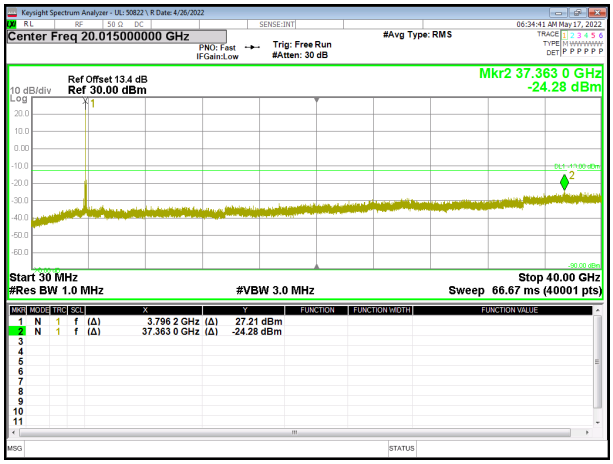
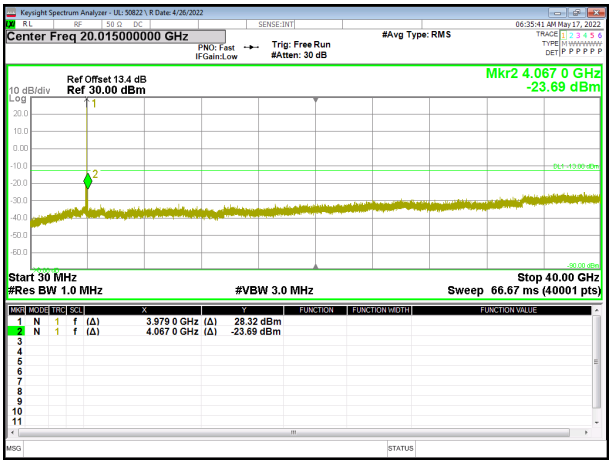
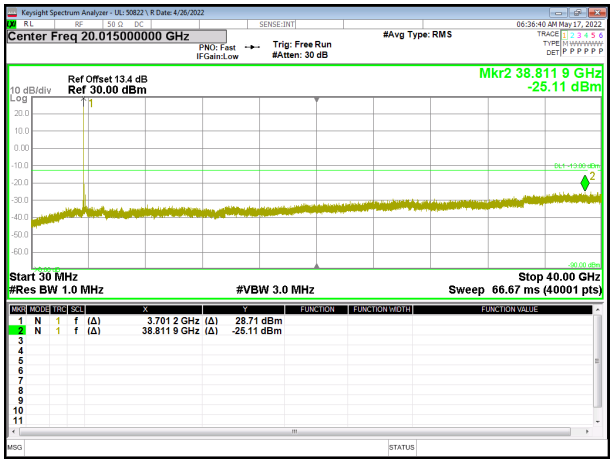


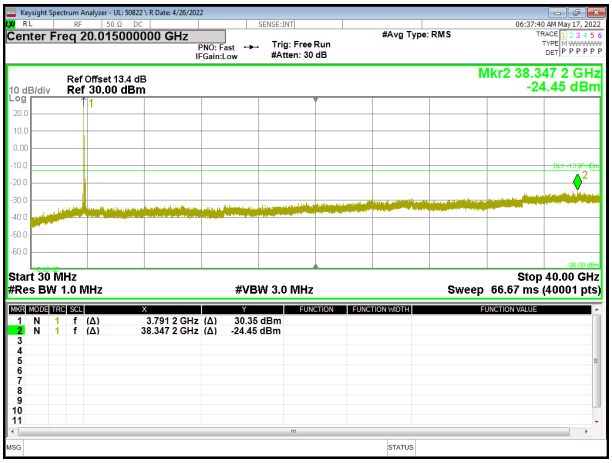
5G NR n77 90MHz BPSK Middle Channel RB1-1



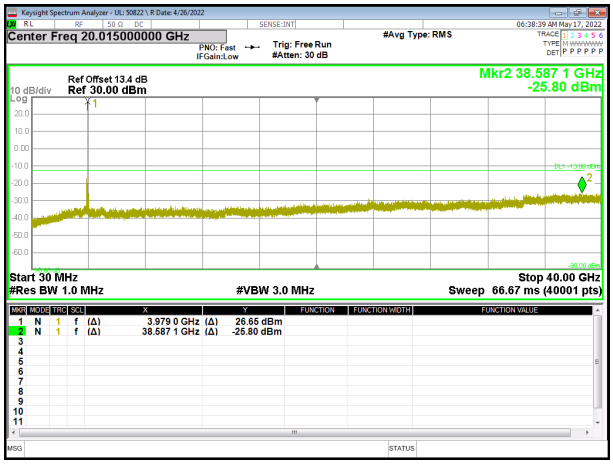
5G NR n77 90MHz BPSK High Channel RB1-244



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



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



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

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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, 3.00VDC.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

RESULTS

See the following pages.

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9.4.1. LTE BAND 5 AND 5G NR n5

LIMITS

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

Test Engineer ID:	25602	Test Date:	6/23/2022

LTE BAND 5 QPSK (10MHz BANDWIDTH)

Band	5	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	824.4175	848.6300			
Extreme (50°C)		824.4175	848.6300	-4.5	-0.005	Yes
Extreme (40°C)		824.4175	848.6300	-4.0	-0.005	Yes
Extreme (30°C)		824.4175	848.6300	3.2	0.004	Yes
Extreme (10°C)		824.4175	848.6300	9.8	0.012	Yes
Extreme (0°C)		824.4175	848.6300	5.3	0.006	Yes
Extreme (-10°C)		824.4175	848.6300	4.2	0.005	Yes
Extreme (-20°C)		824.4175	848.6300	3.7	0.004	Yes
Extreme (-30°C)		824.4175	848.6300	3.6	0.004	Yes
20°C	15%	824.4175	848.6300	-8.2	-0.010	Yes
	-15%	824.4175	848.6300	-3.8	-0.005	Yes
	End Point Voltage	824.4175	848.6300	-3.7	-0.004	Yes

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5G NR n5 BPSK (20MHz BANDWIDTH)

Band	5	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	824.2650	845.2505			
Extreme (50°C)		824.2650	845.2505	8.2	0.010	Yes
Extreme (40°C)		824.2650	845.2505	8.5	0.010	Yes
Extreme (30°C)		824.2650	845.2505	-6.7	-0.008	Yes
Extreme (10°C)		824.2650	845.2505	-12.6	-0.015	Yes
Extreme (0°C)		824.2650	845.2505	9.7	0.012	Yes
Extreme (-10°C)		824.2650	845.2505	-7.2	-0.009	Yes
Extreme (-20°C)		824.2650	845.2505	-8.2	-0.010	Yes
Extreme (-30°C)		824.2650	845.2505	9.0	0.011	Yes
20°C	15%	824.2650	845.2505	-13.2	-0.016	Yes
	-15%	824.2650	845.2505	-9.3	-0.011	Yes
	End Point Voltage	824.2650	845.2505	9.1	0.011	Yes

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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:	6/23/2022

LTE BAND 7 QPSK (20MHz BANDWIDTH)

Band	7	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2500	2570			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	2568.9686	2501.0790			
Extreme (50°C)		2568.9686	2501.0790	6.1	0.002	Yes
Extreme (40°C)		2568.9686	2501.0790	6.8	0.003	Yes
Extreme (30°C)		2568.9686	2501.0790	7.6	0.003	Yes
Extreme (10°C)		2568.9686	2501.0790	9.5	0.004	Yes
Extreme (0°C)		2568.9686	2501.0790	6.2	0.002	Yes
Extreme (-10°C)		2568.9686	2501.0790	7.2	0.003	Yes
Extreme (-20°C)		2568.9686	2501.0790	8.3	0.003	Yes
Extreme (-30°C)		2568.9686	2501.0790	7.2	0.003	Yes
20°C	15%	2568.9686	2501.0790	6.3	0.002	Yes
	-15%	2568.9686	2501.0790	6.7	0.003	Yes
	End Point Voltage	2568.9686	2501.0790	7.0	0.003	Yes

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5G NR n7 BPSK (40MHz BANDWIDTH)

Band	7	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2500	2570			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	2510.3875	2556.2275			
Extreme (50°C)		2510.3875	2556.2275	-11.8	-0.005	Yes
Extreme (40°C)		2510.3875	2556.2275	-17.9	-0.007	Yes
Extreme (30°C)		2510.3875	2556.2275	-10.8	-0.004	Yes
Extreme (10°C)		2510.3875	2556.2275	-10.3	-0.004	Yes
Extreme (0°C)		2510.3875	2556.2275	-15.8	-0.006	Yes
Extreme (-10°C)		2510.3875	2556.2275	-14.4	-0.006	Yes
Extreme (-20°C)		2510.3875	2556.2275	-13.0	-0.005	Yes
Extreme (-30°C)		2510.3875	2556.2275	9.6	0.004	Yes
20°C	15%	2510.3875	2556.2275	-13.0	-0.005	Yes
	-15%	2510.3875	2556.2275	-14.7	-0.006	Yes
	End Point Voltage	2510.3875	2556.2275	-15.6	-0.006	Yes

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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:	6/20/2022

LTE BAND 12 QPSK (10MHz BANDWIDTH)

Band	12	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		699	716			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	699.5371	715.4817			
Extreme (50°C)		699.5371	715.4817	-4.0	-0.006	Yes
Extreme (40°C)		699.5371	715.4818	2.6	0.004	Yes
Extreme (30°C)		699.5371	715.4817	-3.2	-0.005	Yes
Extreme (10°C)		699.5371	715.4818	2.7	0.004	Yes
Extreme (0°C)		699.5371	715.4818	3.1	0.004	Yes
Extreme (-10°C)		699.5371	715.4818	3.2	0.005	Yes
Extreme (-20°C)		699.5371	715.4818	22.9	0.032	Yes
Extreme (-30°C)		699.5371	715.4818	10.4	0.015	Yes
20°C	15%	699.5371	715.4817	-12.8	-0.018	Yes
	-15%	699.5371	715.4818	3.3	0.005	Yes
	End Point Voltage	699.5371	715.4818	10.1	0.014	Yes

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5G NR n12 BPSK (15MHz BANDWIDTH)

Band	12	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		699	716			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	699.9450	714.3875			
Extreme (50°C)		699.9450	714.3875	-11.0	-0.016	Yes
Extreme (40°C)		699.9450	714.3875	-6.4	-0.009	Yes
Extreme (30°C)		699.9450	714.3875	-16.6	-0.023	Yes
Extreme (10°C)		699.9450	714.3875	-14.2	-0.020	Yes
Extreme (0°C)		699.9450	714.3875	9.0	0.013	Yes
Extreme (-10°C)		699.9450	714.3875	9.1	0.013	Yes
Extreme (-20°C)		699.9450	714.3875	-14.5	-0.020	Yes
Extreme (-30°C)		699.9450	714.3875	-17.7	-0.025	Yes
20°C	15%	699.9450	714.3875	-15.4	-0.022	Yes
	-15%	699.9450	714.3875	-18.8	-0.027	Yes
	End Point Voltage	699.9450	714.3875	22.7	0.032	Yes

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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:	6/23/2022

LTE BAND 13 QPSK (10MHz BANDWIDTH)

Band	13	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		777	787			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	777.5346	786.4987			
Extreme (50°C)		777.5346	786.4987	3.0	0.004	Yes
Extreme (40°C)		777.5346	786.4987	5.2	0.007	Yes
Extreme (30°C)		777.5346	786.4987	5.1	0.006	Yes
Extreme (10°C)		777.5346	786.4987	4.5	0.006	Yes
Extreme (0°C)		777.5346	786.4987	6.0	0.008	Yes
Extreme (-10°C)		777.5346	786.4987	18.4	0.023	Yes
Extreme (-20°C)		777.5346	786.4987	12.2	0.016	Yes
Extreme (-30°C)		777.5346	786.4987	12.6	0.016	Yes
20°C	15%	777.5346	786.4987	-10.4	-0.013	Yes
	-15%	777.5346	786.4987	4.4	0.006	Yes
	End Point Voltage	777.5346	786.4987	8.8	0.011	Yes

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9.4.5. LTE BAND 14 AND 5G NR n14

LIMITS

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

Test Engineer ID:	25602	Test Date:	6/23/2022

LTE BAND 14 QPSK (10MHz BANDWIDTH)

Band	14	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		788	798			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	788.5342	797.4789			
Extreme (50°C)		788.5342	797.4789	-4.4	-0.006	Yes
Extreme (40°C)		788.5342	797.4789	2.7	0.003	Yes
Extreme (30°C)		788.5342	797.4789	-2.8	-0.004	Yes
Extreme (10°C)		788.5342	797.4789	-3.1	-0.004	Yes
Extreme (0°C)		788.5342	797.4789	3.6	0.005	Yes
Extreme (-10°C)		788.5342	797.4789	10.0	0.013	Yes
Extreme (-20°C)		788.5341	797.4789	-28.7	-0.036	Yes
Extreme (-30°C)		788.5342	797.4790	19.6	0.025	Yes
20°C	15%	788.5342	797.4789	13.1	0.016	Yes
	-15%	788.5342	797.4789	3.8	0.005	Yes
	End Point Voltage	788.5342	797.4789	-3.3	-0.004	Yes

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5G NR n14 BPSK (15MHz BANDWIDTH)

Band	14	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		788	798			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	787.8400	797.8475			
Extreme (50°C)		787.8400	797.8475	-16.2	-0.020	Yes
Extreme (40°C)		787.8400	797.8475	-8.8	-0.011	Yes
Extreme (30°C)		787.8400	797.8475	17.0	0.021	Yes
Extreme (10°C)		787.8400	797.8475	-16.8	-0.021	Yes
Extreme (0°C)		787.8400	797.8475	-18.9	-0.024	Yes
Extreme (-10°C)		787.8400	797.8475	-9.3	-0.012	Yes
Extreme (-20°C)		787.8400	797.8475	14.2	0.018	Yes
Extreme (-30°C)		787.8400	797.8475	10.9	0.014	Yes
20°C	15%	787.8400	797.8475	-15.3	-0.019	Yes
	-15%	787.8400	797.8475	9.6	0.012	Yes
	End Point Voltage	787.8400	797.8475	-16.8	-0.021	Yes

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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:	25602	Test Date:	6/23/2022

LTE BAND 17 QPSK (10MHz BANDWIDTH)

Band	17	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		704	716			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	704.5304	715.4835			
Extreme (50°C)		704.5304	715.4835	0.8	0.001	Yes
Extreme (40°C)		704.5304	715.4835	-0.6	-0.001	Yes
Extreme (30°C)		704.5304	715.4835	0.3	0.000	Yes
Extreme (10°C)		704.5304	715.4835	-0.8	-0.001	Yes
Extreme (0°C)		704.5304	715.4835	0.4	0.001	Yes
Extreme (-10°C)		704.5304	715.4835	0.6	0.001	Yes
Extreme (-20°C)		704.5304	715.4835	1.0	0.001	Yes
Extreme (-30°C)		704.5304	715.4835	0.9	0.001	Yes
20°C	15%	704.5304	715.4835	0.8	0.001	Yes
	-15%	704.5304	715.4835	-0.5	-0.001	Yes
	End Point Voltage	704.5304	715.4835	1.1	0.002	Yes

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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:	6/20/2022

LTE BAND 25 QPSK (20MHz BANDWIDTH)

Band	25	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1915		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1851.0765	1913.9503			
Extreme (50°C)		1851.0765	1913.9503	-6.1	-0.003	Yes
Extreme (40°C)		1851.0765	1913.9503	-5.6	-0.003	Yes
Extreme (30°C)		1851.0765	1913.9503	-5.9	-0.003	Yes
Extreme (10°C)		1851.0765	1913.9503	-6.2	-0.003	Yes
Extreme (0°C)		1851.0765	1913.9503	-7.0	-0.004	Yes
Extreme (-10°C)		1851.0765	1913.9503	-5.2	-0.003	Yes
Extreme (-20°C)		1851.0765	1913.9503	-5.7	-0.003	Yes
Extreme (-30°C)		1851.0765	1913.9503	-6.5	-0.003	Yes
20°C	15%	1851.0765	1913.9503	-6.9	-0.004	Yes
	-15%	1851.0765	1913.9503	-6.1	-0.003	Yes
	End Point Voltage	1851.0765	1913.9503	-6.2	-0.003	Yes

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5G NR n25 BPSK (40MHz BANDWIDTH)

Band	25	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1915		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1862.7200	1899.5600			
Extreme (50°C)		1862.7200	1899.5600	-10.2	-0.005	Yes
Extreme (40°C)		1862.7200	1899.5600	-10.5	-0.006	Yes
Extreme (30°C)		1862.7200	1899.5600	-12.5	-0.007	Yes
Extreme (10°C)		1862.7200	1899.5600	-17.1	-0.009	Yes
Extreme (0°C)		1862.7200	1899.5600	-8.7	-0.005	Yes
Extreme (-10°C)		1862.7200	1899.5600	-10.6	-0.006	Yes
Extreme (-20°C)		1862.7200	1899.5600	10.6	0.006	Yes
Extreme (-30°C)		1862.7200	1899.5600	-8.1	-0.004	Yes
20°C	15%	1862.7200	1899.5600	-8.9	-0.005	Yes
	-15%	1862.7200	1899.5600	-7.7	-0.004	Yes
	End Point Voltage	1862.7200	1899.5600	-15.1	-0.008	Yes

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9.4.8. LTE BAND 26

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:	6/20/2022

LTE BAND 26 QPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		814	824		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	814.5179	823.4881			
Extreme (50°C)		814.5179	823.4881	3.3	0.004	Yes
Extreme (40°C)		814.5179	823.4881	4.5	0.005	Yes
Extreme (30°C)		814.5179	823.4881	-4.0	-0.005	Yes
Extreme (10°C)		814.5179	823.4880	-4.8	-0.006	Yes
Extreme (0°C)		814.5179	823.4881	4.7	0.006	Yes
Extreme (-10°C)		814.5179	823.4881	7.4	0.009	Yes
Extreme (-20°C)		814.5179	823.4881	8.9	0.011	Yes
Extreme (-30°C)		814.5179	823.4881	11.3	0.014	Yes
20°C	15%	814.5179	823.4881	4.8	0.006	Yes
	-15%	814.5179	823.4881	3.9	0.005	Yes
	End Point Voltage	814.5179	823.4881	4.2	0.005	Yes

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5G NR n26 Part 90s BPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		814	824		2.5	
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	814.1300	823.5550			
Extreme (50°C)		814.1300	823.5550	21.8	0.027	Yes
Extreme (40°C)		814.1300	823.5550	-15.0	-0.018	Yes
Extreme (30°C)		814.1300	823.5550	-11.2	-0.014	Yes
Extreme (10°C)		814.1300	823.5550	-9.7	-0.012	Yes
Extreme (0°C)		814.1300	823.5550	-8.8	-0.011	Yes
Extreme (-10°C)		814.1300	823.5550	13.2	0.016	Yes
Extreme (-20°C)		814.1300	823.5550	-7.6	-0.009	Yes
Extreme (-30°C)		814.1300	823.5550	-11.7	-0.014	Yes
20°C	15%	814.1300	823.5550	-8.4	-0.010	Yes
	-15%	814.1300	823.5550	13.3	0.016	Yes
	End Point Voltage	814.1300	823.5550	-17.7	-0.022	Yes

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9.4.9. LTE BAND 26

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:	6/20/2022

LTE BAND 26 QPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	824.7988	848.2230			
Extreme (50°C)		824.7988	848.2230	-4.5	-0.005	Yes
Extreme (40°C)		824.7988	848.2230	4.1	0.005	Yes
Extreme (30°C)		824.7988	848.2230	7.9	0.009	Yes
Extreme (10°C)		824.7988	848.2230	-7.3	-0.009	Yes
Extreme (0°C)		824.7988	848.2230	-8.7	-0.010	Yes
Extreme (-10°C)		824.7988	848.2230	8.4	0.010	Yes
Extreme (-20°C)		824.7988	848.2230	13.9	0.017	Yes
Extreme (-30°C)		824.7988	848.2230	-12.8	-0.015	Yes
20°C	15%	824.7988	848.2230	-3.9	-0.005	Yes
	-15%	824.7988	848.2230	-4.1	-0.005	Yes
	End Point Voltage	824.7988	848.2230	4.0	0.005	Yes

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5G NR n26 BPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	826.8100	845.1950			
Extreme (50°C)		826.8100	845.1950	-11.0	-0.013	Yes
Extreme (40°C)		826.8100	845.1950	8.2	0.010	Yes
Extreme (30°C)		826.8100	845.1950	-13.8	-0.016	Yes
Extreme (10°C)		826.8100	845.1950	-11.4	-0.014	Yes
Extreme (0°C)		826.8100	845.1950	-8.1	-0.010	Yes
Extreme (-10°C)		826.8100	845.1950	-6.2	-0.007	Yes
Extreme (-20°C)		826.8100	845.1950	-6.1	-0.007	Yes
Extreme (-30°C)		826.8100	845.1950	-9.6	-0.011	Yes
20°C	15%	826.8100	845.1950	-11.4	-0.014	Yes
	-15%	826.8100	845.1950	-8.2	-0.010	Yes
	End Point Voltage	826.8100	845.1950	-7.0	-0.008	Yes

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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:	6/23/2022

LTE BAND 30 QPSK (10MHz BANDWIDTH)

Band	30	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2305	2315			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2305.5305	2314.4863			
Extreme (50°C)		2305.5305	2314.4863	-4.9	-0.002	Yes
Extreme (40°C)		2305.5305	2314.4863	-5.2	-0.002	Yes
Extreme (30°C)		2305.5305	2314.4863	-5.9	-0.003	Yes
Extreme (10°C)		2305.5305	2314.4863	-3.7	-0.002	Yes
Extreme (0°C)		2305.5305	2314.4863	5.9	0.003	Yes
Extreme (-10°C)		2305.5305	2314.4863	6.0	0.003	Yes
Extreme (-20°C)		2305.5305	2314.4863	-5.4	-0.002	Yes
Extreme (-30°C)		2305.5305	2314.4863	5.9	0.003	Yes
20°C	15%	2305.5305	2314.4863	-6.1	-0.003	Yes
	-15%	2305.5305	2314.4863	-9.9	-0.004	Yes
	End Point Voltage	2305.5305	2314.4863	-5.8	-0.002	Yes

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5G NR n30 BPSK (10MHz BANDWIDTH)

Band	30	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2305	2315			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	2305.1850	2314.4283			
Extreme (50°C)		2305.1850	2314.4283	-8.4	-0.004	Yes
Extreme (40°C)		2305.1850	2314.4283	-14.1	-0.006	Yes
Extreme (30°C)		2305.1850	2314.4283	-15.0	-0.007	Yes
Extreme (10°C)		2305.1850	2314.4283	-11.3	-0.005	Yes
Extreme (0°C)		2305.1850	2314.4283	-13.7	-0.006	Yes
Extreme (-10°C)		2305.1850	2314.4283	-11.2	-0.005	Yes
Extreme (-20°C)		2305.1850	2314.4283	-10.4	-0.005	Yes
Extreme (-30°C)		2305.1850	2314.4283	-10.7	-0.005	Yes
20°C	15%	2305.1850	2314.4283	-11.1	-0.005	Yes
	-15%	2305.1850	2314.4283	-13.7	-0.006	Yes
	End Point Voltage	2305.1850	2314.4283	-12.5	-0.005	Yes

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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:	5/20/2022

LTE BAND 41 QPSK (20MHz BANDWIDTH)

Band	41	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2496	2690			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2496.6530	2689.4780			
Extreme (50°C)		2496.6529	2689.4780	-9.3	-0.004	Yes
Extreme (40°C)		2496.6529	2689.4780	-11.5	-0.004	Yes
Extreme (30°C)		2496.6529	2689.4780	-12.4	-0.005	Yes
Extreme (10°C)		2496.6529	2689.4780	-9.7	-0.004	Yes
Extreme (0°C)		2496.6529	2689.4780	-11.0	-0.004	Yes
Extreme (-10°C)		2496.6529	2689.4780	-10.0	-0.004	Yes
Extreme (-20°C)		2496.6529	2689.4780	-14.6	-0.006	Yes
Extreme (-30°C)		2496.6529	2689.4780	-13.3	-0.005	Yes
20°C	15%	2496.6530	2689.4780	10.0	0.004	Yes
	-15%	2496.6529	2689.4780	-13.0	-0.005	Yes
	End Point Voltage	2496.6530	2689.4780	12.9	0.005	Yes

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5G NR n41 BPSK (100MHz BANDWIDTH)

Band	41	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2496	2690		0	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	2495.7750	2689.0900			
Extreme (50°C)		2495.7750	2689.0900	-17.9	-0.007	Yes
Extreme (40°C)		2495.7750	2689.0900	-15.4	-0.006	Yes
Extreme (30°C)		2495.7750	2689.0900	-13.7	-0.005	Yes
Extreme (10°C)		2495.7750	2689.0900	-16.0	-0.006	Yes
Extreme (0°C)		2495.7750	2689.0900	-14.0	-0.005	Yes
Extreme (-10°C)		2495.7750	2689.0900	-14.5	-0.006	Yes
Extreme (-20°C)		2495.7750	2689.0900	-14.1	-0.005	Yes
Extreme (-30°C)		2495.7750	2689.0900	-12.7	-0.005	Yes
20°C	15%	2495.7750	2689.0900	-17.1	-0.007	Yes
	-15%	2495.7750	2689.0900	-17.9	-0.007	Yes
	End Point Voltage	2495.7750	2689.0900	-16.5	-0.006	Yes

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9.4.12. LTE BAND 48

Test Engineer ID:	25602	Test Date:	5/8/2022

LTE BAND 48 QPSK (20MHz BANDWIDTH)

Band	48	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3550	3700			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	3550.9930	3699.2100			
Extreme (50°C)		3550.9930	3699.2100	-8.2	-0.002	Yes
Extreme (40°C)		3550.9930	3699.2100	-6.7	-0.002	Yes
Extreme (30°C)		3550.9930	3699.2100	-10.8	-0.003	Yes
Extreme (10°C)		3550.9930	3699.2100	-8.5	-0.002	Yes
Extreme (0°C)		3550.9930	3699.2100	-10.4	-0.003	Yes
Extreme (-10°C)		3550.9930	3699.2100	8.4	0.002	Yes
Extreme (-20°C)		3550.9930	3699.2100	-10.8	-0.003	Yes
Extreme (-30°C)		3550.9930	3699.2100	-8.2	-0.002	Yes
20°C	15%	3550.9930	3699.2100	-6.8	-0.002	Yes
	-15%	3550.9930	3699.2100	7.0	0.002	Yes
	End Point Voltage	3550.9930	3699.2100	-5.6	-0.002	Yes

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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:	6/20/2022

LTE BAND 66 QPSK (20MHz BANDWIDTH)

Band	66	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1780			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1711.0855	1778.9682			
Extreme (50°C)		1711.0855	1778.9682	-5.5	-0.003	Yes
Extreme (40°C)		1711.0855	1778.9682	-4.9	-0.003	Yes
Extreme (30°C)		1711.0855	1778.9682	-4.8	-0.003	Yes
Extreme (10°C)		1711.0855	1778.9682	-5.7	-0.003	Yes
Extreme (0°C)		1711.0855	1778.9682	4.6	0.003	Yes
Extreme (-10°C)		1711.0855	1778.9682	5.5	0.003	Yes
Extreme (-20°C)		1711.0855	1778.9682	4.6	0.003	Yes
Extreme (-30°C)		1711.0855	1778.9682	4.3	0.002	Yes
20°C	15%	1711.0855	1778.9682	-4.5	-0.003	Yes
	-15%	1711.0855	1778.9682	-4.7	-0.003	Yes
	End Point Voltage	1711.0855	1778.9682	-5.0	-0.003	Yes

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5G NR n66 QPSK (40MHz BANDWIDTH)

Band	66	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1780			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1709.7800	1780.3900			
Extreme (50°C)		1709.7800	1780.3900	-14.3	-0.008	Yes
Extreme (40°C)		1709.7800	1780.3900	-19.0	-0.011	Yes
Extreme (30°C)		1709.7800	1780.3900	-8.4	-0.005	Yes
Extreme (10°C)		1709.7800	1780.3900	-11.1	-0.006	Yes
Extreme (0°C)		1709.7800	1780.3900	-13.8	-0.008	Yes
Extreme (-10°C)		1709.7800	1780.3900	-16.1	-0.009	Yes
Extreme (-20°C)		1709.7800	1780.3900	-10.8	-0.006	Yes
Extreme (-30°C)		1709.7800	1780.3900	-12.4	-0.007	Yes
20°C	15%	1709.7800	1780.3900	-12.7	-0.007	Yes
	-15%	1709.7800	1780.3900	-13.5	-0.008	Yes
	End Point Voltage	1709.7800	1780.3900	-11.4	-0.007	Yes

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9.4.14. 5G NR n70

LIMITS

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

Test Engineer ID:	25602	Test Date:	6/20/2022

5G NR n70 BPSK (15MHz BANDWIDTH)

Band	70	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1695	1710			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	1694.7038	1709.5538			
Extreme (50°C)		1694.7037	1709.5537	-12.8	-0.008	Yes
Extreme (40°C)		1694.7037	1709.5537	-13.1	-0.008	Yes
Extreme (30°C)		1694.7037	1709.5537	-9.4	-0.005	Yes
Extreme (10°C)		1694.7037	1709.5537	-9.6	-0.006	Yes
Extreme (0°C)		1694.7037	1709.5537	-13.0	-0.008	Yes
Extreme (-10°C)		1694.7037	1709.5537	-11.7	-0.007	Yes
Extreme (-20°C)		1694.7037	1709.5537	-9.2	-0.005	Yes
Extreme (-30°C)		1694.7037	1709.5537	-9.3	-0.005	Yes
20°C	15%	1694.7037	1709.5537	-8.8	-0.005	Yes
	-15%	1694.7037	1709.5537	-13.5	-0.008	Yes
	End Point Voltage	1694.7037	1709.5537	-12.7	-0.007	Yes

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9.4.15. LTE BAND 71 AND 5G NR n71

LIMITS

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

Test Engineer ID:	25602	Test Date:	6/23/2022

LTE BAND 71 QPSK (20MHz BANDWIDTH)

Band	71	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		663	698			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	664.0879	696.9517			
Extreme (50°C)		664.0879	696.9517	-3.7	-0.005	Yes
Extreme (40°C)		664.0879	696.9517	3.6	0.005	Yes
Extreme (30°C)		664.0879	696.9517	-3.5	-0.005	Yes
Extreme (10°C)		664.0879	696.9517	-3.8	-0.006	Yes
Extreme (0°C)		664.0879	696.9517	4.4	0.007	Yes
Extreme (-10°C)		664.0879	696.9517	5.6	0.008	Yes
Extreme (-20°C)		664.0879	696.9517	4.3	0.006	Yes
Extreme (-30°C)		664.0879	696.9517	4.3	0.006	Yes
20°C	15%	664.0879	696.9517	-4.2	-0.006	Yes
	-15%	664.0879	696.9517	-4.2	-0.006	Yes
	End Point Voltage	664.0879	696.9517	-3.1	-0.004	Yes

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5G NR n71 BPSK (20MHz BANDWIDTH)

Band	71	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		663	698			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	663.1550	692.2600			
Extreme (50°C)		663.1550	692.2600	-28.4	-0.042	Yes
Extreme (40°C)		663.1550	692.2600	-16.8	-0.025	Yes
Extreme (30°C)		663.1550	692.2600	-15.0	-0.022	Yes
Extreme (10°C)		663.1550	692.2600	-15.9	-0.023	Yes
Extreme (0°C)		663.1550	692.2600	-18.5	-0.027	Yes
Extreme (-10°C)		663.1550	692.2600	-15.8	-0.023	Yes
Extreme (-20°C)		663.1550	692.2600	-15.4	-0.023	Yes
Extreme (-30°C)		663.1550	692.2600	-16.2	-0.024	Yes
20°C	15%	663.1550	692.2600	-12.6	-0.019	Yes
	-15%	663.1550	692.2600	-17.2	-0.025	Yes
	End Point Voltage	663.1550	692.2600	-13.6	-0.020	Yes

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9.4.16. 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:	25602	Test Date:	6/14/2022

5G NR n77 BPSK (100MHz BANDWIDTH)

Band	77	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3450	3550			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	3499.7500	3549.1000			
Extreme (50°C)		3499.7500	3549.1000	-19.1	-0.005	Yes
Extreme (40°C)		3499.7500	3549.1000	-16.5	-0.005	Yes
Extreme (30°C)		3499.7500	3549.1000	-17.8	-0.005	Yes
Extreme (10°C)		3499.7500	3549.1000	-19.2	-0.005	Yes
Extreme (0°C)		3499.7500	3549.1000	-21.0	-0.006	Yes
Extreme (-10°C)		3499.7500	3549.1000	-17.3	-0.005	Yes
Extreme (-20°C)		3499.7500	3549.1000	-22.2	-0.006	Yes
Extreme (-30°C)		3499.7500	3549.1000	-21.2	-0.006	Yes
20°C	15%	3499.7500	3549.1000	-18.3	-0.005	Yes
	-15%	3499.7500	3549.1000	-15.4	-0.004	Yes
	End Point Voltage	3499.7500	3549.1000	-24.5	-0.007	Yes

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9.4.17. 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:	25602	Test Date:	6/16/2022

5G NR n77 BPSK (100MHz BANDWIDTH)

Band	77	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3700	3980			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	3699.7750	3979.1500			
Extreme (50°C)		3699.7750	3979.1500	-18.6	-0.005	Yes
Extreme (40°C)		3699.7750	3979.1500	-20.0	-0.005	Yes
Extreme (30°C)		3699.7750	3979.1500	-25.5	-0.007	Yes
Extreme (10°C)		3699.7750	3979.1500	-16.3	-0.004	Yes
Extreme (0°C)		3699.7750	3979.1500	-22.5	-0.006	Yes
Extreme (-10°C)		3699.7750	3979.1500	-17.1	-0.004	Yes
Extreme (-20°C)		3699.7750	3979.1500	-20.6	-0.005	Yes
Extreme (-30°C)		3699.7750	3979.1500	-18.3	-0.005	Yes
20°C	15%	3699.7750	3979.1500	-18.0	-0.005	Yes
	-15%	3699.7750	3979.1500	-11.0	-0.003	Yes
	End Point Voltage	3699.7750	3979.1500	-16.2	-0.004	Yes

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9.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

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

RESULT

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

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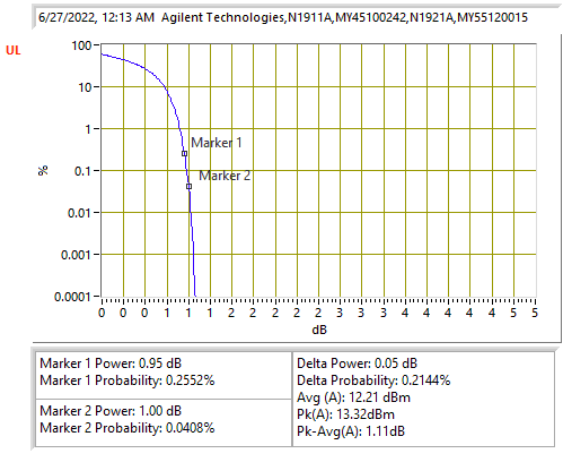
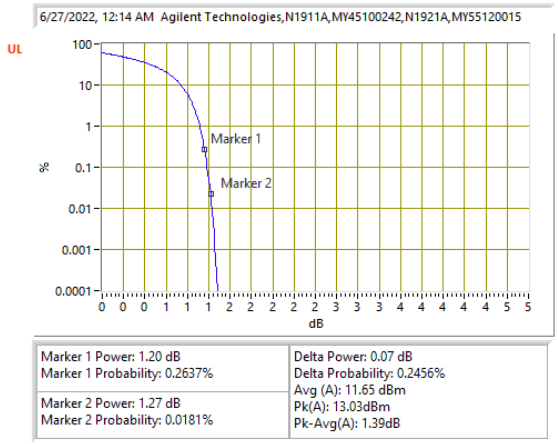
9.5.1. LTE BAND 5 AND 5G NR n5

LTE BAND 5

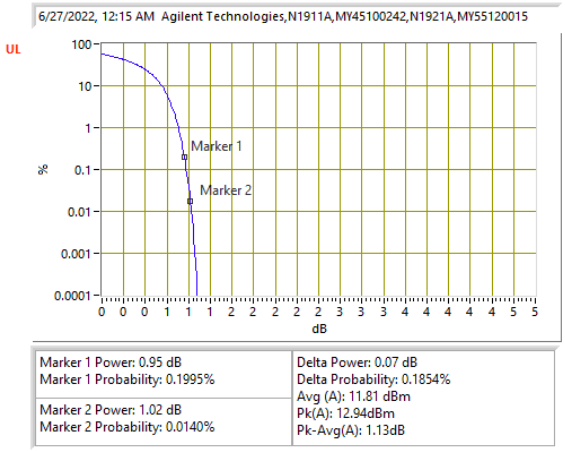
Test Engineer ID:	28774	Test Date:	6/27/2022



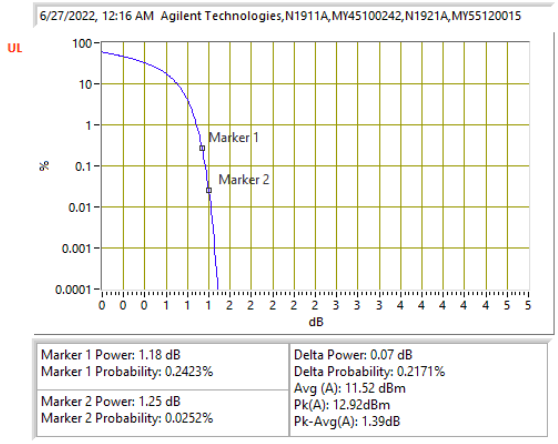
LTE B5 1.4MHz QPSK Middle Channel



LTE B5 1.4MHz 16QAM Middle Channel



LTE B5 3MHz QPSK Middle Channel



LTE B5 3MHz 16QAM Middle Channel

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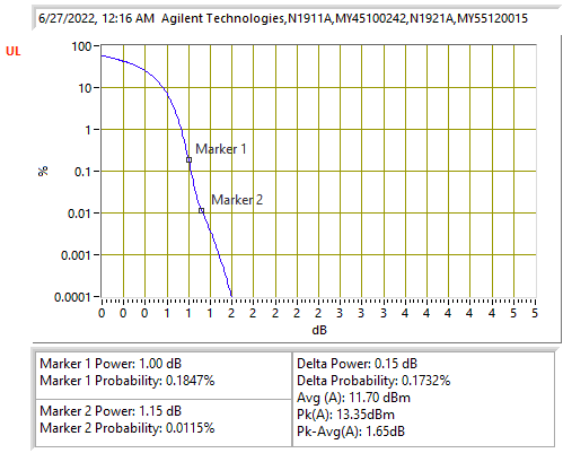
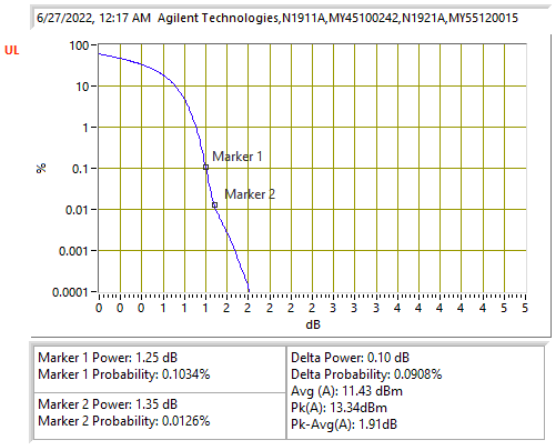
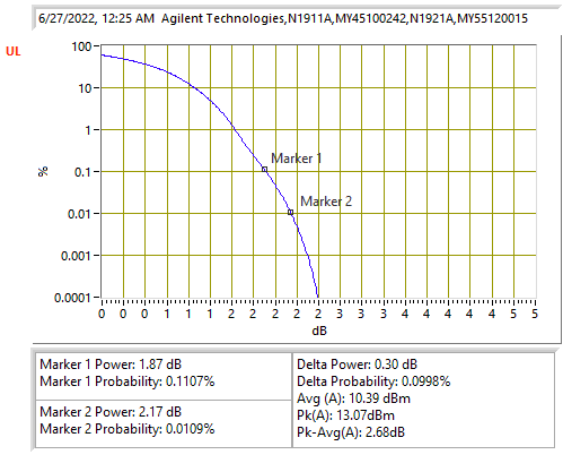


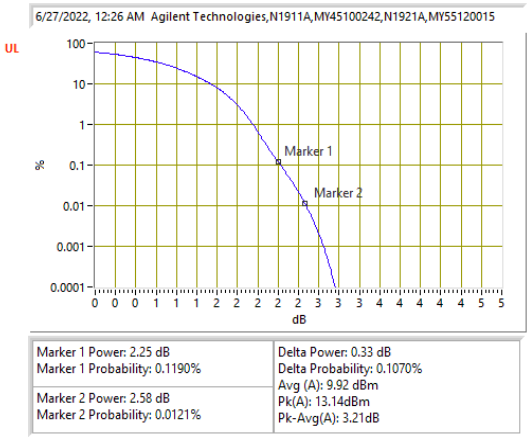
LTE B5 5MHz QPSK Middle Channel



LTE B5 5MHz 16QAM Middle Channel



LTE B5 10MHz QPSK Middle Channel



LTE B5 10MHz 16QAM Middle Channel

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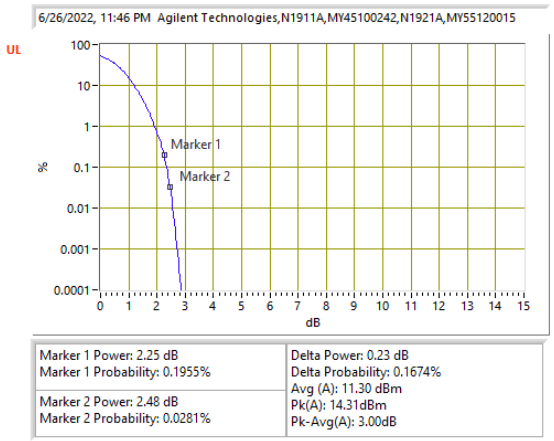
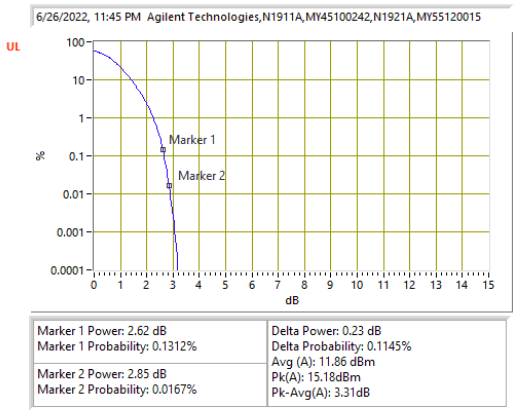
5G NR n5

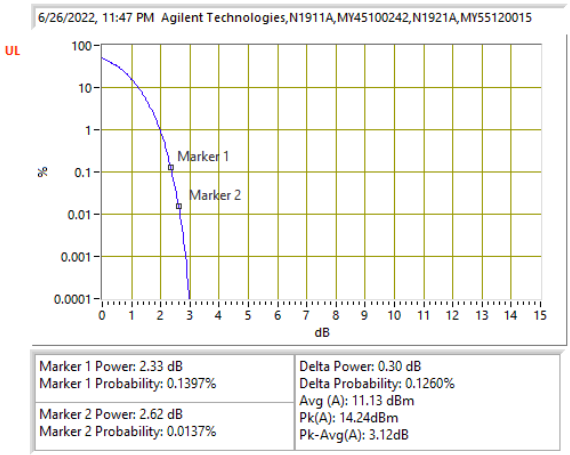
Test Engineer ID:	28774	Test Date:	6/26/2022



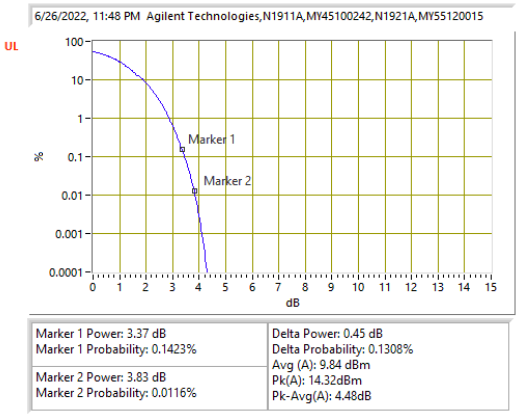
5G NR n5 15MHz BPSK Middle Channel



5G NR n5 15MHz 16QAM Middle Channel



5G NR n5 20MHz BPSK Middle Channel



5G NR n5 20MHz 16QAM Middle Channel

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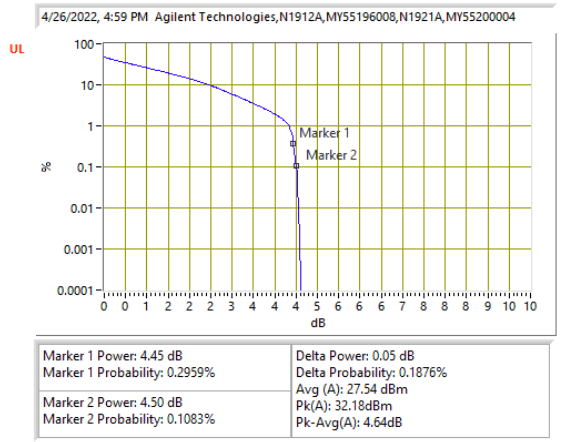
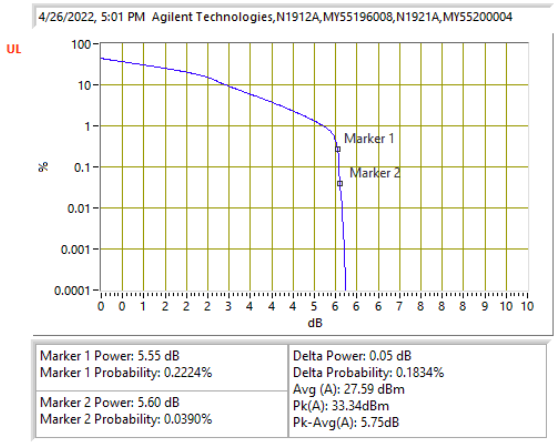
9.5.2. LTE BAND 7 AND 5G NR n7

LTE BAND 7

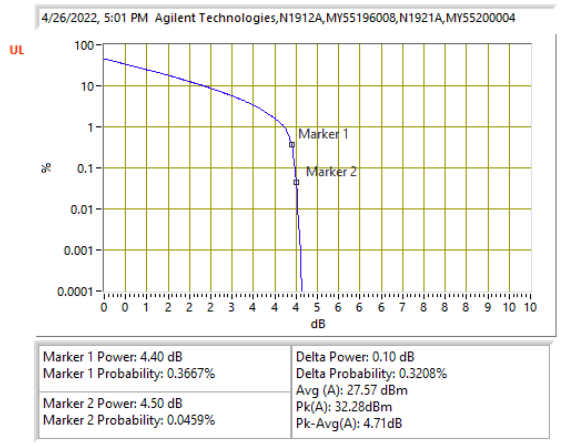
Test Engineer ID:	25602	Test Date:	4/26/2022



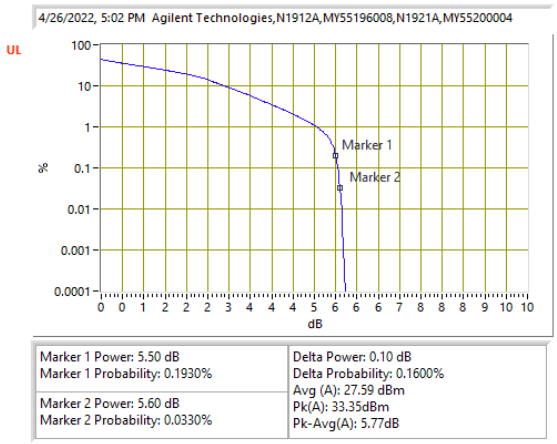
LTE B7 5MHz QPSK Middle Channel



LTE B7 5MHz 16QAM Middle Channel



LTE B7 10MHz QPSK Middle Channel



LTE B7 10MHz 16QAM Middle Channel

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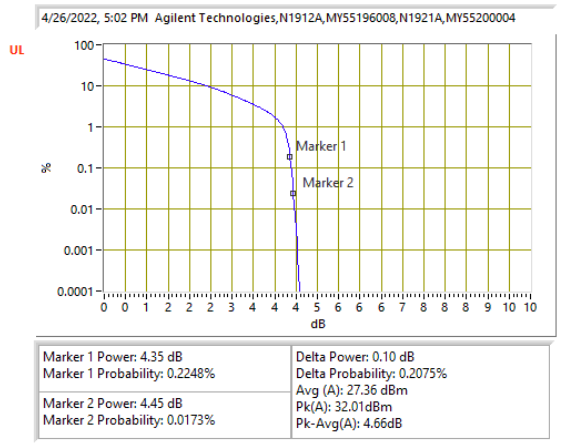
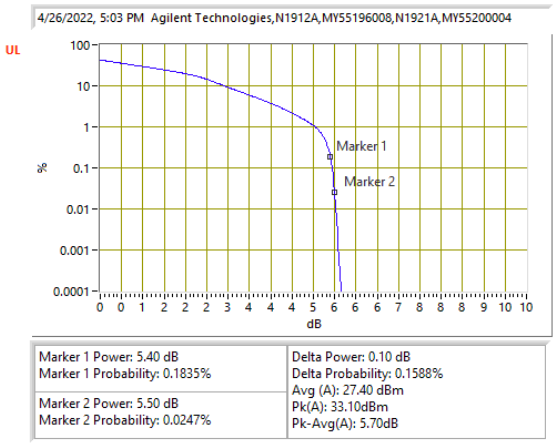
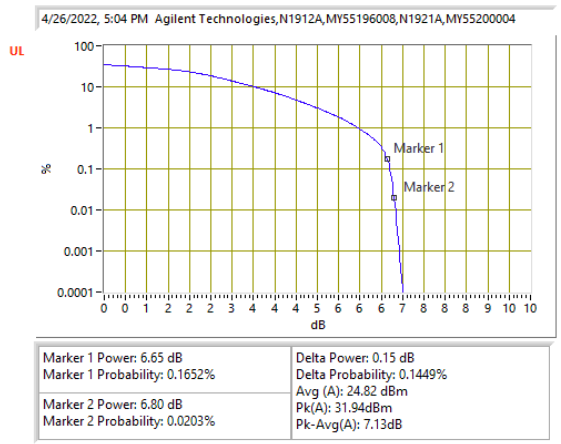


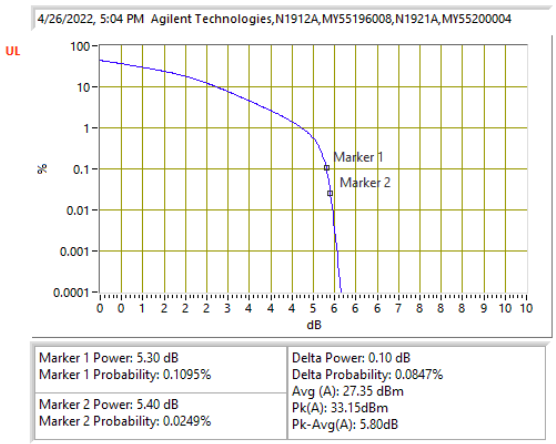
LTE B7 15MHz QPSK Middle Channel



LTE B7 15MHz 16QAM Middle Channel



LTE B7 20MHz QPSK Middle Channel ID:52275



LTE B7 20MHz 16QAM Middle Channel ID:52275

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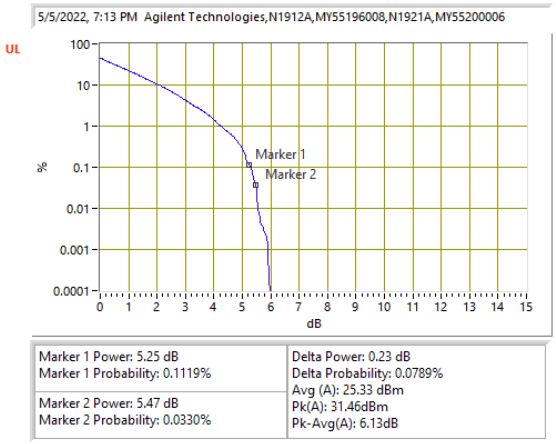
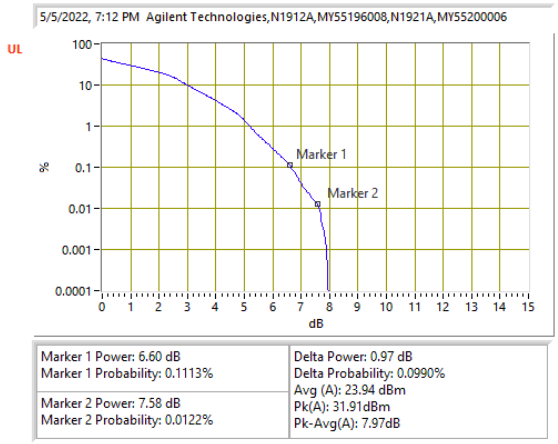
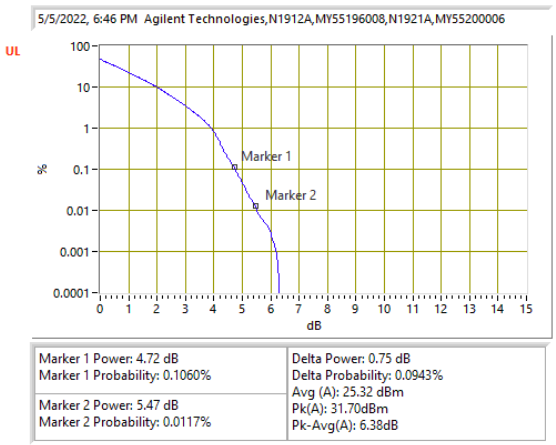
5G NR n7



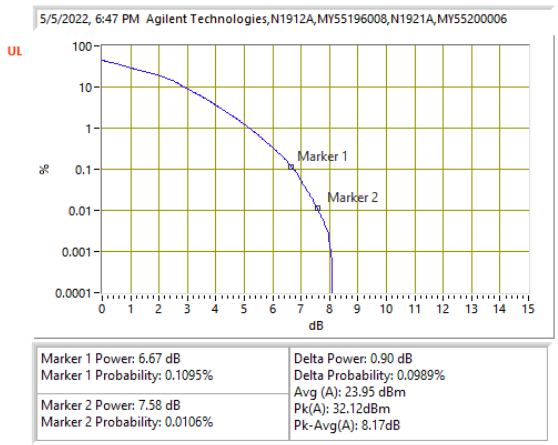
5G NR n7 5MHz BPSK Middle Channel



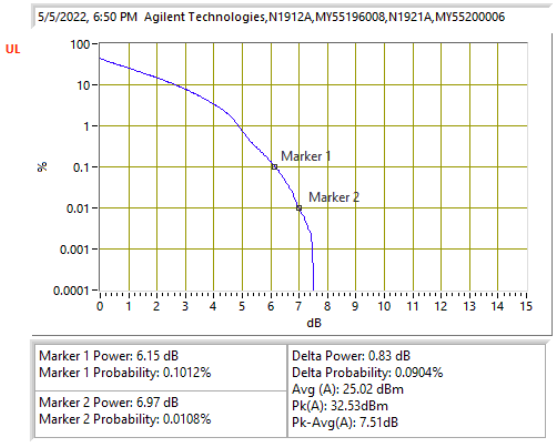
5G NR n7 5MHz 16QAM Middle Channel



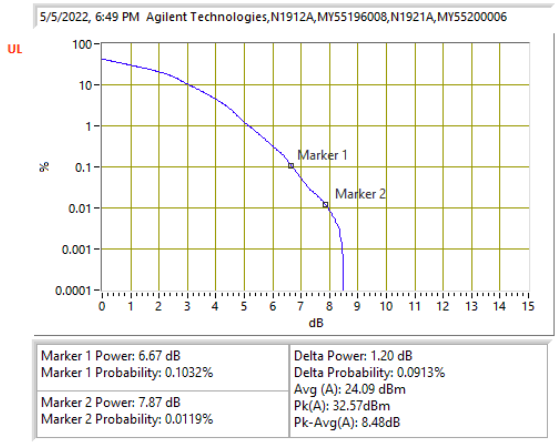
5G NR n7 10MHz BPSK Middle Channel



5G NR n7 10MHz 16QAM Middle Channel



5G NR n7 15MHz BPSK Middle Channel



5G NR n7 15MHz 16QAM Middle Channel

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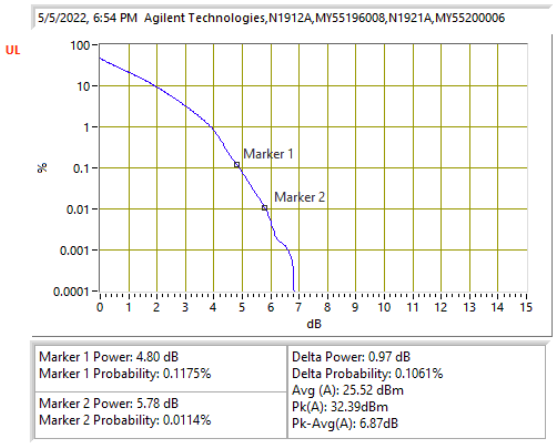
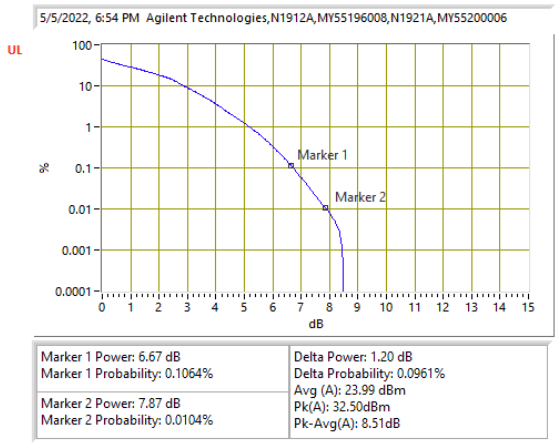
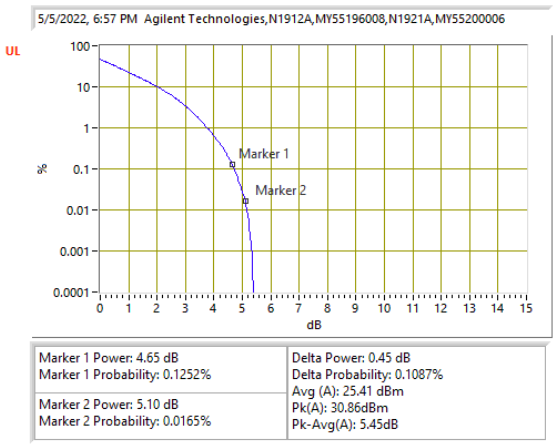


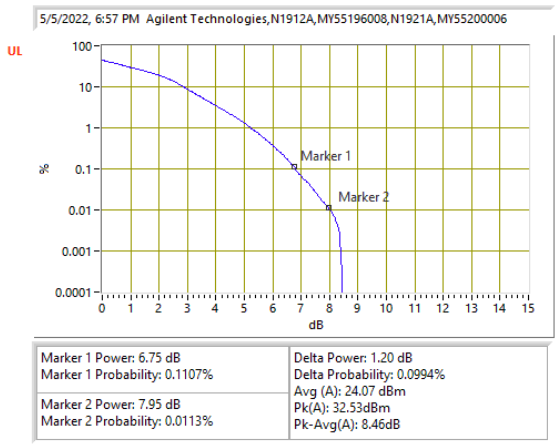
5G NR n7 20MHz BPSK Middle Channel



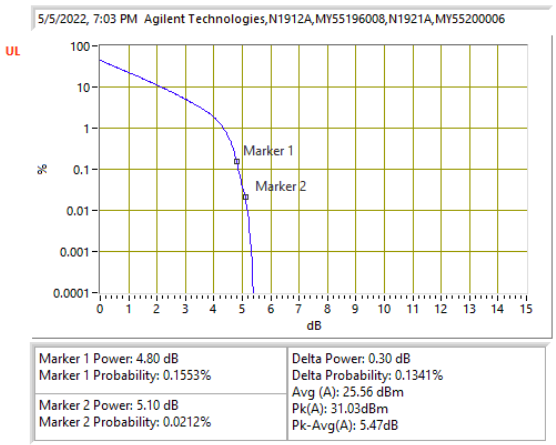
5G NR n7 20MHz 16QAM Middle Channel



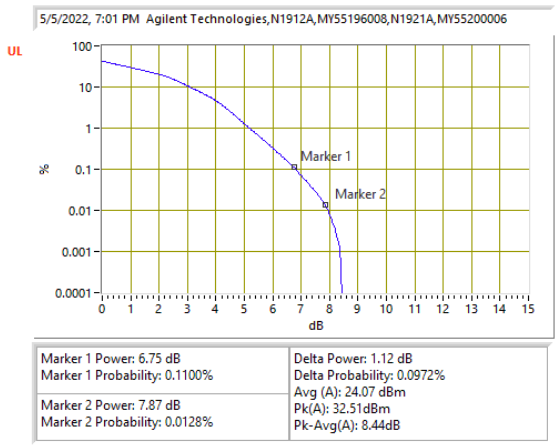
5G NR n7 25MHz BPSK Middle Channel



5G NR n7 25MHz 16QAM Middle Channel



5G NR n7 30MHz BPSK Middle Channel



5G NR n7 30MHz 16QAM Middle Channel

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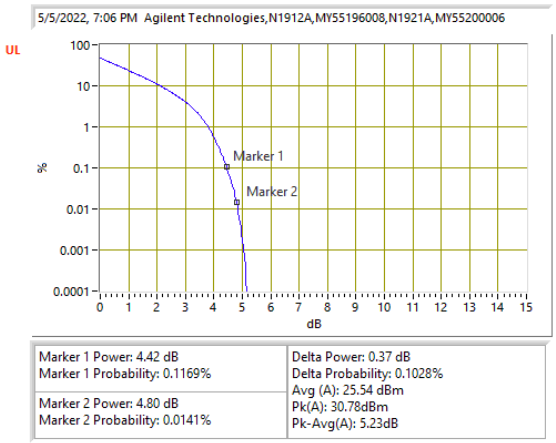
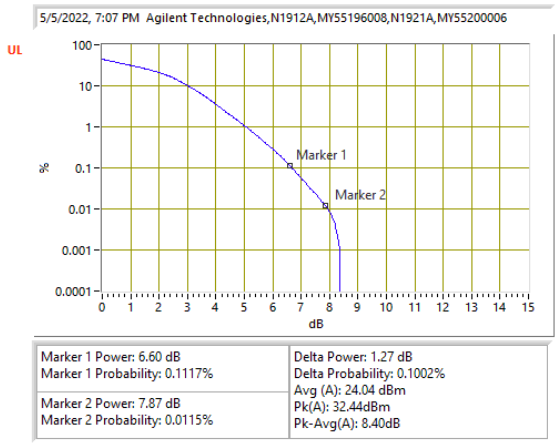
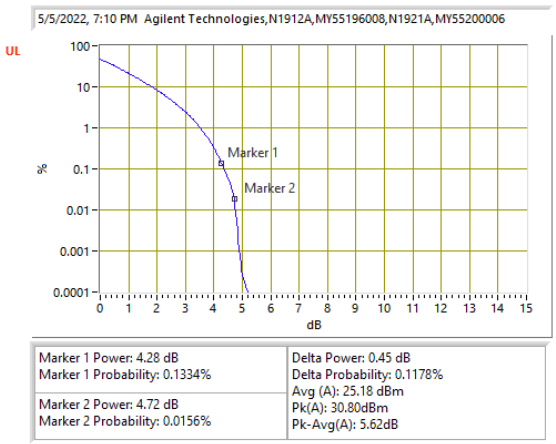


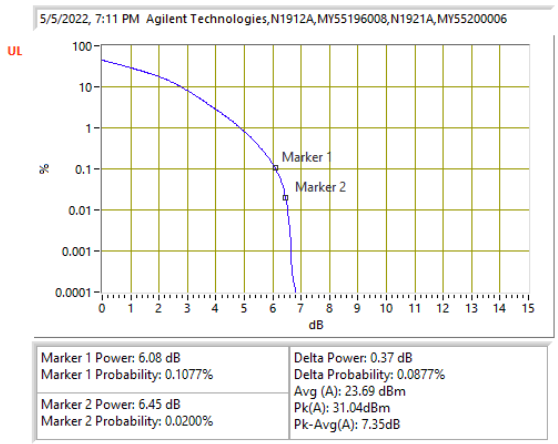
5G NR n7 40MHz BPSK Middle Channel



5G NR n7 40MHz 16QAM Middle Channel



5G NR n7 50MHz BPSK Middle Channel



5G NR n7 50MHz 16QAM Middle Channel

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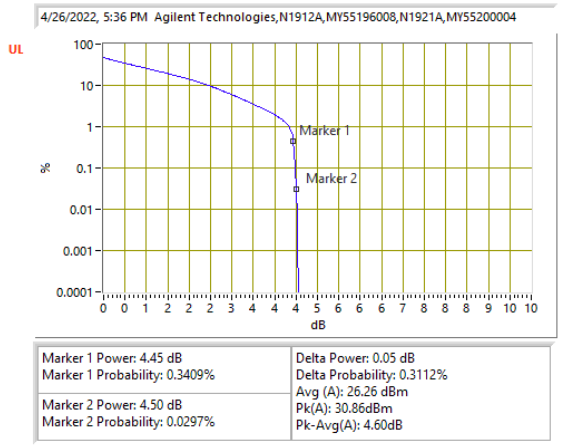
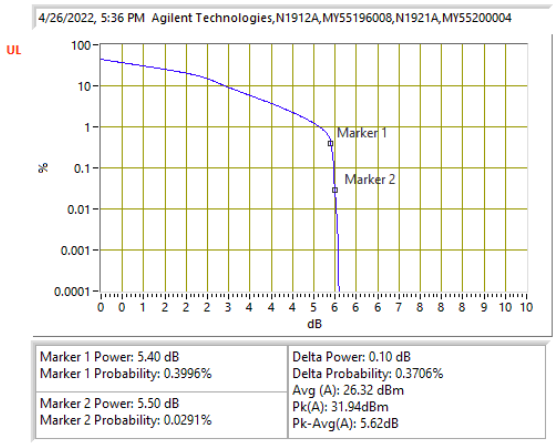
9.5.3. LTE BAND 12 AND 5G NR n12

LTE BAND 12

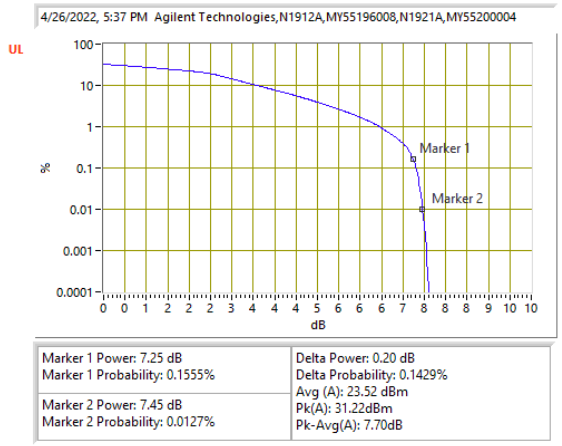
Test Engineer ID:	25780	Test Date:	5/5/2022



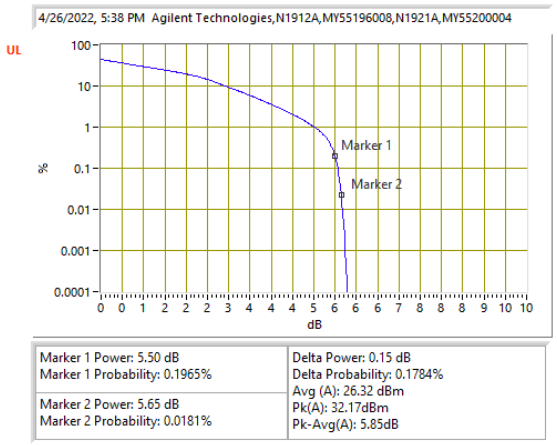
5G NR n12 5MHz QPSK Middle Channel



5G NR n12 5MHz 16QAM Middle Channel



5G NR n12 10MHz QPSK Middle Channel



5G NR n12 10MHz 16QAM Middle Channel

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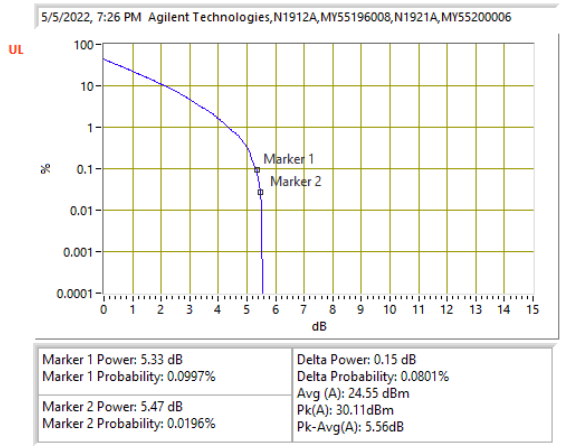
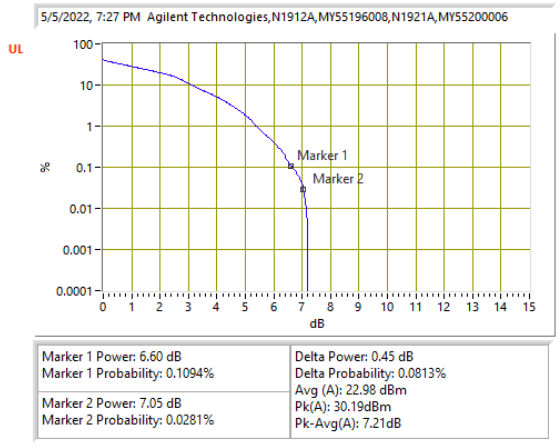
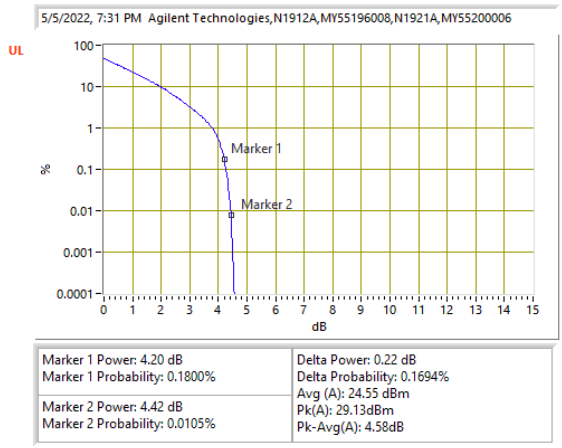
5G NR n12



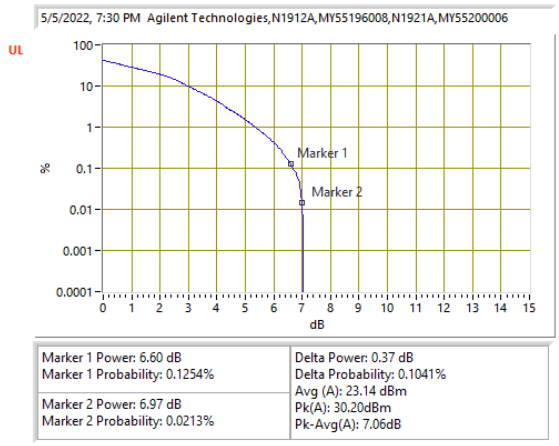
5G NR n12 5MHz BPSK Middle Channel



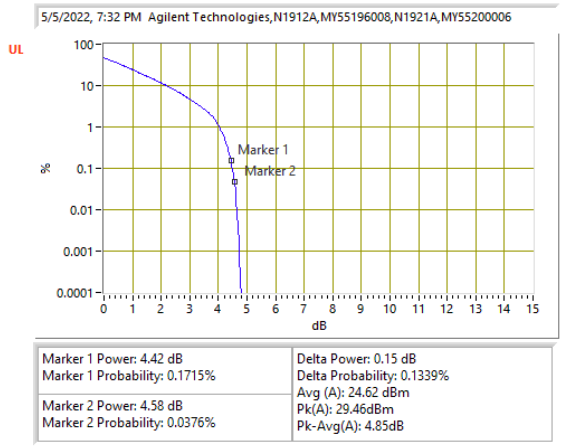
5G NR n12 5MHz 16QAM Middle Channel



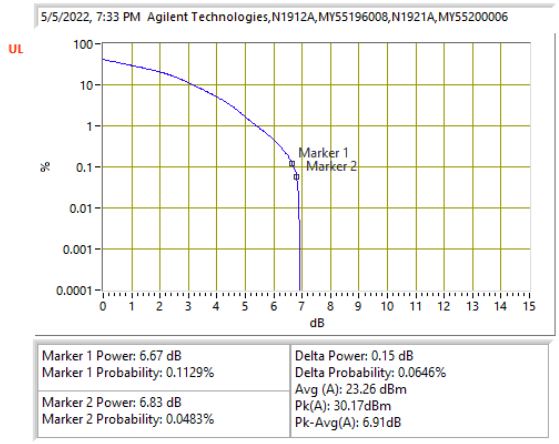
5G NR n12 10MHz BPSK Middle Channel



5G NR n12 10MHz 16QAM Middle Channel



5G NR n12 15MHz BPSK Middle Channel



5G NR n12 15MHz 16QAM Middle Channel

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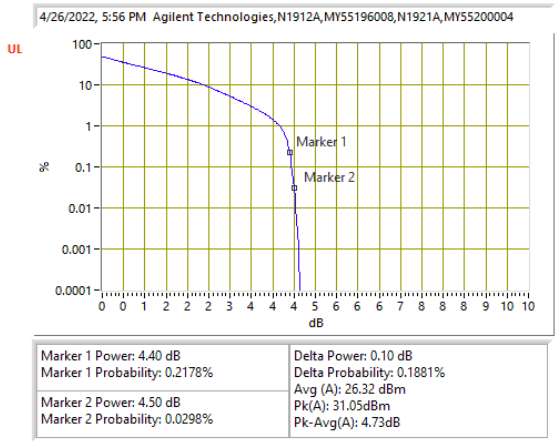
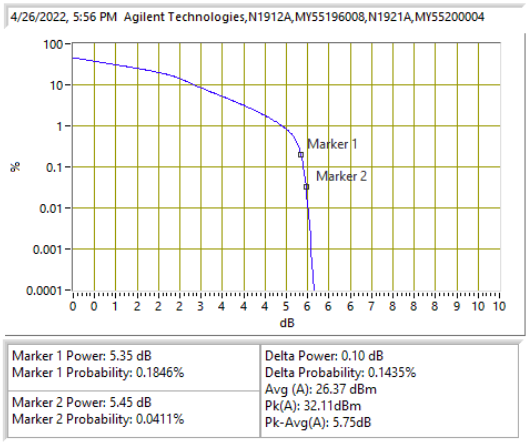
9.5.4. LTE BAND 13

LTE BAND 13

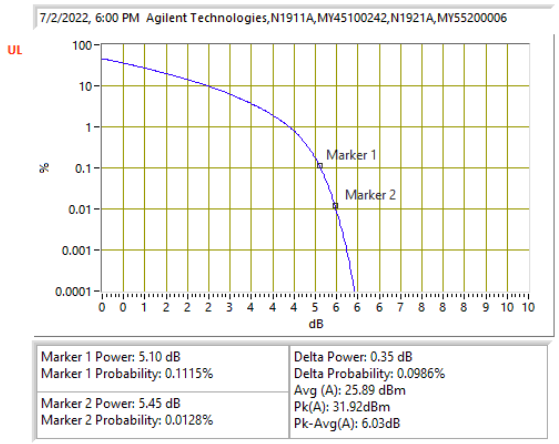
Test Engineer ID:	25602	Test Date:	4/26/2022



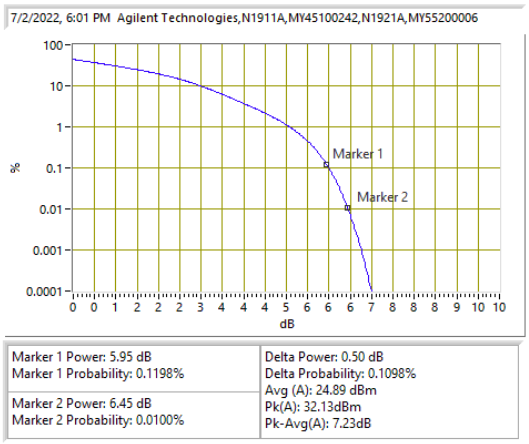
LTE B13 5MHz QPSK Middle Channel



LTE B13 5MHz 16QAM Middle Channel



LTE B13 10MHz QPSK Middle Channel



LTE B13 10MHz 16QAM Middle Channel

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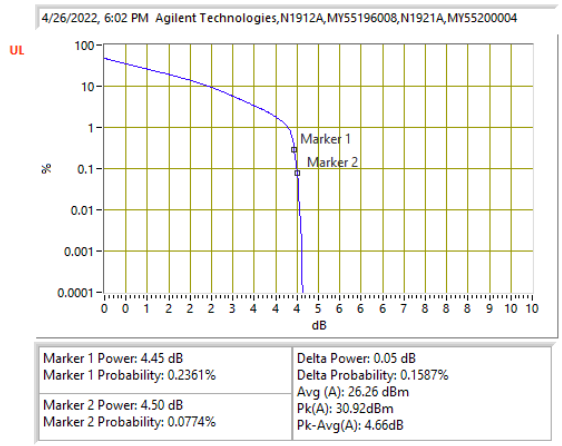
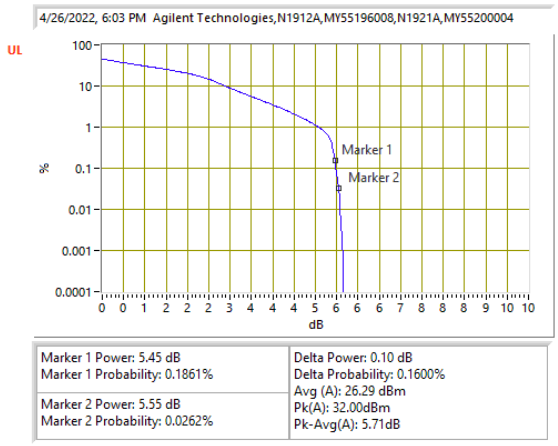
9.5.5. LTE BAND 14 AND 5G NR n14

LTE BAND 14

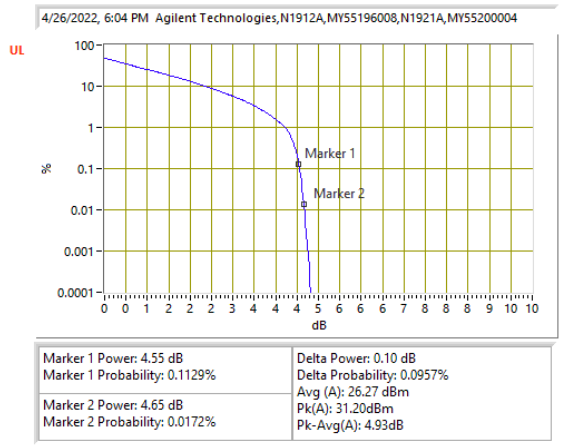
Test Engineer ID:	25602	Test Date:	4/26/2022



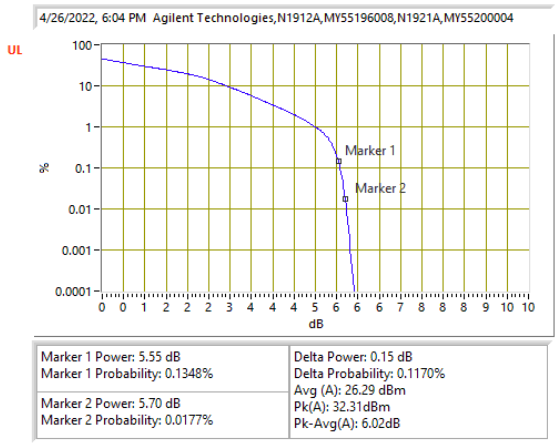
LTE B14 5MHz QPSK Middle Channel



LTE B14 5MHz 16QAM Middle Channel



LTE B14 10MHz QPSK Middle Channel



LTE B14 10MHz 16QAM Middle Channel

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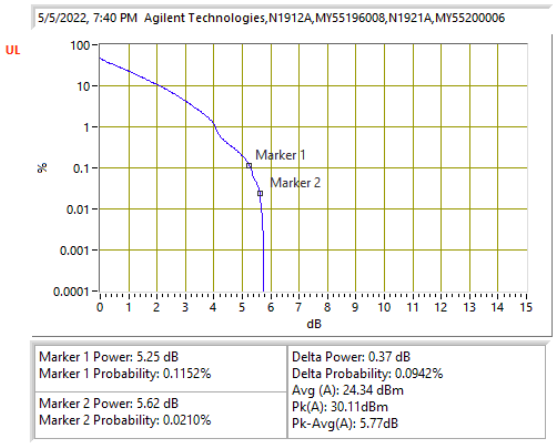
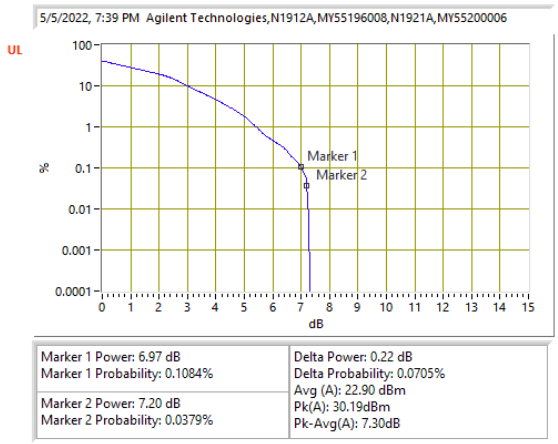
5G NR n14

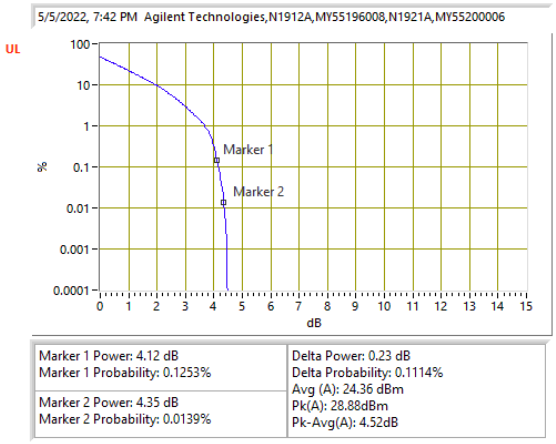
Test Engineer ID:	25780	Test Date:	5/5/2022



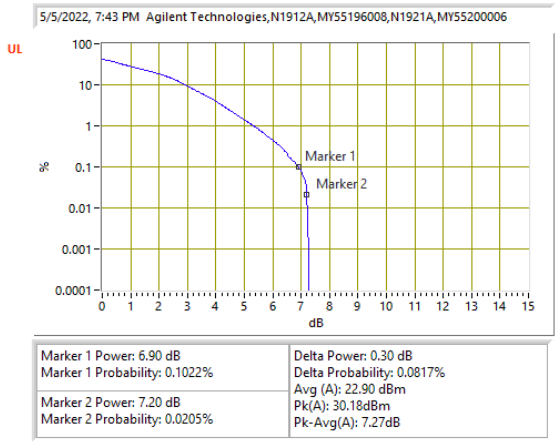
5G NR n14 5MHz BPSK Middle Channel



5G NR n14 5MHz 16QAM Middle Channel



5G NR n14 10MHz BPSK Middle Channel



5G NR n14 10MHz 16QAM Middle Channel

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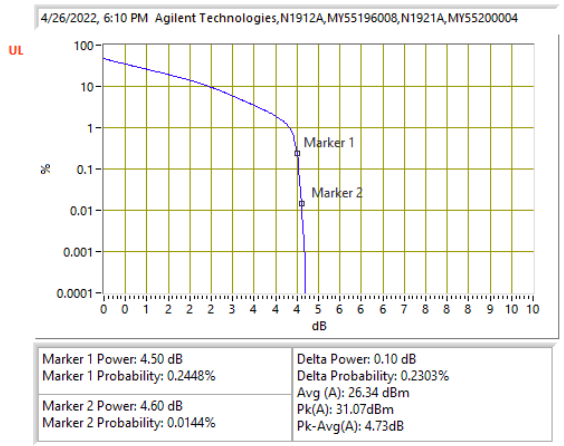
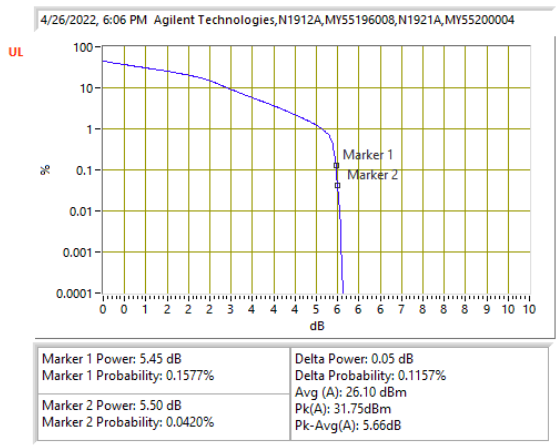
9.5.6. LTE BAND 17

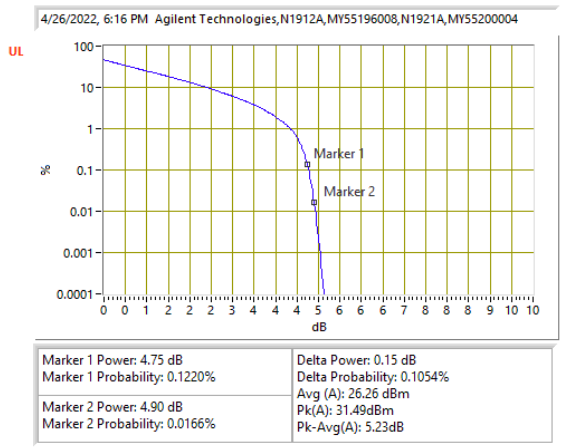
Test Engineer ID:	25602	Test Date:	4/26/2022



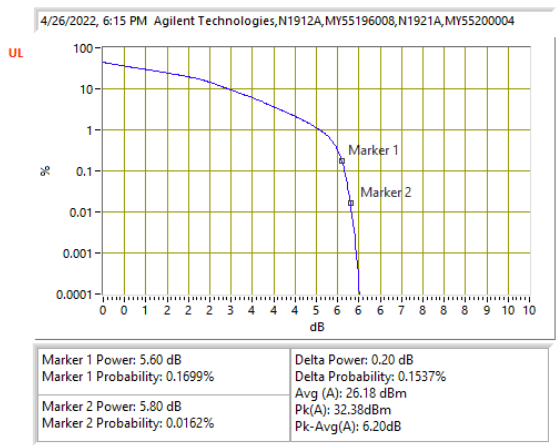
LTE B17 5MHz QPSK Middle Channel



LTE B17 5MHz 16QAM Middle Channel



LTE B17 10MHz QPSK Middle Channel



LTE B17 10MHz 16QAM Middle Channel

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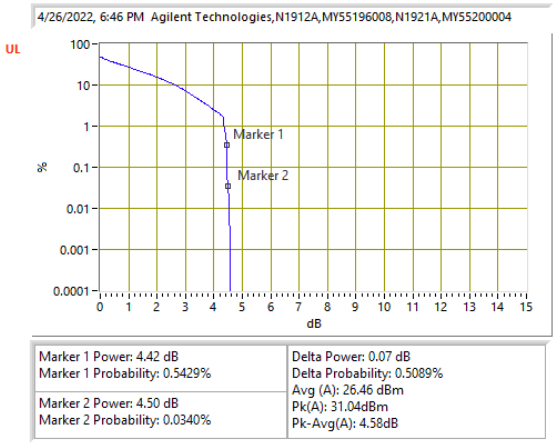
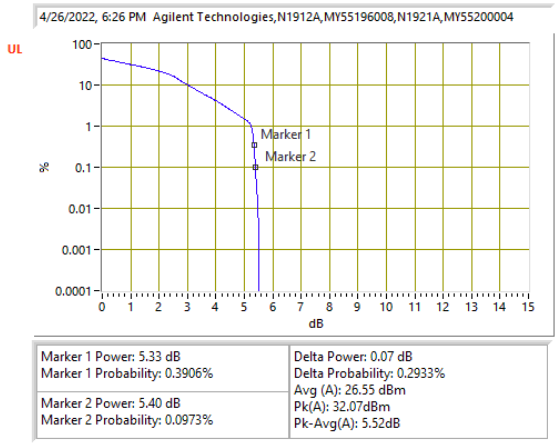
9.5.7. LTE BAND 25 AND 5G NR n25

LTE BAND 25

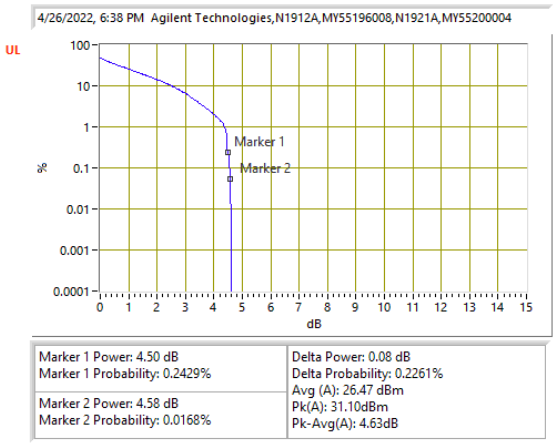
Test Engineer ID:	25602	Test Date:	4/26/2022



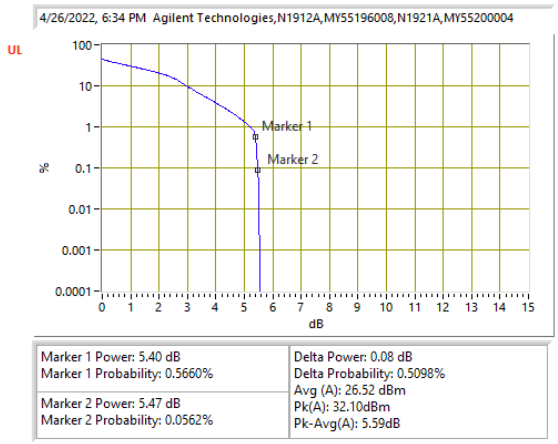
LTE B25 1.4MHz QPSK Middle Channel



LTE B25 1.4MHz 16QAM Middle Channel



LTE B25 3MHz QPSK Middle Channel



LTE B25 3MHz 16QAM Middle Channel

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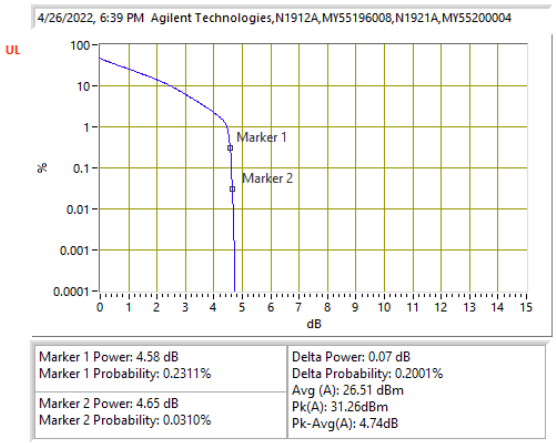
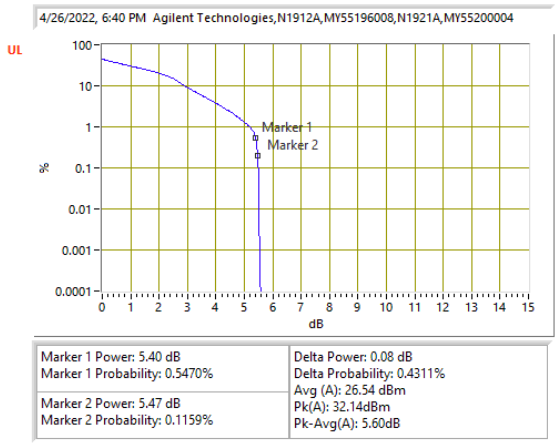
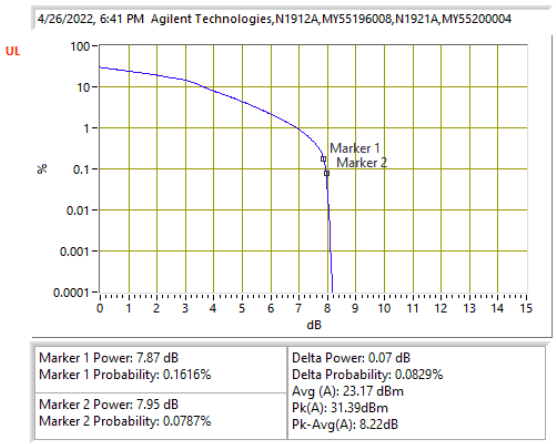


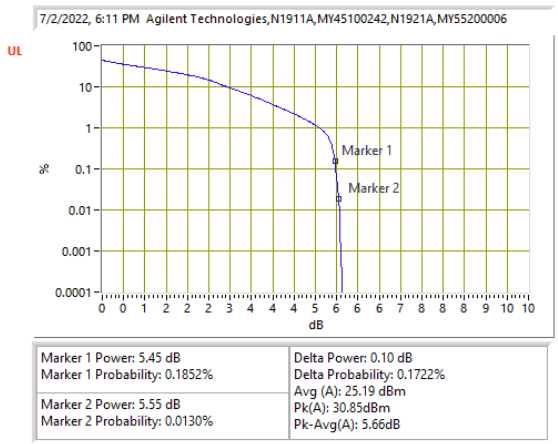
LTE B2 5MHz QPSK Middle Channel



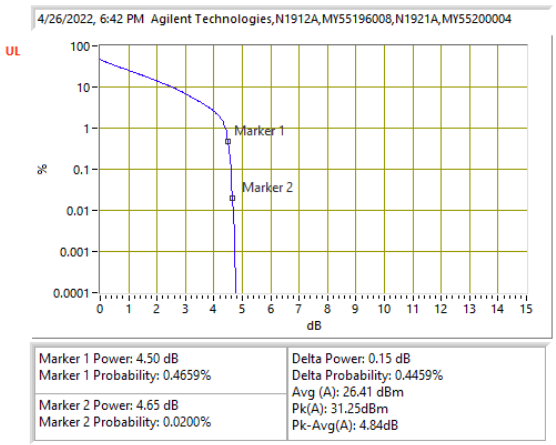
LTE B2 5MHz 16QAM Middle Channel



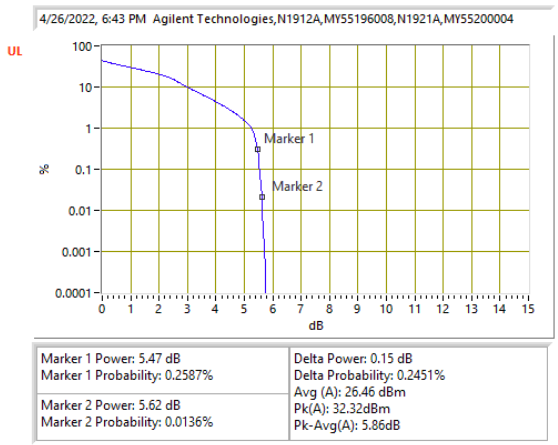
LTE B25 10MHz QPSK Middle Channel



LTE B25 10MHz 16QAM Middle Channel



LTE B25 15MHz QPSK Middle Channel



LTE B25 15MHz 16QAM Middle Channel

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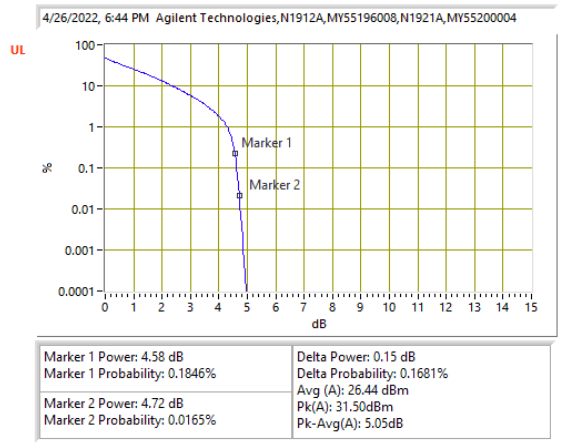
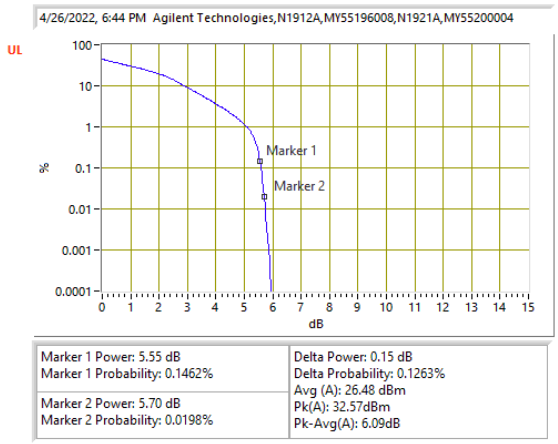


LTE B25 20MHz QPSK Middle Channel



LTE B25 20MHz 16QAM Middle Channel

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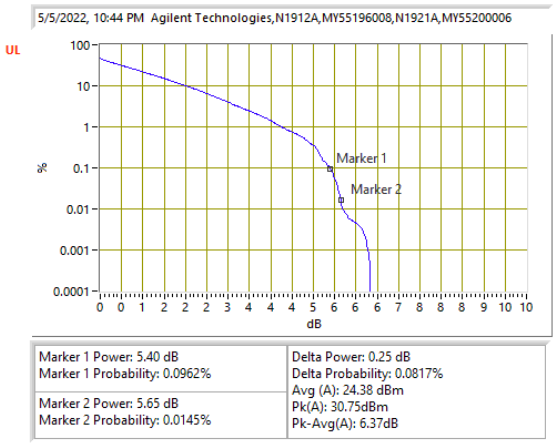
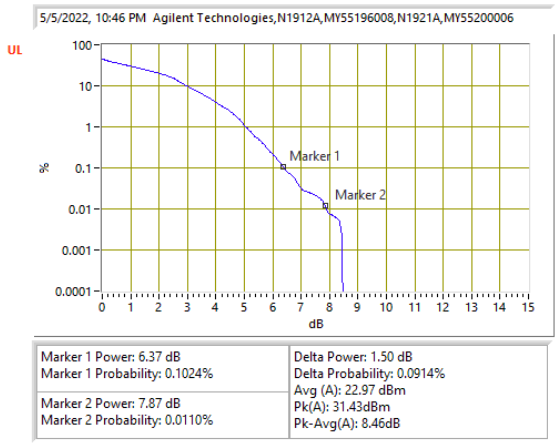
5G NR n25

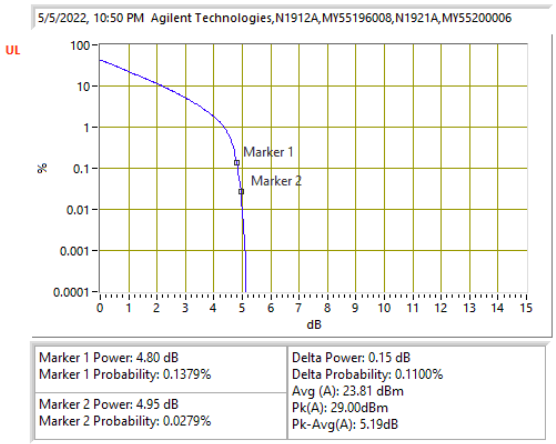
Test Engineer ID:	25780	Test Date:	5/5/2022



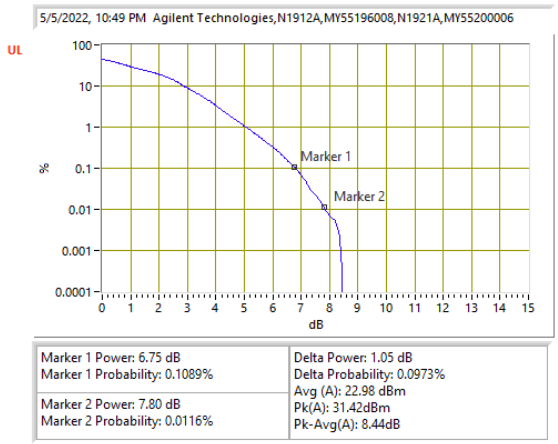
5G NR n25 5MHz BPSK Middle Channel



5G NR n25 5MHz 16QAM Middle Channel



5G NR n25 10MHz BPSK Middle Channel



5G NR n25 10MHz 16QAM Middle Channel

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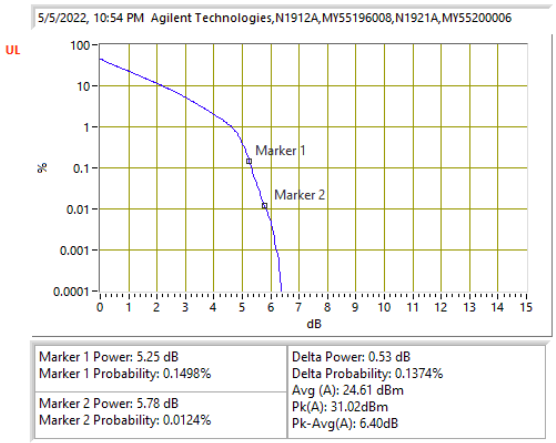
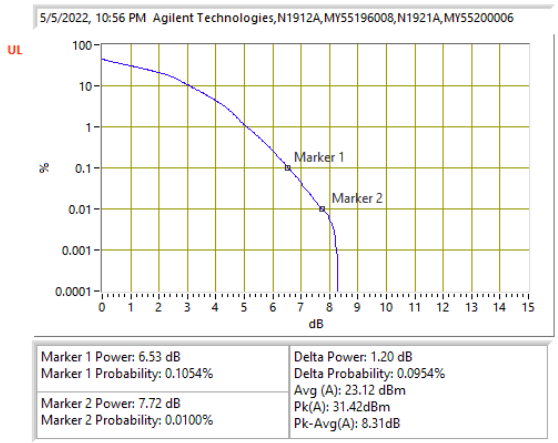
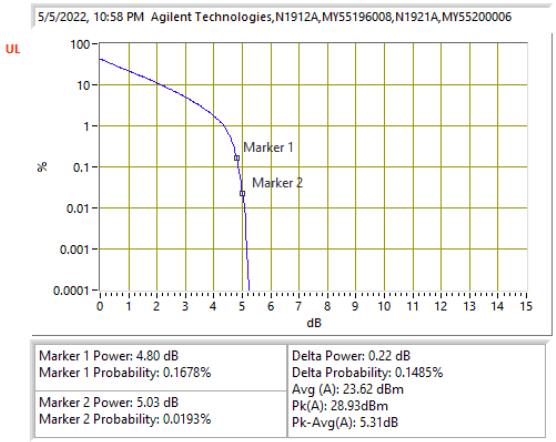


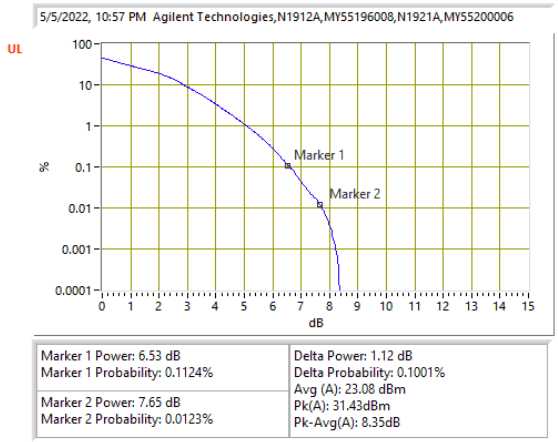
5G NR n25 15MHz BPSK Middle Channel



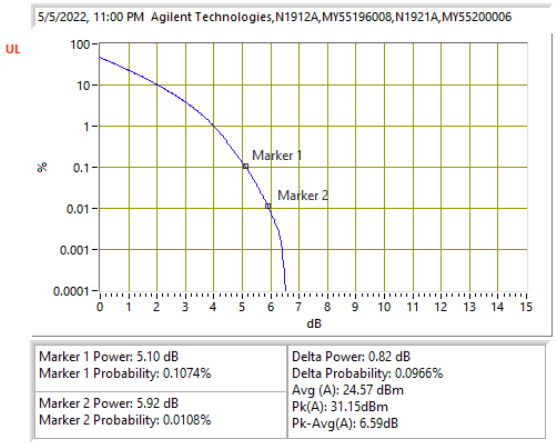
5G NR n25 15MHz 16QAM Middle Channel



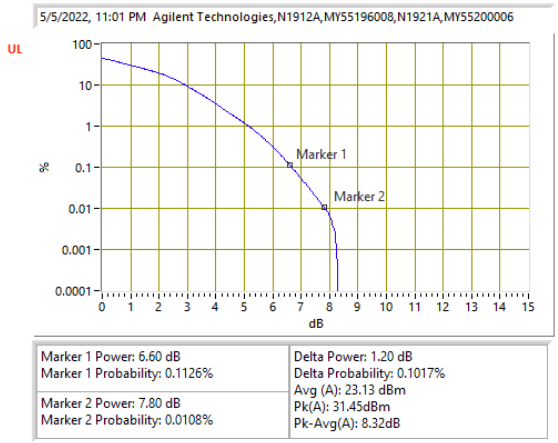
5G NR n25 20MHz BPSK Middle Channel



5G NR n25 20MHz 16QAM Middle Channel



5G NR n25 25MHz BPSK Middle Channel



5G NR n25 25MHz 16QAM Middle Channel

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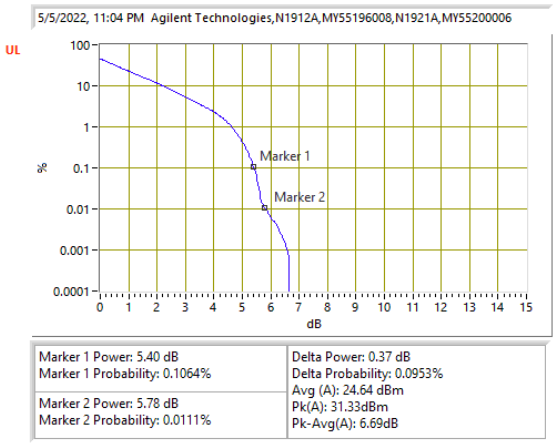
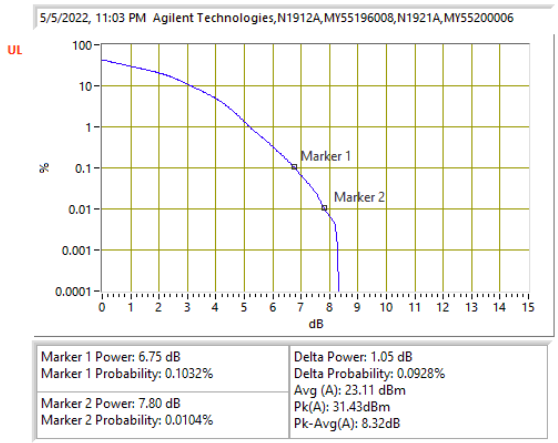
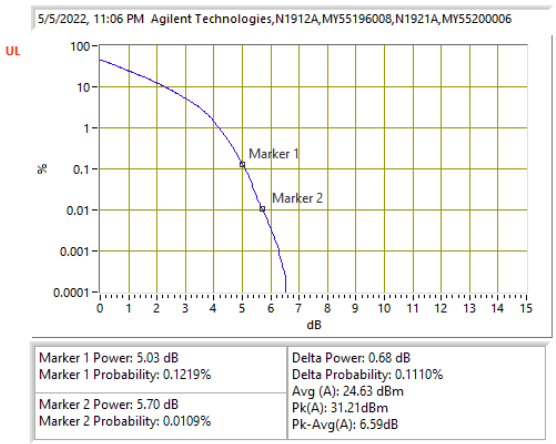


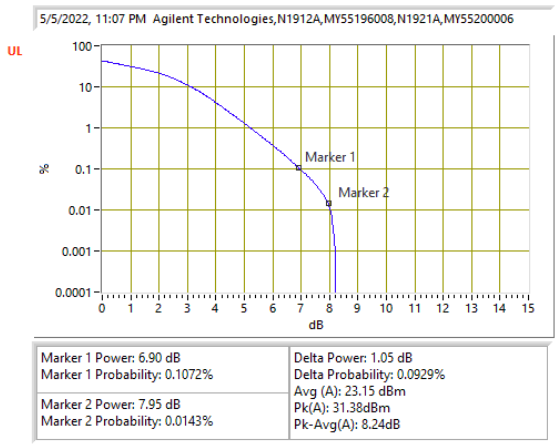
5G NR n25 30MHz BPSK Middle Channel



5G NR n25 30MHz 16QAM Middle Channel



5G NR n25 40MHz BPSK Middle Channel



5G NR n25 40MHz 16QAM Middle Channel

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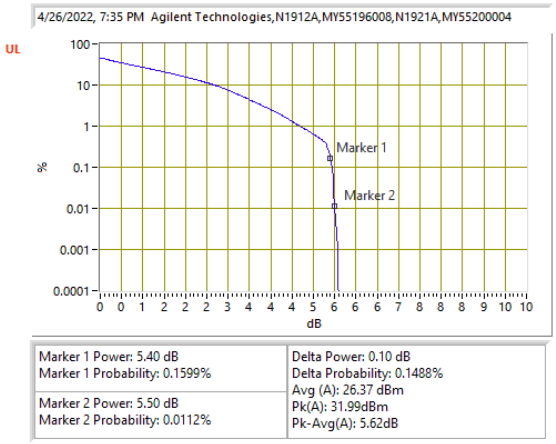
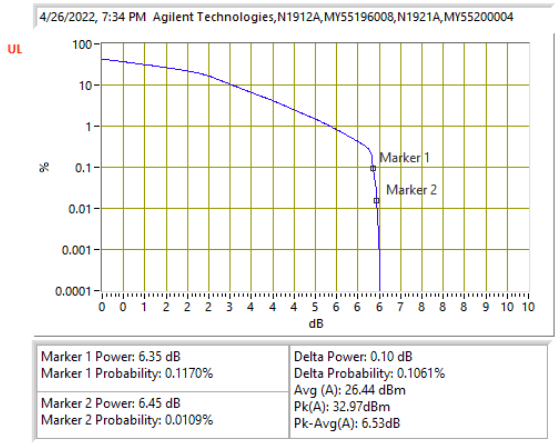
9.5.8. LTE BAND 26

LTE BAND 26

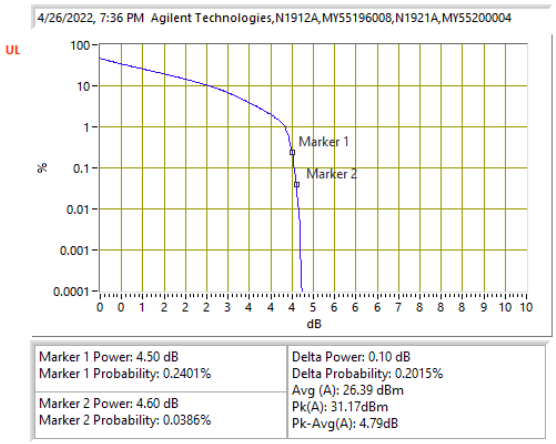
Test Engineer ID:	25602	Test Date:	4/26/2022



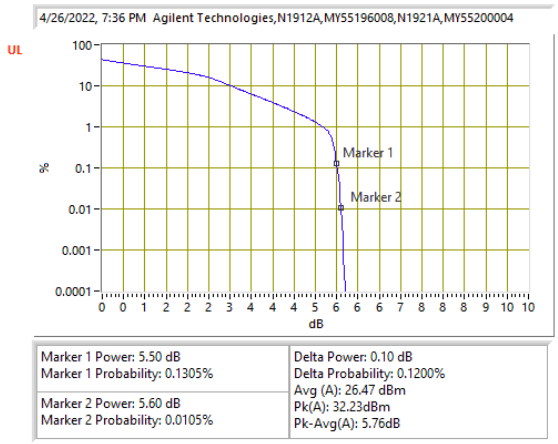
LTE B26 1.4MHz QPSK Middle Channel



LTE B26 1.4MHz 16QAM Middle Channel



LTE B26 3MHz QPSK Middle Channel



LTE B26 3MHz 16QAM Middle Channel

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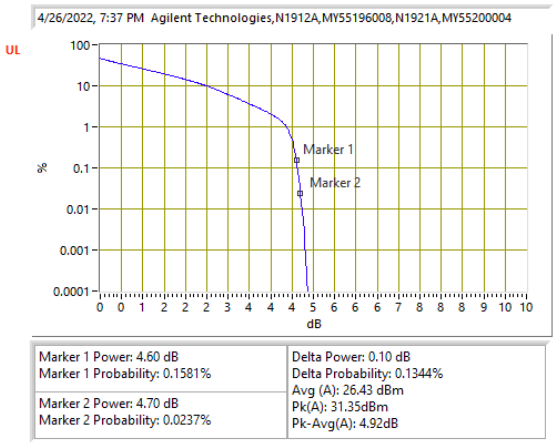
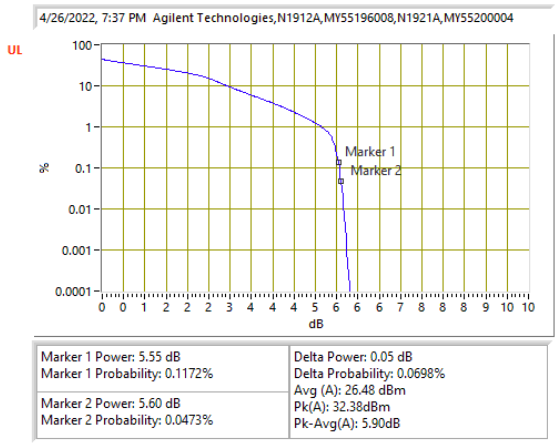
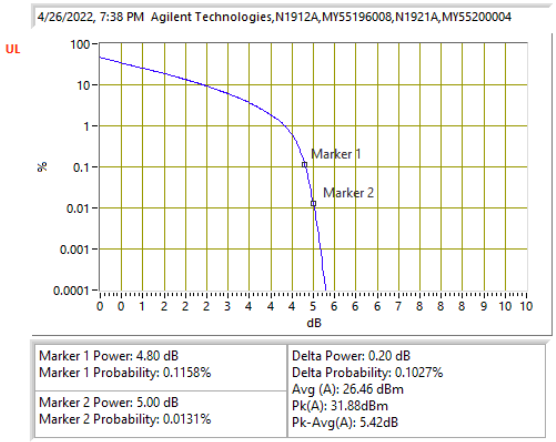


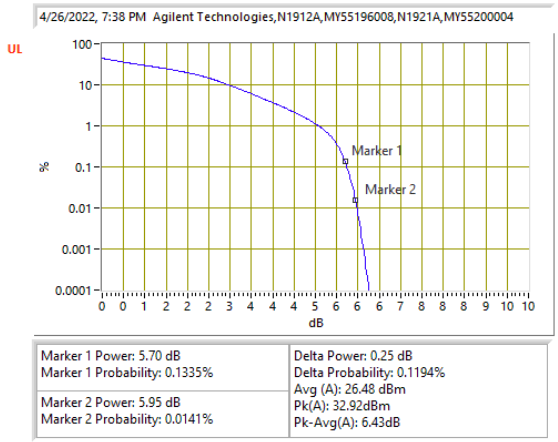
LTE B26 5MHz QPSK Middle Channel



LTE B26 5MHz 16QAM Middle Channel



LTE B26 10MHz QPSK Middle Channel



LTE B26 10MHz 16QAM Middle Channel

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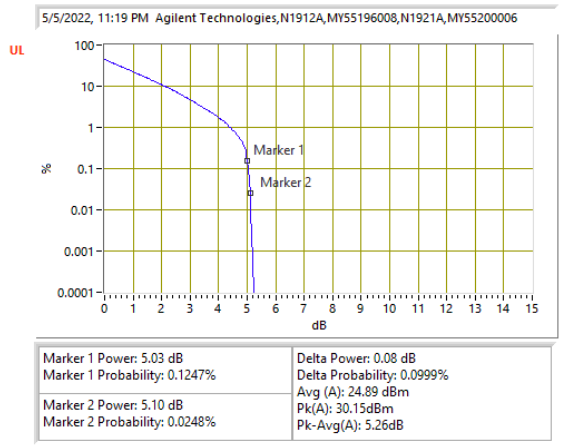
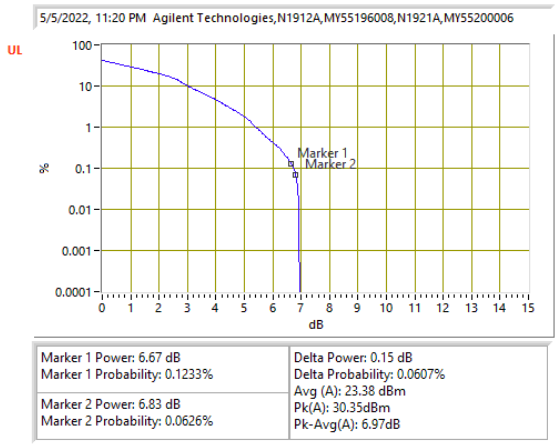
5G NR n26

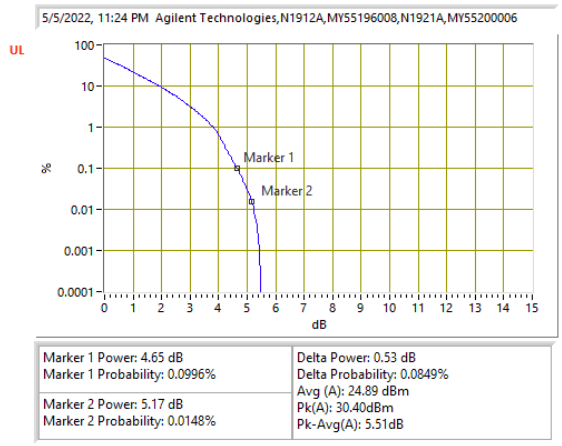
Test Engineer ID:	25780	Test Date:	5/5/2022



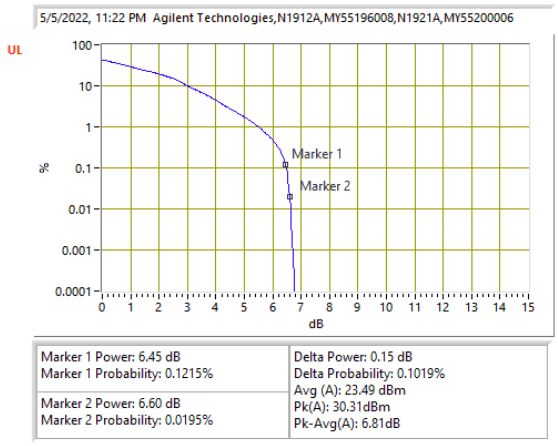
5G NR n26 5MHz BPSK Middle Channel



5G NR n26 5MHz 16QAM Middle Channel



5G NR n26 10MHz BPSK Middle Channel



5G NR n26 10MHz 16QAM Middle Channel

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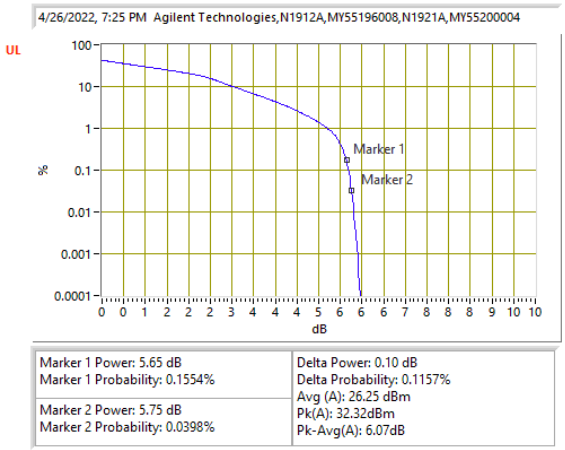
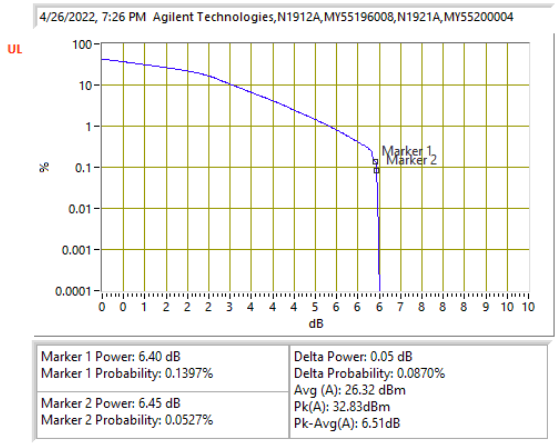
9.5.9. LTE BAND 26

LTE BAND 26

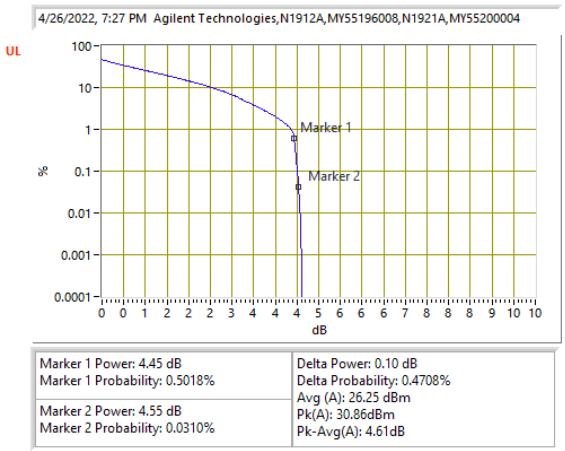
Test Engineer ID:	25602	Test Date:	4/26/2022



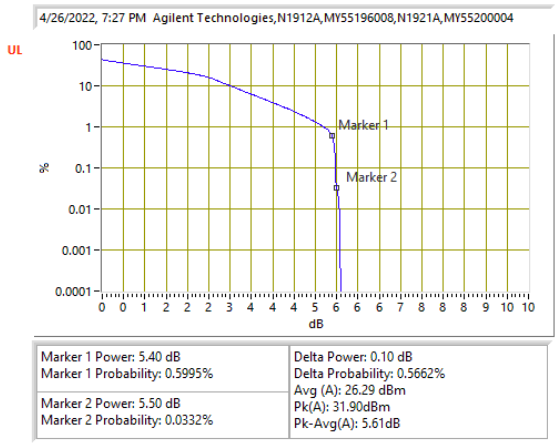
LTE B26 1.4MHz QPSK Middle Channel



LTE B26 1.4MHz 16QAM Middle Channel



LTE B26 3MHz QPSK Middle Channel



LTE B26 3MHz 16QAM Middle Channel

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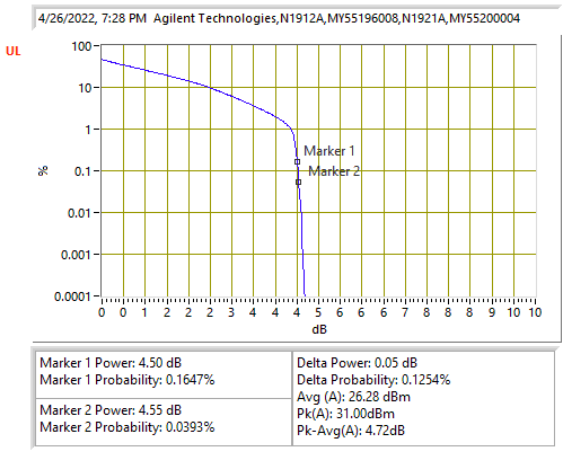
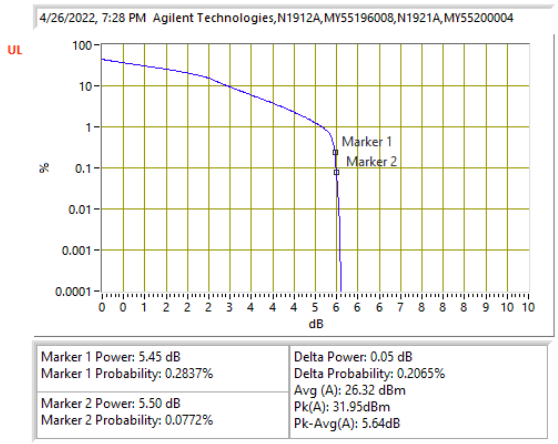
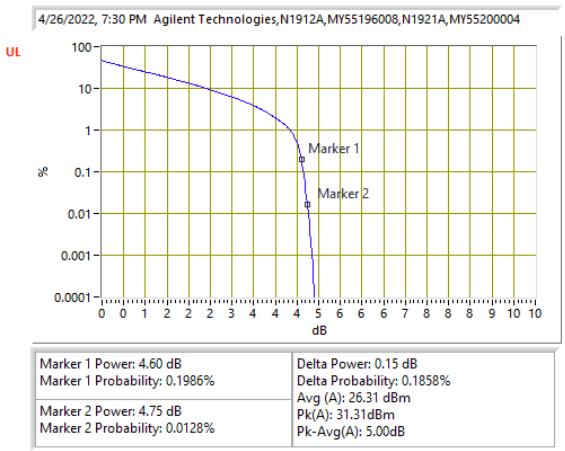


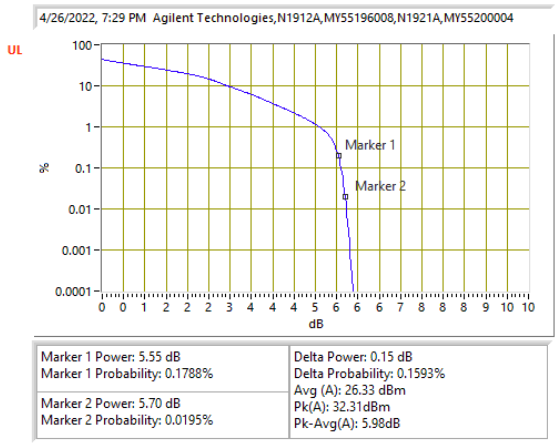
LTE B26 5MHz QPSK Middle Channel



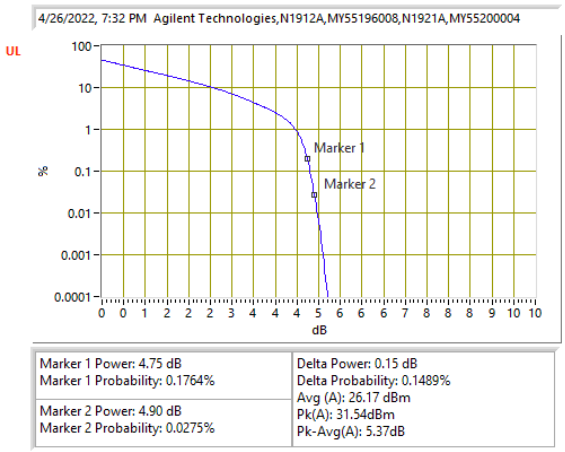
LTE B26 5MHz 16QAM Middle Channel



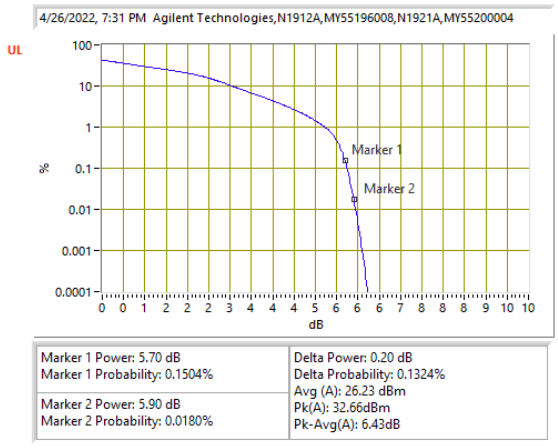
LTE B26 10MHz QPSK Middle Channel



LTE B26 10MHz 16QAM Middle Channel



LTE B26 15MHz QPSK Middle Channel



LTE B26 15MHz 16QAM Middle Channel

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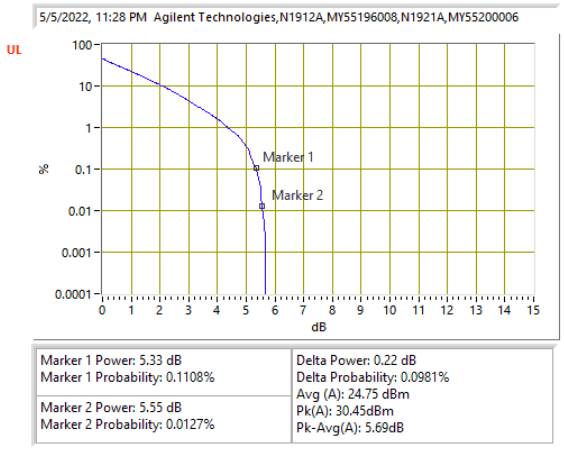
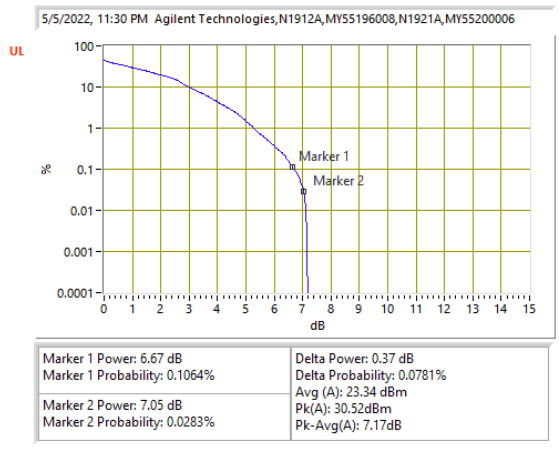
5G NR n26

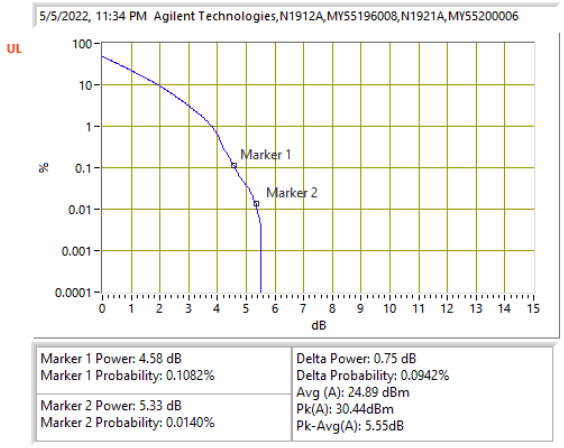
Test Engineer ID:	25780	Test Date:	5/5/2022



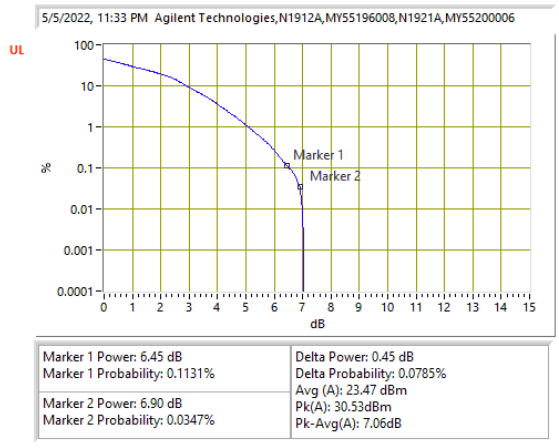
5G NR n26 5MHz BPSK Middle Channel



5G NR n26 5MHz 16QAM Middle Channel



5G NR n26 10MHz BPSK Middle Channel



5G NR n26 10MHz 16QAM Middle Channel

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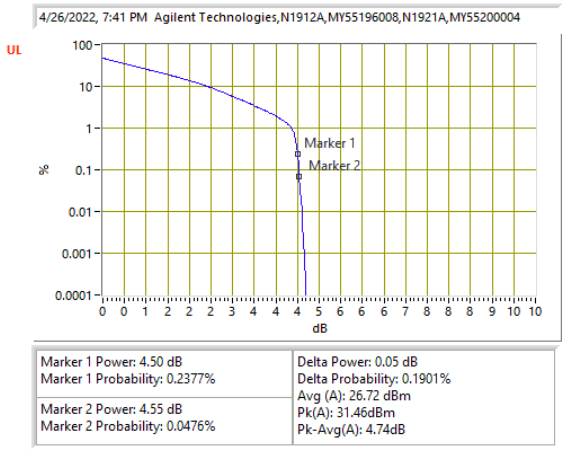
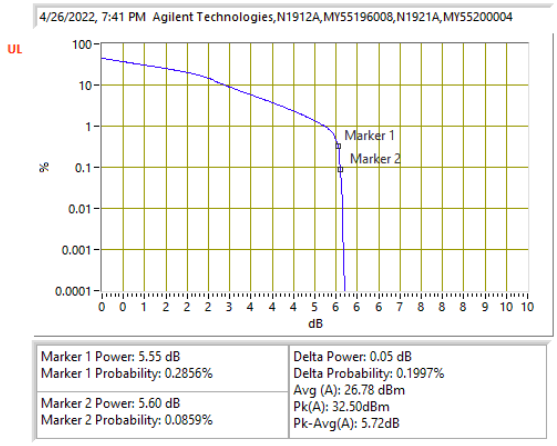
9.5.10. LTE BAND 30 AND 5G NR n30

LTE BAND 30

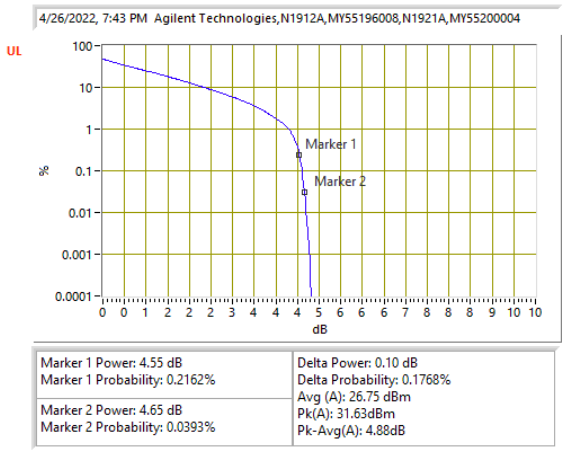
Test Engineer ID:	25602	Test Date:	4/26/2022



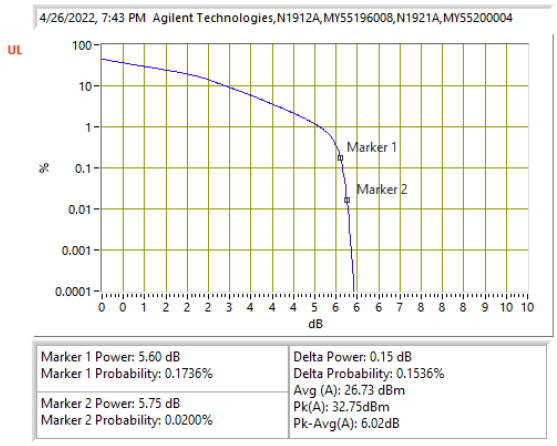
LTE B30 5MHz QPSK Middle Channel



LTE B30 5MHz 16QAM Middle Channel



LTE B30 10MHz QPSK Middle Channel



LTE B30 10MHz 16QAM Middle Channel

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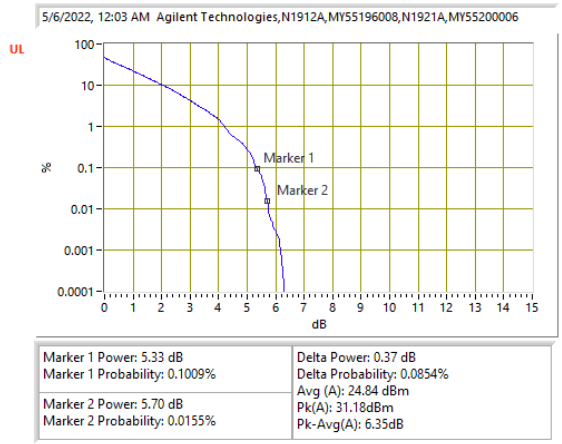
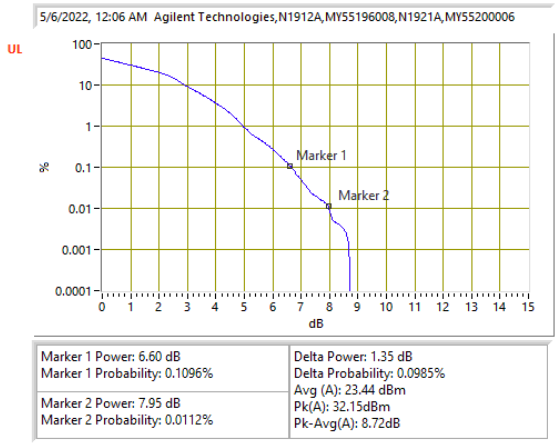
5G NR n30

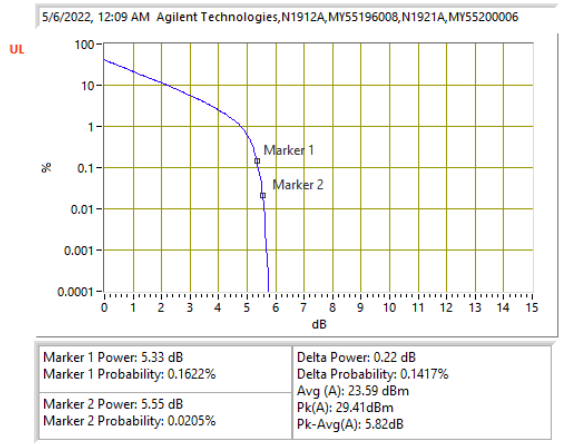
Test Engineer ID:	25780	Test Date:	5/652022



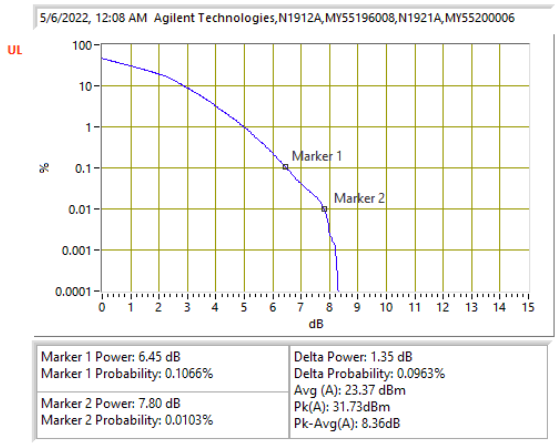
5G NR n30 5MHz BPSK Middle Channel



5G NR n30 5MHz 16QAM Middle Channel



5G NR n30 10MHz BPSK Middle Channel



5G NR n30 10MHz 16QAM Middle Channel

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9.5.11. LTE BAND 41 AND 5G NR n41

Test Engineer ID:	25602	Test Date:	4/4/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
LTE Band 41	5MHz	2593.0	25	0	QPSK	32.66	21.14	*4.51
					16QAM	32.64	20.16	*5.53
	10MHz		50	0	QPSK	32.68	21.15	*4.43
					16QAM	32.57	20.16	*5.42
	15MHz		75	0	QPSK	32.57	20.97	*4.57
					16QAM	32.53	20.03	*5.6
	20MHz		100	0	QPSK	32.62	21.03	*4.62
					16QAM	32.64	20.02	*5.41
5G NR n41	20MHz		50	0	BPSK	32.42	28.17	4.25
					16QAM	32.53	26.60	5.93
	30MHz		75	0	BPSK	32.43	28.12	4.31
					16QAM	32.51	26.67	5.84
	40MHz		100	0	BPSK	32.42	28.17	4.25
					16QAM	32.51	26.73	5.78
	50MHz		128	0	BPSK	32.15	27.92	4.23
					16QAM	32.48	26.46	6.02
	60MHz		162	0	BPSK	32.17	27.99	4.18
					16QAM	32.35	26.43	5.92
	70MHz		180	0	BPSK	31.93	27.80	4.13
					16QAM	32.23	26.18	6.05
	80MHz		216	0	BPSK	31.56	27.66	3.90
					16QAM	32.16	26.13	6.03
	90MHz		243	0	BPSK	31.22	27.76	3.46
					16QAM	31.94	26.05	5.89
	100MHz		270	0	BPSK	31.47	27.65	3.82
					16QAM	31.91	26.00	5.91
*Duty Cycle Correction Factor (dB) =			6.99					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

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9.5.12. LTE BAND 48

Test Engineer ID:	25602	Test Date:	4/26/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
LTE Band 48	5MHz	3625.0	25	0	QPSK	29.88	18.36	*4.53
					16QAM	29.81	17.36	*5.46
	10MHz		50	0	QPSK	30.11	18.39	*4.73
					16QAM	29.98	17.42	*5.57
	15MHz		75	0	QPSK	29.82	18.20	*4.63
					16QAM	29.78	17.26	*5.53
	20MHz		100	0	QPSK	29.96	18.25	*4.72
					16QAM	29.85	17.25	*5.61
*Duty Cycle Correction Factor (dB) =			6.99					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

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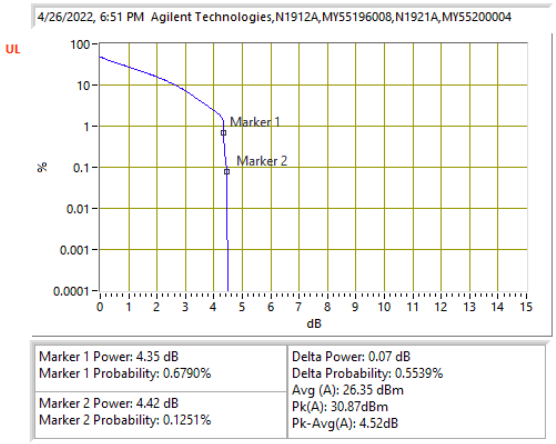
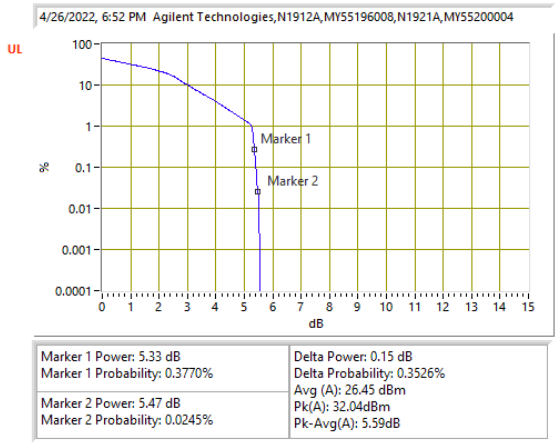
9.5.13. LTE BAND 66 AND 5G NR n66

LTE BAND 66

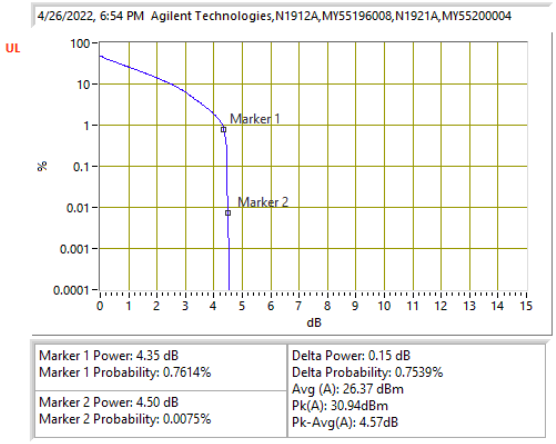
Test Engineer ID:	25602	Test Date:	4/26/2022



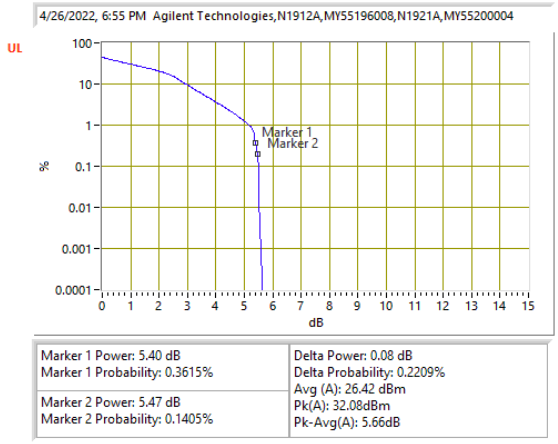
LTE B66 1.4MHz QPSK Middle Channel



LTE B66 1.4MHz 16QAM Middle Channel



LTE B66 3MHz QPSK Middle Channel



LTE B66 3MHz 16QAM Middle Channel

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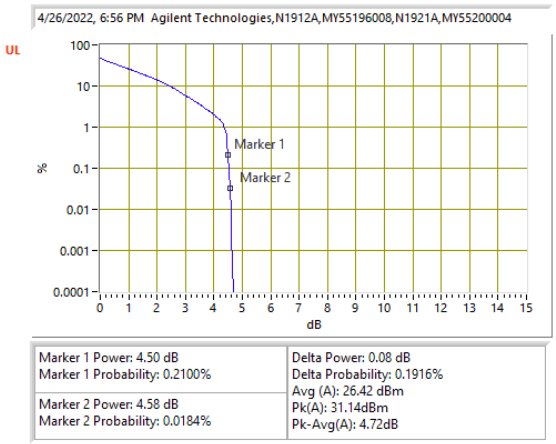
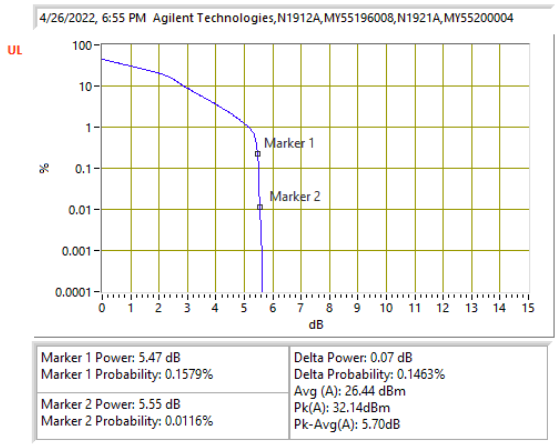
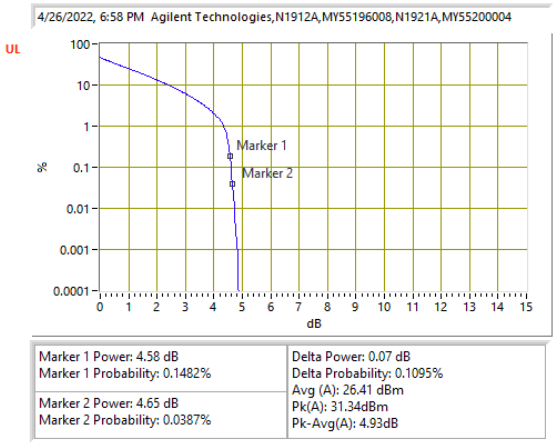


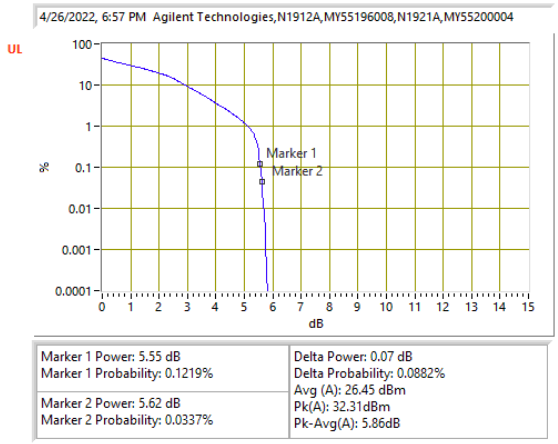
LTE B66 5MHz QPSK Middle Channel



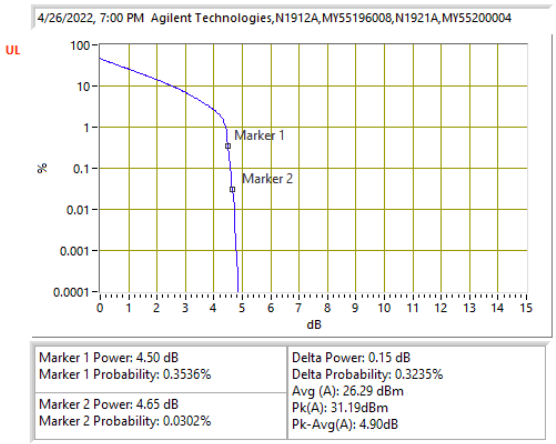
LTE B66 5MHz 16QAM Middle Channel



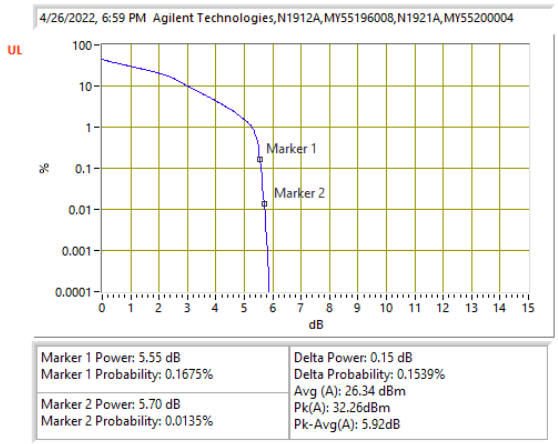
LTE B66 10MHz QPSK Middle Channel



LTE B66 10MHz 16QAM Middle Channel



LTE B66 15MHz QPSK Middle Channel



LTE B66 15MHz 16QAM Middle Channel

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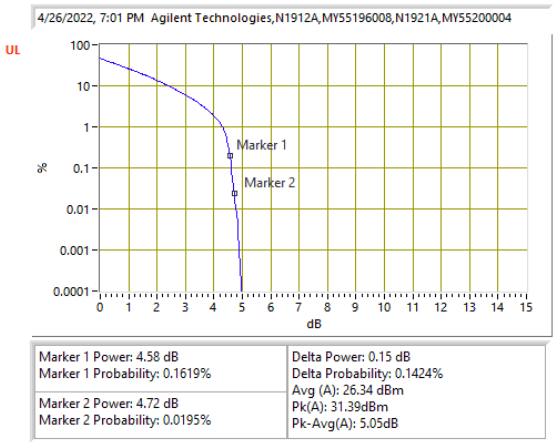
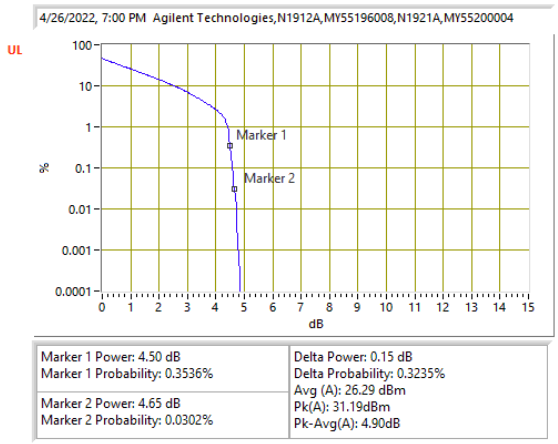


LTE B66 20MHz QPSK Middle Channel



LTE B66 20MHz 16QAM Middle Channel

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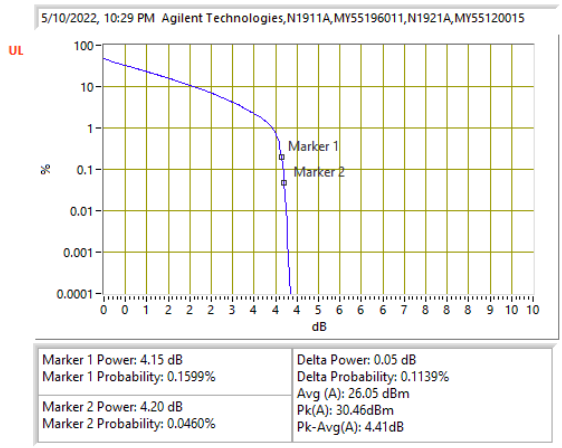
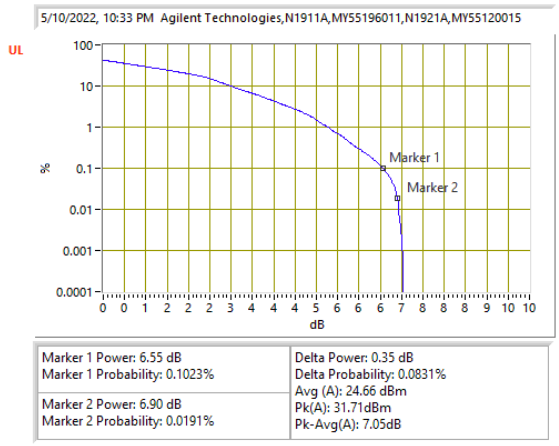
5G NR n66

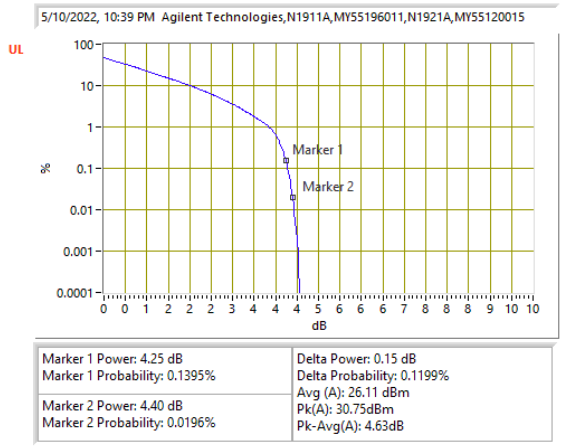
Test Engineer ID:	25602	Test Date:	4/30/2022



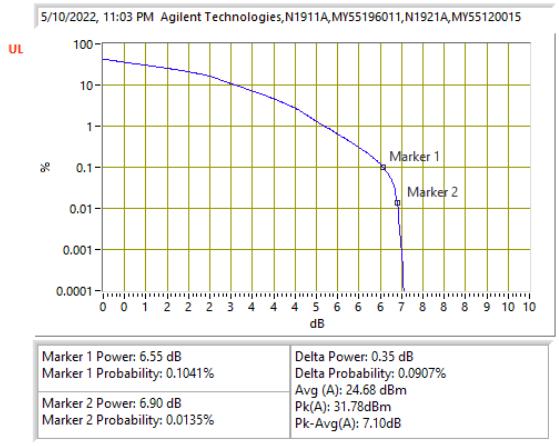
5G NR n66 5MHz BPSK Middle Channel



5G NR n66 5MHz 16QAM Middle Channel



5G NR n66 10MHz BPSK Middle Channel



5G NR n66 10MHz 16QAM Middle Channel

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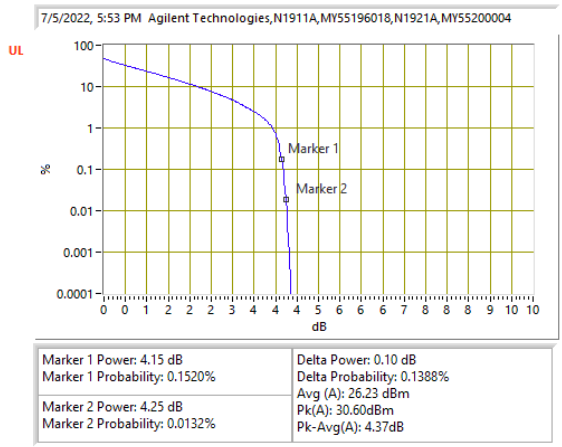
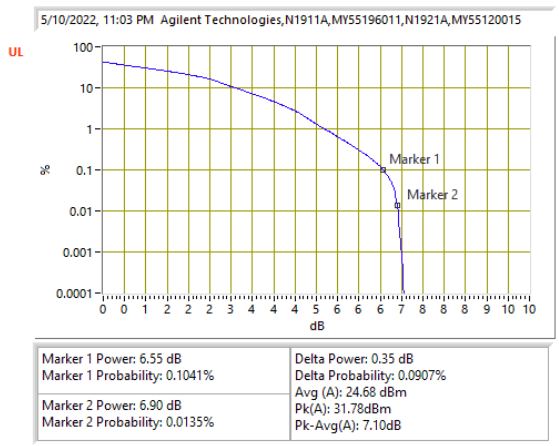
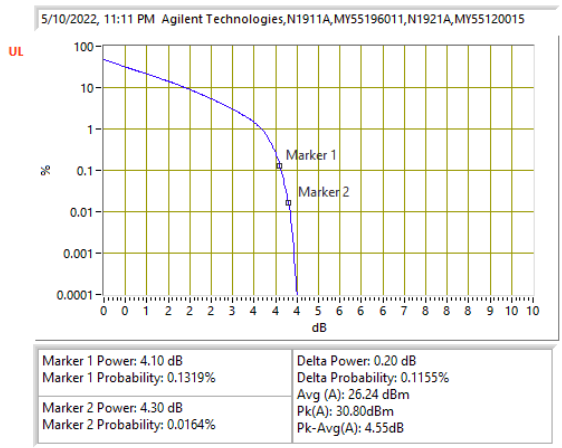


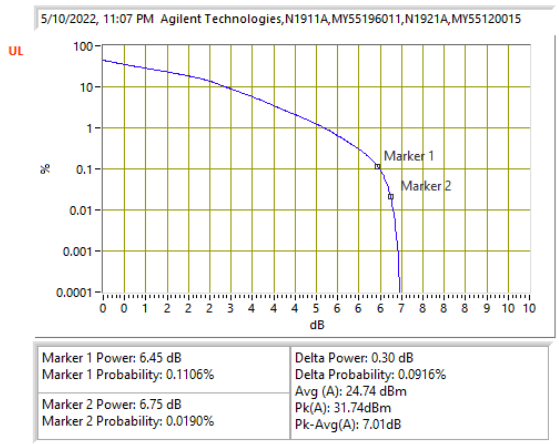
5G NR n66 15MHz BPSK Middle Channel



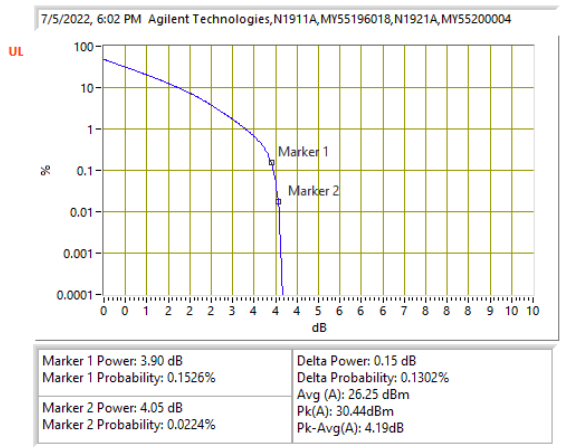
5G NR n66 15MHz 16QAM Middle Channel



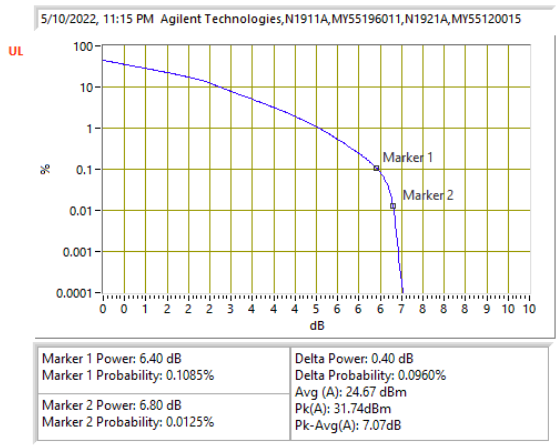
5G NR n66 20MHz BPSK Middle Channel



5G NR n66 20MHz 16QAM Middle Channel



5G NR n66 30MHz BPSK Middle Channel



5G NR n66 30MHz 16QAM Middle Channel

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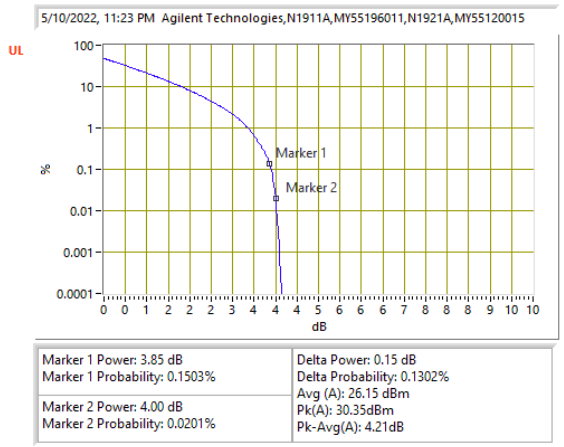
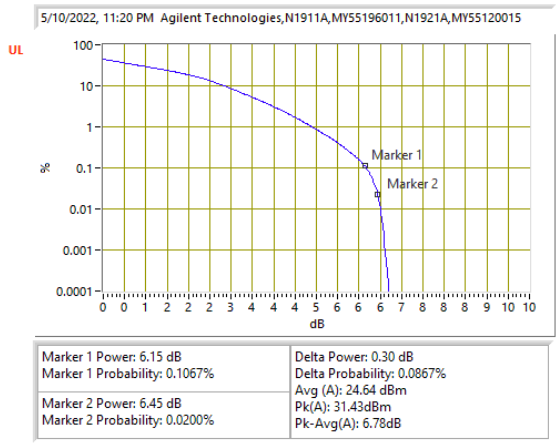


5G NR n66 40MHz BPSK Middle Channel



5G NR n66 40MHz 16QAM Middle Channel

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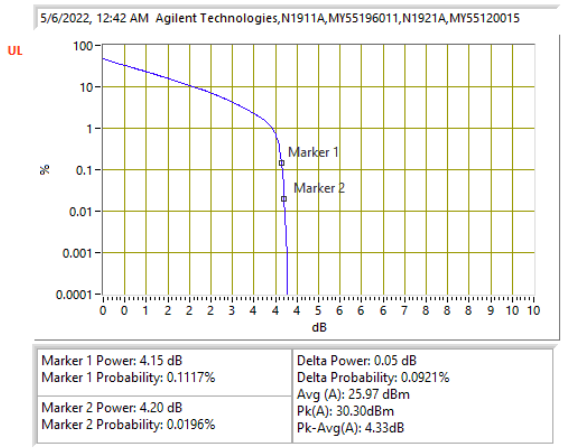
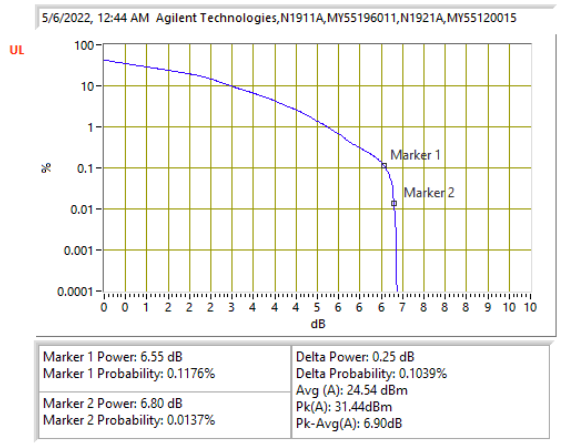
9.5.14. 5G NR n70

5G NR n70

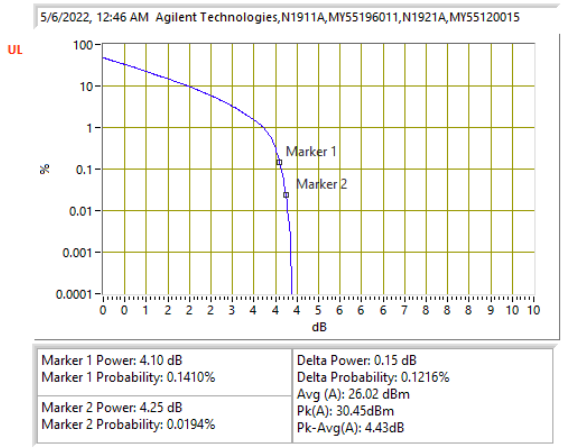
Test Engineer ID:	508222	Test Date:	5/5/2022



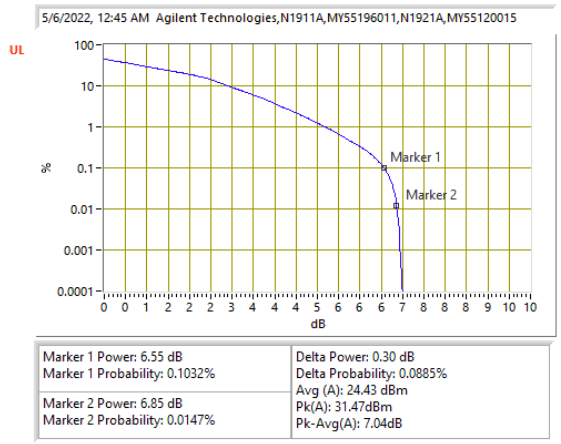
5G NR n70 5MHz BPSK Middle Channel



5G NR n70 5MHz 16QAM Middle Channel



5G NR n70 10MHz BPSK Middle Channel



5G NR n70 10MHz 16QAM Middle Channel

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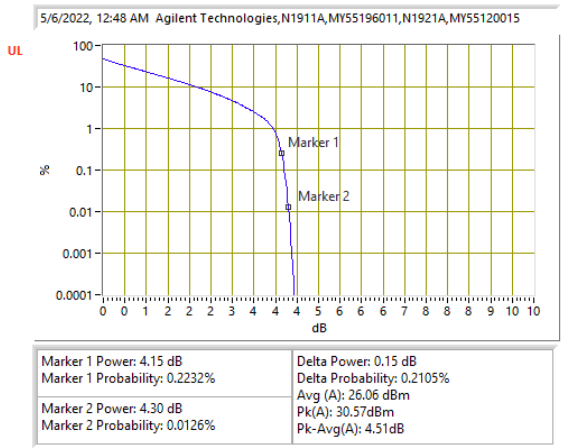
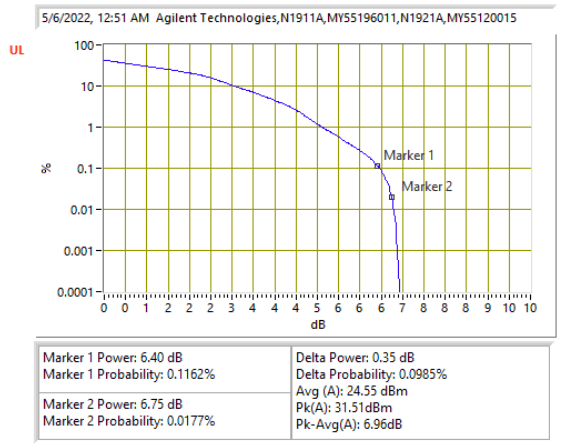


5G NR n70 15MHz BPSK Middle Channel



5G NR n70 15MHz 16QAM Middle Channel

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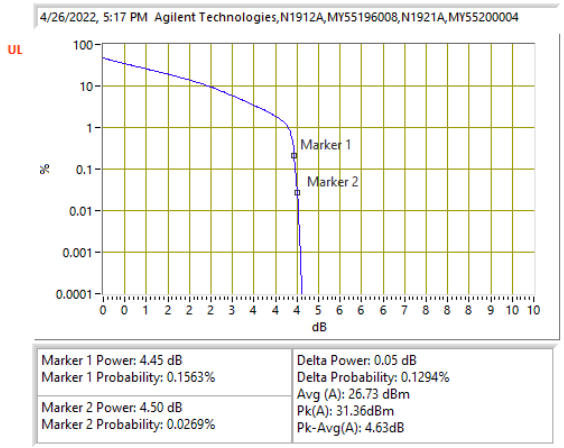
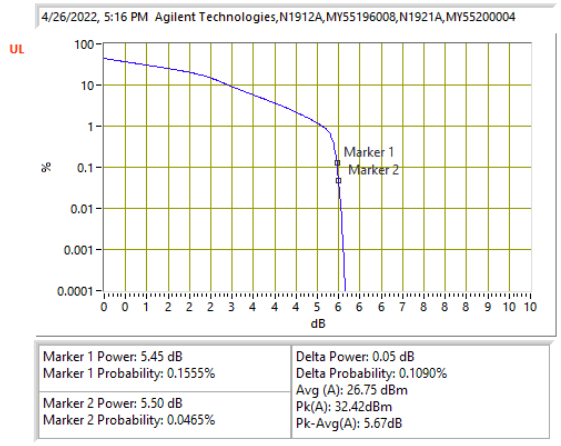
9.5.15. LTE BAND 71 AND 5G NR n71

LTE BAND 71

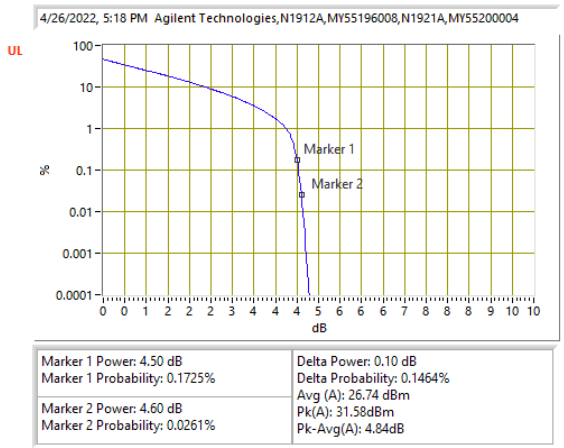
Test Engineer ID:	25062	Test Date:	4/26/2022



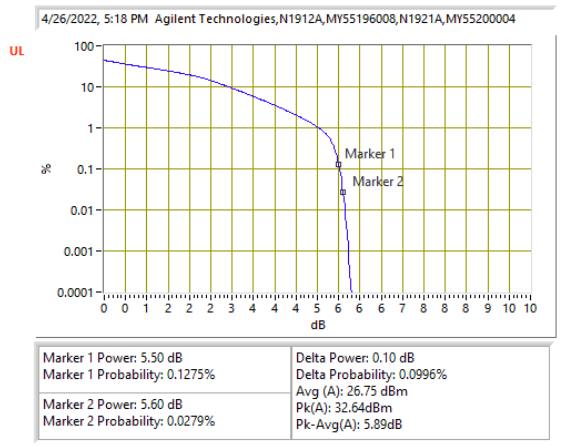
LTE B71 5MHz QPSK Middle Channel



LTE B71 5MHz 16QAM Middle Channel



LTE B71 10MHz QPSK Middle Channel



LTE B71 10MHz 16QAM Middle Channel

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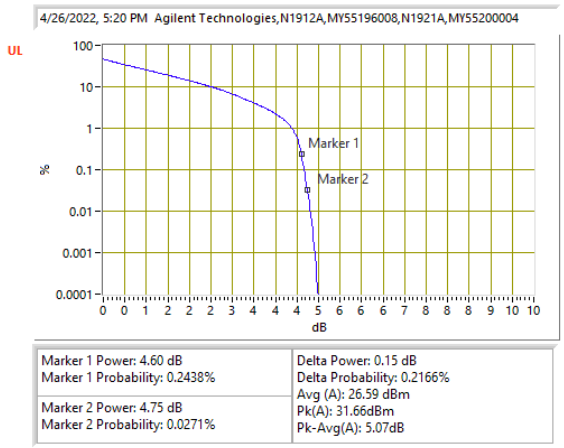
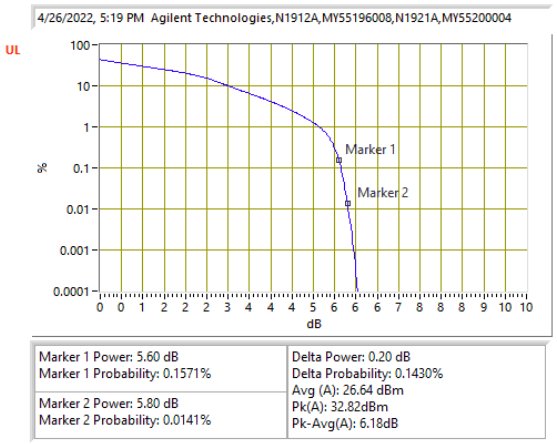
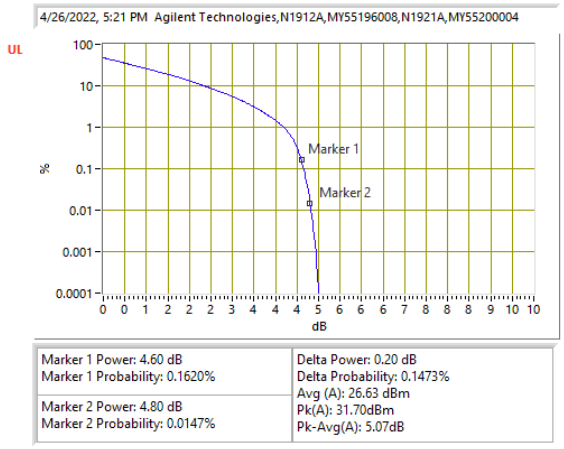


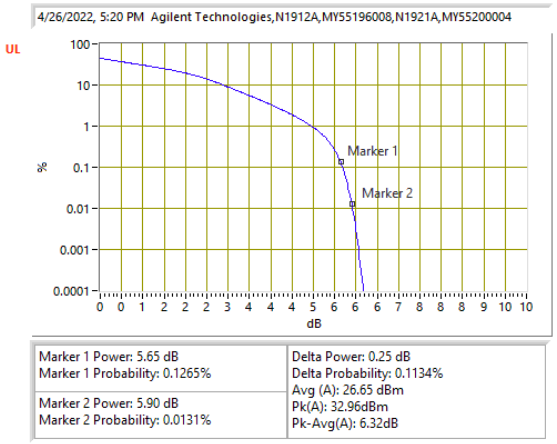
LTE B71 15MHz QPSK Middle Channel



LTE B71 15MHz 16QAM Middle Channel



LTE B71 20MHz QPSK Middle Channel



LTE B71 20MHz 16QAM Middle Channel

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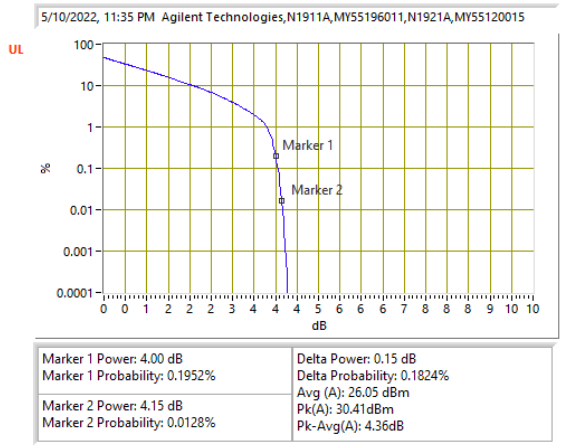
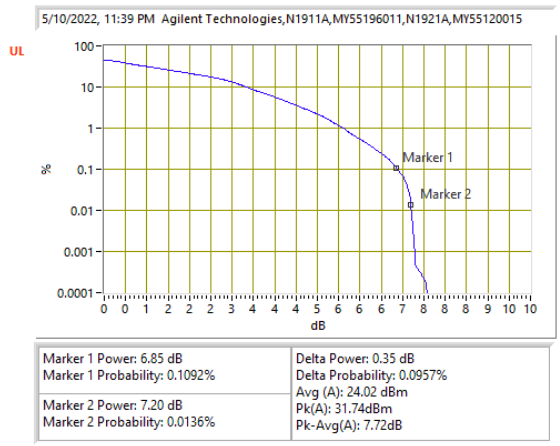
5G NR n71

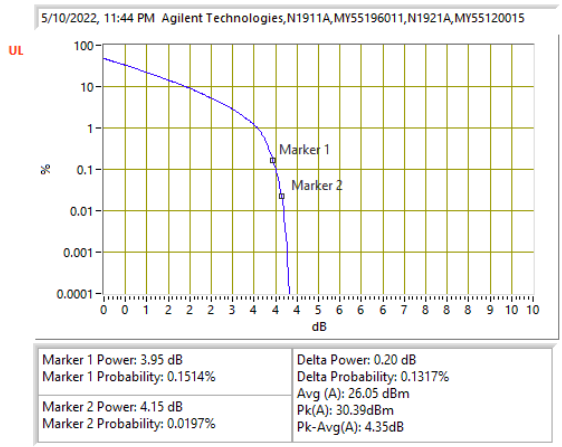
Test Engineer ID:	50822	Test Date:	5/10/2022



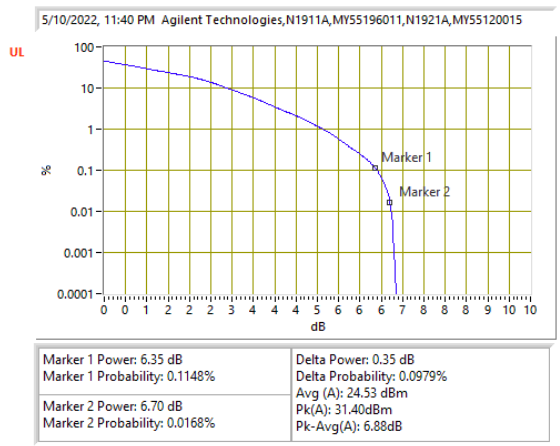
5G NR n71 5MHz BPSK Middle Channel



5G NR n71 5MHz 16QAM Middle Channel



5G NR n71 10MHz BPSK Middle Channel



5G NR n71 10MHz 16QAM Middle Channel

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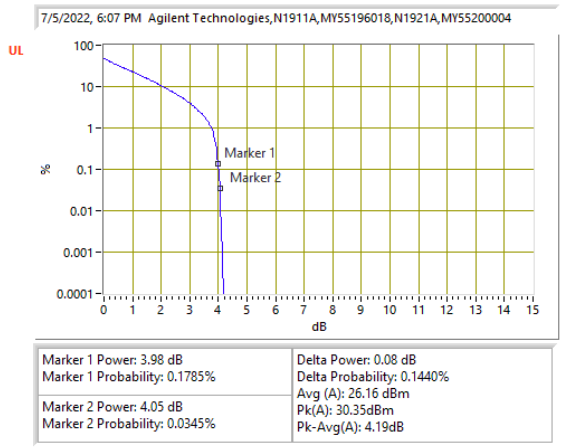
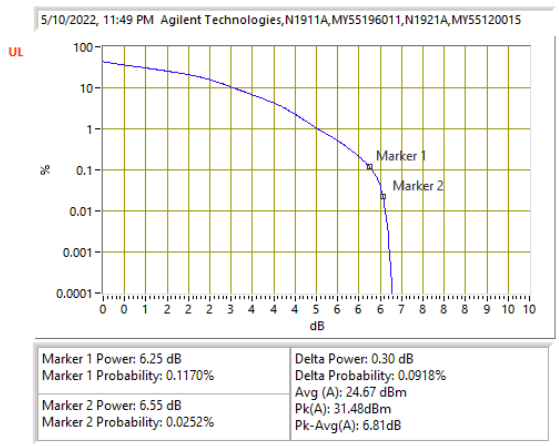
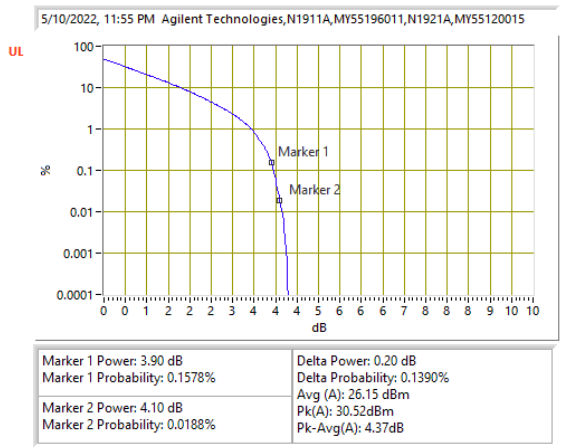


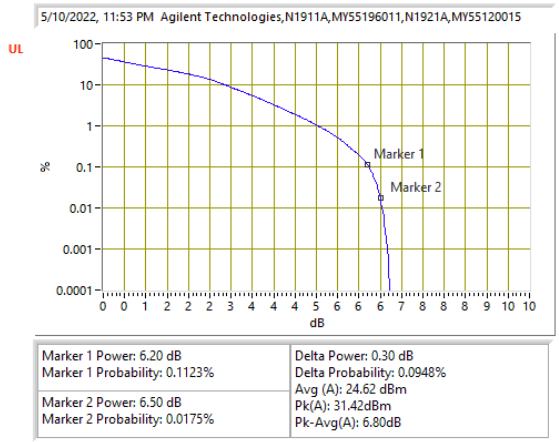
5G NR n71 15MHz BPSK Middle Channel



5G NR n71 15MHz 16QAM Middle Channel



5G NR n71 20MHz BPSK Middle Channel



5G NR n71 20MHz 16QAM Middle Channel

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

Test Engineer ID:	50822	Test Date:	5/10/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
Band n77	10MHz	3500.0	24	0	BPSK	33.13	27.17	5.96
					16QAM	34.17	27.17	7.00
	15MHz		36	0	BPSK	33.13	29.00	4.13
					16QAM	34.32	27.41	6.91
	20MHz		50	0	BPSK	33.08	28.82	4.26
					16QAM	34.33	27.42	6.91
	30MHz		75	0	BPSK	33.25	29.02	4.23
					16QAM	34.38	27.41	6.97
	40MHz		100	0	BPSK	32.84	28.95	3.89
					16QAM	34.22	27.44	6.78
	50MHz		128	0	BPSK	32.62	28.74	3.88
					16QAM	33.48	27.08	6.40
	60MHz		162	0	BPSK	32.60	28.66	3.94
					16QAM	33.56	27.15	6.41
	70MHz		180	0	BPSK	32.56	28.49	4.07
					16QAM	33.52	26.93	6.59
	80MHz		216	0	BPSK	32.05	28.48	3.57
					16QAM	32.95	26.83	6.12
	90MHz		243	0	BPSK	31.89	28.48	3.41
					16QAM	32.69	26.78	5.91
	100MHz		270	0	BPSK	31.60	28.43	3.17
					16QAM	32.60	26.76	5.84
Duty Cycle Correction Factor (dB) =			0.00					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

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

Test Engineer ID:	50822	Test Date:	5/12/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
Band n77	10MHz	3840.0	24	0	BPSK	33.21	29.16	4.05
					16QAM	34.20	27.55	6.65
	15MHz		36	0	BPSK	33.43	29.37	4.06
					16QAM	34.58	27.79	6.79
	20MHz		50	0	BPSK	33.37	29.32	4.05
					16QAM	34.55	27.83	6.72
	30MHz		75	0	BPSK	33.49	29.35	4.14
					16QAM	34.59	27.85	6.74
	40MHz		100	0	BPSK	33.22	29.32	3.90
					16QAM	34.50	27.83	6.67
	50MHz		128	0	BPSK	32.95	29.09	3.86
					16QAM	33.88	27.54	6.34
	60MHz		162	0	BPSK	32.87	29.08	3.79
					16QAM	33.86	27.56	6.30
	70MHz		180	0	BPSK	32.92	28.88	4.04
					16QAM	33.82	27.33	6.49
	80MHz		216	0	BPSK	32.30	28.90	3.40
					16QAM	33.18	27.18	6.00
	90MHz		243	0	BPSK	32.18	28.58	3.60
					16QAM	32.91	27.16	5.75
	100MHz		270	0	BPSK	31.66	28.47	3.19
					16QAM	32.85	27.23	5.62
Duty Cycle Correction Factor (dB) =			0.00					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

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10. RADIATED TEST RESULTS

Radiated measurement using the Field Strength Method

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

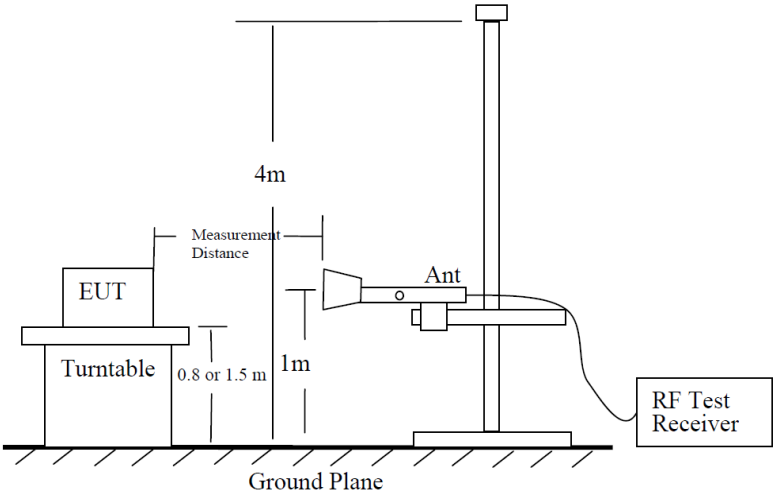

Figure 6 —Test site-up for radiated ERP and/or EIRP measurements

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

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

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

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

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

So, from d)

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

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

Note 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.

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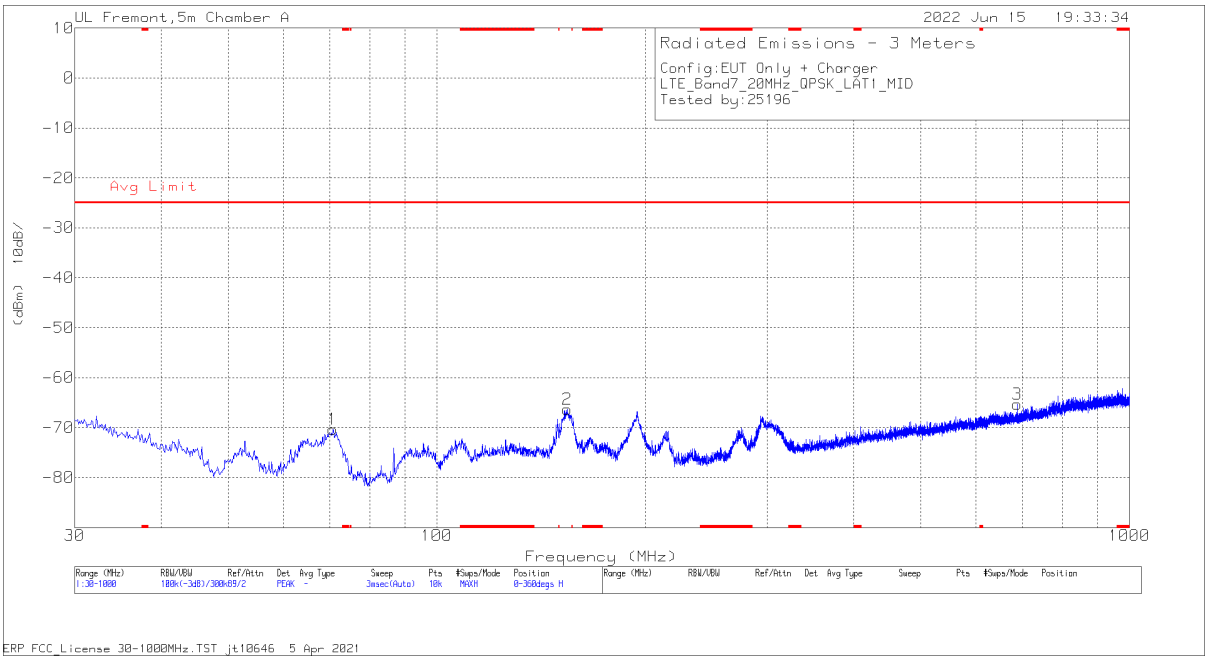
Example Plot Below 1GHz



Horizontal Polarity

Vertical Polarity

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Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T122 (dB/m)	Amp/Cbl (dB/m)	EIRP CF	Corrected Reading (dBm)	Avg Limit	Margin (dB)	Polarity
1	70.837	37.13	Pk	14.4	-26.7	-95.2	-70.37	-25	-45.37	H
4	72.292	38.5	Pk	14.3	-26.7	-95.2	-69.1	-25	-44.1	V
2	154.16	35.73	Pk	18.8	-25.7	-95.2	-66.37	-25	-41.37	H
5	154.16	31.14	Pk	18.8	-25.7	-95.2	-70.96	-25	-45.96	V
3	688.436	28.11	Pk	26.1	-24.3	-95.2	-65.29	-25	-40.29	H
6	857.798	27.18	Pk	28.3	-23	-95.2	-62.72	-25	-37.72	V

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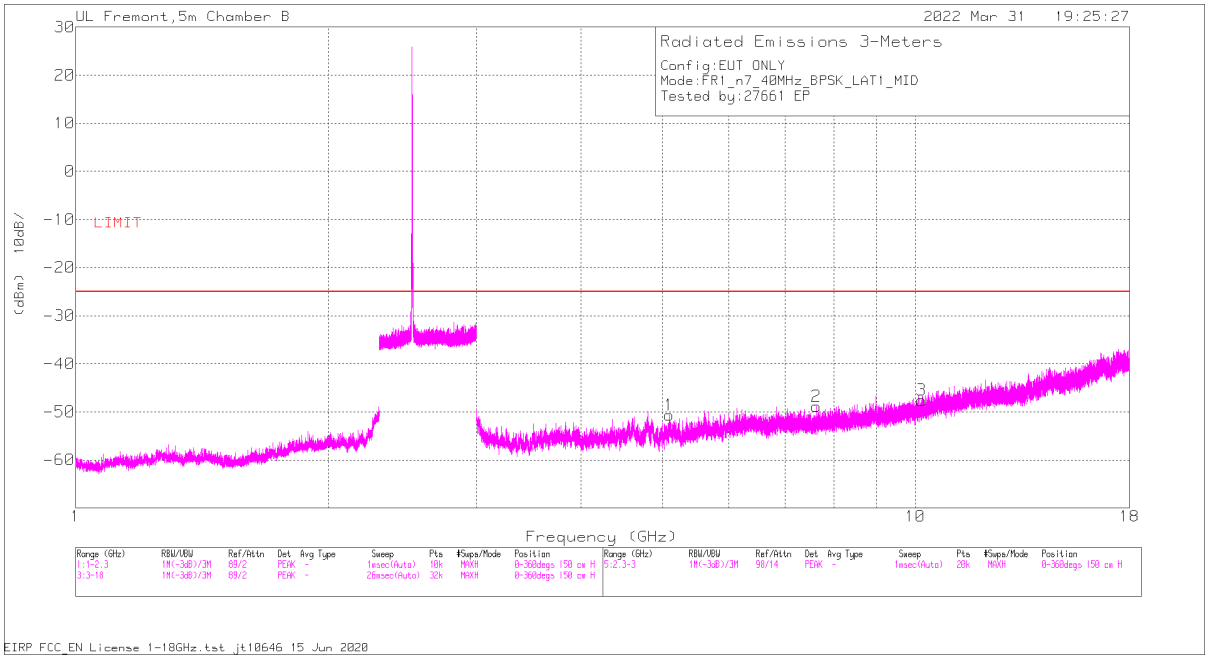
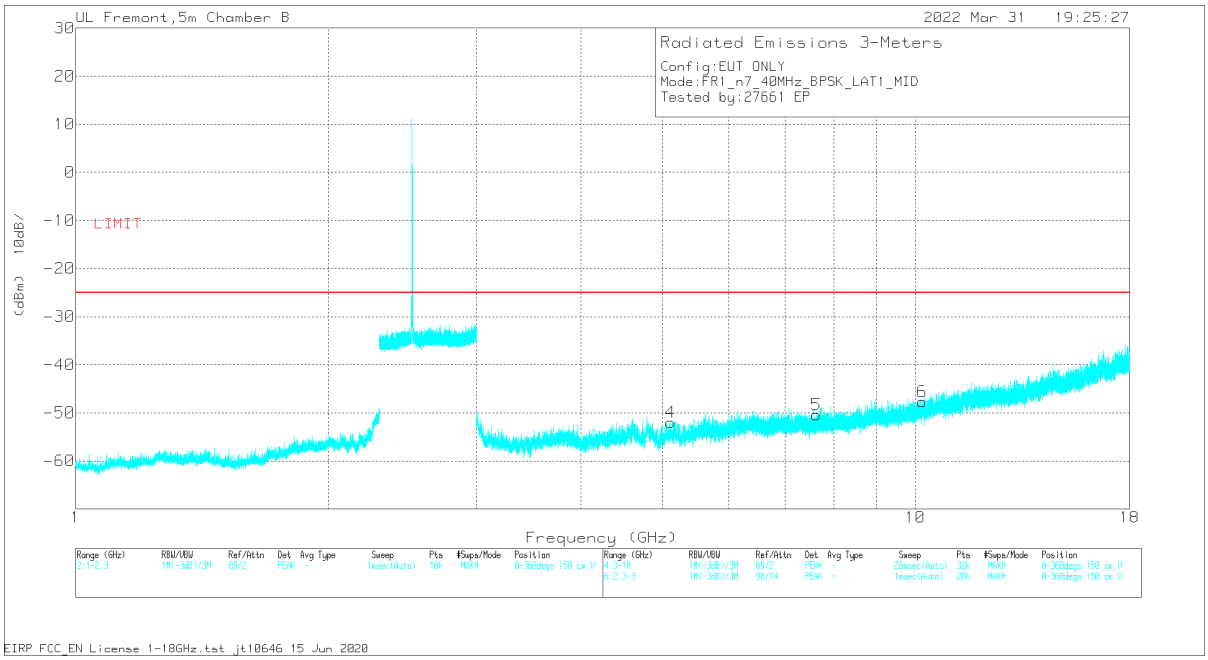
Example Plot Above 1GHz

Horizontal Polarity





Vertical Polarity

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Trace Markers

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
5.095781	39.99	Pk	34.2	-30.4	.8	-95.2	-50.61	-25	-25.61	H
5.107969	38.84	Pk	34.1	-30.5	.8	-95.2	-51.96	-25	-26.96	V
7.622813	35.54	Pk	35.8	-26.9	.4	-95.2	-50.36	-25	-25.36	V
7.632188	37.01	Pk	35.9	-26.9	.4	-95.2	-48.79	-25	-23.79	H
10.174688	34.71	Pk	37.3	-25	.6	-95.2	-47.59	-25	-22.59	H
10.197188	34.39	Pk	37.3	-24.9	.8	-95.2	-47.61	-25	-22.61	V

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10.1. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 1

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

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10.1.1. LTE BAND 5 AND 5G NR n5

LIMITS

FCC: §22.917(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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QPSK LTE BAND 5 (10.0MHZ BANDWIDTH)

Project #:	14040863
Date:	4/4/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE5 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 829MHz										
1.641956	39.18	Pk	28.5	-29.4	.7	-95.2	-56.22	-13	-43.22	V
1.649289	45.89	Pk	28.5	-29.4	.8	-95.2	-49.41	-13	-36.41	H
2.474045	37.73	Pk	32.2	-28.1	.5	-95.2	-52.87	-13	-39.87	H
2.476489	36.55	Pk	32.2	-28.1	.5	-95.2	-54.05	-13	-41.05	V
3.315423	37.06	Pk	32.5	-26.6	.6	-95.2	-51.64	-13	-38.64	H
3.319334	35.79	Pk	32.6	-26.6	.6	-95.2	-52.81	-13	-39.81	V
Mid Channel, 836.5MHz										
1.663467	40.51	Pk	28.5	-29.4	.8	-95.2	-54.79	-13	-41.79	V
1.663956	45.55	Pk	28.5	-29.4	.8	-95.2	-49.75	-13	-36.75	H
2.496045	41.53	Pk	32.2	-28	.6	-95.2	-48.87	-13	-35.87	H
2.496045	38.94	Pk	32.2	-28	.6	-95.2	-51.46	-13	-38.46	V
3.356978	37.02	Pk	32.8	-26.6	.6	-95.2	-51.38	-13	-38.38	V
3.3604	36.59	Pk	32.8	-26.6	.6	-95.2	-51.81	-13	-38.81	H
High Channel, 844MHz										
1.678622	47.25	Pk	28.4	-29.3	.7	-95.2	-48.15	-13	-35.15	H
1.679111	40.82	Pk	28.4	-29.3	.7	-95.2	-54.58	-13	-41.58	V
2.539067	36.76	Pk	32.2	-27.8	.7	-95.2	-53.34	-13	-40.34	V
2.542489	38.47	Pk	32.2	-27.8	.6	-95.2	-51.73	-13	-38.73	H
3.368712	36.57	Pk	32.8	-26.6	.6	-95.2	-51.83	-13	-38.83	H
3.370667	37.05	Pk	32.8	-26.6	.6	-95.2	-51.35	-13	-38.35	V
1.678622	47.25	Pk	28.4	-29.3	.7	-95.2	-48.15	-13	-35.15	H

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BPSK 5G NR n5 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/01/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	n5 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834MHz										
1.664933	42.92	Pk	28.3	-34.9	.7	-95.2	-58.18	-13	-45.18	H
1.673733	42.01	Pk	28.4	-34.9	.7	-95.2	-58.99	-13	-45.99	V
2.510223	42.4	Pk	32.7	-34.7	.5	-95.2	-54.30	-13	-41.30	H
2.516089	42.52	Pk	32.7	-34.7	.5	-95.2	-54.18	-13	-41.18	V
3.323734	41.56	Pk	32.6	-33.8	.5	-95.2	-54.34	-13	-41.34	V
3.332534	40.88	Pk	32.6	-33.7	.5	-95.2	-54.92	-13	-41.92	H
Mid Channel, 836.5MHz										
1.640978	42.53	Pk	28.4	-34.9	.7	-95.2	-58.47	-13	-45.47	V
1.643422	43.1	Pk	28.4	-34.9	.7	-95.2	-57.90	-13	-44.90	H
2.52	42.18	Pk	32.7	-34.7	.5	-95.2	-54.52	-13	-41.52	H
2.52	41.4	Pk	32.7	-34.7	.5	-95.2	-55.30	-13	-42.30	V
3.339378	41.39	Pk	32.6	-33.7	.5	-95.2	-54.41	-13	-41.41	V
3.376534	41.65	Pk	32.6	-33.6	.5	-95.2	-54.05	-13	-41.05	H
High Channel, 839MHz										
1.6576	41.72	Pk	28.3	-34.9	.7	-95.2	-59.38	-13	-46.38	V
1.661022	43.22	Pk	28.2	-34.9	.7	-95.2	-57.98	-13	-44.98	H
2.4892	44.37	Pk	32.7	-34.8	.5	-95.2	-52.43	-13	-39.43	H
2.4892	42.94	Pk	32.7	-34.8	.5	-95.2	-53.86	-13	-40.86	V
3.364312	41.14	Pk	32.5	-33.7	.5	-95.2	-54.76	-13	-41.76	V
3.3648	42.4	Pk	32.5	-33.7	.5	-95.2	-53.50	-13	-40.50	H

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10.1.2. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

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QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	5/2/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.0020	36.76	Pk	34.2	-24.5	.8	-95.2	-47.94	-25	-22.94	V
5.0203	36.06	Pk	34.2	-24.2	.8	-95.2	-48.34	-25	-23.34	H
7.5248	33.15	Pk	35.6	-20.1	.3	-95.2	-46.25	-25	-21.25	H
7.5366	33.7	Pk	35.6	-20.3	.3	-95.2	-45.90	-25	-20.90	V
10.005	31.19	Pk	37.2	-17.6	.6	-95.2	-43.81	-25	-18.81	V
10.0355	33.22	Pk	37.1	-17.8	.7	-95.2	-41.98	-25	-16.98	H
Mid Channel, 2535MHz										
5.075156	36.53	Pk	34.4	-23.7	.7	-95.2	-47.27	-25	-22.27	V
5.085469	35.6	Pk	34.4	-23.8	.8	-95.2	-48.20	-25	-23.20	H
7.621406	33.24	Pk	35.7	-19.8	.4	-95.2	-45.66	-25	-20.66	H
7.625156	33.97	Pk	35.7	-19.7	.4	-95.2	-44.83	-25	-19.83	V
10.125469	32.08	Pk	37.2	-17.7	.7	-95.2	-42.92	-25	-17.92	V
10.135313	31.82	Pk	37.3	-17.7	.7	-95.2	-43.08	-25	-18.08	H
High Channel, 2560MHz										
5.1375	36.7	Pk	34.3	-23.9	.8	-95.2	-47.3	-25	-22.3	V
5.143594	36.57	Pk	34.3	-23.9	.8	-95.2	-47.43	-25	-22.43	H
7.692188	32.67	Pk	35.7	-19.5	.5	-95.2	-45.83	-25	-20.83	V
7.7025	34.46	Pk	35.7	-19.5	.5	-95.2	-44.04	-25	-19.04	H
10.234219	31.6	Pk	37.4	-17.3	.8	-95.2	-42.70	-25	-17.70	H
10.236563	32.52	Pk	37.4	-17.3	.8	-95.2	-41.78	-25	-16.78	V

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BPSK 5G NR 7 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	3/31/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n7 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2520MHz										
5.025938	39.2	Pk	34	-30.7	.7	-95.2	-52.00	-25	-27.00	V
5.053594	38.14	Pk	34.1	-30.6	.6	-95.2	-52.96	-25	-27.96	H
7.537969	36.03	Pk	35.8	-27	.3	-95.2	-50.07	-25	-25.07	V
7.543594	35.38	Pk	35.8	-26.9	.3	-95.2	-50.62	-25	-25.62	H
10.052344	34.04	Pk	37.1	-24.9	.7	-95.2	-48.26	-25	-23.26	V
10.073203	34.62	Pk	37.2	-25	.7	-95.2	-47.68	-25	-22.68	H
Mid Channel, 2535MHz										
5.095781	39.99	Pk	34.2	-30.4	.8	-95.2	-50.61	-25	-25.61	H
5.107969	38.84	Pk	34.1	-30.5	.8	-95.2	-51.96	-25	-26.96	V
7.622813	35.54	Pk	35.8	-26.9	.4	-95.2	-50.36	-25	-25.36	V
7.632188	37.01	Pk	35.9	-26.9	.4	-95.2	-48.79	-25	-23.79	H
10.174688	34.71	Pk	37.3	-25	.6	-95.2	-47.59	-25	-22.59	H
10.197188	34.39	Pk	37.3	-24.9	.8	-95.2	-47.61	-25	-22.61	V
High Channel, 2550MHz										
5.08875	38.95	Pk	34.2	-30.5	.8	-95.2	-51.75	-25	-26.75	H
5.091094	37.99	Pk	34.2	-30.5	.8	-95.2	-52.71	-25	-27.71	V
7.684688	35.87	Pk	35.8	-26.7	.5	-95.2	-49.73	-25	-24.73	V
7.686563	36.3	Pk	35.8	-26.7	.5	-95.2	-49.30	-25	-24.30	H
10.224375	34.45	Pk	37.3	-24.9	.9	-95.2	-47.45	-25	-22.45	H
10.241484	33.99	Pk	37.3	-25	.8	-95.2	-48.11	-25	-23.11	V

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10.1.3. LTE BAND 12 AND 5G NR n12

LIMITS

FCC: §27.53 (g)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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QPSK LTE BAND 12 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	6/29/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE12 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 704MHz										
1.402889	41.79	Pk	28.3	-34.9	1	-95.2	-59.01	-13	-46.01	H
1.405822	40.39	Pk	28.3	-34.9	1	-95.2	-60.41	-13	-47.41	V
2.105911	40.09	Pk	31.9	-34.7	.6	-95.2	-57.31	-13	-44.31	V
2.112267	42.34	Pk	31.8	-34.8	.6	-95.2	-55.26	-13	-42.26	H
2.812356	43.62	Pk	32.6	-34.5	.5	-95.2	-52.98	-13	-39.98	H
2.813334	42.98	Pk	32.6	-34.5	.5	-95.2	-53.62	-13	-40.62	V
Mid Channel, 707.5MHz										
1.407289	43.12	Pk	28.2	-34.8	1	-95.2	-57.68	-13	-44.68	H
1.410711	41.97	Pk	28.2	-34.9	1	-95.2	-58.93	-13	-45.93	V
2.111289	40.74	Pk	31.8	-34.8	.6	-95.2	-56.86	-13	-43.86	V
2.1152	42.95	Pk	31.8	-34.8	.5	-95.2	-54.75	-13	-41.75	H
2.841689	41.93	Pk	32.6	-34.5	.6	-95.2	-54.57	-13	-41.57	H
2.842667	42.9	Pk	32.6	-34.5	.6	-95.2	-53.6	-13	-40.6	V
High Channel, 711MHz										
1.4244	40.58	Pk	28.2	-34.8	.9	-95.2	-60.32	-13	-47.32	V
1.430756	42.26	Pk	28.3	-34.9	.9	-95.2	-58.64	-13	-45.64	H
2.1196	42.51	Pk	31.7	-34.8	.5	-95.2	-55.29	-13	-42.29	H
2.138667	43.02	Pk	31.4	-34.8	.5	-95.2	-55.08	-13	-42.08	V
2.813334	42.29	Pk	32.6	-34.5	.5	-95.2	-54.31	-13	-41.31	V
2.829956	43.05	Pk	32.7	-34.5	.5	-95.2	-53.45	-13	-40.45	H

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BPSK 5G NR n12 (15.0MHZ BANDWIDTH)

Project #:	14040866
Date:	4/1/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n12 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T34(dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 706.5MHz										
1.443956	42.11	Pk	28.8	-34.9	.9	-95.2	-58.29	-13	-45.29	V
1.449822	41.88	Pk	28.7	-34.9	.9	-95.2	-58.62	-13	-45.62	H
2.120578	42	Pk	31.2	-34.8	.5	-95.2	-56.30	-13	-43.30	V
2.1328	42.42	Pk	31.2	-34.9	.5	-95.2	-55.98	-13	-42.98	H
2.827511	42.49	Pk	32.3	-34.4	.5	-95.2	-54.31	-13	-41.31	H
2.837778	41.49	Pk	32.2	-34.4	.5	-95.2	-55.41	-13	-42.41	V
Mid Channel, 707.5MHz										
1.417556	43.08	Pk	29	-34.9	.9	-95.2	-57.12	-13	-44.12	H
1.421956	41.32	Pk	29	-34.9	.9	-95.2	-58.88	-13	-45.88	V
2.116667	43.17	Pk	31.2	-34.9	.5	-95.2	-55.23	-13	-42.23	H
2.124978	42.89	Pk	31.2	-34.9	.5	-95.2	-55.51	-13	-42.51	V
2.8764	40.89	Pk	32.4	-34.5	.5	-95.2	-55.91	-13	-42.91	V
2.876889	42.1	Pk	32.4	-34.5	.5	-95.2	-54.70	-13	-41.70	H
High Channel, 708.5MHz										
1.422933	41.65	Pk	29	-34.9	.9	-95.2	-58.55	-13	-45.55	V
1.428311	42.72	Pk	29	-34.9	.9	-95.2	-57.48	-13	-44.48	H
2.104794	52.82	Pk	31.2	-34.9	.6	-95.2	-45.48	-13	-32.48	H
2.104835	52.65	Pk	31.2	-34.9	.6	-95.2	-45.65	-13	-32.65	V
2.825556	42.84	Pk	32.3	-34.4	.5	-95.2	-53.96	-13	-40.96	H
2.836311	42.06	Pk	32.2	-34.4	.5	-95.2	-54.84	-13	-41.84	V

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10.1.4. LTE BAND 13

LIMITS

FCC: §27.53
(c) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.
(f) Emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

QPSK LTE BAND 13 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	4/29/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE13 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 782MHz										
1.564711	39.76	Pk	28.2	-29.5	.9	-95.2	-55.84	-40	-15.84	V
1.5696	39.99	Pk	28.2	-29.5	.9	-95.2	-55.61	-40	-15.61	H
2.3484	37.89	Pk	31.9	-28.2	.5	-95.2	-53.11	-13	-40.11	V
2.348889	38.48	Pk	31.9	-28.2	.5	-95.2	-52.52	-13	-39.52	H
3.117912	36.87	Pk	33.1	-26.6	.7	-95.2	-51.13	-13	-38.13	V
3.125734	37.22	Pk	33.1	-26.7	.6	-95.2	-50.98	-13	-37.98	H

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10.1.5. LTE BAND 14 AND 5G NR n14

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 #:	14040866
Date:	4/29/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE14 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 793MHz										
1.584267	39.24	Pk	28	-29.6	.8	-95.2	-56.76	-40	-16.76	H
1.588667	39.15	Pk	28	-29.6	.8	-95.2	-56.85	-40	-16.85	V
2.391911	38.32	Pk	32	-28.1	.5	-95.2	-52.48	-13	-39.48	H
2.401689	38.4	Pk	32	-28.2	.5	-95.2	-52.50	-13	-39.50	V
3.18	37.37	Pk	32.9	-26.5	.5	-95.2	-50.93	-13	-37.93	V
3.181956	37.3	Pk	32.9	-26.6	.5	-95.2	-51.10	-13	-38.10	H

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BPSK 5G NR n14 (10.0MHZ BANDWIDTH)

Project #:	14040863
Date:	3/23/2022
Test Engineer:	24943
Configuration:	EUT only
Mode	N14 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 793MHz										
1.573511	42.68	Pk	27.7	-34.9	.8	-95.2	-58.92	-40	-18.92	H
1.582311	41.9	Pk	27.7	-34.9	.8	-95.2	-59.70	-40	-19.70	V
2.36587	49.84	Pk	31.8	-34.8	.5	-95.2	-47.86	-13	-34.86	H
2.366	43.86	Pk	31.8	-34.8	.5	-95.2	-53.84	-13	-40.84	V
3.1932	40.85	Pk	32.8	-33.9	.5	-95.2	-54.95	-13	-41.95	V
3.194178	41.33	Pk	32.8	-33.9	.5	-95.2	-54.47	-13	-41.47	H

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10.1.6. LTE BAND 17

LIMITS

FCC: §27.53 (g)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 17 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	4/5/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE14 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 709MHz										
1.407289	39.87	Pk	28.9	-29.9	.9	-95.2	-55.43	-13	-42.43	V
1.410222	40.3	Pk	28.8	-29.9	.9	-95.2	-55.10	-13	-42.10	H
2.133778	38.64	Pk	31.6	-28.4	.5	-95.2	-52.86	-13	-39.86	H
2.135245	38.52	Pk	31.6	-28.3	.5	-95.2	-52.88	-13	-39.88	V
2.837778	36.09	Pk	32.2	-27.2	.7	-95.2	-53.41	-13	-40.41	H
2.850978	35.88	Pk	32.3	-27.1	.6	-95.2	-53.52	-13	-40.52	V
Mid Channel, 710MHz										
1.414133	40.17	Pk	28.8	-29.9	.9	-95.2	-55.23	-13	-42.23	V
1.423422	40.07	Pk	28.7	-29.8	.9	-95.2	-55.33	-13	-42.33	H
2.135734	38.55	Pk	31.6	-28.3	.5	-95.2	-52.85	-13	-39.85	V
2.139156	38.69	Pk	31.6	-28.3	.5	-95.2	-52.71	-13	-39.71	H
2.835334	37.45	Pk	32.3	-27.3	.7	-95.2	-52.05	-13	-39.05	H
2.840711	36.88	Pk	32.2	-27.2	.7	-95.2	-52.62	-13	-39.62	V
High Channel, 711MHz										
1.412178	40.38	Pk	28.8	-29.9	.9	-95.2	-55.02	-13	-42.02	H
1.414133	39.59	Pk	28.8	-29.9	.9	-95.2	-55.81	-13	-42.81	V
2.1196	38.94	Pk	31.4	-28.7	.5	-95.2	-53.06	-13	-40.06	H
2.1284	37.6	Pk	31.6	-28.5	.5	-95.2	-54.00	-13	-41.00	V
2.834356	37.85	Pk	32.3	-27.3	.7	-95.2	-51.65	-13	-38.65	H
2.838267	37.19	Pk	32.2	-27.2	.7	-95.2	-52.31	-13	-39.31	V

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10.1.7. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.238(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	3/30/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.730781	40	Pk	33.4	-32.2	-95.2	-54.00	-13	-41.00	H
3.737344	39.67	Pk	33.5	-32.2	-95.2	-54.23	-13	-41.23	V
5.536875	37.83	Pk	34.9	-29.6	-95.2	-52.07	-13	-39.07	V
5.537344	37.95	Pk	34.9	-29.6	-95.2	-51.95	-13	-38.95	H
7.463906	34.55	Pk	35.8	-26.1	-95.2	-50.95	-13	-37.95	V
7.4775	35.49	Pk	35.7	-26.2	-95.2	-50.21	-13	-37.21	H
Mid Channel, 1882.5MHz									
3.785156	39.64	Pk	33.6	-31.9	-95.2	-53.86	-13	-40.86	H
3.796875	39.4	Pk	33.6	-31.9	-95.2	-54.10	-13	-41.10	V
5.7	38.9	Pk	34.9	-29.4	-95.2	-50.80	-13	-37.80	V
5.712188	38.33	Pk	34.8	-29.2	-95.2	-51.27	-13	-38.27	H
7.475625	35.72	Pk	35.7	-26.2	-95.2	-49.98	-13	-36.98	V
7.506563	36.87	Pk	35.7	-26.2	-95.2	-48.83	-13	-35.83	H
High Channel, 1905MHz									
3.80625	39.35	Pk	33.6	-31.8	-95.2	-54.05	-13	-41.05	V
3.816563	40.43	Pk	33.7	-31.8	-95.2	-52.87	-13	-39.87	H
5.697188	38.31	Pk	34.9	-29.4	-95.2	-51.39	-13	-38.39	V
5.7	38.62	Pk	34.9	-29.4	-95.2	-51.08	-13	-38.08	H
7.654688	35.93	Pk	35.8	-26.6	-95.2	-50.07	-13	-37.07	V
7.6575	37.28	Pk	35.8	-26.6	-95.2	-48.72	-13	-35.72	H

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BPSK 5G NR 25 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	3/31/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n25 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1870MHz									
3.75	40.73	Pk	33.5	-32.1	-95.2	-53.07	-13	-40.07	V
3.755625	41.24	Pk	33.5	-32.1	-95.2	-52.56	-13	-39.56	H
5.59125	38.62	Pk	34.9	-29.6	-95.2	-51.28	-13	-38.28	V
5.609063	39.29	Pk	35	-29.7	-95.2	-50.61	-13	-37.61	H
7.499531	34.96	Pk	35.8	-26.3	-95.2	-50.74	-13	-37.74	V
7.505625	35.96	Pk	35.7	-26.2	-95.2	-49.74	-13	-36.74	H
Mid Channel, 1882.5MHz									
3.776719	40.42	Pk	33.5	-32	-95.2	-53.28	-13	-40.28	H
3.782813	40.68	Pk	33.6	-32	-95.2	-52.92	-13	-39.92	V
5.688281	37.8	Pk	34.9	-29.6	-95.2	-52.10	-13	-39.10	V
5.68875	38.27	Pk	34.9	-29.6	-95.2	-51.63	-13	-38.63	H
7.531875	35.72	Pk	35.8	-26.1	-95.2	-49.78	-13	-36.78	V
7.536563	35.52	Pk	35.8	-26.1	-95.2	-49.98	-13	-36.98	H
High Channel, 1895MHz									
3.765469	42.16	Pk	33.6	-32	-95.2	-51.44	-13	-38.44	V
3.787969	40.53	Pk	33.6	-31.9	-95.2	-52.97	-13	-39.97	H
5.674688	40.32	Pk	34.9	-29.9	-95.2	-49.88	-13	-36.88	H
5.687813	38.85	Pk	34.9	-29.6	-95.2	-51.05	-13	-38.05	V
7.577813	35.55	Pk	35.8	-26.2	-95.2	-50.05	-13	-37.05	V
7.583438	35.84	Pk	35.8	-26.2	-95.2	-49.76	-13	-36.76	H

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10.1.8. LTE BAND 26 AND 5G NR n26

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 #:	14040866
Date:	03/05/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE26 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.625333	38.71	Pk	28.4	-29.4	.6	-95.2	-56.89	-13	-43.89	V
1.629245	40.07	Pk	28.5	-29.4	.7	-95.2	-55.33	-13	-42.33	H
2.460845	37.68	Pk	32	-28.2	.5	-95.2	-53.22	-13	-40.22	H
2.461823	36.91	Pk	32.1	-28.2	.5	-95.2	-53.89	-13	-40.89	V
3.2768	36.25	Pk	32.6	-26.3	.8	-95.2	-51.85	-13	-38.85	H
3.286578	35.79	Pk	32.6	-26.3	.9	-95.2	-52.21	-13	-39.21	V

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BPSK 5G NR n26 (10.0MHZ BANDWIDTH)

Project #:	14040863
Date:	04/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N26 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.621422	42.49	Pk	28.4	-34.9	.7	-95.2	-58.51	-13	-45.51	V
1.623378	41.93	Pk	28.4	-34.9	.7	-95.2	-59.07	-13	-46.07	H
2.444113	52.17	Pk	32.3	-34.7	.6	-95.2	-44.83	-13	-31.83	H
2.444151	47.99	Pk	32.3	-34.7	.6	-95.2	-49.01	-13	-36.01	V
3.293423	40.98	Pk	32.7	-33.8	.5	-95.2	-54.82	-13	-41.82	V
3.301245	42.01	Pk	32.6	-33.8	.5	-95.2	-53.89	-13	-40.89	H

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10.1.9. LTE BAND 26

LIMITS

FCC: §22.917(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/05/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE26 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 831.5MHz										
1.649778	41.31	Pk	28.5	-29.4	.8	-95.2	-53.99	-13	-40.99	H
1.652222	39.48	Pk	28.5	-29.4	.8	-95.2	-55.82	-13	-42.82	V
2.474045	41.16	Pk	32.2	-28.1	.5	-95.2	-49.44	-13	-36.44	H
2.474045	38.53	Pk	32.2	-28.1	.5	-95.2	-52.07	-13	-39.07	V
3.300267	35.81	Pk	32.6	-26.4	.8	-95.2	-52.39	-13	-39.39	H
3.302223	35.67	Pk	32.6	-26.4	.7	-95.2	-52.63	-13	-39.63	V
Mid Channel, 836.5MHz										
1.663956	39.4	Pk	28.5	-29.4	.8	-95.2	-55.90	-13	-42.90	V
1.664445	41.8	Pk	28.5	-29.4	.8	-95.2	-53.50	-13	-40.50	H
2.494089	38.07	Pk	32.2	-28	.6	-95.2	-52.33	-13	-39.33	H
2.494089	37.21	Pk	32.2	-28	.6	-95.2	-53.19	-13	-40.19	V
3.339867	36.44	Pk	32.6	-26.5	.5	-95.2	-52.16	-13	-39.16	H
3.345245	36.38	Pk	32.6	-26.5	.5	-95.2	-52.22	-13	-39.22	V
High Channel, 841.5MHz										
1.679111	39.96	Pk	28.4	-29.3	.7	-95.2	-55.44	-13	-42.44	H
1.681067	39.12	Pk	28.4	-29.3	.7	-95.2	-56.28	-13	-43.28	V
2.518534	39.23	Pk	32.4	-28.1	.8	-95.2	-50.87	-13	-37.87	H
2.518534	37.63	Pk	32.4	-28.1	.8	-95.2	-52.47	-13	-39.47	V
3.356978	36	Pk	32.8	-26.6	.6	-95.2	-52.40	-13	-39.40	V
3.358445	36.4	Pk	32.8	-26.6	.6	-95.2	-52.00	-13	-39.00	H

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BPSK 5G NR n26 (20.0MHZ BANDWIDTH)

Project #:	14040863
Date:	04/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N26 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834.0MHz										
1.634622	42.96	Pk	28.4	-34.9	.7	-95.2	-58.04	-13	-45.04	V
1.639022	42.39	Pk	28.4	-34.9	.7	-95.2	-58.61	-13	-45.61	H
2.474015	48.46	Pk	32.6	-34.8	.5	-95.2	-48.44	-13	-35.44	V
2.474055	53.94	Pk	32.6	-34.8	.5	-95.2	-42.96	-13	-29.96	H
3.340356	40.68	Pk	32.5	-33.7	.4	-95.2	-55.32	-13	-42.32	V
3.352089	42.15	Pk	32.5	-33.7	.4	-95.2	-53.85	-13	-40.85	H
Mid Channel, 836.5MHz										
1.569111	41.88	Pk	27.7	-34.9	.8	-95.2	-59.72	-13	-46.72	V
1.577911	44.17	Pk	27.7	-34.9	.8	-95.2	-57.43	-13	-44.43	H
2.481867	43.69	Pk	32.6	-34.8	.5	-95.2	-53.21	-13	-40.21	V
2.481516	51.83	Pk	32.6	-34.8	.5	-95.2	-45.07	-13	-32.07	H
3.366267	41.77	Pk	32.5	-33.7	.5	-95.2	-54.13	-13	-41.13	V
3.371645	41.75	Pk	32.6	-33.7	.5	-95.2	-54.05	-13	-41.05	H
High Channel, 839.0MHz										
1.6928	41.72	Pk	28.8	-34.9	.6	-95.2	-58.98	-13	-45.98	H
1.693289	42.3	Pk	28.8	-34.9	.6	-95.2	-58.4	-13	-45.4	V
2.48919	47.85	Pk	32.7	-34.8	.5	-95.2	-48.95	-13	-35.95	H
2.498489	42.82	Pk	32.8	-34.8	.5	-95.2	-53.88	-13	-40.88	V
3.383378	40.72	Pk	32.5	-33.6	.5	-95.2	-55.08	-13	-42.08	V
3.389245	41.13	Pk	32.6	-33.5	.5	-95.2	-54.47	-13	-41.47	H

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10.1.10. LTE BAND 30 AND 5G NR n30

LIMITS

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

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	07/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.606875	35.97	RMS	34.2	-29	-95.2	-54.03	-40	-14.03	V
4.607344	37.25	RMS	34.2	-29	-95.2	-52.75	-40	-12.75	H
6.911719	34.74	RMS	35.8	-26.2	-95.2	-50.86	-40	-10.86	H
6.9225	34.67	RMS	35.8	-26	-95.2	-50.73	-40	-10.73	V
9.221719	32.29	RMS	36.4	-23.7	-95.2	-50.21	-40	-10.21	H
9.249844	31.33	RMS	36.5	-23.5	-95.2	-50.87	-40	-10.87	V

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BPSK 5G NR 30 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	07/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N30 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.615781	36.9	RMS	34.3	-29	-95.2	-53.00	-40	-13.00	V
4.642500	37.52	RMS	34.2	-28.9	-95.2	-52.38	-40	-12.38	H
6.929531	34.76	RMS	35.8	-26	-95.2	-50.64	-40	-10.64	H
6.942656	34.33	RMS	35.7	-26.1	-95.2	-51.27	-40	-11.27	V
9.225000	32.31	RMS	36.4	-23.6	-95.2	-50.09	-40	-10.09	H
9.244688	32.23	RMS	36.4	-23.5	-95.2	-50.07	-40	-10.07	V

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10.1.11. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.02875	37.4	Pk	34.1	-30.7	.7	-95.2	-53.70	-25	-28.70	V
5.038125	39.13	Pk	33.9	-30.7	.6	-95.2	-52.27	-25	-27.27	H
7.064531	35.53	Pk	35.7	-26.8	.7	-95.2	-50.07	-25	-25.07	H
7.072969	35.15	Pk	35.6	-26.9	.6	-95.2	-50.75	-25	-25.75	V
10.054219	33.79	Pk	37.1	-25	.7	-95.2	-48.61	-25	-23.61	V
10.065938	34.75	Pk	37.2	-25	.7	-95.2	-47.55	-25	-22.55	H
Mid Channel, 2593MHz										
5.022188	37.2	Pk	34	-30.8	.7	-95.2	-54.10	-25	-29.10	V
5.026406	39.11	Pk	34.1	-30.7	.7	-95.2	-51.99	-25	-26.99	H
7.497656	34.91	Pk	35.8	-26.8	.4	-95.2	-50.89	-25	-25.89	V
7.498125	35.43	Pk	35.8	-26.8	.4	-95.2	-50.37	-25	-25.37	H
10.053281	33.75	Pk	37.1	-25	.7	-95.2	-48.65	-25	-23.65	V
10.074844	34.81	Pk	37.2	-24.9	.7	-95.2	-47.39	-25	-22.39	H
High Channel, 2680MHz										
5.334375	33.98	Pk	34.5	-24.3	.7	-95.2	-50.32	-25	-25.32	V
5.360156	33.34	Pk	34.6	-23.9	.5	-95.2	-50.66	-25	-25.66	H
8.021719	32.45	Pk	35.7	-19.3	.3	-95.2	-46.05	-25	-21.05	V
8.025	32.72	Pk	35.7	-19.3	.3	-95.2	-45.78	-25	-20.78	H
10.7175	31.93	Pk	37.9	-17.1	.6	-95.2	-41.87	-25	-16.87	V
10.733438	32.78	Pk	37.9	-17	.7	-95.2	-40.82	-25	-15.82	H

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BPSK 5G NR 41 (100.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n41 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2546MHz										
5.107969	38.76	Pk	34.1	-30.5	.8	-95.2	-52.04	-25	-27.04	V
5.109844	39.34	Pk	34.1	-30.5	.8	-95.2	-51.46	-25	-26.46	H
7.622813	35.54	Pk	35.8	-26.9	.4	-95.2	-50.36	-25	-25.36	V
7.63875	35.69	Pk	35.9	-26.9	.4	-95.2	-50.11	-25	-25.11	H
10.139063	34.1	Pk	37.2	-24.8	.7	-95.2	-48.00	-25	-23.00	V
10.14375	35.05	Pk	37.2	-24.8	.6	-95.2	-47.15	-25	-22.15	H
Mid Channel, 2593MHz										
5.162344	38.72	Pk	34.2	-30.5	.7	-95.2	-52.08	-25	-27.08	H
5.162344	38.38	Pk	34.2	-30.5	.7	-95.2	-52.42	-25	-27.42	V
7.730625	36.33	Pk	35.8	-26.8	.3	-95.2	-49.57	-25	-24.57	H
7.736719	35.17	Pk	35.9	-26.8	.3	-95.2	-50.63	-25	-25.63	V
10.370625	34.18	Pk	37.6	-24.9	.8	-95.2	-47.52	-25	-22.52	V
10.371563	34.79	Pk	37.6	-24.9	.8	-95.2	-46.91	-25	-21.91	H
High Channel, 2640MHz										
5.229375	38.83	Pk	34.2	-30.5	.9	-95.2	-51.77	-25	-26.77	V
5.229844	38.29	Pk	34.2	-30.5	.9	-95.2	-52.31	-25	-27.31	H
7.913438	36.07	Pk	35.9	-26.6	.3	-95.2	-49.53	-25	-24.53	V
7.931719	35.1	Pk	35.9	-26.4	.1	-95.2	-50.50	-25	-25.50	H
10.581094	34.54	Pk	37.9	-24.2	.9	-95.2	-46.06	-25	-21.06	H
10.603125	34.19	Pk	37.9	-24.2	.8	-95.2	-46.51	-25	-21.51	V

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10.1.12. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	4/6/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.424219	36.45	Pk	32.7	-26.1	-95.2	-52.15	-13	-39.15	V
3.437344	35.61	Pk	32.7	-26.1	-95.2	-52.99	-13	-39.99	H
5.175938	35.08	Pk	34.4	-24	-95.2	-49.72	-13	-36.72	H
5.178281	35.37	Pk	34.4	-24	-95.2	-49.43	-13	-36.43	V
6.884063	32.93	Pk	35.5	-20.7	-95.2	-47.47	-13	-34.47	H
6.884531	33.74	Pk	35.5	-20.7	-95.2	-46.66	-13	-33.66	V
Mid Channel, 1745MHz									
3.480469	35.07	Pk	32.7	-25.8	-95.2	-53.23	-13	-40.23	V
3.481406	35.77	Pk	32.7	-25.8	-95.2	-52.53	-13	-39.53	H
5.211094	34.72	Pk	34.4	-23.9	-95.2	-49.98	-13	-36.98	V
5.220938	34.57	Pk	34.5	-23.9	-95.2	-50.03	-13	-37.03	H
6.988125	32.75	Pk	35.5	-19.8	-95.2	-46.75	-13	-33.75	V
6.994219	33.64	Pk	35.5	-19.7	-95.2	-45.76	-13	-32.76	H
High Channel, 1770MHz									
3.540938	35.32	Pk	32.9	-24.9	-95.2	-51.88	-13	-38.88	V
3.549375	35.44	Pk	33	-24.8	-95.2	-51.56	-13	-38.56	H
5.295938	36.62	Pk	34.4	-23.4	-95.2	-47.58	-13	-34.58	V
5.303906	36.55	Pk	34.4	-23.1	-95.2	-47.35	-13	-34.35	H
7.051875	34.44	Pk	35.6	-19.6	-95.2	-44.76	-13	-31.76	V
7.058906	32.67	Pk	35.6	-19.6	-95.2	-46.53	-13	-33.53	H

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BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	4/05/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n66 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.443438	41.06	Pk	32.7	-33	-95.2	-54.44	-13	-41.44	V
3.450938	42.16	Pk	32.7	-33	-95.2	-53.34	-13	-40.34	H
5.180156	39.03	Pk	34.2	-29.2	-95.2	-51.17	-13	-38.17	H
5.190469	38.02	Pk	34.2	-29.1	-95.2	-52.08	-13	-39.08	V
6.9225	35.37	Pk	35.8	-26.1	-95.2	-50.13	-13	-37.13	V
6.9375	35.65	Pk	35.8	-26	-95.2	-49.75	-13	-36.75	H
Mid Channel, 1745MHz									
3.479531	41.08	Pk	32.9	-32.9	-95.2	-54.12	-13	-41.12	V
3.480469	41.25	Pk	32.9	-32.9	-95.2	-53.95	-13	-40.95	H
5.246719	36.79	Pk	34.1	-28.9	-95.2	-53.21	-13	-40.21	V
5.248125	37.56	Pk	34.1	-28.9	-95.2	-52.44	-13	-39.44	H
6.977344	34.85	Pk	35.8	-26.3	-95.2	-50.85	-13	-37.85	V
6.99375	36.65	Pk	35.7	-26.3	-95.2	-49.15	-13	-36.15	H
High Channel, 1760MHz									
3.530156	40.18	Pk	33.1	-32.8	-95.2	-54.72	-13	-41.72	V
3.532969	40.66	Pk	33.1	-32.8	-95.2	-54.24	-13	-41.24	H
5.243906	37.99	Pk	34.1	-28.8	-95.2	-51.91	-13	-38.91	V
5.247188	37.64	Pk	34.1	-28.9	-95.2	-52.36	-13	-39.36	H
7.011094	35.58	Pk	35.7	-26.5	-95.2	-50.42	-13	-37.42	V
7.028906	36.45	Pk	35.7	-26.8	-95.2	-49.85	-13	-36.85	H

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10.1.13. 5G NR n70

LIMITS

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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

Project #:	14040863
Date:	04/06/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N70 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.414844	40.69	Pk	32.6	-33	-95.2	-54.91	-13	-41.91	V
3.41625	41.29	Pk	32.6	-33	-95.2	-54.31	-13	-41.31	H
5.019844	38.61	Pk	34	-30.1	-95.2	-52.69	-13	-39.69	V
5.033438	38.37	Pk	34	-30.3	-95.2	-53.13	-13	-40.13	H
6.857813	36.24	Pk	35.8	-26.7	-95.2	-49.86	-13	-36.86	H
6.8775	35.95	Pk	35.9	-26.6	-95.2	-49.95	-13	-36.95	V

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10.1.14. LTE BAND 71 AND 5G NR n71

LIMITS

FCC: §27.53 (g)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 71 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/06/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE71 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.360356	41.06	Pk	29.4	-30.1	1	-95.2	-53.84	-13	-40.84	V
1.361822	41.38	Pk	29.4	-30.1	1	-95.2	-53.52	-13	-40.52	H
2.025245	39.65	Pk	30.8	-28.7	.5	-95.2	-52.95	-13	-39.95	V
2.029156	40.97	Pk	30.8	-28.7	.5	-95.2	-51.63	-13	-38.63	H
2.679378	39.36	Pk	32.3	-27.7	.6	-95.2	-50.64	-13	-37.64	H
2.690623	38.68	Pk	32.2	-27.7	.5	-95.2	-51.52	-13	-38.52	V
Mid Channel, 680.5MHz										
1.363778	39.73	Pk	29.5	-30.1	1	-95.2	-55.07	-13	-42.07	V
1.371111	40.26	Pk	29.4	-30	1	-95.2	-54.54	-13	-41.54	H
2.034045	38.8	Pk	30.8	-28.7	.5	-95.2	-53.80	-13	-40.80	V
2.036	38.71	Pk	30.8	-28.8	.5	-95.2	-53.99	-13	-40.99	H
2.730223	37.07	Pk	32	-27.4	.5	-95.2	-53.03	-13	-40.03	V
2.7356	37.25	Pk	32	-27.3	.5	-95.2	-52.75	-13	-39.75	H
High Channel, 688MHz										
1.362311	41.62	Pk	29.4	-30.1	1	-95.2	-53.28	-13	-40.28	V
1.366711	41.81	Pk	29.5	-30.1	1	-95.2	-52.99	-13	-39.99	H
2.081956	37.78	Pk	31.2	-28.6	.5	-95.2	-54.32	-13	-41.32	H
2.086845	39.27	Pk	31.3	-28.7	.5	-95.2	-52.83	-13	-39.83	V
2.739023	38.03	Pk	32	-27.3	.5	-95.2	-51.97	-13	-38.97	H
2.739511	37	Pk	32	-27.3	.5	-95.2	-53.00	-13	-40.00	V

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BPSK 5G NR 71 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/04/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n71 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.348133	41.58	Pk	29.2	-34.8	1.2	-95.2	-58.02	-13	-45.02	V
1.352044	42.31	Pk	29.2	-34.8	1.2	-95.2	-57.29	-13	-44.29	H
2.068267	44.04	Pk	31.3	-34.8	.6	-95.2	-54.06	-13	-41.06	V
2.085378	43.86	Pk	31.3	-34.8	.6	-95.2	-54.24	-13	-41.24	H
2.697956	42.57	Pk	32.4	-34.6	.6	-95.2	-54.23	-13	-41.23	H
2.702356	42.43	Pk	32.5	-34.6	.6	-95.2	-54.27	-13	-41.27	V
Mid Channel, 680.5MHz										
1.348133	41.58	Pk	29.2	-34.8	1.2	-95.2	-58.02	-13	-45.02	V
1.352044	42.31	Pk	29.2	-34.8	1.2	-95.2	-57.29	-13	-44.29	H
2.068267	44.04	Pk	31.3	-34.8	.6	-95.2	-54.06	-13	-41.06	V
2.085378	43.86	Pk	31.3	-34.8	.6	-95.2	-54.24	-13	-41.24	H
2.697956	42.57	Pk	32.4	-34.6	.6	-95.2	-54.23	-13	-41.23	H
2.702356	42.43	Pk	32.5	-34.6	.6	-95.2	-54.27	-13	-41.27	V
High Channel, 688MHz										
1.385778	42.71	Pk	28.8	-34.9	1	-95.2	-57.59	-13	-44.59	H
1.392622	42.68	Pk	28.7	-34.9	1	-95.2	-57.72	-13	-44.72	V
2.080489	42.43	Pk	31.3	-34.8	.6	-95.2	-55.67	-13	-42.67	H
2.081956	42.22	Pk	31.3	-34.8	.6	-95.2	-55.88	-13	-42.88	V
2.761511	42.7	Pk	32.4	-34.5	.6	-95.2	-54.00	-13	-41.00	V
2.765667	42.01	Pk	32.4	-34.5	.5	-95.2	-54.79	-13	-41.79	H

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10.2. 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.

RESULTS

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10.2.1. LTE BAND 5 AND 5G NR n5

LIMITS

FCC: §22.917(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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QPSK LTE BAND 5 (10.0MHZ BANDWIDTH)

Project #:	14040863
Date:	4/9/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE5 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 829MHz										
1.662489	39.55	Pk	28.5	-29.4	.8	-95.2	-55.75	-13	-42.75	V
1.668356	40.13	Pk	28.5	-29.4	.7	-95.2	-55.27	-13	-42.27	H
2.473556	44.37	Pk	32.2	-28.1	.5	-95.2	-46.23	-13	-33.23	V
2.495067	37.16	Pk	32.2	-28	.6	-95.2	-53.24	-13	-40.24	H
3.302712	36.42	Pk	32.6	-26.5	.7	-95.2	-51.98	-13	-38.98	V
3.312978	36.67	Pk	32.5	-26.6	.6	-95.2	-52.03	-13	-39.03	H
Mid Channel, 836.5MHz										
1.657111	39.98	Pk	28.5	-29.4	.8	-95.2	-55.32	-13	-42.32	V
1.664445	41.81	Pk	28.5	-29.4	.8	-95.2	-53.49	-13	-40.49	H
2.496534	39.08	Pk	32.2	-28	.6	-95.2	-51.32	-13	-38.32	H
2.496534	46.63	Pk	32.2	-28	.6	-95.2	-43.77	-13	-30.77	V
3.337423	36.88	Pk	32.6	-26.6	.5	-95.2	-51.82	-13	-38.82	H
3.348667	36.79	Pk	32.7	-26.6	.5	-95.2	-51.81	-13	-38.81	V
High Channel, 844MHz										
1.679111	39.99	Pk	28.4	-29.3	.7	-95.2	-55.41	-13	-42.41	H
1.683511	40.01	Pk	28.4	-29.2	.7	-95.2	-55.29	-13	-42.29	V
2.518534	50.21	Pk	32.4	-28.1	.8	-95.2	-39.89	-13	-26.89	V
2.519023	41.19	Pk	32.4	-28.1	.8	-95.2	-48.91	-13	-35.91	H
3.372623	36.19	Pk	32.8	-26.6	.6	-95.2	-52.21	-13	-39.21	H
3.3736	36.86	Pk	32.8	-26.6	.6	-95.2	-51.54	-13	-38.54	V

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QPSK 5G NR n5 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	07/14/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n5 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 829MHz										
1.640978	43.37	Pk	28.3	-34.8	.7	-95.2	-57.63	-13	-44.63	V
1.651733	43.4	Pk	28.4	-34.9	.7	-95.2	-57.6	-13	-44.6	H
2.510223	42.28	Pk	32.7	-34.7	.5	-95.2	-54.42	-13	-41.42	V
2.515111	42.76	Pk	32.7	-34.6	.5	-95.2	-53.84	-13	-40.84	H
3.311512	40.88	Pk	33.2	-33.8	.5	-95.2	-54.42	-13	-41.42	V
3.320312	42.35	Pk	33.1	-33.8	.5	-95.2	-53.05	-13	-40.05	H
Mid Channel, 836.5MHz										
1.683022	42.27	Pk	28.8	-34.8	.7	-95.2	-58.23	-13	-45.23	H
1.686445	41.77	Pk	28.8	-34.8	.7	-95.2	-58.73	-13	-45.73	V
2.488223	42.54	Pk	32.7	-34.7	.5	-95.2	-54.16	-13	-41.16	H
2.492623	42.24	Pk	32.7	-34.7	.5	-95.2	-54.46	-13	-41.46	V
3.346712	41.68	Pk	33.1	-33.7	.4	-95.2	-53.72	-13	-40.72	V
3.348667	42.08	Pk	33.1	-33.7	.4	-95.2	-53.32	-13	-40.32	H
High Channel, 844MHz										
1.689378	42.7	Pk	28.9	-34.9	.7	-95.2	-57.8	-13	-44.8	V
1.691333	43.05	Pk	28.9	-34.9	.6	-95.2	-57.55	-13	-44.55	H
2.520489	41.85	Pk	32.7	-34.6	.5	-95.2	-54.75	-13	-41.75	V
2.5244	41.98	Pk	32.7	-34.6	.5	-95.2	-54.62	-13	-41.62	H
3.3472	41.8	Pk	33.1	-33.7	.4	-95.2	-53.6	-13	-40.6	V
3.362845	41.94	Pk	33.1	-33.8	.5	-95.2	-53.46	-13	-40.46	H

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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.

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QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.019844	35.41	Pk	34.2	-24.2	.8	-95.2	-48.99	-25	-23.99	V
5.029688	36.29	Pk	34.3	-24.2	.7	-95.2	-48.11	-25	-23.11	H
7.543125	32.15	Pk	35.6	-20.3	.3	-95.2	-47.45	-25	-22.45	V
7.545	32.31	Pk	35.6	-20.3	.3	-95.2	-47.29	-25	-22.29	H
10.037813	31.75	Pk	37.1	-17.8	.7	-95.2	-43.45	-25	-18.45	V
10.051406	31.19	Pk	37.1	-17.8	.7	-95.2	-44.01	-25	-19.01	H
Mid Channel, 2535MHz										
5.085938	35.22	Pk	34.4	-23.8	.8	-95.2	-48.58	-25	-23.58	V
5.092969	34.33	Pk	34.4	-23.9	.8	-95.2	-49.57	-25	-24.57	H
7.621875	31.71	Pk	35.7	-19.8	.4	-95.2	-47.19	-25	-22.19	V
7.624688	33.87	Pk	35.7	-19.7	.4	-95.2	-44.93	-25	-19.93	H
10.126875	32.27	Pk	37.2	-17.7	.7	-95.2	-42.73	-25	-17.73	V
10.1325	31	Pk	37.3	-17.7	.7	-95.2	-43.90	-25	-18.90	H
High Channel, 2560MHz										
5.12625	35.1	Pk	34.4	-23.9	.8	-95.2	-48.80	-25	-23.80	V
5.134688	36.22	Pk	34.4	-23.9	.8	-95.2	-47.68	-25	-22.68	H
7.673906	32.52	Pk	35.7	-19.6	.4	-95.2	-46.18	-25	-21.18	V
7.677188	32.83	Pk	35.8	-19.6	.4	-95.2	-45.77	-25	-20.77	H
10.247344	31.92	Pk	37.4	-17.3	.7	-95.2	-42.48	-25	-17.48	H
10.257656	32.71	Pk	37.3	-17.3	.7	-95.2	-41.79	-25	-16.79	V

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BPSK 5G NR 7 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/05/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n7 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2520MHz										
5.042813	38.49	Pk	34	-30.7	.6	-95.2	-52.81	-25	-27.81	H
5.044688	38.55	Pk	34	-30.7	.6	-95.2	-52.75	-25	-27.75	V
7.575469	36.17	Pk	35.8	-27	.4	-95.2	-49.83	-25	-24.83	V
7.581563	35.08	Pk	35.8	-27.1	.5	-95.2	-50.92	-25	-25.92	H
10.07625	33.49	Pk	37.2	-24.9	.7	-95.2	-48.71	-25	-23.71	H
10.081875	33.9	Pk	37.2	-24.9	.6	-95.2	-48.40	-25	-23.40	V
Mid Channel, 2535MHz										
5.057344	38.72	Pk	34.1	-30.7	.6	-95.2	-52.48	-25	-27.48	H
5.0625	37.98	Pk	34.1	-30.6	.6	-95.2	-53.12	-25	-28.12	V
7.58625	34.67	Pk	35.7	-27.1	.5	-95.2	-51.43	-25	-26.43	V
7.632188	35.93	Pk	35.9	-26.9	.4	-95.2	-49.87	-25	-24.87	H
10.089844	35.02	Pk	37.2	-24.8	.6	-95.2	-47.18	-25	-22.18	V
10.109294	36.97	Pk	37.2	-25	.7	-95.2	-45.33	-25	-20.33	H
High Channel, 2550MHz										
5.098594	38.28	Pk	34.2	-30.4	.8	-95.2	-52.32	-25	-27.32	H
5.100938	39.58	Pk	34.1	-30.5	.8	-95.2	-51.22	-25	-26.22	V
7.635	34.96	Pk	35.9	-26.9	.4	-95.2	-50.84	-25	-25.84	V
7.645313	34.97	Pk	35.9	-26.9	.4	-95.2	-50.83	-25	-25.83	H
10.250156	34.93	Pk	37.4	-25	.7	-95.2	-47.17	-25	-22.17	H
10.254375	34.89	Pk	37.4	-25	.7	-95.2	-47.21	-25	-22.21	V

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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.

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QPSK LTE BAND 12 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/11/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE12 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 704MHz										
1.397022	40.48	Pk	28.3	-34.8	1	-95.2	-60.22	-13	-47.22	V
1.410711	42.45	Pk	28.2	-34.9	1	-95.2	-58.45	-13	-45.45	H
2.085378	40.99	Pk	32.1	-34.7	.6	-95.2	-56.21	-13	-43.21	V
2.102	42.7	Pk	31.9	-34.8	.6	-95.2	-54.80	-13	-41.80	H
2.822623	42.29	Pk	32.6	-34.5	.5	-95.2	-54.31	-13	-41.31	V
2.834356	42.88	Pk	32.6	-34.5	.5	-95.2	-53.72	-13	-40.72	H
Mid Channel, 707.5MHz										
1.398	40.6	Pk	28.3	-34.9	1	-95.2	-60.20	-13	-47.20	V
1.408267	42.38	Pk	28.2	-34.8	1	-95.2	-58.42	-13	-45.42	H
2.109334	41.41	Pk	31.9	-34.8	.6	-95.2	-56.09	-13	-43.09	V
2.1196	43.13	Pk	31.7	-34.8	.5	-95.2	-54.67	-13	-41.67	H
2.836311	42.86	Pk	32.6	-34.5	.5	-95.2	-53.74	-13	-40.74	H
2.841689	41.61	Pk	32.6	-34.5	.6	-95.2	-54.89	-13	-41.89	V
High Channel, 711MHz										
1.428311	42.51	Pk	28.3	-34.9	.9	-95.2	-58.39	-13	-45.39	H
1.437111	41.42	Pk	28.3	-34.8	.9	-95.2	-59.38	-13	-46.38	V
2.129378	41.84	Pk	31.5	-34.8	.5	-95.2	-56.16	-13	-43.16	V
2.133778	43.08	Pk	31.4	-34.9	.5	-95.2	-55.12	-13	-42.12	H
2.833378	43.33	Pk	32.6	-34.5	.5	-95.2	-53.27	-13	-40.27	V
2.854889	42.59	Pk	32.6	-34.5	.6	-95.2	-53.91	-13	-40.91	H

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BPSK 5G NR n12 (15.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/05/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n12 BPSK 15MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 706.5MHz										
1.468889	44.38	Pk	28.3	-34.9	.8	-95.2	-56.62	-13	-43.62	H
1.469378	43.11	Pk	28.3	-34.9	.8	-95.2	-57.89	-13	-44.89	V
2.098667	48.85	Pk	31.2	-34.9	.6	-95.2	-49.45	-13	-36.45	H
2.103956	43.45	Pk	31.2	-34.9	.6	-95.2	-54.85	-13	-41.85	V
2.857823	41.92	Pk	32.3	-34.4	.5	-95.2	-54.88	-13	-41.88	H
2.874934	42.56	Pk	32.4	-34.5	.5	-95.2	-54.24	-13	-41.24	V
Mid Channel, 707.5MHz										
1.407778	41.59	Pk	28.8	-34.9	1	-95.2	-58.71	-13	-45.71	V
1.408267	42.32	Pk	28.8	-34.9	1	-95.2	-57.98	-13	-44.98	H
2.101861	46.81	Pk	31.2	-34.9	.6	-95.2	-51.49	-13	-38.49	V
2.123022	42.94	Pk	31.2	-34.9	.5	-95.2	-55.46	-13	-42.46	H
2.851467	41.26	Pk	32.2	-34.4	.6	-95.2	-55.54	-13	-42.54	V
2.856845	42.37	Pk	32.3	-34.4	.6	-95.2	-54.33	-13	-41.33	H
High Channel, 708.5MHz										
1.401422	42.54	Pk	28.8	-34.9	1	-95.2	-57.76	-13	-44.76	V
1.4112	42.74	Pk	28.8	-34.9	1	-95.2	-57.56	-13	-44.56	H
2.112756	42.21	Pk	31.2	-34.9	.6	-95.2	-56.09	-13	-43.09	H
2.120089	42.67	Pk	31.2	-34.8	.5	-95.2	-55.63	-13	-42.63	V
2.820667	41.96	Pk	32.3	-34.4	.5	-95.2	-54.84	-13	-41.84	V
2.843156	41.97	Pk	32.2	-34.4	.6	-95.2	-54.83	-13	-41.83	H

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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.

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QPSK LTE BAND 13 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/29/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE13 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 782MHz										
1.555422	39.16	Pk	28.2	-29.5	.8	-95.2	-56.54	-40	-416.54	V
1.558356	39.69	Pk	28.2	-29.5	.8	-95.2	-56.01	-40	-16.01	H
2.341067	37.92	Pk	31.8	-28.2	.5	-95.2	-53.18	-13	-40.18	H
2.344	36.89	Pk	31.8	-28.2	.5	-95.2	-54.21	-13	-41.21	V
3.120356	36.02	Pk	33.2	-26.6	.6	-95.2	-51.98	-13	-38.98	V
3.130623	38.34	Pk	33.1	-26.7	.6	-95.2	-49.86	-13	-36.86	H

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10.2.5. LTE BAND 14 AND 5G NR n14

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 #:	14040866
Date:	04/29/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE14 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 793MHz										
1.570578	39.48	Pk	28.1	-29.5	.9	-95.2	-56.22	-40	-16.22	V
1.581333	39.71	Pk	28	-29.5	.8	-95.2	-56.19	-40	-16.19	H
2.369911	37.7	Pk	32	-28	.5	-95.2	-53.00	-13	-40.00	V
2.371378	38.05	Pk	32	-28	.5	-95.2	-52.65	-13	-39.65	H
3.175112	38.03	Pk	32.8	-26.6	.5	-95.2	-50.47	-13	-37.47	H
3.178045	37.22	Pk	32.9	-26.6	.5	-95.2	-51.18	-13	-38.18	V

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BPSK 5G NR n14 (10.0MHZ BANDWIDTH)

Project #:	14040863
Date:	07/14/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N14 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 793MHz										
1.570089	42.57	Pk	28.2	-34.8	.8	-95.2	-58.43	-40	-18.43	H
1.573511	41.86	Pk	28.2	-34.8	.8	-95.2	-59.14	-40	-19.14	V
2.371867	42.63	Pk	32.2	-34.8	.6	-95.2	-54.57	-13	-41.57	V
2.372845	43.13	Pk	32.2	-34.8	.6	-95.2	-54.07	-13	-41.07	H
3.1756	42.25	Pk	33.2	-34.1	.5	-95.2	-53.35	-13	-40.35	V
3.190267	42.39	Pk	33.2	-34	.5	-95.2	-53.11	-13	-40.11	H

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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 #:	14040866
Date:	04/11/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE17 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 709MHz										
1.409733	39.85	Pk	28.9	-29.9	.9	-95.2	-55.45	-13	-42.45	H
1.411689	40.73	Pk	28.8	-29.9	.9	-95.2	-54.67	-13	-41.67	V
2.138178	37.78	Pk	31.6	-28.3	.5	-95.2	-53.62	-13	-40.62	H
2.1416	39.6	Pk	31.6	-28.4	.5	-95.2	-51.9	-13	-38.9	V
2.828489	37.54	Pk	32.2	-27.2	.7	-95.2	-51.96	-13	-38.96	V
2.836311	38.41	Pk	32.3	-27.2	.7	-95.2	-50.99	-13	-37.99	H
Mid Channel, 710MHz										
1.4156	39.85	Pk	28.8	-29.9	.9	-95.2	-55.55	-13	-42.55	V
1.416578	40.47	Pk	28.8	-29.8	.9	-95.2	-54.83	-13	-41.83	H
2.1284	37.91	Pk	31.6	-28.5	.5	-95.2	-53.69	-13	-40.69	H
2.131334	37.12	Pk	31.6	-28.4	.5	-95.2	-54.38	-13	-41.38	V
2.828978	37.91	Pk	32.2	-27.2	.7	-95.2	-51.59	-13	-38.59	H
2.829956	36.29	Pk	32.2	-27.3	.7	-95.2	-53.31	-13	-40.31	V
High Channel, 711MHz										
1.409244	40.13	Pk	28.9	-29.9	.9	-95.2	-55.17	-13	-42.17	H
1.412178	40.09	Pk	28.8	-29.9	.9	-95.2	-55.31	-13	-42.31	V
2.132311	38.02	Pk	31.6	-28.4	.5	-95.2	-53.48	-13	-40.48	V
2.142578	37.67	Pk	31.6	-28.4	.5	-95.2	-53.83	-13	-40.83	H
2.831911	37.05	Pk	32.2	-27.3	.7	-95.2	-52.55	-13	-39.55	V
2.835823	35.99	Pk	32.3	-27.3	.7	-95.2	-53.51	-13	-40.51	H

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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 #:	14040866
Date:	6/29/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1860MHz									
3.719063	41.47	Pk	32.9	-32.1	-95.2	-52.93	-13	-39.93	H
3.729844	42.02	Pk	32.9	-32	-95.2	-52.28	-13	-39.28	V
5.554219	38.31	Pk	34.8	-29.7	-95.2	-51.79	-13	-38.79	H
5.561719	39.41	Pk	34.7	-29.7	-95.2	-50.79	-13	-37.79	V
7.427344	36.61	Pk	35.9	-26.4	-95.2	-49.09	-13	-36.09	H
7.465781	35.59	Pk	36	-26	-95.2	-49.61	-13	-36.61	V
Mid Channel, 1882.5MHz									
3.765	40.95	Pk	33	-32	-95.2	-53.25	-13	-40.25	V
3.778125	40.82	Pk	33.2	-32	-95.2	-53.18	-13	-40.18	H
5.639531	37.77	Pk	34.6	-29.9	-95.2	-52.73	-13	-39.73	V
5.652188	39.13	Pk	34.7	-30.1	-95.2	-51.47	-13	-38.47	H
7.54125	36.59	Pk	36	-26.1	-95.2	-48.71	-13	-35.71	H
7.554844	35.37	Pk	36	-26.2	-95.2	-50.03	-13	-37.03	V
High Channel, 1905MHz									
3.800625	41.96	Pk	33.5	-31.9	-95.2	-51.64	-13	-38.64	H
3.821719	38.01	Pk	33.6	-31.8	-95.2	-55.39	-13	-42.39	V
5.68875	37.93	Pk	34.8	-29.7	-95.2	-52.17	-13	-39.17	V
5.698594	39.71	Pk	34.9	-29.4	-95.2	-49.99	-13	-36.99	H
7.590469	35.33	Pk	35.9	-26.4	-95.2	-50.37	-13	-37.37	H
7.626094	36.23	Pk	35.9	-26.4	-95.2	-49.47	-13	-36.47	V

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BPSK 5G NR 25 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/04/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n25 BPSK 40MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1870MHz									
3.762656	40.8	Pk	33.6	-32	-95.2	-52.80	-13	-39.80	H
3.765	40.34	Pk	33.5	-32	-95.2	-53.36	-13	-40.36	V
5.64375	39.84	Pk	35	-30.1	-95.2	-50.46	-13	-37.46	V
5.647031	39.72	Pk	35	-30.1	-95.2	-50.58	-13	-37.58	H
7.477969	36.57	Pk	35.7	-26.2	-95.2	-49.13	-13	-36.13	H
7.479844	34.89	Pk	35.7	-26.2	-95.2	-50.81	-13	-37.81	V
Mid Channel, 1882.5MHz									
3.021094	41.81	Pk	33	-33.6	-95.2	-53.99	-13	-40.99	V
3.800156	40.65	Pk	33.6	-31.9	-95.2	-52.85	-13	-39.85	V
3.805313	40.05	Pk	33.6	-31.9	-95.2	-53.45	-13	-40.45	H
5.575313	39.21	Pk	34.9	-29.7	-95.2	-50.79	-13	-37.79	H
5.589844	39.69	Pk	34.9	-29.6	-95.2	-50.21	-13	-37.21	V
7.546406	34.89	Pk	35.8	-26.2	-95.2	-50.71	-13	-37.71	V
High Channel, 1895MHz									
3.744844	40.73	Pk	33.5	-32.1	-95.2	-53.07	-13	-40.07	V
3.749063	40.73	Pk	33.5	-32.1	-95.2	-53.07	-13	-40.07	H
5.680781	38.72	Pk	34.9	-29.7	-95.2	-51.28	-13	-38.28	V
5.703281	38.89	Pk	34.8	-29.4	-95.2	-50.91	-13	-37.91	H
7.515938	38.07	Pk	35.7	-26.2	-95.2	-47.63	-13	-34.63	V
7.595156	34.92	Pk	35.8	-26.2	-95.2	-50.68	-13	-37.68	H

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10.2.8. LTE BAND 26 AND 5G NR n26

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 #:	14040866
Date:	04/11/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE25 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 819MHz										
1.639511	39.15	Pk	28.5	-29.4	.7	-95.2	-56.25	-13	-43.25	V
1.641956	39.59	Pk	28.5	-29.4	.7	-95.2	-55.81	-13	-42.81	H
2.448134	37.61	Pk	32	-28.1	.5	-95.2	-53.19	-13	-40.19	V
2.457423	37.49	Pk	32	-28.2	.5	-95.2	-53.41	-13	-40.41	H
3.252845	37.01	Pk	32.7	-26.3	.4	-95.2	-51.39	-13	-38.39	V
3.262623	36.29	Pk	32.7	-26.4	.6	-95.2	-52.01	-13	-39.01	H

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BPSK 5G NR n26 (10.0MHZ BANDWIDTH)

Project #:	14040863
Date:	04/05/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N26 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.634133	43.01	Pk	28.4	-34.9	.7	-95.2	-57.99	-13	-44.99	H
1.6356	42.29	Pk	28.5	-34.9	.7	-95.2	-58.61	-13	-45.61	V
2.457911	42.31	Pk	32.4	-34.8	.6	-95.2	-54.69	-13	-41.69	V
2.468208	44.6	Pk	32.6	-34.8	.5	-95.2	-52.30	-13	-39.30	H
3.289512	41.78	Pk	32.7	-33.8	.5	-95.2	-54.02	-13	-41.02	V
3.298312	42.17	Pk	32.6	-33.9	.5	-95.2	-53.83	-13	-40.83	H

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10.2.9. LTE BAND 26 AND 5G NR n26

LIMITS

FCC: §22.917(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/11/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE26 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 831.5MHz										
1.642445	39.03	Pk	28.5	-29.4	.7	-95.2	-56.37	-13	-43.37	V
1.647333	39.28	Pk	28.5	-29.4	.7	-95.2	-56.12	-13	-43.12	H
2.481378	37.56	Pk	32.2	-28.1	.5	-95.2	-53.04	-13	-40.04	V
2.4848	38.6	Pk	32.2	-28	.5	-95.2	-51.90	-13	-38.90	H
3.331556	35.93	Pk	32.6	-26.6	.5	-95.2	-52.77	-13	-39.77	V
3.333512	37.89	Pk	32.6	-26.6	.5	-95.2	-50.81	-13	-37.81	H
Mid Channel, 836.5MHz										
1.656133	38.68	Pk	28.5	-29.4	.8	-95.2	-56.62	-13	-43.62	V
1.666889	39.04	Pk	28.5	-29.4	.7	-95.2	-56.36	-13	-43.36	H
2.504845	37.23	Pk	32.3	-28	.7	-95.2	-52.97	-13	-39.97	V
2.513156	37.49	Pk	32.4	-28.1	.7	-95.2	-52.71	-13	-39.71	H
3.339378	36.61	Pk	32.6	-26.5	.5	-95.2	-51.99	-13	-38.99	V
3.340845	36.61	Pk	32.6	-26.5	.5	-95.2	-51.99	-13	-38.99	H
High Channel, 841.5MHz										
1.672756	38.87	Pk	28.4	-29.3	.7	-95.2	-56.53	-13	-43.53	V
1.677645	40.12	Pk	28.4	-29.3	.7	-95.2	-55.28	-13	-42.28	H
2.519023	36.86	Pk	32.4	-28.1	.8	-95.2	-53.24	-13	-40.24	H
2.523423	37.57	Pk	32.4	-28.1	.8	-95.2	-52.53	-13	-39.53	V
3.383867	36.15	Pk	32.8	-26.4	.6	-95.2	-52.05	-13	-39.05	V
3.389245	36.07	Pk	32.8	-26.4	.6	-95.2	-52.13	-13	-39.13	H

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BPSK 5G NR n26 (20.0MHZ BANDWIDTH)

Project #:	14040863
Date:	04/06/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N26 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834.0MHz										
1.682045	43.67	Pk	28.6	-34.9	.7	-95.2	-57.13	-13	-44.13	H
1.6972	42.01	Pk	28.9	-34.9	.6	-95.2	-58.59	-13	-45.59	V
2.474075	61.57	Pk	32.6	-34.8	.5	-95.2	-35.33	-13	-22.33	V
2.474175	56.67	Pk	32.6	-34.8	.5	-95.2	-40.23	-13	-27.23	H
3.332045	41.21	Pk	32.6	-33.7	.5	-95.2	-54.59	-13	-41.59	H
3.337423	41.66	Pk	32.6	-33.7	.5	-95.2	-54.14	-13	-41.14	V
Mid Channel, 836.5MHz										
1.624845	42.31	Pk	28.4	-34.9	.7	-95.2	-58.69	-13	-45.69	H
1.628756	42.23	Pk	28.4	-34.9	.7	-95.2	-58.77	-13	-45.77	V
2.5244	41.21	Pk	32.7	-34.7	.5	-95.2	-55.49	-13	-42.49	V
2.528311	41.85	Pk	32.7	-34.7	.5	-95.2	-54.85	-13	-41.85	H
3.335467	41.56	Pk	32.6	-33.7	.5	-95.2	-54.24	-13	-41.24	H
3.3384	40.94	Pk	32.6	-33.7	.5	-95.2	-54.86	-13	-41.86	V
High Channel, 839.0MHz										
1.629733	41.86	Pk	28.4	-34.9	.7	-95.2	-59.14	-13	-46.14	V
1.638533	42.64	Pk	28.4	-34.9	.7	-95.2	-58.36	-13	-45.36	H
2.426753	44.96	Pk	32.1	-34.8	.6	-95.2	-52.34	-13	-39.34	V
2.488723	46.17	Pk	32.7	-34.8	.5	-95.2	-50.63	-13	-37.63	H
3.347689	42.58	Pk	32.5	-33.7	.4	-95.2	-53.42	-13	-40.42	H
3.347689	41.84	Pk	32.5	-33.7	.4	-95.2	-54.16	-13	-41.16	V

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10.2.11. 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 #:	14040866
Date:	07/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.589063	35.89	RMS	34.1	-29.2	-95.2	-54.41	-40	-14.41	V
4.611563	36.99	RMS	34.3	-29	-95.2	-52.91	-40	-12.91	H
6.910313	34.48	RMS	35.9	-26.2	-95.2	-51.02	-40	-11.02	H
6.940313	33.95	RMS	35.7	-26	-95.2	-51.55	-40	-11.55	V
9.257344	32.11	RMS	36.5	-23.5	-95.2	-50.09	-40	-10.09	V
9.263438	32.37	RMS	36.5	-23.5	-95.2	-49.83	-40	-9.83	H

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BPSK 5G NR 30 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	6/01/2022
Test Engineer:	25196
Configuration:	EUT only
Mode	n30 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.589063	35.89	RMS	34.1	-29.2	-95.2	-54.41	-40	-14.41	V
4.611563	36.99	RMS	34.3	-29	-95.2	-52.91	-40	-12.91	H
6.910313	34.48	RMS	35.9	-26.2	-95.2	-51.02	-40	-11.02	H
6.940313	33.95	RMS	35.7	-26	-95.2	-51.55	-40	-11.55	V
9.257344	32.11	RMS	36.5	-23.5	-95.2	-50.09	-40	-10.09	V
9.263438	32.37	RMS	36.5	-23.5	-95.2	-49.83	-40	-9.83	H

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10.2.12. 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 #:	14040866
Date:	04/15/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.018438	36.14	Pk	34.2	-24.2	.8	-95.2	-48.26	-25	-23.26	V
5.02875	35.43	Pk	34.3	-24.2	.7	-95.2	-48.97	-25	-23.97	H
7.517344	31.93	Pk	35.6	-20.1	.3	-95.2	-47.47	-25	-22.47	V
7.522969	32.45	Pk	35.6	-20.1	.3	-95.2	-46.95	-25	-21.95	H
10.037344	33.07	Pk	37.1	-17.8	.7	-95.2	-42.13	-25	-17.13	H
10.041094	31.48	Pk	37.1	-17.8	.7	-95.2	-43.72	-25	-18.72	V
Mid Channel, 2593MHz										
5.196563	34.77	Pk	34.4	-23.5	.8	-95.2	-48.73	-25	-23.73	V
5.207344	35.53	Pk	34.4	-23.6	1	-95.2	-47.87	-25	-22.87	H
7.757344	32.24	Pk	35.8	-19.7	.3	-95.2	-46.56	-25	-21.56	H
7.77375	32.47	Pk	35.7	-19.9	.3	-95.2	-46.63	-25	-21.63	V
10.360781	33.18	Pk	37.5	-16.9	.8	-95.2	-40.62	-25	-15.62	H
10.385156	31.68	Pk	37.5	-17.1	.8	-95.2	-42.32	-25	-17.32	V
High Channel, 2680MHz										
5.374219	34.34	Pk	34.5	-23.7	.6	-95.2	-49.46	-25	-24.46	V
5.379844	34.1	Pk	34.6	-23.8	.6	-95.2	-49.70	-25	-24.70	H
8.054531	33.21	Pk	35.7	-19.5	.4	-95.2	-45.39	-25	-20.39	H
8.055938	32.45	Pk	35.7	-19.5	.4	-95.2	-46.15	-25	-21.15	V
10.728281	31.9	Pk	38	-17.1	.7	-95.2	-41.70	-25	-16.70	V
10.748906	31.89	Pk	37.9	-16.8	.8	-95.2	-41.41	-25	-16.41	H

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BPSK 5G NR n41 (100.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/05/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n41 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2546MHz										
5.087813	38.7	Pk	34.2	-30.5	.8	-95.2	-52.00	-25	-27.00	V
5.099531	38.57	Pk	34.2	-30.4	.8	-95.2	-52.03	-25	-27.03	H
7.644375	35.68	Pk	35.9	-26.9	.4	-95.2	-50.12	-25	-25.12	H
7.677656	35.81	Pk	35.9	-26.8	.4	-95.2	-49.89	-25	-24.89	V
10.202344	35.4	Pk	37.3	-24.9	.8	-95.2	-46.60	-25	-21.60	H
10.226719	34.72	Pk	37.3	-24.9	.9	-95.2	-47.18	-25	-22.18	V
Mid Channel, 2593MHz										
5.200781	38.99	Pk	34.2	-30.6	.9	-95.2	-51.71	-25	-26.71	H
5.208281	38.66	Pk	34.2	-30.5	1	-95.2	-51.84	-25	-26.84	V
7.798594	35.48	Pk	35.9	-26.7	.4	-95.2	-50.12	-25	-25.12	V
7.801406	36.59	Pk	35.9	-26.7	.4	-95.2	-49.01	-25	-24.01	H
10.338281	35	Pk	37.5	-24.8	.6	-95.2	-46.90	-25	-21.90	H
10.343438	34.87	Pk	37.5	-24.8	.7	-95.2	-46.93	-25	-21.93	V
High Channel, 2640MHz										
5.29125	38.22	Pk	34.3	-30.3	.4	-95.2	-52.58	-25	-27.58	V
5.291719	37.63	Pk	34.3	-30.3	.4	-95.2	-53.17	-25	-28.17	H
7.903594	36.04	Pk	35.9	-26.5	.4	-95.2	-49.36	-25	-24.36	V
7.920938	35.14	Pk	35.9	-26.5	.2	-95.2	-50.46	-25	-25.46	H
10.529531	35.38	Pk	37.8	-24.4	.5	-95.2	-45.92	-25	-20.92	H
10.567031	34.96	Pk	37.8	-24.5	.8	-95.2	-46.14	-25	-21.14	V

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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.

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QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/12/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.418594	36.02	Pk	32.7	-26.1	-95.2	-52.58	-13	-39.58	V
3.434531	36.58	Pk	32.7	-26.1	-95.2	-52.02	-13	-39.02	H
5.14125	34.98	Pk	34.3	-23.3	-95.2	-49.22	-13	-36.22	H
5.142656	34.32	Pk	34.3	-23.3	-95.2	-49.88	-13	-36.88	V
6.845625	33.31	Pk	35.5	-20.7	-95.2	-47.09	-13	-34.09	V
6.861094	33.31	Pk	35.5	-20.9	-95.2	-47.29	-13	-34.29	H
Mid Channel, 1745MHz									
3.492188	36.56	Pk	32.6	-25.6	-95.2	-51.64	-13	-38.64	V
3.508125	35.06	Pk	32.8	-25.5	-95.2	-52.84	-13	-39.84	H
5.222813	34.87	Pk	34.5	-23.9	-95.2	-49.73	-13	-36.73	H
5.234063	34.52	Pk	34.5	-23.9	-95.2	-50.08	-13	-37.08	V
6.953438	34.83	Pk	35.5	-20.4	-95.2	-45.27	-13	-32.27	H
6.953438	33.8	Pk	35.5	-20.4	-95.2	-46.30	-13	-33.30	V
High Channel, 1770MHz									
3.554063	36.1	Pk	33	-24.9	-95.2	-51.00	-13	-38.00	V
3.565781	35.35	Pk	32.9	-25	-95.2	-51.95	-13	-38.95	H
5.314688	33.52	Pk	34.5	-22.9	-95.2	-50.08	-13	-37.08	V
5.316563	34.36	Pk	34.5	-22.9	-95.2	-49.24	-13	-36.24	H
7.065469	32.99	Pk	35.6	-19.6	-95.2	-46.21	-13	-33.21	V
7.073906	33.49	Pk	35.5	-19.8	-95.2	-46.01	-13	-33.01	H

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BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/08/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n66 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.508125	41.14	Pk	33	-32.9	-95.2	-53.96	-13	-40.96	H
3.510938	40.74	Pk	33.1	-32.9	-95.2	-54.26	-13	-41.26	V
5.194219	38.3	Pk	34.2	-29.1	-95.2	-51.80	-13	-38.80	H
5.202188	38.19	Pk	34.2	-29.2	-95.2	-52.01	-13	-39.01	V
6.931406	35.5	Pk	35.8	-26	-95.2	-49.90	-13	-36.90	H
6.945938	35.33	Pk	35.7	-26.1	-95.2	-50.27	-13	-37.27	V
Mid Channel, 1745MHz									
3.452813	40.95	Pk	32.7	-33	-95.2	-54.55	-13	-41.55	V
3.473438	40.63	Pk	32.9	-32.9	-95.2	-54.57	-13	-41.57	H
5.25375	37.54	Pk	34.2	-28.9	-95.2	-52.36	-13	-39.36	H
5.260781	37.14	Pk	34.2	-29	-95.2	-52.86	-13	-39.86	V
6.93	35.71	Pk	35.8	-26	-95.2	-49.69	-13	-36.69	V
6.957188	36.35	Pk	35.7	-26.3	-95.2	-49.45	-13	-36.45	H
High Channel, 1760MHz									
3.518438	40.84	Pk	33.1	-32.8	-95.2	-54.06	-13	-41.06	V
3.519375	40.71	Pk	33.1	-32.8	-95.2	-54.19	-13	-41.19	H
5.287031	38.32	Pk	34.2	-29.3	-95.2	-51.98	-13	-38.98	H
5.328866	40.56	Pk	34.4	-30.3	-95.2	-50.54	-13	-37.54	V
7.004063	36.06	Pk	35.7	-26.4	-95.2	-49.84	-13	-36.84	V
7.036875	36.34	Pk	35.6	-26.8	-95.2	-50.06	-13	-37.06	H

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10.2.14. 5G NR n70

LIMITS

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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

Project #:	14040863
Date:	04/08/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N70 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.454219	40.67	Pk	32.7	-33	-95.2	-54.83	-13	-41.83	H
3.459844	40.21	Pk	32.8	-33	-95.2	-55.19	-13	-42.19	V
5.119219	39.01	Pk	34.2	-30.2	-95.2	-52.19	-13	-39.19	V
5.125313	38.93	Pk	34.2	-30.1	-95.2	-52.17	-13	-39.17	H
6.816094	36.35	Pk	35.7	-26.9	-95.2	-50.05	-13	-37.05	H
6.837656	35.36	Pk	35.8	-26.8	-95.2	-50.84	-13	-37.84	V

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10.2.15. 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 #:	14040866
Date:	04/12/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE71 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.359867	40.63	Pk	29.4	-30.1	1	-95.2	-54.27	-13	-41.27	H
1.360356	40.2	Pk	29.4	-30.1	1	-95.2	-54.70	-13	-41.70	V
2.025245	38.69	Pk	30.8	-28.7	.5	-95.2	-53.91	-13	-40.91	V
2.029156	39.69	Pk	30.8	-28.7	.5	-95.2	-52.91	-13	-39.91	H
2.699423	37.54	Pk	32.2	-27.7	.5	-95.2	-52.66	-13	-39.66	V
2.705289	37.42	Pk	32.2	-27.7	.5	-95.2	-52.78	-13	-39.78	H
Mid Channel, 680.5MHz										
1.3584	41.03	Pk	29.4	-30.1	1	-95.2	-53.87	-13	-40.87	H
1.360356	41.06	Pk	29.4	-30.1	1	-95.2	-53.84	-13	-40.84	V
2.040889	37.41	Pk	30.8	-28.8	.6	-95.2	-55.19	-13	-42.19	V
2.046756	38.8	Pk	30.9	-28.8	.5	-95.2	-53.80	-13	-40.80	H
2.725823	38.12	Pk	32.1	-27.4	.5	-95.2	-51.88	-13	-38.88	H
2.728267	36.33	Pk	32.1	-27.4	.5	-95.2	-53.67	-13	-40.67	V
High Channel, 688MHz										
1.374044	39.41	Pk	29.3	-29.9	1	-95.2	-55.39	-13	-42.39	V
1.381867	39.65	Pk	29.3	-29.9	1	-95.2	-55.15	-13	-42.15	H
2.069245	38.03	Pk	31.2	-28.7	.5	-95.2	-54.17	-13	-41.17	H
2.071689	37.87	Pk	31.2	-28.7	.5	-95.2	-54.33	-13	-41.33	V
2.736578	36.08	Pk	32	-27.3	.5	-95.2	-53.92	-13	-40.92	V
2.741956	36.45	Pk	32	-27.3	.5	-95.2	-53.55	-13	-40.55	H

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BPSK 5G NR 71 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/16/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n71 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.323689	42.42	Pk	28.8	-34.8	1.3	-95.2	-57.48	-13	-44.48	V
1.329556	41.81	Pk	29	-34.8	1.3	-95.2	-57.89	-13	-44.89	H
2.019378	41.99	Pk	31.3	-34.8	.6	-95.2	-56.11	-13	-43.11	H
2.019378	41.67	Pk	31.3	-34.8	.6	-95.2	-56.43	-13	-43.43	V
2.684756	41.76	Pk	32.4	-34.6	.5	-95.2	-55.14	-13	-42.14	H
2.686711	42.04	Pk	32.4	-34.6	.5	-95.2	-54.86	-13	-41.86	V
Mid Channel, 680.5MHz										
1.356933	42.39	Pk	29.1	-34.8	1.1	-95.2	-57.41	-13	-44.41	H
1.363778	42.2	Pk	29.1	-34.9	1.1	-95.2	-57.70	-13	-44.70	V
2.013391	44.36	Pk	31.3	-34.8	.6	-95.2	-53.74	-13	-40.74	V
2.016541	44.6	Pk	31.3	-34.8	.6	-95.2	-53.50	-13	-40.50	H
2.730711	43.03	Pk	32.4	-34.6	.5	-95.2	-53.87	-13	-40.87	H
2.734623	42.44	Pk	32.5	-34.6	.5	-95.2	-54.36	-13	-41.36	V
High Channel, 688MHz										
1.365244	42.95	Pk	28.6	-34.7	1	-95.2	-57.35	-13	-44.35	H
1.367689	41.35	Pk	28.6	-34.8	1	-95.2	-59.05	-13	-46.05	V
2.045289	41.37	Pk	31.9	-34.8	.6	-95.2	-56.13	-13	-43.13	V
2.057511	43.49	Pk	32	-34.8	.6	-95.2	-53.91	-13	-40.91	H
2.742445	40.47	Pk	32.3	-34.5	.6	-95.2	-56.33	-13	-43.33	V
2.745378	41.96	Pk	32.3	-34.5	.6	-95.2	-54.84	-13	-41.84	H

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10.3. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 3

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

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10.3.1. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

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QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.010938	38.07	Pk	34.1	-30.8	.8	-95.2	-53.03	-25	-28.03	V
5.03625	38.73	Pk	34	-30.7	.6	-95.2	-52.57	-25	-27.57	H
7.520156	35.42	Pk	35.7	-27	.3	-95.2	-50.78	-25	-25.78	V
7.520625	36.39	Pk	35.8	-27	.3	-95.2	-49.71	-25	-24.71	H
10.022813	34.86	Pk	37.1	-24.8	.6	-95.2	-47.44	-25	-22.44	V
10.033594	33.98	Pk	37.1	-24.8	.7	-95.2	-48.22	-25	-23.22	H
Mid Channel, 2535MHz										
5.087813	38.21	Pk	34.2	-30.5	.8	-95.2	-52.49	-25	-27.49	V
5.095781	38.85	Pk	34.2	-30.4	.8	-95.2	-51.75	-25	-26.75	H
7.595625	35.22	Pk	35.8	-27	.5	-95.2	-50.68	-25	-25.68	H
7.606875	35.46	Pk	35.9	-27	.4	-95.2	-50.44	-25	-25.44	V
10.150313	34.99	Pk	37.2	-24.8	.6	-95.2	-47.21	-25	-22.21	H
10.177031	34.6	Pk	37.3	-25	.6	-95.2	-47.70	-25	-22.70	V
High Channel, 2560MHz										
5.158594	39.19	Pk	34.3	-30.5	.8	-95.2	-51.41	-25	-26.41	V
5.160469	38.93	Pk	34.2	-30.5	.8	-95.2	-51.77	-25	-26.77	H
7.675313	35.07	Pk	35.9	-26.7	.4	-95.2	-50.53	-25	-25.53	H
7.684219	35.52	Pk	35.8	-26.7	.5	-95.2	-50.08	-25	-25.08	V
10.267969	35.04	Pk	37.3	-24.9	.7	-95.2	-47.06	-25	-22.06	V
10.283906	34.09	Pk	37.4	-24.8	.7	-95.2	-47.81	-25	-22.81	H

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BPSK 5G NR 7 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/07/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n7 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2520MHz										
5.040469	38.4	Pk	34	-30.7	.6	-95.2	-52.90	-25	-27.90	V
5.041406	38.57	Pk	34	-30.7	.6	-95.2	-52.73	-25	-27.73	H
7.5375	35.58	Pk	35.8	-27	.3	-95.2	-50.52	-25	-25.52	V
7.544063	36.27	Pk	35.8	-26.9	.3	-95.2	-49.73	-25	-24.73	H
10.081875	34.31	Pk	37.2	-24.9	.6	-95.2	-47.99	-25	-22.99	V
10.08375	34.09	Pk	37.1	-24.9	.6	-95.2	-48.31	-25	-23.31	H
Mid Channel, 2535MHz										
5.030156	38.38	Pk	34	-30.7	.7	-95.2	-52.82	-25	-27.82	V
5.050781	38.49	Pk	34.1	-30.7	.6	-95.2	-52.71	-25	-27.71	H
7.553124	38.55	Pk	35.8	-26.9	.3	-95.2	-47.45	-25	-22.45	H
7.552031	35.54	Pk	35.8	-26.9	.3	-95.2	-50.46	-25	-25.46	V
11.165625	34.27	Pk	37.9	-23	.6	-95.2	-45.43	-25	-20.43	V
11.1675	33.53	Pk	37.9	-23	.6	-95.2	-46.17	-25	-21.17	H
High Channel, 2550MHz										
5.114063	38.69	Pk	34.2	-30.7	.8	-95.2	-52.21	-25	-27.21	V
5.119219	38.64	Pk	34.2	-30.7	.8	-95.2	-52.26	-25	-27.26	H
7.67625	35.3	Pk	35.9	-26.7	.4	-95.2	-50.30	-25	-25.30	H
7.693594	35.58	Pk	35.8	-26.7	.5	-95.2	-50.02	-25	-25.02	V
10.235156	36.33	Pk	37.3	-25	.8	-95.2	-45.77	-25	-20.77	V
10.271719	36.57	Pk	37.3	-24.8	.7	-95.2	-45.43	-25	-20.43	H

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10.3.2. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.238(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/18/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.716719	41.77	Pk	33.3	-32.2	-95.2	-52.33	-13	-39.33	V
3.732188	40.39	Pk	33.5	-32.2	-95.2	-53.51	-13	-40.51	H
5.588906	37.55	Pk	34.9	-29.6	-95.2	-52.35	-13	-39.35	V
5.59875	38.4	Pk	35	-29.7	-95.2	-51.50	-13	-38.50	H
7.432969	35.34	Pk	35.8	-26.4	-95.2	-50.46	-13	-37.46	H
7.44	35.7	Pk	35.8	-26.3	-95.2	-50.00	-13	-37.00	V
Mid Channel, 1882.5MHz									
3.763594	39.4	Pk	33.6	-32	-95.2	-54.20	-13	-41.20	H
3.774844	39.24	Pk	33.5	-32	-95.2	-54.46	-13	-41.46	V
5.625	37.57	Pk	35	-29.9	-95.2	-52.53	-13	-39.53	V
5.633438	38.88	Pk	35	-30	-95.2	-51.32	-13	-38.32	H
7.467656	36.85	Pk	35.7	-26.1	-95.2	-48.75	-13	-35.75	V
7.536094	35.49	Pk	35.8	-26.1	-95.2	-50.01	-13	-37.01	H
High Channel, 1905MHz									
3.787969	40.49	Pk	33.6	-31.9	-95.2	-53.01	-13	-40.01	V
3.802031	40.81	Pk	33.6	-31.8	-95.2	-52.59	-13	-39.59	H
5.717813	38.86	Pk	34.8	-29.2	-95.2	-50.74	-13	-37.74	V
5.738906	37.26	Pk	34.8	-28.8	-95.2	-51.94	-13	-38.94	H
7.606406	36.06	Pk	35.9	-26.3	-95.2	-49.54	-13	-36.54	V
7.618594	36.56	Pk	35.7	-26.5	-95.2	-49.44	-13	-36.44	H

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BPSK 5G NR 25 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/06/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n25 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1870MHz									
3.75375	40.45	Pk	33.5	-32.1	-95.2	-53.35	-13	-40.35	V
3.762656	42.11	Pk	33.6	-32	-95.2	-51.49	-13	-38.49	H
5.606719	38.3	Pk	35	-29.7	-95.2	-51.6	-13	-38.6	H
5.614688	38.76	Pk	35	-29.8	-95.2	-51.24	-13	-38.24	V
7.460625	35.46	Pk	35.8	-26.2	-95.2	-50.14	-13	-37.14	H
7.496719	36.58	Pk	35.8	-26.3	-95.2	-49.12	-13	-36.12	V
Mid Channel, 1882.5MHz									
3.7425	42.83	Pk	33.5	-32.1	-95.2	-50.97	-13	-37.97	H
3.753281	40.56	Pk	33.5	-32.1	-95.2	-53.24	-13	-40.24	V
5.658281	38.94	Pk	35	-30.1	-95.2	-51.36	-13	-38.36	H
5.659219	39.58	Pk	35	-30.1	-95.2	-50.72	-13	-37.72	V
7.595391	35.93	Pk	35.8	-26.2	-95.2	-49.67	-13	-36.67	H
7.607813	35.91	Pk	35.9	-26.4	-95.2	-49.79	-13	-36.79	V
High Channel, 1895MHz									
3.748594	41.1	Pk	33.5	-32.1	-95.2	-52.7	-13	-39.7	V
3.759375	41.15	Pk	33.5	-32.1	-95.2	-52.65	-13	-39.65	H
5.685938	39.04	Pk	34.9	-29.7	-95.2	-50.96	-13	-37.96	V
5.694375	39.13	Pk	34.9	-29.5	-95.2	-50.67	-13	-37.67	H
7.581094	37.51	Pk	35.8	-26.2	-95.2	-48.09	-13	-35.09	H
7.584375	36.11	Pk	35.8	-26.2	-95.2	-49.49	-13	-36.49	V

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10.3.3. LTE BAND 30 AND 5G NR n30

LIMITS

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

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	07/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.604531	37.87	RMS	34.2	-29	-95.2	-52.13	-40	-12.13	H
4.609219	36.36	RMS	34.2	-29	-95.2	-53.64	-40	-13.64	V
6.948281	33.91	RMS	35.7	-26.1	-95.2	-51.69	-40	-11.69	H
6.952969	34.05	RMS	35.7	-26.2	-95.2	-51.65	-40	-11.65	V
9.256406	32.34	RMS	36.5	-23.5	-95.2	-49.86	-40	-9.86	H
9.25875	31.85	RMS	36.5	-23.5	-95.2	-50.35	-40	-10.35	V

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BPSK 5G NR 30 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	07/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n30 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.6125	36.25	RMS	34.3	-29	-95.2	-53.65	-40	-13.65	H
4.622813	37.74	RMS	34.3	-29.1	-95.2	-52.26	-40	-12.26	V
6.92625	34	RMS	35.8	-26	-95.2	-51.40	-40	-11.40	V
6.93	34.69	RMS	35.8	-26	-95.2	-50.71	-40	-10.71	H
9.239531	32.98	RMS	36.4	-23.5	-95.2	-49.32	-40	-9.32	H
9.245625	30.99	RMS	36.5	-23.5	-95.2	-51.21	-40	-11.21	V

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10.3.4. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)

At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2506MHz										
4.978594	38.5	Pk	34.1	-30.8	.6	-95.2	-52.80	-25	-27.80	V
4.990313	39.79	Pk	34	-30.8	.7	-95.2	-51.51	-25	-26.51	H
7.495313	34.7	Pk	35.8	-26.8	.3	-95.2	-51.20	-25	-26.20	V
7.514063	36.24	Pk	35.7	-27	.3	-95.2	-49.96	-25	-24.96	H
10.070625	34.11	Pk	37.2	-25	.7	-95.2	-48.19	-25	-23.19	H
10.085625	34.21	Pk	37.2	-24.9	.6	-95.2	-48.09	-25	-23.09	V
Mid Channel, 2593MHz										
5.179688	38.28	Pk	34.2	-30.6	.7	-95.2	-52.62	-25	-27.62	V
5.188594	38.25	Pk	34.2	-30.7	.8	-95.2	-52.65	-25	-27.65	H
7.7775	37.18	Pk	35.9	-26.9	.3	-95.2	-48.72	-25	-23.72	H
7.786406	37.73	Pk	35.9	-26.8	.4	-95.2	-47.97	-25	-22.97	V
10.302656	33.78	Pk	37.4	-25.1	.6	-95.2	-48.52	-25	-23.52	V
10.323281	34.77	Pk	37.5	-24.9	.6	-95.2	-47.23	-25	-22.23	H
High Channel, 2680MHz										
5.360625	37.61	Pk	34.5	-30.1	.5	-95.2	-52.69	-25	-27.69	V
5.372344	37.5	Pk	34.5	-30.1	.6	-95.2	-52.70	-25	-27.70	H
8.071406	35.68	Pk	35.9	-26.1	.3	-95.2	-49.42	-25	-24.42	H
8.085	35.82	Pk	35.8	-26.2	.3	-95.2	-49.48	-25	-24.48	V
10.7625	35.01	Pk	38	-24	.9	-95.2	-45.29	-25	-20.29	H
10.76625	33.12	Pk	38	-23.9	.9	-95.2	-47.08	-25	-22.08	V

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BPSK LTE BAND 41 (100.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/07/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n41 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2546MHz										
5.086875	37.68	Pk	34.2	-30.5	.8	-95.2	-53.02	-25	-28.02	V
5.100469	38.74	Pk	34.1	-30.5	.8	-95.2	-52.06	-25	-27.06	H
7.635938	36.09	Pk	35.9	-26.9	.4	-95.2	-49.71	-25	-24.71	H
7.636875	35.08	Pk	35.9	-26.9	.4	-95.2	-50.72	-25	-25.72	V
10.185	34.43	Pk	37.3	-25	.6	-95.2	-47.87	-25	-22.87	H
10.189219	34.71	Pk	37.2	-24.9	.7	-95.2	-47.49	-25	-22.49	V
Mid Channel, 2593MHz										
5.211563	38.31	Pk	34.1	-30.5	1	-95.2	-52.29	-25	-27.29	H
5.213906	38.9	Pk	34.2	-30.5	1	-95.2	-51.60	-25	-26.60	V
7.769531	36.51	Pk	35.8	-26.9	.3	-95.2	-49.49	-25	-24.49	V
7.79625	35.93	Pk	35.9	-26.8	.4	-95.2	-49.77	-25	-24.77	H
10.311094	35.25	Pk	37.4	-25	.6	-95.2	-46.95	-25	-21.95	H
10.327031	35.26	Pk	37.5	-24.8	.6	-95.2	-46.64	-25	-21.64	V
High Channel, 2640MHz										
5.2875	37.81	Pk	34.2	-30.2	.4	-95.2	-52.99	-25	-27.99	V
5.294063	38.37	Pk	34.3	-30.3	.4	-95.2	-52.43	-25	-27.43	H
7.940156	35.77	Pk	35.8	-26.5	.2	-95.2	-49.93	-25	-24.93	V
7.942969	35.26	Pk	35.8	-26.5	.2	-95.2	-50.44	-25	-25.44	H
10.549688	34	Pk	37.9	-24.5	.6	-95.2	-47.20	-25	-22.20	V
10.551563	34.59	Pk	37.8	-24.5	.6	-95.2	-46.71	-25	-21.71	H

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10.3.5. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.42375	35.21	Pk	32.7	-26.1	-95.2	-53.39	-13	-40.39	V
3.433125	36.5	Pk	32.7	-26.1	-95.2	-52.10	-13	-39.10	H
5.150156	35.88	Pk	34.4	-23.5	-95.2	-48.42	-13	-35.42	H
5.151094	34.37	Pk	34.4	-23.5	-95.2	-49.93	-13	-36.93	V
6.870938	33.19	Pk	35.4	-20.8	-95.2	-47.41	-13	-34.41	V
6.872813	33.63	Pk	35.4	-20.8	-95.2	-46.97	-13	-33.97	H
Mid Channel, 1745MHz									
3.465	36	Pk	32.6	-26.1	-95.2	-52.70	-13	-39.70	V
3.474844	36.52	Pk	32.7	-25.9	-95.2	-51.88	-13	-38.88	H
5.230781	34.78	Pk	34.5	-24	-95.2	-49.92	-13	-36.92	H
5.237344	34.74	Pk	34.5	-23.8	-95.2	-49.76	-13	-36.76	V
7.002188	33.57	Pk	35.5	-19.6	-95.2	-45.73	-13	-32.73	H
7.005938	32.8	Pk	35.5	-19.6	-95.2	-46.50	-13	-33.50	V
High Channel, 1770MHz									
3.526875	35.77	Pk	32.9	-25.3	-95.2	-51.83	-13	-38.83	V
3.539531	35.06	Pk	32.9	-25	-95.2	-52.24	-13	-39.24	H
5.29875	34.21	Pk	34.4	-23.3	-95.2	-49.89	-13	-36.89	V
5.306719	34.38	Pk	34.4	-23	-95.2	-49.42	-13	-36.42	H
7.051875	33.6	Pk	35.6	-19.6	-95.2	-45.60	-13	-32.60	H
7.05375	32.44	Pk	35.6	-19.6	-95.2	-46.76	-13	-33.76	V

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BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/07/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n66 BPSK 40MHz
Chamber #:	Chamber

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.44625	40.58	Pk	32.7	-33	-95.2	-54.92	-13	-41.92	V
3.467344	41.4	Pk	32.8	-32.9	-95.2	-53.90	-13	-40.90	H
5.146875	39.24	Pk	34.2	-29.8	-95.2	-51.56	-13	-38.56	H
5.151563	38.65	Pk	34.3	-29.8	-95.2	-52.05	-13	-39.05	V
6.910313	36.56	Pk	35.8	-26.4	-95.2	-49.24	-13	-36.24	H
6.912656	35.42	Pk	35.8	-26.3	-95.2	-50.28	-13	-37.28	V
Mid Channel, 1745MHz									
3.462656	41.07	Pk	32.8	-33	-95.2	-54.33	-13	-41.33	H
3.463594	39.9	Pk	32.8	-33	-95.2	-55.50	-13	-42.50	V
5.246719	37.9	Pk	34.1	-28.9	-95.2	-52.10	-13	-39.10	H
5.251875	37.74	Pk	34.1	-28.8	-95.2	-52.16	-13	-39.16	V
6.975938	36.06	Pk	35.8	-26.3	-95.2	-49.64	-13	-36.64	H
7.006875	35.63	Pk	35.7	-26.4	-95.2	-50.27	-13	-37.27	V
High Channel, 1760MHz									
3.5475	41.02	Pk	33.1	-32.7	-95.2	-53.78	-13	-40.78	H
3.549141	41.26	Pk	33.1	-32.7	-95.2	-53.54	-13	-40.54	V
5.2875	37.27	Pk	34.2	-29.3	-95.2	-53.03	-13	-40.03	H
5.291719	37.05	Pk	34.3	-29.4	-95.2	-53.25	-13	-40.25	V
7.019531	36.26	Pk	35.7	-26.7	-95.2	-49.94	-13	-36.94	H
7.020469	36.42	Pk	35.7	-26.7	-95.2	-49.78	-13	-36.78	V

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10.3.6. 5G NR n70

LIMITS

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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

Project #:	14040863
Date:	04/08/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N70 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.422813	41.06	Pk	32.6	-33	-95.2	-54.54	-13	-41.54	H
3.429844	40.76	Pk	32.6	-33	-95.2	-54.84	-13	-41.84	V
5.128125	39.89	Pk	34.2	-30.1	-95.2	-51.21	-13	-38.21	H
5.139844	39.16	Pk	34.2	-29.9	-95.2	-51.74	-13	-38.74	V
6.808594	36.45	Pk	35.7	-26.9	-95.2	-49.95	-13	-36.95	H
6.831563	35.91	Pk	35.8	-26.8	-95.2	-50.29	-13	-37.29	V

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10.4. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 4

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

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10.4.1. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

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QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.039063	39.21	Pk	33.9	-30.7	.6	-95.2	-52.19	-25	-27.19	V
5.040938	38.49	Pk	34	-30.7	.6	-95.2	-52.81	-25	-27.81	H
7.53	35.18	Pk	35.8	-27	.3	-95.2	-50.92	-25	-25.92	H
7.542656	35.99	Pk	35.8	-27	.3	-95.2	-50.11	-25	-25.11	V
10.081406	35.18	Pk	37.2	-24.9	.6	-95.2	-47.12	-25	-22.12	H
10.116094	34.81	Pk	37.2	-25	.7	-95.2	-47.49	-25	-22.49	V
Mid Channel, 2535MHz										
3.002813	41.54	Pk	32.9	-34.2	6.3	-95.2	-48.66	-25	-23.66	V
5.090156	37.38	Pk	34.2	-30.5	.8	-95.2	-53.32	-25	-28.32	H
5.110313	38.51	Pk	34.2	-30.5	.8	-95.2	-52.19	-25	-27.19	V
7.607813	36.37	Pk	35.9	-27	.4	-95.2	-49.53	-25	-24.53	H
7.6275	35.09	Pk	35.8	-26.9	.4	-95.2	-50.81	-25	-25.81	V
10.146094	33.99	Pk	37.3	-24.7	.6	-95.2	-48.01	-25	-23.01	V
High Channel, 2560MHz										
5.098125	38.7	Pk	34.2	-30.4	.8	-95.2	-51.90	-25	-26.90	V
5.106563	38.61	Pk	34.1	-30.5	.8	-95.2	-52.19	-25	-27.19	H
7.709063	35.85	Pk	35.9	-26.9	.4	-95.2	-49.95	-25	-24.95	H
7.709531	34.39	Pk	35.9	-26.9	.4	-95.2	-51.41	-25	-26.41	V
10.238906	34.46	Pk	37.3	-25	.8	-95.2	-47.64	-25	-22.64	V
10.239844	35.38	Pk	37.3	-25	.8	-95.2	-46.72	-25	-21.72	H

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BPSK 5G NR 7 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/12/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n7 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2520MHz										
5.052188	38.98	Pk	34.1	-30.6	.6	-95.2	-52.12	-25	-27.12	H
5.054531	37.7	Pk	34.1	-30.6	.6	-95.2	-53.40	-25	-28.40	V
7.560938	35.63	Pk	35.8	-27	.4	-95.2	-50.37	-25	-25.37	V
7.568906	36.73	Pk	35.8	-27	.4	-95.2	-49.27	-25	-24.27	H
10.0575	34.47	Pk	37.1	-25	.7	-95.2	-47.93	-25	-22.93	H
10.068281	33.79	Pk	37.2	-25	.7	-95.2	-48.51	-25	-23.51	V
Mid Channel, 2535MHz										
5.089219	38.19	Pk	34.2	-30.5	.8	-95.2	-52.51	-25	-27.51	H
5.09625	38.59	Pk	34.2	-30.4	.8	-95.2	-52.01	-25	-27.01	V
7.579219	35.94	Pk	35.8	-27	.5	-95.2	-49.96	-25	-24.96	V
7.584375	36.69	Pk	35.8	-27.1	.5	-95.2	-49.31	-25	-24.31	H
10.17	34.69	Pk	37.3	-24.9	.6	-95.2	-47.51	-25	-22.51	H
10.170938	33.94	Pk	37.3	-24.9	.6	-95.2	-48.26	-25	-23.26	V
High Channel, 2550MHz										
5.07	39.19	Pk	34.1	-30.6	.7	-95.2	-51.81	-25	-26.81	V
5.101875	38.08	Pk	34.1	-30.5	.8	-95.2	-52.72	-25	-27.72	H
7.617188	35.1	Pk	35.8	-26.9	.4	-95.2	-50.80	-25	-25.80	V
7.64625	35.6	Pk	35.9	-26.9	.4	-95.2	-50.20	-25	-25.20	H
10.208906	35.1	Pk	37.3	-24.8	.9	-95.2	-46.70	-25	-21.70	V
10.229531	35.89	Pk	37.2	-24.9	.8	-95.2	-46.21	-25	-21.21	H

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10.4.2. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.238(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.725625	40.51	Pk	33.4	-32.2	-95.2	-53.49	-13	-40.49	H
3.739219	40.31	Pk	33.5	-32.2	-95.2	-53.59	-13	-40.59	V
5.580938	38.5	Pk	34.8	-29.6	-95.2	-51.50	-13	-38.50	V
5.593125	39.11	Pk	35	-29.6	-95.2	-50.69	-13	-37.69	H
7.495313	37.19	Pk	35.8	-26.3	-95.2	-48.51	-13	-35.51	H
7.50375	36.24	Pk	35.8	-26.3	-95.2	-49.46	-13	-36.46	V
Mid Channel, 1882.5MHz									
3.764063	41.44	Pk	33.5	-32	-95.2	-52.26	-13	-39.26	V
3.793594	40.51	Pk	33.6	-31.9	-95.2	-52.99	-13	-39.99	H
5.620751	47.08	Pk	35	-29.9	-95.2	-43.02	-13	-30.02	V
5.653125	38.87	Pk	34.9	-30	-95.2	-51.43	-13	-38.43	H
7.527656	36.87	Pk	35.8	-26.1	-95.2	-48.63	-13	-35.63	H
7.537969	35.94	Pk	35.8	-26.1	-95.2	-49.56	-13	-36.56	V
High Channel, 1905MHz									
3.81375	40.07	Pk	33.7	-31.8	-95.2	-53.23	-13	-40.23	H
3.824063	40.92	Pk	33.7	-31.8	-95.2	-52.38	-13	-39.38	V
5.688211	47.01	Pk	34.9	-29.6	-95.2	-42.89	-13	-29.89	V
5.730469	38.61	Pk	34.8	-28.9	-95.2	-50.69	-13	-37.69	H
7.593281	35.52	Pk	35.8	-26.2	-95.2	-50.08	-13	-37.08	H
7.599844	35.75	Pk	35.8	-26.3	-95.2	-49.95	-13	-36.95	V

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BPSK 5G NR 25 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/12/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n25 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1870MHz									
3.747656	41.03	Pk	33.5	-32.1	-95.2	-52.77	-13	-39.77	H
3.753281	40.46	Pk	33.5	-32.1	-95.2	-53.34	-13	-40.34	V
5.631563	39.23	Pk	35.1	-30	-95.2	-50.87	-13	-37.87	H
5.648906	38.29	Pk	35	-30.1	-95.2	-52.01	-13	-39.01	V
7.484063	35.3	Pk	35.7	-26.3	-95.2	-50.50	-13	-37.50	V
7.492031	36.3	Pk	35.8	-26.3	-95.2	-49.40	-13	-36.40	H
Mid Channel, 1882.5MHz									
3.795	41.11	Pk	33.6	-31.9	-95.2	-52.39	-13	-39.39	H
3.800859	40.49	Pk	33.6	-31.8	-95.2	-52.91	-13	-39.91	V
5.649844	38.95	Pk	35	-30.1	-95.2	-51.35	-13	-38.35	H
5.6625	38.73	Pk	35	-30	-95.2	-51.47	-13	-38.47	V
7.550625	35.23	Pk	35.7	-26.2	-95.2	-50.47	-13	-37.47	H
7.558125	35.74	Pk	35.8	-26.3	-95.2	-49.96	-13	-36.96	V
High Channel, 1995MHz									
3.803438	40.62	Pk	33.6	-31.8	-95.2	-52.78	-13	-39.78	V
3.807656	39.54	Pk	33.6	-31.8	-95.2	-53.86	-13	-40.86	H
5.692031	39.76	Pk	34.9	-29.5	-95.2	-50.04	-13	-37.04	H
5.700469	38.5	Pk	34.9	-29.4	-95.2	-51.20	-13	-38.20	V
7.569844	34.98	Pk	35.8	-26.3	-95.2	-50.72	-13	-37.72	V
7.585313	35.4	Pk	35.7	-26.2	-95.2	-50.30	-13	-37.30	H

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10.4.3. LTE BAND 30 AND 5G NR n30

LIMITS

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

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	07/01/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.621875	36.31	RMS	34.3	-29.1	-95.2	-53.69	-40	-13.69	V
4.629375	36.31	RMS	34.2	-29.1	-95.2	-53.79	-40	-13.79	H
6.944531	34.95	RMS	35.7	-26.1	-95.2	-50.65	-40	-10.65	V
6.960469	34.5	RMS	35.7	-26.3	-95.2	-51.3	-40	-11.3	H
9.22875	32.43	RMS	36.4	-23.6	-95.2	-49.97	-40	-9.97	V
9.251719	32.45	RMS	36.5	-23.5	-95.2	-49.75	-40	-9.75	H

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BPSK 5G NR 30 (10.0MHZ BANDWIDTH)

Project #:	14040866
Date:	07/01/2022
Test Engineer:	25196
Configuration:	EUT only
Mode	n30 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.579688	35.21	RMS	34.1	-29.5	-95.2	-55.39	-40	-15.39	V
4.610156	38.19	RMS	34.2	-29	-95.2	-51.81	-40	-11.81	H
6.941719	33.49	RMS	35.7	-26	-95.2	-52.01	-40	-12.01	V
6.974063	34.85	RMS	35.7	-26.4	-95.2	-51.05	-40	-11.05	H
9.249844	31.73	RMS	36.5	-23.5	-95.2	-50.47	-40	-10.47	H
9.283125	32.69	RMS	36.6	-23.5	-95.2	-49.41	-40	-9.41	V

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10.4.4. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

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QPSK LTE BAND 41 (20MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.048906	38.85	Pk	34.1	-30.7	.6	-95.2	-52.35	-25	-27.35	H
5.053594	38.38	Pk	34.1	-30.6	.6	-95.2	-52.72	-25	-27.72	V
7.54125	36.56	Pk	35.8	-26.9	.3	-95.2	-49.44	-25	-24.44	H
7.568438	35.71	Pk	35.8	-27	.4	-95.2	-50.29	-25	-25.29	V
10.038281	34.51	Pk	37.1	-24.9	.7	-95.2	-47.79	-25	-22.79	H
10.063125	33.95	Pk	37.2	-25	.7	-95.2	-48.35	-25	-23.35	V
Mid Channel, 2593MHz										
3.002813	41.54	Pk	32.9	-34.2	6.3	-95.2	-48.66	-25	-23.66	V
5.090156	37.38	Pk	34.2	-30.5	.8	-95.2	-53.32	-25	-28.32	H
5.110313	38.51	Pk	34.2	-30.5	.8	-95.2	-52.19	-25	-27.19	V
7.607813	36.37	Pk	35.9	-27	.4	-95.2	-49.53	-25	-24.53	H
7.6275	35.09	Pk	35.8	-26.9	.4	-95.2	-50.81	-25	-25.81	V
10.146094	33.99	Pk	37.3	-24.7	.6	-95.2	-48.01	-25	-23.01	V
High Channel, 2680MHz										
5.310938	38.22	Pk	34.4	-30.4	.7	-95.2	-52.28	-25	-27.28	V
5.327344	37.85	Pk	34.4	-30.3	.8	-95.2	-52.45	-25	-27.45	H
8.054063	35.73	Pk	35.8	-26.3	.4	-95.2	-49.57	-25	-24.57	V
8.064844	35.26	Pk	35.9	-26.2	.4	-95.2	-49.84	-25	-24.84	H
10.737656	36.54	Pk	38	-24.1	.7	-95.2	-44.06	-25	-19.06	H
10.753125	34	Pk	38	-24.1	.9	-95.2	-46.40	-25	-21.40	V

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BPSK 5G NR n41 (100.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/13/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n41 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2546MHz										
5.095781	37.72	Pk	34.2	-30.4	.8	-95.2	-52.88	-25	-27.88	V
5.106094	39.38	Pk	34.1	-30.5	.8	-95.2	-51.42	-25	-26.42	H
7.603594	36.53	Pk	35.8	-27	.4	-95.2	-49.47	-25	-24.47	V
7.608281	36.33	Pk	35.8	-26.9	.4	-95.2	-49.57	-25	-24.57	H
10.135781	33.73	Pk	37.2	-24.8	.7	-95.2	-48.37	-25	-23.37	V
10.139063	34.84	Pk	37.2	-24.8	.7	-95.2	-47.26	-25	-22.26	H
Mid Channel, 2593MHz										
5.162813	39.84	Pk	34.2	-30.5	.7	-95.2	-50.96	-25	-25.96	V
5.175	40.1	Pk	34.2	-30.6	.7	-95.2	-50.80	-25	-25.80	H
7.786875	36.13	Pk	35.9	-26.8	.4	-95.2	-49.57	-25	-24.57	V
7.802813	35.93	Pk	35.8	-26.7	.4	-95.2	-49.77	-25	-24.77	H
10.413281	34.42	Pk	37.6	-24.4	.8	-95.2	-46.78	-25	-21.78	H
10.431094	34.25	Pk	37.6	-24.6	.8	-95.2	-47.15	-25	-22.15	V
High Channel, 2640MHz										
5.291719	36.91	Pk	34.3	-30.3	.4	-95.2	-53.89	-25	-28.89	H
5.295938	38.47	Pk	34.3	-30.3	.5	-95.2	-52.23	-25	-27.23	V
7.87125	35.97	Pk	35.9	-26.3	.4	-95.2	-49.23	-25	-24.23	V
7.895625	35.2	Pk	35.9	-26.5	.5	-95.2	-50.10	-25	-25.10	H
10.52625	34.95	Pk	37.8	-24.3	.5	-95.2	-46.25	-25	-21.25	V
10.551094	34.59	Pk	37.8	-24.5	.6	-95.2	-46.71	-25	-21.71	H

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10.4.5. LTE BAND 48

LIMITS

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

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	06/04/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.114359	33.09	RMS	35.9	-26.8	.5	-95.2	-52.51	-40	-12.51	V
7.145644	33.42	RMS	36	-27	.6	-95.2	-52.18	-40	-12.18	H
10.641563	31.4	RMS	37.7	-24.2	.6	-95.2	-49.70	-40	-9.70	V
10.683422	32.04	RMS	37.7	-24.3	.6	-95.2	-49.16	-40	-9.16	H
14.206219	30.13	RMS	39.4	-19.9	.7	-95.2	-44.87	-40	-4.87	V
14.22825	30.65	RMS	39.5	-20	.8	-95.2	-44.25	-40	-4.25	H
Mid Channel, 3625MHz										
7.2558	32.94	RMS	35.7	-26.8	.6	-95.2	-52.76	-40	-12.76	V
7.261088	32.85	RMS	35.7	-26.8	.6	-95.2	-52.85	-40	-12.85	H
10.860553	32.12	RMS	37.8	-23.8	.4	-95.2	-48.68	-40	-8.68	H
10.869806	31.85	RMS	37.9	-23.9	.4	-95.2	-48.95	-40	-8.95	V
14.480288	29.89	RMS	39.7	-19.6	.7	-95.2	-44.51	-40	-4.51	H
14.514216	29.41	RMS	39.7	-19.9	.8	-95.2	-45.19	-40	-5.19	V
High Channel, 3690MHz										
7.369481	32.68	RMS	35.7	-26.7	.7	-95.2	-52.82	-40	-12.82	H
7.388869	32.26	RMS	35.8	-26.8	.7	-95.2	-53.24	-40	-13.24	V
11.101575	30.54	RMS	37.8	-23.2	.7	-95.2	-49.36	-40	-9.36	V
11.103338	32.21	RMS	37.8	-23.2	.7	-95.2	-47.69	-40	-7.69	H
14.812519	30.39	RMS	39.9	-20	.9	-95.2	-44.01	-40	-4.01	H
14.825297	30.27	RMS	39.9	-19.8	.8	-95.2	-44.03	-40	-4.03	V

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10.4.6. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/14/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.436406	36.22	Pk	32.7	-26.1	-95.2	-52.38	-13	-39.38	V
3.446719	36.06	Pk	32.7	-26.1	-95.2	-52.54	-13	-39.54	H
5.150625	35.39	Pk	34.4	-23.5	-95.2	-48.91	-13	-35.91	H
5.151094	35.53	Pk	34.4	-23.5	-95.2	-48.77	-13	-35.77	V
6.877031	32.97	Pk	35.5	-20.8	-95.2	-47.53	-13	-34.53	H
6.878906	33	Pk	35.5	-20.8	-95.2	-47.50	-13	-34.50	V
Mid Channel, 1745MHz									
3.459844	35.95	Pk	32.6	-26.1	-95.2	-52.75	-13	-39.75	V
3.480469	36.02	Pk	32.7	-25.8	-95.2	-52.28	-13	-39.28	H
5.215547	34.26	Pk	34.5	-23.9	-95.2	-50.34	-13	-37.34	V
5.218125	34.67	Pk	34.5	-23.9	-95.2	-49.93	-13	-36.93	H
6.988594	33.7	Pk	35.5	-19.8	-95.2	-45.80	-13	-32.80	V
6.994688	32.1	Pk	35.5	-19.7	-95.2	-47.30	-13	-34.30	H
High Channel, 1770MHz									
3.556406	35.92	Pk	32.9	-24.9	-95.2	-51.28	-13	-38.28	H
3.561563	36	Pk	32.9	-25	-95.2	-51.30	-13	-38.30	V
5.308594	34.25	Pk	34.4	-23	-95.2	-49.55	-13	-36.55	H
5.31	33.16	Pk	34.5	-23	-95.2	-50.54	-13	-37.54	V
7.043438	32.66	Pk	35.5	-19.7	-95.2	-46.74	-13	-33.74	V
7.059375	35.74	Pk	35.6	-19.6	-95.2	-43.46	-13	-30.46	H

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BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040866
Date:	04/15/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n66 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.480469	40.42	Pk	32.9	-32.9	-95.2	-54.78	-13	-41.78	0-360
3.480938	41.12	Pk	32.9	-32.9	-95.2	-54.08	-13	-41.08	0-360
5.132374	51.15	Pk	34.2	-30	-95.2	-39.85	-13	-26.85	165
5.1375	38.48	Pk	34.2	-29.9	-95.2	-52.42	-13	-39.42	0-360
6.909844	36.5	Pk	35.8	-26.4	-95.2	-49.3	-13	-36.3	0-360
6.927656	35.83	Pk	35.8	-26.1	-95.2	-49.67	-13	-36.67	0-360
Mid Channel, 1745MHz									
3.480938	40.18	Pk	32.9	-32.9	-95.2	-55.02	-13	-42.02	V
3.483281	41.29	Pk	32.9	-32.9	-95.2	-53.91	-13	-40.91	H
5.191875	37.08	Pk	34.2	-29.1	-95.2	-53.02	-13	-40.02	V
5.212969	38.07	Pk	34.2	-29.2	-95.2	-52.13	-13	-39.13	H
6.928594	35.3	Pk	35.8	-26.1	-95.2	-50.20	-13	-37.20	V
6.957188	35.88	Pk	35.7	-26.3	-95.2	-49.92	-13	-36.92	H
High Channel, 1760MHz									
3.511875	41.09	Pk	33.1	-32.9	-95.2	-53.91	-13	-40.91	H
3.514219	39.86	Pk	33.1	-32.8	-95.2	-55.04	-13	-42.04	V
5.289375	36.92	Pk	34.3	-29.3	-95.2	-53.28	-13	-40.28	V
5.302031	37.25	Pk	34.3	-29.5	-95.2	-53.15	-13	-40.15	H
7.011563	34.84	Pk	35.7	-26.5	-95.2	-51.16	-13	-38.16	V
7.025156	35.19	Pk	35.7	-26.7	-95.2	-51.01	-13	-38.01	H

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10.4.7. 5G NR n70

LIMITS

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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

Project #:	14040863
Date:	04/12/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	N70 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.400313	39.71	Pk	32.5	-33	-95.2	-55.99	-13	-42.99	V
3.416719	41.24	Pk	32.6	-33	-95.2	-54.36	-13	-41.36	H
5.108438	40.06	Pk	34.1	-30.2	-95.2	-51.24	-13	-38.24	H
5.123438	38.85	Pk	34.2	-30.1	-95.2	-52.25	-13	-39.25	V
6.824063	35.75	Pk	35.7	-26.8	-95.2	-50.55	-13	-37.55	V
6.835313	36.66	Pk	35.8	-26.8	-95.2	-49.54	-13	-36.54	H

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10.4.8. 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 #:	14040866
Date:	04/13/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB	208398 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
6.99495	27.41	RMS	35.7	-27.3	.5	-95.2	-58.89	-13	-45.89	V
7.002881	28.39	RMS	35.7	-27.3	.4	-95.2	-58.01	-13	-45.01	H
10.606313	25.53	RMS	37.9	-24.2	.6	-95.2	-55.37	-13	-42.37	H
10.635394	25.29	RMS	37.9	-24.3	.6	-95.2	-55.71	-13	-42.71	V
14.075794	23.29	RMS	38.7	-19.9	.7	-95.2	-52.41	-13	-39.41	H
14.091216	23.44	RMS	38.6	-20.2	.7	-95.2	-52.66	-13	-39.66	V

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

LIMITS

FCC: §27.53
(I) 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 #:	14040866
Date:	04/13/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.555	35.21	Pk	35.8	-26.6	-95.2	-50.79	-13	-37.79	V
7.5575	36.5	Pk	35.8	-26.6	-95.2	-49.50	-13	-36.50	H
11.2745	32.49	Pk	38	-22.3	-95.2	-47.01	-13	-34.01	H
11.28	32.31	Pk	38	-22.4	-95.2	-47.29	-13	-34.29	V
15.0625	32.72	Pk	39.7	-19.6	-95.2	-42.38	-13	-29.38	H
15.069	32.19	Pk	39.7	-19.5	-95.2	-42.81	-13	-29.81	V
Mid Channel, 3840MHz									
7.6765	36.73	Pk	35.9	-26.6	-95.2	-49.17	-13	-36.17	H
7.6765	35.92	Pk	35.9	-26.6	-95.2	-49.98	-13	-36.98	V
11.535	32.86	Pk	38.3	-22.1	-95.2	-46.14	-13	-33.14	V
11.5535	33	Pk	38.3	-21.8	-95.2	-45.70	-13	-32.70	H
15.3225	32.86	Pk	40.1	-19.2	-95.2	-41.44	-13	-28.44	V
15.359	32.78	Pk	40.2	-19.6	-95.2	-41.82	-13	-28.82	H
High Channel, 3930MHz									
7.874	35.33	Pk	35.9	-26.2	-95.2	-50.17	-13	-37.17	H
7.8875	35.4	Pk	35.9	-26.2	-95.2	-50.10	-13	-37.10	V
11.776	33.36	Pk	38.4	-20.9	-95.2	-44.34	-13	-31.34	H
11.784	31.84	Pk	38.4	-20.8	-95.2	-45.76	-13	-32.76	V
15.728	32.23	Pk	40.3	-18.9	-95.2	-41.57	-13	-28.57	H
15.7745	31.85	Pk	40.3	-18.6	-95.2	-41.65	-13	-28.65	V

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10.5. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 7

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

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10.5.1. LTE BAND 48

LIMITS

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

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	06/04/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.125375	32.81	RMS	35.9	-26.9	.5	-95.2	-52.89	-40	-12.89	H
7.133306	33.28	RMS	36	-27	.5	-95.2	-52.42	-40	-12.42	V
10.682541	32.37	RMS	37.7	-24.3	.6	-95.2	-48.83	-40	-8.83	H
10.684744	31.79	RMS	37.7	-24.3	.6	-95.2	-49.41	-40	-9.41	V
14.2212	30.65	RMS	39.4	-19.9	.8	-95.2	-44.25	-40	-4.25	H
14.282006	29.78	RMS	39.5	-20	.7	-95.2	-45.22	-40	-5.22	V
Mid Channel, 3625MHz										
7.265934	33.39	RMS	35.7	-26.8	.6	-95.2	-52.31	-40	-12.31	V
7.266816	34.49	RMS	35.7	-26.7	.6	-95.2	-51.11	-40	-11.11	H
10.854384	31.77	RMS	37.8	-23.7	.5	-95.2	-48.83	-40	-8.83	V
10.870688	32.64	RMS	37.9	-23.9	.4	-95.2	-48.16	-40	-8.16	H
14.557397	30.82	RMS	39.8	-20.3	.8	-95.2	-44.08	-40	-4.08	V
14.560922	30.56	RMS	39.8	-20.2	.8	-95.2	-44.24	-40	-4.24	H
High Channel, 3690MHz										
7.364634	32.58	RMS	35.7	-26.7	.7	-95.2	-52.92	-40	-12.92	V
7.382259	33.23	RMS	35.8	-26.8	.7	-95.2	-52.27	-40	-12.27	H
11.072934	31.78	RMS	37.8	-23.4	.6	-95.2	-48.42	-40	-8.42	H
11.110388	31.11	RMS	37.8	-23.2	.7	-95.2	-48.79	-40	-8.79	V
14.769778	30.19	RMS	39.9	-20.2	.8	-95.2	-44.51	-40	-4.51	H
14.770219	29.43	RMS	39.9	-20.1	.8	-95.2	-45.17	-40	-5.17	V

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10.5.2. 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 #:	14040866
Date:	04/08/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB	208398 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
7.057959	27.33	RMS	35.7	-26.9	.8	-95.2	-58.27	-13	-45.27	H
7.061484	27.17	RMS	35.7	-26.8	.8	-95.2	-58.33	-13	-45.33	V
10.507172	25.95	RMS	37.8	-24.5	.6	-95.2	-55.35	-13	-42.35	H
10.516425	25.64	RMS	37.8	-24.4	.6	-95.2	-55.56	-13	-42.56	V
14.070947	24.02	RMS	38.6	-20	.7	-95.2	-51.88	-13	-38.88	H
14.076234	23	RMS	38.7	-19.9	.7	-95.2	-52.70	-13	-39.70	V

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

LIMITS

FCC: §27.53
(I) 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 #:	14040866
Date:	04/08/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.5085	36.03	Pk	35.7	-26.9	-95.2	-50.37	-13	-37.37	H
7.5185	35.65	Pk	35.7	-26.8	-95.2	-50.65	-13	-37.65	V
11.268	33.44	Pk	38	-22.2	-95.2	-45.96	-13	-32.96	H
11.2695	33.4	Pk	38	-22.2	-95.2	-46.00	-13	-33.00	V
15.051	33.31	Pk	39.7	-19.5	-95.2	-41.69	-13	-28.69	H
15.06	32.33	Pk	39.7	-19.6	-95.2	-42.77	-13	-29.77	V
Mid Channel, 3840MHz									
7.6855	36.76	Pk	35.8	-26.7	-95.2	-49.34	-13	-36.34	V
7.7105	36.75	Pk	35.9	-26.8	-95.2	-49.35	-13	-36.35	H
11.5235	33.59	Pk	38.3	-22.2	-95.2	-45.51	-13	-32.51	H
11.5295	34.06	Pk	38.3	-22.2	-95.2	-45.04	-13	-32.04	V
15.393	32.42	Pk	40.3	-19.6	-95.2	-42.08	-13	-29.08	V
15.397	31.78	Pk	40.3	-19.6	-95.2	-42.72	-13	-29.72	H
High Channel, 3930MHz									
7.8195	35.3	Pk	35.8	-26.4	-95.2	-50.50	-13	-37.50	
7.856	35.38	Pk	35.9	-26.5	-95.2	-50.42	-13	-37.42	
11.799	34.07	Pk	38.5	-20.9	-95.2	-43.53	-13	-30.53	
11.8	33.46	Pk	38.4	-20.9	-95.2	-44.24	-13	-31.24	
15.7355	32.11	Pk	40.3	-18.8	-95.2	-41.59	-13	-28.59	
15.7465	31.88	Pk	40.3	-18.6	-95.2	-41.62	-13	-28.62	

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10.6. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 8

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

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10.6.1. LTE BAND 48

LIMITS

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

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	06/04/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.113478	32.81	RMS	35.9	-26.8	.5	-95.2	-52.79	-40	-12.79	V
7.133747	33.27	RMS	36	-27	.5	-95.2	-52.43	-40	-12.43	H
10.659188	31.39	RMS	37.7	-24	.6	-95.2	-49.51	-40	-9.51	V
10.669763	32.41	RMS	37.7	-24.1	.6	-95.2	-48.59	-40	-8.59	H
14.236181	30.19	RMS	39.5	-20.2	.8	-95.2	-44.91	-40	-4.91	H
14.261297	30.7	RMS	39.5	-19.9	.8	-95.2	-44.10	-40	-4.10	V
Mid Channel, 3625MHz										
7.263731	33.77	RMS	35.7	-26.8	.6	-95.2	-51.93	-40	-11.93	V
7.266816	33.49	RMS	35.7	-26.7	.6	-95.2	-52.11	-40	-12.11	H
10.857028	31.21	RMS	37.8	-23.7	.5	-95.2	-49.39	-40	-9.39	V
10.865841	32.35	RMS	37.9	-23.8	.4	-95.2	-48.35	-40	-8.35	H
14.527875	29.67	RMS	39.8	-19.8	.8	-95.2	-44.73	-40	-4.73	H
14.550347	29.86	RMS	39.8	-20.2	.8	-95.2	-44.94	-40	-4.94	V
High Channel, 3690MHz										
7.399884	32.48	RMS	35.8	-26.8	.6	-95.2	-53.12	-40	-13.12	V
7.409138	33.05	RMS	35.9	-26.8	.6	-95.2	-52.45	-40	-12.45	H
11.028872	32.06	RMS	37.9	-23.3	.6	-95.2	-47.94	-40	-7.94	V
11.047378	31.66	RMS	37.8	-23.3	.6	-95.2	-48.44	-40	-8.44	H
14.675484	29.69	RMS	39.7	-19.5	.9	-95.2	-44.41	-40	-4.41	H
14.694431	29.49	RMS	39.8	-19.9	.9	-95.2	-44.91	-40	-4.91	V

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10.6.2. 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 #:	14040866
Date:	04/8/2022
Test Engineer:	25196
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB	208398 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
7.030641	27.18	RMS	35.6	-27.1	.5	-95.2	-59.02	-13	-46.02	V
7.032844	27.54	RMS	35.6	-27.1	.6	-95.2	-58.56	-13	-45.56	H
10.526119	25.47	RMS	37.8	-24.3	.6	-95.2	-55.63	-13	-42.63	V
10.542422	26.09	RMS	37.9	-24.4	.6	-95.2	-55.01	-13	-42.01	H
14.051559	24.64	RMS	38.6	-20.4	.8	-95.2	-51.56	-13	-38.56	H
14.078438	23.41	RMS	38.6	-19.9	.7	-95.2	-52.39	-13	-39.39	V

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

LIMITS

FCC: §27.53
(I) 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 #:	14040866
Date:	04/11/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.5205	35.64	Pk	35.8	-26.8	-95.2	-50.56	-13	-37.56	V
7.534	35.57	Pk	35.8	-26.7	-95.2	-50.53	-13	-37.53	H
11.245	32.51	Pk	38	-22.5	-95.2	-47.19	-13	-34.19	V
11.2515	32.86	Pk	38	-22.3	-95.2	-46.64	-13	-33.64	H
14.987	31.43	Pk	39.6	-19	-95.2	-43.17	-13	-30.17	V
14.9935	32.34	Pk	39.6	-19.1	-95.2	-42.36	-13	-29.36	H
Mid Channel, 3840MHz									
7.6705	35.11	Pk	35.9	-26.5	-95.2	-50.69	-13	-37.69	V
7.675	35.65	Pk	35.9	-26.5	-95.2	-50.15	-13	-37.15	H
11.53	33.54	Pk	38.3	-22.2	-95.2	-45.56	-13	-32.56	H
11.5345	32.86	Pk	38.3	-22.1	-95.2	-46.14	-13	-33.14	V
15.3665	31.91	Pk	40.2	-19.6	-95.2	-42.69	-13	-29.69	H
15.378	32.46	Pk	40.2	-19.7	-95.2	-42.24	-13	-29.24	V
High Channel, 3930MHz									
7.8905	36.47	Pk	35.9	-26.2	-95.2	-49.03	-13	-36.03	H
7.8955	35.23	Pk	35.9	-26.2	-95.2	-50.27	-13	-37.27	V
11.787	31.96	Pk	38.4	-20.8	-95.2	-45.64	-13	-32.64	H
11.7925	31.67	Pk	38.4	-20.8	-95.2	-45.93	-13	-32.93	V
15.761	32.7	Pk	40.4	-18.5	-95.2	-40.60	-13	-27.60	V
15.7705	31.71	Pk	40.3	-18.6	-95.2	-41.79	-13	-28.79	H

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10.7. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 9

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

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10.7.1. LTE BAND 48

LIMITS

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

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040866
Date:	06/04/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.243903	33.48	RMS	35.7	-26.7	.5	-95.2	-52.22	-40	-12.22	V
7.260206	33.26	RMS	35.7	-26.8	.6	-95.2	-52.44	-40	-12.44	H
10.850419	31.44	RMS	37.8	-23.6	.5	-95.2	-49.06	-40	-9.06	H
10.868044	31.76	RMS	37.9	-23.9	.4	-95.2	-49.04	-40	-9.04	V
14.535806	29.63	RMS	39.8	-19.9	.8	-95.2	-44.87	-40	-4.87	H
14.583394	29.56	RMS	39.7	-19.7	.9	-95.2	-44.74	-40	-4.74	V
Mid Channel, 3625MHz										
7.407816	33.35	RMS	35.9	-26.8	.6	-95.2	-52.15	-40	-12.15	H
7.425881	33.46	RMS	35.9	-26.8	.5	-95.2	-52.14	-40	-12.14	V
11.047819	31.15	RMS	37.8	-23.3	.6	-95.2	-48.95	-40	-8.95	V
11.051784	31.35	RMS	37.8	-23.3	.6	-95.2	-48.75	-40	-8.75	H
14.775066	29.53	RMS	39.9	-20.1	.8	-95.2	-45.07	-40	-5.07	H
14.857022	30.2	RMS	39.9	-19.8	.8	-95.2	-44.10	-40	-4.10	V
High Channel, 3690MHz										
7.103784	32.76	RMS	35.9	-26.8	.5	-95.2	-52.84	-40	-12.84	H
7.105547	32.92	RMS	35.9	-26.8	.5	-95.2	-52.68	-40	-12.68	V
10.665797	31.41	RMS	37.7	-24	.6	-95.2	-49.49	-40	-9.49	V
10.668441	31.99	RMS	37.7	-24.1	.6	-95.2	-49.01	-40	-9.01	H
14.222081	29.34	RMS	39.5	-19.9	.8	-95.2	-45.46	-40	-5.46	H
14.282447	29.79	RMS	39.5	-20	.7	-95.2	-45.21	-40	-5.21	V

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10.7.2. 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 #:	14040866
Date:	04/11/2022
Test Engineer:	25196
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB	208398 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
7.050909	27.8	RMS	35.7	-27	.9	-95.2	-57.80	-13	-44.80	H
7.053553	27.47	RMS	35.7	-26.9	.9	-95.2	-58.03	-13	-45.03	V
10.496597	25.83	RMS	37.8	-24.6	.6	-95.2	-55.57	-13	-42.57	V
10.506291	26.19	RMS	37.8	-24.5	.6	-95.2	-55.11	-13	-42.11	H
14.028206	23.66	RMS	38.6	-20.4	.7	-95.2	-52.64	-13	-39.64	H
14.055525	23.77	RMS	38.6	-20.3	.8	-95.2	-52.33	-13	-39.33	V

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

LIMITS

FCC: §27.53
(I) 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 #:	14040866
Date:	4/11/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.4870	36.33	Pk	35.7	-26.9	-95.2	-50.07	-13	-37.07	H
7.4910	36.1	Pk	35.7	-26.9	-95.2	-50.30	-13	-37.30	V
11.265	31.79	Pk	38	-22.2	-95.2	-47.61	-13	-34.61	V
11.285	33.36	Pk	38	-22.5	-95.2	-46.34	-13	-33.34	H
15.0665	32.47	Pk	39.7	-19.5	-95.2	-42.53	-13	-29.53	H
15.0675	32.21	Pk	39.7	-19.5	-95.2	-42.79	-13	-29.79	V
Mid Channel, 3840MHz									
7.6935	35.6	Pk	35.8	-26.7	-95.2	-50.50	-13	-37.50	H
7.7045	35.05	Pk	35.8	-26.7	-95.2	-51.05	-13	-38.05	V
11.5345	33.18	Pk	38.3	-22.1	-95.2	-45.82	-13	-32.82	V
11.5465	33.77	Pk	38.3	-21.9	-95.2	-45.03	-13	-32.03	H
15.339	32.78	Pk	40.1	-19.3	-95.2	-41.62	-13	-28.62	H
15.357	32.64	Pk	40.2	-19.6	-95.2	-41.96	-13	-28.96	V
High Channel, 3930MHz									
7.8835	34.8	Pk	35.9	-26.2	-95.2	-50.70	-13	-37.70	H
7.887	35.35	Pk	35.9	-26.2	-95.2	-50.15	-13	-37.15	V
11.785	32.18	Pk	38.4	-20.8	-95.2	-45.42	-13	-32.42	V
11.7885	33.84	Pk	38.4	-20.7	-95.2	-43.66	-13	-30.66	H
15.751	31.99	Pk	40.3	-18.6	-95.2	-41.51	-13	-28.51	H
15.7525	32.09	Pk	40.3	-18.6	-95.2	-41.41	-13	-28.41	V

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11. SETUP PHOTOS

Please refer to 14040866-EP1V1 for setup photos

END OF REPORT

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