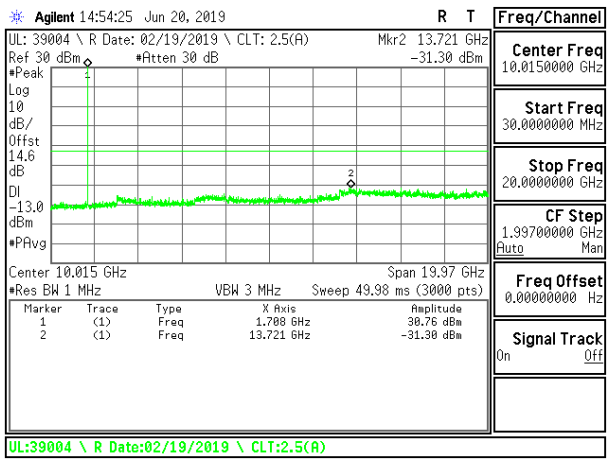

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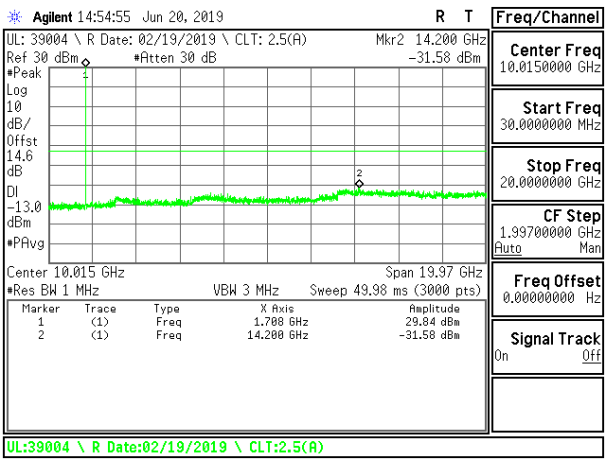

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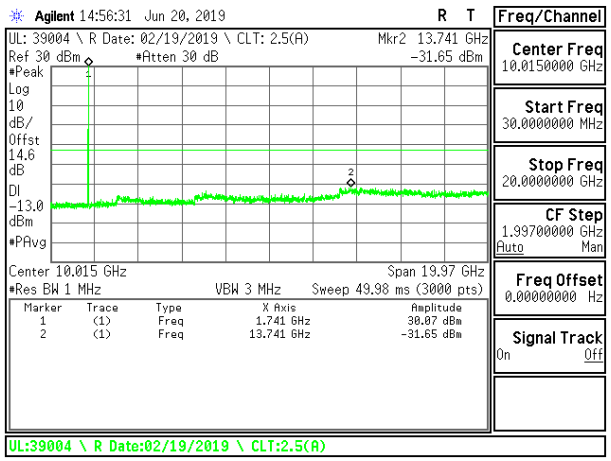

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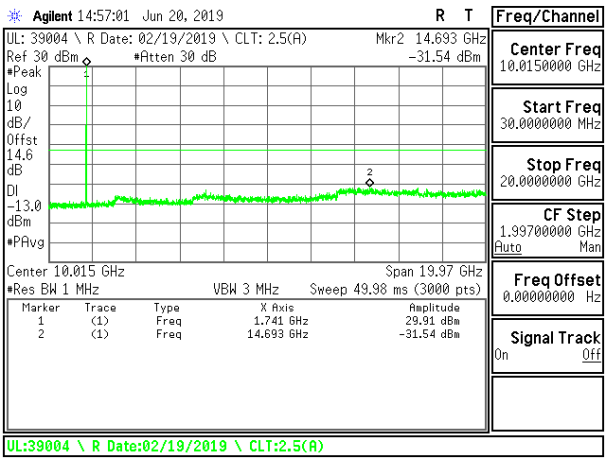

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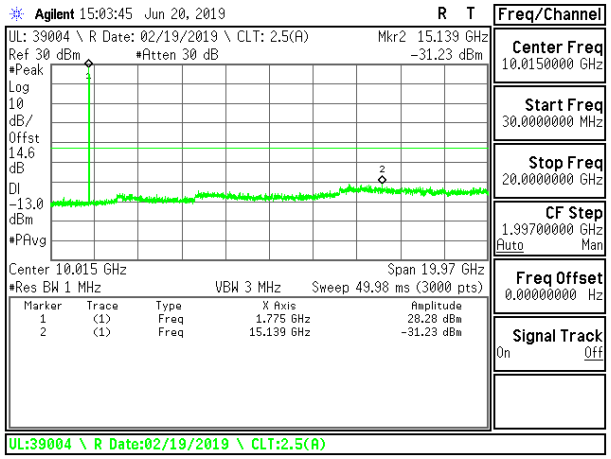

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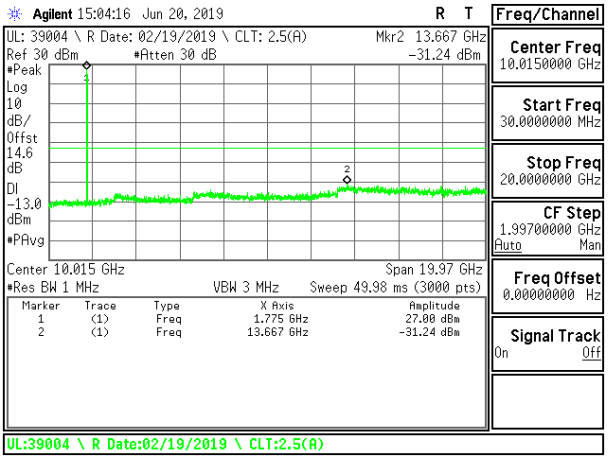

LTE B66 3MHz 16QAM High Channel RB1-0

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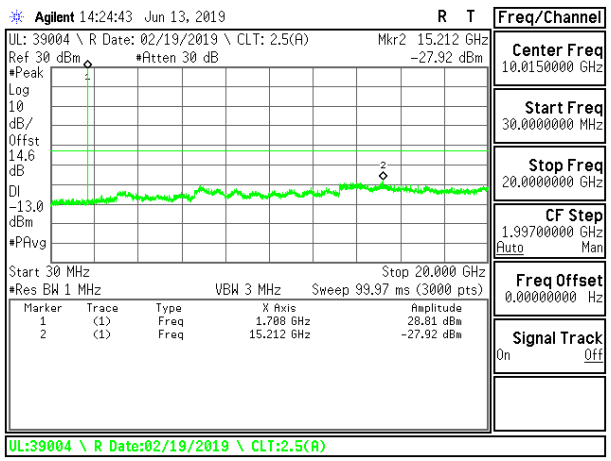

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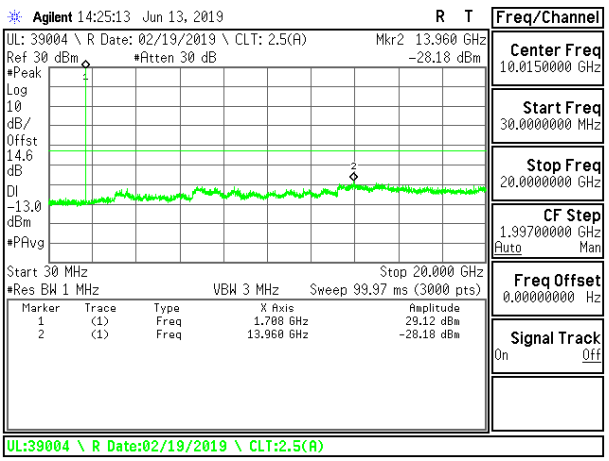

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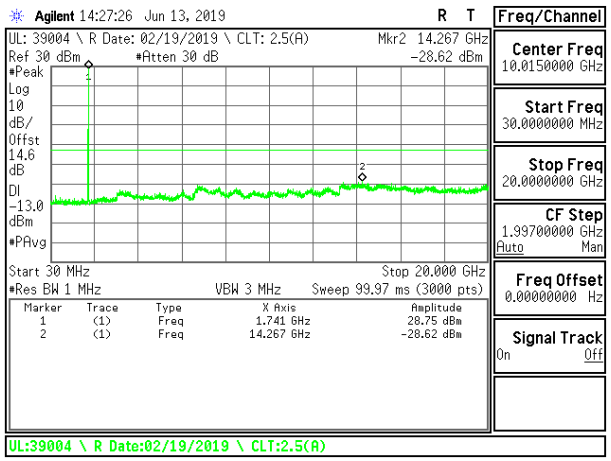

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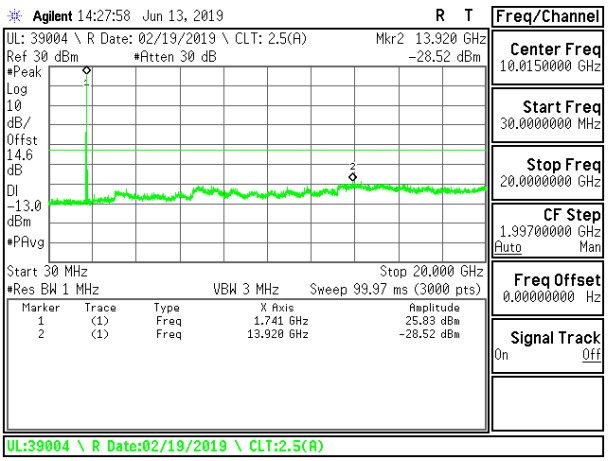
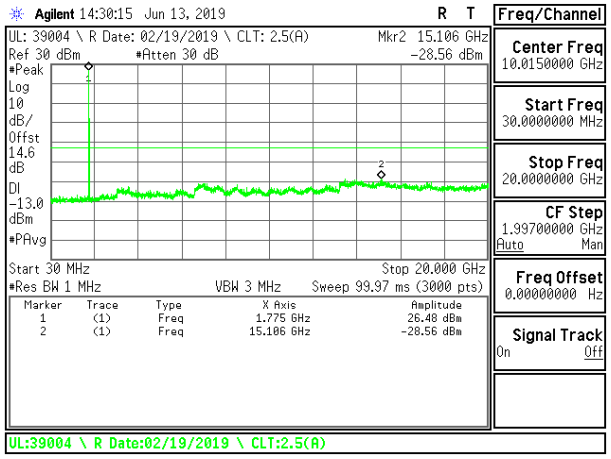
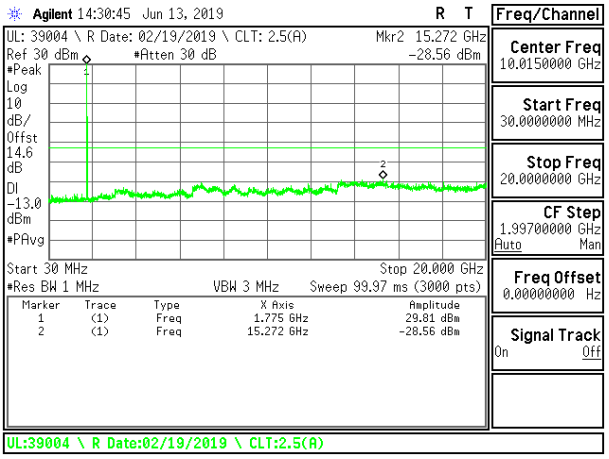


LTE B66 5MHz 16QAM Middle Channel RB1-0



LTE B66 5MHz QPSK High Channel RB1-0



LTE B66 5MHz 16QAM High Channel RB1-0

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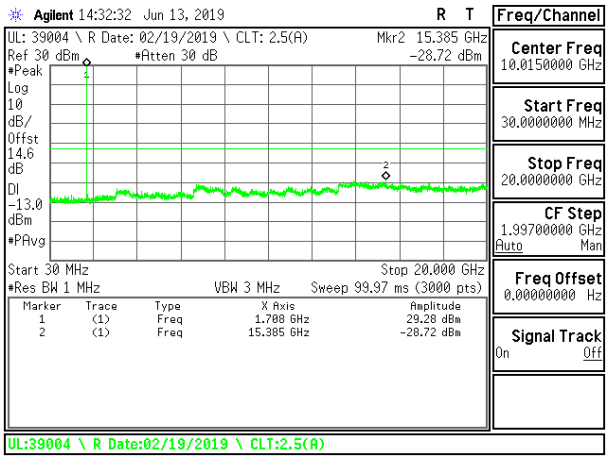

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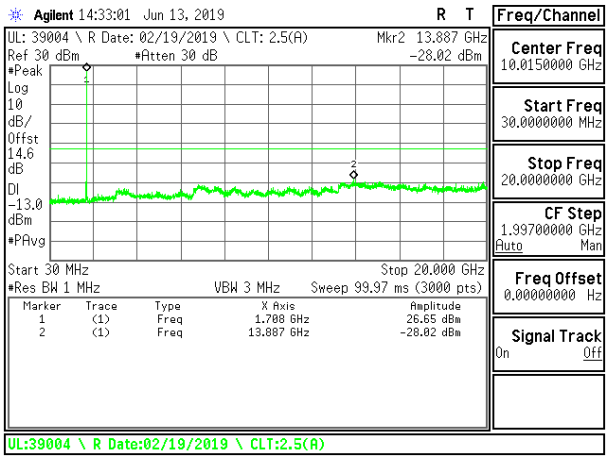

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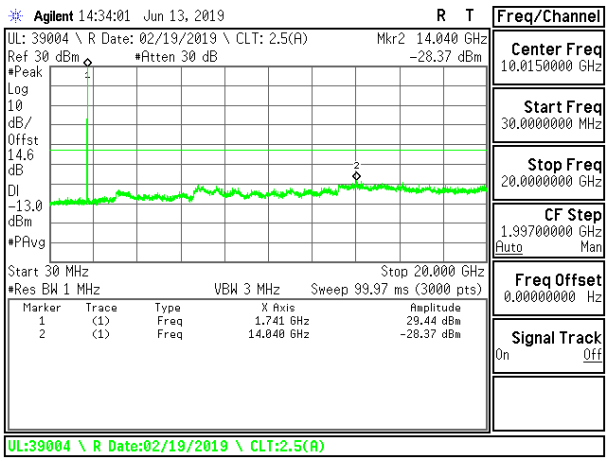
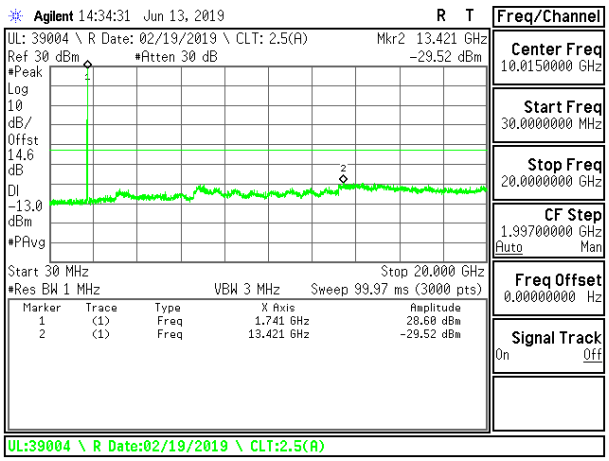
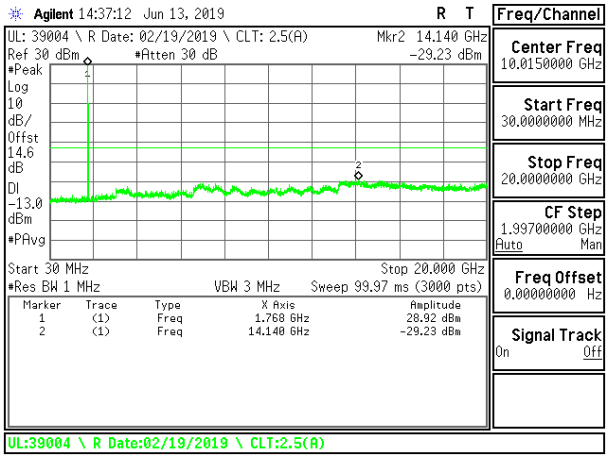


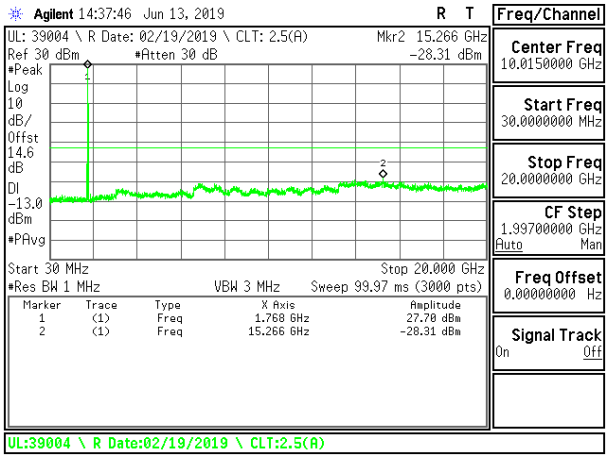
LTE B66 10MHz QPSK Middle Channel RB1-0



LTE B66 10MHz 16QAM Middle Channel RB1-0



LTE B66 10MHz QPSK High Channel RB1-0



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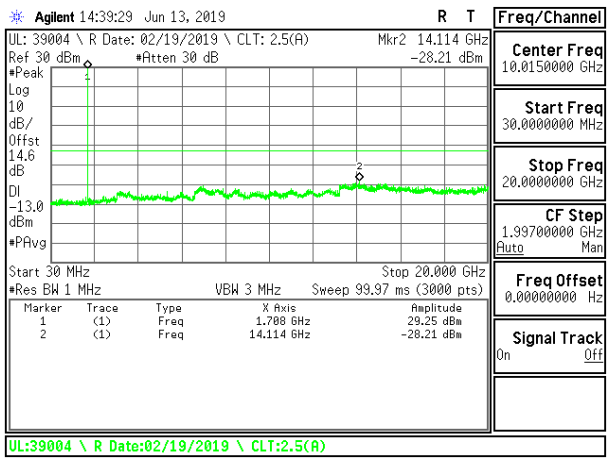
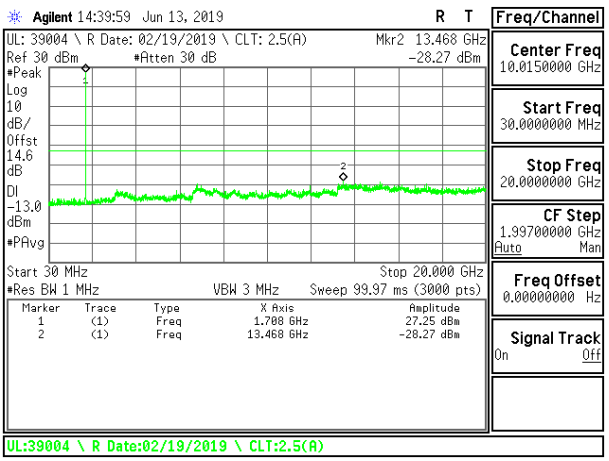


LTE B66 15MHz QPSK Low Channel RB1-0



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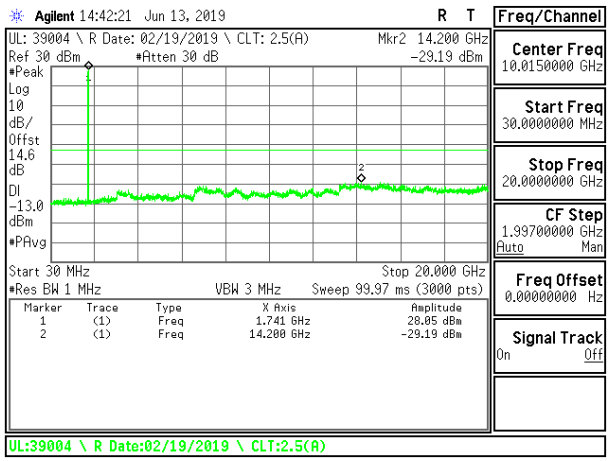
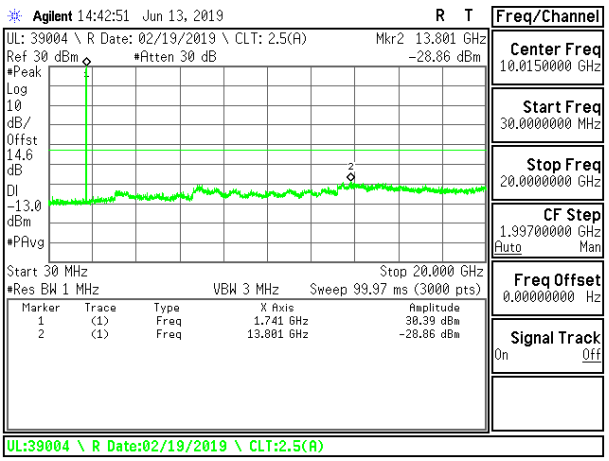
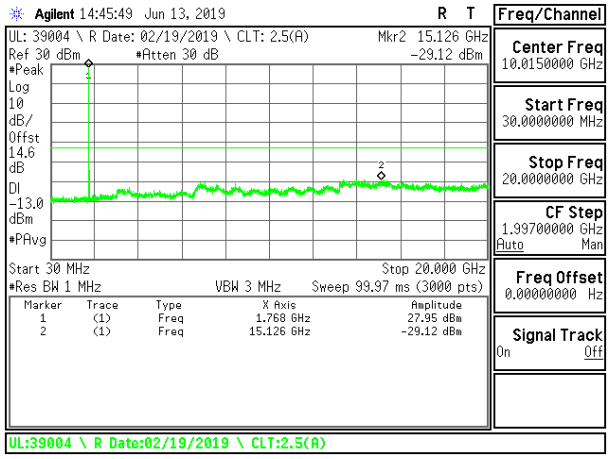


LTE B66 15MHz QPSK Middle Channel RB1-0



LTE B66 15MHz 16QAM Middle Channel RB1-0



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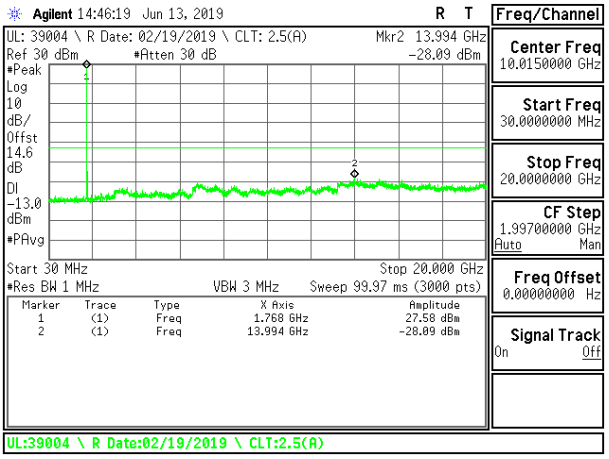

LTE B66 15MHz 16QAM High Channel RB1-0

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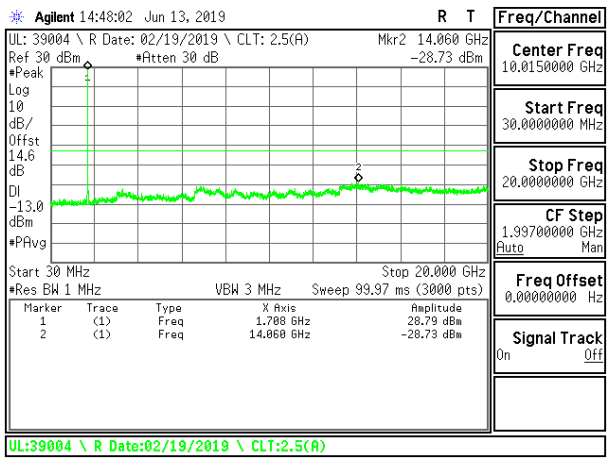

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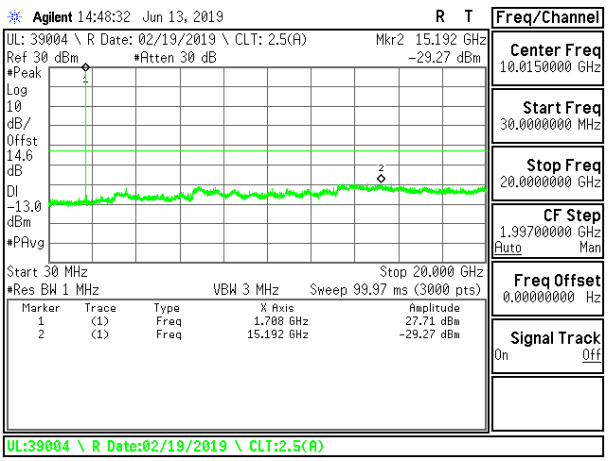

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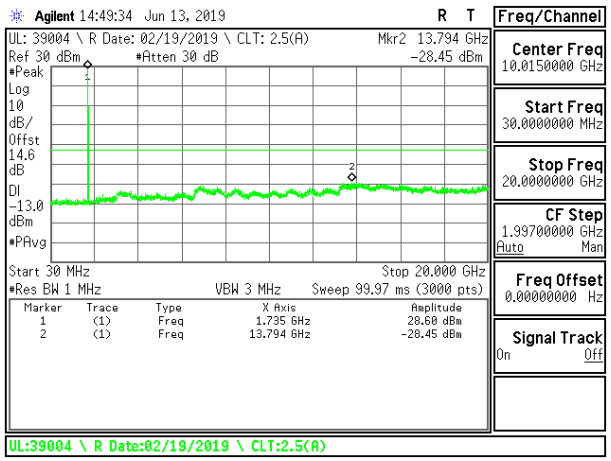

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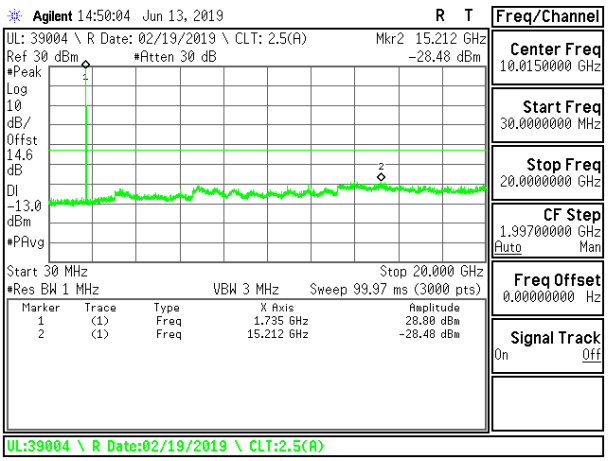

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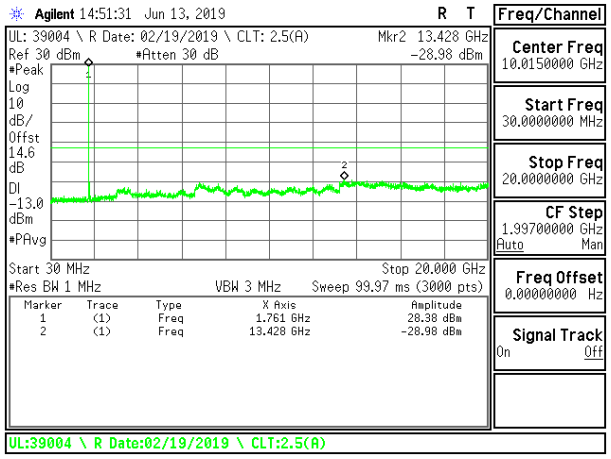

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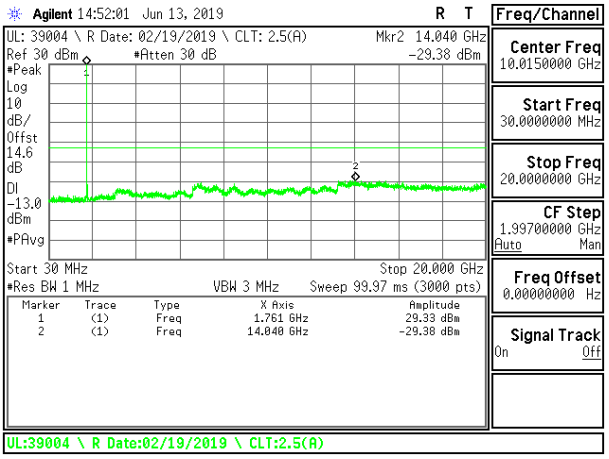

LTE B66 20MHz 16QAM High Channel RB1-0

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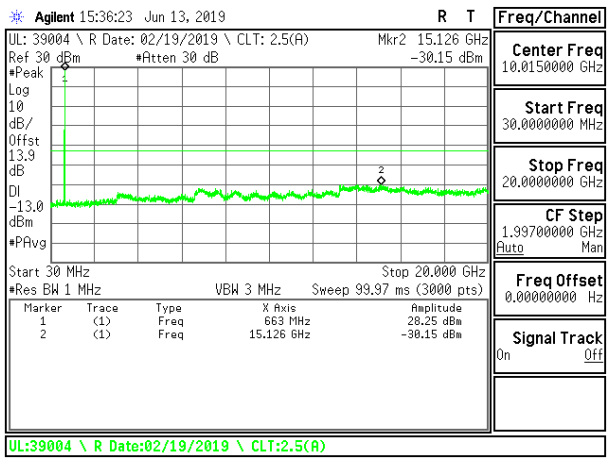
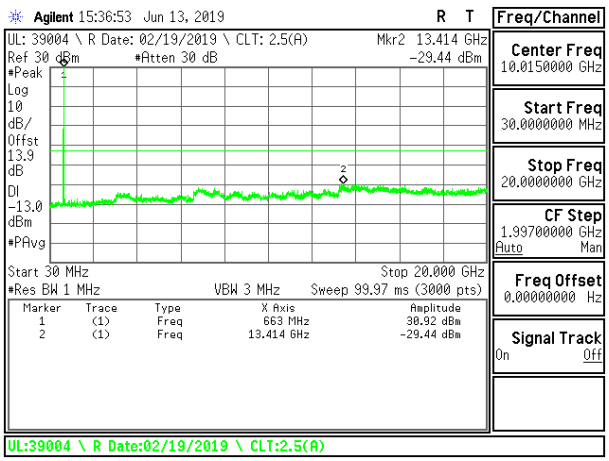
8.3.14. LTE BAND 71



LTE B71 5MHz QPSK Low Channel RB1-0



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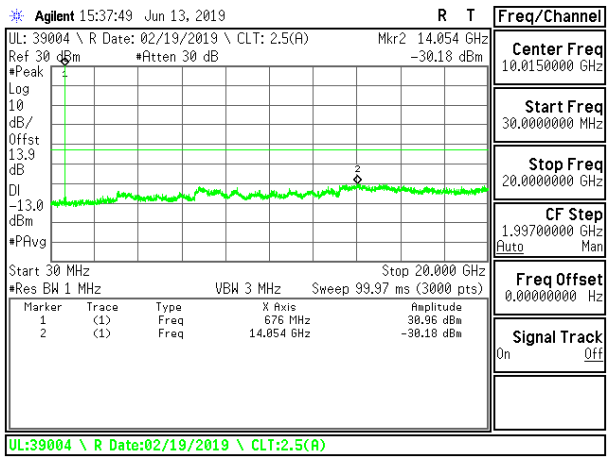
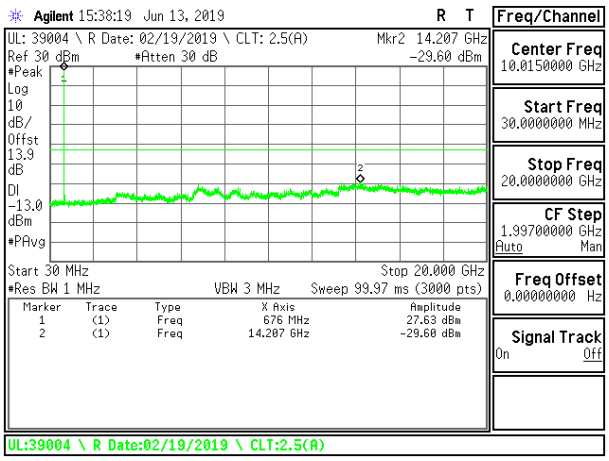
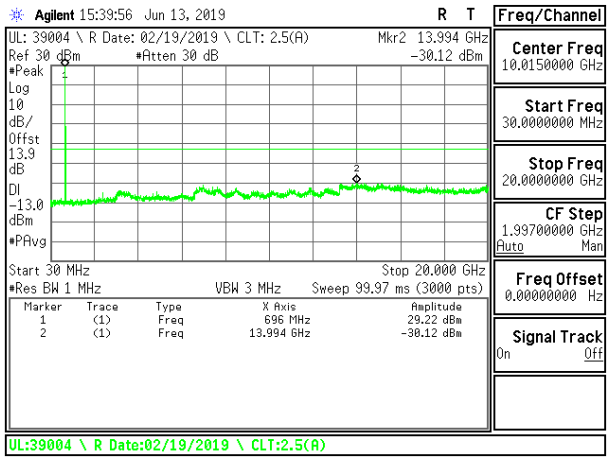


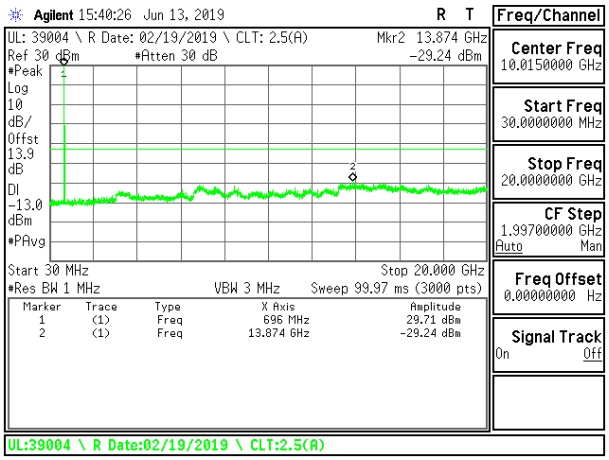
LTE B71 5MHz QPSK Middle Channel RB1-0



LTE B71 5MHz 16QAM Middle Channel RB1-0



LTE B71 5MHz QPSK High Channel RB1-0



LTE B71 5MHz 16QAM High Channel RB1-0

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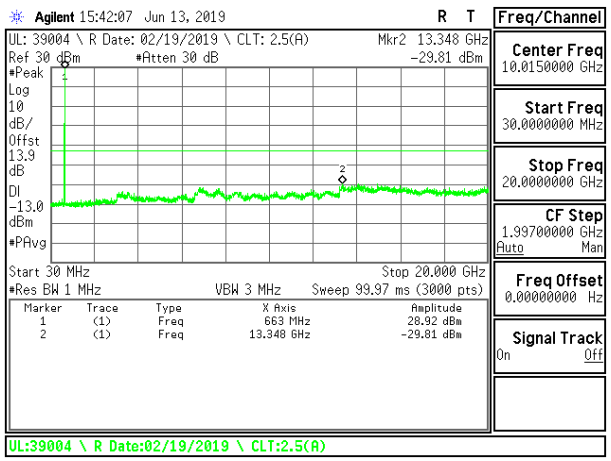
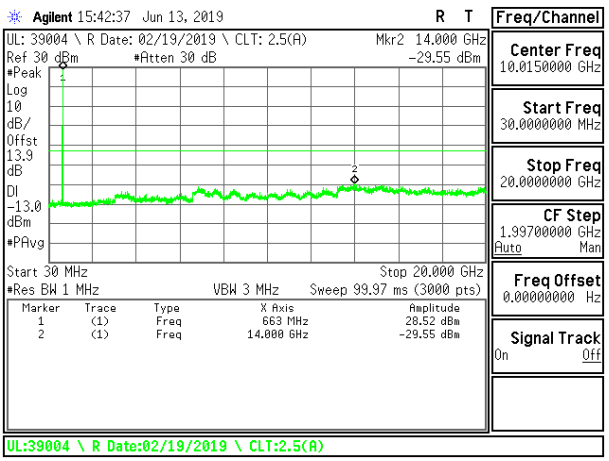


LTE B71 10MHz QPSK Low Channel RB1-0



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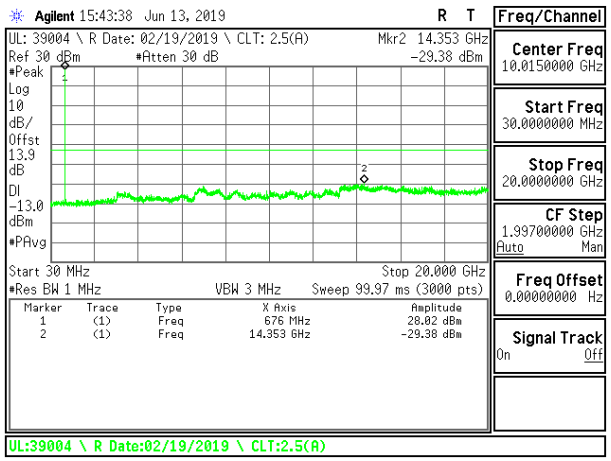
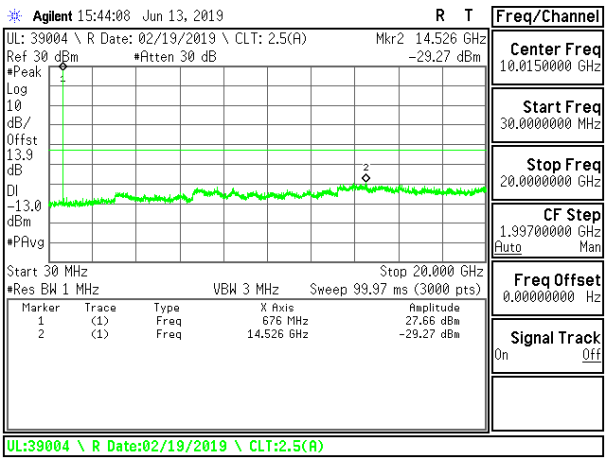
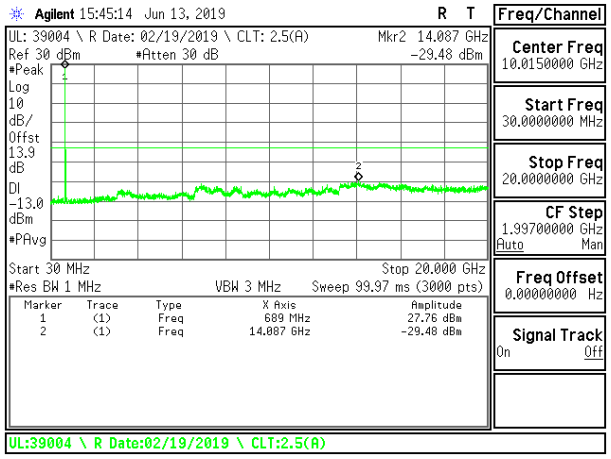


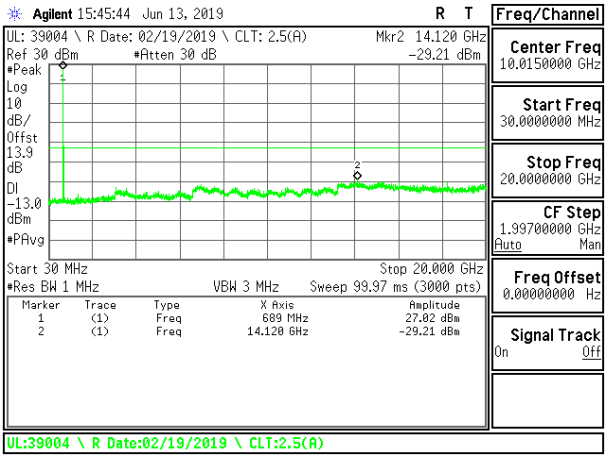
LTE B71 10MHz QPSK Middle Channel RB1-0



LTE B71 10MHz 16QAM Middle Channel RB1-0



LTE 71 10MHz QPSK High Channel RB1-0



LTE B71 10MHz 16QAM High Channel RB1-0

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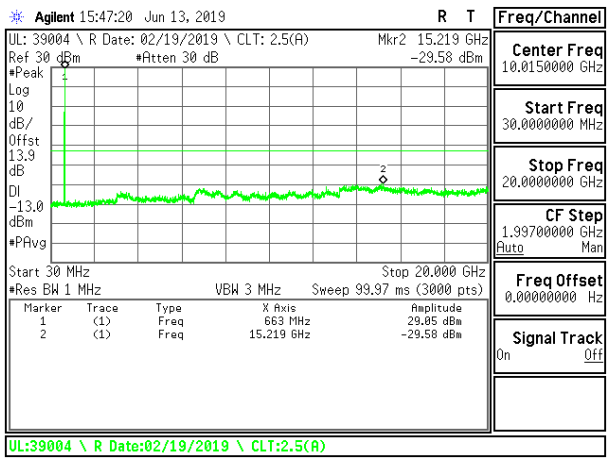
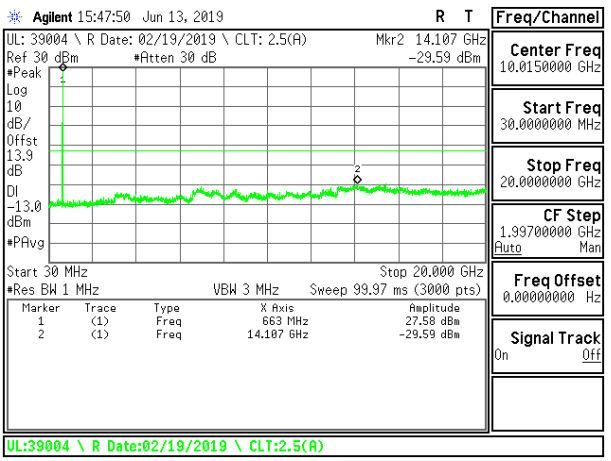
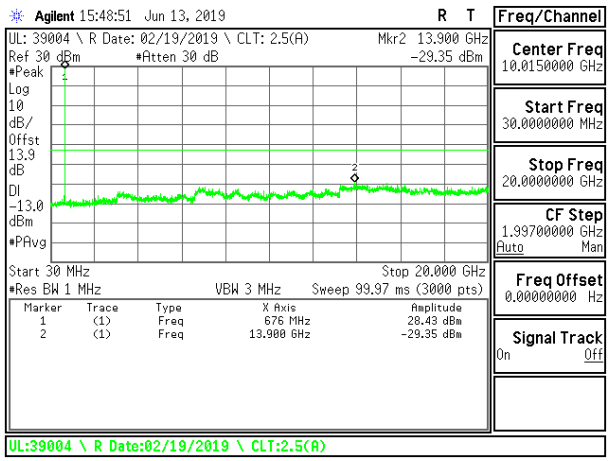


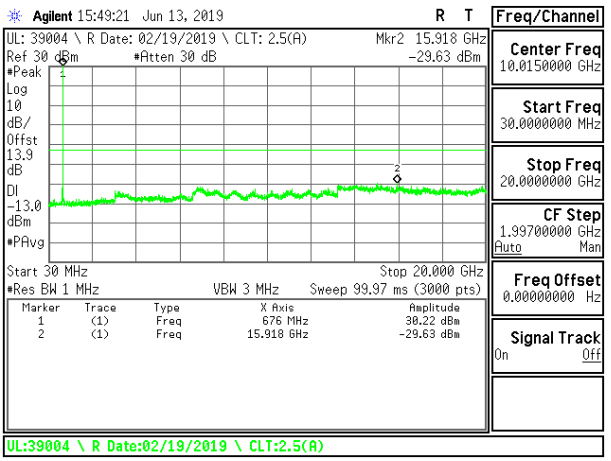
LTE B71 15MHz QPSK Low Channel RB1-0



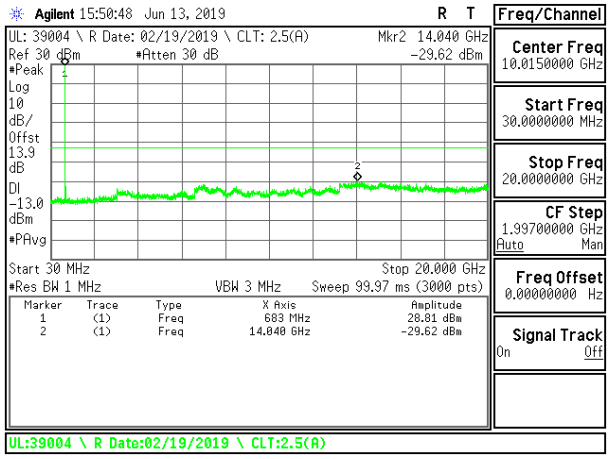
LTE B71 15MHz 16QAM Low Channel RB1-0



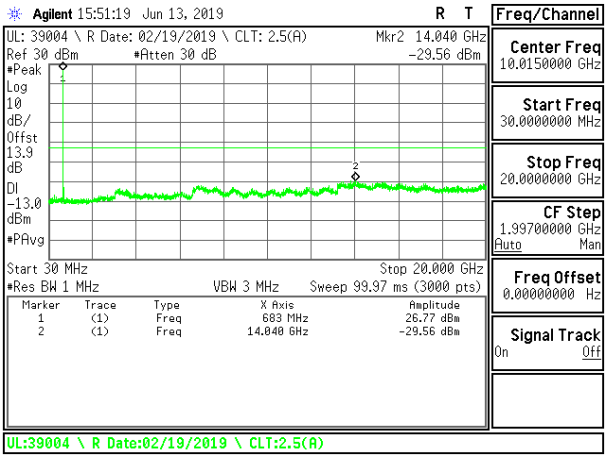
LTE B71 15MHz QPSK Middle Channel RB1-0



LTE B71 15MHz 16QAM Middle Channel RB1-0



LTE B71 15MHz QPSK High Channel RB1-0



LTE B71 15MHz 16QAM High Channel RB1-0

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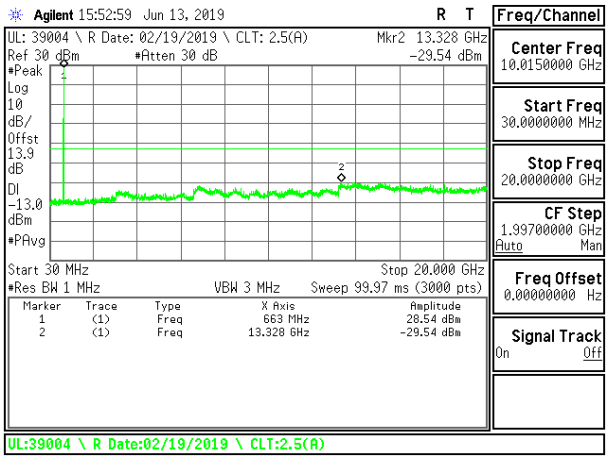
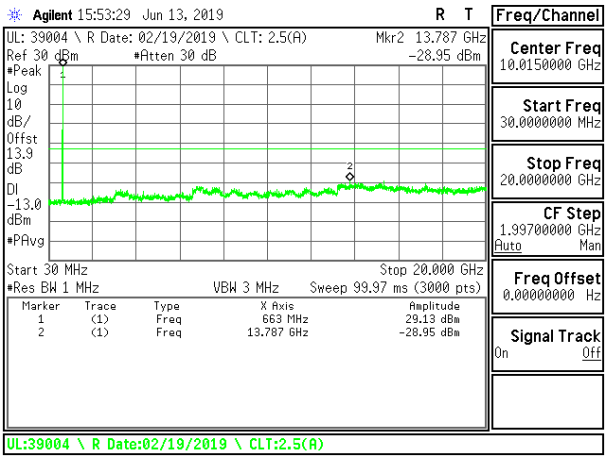
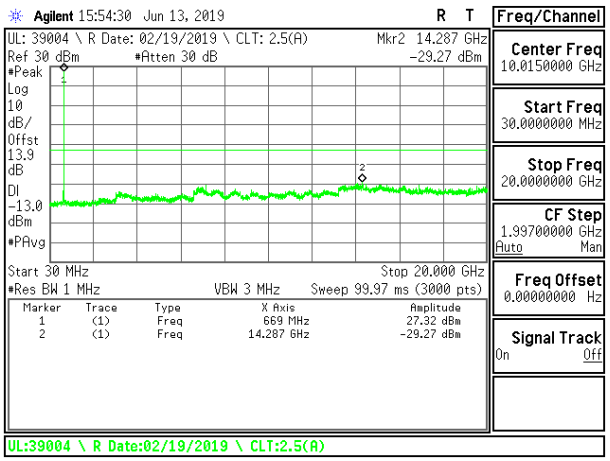


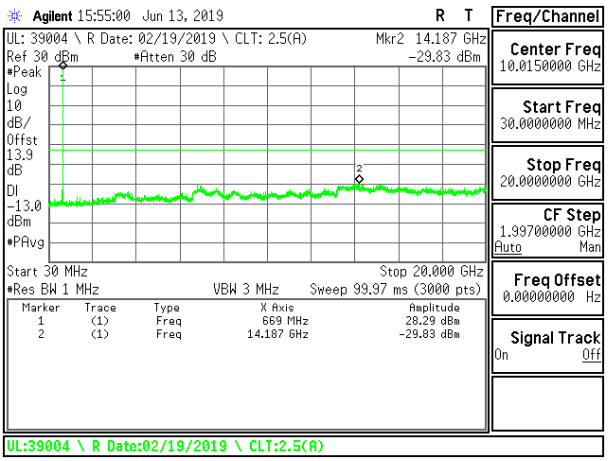
LTE B71 20MHz QPSK Low Channel RB1-0



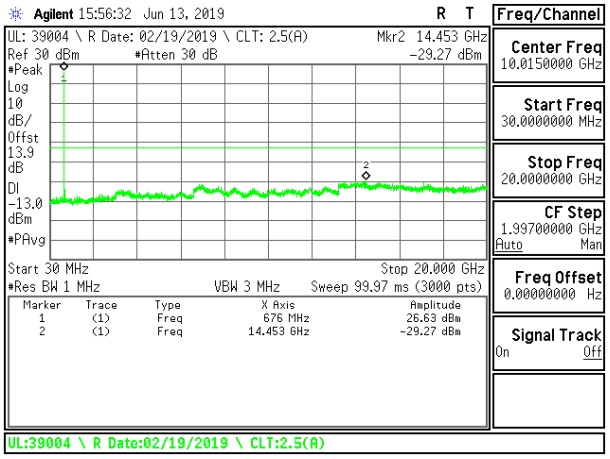
LTE B71 20MHz 16QAM Low Channel RB1-0



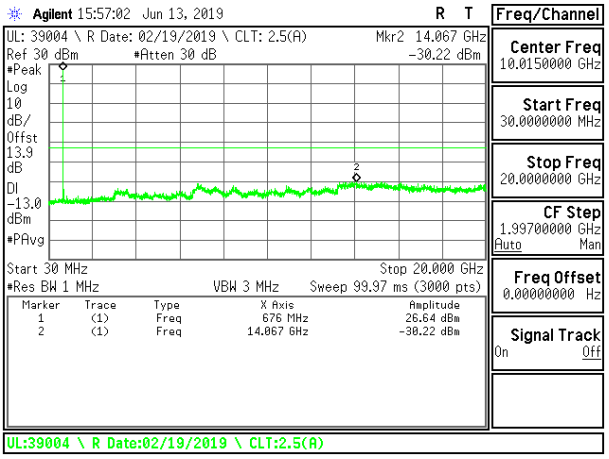
LTE B71 20MHz QPSK Middle Channel RB1-0



LTE B71 20MHz 16QAM Middle Channel RB1-0



LTE B71 20MHz QPSK High Channel RB1-0



LTE B71 20MHz 16QAM High Channel RB1-0

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8.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54, §90.213 and §90.539

LIMITS

FCC: §22.355, §90.213
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

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.

FCC: §24.235 & §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

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

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

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

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

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

RESULTS

See the following pages.

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8.4.1. LTE BAND 2

ID:	38602	Date:	6/2/19

QPSK, (20MHz BANDWIDTH)

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1851.0129	1908.9986		
Extreme (50C)		1851.0129	1908.9986	-9.5	-0.005
Extreme (40C)		1851.0129	1908.9986	5.9	0.003
Extreme (30C)		1851.0129	1908.9986	-6.9	-0.004
Extreme (10C)		1851.0129	1908.9986	-7.3	-0.004
Extreme (0C)		1851.0129	1908.9986	6.4	0.003
Extreme (-10C)		1851.0129	1908.9986	-5.4	-0.003
Extreme (-20C)		1851.0129	1908.9986	7.8	0.004
Extreme (-30C)		1851.0129	1908.9986	-5.6	-0.003
20C	15%	1851.0129	1908.9986	-6.8	-0.004
	-15%	1851.0129	1908.9986	6.9	0.004
	End Point	1851.0129	1908.9986	6.1	0.003

8.4.2. LTE BAND 4

ID:	38602	Date:	6/2/19

QPSK, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1711.0081	1753.9971		
Extreme (50C)		1711.0081	1753.9971	6.8	0.004
Extreme (40C)		1711.0081	1753.9971	-6.9	-0.004
Extreme (30C)		1711.0081	1753.9971	6.0	0.003
Extreme (10C)		1711.0081	1753.9971	7.5	0.004
Extreme (0C)		1711.0081	1753.9971	8.4	0.005
Extreme (-10C)		1711.0081	1753.9971	6.2	0.004
Extreme (-20C)		1711.0081	1753.9971	7.3	0.004
Extreme (-30C)		1711.0081	1753.9971	-5.7	-0.003
20C	15%	1711.0081	1753.9971	6.7	0.004
	-15%	1711.0081	1753.9971	4.9	0.003
	End Point	1711.008	1753.9971	6.5	0.004

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8.4.3. LTE BAND 5

ID:	38602	Date:	6/3/19

QPSK, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.4875	848.5204		
Extreme (50C)		824.4875	848.5204	5.1	0.006
Extreme (40C)		824.4875	848.5204	-5.1	-0.006
Extreme (30C)		824.4875	848.5204	6.1	0.007
Extreme (10C)		824.4875	848.5204	4.9	0.006
Extreme (0C)		824.4875	848.5204	6.2	0.007
Extreme (-10C)		824.4875	848.5204	5.2	0.006
Extreme (-20C)		824.4875	848.5204	4.5	0.005
Extreme (-30C)		824.4875	848.5204	4.6	0.006
20C	15%	824.4875	848.5204	4.9	0.006
	-15%	824.4875	848.5204	4.2	0.005
	End Point	824.4875	848.5204	5.2	0.006

8.4.4. LTE BAND 7

ID:	38602	Date:	6/3/19

QPSK, (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2501.019	2568.991		
Extreme (50C)		2501.019	2568.991	7.3	0.003
Extreme (40C)		2501.019	2568.991	5.1	0.002
Extreme (30C)		2501.019	2568.991	3.5	0.001
Extreme (10C)		2501.019	2568.991	8.7	0.003
Extreme (0C)		2501.019	2568.991	8.5	0.003
Extreme (-10C)		2501.019	2568.991	9.1	0.004
Extreme (-20C)		2501.019	2568.991	8.9	0.004
Extreme (-30C)		2501.019	2568.990	-10.6	-0.004
20C	15%	2501.019	2568.991	9.0	0.004
	-15%	2501.019	2568.991	8.5	0.003
	End Point	2501.019	2568.991	8.4	0.003

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8.4.5. LTE BAND 12

ID:	38602	Date:	6/3/19

QPSK, (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	699.4720	715.6670		
Extreme (50C)		699.4720	715.6670	-2.8	-0.004
Extreme (40C)		699.4720	715.6670	4.4	0.006
Extreme (30C)		699.4720	715.6670	-5.1	-0.007
Extreme (10C)		699.4720	715.6670	-4.2	-0.006
Extreme (0C)		699.4720	715.6670	3.9	0.005
Extreme (-10C)		699.4720	715.6670	4.1	0.006
Extreme (-20C)		699.4720	715.6670	4.6	0.007
Extreme (-30C)		699.4720	715.6670	4.2	0.006
20C	15%	699.4720	715.6670	2.8	0.004
	-15%	699.4720	715.6670	3.1	0.004
	End Point	699.4720	715.6670	3.0	0.004

8.4.6. LTE BAND 13

ID:	38602	Date:	6/3/19

QPSK, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	777.2249	786.7979		
Extreme (50C)		777.2249	786.7979	-5.0	-0.006
Extreme (40C)		777.2249	786.7979	3.2	0.004
Extreme (30C)		777.2249	786.7979	2.9	0.004
Extreme (10C)		777.2249	786.7979	-4.4	-0.006
Extreme (0C)		777.2249	786.7979	-5.0	-0.006
Extreme (-10C)		777.2249	786.7979	4.4	0.006
Extreme (-20C)		777.2249	786.7979	-5.2	-0.007
Extreme (-30C)		777.2249	786.7979	-5.5	-0.007
20C	15%	777.2249	786.7979	-2.7	-0.003
	-15%	777.2249	786.7979	-3.2	-0.004
	End Point	777.2249	786.7979	-3.0	-0.004

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8.4.7. LTE BAND 14

ID:	30606	Date:	6/3/19

QPSK, (10MHz BANDWIDTH)

Limit		788	798	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	788.2253	797.8060		
Extreme (50C)		788.2253	797.8060	4.7	0.006
Extreme (40C)		788.2253	797.8060	4.3	0.005
Extreme (30C)		788.2253	797.8060	-4.9	-0.006
Extreme (10C)		788.2253	797.8060	5.1	0.006
Extreme (0C)		788.2253	797.8060	4.6	0.006
Extreme (-10C)		788.2253	797.8060	5.1	0.006
Extreme (-20C)		788.2253	797.8060	4.2	0.005
Extreme (-30C)		788.2253	797.8060	5.2	0.007
20C	15%	788.2253	797.8060	3.9	0.005
	-15%	788.2253	797.8060	3.7	0.005
	End Point	788.2253	797.8060	4.0	0.005

8.4.8. LTE BAND 17

ID:	30606	Date:	6/6/19

QPSK, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	704.4660	715.5128		
Extreme (50C)		704.4660	715.5128	3.9	0.005
Extreme (40C)		704.4660	715.5128	4.1	0.006
Extreme (30C)		704.4660	715.5128	3.3	0.005
Extreme (10C)		704.4660	715.5128	3.5	0.005
Extreme (0C)		704.4660	715.5128	3.7	0.005
Extreme (-10C)		704.4660	715.5128	5.2	0.007
Extreme (-20C)		704.4660	715.5128	4.5	0.006
Extreme (-30C)		704.4660	715.5128	3.8	0.005
20C	15%	704.4660	715.5128	3.0	0.004
	-15%	704.4660	715.5128	3.1	0.004
	End Point	704.4660	715.5128	3.0	0.004

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8.4.9. LTE BAND 25

ID:	30606	Date:	6/4/19

QPSK, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1851.0094	1913.9939		
Extreme (50C)		1851.0094	1913.9939	-5.0	-0.003
Extreme (40C)		1851.0094	1913.9939	-5.9	-0.003
Extreme (30C)		1851.0094	1913.9939	6.5	0.003
Extreme (10C)		1851.0094	1913.9939	-5.4	-0.003
Extreme (0C)		1851.0094	1913.9939	4.1	0.002
Extreme (-10C)		1851.0094	1913.9939	-6.8	-0.004
Extreme (-20C)		1851.0094	1913.9939	-5.6	-0.003
Extreme (-30C)		1851.0094	1913.9939	-6.9	-0.004
20C	15%	1851.0094	1913.9939	5.1	0.003
	-15%	1851.0094	1913.9939	5.2	0.003
	End Point	1851.0094	1913.9939	5.1	0.003

8.4.10. LTE BAND 26 (PART 90S)

ID:	30606	Date:	6/3/19

QPSK, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	814.2138	823.7958		
Extreme (50C)		814.2138	823.7958	5.0	0.006
Extreme (40C)		814.2138	823.7958	4.6	0.006
Extreme (30C)		814.2138	823.7958	2.9	0.004
Extreme (10C)		814.2138	823.7958	5.1	0.006
Extreme (0C)		814.2138	823.7958	4.1	0.005
Extreme (-10C)		814.2138	823.7958	-4.3	-0.005
Extreme (-20C)		814.2138	823.7958	4.3	0.005
Extreme (-30C)		814.2138	823.7958	5.5	0.007
20C	15%	814.2138	823.7958	4.3	0.005
	-15%	814.2138	823.7958	3.9	0.005
	End Point	814.2138	823.7958	4.1	0.005

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8.4.11. LTE BAND 30

ID:	30606	Date:	6/4/19

QPSK, (10MHz BANDWIDTH)

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2305.2364	2314.8115		
Extreme (50C)		2305.2364	2314.8115	9.5	0.004
Extreme (40C)		2305.2364	2314.8115	10.2	0.004
Extreme (30C)		2305.2364	2314.8115	11.7	0.005
Extreme (10C)		2305.2364	2314.8115	8.2	0.004
Extreme (0C)		2305.2364	2314.8115	10.0	0.004
Extreme (-10C)		2305.2364	2314.8115	8.0	0.003
Extreme (-20C)		2305.2364	2314.8115	10.1	0.004
Extreme (-30C)		2305.2364	2314.8115	7.4	0.003
20C	15%	2305.2364	2314.8115	8.0	0.003
	-15%	2305.2364	2314.8115	8.1	0.003
	End Point	2305.2364	2314.8115	8.1	0.004

8.4.12. LTE BAND 41

ID:	38602	Date:	6/4/19

QPSK, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2496.6616	2689.9946		
Extreme (50C)		2496.6616	2689.9946	11.9	0.005
Extreme (40C)		2496.6616	2689.9946	11.1	0.004
Extreme (30C)		2496.6616	2689.9946	10.6	0.004
Extreme (10C)		2496.6616	2689.9946	10.3	0.004
Extreme (0C)		2496.6616	2689.9946	-8.3	-0.003
Extreme (-10C)		2496.6616	2689.9946	9.7	0.004
Extreme (-20C)		2496.6616	2689.9946	8.4	0.003
Extreme (-30C)		2496.6616	2689.9946	10.7	0.004
20C	15%	2496.6616	2689.9946	11.2	0.004
	-15%	2496.6616	2689.9946	11.1	0.004
	End Point	2496.6616	2689.9946	11.3	0.004

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8.4.13. LTE BAND 48

ID:	38602	Date:	6/19/19

QPSK, (20MHz BANDWIDTH)

Limit		3550	3700	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	3550.9589	3699.0540		
Extreme (50C)		3550.9589	3699.0540	13.4	0.004
Extreme (40C)		3550.9589	3699.0540	11.9	0.003
Extreme (30C)		3550.9589	3699.0540	10.5	0.003
Extreme (10C)		3550.9589	3699.0540	14.3	0.004
Extreme (0C)		3550.9589	3699.0540	14.0	0.004
Extreme (-10C)		3550.9589	3699.0540	14.4	0.004
Extreme (-20C)		3550.9589	3699.0540	13.2	0.004
Extreme (-30C)		3550.9589	3699.0540	14.6	0.004
20C	15%	3550.9589	3699.0540	12.5	0.003
	-15%	3550.9589	3699.0540	12.3	0.003
	End Point	3550.9589	3699.0540	12.4	0.003

8.4.14. LTE BAND 66

ID:	38602	Date:	6/4/19

QPSK, (20MHz BANDWIDTH)

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1711.0045	1779.0008		
Extreme (50C)		1711.0045	1779.0008	7.5	0.004
Extreme (40C)		1711.0045	1779.0008	7.7	0.004
Extreme (30C)		1711.0045	1779.0008	7.5	0.004
Extreme (10C)		1711.0045	1779.0008	6.4	0.004
Extreme (0C)		1711.0045	1779.0008	4.9	0.003
Extreme (-10C)		1711.0045	1779.0008	5.7	0.003
Extreme (-20C)		1711.0045	1779.0008	4.8	0.003
Extreme (-30C)		1711.0045	1779.0008	8.0	0.005
20C	15%	1711.0045	1779.0008	6.0	0.003
	-15%	1711.0045	1779.0008	5.9	0.003
	End Point	1711.0045	1779.0008	5.9	0.003

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8.4.15. LTE BAND 71

ID:	30606	Date:	6/4/19

QPSK, (20MHz BANDWIDTH)

Limit		663	698	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	664.0151	696.9987		
Extreme (50C)		664.0151	696.9987	11.9	0.018
Extreme (40C)		664.0151	696.9987	9.3	0.014
Extreme (30C)		664.0151	696.9987	8.2	0.012
Extreme (10C)		664.0151	696.9987	9.0	0.013
Extreme (0C)		664.0151	696.9987	11.2	0.017
Extreme (-10C)		664.0151	696.9987	8.8	0.013
Extreme (-20C)		664.0151	696.9987	9.1	0.013
Extreme (-30C)		664.0151	696.9987	12.1	0.018
20C	15%	664.0151	696.9987	10.4	0.015
	-15%	664.0151	696.9987	10.6	0.016
	End Point	664.0151	696.9987	10.4	0.015

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8.5. 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.

MODES TESTED

- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 66
- LTE Band 71

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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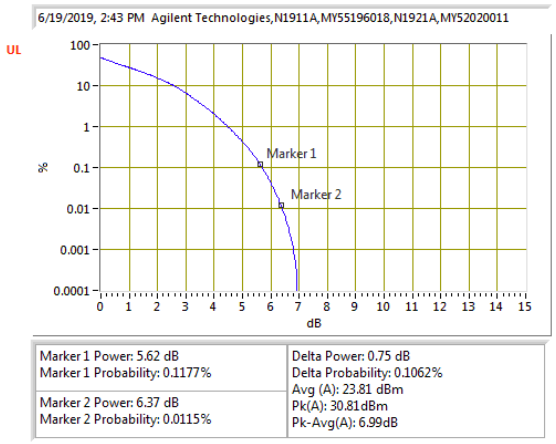
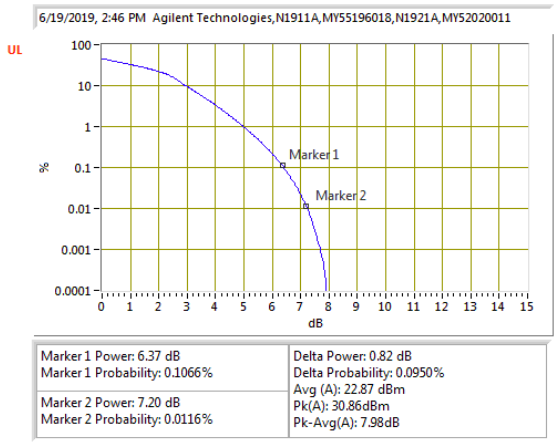
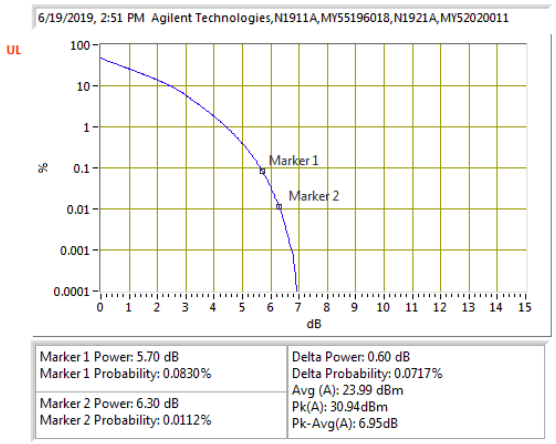
8.5.1. LTE BAND 2



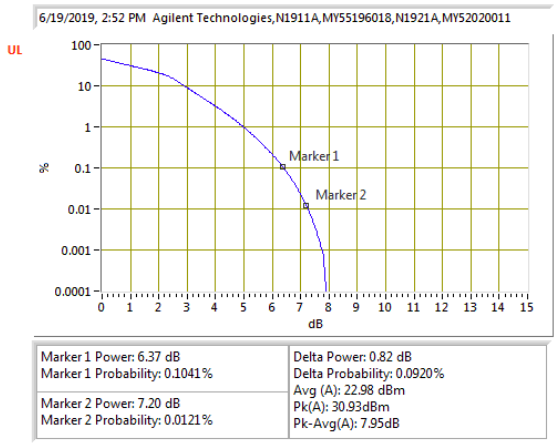
LTE B2 1.4MHz QPSK Middle Channel



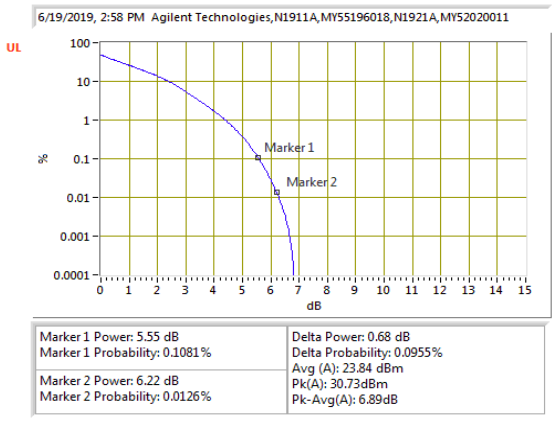
LTE B2 1.4MHz 16QAM Middle Channel



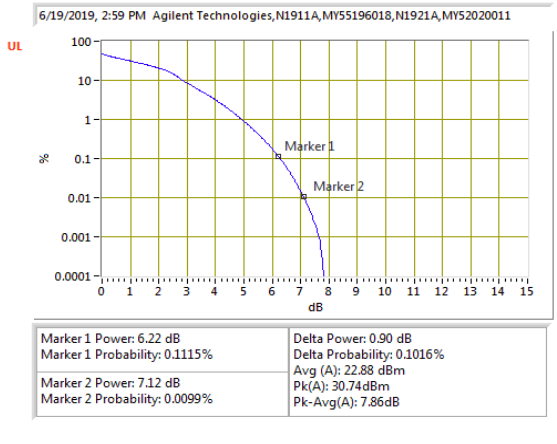
LTE B2 3MHz QPSK Middle Channel



LTE B2 3MHz 16QAM Middle Channel



LTE B2 5MHz QPSK Middle Channel



LTE B2 5MHz 16QAM Middle Channel

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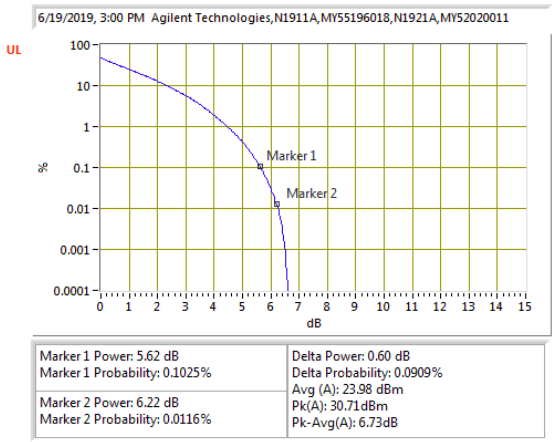
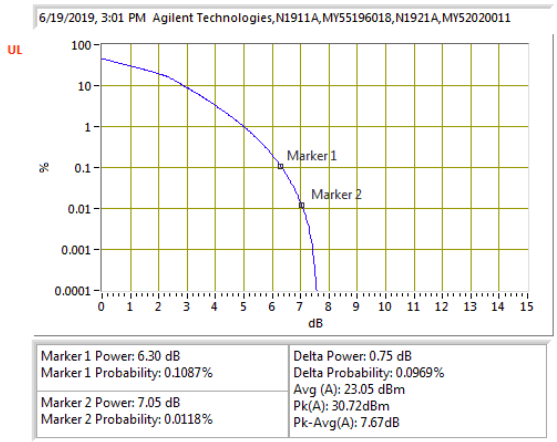
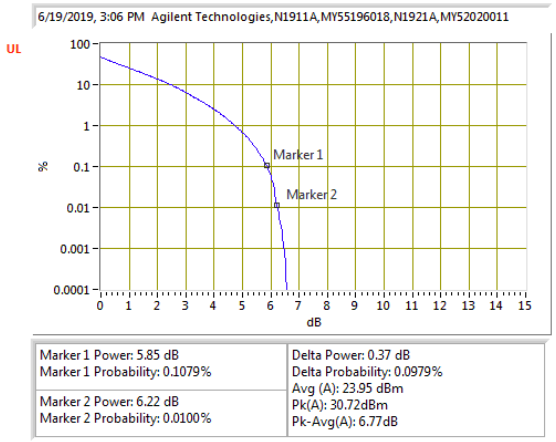


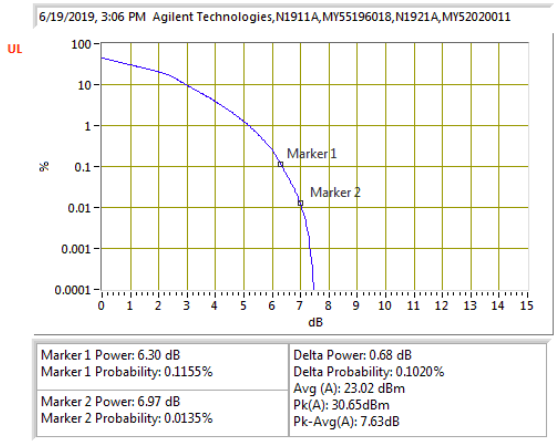
LTE B2 10MHz QPSK Middle Channel



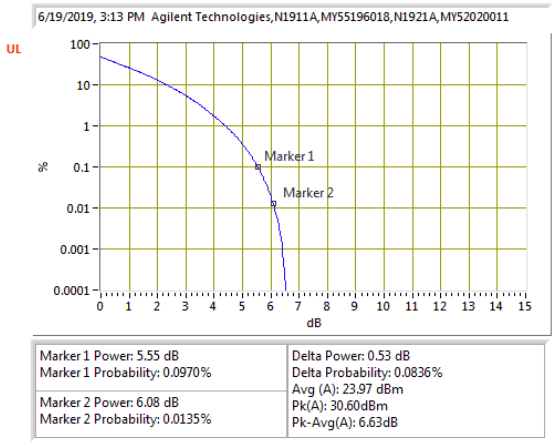
LTE B2 10MHz 16QAM Middle Channel



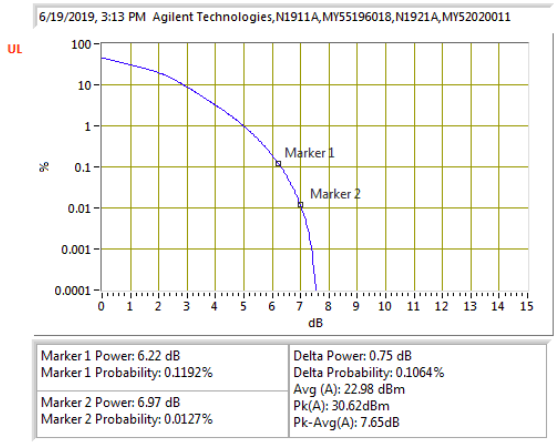
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel



LTE B2 20MHz QPSK Middle Channel



LTE B2 20MHz 16QAM Middle Channel

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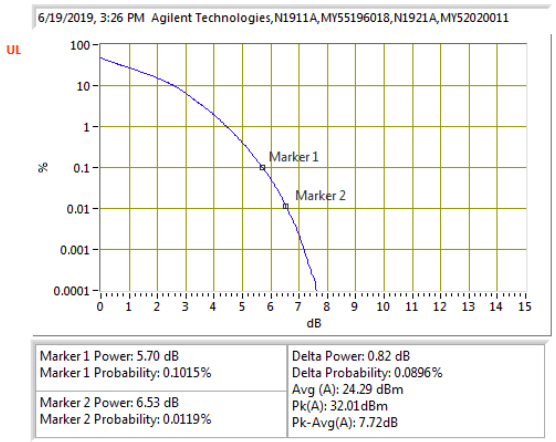
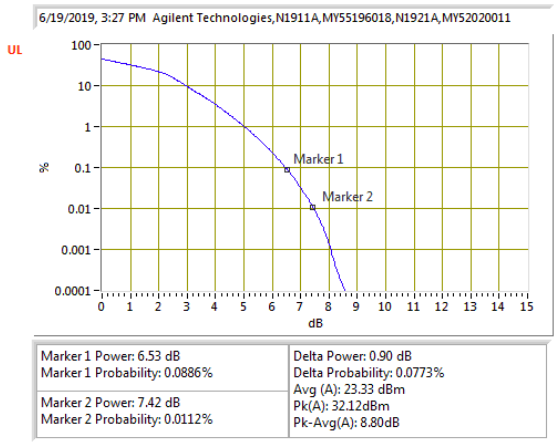
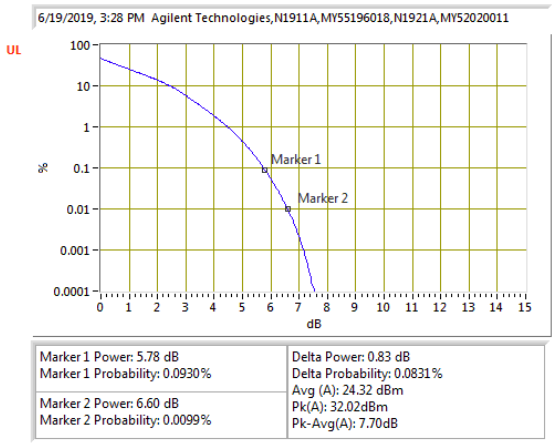
8.5.2. LTE BAND 5



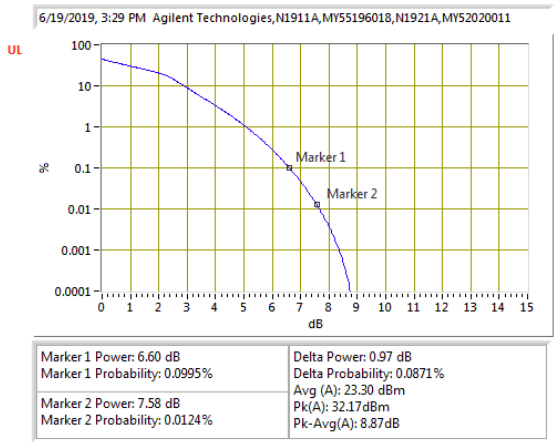
LTE B5 1.4MHz QPSK Middle Channel



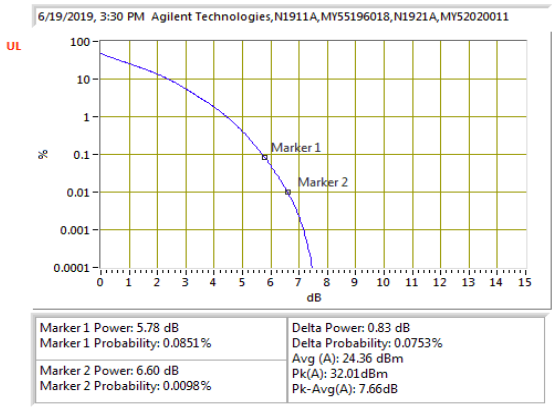
LTE B5 1.4MHz 16QAM Middle Channel



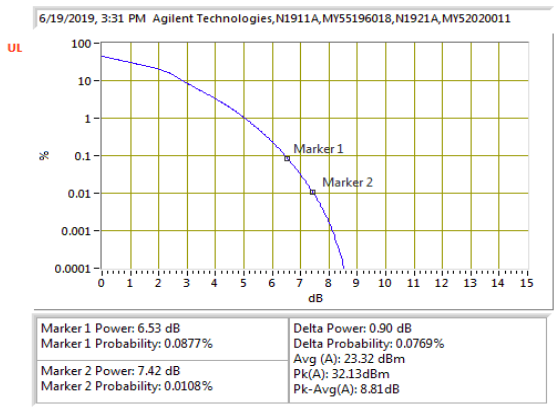
LTE B5 3MHz QPSK Middle Channel



LTE B5 3MHz 16QAM Middle Channel



LTE B5 5MHz QPSK Middle Channel



LTE B5 5MHz 16QAM Middle Channel

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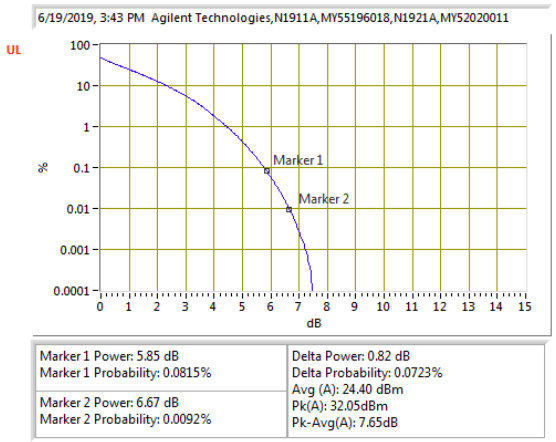
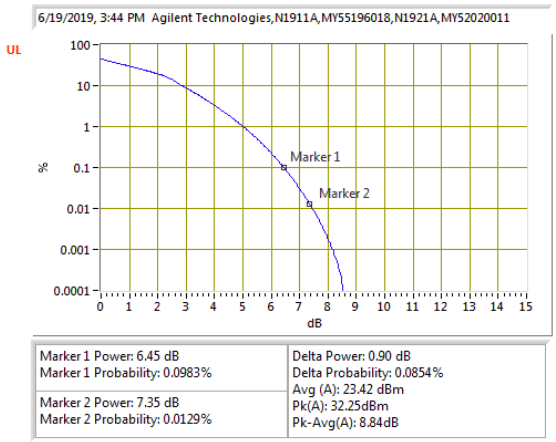


LTE B5 10MHz QPSK Middle Channel



LTE B5 10MHz 16QAM Middle Channel

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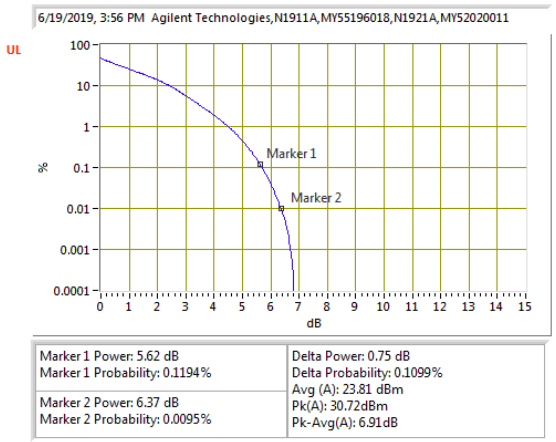
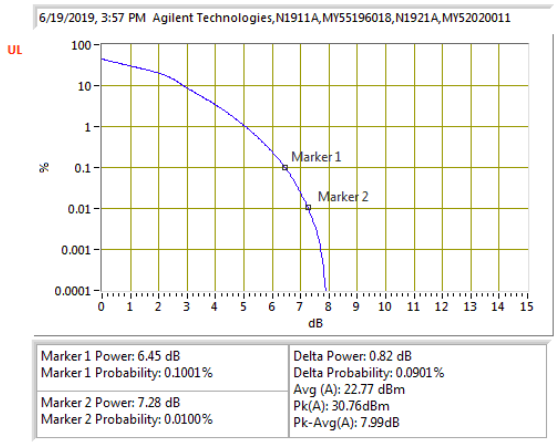
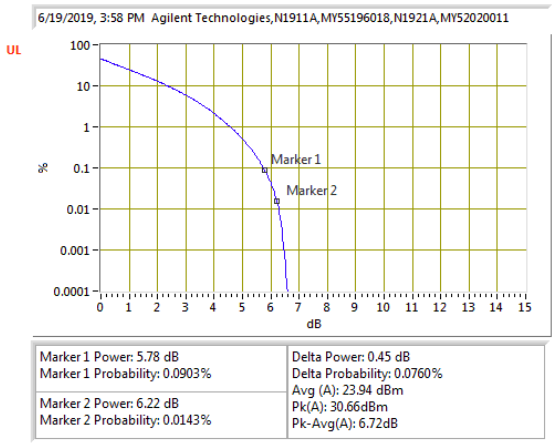
8.5.3. LTE BAND 7



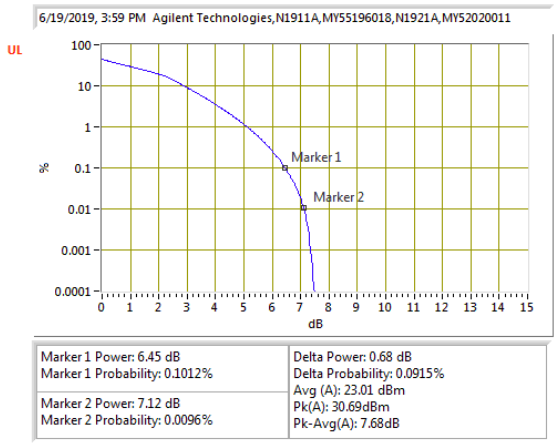
LTE B7 5MHz QPSK Middle Channel



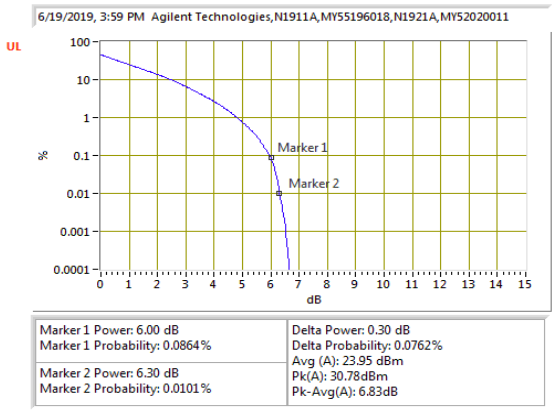
LTE B7 5MHz 16QAM Middle Channel



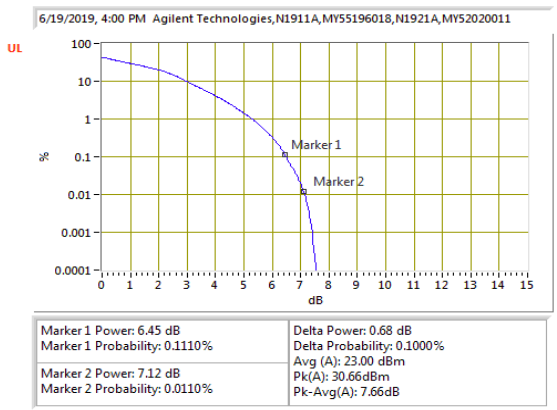
LTE B7 10MHz QPSK Middle Channel



LTE B7 10MHz 16QAM Middle Channel



LTE B7 15MHz QPSK Middle Channel



LTE B7 15MHz 16QAM Middle Channel

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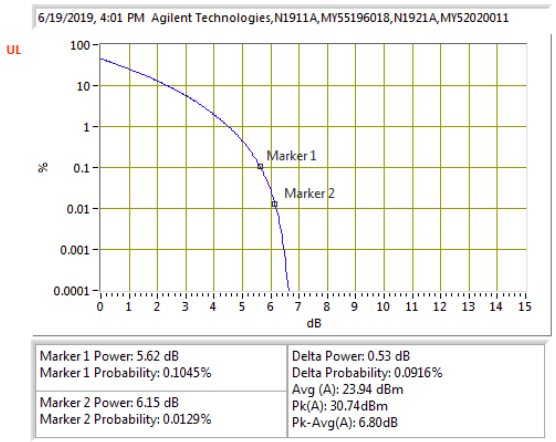
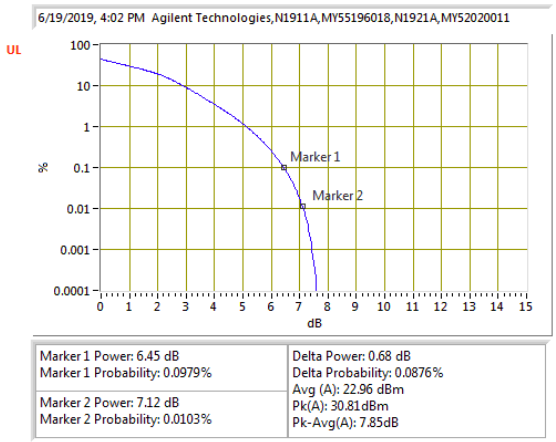


LTE B7 20MHz QPSK Middle Channel



LTE B7 20MHz 16QAM Middle Channel

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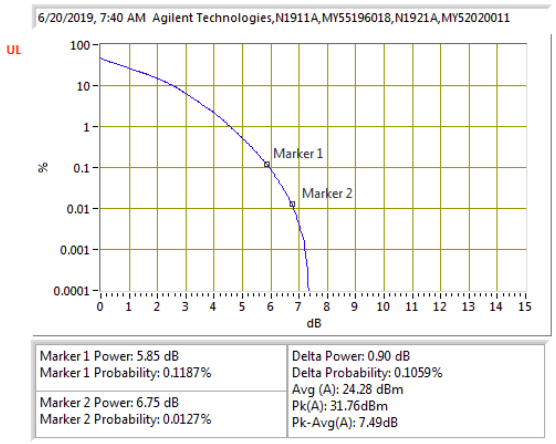
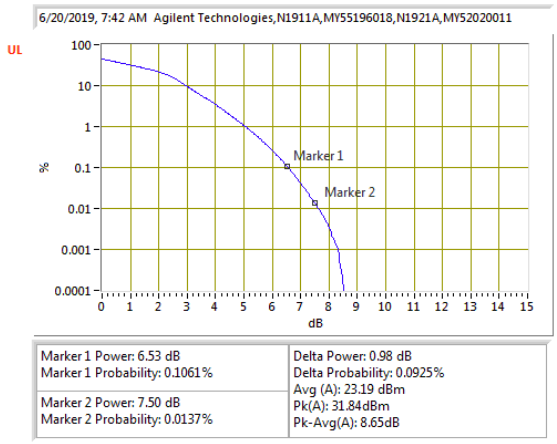
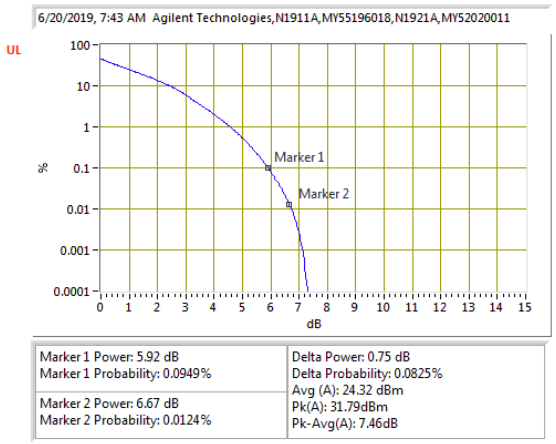
8.5.4. LTE BAND 12



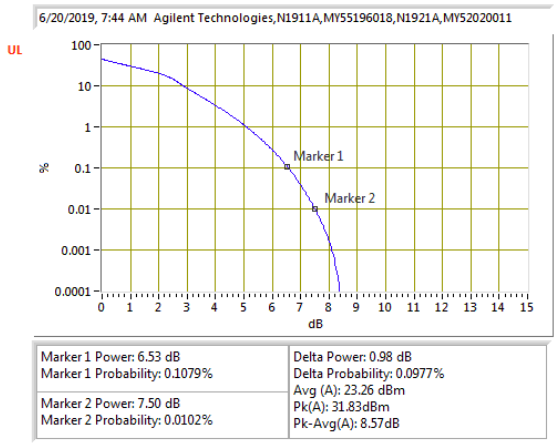
LTE B12 1.4MHz QPSK Middle Channel



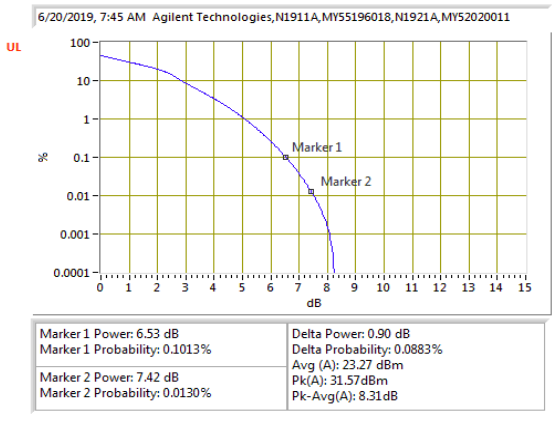
LTE B12 1.4MHz 16QAM Middle Channel



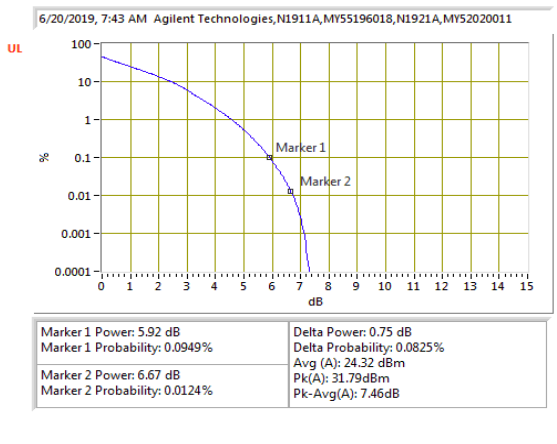
LTE B12 3MHz QPSK Middle Channel



LTE B12 3MHz 16QAM Middle Channel



LTE B12 5MHz QPSK Middle Channel



LTE B12 5MHz 16QAM Middle Channel

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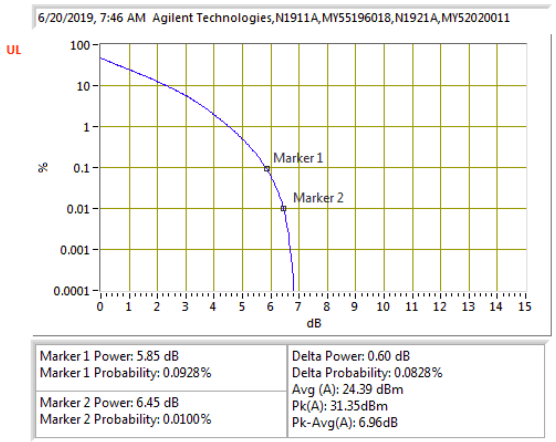
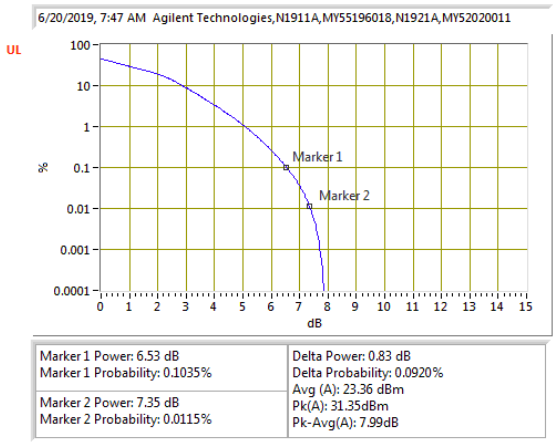


LTE B12 10MHz QPSK Middle Channel



LTE B12 10MHz 16QAM Middle Channel

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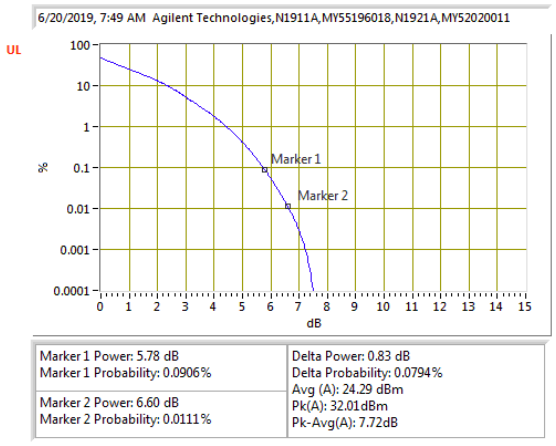
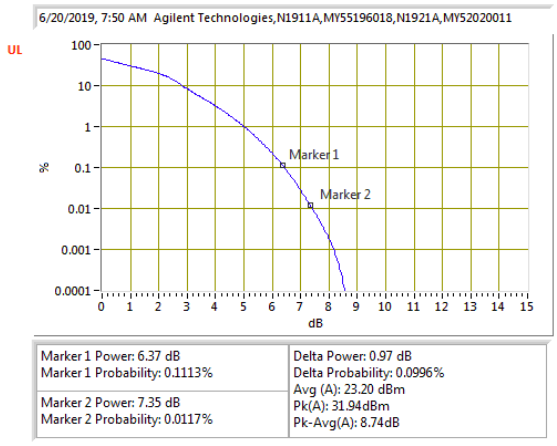
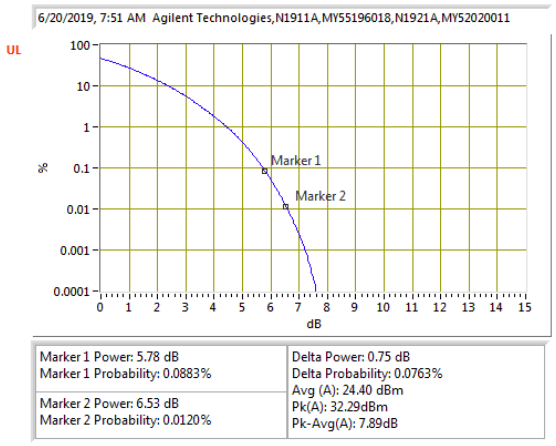
8.5.5. LTE BAND 13



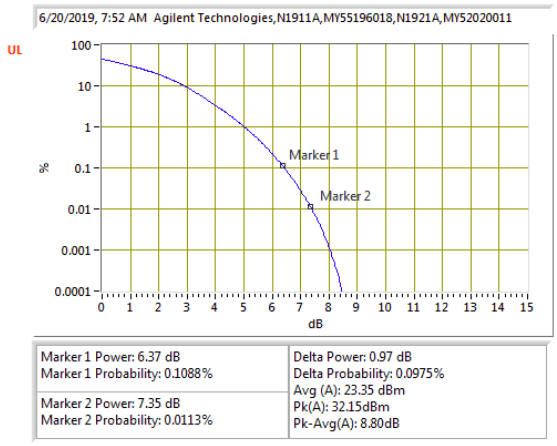
LTE B13 5MHz QPSK Middle Channel



LTE B13 5MHz 16QAM Middle Channel



LTE B13 10MHz QPSK Middle Channel



LTE B13 10MHz 16QAM Middle Channel

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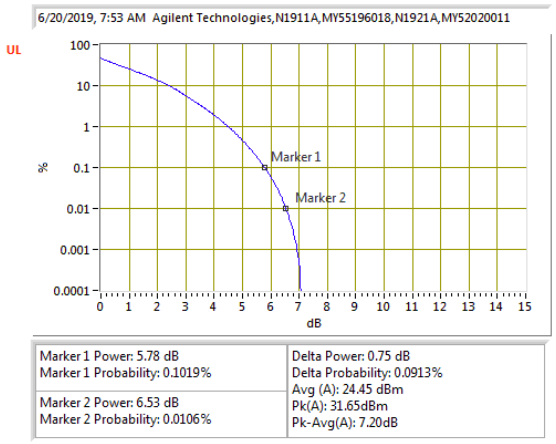
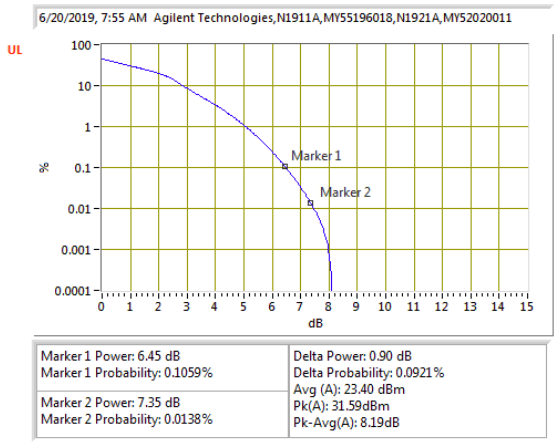
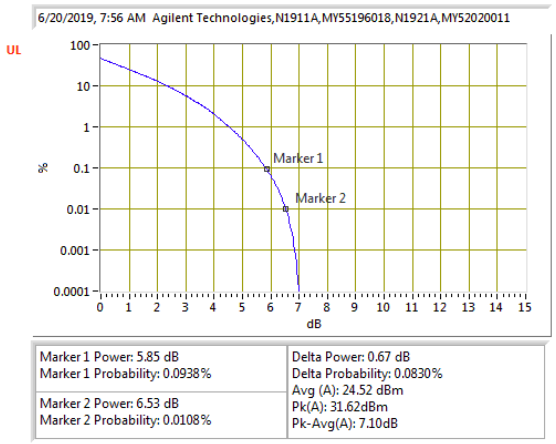
8.5.6. LTE BAND 14



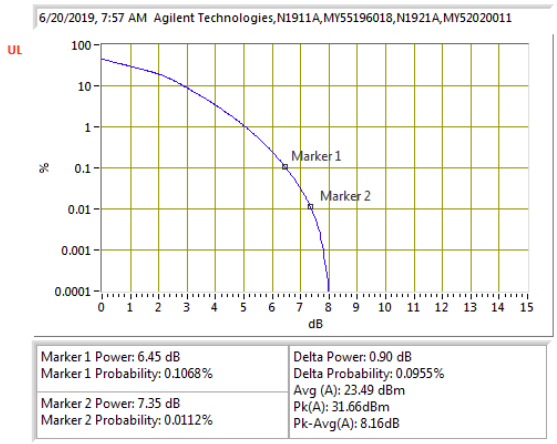
LTE B14 5MHz QPSK Middle Channel



LTE B14 5MHz 16QAM Middle Channel



LTE B14 10MHz QPSK Middle Channel



LTE B14 10MHz 16QAM Middle Channel

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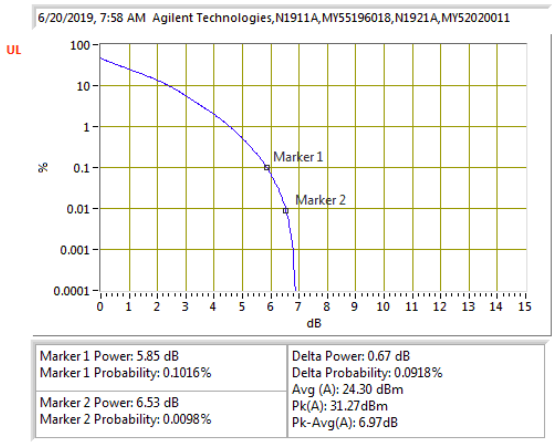
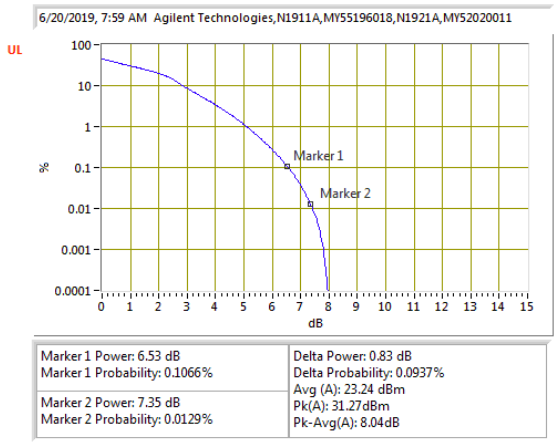
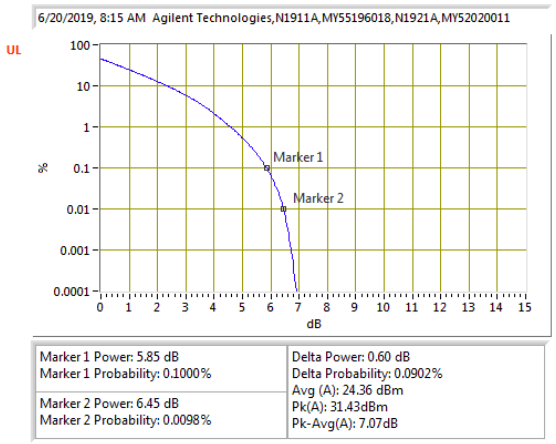
8.5.7. LTE BAND 17



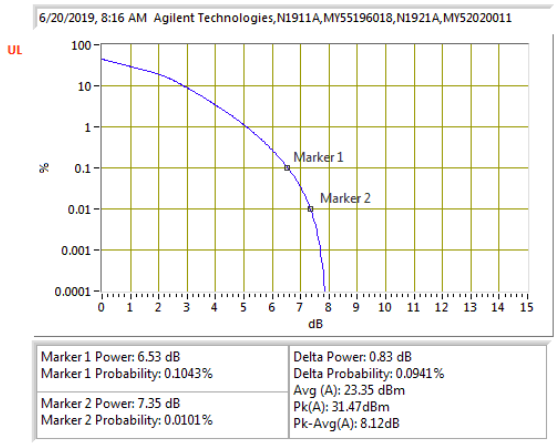
LTE B17 5MHz QPSK Middle Channel



LTE B17 5MHz 16QAM Middle Channel



LTE B17 10MHz QPSK Middle Channel



LTE B17 10MHz 16QAM Middle Channel

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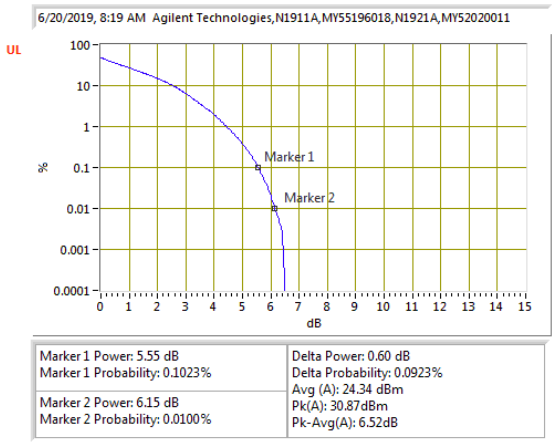
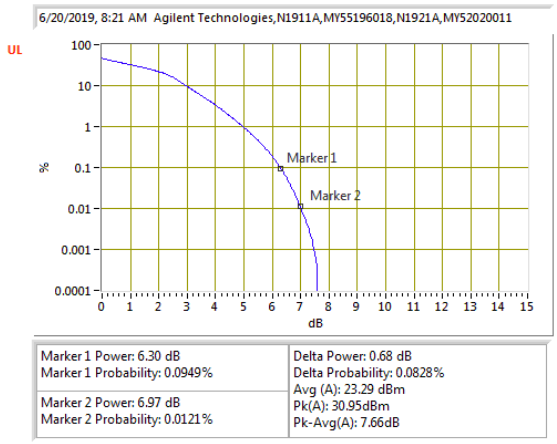
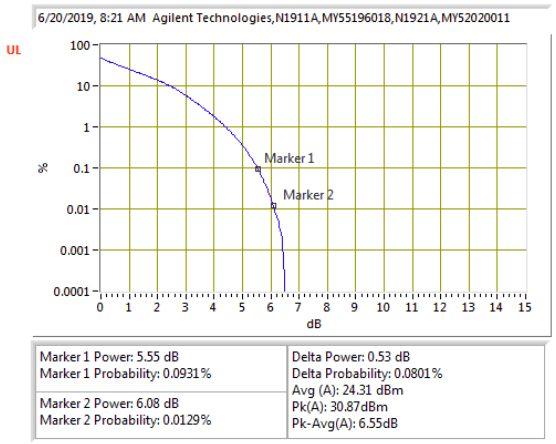
8.5.8. LTE BAND 25



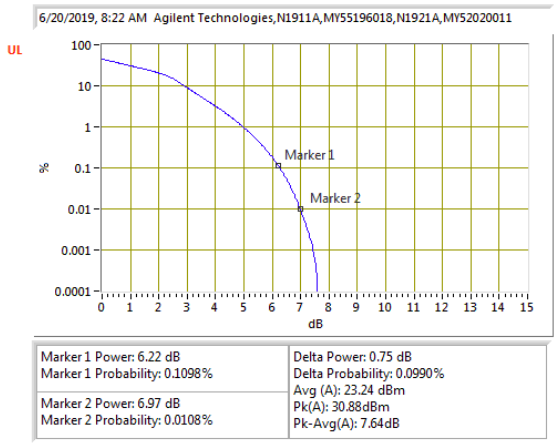
LTE B25 1.4MHz QPSK Middle Channel



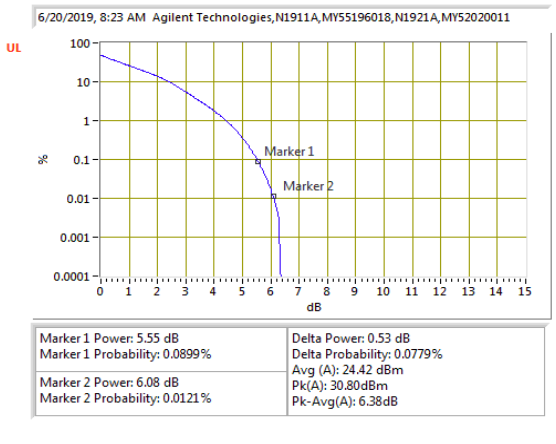
LTE B25 1.4MHz 16QAM Middle Channel



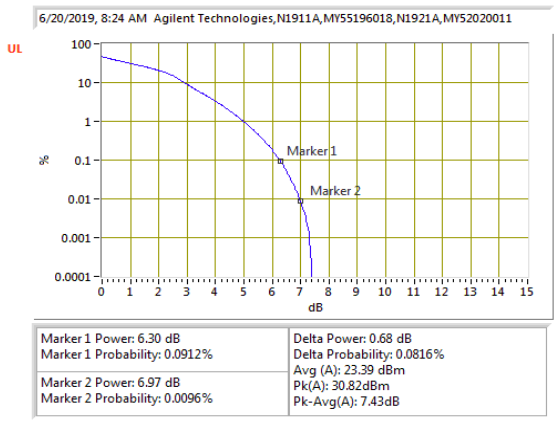
LTE B25 3MHz QPSK Middle Channel



LTE B25 3MHz 16QAM Middle Channel



LTE B2 5MHz QPSK Middle Channel



LTE B2 5MHz 16QAM Middle Channel

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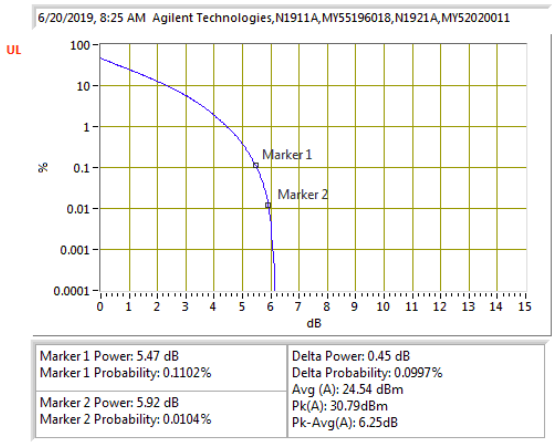
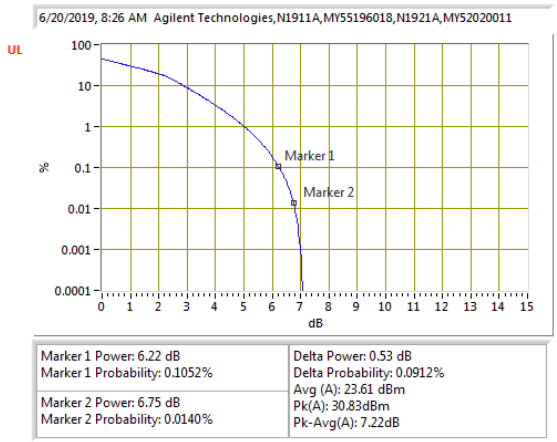
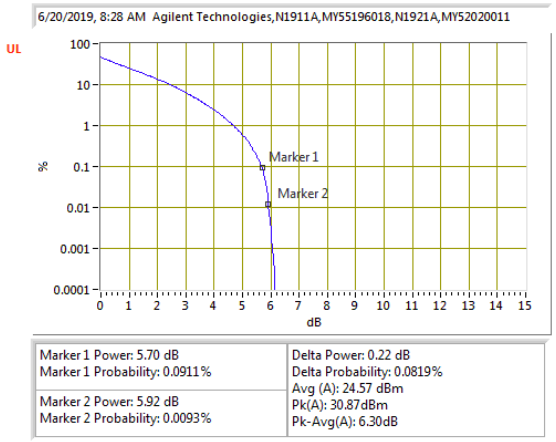


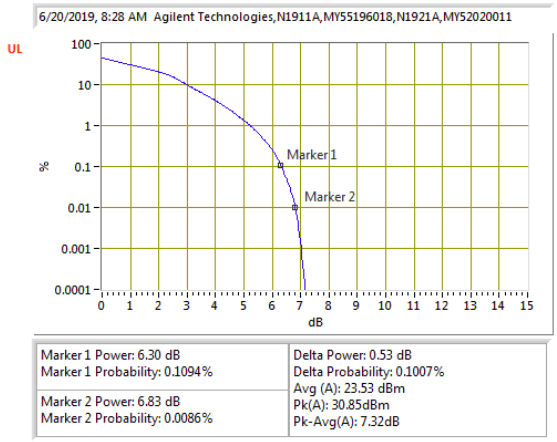
LTE B25 10MHz QPSK Middle Channel



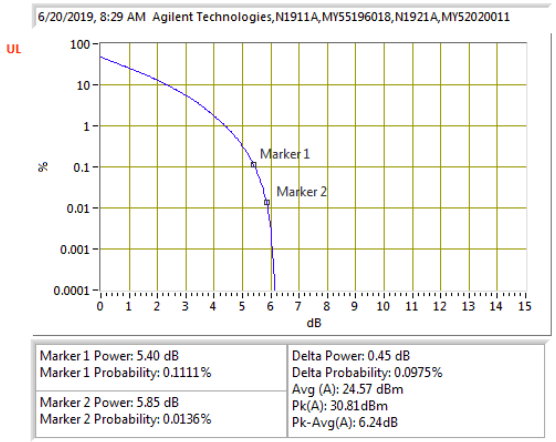
LTE B25 10MHz 16QAM Middle Channel



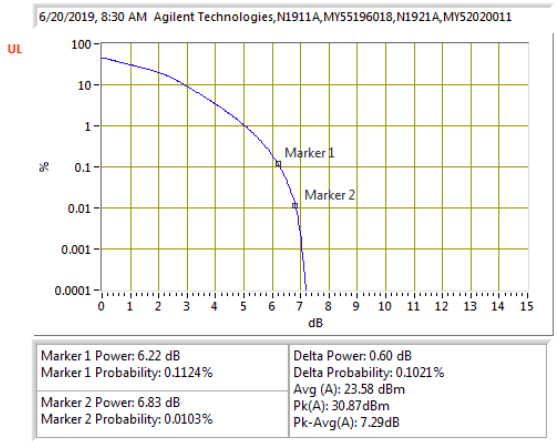
LTE B25 15MHz QPSK Middle Channel



LTE B25 15MHz 16QAM Middle Channel



LTE B25 20MHz QPSK Middle Channel



LTE B25 20MHz 16QAM Middle Channel

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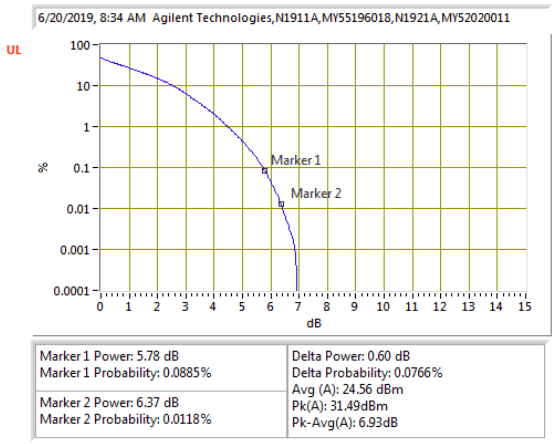
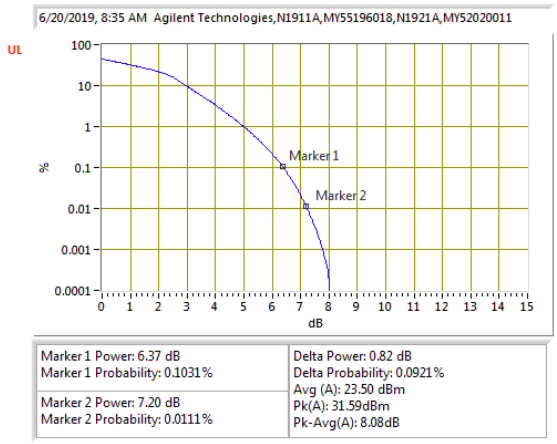
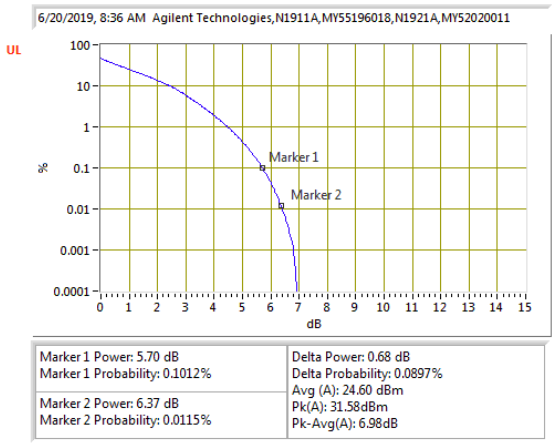
8.5.9. LTE BAND 26 (PART 90S)



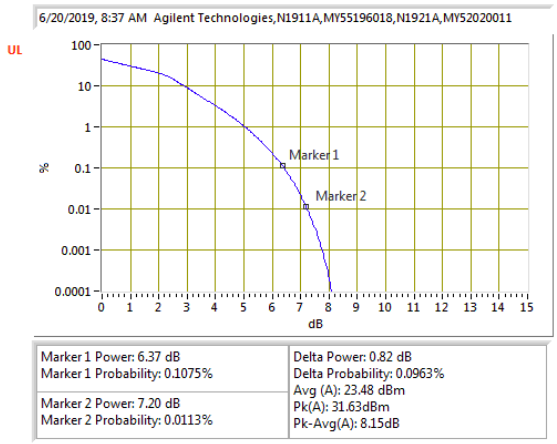
LTE B26 1.4MHz QPSK Middle Channel



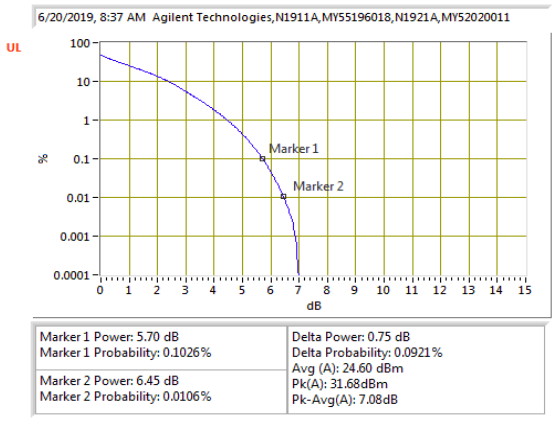
LTE B26 1.4MHz 16QAM Middle Channel



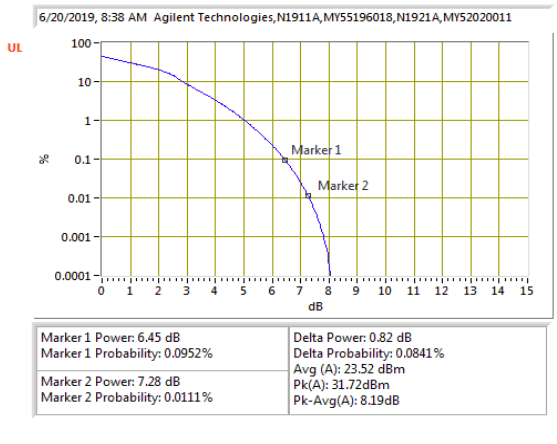
LTE B26 3MHz QPSK Middle Channel



LTE B26 3MHz 16QAM Middle Channel



LTE B26 5MHz QPSK Middle Channel



LTE B26 5MHz 16QAM Middle Channel

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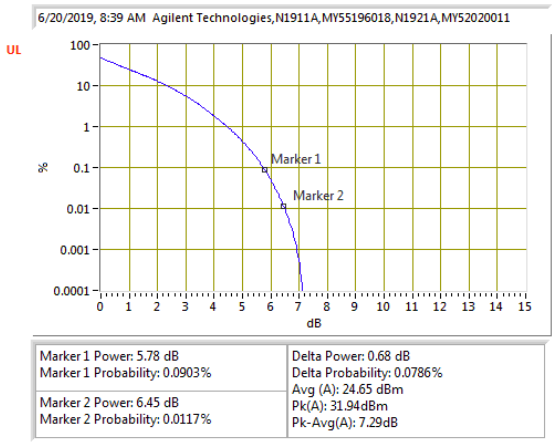
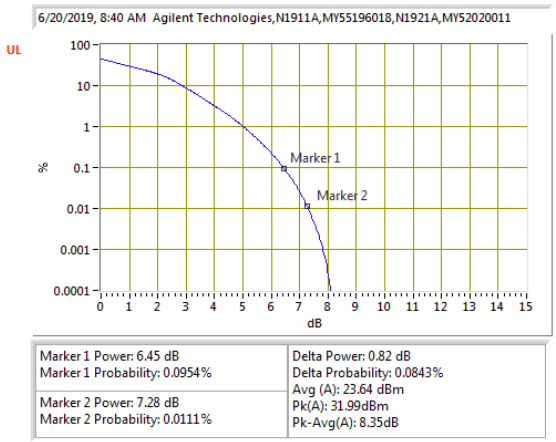


LTE B26 10MHz QPSK Middle Channel



LTE B26 10MHz 16QAM Middle Channel

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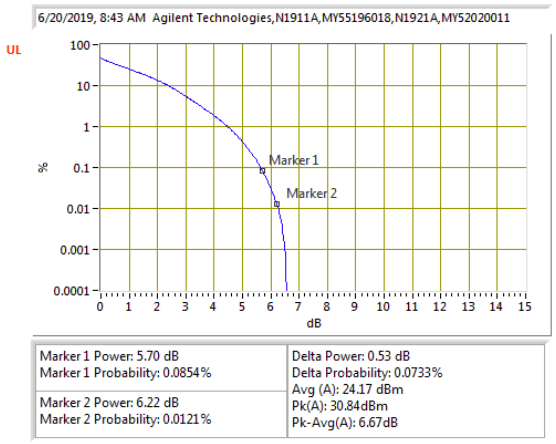
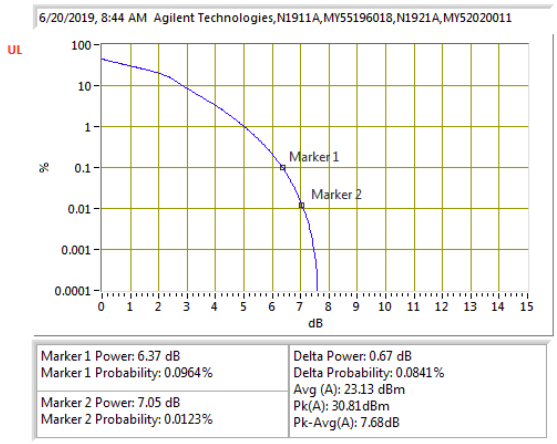
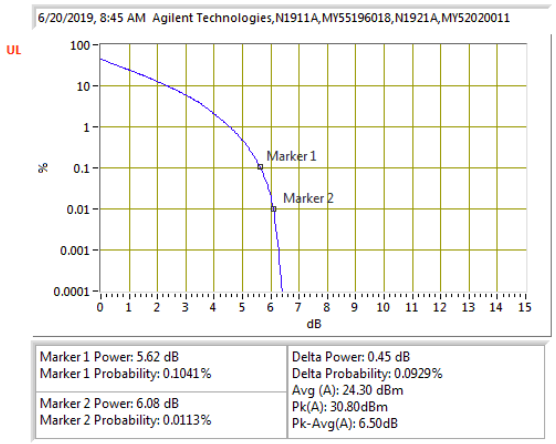
8.5.10. LTE BAND 30



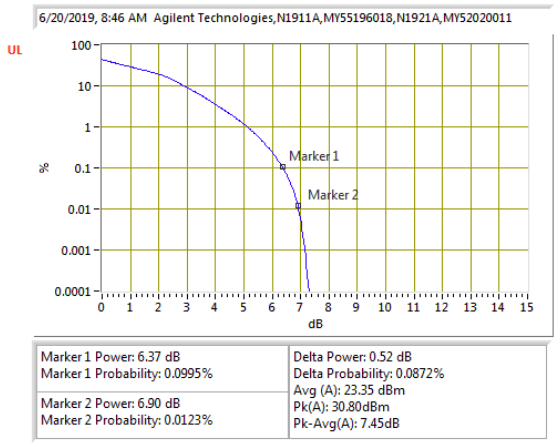
LTE B30 5MHz QPSK Middle Channel



LTE B30 5MHz 16QAM Middle Channel



LTE B30 10MHz QPSK Middle Channel



LTE B30 10MHz 16QAM Middle Channel

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8.5.11. LTE BAND 41

ID:	39004	Date:	6/20/19

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
Band 41	5MHz	2593.0	25	0	QPSK	33.67	22.87	3.76
					16QAM	33.37	21.89	4.44
	10MHz		50	0	QPSK	33.58	23.01	3.53
					16QAM	33.57	22.02	4.51
	15MHz		75	0	QPSK	33.58	22.95	3.59
					16QAM	33.57	21.96	4.57
	20MHz		100	0	QPSK	33.52	22.95	3.53
					16QAM	33.64	21.99	4.61
Duty Cycle Correction Factor (dB) =			7.04					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

8.5.12. LTE BAND 48

ID:	39004	Date:	6/20/19

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
Band 42	5MHz	3625.0	25	0	QPSK	30.13	19.35	3.74
					16QAM	30.01	18.27	4.70
	10MHz		50	0	QPSK	30.01	19.38	3.59
					16QAM	29.86	18.34	4.48
	15MHz		75	0	QPSK	29.76	19.22	3.50
					16QAM	29.84	18.26	4.54
	20MHz		100	0	QPSK	29.81	19.35	3.42
					16QAM	29.90	18.38	4.48
Duty Cycle Correction Factor (dB) =			7.04					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

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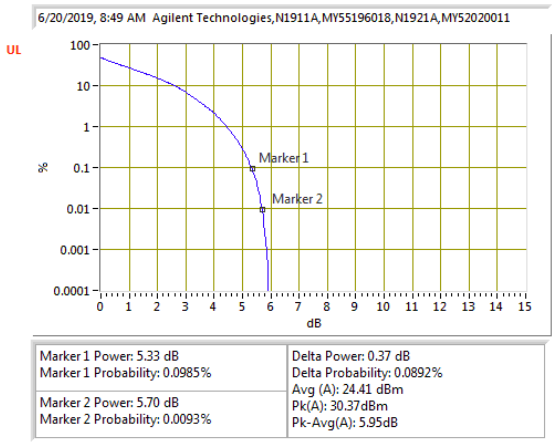
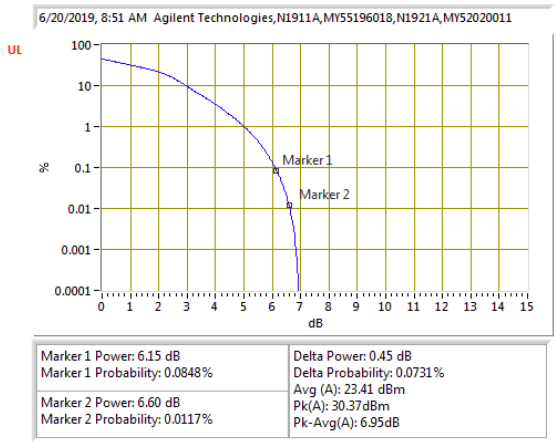
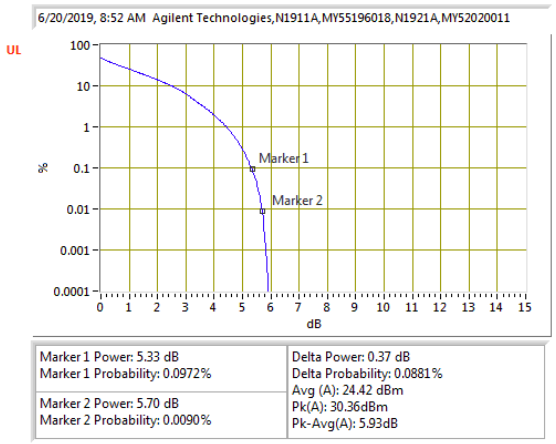
8.5.13. LTE BAND 66



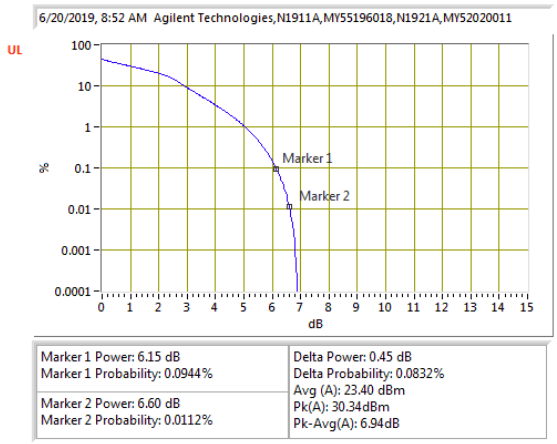
LTE B66 1.4MHz QPSK Middle Channel



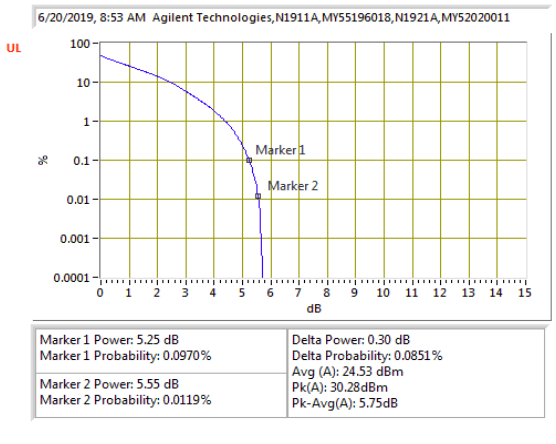
LTE B66 1.4MHz 16QAM Middle Channel



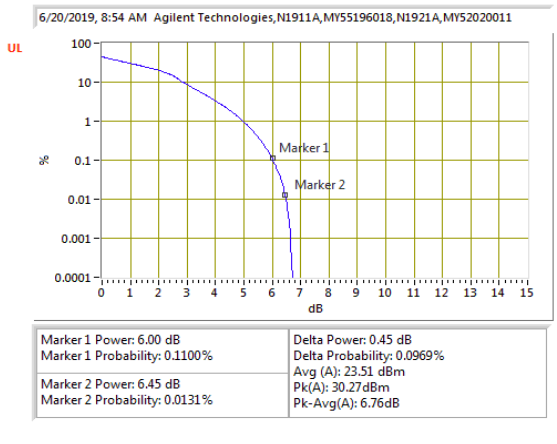
LTE B66 3MHz QPSK Middle Channel



LTE B66 3MHz 16QAM Middle Channel



LTE B66 5MHz QPSK Middle Channel



LTE B66 5MHz 16QAM Middle Channel

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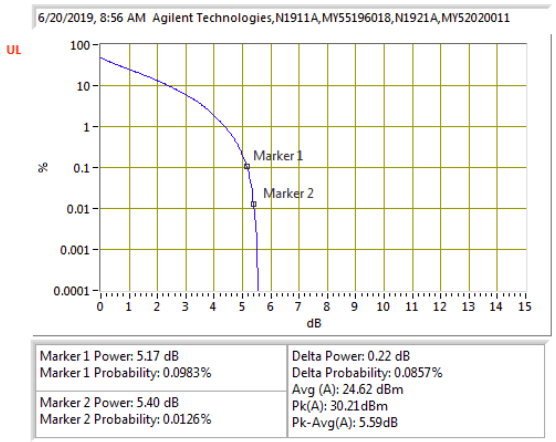
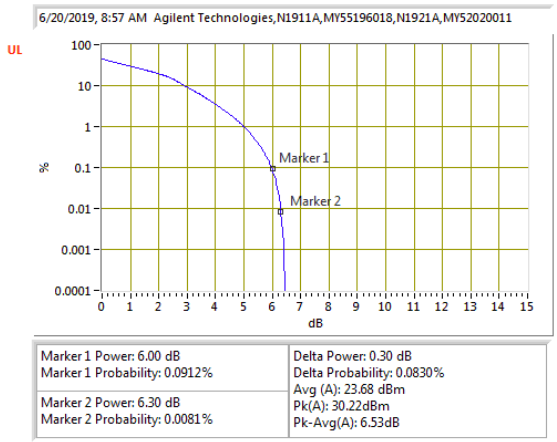
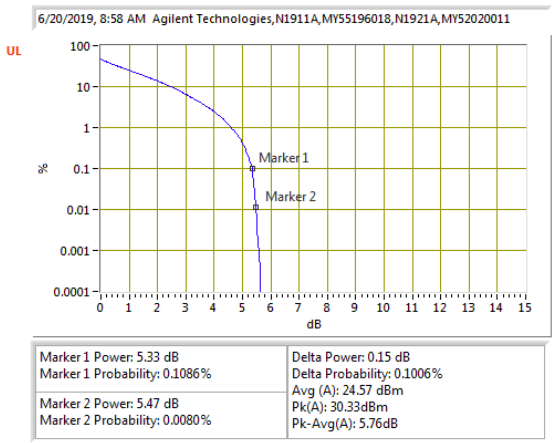


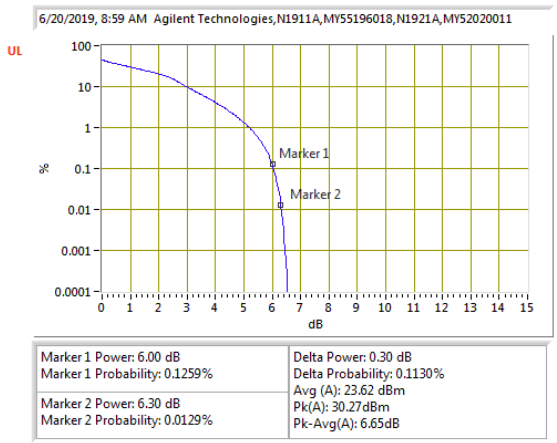
LTE B66 10MHz QPSK Middle Channel



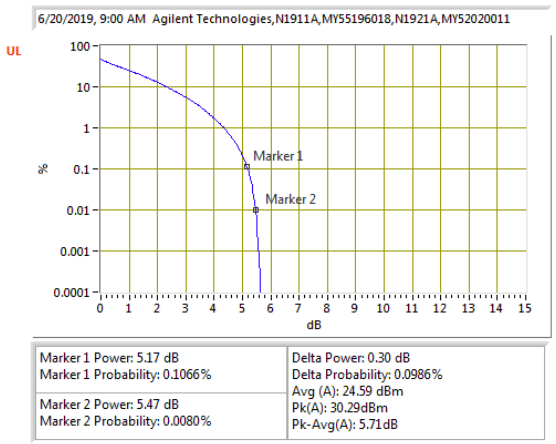
LTE B66 10MHz 16QAM Middle Channel



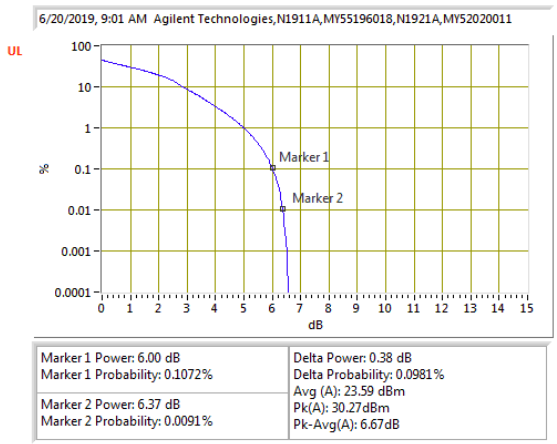
LTE B66 15MHz QPSK Middle Channel



LTE B66 15MHz 16QAM Middle Channel



LTE B66 20MHz QPSK Middle Channel



LTE B66 20MHz 16QAM Middle Channel

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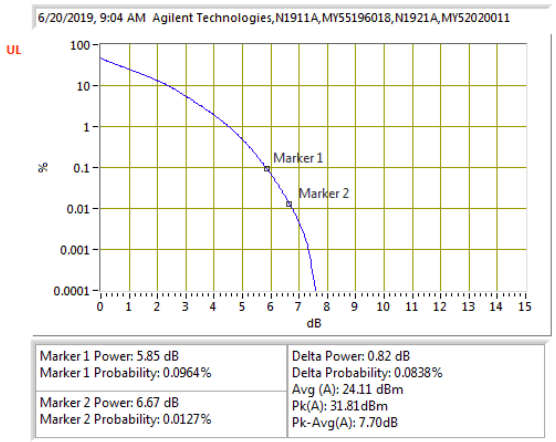
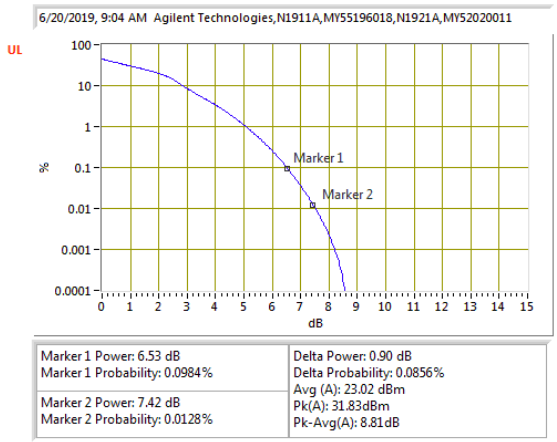
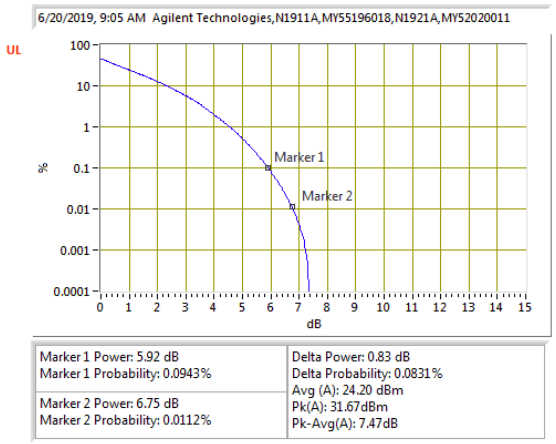
8.5.14. LTE BAND 71



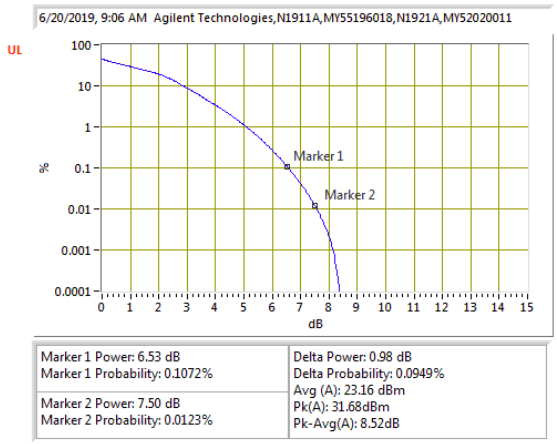
LTE B71 5MHz QPSK Middle Channel



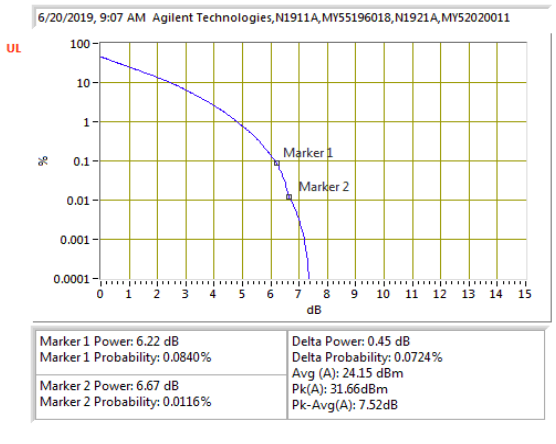
LTE B71 5MHz 16QAM Middle Channel



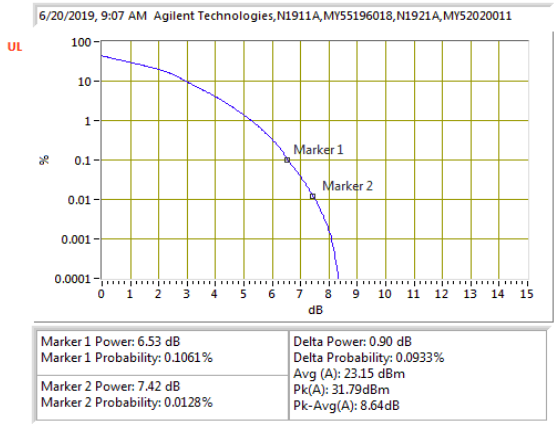
LTE B71 10MHz QPSK Middle Channel



LTE B71 10MHz 16QAM Middle Channel



LTE B71 15MHz QPSK Middle Channel



LTE B71 15MHz 16QAM Middle Channel

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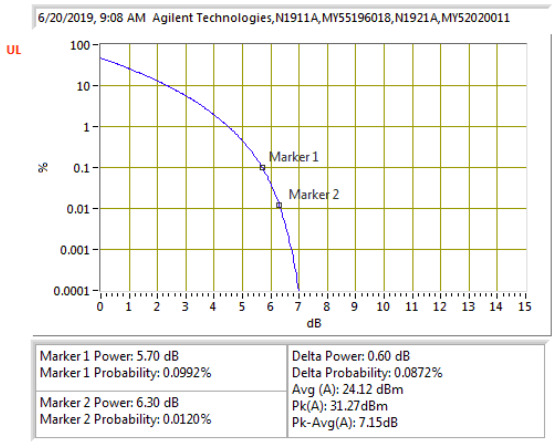
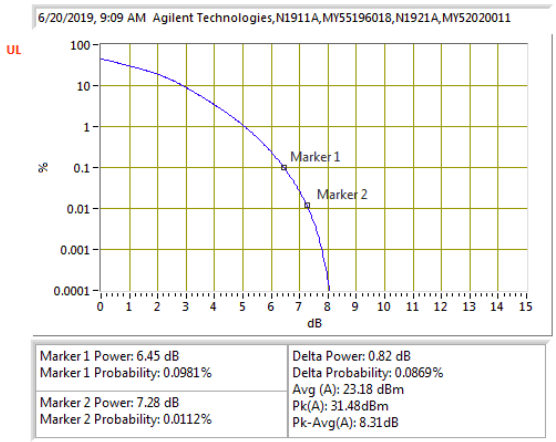


LTE B71 20MHz QPSK Middle Channel



LTE B71 20MHz 16QAM Middle Channel

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9. RADIATED TEST RESULTS

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53, §90.669, §90.691, §90.543 and §96.41

LIMIT

FCC: §22.917(a), §24.238(a), §27.53 (g), (h), §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.

FCC: §27.53 (Band 13)
(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. (-70 dBW/MHz = -40dBm/MHz).

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.

FCC: § 90.669 Emission limits. (Band 26)
(a) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 plus 10 log10(P) decibels or 80 decibels, whichever is the lesser attenuation.

FCC: §27.53 (a) (Band 30)
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.

FCC: §27.53 (m) (Band 7, 41)
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.

FCC: §96.41 (Band 48)
(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.

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TEST PROCEDURE

KDB 971168 D01/D02 v03r01/v02r01

MODES TESTED

- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

RESULTS

For LTE Band 13 and 14, no narrow band emissions were observed in the 1559-1610MHz band, so the wide band limit of -70dBW/MHz was applied.

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9.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1

9.1.1. LTE BAND 2

Company:	
Project #:	12901678
Date:	5/25/2019
Test Engineer:	12500
Configuration:	EUT Only
Mode:	LTE 2 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
2.314	-67.89	Pk	31.7	-31.8	11.1	-56.89	-13	-43.89	H
3.735	-71.9	Pk	33.2	-30.3	9.9	-59.1	-13	-46.1	H
3.36	-70.12	Pk	32.8	-30.3	9.8	-57.82	-13	-44.82	V
5.57	-73.33	Pk	34.7	-28.5	8.4	-58.73	-13	-45.73	H
6.828	-74.02	Pk	35.6	-27.2	7.6	-58.02	-13	-45.02	V
15.215	-78.09	Pk	40.4	-19.2	11.1	-45.79	-13	-32.79	V
Mid Channel, 1880MHz									
4.139	-69.59	Pk	33.6	-29.6	9.2	-56.39	-13	-43.39	H
12.121	-77.57	Pk	38.8	-21.3	8.5	-51.57	-13	-38.57	H
4.942	-71.7	Pk	34	-28.6	9.5	-56.8	-13	-43.8	V
9.454	-74.32	Pk	36.5	-23.7	8.5	-53.02	-13	-40.02	V
3.1	-71.48	Pk	33	-30.4	10.6	-58.28	-13	-45.28	V
5.632	-70.41	Pk	34.7	-28.6	8.5	-55.81	-13	-42.81	H
High Cahnnel, 1900MHz									
3.782	-65.36	Pk	33.5	-30.1	10	-51.96	-13	-38.96	H
14.473	-74.85	Pk	39.7	-20.3	10.9	-44.55	-13	-31.55	H
2.724	-70.43	Pk	32.2	-31	9.7	-59.53	-13	-46.53	V
4.994	-71.56	Pk	34.1	-28.1	9.9	-55.66	-13	-42.66	V
9.053	-76.19	Pk	36.2	-24.2	8.4	-55.79	-13	-42.79	V
2.142	-70.07	Pk	31.4	-31.8	11.1	-59.37	-13	-46.37	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	5/25/2019
Test Engineer:	12500
Configuration:	EUT Only
Mode:	LTE 2 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
11.292	-77.98	Pk	38	-21.7	8.2	-53.48	-13	-40.48	H
2.654	-69.85	Pk	32.3	-31.1	9	-59.65	-13	-46.65	H
3.305	-72.82	Pk	32.9	-30.2	10	-60.12	-13	-47.12	V
5.176	-73.91	Pk	34.2	-28.8	8.9	-59.61	-13	-46.61	H
6.511	-73.7	Pk	35.5	-27.3	8.1	-57.4	-13	-45.4	V
10.162	-73.8	Pk	37.2	-22.7	7	-52.3	-13	-39.3	V
Mid Channel, 1880MHz									
2.314	-70.17	Pk	31.7	-31.8	11.1	-59.17	-13	-46.17	H
5.145	-71.4	Pk	34.3	-28.7	9	-56.8	-13	-43.8	H
11.631	-76.69	Pk	38.3	-21.2	8.7	-50.89	-13	-37.89	V
3.105	-72.98	Pk	33	-30.5	10.8	-59.68	-13	-46.68	V
6.107	-72.69	Pk	35.6	-28.4	7.9	-57.59	-13	-45.59	V
13.11	-75.2	Pk	39.3	-21.1	8.9	-48.1	-13	-35.1	H
High Channel, 1900MHz									
3.782	-66.33	Pk	33.5	-30.1	10	-52.93	-13	-39.93	H
7.339	-74.94	Pk	35.5	-26.2	7.7	-57.94	-13	-44.94	V
11.329	-76.87	Pk	38	-21.7	7.8	-52.77	-13	-39.77	V
2.987	-69.8	Pk	32.7	-30.9	10.2	-57.8	-13	-44.8	H
3.1	-70.69	Pk	33	-30.4	10.6	-57.49	-13	-44.49	V
5.68	-71.37	Pk	34.7	-27.9	8.2	-56.37	-13	-43.37	H

Pk - Peak detector

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9.1.2. LTE BAND 5

Company:	
Project #:	12901678
Date:	6/4/2019
Test Engineer:	23508
Configuration:	EUT Only
Mode:	LTE 5 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz									
1.644	-69.55	Pk	28.7	-32.4	12.3	-60.95	-13	-47.95	H
1.645	-70.83	Pk	28.7	-32.4	11.4	-63.13	-13	-50.13	V
2.451	-71.33	Pk	32.5	-31.5	11.8	-58.53	-13	-45.53	V
2.463	-71.7	Pk	32.6	-31.6	12.2	-58.5	-13	-45.5	H
3.307	-71.92	Pk	32.8	-30.3	10.9	-58.52	-13	-45.52	V
3.31	-71.21	Pk	32.8	-30.3	11.4	-57.31	-13	-44.31	H
Mid Channel, 836.5MHz									
1.702	-66.13	Pk	29	-32.1	12.3	-56.93	-13	-43.93	H
1.692	-66.41	Pk	28.9	-32.3	12	-57.81	-13	-44.81	V
2.498	-76.45	Pk	32.6	-31.5	11.9	-63.45	-13	-50.45	V
2.509	-68.45	Pk	32.6	-31.4	11.4	-55.85	-13	-42.85	H
3.324	-76.99	Pk	32.8	-30.2	10.9	-63.49	-13	-50.49	V
3.343	-68.33	Pk	32.8	-30.3	10.4	-55.43	-13	-42.43	H
High Channel, 844MHz									
1.722	-70.77	Pk	29.5	-32.4	12	-61.67	-13	-48.67	H
1.72	-76.24	Pk	29.5	-32.4	13.8	-65.34	-13	-52.34	V
2.557	-67.36	Pk	32.6	-31.4	11.4	-54.76	-13	-41.76	V
2.566	-68.3	Pk	32.5	-31.3	12.5	-54.6	-13	-41.6	H
3.391	-68.16	Pk	32.7	-30	11.2	-54.26	-13	-41.26	V
3.392	-67.15	Pk	32.7	-30	11.2	-53.25	-13	-40.25	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	3/31/2019
Test Engineer:	31300
Configuration:	EUT Only
Mode:	LTE 5 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz									
1.654	-71.71	Pk	28.7	-32.4	12.2	-63.21	-13	-50.21	H
1.654	-66.79	Pk	28.7	-32.4	11.5	-58.99	-13	-45.99	V
2.48	-71.74	Pk	32.6	-31.4	11.4	-59.14	-13	-46.14	H
2.481	-68.26	Pk	32.6	-31.5	11.4	-55.76	-13	-42.76	V
3.307	-67.06	Pk	32.8	-30.3	10.9	-53.66	-13	-40.66	V
3.313	-67.85	Pk	32.8	-30.3	11.5	-53.85	-13	-40.85	H
Mid Channel, 836.5MHz									
1.675	-72.25	Pk	28.9	-32.4	12.4	-63.35	-13	-50.35	H
3.335	-71.35	Pk	32.8	-30.1	10.7	-57.95	-13	-44.95	H
1.666	-75.17	Pk	28.7	-32.4	11.6	-67.27	-13	-54.27	V
2.5	-74.7	Pk	32.6	-31.5	11.7	-61.9	-13	-48.9	V
3.336	-80.91	Pk	32.8	-30.1	11	-67.21	-13	-54.21	V
2.508	-72.67	Pk	32.6	-31.4	11.4	-60.07	-13	-47.07	H
High Channel, 844MHz									
1.679	-66.34	Pk	28.9	-32.4	12	-57.84	-13	-44.84	H
1.661	-77.38	Pk	28.8	-32.4	11.6	-69.38	-13	-56.38	V
2.538	-67.58	Pk	32.6	-31.4	11.9	-54.48	-13	-41.48	H
2.539	-66.38	Pk	32.6	-31.4	12	-53.18	-13	-40.18	V
3.365	-68.24	Pk	32.8	-30.2	11.7	-53.94	-13	-40.94	V
3.368	-67.8	Pk	32.8	-30.1	11.3	-53.8	-13	-40.8	H

Pk - Peak detector

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9.1.3. LTE BAND 7

Company:	
Project #:	12901678
Date:	5/25/2019
Test Engineer:	12500
Configuration:	EUT Only
Mode:	LTE 7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.002	-67.98	Pk	34.1	-28.5	9.5	-52.88	-25	-27.88	H
11.953	-76.7	Pk	38.6	-21.4	8.8	-50.7	-25	-25.7	H
4.206	-72.94	Pk	33.6	-29.4	9.5	-59.24	-25	-34.24	V
7.491	-74.89	Pk	35.7	-26.5	7.6	-58.09	-25	-33.09	V
10.563	-77.44	Pk	37.8	-22.2	8.2	-53.64	-25	-28.64	H
16.599	-76.52	Pk	42.2	-18.7	10.8	-42.22	-25	-17.22	V
Mid Channel, 2535MHz									
4.04	-69.81	Pk	33.5	-29.6	9.5	-56.41	-25	-31.41	H
5.052	-67.66	Pk	34.2	-28.6	9.4	-52.66	-25	-27.66	H
11.009	-74.77	Pk	37.9	-21.9	8.4	-50.37	-25	-25.37	H
4.533	-71.41	Pk	34.1	-29.3	9.9	-56.71	-25	-31.71	V
6.52	-73.56	Pk	35.5	-27.5	7.7	-57.86	-25	-32.86	V
17.442	-78.23	Pk	41.5	-17.7	11.3	-43.13	-25	-18.13	V
High Channel, 2560MHz									
3.944	-71.59	Pk	33.5	-30	10	-58.09	-25	-33.09	H
8.311	-73.63	Pk	35.7	-25.3	8.2	-55.03	-25	-30.03	H
4.587	-72.54	Pk	34.2	-29.3	9.7	-57.94	-25	-32.94	V
9.602	-77.68	Pk	36.8	-23.1	8.1	-55.88	-25	-30.88	V
12.95	-78.27	Pk	39.3	-20.9	9.7	-50.17	-25	-25.17	H
16.491	-77.96	Pk	41.9	-18.8	11.4	-43.46	-25	-18.46	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	5/25/2019
Test Engineer:	12500
Configuration:	EUT Only
Mode:	LTE 7 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.002	-69.01	Pk	34.1	-28.5	9.5	-53.91	-25	-28.91	H
3.7	-69.42	Pk	33.1	-29.9	9.7	-56.52	-25	-31.52	V
6.083	-71.5	Pk	35.5	-28.3	8.3	-56.00	-25	-31.00	V
8.506	-73.42	Pk	35.9	-24.8	8.5	-53.82	-25	-28.82	H
10.514	-78.2	Pk	37.8	-22.1	7.9	-54.6	-25	-29.6	V
14.524	-76.65	Pk	39.7	-20.1	11.2	-45.85	-25	-20.85	H
Mid Channel, 2535MHz									
3.938	-69.38	Pk	33.4	-30.1	10.1	-55.98	-25	-30.98	H
5.052	-69.92	Pk	34.2	-28.6	9.4	-54.92	-25	-29.92	H
4.783	-70.69	Pk	34.1	-29.1	9.5	-56.19	-25	-31.19	V
7.647	-73.64	Pk	35.7	-26.1	7.4	-56.64	-25	-31.64	V
11.046	-77.63	Pk	38	-21.8	8.2	-53.23	-25	-28.23	V
10.563	-77.17	Pk	37.8	-22.2	8.2	-53.37	-25	-28.37	H
High Channel, 2560MHz									
4.516	-72.06	Pk	34	-29.2	10.2	-57.06	-25	-32.06	H
8.371	-76.41	Pk	35.8	-25.3	8.7	-57.21	-25	-32.21	V
5.563	-72.35	Pk	34.7	-28.3	9.1	-56.85	-25	-31.85	V
7.015	-72.85	Pk	35.6	-26.8	7.4	-56.65	-25	-31.65	H
13.181	-77.85	Pk	39.3	-21.1	8.1	-51.55	-25	-26.55	H
14.529	-75.58	Pk	39.7	-20.1	11.5	-44.48	-25	-19.48	V

Pk - Peak detector

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9.1.4. LTE BAND 12

Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 12 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 704MHz									
1.403	-67.78	Pk	28.6	-30.1	10.2	-59.08	-13	-46.08	H
2.817	-67.92	Pk	32.3	-27.9	9.7	-53.82	-13	-40.82	H
1.396	-67.38	Pk	28.8	-30.2	9.2	-59.58	-13	-46.58	V
2.805	-68.82	Pk	32.3	-27.9	8.8	-55.62	-13	-42.62	V
2.102	-68.26	Pk	31.2	-28.7	9.3	-56.46	-13	-43.46	V
2.107	-67.94	Pk	31.2	-28.8	10.3	-55.24	-13	-42.24	H
Mid Channel, 707.5MHz									
1.437	-67.69	Pk	28.1	-30.2	9.1	-60.69	-13	-47.69	H
2.821	-68.2	Pk	32.3	-27.9	9.7	-54.1	-13	-41.1	H
1.425	-67	Pk	28.3	-30.2	8.4	-60.5	-13	-47.5	V
2.837	-68.97	Pk	32.2	-27.8	9.2	-55.37	-13	-42.37	V
2.135	-68.07	Pk	31.4	-28.9	10.4	-55.17	-13	-42.17	V
2.137	-68.21	Pk	31.4	-28.9	11.6	-54.11	-13	-41.11	H
High Channel, 711MHz									
1.409	-66.57	Pk	28.7	-32.6	12.5	-57.97	-13	-44.97	H
2.854	-67.9	Pk	32.5	-30.9	11.7	-54.6	-13	-41.6	H
1.41	-66.22	Pk	28.7	-32.6	12	-58.12	-13	-45.12	V
2.845	-77.41	Pk	32.4	-30.9	11.6	-64.31	-13	-51.31	V
2.13	-66.73	Pk	31.7	-31.6	12.5	-54.13	-13	-41.13	H
2.13	-67.69	Pk	31.7	-31.6	13.4	-54.19	-13	-41.19	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 12 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 704MHz									
1.411	-68.65	Pk	28.5	-30.2	10.4	-59.95	-13	-46.95	H
1.407	-68.5	Pk	28.5	-30.1	9.8	-60.3	-13	-47.3	V
2.823	-68.69	Pk	32.3	-27.9	9.6	-54.69	-13	-41.69	V
2.138	-66.97	Pk	31.4	-28.9	11.6	-52.87	-13	-39.87	H
2.149	-68.24	Pk	31.4	-28.9	10.5	-55.24	-13	-42.24	V
1.411	-68.65	Pk	28.5	-30.2	10.4	-59.95	-13	-46.95	H
Mid Channel, 707.5MHz									
1.411	-68.65	Pk	28.5	-30.2	10.4	-59.95	-13	-46.95	H
1.407	-68.5	Pk	28.5	-30.1	9.8	-60.3	-13	-47.3	V
2.823	-68.69	Pk	32.3	-27.9	9.6	-54.69	-13	-41.69	V
2.138	-66.97	Pk	31.4	-28.9	11.6	-52.87	-13	-39.87	H
2.149	-68.24	Pk	31.4	-28.9	10.5	-55.24	-13	-42.24	V
1.411	-68.65	Pk	28.5	-30.2	10.4	-59.95	-13	-46.95	H
High Channel, 711MHz									
1.421	-74.14	Pk	28.6	-32.5	10.7	-67.34	-13	-54.34	H
2.857	-74.23	Pk	32.5	-30.9	11.7	-60.93	-13	-47.93	H
1.41	-80.09	Pk	28.7	-32.6	12	-71.99	-13	-58.99	V
2.845	-68.32	Pk	32.4	-30.9	11.7	-55.12	-13	-42.12	V
2.132	-67.38	Pk	31.7	-31.6	13.4	-53.88	-13	-40.88	V
2.136	-67.16	Pk	31.7	-31.8	12.3	-54.96	-13	-41.96	H

Pk - Peak detector

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9.1.5. LTE BAND 13

Company:	
Project #:	12901678
Date:	6/11/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 13 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 782MHz									
1.557	-80.37	Pk	28	-32.9	9.8	-75.47	-40	-35.47	V
1.567	-81.03	Pk	28	-32.9	9.5	-76.43	-40	-36.43	H
2.334	-79.74	Pk	31.6	-31.6	9	-70.74	-13	-57.74	V
2.345	-79.68	Pk	31.6	-31.7	10	-69.78	-13	-56.78	H
3.101	-79.01	Pk	33	-30.4	10.6	-65.81	-13	-52.81	V
3.129	-78.13	Pk	33.1	-30.8	9.4	-66.43	-13	-53.43	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/11/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 13 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 782MHz									
1.544	-81.32	Pk	28.2	-32.9	9.9	-76.12	-40	-36.12	V
1.561	-80.5	Pk	28	-32.8	8.9	-76.4	-40	-36.4	H
2.331	-79.38	Pk	31.6	-31.6	9.1	-70.28	-13	-57.28	V
2.342	-79.93	Pk	31.5	-31.7	10.1	-70.03	-13	-57.03	H
3.12	-78.53	Pk	33.1	-30.6	9.4	-66.63	-13	-53.63	H
3.121	-77.61	Pk	33.1	-30.6	9.9	-65.21	-13	-52.21	V

Pk - Peak detector

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9.1.6. LTE BAND 14

Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 14 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793MHz									
1.58	-71.97	Pk	28	-29.9	9.5	-64.37	-40	-24.37	H
2.37	-71.94	Pk	31.8	-28.6	10.6	-58.14	-13	-45.14	H
1.575	-71.51	Pk	28	-29.9	9.8	-63.61	-40	-23.61	V
2.364	-72.73	Pk	31.7	-28.7	9.8	-59.93	-13	-46.93	V
3.147	-72.03	Pk	32.9	-27.6	10.3	-56.43	-13	-43.43	V
3.17	-73.83	Pk	32.8	-27.6	9.6	-59.03	-13	-46.03	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 14 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793MHz									
1.587	-67.11	Pk	28.1	-29.9	9.3	-59.61	-40	-19.61	H
2.37	-68.27	Pk	31.8	-28.6	10.6	-54.47	-13	-41.47	H
1.584	-67.46	Pk	28	-29.9	10	-59.36	-40	-19.36	V
2.368	-67.68	Pk	31.8	-28.6	10	-54.48	-13	-41.48	V
3.163	-68.87	Pk	32.7	-27.7	9.8	-54.07	-13	-41.07	V
3.17	-68.34	Pk	32.7	-27.6	9.6	-53.64	-13	-40.64	H

Pk - Peak detector

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9.1.7. LTE BAND 17

Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	12501
Configuration:	EUT Only
Mode:	LTE 17 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 709MHz									
1.408	-66.64	Pk	28.7	-32.5	12.7	-57.74	-13	-44.74	H
2.833	-67.99	Pk	32.4	-30.7	11.9	-54.39	-13	-41.39	H
1.406	-66.52	Pk	28.8	-32.5	12.4	-57.82	-13	-44.82	V
2.823	-67.07	Pk	32.5	-30.8	12.4	-52.97	-13	-39.97	V
2.129	-67.27	Pk	31.7	-31.6	12.6	-54.57	-13	-41.57	H
2.13	-67.57	Pk	31.7	-31.6	13.4	-54.07	-13	-41.07	V
Mid Channel, 710MHz									
1.419	-66.92	Pk	28.6	-32.4	10.8	-59.92	-13	-46.92	H
2.832	-67.33	Pk	32.4	-30.7	11.9	-53.73	-13	-40.73	H
1.413	-67.7	Pk	28.7	-32.6	11.3	-60.3	-13	-47.3	V
2.831	-68.06	Pk	32.4	-30.7	12	-54.36	-13	-41.36	V
2.117	-67.04	Pk	31.7	-31.8	12.2	-54.94	-13	-41.94	V
2.13	-67.1	Pk	31.7	-31.6	12.5	-54.5	-13	-41.5	H
High Channel, 711MHz									
1.416	-66.39	Pk	28.6	-32.5	11.1	-59.19	-13	-46.19	H
2.845	-68	Pk	32.4	-30.9	11.8	-54.7	-13	-41.7	H
1.411	-67.18	Pk	28.7	-32.6	11.7	-59.38	-13	-46.38	V
2.851	-67.21	Pk	32.4	-31	12	-53.81	-13	-40.81	V
2.131	-68.02	Pk	31.7	-31.6	12.5	-55.42	-13	-42.42	H
2.133	-67.14	Pk	31.7	-31.7	13.4	-53.74	-13	-40.74	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	12501
Configuration:	EUT Only
Mode:	LTE 17 16QAM 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 709MHz									
1.418	-67.01	Pk	28.6	-32.4	10.9	-59.91	-13	-46.91	H
2.837	-68.25	Pk	32.4	-30.7	11.8	-54.75	-13	-41.75	H
1.411	-67.24	Pk	28.7	-32.6	11.8	-59.34	-13	-46.34	V
2.838	-67.82	Pk	32.4	-30.8	11.6	-54.62	-13	-41.62	V
2.115	-67.28	Pk	31.7	-31.8	12	-55.38	-13	-42.38	V
2.123	-67.14	Pk	31.7	-31.8	13.1	-54.14	-13	-41.14	H
Mid Channel, 710MHz									
1.417	-67.14	Pk	28.6	-32.5	11	-60.04	-13	-47.04	H
2.837	-67.93	Pk	32.4	-30.7	11.8	-54.43	-13	-41.43	H
1.417	-67	Pk	28.6	-32.5	10.7	-60.2	-13	-47.2	V
2.838	-68.46	Pk	32.4	-30.8	11.6	-55.26	-13	-42.26	V
2.127	-67.14	Pk	31.7	-31.6	13.2	-53.84	-13	-40.84	V
2.129	-67.56	Pk	31.7	-31.6	12.6	-54.86	-13	-41.86	H
High Channel,711MHz									
1.423	-67.29	Pk	28.6	-32.6	10.6	-60.69	-13	-47.69	H
2.839	-68.4	Pk	32.4	-30.8	11.7	-55.1	-13	-42.1	H
1.42	-66.97	Pk	28.6	-32.5	10.6	-60.27	-13	-47.27	V
2.833	-68.46	Pk	32.4	-30.7	11.8	-54.96	-13	-41.96	V
2.127	-67.32	Pk	31.7	-31.6	12.7	-54.52	-13	-41.52	H
2.13	-66.86	Pk	31.7	-31.6	13.4	-53.36	-13	-40.36	V

Pk - Peak detector

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9.1.8. LTE BAND 25

Company:	
Project #:	12901678
Date:	5/26/2019
Test Engineer:	12508
Configuration:	EUT Only
Mode:	LTE 25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
14.479	-76.77	Pk	39.7	-20.3	11	-46.37	-13	-33.37	H
4.105	-71.67	Pk	33.7	-29.5	9.6	-57.87	-13	-44.87	V
11.088	-76.86	Pk	38	-21.7	8.5	-52.06	-13	-39.06	V
3.286	-70.77	Pk	32.8	-30.1	9.6	-58.47	-13	-45.47	H
5.157	-70.4	Pk	34.3	-28.6	9.1	-55.6	-13	-42.6	H
6.077	-73.95	Pk	35.5	-28.3	8.2	-58.55	-13	-45.55	V
Mid Channel, 1882.5MHz									
3.799	-69.83	Pk	33.6	-30.2	9.4	-57.03	-13	-44.03	V
12.342	-75.26	Pk	38.9	-21.4	8.9	-48.86	-13	-35.86	V
3.113	-70.99	Pk	33	-30.5	9.3	-59.19	-13	-46.19	H
6.163	-74.21	Pk	35.7	-28.4	7.3	-59.61	-13	-46.61	H
7.205	-73.27	Pk	35.5	-26.4	7.9	-56.27	-13	-43.27	V
13.657	-76.76	Pk	38.8	-21.1	10.6	-48.46	-13	-35.46	H
High Channel, 1905MHz									
2.804	-71.44	Pk	32.3	-30.9	9.4	-60.64	-13	-47.64	H
5.371	-71.46	Pk	34.5	-29.2	9	-57.16	-13	-44.16	H
4.259	-69.76	Pk	33.6	-29.4	9.6	-55.96	-13	-42.96	V
5.561	-70.85	Pk	34.7	-28.3	9	-55.45	-13	-42.45	V
10.561	-74.97	Pk	37.7	-22.3	8.3	-51.27	-13	-38.27	V
17.002	-77.21	Pk	41.8	-18.7	12.5	-41.61	-13	-28.61	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	5/26/2019
Test Engineer:	12508
Configuration:	EUT Only
Mode:	LTE 25 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
2.755	-72.89	Pk	32.2	-31.2	9.5	-62.39	-13	-49.39	H
5.101	-72.7	Pk	34.2	-28.9	9.5	-57.9	-13	-44.9	H
7.714	-72.54	Pk	35.8	-25.9	7.4	-55.24	-13	-42.24	V
4.456	-70.09	Pk	33.7	-29.2	10.1	-55.49	-13	-42.49	V
5.919	-70.2	Pk	35.2	-28.5	8.2	-55.3	-13	-42.3	V
14.526	-77.27	Pk	39.7	-20	11.3	-46.27	-13	-33.27	H
Mid Channel, 1882.5MHz									
2.794	-70.91	Pk	32.3	-31	9.5	-60.11	-13	-47.11	H
10.69	-74.51	Pk	37.9	-22.1	8.2	-50.51	-13	-37.51	V
3.365	-70.19	Pk	32.8	-30.3	9.8	-57.89	-13	-44.89	V
5.592	-73.34	Pk	34.7	-28.6	8.3	-58.94	-13	-45.94	H
6.444	-71.84	Pk	35.5	-27.4	7.4	-56.34	-13	-43.34	V
13.589	-78.37	Pk	38.8	-21	10.2	-50.37	-13	-37.37	H
High Channel, 1905MHz									
4.259	-70.3	Pk	33.6	-29.4	9.6	-56.5	-13	-43.5	V
8.439	-73.29	Pk	35.9	-24.7	8.2	-53.89	-13	-40.89	V
3.159	-69.97	Pk	32.8	-30.6	9.6	-58.17	-13	-45.17	H
5.236	-71.31	Pk	34.3	-29.1	9.1	-57.01	-13	-44.01	H
12.775	-78.07	Pk	39.1	-21.4	9.7	-50.67	-13	-37.67	V
15.211	-75.71	Pk	40.4	-19.2	11.3	-43.21	-13	-30.21	H

Pk - Peak detector

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9.1.9. LTE BAND 26 (PART 90S)

Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 26(90S) QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 819MHz									
1.63	-67.52	Pk	28.4	-29.9	10.3	-58.72	-13	-45.72	V
1.641	-67.63	Pk	28.4	-29.9	10.7	-58.43	-13	-45.43	H
2.443	-67.78	Pk	32.1	-28.7	9.3	-55.08	-13	-42.08	V
2.46	-67.48	Pk	32.3	-28.6	8.8	-54.98	-13	-41.98	H
3.273	-68.85	Pk	32.9	-27.2	10	-53.15	-13	-40.15	H
3.276	-68.57	Pk	32.9	-27.2	9.1	-53.77	-13	-40.77	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 26(90S) 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 819MHz									
1.644	-67.8	Pk	28.5	-29.9	10.6	-58.6	-13	-45.6	V
1.648	-68.48	Pk	28.5	-29.9	11	-58.88	-13	-45.88	H
2.461	-68.22	Pk	32.3	-28.6	8.8	-55.72	-13	-42.72	H
2.475	-67.86	Pk	32.3	-28.4	9	-54.96	-13	-41.96	V
3.279	-63.3	Pk	32.9	-27.3	9.1	-48.6	-13	-35.6	V
3.286	-68.61	Pk	32.8	-27.1	9.7	-53.21	-13	-40.21	H

Pk - Peak detector

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9.1.10. LTE BAND 30

Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.624	-70.45	Pk	34.2	-26.3	9.5	-53.05	-40	-13.05	H
4.614	-70.29	Pk	34.1	-26.2	9.6	-52.79	-40	-12.79	V
9.185	-73.68	Pk	36.3	-19.9	7.6	-49.68	-40	-9.68	V
6.874	-71.51	Pk	35.6	-23.6	6.6	-52.91	-40	-12.91	V
6.914	-71.22	Pk	35.6	-23.6	6.3	-52.92	-40	-12.92	H
9.228	-73.41	Pk	36.3	-20	8	-49.11	-40	-9.11	H

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
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Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 30 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.631	-70.8	Pk	34.1	-26.1	9.9	-52.9	-40	-12.9	H
4.589	-70.96	Pk	34.2	-26.2	9.6	-53.36	-40	-13.36	V
6.914	-71.26	Pk	35.6	-23.6	6.5	-52.76	-40	-12.76	V
6.919	-71.24	Pk	35.6	-23.6	6.6	-52.64	-40	-12.64	H
9.237	-73.34	Pk	36.3	-19.9	8	-48.94	-40	-8.94	H
9.293	-73.09	Pk	36.4	-19.9	8.4	-48.19	-40	-8.19	V

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
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9.1.11. LTE BAND 41

Company:	
Project #:	12901678
Date:	5/28/2019
Test Engineer:	12500
Configuration:	EUT Only
Mode:	LTE 41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz									
4.994	-67.43	Pk	34.1	-28.1	9.8	-51.63	-25	-26.63	H
11.671	-75.01	Pk	38.4	-21.2	8.7	-49.11	-25	-24.11	H
12.461	-74.54	Pk	39	-21.2	8.5	-48.24	-25	-23.24	H
4.524	-70.9	Pk	34.1	-29.2	10.3	-55.7	-25	-30.7	V
6.656	-71.29	Pk	35.6	-27.7	7.4	-55.99	-25	-30.99	V
9.798	-74.82	Pk	36.9	-22.9	8.5	-52.32	-25	-27.32	V
Mid Channel, 2593MHz									
3.856	-70.03	Pk	33.6	-30	9.5	-56.93	-25	-31.93	H
4.737	-70.62	Pk	34	-29.2	9.4	-56.42	-25	-31.42	V
8.458	-75.7	Pk	35.9	-24.6	8.4	-56	-25	-31	V
11.651	-78.17	Pk	38.3	-21.3	9.1	-52.07	-25	-27.07	V
6.64	-71.24	Pk	35.5	-27.3	7.3	-55.74	-25	-30.74	H
14.384	-74.69	Pk	39.4	-20.5	10.5	-45.29	-25	-20.29	H
High Channel, 2680MHz									
4.839	-70.16	Pk	34.3	-29.4	9.5	-55.76	-25	-30.76	H
9.089	-74.29	Pk	36.2	-24	8.3	-53.79	-25	-28.79	H
3.831	-69.65	Pk	33.5	-29.6	9.7	-56.05	-25	-31.05	V
5.342	-67.09	Pk	34.4	-29.1	7.4	-54.39	-25	-29.39	V
6.035	-70.83	Pk	35.5	-28.2	7.8	-55.73	-25	-30.73	V
13.803	-75.77	Pk	38.6	-20.8	11	-46.97	-25	-21.97	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	5/28/2019
Test Engineer:	12500
Configuration:	EUT Only
Mode:	LTE 41 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz									
3.833	-69.48	Pk	33.6	-29.7	9.3	-56.28	-25	-31.28	H
10.976	-74.98	Pk	38	-21.7	8	-50.68	-25	-25.68	H
4.395	-70.83	Pk	33.6	-29	9.2	-57.03	-25	-32.03	V
7.462	-76.33	Pk	35.6	-26.5	7.6	-59.63	-25	-34.63	V
5.48	-73.63	Pk	34.6	-28.5	8.5	-59.03	-25	-34.03	H
16.947	-79.21	Pk	41.9	-18.3	12.3	-43.31	-25	-18.31	V
Mid Channel, 2593MHz									
4.204	-73.24	Pk	33.5	-29.4	9.7	-59.44	-25	-34.44	H
8.34	-75.5	Pk	35.7	-25.4	7.9	-57.3	-25	-32.3	H
14.478	-78.24	Pk	39.7	-20.3	11	-47.84	-25	-22.84	H
10.691	-77.04	Pk	37.9	-22.1	8.2	-53.04	-25	-28.04	V
4.406	-71.02	Pk	33.6	-29.1	10.1	-56.42	-25	-31.42	V
5.519	-73.86	Pk	34.7	-28.6	8.6	-59.16	-25	-34.16	V
High Channel, 2680MHz									
4.043	-70.26	Pk	33.5	-29.6	9.8	-56.56	-25	-31.56	H
8.491	-75	Pk	35.8	-24.9	8.6	-55.5	-25	-30.5	H
14.481	-74.46	Pk	39.7	-20.3	10.9	-44.16	-25	-19.16	H
11.851	-75.43	Pk	38.5	-21.3	8.5	-49.73	-25	-24.73	V
5.555	-69.27	Pk	34.7	-28.3	8.8	-54.07	-25	-29.07	V
7.78	-72.48	Pk	35.7	-25.9	7.8	-54.88	-25	-29.88	V

Pk - Peak detector

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9.1.12. LTE BAND 48

Company:	
Project #:	12901678
Date:	6/12/2019
Test Engineer:	19459
Configuration:	EUT Only
Mode:	LTE 48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz									
10.674	-72.51	Pk	37.9	-21.9	8.1	-48.41	-40	-8.41	H
10.691	-72.21	Pk	37.9	-22.1	8.2	-48.21	-40	-8.21	V
10.69	-72.35	Pk	37.9	-22.1	8.2	-48.35	-40	-8.35	V
7.113	-71.16	Pk	35.6	-26.6	7.1	-55.06	-40	-15.06	H
7.124	-71.82	Pk	35.7	-26.4	6.8	-55.72	-40	-15.72	V
14.233	-71.38	Pk	39.1	-20.9	9.2	-43.98	-40	-3.98	H
Mid Channel, 3625MHz									
7.252	-71.99	Pk	35.5	-22.5	7.4	-51.59	-40	-11.59	H
10.854	-75.25	Pk	37.9	-18.6	6.8	-49.15	-40	-9.15	H
10.787	-79.6	Pk	38	-18.6	7.6	-52.6	-40	-12.6	V
14.479	-72.55	Pk	39.7	-20.2	11	-42.05	-40	-2.05	V
7.213	-71.93	Pk	35.5	-22.8	7.7	-51.53	-40	-11.53	V
14.304	-71.71	Pk	39.3	-20.2	9.7	-42.91	-40	-2.91	H
High Channel, 3690MHz									
10.688	-72.64	Pk	37.9	-22.1	8.2	-48.64	-40	-8.64	H
10.751	-73.08	Pk	38	-22	8.3	-48.78	-40	-8.78	V
7.177	-71.47	Pk	35.6	-26.4	7.2	-55.07	-40	-15.07	H
7.19	-71.72	Pk	35.6	-26.4	7.8	-54.72	-40	-14.72	V
14.331	-71.36	Pk	39.3	-20.5	10.1	-42.46	-40	-2.46	H
14.353	-71.2	Pk	39.4	-20.3	9.7	-42.4	-40	-2.4	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/12/2019
Test Engineer:	19459
Configuration:	EUT Only
Mode:	LTE 48 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz									
10.675	-72.52	Pk	37.9	-21.9	8	-48.52	-40	-8.52	H
10.71	-73.19	Pk	37.9	-22	8	-49.29	-40	-9.29	V
7.093	-71.03	Pk	35.6	-26.6	7.5	-54.53	-40	-14.53	V
7.108	-71.17	Pk	35.6	-26.6	6.8	-55.37	-40	-15.37	H
14.233	-71.62	Pk	39.1	-20.9	9.2	-44.22	-40	-4.22	H
14.259	-71.8	Pk	39.2	-20.7	9.7	-43.6	-40	-3.6	V
Mid Channel, 3625MHz									
11.053	-73.71	Pk	38	-18.6	8.3	-46.01	-40	-6.01	H
14.483	-72.85	Pk	39.7	-20.1	10.9	-42.35	-40	-2.35	H
11.013	-75.01	Pk	37.9	-18.5	7.9	-47.71	-40	-7.71	V
14.477	-73.2	Pk	39.7	-20.2	11.1	-42.6	-40	-2.6	V
7.163	-80.89	Av	35.6	-22.9	7.5	-60.69	-40	-20.69	V
7.21	-72.18	Pk	35.5	-22.8	7.7	-51.78	-40	-11.78	H
High Channel, 3690MHz									
10.689	-72.75	Pk	37.9	-22.1	8.2	-48.75	-40	-8.75	H
10.69	-73.02	Pk	37.9	-22.1	8.1	-49.12	-40	-9.12	V
7.171	-71.16	Pk	35.6	-26.6	7.2	-54.96	-40	-14.96	H
7.194	-71.22	Pk	35.6	-26.4	8	-54.02	-40	-14.02	V
14.357	-71.42	Pk	39.4	-20.3	10	-42.32	-40	-2.32	H
14.395	-71.87	Pk	39.5	-20.4	10.3	-42.47	-40	-2.47	V

Pk - Peak detector

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9.1.13. LTE BAND 66

Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.402	-67.72	Pk	32.6	-30.4	8.7	-56.82	-13	-43.82	V
3.425	-68.14	Pk	32.6	-30.1	9	-56.64	-13	-43.64	H
5.167	-69.71	Pk	34.3	-28.7	9.5	-54.61	-13	-41.61	H
5.224	-69.28	Pk	34.3	-29	8.9	-55.08	-13	-42.08	V
6.849	-70.87	Pk	35.5	-27.3	6.7	-55.97	-13	-42.97	V
6.875	-71.06	Pk	35.6	-27.5	6.6	-56.36	-13	-43.36	H
Mid Channel, 1745MHz									
3.481	-68.09	Pk	32.6	-30	9.5	-55.99	-13	-42.99	V
3.49	-67.97	Pk	32.6	-30	9.5	-55.87	-13	-42.87	H
5.216	-68.88	Pk	34.2	-28.9	9.1	-54.48	-13	-41.48	H
5.216	-69.74	Pk	34.2	-28.9	9.1	-55.34	-13	-42.34	V
6.958	-70.29	Pk	35.6	-27.1	7	-54.79	-13	-41.79	V
6.977	-70.55	Pk	35.7	-26.9	6.9	-54.85	-13	-41.85	H
High Channel, 1770MHz									
3.568	-68.21	Pk	32.9	-30.1	9.2	-56.21	-13	-43.21	H
5.403	-69.52	Pk	34.5	-29.2	8	-56.22	-13	-43.22	H
3.561	-67.96	Pk	32.9	-30.1	9.3	-55.86	-13	-42.86	V
5.377	-69.45	Pk	34.4	-29.2	8.9	-55.35	-13	-42.35	V
6.941	-69.78	Pk	35.6	-27.3	6.8	-54.68	-13	-41.68	H
6.953	-69.85	Pk	35.7	-27.2	6.8	-54.55	-13	-41.55	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 66 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
5.12	-68.33	Pk	34.3	-28.9	8.8	-54.13	-13	-41.13	V
3.42	-68.07	Pk	32.6	-30.2	9.4	-56.27	-13	-43.27	V
3.441	-67.14	Pk	32.6	-30	8.9	-55.64	-13	-42.64	H
5.165	-69.41	Pk	34.3	-28.7	9.4	-54.41	-13	-41.41	H
6.873	-70.49	Pk	35.6	-27.5	6.6	-55.79	-13	-42.79	V
6.877	-70.66	Pk	35.7	-27.4	6.6	-55.76	-13	-42.76	H
Mid Channel, 1745MHz									
3.47	-67.62	Pk	32.6	-30.1	9.2	-55.92	-13	-42.92	V
3.493	-68.67	Pk	32.7	-29.9	9.5	-56.37	-13	-43.37	H
5.196	-68.89	Pk	34.2	-28.9	9	-54.59	-13	-41.59	V
5.226	-69.75	Pk	34.3	-29	9	-55.45	-13	-42.45	H
6.922	-70.34	Pk	35.6	-27.4	6.9	-55.24	-13	-42.24	V
6.948	-70.09	Pk	35.7	-27.3	6.8	-54.89	-13	-41.89	H
High Channel, 1770MHz									
3.543	-68.57	Pk	32.9	-30.1	9.3	-56.47	-13	-43.47	H
5.384	-68.02	Pk	34.5	-29.3	8.2	-54.62	-13	-41.62	H
3.551	-68.07	Pk	32.9	-30.1	8.8	-56.47	-13	-43.47	V
5.363	-69.93	Pk	34.5	-29.1	8.7	-55.83	-13	-42.83	V
7.012	-70.32	Pk	35.7	-26.7	7.1	-54.22	-13	-41.22	V
7.061	-71.42	Pk	35.5	-26.5	7	-55.42	-13	-42.42	H

Pk - Peak detector

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9.1.14. LTE BAND 71

Company:	
Project #:	12901678
Date:	6/20/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 71 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 673MHz									
1.348	-68.49	Pk	29.1	-30.3	10.6	-59.09	-13	-46.09	H
2.67	-69.24	Pk	32.3	-28.1	9.9	-55.14	-13	-42.14	H
1.354	-68.29	Pk	29.3	-30.2	9	-60.19	-13	-47.19	V
2.666	-68.26	Pk	32.3	-28	9.9	-54.06	-13	-41.06	V
2.023	-67.48	Pk	30.9	-29.2	9.2	-56.58	-13	-43.58	H
2.03	-67.11	Pk	30.8	-29	10.2	-55.11	-13	-42.11	V
Mid Channel, 680.5MHz									
1.358	-67.42	Pk	29.3	-30.2	9	-59.32	-13	-46.32	V
1.36	-71.46	Pk	29.3	-30.2	9.5	-62.86	-13	-49.86	H
2.032	-68.26	Pk	30.8	-29	10.4	-56.06	-13	-43.06	V
2.051	-68.2	Pk	30.9	-28.9	9.9	-56.3	-13	-43.3	H
2.707	-68.44	Pk	32.2	-28	9.2	-55.04	-13	-42.04	V
2.718	-69.18	Pk	32.2	-28.1	9.8	-55.28	-13	-42.28	H
High Channel, 688MHz									
1.377	-66.52	Pk	29.1	-30.3	6.3	-61.42	-13	-48.42	V
1.383	-66.69	Pk	29.1	-30.2	7.9	-59.89	-13	-46.89	H
2.055	-67.76	Pk	30.9	-28.8	10.4	-55.26	-13	-42.26	V
2.062	-66.85	Pk	31	-28.9	9.5	-55.25	-13	-42.25	H
2.739	-67.85	Pk	32.2	-28	8.8	-54.85	-13	-41.85	V
2.753	-68.68	Pk	32.2	-28.2	9.2	-55.48	-13	-42.48	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/20/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 71 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel,673MHz									
1.346	-67.11	Pk	29	-30.3	10.6	-57.81	-13	-44.81	H
2.683	-68.68	Pk	32.3	-28	9	-55.38	-13	-42.38	H
1.339	-67.31	Pk	29	-30.2	8.7	-59.81	-13	-46.81	V
2.677	-68.2	Pk	32.3	-28	10.3	-53.6	-13	-40.6	V
2.009	-68.29	Pk	31	-29.2	9.9	-56.59	-13	-43.59	V
2.021	-67.67	Pk	30.9	-29.2	9.1	-56.87	-13	-43.87	H
Mid Channel, 680.5MHz									
1.362	-67.32	Pk	29.3	-30.2	9	-59.22	-13	-46.22	H
1.367	-66.9	Pk	29.4	-30.3	7.6	-60.2	-13	-47.2	V
2.039	-68.41	Pk	30.9	-29.1	9.6	-57.01	-13	-44.01	H
2.04	-67.76	Pk	30.9	-29.1	10.8	-55.16	-13	-42.16	V
2.714	-68.65	Pk	32.2	-28	9.5	-54.95	-13	-41.95	V
2.722	-68.85	Pk	32.2	-28	9.9	-54.75	-13	-41.75	H
High Channel, 688MHz									
1.374	-66.85	Pk	29.2	-30.2	6.6	-61.25	-13	-48.25	V
1.378	-67.21	Pk	29.1	-30.3	7.6	-60.81	-13	-47.81	H
2.049	-67.2	Pk	30.9	-28.9	10.6	-54.6	-13	-41.6	V
2.056	-67.75	Pk	30.9	-28.8	10	-55.65	-13	-42.65	H
2.747	-68.57	Pk	32.1	-28.1	8.5	-56.07	-13	-43.07	V
2.752	-68.99	Pk	32.2	-28.2	9.1	-55.89	-13	-42.89	H

Pk - Peak detector

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9.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

9.2.1. LTE BAND 2

Company:	
Project #:	12901678
Date:	6/11/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 2 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel,1860MHz									
3.673	-68.24	Pk	33.1	-26.8	10.5	-51.44	-13	-38.44	V
3.724	-68.63	Pk	33.2	-26.7	10.1	-52.03	-13	-39.03	H
5.566	-70.14	Pk	34.7	-25	8.8	-51.64	-13	-38.64	H
5.613	-69.5	Pk	34.7	-24.9	8.6	-51.1	-13	-38.1	V
7.388	-71.71	Pk	35.5	-22.9	7.3	-51.81	-13	-38.81	V
7.438	-71.1	Pk	35.6	-22.8	7	-51.3	-13	-38.3	H
Mid Channel, 1880MHz									
3.752	-67.42	Pk	33.3	-30.1	9.7	-54.52	-13	-41.52	H
3.76	-67.97	Pk	33.4	-30.1	9.6	-55.07	-13	-42.07	V
5.613	-63.56	Pk	34.7	-28.4	8.4	-48.86	-13	-35.86	H
5.613	-68.11	Pk	34.7	-28.4	8.6	-53.21	-13	-40.21	V
7.474	-70.3	Pk	35.6	-26.5	7.4	-53.8	-13	-40.8	V
7.51	-70.12	Pk	35.6	-26.3	7.7	-53.12	-13	-40.12	H
High Channel, 1900MHz									
3.758	-68.01	Pk	33.3	-30.1	9.3	-55.51	-13	-42.51	H
3.78	-67.12	Pk	33.4	-30.2	9.8	-54.12	-13	-41.12	V
5.618	-68.78	Pk	34.6	-28.4	8.8	-53.78	-13	-40.78	V
5.638	-68.46	Pk	34.7	-28.6	8.4	-53.96	-13	-40.96	H
7.475	-70.13	Pk	35.6	-26.5	7.4	-53.63	-13	-40.63	V
7.515	-71.01	Pk	35.6	-26.3	7.6	-54.11	-13	-41.11	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/11/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 2 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.694	-68.31	Pk	33.1	-26.9	9.9	-52.21	-13	-39.21	V
3.722	-68.45	Pk	33.2	-26.7	10	-51.95	-13	-38.95	H
5.572	-70.17	Pk	34.6	-25.1	8.3	-52.37	-13	-39.37	H
5.619	-69.32	Pk	34.6	-24.9	8.8	-50.82	-13	-37.82	V
7.436	-71.3	Pk	35.6	-22.9	7	-51.6	-13	-38.6	H
7.502	-72.36	Pk	35.6	-22.7	7.9	-51.56	-13	-38.56	V
Mid Channel, 1880MHz									
3.758	-68.01	Pk	33.3	-30.1	9.3	-55.51	-13	-42.51	H
3.78	-67.12	Pk	33.4	-30.2	9.8	-54.12	-13	-41.12	V
5.618	-68.78	Pk	34.6	-28.4	8.8	-53.78	-13	-40.78	V
5.638	-68.46	Pk	34.7	-28.6	8.4	-53.96	-13	-40.96	H
7.475	-70.13	Pk	35.6	-26.5	7.4	-53.63	-13	-40.63	V
7.515	-71.01	Pk	35.6	-26.3	7.6	-54.11	-13	-41.11	H
High Channel, 1900MHz									
3.801	-67.17	Pk	33.5	-26.8	9.9	-50.57	-13	-37.57	H
3.802	-68.27	Pk	33.5	-26.8	9.5	-52.07	-13	-39.07	V
5.689	-70.33	Pk	34.7	-24.6	7.9	-52.33	-13	-39.33	V
5.699	-69.82	Pk	34.7	-24.7	7.7	-52.12	-13	-39.12	H
7.597	-70.57	Pk	35.6	-22.8	7.4	-50.37	-13	-37.37	H
7.622	-71.12	Pk	35.7	-22.6	7.4	-50.62	-13	-37.62	V

Pk - Peak detector

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9.2.2. LTE BAND 5

Company:	
Project #:	12901678
Date:	6/11/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 5 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz									
1.661	-65.84	Pk	28.6	-29.8	10.3	-56.74	-13	-43.74	H
1.682	-67.44	Pk	28.7	-29.7	9.6	-58.84	-13	-45.84	V
2.498	-67.44	Pk	32.4	-28.5	8.8	-54.74	-13	-41.74	H
2.498	-67.85	Pk	32.4	-28.5	9.3	-54.65	-13	-41.65	V
3.306	-68.69	Pk	32.9	-27.2	9.9	-53.09	-13	-40.09	V
3.32	-69.31	Pk	32.8	-27.2	9.2	-54.51	-13	-41.51	H
Mid Channel, 836.5MHz									
1.674	-66.35	Pk	28.7	-29.9	10.6	-56.95	-13	-43.95	H
1.685	-67.21	Pk	28.7	-29.8	9.8	-58.51	-13	-45.51	V
2.513	-67.79	Pk	32.4	-28.5	9.5	-54.39	-13	-41.39	V
2.519	-68.15	Pk	32.3	-28.5	9.1	-55.25	-13	-42.25	H
3.341	-69.27	Pk	32.8	-27.2	8.9	-54.77	-13	-41.77	H
3.342	-68.76	Pk	32.8	-27.2	9.3	-53.86	-13	-40.86	V
High Channel, 844MHz									
1.684	-66.91	Pk	28.7	-29.8	9.8	-58.21	-13	-45.21	V
1.692	-66.87	Pk	28.7	-29.7	10.4	-57.47	-13	-44.47	H
2.512	-67.46	Pk	32.4	-28.6	9.5	-54.16	-13	-41.16	V
2.527	-67.86	Pk	32.4	-28.5	9.1	-54.86	-13	-41.86	H
3.378	-68.88	Pk	32.7	-27.2	8.9	-54.48	-13	-41.48	H
3.39	-68.57	Pk	32.6	-27.3	8.7	-54.57	-13	-41.57	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/11/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 5 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz									
1.66	-67.13	Pk	28.6	-29.8	9.1	-59.23	-13	-46.23	V
1.665	-67.5	Pk	28.6	-29.8	10.2	-58.5	-13	-45.5	H
2.487	-67.94	Pk	32.3	-28.4	8.7	-55.34	-13	-42.34	H
2.505	-68.4	Pk	32.4	-28.5	9.3	-55.2	-13	-42.2	V
3.312	-68.69	Pk	32.8	-27.1	9.8	-53.19	-13	-40.19	V
3.318	-69.16	Pk	32.8	-27.2	9.3	-54.26	-13	-41.26	H
Mid Channel, 836.5MHz									
1.656	-66.95	Pk	28.6	-29.9	9.6	-58.65	-13	-45.65	V
1.659	-67.33	Pk	28.6	-29.8	10.6	-57.93	-13	-44.93	H
2.506	-67.9	Pk	32.4	-28.5	9.1	-54.9	-13	-41.9	H
2.507	-68.27	Pk	32.4	-28.5	9.3	-55.07	-13	-42.07	V
3.355	-69.16	Pk	32.8	-27.2	9.5	-54.06	-13	-41.06	H
3.358	-68.52	Pk	32.8	-27.2	10	-52.92	-13	-39.92	V
High Channel, 844MHz									
1.683	-66.8	Pk	28.7	-29.7	11	-56.8	-13	-43.8	H
1.686	-67.51	Pk	28.7	-29.8	9.8	-58.81	-13	-45.81	V
2.533	-67.91	Pk	32.3	-28.4	9	-55.01	-13	-42.01	H
2.54	-68.49	Pk	32.3	-28.4	9	-55.59	-13	-42.59	V
3.37	-68.7	Pk	32.7	-27.2	9.9	-53.3	-13	-40.3	V
3.372	-68.56	Pk	32.7	-27.1	9.4	-53.56	-13	-40.56	H

Pk - Peak detector

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9.2.3. LTE BAND 7

Company:	
Project #:	12901678
Date:	5/28/2019
Test Engineer:	12501
Configuration:	EUT Only
Mode:	LTE 7 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.022	-69.13	Pk	34.1	-28.9	10.5	-53.43	-25	-28.43	H
7.531	-70.99	Pk	35.6	-24.5	10.5	-49.39	-25	-24.39	H
5.033	-68.73	Pk	34.2	-28.8	11.2	-52.13	-25	-27.13	V
7.54	-70.82	Pk	35.5	-24.6	10.8	-49.12	-25	-24.12	V
10.023	-72.75	Pk	36.9	-22.2	10.4	-47.65	-25	-22.65	H
10.091	-72.29	Pk	37	-22.1	10.5	-46.89	-25	-21.89	V
Mid Channel, 2535MHz									
5.066	-67.44	Pk	34.2	-28.7	10.7	-51.24	-25	-26.24	H
7.601	-70.63	Pk	35.5	-24.4	10.6	-48.93	-25	-23.93	H
5.053	-67.63	Pk	34.1	-28.5	11.2	-50.83	-25	-25.83	V
7.59	-71.53	Pk	35.6	-24.4	10.7	-49.63	-25	-24.63	V
10.128	-72.29	Pk	37.1	-21.8	9.8	-47.19	-25	-22.19	H
10.195	-72.16	Pk	37.2	-21.6	10.4	-46.16	-25	-21.16	V
High Channel, 2560MHz									
5.111	-67.43	Pk	34.1	-28.4	11.3	-50.43	-25	-25.43	H
7.667	-69.99	Pk	35.5	-24.6	11	-48.09	-25	-23.09	H
5.098	-68.38	Pk	34.2	-28.5	11.4	-51.28	-25	-26.28	V
7.69	-70.88	Pk	35.5	-24.5	11.3	-48.58	-25	-23.58	V
10.231	-72.57	Pk	37.4	-21.6	10	-46.77	-25	-21.77	H
10.243	-71.3	Pk	37.3	-21.5	10.2	-45.3	-25	-20.3	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	5/28/2019
Test Engineer:	12501
Configuration:	EUT Only
Mode:	LTE 7 16QAM 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.006	-68.26	Pk	34.1	-28.7	10.8	-52.06	-25	-27.06	H
7.527	-70.56	Pk	35.6	-24.6	10.4	-49.16	-25	-24.16	H
5.014	-68.74	Pk	34.2	-28.9	10.3	-53.14	-25	-28.14	V
7.509	-72.5	Pk	35.6	-24.5	10.9	-50.5	-25	-25.5	V
10.035	-71.76	Pk	36.9	-22.1	10.7	-46.26	-25	-21.26	V
10.038	-72.6	Pk	36.9	-22.1	10.4	-47.4	-25	-22.4	H
Mid Channel,2535MHz									
5.052	-66.12	Pk	34.1	-28.5	11.1	-49.42	-25	-24.42	H
7.601	-70.69	Pk	35.5	-24.4	10.6	-48.99	-25	-23.99	H
5.055	-66.62	Pk	34.1	-28.5	11.2	-49.82	-25	-24.82	V
7.592	-71.51	Pk	35.5	-24.4	10.8	-49.61	-25	-24.61	V
10.127	-72.4	Pk	37.1	-21.8	9.9	-47.2	-25	-22.2	H
10.174	-72.54	Pk	37.2	-21.5	10.6	-46.24	-25	-21.24	V
High Channel, 2560MHz									
5.108	-67.62	Pk	34.2	-28.3	11.3	-50.42	-25	-25.42	H
7.666	-70.16	Pk	35.6	-24.6	11	-48.16	-25	-23.16	H
5.105	-67.23	Pk	34.2	-28.3	11.3	-50.03	-25	-25.03	V
7.671	-70.7	Pk	35.6	-24.6	11.4	-48.3	-25	-23.3	V
10.23	-72.34	Pk	37.4	-21.6	10	-46.54	-25	-21.54	H
10.247	-72.84	Pk	37.4	-21.4	10.2	-46.64	-25	-21.64	V

Pk - Peak detector

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9.2.4. LTE BAND 12

Company:	
Project #:	12901678
Date:	5/28/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 12 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 704MHz									
1.399	-53.56	Pk	28.7	-33.1	9.9	-48.06	-13	-35.06	H
1.405	-65.28	Pk	28.6	-33.2	9.7	-60.18	-13	-47.18	V
2.099	-57.49	Pk	31.2	-32	10.5	-47.79	-13	-34.79	H
2.099	-57.89	Pk	31.2	-32	9.6	-49.09	-13	-36.09	V
2.826	-66.61	Pk	32.2	-30.9	9.7	-55.61	-13	-42.61	V
2.835	-67.33	Pk	32.3	-31	9.5	-56.53	-13	-43.53	H
Mid Channel, 707.5MHz									
1.406	-55.61	Pk	28.6	-33.2	10.4	-49.81	-13	-36.81	H
1.406	-64.3	Pk	28.6	-33.2	9.8	-59.1	-13	-46.1	V
2.109	-56.09	Pk	31.3	-31.9	10.3	-46.39	-13	-33.39	H
2.109	-60.29	Pk	31.3	-31.9	9.5	-51.39	-13	-38.39	V
2.793	-67.21	Pk	32.3	-31	9.5	-56.41	-13	-43.41	H
2.829	-66.84	Pk	32.2	-30.9	9.6	-55.94	-13	-42.94	V
High Channel, 711MHz									
1.411	-64.9	Pk	28.5	-33.1	9.5	-60	-13	-45	V
1.413	-56.15	Pk	28.5	-33.1	10	-50.75	-13	-37.75	H
2.12	-56.15	Pk	31.3	-31.8	10.4	-46.25	-13	-33.25	H
2.12	-54.71	Pk	31.3	-31.8	9.8	-45.41	-13	-32.41	V
2.827	-67.35	Pk	32.2	-30.9	9.9	-56.15	-13	-43.15	H
2.84	-66.71	Pk	32.2	-30.7	9.2	-56.01	-13	-43.01	V

Pk - Peak detector

UL VERIFICATION SERVICES INC.
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Company:	
Project #:	12901678
Date:	5/28/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 12 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 704MHz									
1.399	-53.18	Pk	28.7	-33.1	9.9	-47.68	-13	-34.68	H
1.409	-64.94	Pk	28.5	-33.2	9.7	-59.94	-13	-46.94	V
2.099	-63.77	Pk	31.2	-32	10.6	-53.97	-13	-40.97	H
2.099	-57.23	Pk	31.2	-32	9.6	-48.43	-13	-35.43	V
2.785	-66.88	Pk	32.3	-30.9	9.8	-55.68	-13	-42.68	H
2.817	-67.16	Pk	32.3	-30.9	9.1	-56.66	-13	-43.66	V
Mid Channel, 707.5MHz									
1.406	-61.95	Pk	28.6	-33.2	10.5	-56.05	-13	-43.05	H
1.408	-65.22	Pk	28.5	-33.2	9.8	-60.12	-13	-47.12	V
2.109	-55.32	Pk	31.3	-31.9	9.5	-46.42	-13	-33.42	V
2.119	-65.89	Pk	31.3	-31.8	10.4	-55.99	-13	-42.99	H
2.825	-67.2	Pk	32.2	-30.9	9.7	-56.2	-13	-43.2	V
2.826	-67.42	Pk	32.2	-30.9	10	-56.12	-13	-43.12	H
High Channel, 711MHz									
1.413	-63.25	Pk	28.5	-33.1	10	-57.85	-13	-44.85	H
1.413	-65.26	Pk	28.4	-33.1	9.2	-60.76	-13	-47.76	V
2.12	-64.2	Pk	31.3	-31.8	10.4	-54.3	-13	-41.3	H
2.12	-54.71	Pk	31.3	-31.8	9.8	-45.41	-13	-32.41	V
2.825	-66.45	Pk	32.2	-30.9	10	-55.15	-13	-42.15	H
2.827	-67.38	Pk	32.2	-30.9	9.7	-56.38	-13	-43.38	V

Pk - Peak detector

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9.2.5. LTE BAND 13

Company:	
Project #:	12901678
Date:	5/29/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 13 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 782MHz									
1.561	-65.9	Pk	28	-32.8	9.9	-60.8	-40	-20.8	V
1.566	-63.76	Pk	28	-32.9	9.4	-59.26	-40	-19.26	H
2.333	-54.8	Pk	31.6	-31.6	10	-44.8	-13	-31.8	H
2.333	-52.4	Pk	31.6	-31.6	9.1	-43.3	-13	-30.3	V
3.038	-67.89	Pk	32.9	-30.5	10.7	-54.79	-13	-41.79	H
3.121	-67.83	Pk	33.2	-30.7	9.9	-55.43	-13	-42.43	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	5/29/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 13 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 782MHz									
1.555	-64.97	Pk	28.1	-32.9	8.7	-61.07	-40	-21.07	H
1.559	-65.66	Pk	28	-32.9	9.8	-60.76	-40	-20.76	V
2.333	-54.51	Pk	31.6	-31.6	10	-44.51	-13	-31.51	H
2.333	-51.1	Pk	31.6	-31.6	9.1	-42.00	-13	-29.00	V
3.129	-68.31	Pk	33.1	-30.8	10	-56.01	-13	-43.01	V
3.136	-59.37	Pk	33	-30.8	9.9	-47.27	-13	-34.27	H

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
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9.2.6. LTE BAND 14

Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 14 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793MHz									
1.575	-65.55	Pk	28.0	-32.9	9.3	-61.15	-40	-21.15	H
2.366	-63.47	Pk	31.7	-31.7	10.8	-52.67	-13	-39.67	H
1.576	-65.41	Pk	28.0	-32.9	9.9	-60.41	-40	-20.41	V
2.366	-62.9	Pk	31.7	-31.7	9.9	-53.00	-13	-40.00	V
3.193	-67.76	Pk	32.8	-30.8	9.9	-55.86	-13	-42.86	H
3.199	-66.9	Pk	32.9	-30.7	9.6	-55.1	-13	-42.1	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 14 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793MHz									
1.576	-65.96	Pk	28	-32.9	9.4	-61.46	-40	-21.46	H
1.579	-64.78	Pk	28	-32.9	10	-59.68	-40	-19.68	V
2.366	-62.21	Pk	31.7	-31.7	10.8	-51.41	-13	-38.41	H
2.366	-62.08	Pk	31.7	-31.7	9.9	-52.18	-13	-39.18	V
3.137	-67.09	Pk	32.9	-30.8	9.9	-55.09	-13	-42.09	H
3.143	-67.37	Pk	32.9	-30.8	10.4	-54.87	-13	-41.87	V

Pk - Peak detector

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9.2.7. LTE BAND 17

Company:	
Project #:	12901678
Date:	6/14/2019
Test Engineer:	19459
Configuration:	EUT Only
Mode:	LTE 17 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 710MHz									
1.427	-66.54	Pk	28.3	-30.1	8.2	-60.14	-13	-47.14	H
2.838	-68.33	Pk	32.2	-27.8	9.4	-54.53	-13	-41.53	H
1.425	-66.38	Pk	28.3	-30.2	8.4	-59.88	-13	-46.88	V
2.847	-68.3	Pk	32.2	-27.7	9.1	-54.70	-13	-41.70	V
2.13	-67.17	Pk	31.4	-28.8	10.3	-54.27	-13	-41.27	V
2.135	-67.44	Pk	31.4	-28.9	11.6	-53.34	-13	-40.34	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/14/2019
Test Engineer:	19459
Configuration:	EUT Only
Mode:	LTE 17 16QAM10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 710MHz									
2.832	-68.17	Pk	32.3	-27.9	9.5	-54.27	-13	-41.27	H
2.843	-68.46	Pk	32.2	-27.8	9.2	-54.86	-13	-41.86	V
1.427	-66.78	Pk	28.3	-30.1	8.1	-60.48	-13	-47.48	H
1.43	-71.27	Pk	28.3	-30.1	7.7	-65.37	-13	-52.37	V
2.134	-67.96	Pk	31.4	-28.9	11.5	-53.96	-13	-40.96	H
2.139	-67.59	Pk	31.4	-28.9	9.9	-55.19	-13	-42.19	V

Pk - Peak detector

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9.2.8. LTE BAND 25

Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.677	-68.92	Pk	33.1	-26.8	10.1	-52.52	-13	-39.52	H
7.462	-72.34	Pk	35.6	-22.9	7.5	-52.14	-13	-39.14	H
3.67	-68.87	Pk	33	-26.7	10.6	-51.97	-13	-38.97	V
7.443	-72.29	Pk	35.5	-22.9	6.9	-52.79	-13	-39.79	V
5.557	-70.89	Pk	34.7	-25	8.8	-52.39	-13	-39.39	V
5.58	-70.22	Pk	34.7	-25	8.3	-52.22	-13	-39.22	H
Mid Channel, 1882.5MHz									
3.753	-69.47	Pk	33.3	-26.8	9.5	-53.47	-13	-40.47	H
7.515	-72.27	Pk	35.6	-22.8	7.6	-51.87	-13	-38.87	H
3.744	-69.05	Pk	33.3	-26.8	9.7	-52.85	-13	-39.85	V
7.503	-72.34	Pk	35.6	-22.7	7.9	-51.54	-13	-38.54	V
5.612	-70.2	Pk	34.7	-24.9	8.5	-51.9	-13	-38.9	V
5.639	-70.38	Pk	34.7	-24.9	8.3	-52.28	-13	-39.28	H
High Channel, 1905MHz									
3.806	-68.31	Pk	33.5	-26.9	9.4	-52.31	-13	-39.31	H
7.631	-72.63	Pk	35.7	-22.6	7.4	-52.13	-13	-39.13	H
3.807	-68.57	Pk	33.5	-26.9	9.2	-52.77	-13	-39.77	V
7.634	-72.14	Pk	35.7	-22.6	7.3	-51.74	-13	-38.74	V
5.714	-71.02	Pk	34.7	-24.6	7.9	-53.02	-13	-40.02	V
5.726	-71.17	Pk	34.7	-24.5	8	-52.97	-13	-39.97	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 25 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.721	-69.27	Pk	33.2	-26.8	9.9	-52.97	-13	-39.97	H
7.444	-72.61	Pk	35.5	-22.9	7.1	-52.91	-13	-39.91	H
3.714	-69.34	Pk	33.2	-26.9	9.7	-53.34	-13	-40.34	V
7.411	-71.19	Pk	35.5	-22.9	7.1	-51.49	-13	-38.49	V
5.564	-71.24	Pk	34.7	-24.9	9	-52.44	-13	-39.44	V
5.569	-70.24	Pk	34.7	-25	8.5	-52.04	-13	-39.04	H
Mid Channel, 1882.5MHz									
3.751	-68.49	Pk	33.3	-26.8	9.7	-52.29	-13	-39.29	H
7.522	-71.82	Pk	35.6	-22.8	7.5	-51.52	-13	-38.52	H
3.769	-69.59	Pk	33.4	-26.9	9.5	-53.59	-13	-40.59	V
7.555	-71.97	Pk	35.7	-22.8	7.2	-51.87	-13	-38.87	V
5.562	-69.91	Pk	34.7	-24.9	9	-51.11	-13	-38.11	V
5.623	-70.55	Pk	34.7	-24.9	8.5	-52.25	-13	-39.25	H
High Channel, 1905MHz									
3.808	-68.53	Pk	33.5	-26.9	9.3	-52.63	-13	-39.63	H
7.601	-72.25	Pk	35.7	-22.8	7.6	-51.75	-13	-38.75	H
3.8	-68.68	Pk	33.6	-26.8	9.4	-52.48	-13	-39.48	V
7.575	-71.73	Pk	35.6	-22.9	7.3	-51.73	-13	-38.73	V
5.675	-70.65	Pk	34.7	-24.5	8.6	-51.85	-13	-38.85	V
5.707	-71.15	Pk	34.7	-24.6	7.7	-53.35	-13	-40.35	H

Pk - Peak detector

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9.2.9. LTE BAND 26 (PART 90S)

Company:	
Project #:	12901678
Date:	5/29/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 26(90S) QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 819MHz									
1.646	-65.63	Pk	28.5	-32.8	10.5	-59.43	-13	-46.43	V
1.656	-65.56	Pk	28.6	-32.8	10.7	-59.06	-13	-46.06	H
2.474	-53.12	Pk	32.3	-31.5	9	-43.32	-13	-30.32	V
2.475	-49.46	Pk	32.3	-31.5	8.8	-39.86	-13	-26.86	H
3.306	-68.03	Pk	32.9	-30.2	9.6	-55.73	-13	-42.73	H
3.338	-67.02	Pk	32.8	-30.4	9	-55.62	-13	-42.62	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	5/29/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 26(90S) 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 819MHz									
1.656	-65.15	Pk	28.6	-32.8	10.7	-58.65	-13	-45.65	H
1.658	-66.16	Pk	28.6	-32.7	9.3	-60.96	-13	-47.96	V
2.474	-48.7	Pk	32.3	-31.5	8.8	-39.10	-13	-26.10	H
2.475	-51.9	Pk	32.3	-31.5	9	-42.10	-13	-29.10	V
3.324	-67.99	Pk	32.8	-30.4	9.1	-56.49	-13	-43.49	V
3.325	-68.03	Pk	32.8	-30.4	9.1	-56.53	-13	-43.53	H

Pk - Peak detector

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9.2.10. LTE BAND 30

Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.615	-67.94	Pk	34.1	-29.6	9.6	-53.84	-40	-13.84	H
4.616	-68.96	Pk	34.1	-29.6	9.7	-54.76	-40	-14.76	V
6.929	-70.1	Pk	35.7	-27.4	6.8	-55.00	-40	-15.00	H
6.954	-69.63	Pk	35.7	-27.2	6.9	-54.23	-40	-14.23	V
8.491	-71.21	Pk	35.8	-24.9	8.6	-51.71	-40	-11.71	H
8.514	-71.28	Pk	35.9	-25	8.5	-51.88	-40	-11.88	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 30 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.611	-54.22	Pk	34.1	-29.5	9.4	-40.22	-40	-22.00	H
4.611	-68.41	Pk	34.1	-29.5	9.3	-54.51	-40	-14.51	V
6.899	-69.21	Pk	35.7	-27.4	6.8	-54.11	-40	-14.11	V
6.918	-70.12	Pk	35.6	-27.3	6.4	-55.42	-40	-15.42	H
8.504	-70.64	Pk	35.9	-24.8	8.5	-51.04	-40	-11.04	H
8.506	-71.6	Pk	35.9	-24.8	8.4	-52.1	-40	-12.1	V

Pk - Peak detector

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9.2.11. LTE BAND 41

Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz									
5.026	-69.18	Pk	34.1	-28.7	8.3	-55.48	-25	-30.48	H
5.034	-69.5	Pk	34.1	-28.7	8.8	-55.3	-25	-30.3	V
7.513	-70.79	Pk	35.6	-26.3	7.6	-53.89	-25	-28.89	V
7.519	-70.17	Pk	35.6	-26.3	7.5	-53.37	-25	-28.37	H
10.239	-72.18	Pk	37.3	-22.6	7.7	-49.78	-25	-24.78	H
10.265	-71.97	Pk	37.4	-22.5	7	-50.07	-25	-25.07	V
Mid Channel, 2593MHz									
5.187	-68.04	Pk	34.2	-28.9	8.9	-53.84	-25	-28.84	H
7.773	-71.48	Pk	35.8	-26	8	-53.68	-25	-28.68	V
7.776	-70.93	Pk	35.8	-26	7.9	-53.23	-25	-28.23	H
10.363	-73.06	Pk	37.5	-22.5	7.6	-50.46	-25	-25.46	V
10.38	-73.22	Pk	37.6	-22.2	7.9	-49.92	-25	-24.92	H
5.187	-68.04	Pk	34.2	-28.9	8.9	-53.84	-25	-28.84	H
High Channel, 2680MHz									
5.348	-68.82	Pk	34.5	-29	7.9	-55.42	-25	-30.42	V
5.36	-69.14	Pk	34.5	-29.1	8.9	-54.84	-25	-29.84	H
8.036	-70.82	Pk	35.8	-25.5	8	-52.52	-25	-27.52	V
8.037	-70.68	Pk	35.7	-25.4	8.2	-52.18	-25	-27.18	H
10.695	-72.56	Pk	38	-22	8.3	-48.26	-25	-23.26	V
10.709	-71.39	Pk	37.9	-22	8.1	-47.39	-25	-22.39	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 41 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz									
5.003	-69.44	Pk	34.1	-28.5	9.4	-54.44	-25	-29.44	H
5.012	-68.92	Pk	34.2	-28.6	8.9	-54.42	-25	-29.42	V
7.52	-69.94	Pk	35.6	-26.3	7.5	-53.14	-25	-28.14	H
7.524	-70.66	Pk	35.7	-26.3	7.3	-53.96	-25	-28.96	V
10.256	-71.8	Pk	37.3	-22.5	7	-50.00	-25	-25.00	V
10.265	-72.69	Pk	37.4	-22.5	7	-50.79	-25	-25.79	H
Mid Channel, 2593MHz									
5.192	-68.3	Pk	34.2	-28.8	8.7	-54.2	-25	-29.2	V
5.196	-68.89	Pk	34.2	-28.9	9.2	-54.39	-25	-29.39	H
7.762	-70.44	Pk	35.7	-26	7.9	-52.84	-25	-27.84	V
7.781	-70.56	Pk	35.7	-25.9	7.7	-53.06	-25	-28.06	H
10.352	-72.38	Pk	37.5	-22.4	6.9	-50.38	-25	-25.38	H
10.371	-72.8	Pk	37.5	-22.4	7.9	-49.8	-25	-24.8	V
High Channel, 2680MHz									
5.357	-69.23	Pk	34.5	-29.1	8.7	-55.13	-25	-30.13	H
8.037	-71.24	Pk	35.7	-25.4	8.2	-52.74	-25	-27.74	H
10.748	-72.89	Pk	37.9	-21.9	8.4	-48.49	-25	-23.49	H
5.358	-68.97	Pk	34.5	-29.1	8.7	-54.87	-25	-29.87	V
8.037	-70.84	Pk	35.7	-25.4	8.1	-52.44	-25	-27.44	V
10.73	-72.66	Pk	37.9	-22.1	7.9	-48.96	-25	-23.96	V

Pk - Peak detector

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9.2.12. LTE BAND 66

Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.434	-67.35	Pk	32.6	-29.9	8.9	-55.75	-13	-42.75	V
3.442	-67.52	Pk	32.6	-30	8.9	-56.02	-13	-43.02	H
5.133	-59.6	Pk	34.3	-28.6	8.3	-45.6	-13	-32.6	H
5.133	-62.84	Pk	34.3	-28.6	8.1	-49.04	-13	-36.04	V
6.831	-70.15	Pk	35.6	-27.2	7.3	-54.45	-13	-41.45	H
6.841	-70.4	Pk	35.6	-27.3	6.9	-55.2	-13	-42.2	V
Mid Channel, 1745MHz									
3.501	-68.06	Pk	32.7	-29.8	9.6	-55.56	-13	-42.56	V
3.505	-67.47	Pk	32.8	-29.8	9.7	-54.77	-13	-41.77	H
5.208	-65.07	Pk	34.2	-28.8	9.3	-50.37	-13	-37.37	H
5.208	-65.04	Pk	34.2	-28.8	9.3	-50.34	-13	-37.34	V
7.004	-69.99	Pk	35.7	-26.8	7	-54.09	-13	-41.09	V
7.011	-69.99	Pk	35.7	-26.8	7.2	-53.89	-13	-40.89	H
High Channel, 1770MHz									
3.534	-68.94	Pk	32.9	-30.2	9.6	-56.64	-13	-43.64	H
3.535	-68.54	Pk	32.9	-30.2	9.7	-56.14	-13	-43.14	V
5.283	-62.44	Pk	34.4	-28.7	8.1	-48.64	-13	-35.64	H
5.283	-63.19	Pk	34.4	-28.7	7.8	-49.69	-13	-36.69	V
7.088	-70.5	Pk	35.6	-26.6	7.6	-53.9	-13	-40.9	V
7.094	-69.13	Pk	35.6	-26.6	7.4	-52.73	-13	-39.73	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 66 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.422	-62.52	Pk	32.6	-30.2	8.9	-51.22	-13	-38.22	H
3.422	-66.03	Pk	32.6	-30.2	9.3	-54.33	-13	-41.33	V
5.133	-58.97	Pk	34.3	-28.6	8.3	-44.97	-13	-31.97	H
5.134	-61.95	Pk	34.3	-28.7	8.1	-48.25	-13	-35.25	V
6.95	-69.58	Pk	35.7	-27.2	6.8	-54.28	-13	-41.28	H
6.957	-69.7	Pk	35.6	-27.1	7	-54.2	-13	-41.2	V
Mid Channel, 1745MHz									
3.494	-68.51	Pk	32.7	-29.8	9.6	-56.01	-13	-43.01	V
3.495	-68.42	Pk	32.7	-29.8	9.5	-56.02	-13	-43.02	H
5.208	-65.14	Pk	34.2	-28.8	9.3	-50.44	-13	-37.44	V
5.24	-68.4	Pk	34.2	-29.1	8.8	-54.5	-13	-41.5	H
6.951	-68.87	Pk	35.7	-27.2	6.8	-53.57	-13	-40.57	V
6.98	-70.69	Pk	35.6	-26.8	6.9	-54.99	-13	-41.99	H
High Channel, 1770MHz									
3.513	-67.67	Pk	32.7	-29.8	9.6	-55.17	-13	-42.17	H
3.514	-67.78	Pk	32.7	-29.8	9.7	-55.18	-13	-42.18	V
5.283	-60.49	Pk	34.4	-28.7	8.2	-46.59	-13	-33.59	H
5.283	-62.4	Pk	34.4	-28.7	7.8	-48.9	-13	-35.9	V
7.142	-69.76	Pk	35.7	-26.5	7.3	-53.26	-13	-40.26	V
7.152	-69.91	Pk	35.6	-26.7	8.3	-52.71	-13	-39.71	H

Pk - Peak detector

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9.2.13. LTE BAND 71

Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 71 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 673MHz									
1.344	-67.35	Pk	29	-30.3	9.2	-59.45	-13	-46.45	V
1.355	-67.3	Pk	29.3	-30.2	10	-58.2	-13	-45.2	H
2.027	-68.35	Pk	30.9	-29.1	9.9	-56.65	-13	-43.65	V
2.03	-68.19	Pk	30.8	-29	9.6	-56.79	-13	-43.79	H
2.686	-68.69	Pk	32.3	-28	10	-54.39	-13	-41.39	V
2.693	-68.78	Pk	32.3	-28.2	8.7	-55.98	-13	-42.98	H
Mid Channel, 680.5MHz									
1.355	-67.22	Pk	29.3	-30.2	9.9	-58.22	-13	-45.22	H
1.358	-66.99	Pk	29.3	-30.2	9	-58.89	-13	-45.89	V
2.038	-67.92	Pk	30.9	-29.1	10.5	-55.62	-13	-42.62	V
2.046	-67.85	Pk	30.9	-28.9	9.7	-56.15	-13	-43.15	H
2.71	-69.08	Pk	32.2	-28	9	-55.88	-13	-42.88	H
2.721	-68.93	Pk	32.2	-28	10	-54.73	-13	-41.73	V
High Channel, 688MHz									
1.372	-66.55	Pk	29.3	-30.2	6.9	-60.55	-13	-47.55	V
1.38	-66.39	Pk	29.1	-30.3	7.7	-59.89	-13	-46.89	H
2.045	-67.25	Pk	30.9	-28.9	11	-54.25	-13	-41.25	V
2.055	-67.72	Pk	30.9	-28.8	10	-55.62	-13	-42.62	H
2.734	-68.5	Pk	32.2	-28.1	9.3	-55.1	-13	-42.1	V
2.749	-68.42	Pk	32.1	-28.2	8.9	-55.62	-13	-42.62	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/8/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 71 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 673MHz									
1.349	-67.83	Pk	29.1	-30.3	10.5	-58.53	-13	-45.53	H
1.349	-68.01	Pk	29.1	-30.3	9.4	-59.81	-13	-46.81	V
2.029	-68.13	Pk	30.9	-29	9.6	-56.63	-13	-43.63	H
2.037	-68.18	Pk	30.9	-29	10.5	-55.78	-13	-42.78	V
2.672	-68.17	Pk	32.3	-28.1	10.1	-53.87	-13	-40.87	V
2.676	-68.27	Pk	32.3	-28	9.8	-54.17	-13	-41.17	H
Mid Channel, 680.5MHz									
1.358	-67.09	Pk	29.3	-30.2	9	-58.99	-13	-45.99	V
1.366	-65.98	Pk	29.4	-30.3	8.6	-58.28	-13	-45.28	H
2.032	-67.88	Pk	30.8	-29	9.6	-56.48	-13	-43.48	H
2.034	-68.45	Pk	30.8	-29	10.5	-56.15	-13	-43.15	V
2.714	-68.25	Pk	32.2	-28	9.3	-54.75	-13	-41.75	H
2.72	-68.79	Pk	32.2	-28	10	-54.59	-13	-41.59	V
High Channel, 688MHz									
1.372	-66.23	Pk	29.3	-30.2	6.9	-60.23	-13	-47.23	V
1.378	-66.85	Pk	29.1	-30.3	7.6	-60.45	-13	-47.45	H
2.056	-68.06	Pk	30.9	-28.8	10.4	-55.56	-13	-42.56	V
2.061	-67.44	Pk	30.9	-28.9	9.5	-55.94	-13	-42.94	H
2.746	-68.6	Pk	32.1	-28.1	9	-55.6	-13	-42.6	H
2.748	-68.49	Pk	32.1	-28.2	8.4	-56.19	-13	-43.19	V

Pk - Peak detector

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9.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3

9.3.1. LTE BAND 2

Company:	
Project #:	12901678
Date:	6/3/2019
Test Engineer:	23508
Configuration:	EUT Only
Mode:	LTE 2 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.719	-77.97	Pk	33.3	-29.9	11	-63.57	-13	-50.57	H
7.439	-70.92	Pk	35.8	-24.5	11.1	-48.52	-13	-35.52	H
3.697	-77.79	Pk	33.2	-29.6	11.6	-62.59	-13	-49.59	V
3.697	-73.51	Pk	33.2	-29.6	11.6	-58.31	-13	-45.31	V
7.423	-79.62	Pk	35.7	-24.5	11.2	-57.22	-13	-44.22	V
5.583	-69.28	Pk	34.9	-28.1	10.7	-51.78	-13	-38.78	H
Mid Channel, 1880MHz									
3.755	-67.07	Pk	33.5	-29.7	11.5	-51.77	-13	-38.77	H
7.551	-71.05	Pk	35.8	-24.4	10.8	-48.85	-13	-35.85	H
3.754	-66.36	Pk	33.5	-29.6	11.5	-50.96	-13	-37.96	V
7.53	-71.13	Pk	35.8	-24.5	10.6	-49.23	-13	-36.23	V
7.53	-79.5	Pk	35.8	-24.5	10.6	-57.6	-13	-44.6	V
5.634	-68.78	Pk	34.8	-28.1	10.7	-51.38	-13	-38.38	H
High Channel, 1900MHz									
3.801	-77.82	Pk	33.7	-29.6	11.2	-62.52	-13	-49.52	H
7.616	-71.21	Pk	35.7	-24.4	10.9	-49.01	-13	-36.01	H
3.784	-66.81	Pk	33.6	-29.7	11.3	-51.61	-13	-38.61	V
7.592	-70.94	Pk	35.7	-24.4	10.8	-48.84	-13	-35.84	V
5.679	-69.17	Pk	34.8	-27.8	10.4	-51.77	-13	-38.77	V
5.712	-69.46	Pk	34.9	-27.6	10.6	-51.56	-13	-38.56	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/3/2019
Test Engineer:	23508
Configuration:	EUT Only
Mode:	LTE 2 16QAM 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.724	-73.88	Pk	33.4	-30	11.5	-58.98	-13	-45.98	H
7.429	-70.79	Pk	35.7	-24.6	10.8	-48.89	-13	-35.89	H
3.726	-67.31	Pk	33.4	-30	11.5	-52.41	-13	-39.41	V
7.421	-76.64	Pk	35.8	-24.6	11.1	-54.34	-13	-41.34	V
5.572	-67.51	Pk	34.9	-28	10.9	-49.71	-13	-36.71	H
5.588	-68.89	Pk	34.9	-28	10.9	-51.09	-13	-38.09	V
Mid Channel, 1880MHz									
3.88	-72.7	Pk	33.6	-29.4	11.5	-57	-13	-44	H
7.564	-76.54	Pk	35.7	-24.5	10.9	-54.44	-13	-41.44	H
3.869	-66.25	Pk	33.6	-29.4	11.6	-50.45	-13	-37.45	V
7.592	-70.91	Pk	35.7	-24.4	10.8	-48.81	-13	-35.81	V
5.777	-68.94	Pk	35.1	-27.2	10.4	-50.64	-13	-37.64	V
5.812	-68.91	Pk	35.2	-27.2	10.7	-50.21	-13	-37.21	H
High Channel, 1900MHz									
3.796	-67.69	Pk	33.7	-29.7	11	-52.69	-13	-39.69	H
7.633	-76.03	Pk	35.8	-24.4	10.7	-53.93	-13	-40.93	H
3.788	-72.56	Pk	33.6	-29.7	11.5	-57.16	-13	-44.16	V
7.625	-70.91	Pk	35.8	-24.5	11.3	-48.31	-13	-35.31	V
5.702	-67.49	Pk	34.9	-27.6	10.5	-49.69	-13	-36.69	V
5.712	-69.17	Pk	34.9	-27.6	10.6	-51.27	-13	-38.27	H

Pk - Peak detector

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9.3.2. LTE BAND 7

Company:	
Project #:	12901678
Date:	6/10/2019
Test Engineer:	23508
Configuration:	EUT Only
Mode:	LTE 7 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.031	-78.18	Av	34.3	-28.8	11	-61.68	-25	-36.68	H
7.541	-80.47	Av	35.7	-24.5	10.7	-58.57	-25	-33.57	H
5.01	-76.76	Av	34.3	-28.9	10.4	-60.96	-25	-35.96	V
7.524	-80.77	Av	35.7	-24.6	10.6	-59.07	-25	-34.07	V
9.994	-82.47	Av	37	-22.3	10.6	-57.17	-25	-32.17	H
10.017	-82.43	Av	37	-22.2	10.6	-57.03	-25	-32.03	V
Mid Channel, 2535MHz									
5.053	-70.88	Pk	34.3	-28.5	11.1	-53.98	-25	-28.98	H
7.605	-73.73	Pk	35.8	-24.4	10.8	-51.53	-25	-26.53	H
5.019	-71.61	Pk	34.3	-28.9	10.6	-55.61	-25	-30.61	V
7.604	-73.47	Pk	35.8	-24.4	11.1	-50.97	-25	-25.97	V
10.001	-75.88	Pk	37	-22.3	10.5	-50.68	-25	-25.68	H
10.007	-74.93	Pk	37	-22.2	10.6	-49.53	-25	-24.53	V
High Channel, 2560MHz									
5.113	-70.87	Pk	34.4	-28.4	11.3	-53.57	-25	-28.57	H
7.677	-74.61	Pk	35.8	-24.5	11.2	-52.11	-25	-27.11	H
5.088	-72.18	Pk	34.4	-28.6	11.2	-55.18	-25	-30.18	V
7.64	-74.85	Pk	35.8	-24.5	11.2	-52.35	-25	-27.35	V
10.18	-75.67	Pk	37.2	-21.5	10.6	-49.37	-25	-24.37	V
10.228	-75.09	Pk	37.3	-21.6	10	-49.39	-25	-24.39	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/10/2019
Test Engineer:	23508
Configuration:	EUT Only
Mode:	LTE 7 16QAM 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel,2510MHz									
5.059	-69.57	Pk	34.3	-28.7	11	-52.97	-25	-27.97	H
7.558	-73.8	Pk	35.7	-24.4	10.9	-51.6	-25	-26.6	H
5.046	-72.51	Pk	34.4	-28.5	11.1	-55.51	-25	-30.51	V
7.537	-74.84	Pk	35.8	-24.5	10.7	-52.84	-25	-27.84	V
10.021	-75.91	Pk	37.1	-22.2	10.5	-50.51	-25	-25.51	V
10.047	-75.7	Pk	37.1	-22.1	10.3	-50.4	-25	-25.4	H
Mid Channel, 2535MHz									
5.102	-70.23	Pk	34.5	-28.4	11.3	-52.83	-25	-27.83	H
7.596	-73.85	Pk	35.7	-24.4	10.5	-52.05	-25	-27.05	H
5.075	-71.26	Pk	34.3	-28.7	10.8	-54.86	-25	-29.86	V
7.598	-73.93	Pk	35.7	-24.4	10.8	-51.83	-25	-26.83	V
10.151	-75.03	Pk	37.2	-21.6	9.8	-49.63	-25	-24.63	H
10.173	-75.14	Pk	37.2	-21.5	10.6	-48.84	-25	-23.84	V
Low Channel, 2560MHz									
5.119	-70.72	Pk	34.6	-28.5	10.9	-53.72	-25	-28.72	H
7.677	-73.88	Pk	35.8	-24.5	11.2	-51.38	-25	-26.38	H
5.1	-71.51	Pk	34.5	-28.4	11.4	-54.01	-25	-29.01	V
7.682	-73.18	Pk	35.8	-24.5	11.4	-50.48	-25	-25.48	V
10.172	-75.11	Pk	37.2	-21.5	10.6	-48.81	-25	-23.81	V
10.234	-75.62	Pk	37.3	-21.6	10.1	-49.82	-25	-24.82	H

Pk - Peak detector

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9.3.3. LTE BAND 25

Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.721	-69.22	Pk	33.2	-26.7	9.9	-52.82	-13	-39.82	H
7.442	-72.27	Pk	35.6	-22.9	7	-52.57	-13	-39.57	H
3.713	-69.27	Pk	33.2	-26.9	9.7	-53.27	-13	-40.27	V
7.409	-71.38	Pk	35.5	-23	7.1	-51.78	-13	-38.78	V
5.527	-70.32	Pk	34.7	-25.2	8.7	-52.12	-13	-39.12	V
5.556	-71.04	Pk	34.7	-25	8.9	-52.44	-13	-39.44	H
Mid Channel, 1882.5MHz									
3.748	-68.26	Pk	33.3	-26.8	9.9	-51.86	-13	-38.86	H
7.529	-71.63	Pk	35.7	-22.8	7.5	-51.23	-13	-38.23	H
3.727	-68.77	Pk	33.2	-26.6	9.9	-52.27	-13	-39.27	V
7.527	-71.45	Pk	35.7	-22.8	7.3	-51.25	-13	-38.25	V
5.613	-70.4	Pk	34.7	-24.9	8.5	-52.1	-13	-39.1	V
5.623	-71.27	Pk	34.7	-24.9	8.5	-52.97	-13	-39.97	H
High Channel, 1905MHz									
3.802	-68.18	Pk	33.5	-26.8	9.8	-51.68	-13	-38.68	H
7.613	-71.33	Pk	35.6	-22.7	7.5	-50.93	-13	-37.93	H
3.792	-67	Pk	33.5	-26.9	9.7	-50.7	-13	-37.7	V
7.603	-72.01	Pk	35.7	-22.8	7.6	-51.51	-13	-38.51	V
5.677	-70.08	Pk	34.7	-24.4	8.6	-51.18	-13	-38.18	V
5.706	-70.97	Pk	34.7	-24.6	7.7	-53.17	-13	-40.17	H

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888
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Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 25 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.744	-68.37	Pk	33.3	-26.8	9.9	-51.97	-13	-38.97	H
3.747	-69.12	Pk	33.3	-26.8	9.8	-52.82	-13	-39.82	V
3.747	-79.1	Pk	33.3	-26.8	9.8	-62.8	-13	-49.8	V
7.336	-71.52	Pk	35.5	-22.6	7.7	-50.92	-13	-37.92	V
5.519	-69.71	Pk	34.7	-25.2	8.6	-51.61	-13	-38.61	V
5.554	-70.77	Pk	34.7	-25	8.9	-52.17	-13	-39.17	H
Mid Channel, 1882.5MHz									
3.755	-68.92	Pk	33.3	-26.8	9.4	-53.02	-13	-40.02	H
7.53	-70.13	Pk	35.7	-22.8	7.5	-49.73	-13	-36.73	H
3.737	-68.66	Pk	33.2	-26.8	9.8	-52.46	-13	-39.46	V
7.499	-72.47	Pk	35.6	-22.7	7.7	-51.87	-13	-38.87	V
5.617	-70.41	Pk	34.6	-24.9	8.8	-51.91	-13	-38.91	V
5.644	-70.47	Pk	34.8	-25	8	-52.67	-13	-39.67	H
High Channel, 1905MHz									
3.808	-68.92	Pk	33.5	-26.9	9.3	-53.02	-13	-40.02	H
7.605	-71.58	Pk	35.7	-22.7	7.7	-50.88	-13	-37.88	H
3.796	-68.44	Pk	33.5	-26.8	9.5	-52.24	-13	-39.24	V
7.59	-71.61	Pk	35.7	-22.9	6.9	-51.91	-13	-38.91	V
5.709	-70.85	Pk	34.7	-24.7	7.6	-53.25	-13	-40.25	V
5.71	-70.93	Pk	34.7	-24.7	7.8	-53.13	-13	-40.13	H

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
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9.3.4. LTE BAND 30

Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.625	-69.58	Pk	34.1	-26.2	9.6	-52.08	-40	-12.08	H
4.625	-68.96	Pk	34.2	-26.3	9.6	-51.46	-40	-11.46	V
6.925	-72.37	Pk	35.6	-23.5	6.9	-53.37	-40	-13.37	H
6.936	-72.16	Pk	35.7	-23.5	6.8	-53.16	-40	-13.16	V
9.233	-73.18	Pk	36.3	-20	8	-48.88	-40	-8.88	V
9.237	-73.8	Pk	36.3	-19.9	8	-49.4	-40	-9.4	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 30 16QAM 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.614	-69.77	Pk	34.1	-26.2	9.6	-52.27	-40	-12.27	H
4.609	-70.11	Pk	34.1	-26.2	9.1	-53.11	-40	-13.11	V
9.327	-73.95	Pk	36.5	-19.9	8.2	-49.15	-40	-9.15	V
6.884	-71.69	Pk	35.6	-23.6	6.8	-52.89	-40	-12.89	V
6.915	-70.58	Pk	35.6	-23.6	6.3	-52.28	-40	-12.28	H
9.231	-74.14	Pk	36.3	-20	7.9	-49.94	-40	-9.94	H

Pk - Peak detector

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9.3.5. LTE BAND 41

Company:	
Project #:	12901678
Date:	6/12/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz									
4.98	-69.9	Pk	34.1	-24.9	9.1	-51.6	-25	-26.6	V
5.015	-69.79	Pk	34.2	-25.2	8.6	-52.19	-25	-27.19	H
7.51	-72.15	Pk	35.6	-22.8	7.8	-51.55	-25	-26.55	V
7.515	-70.87	Pk	35.6	-22.8	7.6	-50.47	-25	-25.47	H
9.997	-72.96	Pk	37	-18.8	8	-46.76	-25	-21.76	H
10.017	-73.1	Pk	37	-18.7	8.2	-46.6	-25	-21.6	V
Mid Channel, 2593MHz									
5.188	-69.52	Pk	34.2	-25.4	8.9	-51.82	-25	-26.82	H
5.204	-68.82	Pk	34.2	-25.4	9.2	-50.82	-25	-25.82	V
7.781	-70.1	Pk	35.7	-22.5	7.7	-49.2	-25	-24.2	H
7.781	-71.22	Pk	35.7	-22.5	7.8	-50.22	-25	-25.22	V
10.345	-73.35	Pk	37.5	-18.6	6.8	-47.65	-25	-22.65	H
10.371	-73.58	Pk	37.5	-18.5	7.9	-46.68	-25	-21.68	V
High Channel, 2680MHz									
5.35	-70.24	Pk	34.5	-25.7	8.2	-53.24	-25	-28.24	H
5.377	-70.38	Pk	34.4	-25.7	8.9	-52.78	-25	-27.78	V
8.033	-71.45	Pk	35.8	-21.9	7.9	-49.65	-25	-24.65	H
8.068	-71.86	Pk	35.7	-21.7	7.3	-50.56	-25	-25.56	V
10.691	-72.83	Pk	37.9	-18.4	8.3	-45.03	-25	-20.03	H
10.697	-73.04	Pk	38	-18.4	8.4	-45.04	-25	-20.04	V

Pk - Peak detector

UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000
FORM NO: CCSUP4031B
FAX: (510) 661-0888
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Company:	
Project #:	12901678
Date:	6/12/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 41 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel,2506MHz									
4.995	-69.81	Pk	34.1	-24.9	10	-50.61	-25	-25.61	V
5.005	-69.11	Pk	34.2	-25.1	9.4	-50.61	-25	-25.61	H
7.517	-71.93	Pk	35.6	-22.8	7.5	-51.63	-25	-26.63	H
7.517	-71.48	Pk	35.6	-22.8	7.5	-51.18	-25	-26.18	V
9.979	-73.55	Pk	37	-18.8	8.2	-47.15	-25	-22.15	V
9.999	-73.88	Pk	37	-18.8	8.1	-47.58	-25	-22.58	H
Mid Channel, 2593MHz									
5.181	-68.76	Pk	34.2	-25.5	8.6	-51.46	-25	-26.46	V
5.188	-69.72	Pk	34.2	-25.4	8.9	-52.02	-25	-27.02	H
7.767	-71.15	Pk	35.8	-22.5	7.7	-50.15	-25	-25.15	H
7.782	-71.3	Pk	35.7	-22.5	7.8	-50.3	-25	-25.3	V
10.309	-73.28	Pk	37.4	-18.7	7.3	-47.28	-25	-22.28	V
10.347	-72.89	Pk	37.5	-18.6	6.8	-47.19	-25	-22.19	H
High Channel, 2680MHz									
5.349	-70.1	Pk	34.5	-25.7	8.2	-53.1	-25	-28.1	H
5.369	-70.11	Pk	34.5	-25.6	8.9	-52.31	-25	-27.31	V
8.021	-70.81	Pk	35.7	-21.9	7.7	-49.31	-25	-24.31	V
8.041	-71.39	Pk	35.7	-21.8	8.2	-49.29	-25	-24.29	H
10.72	-72.95	Pk	38	-18.5	7.8	-45.65	-25	-20.65	V
10.73	-72.82	Pk	38	-18.6	7.9	-45.52	-25	-20.52	H

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
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9.3.6. LTE BAND 48

Company:	
Project #:	12901678
Date:	6/12/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel,3560MHz									
7.113	-71.04	Pk	35.6	-26.6	7.1	-54.94	-40	-14.94	H
7.161	-71.36	Pk	35.7	-26.5	7.5	-54.66	-40	-14.66	V
10.67	-72.97	Pk	37.9	-21.9	7.9	-49.07	-40	-9.07	H
10.703	-72.6	Pk	37.9	-22	8.3	-48.4	-40	8.4	V
14.18	-71.7	Pk	38.9	-21.1	9.6	-44.3	-40	-4.3	V
14.232	-71.68	Pk	39.1	-20.9	9.2	-44.28	-40	-4.28	H
Mid Channel, 3625MHz									
7.257	-71.06	Pk	35.5	-26.1	7.3	-54.36	-40	-14.36	H
7.267	-71.11	Pk	35.5	-26.2	7.4	-54.41	-40	-14.41	V
10.874	-73.21	Pk	38	-21.9	7.6	-49.51	-40	-9.51	V
10.877	-73.12	Pk	38	-21.9	7.4	-49.62	-40	-9.62	H
14.393	-71.57	Pk	39.5	-20.5	10.3	-42.27	-40	-2.27	H
14.5	-75.54	Pk	39.6	-20.3	11.1	-45.14	-40	-5.14	V
High Channel, 3690MHz									
7.378	-71.37	Pk	35.5	-26.4	7.6	-54.67	-40	-14.67	V
7.382	-70.43	Pk	35.6	-26.4	7.3	-53.93	-40	-13.93	H
11.063	-73.03	Pk	37.9	-21.7	8.5	-48.33	-40	-8.33	H
11.177	-72.95	Pk	38	-21.8	8.6	-48.15	-40	-8.15	V
14.755	-71.78	Pk	39.9	-20.7	8.7	-43.88	-40	-3.88	H
14.872	-71.33	Pk	39.8	-20.6	9.9	-42.23	-40	-2.23	V

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
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Company:	
Project #:	12901678
Date:	6/12/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 48 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz									
7.084	-70.98	Pk	35.7	-26.6	7.6	-54.28	-40	-14.28	V
7.096	-71.39	Pk	35.6	-26.5	7.4	-54.89	-40	-14.89	H
10.618	-73.01	Pk	37.9	-22.2	8.1	-49.21	-40	-9.21	V
10.676	-72.49	Pk	37.9	-22	8.1	-48.49	-40	-8.49	H
13.891	-71.13	Pk	38.7	-20.7	10	-43.13	-40	-3.13	V
14.183	-71.78	Pk	39	-21.2	9.4	-44.58	-40	-4.58	H
Mid Channel, 3625MHz									
7.337	-71.51	Pk	35.5	-26.1	7.7	-54.41	-40	-14.41	V
7.377	-71.23	Pk	35.5	-26.3	7.4	-54.63	-40	-14.63	H
11.001	-72.77	Pk	38	-21.8	8	-48.57	-40	-8.57	V
11.065	-73.2	Pk	38	-21.8	8.4	-48.6	-40	-8.6	H
14.752	-72.06	Pk	39.9	-20.7	8.6	-44.26	-40	-4.26	V
14.769	-71.72	Pk	39.9	-20.7	9.2	-43.32	-40	-3.32	H
High Channel, 3690MHz									
7.372	-71.56	Pk	35.5	-26.4	7.2	-55.26	-40	-15.26	H
7.377	-70.97	Pk	35.5	-26.4	7.6	-54.27	-40	-14.27	V
11.058	-72.35	Pk	38	-21.7	8.4	-47.65	-40	-7.65	V
11.061	-73.09	Pk	37.9	-21.6	8.5	-48.29	-40	-8.29	H
14.728	-71.62	Pk	39.9	-20.6	9.2	-43.12	-40	-3.12	V
14.746	-71.55	Pk	39.8	-20.8	9	-43.55	-40	-3.55	H

Pk - Peak detector

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9.3.7. LTE BAND 66

Company:	
Project #:	12901678
Date:	6/20/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.444	-70.57	Pk	32.6	-27	8.7	-56.27	-13	-43.27	V
3.447	-71.17	Pk	32.6	-27	9.2	-56.37	-13	-43.37	H
5.163	-69.75	Pk	34.3	-25.4	9.4	-51.45	-13	-38.45	V
5.164	-69.77	Pk	34.3	-25.4	9.3	-51.57	-13	-38.57	H
6.905	-70.34	Pk	35.6	-23.6	6.7	-51.64	-13	-38.64	H
6.913	-71.29	Pk	35.7	-23.6	6.6	-52.59	-13	-39.59	V
Mid Channel, 1745MHz									
3.48	-67.88	Pk	32.8	-30.4	11.4	-54.08	-13	-41.08	V
3.49	-67.07	Pk	33.1	-30.2	12	-52.17	-13	-39.17	H
5.21	-68.51	Pk	34.7	-28.4	11.3	-50.91	-13	-37.91	V
5.226	-68.21	Pk	34.7	-28.2	11.2	-50.51	-13	-37.51	H
6.941	-70.69	Pk	35.9	-25	11.4	-48.39	-13	-35.39	V
6.967	-70.9	Pk	35.9	-25.1	10.2	-49.9	-13	-36.9	H
High Channel, 1770MHz									
3.569	-70.43	Pk	32.9	-27	9.3	-55.23	-13	-42.23	H
3.559	-70.96	Pk	32.9	-27	9.3	-55.76	-13	-42.76	V
5.232	-70.34	Pk	34.3	-25.3	8.6	-52.74	-13	-39.74	V
5.234	-70.46	Pk	34.3	-25.4	9	-52.56	-13	-39.56	H
7.081	-71.4	Pk	35.6	-22.8	7.3	-51.3	-13	-38.3	H
7.084	-71.21	Pk	35.6	-22.9	7.5	-51.01	-13	-38.01	V

Pk - Peak detector

UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000

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Company:	
Project #:	12901678
Date:	6/20/2019
Test Engineer:	23549
Configuration:	EUT Only
Mode:	LTE 66 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel,1720MHz									
3.43	-69.95	Pk	32.6	-27.1	9	-55.45	-13	-42.45	V
3.442	-69.55	Pk	32.6	-27	8.9	-55.05	-13	-42.05	H
5.191	-70.66	Pk	34.2	-25.3	9	-52.76	-13	-39.76	H
5.198	-70.48	Pk	34.2	-25.5	9.3	-52.48	-13	-39.48	V
6.829	-71.63	Pk	35.6	-23.7	7.4	-52.33	-13	-39.33	H
6.858	-71.03	Pk	35.6	-23.6	6.5	-52.53	-13	-39.53	V
Mid Channel, 1745MHz									
3.466	-70.22	Pk	32.6	-27	9.3	-55.32	-13	-42.32	V
3.484	-69.84	Pk	32.6	-26.8	9.5	-54.54	-13	-41.54	H
5.232	-70.09	Pk	34.3	-25.3	8.6	-52.49	-13	-39.49	V
5.237	-70.73	Pk	34.3	-25.3	9.2	-52.53	-13	-39.53	H
6.936	-72.07	Pk	35.7	-23.5	6.8	-53.07	-13	-40.07	V
6.979	-71.6	Pk	35.7	-23.4	6.9	-52.4	-13	-39.40	H
High Channel, 1770MHz									
3.538	-69.86	Pk	33	-26.9	9.4	-54.36	-13	-41.36	H
3.527	-70.02	Pk	32.8	-26.9	9.7	-54.42	-13	-41.42	V
5.294	-69.69	Pk	34.4	-25.4	7.8	-52.89	-13	-39.89	V
5.306	-70.95	Pk	34.5	-25.3	8.4	-53.35	-13	-40.35	H
7.072	-71.87	Pk	35.6	-22.8	7.2	-51.87	-13	-38.87	V
7.078	-71.49	Pk	35.6	-22.7	7.2	-51.39	-13	-38.39	H

Pk - Peak detector

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9.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4

9.4.1. LTE BAND 2

Company:	
Project #:	12901678
Date:	6/3/2019
Test Engineer:	23508
Configuration:	EUT Only
Mode:	LTE 2 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel,1860MHz									
3.719	-66.87	Pk	33.3	-29.9	10.9	-52.57	-13	-39.57	H
7.432	-71.75	Pk	35.7	-24.6	10.8	-49.85	-13	-36.85	H
3.701	-66.92	Pk	33.2	-29.7	11.4	-52.02	-13	-39.02	V
7.436	-71.22	Pk	35.8	-24.5	11.3	-48.62	-13	-35.62	V
5.552	-68.51	Pk	34.8	-28.1	11	-50.81	-13	-37.81	V
5.584	-69.18	Pk	34.9	-28.1	10.7	-51.68	-13	-38.68	H
Mid Channel,1880MHz									
3.759	-66.7	Pk	33.5	-29.7	11.6	-51.3	-13	38.3	H
3.74	-70.91	Pk	33.4	-29.9	11.7	-55.71	-13	-42.71	V
7.45	-71.42	Pk	35.7	-24.6	11.2	-49.12	-13	-36.12	V
5.515	-68.93	Pk	34.9	-28.1	11.2	-50.93	-13	-37.93	V
5.53	-68.89	Pk	34.8	-28	11.1	-50.99	-13	-37.99	H
5.53	-74.69	Pk	34.8	-28	11.1	-56.79	-13	-43.79	H
High Channel, 1900MHz									
3.853	-66.31	Pk	33.6	-29.7	11.5	-50.91	-13	-37.91	H
7.634	-71.1	Pk	35.8	-24.5	10.7	-49.1	-13	-36.1	H
3.833	-66.56	Pk	33.7	-29.4	11.2	-51.06	-13	-38.06	V
7.607	-71.33	Pk	35.8	-24.4	11.2	-48.73	-13	-35.73	V
5.739	-69.33	Pk	34.9	-27.4	10.1	-51.73	-13	-38.73	V
5.754	-68.54	Pk	35	-27.5	10.5	-50.54	-13	-37.54	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/3/2019
Test Engineer:	23508
Configuration:	EUT Only
Mode:	LTE 2 16QAM 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.718	-79.21	Av	33.3	-29.9	10.9	-64.91	-13	-51.91	H
7.435	-76.28	Pk	35.8	-24.5	11	-53.98	-13	-40.98	H
3.724	-79.09	Pk	33.4	-30	11.5	-64.19	-13	-51.19	V
7.408	-79.06	Pk	35.7	-24.7	10.8	-57.26	-13	-44.26	V
5.56	-69.17	Pk	34.8	-28.2	10.8	-51.77	-13	-38.77	V
5.585	-67.58	Pk	34.9	-28.1	10.8	-49.98	-13	-36.98	H
Mid Channel, 1880MHz									
3.817	-67.18	Pk	33.7	-29.5	11.6	-51.38	-13	-38.38	H
3.824	-66.65	Pk	33.7	-29.2	11.1	-51.05	-13	-38.05	V
5.588	-76.82	Pk	34.9	-28	10.9	-59.02	-13	-46.02	V
5.628	-69.41	Pk	34.9	-28	10.5	-52.01	-13	-39.01	H
9.585	-71.98	Pk	36.7	-22.7	11.1	-46.88	-13	-33.88	H
9.596	-71.84	Pk	36.7	-22.5	11	-46.64	-13	-33.64	V
High Channel, 1900MHz									
3.8	-66.99	Pk	33.7	-29.6	11.2	-51.69	-13	-38.69	H
7.604	-80.66	Pk	35.8	-24.4	10.7	-58.56	-13	-45.56	H
3.784	-74.89	Pk	33.6	-29.7	11.3	-59.69	-13	-46.69	V
7.563	-71.44	Pk	35.7	-24.5	11.3	-48.94	-13	-35.94	V
5.716	-69.32	Pk	35	-27.5	10.6	-51.22	-13	-38.22	V
5.722	-69.92	Pk	34.9	-27.4	10.4	-52.02	-13	-39.02	H

Pk - Peak detector

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9.4.2. LTE BAND 7

Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz									
4.176	-72.5	Pk	33.5	-29.2	8.8	-59.4	-25	-34.4	H
11.009	-75.37	Pk	37.9	-21.9	8.4	-50.97	-25	-25.97	H
3.883	-71.9	Pk	33.4	-30	9.5	-59.00	-25	-34.00	H
6.401	-73.96	Pk	35.5	-27.5	7.3	-58.66	-25	-33.66	H
7.225	-72.67	Pk	35.5	-26.5	7.4	-56.27	-25	-31.27	H
13.752	-76.14	Pk	38.6	-20.9	10.5	-47.94	-25	-22.94	H
Mid Channel, 2535MHz									
5.06	-65.07	Pk	34.2	-28.8	9	-50.67	-25	-25.67	V
5.066	-68.5	Pk	34.2	-28.7	8.7	-54.3	-25	-29.3	H
7.152	-73.16	Pk	35.6	-26.6	8.5	-55.66	-25	-30.66	V
7.922	-72.98	Pk	35.8	-25.2	7.9	-54.48	-25	-29.48	H
11.631	-75.11	Pk	38.3	-21.2	8.7	-49.31	-25	-24.31	H
13.935	-73.29	Pk	38.6	-20.9	9.8	-45.79	-25	-20.79	V
High Channel, 2560MHz									
3.621	-71.86	Pk	32.9	-29.9	9.6	-59.26	-25	-34.26	H
5.06	-70.78	Pk	34.2	-28.7	8.8	-56.48	-25	-31.48	H
6.141	-73.92	Pk	35.6	-28.4	7.7	-59.02	-25	-34.02	V
8.843	-75.96	Pk	36.1	-24.1	8.1	-55.86	-25	-30.86	V
9.985	-76	Pk	37	-22.8	8.2	-53.6	-25	-28.6	H
13.779	-77.71	Pk	38.7	-21.1	10.2	-49.91	-25	-24.91	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 7 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.006	-70.34	Pk	34.1	-25.1	9.4	-51.94	-25	-26.94	H
7.511	-71.38	Pk	35.6	-22.8	7.7	-50.88	-25	-25.88	H
5.009	-70.7	Pk	34.1	-25.1	9.2	-52.5	-25	-27.5	V
7.507	-71.68	Pk	35.6	-22.7	7.9	-50.88	-25	-25.88	V
9.984	-73.22	Pk	37	-18.8	8.1	-46.92	-25	-21.92	V
10.013	-73.81	Pk	37	-18.7	8.1	-47.41	-25	-22.41	H
Mid Channel, 2535MHz									
5.065	-70.79	Pk	34.2	-25.1	8.7	-52.99	-25	-27.99	H
5.105	-69.91	Pk	34.2	-25.2	9.5	-51.41	-25	-26.41	V
7.677	-71.66	Pk	35.7	-22.1	7.7	-50.36	-25	-25.36	V
7.833	-72.47	Pk	35.8	-22.2	7.6	-51.27	-25	-26.27	H
9.907	-73.08	Pk	37	-19.1	8.3	-46.88	-25	-21.88	V
10.024	-73.35	Pk	37.1	-18.6	8.2	-46.65	-25	-21.65	H
High Channel, 2560MHz									
3.842	-71.43	Pk	33.6	-29.8	9.5	-58.13	-25	-33.13	V
4.445	-71.69	Pk	33.6	-29	9.2	-57.89	-25	-32.89	H
5.17	-72.15	Pk	34.3	-28.7	9.3	-57.25	-25	-32.25	V
6.096	-74.12	Pk	35.5	-28.3	8.6	-58.32	-25	-33.32	H
9.549	-76.13	Pk	36.7	-23.3	7.8	-54.93	-25	-29.93	V
12.778	-77.35	Pk	39.2	-21.4	9.8	-49.75	-25	-24.75	H

Pk - Peak detector

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9.4.3. LTE BAND 25

Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.724	-67.67	Pk	33.2	-30.1	10.1	-54.47	-13	-41.47	H
3.731	-67.84	Pk	33.2	-30.1	9.7	-55.04	-13	-42.04	V
5.573	-68.25	Pk	34.6	-28.6	8.3	-53.95	-13	-40.95	H
5.579	-68.2	Pk	34.7	-28.5	8.3	-53.70	-13	-40.70	V
7.437	-70.16	Pk	35.6	-26.6	7	-54.16	-13	-41.16	H
7.471	-70.45	Pk	35.6	-26.4	7.4	-53.85	-13	-40.85	V
Mid Channel, 1882.5MHz									
3.765	-66.86	Pk	33.4	-30	9.3	-54.16	-13	-41.16	H
3.795	-67.37	Pk	33.5	-30.2	9.6	-54.47	-13	-41.47	V
5.651	-67.75	Pk	34.6	-28.6	8.3	-53.45	-13	-40.45	H
5.672	-68.7	Pk	34.7	-28.2	8.5	-53.7	-13	-40.7	V
7.526	-70.35	Pk	35.7	-26.3	7.4	-53.55	-13	-40.55	H
7.594	-70.1	Pk	35.6	-26.2	7	-53.7	-13	-40.7	V
High Channel, 1905MHz									
3.806	-67.1	Pk	33.5	-30.1	9.4	-54.3	-13	-41.3	H
3.818	-66.97	Pk	33.5	-30.1	9.9	-53.67	-13	-40.67	V
5.712	-69.42	Pk	34.7	-28.2	7.9	-55.02	-13	-42.02	H
5.743	-68.7	Pk	34.8	-27.7	7.8	-53.8	-13	-40.8	V
7.618	-70.39	Pk	35.6	-26.4	7.6	-53.59	-13	-40.59	H
7.642	-70.24	Pk	35.7	-26.1	7.4	-53.24	-13	-40.24	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 25 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.727	-68	Pk	33.2	-30.1	10.1	-54.8	-13	-41.8	H
3.738	-65.15	Pk	33.2	-30.3	9.7	-52.55	-13	-39.55	V
5.579	-68.67	Pk	34.7	-28.5	8.3	-54.17	-13	-41.17	H
5.59	-68.73	Pk	34.7	-28.5	8.3	-54.23	-13	-41.23	V
7.424	-69.74	Pk	35.5	-26.7	6.9	-54.04	-13	-41.04	V
3.727	-68	Pk	33.2	-30.1	10.1	-54.8	-13	-41.8	H
Mid Channel, 1882.5MHz									
3.783	-58.66	Pk	33.5	-30.1	10	-45.26	-13	-32.26	H
3.783	-48.48	Pk	33.5	-30.1	9.7	-35.38	-13	-22.38	V
5.566	-68.28	Pk	34.7	-28.5	8.7	-53.38	-13	-40.38	V
5.569	-68.52	Pk	34.7	-28.5	8.5	-53.82	-13	-40.82	H
7.534	-70.64	Pk	35.7	-26.4	7.4	-53.94	-13	-40.94	H
7.554	-70.28	Pk	35.7	-26.5	7.3	-53.78	-13	-40.78	V
High Channel, 1905MHz									
3.815	-67.02	Pk	33.5	-30.1	9.4	-54.22	-13	-41.22	H
3.819	-66.38	Pk	33.5	-30.1	9.9	-53.08	-13	-40.08	V
5.727	-69.3	Pk	34.7	-27.9	8	-54.5	-13	-41.5	H
5.745	-68.98	Pk	34.8	-27.6	7.7	-54.08	-13	-41.08	V
7.620	-69.76	Pk	35.7	-26.4	7.6	-52.86	-13	-39.86	H
7.637	-70.22	Pk	35.6	-26.3	7.2	-53.72	-13	-40.72	V

Pk - Peak detector

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9.4.4. LTE BAND 30

Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 30 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.606	-76.33	Pk	34.3	-29	10.8	-60.23	-40	-20.23	H
9.194	-78.91	Pk	36.2	-22.7	11	-54.41	-40	-14.41	H
4.584	-70.18	Pk	34.2	-29	10.1	-54.88	-40	-14.88	V
9.130	-79.89	Pk	36.3	-23.1	11.1	-55.59	-40	-15.59	V
6.903	-70.43	Pk	35.9	-25	10.3	-49.23	-40	-9.23	V
6.934	-70.37	Pk	36	-25.1	10.9	-48.57	-40	-8.57	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/9/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 30 16QAM 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.597	-67.39	Pk	34.3	-29.1	10.8	-51.39	-40	-11.39	H
4.58	-67.89	Pk	34.2	-29	10.3	-52.39	-40	-12.39	V
9.171	-78.26	Pk	36.3	-22.8	11.2	-53.56	-40	-13.56	V
6.922	-71.27	Pk	35.8	-25.1	10.8	-49.77	-40	-9.77	V
6.942	-71.44	Pk	35.9	-25	10.8	-49.74	-40	-9.74	H
9.205	-76.07	Pk	36.2	-22.8	11	-51.67	-40	-11.67	H

Pk - Peak detector

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9.4.5. LTE BAND 41

Company:	
Project #:	12901678
Date:	6/18/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2506MHz									
5.01	-69.28	Pk	34.2	-25.2	9	-51.28	-25	-26.28	H
7.668	-71.63	Pk	35.7	-22.2	8	-50.13	-25	-25.13	H
4.985	-71.38	Pk	34.1	-25	9.1	-53.18	-25	-28.18	V
7.623	-72.1	Pk	35.7	-22.6	7.4	-51.6	-25	-26.6	V
10.146	-73.38	Pk	37.2	-18.8	6.4	-48.58	-25	-23.58	V
10.169	-73.37	Pk	37.2	-19	7.4	-47.77	-25	-22.77	H
Mid Channel, 2593MHz									
5.224	-68.42	Pk	34.3	-29	8.9	-54.22	-25	-29.22	H
5.234	-68.09	Pk	34.3	-29.1	8.7	-54.19	-25	-29.19	V
7.83	-70.95	Pk	35.8	-25.7	7.9	-52.95	-25	-27.95	V
7.845	-70.29	Pk	35.8	-25.4	7.4	-52.49	-25	-27.49	H
10.249	-71.77	Pk	37.4	-22.4	7.3	-49.47	-25	-24.47	H
10.283	-71.91	Pk	37.4	-22.4	7.3	-49.61	-25	-24.61	V
High Channel,2680MHz									
4.232	-69.03	Pk	33.5	-29.3	9.4	-55.43	-25	-30.43	H
5.378	-52.47	Pk	34.5	-29.3	9	-38.27	-25	-13.27	H
11.416	-72.97	Pk	38.1	-21.6	7.6	-48.87	-25	-23.87	V
4.499	-68.83	Pk	33.9	-29.3	9.3	-54.93	-25	-29.93	V
6.547	-69.99	Pk	35.5	-27.3	6.6	-55.19	-25	-30.19	V
7.939	-70.78	Pk	35.8	-25.4	8	-52.38	-25	-27.38	H

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/25/2019
Test Engineer:	19459
Configuration:	EUT Only
Mode:	LTE 41 16QAM 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2506MHz									
5.015	-72.23	Pk	34.4	-27.9	10.4	-55.33	-25	-30.33	H
7.542	-72.65	Pk	35.7	-23.4	10.7	-49.65	-25	-24.65	H
5.012	-71.25	Pk	34.3	-27.9	10.3	-54.55	-25	-29.55	V
7.54	-74.98	Pk	35.7	-23.4	10.8	-51.88	-25	-26.88	V
10.047	-75.14	Pk	37.1	-20.9	10.3	-48.64	-25	-23.64	H
10.062	-75.77	Pk	37.1	-21	10.5	-49.17	-25	-24.17	V
Mid Channel, 2593MHz									
5.174	-71.9	Pk	34.6	-27.6	11.4	-53.5	-25	-28.5	V
5.183	-71.72	Pk	34.6	-27.6	11	-53.72	-25	-28.72	H
7.878	-74.47	Pk	35.9	-23.3	11.2	-50.67	-25	-25.67	H
7.902	-74.67	Pk	35.9	-23.3	11.3	-50.77	-25	-25.77	V
10.372	-76.14	Pk	37.4	-20.3	10.3	-48.74	-25	-23.74	H
10.415	-75.01	Pk	37.5	-20.3	10.1	-47.71	-25	-22.71	V
Mid Channel, 2680MHz									
5.05	-69.06	Pk	34.2	-28.6	9.4	-54.06	-25	-29.06	H
3.996	-68	Pk	33.5	-30.1	9.9	-54.7	-25	-29.7	H
12.155	-77.65	Pk	38.9	-21.3	8.7	-51.35	-25	-26.35	H
4.53	-69.81	Pk	34.1	-29.4	10.2	-54.91	-25	-29.91	V
9.485	-72.68	Pk	36.6	-23.7	8.4	-51.38	-25	-26.38	V
5.922	-69.17	Pk	35.2	-28.5	8.3	-54.17	-25	-29.17	V

Pk - Peak detector

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9.4.6. LTE BAND 48

Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE 48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz									
7.114	-71.27	Pk	35.6	-26.6	7.1	-55.17	-40	-15.17	H
7.135	-71.33	Pk	35.6	-26.5	7.2	-55.03	-40	-15.03	V
10.675	-73.25	Pk	37.9	-21.9	8	-49.25	-40	-9.25	H
10.694	-72.17	Pk	38	-22	8.3	-47.87	-40	-7.87	V
14.212	-71.78	Pk	39.1	-21	9.1	-44.58	-40	-4.58	V
14.235	-70.61	Pk	39.1	-20.9	9.2	-43.21	-40	-3.21	H
Mid Channel, 3625MHz									
7.25	-70.78	Pk	35.5	-26.3	7.4	-54.18	-40	-14.18	H
7.283	-71.15	Pk	35.5	-26.2	7.4	-54.45	-40	-14.45	V
10.859	-73.54	Pk	38	-22	7	-50.54	-40	-10.54	V
10.871	-73.74	Pk	38	-22	7.5	-50.24	-40	-10.24	H
14.286	-72.05	Pk	39.3	-20.5	9.2	-44.05	-40	-4.05	H
14.676	-72.01	Pk	39.9	-20.2	9.9	-42.41	-40	-2.41	V
High Channel, 690MHz									
7.377	-71.45	Pk	35.5	-26.4	7.5	-54.85	-40	-14.85	H
7.38	-71.7	Pk	35.5	-26.4	7.6	-55.00	-40	-15.00	V
11.07	-72.83	Pk	38	-21.8	8.5	-48.13	-40	-8.13	H
11.104	-73.14	Pk	38	-21.6	8.5	-48.24	-40	-8.24	V
14.75	-71.43	Pk	39.9	-20.7	8.7	-43.53	-40	-3.53	H
14.774	-72.16	Pk	39.9	-20.7	9.4	-43.56	-40	-3.56	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	50822
Configuration:	EUTOnly
Mode:	LTE 48 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
High Channel, 3560MHz									
7.081	-71.07	Pk	35.6	-26.5	7.4	-54.57	-40	-14.57	V
7.114	-71.25	Pk	35.6	-26.6	7.1	-55.15	-40	-15.15	H
10.67	-73.11	Pk	37.9	-21.9	7.8	-49.31	-40	-9.31	H
10.728	-72.68	Pk	37.9	-22	7.9	-48.88	-40	-8.88	V
14.225	-71.87	Pk	39.1	-20.9	9.2	-44.47	-40	-4.47	H
14.064	-71.64	Pk	38.7	-21	9.9	-44.04	-40	-4.04	V
Mid Channel, 3625MHz									
7.217	-70.84	Pk	35.6	-26.4	7.5	-54.14	-40	-14.14	V
7.253	-70.96	Pk	35.5	-26.2	7.4	-54.26	-40	-14.26	H
10.875	-72.93	Pk	38	-21.9	7.5	-49.33	-40	-9.33	H
10.878	-73.36	Pk	38	-21.8	7.5	-49.66	-40	-9.66	V
14.309	-71.58	Pk	39.3	-20.7	9.8	-43.18	-40	-3.18	H
14.579	-72.09	Pk	39.8	-20.2	10.2	-42.29	-40	-2.29	V
High Channel, 3690MHz									
7.389	-70.64	Pk	35.5	-26.4	7	-54.54	-40	-14.54	H
7.402	-71.45	Pk	35.5	-26.4	7.2	-55.15	-40	-15.15	V
11.067	-72.91	Pk	38	-21.8	8.4	-48.31	-40	-8.31	H
11.124	-72.79	Pk	38	-21.8	8.6	-47.99	-40	-7.99	V
14.749	-71.74	Pk	39.9	-20.7	8.7	-43.84	-40	-3.84	H
14.83	-71.3	Pk	39.9	-20.5	9.5	-42.4	-40	-2.4	V

Pk - Peak detector

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9.4.7. LTE BAND 66

Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.43	-72.41	Pk	32.6	-30	9	-60.81	-13	-47.81	V
3.431	-71.76	Pk	32.6	-30	8.9	-60.26	-13	-47.26	H
5.159	-72.44	Pk	34.3	-28.7	9.2	-57.64	-13	-44.64	H
5.161	-71.94	Pk	34.3	-28.7	9.4	-56.94	-13	-43.94	V
6.881	-74.24	Pk	35.7	-27.4	6.7	-59.24	-13	-46.24	H
6.885	-73.63	Pk	35.6	-27.5	6.8	-58.73	-13	-45.73	V
Mid Channel, 1745MHz									
3.482	-70.52	Pk	32.6	-26.8	9.5	-55.22	-13	-42.22	V
3.486	-70.1	Pk	32.6	-26.9	9.5	-54.9	-13	-41.9	H
5.216	-69.85	Pk	34.2	-25.4	9.1	-51.95	-13	-38.95	V
5.231	-70.6	Pk	34.3	-25.3	8.9	-52.7	-13	-39.7	H
6.944	-71.71	Pk	35.6	-23.5	7	-52.61	-13	-39.61	V
6.97	-71.1	Pk	35.7	-23.3	6.8	-51.9	-13	-38.9	H
High Channel, 1770MHz									
3.54	-70.04	Pk	33	-26.9	9.4	-54.54	-13	-41.54	H
3.517	-70.56	Pk	32.8	-26.9	10	-54.66	-13	-41.66	V
5.317	-71.13	Pk	34.4	-25.5	8	-54.23	-13	-41.23	V
5.346	-70.84	Pk	34.5	-25.6	8.2	-53.74	-13	-40.74	H
7.082	-71.9	Pk	35.6	-22.9	7.4	-51.8	-13	-38.8	H
7.096	-71.68	Pk	35.6	-22.7	7.5	-51.28	-13	-38.28	V

Pk - Peak detector

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Company:	
Project #:	12901678
Date:	6/13/2019
Test Engineer:	23509
Configuration:	EUT Only
Mode:	LTE 66 16QAM 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.439	-70.02	Pk	32.6	-26.9	8.9	-55.42	-13	-42.42	V
3.451	-69.73	Pk	32.6	-27.1	9.5	-54.73	-13	-41.73	H
5.161	-70.3	Pk	34.3	-25.4	9.2	-52.2	-13	-39.2	H
5.198	-70.5	Pk	34.2	-25.5	9.2	-52.6	-13	-39.6	V
6.877	-71.25	Pk	35.7	-23.6	6.7	-52.45	-13	-39.45	V
6.886	-71.94	Pk	35.6	-23.6	6.5	-53.44	-13	-40.44	H
Mid Channel, 1745MHz									
3.48	-69.86	Pk	32.6	-26.9	9.5	-54.66	-13	-41.66	V
3.493	-69.6	Pk	32.7	-26.8	9.5	-54.2	-13	-41.2	H
5.225	-69.89	Pk	34.3	-25.4	8.9	-52.09	-13	-39.09	V
5.231	-69.9	Pk	34.3	-25.2	8.9	-51.9	-13	-38.9	H
6.942	-71.58	Pk	35.6	-23.5	6.9	-52.58	-13	-39.58	V
6.965	-71.43	Pk	35.6	-23.4	7	-52.23	-13	-39.23	H
High Channel, 1770MHz									
3.536	-70.61	Pk	32.9	-26.9	9.5	-55.11	-13	-42.11	H
3.519	-70.49	Pk	32.8	-26.8	10.1	-54.39	-13	-41.39	V
5.299	-70.51	Pk	34.4	-25.4	7.7	-53.81	-13	-40.81	V
5.309	-70.65	Pk	34.5	-25.4	8.4	-53.15	-13	-40.15	H
7.054	-71.84	Pk	35.5	-22.8	6.8	-52.34	-13	-39.34	V
7.071	-71.92	Pk	35.6	-22.7	7.1	-51.92	-13	-38.92	H

Pk - Peak detector

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10. SETUP PHOTOS

Please see setup photo report 12901678-EP1V1

END OF REPORT

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