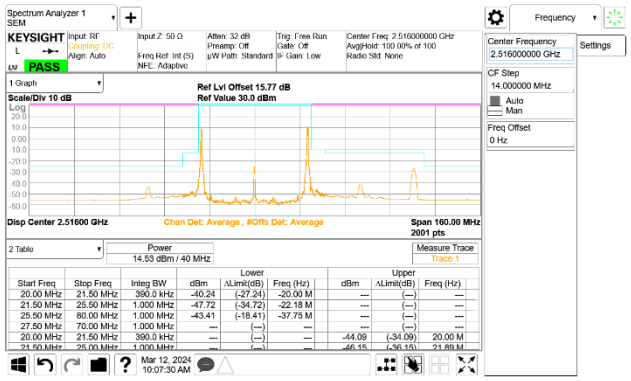
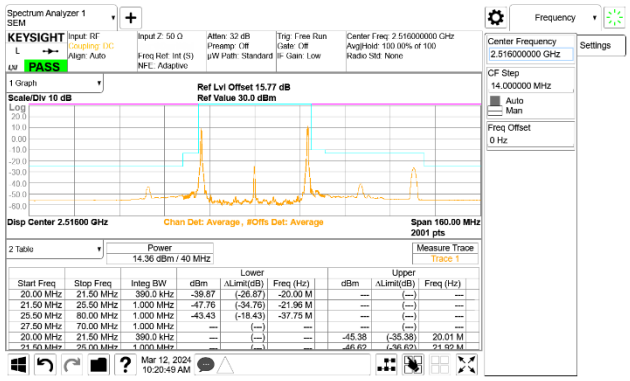
9.2.3. LTE BAND 41C

LIMITS

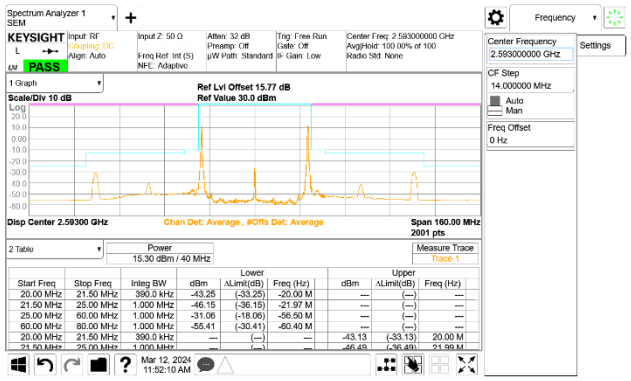
FCC: §27.53(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 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. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



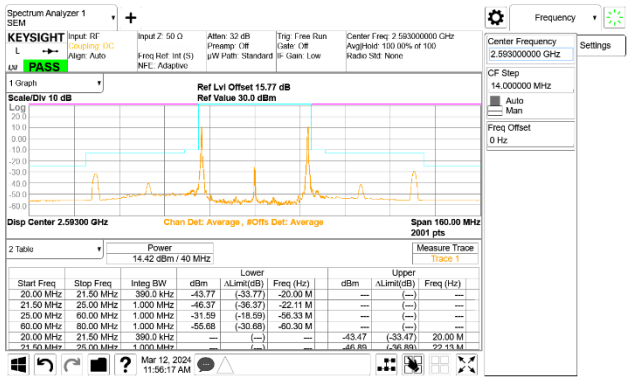
LTE B41 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99 ID:32061



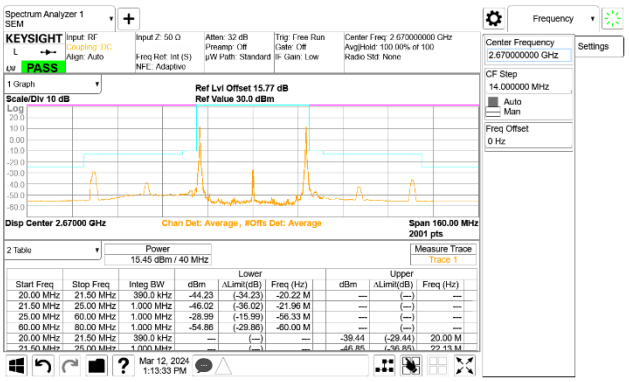
LTE B41 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99 ID:32061



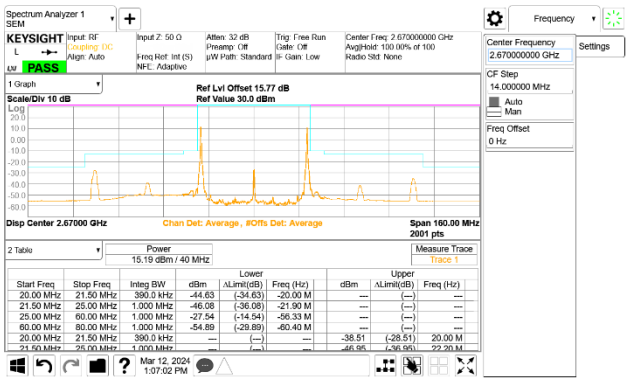
LTE B41 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99 ID:32061



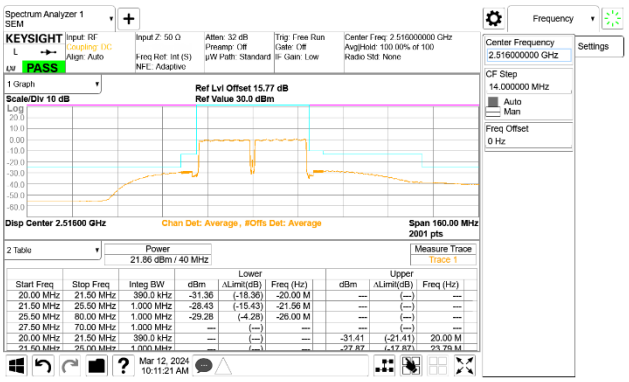
LTE B41 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99 ID:32061



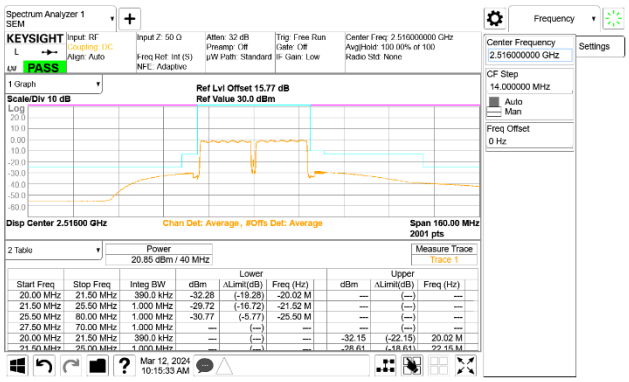
LTE B41 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99 ID:32061



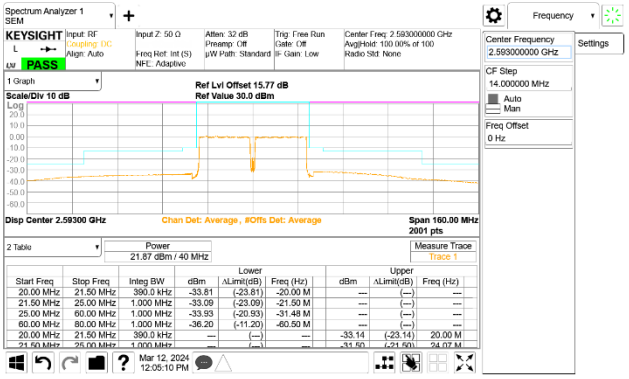
LTE B41 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99 ID:32061



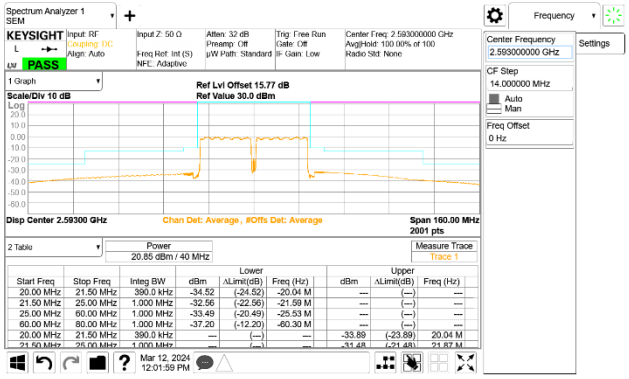
LTE B41 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0 ID:32061



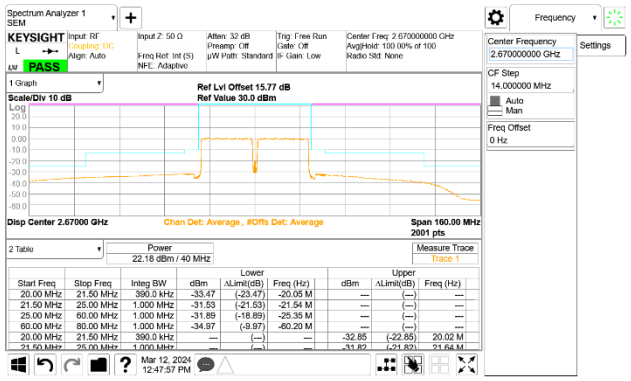
LTE B41 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0 ID:32061



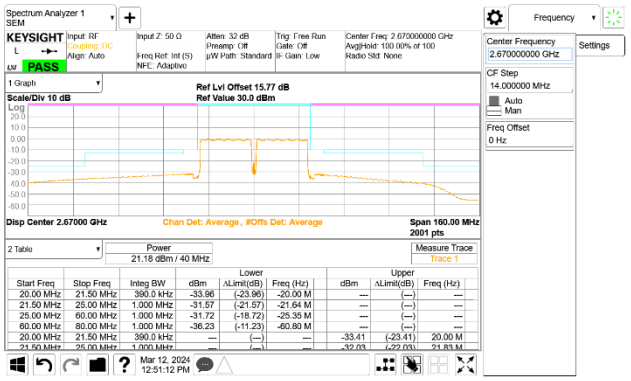
LTE B41 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0 ID:32061



LTE B41 20MHz + 20MHz 16QAM Mid Ch RB100-0 + RB100-0 ID:32061



LTE B41 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0
ID:32061

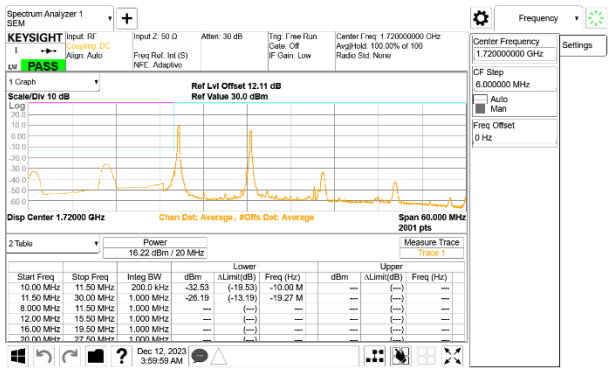


LTE B41 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0
ID:32061

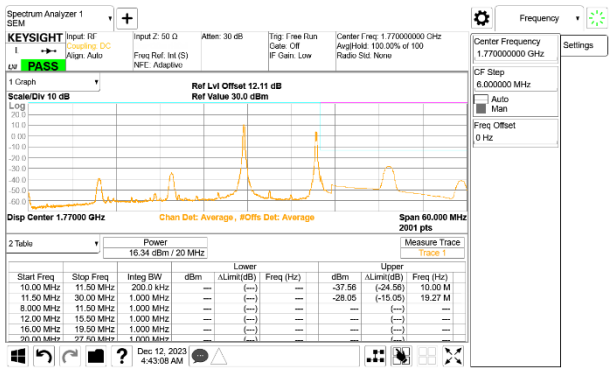
9.2.4. LTE BAND 66B

LIMITS

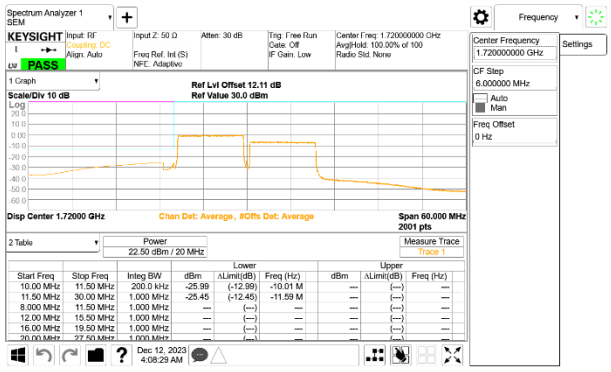
FCC: §27.53(h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.



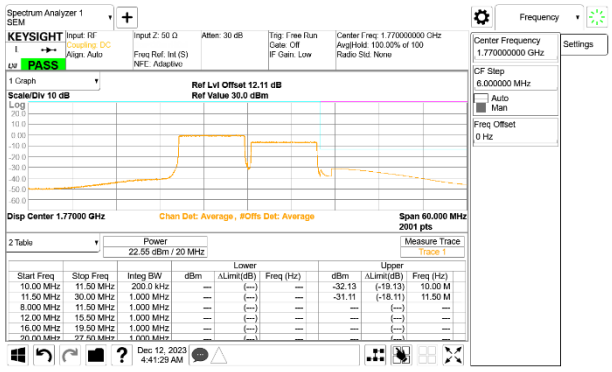
LTE B66B 10MHz + 10MHz QPSK Low Ch RB1-0 + RB1-0
ID:32061



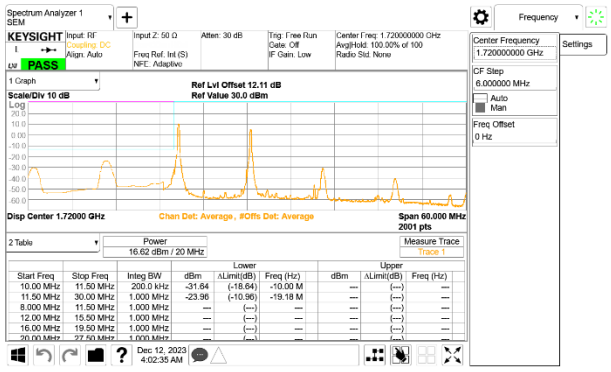
LTE B66B 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-49
ID:32061



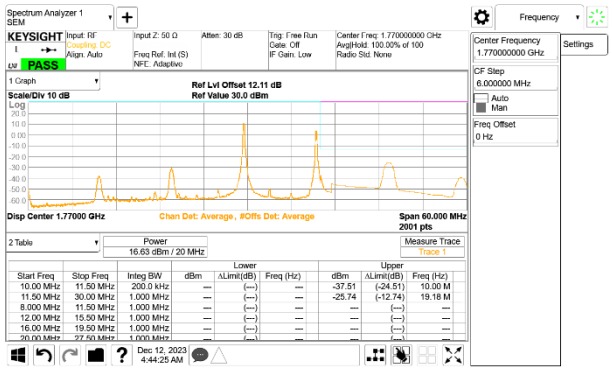
LTE B66B 10MHz + 10MHz QPSK Low Ch RB50-0 + RB50-0
ID:32061



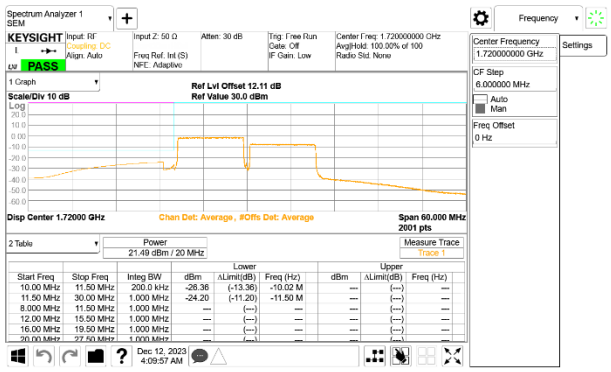
LTE B66B 10MHz + 10MHz QPSK High Ch RB50-0 + RB50-0
ID:32061



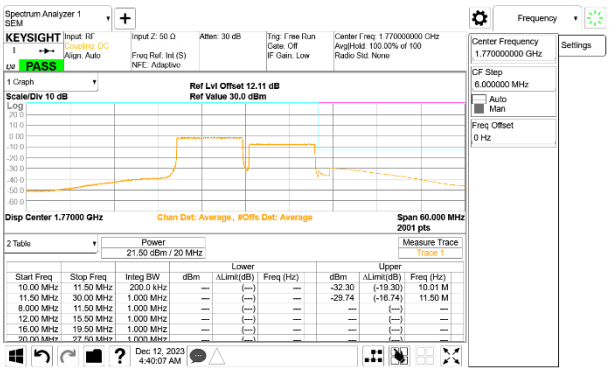
LTE B66B 10MHz + 10MHz 16QAM Low Ch RB1-0 + RB1-0
ID:32061



LTE B66B 10MHz + 10MHz 16QAM High Ch RB1-49 + RB1-49
ID:32061



LTE B66B 10MHz + 10MHz 16QAM Low Ch RB50-0 + RB50-0
ID:32061

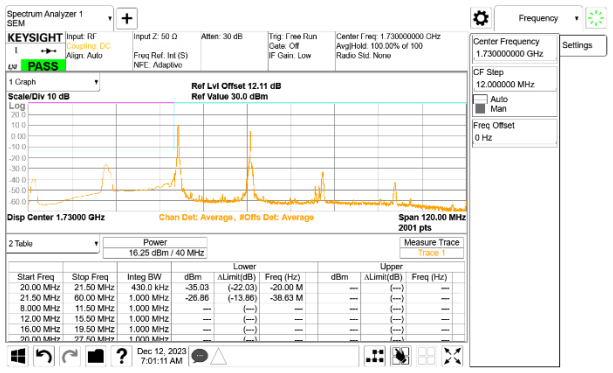


LTE B66B 10MHz + 10MHz 16QAM High Ch RB50-0 + RB50-0
ID:32061

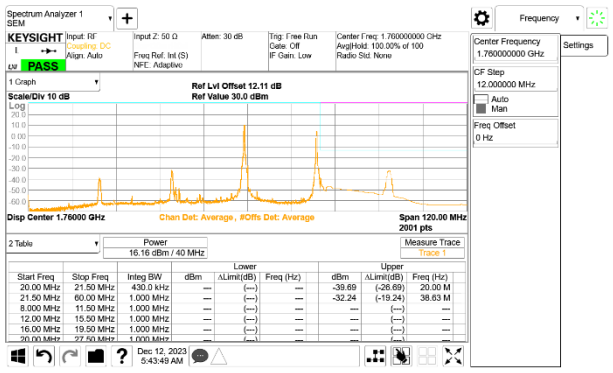
9.2.5. LTE BAND 66C

LIMITS

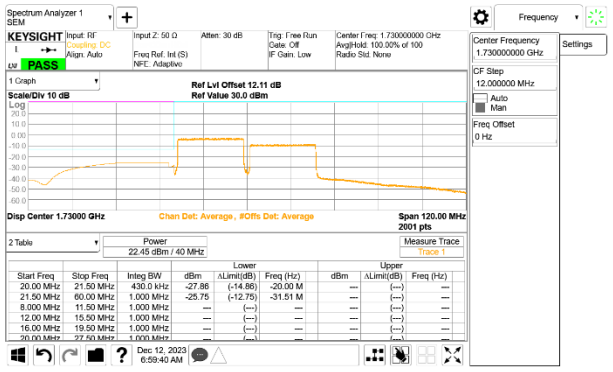
FCC: §27.53(h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.



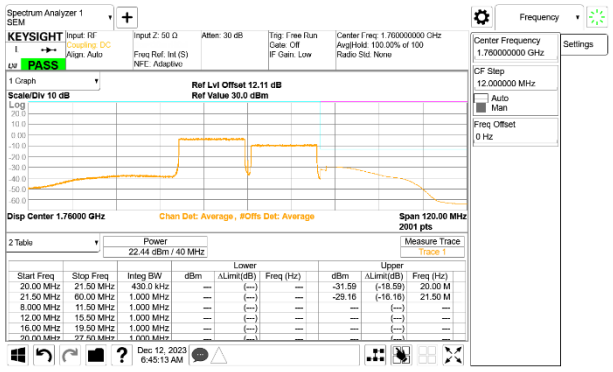
LTE B66C 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-0
ID:32061



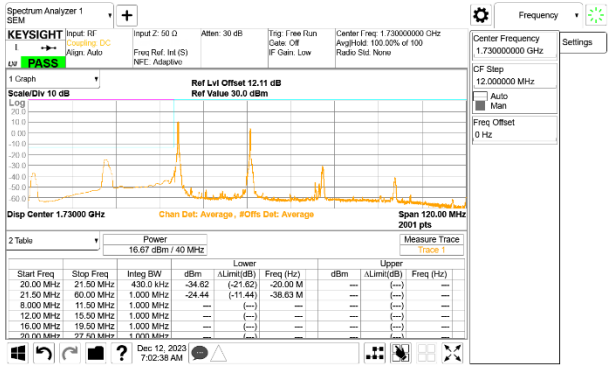
LTE B66C 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-99
ID:32061



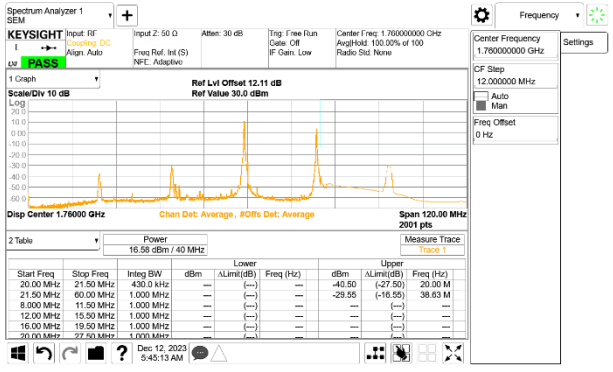
LTE B66C 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0
ID:32061



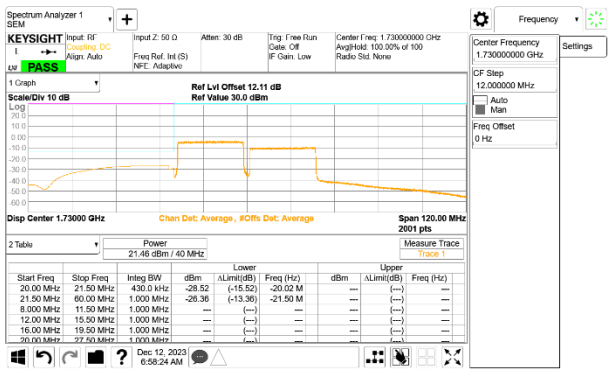
LTE B66C 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0
ID:32061



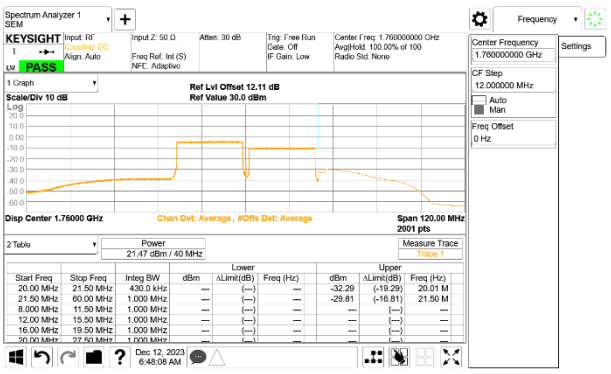
LTE B66C 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-0
ID:32061



LTE B66C 20MHz + 20MHz 16QAM High Ch RB1-99 + RB1-99
ID:32061



LTE B66C 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0
ID:32061



LTE B66C 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0
ID:32061

9.3. OUT OF BAND EMISSIONS

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

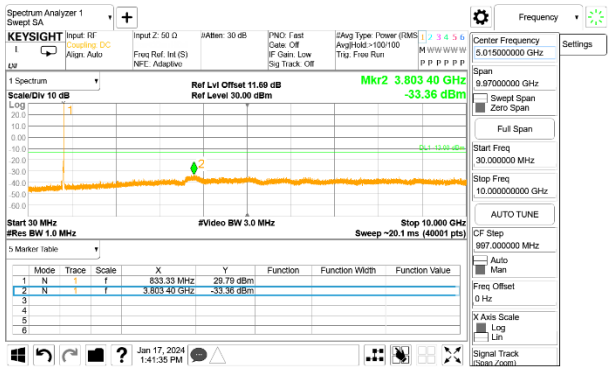
- Set display line at -13 dBm to band 5 and -25 dBm to band 7 and 41
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz. (NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

9.3.1. LTE BAND 5B

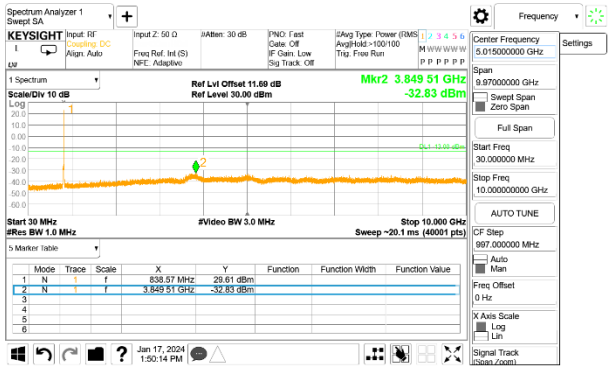
LIMITS

FCC: §22.917
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B5 10MHz + 10MHz QPSK Low Ch RB1-49 + RB1-0
ID:32061

LTE B5 10MHz + 10MHz QPSK Middle Ch RB1-49 + RB1-0
ID:32061

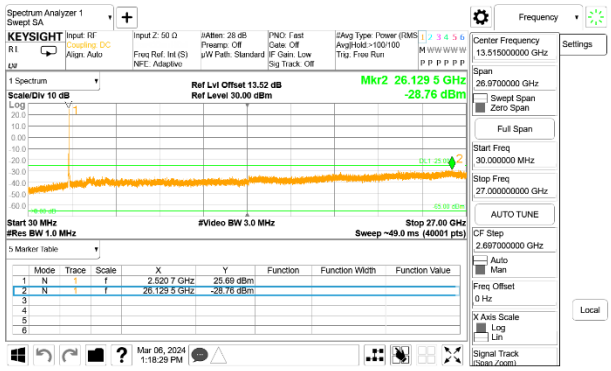


LTE B5 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-0
ID:32061

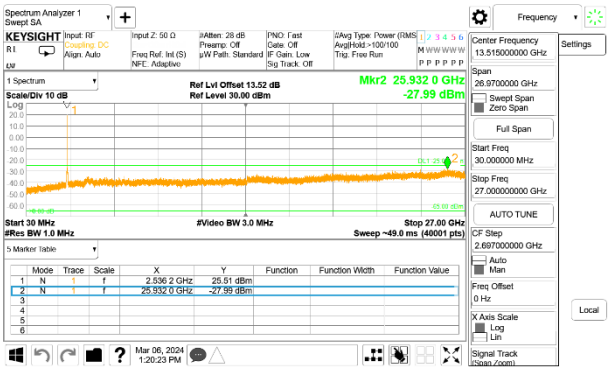
9.3.2. LTE BAND 7C

LIMITS

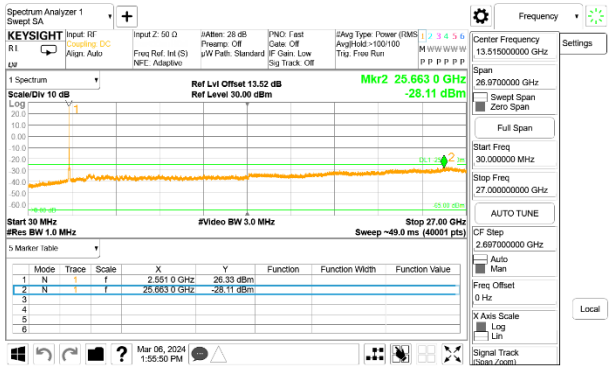
FCC: §27.53 (m)
The minimum permissible attenuation level of any spurious emissions is 55 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B7 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0
ID:32061



LTE B7 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0
ID:32061

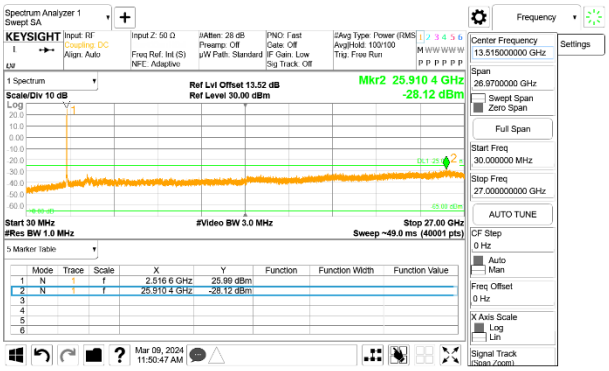


LTE B7 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0
ID:32061

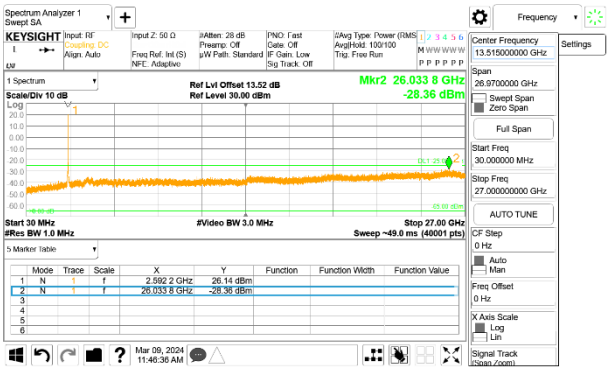
9.3.3. LTE BAND 41C

LIMITS

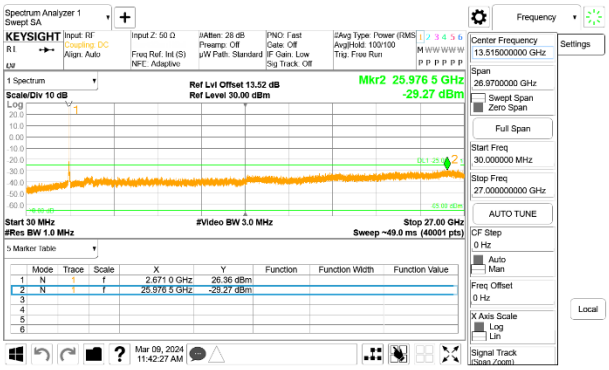
FCC: §27.53 (m)
The minimum permissible attenuation level of any spurious emissions is 55 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B41 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0
ID:32061



LTE B41 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0
ID:32061

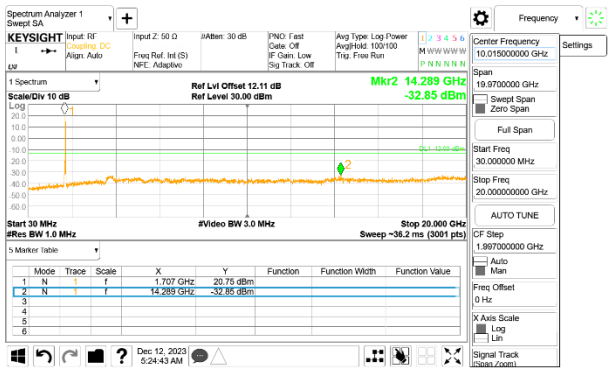


LTE B41 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0
ID:32061

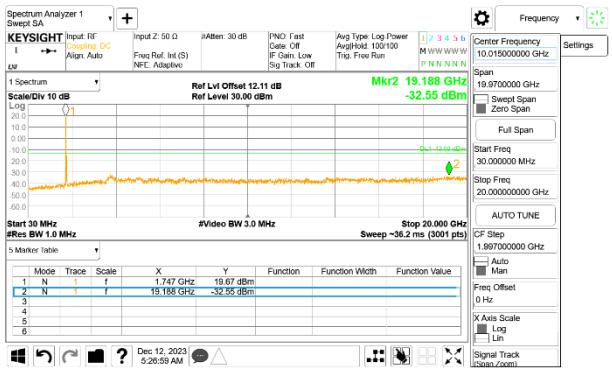
9.3.4. LTE BAND 66B

LIMITS

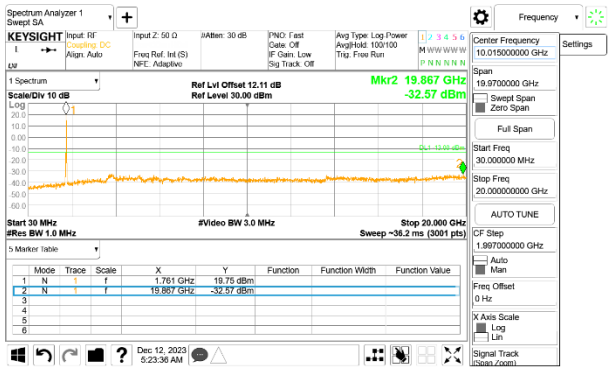
FCC: §27.53 (h)
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B66B 10MHz + 10MHz QPSK Low Ch RB1-49 + RB1-0
ID:32061



LTE B66B 10MHz + 10MHz QPSK Middle Ch RB1-49 + RB1-0
ID:32061

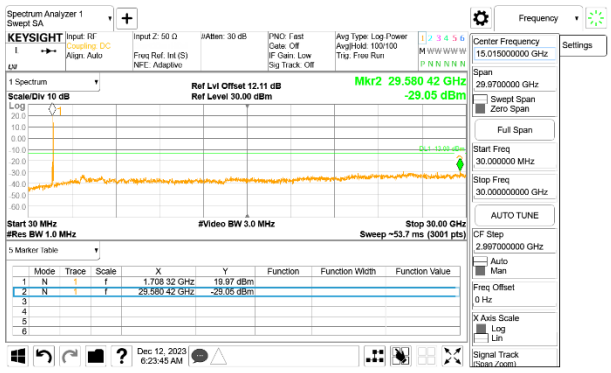


LTE B66B 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-0
ID:32061

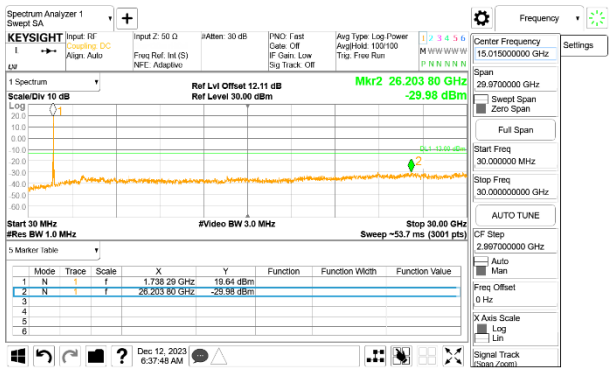
9.3.5. LTE BAND 66C

LIMITS

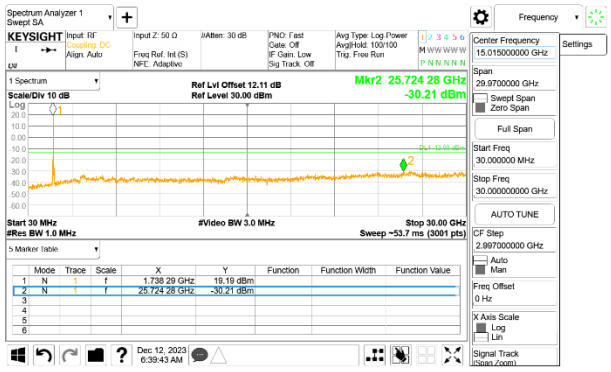
FCC: §27.53 (h)
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B66C 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0
ID:32061



LTE B66C 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0
ID:32061



LTE B66C 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0
ID:32061

9.4. FREQUENCY STABILITY

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

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

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

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

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

RESULTS

See the following pages.

9.4.1. LTE BAND 5B

LIMITS

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

Test Engineer ID:	32546	Test Date:	2024-03-21

QPSK (10MHz + 10MHz BANDWIDTH)

Band	5	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	824.5790	848.4209			
Extreme (50°C)		824.5790	848.4209	-4.1	-0.005	Yes
Extreme (40°C)		824.5790	848.4209	-4.1	-0.005	Yes
Extreme (30°C)		824.5790	848.4209	-4.3	-0.005	Yes
Extreme (10°C)		824.5790	848.4209	-5.2	-0.006	Yes
Extreme (0°C)		824.5790	848.4209	-4.0	-0.005	Yes
Extreme (-10°C)		824.5790	848.4209	-3.7	-0.004	Yes
Extreme (-20°C)		824.5790	848.4209	-3.5	-0.004	Yes
Extreme (-30°C)		824.5790	848.4209	-3.5	-0.004	Yes
20°C	15%	824.5790	848.4209	-4.0	-0.005	Yes
	-15%	824.5790	848.4209	-4.0	-0.005	Yes
	End Point Voltage	824.5790	848.4209	-4.2	-0.005	Yes

9.4.2. LTE BAND 7C

LIMITS

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

Test Engineer ID:	32546	Test Date:	2024-03-22

QPSK (20MHz + 20MHz BANDWIDTH)

Band	7	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2500	2570			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2501.1441	2568.8568			
Extreme (50°C)		2501.1441	2568.8568	9.7	0.004	Yes
Extreme (40°C)		2501.1441	2568.8568	7.3	0.003	Yes
Extreme (30°C)		2501.1441	2568.8568	10.1	0.004	Yes
Extreme (10°C)		2501.1441	2568.8568	-12.2	-0.005	Yes
Extreme (0°C)		2501.1441	2568.8568	8.5	0.003	Yes
Extreme (-10°C)		2501.1441	2568.8568	10.1	0.004	Yes
Extreme (-20°C)		2501.1441	2568.8568	14.3	0.006	Yes
Extreme (-30°C)		2501.1441	2568.8568	17.4	0.007	Yes
20°C	15%	2501.1441	2568.8568	9.9	0.004	Yes
	-15%	2501.1441	2568.8568	9.3	0.004	Yes
	End Point Voltage	2501.1441	2568.8568	11.3	0.004	Yes

9.4.3. LTE BAND 41C

LIMITS

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

Test Engineer ID:	32546	Test Date:	2024-03-21

QPSK (20MHz + 20MHz BANDWIDTH)

Band	41	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2496	2690			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	2496.7433	2689.3006			
Extreme (50°C)		2496.7433	2689.3006	10.4	0.004	Yes
Extreme (40°C)		2496.7433	2689.3006	9.4	0.004	Yes
Extreme (30°C)		2496.7433	2689.3006	10.2	0.004	Yes
Extreme (10°C)		2496.7433	2689.3006	10.4	0.004	Yes
Extreme (0°C)		2496.7433	2689.3006	-8.5	-0.003	Yes
Extreme (-10°C)		2496.7433	2689.3006	-8.8	-0.003	Yes
Extreme (-20°C)		2496.7433	2689.3006	10.2	0.004	Yes
Extreme (-30°C)		2496.7433	2689.3006	-9.9	-0.004	Yes
20°C	15%	2496.7433	2689.3006	7.5	0.003	Yes
	-15%	2496.7433	2689.3006	7.5	0.003	Yes
	End Point Voltage	2496.7433	2689.3006	7.9	0.003	Yes

9.4.4. LTE BAND 66B

LIMITS

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

Test Engineer ID:	32546	Test Date:	2024-03-21

QPSK (10MHz + 10MHz BANDWIDTH)

Band	66	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1780			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	1710.5720	1779.4149			
Extreme (50°C)		1710.5720	1779.4149	4.6	0.003	Yes
Extreme (40°C)		1710.5720	1779.4149	-5.0	-0.003	Yes
Extreme (30°C)		1710.5720	1779.4149	-4.0	-0.002	Yes
Extreme (10°C)		1710.5720	1779.4149	-5.3	-0.003	Yes
Extreme (0°C)		1710.5720	1779.4149	-6.9	-0.004	Yes
Extreme (-10°C)		1710.5720	1779.4149	-4.6	-0.003	Yes
Extreme (-20°C)		1710.5720	1779.4149	-3.9	-0.002	Yes
Extreme (-30°C)		1710.5720	1779.4149	-4.9	-0.003	Yes
20°C	15%	1710.5720	1779.4149	-2.9	-0.002	Yes
	-15%	1710.5720	1779.4149	-4.2	-0.002	Yes
	End Point Voltage	1710.5720	1779.4149	-4.0	-0.002	Yes

9.4.5. LTE BAND 66C

LIMITS

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

Test Engineer ID:	32546	Test Date:	2024-03-21

QPSK (20MHz + 20MHz BANDWIDTH)

Band	66	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1780			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	1711.1313	1778.8261			
Extreme (50°C)		1711.1313	1778.8261	6.3	0.004	Yes
Extreme (40°C)		1711.1313	1778.8261	6.5	0.004	Yes
Extreme (30°C)		1711.1313	1778.8261	-5.6	-0.003	Yes
Extreme (10°C)		1711.1313	1778.8261	-7.5	-0.004	Yes
Extreme (0°C)		1711.1313	1778.8261	-5.4	-0.003	Yes
Extreme (-10°C)		1711.1313	1778.8261	-5.3	-0.003	Yes
Extreme (-20°C)		1711.1313	1778.8261	-5.1	-0.003	Yes
Extreme (-30°C)		1711.1313	1778.8261	6.9	0.004	Yes
20°C	15%	1711.1313	1778.8261	7.3	0.004	Yes
	-15%	1711.1313	1778.8261	7.0	0.004	Yes
	End Point Voltage	1711.1313	1778.8261	8.9	0.005	Yes

9.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

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

RESULT

Test was performed on Antenna 1; 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 ratio criteria.

9.5.1. LTE BAND 5B

Test Engineer ID:	50822	**Test Date:**	2024-01-16

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 5	3MHz / 5MHz	834.0	837.9	QPSK	30.63	23.68	6.95
				16QAM	30.61	23.64	6.97
	5 MHz / 3MHz	835.0	838.9	QPSK	30.71	23.74	6.97
				16QAM	30.61	23.67	6.94
	5MHz / 10MHz	831.6	838.8	QPSK	30.84	22.60	8.24
				16QAM	29.92	21.67	8.25
	10MHz / 5MHz	834.3	841.5	QPSK	31.02	22.69	8.33
				16QAM	29.96	21.68	8.28
	10MHz / 10MHz	831.5	841.4	QPSK	31.05	22.67	8.38
				16QAM	30.37	21.70	8.67
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.2. LTE BAND 7C

Test Engineer ID:	50822	**Test Date:**	2024-03-05

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 7	10MHz / 20MHz	2525.6	2540.0	QPSK	30.78	21.56	9.22
				16QAM	30.34	20.54	9.80
	20MHz / 10MHz	2530.1	2544.5	QPSK	30.60	21.57	9.03
				16QAM	30.81	20.55	10.26
	15 MHz / 15MHz	2527.5	2542.5	QPSK	30.61	21.54	9.07
				16QAM	30.80	20.53	10.27
	15MHz / 20MHz	2525.3	2542.4	QPSK	30.63	21.52	9.11
				16QAM	30.51	20.50	10.01
	20MHz / 15MHz	2527.6	2544.7	QPSK	30.46	21.53	8.93
				16QAM	30.58	20.52	10.06
	20MHz / 20MHz	2525.1	2544.9	QPSK	30.66	21.5	9.16
				16QAM	30.74	20.49	10.25
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.3. LTE BAND 41C

Test Engineer ID:	50822	Test Date:	2024-03-07

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 41 (FCC)	5MHz / 20MHz	2583.8	2595.5	QPSK	32.46	21.50	6.94
				16QAM	32.14	20.46	7.66
	20MHz / 5MHz	2590.5	2602.2	QPSK	32.47	21.42	7.03
				16QAM	31.89	20.38	7.49
	10MHz / 20MHz	2583.6	2598.0	QPSK	32.45	21.42	7.01
				16QAM	31.66	20.39	7.25
	20MHz / 10MHz	2588.1	2602.5	QPSK	32.23	21.49	6.72
				16QAM	32.19	20.48	7.69
	15MHz / 15MHz	2585.5	2600.5	QPSK	32.42	21.49	6.91
				16QAM	32.51	20.46	8.03
	15MHz / 20MHz	2583.3	2600.4	QPSK	32.60	21.44	7.14
				16QAM	31.93	20.4	7.51
	20MHz / 15MHz	2585.6	2602.7	QPSK	32.25	21.46	6.77
				16QAM	32.01	20.42	7.57
	20MHz / 20MHz	2583.1	2602.9	QPSK	31.98	21.43	6.53
				16QAM	31.73	20.39	7.32
Duty Cycle Correction Factor (dB) =			4.02				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.4. LTE BAND 66B

Test Engineer ID:	50822	Test Date:	2024-01-09

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 66B	5MHz / 5MHz	1752.6	1757.4	QPSK	29.32	21.15	8.17
				16QAM	28.22	20.34	7.88
	5MHz / 10MHz	1750.3	1757.5	QPSK	29.46	21.33	8.13
				16QAM	28.16	20.31	7.85
	10 MHz / 5MHz	1752.5	1759.7	QPSK	29.41	21.35	8.06
				16QAM	28.17	20.34	7.83
	5MHz / 15MHz	1748.1	1757.4	QPSK	30.64	21.34	9.30
				16QAM	30.94	20.33	10.61
	15MHz / 5MHz	1752.6	1761.9	QPSK	30.98	21.39	9.59
				16QAM	30.50	20.38	10.12
	10MHz / 10MHz	1750.1	1760.0	QPSK	29.56	21.34	8.22
				16QAM	28.27	20.32	7.95
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.5. LTE BAND 66C

Test Engineer ID:	50822	Test Date:	2024-01-09

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 66C	10MHz / 15MHz	1749.9	1759.9	QPSK	30.69	21.31	9.38
				16QAM	30.63	20.31	10.32
	15MHz / 10MHz	1750.1	1762.1	QPSK	30.62	21.35	9.27
				16QAM	30.52	20.37	10.15
	10MHz / 20MHz	1745.6	1760.0	QPSK	30.60	21.31	9.29
				16QAM	30.48	20.31	10.17
	20MHz / 10MHz	1750.1	1764.5	QPSK	30.51	21.35	9.16
				16QAM	30.49	20.33	10.16
	15MHz / 15MHz	1747.5	1762.5	QPSK	30.37	21.33	9.04
				16QAM	29.92	20.32	9.60
	15MHz / 20MHz	1745.3	1762.4	QPSK	30.56	21.28	9.28
				16QAM	30.28	20.26	10.02
	20MHz / 15MHz	1747.6	1764.7	QPSK	30.72	21.31	9.41
				16QAM	30.80	20.31	10.49
	20MHz / 5MHz	1752.5	1764.2	QPSK	30.86	21.38	9.48
				16QAM	30.98	20.37	10.61
	5MHz / 20MHz	1745.8	1757.5	QPSK	30.74	21.32	9.42
				16QAM	30.40	20.31	10.09
	20MHz / 20MHz	1745.1	1764.9	QPSK	30.17	21.27	8.90
				16QAM	30.22	20.26	9.96
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

10. RADIATED TEST RESULTS

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

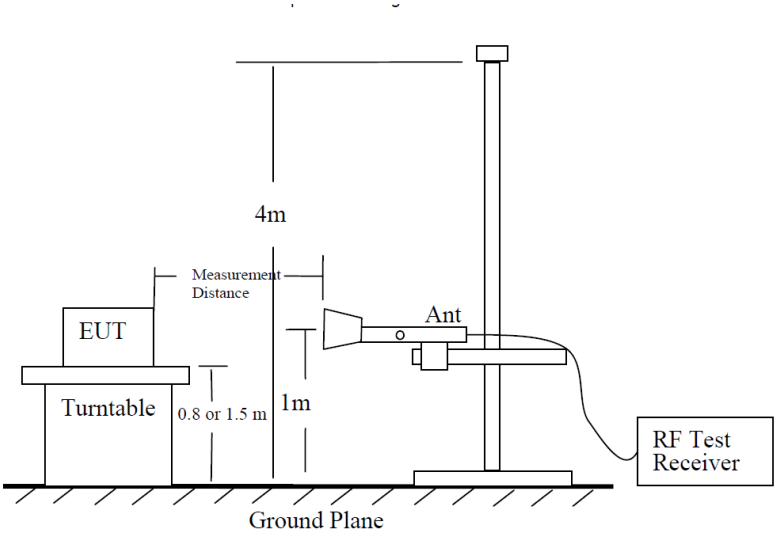


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

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

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

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

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

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

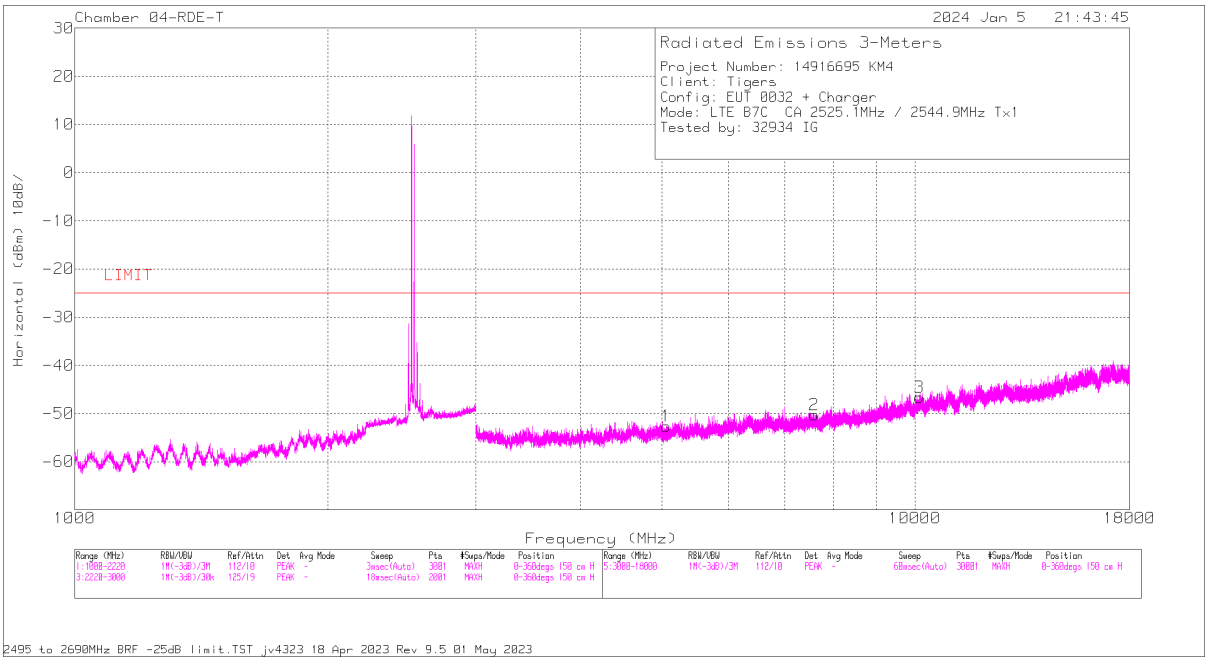
So, from d)

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

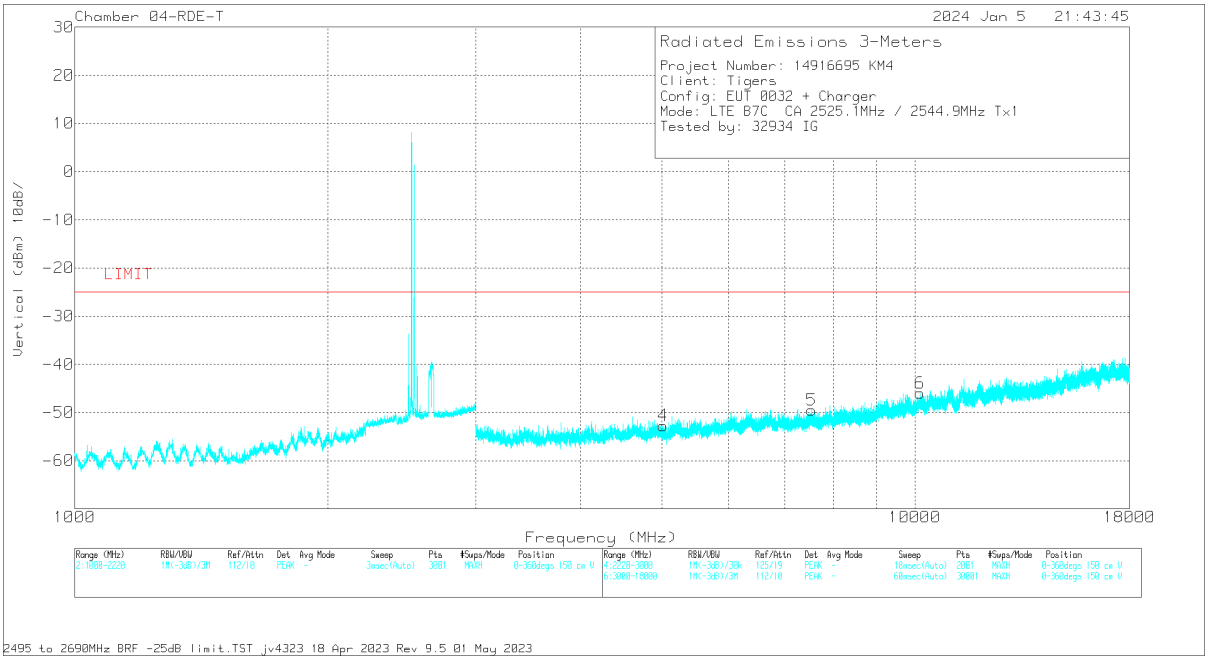
Then, EIRP (dBm) = E (dBµV/m) + 9.5424 − 104.8 = E (dBµV/m) – 95.2576

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

Example Plot



Horizontal Polarity



Vertical Polarity

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404_ACF(dB) - 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
1	5057	55.13	Pk	34.1	-95.2	-46.59	-52.56	-25	-27.56	H
2	7587	53.19	Pk	35.8	-95.2	-44.08	-50.29	-25	-25.29	H
4	5016.5	54.96	Pk	34	-95.2	-46.44	-52.68	-25	-27.68	V
5	7531	54.02	Pk	35.7	-95.2	-44.04	-49.52	-25	-24.52	V
3	10118	53.44	Pk	37.2	-95.2	-42.11	-46.67	-25	-21.67	H
6	10135	54.1	Pk	37.2	-95.2	-42.01	-45.91	-25	-20.91	V

10.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 0

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02r02

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

RESULTS

10.1.1. LTE BAND 5B

LIMIT

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

QPSK LTE BAND 5 (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-04
Test Engineer:	VK 25019
Configuration:	EUT + Charger
Mode	LTE Band 5 QPSK 10MHz + 10MHz
Chamber #:	04-RDE-N

Frequency (MHz)	Meter Reading (dBuV)	Det	206805 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz + 838.9MHz									
1668.7	61.57	Pk	28.5	-95.2	-52.77	-57.9	-13	-44.9	H
1668.7	60.45	Pk	28.5	-95.2	-52.77	-59.02	-13	-46.02	V
2502.55	59.2	Pk	32.5	-95.2	-51.11	-54.61	-13	-41.61	H
2502.55	57.77	Pk	32.5	-95.2	-51.11	-56.04	-13	-43.04	V
3336.4	57.79	Pk	32.7	-95.2	-50.27	-54.98	-13	-41.98	H
3336.4	58.17	Pk	32.7	-95.2	-50.27	-54.6	-13	-41.6	V
Mid Channel, 831.6MHz + 841.5MHz									
1674.1	61.03	Pk	28.5	-95.2	-52.77	-58.44	-13	-45.44	H
1674.1	60.66	Pk	28.5	-95.2	-52.77	-58.81	-13	-45.81	V
2511.1	58.04	Pk	32.4	-95.2	-51.21	-55.97	-13	-42.97	H
2511.1	57.78	Pk	32.4	-95.2	-51.21	-56.23	-13	-43.23	V
3349	57.88	Pk	32.6	-95.2	-50.12	-54.84	-13	-41.84	H
3349	57.52	Pk	32.6	-95.2	-50.12	-55.2	-13	-42.2	V
High Channel, 834.1MHz + 844MHz									
1678.6	60.37	Pk	28.5	-95.2	-52.41	-58.74	-13	-45.74	H
1678.6	60.46	Pk	28.5	-95.2	-52.41	-58.65	-13	-45.65	V
2517.85	57.63	Pk	32.4	-95.2	-51.12	-56.29	-13	-43.29	H
2517.85	57.43	Pk	32.4	-95.2	-51.12	-56.49	-13	-43.49	V
3357.1	57.62	Pk	32.6	-95.2	-49.99	-54.97	-13	-41.97	H
3357.1	58.41	Pk	32.6	-95.2	-49.99	-54.18	-13	-41.18	V

10.1.2. LTE BAND 7C

LIMIT

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

QPSK LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-05
Test Engineer:	VK 25019
Configuration:	EUT + Charger
Mode	LTE Band 7 QPSK 20MHz + 20MHz
Chamber #:	04-RDE-N

Frequency (MHz)	Meter Reading (dBuV)	Det	206805 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz + 2529.8MHz									
5016	55.85	Pk	34	-95.2	-46.44	-51.79	-25	-26.79	H
7523	53.08	Pk	35.7	-95.2	-43.93	-50.35	-25	-25.35	H
4979	55.29	Pk	34	-95.2	-46.41	-52.32	-25	-27.32	V
7526.5	53.48	Pk	35.7	-95.2	-44	-50.02	-25	-25.02	V
10012	53.75	Pk	37.1	-95.2	-42.64	-46.99	-25	-21.99	V
10032.5	53.72	Pk	37.1	-95.2	-42.72	-47.1	-25	-22.1	H
Mid Channel, 2525.1MHz + 2544.9MHz									
5057	55.13	Pk	34.1	-95.2	-46.59	-52.56	-25	-27.56	H
7587	53.19	Pk	35.8	-95.2	-44.08	-50.29	-25	-25.29	H
5016.5	54.96	Pk	34	-95.2	-46.44	-52.68	-25	-27.68	V
7531	54.02	Pk	35.7	-95.2	-44.04	-49.52	-25	-24.52	V
10118	53.44	Pk	37.2	-95.2	-42.11	-46.67	-25	-21.67	H
10135	54.1	Pk	37.2	-95.2	-42.01	-45.91	-25	-20.91	V
High Channel, 2540.2MHz + 2560MHz									
5100.5	57.04	Pk	34.4	-95.2	-49.97	-53.73	-25	-28.73	H
5100.5	56.56	Pk	34.4	-95.2	-49.97	-54.21	-25	-29.21	V
7651	52.29	Pk	35.7	-95.2	-44.71	-51.92	-25	-26.92	H
7651	51.64	Pk	35.7	-95.2	-44.71	-52.57	-25	-27.57	V
10201	47.36	Pk	37.6	-95.2	-38.54	-48.78	-25	-23.78	H
10201	45.8	Pk	37.6	-95.2	-38.54	-50.34	-25	-25.34	V

10.1.3. LTE BAND 41C

LIMIT

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

QPSK LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-05
Test Engineer:	VK 25019
Configuration:	EUT + Charger
Mode	LTE BAND 41 20.0MHz + 20.0MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz + 2529.8MHz									
5032	52.82	Pk	34	-95.2	-46.5	-54.88	-25	-29.88	H
7548	52.4	Pk	35.8	-95.2	-44.26	-51.26	-25	-26.26	V
5032	52.79	Pk	34	-95.2	-46.5	-54.91	-25	-29.91	H
7548	51.9	Pk	35.8	-95.2	-44.26	-51.76	-25	-26.76	V
10064	52.15	Pk	37.2	-95.2	-42.47	-48.32	-25	-23.32	H
10064	52.12	Pk	37.2	-95.2	-42.47	-48.35	-25	-23.35	V
Mid Channel, 2585.1MHz + 2604.9MHz									
5179.75	53.27	Pk	34.3	-95.2	-45.93	-53.56	-25	-28.56	H
5180	53.05	Pk	34.3	-95.2	-45.93	-53.78	-25	-28.78	V
7779	51.36	Pk	35.8	-95.2	-43.51	-51.55	-25	-26.55	H
7779	50.29	Pk	35.8	-95.2	-43.51	-52.62	-25	-27.62	V
10372	50.59	Pk	37.4	-95.2	-42.27	-49.48	-25	-24.48	V
10372	50.41	Pk	37.4	-95.2	-42.27	-49.66	-25	-24.66	H
High Channel, 2660.2MHz + 2680MHz									
10680	51.01	Pk	37.7	-95.2	-42.32	-48.81	-25	-23.81	**H**
10680	51.06	Pk	37.7	-95.2	-42.32	-48.76	-25	-23.76	**H**
5340	52.02	Pk	34.5	-95.2	-46.02	-54.7	-25	-29.7	**V**
5340	51.58	Pk	34.5	-95.2	-46.02	-55.14	-25	-30.14	**V**
8010.5	53.37	Pk	35.8	-95.2	-43.61	-49.64	-25	-24.64	**H**
8010.5	51.27	Pk	35.8	-95.2	-43.61	-51.74	-25	-26.74	**V**

10.1.4. LTE BAND 66B

LIMIT

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

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-05
Test Engineer:	VK 25019
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 10MHz + 10MHz
Chamber #:	04-RDE-N

Frequency (MHz)	Meter Reading (dBuV)	Det	206805 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
5146	54.6	Pk	34.2	-95.2	-46.1	-52.5	-13	-39.5	H
5117.5	55.08	Pk	34.1	-95.2	-46.24	-52.26	-13	-39.26	V
3438.5	54.57	Pk	32.8	-95.2	-45.07	-52.9	-13	-39.9	V
3441	54.3	Pk	32.8	-95.2	-45.06	-53.16	-13	-40.16	H
6856	52.96	Pk	35.6	-95.2	-44.47	-51.11	-13	-38.11	H
6917.5	55.01	Pk	35.6	-95.2	-44.16	-48.75	-13	-35.75	V
Mid Channel,1750.1MHz + 1760MHz									
3503	52.4	Pk	32.8	-95.2	-45.16	-55.16	-13	-42.16	H
3498	54.65	Pk	32.8	-95.2	-45.29	-53.04	-13	-40.04	V
5231	55.14	Pk	34.3	-95.2	-45.92	-51.68	-13	-38.68	V
5270	54.82	Pk	34.4	-95.2	-45.82	-51.8	-13	-38.8	H
7005	53.47	Pk	35.6	-95.2	-43.62	-49.75	-13	-36.75	H
7041	53.68	Pk	35.6	-95.2	-43.63	-49.55	-13	-36.55	V
High Channel, 1765.1MHz + 1775MHz									
3540.5	58.03	Pk	32.9	-95.2	-49.78	-54.05	-13	-41.05	H
3540.5	58.41	Pk	32.9	-95.2	-49.78	-53.67	-13	-40.67	V
5310	55.21	Pk	34.5	-95.2	-48.2	-53.69	-13	-40.69	H
5310	55.57	Pk	34.5	-95.2	-48.2	-53.33	-13	-40.33	V
7080	51.82	Pk	35.7	-95.2	-42.99	-50.67	-13	-37.67	H
7080	50.06	Pk	35.7	-95.2	-42.99	-52.43	-13	-39.43	V

10.1.5. LTE BAND 66C

LIMIT

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

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-05
Test Engineer:	IG 32934
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 20MHz + 20MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
5126	54.85	Pk	34.2	-95.2	-46.35	-52.5	-13	-39.5	V
3391	54.5	Pk	32.7	-95.2	-45.18	-53.18	-13	-40.18	V
3434	53.88	Pk	32.7	-95.2	-45.33	-53.95	-13	-40.95	H
5160.5	54.17	Pk	34.2	-95.2	-46.07	-52.9	-13	-39.9	H
6865	53.63	Pk	35.6	-95.2	-44.6	-50.57	-13	-37.57	V
6870.5	52.98	Pk	35.6	-95.2	-44.61	-51.23	-13	-38.23	H
Mid Channel,1745.1MHz + 1764.9MHz									
3500	54.29	Pk	32.8	-95.2	-45.12	-53.23	-13	-40.23	V
3498.5	54.73	Pk	32.8	-95.2	-45.3	-52.97	-13	-39.97	H
5238.5	54.27	Pk	34.3	-95.2	-45.91	-52.54	-13	-39.54	H
5241	55.25	Pk	34.4	-95.2	-45.99	-51.54	-13	-38.54	V
6972.5	52.99	Pk	35.6	-95.2	-43.68	-50.29	-13	-37.29	H
7018.5	54.5	Pk	35.6	-95.2	-43.83	-48.93	-13	-35.93	V
High Channel, 1750.2MHz + 1770MHz									
3509.5	54.08	Pk	32.8	-95.2	-45.13	-53.45	-13	-40.45	H
3493	53.53	Pk	32.8	-95.2	-45.15	-54.02	-13	-41.02	V
5231	54.06	Pk	34.3	-95.2	-45.92	-52.76	-13	-39.76	V
5245.5	54.95	Pk	34.4	-95.2	-45.86	-51.71	-13	-38.71	H
7038.5	53.91	Pk	35.6	-95.2	-43.62	-49.31	-13	-36.31	V
7039	53.61	Pk	35.6	-95.2	-43.61	-49.6	-13	-36.6	H

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02r02

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

RESULTS

10.2.1. LTE BAND 5B

LIMIT

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

QPSK LTE BAND 5 (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-04
Test Engineer:	VK 25019
Configuration:	EUT + Charger
Mode	LTE Band 5 QPSK 10MHz + 10MHz
Chamber #:	04-RDE-N

Frequency (MHz)	Meter Reading (dBuV)	Det	206805 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz + 838.9MHz									
1668.7	61.83	Pk	28.5	-95.2	-52.77	-57.64	-13	-44.64	H
1668.7	60.39	Pk	28.5	-95.2	-52.77	-59.08	-13	-46.08	V
2501.65	63.5	Pk	32.5	-95.2	-51.11	-50.31	-13	-37.31	H
2502.1	64.38	Pk	32.5	-95.2	-51.13	-49.45	-13	-36.45	V
3336.4	58.34	Pk	32.7	-95.2	-50.27	-54.43	-13	-41.43	H
3336.4	59.37	Pk	32.7	-95.2	-50.27	-53.4	-13	-40.4	V
Mid Channel, 831.6MHz + 841.5MHz									
1674.55	60.39	Pk	28.5	-95.2	-52.67	-58.98	-13	-45.98	H
1674.55	60.62	Pk	28.5	-95.2	-52.67	-58.75	-13	-45.75	V
2512	56.91	Pk	32.4	-95.2	-51.05	-56.94	-13	-43.94	H
2512	57.07	Pk	32.4	-95.2	-51.05	-56.78	-13	-43.78	V
3348.55	57.43	Pk	32.6	-95.2	-50.14	-55.31	-13	-42.31	H
3348.55	58.26	Pk	32.6	-95.2	-50.14	-54.48	-13	-41.48	V
High Channel, 834.1MHz + 844MHz									
1678.6	61.55	Pk	28.5	-95.2	-52.41	-57.56	-13	-44.56	H
1678.6	60.05	Pk	28.5	-95.2	-52.41	-59.06	-13	-46.06	V
2516.95	59.46	Pk	32.4	-95.2	-51.06	-54.4	-13	-41.4	H
2516.95	57.83	Pk	32.4	-95.2	-51.06	-56.03	-13	-43.03	V
3335.05	58.35	Pk	32.7	-95.2	-50.33	-54.48	-13	-41.48	H
3335.05	58.26	Pk	32.7	-95.2	-50.33	-54.57	-13	-41.57	V

10.2.2. LTE BAND 66B

LIMIT

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

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-02-09
Test Engineer:	AC 32188
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 10MHz + 10MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
3440.5	54.18	Pk	32.9	-95.2	-45.97	-54.09	-13	-41.09	H
3440.5	52.89	Pk	32.9	-95.2	-45.97	-55.38	-13	-42.38	V
5160.5	52.31	Pk	34.2	-95.2	-46.14	-54.83	-13	-41.83	H
5160.5	52.42	Pk	34.2	-95.2	-46.14	-54.72	-13	-41.72	V
6880	51.74	Pk	35.5	-95.2	-44.2	-52.16	-13	-39.16	H
6880	50.81	Pk	35.5	-95.2	-44.2	-53.09	-13	-40.09	V
Mid Channel,1750.1MHz + 1760MHz									
3510	51.92	Pk	32.9	-95.2	-46.13	-56.51	-13	-43.51	H
3510	53.46	Pk	32.9	-95.2	-46.13	-54.97	-13	-41.97	V
5265.5	52.28	Pk	34.1	-95.2	-46.24	-55.06	-13	-42.06	H
5265.5	53.93	Pk	34.1	-95.2	-46.24	-53.41	-13	-40.41	V
7020.5	52.24	Pk	35.5	-95.2	-44.77	-52.23	-13	-39.23	H
7020.5	52.42	Pk	35.5	-95.2	-44.77	-52.05	-13	-39.05	V
High Channel, 1765.1MHz + 1775MHz									
3541	53.35	Pk	32.9	-95.2	-44.79	-53.74	-13	-40.74	H
*3541	52.94	Pk	32.9	-95.2	-44.79	-54.15	-13	-41.15	V
5310.5	52.34	Pk	34.2	-95.2	-46.01	-54.67	-13	-41.67	H
5310.5	54.74	Pk	34.2	-95.2	-46.01	-52.27	-13	-39.27	V
7081	51.59	Pk	35.6	-95.2	-44.1	-52.11	-13	-39.11	H
7081	50.93	Pk	35.6	-95.2	-44.1	-52.77	-13	-39.77	V

10.2.3. LTE BAND 66C

LIMIT

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

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-02-20
Test Engineer:	IG 32934
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 20MHz + 20MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
3351.5	53.77	Pk	32.9	-95.2	-45	-53.53	-13	-40.53	H
5148	55.26	Pk	34.4	-95.2	-46.17	-51.71	-13	-38.71	V
3329.5	52.88	Pk	32.9	-95.2	-44.83	-54.25	-13	-41.25	V
5151.5	54.83	Pk	34.4	-95.2	-46.23	-52.2	-13	-39.2	H
6857.5	52.79	Pk	36.2	-95.2	-44.47	-50.68	-13	-37.68	V
6884.5	53.17	Pk	36	-95.2	-44.39	-50.42	-13	-37.42	H
Mid Channel,1745.1MHz + 1764.9MHz									
3470.5	53.57	Pk	33	-95.2	-45.03	-53.66	-13	-40.66	V
3481	54.55	Pk	33	-95.2	-45.3	-52.95	-13	-39.95	H
5243.5	55.5	Pk	34.5	-95.2	-45.94	-51.14	-13	-38.14	V
5244.5	55.01	Pk	34.5	-95.2	-45.88	-51.57	-13	-38.57	H
6978	52.73	Pk	35.6	-95.2	-43.53	-50.4	-13	-37.4	H
6996.5	53.28	Pk	35.6	-95.2	-43.66	-49.98	-13	-36.98	V
High Channel, 1750.2MHz + 1770MHz									
5143	55.11	Pk	34.4	-95.2	-46.23	-51.92	-13	-38.92	H
5145.5	54.85	Pk	34.4	-95.2	-46.11	-52.06	-13	-39.06	V
3492	53.27	Pk	33.1	-95.2	-45.18	-54.01	-13	-41.01	V
3498.5	53.8	Pk	33.1	-95.2	-45.3	-53.6	-13	-40.6	H
6989.5	54.06	Pk	35.6	-95.2	-43.57	-49.11	-13	-36.11	H
6995	53.04	Pk	35.6	-95.2	-43.69	-50.25	-13	-37.25	V

10.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02r02

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

RESULTS

10.3.1. LTE BAND 7C

LIMIT

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

QPSK LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-05
Test Engineer:	IG 32934
Configuration:	EUT + Charger
Mode	LTE Band 7 QPSK 20MHz + 20MHz
Chamber #:	04-RDE-N

Frequency (MHz)	Meter Reading (dBuV)	Det	206805 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz + 2529.8MHz									
5040.5	57.44	Pk	34.4	-95.2	-49.83	-53.19	-25	-28.19	H
5040.5	56.84	Pk	34.4	-95.2	-49.83	-53.79	-25	-28.79	V
7561	51.39	Pk	35.7	-95.2	-44.79	-52.9	-25	-27.9	H
7561	51.85	Pk	35.7	-95.2	-44.79	-52.44	-25	-27.44	V
10080.5	49.05	Pk	37.5	-95.2	-39.45	-48.1	-25	-23.1	H
10080.5	47.48	Pk	37.5	-95.2	-39.45	-49.67	-25	-24.67	V
Mid Channel, 2525.1MHz + 2544.9MHz									
5070.5	56.68	Pk	34.4	-95.2	-49.8	-53.92	-25	-28.92	H
5070.5	56.55	Pk	34.4	-95.2	-49.8	-54.05	-25	-29.05	V
7605.5	51.56	Pk	35.7	-95.2	-45.23	-53.17	-25	-28.17	H
7605.5	51.91	Pk	35.7	-95.2	-45.23	-52.82	-25	-27.82	V
10140.5	49.05	Pk	37.6	-95.2	-39.07	-47.62	-25	-22.62	H
10140.5	48.71	Pk	37.6	-95.2	-39.07	-47.96	-25	-22.96	V
High Channel, 2540.2MHz + 2560MHz									
5100.5	57.04	Pk	34.4	-95.2	-49.97	-53.73	-25	-28.73	H
5100.5	56.56	Pk	34.4	-95.2	-49.97	-54.21	-25	-29.21	V
7651	52.29	Pk	35.7	-95.2	-44.71	-51.92	-25	-26.92	H
7651	51.64	Pk	35.7	-95.2	-44.71	-52.57	-25	-27.57	V
10201	47.36	Pk	37.6	-95.2	-38.54	-48.78	-25	-23.78	H
10201	45.8	Pk	37.6	-95.2	-38.54	-50.34	-25	-25.34	V

10.3.2. LTE BAND 41C

LIMIT

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

QPSK LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-08
Test Engineer:	AC 32168
Configuration:	EUT + Charger
Mode	LTE BAND 41 20.0MHz + 20.0MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz									
5032	53.51	Pk	34	-95.2	-46.5	-54.19	-25	-29.19	H
7548	51.56	Pk	35.8	-95.2	-44.26	-52.1	-25	-27.1	H
5032	52.46	Pk	34	-95.2	-46.5	-55.24	-25	-30.24	V
7548	51.04	Pk	35.8	-95.2	-44.26	-52.62	-25	-27.62	V
10064	50.94	Pk	37.2	-95.2	-42.47	-49.53	-25	-24.53	H
10064	53.67	Pk	37.2	-95.2	-42.47	-46.8	-25	-21.8	V
Mid Channel, 2583.1MHz + 2602.9MHz									
5186	52.75	Pk	34.3	-95.2	-45.75	-53.9	-25	-28.9	H
5186	53.92	Pk	34.3	-95.2	-45.75	-52.73	-25	-27.73	V
7779	51.58	Pk	35.8	-95.2	-43.51	-51.33	-25	-26.33	H
7779	52.82	Pk	35.8	-95.2	-43.51	-50.09	-25	-25.09	V
10372	52.8	Pk	37.4	-95.2	-42.27	-47.27	-25	-22.27	H
10372	52.12	Pk	37.4	-95.2	-42.27	-47.95	-25	-22.95	V
High Channel, 2660.2MHz + 2680MHz									
10680	51.01	Pk	37.7	-95.2	-42.32	-48.81	-25	-23.81	H
10680	51.06	Pk	37.7	-95.2	-42.32	-48.76	-25	-23.76	V
5340	52.02	Pk	34.5	-95.2	-46.02	-54.7	-25	-29.7	H
5340	51.58	Pk	34.5	-95.2	-46.02	-55.14	-25	-30.14	V
8010.5	53.37	Pk	35.8	-95.2	-43.61	-49.64	-25	-24.64	H
8010.5	51.27	Pk	35.8	-95.2	-43.61	-51.74	-25	-26.74	V

10.3.3. LTE BAND 66B

LIMIT

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

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-05
Test Engineer:	VK 25019
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 10MHz + 10MHz
Chamber #:	04-RDE-N

Frequency (MHz)	Meter Reading (dBuV)	Det	206805 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
3440.5	56.81	Pk	32.6	-95.2	-49.66	-55.45	-13	-42.45	H
3440.5	57.39	Pk	32.6	-95.2	-49.66	-54.87	-13	-41.87	V
5160.5	55.85	Pk	34.5	-95.2	-49.22	-54.07	-13	-41.07	H
5160.5	56.4	Pk	34.5	-95.2	-49.22	-53.52	-13	-40.52	V
6880.5	50.33	Pk	35.7	-95.2	-43.46	-52.63	-13	-39.63	H
6880.5	50.43	Pk	35.7	-95.2	-43.46	-52.53	-13	-39.53	V
Mid Channel,1750.1MHz + 1760MHz									
3510.5	57.74	Pk	32.8	-95.2	-49.94	-54.6	-13	-41.6	H
3511	58.9	Pk	32.8	-95.2	-49.91	-53.41	-13	-40.41	V
5265.5	55.98	Pk	34.5	-95.2	-48.65	-53.37	-13	-40.37	H
5265.5	55.95	Pk	34.5	-95.2	-48.65	-53.4	-13	-40.4	V
7020.5	52.16	Pk	35.7	-95.2	-43.29	-50.63	-13	-37.63	H
7020.5	49.8	Pk	35.7	-95.2	-43.29	-52.99	-13	-39.99	V
High Channel, 1765.1MHz + 1775MHz									
3540	56.7	Pk	32.9	-95.2	-49.76	-55.36	-13	-42.36	H
3540	57.51	Pk	32.9	-95.2	-49.76	-54.55	-13	-41.55	V
5310.5	54.88	Pk	34.5	-95.2	-48.28	-54.1	-13	-41.1	H
5310.5	56.82	Pk	34.5	-95.2	-48.28	-52.16	-13	-39.16	V
7080	52.9	Pk	35.7	-95.2	-42.99	-49.59	-13	-36.59	H
7080	51.18	Pk	35.7	-95.2	-42.99	-51.31	-13	-38.31	V

10.3.4. LTE BAND 66C

LIMIT

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

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-01-05
Test Engineer:	IG 32934
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 20MHz + 20MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
5147.5	55.3	Pk	34.2	-95.2	-46.15	-51.85	-13	-38.85	V
3429	54.65	Pk	32.7	-95.2	-45.26	-53.11	-13	-40.11	H
3437.5	53.59	Pk	32.8	-95.2	-45.23	-54.04	-13	-41.04	V
5156.5	54.55	Pk	34.2	-95.2	-46.19	-52.64	-13	-39.64	H
6858	54.58	Pk	35.6	-95.2	-44.48	-49.5	-13	-36.5	V
6884.5	53.39	Pk	35.6	-95.2	-44.39	-50.6	-13	-37.6	H
Mid Channel,1745.1MHz + 1764.9MHz									
3489.5	54.83	Pk	32.8	-95.2	-45.28	-52.85	-13	-39.85	V
3497	54.08	Pk	32.8	-95.2	-45.21	-53.53	-13	-40.53	H
5237	54.27	Pk	34.3	-95.2	-46	-52.63	-13	-39.63	H
5245	54.15	Pk	34.4	-95.2	-45.87	-52.52	-13	-39.52	V
6984.5	52.93	Pk	35.6	-95.2	-43.46	-50.13	-13	-37.13	H
6989	53.8	Pk	35.6	-95.2	-43.52	-49.32	-13	-36.32	V
High Channel, 1750.2MHz + 1770MHz									
3502	53.94	Pk	32.8	-95.2	-45.08	-53.54	-13	-40.54	H
3506.5	54.2	Pk	32.8	-95.2	-45.23	-53.43	-13	-40.43	V
5233.5	55.39	Pk	34.3	-95.2	-46.02	-51.53	-13	-38.53	V
5264.5	53.89	Pk	34.4	-95.2	-45.95	-52.86	-13	-39.86	H
7005.5	53.37	Pk	35.6	-95.2	-43.65	-49.88	-13	-36.88	V
7042	53.63	Pk	35.6	-95.2	-43.62	-49.59	-13	-36.59	H

10.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 5

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02r02

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

RESULTS

10.4.1. LTE BAND 66B

LIMIT

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

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-02-20
Test Engineer:	IG 32934
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 10MHz + 10MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
5131.5	56.05	Pk	34.4	-95.2	-46.13	-50.88	-13	-37.88	H
5147	55.59	Pk	34.4	-95.2	-46.13	-51.34	-13	-38.34	V
3417	53.42	Pk	32.9	-95.2	-45.09	-53.97	-13	-40.97	V
3422.5	53.56	Pk	32.9	-95.2	-45.2	-53.94	-13	-40.94	H
6845.5	54.01	Pk	36.3	-95.2	-44.52	-49.41	-13	-36.41	H
6855	53.57	Pk	36.2	-95.2	-44.48	-49.91	-13	-36.91	V
Mid Channel,1750.1MHz + 1760MHz									
3498	53.72	Pk	33.1	-95.2	-45.29	-53.67	-13	-40.67	H
3498.5	54.18	Pk	33.1	-95.2	-45.3	-53.22	-13	-40.22	V
5214	54.4	Pk	34.5	-95.2	-45.92	-52.22	-13	-39.22	V
5235.5	55.6	Pk	34.5	-95.2	-46.06	-51.16	-13	-38.16	H
7015.5	53.62	Pk	35.5	-95.2	-43.8	-49.88	-13	-36.88	H
7024	53.72	Pk	35.5	-95.2	-43.78	-49.76	-13	-36.76	V
High Channel, 1765.1MHz + 1775MHz									
3525	52.85	Pk	33.1	-95.2	-44.82	-54.07	-13	-41.07	H
3531	53.89	Pk	33.1	-95.2	-45.14	-53.35	-13	-40.35	V
5278	53.77	Pk	34.6	-95.2	-45.82	-52.65	-13	-39.65	V
5293.5	54.07	Pk	34.6	-95.2	-45.9	-52.43	-13	-39.43	H
7037	53.13	Pk	35.5	-95.2	-43.6	-50.17	-13	-37.17	V
7062.5	53.38	Pk	35.5	-95.2	-43.97	-50.29	-13	-37.29	H

10.4.2. LTE BAND 66C

LIMIT

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

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	15107858
Date:	2024-02-20
Test Engineer:	IG 32934
Configuration:	EUT + Charger
Mode	LTE Band 66 QPSK 20MHz + 20MHz
Chamber #:	04-RDE-T

Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
3419	53.33	Pk	32.9	-95.2	-45.18	-54.15	-13	-41.15	V
3422	54.17	Pk	32.9	-95.2	-45.25	-53.38	-13	-40.38	H
5151	55.2	Pk	34.4	-95.2	-46.26	-51.86	-13	-38.86	H
5174	55.21	Pk	34.4	-95.2	-46.14	-51.73	-13	-38.73	V
6879	53.27	Pk	36	-95.2	-44.47	-50.4	-13	-37.4	H
6900	52.89	Pk	35.9	-95.2	-44.29	-50.7	-13	-37.7	V
Mid Channel,1745.1MHz + 1764.9MHz									
3492.5	53.43	Pk	33.1	-95.2	-45.17	-53.84	-13	-40.84	V
3494.5	53.83	Pk	33.1	-95.2	-45.01	-53.28	-13	-40.28	H
5214.5	53.72	Pk	34.5	-95.2	-45.88	-52.86	-13	-39.86	V
5239.5	54.72	Pk	34.5	-95.2	-45.9	-51.88	-13	-38.88	H
6958	53.94	Pk	35.6	-95.2	-43.76	-49.42	-13	-36.42	V
6969	53.36	Pk	35.6	-95.2	-43.64	-49.88	-13	-36.88	H
High Channel, 1750.2MHz + 1770MHz									
3500.5	54.12	Pk	33.1	-95.2	-45.11	-53.09	-13	-40.09	H
3491.5	54.21	Pk	33.1	-95.2	-45.25	-53.14	-13	-40.14	V
5223.5	60.15	Pk	34.5	-95.2	-45.95	-46.5	-13	-33.5	H
5223.5	65.16	Pk	34.5	-95.2	-45.95	-41.49	-13	-28.49	V
6998.5	53.04	Pk	35.6	-95.2	-43.66	-50.22	-13	-37.22	V
7000	53.78	Pk	35.6	-95.2	-43.68	-49.5	-13	-36.5	H

11. SETUP PHOTOS

Please refer to 15107858-EP1 for setup photos.

END OF REPORT