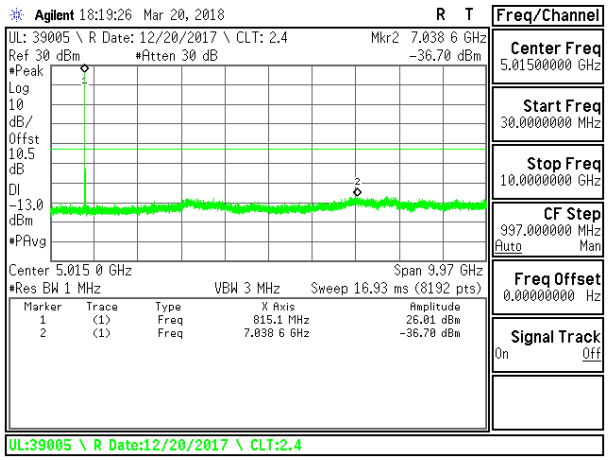
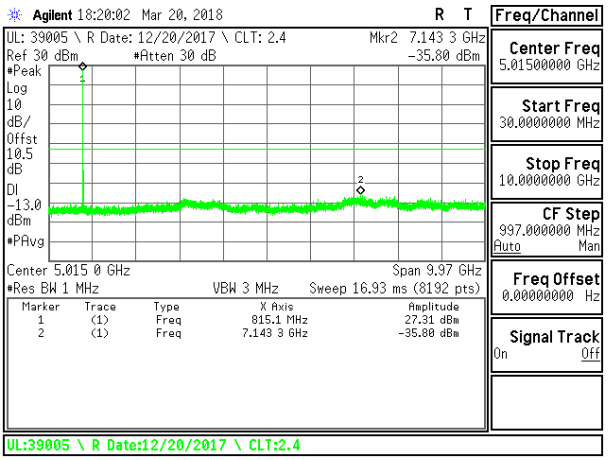


LTE B26 10MHz QPSK Low Channel RB1-0



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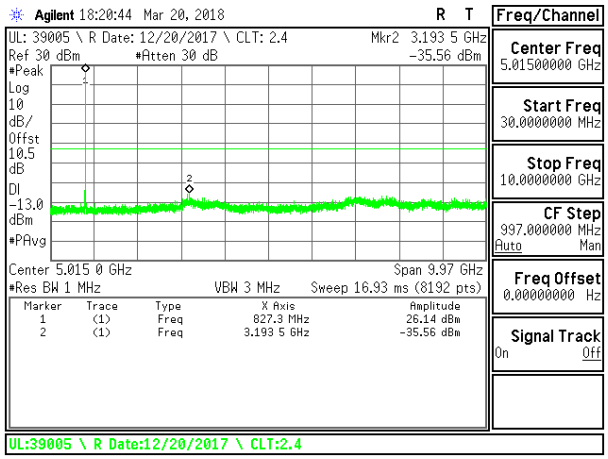

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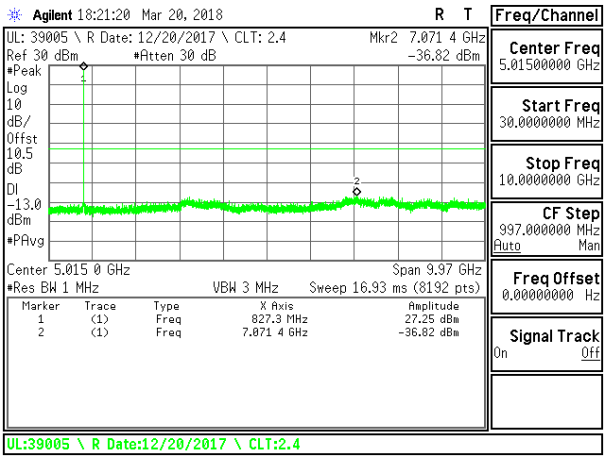

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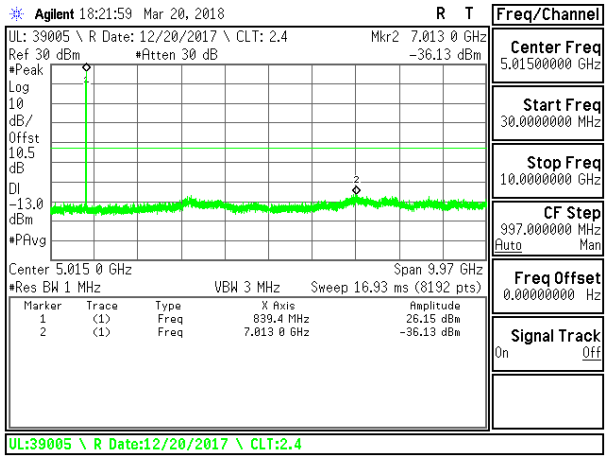

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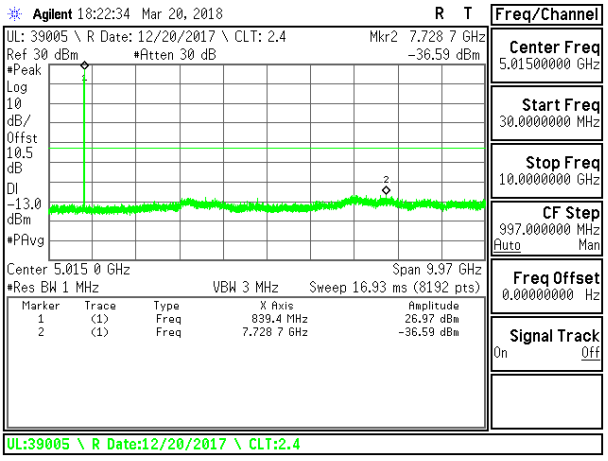

LTE B26 10MHz 16QAM High Channel RB1-0

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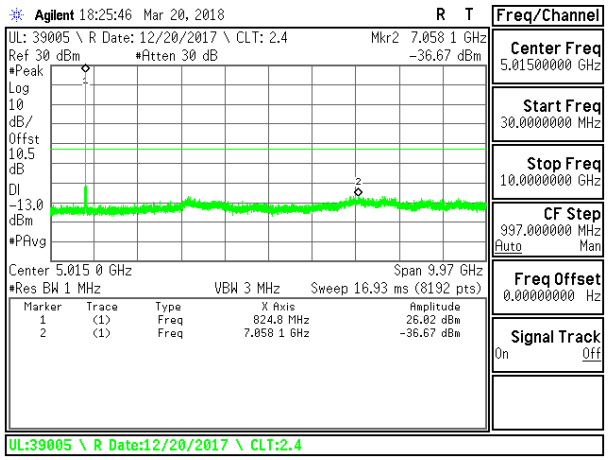

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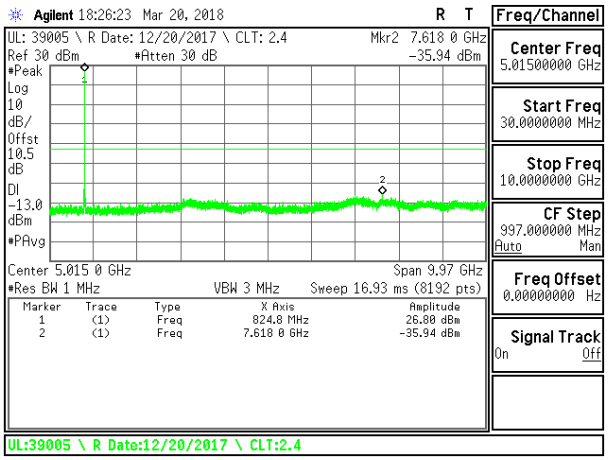

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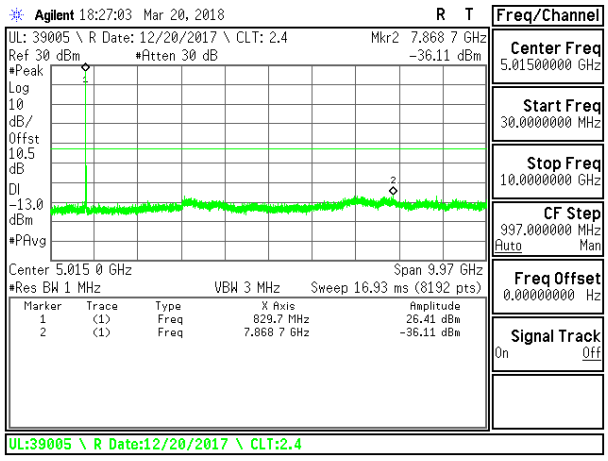
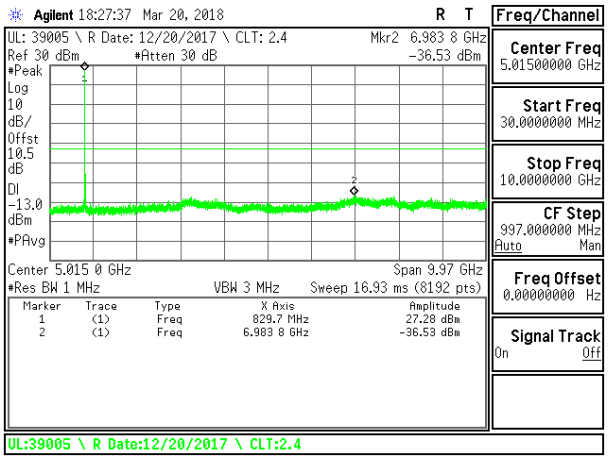
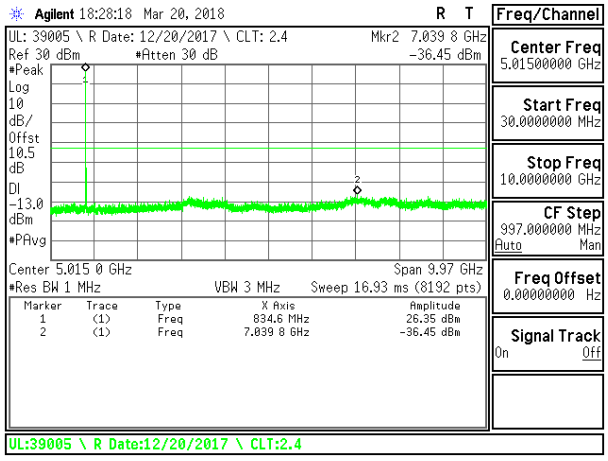


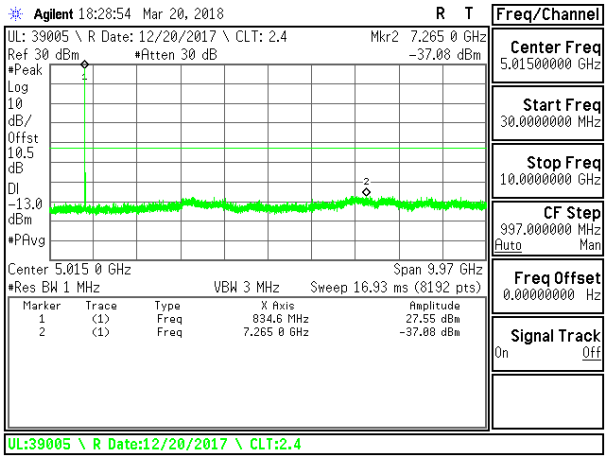
LTE B26 15MHz QPSK Middle Channel RB1-0



LTE B26 15MHz 16QAM Middle Channel RB1-0



LTE B26 15MHz QPSK High Channel RB1-0



LTE B26 15MHz 16QAM High Channel RB1-0

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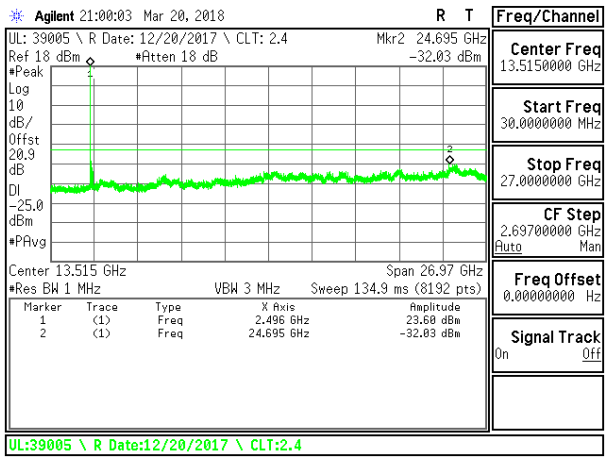
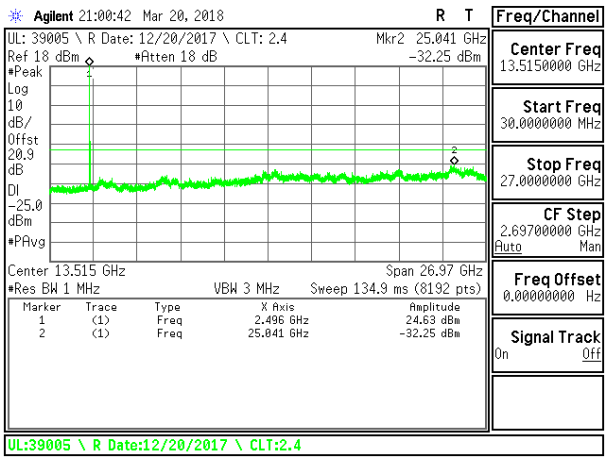
8.3.12. LTE BAND 41



LTE B41 5MHz QPSK Low Channel RB1-0



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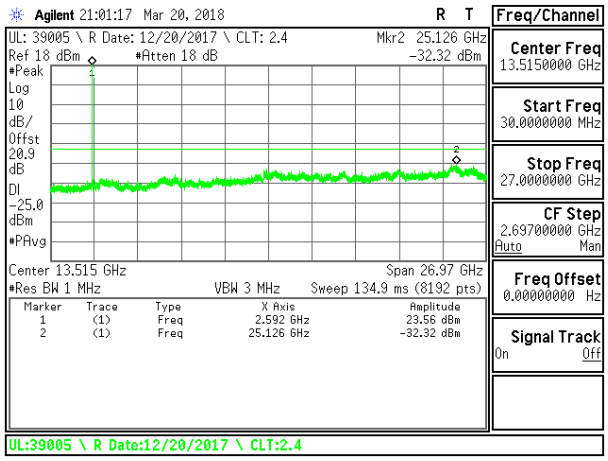
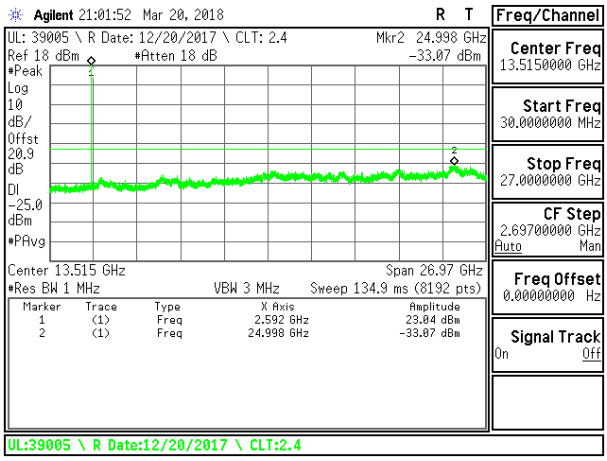


LTE B41 5MHz QPSK Middle Channel RB1-0



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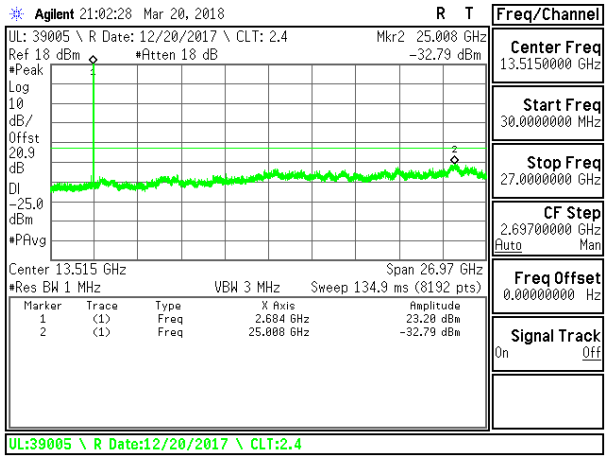
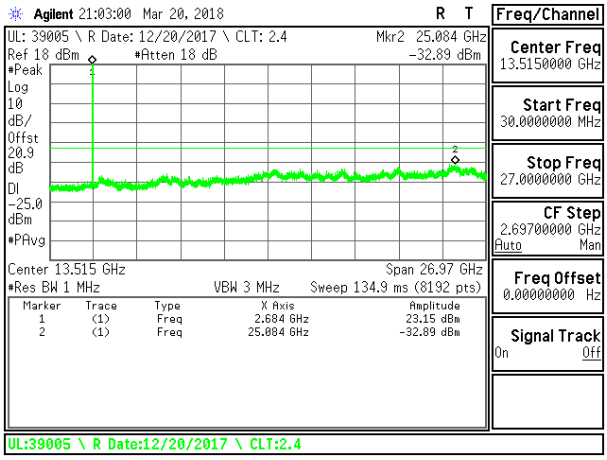


LTE B41 5MHz QPSK High Channel RB1-0



LTE B41 5MHz 16QAM High Channel RB1-0

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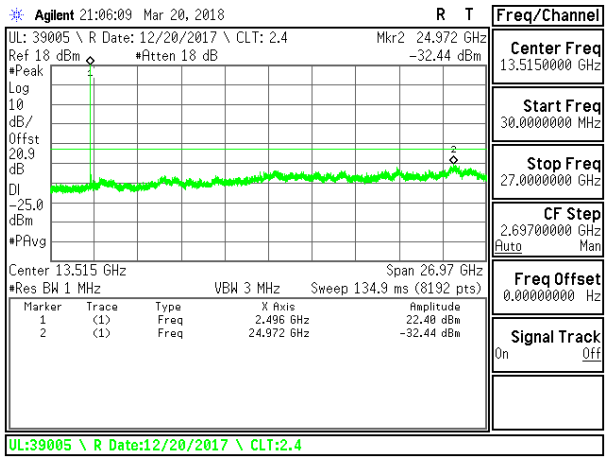
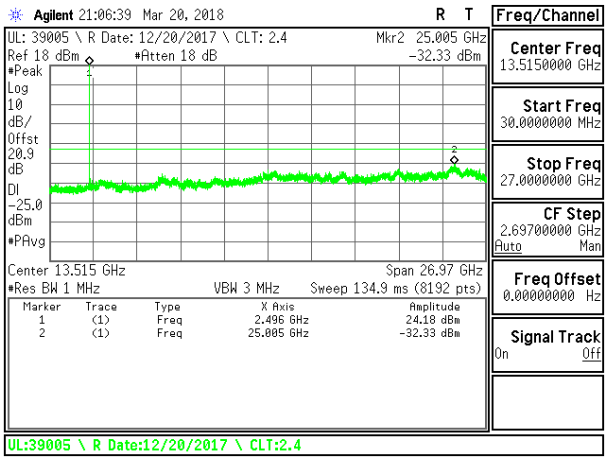
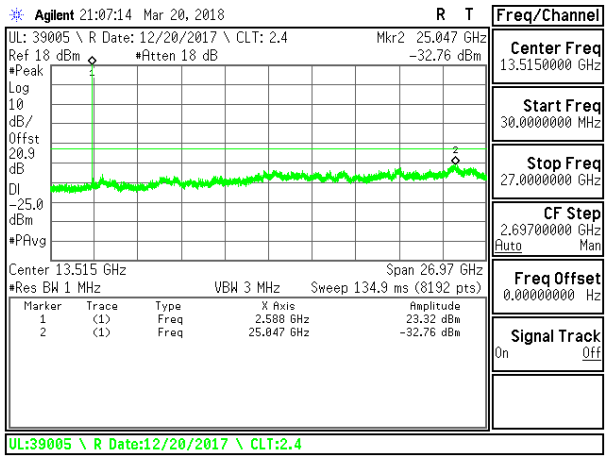


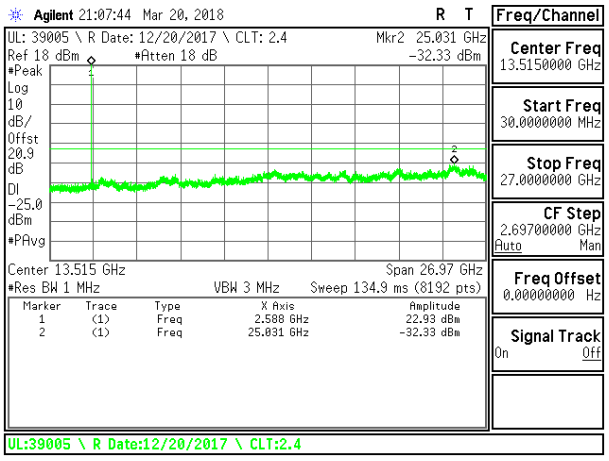
LTE B41 10MHz QPSK Low Channel RB1-0



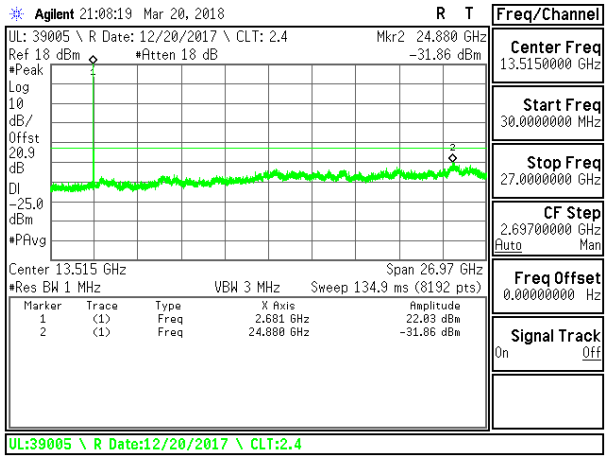
LTE B41 10MHz 16QAM Low Channel RB1-0



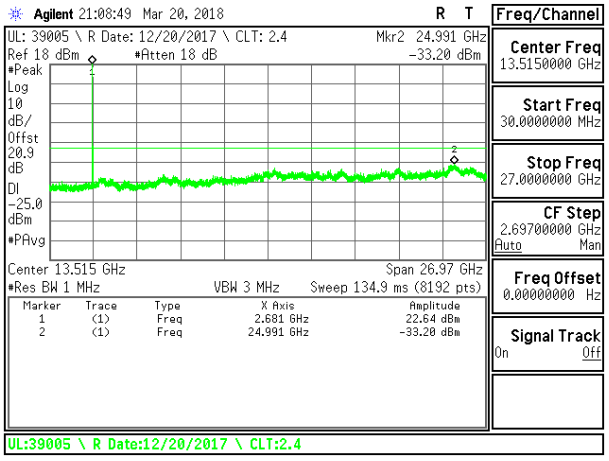
LTE B41 10MHz QPSK Middle Channel RB1-0



LTE B41 10MHz 16QAM Middle Channel RB1-0



LTE B41 10MHz QPSK High Channel RB1-0



LTE B41 10MHz 16QAM High Channel RB1-0

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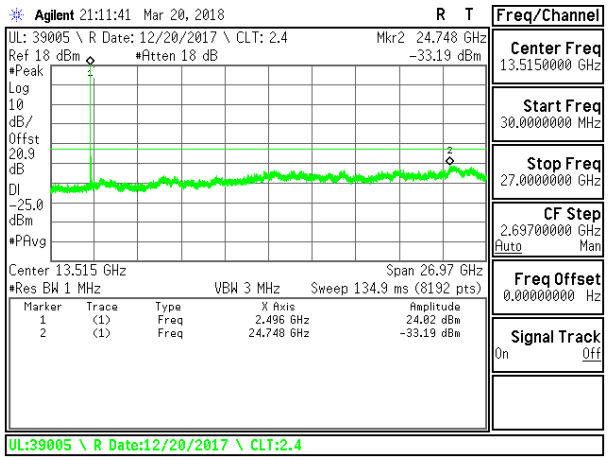
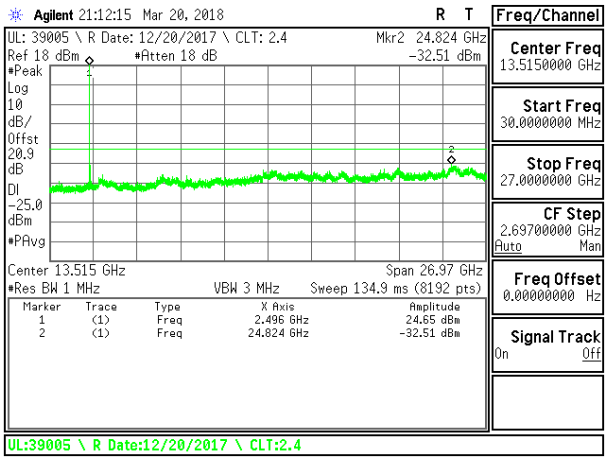
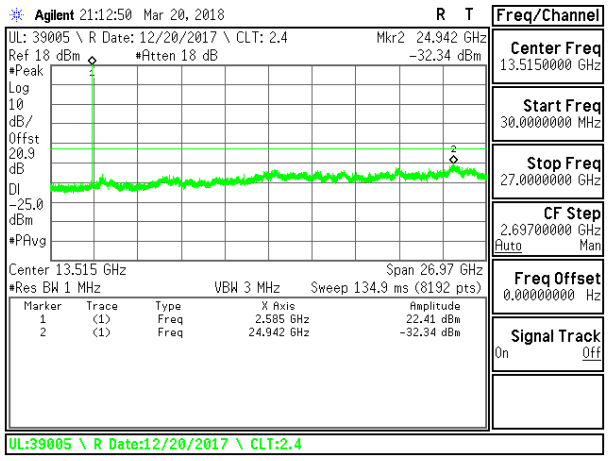


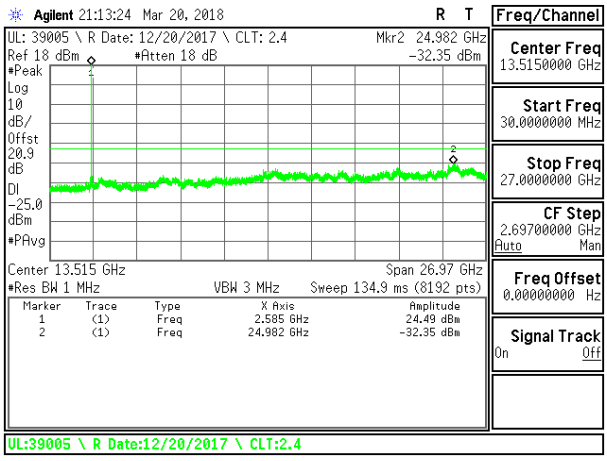
LTE B41 15MHz QPSK Low Channel RB1-0



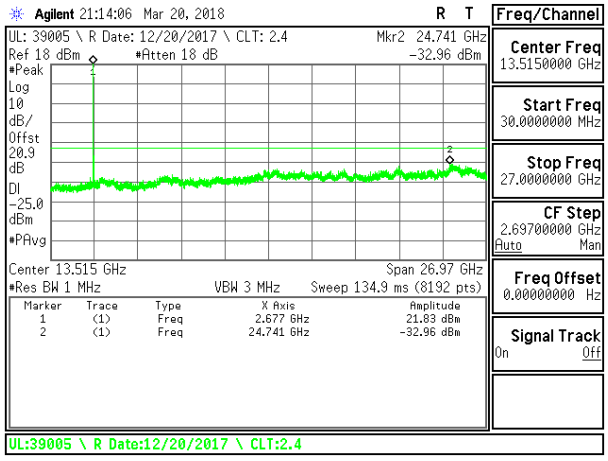
LTE B41 15MHz 16QAM Low Channel RB1-0



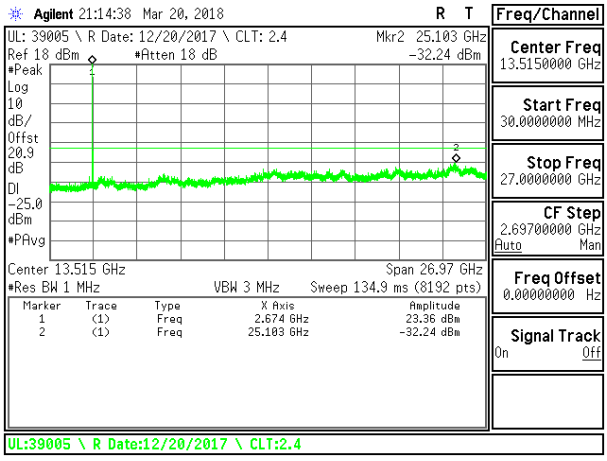
LTE B41 15MHz QPSK Middle Channel RB1-0



LTE B41 15MHz 16QAM Middle Channel RB1-0



LTE B41 15MHz QPSK High Channel RB1-0



LTE B41 15MHz 16QAM High Channel RB1-0

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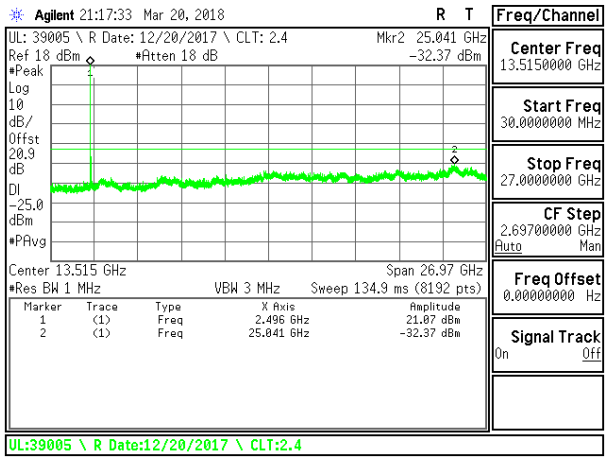
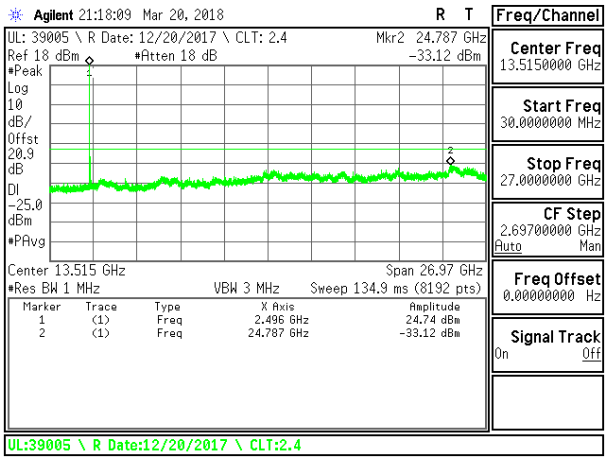
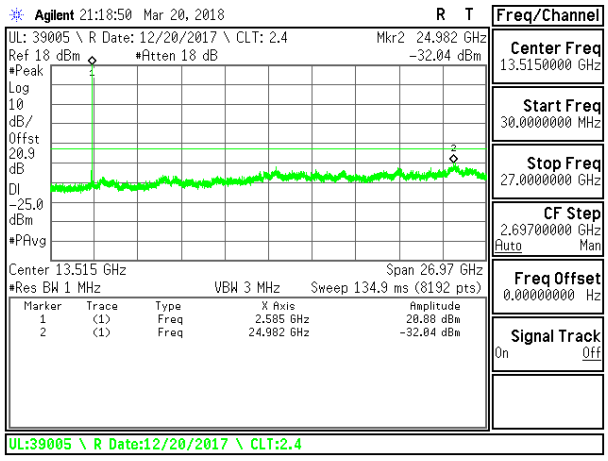


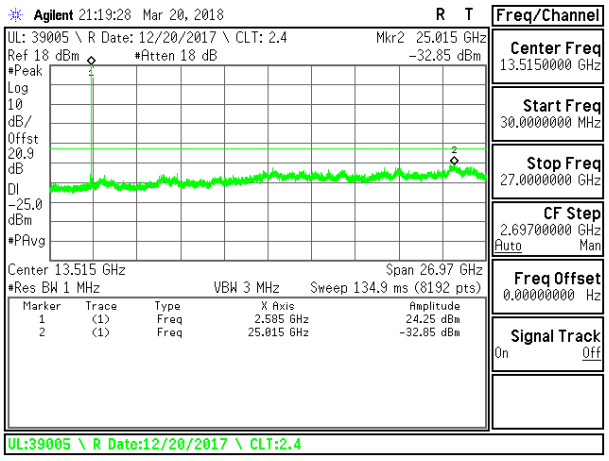
LTE B41 20MHz QPSK Low Channel RB1-0



LTE B41 20MHz 16QAM Low Channel RB1-0



LTE B41 20MHz QPSK Middle Channel RB1-0



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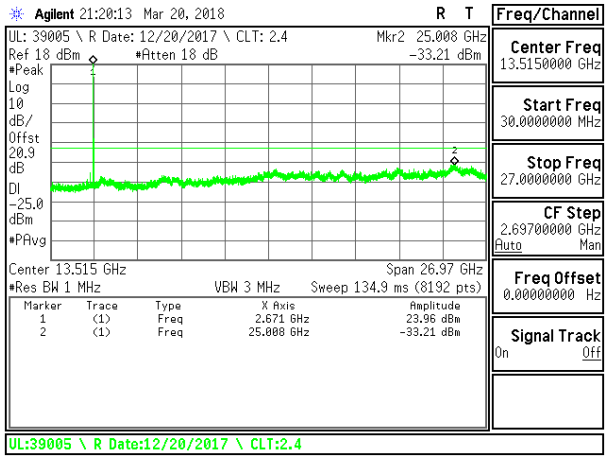
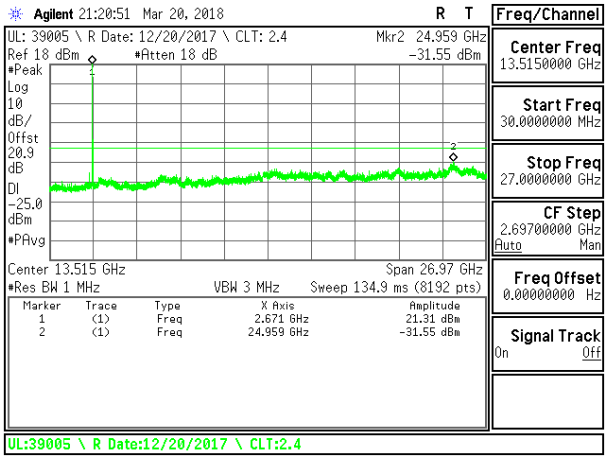


LTE B41 20MHz QPSK High Channel RB1-0



LTE B41 20MHz 16QAM High Channel RB1-0

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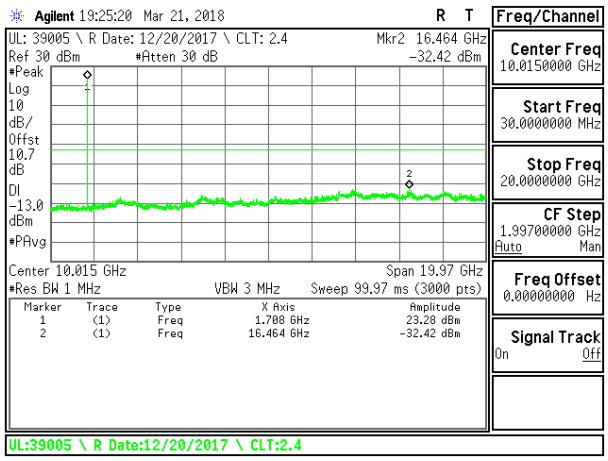
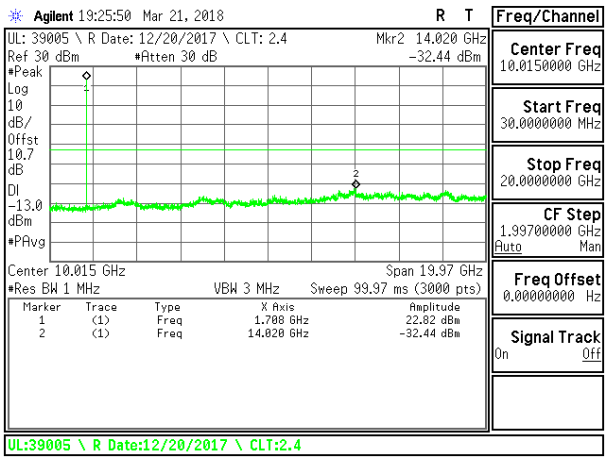
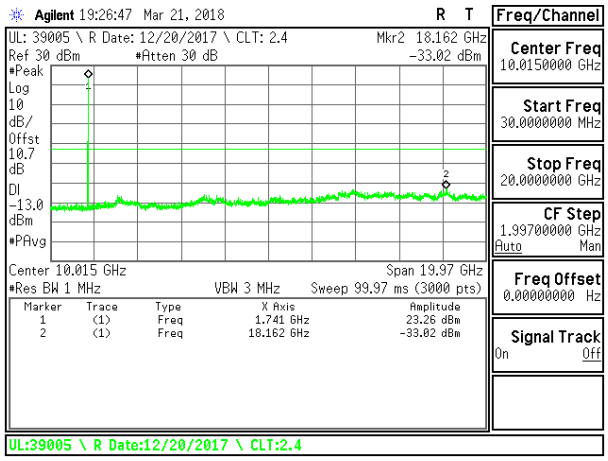
8.3.13. LTE BAND 66



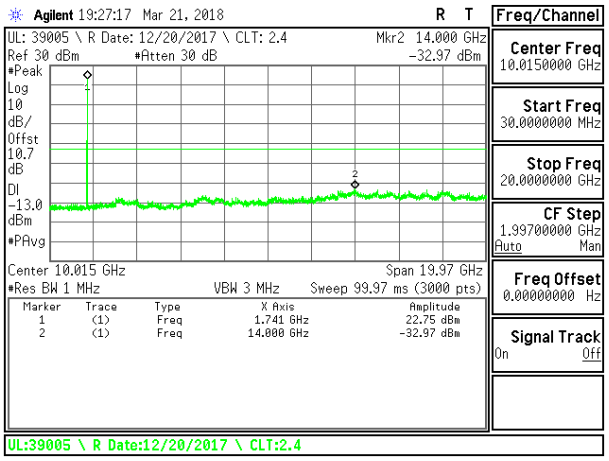
LTE B66 1.4MHz QPSK Low Channel RB1-0



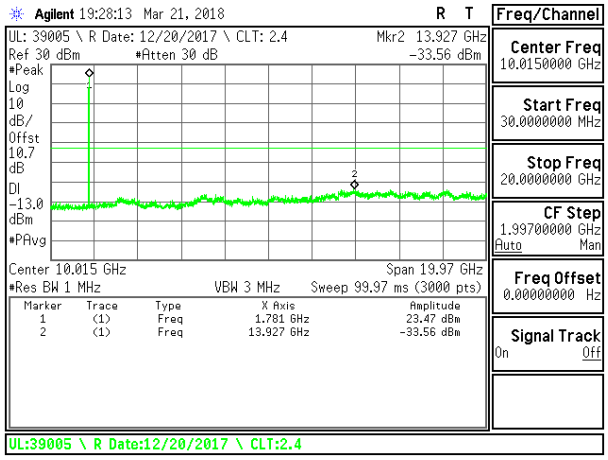
LTE B66 1.4MHz 16QAM Low Channel RB1-0



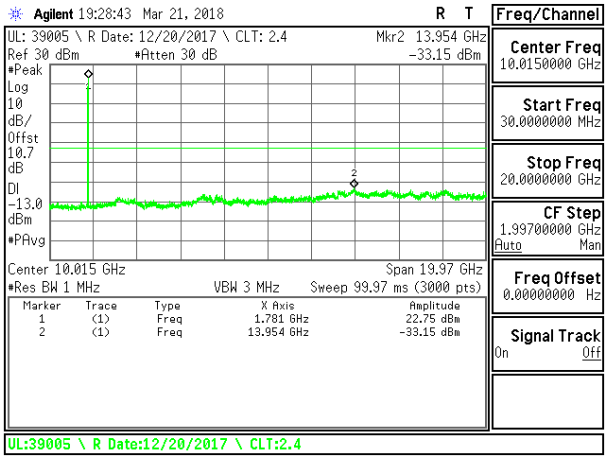
LTE B66 1.4MHz QPSK Middle Channel RB1-0



LTE B66 1.4MHz 16QAM Middle Channel RB1-0



LTE B66 1.4MHz QPSK High Channel RB1-0



LTE B66 1.4MHz 16QAM High Channel RB1-0

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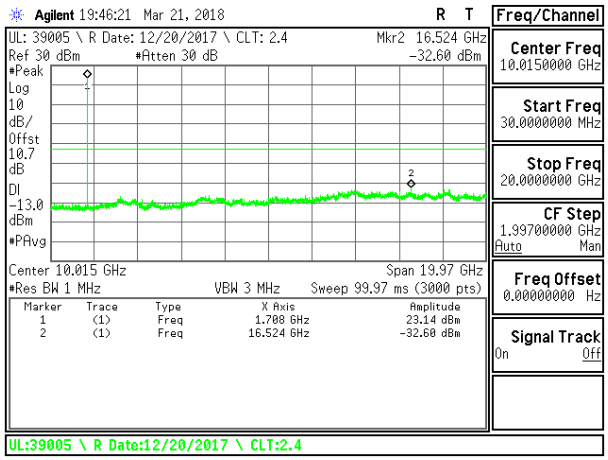
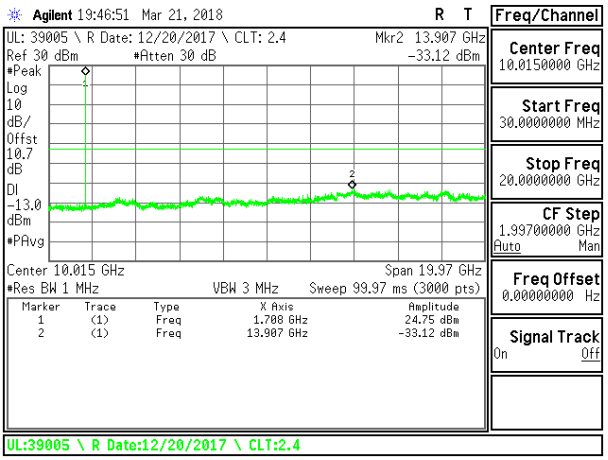
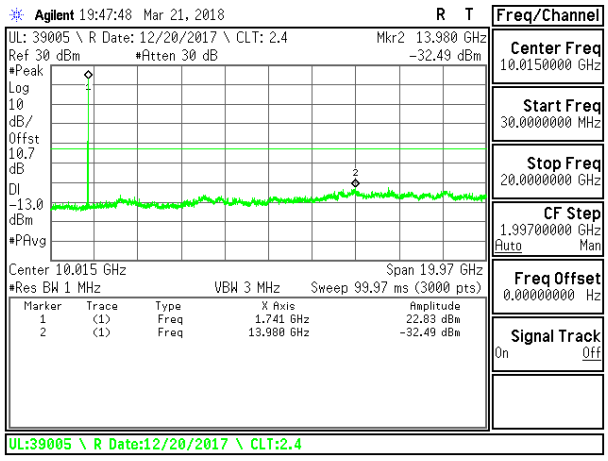


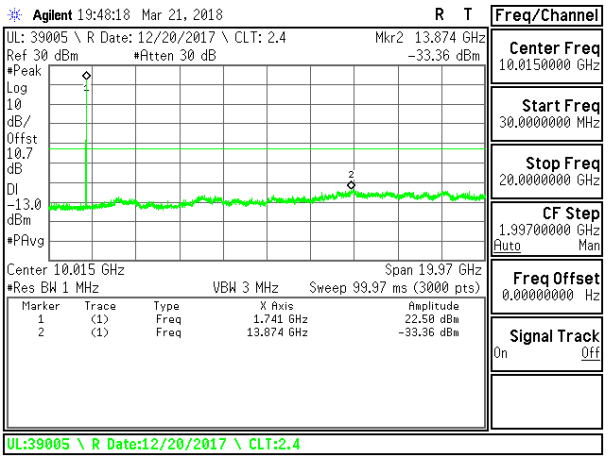
LTE B66 3MHz QPSK Low Channel RB1-0



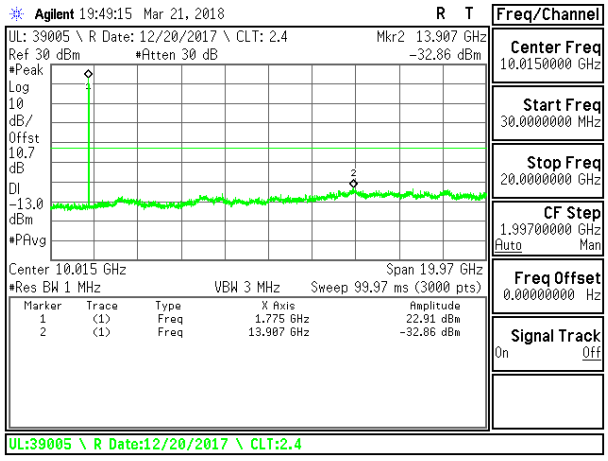
LTE B66 3MHz 16QAM Low Channel RB1-0



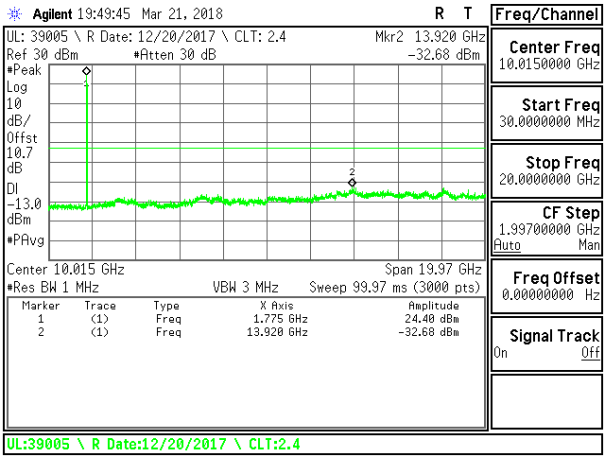
LTE B66 3MHz QPSK Middle Channel RB1-0



LTE B66 3MHz 16QAM Middle Channel RB1-0



LTE B66 3MHz QPSK High Channel RB1-0



LTE B66 3MHz 16QAM High Channel RB1-0

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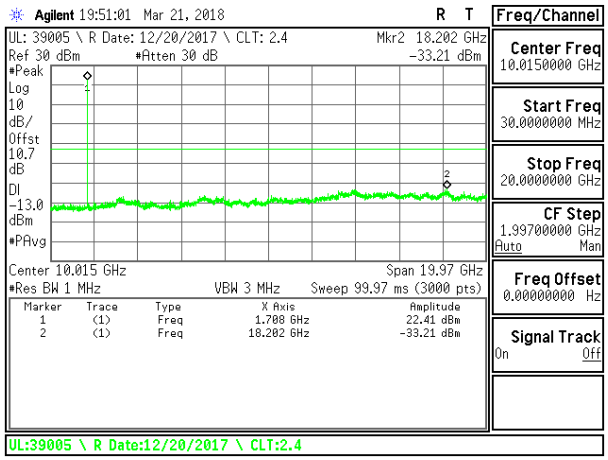
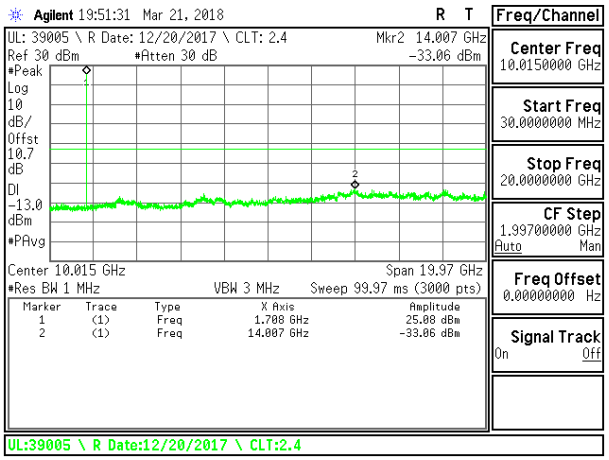
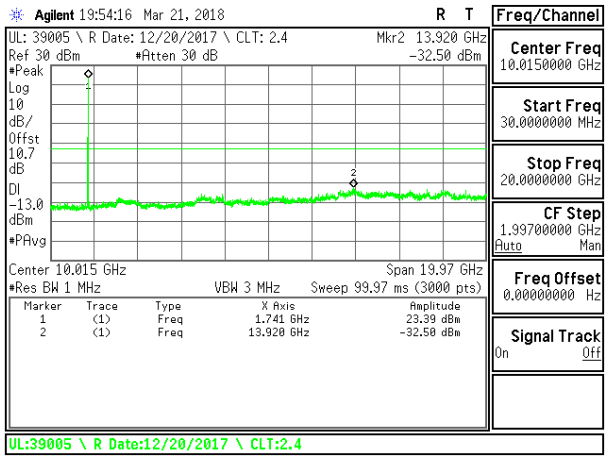


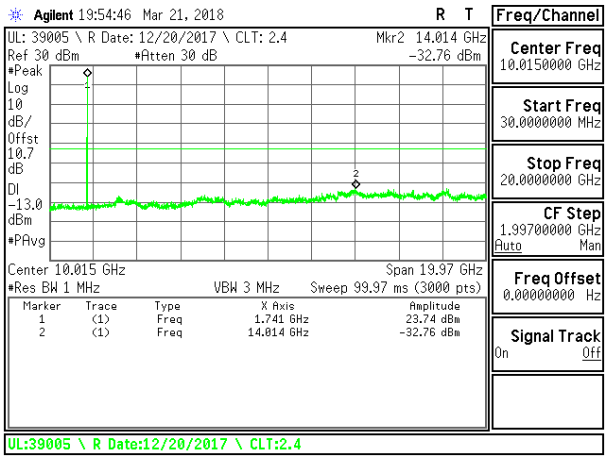
LTE B66 5MHz QPSK Low Channel RB1-0



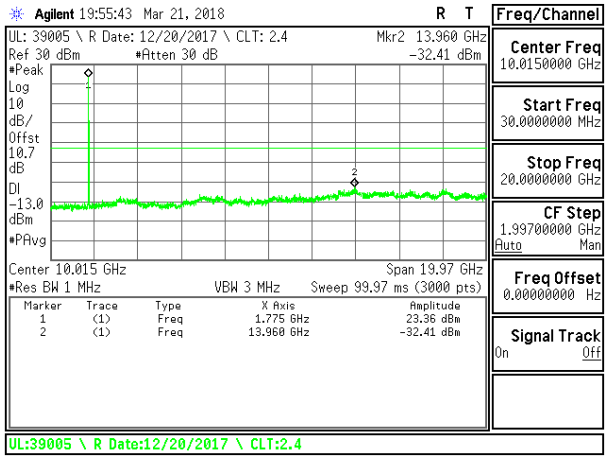
LTE B66 5MHz 16QAM Low Channel RB1-0



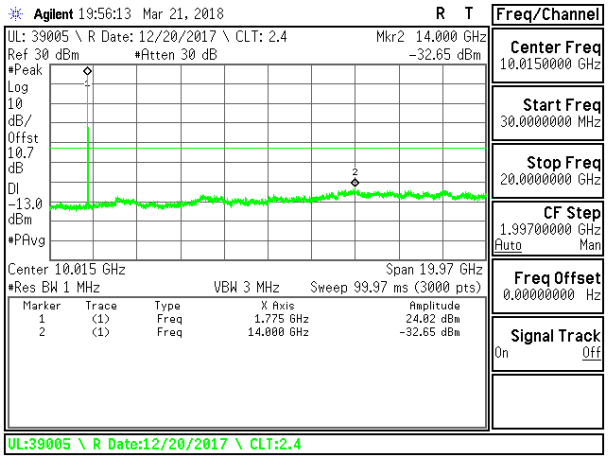
LTE B66 5MHz QPSK Middle Channel RB1-0



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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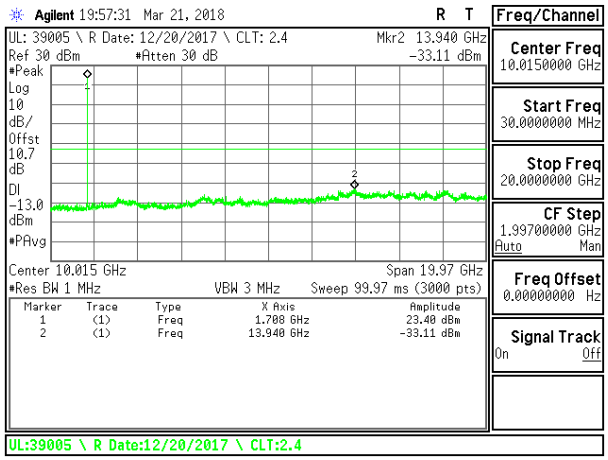
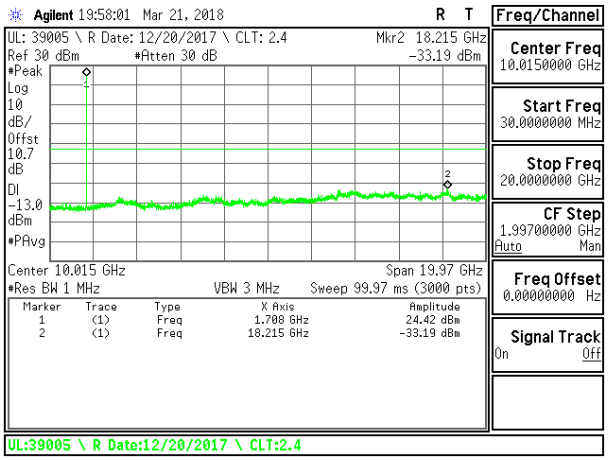


LTE B66 10MHz QPSK Low Channel RB1-0



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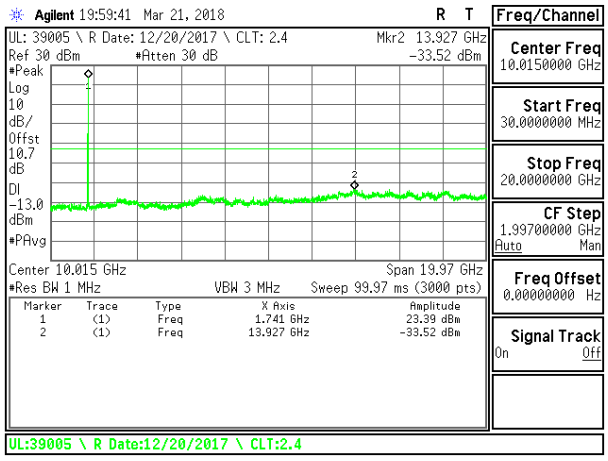
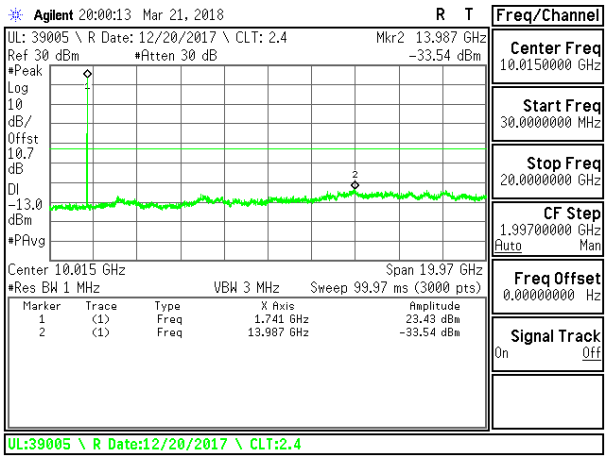
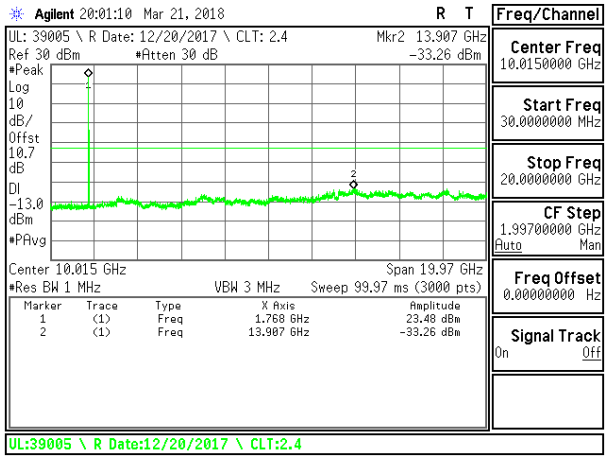


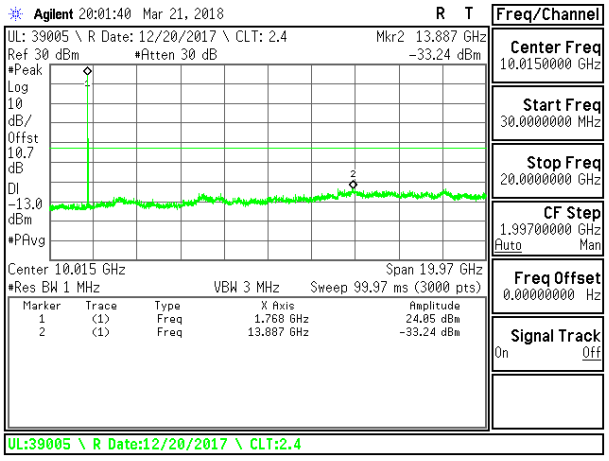
LTE B66 10MHz QPSK Middle Channel RB1-0



LTE B66 10MHz 16QAM Middle Channel RB1-0



LTE B66 10MHz QPSK High Channel RB1-0



LTE B66 10MHz 16QAM High Channel RB1-0

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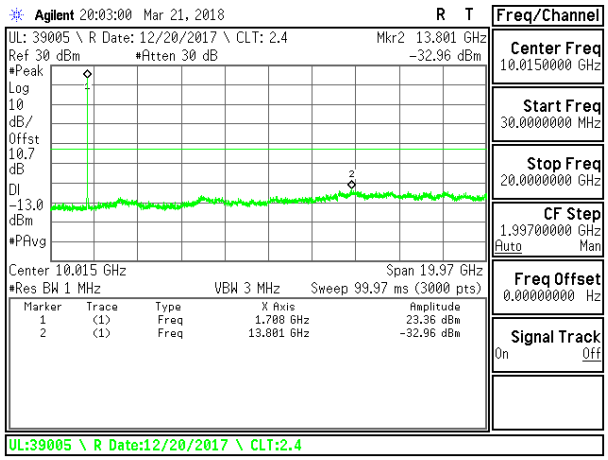
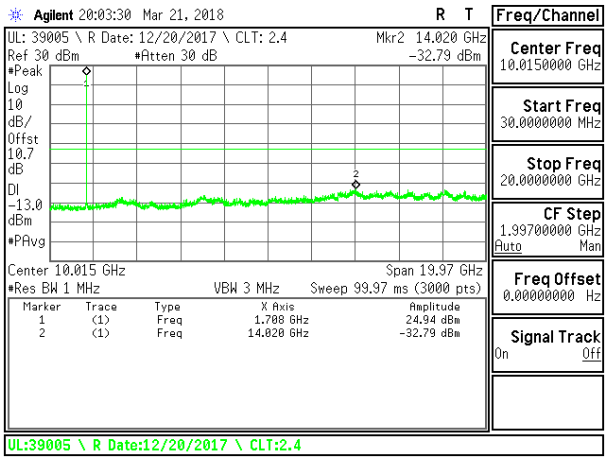
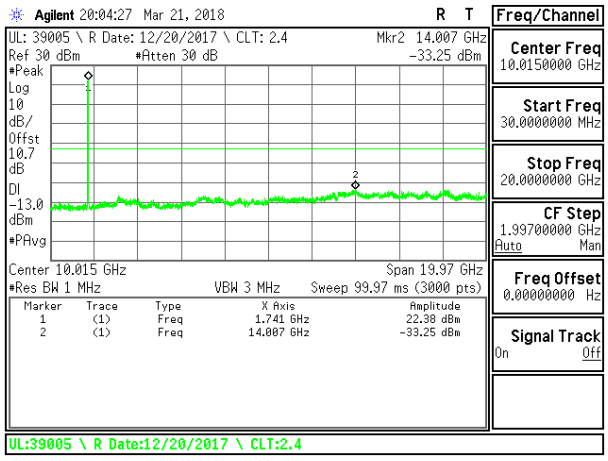


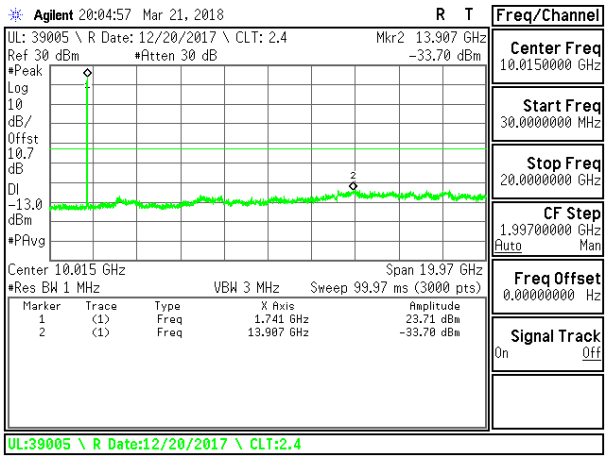
LTE B66 15MHz QPSK Low Channel RB1-0



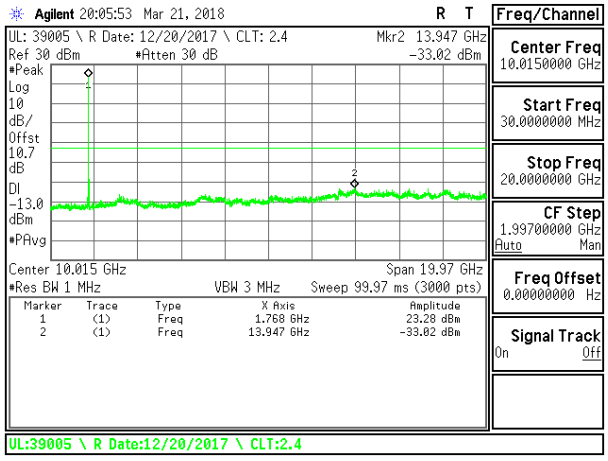
LTE B66 15MHz 16QAM Low Channel RB1-0



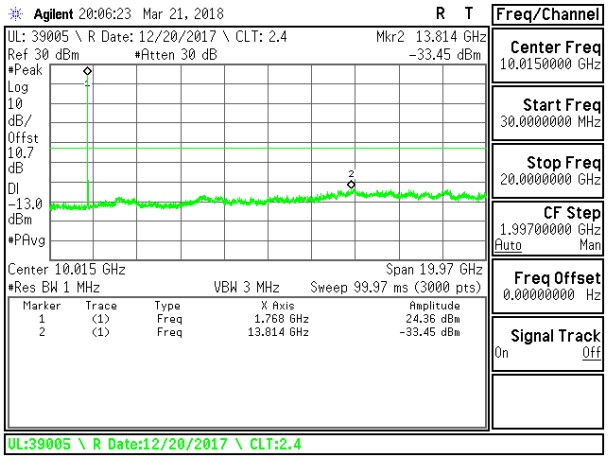
LTE B66 15MHz QPSK Middle Channel RB1-0



LTE B66 15MHz 16QAM Middle Channel RB1-0



LTE B66 15MHz QPSK High Channel RB1-0



LTE B66 15MHz 16QAM High Channel RB1-0

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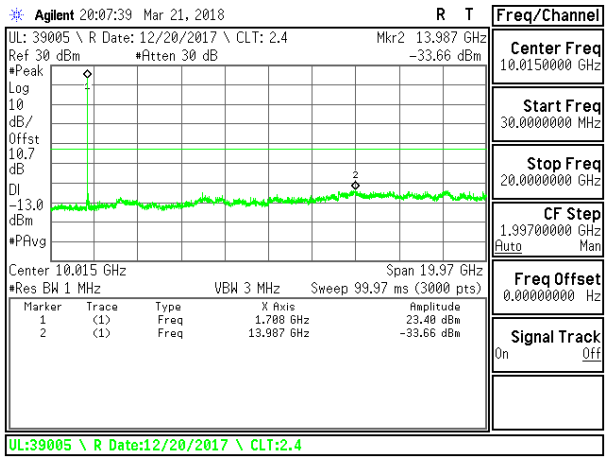
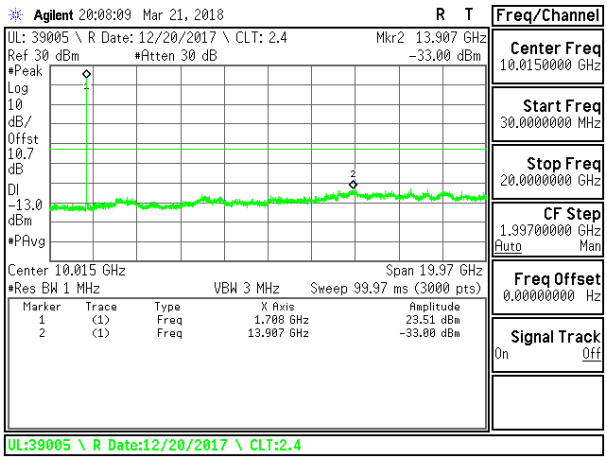
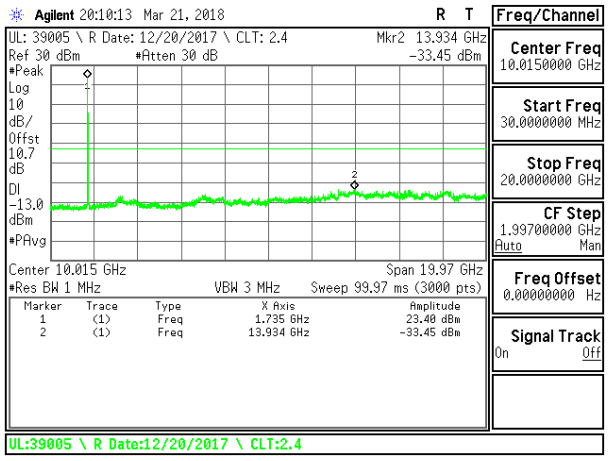


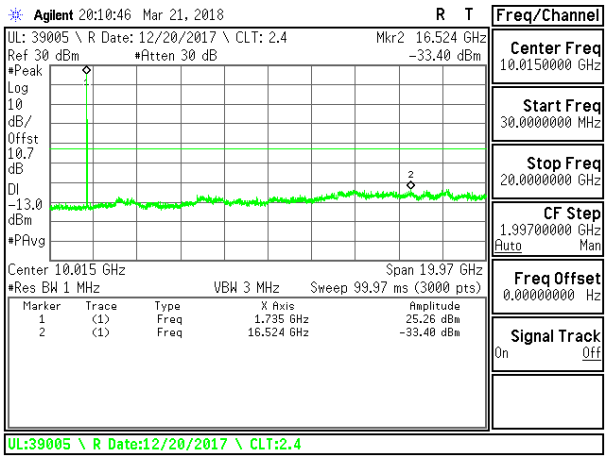
LTE B66 20MHz QPSK Low Channel RB1-0



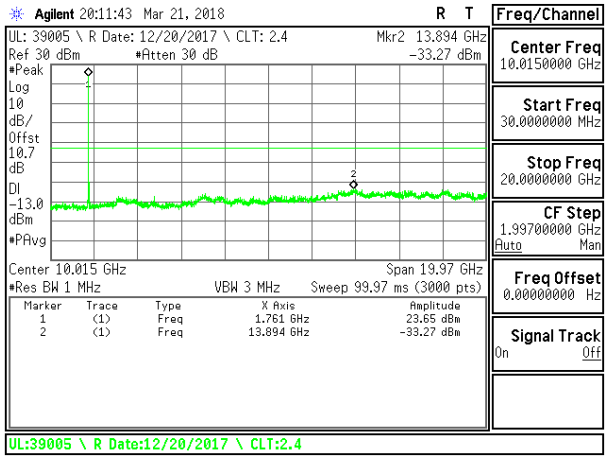
LTE B66 20MHz 16QAM Low Channel RB1-0



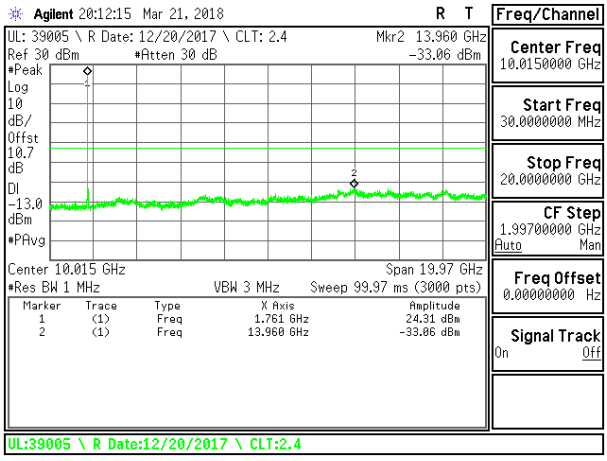
LTE B66 20MHz QPSK Middle Channel RB1-0



LTE B66 20MHz 16QAM Middle Channel RB1-0



LTE B66 20MHz QPSK High Channel RB1-0



LTE B66 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 and §90.213

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: §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

- GSM 850
- GSM 1900
- WCDM Band 2
- WCDM Band 4
- WCDM Band 5
- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 26
- LTE Band 41
- LTE Band 66

RESULTS

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8.4.1. GSM 850MHz

ID:	38005	Date:	3/29/18

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.0322	848.9772		
Extreme (50C)		824.0322	848.9772	10.2	0.01
Extreme (40C)		824.0322	848.9772	12.3	0.01
Extreme (30C)		824.0322	848.9772	12.1	0.01
Extreme (10C)		824.0322	848.9772	9.6	0.01
Extreme (0C)		824.0322	848.9772	14.2	0.02
Extreme (-10C)		824.0322	848.9772	12.5	0.01
Extreme (-20C)		824.0322	848.9772	13.3	0.02
Extreme (-30C)		824.0322	848.9772	12.2	0.01
20C	15%	824.0322	848.9772	12.5	0.01
	-15%	824.0322	848.9772	10.3	0.01
	End Point	824.0322	848.9772	12.2	0.01

8.4.2. GSM 1900MHz

ID:	38005	Date:	3/29/18

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.0285	1909.9702		
Extreme (50C)		1850.0285	1909.9703	15.5	0.01
Extreme (40C)		1850.0285	1909.9703	16.3	0.01
Extreme (30C)		1850.0285	1909.9703	17.3	0.01
Extreme (10C)		1850.0285	1909.9703	10.2	0.01
Extreme (0C)		1850.0285	1909.9703	11.5	0.01
Extreme (-10C)		1850.0285	1909.9703	15.2	0.01
Extreme (-20C)		1850.0285	1909.9703	18.3	0.01
Extreme (-30C)		1850.0285	1909.9703	18.0	0.01
20C	15%	1850.0285	1909.9703	13.5	0.01
	-15%	1850.0285	1909.9703	14.4	0.01
	End Point	1850.0285	1909.9703	15.4	0.01

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8.4.3. WCDMA BAND 2

ID:	38005	Date:	3/29/18

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.1809	1909.8300		
Extreme (50C)		1850.1809	1909.8300	9.0	0.00
Extreme (40C)		1850.1809	1909.8300	8.7	0.00
Extreme (30C)		1850.1809	1909.8300	8.3	0.00
Extreme (10C)		1850.1809	1909.8300	8.3	0.00
Extreme (0C)		1850.1809	1909.8300	6.6	0.00
Extreme (-10C)		1850.1809	1909.8300	7.2	0.00
Extreme (-20C)		1850.1809	1909.8300	9.3	0.00
Extreme (-30C)		1850.1809	1909.8300	7.4	0.00
20C	15%	1850.1809	1909.8300	10.0	0.01
	-15%	1850.1809	1909.8300	6.6	0.00
	End Point	1850.1809	1909.8300	7.2	0.00

8.4.4. WCDMA BAND 4

ID:	38005	Date:	3/29/18

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.1734	1754.8275		
Extreme (50C)		1710.1734	1754.8275	-4.9	0.00
Extreme (40C)		1710.1734	1754.8275	-7.2	0.00
Extreme (30C)		1710.1734	1754.8275	-6.5	0.00
Extreme (10C)		1710.1734	1754.8275	-6.3	0.00
Extreme (0C)		1710.1734	1754.8275	-11.0	-0.01
Extreme (-10C)		1710.1734	1754.8275	-7.4	0.00
Extreme (-20C)		1710.1734	1754.8275	-6.2	0.00
Extreme (-30C)		1710.1734	1754.8275	-7.0	0.00
20C	15%	1710.1734	1754.8275	-10.3	-0.01
	-15%	1710.1734	1754.8275	-8.5	0.00
	End Point	1710.1734	1754.8275	-8.2	0.00

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8.4.5. WCDMA BAND 5

ID:	38005	Date:	3/29/18

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.1467	848.8566		
Extreme (50C)		824.1467	848.8566	12.0	0.01
Extreme (40C)		824.1467	848.8566	11.4	0.01
Extreme (30C)		824.1467	848.8566	8.3	0.01
Extreme (10C)		824.1467	848.8566	11.3	0.01
Extreme (0C)		824.1467	848.8566	9.0	0.01
Extreme (-10C)		824.1467	848.8566	7.7	0.01
Extreme (-20C)		824.1467	848.8566	6.9	0.01
Extreme (-30C)		824.1467	848.8566	2.5	0.00
20C	15%	824.1467	848.8566	10.4	0.01
	-15%	824.1467	848.8566	12.3	0.01
	End Point	824.1467	848.8566	9.9	0.01

8.4.6. LTE BAND 2

ID:	38005	Date:	3/29/18

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.8890	1909.1530		
Extreme (50C)		1850.8890	1909.1530	13.6	0.007
Extreme (40C)		1850.8890	1909.1530	15.2	0.008
Extreme (30C)		1850.8890	1909.1530	15.9	0.008
Extreme (10C)		1850.8890	1909.1530	13.6	0.007
Extreme (0C)		1850.8890	1909.1530	14.8	0.008
Extreme (-10C)		1850.8890	1909.1530	17.7	0.009
Extreme (-20C)		1850.8890	1909.1530	13.6	0.007
Extreme (-30C)		1850.8890	1909.1530	18.6	0.010
20C	15%	1850.8890	1909.1530	15.8	0.008
	-15%	1850.8890	1909.1530	15.3	0.008
	End Point	1850.8890	1909.1530	14.8	0.008

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8.4.7. LTE BAND 4

ID:	38005	Date:	3/29/18

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.8670	1754.1270		
Extreme (50C)		1710.8670	1754.1270	7.0	0.004
Extreme (40C)		1710.8670	1754.1270	5.3	0.003
Extreme (30C)		1710.8670	1754.1270	5.3	0.003
Extreme (10C)		1710.8670	1754.1270	5.8	0.003
Extreme (0C)		1710.8670	1754.1270	5.2	0.003
Extreme (-10C)		1710.8670	1754.1270	5.2	0.003
Extreme (-20C)		1710.8670	1754.1270	5.5	0.003
Extreme (-30C)		1710.8670	1754.1270	4.5	0.003
20C	15%	1710.8670	1754.1270	6.6	0.004
	-15%	1710.8670	1754.1270	6.5	0.004
	End Point	1710.8670	1754.1270	6.4	0.004

8.4.8. LTE BAND 5

ID:	38005	Date:	3/29/18

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.4300	848.5730		
Extreme (50C)		824.4300	848.5730	-8.3	-0.010
Extreme (40C)		824.4300	848.5730	-7.5	-0.009
Extreme (30C)		824.4300	848.5730	-6.9	-0.008
Extreme (10C)		824.4300	848.5730	-8.2	-0.010
Extreme (0C)		824.4300	848.5730	-9.3	-0.011
Extreme (-10C)		824.4300	848.5730	-6.2	-0.007
Extreme (-20C)		824.4300	848.5730	-6.8	-0.008
Extreme (-30C)		824.4300	848.5730	-8.2	-0.010
20C	15%	824.4300	848.5730	-7.1	-0.008
	-15%	824.4300	848.5730	-6.7	-0.008
	End Point	824.4300	848.5730	-8.2	-0.010

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8.4.9. LTE BAND 7

ID:	38005	Date:	3/29/18

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2500.9000	2569.0930		
Extreme (50C)		2500.9000	2569.0930	-12.8	-0.005
Extreme (40C)		2500.9000	2569.0930	12.4	0.005
Extreme (30C)		2500.9000	2569.0930	-14.2	-0.006
Extreme (10C)		2500.9000	2569.0930	11.6	0.005
Extreme (0C)		2500.9000	2569.0930	12.6	0.005
Extreme (-10C)		2500.9000	2569.0930	11.1	0.004
Extreme (-20C)		2500.9000	2569.0930	-12.1	-0.005
Extreme (-30C)		2500.9000	2569.0930	12.3	0.005
20C	15%	2500.9000	2569.0930	-12.9	-0.005
	-15%	2500.9000	2569.0930	10.9	0.004
	End Point	2500.9000	2569.0930	13.0	0.005

8.4.10. LTE BAND 12

ID:	38005	Date:	3/29/18

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	699.3300	715.6670		
Extreme (50C)		699.3300	715.6670	-3.5	0.00
Extreme (40C)		699.3300	715.6670	-2.4	0.00
Extreme (30C)		699.3300	715.6670	-3.6	-0.01
Extreme (10C)		699.3300	715.6670	-6.7	-0.01
Extreme (0C)		699.3300	715.6670	-6.4	-0.01
Extreme (-10C)		699.3300	715.6670	-5.2	-0.01
Extreme (-20C)		699.3300	715.6670	-6.2	-0.01
Extreme (-30C)		699.3300	715.6670	-6.3	-0.01
20C	15%	699.3300	715.6670	-6.9	-0.01
	-15%	699.3300	715.6670	-5.7	-0.01
	End Point	699.3300	715.6670	-5.1	-0.01

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8.4.11. LTE BAND 13

ID:	38005	Date:	3/29/18

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	777.1634	786.8400		
Extreme (50C)		777.1634	786.8400	-9.3	-0.012
Extreme (40C)		777.1634	786.8400	-7.9	-0.010
Extreme (30C)		777.1634	786.8400	-8.3	-0.011
Extreme (10C)		777.1634	786.8400	-6.9	-0.009
Extreme (0C)		777.1634	786.8400	-8.1	-0.010
Extreme (-10C)		777.1634	786.8400	-9.0	-0.011
Extreme (-20C)		777.1634	786.8400	-5.5	-0.007
Extreme (-30C)		777.1634	786.8400	-7.7	-0.010
20C	15%	777.1634	786.8400	-9.3	-0.012
	-15%	777.1634	786.8400	-8.0	-0.010
	End Point	777.1634	786.8400	-8.3	-0.011

8.4.12. LTE BAND 17

ID:	38005	Date:	3/29/18

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	704.4230	715.5770		
Extreme (50C)		704.4230	715.5770	9.2	0.013
Extreme (40C)		704.4230	715.5770	7.7	0.011
Extreme (30C)		704.4230	715.5770	8.6	0.012
Extreme (10C)		704.4230	715.5770	10.6	0.015
Extreme (0C)		704.4230	715.5770	9.9	0.014
Extreme (-10C)		704.4230	715.5770	9.8	0.014
Extreme (-20C)		704.4230	715.5770	6.9	0.010
Extreme (-30C)		704.4230	715.5770	8.6	0.012
20C	15%	704.4230	715.5770	8.4	0.012
	-15%	704.4230	715.5770	9.6	0.014
	End Point	704.4230	715.5770	8.6	0.012

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8.4.13. LTE BAND 26(FCC PART 90S)

ID:	38005	Date:	3/29/18

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	814.1642	823.8333		
Extreme (50C)		814.1642	823.8333	7.2	0.009
Extreme (40C)		814.1642	823.8333	8.9	0.011
Extreme (30C)		814.1642	823.8333	8.1	0.010
Extreme (10C)		814.1642	823.8333	10.4	0.013
Extreme (0C)		814.1642	823.8333	8.6	0.011
Extreme (-10C)		814.1642	823.8333	10.1	0.012
Extreme (-20C)		814.1642	823.8333	10.2	0.012
Extreme (-30C)		814.1642	823.8333	10.8	0.013
20C	15%	814.1642	823.8333	8.3	0.010
	-15%	814.1642	823.8333	9.3	0.011
	End Point	814.1642	823.8333	7.3	0.009

8.4.14. LTE BAND 26(FCC PART 22)

ID:	38005	Date:	3/29/18

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.5900	848.4050		
Extreme (50C)		824.5900	848.4050	8.2	0.010
Extreme (40C)		824.5900	848.4050	8.9	0.011
Extreme (30C)		824.5900	848.4050	8.1	0.010
Extreme (10C)		824.5900	848.4050	9.0	0.011
Extreme (0C)		824.5900	848.4050	8.6	0.010
Extreme (-10C)		824.5900	848.4050	12.2	0.015
Extreme (-20C)		824.5900	848.4050	13.0	0.016
Extreme (-30C)		824.5900	848.4050	11.2	0.013
20C	15%	824.5900	848.4050	8.1	0.010
	-15%	824.5900	848.4050	9.0	0.011
	End Point	824.5900	848.4050	9.3	0.011

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8.4.15. LTE BAND 41

ID:	38005	Date:	3/29/18

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2496.5730	2689.5530		
Extreme (50C)		2496.5730	2689.5530	10.7	0.004
Extreme (40C)		2496.5730	2689.5530	8.6	0.003
Extreme (30C)		2496.5730	2689.5530	12.2	0.005
Extreme (10C)		2496.5730	2689.5530	12.7	0.005
Extreme (0C)		2496.5730	2689.5530	10.8	0.004
Extreme (-10C)		2496.5730	2689.5530	10.3	0.004
Extreme (-20C)		2496.5730	2689.5530	11.3	0.004
Extreme (-30C)		2496.5730	2689.5530	12.4	0.005
20C	15%	2496.5730	2689.5530	11.5	0.004
	-15%	2496.5730	2689.5530	13.0	0.005
	End Point	2496.5730	2689.5530	11.6	0.004

8.4.16. LTE BAND 66

ID:	38005	Date:	3/29/18

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.8730	1779.1200		
Extreme (50C)		1710.8730	1779.1200	7.7	0.004
Extreme (40C)		1710.8730	1779.1200	7.2	0.004
Extreme (30C)		1710.8730	1779.1200	7.8	0.004
Extreme (10C)		1710.8730	1779.1200	9.0	0.005
Extreme (0C)		1710.8730	1779.1200	9.5	0.005
Extreme (-10C)		1710.8730	1779.1200	11.1	0.006
Extreme (-20C)		1710.8730	1779.1200	9.8	0.006
Extreme (-30C)		1710.8730	1779.1200	9.0	0.005
20C	15%	1710.8730	1779.1200	9.3	0.005
	-15%	1710.8730	1779.1200	9.4	0.005
	End Point	1710.8730	1779.1200	9.0	0.005

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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.

RESULT

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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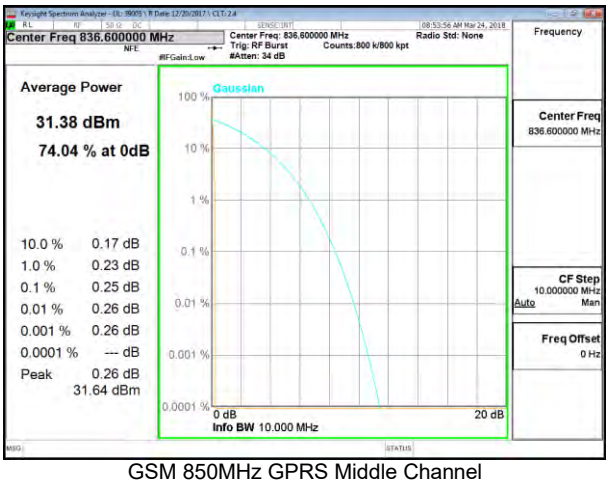
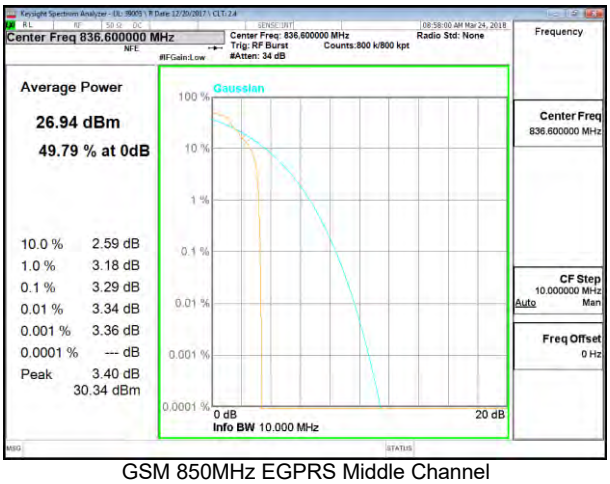
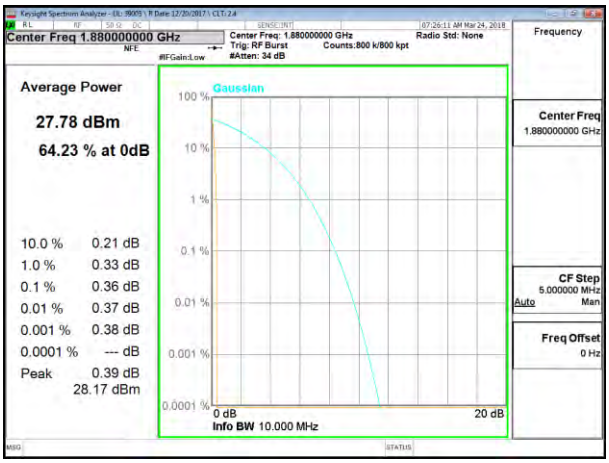
8.5.1. GSM



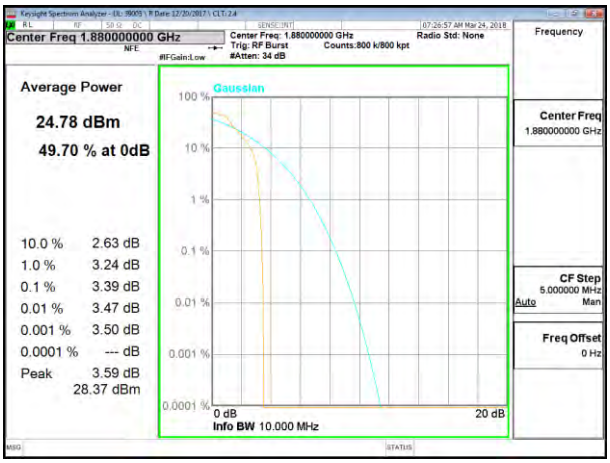
GSM 850MHz GPRS Middle Channel



GSM 850MHz EGPRS Middle Channel



GSM 1900MHz GPRS Middle Channel



GSM 1900MHz EGPRS Middle Channel

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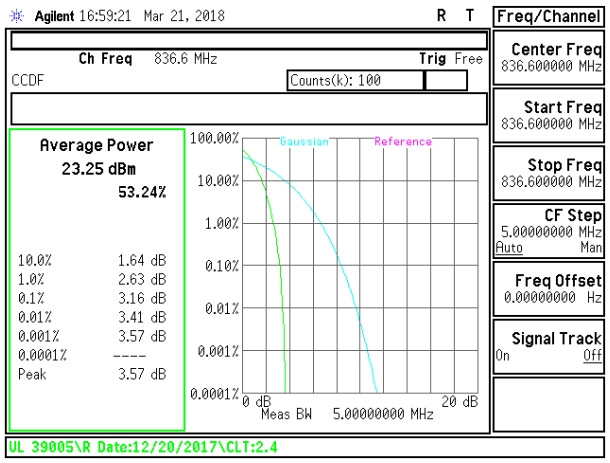
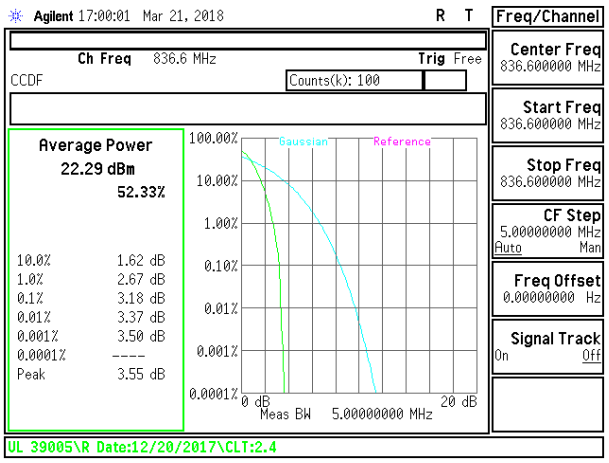
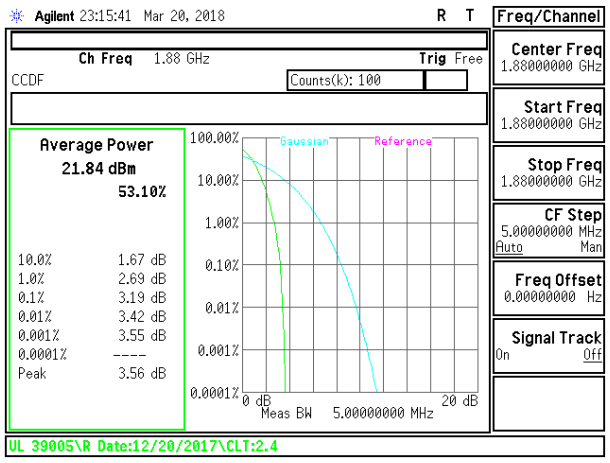
8.5.2. WCDMA



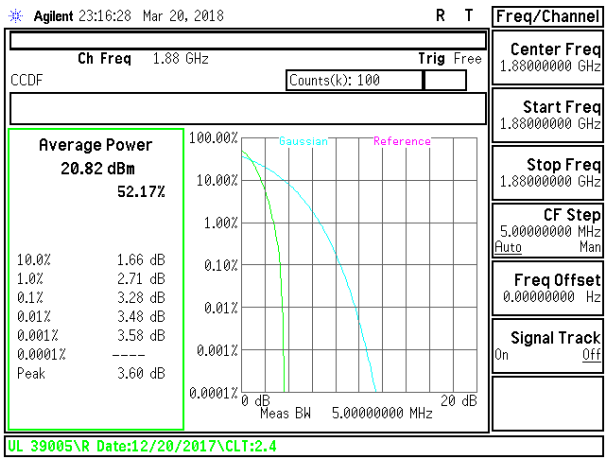
WCDMA Band 5 Rel 99 Middle Channel



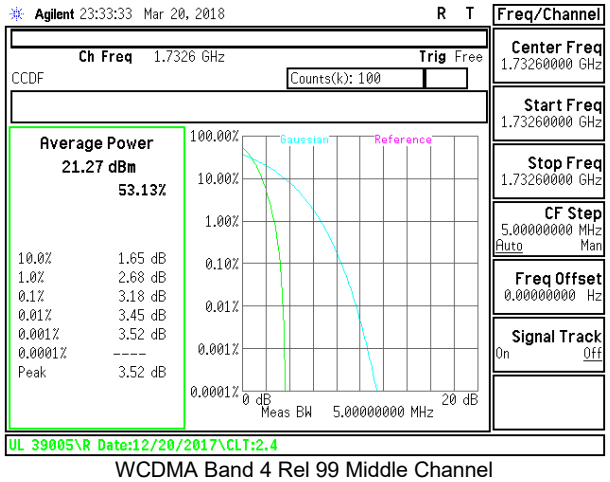
WCDMA Band 5 HSDPA Middle Channel



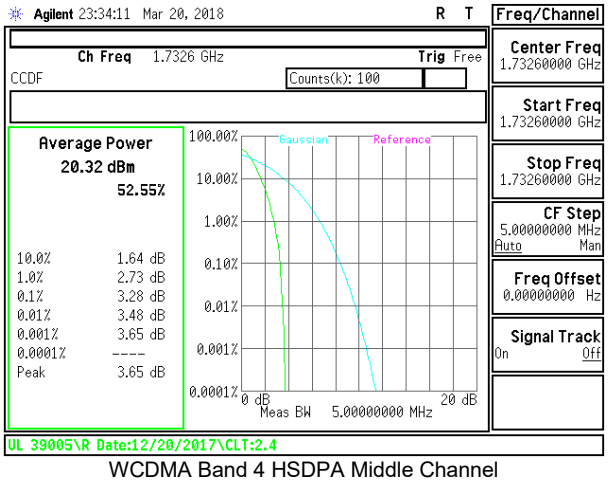
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel

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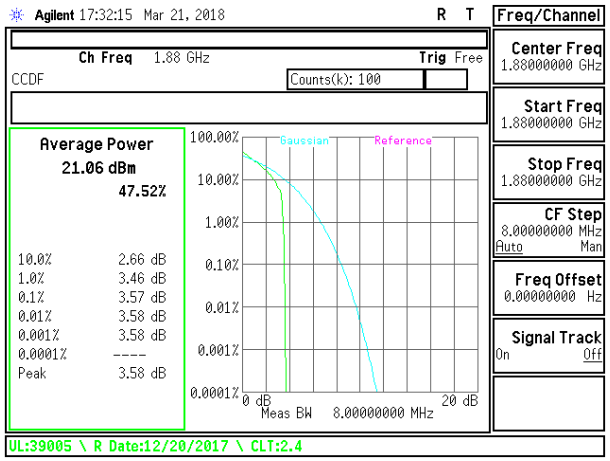
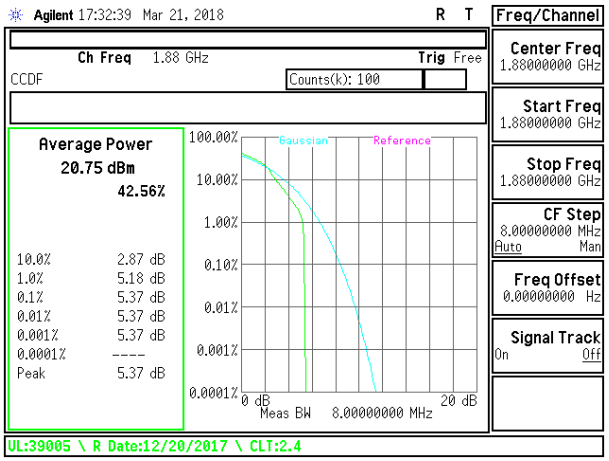
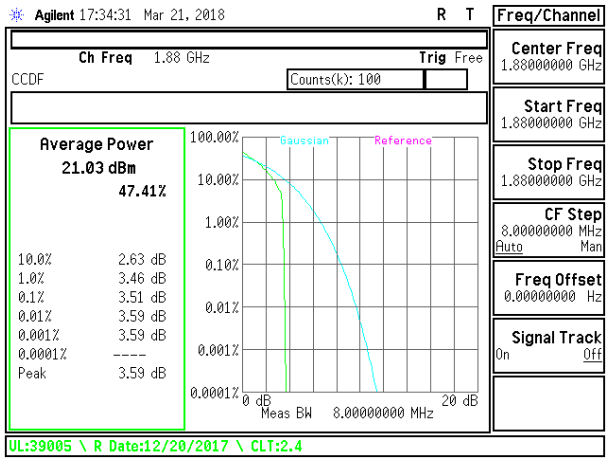
8.5.3. LTE BAND 2



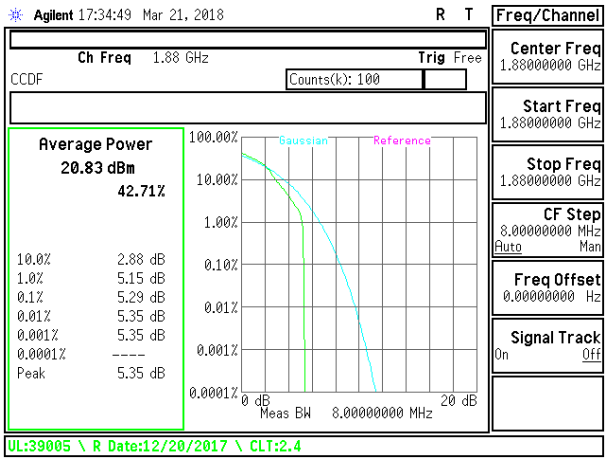
LTE B2 1.4MHz QPSK Middle Channel



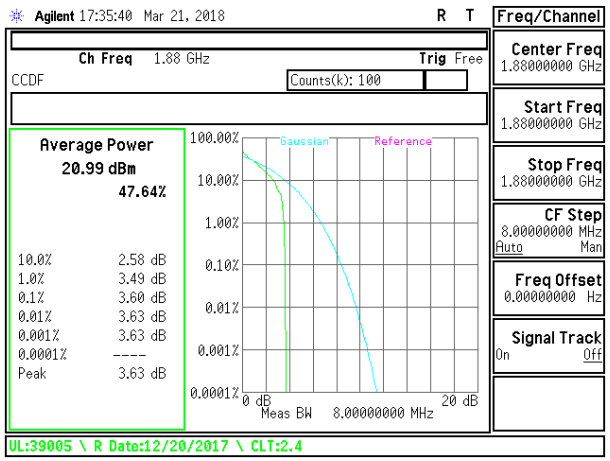
LTE B2 1.4MHz 16QAM Middle Channel



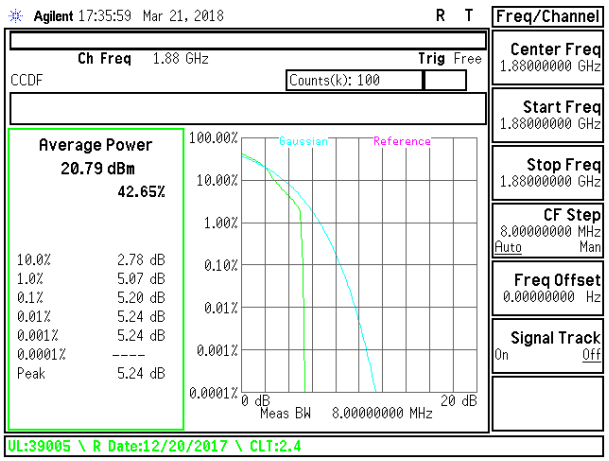
LTE B2 3MHz QPSK Middle Channel



LTE B2 3MHz 16QAM Middle Channel



LTE B2 5MHz QPSK Middle Channel



LTE B2 5MHz 16QAM Middle Channel

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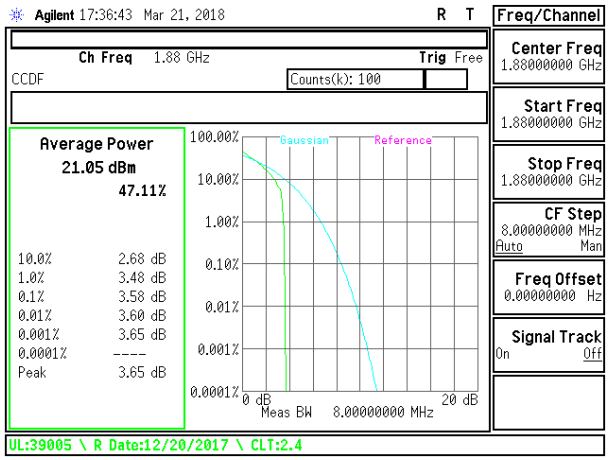
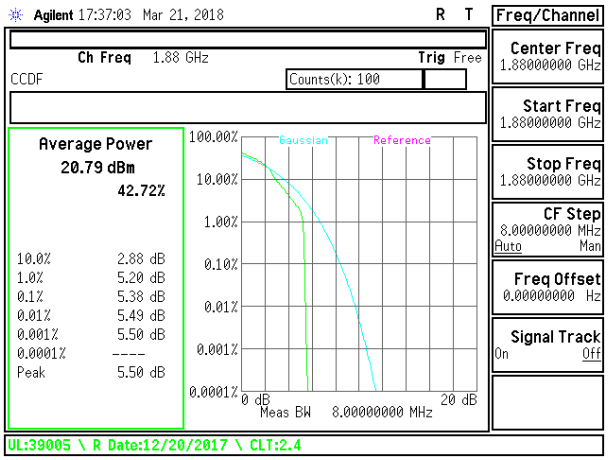
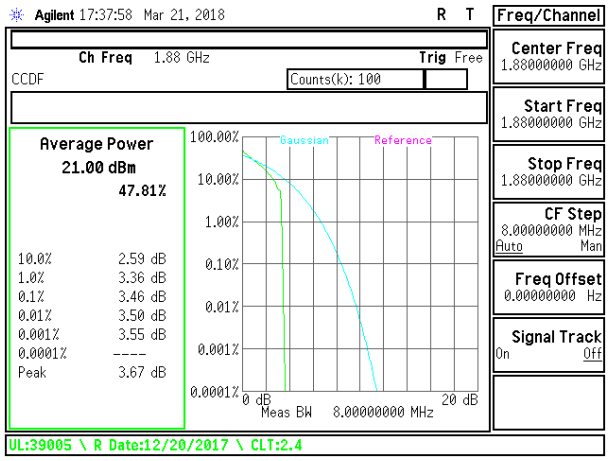


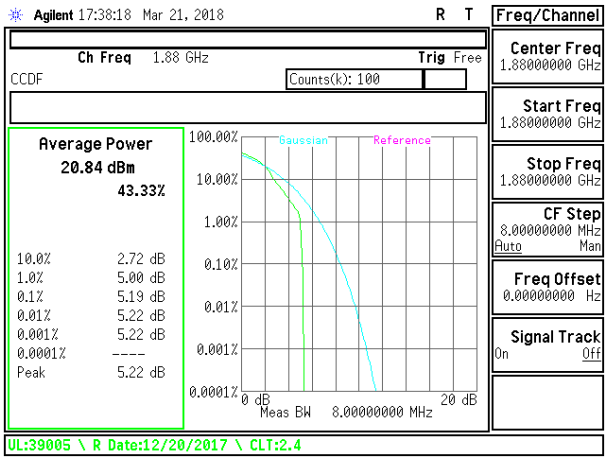
LTE B2 10MHz QPSK Middle Channel



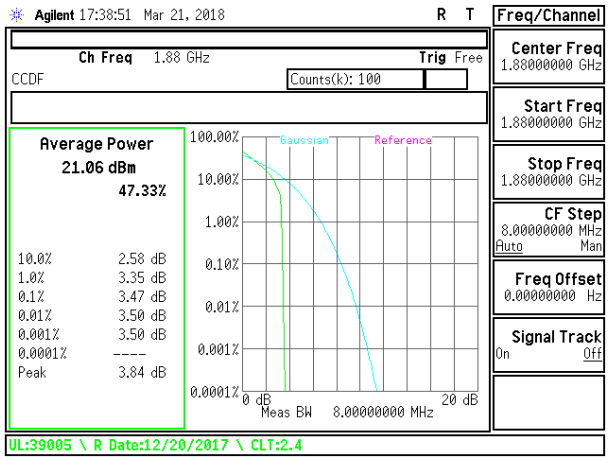
LTE B2 10MHz 16QAM Middle Channel



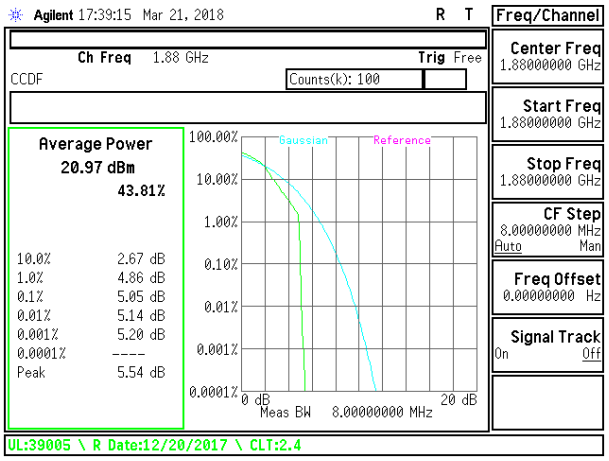
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel



LTE B2 20MHz QPSK Middle Channel



LTE B2 20MHz 16QAM Middle Channel

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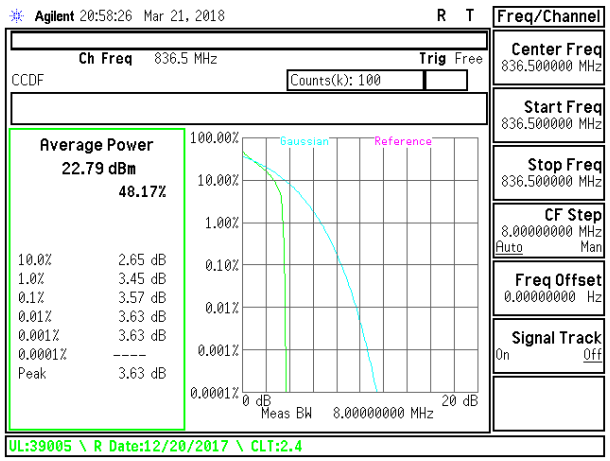
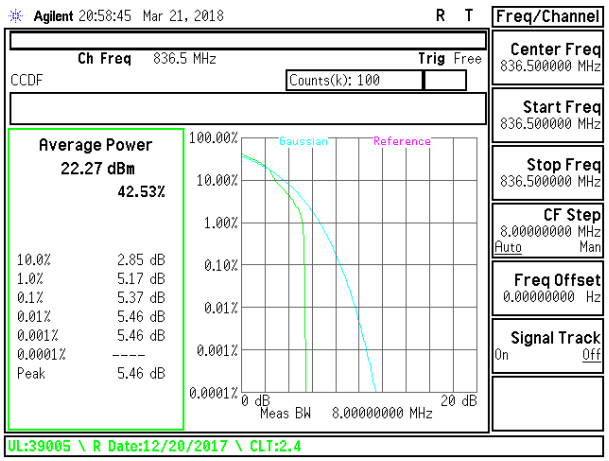
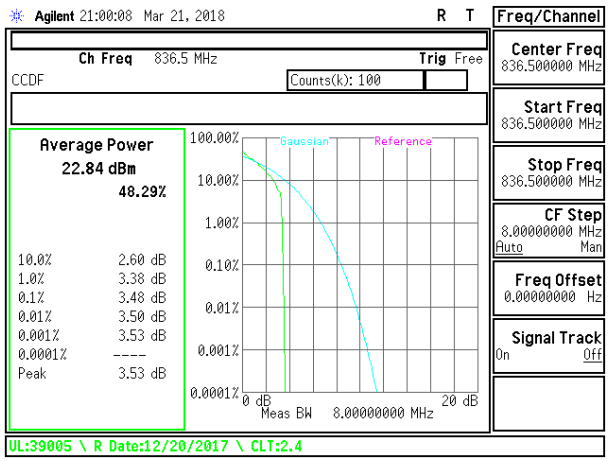
8.5.4. LTE BAND 5



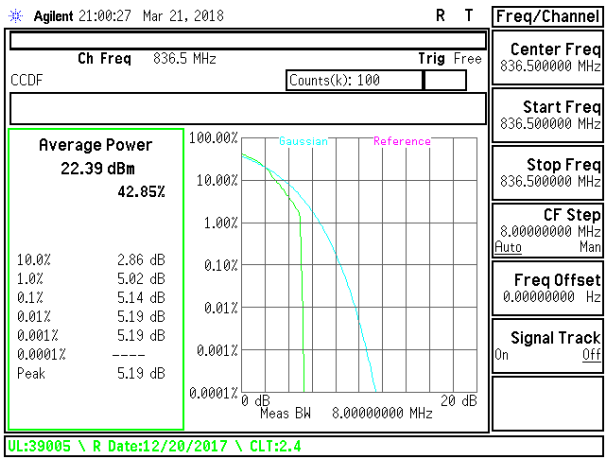
LTE B5 1.4MHz QPSK Middle Channel



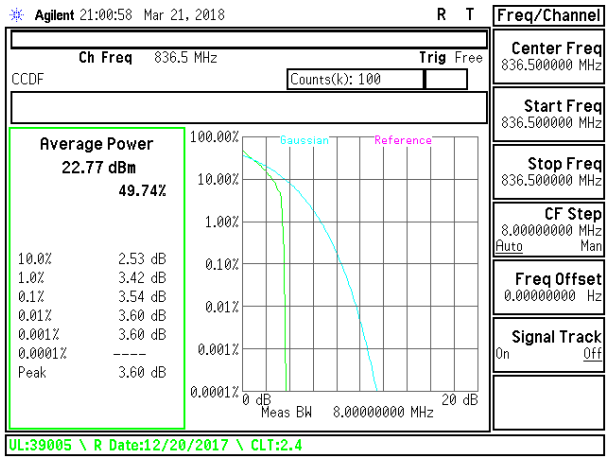
LTE B5 1.4MHz 16QAM Middle Channel



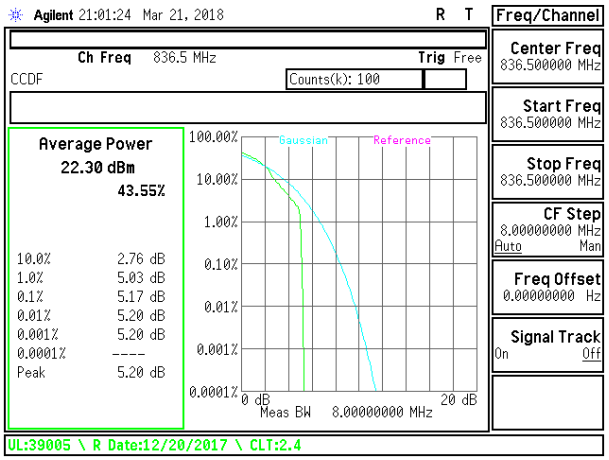
LTE B5 3MHz QPSK Middle Channel



LTE B5 3MHz 16QAM Middle Channel



LTE B5 5MHz QPSK Middle Channel



LTE B5 5MHz 16QAM Middle Channel

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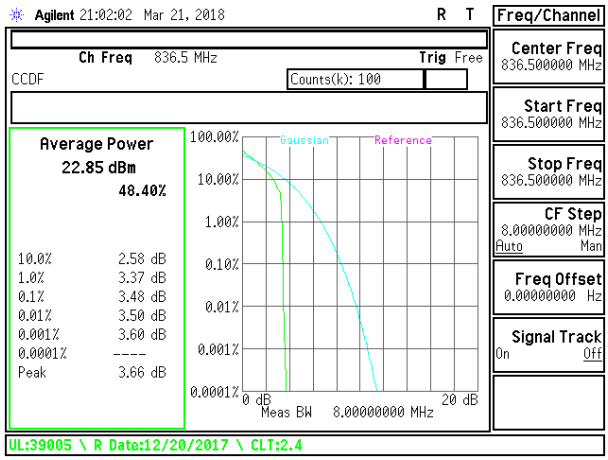
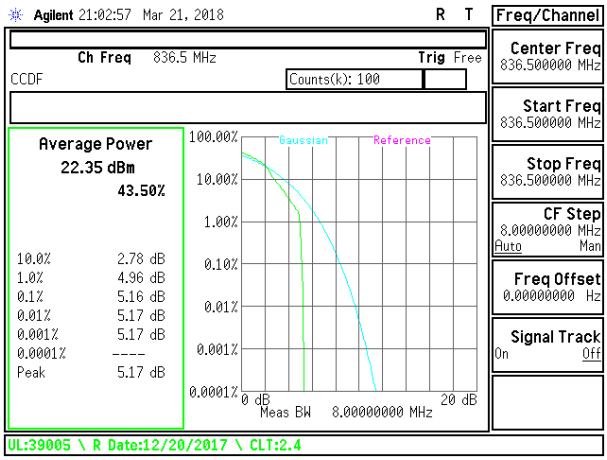


LTE B5 10MHz QPSK Middle Channel



LTE B5 10MHz 16QAM Middle Channel

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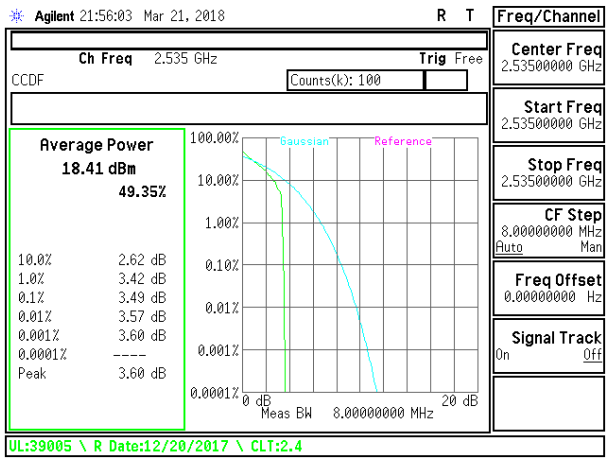
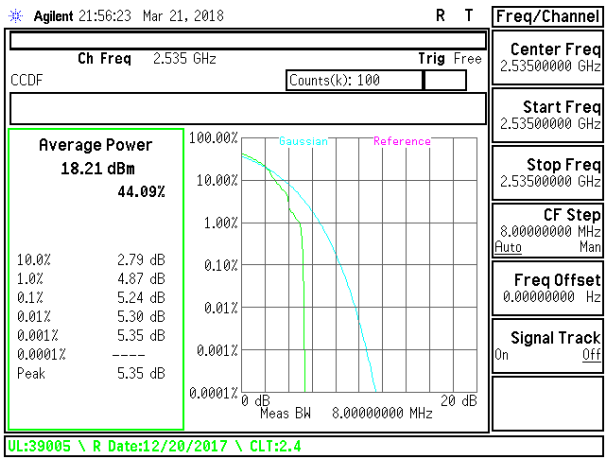
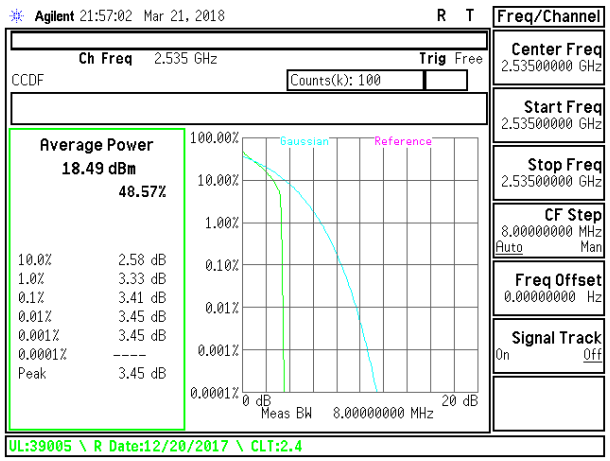
8.5.5. LTE BAND 7



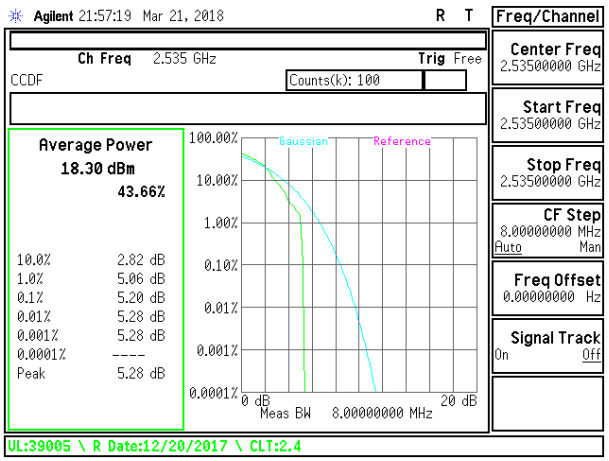
LTE B7 5MHz QPSK Middle Channel



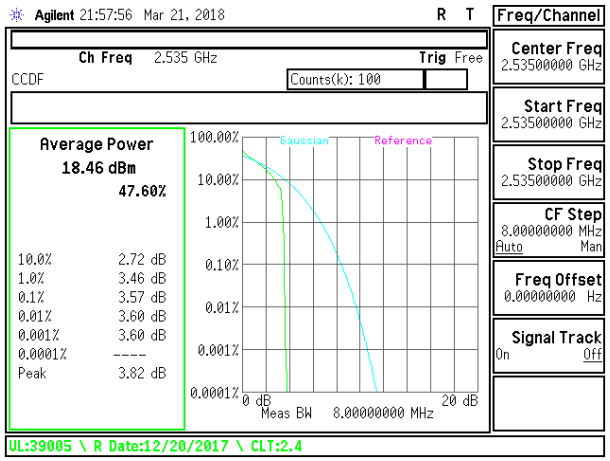
LTE B7 5MHz 16QAM Middle Channel



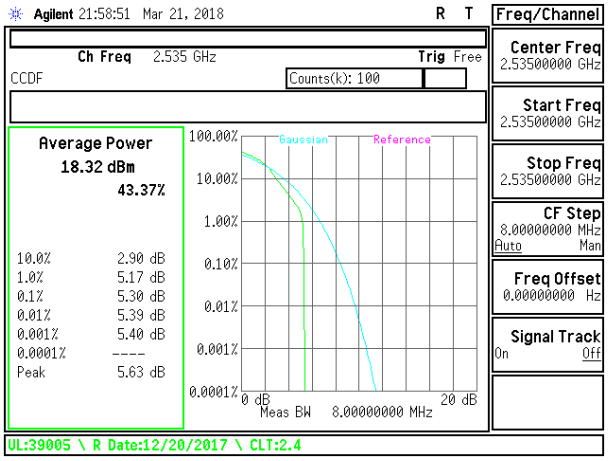
LTE B7 10MHz QPSK Middle Channel



LTE B7 10MHz 16QAM Middle Channel



LTE B7 15MHz QPSK Middle Channel



LTE B7 15MHz 16QAM Middle Channel

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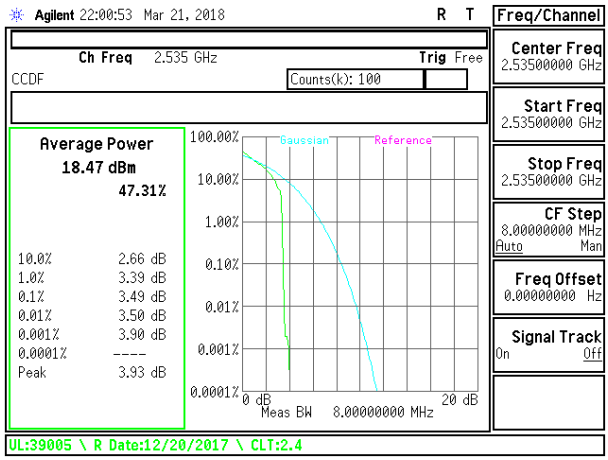
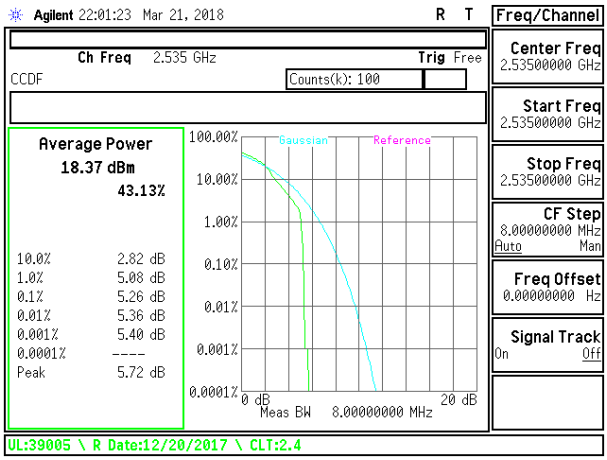


LTE B7 20MHz QPSK Middle Channel



LTE B7 20MHz 16QAM Middle Channel

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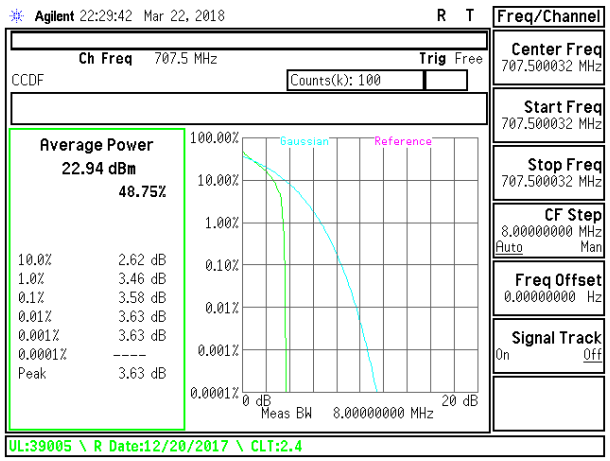
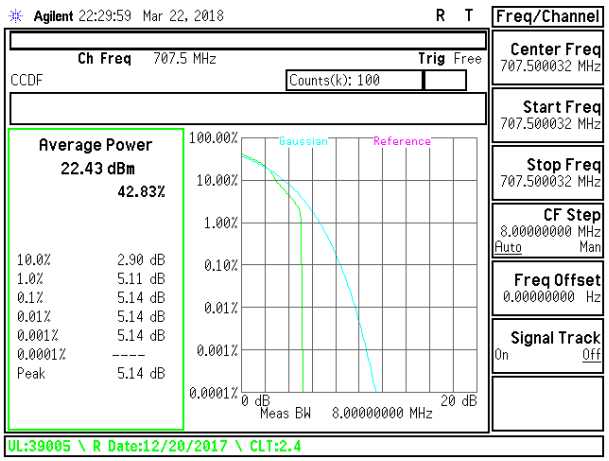
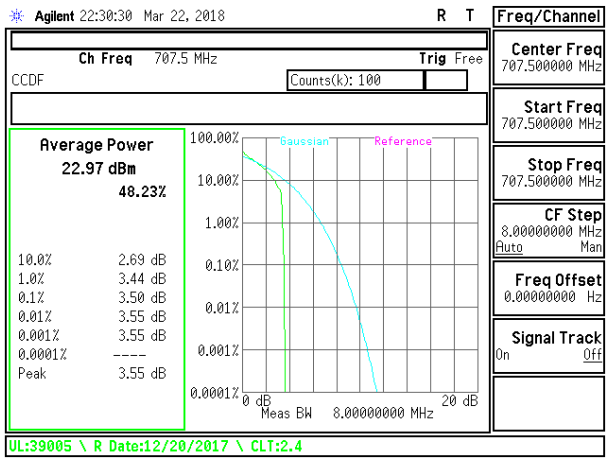
8.5.6. LTE BAND 12



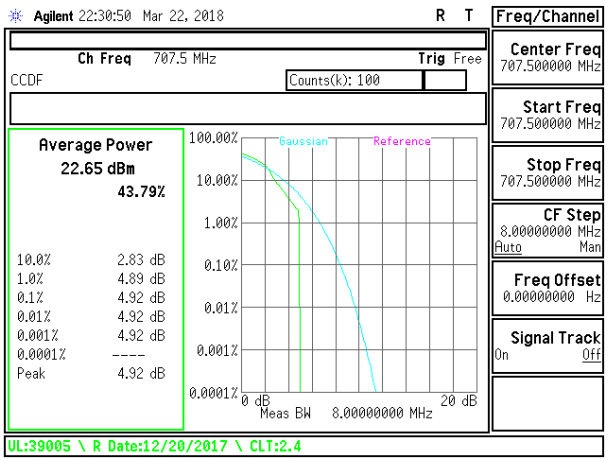
LTE B12 1.4MHz QPSK Middle Channel



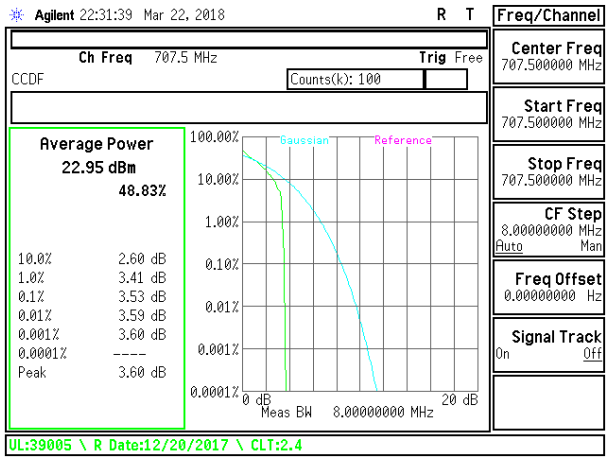
LTE B12 1.4MHz 16QAM Middle Channel



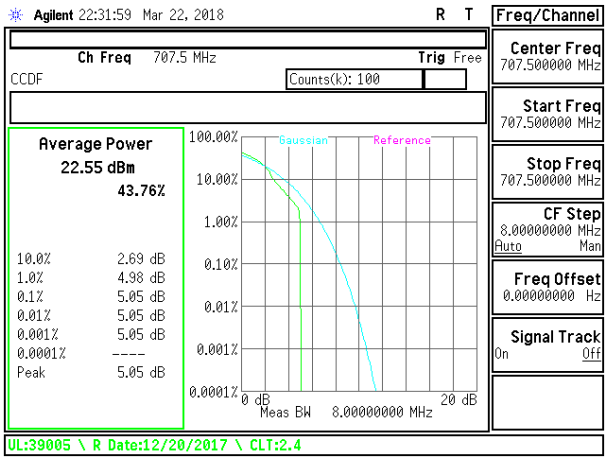
LTE B12 3MHz QPSK Middle Channel



LTE B12 3MHz 16QAM Middle Channel



LTE B12 5MHz QPSK Middle Channel



LTE B12 5MHz 16QAM Middle Channel

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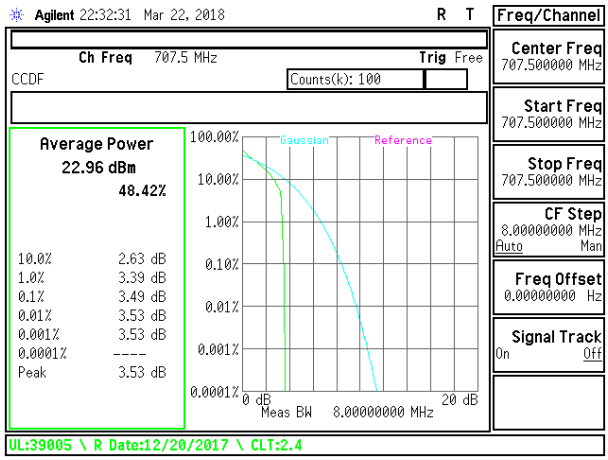
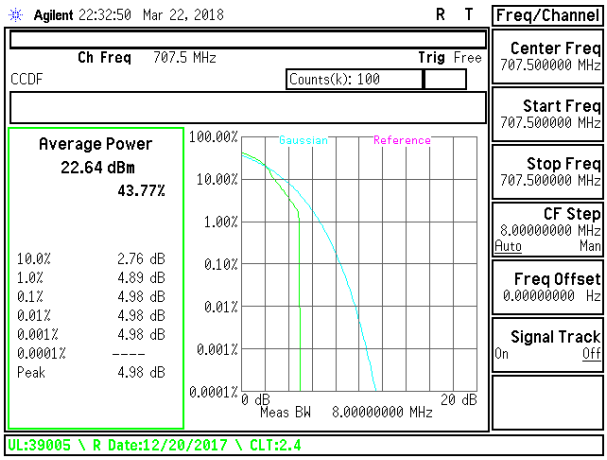


LTE B12 10MHz QPSK Middle Channel



LTE B12 10MHz 16QAM Middle Channel

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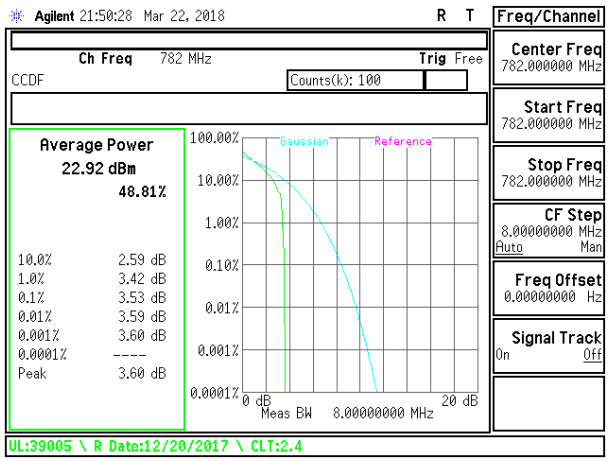
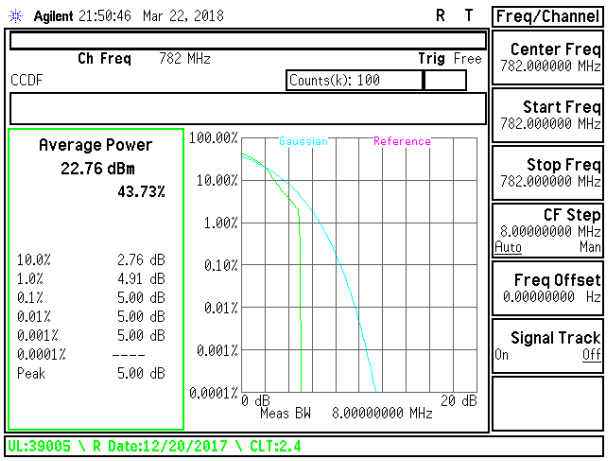
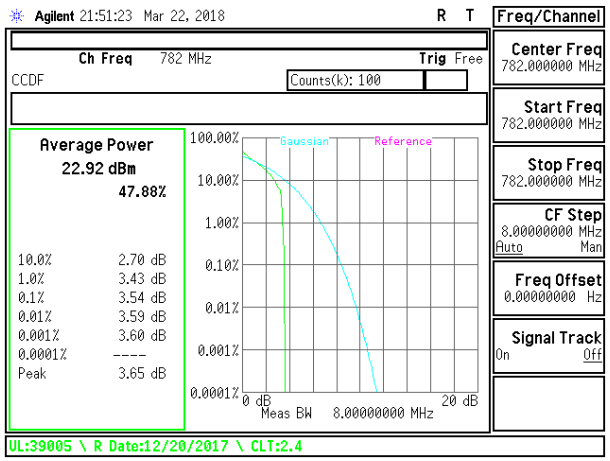
8.5.7. LTE BAND 13



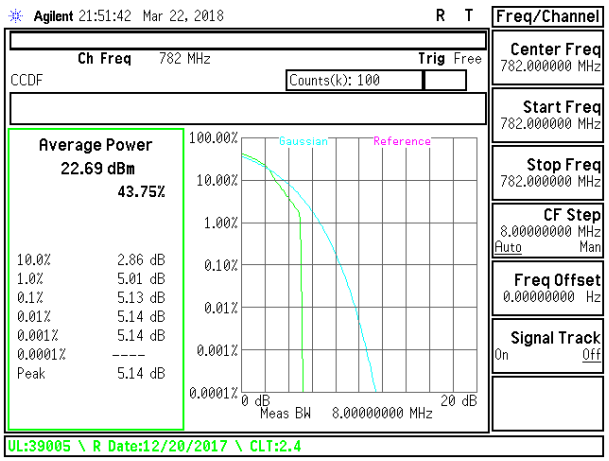
LTE B13 5MHz QPSK Middle Channel



LTE B13 5MHz 16QAM Middle Channel



LTE B13 10MHz QPSK Middle Channel



LTE B13 10MHz 16QAM Middle Channel

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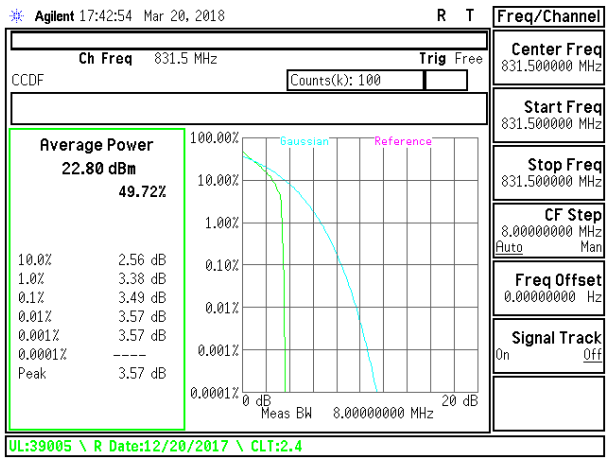
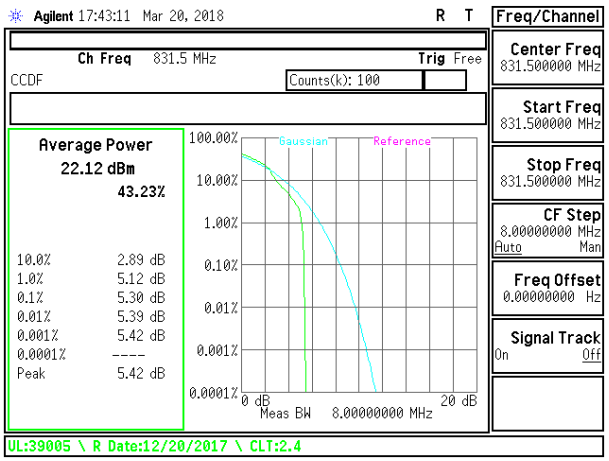
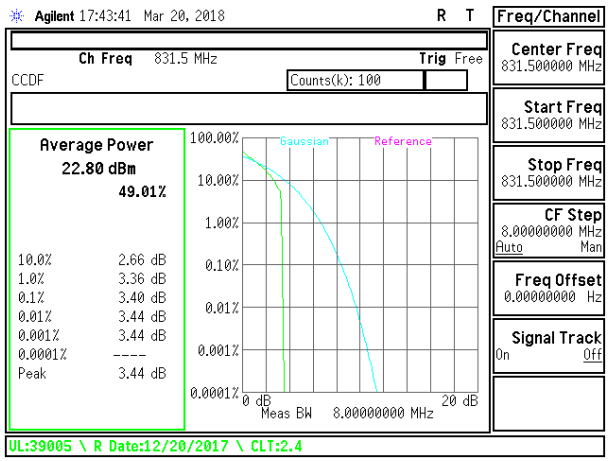
8.5.8. LTE BAND 26



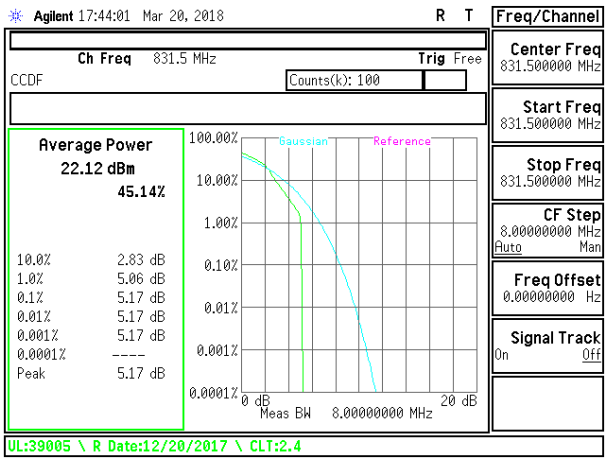
LTE B26 1.4MHz QPSK Middle Channel



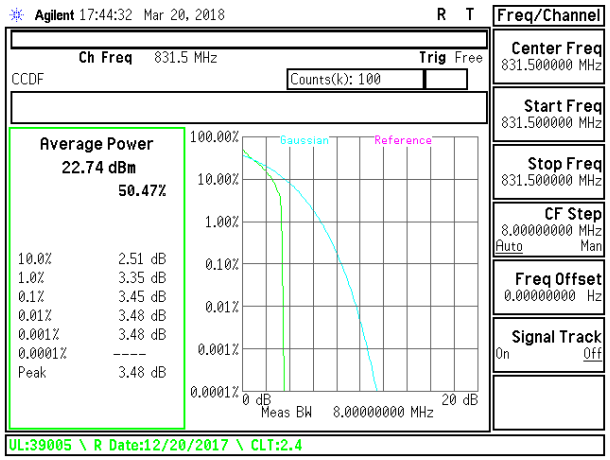
LTE B26 1.4MHz 16QAM Middle Channel



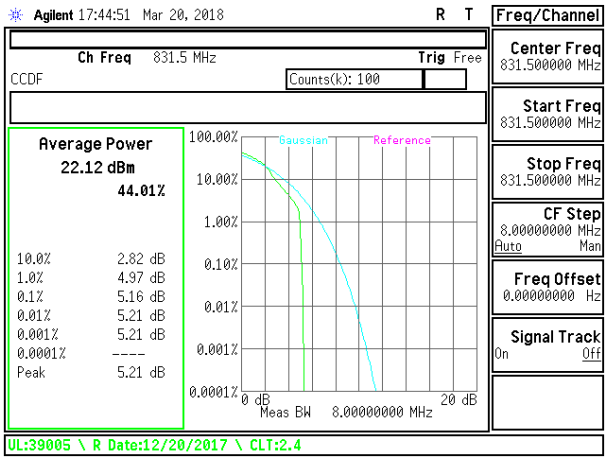
LTE B26 3MHz QPSK Middle Channel



LTE B26 3MHz 16QAM Middle Channel



LTE B26 5MHz QPSK Middle Channel



LTE B26 5MHz 16QAM Middle Channel

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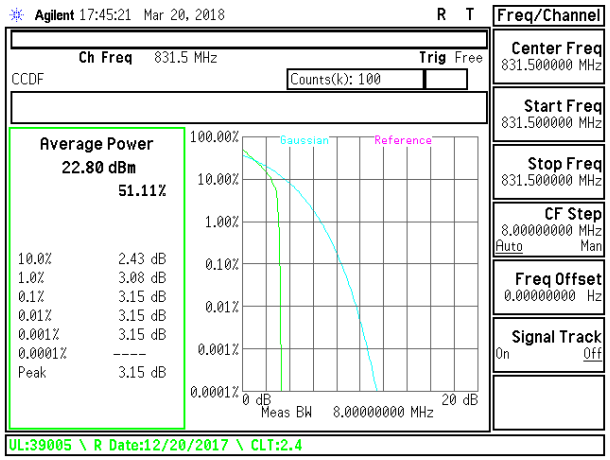
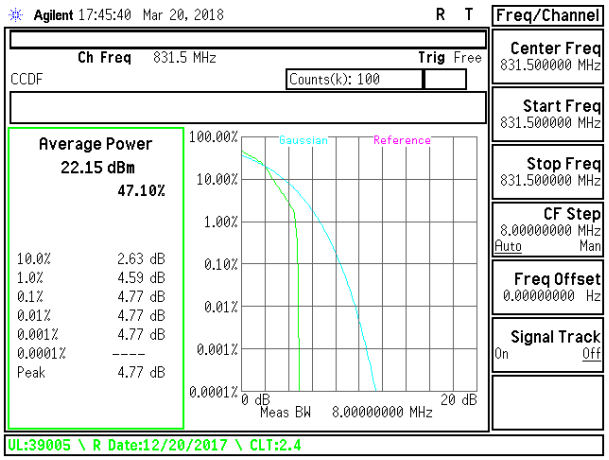
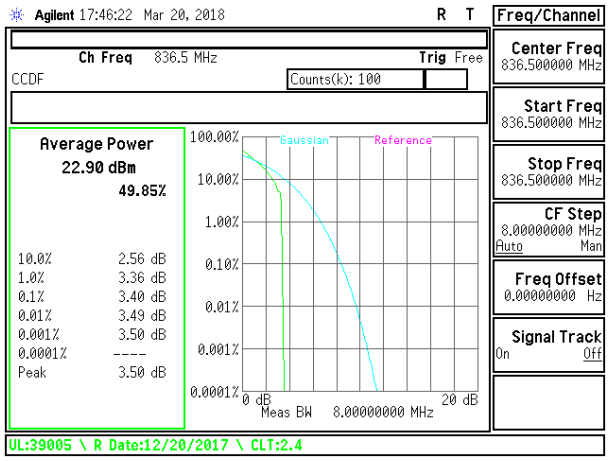


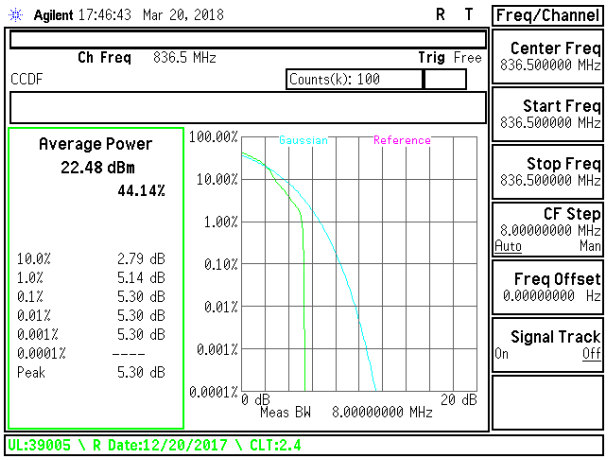
LTE B26 10MHz QPSK Middle Channel



LTE B26 10MHz 16QAM Middle Channel



LTE B26 15MHz QPSK Middle Channel



LTE B26 15MHz 16QAM Middle Channel

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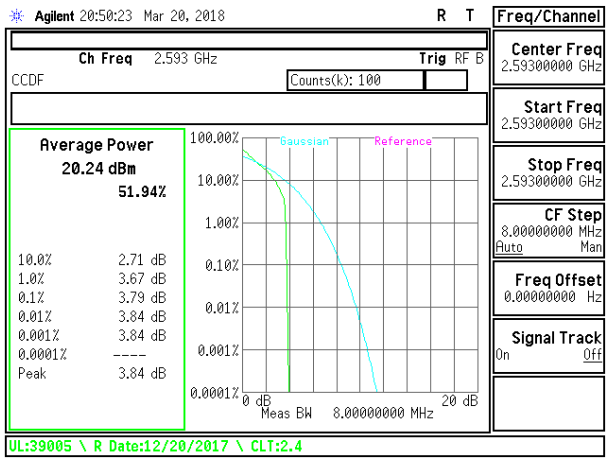
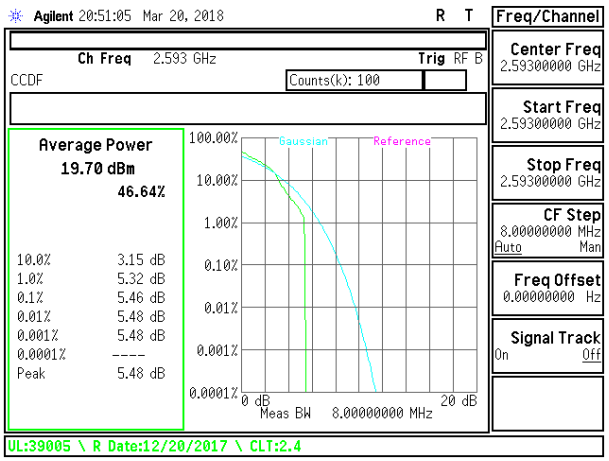
8.5.9. LTE BAND 41

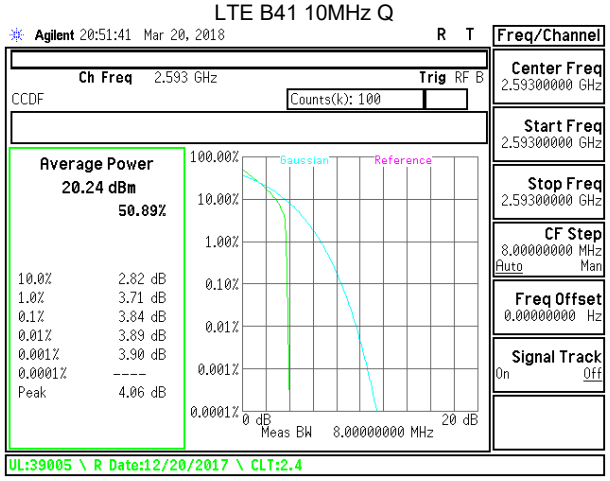


LTE B41 5MHz QPSK Middle Channel

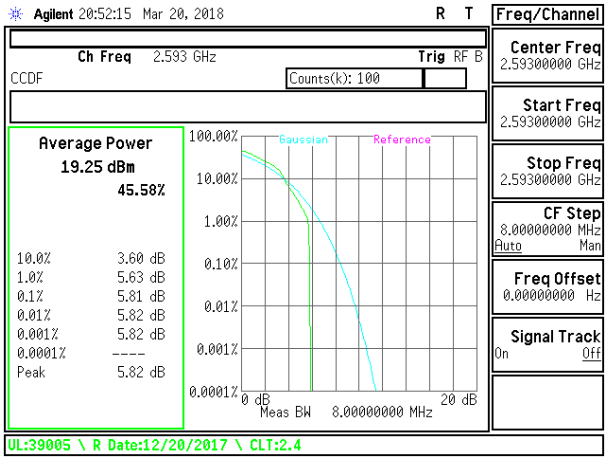


LTE B41 5MHz 16QAM Middle Channel

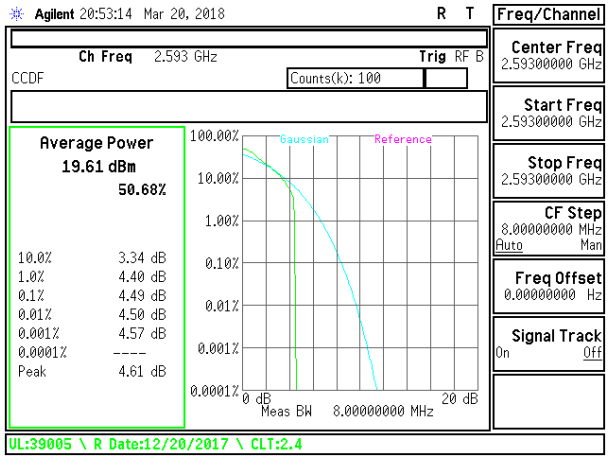
LTE B41 10MHz Q



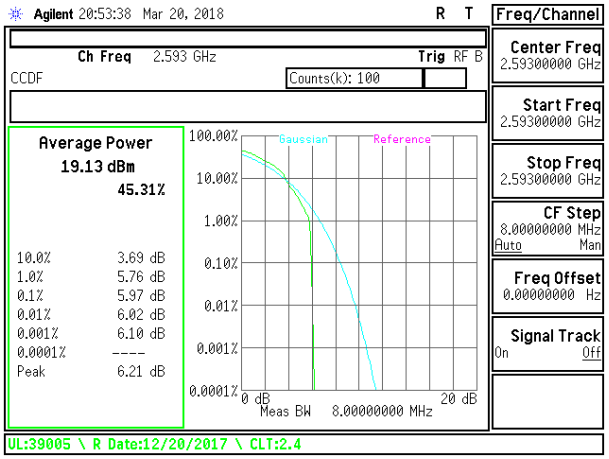
PSK Middle Channel



LTE B41 10MHz 16QAM Middle Channel



LTE B41 15MHz QPSK Middle Channel



LTE B41 15MHz 16QAM Middle Channel

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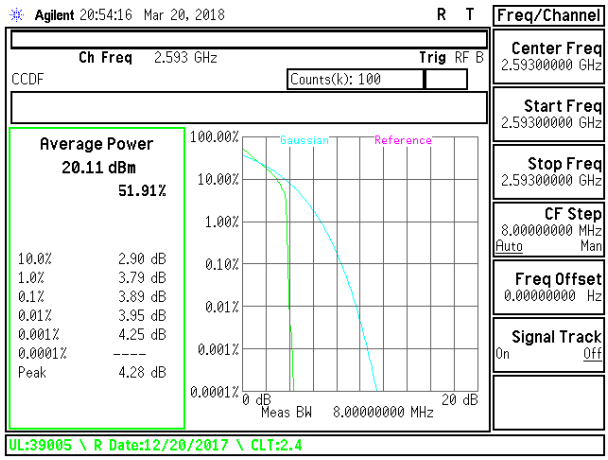
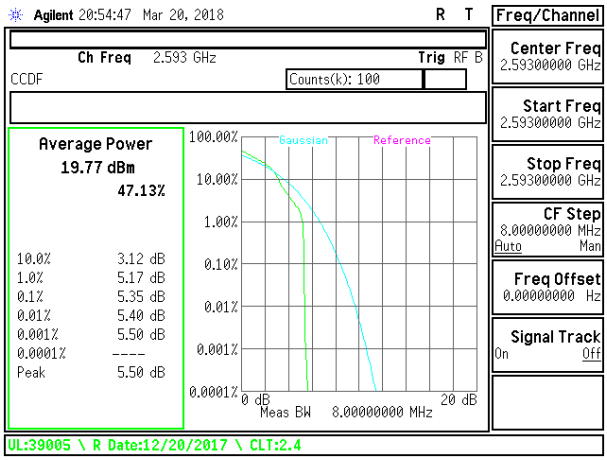


LTE B41 20MHz QPSK Middle Channel



LTE B41 20MHz 16QAM Middle Channel

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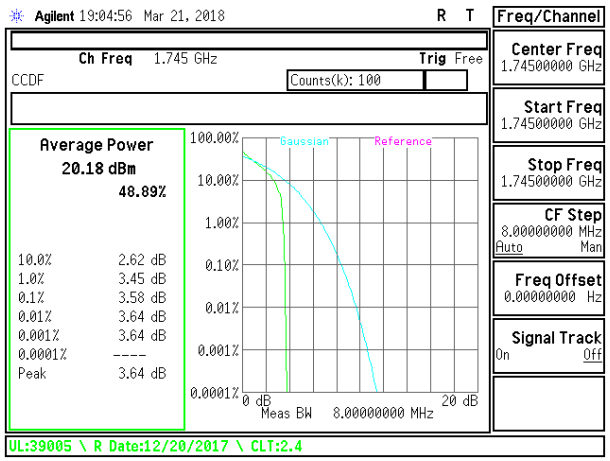
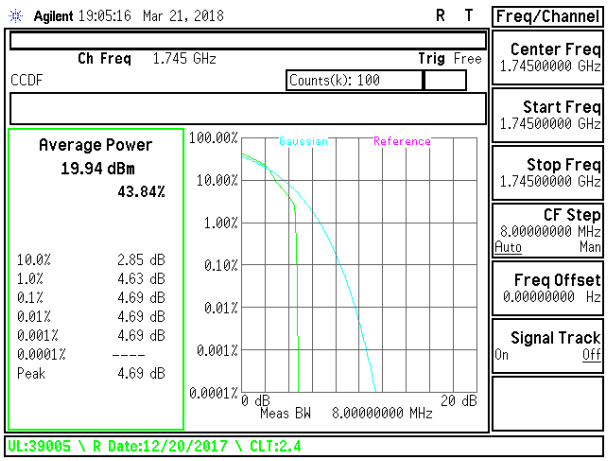
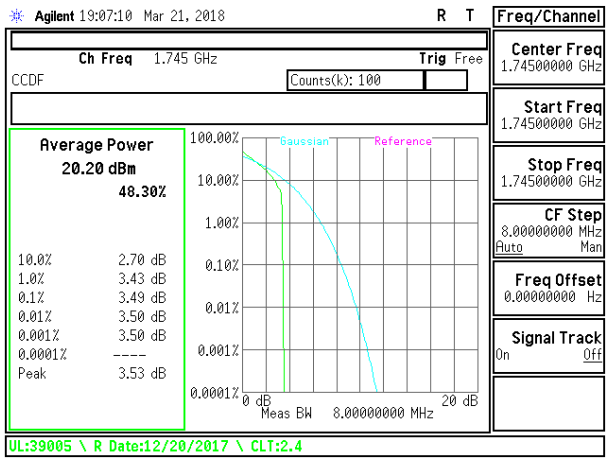
8.5.10. LTE BAND 66



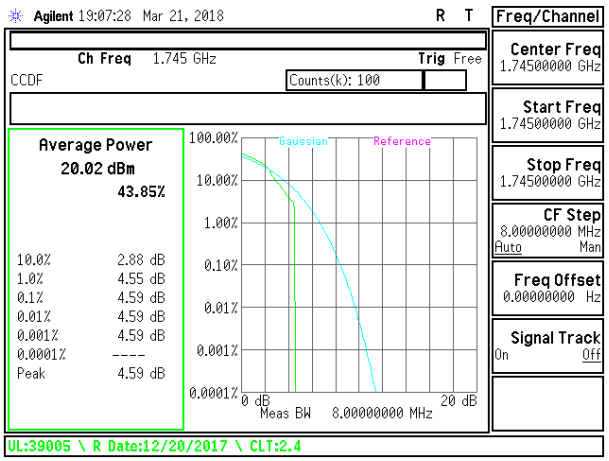
LTE B66 1.4MHz QPSK Middle Channel



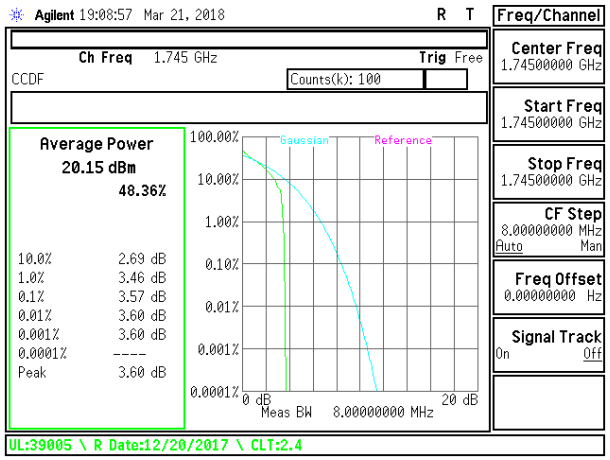
LTE B66 1.4MHz 16QAM Middle Channel



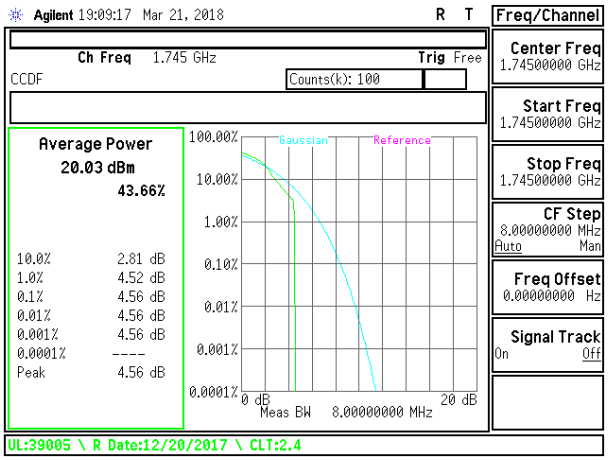
LTE B66 3MHz QPSK Middle Channel



LTE B66 3MHz 16QAM Middle Channel



LTE B66 5MHz QPSK Middle Channel



LTE B66 5MHz 16QAM Middle Channel

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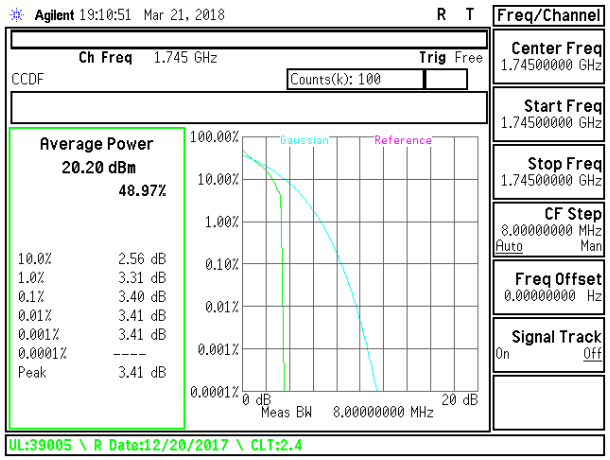
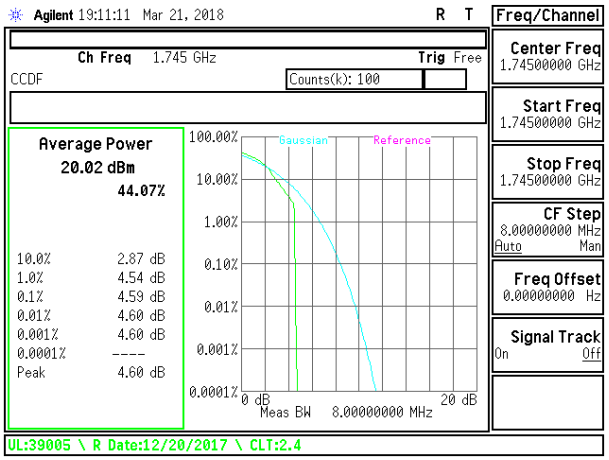
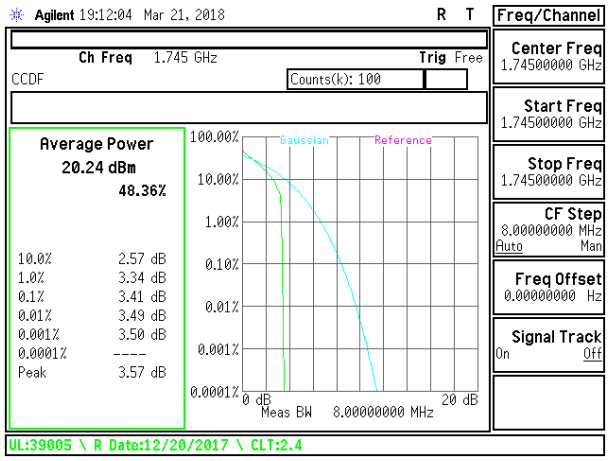


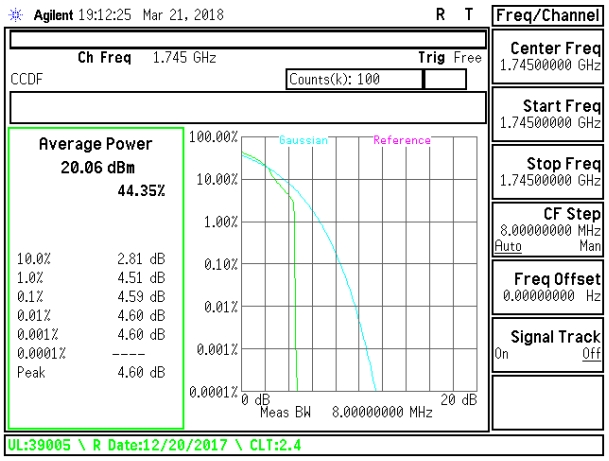
LTE B66 10MHz QPSK Middle Channel



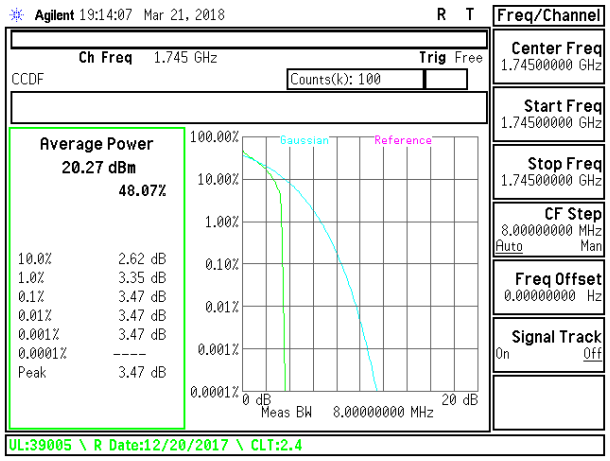
LTE B66 10MHz 16QAM Middle Channel



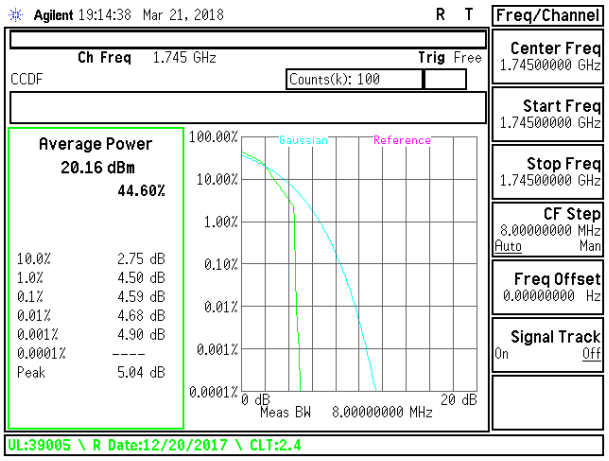
LTE B66 15MHz QPSK Middle Channel



LTE B66 15MHz 16QAM Middle Channel



LTE B66 20MHz QPSK Middle Channel



LTE B66 20MHz 16QAM Middle Channel

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9. RADIATED TEST RESULTS

9.1. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53, §90.691

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: §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 42)
(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.

TEST PROCEDURE

KDB 971168 D01 v02r02/D02 v01

TIA-603-E, Section 2.2.12.

MODES TESTED

- GSM 850
- GSM 1900
- WCDM Band 2
- WCDM Band 4
- WCDM Band 5
- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 26
- LTE Band 41
- LTE Band 66

RESULTS

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9.1.1. GSM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber C
Mode: GPRS 850 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1648.40	-28.3	V	3.0	37.0	1.0	-64.4	-13.0	-51.4	
2472.60	-25.7	V	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3296.80	-24.1	V	3.0	36.2	1.0	-59.3	-13.0	-46.3	
1648.40	-27.9	H	3.0	37.0	1.0	-63.9	-13.0	-50.9	
2472.60	-25.4	H	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3296.80	-24.5	H	3.0	36.2	1.0	-59.7	-13.0	-46.7	
Mid Ch, 836.6MHz									
1673.20	-30.6	V	3.0	37.0	1.0	-66.6	-13.0	-53.6	
2509.80	-25.3	V	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3346.40	-23.8	V	3.0	36.1	1.0	-58.9	-13.0	-45.9	
1673.20	-28.9	H	3.0	37.0	1.0	-64.9	-13.0	-51.9	
2509.80	-23.6	H	3.0	36.4	1.0	-59.0	-13.0	-46.0	
3346.40	-23.7	H	3.0	36.1	1.0	-58.9	-13.0	-45.9	
High Ch, 848.8MHz									
1697.60	-29.9	V	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2546.40	-25.1	V	3.0	36.4	1.0	-60.5	-13.0	-47.5	
3395.20	-23.4	V	3.0	36.1	1.0	-58.5	-13.0	-45.5	
1697.60	-28.9	H	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2546.40	-23.7	H	3.0	36.4	1.0	-59.1	-13.0	-46.1	
3395.20	-23.6	H	3.0	36.1	1.0	-58.7	-13.0	-45.7	

GSM 850MHz GPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: EGPRS 850 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz									
1648.40	-28.6	V	3.0	37.0	1.0	-64.6	-13.0	-51.6	
2472.60	-24.3	V	3.0	36.4	1.0	-59.7	-13.0	-46.7	
3296.80	-21.5	V	3.0	36.2	1.0	-56.7	-13.0	-43.7	
1648.40	-28.1	H	3.0	37.0	1.0	-64.1	-13.0	-51.1	
2472.60	-27.8	H	3.0	36.4	1.0	-63.2	-13.0	-50.2	
3296.80	-21.4	H	3.0	36.2	1.0	-56.5	-13.0	-43.5	
Mid Ch, 836.6MHz									
1673.20	-28.3	V	3.0	37.0	1.0	-64.3	-13.0	-51.3	
2509.80	-24.4	V	3.0	36.4	1.0	-59.8	-13.0	-46.8	
3346.40	-21.7	V	3.0	36.1	1.0	-56.8	-13.0	-43.8	
1673.20	-28.0	H	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2509.80	-26.0	H	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3346.40	-21.7	H	3.0	36.1	1.0	-56.9	-13.0	-43.9	
High Ch, 848.8MHz									
1697.60	-28.2	V	3.0	37.0	1.0	-64.1	-13.0	-51.1	
2546.40	-24.4	V	3.0	36.4	1.0	-59.8	-13.0	-46.8	
3395.20	-21.6	V	3.0	36.1	1.0	-56.7	-13.0	-43.7	
1697.60	-27.3	H	3.0	37.0	1.0	-63.2	-13.0	-50.2	
2546.40	-25.7	H	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3395.20	-21.5	H	3.0	36.1	1.0	-56.6	-13.0	-43.6	

GSM 850MHz EGPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: GPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz									
3700.40	-21.6	V	3.0	35.9	1.0	-56.5	-13.0	-43.5	
5550.60	-17.6	V	3.0	35.5	1.0	-52.1	-13.0	-39.1	
7400.80	-17.3	V	3.0	35.7	1.0	-52.1	-13.0	-39.1	
3700.40	-21.4	H	3.0	35.9	1.0	-56.2	-13.0	-43.2	
5550.60	-18.2	H	3.0	35.5	1.0	-52.6	-13.0	-39.6	
7400.80	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	
Mid Ch, 1880MHz									
3760.00	-22.3	V	3.0	35.8	1.0	-57.1	-13.0	-44.1	
5640.00	-19.7	V	3.0	35.5	1.0	-54.1	-13.0	-41.1	
7520.00	-16.8	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3760.00	-20.9	H	3.0	35.8	1.0	-55.7	-13.0	-42.7	
5640.00	-17.6	H	3.0	35.5	1.0	-52.1	-13.0	-39.1	
7520.00	-14.4	H	3.0	35.7	1.0	-49.2	-13.0	-36.2	
High Ch, 1909.8MHz									
3819.60	-20.0	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
5729.40	-17.4	V	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7639.20	-16.0	V	3.0	35.8	1.0	-50.8	-13.0	-37.8	
3819.60	-17.5	H	3.0	35.8	1.0	-52.3	-13.0	-39.3	
5729.40	-13.5	H	3.0	35.5	1.0	-48.0	-13.0	-35.0	
7639.20	-12.8	H	3.0	35.8	1.0	-47.5	-13.0	-34.5	

GSM 1900MHz GPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: EGPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz									
3700.40	-20.3	V	3.0	35.9	1.0	-55.2	-13.0	-42.2	
5550.60	-16.5	V	3.0	35.5	1.0	-50.9	-13.0	-37.9	
7400.80	-14.2	V	3.0	35.7	1.0	-48.9	-13.0	-35.9	
3700.40	-19.6	H	3.0	35.9	1.0	-54.4	-13.0	-41.4	
5550.60	-16.0	H	3.0	35.5	1.0	-50.4	-13.0	-37.4	
7400.80	-12.6	H	3.0	35.7	1.0	-47.3	-13.0	-34.3	
Mid Ch, 1880MHz									
3760.00	-19.8	V	3.0	35.8	1.0	-54.7	-13.0	-41.7	
5640.00	-16.7	V	3.0	35.5	1.0	-51.2	-13.0	-38.2	
7520.00	-14.9	V	3.0	35.7	1.0	-49.6	-13.0	-36.6	
3760.00	-19.9	H	3.0	35.8	1.0	-54.7	-13.0	-41.7	
5640.00	-15.7	H	3.0	35.5	1.0	-50.1	-13.0	-37.1	
7520.00	-12.8	H	3.0	35.7	1.0	-47.5	-13.0	-34.5	
High Ch, 1909.8MHz									
3819.60	-19.4	V	3.0	35.8	1.0	-54.1	-13.0	-41.1	
5729.40	-16.1	V	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7639.20	-14.4	V	3.0	35.8	1.0	-49.2	-13.0	-36.2	
3819.60	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
5729.40	-15.4	H	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7639.20	-12.5	H	3.0	35.8	1.0	-47.2	-13.0	-34.2	

GSM 1900MHz EGPRS

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9.1.2. WCDMA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: Rel99 Band 5 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4MHz									
1652.80	-30.0	V	3.0	37.0	1.0	-66.1	-13.0	-53.1	
2479.20	-26.0	V	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3305.60	-23.9	V	3.0	36.1	1.0	-59.0	-13.0	-46.0	
1652.80	-30.3	H	3.0	37.0	1.0	-66.4	-13.0	-53.4	
2479.20	-26.3	H	3.0	36.4	1.0	-61.7	-13.0	-48.7	
3305.60	-24.6	H	3.0	36.1	1.0	-59.8	-13.0	-46.8	
Mid Ch, 836.6MHz									
1673.20	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2509.80	-26.0	V	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3346.40	-23.8	V	3.0	36.1	1.0	-58.9	-13.0	-45.9	
1673.20	-29.6	H	3.0	37.0	1.0	-65.6	-13.0	-52.6	
2509.80	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3346.40	-24.1	H	3.0	36.1	1.0	-59.2	-13.0	-46.2	
High Ch, 846.6MHz									
1693.20	-29.6	V	3.0	37.0	1.0	-65.6	-13.0	-52.6	
2539.80	-25.7	V	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3386.40	-24.5	V	3.0	36.1	1.0	-59.6	-13.0	-46.6	
1693.20	-29.7	H	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2539.80	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3386.40	-23.9	H	3.0	36.1	1.0	-59.0	-13.0	-46.0	

WCDMA Band 5 Rel 99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: HSDPA Band 5 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4MHz									
1652.80	-29.5	V	3.0	37.0	1.0	-65.5	-13.0	-52.5	
2479.20	-26.2	V	3.0	36.4	1.0	-61.6	-13.0	-48.6	
3305.60	-24.6	V	3.0	36.1	1.0	-59.8	-13.0	-46.8	
1652.80	-30.4	H	3.0	37.0	1.0	-66.4	-13.0	-53.4	
2479.20	-25.9	H	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3305.60	-24.1	H	3.0	36.1	1.0	-59.3	-13.0	-46.3	
Mid Ch, 836.6MHz									
1673.20	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2509.80	-25.4	V	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3346.40	-24.3	V	3.0	36.1	1.0	-59.4	-13.0	-46.4	
1673.20	-29.3	H	3.0	37.0	1.0	-65.3	-13.0	-52.3	
2509.80	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3346.40	-24.6	H	3.0	36.1	1.0	-59.7	-13.0	-46.7	
High Ch, 846.6MHz									
1693.20	-29.4	V	3.0	37.0	1.0	-65.4	-13.0	-52.4	
2539.80	-25.4	V	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3386.40	-24.3	V	3.0	36.1	1.0	-59.4	-13.0	-46.4	
1693.20	-29.8	H	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2539.80	-25.3	H	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3386.40	-24.0	H	3.0	36.1	1.0	-59.1	-13.0	-46.1	

WCDMA Band 5 HSDPA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: Rel99 Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3704.80	-23.8	V	3.0	35.9	1.0	-58.6	-13.0	-45.6	
5557.20	-22.1	V	3.0	35.5	1.0	-56.6	-13.0	-43.6	
7409.60	-21.8	V	3.0	35.7	1.0	-56.5	-13.0	-43.5	
3704.80	-23.1	H	3.0	35.9	1.0	-58.0	-13.0	-45.0	
5557.20	-22.3	H	3.0	35.5	1.0	-56.8	-13.0	-43.8	
7409.60	-21.8	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
Mid Ch, 1880MHz									
3760.00	-23.4	V	3.0	35.8	1.0	-58.2	-13.0	-45.2	
5640.00	-21.0	V	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7520.00	-21.7	V	3.0	35.7	1.0	-56.5	-13.0	-43.5	
3760.00	-24.7	H	3.0	35.8	1.0	-59.5	-13.0	-46.5	
5640.00	-20.9	H	3.0	35.5	1.0	-55.4	-13.0	-42.4	
7520.00	-21.9	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
High Ch, 1907.6MHz									
3815.20	-22.9	V	3.0	35.8	1.0	-57.7	-13.0	-44.7	
5722.80	-22.0	V	3.0	35.5	1.0	-56.5	-13.0	-43.5	
7630.40	-22.0	V	3.0	35.8	1.0	-56.8	-13.0	-43.8	
3815.20	-22.8	H	3.0	35.8	1.0	-57.6	-13.0	-44.6	
5722.80	-22.3	H	3.0	35.5	1.0	-56.8	-13.0	-43.8	
7630.40	-22.0	H	3.0	35.8	1.0	-56.8	-13.0	-43.8	

WCDMA Band 2 Rel 99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: HSDPA Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3704.80	-24.1	V	3.0	35.9	1.0	-59.0	-13.0	-46.0	
5557.20	-21.8	V	3.0	35.5	1.0	-56.3	-13.0	-43.3	
7409.60	-22.5	V	3.0	35.7	1.0	-57.3	-13.0	-44.3	
3704.80	-24.0	H	3.0	35.9	1.0	-58.8	-13.0	-45.8	
5557.20	-21.0	H	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7409.60	-22.1	H	3.0	35.7	1.0	-56.8	-13.0	-43.8	
Mid Ch, 1880MHz									
3760.00	-23.6	V	3.0	35.8	1.0	-58.4	-13.0	-45.4	
5640.00	-21.6	V	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7520.00	-21.5	V	3.0	35.7	1.0	-56.3	-13.0	-43.3	
3760.00	-24.2	H	3.0	35.8	1.0	-59.1	-13.0	-46.1	
5640.00	-20.9	H	3.0	35.5	1.0	-55.4	-13.0	-42.4	
7520.00	-21.9	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
High Ch, 1907.6MHz									
3815.20	-22.6	V	3.0	35.8	1.0	-57.4	-13.0	-44.4	
5722.80	-22.3	V	3.0	35.5	1.0	-56.8	-13.0	-43.8	
7630.40	-20.9	V	3.0	35.8	1.0	-55.7	-13.0	-42.7	
3815.20	-22.5	H	3.0	35.8	1.0	-57.2	-13.0	-44.2	
5722.80	-22.0	H	3.0	35.5	1.0	-56.5	-13.0	-43.5	
7630.40	-19.0	H	3.0	35.8	1.0	-53.8	-13.0	-40.8	

WCDMA Band 2 HSDPA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: Rel99 Band 4 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.4MHz									
3424.80	-22.2	V	3.0	36.1	1.0	-57.3	-13.0	-44.3	
5137.20	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
6849.60	-14.7	V	3.0	35.7	1.0	-49.4	-13.0	-36.4	
3424.80	-21.4	H	3.0	36.1	1.0	-56.5	-13.0	-43.5	
5137.20	-16.0	H	3.0	35.4	1.0	-50.4	-13.0	-37.4	
6849.60	-12.9	H	3.0	35.7	1.0	-47.6	-13.0	-34.6	
Mid Ch, 1732.6MHz									
3465.20	-22.0	V	3.0	36.0	1.0	-57.0	-13.0	-44.0	
5197.80	-15.3	V	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6930.40	-15.0	V	3.0	35.7	1.0	-49.7	-13.0	-36.7	
3465.20	-21.3	H	3.0	36.0	1.0	-56.3	-13.0	-43.3	
5197.80	-15.1	H	3.0	35.4	1.0	-49.5	-13.0	-36.5	
6930.40	-13.0	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
High Ch, 1752.6MHz									
3505.20	-21.7	V	3.0	36.0	1.0	-56.7	-13.0	-43.7	
5257.80	-14.2	V	3.0	35.4	1.0	-48.7	-13.0	-35.7	
7010.40	-15.8	V	3.0	35.7	1.0	-50.5	-13.0	-37.5	
3505.20	-21.8	H	3.0	36.0	1.0	-56.8	-13.0	-43.8	
5257.80	-14.6	H	3.0	35.4	1.0	-49.1	-13.0	-36.1	
7010.40	-13.2	H	3.0	35.7	1.0	-47.9	-13.0	-34.9	

WCDMA Band 4 Rel 99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: HSDPA Band 4 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.4MHz									
3424.80	-22.1	V	3.0	36.1	1.0	-57.2	-13.0	-44.2	
5137.20	-16.5	V	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6849.60	-14.4	V	3.0	35.7	1.0	-49.1	-13.0	-36.1	
3424.80	-21.8	H	3.0	36.1	1.0	-56.9	-13.0	-43.9	
5137.20	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6849.60	-14.4	H	3.0	35.7	1.0	-49.1	-13.0	-36.1	
Mid Ch, 1732.6MHz									
3465.20	-21.5	V	3.0	36.0	1.0	-56.5	-13.0	-43.5	
5197.80	-15.9	V	3.0	35.4	1.0	-50.3	-13.0	-37.3	
6930.40	-14.6	V	3.0	35.7	1.0	-49.3	-13.0	-36.3	
3465.20	-21.0	H	3.0	36.0	1.0	-56.0	-13.0	-43.0	
5197.80	-15.3	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6930.40	-12.9	H	3.0	35.7	1.0	-47.6	-13.0	-34.6	
High Ch, 1752.6MHz									
3505.20	-21.2	V	3.0	36.0	1.0	-56.2	-13.0	-43.2	
5257.80	-15.8	V	3.0	35.4	1.0	-50.2	-13.0	-37.2	
7010.40	-14.5	V	3.0	35.7	1.0	-49.2	-13.0	-36.2	
3505.20	-21.0	H	3.0	36.0	1.0	-56.0	-13.0	-43.0	
5257.80	-13.7	H	3.0	35.4	1.0	-48.1	-13.0	-35.1	
7010.40	-13.5	H	3.0	35.7	1.0	-48.2	-13.0	-35.2	

WCDMA Band 4 HSDPA

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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9.1.3. LTE BAND 2

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7MHz									
3701.40	-23.8	V	3.0	35.9	1.0	-58.6	-13.0	-45.6	
5552.10	-22.5	V	3.0	35.5	1.0	-57.0	-13.0	-44.0	
7402.80	-21.6	V	3.0	35.7	1.0	-56.4	-13.0	-43.4	
3701.40	-23.7	H	3.0	35.9	1.0	-58.6	-13.0	-45.6	
5552.10	-21.5	H	3.0	35.5	1.0	-56.0	-13.0	-43.0	
7402.80	-22.5	H	3.0	35.7	1.0	-57.2	-13.0	-44.2	
Mid Ch, 1880MHz									
3760.00	-22.1	V	3.0	35.8	1.0	-56.9	-13.0	-43.9	
5640.00	-20.7	V	3.0	35.5	1.0	-55.2	-13.0	-42.2	
7520.00	-21.5	V	3.0	35.7	1.0	-56.3	-13.0	-43.3	
3760.00	-23.7	H	3.0	35.8	1.0	-58.5	-13.0	-45.5	
5640.00	-21.6	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7520.00	-21.9	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	
High Ch, 1909.3MHz									
3818.60	-23.6	V	3.0	35.8	1.0	-58.4	-13.0	-45.4	
5727.90	-22.0	V	3.0	35.5	1.0	-56.5	-13.0	-43.5	
7637.20	-20.4	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
3818.60	-23.8	H	3.0	35.8	1.0	-58.6	-13.0	-45.6	
5727.90	-21.0	H	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7637.20	-21.9	H	3.0	35.8	1.0	-56.7	-13.0	-43.7	

LTE B2 1.4MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 2 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7MHz									
3701.40	-24.2	V	3.0	35.9	1.0	-59.1	-13.0	-46.1	
5552.10	-22.2	V	3.0	35.5	1.0	-56.6	-13.0	-43.6	
7402.80	-21.6	V	3.0	35.7	1.0	-56.3	-13.0	-43.3	
3701.40	-24.2	H	3.0	35.9	1.0	-59.1	-13.0	-46.1	
5552.10	-21.8	H	3.0	35.5	1.0	-56.3	-13.0	-43.3	
7402.80	-21.8	H	3.0	35.7	1.0	-56.5	-13.0	-43.5	
Mid Ch, 1880MHz									
3760.00	-23.8	V	3.0	35.8	1.0	-58.7	-13.0	-45.7	
5640.00	-21.7	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7520.00	-22.4	V	3.0	35.7	1.0	-57.2	-13.0	-44.2	
3760.00	-24.0	H	3.0	35.8	1.0	-58.9	-13.0	-45.9	
5640.00	-21.4	H	3.0	35.5	1.0	-55.9	-13.0	-42.9	
7520.00	-21.6	H	3.0	35.7	1.0	-56.3	-13.0	-43.3	
High Ch, 1909.3MHz									
3818.60	-22.0	V	3.0	35.8	1.0	-56.8	-13.0	-43.8	
5727.90	-21.7	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7637.20	-21.6	V	3.0	35.8	1.0	-56.3	-13.0	-43.3	
3818.60	-23.1	H	3.0	35.8	1.0	-57.9	-13.0	-44.9	
5727.90	-22.7	H	3.0	35.5	1.0	-57.2	-13.0	-44.2	
7637.20	-20.8	H	3.0	35.8	1.0	-55.6	-13.0	-42.6	

LTE B2 1.4MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5MHz									
3703.00	-23.9	V	3.0	35.9	1.0	-58.7	-13.0	-45.7	
5554.50	-21.8	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7406.00	-21.2	V	3.0	35.7	1.0	-55.9	-13.0	-42.9	
3703.00	-24.1	H	3.0	35.9	1.0	-59.0	-13.0	-46.0	
5554.50	-22.2	H	3.0	35.5	1.0	-56.7	-13.0	-43.7	
7406.00	-21.9	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
Mid Ch, 1880MHz									
3760.00	-23.4	V	3.0	35.8	1.0	-58.2	-13.0	-45.2	
5640.00	-21.7	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7520.00	-22.1	V	3.0	35.7	1.0	-56.8	-13.0	-43.8	
3760.00	-23.5	H	3.0	35.8	1.0	-58.4	-13.0	-45.4	
5640.00	-21.2	H	3.0	35.5	1.0	-55.7	-13.0	-42.7	
7520.00	-22.1	H	3.0	35.7	1.0	-56.9	-13.0	-43.9	
High Ch, 1908.5MHz									
3817.00	-23.5	V	3.0	35.8	1.0	-58.2	-13.0	-45.2	
5725.50	-22.3	V	3.0	35.5	1.0	-56.8	-13.0	-43.8	
7634.00	-21.6	V	3.0	35.8	1.0	-56.3	-13.0	-43.3	
3817.00	-22.8	H	3.0	35.8	1.0	-57.6	-13.0	-44.6	
5725.50	-21.7	H	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7634.00	-21.3	H	3.0	35.8	1.0	-56.1	-13.0	-43.1	

LTE B2 3MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 2 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5MHz									
3703.00	-23.6	V	3.0	35.9	1.0	-58.4	-13.0	-45.4	
5554.50	-21.0	V	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7406.00	-21.1	V	3.0	35.7	1.0	-55.8	-13.0	-42.8	
3703.00	-23.8	H	3.0	35.9	1.0	-58.6	-13.0	-45.6	
5554.50	-21.7	H	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7406.00	-21.1	H	3.0	35.7	1.0	-55.8	-13.0	-42.8	
Mid Ch, 1880MHz									
3760.00	-23.9	V	3.0	35.8	1.0	-58.7	-13.0	-45.7	
5640.00	-21.0	V	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7520.00	-21.8	V	3.0	35.7	1.0	-56.3	-13.0	-43.3	
3760.00	-23.4	H	3.0	35.8	1.0	-58.2	-13.0	-45.2	
5640.00	-21.9	H	3.0	35.5	1.0	-56.4	-13.0	-43.4	
7520.00	-21.8	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
High Ch, 1908.5MHz									
3817.00	-22.7	V	3.0	35.8	1.0	-57.4	-13.0	-44.4	
5725.50	-22.0	V	3.0	35.5	1.0	-56.5	-13.0	-43.5	
7634.00	-21.2	V	3.0	35.8	1.0	-55.9	-13.0	-42.9	
3817.00	-23.2	H	3.0	35.8	1.0	-58.0	-13.0	-45.0	
5725.50	-22.2	H	3.0	35.5	1.0	-56.7	-13.0	-43.7	
7634.00	-20.6	H	3.0	35.8	1.0	-55.3	-13.0	-42.3	

LTE B2 3MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5MHz									
3705.00	-23.8	V	3.0	35.9	1.0	-58.7	-13.0	-45.7	
5557.50	-22.2	V	3.0	35.5	1.0	-56.7	-13.0	-43.7	
7410.00	-21.1	V	3.0	35.7	1.0	-55.8	-13.0	-42.8	
3705.00	-24.3	H	3.0	35.9	1.0	-59.1	-13.0	-46.1	
5557.50	-21.6	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7410.00	-22.0	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	
Mid Ch, 1880MHz									
3760.00	-22.8	V	3.0	35.8	1.0	-57.6	-13.0	-44.6	
5640.00	-21.4	V	3.0	35.5	1.0	-55.9	-13.0	-42.9	
7520.00	-22.2	V	3.0	35.7	1.0	-56.9	-13.0	-43.9	
3760.00	-23.5	H	3.0	35.8	1.0	-58.3	-13.0	-45.3	
5640.00	-21.0	H	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7520.00	-22.2	H	3.0	35.7	1.0	-56.9	-13.0	-43.9	
High Ch, 1907.5MHz									
3815.00	-23.7	V	3.0	35.8	1.0	-58.5	-13.0	-45.5	
5722.50	-22.6	V	3.0	35.5	1.0	-57.1	-13.0	-44.1	
7630.00	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
3815.00	-21.8	H	3.0	35.8	1.0	-56.6	-13.0	-43.6	
5722.50	-22.0	H	3.0	35.5	1.0	-56.5	-13.0	-43.5	
7630.00	-21.5	H	3.0	35.8	1.0	-56.3	-13.0	-43.3	

LTE B2 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 2 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5MHz									
3705.00	-23.0	V	3.0	35.9	1.0	-57.8	-13.0	-44.8	
5557.50	-21.9	V	3.0	35.5	1.0	-56.4	-13.0	-43.4	
7410.00	-21.6	V	3.0	35.7	1.0	-56.4	-13.0	-43.4	
3705.00	-24.6	H	3.0	35.9	1.0	-59.4	-13.0	-46.4	
5557.50	-22.4	H	3.0	35.5	1.0	-56.8	-13.0	-43.8	
7410.00	-21.7	H	3.0	35.7	1.0	-56.4	-13.0	-43.4	
Mid Ch, 1880MHz									
3760.00	-23.8	V	3.0	35.8	1.0	-58.6	-13.0	-45.6	
5640.00	-20.8	V	3.0	35.5	1.0	-55.3	-13.0	-42.3	
7520.00	-20.8	V	3.0	35.7	1.0	-55.6	-13.0	-42.6	
3760.00	-23.4	H	3.0	35.8	1.0	-58.2	-13.0	-45.2	
5640.00	-21.2	H	3.0	35.5	1.0	-55.7	-13.0	-42.7	
7520.00	-21.0	H	3.0	35.7	1.0	-55.7	-13.0	-42.7	
High Ch, 1907.5MHz									
3815.00	-23.0	V	3.0	35.8	1.0	-57.8	-13.0	-44.8	
5722.50	-21.8	V	3.0	35.5	1.0	-56.3	-13.0	-43.3	
7630.00	-21.4	V	3.0	35.8	1.0	-56.2	-13.0	-43.2	
3815.00	-23.6	H	3.0	35.8	1.0	-58.3	-13.0	-45.3	
5722.50	-21.6	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7630.00	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	

LTE B2 5MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855MHz									
3710.00	-23.7	V	3.0	35.9	1.0	-58.5	-13.0	-45.5	
5565.00	-21.7	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7420.00	-21.7	V	3.0	35.7	1.0	-56.5	-13.0	-43.5	
3710.00	-23.7	H	3.0	35.9	1.0	-58.5	-13.0	-45.5	
5565.00	-21.8	H	3.0	35.5	1.0	-56.3	-13.0	-43.3	
7420.00	-21.4	H	3.0	35.7	1.0	-56.1	-13.0	-43.1	
Mid Ch, 1880MHz									
3760.00	-23.6	V	3.0	35.8	1.0	-58.4	-13.0	-45.4	
5640.00	-22.0	V	3.0	35.5	1.0	-56.5	-13.0	-43.5	
7520.00	-21.1	V	3.0	35.7	1.0	-55.8	-13.0	-42.8	
3760.00	-23.6	H	3.0	35.8	1.0	-58.4	-13.0	-45.4	
5640.00	-21.6	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7520.00	-22.5	H	3.0	35.7	1.0	-57.2	-13.0	-44.2	
High Ch, 1905MHz									
3810.00	-23.8	V	3.0	35.8	1.0	-58.6	-13.0	-45.6	
5715.00	-21.7	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7620.00	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
3810.00	-23.5	H	3.0	35.8	1.0	-58.3	-13.0	-45.3	
5715.00	-21.7	H	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7620.00	-20.8	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	

LTE B2 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 2 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855MHz									
3710.00	-24.1	V	3.0	35.9	1.0	-59.0	-13.0	-46.0	
5565.00	-22.5	V	3.0	35.5	1.0	-57.0	-13.0	-44.0	
7420.00	-21.9	V	3.0	35.7	1.0	-56.7	-13.0	-43.7	
3710.00	-23.4	H	3.0	35.9	1.0	-58.3	-13.0	-45.3	
5565.00	-22.0	H	3.0	35.5	1.0	-56.4	-13.0	-43.4	
7420.00	-22.1	H	3.0	35.7	1.0	-56.9	-13.0	-43.9	
Mid Ch, 1880MHz									
3760.00	-23.5	V	3.0	35.8	1.0	-58.3	-13.0	-45.3	
5640.00	-20.6	V	3.0	35.5	1.0	-55.1	-13.0	-42.1	
7520.00	-22.2	V	3.0	35.7	1.0	-56.9	-13.0	-43.9	
3760.00	-23.7	H	3.0	35.8	1.0	-58.5	-13.0	-45.5	
5640.00	-21.4	H	3.0	35.5	1.0	-55.9	-13.0	-42.9	
7520.00	-20.6	H	3.0	35.7	1.0	-55.4	-13.0	-42.4	
High Ch, 1905MHz									
3810.00	-22.8	V	3.0	35.8	1.0	-57.6	-13.0	-44.6	
5715.00	-21.4	V	3.0	35.5	1.0	-55.9	-13.0	-42.9	
7620.00	-21.3	V	3.0	35.8	1.0	-56.0	-13.0	-43.0	
3810.00	-23.8	H	3.0	35.8	1.0	-58.5	-13.0	-45.5	
5715.00	-21.2	H	3.0	35.5	1.0	-55.7	-13.0	-42.7	
7620.00	-21.0	H	3.0	35.8	1.0	-55.8	-13.0	-42.8	

LTE B2 10MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5MHz									
3715.00	-24.6	V	3.0	35.8	1.0	-59.5	-13.0	-46.5	
5572.50	-21.3	V	3.0	35.5	1.0	-55.8	-13.0	-42.8	
7430.00	-21.9	V	3.0	35.7	1.0	-56.6	-13.0	-43.6	
3715.00	-24.1	H	3.0	35.8	1.0	-58.9	-13.0	-45.9	
5572.50	-21.3	H	3.0	35.5	1.0	-55.8	-13.0	-42.8	
7430.00	-22.1	H	3.0	35.7	1.0	-56.8	-13.0	-43.8	
Mid Ch, 1880MHz									
3760.00	-23.5	V	3.0	35.8	1.0	-58.3	-13.0	-45.3	
5640.00	-21.2	V	3.0	35.5	1.0	-55.7	-13.0	-42.7	
7520.00	-22.2	V	3.0	35.7	1.0	-56.9	-13.0	-43.9	
3760.00	-23.7	H	3.0	35.8	1.0	-58.5	-13.0	-45.5	
5640.00	-21.7	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7520.00	-21.5	H	3.0	35.7	1.0	-56.3	-13.0	-43.3	
High Ch, 1902.5MHz									
3805.00	-23.0	V	3.0	35.8	1.0	-57.8	-13.0	-44.8	
5707.50	-22.2	V	3.0	35.5	1.0	-56.7	-13.0	-43.7	
7610.00	-22.0	V	3.0	35.8	1.0	-56.7	-13.0	-43.7	
3805.00	-23.8	H	3.0	35.8	1.0	-58.6	-13.0	-45.6	
5707.50	-22.4	H	3.0	35.5	1.0	-56.8	-13.0	-43.8	
7610.00	-21.9	H	3.0	35.8	1.0	-56.6	-13.0	-43.6	

LTE B2 15MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 2 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5MHz									
3715.00	-23.3	V	3.0	35.8	1.0	-58.1	-13.0	-45.1	
5572.50	-21.7	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7430.00	-21.5	V	3.0	35.7	1.0	-56.2	-13.0	-43.2	
3715.00	-23.4	H	3.0	35.8	1.0	-58.2	-13.0	-45.2	
5572.50	-22.1	H	3.0	35.5	1.0	-56.6	-13.0	-43.6	
7430.00	-21.6	H	3.0	35.7	1.0	-56.4	-13.0	-43.4	
Mid Ch, 1880MHz									
3760.00	-23.3	V	3.0	35.8	1.0	-58.1	-13.0	-45.1	
5640.00	-20.7	V	3.0	35.5	1.0	-55.2	-13.0	-42.2	
7520.00	-21.8	V	3.0	35.7	1.0	-56.5	-13.0	-43.5	
3760.00	-22.7	H	3.0	35.8	1.0	-57.5	-13.0	-44.5	
5640.00	-20.7	H	3.0	35.5	1.0	-55.2	-13.0	-42.2	
7520.00	-22.5	H	3.0	35.7	1.0	-57.2	-13.0	-44.2	
High Ch, 1902.5MHz									
3805.00	-23.6	V	3.0	35.8	1.0	-58.4	-13.0	-45.4	
5707.50	-22.6	V	3.0	35.5	1.0	-57.1	-13.0	-44.1	
7610.00	-20.8	V	3.0	35.8	1.0	-55.5	-13.0	-42.5	
3805.00	-23.1	H	3.0	35.8	1.0	-57.9	-13.0	-44.9	
5707.50	-22.5	H	3.0	35.5	1.0	-57.0	-13.0	-44.0	
7610.00	-21.7	H	3.0	35.8	1.0	-56.5	-13.0	-43.5	

LTE B2 15MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 2 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860MHz									
3720.00	-24.9	V	3.0	35.8	1.0	-59.7	-13.0	-46.7	
5580.00	-21.1	V	3.0	35.5	1.0	-55.6	-13.0	-42.6	
7440.00	-22.8	V	3.0	35.7	1.0	-57.5	-13.0	-44.5	
3720.00	-24.8	H	3.0	35.8	1.0	-59.6	-13.0	-46.6	
5580.00	-21.5	H	3.0	35.5	1.0	-56.0	-13.0	-43.0	
7440.00	-22.9	H	3.0	35.7	1.0	-57.6	-13.0	-44.6	
Mid Ch, 1880MHz									
3760.00	-23.7	V	3.0	35.8	1.0	-58.6	-13.0	-45.6	
5640.00	-21.1	V	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7520.00	-22.1	V	3.0	35.7	1.0	-56.8	-13.0	-43.8	
3760.00	-23.9	H	3.0	35.8	1.0	-58.7	-13.0	-45.7	
5640.00	-21.8	H	3.0	35.5	1.0	-56.3	-13.0	-43.3	
7520.00	-21.9	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	
High Ch, 1900MHz									
3800.00	-23.2	V	3.0	35.8	1.0	-58.0	-13.0	-45.0	
5700.00	-21.6	V	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7600.00	-21.9	V	3.0	35.8	1.0	-56.6	-13.0	-43.6	
3800.00	-22.8	H	3.0	35.8	1.0	-57.6	-13.0	-44.6	
5700.00	-21.7	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7600.00	-20.4	H	3.0	35.8	1.0	-55.1	-13.0	-42.1	

LTE B2 20MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 2 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860MHz									
3720.00	-22.9	V	3.0	35.8	1.0	-57.7	-13.0	-44.7	
5580.00	-21.3	V	3.0	35.5	1.0	-55.8	-13.0	-42.8	
7440.00	-20.8	V	3.0	35.7	1.0	-55.6	-13.0	-42.6	
3720.00	-23.6	H	3.0	35.8	1.0	-58.5	-13.0	-45.5	
5580.00	-21.2	H	3.0	35.5	1.0	-55.7	-13.0	-42.7	
7440.00	-22.6	H	3.0	35.7	1.0	-57.4	-13.0	-44.4	
Mid Ch, 1880MHz									
3760.00	-23.1	V	3.0	35.8	1.0	-57.9	-13.0	-44.9	
5640.00	-21.0	V	3.0	35.5	1.0	-55.5	-13.0	-42.5	
7520.00	-21.5	V	3.0	35.7	1.0	-56.2	-13.0	-43.2	
3760.00	-24.1	H	3.0	35.8	1.0	-58.9	-13.0	-45.9	
5640.00	-21.6	H	3.0	35.5	1.0	-56.1	-13.0	-43.1	
7520.00	-21.9	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
High Ch, 1900MHz									
3800.00	-23.7	V	3.0	35.8	1.0	-58.5	-13.0	-45.5	
5700.00	-21.7	V	3.0	35.5	1.0	-56.2	-13.0	-43.2	
7600.00	-21.5	V	3.0	35.8	1.0	-56.2	-13.0	-43.2	
3800.00	-24.0	H	3.0	35.8	1.0	-58.8	-13.0	-45.8	
5700.00	-22.1	H	3.0	35.5	1.0	-56.6	-13.0	-43.6	
7600.00	-21.6	H	3.0	35.8	1.0	-56.3	-13.0	-43.3	

LTE B2 20MHz 16QAM

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9.1.4. LTE BAND 5

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_QPSK Band 5 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1649.40	-29.1	V	3.0	37.0	1.0	-65.1	-13.0	-52.1	
2474.10	-26.5	V	3.0	36.4	1.0	-61.9	-13.0	-48.9	
3298.80	-21.0	V	3.0	36.2	1.0	-56.1	-13.0	-43.1	
1649.40	-29.0	H	3.0	37.0	1.0	-65.1	-13.0	-52.1	
2474.10	-27.3	H	3.0	36.4	1.0	-62.7	-13.0	-49.7	
3298.80	-22.2	H	3.0	36.2	1.0	-57.4	-13.0	-44.4	
Mid Ch, 836.5MHz									
1673.00	-29.5	V	3.0	37.0	1.0	-65.5	-13.0	-52.5	
2509.50	-24.6	V	3.0	36.4	1.0	-60.0	-13.0	-47.0	
3346.00	-19.9	V	3.0	36.1	1.0	-55.1	-13.0	-42.1	
1673.00	-28.4	H	3.0	37.0	1.0	-64.4	-13.0	-51.4	
2509.50	-27.4	H	3.0	36.4	1.0	-62.8	-13.0	-49.8	
3346.00	-20.1	H	3.0	36.1	1.0	-55.2	-13.0	-42.2	
High Ch, 848.3MHz									
1696.60	-29.2	V	3.0	37.0	1.0	-65.2	-13.0	-52.2	
2544.90	-22.8	V	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3393.20	-20.9	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1696.60	-28.6	H	3.0	37.0	1.0	-64.5	-13.0	-51.5	
2544.90	-26.7	H	3.0	36.4	1.0	-62.1	-13.0	-49.1	
3393.20	-20.9	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	

LTE B5 1.4MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1649.40	-29.6	V	3.0	37.0	1.0	-65.6	-13.0	-52.6	
2474.10	-26.8	V	3.0	36.4	1.0	-62.2	-13.0	-49.2	
3298.80	-22.1	V	3.0	36.2	1.0	-57.2	-13.0	-44.2	
1649.40	-28.7	H	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2474.10	-26.2	H	3.0	36.4	1.0	-61.6	-13.0	-48.6	
3298.80	-21.9	H	3.0	36.2	1.0	-57.1	-13.0	-44.1	
Mid Ch, 836.5MHz									
1673.00	-29.6	V	3.0	37.0	1.0	-65.6	-13.0	-52.6	
2509.50	-25.2	V	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3346.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1673.00	-28.7	H	3.0	37.0	1.0	-64.7	-13.0	-51.7	
2509.50	-27.2	H	3.0	36.4	1.0	-62.6	-13.0	-49.6	
3346.00	-20.2	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	
High Ch, 848.3MHz									
1696.60	-29.3	V	3.0	37.0	1.0	-65.2	-13.0	-52.2	
2544.90	-25.2	V	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3393.20	-21.1	V	3.0	36.1	1.0	-56.1	-13.0	-43.1	
1696.60	-28.9	H	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2544.90	-27.8	H	3.0	36.4	1.0	-63.2	-13.0	-50.2	
3393.20	-21.7	H	3.0	36.1	1.0	-56.7	-13.0	-43.7	

LTE B5 1.4MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_QPSK Band 5 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5MHz									
1651.00	-29.0	V	3.0	37.0	1.0	-65.0	-13.0	-52.0	
2476.50	-25.3	V	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3302.00	-20.8	V	3.0	36.2	1.0	-55.9	-13.0	-42.9	
1651.00	-28.2	H	3.0	37.0	1.0	-64.3	-13.0	-51.3	
2476.50	-26.6	H	3.0	36.4	1.0	-62.0	-13.0	-49.0	
3302.00	-21.4	H	3.0	36.2	1.0	-56.6	-13.0	-43.6	
Mid Ch, 836.5MHz									
1673.00	-28.7	V	3.0	37.0	1.0	-64.7	-13.0	-51.7	
2509.50	-24.9	V	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3346.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1673.00	-28.6	H	3.0	37.0	1.0	-64.6	-13.0	-51.6	
2509.50	-27.0	H	3.0	36.4	1.0	-62.4	-13.0	-49.4	
3346.00	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	
High Ch, 847.5MHz									
1695.00	-27.4	V	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2542.50	-24.0	V	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3390.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1695.00	-27.9	H	3.0	37.0	1.0	-63.8	-13.0	-50.8	
2542.50	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3390.00	-19.3	H	3.0	36.1	1.0	-54.4	-13.0	-41.4	

LTE B5 3MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_16QAM Band 5 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5MHz									
1651.00	-28.7	V	3.0	37.0	1.0	-64.7	-13.0	-51.7	
2476.50	-25.5	V	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3302.00	-21.0	V	3.0	36.2	1.0	-56.1	-13.0	-43.1	
1651.00	-28.0	H	3.0	37.0	1.0	-64.1	-13.0	-51.1	
2476.50	-26.3	H	3.0	36.4	1.0	-61.8	-13.0	-48.8	
3302.00	-20.9	H	3.0	36.2	1.0	-56.0	-13.0	-43.0	
Mid Ch, 836.5MHz									
1673.00	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2509.50	-25.0	V	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3346.00	-20.3	V	3.0	36.1	1.0	-55.4	-13.0	-42.4	
1673.00	-28.3	H	3.0	37.0	1.0	-64.3	-13.0	-51.3	
2509.50	-27.1	H	3.0	36.4	1.0	-62.5	-13.0	-49.5	
3346.00	-21.5	H	3.0	36.1	1.0	-56.6	-13.0	-43.6	
High Ch, 847.5MHz									
1695.00	-28.6	V	3.0	37.0	1.0	-64.5	-13.0	-51.5	
2542.50	-24.9	V	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3390.00	-21.0	V	3.0	36.1	1.0	-56.1	-13.0	-43.1	
1695.00	-28.2	H	3.0	37.0	1.0	-64.2	-13.0	-51.2	
2542.50	-25.9	H	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3390.00	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	

LTE B5 3MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_QPSK Band 5 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5MHz									
1653.00	-28.5	V	3.0	37.0	1.0	-64.5	-13.0	-51.5	
2479.50	-26.0	V	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3306.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1653.00	-28.4	H	3.0	37.0	1.0	-64.4	-13.0	-51.4	
2479.50	-27.6	H	3.0	36.4	1.0	-63.0	-13.0	-50.0	
3306.00	-21.3	H	3.0	36.1	1.0	-56.5	-13.0	-43.5	
Mid Ch, 836.5MHz									
1673.00	-28.7	V	3.0	37.0	1.0	-64.7	-13.0	-51.7	
2509.50	-25.6	V	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3346.00	-20.9	V	3.0	36.1	1.0	-56.0	-13.0	-43.0	
1673.00	-27.9	H	3.0	37.0	1.0	-63.9	-13.0	-50.9	
2509.50	-27.4	H	3.0	36.4	1.0	-62.8	-13.0	-49.8	
3346.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
High Ch, 846.5MHz									
1693.00	-27.9	V	3.0	37.0	1.0	-63.9	-13.0	-50.9	
2539.50	-25.9	V	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3386.00	-19.8	V	3.0	36.1	1.0	-54.9	-13.0	-41.9	
1693.00	-27.3	H	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2539.50	-28.1	H	3.0	36.4	1.0	-63.6	-13.0	-50.6	
3386.00	-21.1	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	

LTE B5 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_16QAM Band 5 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5MHz									
1653.00	-28.5	V	3.0	37.0	1.0	-64.5	-13.0	-51.5	
2479.50	-26.3	V	3.0	36.4	1.0	-61.7	-13.0	-48.7	
3306.00	-21.9	V	3.0	36.1	1.0	-57.0	-13.0	-44.0	
1653.00	-28.7	H	3.0	37.0	1.0	-64.7	-13.0	-51.7	
2479.50	-26.6	H	3.0	36.4	1.0	-62.1	-13.0	-49.1	
3306.00	-21.6	H	3.0	36.1	1.0	-56.7	-13.0	-43.7	
Mid Ch, 836.5MHz									
1673.00	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2509.50	-25.8	V	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3346.00	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1673.00	-28.6	H	3.0	37.0	1.0	-64.6	-13.0	-51.6	
2509.50	-27.8	H	3.0	36.4	1.0	-63.3	-13.0	-50.3	
3346.00	-20.2	H	3.0	36.1	1.0	-55.3	-13.0	-42.3	
High Ch, 846.5MHz									
1693.00	-28.6	V	3.0	37.0	1.0	-64.6	-13.0	-51.6	
2539.50	-24.6	V	3.0	36.4	1.0	-60.0	-13.0	-47.0	
3386.00	-20.2	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1693.00	-27.7	H	3.0	37.0	1.0	-63.7	-13.0	-50.7	
2539.50	-28.4	H	3.0	36.4	1.0	-63.8	-13.0	-50.8	
3386.00	-20.7	H	3.0	36.1	1.0	-55.8	-13.0	-42.8	

LTE B5 5MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829MHz									
1658.00	-28.3	V	3.0	37.0	1.0	-64.3	-13.0	-51.3	
2487.00	-25.5	V	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3316.00	-21.1	V	3.0	36.1	1.0	-56.2	-13.0	-43.2	
1658.00	-28.3	H	3.0	37.0	1.0	-64.3	-13.0	-51.3	
2487.00	-27.8	H	3.0	36.4	1.0	-63.2	-13.0	-50.2	
3316.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	
Mid Ch, 836.5MHz									
1673.00	-28.8	V	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2509.50	-25.4	V	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3346.00	-19.9	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1673.00	-28.0	H	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2509.50	-27.4	H	3.0	36.4	1.0	-62.8	-13.0	-49.8	
3346.00	-20.2	H	3.0	36.1	1.0	-55.3	-13.0	-42.3	
High Ch, 844MHz									
1688.00	-28.3	V	3.0	37.0	1.0	-64.3	-13.0	-51.3	
2532.00	-26.0	V	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3376.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1688.00	-27.3	H	3.0	37.0	1.0	-63.3	-13.0	-50.3	
2532.00	-28.2	H	3.0	36.4	1.0	-63.6	-13.0	-50.6	
3376.00	-21.5	H	3.0	36.1	1.0	-56.6	-13.0	-43.6	

LTE B5 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/23/2018
Test Engineer: 39005 RA
Configuration: EUT + Support Equipment
Location: Chamber B
Mode: LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829MHz									
1658.00	-28.0	V	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2487.00	-24.9	V	3.0	36.4	1.0	-60.3	-13.0	-47.3	
3316.00	-21.4	V	3.0	36.1	1.0	-56.5	-13.0	-43.5	
1658.00	-28.4	H	3.0	37.0	1.0	-64.4	-13.0	-51.4	
2487.00	-27.8	H	3.0	36.4	1.0	-63.2	-13.0	-50.2	
3316.00	-21.2	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	
Mid Ch, 836.5MHz									
1673.00	-27.6	V	3.0	37.0	1.0	-63.6	-13.0	-50.6	
2509.50	-25.0	V	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3346.00	-21.4	V	3.0	36.1	1.0	-56.5	-13.0	-43.5	
1673.00	-28.0	H	3.0	37.0	1.0	-64.0	-13.0	-51.0	
2509.50	-27.5	H	3.0	36.4	1.0	-62.9	-13.0	-49.9	
3346.00	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	
High Ch, 844MHz									
1688.00	-28.5	V	3.0	37.0	1.0	-64.5	-13.0	-51.5	
2532.00	-26.0	V	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3376.00	-20.7	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1688.00	-27.4	H	3.0	37.0	1.0	-63.4	-13.0	-50.4	
2532.00	-28.3	H	3.0	36.4	1.0	-63.7	-13.0	-50.7	
3376.00	-21.5	H	3.0	36.1	1.0	-56.6	-13.0	-43.6	

LTE B5 10MHz 16QAM

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9.1.5. LTE BAND 7

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_QPSK Band 7 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2502.5MHz									
5005.00	-15.8	V	3.0	35.5	1.0	-50.3	-25.0	-25.3	
7507.50	-16.4	V	3.0	35.7	1.0	-51.1	-25.0	-26.1	
10010.00	-13.6	V	3.0	36.0	1.0	-48.6	-25.0	-23.6	
5005.00	-16.6	H	3.0	35.5	1.0	-51.0	-25.0	-26.0	
7507.50	-13.3	H	3.0	35.7	1.0	-48.1	-25.0	-23.1	
10010.00	-10.7	H	3.0	36.0	1.0	-45.7	-25.0	-20.7	
Mid Ch, 2535MHz									
5070.00	-16.3	V	3.0	35.4	1.0	-50.8	-25.0	-25.8	
7605.00	-14.6	V	3.0	35.8	1.0	-49.3	-25.0	-24.3	
10140.00	-11.9	V	3.0	36.0	1.0	-46.8	-25.0	-21.8	
5070.00	-15.4	H	3.0	35.4	1.0	-49.8	-25.0	-24.8	
7605.00	-12.2	H	3.0	35.8	1.0	-47.0	-25.0	-22.0	
10140.00	-11.3	H	3.0	36.0	1.0	-46.3	-25.0	-21.3	
High Ch, 2567.5MHz									
5135.00	-16.9	V	3.0	35.4	1.0	-51.3	-25.0	-26.3	
7702.50	-14.9	V	3.0	35.8	1.0	-49.7	-25.0	-24.7	
10270.00	-12.3	V	3.0	35.9	1.0	-47.2	-25.0	-22.2	
5135.00	-14.9	H	3.0	35.4	1.0	-49.3	-25.0	-24.3	
7702.50	-13.5	H	3.0	35.8	1.0	-48.3	-25.0	-23.3	
10270.00	-11.4	H	3.0	35.9	1.0	-46.3	-25.0	-21.3	

LTE B7 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_16QAM Band 7 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2502.5MHz									
5005.00	-17.2	V	3.0	35.5	1.0	-51.6	-25.0	-26.6	
7507.50	-16.5	V	3.0	35.7	1.0	-51.2	-25.0	-26.2	
10010.00	-12.7	V	3.0	36.0	1.0	-47.7	-25.0	-22.7	
5005.00	-17.7	H	3.0	35.5	1.0	-52.2	-25.0	-27.2	
7507.50	-13.7	H	3.0	35.7	1.0	-48.4	-25.0	-23.4	
10010.00	-11.5	H	3.0	36.0	1.0	-46.5	-25.0	-21.5	
Mid Ch, 2535MHz									
5070.00	-16.5	V	3.0	35.4	1.0	-50.9	-25.0	-25.9	
7605.00	-15.3	V	3.0	35.8	1.0	-50.1	-25.0	-25.1	
10140.00	-12.8	V	3.0	36.0	1.0	-47.7	-25.0	-22.7	
5070.00	-16.5	H	3.0	35.4	1.0	-50.9	-25.0	-25.9	
7605.00	-13.5	H	3.0	35.8	1.0	-48.2	-25.0	-23.2	
10140.00	-10.2	H	3.0	36.0	1.0	-45.2	-25.0	-20.2	
High Ch, 2567.5MHz									
5135.00	-15.9	V	3.0	35.4	1.0	-50.4	-25.0	-25.4	
7702.50	-13.9	V	3.0	35.8	1.0	-48.7	-25.0	-23.7	
10270.00	-12.7	V	3.0	35.9	1.0	-47.6	-25.0	-22.6	
5135.00	-16.3	H	3.0	35.4	1.0	-50.7	-25.0	-25.7	
7702.50	-13.1	H	3.0	35.8	1.0	-47.9	-25.0	-22.9	
10270.00	-10.0	H	3.0	35.9	1.0	-44.9	-25.0	-19.9	

LTE B7 5MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_QPSK Band 7 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2505MHz									
5010.00	-17.7	V	3.0	35.5	1.0	-52.1	-25.0	-27.1	
7515.00	-16.4	V	3.0	35.7	1.0	-51.1	-25.0	-26.1	
10020.00	-13.8	V	3.0	36.0	1.0	-48.8	-25.0	-23.8	
5010.00	-16.9	H	3.0	35.5	1.0	-51.4	-25.0	-26.4	
7515.00	-14.7	H	3.0	35.7	1.0	-49.4	-25.0	-24.4	
10020.00	-11.5	H	3.0	36.0	1.0	-46.6	-25.0	-21.6	
Mid Ch, 2535MHz									
5070.00	-17.0	V	3.0	35.4	1.0	-51.5	-25.0	-26.5	
7605.00	-16.2	V	3.0	35.8	1.0	-51.0	-25.0	-26.0	
10140.00	-11.9	V	3.0	36.0	1.0	-46.9	-25.0	-21.9	
5070.00	-16.3	H	3.0	35.4	1.0	-50.8	-25.0	-25.8	
7605.00	-12.8	H	3.0	35.8	1.0	-47.6	-25.0	-22.6	
10140.00	-10.9	H	3.0	36.0	1.0	-45.9	-25.0	-20.9	
High Ch, 2565MHz									
5130.00	-16.6	V	3.0	35.4	1.0	-51.0	-25.0	-26.0	
7695.00	-16.2	V	3.0	35.8	1.0	-50.9	-25.0	-25.9	
10260.00	-12.6	V	3.0	35.9	1.0	-47.5	-25.0	-22.5	
5130.00	-17.3	H	3.0	35.4	1.0	-51.8	-25.0	-26.8	
7695.00	-13.7	H	3.0	35.8	1.0	-48.4	-25.0	-23.4	
10260.00	-10.9	H	3.0	35.9	1.0	-45.8	-25.0	-20.8	

LTE B7 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_16QAM Band 7 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2505MHz									
5010.00	-15.8	V	3.0	35.5	1.0	-50.2	-25.0	-25.2	
7515.00	-14.4	V	3.0	35.7	1.0	-49.1	-25.0	-24.1	
10020.00	-10.9	V	3.0	36.0	1.0	-45.9	-25.0	-20.9	
5010.00	-15.4	H	3.0	35.5	1.0	-49.9	-25.0	-24.9	
7515.00	-12.3	H	3.0	35.7	1.0	-47.0	-25.0	-22.0	
10020.00	-10.1	H	3.0	36.0	1.0	-45.1	-25.0	-20.1	
Mid Ch, 2535MHz									
5070.00	-15.6	V	3.0	35.4	1.0	-50.1	-25.0	-25.1	
7605.00	-13.4	V	3.0	35.8	1.0	-48.2	-25.0	-23.2	
10140.00	-10.5	V	3.0	36.0	1.0	-45.5	-25.0	-20.5	
5070.00	-14.5	H	3.0	35.4	1.0	-49.0	-25.0	-24.0	
7605.00	-11.8	H	3.0	35.8	1.0	-46.6	-25.0	-21.6	
10140.00	-9.2	H	3.0	36.0	1.0	-44.1	-25.0	-19.1	
High Ch, 2565MHz									
5130.00	-15.2	V	3.0	35.4	1.0	-49.6	-25.0	-24.6	
7695.00	-12.8	V	3.0	35.8	1.0	-47.5	-25.0	-22.5	
10260.00	-11.3	V	3.0	35.9	1.0	-46.2	-25.0	-21.2	
5130.00	-14.1	H	3.0	35.4	1.0	-48.5	-25.0	-23.5	
7695.00	-10.9	H	3.0	35.8	1.0	-45.7	-25.0	-20.7	
10260.00	-8.8	H	3.0	35.9	1.0	-43.7	-25.0	-18.7	

LTE B7 10MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_QPSK Band 7 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5MHz									
5015.00	-16.1	V	3.0	35.5	1.0	-50.6	-25.0	-25.6	
7522.50	-13.6	V	3.0	35.7	1.0	-48.4	-25.0	-23.4	
10030.00	-10.3	V	3.0	36.0	1.0	-45.3	-25.0	-20.3	
5015.00	-14.7	H	3.0	35.5	1.0	-49.2	-25.0	-24.2	
7522.50	-12.7	H	3.0	35.7	1.0	-47.4	-25.0	-22.4	
10030.00	-9.0	H	3.0	36.0	1.0	-44.0	-25.0	-19.0	
Mid Ch, 2535MHz									
5070.00	-15.6	V	3.0	35.4	1.0	-50.0	-25.0	-25.0	
7605.00	-13.4	V	3.0	35.8	1.0	-48.1	-25.0	-23.1	
10140.00	-10.8	V	3.0	36.0	1.0	-45.8	-25.0	-20.8	
5070.00	-13.7	H	3.0	35.4	1.0	-48.1	-25.0	-23.1	
7605.00	-12.1	H	3.0	35.8	1.0	-46.9	-25.0	-21.9	
10140.00	-9.9	H	3.0	36.0	1.0	-44.9	-25.0	-19.9	
High Ch, 2562.5MHz									
5125.00	-14.9	V	3.0	35.4	1.0	-49.3	-25.0	-24.3	
7687.50	-13.1	V	3.0	35.8	1.0	-47.8	-25.0	-22.8	
10250.00	-10.6	V	3.0	35.9	1.0	-45.6	-25.0	-20.6	
5125.00	-13.9	H	3.0	35.4	1.0	-48.3	-25.0	-23.3	
7687.50	-11.1	H	3.0	35.8	1.0	-45.8	-25.0	-20.8	
10250.00	-9.1	H	3.0	35.9	1.0	-44.0	-25.0	-19.0	

LTE B7 15MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_16QAM Band 7 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5MHz									
5015.00	-16.0	V	3.0	35.5	1.0	-50.5	-25.0	-25.5	
7522.50	-13.4	V	3.0	35.7	1.0	-48.2	-25.0	-23.2	
10030.00	-11.1	V	3.0	36.0	1.0	-46.1	-25.0	-21.1	
5015.00	-15.5	H	3.0	35.5	1.0	-50.0	-25.0	-25.0	
7522.50	-13.5	H	3.0	35.7	1.0	-48.3	-25.0	-23.3	
10030.00	-10.4	H	3.0	36.0	1.0	-45.4	-25.0	-20.4	
Mid Ch, 2535MHz									
5070.00	-15.1	V	3.0	35.4	1.0	-49.6	-25.0	-24.6	
7605.00	-14.1	V	3.0	35.8	1.0	-48.8	-25.0	-23.8	
10140.00	-8.9	V	3.0	36.0	1.0	-43.9	-25.0	-18.9	
5070.00	-15.5	H	3.0	35.4	1.0	-49.9	-25.0	-24.9	
7605.00	-13.6	H	3.0	35.8	1.0	-48.4	-25.0	-23.4	
10140.00	-10.3	H	3.0	36.0	1.0	-45.3	-25.0	-20.3	
High Ch, 2562.5MHz									
5125.00	-14.2	V	3.0	35.4	1.0	-48.7	-25.0	-23.7	
7687.50	-13.2	V	3.0	35.8	1.0	-48.0	-25.0	-23.0	
10250.00	-11.2	V	3.0	35.9	1.0	-46.1	-25.0	-21.1	
5125.00	-14.8	H	3.0	35.4	1.0	-49.2	-25.0	-24.2	
7687.50	-11.3	H	3.0	35.8	1.0	-46.1	-25.0	-21.1	
10250.00	-7.6	H	3.0	35.9	1.0	-42.6	-25.0	-17.6	

LTE B7 15MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_QPSK Band 7 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510MHz									
5020.00	-15.2	V	3.0	35.5	1.0	-49.6	-25.0	-24.6	
7530.00	-13.3	V	3.0	35.7	1.0	-48.0	-25.0	-23.0	
10040.00	-11.4	V	3.0	36.0	1.0	-46.4	-25.0	-21.4	
5020.00	-14.2	H	3.0	35.5	1.0	-48.6	-25.0	-23.6	
7530.00	-12.8	H	3.0	35.7	1.0	-47.6	-25.0	-22.6	
10040.00	-9.9	H	3.0	36.0	1.0	-44.9	-25.0	-19.9	
Mid Ch, 2535MHz									
5070.00	-14.1	V	3.0	35.4	1.0	-48.6	-25.0	-23.6	
7605.00	-14.2	V	3.0	35.8	1.0	-49.0	-25.0	-24.0	
10140.00	-12.2	V	3.0	36.0	1.0	-47.1	-25.0	-22.1	
5070.00	-15.2	H	3.0	35.4	1.0	-49.7	-25.0	-24.7	
7605.00	-13.6	H	3.0	35.8	1.0	-48.4	-25.0	-23.4	
10140.00	-9.5	H	3.0	36.0	1.0	-44.5	-25.0	-19.5	
High Ch, 2560MHz									
5120.00	-13.6	V	3.0	35.4	1.0	-48.0	-25.0	-23.0	
7680.00	-14.2	V	3.0	35.8	1.0	-49.0	-25.0	-24.0	
10240.00	-10.2	V	3.0	35.9	1.0	-45.1	-25.0	-20.1	
5120.00	-15.0	H	3.0	35.4	1.0	-49.5	-25.0	-24.5	
7680.00	-12.1	H	3.0	35.8	1.0	-46.8	-25.0	-21.8	
10240.00	-10.2	H	3.0	35.9	1.0	-45.1	-25.0	-20.1	

LTE B7 20MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_16QAM Band 7 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510MHz									
5020.00	-16.1	V	3.0	35.5	1.0	-50.5	-25.0	-25.5	
7530.00	-13.1	V	3.0	35.7	1.0	-47.9	-25.0	-22.9	
10040.00	-11.1	V	3.0	36.0	1.0	-46.1	-25.0	-21.1	
5020.00	-16.2	H	3.0	35.5	1.0	-50.7	-25.0	-25.7	
7530.00	-13.3	H	3.0	35.7	1.0	-48.0	-25.0	-23.0	
10040.00	-9.0	H	3.0	36.0	1.0	-44.0	-25.0	-19.0	
Mid Ch, 2535MHz									
5070.00	-15.0	V	3.0	35.4	1.0	-49.4	-25.0	-24.4	
7605.00	-12.8	V	3.0	35.8	1.0	-47.6	-25.0	-22.6	
10140.00	-10.7	V	3.0	36.0	1.0	-45.7	-25.0	-20.7	
5070.00	-14.9	H	3.0	35.4	1.0	-49.4	-25.0	-24.4	
7605.00	-11.2	H	3.0	35.8	1.0	-46.0	-25.0	-21.0	
10140.00	-9.3	H	3.0	36.0	1.0	-44.2	-25.0	-19.2	
High Ch, 2560MHz									
5120.00	-15.0	V	3.0	35.4	1.0	-49.5	-25.0	-24.5	
7680.00	-13.8	V	3.0	35.8	1.0	-48.6	-25.0	-23.6	
10240.00	-10.2	V	3.0	35.9	1.0	-45.1	-25.0	-20.1	
5120.00	-13.7	H	3.0	35.4	1.0	-48.1	-25.0	-23.1	
7680.00	-12.4	H	3.0	35.8	1.0	-47.1	-25.0	-22.1	
10240.00	-9.2	H	3.0	35.9	1.0	-44.1	-25.0	-19.1	

LTE B7 20MHz 16QAM

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9.1.6. LTE BAND 12

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_QPSK Band 12 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 699.7MHz									
1399.40	-30.0	V	3.0	37.4	1.0	-66.4	-13.0	-53.4	
2099.10	-22.0	V	3.0	36.6	1.0	-57.6	-13.0	-44.6	
2798.80	-19.3	V	3.0	36.4	1.0	-54.7	-13.0	-41.7	
1399.40	-29.4	H	3.0	37.4	1.0	-65.7	-13.0	-52.7	
2099.10	-23.6	H	3.0	36.6	1.0	-59.2	-13.0	-46.2	
2798.80	-21.1	H	3.0	36.4	1.0	-56.4	-13.0	-43.4	
Mid Ch, 707.5MHz									
1415.00	-29.6	V	3.0	37.4	1.0	-66.0	-13.0	-53.0	
2122.50	-21.7	V	3.0	36.6	1.0	-57.3	-13.0	-44.3	
2830.00	-19.5	V	3.0	36.4	1.0	-54.9	-13.0	-41.9	
1415.00	-28.5	H	3.0	37.4	1.0	-64.9	-13.0	-51.9	
2122.50	-23.7	H	3.0	36.6	1.0	-59.2	-13.0	-46.2	
2830.00	-20.6	H	3.0	36.4	1.0	-56.0	-13.0	-43.0	
High Ch, 715.3MHz									
1430.60	-30.4	V	3.0	37.3	1.0	-66.7	-13.0	-53.7	
2145.90	-22.2	V	3.0	36.6	1.0	-57.8	-13.0	-44.8	
2861.20	-19.7	V	3.0	36.4	1.0	-55.1	-13.0	-42.1	
1430.60	-28.8	H	3.0	37.3	1.0	-65.1	-13.0	-52.1	
2145.90	-23.9	H	3.0	36.6	1.0	-59.5	-13.0	-46.5	
2861.20	-20.0	H	3.0	36.4	1.0	-55.3	-13.0	-42.3	

LTE B12 1.4MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_16QAM Band 12 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 699.7MHz									
1399.40	-30.9	V	3.0	37.4	1.0	-67.3	-13.0	-54.3	
2099.10	-22.5	V	3.0	36.6	1.0	-58.0	-13.0	-45.0	
2798.80	-19.7	V	3.0	36.4	1.0	-55.1	-13.0	-42.1	
1399.40	-29.9	H	3.0	37.4	1.0	-66.2	-13.0	-53.2	
2099.10	-23.6	H	3.0	36.6	1.0	-59.1	-13.0	-46.1	
2798.80	-21.4	H	3.0	36.4	1.0	-56.8	-13.0	-43.8	
Mid Ch, 707.5MHz									
1415.00	-30.0	V	3.0	37.4	1.0	-66.3	-13.0	-53.3	
2122.50	-22.9	V	3.0	36.6	1.0	-58.5	-13.0	-45.5	
2830.00	-20.6	V	3.0	36.4	1.0	-56.0	-13.0	-43.0	
1415.00	-29.7	H	3.0	37.4	1.0	-66.0	-13.0	-53.0	
2122.50	-22.2	H	3.0	36.6	1.0	-57.7	-13.0	-44.7	
2830.00	-21.3	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
High Ch, 715.3MHz									
1430.60	-31.0	V	3.0	37.3	1.0	-67.4	-13.0	-54.4	
2145.90	-22.5	V	3.0	36.6	1.0	-58.0	-13.0	-45.0	
2861.20	-20.0	V	3.0	36.4	1.0	-55.4	-13.0	-42.4	
1430.60	-29.5	H	3.0	37.3	1.0	-65.9	-13.0	-52.9	
2145.90	-23.9	H	3.0	36.6	1.0	-59.5	-13.0	-46.5	
2861.20	-20.8	H	3.0	36.4	1.0	-56.2	-13.0	-43.2	

LTE B12 1.4MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_QPSK Band 12 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 700.5MHz									
1401.00	-31.8	V	3.0	37.4	1.0	-68.1	-13.0	-55.1	
2101.50	-24.8	V	3.0	36.6	1.0	-60.4	-13.0	-47.4	
2802.00	-24.0	V	3.0	36.4	1.0	-59.3	-13.0	-46.3	
1401.00	-30.8	H	3.0	37.4	1.0	-67.2	-13.0	-54.2	
2101.50	-24.6	H	3.0	36.6	1.0	-60.2	-13.0	-47.2	
2802.00	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
Mid Ch, 707.5MHz									
1415.00	-32.5	V	3.0	37.4	1.0	-68.9	-13.0	-55.9	
2122.50	-22.7	V	3.0	36.6	1.0	-58.3	-13.0	-45.3	
2830.00	-23.2	V	3.0	36.4	1.0	-58.6	-13.0	-45.6	
1415.00	-31.0	H	3.0	37.4	1.0	-67.4	-13.0	-54.4	
2122.50	-26.5	H	3.0	36.6	1.0	-62.1	-13.0	-49.1	
2830.00	-24.1	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
High Ch, 714.5MHz									
1429.00	-32.5	V	3.0	37.3	1.0	-68.9	-13.0	-55.9	
2143.50	-23.9	V	3.0	36.6	1.0	-59.5	-13.0	-46.5	
2858.00	-23.1	V	3.0	36.4	1.0	-58.5	-13.0	-45.5	
1429.00	-31.6	H	3.0	37.3	1.0	-67.9	-13.0	-54.9	
2143.50	-26.0	H	3.0	36.6	1.0	-61.6	-13.0	-48.6	
2858.00	-23.4	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	

LTE B12 3MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_16QAM Band 12 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 700.5MHz									
1401.00	-30.9	V	3.0	37.4	1.0	-67.3	-13.0	-54.3	
2101.50	-24.7	V	3.0	36.6	1.0	-60.2	-13.0	-47.2	
2802.00	-24.0	V	3.0	36.4	1.0	-59.4	-13.0	-46.4	
1401.00	-31.7	H	3.0	37.4	1.0	-68.1	-13.0	-55.1	
2101.50	-25.8	H	3.0	36.6	1.0	-61.4	-13.0	-48.4	
2802.00	-24.0	H	3.0	36.4	1.0	-59.4	-13.0	-46.4	
Mid Ch, 707.5MHz									
1415.00	-32.2	V	3.0	37.4	1.0	-68.6	-13.0	-55.6	
2122.50	-23.4	V	3.0	36.6	1.0	-59.0	-13.0	-46.0	
2830.00	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
1415.00	-30.8	H	3.0	37.4	1.0	-67.2	-13.0	-54.2	
2122.50	-23.9	H	3.0	36.6	1.0	-59.5	-13.0	-46.5	
2830.00	-24.8	H	3.0	36.4	1.0	-60.2	-13.0	-47.2	
High Ch, 714.5MHz									
1429.00	-32.3	V	3.0	37.3	1.0	-68.6	-13.0	-55.6	
2143.50	-23.9	V	3.0	36.6	1.0	-59.4	-13.0	-46.4	
2858.00	-23.1	V	3.0	36.4	1.0	-58.5	-13.0	-45.5	
1429.00	-31.2	H	3.0	37.3	1.0	-67.6	-13.0	-54.6	
2143.50	-26.3	H	3.0	36.6	1.0	-61.9	-13.0	-48.9	
2858.00	-24.4	H	3.0	36.4	1.0	-59.8	-13.0	-46.8	

LTE B12 3MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_QPSK Band 12 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 701.5MHz									
1403.00	-32.5	V	3.0	37.4	1.0	-68.8	-13.0	-55.8	
2104.50	-26.4	V	3.0	36.6	1.0	-62.0	-13.0	-49.0	
2806.00	-25.0	V	3.0	36.4	1.0	-60.4	-13.0	-47.4	
1403.00	-30.8	H	3.0	37.4	1.0	-67.2	-13.0	-54.2	
2104.50	-27.4	H	3.0	36.6	1.0	-62.9	-13.0	-49.9	
2806.00	-26.3	H	3.0	36.4	1.0	-61.7	-13.0	-48.7	
Mid Ch, 707.5MHz									
1415.00	-31.9	V	3.0	37.4	1.0	-68.2	-13.0	-55.2	
2122.50	-22.1	V	3.0	36.6	1.0	-57.7	-13.0	-44.7	
2830.00	-23.5	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
1415.00	-31.2	H	3.0	37.4	1.0	-67.6	-13.0	-54.6	
2122.50	-26.0	H	3.0	36.6	1.0	-61.6	-13.0	-48.6	
2830.00	-21.9	H	3.0	36.4	1.0	-57.3	-13.0	-44.3	
High Ch, 713.5MHz									
1427.00	-33.1	V	3.0	37.3	1.0	-69.4	-13.0	-56.4	
2140.50	-22.8	V	3.0	36.6	1.0	-58.4	-13.0	-45.4	
2854.00	-24.8	V	3.0	36.4	1.0	-60.2	-13.0	-47.2	
1427.00	-31.6	H	3.0	37.3	1.0	-67.9	-13.0	-54.9	
2140.50	-26.2	H	3.0	36.6	1.0	-61.8	-13.0	-48.8	
2854.00	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	

LTE B12 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_16QAM Band 12 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 701.5MHz									
1403.00	-31.6	V	3.0	37.4	1.0	-68.0	-13.0	-55.0	
2104.50	-26.2	V	3.0	36.6	1.0	-61.8	-13.0	-48.8	
2806.00	-24.9	V	3.0	36.4	1.0	-60.3	-13.0	-47.3	
1403.00	-32.3	H	3.0	37.4	1.0	-68.7	-13.0	-55.7	
2104.50	-27.0	H	3.0	36.6	1.0	-62.5	-13.0	-49.5	
2806.00	-26.0	H	3.0	36.4	1.0	-61.4	-13.0	-48.4	
Mid Ch, 707.5MHz									
1415.00	-33.9	V	3.0	37.4	1.0	-70.3	-13.0	-57.3	
2122.50	-23.7	V	3.0	36.6	1.0	-59.3	-13.0	-46.3	
2830.00	-24.7	V	3.0	36.4	1.0	-60.1	-13.0	-47.1	
1415.00	-31.4	H	3.0	37.4	1.0	-67.8	-13.0	-54.8	
2122.50	-23.1	H	3.0	36.6	1.0	-58.6	-13.0	-45.6	
2830.00	-24.1	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
High Ch, 713.5MHz									
1427.00	-33.4	V	3.0	37.3	1.0	-69.7	-13.0	-56.7	
2140.50	-26.2	V	3.0	36.6	1.0	-61.8	-13.0	-48.8	
2854.00	-24.3	V	3.0	36.4	1.0	-59.7	-13.0	-46.7	
1427.00	-32.5	H	3.0	37.3	1.0	-68.9	-13.0	-55.9	
2140.50	-26.3	H	3.0	36.6	1.0	-61.9	-13.0	-48.9	
2854.00	-25.6	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	

LTE B12 5MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 704MHz									
1408.00	-31.8	V	3.0	37.4	1.0	-68.1	-13.0	-55.1	
2112.00	-24.6	V	3.0	36.6	1.0	-60.2	-13.0	-47.2	
2816.00	-24.3	V	3.0	36.4	1.0	-59.7	-13.0	-46.7	
1408.00	-31.6	H	3.0	37.4	1.0	-68.0	-13.0	-55.0	
2112.00	-26.5	H	3.0	36.6	1.0	-62.1	-13.0	-49.1	
2816.00	-25.9	H	3.0	36.4	1.0	-61.2	-13.0	-48.2	
Mid Ch, 707.5MHz									
1415.00	-33.1	V	3.0	37.4	1.0	-69.5	-13.0	-56.5	
2122.50	-26.0	V	3.0	36.6	1.0	-61.6	-13.0	-48.6	
2830.00	-24.4	V	3.0	36.4	1.0	-59.8	-13.0	-46.8	
1415.00	-31.4	H	3.0	37.4	1.0	-67.8	-13.0	-54.8	
2122.50	-26.6	H	3.0	36.6	1.0	-62.2	-13.0	-49.2	
2830.00	-25.8	H	3.0	36.4	1.0	-61.2	-13.0	-48.2	
High Ch, 711MHz									
1422.00	-33.5	V	3.0	37.3	1.0	-69.8	-13.0	-56.8	
2133.00	-25.4	V	3.0	36.6	1.0	-61.0	-13.0	-48.0	
2844.00	-24.7	V	3.0	36.4	1.0	-60.1	-13.0	-47.1	
1422.00	-32.8	H	3.0	37.3	1.0	-69.2	-13.0	-56.2	
2133.00	-26.4	H	3.0	36.6	1.0	-61.9	-13.0	-48.9	
2844.00	-26.0	H	3.0	36.4	1.0	-61.4	-13.0	-48.4	

LTE B12 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_16QAM Band 12 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 704MHz									
1408.00	-33.3	V	3.0	37.4	1.0	-69.6	-13.0	-56.6	
2112.00	-25.9	V	3.0	36.6	1.0	-61.4	-13.0	-48.4	
2816.00	-24.7	V	3.0	36.4	1.0	-60.1	-13.0	-47.1	
1408.00	-31.1	H	3.0	37.4	1.0	-67.5	-13.0	-54.5	
2112.00	-26.4	H	3.0	36.6	1.0	-62.0	-13.0	-49.0	
2816.00	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
Mid Ch, 707.5MHz									
1415.00	-33.3	V	3.0	37.4	1.0	-69.7	-13.0	-56.7	
2122.50	-26.3	V	3.0	36.6	1.0	-61.9	-13.0	-48.9	
2830.00	-23.7	V	3.0	36.4	1.0	-59.1	-13.0	-46.1	
1415.00	-32.0	H	3.0	37.4	1.0	-68.4	-13.0	-55.4	
2122.50	-26.5	H	3.0	36.6	1.0	-62.0	-13.0	-49.0	
2830.00	-25.4	H	3.0	36.4	1.0	-60.8	-13.0	-47.8	
High Ch, 711MHz									
1422.00	-34.1	V	3.0	37.3	1.0	-70.5	-13.0	-57.5	
2133.00	-26.2	V	3.0	36.6	1.0	-61.7	-13.0	-48.7	
2844.00	-24.9	V	3.0	36.4	1.0	-60.3	-13.0	-47.3	
1422.00	-33.0	H	3.0	37.3	1.0	-69.4	-13.0	-56.4	
2133.00	-27.2	H	3.0	36.6	1.0	-62.8	-13.0	-49.8	
2844.00	-25.9	H	3.0	36.4	1.0	-61.3	-13.0	-48.3	

LTE B12 10MHz 16QAM

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9.1.7. LTE BAND 13

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5MHz									
1559.00	-31.0	V	3.0	37.1	1.0	-67.2	-40.0	-27.2	
2338.50	-26.3	V	3.0	36.5	1.0	-61.8	-13.0	-48.8	
3118.00	-24.4	V	3.0	36.3	1.0	-59.6	-13.0	-46.6	
1559.00	-30.7	H	3.0	37.1	1.0	-66.9	-40.0	-26.9	
2338.50	-26.5	H	3.0	36.5	1.0	-62.0	-13.0	-49.0	
3118.00	-23.2	H	3.0	36.3	1.0	-58.5	-13.0	-45.5	
Mid Ch, 782MHz									
1564.00	-30.8	V	3.0	37.1	1.0	-67.0	-40.0	-27.0	
2346.00	-26.5	V	3.0	36.5	1.0	-62.0	-13.0	-49.0	
3128.00	-23.8	V	3.0	36.3	1.0	-59.0	-13.0	-46.0	
1564.00	-30.9	H	3.0	37.1	1.0	-67.0	-40.0	-27.0	
2346.00	-26.6	H	3.0	36.5	1.0	-62.1	-13.0	-49.1	
3128.00	-25.0	H	3.0	36.3	1.0	-60.2	-13.0	-47.2	
High Ch, 784.5MHz									
1569.00	-30.3	V	3.0	37.1	1.0	-66.4	-40.0	-26.4	
2353.50	-26.2	V	3.0	36.5	1.0	-61.6	-13.0	-48.6	
3138.00	-25.0	V	3.0	36.3	1.0	-60.3	-13.0	-47.3	
1569.00	-30.5	H	3.0	37.1	1.0	-66.7	-40.0	-26.7	
2353.50	-26.0	H	3.0	36.5	1.0	-61.5	-13.0	-48.5	
3138.00	-24.5	H	3.0	36.3	1.0	-59.8	-13.0	-46.8	

LTE B13 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5MHz									
1559.00	-30.5	V	3.0	37.1	1.0	-66.6	-40.0	-26.6	
2338.50	-26.3	V	3.0	36.5	1.0	-61.8	-13.0	-48.8	
3118.00	-24.0	V	3.0	36.3	1.0	-59.3	-13.0	-46.3	
1559.00	-30.7	H	3.0	37.1	1.0	-66.8	-40.0	-26.8	
2338.50	-26.8	H	3.0	36.5	1.0	-62.3	-13.0	-49.3	
3118.00	-24.3	H	3.0	36.3	1.0	-59.6	-13.0	-46.6	
Mid Ch, 782MHz									
1564.00	-30.4	V	3.0	37.1	1.0	-66.5	-40.0	-26.5	
2346.00	-26.8	V	3.0	36.5	1.0	-62.3	-13.0	-49.3	
3128.00	-24.4	V	3.0	36.3	1.0	-59.7	-13.0	-46.7	
1564.00	-30.5	H	3.0	37.1	1.0	-66.6	-40.0	-26.6	
2346.00	-26.9	H	3.0	36.5	1.0	-62.4	-13.0	-49.4	
3128.00	-24.5	H	3.0	36.3	1.0	-59.8	-13.0	-46.8	
High Ch, 784.5MHz									
1569.00	-30.6	V	3.0	37.1	1.0	-66.8	-40.0	-26.8	
2353.50	-26.8	V	3.0	36.5	1.0	-62.3	-13.0	-49.3	
3138.00	-24.7	V	3.0	36.3	1.0	-60.0	-13.0	-47.0	
1569.00	-30.9	H	3.0	37.1	1.0	-67.0	-40.0	-27.0	
2353.50	-26.4	H	3.0	36.5	1.0	-61.9	-13.0	-48.9	
3138.00	-24.7	H	3.0	36.3	1.0	-60.0	-13.0	-47.0	

LTE B13 5MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 13 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Ch, 782MHz									
1564.00	-30.5	V	3.0	37.1	1.0	-66.6	-40.0	-26.6	
2346.00	-26.2	V	3.0	36.5	1.0	-61.7	-13.0	-48.7	
3128.00	-24.0	V	3.0	36.3	1.0	-59.3	-13.0	-46.3	
1564.00	-30.5	H	3.0	37.1	1.0	-66.7	-40.0	-26.7	
2346.00	-26.0	H	3.0	36.5	1.0	-61.5	-13.0	-48.5	
3128.00	-25.2	H	3.0	36.3	1.0	-60.4	-13.0	-47.4	

LTE B13 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/19/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 13 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Mid Ch, 782MHz									
1564.00	-30.7	V	3.0	37.1	1.0	-66.8	-40.0	-26.8	
2346.00	-26.2	V	3.0	36.5	1.0	-61.7	-13.0	-48.7	
3128.00	-24.9	V	3.0	36.3	1.0	-60.2	-13.0	-47.2	
1564.00	-29.9	H	3.0	37.1	1.0	-66.1	-40.0	-26.1	
2346.00	-26.3	H	3.0	36.5	1.0	-61.8	-13.0	-48.8	
3128.00	-24.0	H	3.0	36.3	1.0	-59.3	-13.0	-46.3	

LTE B13 10MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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9.1.8. LTE BAND 26

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 26 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 814.7MHz									
1629.40	-29.8	V	3.0	37.1	1.0	-65.8	-13.0	-52.8	
2444.10	-25.6	V	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3258.80	-24.5	V	3.0	36.2	1.0	-59.6	-13.0	-46.6	
1629.40	-29.7	H	3.0	37.1	1.0	-65.7	-13.0	-52.7	
2444.10	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3258.80	-23.3	H	3.0	36.2	1.0	-58.4	-13.0	-45.4	
Mid Ch, 831.5MHz									
1663.00	-29.5	V	3.0	37.0	1.0	-65.5	-13.0	-52.5	
2494.50	-23.6	V	3.0	36.4	1.0	-59.0	-13.0	-46.0	
3326.00	-24.4	V	3.0	36.1	1.0	-59.5	-13.0	-46.5	
1663.00	-29.9	H	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2494.50	-25.8	H	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3326.00	-24.5	H	3.0	36.1	1.0	-59.6	-13.0	-46.6	
High Ch, 848.3MHz									
1696.60	-29.2	V	3.0	37.0	1.0	-65.1	-13.0	-52.1	
2544.90	-24.4	V	3.0	36.4	1.0	-59.8	-13.0	-46.8	
3393.20	-23.8	V	3.0	36.1	1.0	-58.9	-13.0	-45.9	
1696.60	-29.7	H	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2544.90	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	
3393.20	-23.9	H	3.0	36.1	1.0	-59.0	-13.0	-46.0	

LTE B26 1.4MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 26 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 814.7MHz									
1629.40	-29.6	V	3.0	37.1	1.0	-65.6	-13.0	-52.6	
2444.10	-25.9	V	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3258.80	-24.5	V	3.0	36.2	1.0	-59.6	-13.0	-46.6	
1629.40	-30.5	H	3.0	37.1	1.0	-66.5	-13.0	-53.5	
2444.10	-26.0	H	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3258.80	-24.6	H	3.0	36.2	1.0	-59.7	-13.0	-46.7	
Mid Ch, 831.5MHz									
1663.00	-30.3	V	3.0	37.0	1.0	-66.3	-13.0	-53.3	
2494.50	-22.7	V	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3326.00	-25.1	V	3.0	36.1	1.0	-60.2	-13.0	-47.2	
1663.00	-29.9	H	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2494.50	-25.8	H	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3326.00	-24.1	H	3.0	36.1	1.0	-59.2	-13.0	-46.2	
High Ch, 848.3MHz									
1696.60	-29.6	V	3.0	37.0	1.0	-65.5	-13.0	-52.5	
2544.90	-25.4	V	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3393.20	-24.6	V	3.0	36.1	1.0	-59.7	-13.0	-46.7	
1696.60	-29.4	H	3.0	37.0	1.0	-65.4	-13.0	-52.4	
2544.90	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3393.20	-24.5	H	3.0	36.1	1.0	-59.6	-13.0	-46.6	

LTE B26 1.4MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 26 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 815.5MHz									
1631.00	-29.8	V	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2446.50	-26.1	V	3.0	36.4	1.0	-61.5	-13.0	-48.5	
3262.00	-24.5	V	3.0	36.2	1.0	-59.6	-13.0	-46.6	
1631.00	-30.3	H	3.0	37.0	1.0	-66.4	-13.0	-53.4	
2446.50	-26.4	H	3.0	36.4	1.0	-61.9	-13.0	-48.9	
3262.00	-24.4	H	3.0	36.2	1.0	-59.6	-13.0	-46.6	
Mid Ch, 831.5MHz									
1663.00	-29.9	V	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2494.50	-25.6	V	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3326.00	-24.4	V	3.0	36.1	1.0	-59.5	-13.0	-46.5	
1663.00	-29.7	H	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2494.50	-24.6	H	3.0	36.4	1.0	-60.0	-13.0	-47.0	
3326.00	-24.2	H	3.0	36.1	1.0	-59.3	-13.0	-46.3	
High Ch, 847.5MHz									
1695.00	-29.6	V	3.0	37.0	1.0	-65.6	-13.0	-52.6	
2542.50	-25.6	V	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3390.00	-23.9	V	3.0	36.1	1.0	-59.0	-13.0	-46.0	
1695.00	-29.9	H	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2542.50	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3390.00	-24.0	H	3.0	36.1	1.0	-59.0	-13.0	-46.0	

LTE B26 3MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 26 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 815.5MHz									
1631.00	-29.7	V	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2446.50	-25.8	V	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3262.00	-23.8	V	3.0	36.2	1.0	-59.0	-13.0	-46.0	
1631.00	-30.7	H	3.0	37.0	1.0	-66.8	-13.0	-53.8	
2446.50	-26.2	H	3.0	36.4	1.0	-61.6	-13.0	-48.6	
3262.00	-24.6	H	3.0	36.2	1.0	-59.8	-13.0	-46.8	
Mid Ch, 831.5MHz									
1663.00	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2494.50	-26.2	V	3.0	36.4	1.0	-61.6	-13.0	-48.6	
3326.00	-24.4	V	3.0	36.1	1.0	-59.5	-13.0	-46.5	
1663.00	-28.9	H	3.0	37.0	1.0	-65.0	-13.0	-52.0	
2494.50	-25.9	H	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3326.00	-24.5	H	3.0	36.1	1.0	-59.6	-13.0	-46.6	
High Ch, 847.5MHz									
1695.00	-29.2	V	3.0	37.0	1.0	-65.1	-13.0	-52.1	
2542.50	-25.4	V	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3390.00	-24.5	V	3.0	36.1	1.0	-59.6	-13.0	-46.6	
1695.00	-29.7	H	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2542.50	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3390.00	-24.4	H	3.0	36.1	1.0	-59.5	-13.0	-46.5	

LTE B26 3MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 26 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 816.5MHz									
1633.00	-30.1	V	3.0	37.0	1.0	-66.1	-13.0	-53.1	
2449.50	-26.3	V	3.0	36.4	1.0	-61.7	-13.0	-48.7	
3266.00	-23.5	V	3.0	36.2	1.0	-58.7	-13.0	-45.7	
1633.00	-30.4	H	3.0	37.0	1.0	-66.4	-13.0	-53.4	
2449.50	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3266.00	-24.4	H	3.0	36.2	1.0	-59.5	-13.0	-46.5	
Mid Ch, 831.5MHz									
1663.00	-30.5	V	3.0	37.0	1.0	-66.5	-13.0	-53.5	
2494.50	-25.9	V	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3326.00	-24.8	V	3.0	36.1	1.0	-59.9	-13.0	-46.9	
1663.00	-30.3	H	3.0	37.0	1.0	-66.3	-13.0	-53.3	
2494.50	-26.2	H	3.0	36.4	1.0	-61.6	-13.0	-48.6	
3326.00	-24.5	H	3.0	36.1	1.0	-59.7	-13.0	-46.7	
High Ch, 846.5MHz									
1693.00	-29.8	V	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2539.50	-25.5	V	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3386.00	-24.1	V	3.0	36.1	1.0	-59.1	-13.0	-46.1	
1693.00	-30.2	H	3.0	37.0	1.0	-66.1	-13.0	-53.1	
2539.50	-25.8	H	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3386.00	-25.4	H	3.0	36.1	1.0	-60.4	-13.0	-47.4	

LTE B26 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 26 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 816.5MHz									
1633.00	-29.7	V	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2449.50	-26.2	V	3.0	36.4	1.0	-61.6	-13.0	-48.6	
3266.00	-24.1	V	3.0	36.2	1.0	-59.3	-13.0	-46.3	
1633.00	-29.9	H	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2449.50	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3266.00	-23.8	H	3.0	36.2	1.0	-59.0	-13.0	-46.0	
Mid Ch, 831.5MHz									
1663.00	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2494.50	-25.6	V	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3326.00	-24.5	V	3.0	36.1	1.0	-59.6	-13.0	-46.6	
1663.00	-28.8	H	3.0	37.0	1.0	-64.8	-13.0	-51.8	
2494.50	-26.1	H	3.0	36.4	1.0	-61.5	-13.0	-48.5	
3326.00	-23.6	H	3.0	36.1	1.0	-58.7	-13.0	-45.7	
High Ch, 846.5MHz									
1693.00	-29.0	V	3.0	37.0	1.0	-65.0	-13.0	-52.0	
2539.50	-25.3	V	3.0	36.4	1.0	-60.7	-13.0	-47.7	
3386.00	-24.8	V	3.0	36.1	1.0	-59.9	-13.0	-46.9	
1693.00	-28.7	H	3.0	37.0	1.0	-64.6	-13.0	-51.6	
2539.50	-25.8	H	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3386.00	-24.7	H	3.0	36.1	1.0	-59.8	-13.0	-46.8	

LTE B26 5MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 819MHz									
1638.00	-30.1	V	3.0	37.0	1.0	-66.1	-13.0	-53.1	
2457.00	-26.1	V	3.0	36.4	1.0	-61.5	-13.0	-48.5	
3276.00	-23.9	V	3.0	36.2	1.0	-59.1	-13.0	-46.1	
1638.00	-30.1	H	3.0	37.0	1.0	-66.1	-13.0	-53.1	
2457.00	-26.2	H	3.0	36.4	1.0	-61.7	-13.0	-48.7	
3276.00	-24.7	H	3.0	36.2	1.0	-59.8	-13.0	-46.8	
Mid Ch, 831.5MHz									
1663.00	-30.0	V	3.0	37.0	1.0	-66.0	-13.0	-53.0	
2494.50	-25.8	V	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3326.00	-24.8	V	3.0	36.1	1.0	-60.0	-13.0	-47.0	
1663.00	-29.8	H	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2494.50	-26.0	H	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3326.00	-25.0	H	3.0	36.1	1.0	-60.1	-13.0	-47.1	
High Ch, 844MHz									
1688.00	-29.9	V	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2532.00	-25.2	V	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3376.00	-24.1	V	3.0	36.1	1.0	-59.2	-13.0	-46.2	
1688.00	-28.9	H	3.0	37.0	1.0	-64.9	-13.0	-51.9	
2532.00	-25.5	H	3.0	36.4	1.0	-60.9	-13.0	-47.9	
3376.00	-24.5	H	3.0	36.1	1.0	-59.6	-13.0	-46.6	

LTE B26 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 26 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 819MHz									
1638.00	-30.5	V	3.0	37.0	1.0	-66.5	-13.0	-53.5	
2457.00	-25.7	V	3.0	36.4	1.0	-61.2	-13.0	-48.2	
3276.00	-24.3	V	3.0	36.2	1.0	-59.5	-13.0	-46.5	
1638.00	-30.4	H	3.0	37.0	1.0	-66.4	-13.0	-53.4	
2457.00	-26.1	H	3.0	36.4	1.0	-61.5	-13.0	-48.5	
3276.00	-24.1	H	3.0	36.2	1.0	-59.3	-13.0	-46.3	
Mid Ch, 831.5MHz									
1663.00	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2494.50	-26.0	V	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3326.00	-24.2	V	3.0	36.1	1.0	-59.4	-13.0	-46.4	
1663.00	-29.9	H	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2494.50	-25.7	H	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3326.00	-25.0	H	3.0	36.1	1.0	-60.1	-13.0	-47.1	
High Ch, 844MHz									
1688.00	-29.8	V	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2532.00	-25.9	V	3.0	36.4	1.0	-61.3	-13.0	-48.3	
3376.00	-24.9	V	3.0	36.1	1.0	-60.0	-13.0	-47.0	
1688.00	-29.8	H	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2532.00	-25.7	H	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3376.00	-24.9	H	3.0	36.1	1.0	-60.0	-13.0	-47.0	

LTE B26 10MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 26 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 821.5MHz									
1663.00	-29.6	V	3.0	37.0	1.0	-65.6	-13.0	-52.6	
2494.50	-25.3	V	3.0	36.4	1.0	-60.8	-13.0	-47.8	
3326.00	-24.2	V	3.0	36.1	1.0	-59.3	-13.0	-46.3	
3326.00	-22.5	H	3.0	36.1	1.0	-57.6	-13.0	-44.6	
3326.00	-23.4	H	3.0	36.1	1.0	-58.5	-13.0	-45.5	
3326.00	-24.0	H	3.0	36.1	1.0	-59.1	-13.0	-46.1	
Mid Ch, 831.5MHz									
1673.00	-29.8	V	3.0	37.0	1.0	-65.8	-13.0	-52.8	
2509.50	-26.3	V	3.0	36.4	1.0	-61.7	-13.0	-48.7	
3346.00	-24.7	V	3.0	36.1	1.0	-59.8	-13.0	-46.8	
3346.00	-22.6	H	3.0	36.1	1.0	-57.7	-13.0	-44.7	
3346.00	-24.0	H	3.0	36.1	1.0	-59.1	-13.0	-46.1	
3346.00	-26.1	H	3.0	36.1	1.0	-61.3	-13.0	-48.3	
High Ch, 841.5MHz									
1663.00	-29.9	V	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2494.50	-25.6	V	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3326.00	-24.4	V	3.0	36.1	1.0	-59.5	-13.0	-46.5	
3326.00	-22.8	H	3.0	36.1	1.0	-57.9	-13.0	-44.9	
3326.00	-23.8	H	3.0	36.1	1.0	-58.9	-13.0	-45.9	
3326.00	-23.9	H	3.0	36.1	1.0	-59.0	-13.0	-46.0	

LTE B26 15MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/20/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 26 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 821.5MHz									
1663.00	-29.9	V	3.0	37.0	1.0	-65.9	-13.0	-52.9	
2494.50	-26.1	V	3.0	36.4	1.0	-61.5	-13.0	-48.5	
3326.00	-23.7	V	3.0	36.1	1.0	-58.9	-13.0	-45.9	
3326.00	-22.7	H	3.0	36.1	1.0	-57.8	-13.0	-44.8	
3326.00	-23.5	H	3.0	36.1	1.0	-58.6	-13.0	-45.6	
3326.00	-23.4	H	3.0	36.1	1.0	-58.5	-13.0	-45.5	
Mid Ch, 831.5MHz									
1673.00	-30.1	V	3.0	37.0	1.0	-66.1	-13.0	-53.1	
2509.50	-25.7	V	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3346.00	-24.2	V	3.0	36.1	1.0	-59.3	-13.0	-46.3	
3346.00	-22.3	H	3.0	36.1	1.0	-57.4	-13.0	-44.4	
3346.00	-23.8	H	3.0	36.1	1.0	-58.9	-13.0	-45.9	
3346.00	-24.2	H	3.0	36.1	1.0	-59.3	-13.0	-46.3	
High Ch, 841.5MHz									
1663.00	-29.7	V	3.0	37.0	1.0	-65.7	-13.0	-52.7	
2494.50	-25.7	V	3.0	36.4	1.0	-61.1	-13.0	-48.1	
3326.00	-23.8	V	3.0	36.1	1.0	-58.9	-13.0	-45.9	
3326.00	-23.0	H	3.0	36.1	1.0	-58.2	-13.0	-45.2	
3326.00	-22.5	H	3.0	36.1	1.0	-57.6	-13.0	-44.6	
3326.00	-24.7	H	3.0	36.1	1.0	-59.9	-13.0	-46.9	

LTE B26 15MHz 16QAM

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9.1.9. LTE BAND 41

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_QPSK Band 41 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2498.5MHz									
4997.00	-14.6	V	3.0	35.5	1.0	-49.1	-25.0	-24.1	
7495.50	-13.7	V	3.0	35.7	1.0	-48.4	-25.0	-23.4	
9994.00	-8.6	V	3.0	36.0	1.0	-43.6	-25.0	-18.6	
4997.00	-14.8	H	3.0	35.5	1.0	-49.2	-25.0	-24.2	
7495.50	-12.6	H	3.0	35.7	1.0	-47.3	-25.0	-22.3	
9994.00	-10.2	H	3.0	36.0	1.0	-45.3	-25.0	-20.3	
Mid Ch, 2593MHz									
5186.00	-16.4	V	3.0	35.4	1.0	-50.8	-25.0	-25.8	
7779.00	-14.1	V	3.0	35.8	1.0	-48.9	-25.0	-23.9	
10372.00	-10.2	V	3.0	35.8	1.0	-45.1	-25.0	-20.1	
5186.00	-14.5	H	3.0	35.4	1.0	-48.9	-25.0	-23.9	
7779.00	-12.9	H	3.0	35.8	1.0	-47.7	-25.0	-22.7	
10372.00	-9.1	H	3.0	35.8	1.0	-43.9	-25.0	-18.9	
High Ch, 2687.5MHz									
5375.00	-16.2	V	3.0	35.4	1.0	-50.6	-25.0	-25.6	
8062.50	-12.6	V	3.0	35.8	1.0	-47.4	-25.0	-22.4	
10750.00	-9.1	V	3.0	35.7	1.0	-43.8	-25.0	-18.8	
5375.00	-15.9	H	3.0	35.4	1.0	-50.4	-25.0	-25.4	
8062.50	-11.6	H	3.0	35.8	1.0	-46.4	-25.0	-21.4	
10750.00	-9.4	H	3.0	35.7	1.0	-44.0	-25.0	-19.0	

LTE B41 5MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber B
Mode: LTE_16QAM Band 41 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2498.5MHz									
4997.00	-15.7	V	3.0	35.5	1.0	-50.2	-25.0	-25.2	
7495.50	-13.9	V	3.0	35.7	1.0	-48.6	-25.0	-23.6	
9994.00	-11.8	V	3.0	36.0	1.0	-46.9	-25.0	-21.9	
4997.00	-14.4	H	3.0	35.5	1.0	-48.9	-25.0	-23.9	
7495.50	-11.7	H	3.0	35.7	1.0	-46.4	-25.0	-21.4	
9994.00	-10.3	H	3.0	36.0	1.0	-45.3	-25.0	-20.3	
Mid Ch, 2593MHz									
5186.00	-15.5	V	3.0	35.4	1.0	-49.9	-25.0	-24.9	
7779.00	-14.3	V	3.0	35.8	1.0	-49.1	-25.0	-24.1	
10372.00	-10.8	V	3.0	35.8	1.0	-45.6	-25.0	-20.6	
5186.00	-15.6	H	3.0	35.4	1.0	-50.0	-25.0	-25.0	
7779.00	-12.0	H	3.0	35.8	1.0	-46.8	-25.0	-21.8	
10372.00	-7.9	H	3.0	35.8	1.0	-42.7	-25.0	-17.7	
High Ch, 2687.5MHz									
5375.00	-16.7	V	3.0	35.4	1.0	-51.1	-25.0	-26.1	
8062.50	-12.9	V	3.0	35.8	1.0	-47.7	-25.0	-22.7	
10750.00	-8.6	V	3.0	35.7	1.0	-44.2	-25.0	-19.2	
5375.00	-15.9	H	3.0	35.4	1.0	-50.3	-25.0	-25.3	
8062.50	-11.7	H	3.0	35.8	1.0	-46.6	-25.0	-21.6	
10750.00	-10.0	H	3.0	35.7	1.0	-44.7	-25.0	-19.7	

LTE B41 5MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_QPSK Band 41 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501MHz									
5002.00	-15.9	V	3.0	35.5	1.0	-50.4	-25.0	-25.4	
7503.00	-11.8	V	3.0	35.7	1.0	-46.5	-25.0	-21.5	
10004.00	-10.7	V	3.0	36.0	1.0	-45.7	-25.0	-20.7	
5002.00	-15.7	H	3.0	35.5	1.0	-50.1	-25.0	-25.1	
7503.00	-12.0	H	3.0	35.7	1.0	-46.8	-25.0	-21.8	
10004.00	-9.9	H	3.0	36.0	1.0	-45.0	-25.0	-20.0	
Mid Ch, 2593MHz									
5186.00	-15.8	V	3.0	35.4	1.0	-50.2	-25.0	-25.2	
7779.00	-14.1	V	3.0	35.8	1.0	-48.8	-25.0	-23.8	
10372.00	-10.2	V	3.0	35.8	1.0	-45.0	-25.0	-20.0	
5186.00	-15.1	H	3.0	35.4	1.0	-49.5	-25.0	-24.5	
7779.00	-12.4	H	3.0	35.8	1.0	-47.2	-25.0	-22.2	
10372.00	-9.7	H	3.0	35.8	1.0	-44.5	-25.0	-19.5	
High Ch, 2685MHz									
5370.00	-16.9	V	3.0	35.4	1.0	-51.3	-25.0	-26.3	
8055.00	-12.4	V	3.0	35.8	1.0	-47.2	-25.0	-22.2	
10740.00	-8.8	V	3.0	35.7	1.0	-43.5	-25.0	-18.5	
5370.00	-16.2	H	3.0	35.4	1.0	-50.7	-25.0	-25.7	
8055.00	-10.1	H	3.0	35.8	1.0	-44.9	-25.0	-19.9	
10740.00	-9.2	H	3.0	35.7	1.0	-43.9	-25.0	-18.9	

LTE B41 10MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_16QAM Band 41 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501MHz									
5002.00	-17.6	V	3.0	35.5	1.0	-52.0	-25.0	-27.0	
7503.00	-13.0	V	3.0	35.7	1.0	-47.8	-25.0	-22.8	
10004.00	-10.8	V	3.0	36.0	1.0	-45.8	-25.0	-20.8	
5002.00	-14.9	H	3.0	35.5	1.0	-49.3	-25.0	-24.3	
7503.00	-11.8	H	3.0	35.7	1.0	-46.5	-25.0	-21.5	
10004.00	-10.4	H	3.0	36.0	1.0	-45.4	-25.0	-20.4	
Mid Ch, 2593MHz									
5186.00	-14.8	V	3.0	35.4	1.0	-49.2	-25.0	-24.2	
7779.00	-13.2	V	3.0	35.8	1.0	-48.0	-25.0	-23.0	
10372.00	-10.3	V	3.0	35.8	1.0	-45.1	-25.0	-20.1	
5186.00	-16.3	H	3.0	35.4	1.0	-50.7	-25.0	-25.7	
7779.00	-12.2	H	3.0	35.8	1.0	-47.0	-25.0	-22.0	
10372.00	-8.3	H	3.0	35.8	1.0	-43.1	-25.0	-18.1	
High Ch, 2685MHz									
5370.00	-16.7	V	3.0	35.4	1.0	-51.2	-25.0	-26.2	
8055.00	-13.2	V	3.0	35.8	1.0	-48.0	-25.0	-23.0	
10740.00	-10.5	V	3.0	35.7	1.0	-45.2	-25.0	-20.2	
5370.00	-16.2	H	3.0	35.4	1.0	-50.7	-25.0	-25.7	
8055.00	-11.5	H	3.0	35.8	1.0	-46.3	-25.0	-21.3	
10740.00	-9.6	H	3.0	35.7	1.0	-44.2	-25.0	-19.2	

LTE B41 10MHz 16QAM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_QPSK Band 41 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2503.5MHz									
5007.00	-14.3	V	3.0	35.5	1.0	-48.7	-25.0	-23.7	
7510.50	-13.9	V	3.0	35.7	1.0	-48.6	-25.0	-23.6	
10014.00	-12.3	V	3.0	36.0	1.0	-47.3	-25.0	-22.3	
5007.00	-15.3	H	3.0	35.5	1.0	-49.7	-25.0	-24.7	
7510.50	-10.7	H	3.0	35.7	1.0	-45.4	-25.0	-20.4	
10014.00	-9.5	H	3.0	36.0	1.0	-44.6	-25.0	-19.6	
Mid Ch, 2593MHz									
5186.00	-18.2	V	3.0	35.4	1.0	-52.6	-25.0	-27.6	
7779.00	-12.9	V	3.0	35.8	1.0	-47.6	-25.0	-22.6	
10372.00	-10.7	V	3.0	35.8	1.0	-45.6	-25.0	-20.6	
5186.00	-15.3	H	3.0	35.4	1.0	-49.7	-25.0	-24.7	
7779.00	-11.7	H	3.0	35.8	1.0	-46.5	-25.0	-21.5	
10372.00	-8.9	H	3.0	35.8	1.0	-43.7	-25.0	-18.7	
High Ch, 2682.5MHz									
5365.00	-16.5	V	3.0	35.4	1.0	-51.0	-25.0	-26.0	
8047.50	-13.5	V	3.0	35.8	1.0	-48.3	-25.0	-23.3	
10730.00	-9.2	V	3.0	35.7	1.0	-43.9	-25.0	-18.9	
5365.00	-15.4	H	3.0	35.4	1.0	-49.8	-25.0	-24.8	
8047.50	-12.2	H	3.0	35.8	1.0	-47.0	-25.0	-22.0	
10730.00	-9.3	H	3.0	35.7	1.0	-43.9	-25.0	-18.9	

LTE B41 15MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_16QAM Band 41 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2503.5MHz									
5007.00	-14.9	V	3.0	35.5	1.0	-49.3	-25.0	-24.3	
7510.50	-14.2	V	3.0	35.7	1.0	-48.9	-25.0	-23.9	
10014.00	-11.1	V	3.0	36.0	1.0	-46.1	-25.0	-21.1	
5007.00	-15.4	H	3.0	35.5	1.0	-49.8	-25.0	-24.8	
7510.50	-13.4	H	3.0	35.7	1.0	-48.1	-25.0	-23.1	
10014.00	-11.6	H	3.0	36.0	1.0	-46.6	-25.0	-21.6	
Mid Ch, 2593MHz									
5186.00	-16.7	V	3.0	35.4	1.0	-51.2	-25.0	-26.2	
7779.00	-13.7	V	3.0	35.8	1.0	-48.5	-25.0	-23.5	
10372.00	-10.1	V	3.0	35.8	1.0	-44.9	-25.0	-19.9	
5186.00	-14.9	H	3.0	35.4	1.0	-49.3	-25.0	-24.3	
7779.00	-13.2	H	3.0	35.8	1.0	-47.9	-25.0	-22.9	
10372.00	-9.7	H	3.0	35.8	1.0	-44.6	-25.0	-19.6	
High Ch, 2682.5MHz									
5365.00	-16.5	V	3.0	35.4	1.0	-51.0	-25.0	-26.0	
8047.50	-14.4	V	3.0	35.8	1.0	-49.2	-25.0	-24.2	
10730.00	-11.1	V	3.0	35.7	1.0	-45.7	-25.0	-20.7	
5365.00	-15.2	H	3.0	35.4	1.0	-49.6	-25.0	-24.6	
8047.50	-11.4	H	3.0	35.8	1.0	-46.2	-25.0	-21.2	
10730.00	-9.1	H	3.0	35.7	1.0	-43.8	-25.0	-18.8	

LTE B41 15MHz 16QAM

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_QPSK Band 41 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2506MHz									
5012.00	-15.0	V	3.0	35.5	1.0	-49.5	-25.0	-24.5	
7518.00	-14.8	V	3.0	35.7	1.0	-49.8	-25.0	-24.6	
10024.00	-11.5	V	3.0	36.0	1.0	-46.5	-25.0	-21.5	
5012.00	-15.4	H	3.0	35.5	1.0	-49.8	-25.0	-24.8	
7518.00	-12.7	H	3.0	35.7	1.0	-47.5	-25.0	-22.5	
10024.00	-10.7	H	3.0	36.0	1.0	-45.7	-25.0	-20.7	
Mid Ch, 2593MHz									
5186.00	-15.9	V	3.0	35.4	1.0	-50.4	-25.0	-25.4	
7779.00	-14.0	V	3.0	35.8	1.0	-48.8	-25.0	-23.8	
10372.00	-10.2	V	3.0	35.8	1.0	-45.0	-25.0	-20.0	
5186.00	-14.2	H	3.0	35.4	1.0	-48.7	-25.0	-23.7	
7779.00	-12.1	H	3.0	35.8	1.0	-46.9	-25.0	-21.9	
10372.00	-8.1	H	3.0	35.8	1.0	-42.9	-25.0	-17.9	
High Ch, 2680MHz									
5360.00	-17.2	V	3.0	35.4	1.0	-51.7	-25.0	-26.7	
8040.00	-13.2	V	3.0	35.8	1.0	-48.0	-25.0	-23.0	
10720.00	-9.3	V	3.0	35.7	1.0	-43.9	-25.0	-18.9	
5360.00	-16.1	H	3.0	35.4	1.0	-50.6	-25.0	-25.6	
8040.00	-12.0	H	3.0	35.8	1.0	-46.8	-25.0	-21.8	
10720.00	-9.8	H	3.0	35.7	1.0	-44.5	-25.0	-19.5	

LTE B41 20MHz QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/22/2018
Test Engineer: 16069 OG
Configuration: EUT + SUPPORT EQUIPMENT
Location: Chamber C
Mode: LTE_16QAM Band 41 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2506MHz									
5012.00	-15.7	V	3.0	35.5	1.0	-50.2	-25.0	-25.2	
7518.00	-15.0	V	3.0	35.7	1.0	-49.8	-25.0	-24.8	
10024.00	-12.6	V	3.0	36.0	1.0	-47.6	-25.0	-22.6	
5012.00	-16.9	H	3.0	35.5	1.0	-51.4	-25.0	-26.4	
7518.00	-13.3	H	3.0	35.7	1.0	-48.0	-25.0	-23.0	
10024.00	-10.6	H	3.0	36.0	1.0	-45.6	-25.0	-20.6	
Mid Ch, 2593MHz									
5186.00	-16.5	V	3.0	35.4	1.0	-50.9	-25.0	-25.9	
7779.00	-14.8	V	3.0	35.8	1.0	-49.5	-25.0	-24.5	
10372.00	-11.1	V	3.0	35.8	1.0	-46.0	-25.0	-21.0	
5186.00	-16.7	H	3.0	35.4	1.0	-51.2	-25.0	-26.2	
7779.00	-11.7	H	3.0	35.8	1.0	-46.5	-25.0	-21.5	
10372.00	-9.7	H	3.0	35.8	1.0	-44.6	-25.0	-19.6	
High Ch, 2680MHz									
5360.00	-17.4	V	3.0	35.4	1.0	-51.8	-25.0	-26.8	
8040.00	-14.5	V	3.0	35.8	1.0	-49.3	-25.0	-24.3	
10720.00	-9.1	V	3.0	35.7	1.0	-43.8	-25.0	-18.8	
5360.00	-16.6	H	3.0	35.4	1.0	-51.1	-25.0	-26.1	
8040.00	-11.6	H	3.0	35.8	1.0	-46.4	-25.0	-21.4	
10720.00	-8.9	H	3.0	35.7	1.0	-43.6	-25.0	-18.6	

LTE B41 20MHz 16QAM

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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9.1.10. LTE BAND 66

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 66 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7MHz									
3421.40	-24.0	V	3.0	36.1	1.0	-59.0	-13.0	-46.0	
5132.10	-20.6	V	3.0	35.4	1.0	-55.0	-13.0	-42.0	
6842.80	-22.1	V	3.0	35.7	1.0	-56.7	-13.0	-43.7	
3421.40	-24.0	H	3.0	36.1	1.0	-59.0	-13.0	-46.0	
5132.10	-22.4	H	3.0	35.4	1.0	-56.8	-13.0	-43.8	
6842.80	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	
Mid Ch, 1745MHz									
3490.00	-24.2	V	3.0	36.0	1.0	-59.2	-13.0	-46.2	
5235.00	-22.2	V	3.0	35.4	1.0	-56.6	-13.0	-43.6	
6980.00	-22.2	V	3.0	35.7	1.0	-56.9	-13.0	-43.9	
3490.00	-23.4	H	3.0	36.0	1.0	-58.4	-13.0	-45.4	
5235.00	-22.4	H	3.0	35.4	1.0	-56.8	-13.0	-43.8	
6980.00	-21.4	H	3.0	35.7	1.0	-56.1	-13.0	-43.1	
High Ch, 1779.3MHz									
3558.60	-23.6	V	3.0	36.0	1.0	-58.5	-13.0	-45.5	
5337.90	-20.7	V	3.0	35.4	1.0	-55.1	-13.0	-42.1	
7117.20	-22.3	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
3558.60	-23.6	H	3.0	36.0	1.0	-58.5	-13.0	-45.5	
5337.90	-22.2	H	3.0	35.4	1.0	-56.6	-13.0	-43.6	
7117.20	-22.0	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	

LTE B66 1.4MHz QPSK Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 66 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7MHz									
3421.40	-24.3	V	3.0	36.1	1.0	-59.4	-13.0	-46.4	
5132.10	-22.4	V	3.0	35.4	1.0	-56.8	-13.0	-43.8	
6842.80	-22.0	V	3.0	35.7	1.0	-56.6	-13.0	-43.6	
3421.40	-24.0	H	3.0	36.1	1.0	-59.0	-13.0	-46.0	
5132.10	-22.6	H	3.0	35.4	1.0	-57.0	-13.0	-44.0	
6842.80	-22.0	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	
Mid Ch, 1745MHz									
3490.00	-23.9	V	3.0	36.0	1.0	-58.9	-13.0	-45.9	
5235.00	-22.5	V	3.0	35.4	1.0	-56.9	-13.0	-43.9	
6980.00	-22.4	V	3.0	35.7	1.0	-57.1	-13.0	-44.1	
3490.00	-24.3	H	3.0	36.0	1.0	-59.3	-13.0	-46.3	
5235.00	-22.6	H	3.0	35.4	1.0	-57.0	-13.0	-44.0	
6980.00	-22.2	H	3.0	35.7	1.0	-56.9	-13.0	-43.9	
High Ch, 1779.3MHz									
3558.60	-23.1	V	3.0	36.0	1.0	-58.0	-13.0	-45.0	
5337.90	-22.2	V	3.0	35.4	1.0	-56.6	-13.0	-43.6	
7117.20	-20.8	V	3.0	35.7	1.0	-55.5	-13.0	-42.5	
3558.60	-22.9	H	3.0	36.0	1.0	-57.8	-13.0	-44.8	
5337.90	-21.4	H	3.0	35.4	1.0	-55.9	-13.0	-42.9	
7117.20	-22.9	H	3.0	35.7	1.0	-57.5	-13.0	-44.5	

LTE B66 1.4MHz 16QAM Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 66 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5MHz									
3423.00	-24.6	V	3.0	36.1	1.0	-59.7	-13.0	-46.7	
5134.50	-22.6	V	3.0	35.4	1.0	-57.1	-13.0	-44.1	
6846.00	-22.5	V	3.0	35.7	1.0	-57.1	-13.0	-44.1	
3423.00	-24.1	H	3.0	36.1	1.0	-59.1	-13.0	-46.1	
5134.50	-20.5	H	3.0	35.4	1.0	-55.0	-13.0	-42.0	
6846.00	-22.2	H	3.0	35.7	1.0	-56.9	-13.0	-43.9	
Mid Ch, 1745MHz									
3490.00	-24.6	V	3.0	36.0	1.0	-59.6	-13.0	-46.6	
5235.00	-22.9	V	3.0	35.4	1.0	-57.3	-13.0	-44.3	
6980.00	-22.4	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
3490.00	-24.4	H	3.0	36.0	1.0	-59.4	-13.0	-46.4	
5235.00	-21.7	H	3.0	35.4	1.0	-56.1	-13.0	-43.1	
6980.00	-21.6	H	3.0	35.7	1.0	-56.2	-13.0	-43.2	
High Ch, 1778.5MHz									
3557.00	-23.8	V	3.0	36.0	1.0	-58.8	-13.0	-45.8	
5335.50	-21.9	V	3.0	35.4	1.0	-56.3	-13.0	-43.3	
7114.00	-22.1	V	3.0	35.7	1.0	-56.8	-13.0	-43.8	
3557.00	-23.9	H	3.0	36.0	1.0	-58.9	-13.0	-45.9	
5335.50	-21.8	H	3.0	35.4	1.0	-56.3	-13.0	-43.3	
7114.00	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	

LTE B66 3MHz QPSK Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 66 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5MHz									
3423.00	-24.6	V	3.0	36.1	1.0	-59.6	-13.0	-46.6	
5134.50	-22.1	V	3.0	35.4	1.0	-56.6	-13.0	-43.6	
6846.00	-22.0	V	3.0	35.7	1.0	-56.6	-13.0	-43.6	
3423.00	-23.8	H	3.0	36.1	1.0	-58.9	-13.0	-45.9	
5134.50	-21.5	H	3.0	35.4	1.0	-56.0	-13.0	-43.0	
6846.00	-21.9	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
Mid Ch, 1745MHz									
3490.00	-24.3	V	3.0	36.0	1.0	-59.3	-13.0	-46.3	
5235.00	-22.0	V	3.0	35.4	1.0	-56.4	-13.0	-43.4	
6980.00	-21.1	V	3.0	35.7	1.0	-55.8	-13.0	-42.8	
3490.00	-24.2	H	3.0	36.0	1.0	-59.2	-13.0	-46.2	
5235.00	-22.4	H	3.0	35.4	1.0	-56.9	-13.0	-43.9	
6980.00	-21.7	H	3.0	35.7	1.0	-56.4	-13.0	-43.4	
High Ch, 1778.5MHz									
3557.00	-23.8	V	3.0	36.0	1.0	-58.7	-13.0	-45.7	
5335.50	-23.1	V	3.0	35.4	1.0	-57.6	-13.0	-44.6	
7114.00	-22.2	V	3.0	35.7	1.0	-56.9	-13.0	-43.9	
3557.00	-23.4	H	3.0	36.0	1.0	-58.4	-13.0	-45.4	
5335.50	-22.3	H	3.0	35.4	1.0	-56.8	-13.0	-43.8	
7114.00	-21.7	H	3.0	35.7	1.0	-56.4	-13.0	-43.4	

LTE B66 3MHz 16QAM Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 66 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5MHz									
3425.00	-24.8	V	3.0	36.1	1.0	-59.9	-13.0	-46.9	
5137.50	-21.8	V	3.0	35.4	1.0	-56.3	-13.0	-43.3	
6850.00	-22.3	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
3425.00	-24.2	H	3.0	36.1	1.0	-59.3	-13.0	-46.3	
5137.50	-22.7	H	3.0	35.4	1.0	-57.1	-13.0	-44.1	
6850.00	-22.4	H	3.0	35.7	1.0	-57.1	-13.0	-44.1	
Mid Ch, 1745MHz									
3490.00	-24.6	V	3.0	36.0	1.0	-59.6	-13.0	-46.6	
5235.00	-23.0	V	3.0	35.4	1.0	-57.4	-13.0	-44.4	
6980.00	-22.3	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
3490.00	-23.0	H	3.0	36.0	1.0	-58.0	-13.0	-45.0	
5235.00	-23.1	H	3.0	35.4	1.0	-57.5	-13.0	-44.5	
6980.00	-21.8	H	3.0	35.7	1.0	-56.5	-13.0	-43.5	
High Ch, 1777.5MHz									
3555.00	-23.6	V	3.0	36.0	1.0	-58.6	-13.0	-45.6	
5332.50	-22.6	V	3.0	35.4	1.0	-57.0	-13.0	-44.0	
7110.00	-21.9	V	3.0	35.7	1.0	-56.6	-13.0	-43.6	
3555.00	-23.6	H	3.0	36.0	1.0	-58.6	-13.0	-45.6	
5332.50	-21.9	H	3.0	35.4	1.0	-56.4	-13.0	-43.4	
7110.00	-22.6	H	3.0	35.7	1.0	-57.3	-13.0	-44.3	

LTE B66 5MHz QPSK Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 66 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5MHz									
3425.00	-24.3	V	3.0	36.1	1.0	-59.3	-13.0	-46.3	
5137.50	-22.4	V	3.0	35.4	1.0	-56.9	-13.0	-43.9	
6850.00	-22.4	V	3.0	35.7	1.0	-57.1	-13.0	-44.1	
3425.00	-24.2	H	3.0	36.1	1.0	-59.2	-13.0	-46.2	
5137.50	-22.9	H	3.0	35.4	1.0	-57.3	-13.0	-44.3	
6850.00	-21.6	H	3.0	35.7	1.0	-56.3	-13.0	-43.3	
Mid Ch, 1745MHz									
3490.00	-24.5	V	3.0	36.0	1.0	-59.5	-13.0	-46.5	
5235.00	-22.5	V	3.0	35.4	1.0	-56.9	-13.0	-43.9	
6980.00	-22.0	V	3.0	35.7	1.0	-56.7	-13.0	-43.7	
3490.00	-24.4	H	3.0	36.0	1.0	-59.4	-13.0	-46.4	
5235.00	-22.8	H	3.0	35.4	1.0	-57.2	-13.0	-44.2	
6980.00	-21.5	H	3.0	35.7	1.0	-56.2	-13.0	-43.2	
High Ch, 1777.5MHz									
3555.00	-23.9	V	3.0	36.0	1.0	-58.9	-13.0	-45.9	
5332.50	-21.5	V	3.0	35.4	1.0	-56.0	-13.0	-43.0	
7110.00	-22.6	V	3.0	35.7	1.0	-57.3	-13.0	-44.3	
3555.00	-23.1	H	3.0	36.0	1.0	-58.1	-13.0	-45.1	
5332.50	-21.5	H	3.0	35.4	1.0	-56.0	-13.0	-43.0	
7110.00	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	

LTE B66 5MHz 16QAM Middle Channel

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UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 66 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715MHz									
3430.00	-23.9	V	3.0	36.1	1.0	-59.0	-13.0	-46.0	
5145.00	-21.6	V	3.0	35.4	1.0	-56.0	-13.0	-43.0	
6860.00	-22.3	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
3430.00	-24.5	H	3.0	36.1	1.0	-59.6	-13.0	-46.6	
5145.00	-22.2	H	3.0	35.4	1.0	-56.6	-13.0	-43.6	
6860.00	-21.8	H	3.0	35.7	1.0	-56.4	-13.0	-43.4	
Mid Ch, 1745MHz									
3490.00	-24.0	V	3.0	36.0	1.0	-59.0	-13.0	-46.0	
5235.00	-23.2	V	3.0	35.4	1.0	-57.6	-13.0	-44.6	
6980.00	-22.2	V	3.0	35.7	1.0	-56.8	-13.0	-43.8	
3490.00	-24.2	H	3.0	36.0	1.0	-59.2	-13.0	-46.2	
5235.00	-22.7	H	3.0	35.4	1.0	-57.1	-13.0	-44.1	
6980.00	-22.2	H	3.0	35.7	1.0	-56.9	-13.0	-43.9	
High Ch, 1775MHz									
3550.00	-23.5	V	3.0	36.0	1.0	-58.5	-13.0	-45.5	
5325.00	-22.3	V	3.0	35.4	1.0	-56.8	-13.0	-43.8	
7100.00	-22.0	V	3.0	35.7	1.0	-56.7	-13.0	-43.7	
3550.00	-23.5	H	3.0	36.0	1.0	-58.4	-13.0	-45.4	
5325.00	-22.5	H	3.0	35.4	1.0	-56.9	-13.0	-43.9	
7100.00	-21.8	H	3.0	35.7	1.0	-56.3	-13.0	-43.3	

LTE B66 10MHz QPSK Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 66 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715MHz									
3430.00	-24.0	V	3.0	36.1	1.0	-59.0	-13.0	-46.0	
5145.00	-22.6	V	3.0	35.4	1.0	-57.1	-13.0	-44.1	
6860.00	-20.5	V	3.0	35.7	1.0	-55.1	-13.0	-42.1	
3430.00	-24.4	H	3.0	36.1	1.0	-59.4	-13.0	-46.4	
5145.00	-21.8	H	3.0	35.4	1.0	-56.2	-13.0	-43.2	
6860.00	-22.9	H	3.0	35.7	1.0	-57.6	-13.0	-44.6	
Mid Ch, 1745MHz									
3490.00	-24.0	V	3.0	36.0	1.0	-59.0	-13.0	-46.0	
5235.00	-22.2	V	3.0	35.4	1.0	-56.6	-13.0	-43.6	
6980.00	-22.3	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
3490.00	-24.4	H	3.0	36.0	1.0	-59.4	-13.0	-46.4	
5235.00	-22.7	H	3.0	35.4	1.0	-57.1	-13.0	-44.1	
6980.00	-20.4	H	3.0	35.7	1.0	-55.0	-13.0	-42.0	
High Ch, 1775MHz									
3550.00	-23.9	V	3.0	36.0	1.0	-58.9	-13.0	-45.9	
5325.00	-21.9	V	3.0	35.4	1.0	-56.4	-13.0	-43.4	
7100.00	-20.6	V	3.0	35.7	1.0	-55.3	-13.0	-42.3	
3550.00	-23.5	H	3.0	36.0	1.0	-58.5	-13.0	-45.5	
5325.00	-22.3	H	3.0	35.4	1.0	-56.7	-13.0	-43.7	
7100.00	-21.5	H	3.0	35.7	1.0	-56.2	-13.0	-43.2	

LTE B66 10MHz 16QAM Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 66 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5MHz									
3435.00	-24.4	V	3.0	36.1	1.0	-59.5	-13.0	-46.5	
5152.50	-22.8	V	3.0	35.4	1.0	-57.2	-13.0	-44.2	
6870.00	-22.0	V	3.0	35.7	1.0	-56.7	-13.0	-43.7	
3435.00	-24.2	H	3.0	36.1	1.0	-59.2	-13.0	-46.2	
5152.50	-22.9	H	3.0	35.4	1.0	-57.3	-13.0	-44.3	
6870.00	-23.0	H	3.0	35.7	1.0	-57.7	-13.0	-44.7	
Mid Ch, 1745MHz									
3490.00	-24.6	V	3.0	36.0	1.0	-59.6	-13.0	-46.6	
5235.00	-22.5	V	3.0	35.4	1.0	-56.9	-13.0	-43.9	
6980.00	-21.7	V	3.0	35.7	1.0	-56.4	-13.0	-43.4	
3490.00	-24.4	H	3.0	36.0	1.0	-59.4	-13.0	-46.4	
5235.00	-22.7	H	3.0	35.4	1.0	-57.2	-13.0	-44.2	
6980.00	-22.1	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	
High Ch, 1772.5MHz									
3545.00	-24.3	V	3.0	36.0	1.0	-59.3	-13.0	-46.3	
5317.50	-22.8	V	3.0	35.4	1.0	-57.3	-13.0	-44.3	
7090.00	-21.1	V	3.0	35.7	1.0	-55.8	-13.0	-42.8	
3545.00	-24.0	H	3.0	36.0	1.0	-59.0	-13.0	-46.0	
5317.50	-22.8	H	3.0	35.4	1.0	-57.2	-13.0	-44.2	
7090.00	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	

LTE B66 15MHz QPSK Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 66 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5MHz									
3435.00	-24.2	V	3.0	36.1	1.0	-59.2	-13.0	-46.2	
5152.50	-22.0	V	3.0	35.4	1.0	-56.4	-13.0	-43.4	
6870.00	-22.7	V	3.0	35.7	1.0	-57.3	-13.0	-44.3	
3435.00	-23.9	H	3.0	36.1	1.0	-59.0	-13.0	-46.0	
5152.50	-22.2	H	3.0	35.4	1.0	-56.7	-13.0	-43.7	
6870.00	-22.4	H	3.0	35.7	1.0	-57.1	-13.0	-44.1	
Mid Ch, 1745MHz									
3490.00	-24.1	V	3.0	36.0	1.0	-59.1	-13.0	-46.1	
5235.00	-22.7	V	3.0	35.4	1.0	-57.1	-13.0	-44.1	
6980.00	-21.8	V	3.0	35.7	1.0	-56.5	-13.0	-43.5	
3490.00	-24.4	H	3.0	36.0	1.0	-59.4	-13.0	-46.4	
5235.00	-22.3	H	3.0	35.4	1.0	-56.7	-13.0	-43.7	
6980.00	-21.9	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
High Ch, 1772.5MHz									
3545.00	-23.2	V	3.0	36.0	1.0	-58.1	-13.0	-45.1	
5317.50	-22.6	V	3.0	35.4	1.0	-57.1	-13.0	-44.1	
7090.00	-21.9	V	3.0	35.7	1.0	-56.6	-13.0	-43.6	
3545.00	-23.9	H	3.0	36.0	1.0	-58.8	-13.0	-45.8	
5317.50	-21.7	H	3.0	35.4	1.0	-56.1	-13.0	-43.1	
7090.00	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	

LTE B66 15MHz 16QAM Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_QPSK Band 66 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720MHz									
3440.00	-24.3	V	3.0	36.0	1.0	-59.3	-13.0	-46.3	
5160.00	-21.9	V	3.0	35.4	1.0	-56.4	-13.0	-43.4	
6880.00	-22.2	V	3.0	35.7	1.0	-56.9	-13.0	-43.9	
3440.00	-24.5	H	3.0	36.0	1.0	-59.6	-13.0	-46.6	
5160.00	-23.2	H	3.0	35.4	1.0	-57.6	-13.0	-44.6	
6880.00	-22.1	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	
Mid Ch, 1745MHz									
3490.00	-24.5	V	3.0	36.0	1.0	-59.5	-13.0	-46.5	
5235.00	-23.2	V	3.0	35.4	1.0	-57.6	-13.0	-44.6	
6980.00	-21.6	V	3.0	35.7	1.0	-56.3	-13.0	-43.3	
3490.00	-23.6	H	3.0	36.0	1.0	-58.6	-13.0	-45.6	
5235.00	-21.7	H	3.0	35.4	1.0	-56.1	-13.0	-43.1	
6980.00	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	
High Ch, 1770MHz									
3540.00	-23.4	V	3.0	36.0	1.0	-58.4	-13.0	-45.4	
5310.00	-22.3	V	3.0	35.4	1.0	-56.8	-13.0	-43.8	
7080.00	-22.4	V	3.0	35.7	1.0	-57.1	-13.0	-44.1	
3540.00	-23.0	H	3.0	36.0	1.0	-58.0	-13.0	-45.0	
5310.00	-21.2	H	3.0	35.4	1.0	-55.7	-13.0	-42.7	
7080.00	-22.0	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	

LTE B66 20MHz QPSK Middle Channel

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: SOMC
Project #: 12118543
Date: 3/21/2018
Test Engineer: 43575 OS
Configuration: EUT + Support Equipment
Location: Chamber A
Mode: LTE_16QAM Band 66 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720MHz									
3440.00	-24.2	V	3.0	36.0	1.0	-59.2	-13.0	-46.2	
5160.00	-23.0	V	3.0	35.4	1.0	-57.5	-13.0	-44.5	
6880.00	-22.1	V	3.0	35.7	1.0	-56.7	-13.0	-43.7	
3440.00	-24.6	H	3.0	36.0	1.0	-59.7	-13.0	-46.7	
5160.00	-22.3	H	3.0	35.4	1.0	-56.7	-13.0	-43.7	
6880.00	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	
Mid Ch, 1745MHz									
3490.00	-24.0	V	3.0	36.0	1.0	-59.0	-13.0	-46.0	
5235.00	-21.8	V	3.0	35.4	1.0	-56.3	-13.0	-43.3	
6980.00	-22.1	V	3.0	35.7	1.0	-56.8	-13.0	-43.8	
3490.00	-24.1	H	3.0	36.0	1.0	-59.1	-13.0	-46.1	
5235.00	-22.1	H	3.0	35.4	1.0	-56.5	-13.0	-43.5	
6980.00	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	
High Ch, 1770MHz									
3540.00	-22.8	V	3.0	36.0	1.0	-57.8	-13.0	-44.8	
5310.00	-21.4	V	3.0	35.4	1.0	-55.8	-13.0	-42.8	
7080.00	-21.9	V	3.0	35.7	1.0	-56.6	-13.0	-43.6	
3540.00	-23.4	H	3.0	36.0	1.0	-58.4	-13.0	-45.4	
5310.00	-22.7	H	3.0	35.4	1.0	-57.1	-13.0	-44.1	
7080.00	-22.0	H	3.0	35.7	1.0	-56.7	-13.0	-43.7	

LTE B66 20MHz 16QAM Middle Channel

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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10. VERFICATION AND VALIDATION OF USING MOBILE COUNTRY CODE

RESULTS

- Appendix A

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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Appendix A

For this product when the Mobile Country Code (=MCC) is set to US MCC, the below bands will be disabled.

- LTE B19
- LTE B38
- LTE B40
- LTE B46

The following pages show that when US MCC is connected on the base station, LTE B19/38/40/46 cannot be registered and no capability (i.e. disabled). On the other hand, when non-US MCC is connected, the above bands are able to register and have capability.

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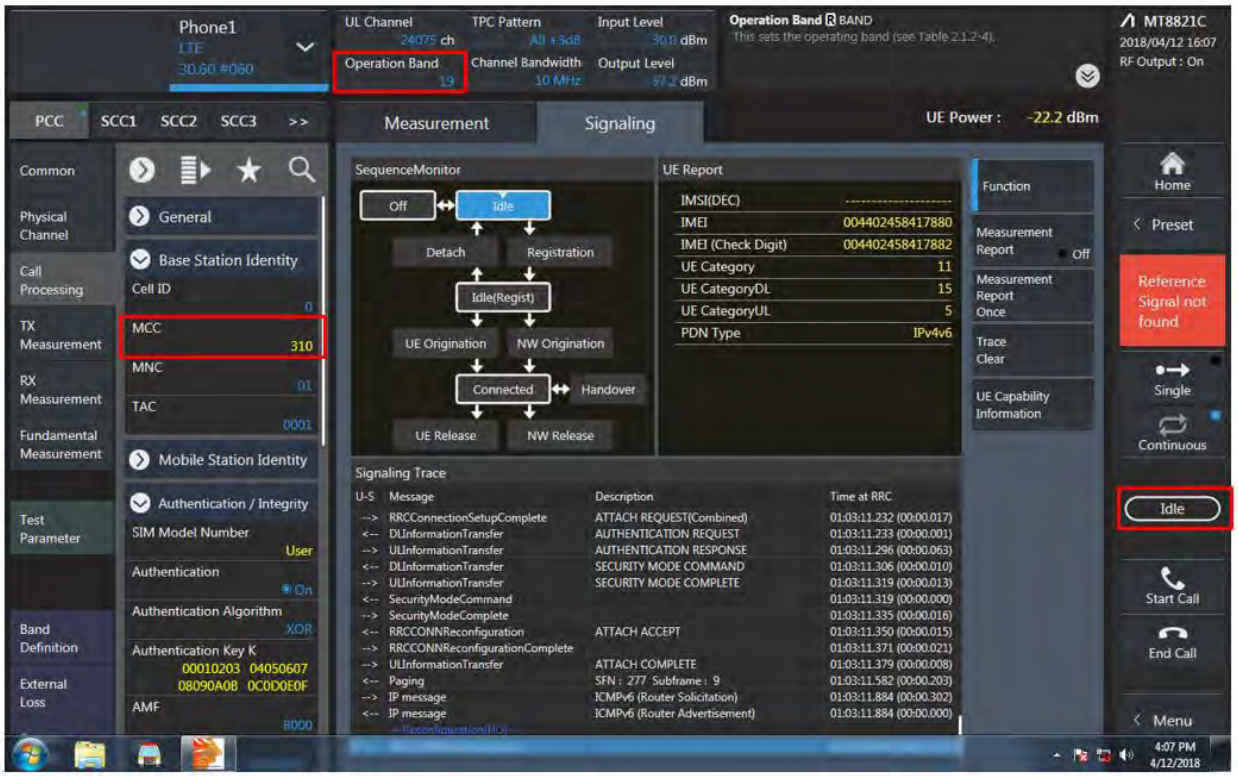
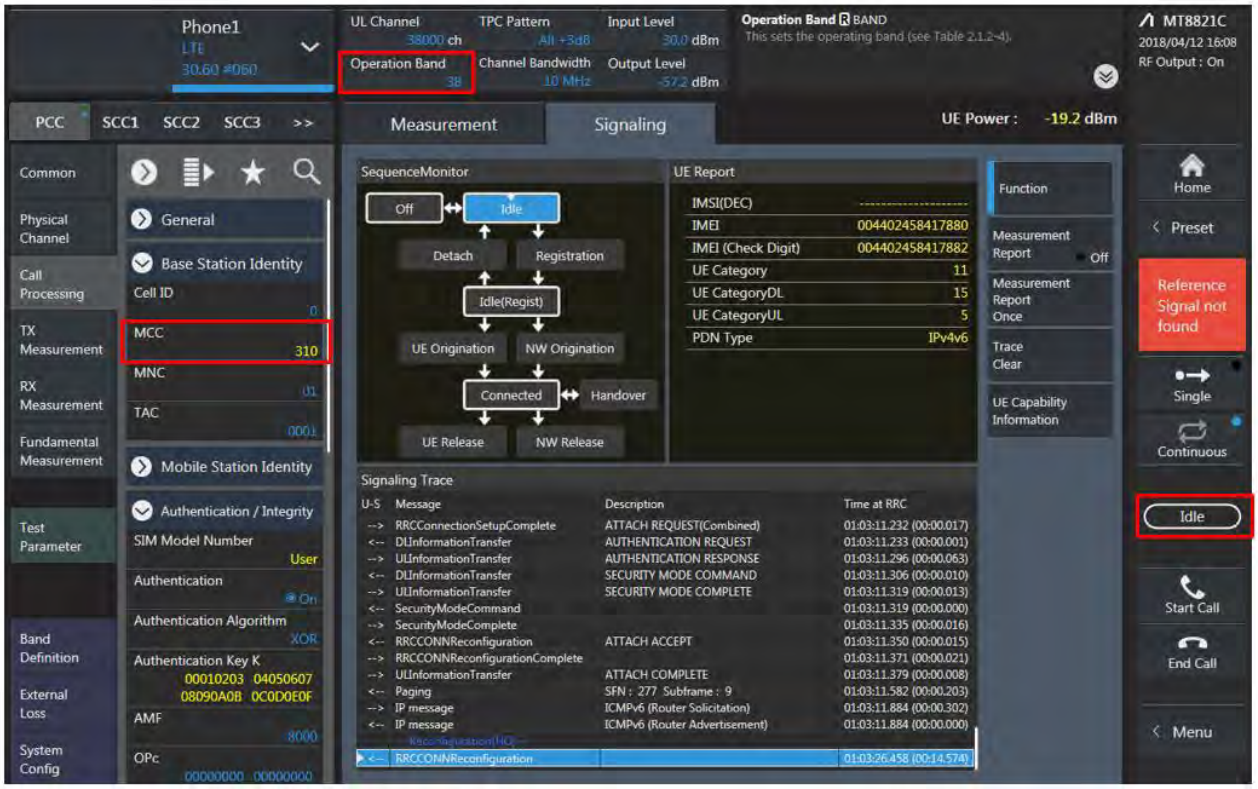
UE cannot register B19 at US MCC (310)



UE cannot register B38 at US MCC (310)



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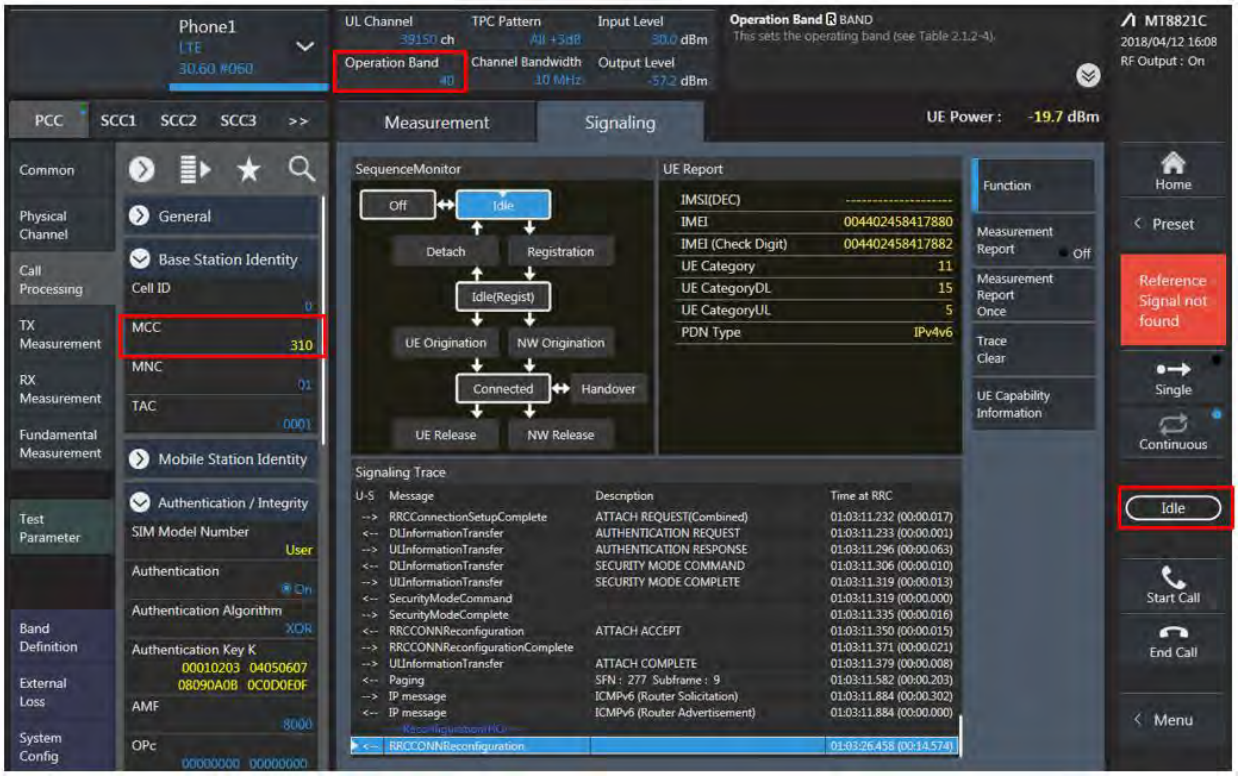
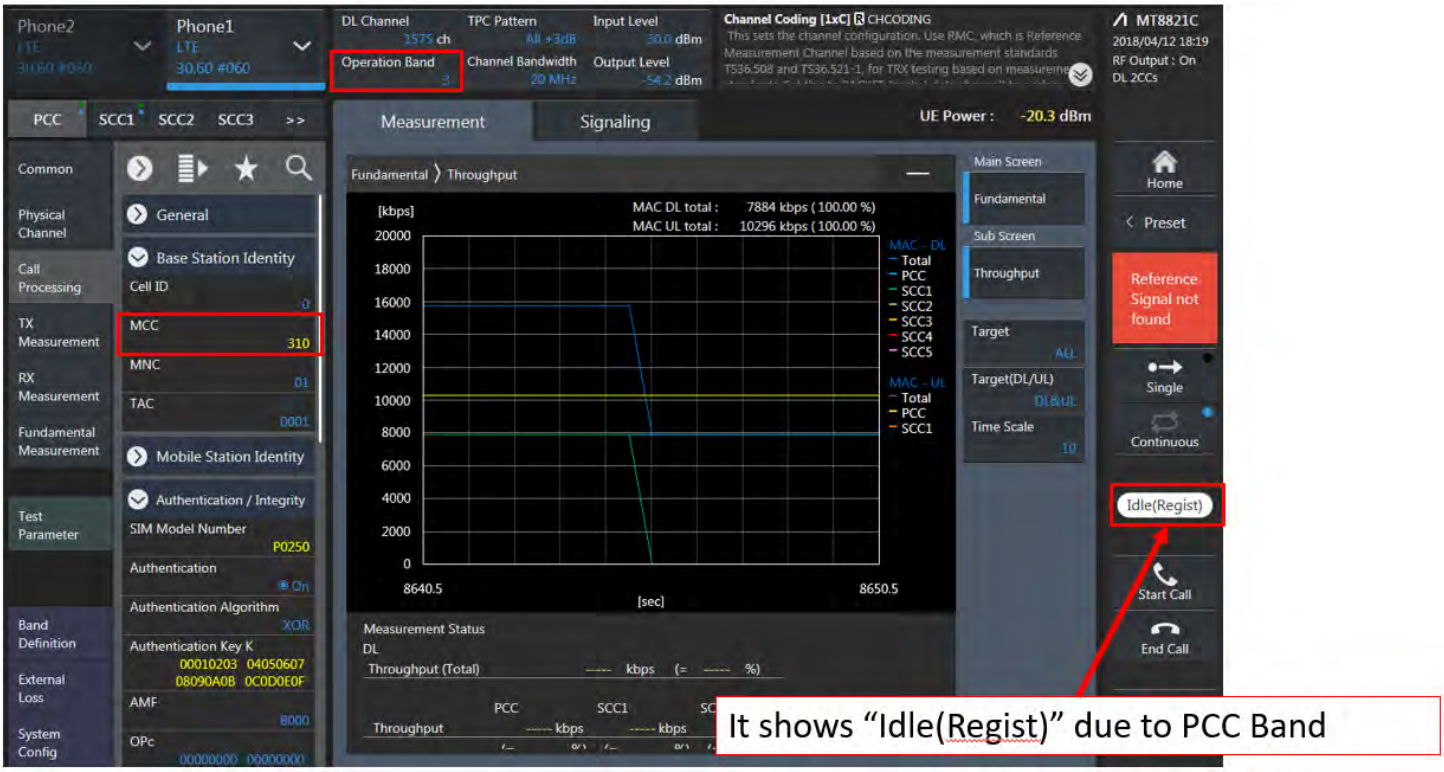
UE cannot register B40 at US MCC (310)



UE cannot register B46 at US MCC (310) PCC_B3[CA_3A-46A]



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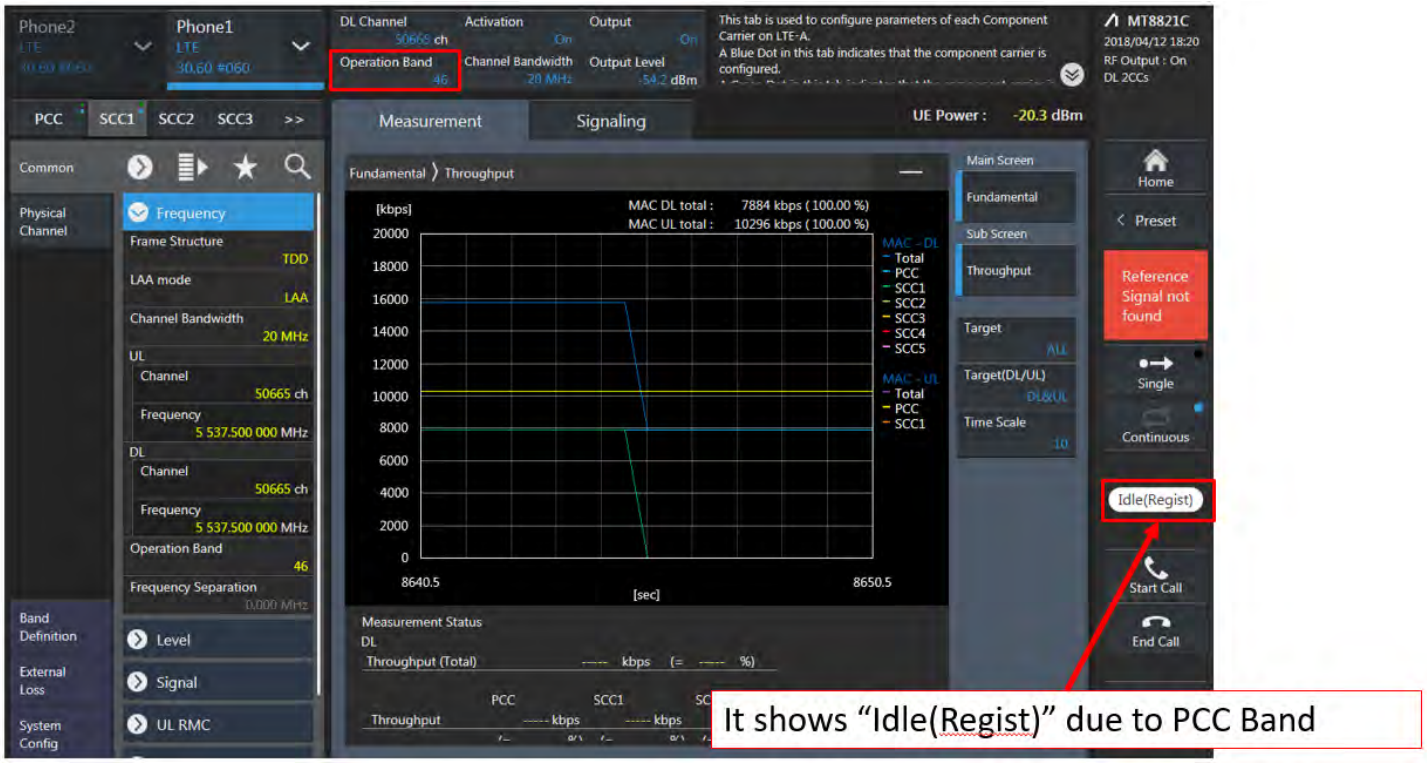
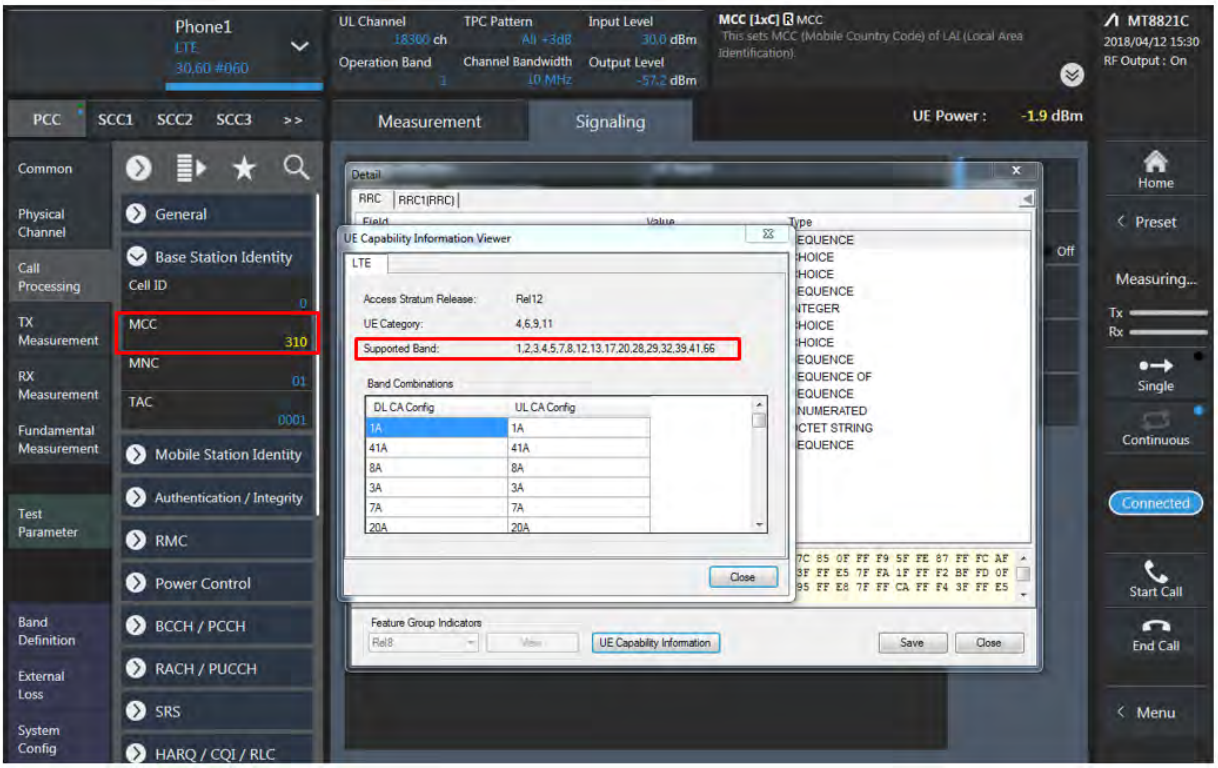
UE cannot register B46 at US MCC (310) SCC_B46[CA_3A-46A]



UE capability does not have B19/38/40/46 at US MCC (310)



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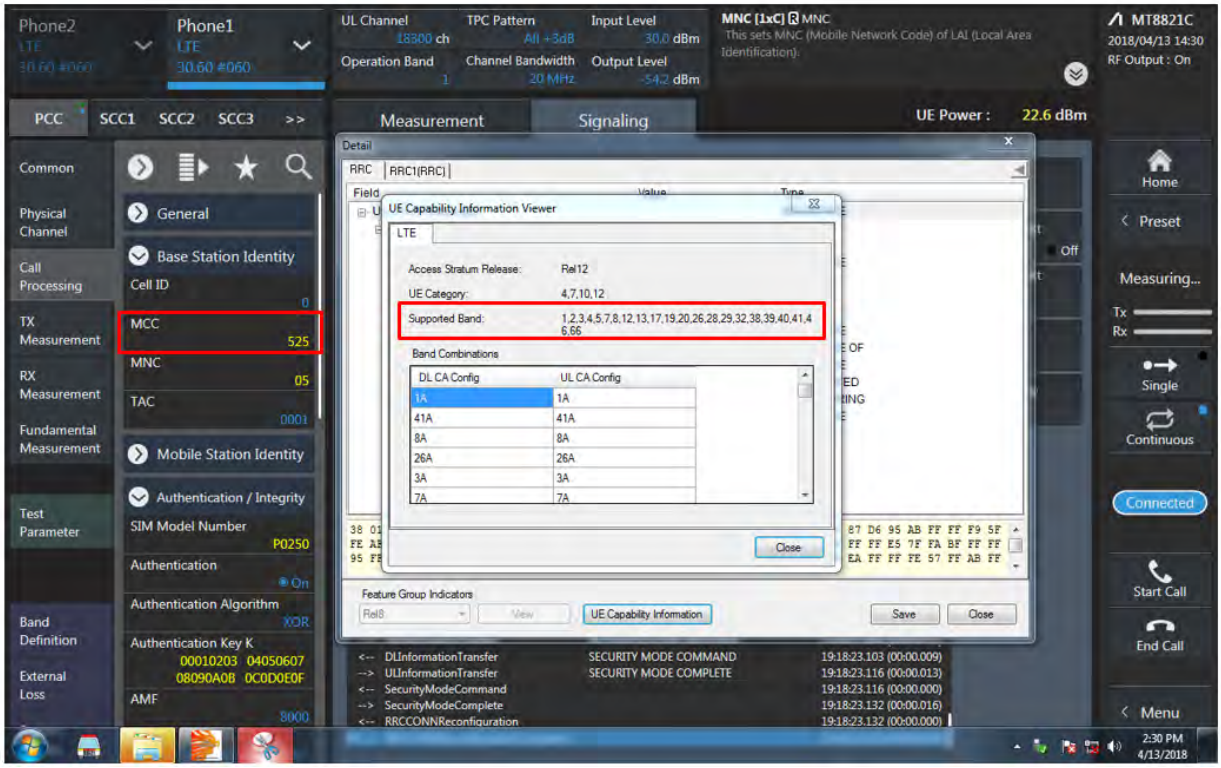
UE capability does have B19/38/40/46 at Non-US MCC (525)



END OF REPORT

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