

QPSK LTE BAND 2 (20.0MHZ BANDWIDTH)

Project #:	1317915
Date:	7/8/2020
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE Band 2 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.72639	39.53	Pk	33.4	-27.2	-95.2	-49.47	-13	-36.47	H
3.74352	40.19	Pk	33.4	-27.1	-95.2	-48.71	-13	-35.71	V
5.57112	38.19	Pk	34.9	-26.4	-95.2	-48.51	-13	-35.51	V
5.60476	37.87	Pk	34.9	-26.4	-95.2	-48.83	-13	-35.83	H
7.42108	35.45	Pk	35.8	-23.6	-95.2	-47.55	-13	-34.55	V
7.44021	35.93	Pk	35.8	-23.8	-95.2	-47.27	-13	-34.27	H
Mid Channel, 1880MHz									
3.73496	39.86	Pk	33.4	-27.1	-95.2	-49.04	-13	-36.04	H
3.7801	40.55	Pk	33.6	-27.2	-95.2	-48.25	-13	-35.25	V
5.55405	38.54	Pk	34.8	-26.6	-95.2	-48.46	-13	-35.46	V
5.61147	38.11	Pk	34.9	-26.4	-95.2	-48.59	-13	-35.59	H
7.51384	36.43	Pk	35.8	-23.4	-95.2	-46.37	-13	-33.37	H
7.52828	36.55	Pk	35.8	-23.1	-95.2	-45.95	-13	-32.95	V
High Channel, 1900MHz									
3.79298	39.96	Pk	33.7	-27.4	-95.2	-48.94	-13	-35.94	H
3.79775	41.14	Pk	33.7	-27.4	-95.2	-47.76	-13	-34.76	V
5.67953	38.84	Pk	34.8	-26.6	-95.2	-48.16	-13	-35.16	V
5.68542	38.61	Pk	34.8	-26.7	-95.2	-48.49	-13	-35.49	H
7.61445	35.05	Pk	35.7	-21.3	-95.2	-45.75	-13	-32.75	H
7.61519	35.51	Pk	35.7	-21.3	-95.2	-45.29	-13	-32.29	V

9.3.2. LTE BAND 5 AND 5G NR Band n5

LIMITS

FCC: §22.917(a)

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

QPSK LTE BAND 5 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/14/2020
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 5 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 829MHz									
1.6652	41.66	Pk	28.7	-32.8	-95.2	-57.64	-13	-44.64	V
1.67552	41.75	Pk	28.9	-32.8	-95.2	-57.35	-13	-44.35	H
2.49822	41.46	Pk	32.6	-31.9	-95.2	-53.04	-13	-40.04	V
2.50251	41.35	Pk	32.6	-31.8	-95.2	-53.05	-13	-40.05	H
3.36078	40.46	Pk	32.8	-30.7	-95.2	-52.64	-13	-39.64	H
3.38328	40.29	Pk	32.8	-30.7	-95.2	-52.81	-13	-39.81	V
Mid Channel, 836.5MHz									
1.6652	41.66	Pk	28.7	-32.8	-95.2	-57.64	-13	-44.64	V
1.67552	41.75	Pk	28.9	-32.8	-95.2	-57.35	-13	-44.35	H
2.49822	41.46	Pk	32.6	-31.9	-95.2	-53.04	-13	-40.04	V
2.50251	41.35	Pk	32.6	-31.8	-95.2	-53.05	-13	-40.05	H
3.36078	40.46	Pk	32.8	-30.7	-95.2	-52.64	-13	-39.64	H
3.38328	40.29	Pk	32.8	-30.7	-95.2	-52.81	-13	-39.81	V
High Channel, 844MHz									
1.68569	41.43	Pk	28.9	-32.7	-95.2	-57.57	-13	-44.57	H
1.69428	41.8	Pk	28.8	-32.7	-95.2	-57.3	-13	-44.3	V
2.51869	43.82	Pk	32.6	-31.8	-95.2	-50.58	-13	-37.58	H
2.53489	41.14	Pk	32.6	-31.7	-95.2	-53.16	-13	-40.16	V
3.3878	39.94	Pk	32.7	-30.8	-95.2	-53.36	-13	-40.36	H
3.40806	40.9	Pk	32.8	-30.6	-95.2	-52.1	-13	-39.1	V

QPSK 5G NR Band n5 (20.0MHZ BANDWIDTH)

Project #:	13179116
Date:	7/18/2020
Test Engineer:	19497
Configuration:	EUT only
Mode	5G NR Band n5 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 834MHz									
1.66215	38.49	Pk	29	-32.3	-95.2	-59.21	-13	-46.21	V
1.67079	41.29	Pk	29	-32.2	-95.2	-56.41	-13	-43.41	H
2.4952	41.78	Pk	33.5	-31.3	-95.2	-50.62	-13	-37.62	H
2.49591	40.88	Pk	33.5	-31.3	-95.2	-51.52	-13	-38.52	V
3.35102	40.92	Pk	33	-30.1	-95.2	-50.78	-13	-37.78	V
3.35299	40.26	Pk	33	-30.1	-95.2	-51.44	-13	-38.44	H
Mid Channel, 836.5MHz									
1.67178	42.16	Pk	29	-32.2	-95.2	-55.54	-13	-42.54	H
1.67943	42.29	Pk	28.9	-32.2	-95.2	-55.51	-13	-42.51	V
2.5056	40.63	Pk	33.5	-31.4	-95.2	-51.77	-13	-38.77	V
2.51059	41.1	Pk	33.5	-31.4	-95.2	-51.3	-13	-38.3	H
3.34568	40.33	Pk	33	-30.1	-95.2	-51.37	-13	-38.37	V
3.35008	41.04	Pk	33	-30.1	-95.2	-50.66	-13	-37.66	H
High Channel, 839MHz									
1.68194	41.52	Pk	28.9	-32.2	-95.2	-56.28	-13	-43.28	V
1.68194	37.32	Pk	28.9	-32.2	-95.2	-60.48	-13	-47.48	V
1.6838	41.97	Pk	29	-32.2	-95.2	-55.73	-13	-42.73	H
2.51649	40.88	Pk	33.5	-31.4	-95.2	-51.42	-13	-38.42	H
2.51924	40.98	Pk	33.5	-31.3	-95.2	-51.22	-13	-38.22	V
3.35395	40.24	Pk	33	-30.1	-95.2	-51.46	-13	-38.46	V

9.3.3. LTE BAND 7

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/14/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode	LTE Band 7 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.02667	39.54	Pk	34.3	-28.8	-95.2	-50.16	-25	-25.16	V
5.0339	39.77	Pk	34.3	-28.9	-95.2	-50.03	-25	-25.03	H
7.51376	36.01	Pk	35.8	-24.4	-95.2	-47.79	-25	-22.79	H
7.52386	36.86	Pk	35.7	-24.5	-95.2	-47.14	-25	-22.14	V
9.99203	34.88	Pk	37	-21.9	-95.2	-45.22	-25	-20.22	V
10.10644	36.21	Pk	37.1	-22.1	-95.2	-43.99	-25	-18.99	H
Mid Channel, 2535MHz									
5.06554	39.1	Pk	34.3	-28.7	-95.2	-50.5	-25	-25.5	H
5.0984	38.75	Pk	34.5	-28.6	-95.2	-50.55	-25	-25.55	V
7.57095	36.44	Pk	35.8	-24.4	-95.2	-47.36	-25	-22.36	V
7.60275	37.27	Pk	35.8	-24.6	-95.2	-46.73	-25	-21.73	H
10.157	35.51	Pk	37.2	-21.9	-95.2	-44.39	-25	-19.39	H
10.19012	35.32	Pk	37.2	-21.9	-95.2	-44.58	-25	-19.58	V
High Channel, 2560MHz									
5.09392	-68.01	Pk	34.5	-28.7	11	-51.21	-25	-26.21	144
5.15012	-67.47	Pk	34.6	-28.6	11.2	-50.27	-25	-25.27	300
7.66589	-70.03	Pk	35.8	-24.2	11.2	-47.23	-25	-22.23	213
7.68393	-71.16	Pk	35.8	-23.8	11.2	-47.96	-25	-22.96	102
10.09029	-71.73	Pk	37.1	-22.1	10.5	-46.23	-25	-21.23	289
10.09267	-71.41	Pk	37.1	-22.1	10.4	-46.01	-25	-21.01	308

9.3.4. LTE BAND 12 AND 5G NR Band n12

LIMITS

FCC: §27.53 (g)

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

QPSK LTE BAND 12 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	7/20/2020
Test Engineer:	31300
Configuration:	EUT only
Mode	5G NR Band n12 QPSK 15MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 704MHz									
1.4039	42.45	Pk	28.8	-33.1	-95.2	-57.05	-13	-44.05	V
1.40967	41.6	Pk	28.7	-33.1	-95.2	-58	-13	-45	H
2.12091	41.58	Pk	31.7	-32.2	-95.2	-54.12	-13	-41.12	H
2.13926	41.7	Pk	31.7	-32.1	-95.2	-53.9	-13	-40.9	V
2.82447	40.53	Pk	32.4	-31.3	-95.2	-53.57	-13	-40.57	H
2.85929	40.56	Pk	32.5	-31.1	-95.2	-53.24	-13	-40.24	V
Mid Channel, 707.5MHz									
1.42359	41.97	Pk	28.5	-33.1	-95.2	-57.83	-13	-44.83	V
1.42396	42.56	Pk	28.5	-33.1	-95.2	-57.24	-13	-44.24	H
2.13313	40.94	Pk	31.7	-32.1	-95.2	-54.66	-13	-41.66	H
2.13675	41.66	Pk	31.7	-32.1	-95.2	-53.94	-13	-40.94	V
2.84353	40.85	Pk	32.4	-31.1	-95.2	-53.05	-13	-40.05	H
2.84694	41.01	Pk	32.4	-31.1	-95.2	-52.89	-13	-39.89	V
High Channel, 711MHz									
1.41566	-64.95	Pk	28.6	-33.1	10.9	-58.55	-13	-45.55	158
1.42046	-64.69	Pk	28.6	-33	10.7	-58.39	-13	-45.39	56
2.12906	-66.08	Pk	31.7	-32.2	13.4	-53.18	-13	-40.18	301
2.14431	-65.6	Pk	31.6	-32	12	-54	-13	-41	290
3.04098	-67.04	Pk	33.1	-30.8	11.8	-52.94	-13	-39.94	115
3.05973	-66.62	Pk	33.4	-30.8	11.7	-52.32	-13	-39.32	161

QPSK 5G NR Band n12 (15.0MHZ BANDWIDTH)

Project #:	13179116
Date:	7/29/2020
Test Engineer:	50820
Configuration:	EUT only
Mode	5G NR Band n12 QPSK 15MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 706.5MHz									
1.40992	41.79	Pk	29.1	-32.7	-95.2	-56.11	-13	-43.11	V
1.41297	41.63	Pk	29.1	-32.7	-95.2	-56.27	-13	-43.27	H
2.10728	42.02	Pk	31.7	-31.9	-95.2	-52.88	-13	-39.88	V
2.11542	41.95	Pk	31.7	-31.8	-95.2	-52.85	-13	-39.85	H
2.82323	40.05	Pk	32.6	-30.7	-95.2	-52.55	-13	-39.55	V
2.82584	40.04	Pk	32.6	-30.6	-95.2	-52.46	-13	-39.46	H
Mid Channel, 707.5MHz									
1.42551	41.54	Pk	29	-32.6	-95.2	-56.36	-13	-43.36	V
1.42861	41.37	Pk	29	-32.6	-95.2	-56.53	-13	-43.53	H
2.1332	41.11	Pk	31.5	-31.5	-95.2	-53.59	-13	-40.59	V
2.13634	40.93	Pk	31.6	-31.5	-95.2	-53.67	-13	-40.67	H
2.81567	40.34	Pk	32.6	-30.7	-95.2	-52.36	-13	-39.36	V
2.81726	41.1	Pk	32.6	-30.7	-95.2	-51.6	-13	-38.6	H
High Channel, 708.5MHz									
1.40911	41.81	Pk	29.2	-32.7	-95.2	-55.99	-13	-42.99	V
1.41113	42.31	Pk	29.1	-32.7	-95.2	-55.59	-13	-42.59	H
2.13632	41.29	Pk	31.6	-31.5	-95.2	-53.31	-13	-40.31	V
2.13723	40.76	Pk	31.6	-31.5	-95.2	-53.84	-13	-40.84	H
2.8361	39.71	Pk	32.5	-30.6	-95.2	-52.89	-13	-39.89	H
2.83702	39.88	Pk	32.5	-30.6	-95.2	-52.72	-13	-39.72	V

9.3.5. LTE BAND 13

LIMITS

FCC: §27.53

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

(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

QPSK LTE BAND 13 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/14/2020
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 13 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 782MHz									
1.56079	42.16	Pk	28	-33	-95.2	-58.04	-40	-18.04	V
1.56106	41.58	Pk	28	-33	-95.2	-58.62	-40	-18.62	H
2.33037	41.37	Pk	31.9	-31.9	-95.2	-53.83	-13	-40.83	H
2.33806	41.33	Pk	31.8	-31.9	-95.2	-53.97	-13	-40.97	V
3.1239	40.76	Pk	33.1	-31	-95.2	-52.34	-13	-39.34	H
3.154	40.17	Pk	32.9	-31	-95.2	-53.13	-13	-40.13	V

* Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.

9.3.6. LTE BAND 14

LIMITS

FCC: §90.543 Emission Limitations. (Band 14)

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation

QPSK LTE BAND 14 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/22/2020
Test Engineer:	20792
Configuration:	EUT Only
Mode	LTE Band 14 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 793MHz									
1.58403	41.66	Pk	28.1	-32.9	-95.2	-58.34	-40	-18.34	V
1.58532	42.23	Pk	28.1	-32.9	-95.2	-57.77	-40	-17.77	H
2.38024	41.36	Pk	32.2	-31.8	-95.2	-53.44	-13	-40.44	V
2.38094	40.96	Pk	32.2	-31.8	-95.2	-53.84	-13	-40.84	H
3.1719	40.65	Pk	32.9	-30.9	-95.2	-52.55	-13	-39.55	H
3.17344	40.61	Pk	32.9	-30.9	-95.2	-52.59	-13	-39.59	V

* Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.

9.3.7. LTE BAND 17

LIMITS

FCC: §27.53 (g)

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

QPSK LTE BAND 17 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/16/2020
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 17 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 710MHz									
1.44538	41.78	Pk	28.3	-33	-95.2	-58.12	-13	-45.12	V
1.44629	41.61	Pk	28.3	-33	-95.2	-58.29	-13	-45.29	H
2.12975	42.38	Pk	31.7	-32.2	-95.2	-53.32	-13	-40.32	H
2.13265	41.35	Pk	31.7	-32.1	-95.2	-54.25	-13	-41.25	V
2.8219	40.82	Pk	32.5	-31.3	-95.2	-53.18	-13	-40.18	V
2.84294	41.27	Pk	32.4	-31.1	-95.2	-52.63	-13	-39.63	H

9.3.8. LTE BAND 25

LIMITS

FCC: §24.238(a)

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

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/15/2020
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 25 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1860MHz									
3.71057	41.57	Pk	33.3	-29.9	-95.2	-50.23	-13	-37.23	H
3.71776	40.84	Pk	33.3	-29.9	-95.2	-50.96	-13	-37.96	V
5.55317	40.69	Pk	34.8	-27.8	-95.2	-47.51	-13	-34.51	H
5.55357	43.78	Pk	34.8	-27.8	-95.2	-44.42	-13	-31.42	V
7.41188	36.2	Pk	35.7	-24.7	-95.2	-48	-13	-35	V
7.44584	37.03	Pk	35.7	-24.8	-95.2	-47.27	-13	-34.27	H
Mid Channel, 1882.5MHz									
3.77261	41.15	Pk	33.6	-30.1	-95.2	-50.55	-13	-37.55	H
3.77434	41.23	Pk	33.6	-30.1	-95.2	-50.47	-13	-37.47	V
5.62064	42.45	Pk	34.8	-27.7	-95.2	-45.65	-13	-32.65	V
5.62089	41.34	Pk	34.8	-27.7	-95.2	-46.76	-13	-33.76	H
7.53435	37.26	Pk	35.8	-24.6	-95.2	-46.74	-13	-33.74	H
7.55682	37.1	Pk	35.7	-24.7	-95.2	-47.1	-13	-34.1	V
High Channel, 1905MHz									
3.77775	41.1	Pk	33.6	-30.1	-95.2	-50.6	-13	-37.6	V
3.82742	40.93	Pk	33.7	-29.9	-95.2	-50.47	-13	-37.47	H
5.66219	38.9	Pk	34.8	-27.9	-95.2	-49.4	-13	-36.4	V
5.68788	39.98	Pk	34.8	-28.1	-95.2	-48.52	-13	-35.52	H
7.63253	37.1	Pk	35.8	-24.1	-95.2	-46.4	-13	-33.4	V
7.63504	36.48	Pk	35.8	-24.1	-95.2	-47.02	-13	-34.02	H

9.3.9. LTE BAND 26 (PART 90S)

LIMITS

FCC: §90.691

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

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/15/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode	LTE Band 26 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 819MHz									
1.67311	41.62	Pk	28.9	-32.8	-95.2	-57.48	-13	-44.48	H
1.67348	42.8	Pk	28.9	-32.8	-95.2	-56.3	-13	-43.3	V
2.44339	42.17	Pk	32.5	-31.8	-95.2	-52.33	-13	-39.33	V
2.44373	46.04	Pk	32.5	-31.8	-95.2	-48.46	-13	-35.46	H
3.2704	40.26	Pk	32.9	-30.7	-95.2	-52.74	-13	-39.74	V
3.29442	41.01	Pk	32.9	-30.7	-95.2	-51.99	-13	-38.99	H

9.3.10. LTE BAND 30

LIMITS

FCC: §27.53 (a)

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

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/22/2020
Test Engineer:	20792
Configuration:	EUT Only
Mode:	LTE Band 30 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.61856	40.14	Pk	34.3	-29.5	-95.2	-50.26	-40	-10.26	H
4.62018	40.57	Pk	34.3	-29.5	-95.2	-49.83	-40	-9.83	V
6.9298	36.02	Pk	36	-25.5	-95.2	-48.68	-40	-8.68	V
6.93033	35.89	Pk	36	-25.5	-95.2	-48.81	-40	-8.81	H
9.24141	35.9	Pk	36.3	-23	-95.2	-46	-40	-6	V
9.24185	35.18	Pk	36.3	-23	-95.2	-46.72	-40	-6.72	H

9.3.11. LTE BAND 41 AND 5G NR Band n41

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/15/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode	LTE Band 41 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 2506MHz									
4.95999	39.36	Pk	34.2	-29.2	-95.2	-50.84	-25	-25.84	V
4.97163	40.35	Pk	34.3	-29.2	-95.2	-49.75	-25	-24.75	H
7.53325	36.18	Pk	35.8	-24.6	-95.2	-47.82	-25	-22.82	H
7.56781	36.49	Pk	35.8	-24.5	-95.2	-47.41	-25	-22.41	V
10.14989	35.27	Pk	37.2	-22	-95.2	-44.73	-25	-19.73	V
10.18319	35.77	Pk	37.2	-21.9	-95.2	-44.13	-25	-19.13	H
Mid Channel, 2593MHz									
4.78971	39.53	Pk	34.3	-29.1	-95.2	-50.47	-25	-25.47	H
4.80321	40.75	Pk	34.3	-29.2	-95.2	-49.35	-25	-24.35	V
7.13342	36.58	Pk	36.1	-25.2	-95.2	-47.72	-25	-22.72	V
7.75222	37.54	Pk	35.9	-24.1	-95.2	-45.86	-25	-20.86	H
10.28953	35.34	Pk	37.4	-21.5	-95.2	-43.96	-25	-18.96	V
10.34752	35.27	Pk	37.4	-21.3	-95.2	-43.83	-25	-18.83	H
High Channel, 2680MHz									
5.34275	39.07	Pk	35	-28.9	-95.2	-50.03	-25	-25.03	V
5.37454	39.31	Pk	34.9	-28.7	-95.2	-49.69	-25	-24.69	H
8.04134	36.28	Pk	35.8	-23.8	-95.2	-46.92	-25	-21.92	V
8.04276	36.51	Pk	35.8	-23.8	-95.2	-46.69	-25	-21.69	H
10.60691	35.63	Pk	37.9	-21.2	-95.2	-42.87	-25	-17.87	V
10.70383	35.69	Pk	37.9	-21.2	-95.2	-42.81	-25	-17.81	H

QPSK 5G NR Band n41 (100.0MHZ BANDWIDTH)

Project #:	13179115
Date:	7/17/2020
Test Engineer:	19169
Configuration:	EUT Only
Mode	5G NR Band n41 QPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 2546MHz									
4.99013	39.14	Pk	34.1	-28.4	-95.2	-50.36	-25	-25.36	H
4.99239	39.39	Pk	34.1	-28.4	-95.2	-50.11	-25	-25.11	V
7.48763	37.3	Pk	36	-23.8	-95.2	-45.7	-25	-20.7	V
7.4893	36.58	Pk	36	-23.8	-95.2	-46.42	-25	-21.42	H
9.98269	35.11	Pk	37.2	-20.9	-95.2	-43.79	-25	-18.79	V
9.9828	35.42	Pk	37.2	-20.9	-95.2	-43.48	-25	-18.48	H
Mid Channel, 2593MHz									
5.18578	39.48	Pk	34.6	-27.7	-95.2	-48.82	-25	-23.82	H
5.18799	38.85	Pk	34.6	-27.7	-95.2	-49.45	-25	-24.45	V
7.77832	36.2	Pk	35.9	-23.4	-95.2	-46.5	-25	-21.5	V
7.78083	36.18	Pk	35.9	-23.4	-95.2	-46.52	-25	-21.52	H
10.37314	34.74	Pk	37.7	-20.2	-95.2	-42.96	-25	-17.96	V
10.3735	34.68	Pk	37.7	-20.2	-95.2	-43.02	-25	-18.02	H
High Channel, 2640MHz									
5.37908	38.69	Pk	34.8	-27.8	-95.2	-49.51	-25	-24.51	V
5.37948	38.48	Pk	34.8	-27.8	-95.2	-49.72	-25	-24.72	H
8.06832	36.26	Pk	36.2	-23.2	-95.2	-45.94	-25	-20.94	H
8.06964	36.06	Pk	36.2	-23.2	-95.2	-46.14	-25	-21.14	V
10.7604	35.6	Pk	37.8	-20.2	-95.2	-42	-25	-17	V
10.76075	35.77	Pk	37.8	-20.2	-95.2	-41.83	-25	-16.83	H

9.3.12. LTE BAND 66

LIMITS

FCC: §27.53 (h)

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

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/15/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode	LTE Band 66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1720MHz									
2.11722	46.5	Pk	31.7	-32.2	-95.2	-49.2	-13	-36.2	H
2.12016	46.96	Pk	31.7	-32.2	-95.2	-48.74	-13	-35.74	V
5.13299	39.32	Pk	34.5	-28.6	-95.2	-49.98	-13	-36.98	V
5.16735	39.07	Pk	34.5	-28.6	-95.2	-50.23	-13	-37.23	H
6.80902	38.1	Pk	35.8	-25.5	-95.2	-46.8	-13	-33.8	H
6.87689	37.84	Pk	35.9	-25.1	-95.2	-46.56	-13	-33.56	V
Mid Channel, 1745MHz									
3.50567	40.42	Pk	34.1	-30.4	-95.2	-51.08	-13	-38.08	H
3.51167	41.09	Pk	33.5	-30.5	-95.2	-51.11	-13	-38.11	V
5.19143	39	Pk	34.6	-28.4	-95.2	-50	-13	-37	V
5.20849	39.23	Pk	34.6	-28.5	-95.2	-49.87	-13	-36.87	H
6.98645	37.62	Pk	36	-25.4	-95.2	-46.98	-13	-33.98	V
7.01355	36.57	Pk	35.9	-25.5	-95.2	-48.23	-13	-35.23	H
High Channel, 1770MHz									
2.17121	44.55	Pk	31.6	-31.9	-95.2	-50.95	-13	-37.95	H
2.17748	48.68	Pk	31.6	-32	-95.2	-46.92	-13	-33.92	V
5.28306	40.43	Pk	34.9	-28.9	-95.2	-48.77	-13	-35.77	V
5.35442	38.85	Pk	35	-28.8	-95.2	-50.15	-13	-37.15	H
7.05549	37.19	Pk	36	-25.4	-95.2	-47.41	-13	-34.41	V
7.13355	36.72	Pk	36.1	-25.2	-95.2	-47.58	-13	-34.58	H

9.3.13. LTE BAND 71

LIMITS

FCC: §27.53 (g)

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

QPSK LTE BAND 71 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/16/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode	LTE Band 71 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 673.0MHz									
1.35614	-65.14	Pk	29.6	-33.1	11.6	-57.04	-13	-44.04	200
1.46058	-65.1	Pk	28.4	-32.9	12.3	-57.3	-13	-44.3	112
1.72017	-65.58	Pk	29.5	-32.6	13.9	-54.78	-13	-41.78	345
2.02178	-65.48	Pk	31.7	-32.4	11.8	-54.38	-13	-41.38	47
2.63538	-66.05	Pk	32.6	-31.6	13	-52.05	-13	-39.05	210
2.72135	-66.05	Pk	32.4	-31.5	11.4	-53.75	-13	-40.75	35
Mid Channel, 680.5MHz									
1.37334	42.32	Pk	29.4	-33.2	-95.2	-56.68	-13	-43.68	H
1.39762	41.75	Pk	28.9	-33.2	-95.2	-57.75	-13	-44.75	V
2.04299	41.1	Pk	31.6	-32.3	-95.2	-54.8	-13	-41.8	H
2.05252	41.55	Pk	31.6	-32.3	-95.2	-54.35	-13	-41.35	V
2.73705	41.5	Pk	32.5	-31.3	-95.2	-52.5	-13	-39.5	V
2.74244	40.8	Pk	32.5	-31.3	-95.2	-53.2	-13	-40.2	H
High Channel, 688.0MHz									
1.33757	-65.56	Pk	29.3	-33.3	12.1	-57.46	-13	-44.46	230
1.35261	-65.11	Pk	29.6	-33.1	12	-56.61	-13	-43.61	25
2.02655	-62.24	Pk	31.6	-32.3	11.1	-51.84	-13	-38.84	178
2.13226	-65.74	Pk	31.7	-32.1	13.4	-52.74	-13	-39.74	201
2.53936	-65.94	Pk	32.6	-31.7	12	-53.04	-13	-40.04	190
2.57344	-66.24	Pk	32.6	-31.5	12.6	-52.54	-13	-39.54	52

9.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT3

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

9.4.1. LTE BAND 2

LIMITS

FCC: §24.238(a)

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

QPSK LTE BAND 2 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	7/8/2020
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE Band 2 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.72879	39.46	Pk	33.4	-27.2	-95.2	-49.54	-13	-36.54	V
3.75108	40.21	Pk	33.5	-27	-95.2	-48.49	-13	-35.49	H
5.56665	38.7	Pk	34.9	-26.5	-95.2	-48.1	-13	-35.1	V
5.58678	37.26	Pk	34.9	-26.4	-95.2	-49.44	-13	-36.44	H
7.41511	36.01	Pk	35.7	-23.4	-95.2	-46.89	-13	-33.89	V
7.46671	35.44	Pk	35.7	-23.8	-95.2	-47.86	-13	-34.86	H
Mid Channel, 1880MHz									
3.77652	39.93	Pk	33.6	-27.2	-95.2	-48.87	-13	-35.87	H
3.78125	39.46	Pk	33.6	-27.3	-95.2	-49.44	-13	-36.44	V
5.63583	37.32	Pk	34.8	-26.4	-95.2	-49.48	-13	-36.48	V
5.64886	37.64	Pk	34.8	-26.4	-95.2	-49.16	-13	-36.16	H
7.53035	36.04	Pk	35.8	-23	-95.2	-46.36	-13	-33.36	H
7.53068	35.72	Pk	35.8	-23	-95.2	-46.68	-13	-33.68	V
High Channel, 1900MHz									
3.7761	39.97	Pk	33.6	-27.2	-95.2	-48.83	-13	-35.83	V
3.80274	39.77	Pk	33.7	-27.5	-95.2	-49.23	-13	-36.23	H
5.68389	38.38	Pk	34.8	-26.7	-95.2	-48.72	-13	-35.72	H
5.69804	37.83	Pk	34.8	-26.9	-95.2	-49.47	-13	-36.47	V
7.59251	36.1	Pk	35.7	-21.8	-95.2	-45.2	-13	-32.2	H
7.59731	36.02	Pk	35.7	-21.6	-95.2	-45.08	-13	-32.08	V

9.4.2. LTE BAND 7

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/21/2020
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 7 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz									
4.97909	39.44	Pk	34.3	-29.2	-95.2	-50.66	-25	-25.66	V
5.01477	39.11	Pk	34.4	-29	-95.2	-50.69	-25	-25.69	H
7.51152	36.22	Pk	35.8	-24.5	-95.2	-47.68	-25	-22.68	V
7.5303	36.32	Pk	35.8	-24.5	-95.2	-47.58	-25	-22.58	H
10.03736	35.02	Pk	37	-22.1	-95.2	-45.28	-25	-20.28	V
10.05994	34.75	Pk	37.1	-22.1	-95.2	-45.45	-25	-20.45	H
Mid Channel, 2535MHz									
4.99936	38.65	Pk	34.3	-29.1	-95.2	-51.35	-25	-26.35	V
5.02617	39.68	Pk	34.3	-28.9	-95.2	-50.12	-25	-25.12	H
7.53365	36.49	Pk	35.8	-24.6	-95.2	-47.51	-25	-22.51	H
7.5399	36.91	Pk	35.7	-24.7	-95.2	-47.29	-25	-22.29	V
10.03676	34.79	Pk	37	-22.1	-95.2	-45.51	-25	-20.51	V
10.04193	35.28	Pk	37.1	-22.1	-95.2	-44.92	-25	-19.92	H
High Channel, 2560MHz									
5.11684	38.5	Pk	34.5	-28.8	-95.2	-51	-25	-26	H
5.1242	39.27	Pk	34.6	-28.7	-95.2	-50.03	-25	-25.03	V
7.67572	36.25	Pk	35.8	-24	-95.2	-47.15	-25	-22.15	H
7.70281	35.61	Pk	35.8	-23.9	-95.2	-47.69	-25	-22.69	V
10.24181	34.88	Pk	37.3	-21.6	-95.2	-44.62	-25	-19.62	H
10.26933	35.11	Pk	37.4	-21.7	-95.2	-44.39	-25	-19.39	V

9.4.3. LTE BAND 25

LIMITS

FCC: §24.238(a)

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

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/17/2020
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 25 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1860MHz									
3.73081	40.37	Pk	33.4	-30.1	-95.2	-51.53	-13	-38.53	H
3.74705	40.59	Pk	33.5	-30.2	-95.2	-51.31	-13	-38.31	V
5.58792	38.91	Pk	34.9	-28	-95.2	-49.39	-13	-36.39	H
5.63244	38.16	Pk	34.8	-27.9	-95.2	-50.14	-13	-37.14	V
7.42058	36.82	Pk	35.8	-24.8	-95.2	-47.38	-13	-34.38	V
7.44737	36.84	Pk	35.7	-24.7	-95.2	-47.36	-13	-34.36	H
Mid Channel, 1882.5MHz									
3.76074	40.38	Pk	33.6	-30.1	-95.2	-51.32	-13	-38.32	V
3.77515	40.65	Pk	33.6	-30.1	-95.2	-51.05	-13	-38.05	H
5.66038	38.56	Pk	34.8	-28	-95.2	-49.84	-13	-36.84	H
5.69013	38.5	Pk	34.8	-28.2	-95.2	-50.1	-13	-37.1	V
7.53533	36.39	Pk	35.8	-24.7	-95.2	-47.71	-13	-34.71	H
7.58697	36.78	Pk	35.8	-24.5	-95.2	-47.12	-13	-34.12	V
High Channel, 1905MHz									
3.80694	40.22	Pk	33.7	-30.3	-95.2	-51.58	-13	-38.58	V
3.81546	41.07	Pk	33.7	-30.1	-95.2	-50.53	-13	-37.53	H
5.72152	38.44	Pk	34.9	-28.1	-95.2	-49.96	-13	-36.96	H
5.78743	38.81	Pk	35.1	-27.9	-95.2	-49.19	-13	-36.19	V
7.62609	36.34	Pk	35.8	-24.2	-95.2	-47.26	-13	-34.26	H
7.62611	36.48	Pk	35.8	-24.2	-95.2	-47.12	-13	-34.12	V

9.4.4. LTE BAND 30

LIMITS

FCC: §27.53 (a)

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

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/21/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE Band 30 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.63477	39.26	Pk	34.3	-29.3	-95.2	-50.94	-40	-10.94	H
4.6391	39.5	Pk	34.3	-29.3	-95.2	-50.7	-40	-10.7	V
6.93721	37.23	Pk	36	-25.4	-95.2	-47.37	-40	-7.37	H
6.97716	36.56	Pk	36	-25.5	-95.2	-48.14	-40	-8.14	V
9.24005	35.7	Pk	36.3	-23	-95.2	-46.2	-40	-6.2	H
9.3896	35.24	Pk	36.4	-22.9	-95.2	-46.46	-40	-6.46	V

9.4.5. LTE BAND 41 AND 5G NR Band n41

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	6/26/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE Band 41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 2506MHz									
5.0212	38.36	Pk	33.7	-25.9	-95.2	-48.34	-25	-23.34	H
5.14177	37.48	Pk	33.8	-26.2	-95.2	-49.32	-25	-24.32	V
7.18962	36.12	Pk	37	-24	-95.2	-45.68	-25	-20.68	V
7.22167	35.64	Pk	37.1	-23.5	-95.2	-45.66	-25	-20.66	H
9.71608	34.59	Pk	38.7	-20	-95.2	-41.11	-25	-16.11	V
9.82231	35.17	Pk	38.6	-20.3	-95.2	-41.13	-25	-16.13	H
Mid Channel, 2593MHz									
5.01236	37.57	Pk	33.7	-26	-95.2	-49.13	-25	-24.13	H
5.1063	37.86	Pk	34	-26.4	-95.2	-48.94	-25	-23.94	V
7.82386	34.5	Pk	37.3	-23.1	-95.2	-46.1	-25	-21.1	H
8.02327	35.42	Pk	37.1	-22.8	-95.2	-45.18	-25	-20.18	V
10.58271	34.55	Pk	39.5	-19.5	-95.2	-39.75	-25	-14.75	V
11.41539	34.6	Pk	39.2	-19.7	-95.2	-40.2	-25	-15.2	H
High Channel, 2680MHz									
5.01502	38.36	Pk	33.7	-26	-95.2	-48.34	-25	-23.34	H
5.17437	37.27	Pk	33.7	-26.4	-95.2	-49.93	-25	-24.93	V
7.90039	35.6	Pk	37.3	-22.6	-95.2	-44.4	-25	-19.4	V
7.98243	34.96	Pk	37.1	-22.9	-95.2	-45.74	-25	-20.74	H
10.38227	34.59	Pk	39.2	-19.3	-95.2	-39.91	-25	-14.91	V
10.44006	33.74	Pk	39.4	-19.3	-95.2	-40.56	-25	-15.56	H

QPSK 5G NR Band n41 (100.0MHZ BANDWIDTH)

Project #:	13179115
Date:	6/26/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode	5G NR Band n41 QPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 2546MHz									
4.99274	39.22	Pk	34.1	-28.4	-95.2	-50.28	-25	-25.28	H
4.99374	39.28	Pk	34.1	-28.4	-95.2	-50.22	-25	-25.22	V
7.45751	36.76	Pk	36.2	-24	-95.2	-46.24	-25	-21.24	V
7.45931	36.53	Pk	36.2	-24	-95.2	-46.47	-25	-21.47	H
9.9843	35.01	Pk	37.2	-20.9	-95.2	-43.89	-25	-18.89	H
9.98464	35.72	Pk	37.2	-20.9	-95.2	-43.18	-25	-18.18	V
Mid Channel, 2593MHz									
5.18442	38.71	Pk	34.6	-27.7	-95.2	-49.59	-25	-24.59	V
5.18708	38.36	Pk	34.6	-27.7	-95.2	-49.94	-25	-24.94	H
7.77909	35.88	Pk	35.9	-23.4	-95.2	-46.82	-25	-21.82	H
7.7792	36.46	Pk	35.9	-23.4	-95.2	-46.24	-25	-21.24	V
10.36982	34.58	Pk	37.7	-20.2	-95.2	-43.12	-25	-18.12	H
10.37104	34.49	Pk	37.7	-20.2	-95.2	-43.21	-25	-18.21	V
High Channel, 2640MHz									
5.37942	-67.99	Pk	34.8	-27.8	10.5	-50.49	-25	-25.49	197
5.38203	-68.4	Pk	34.8	-27.8	10.6	-50.8	-25	-25.8	12
8.06898	-70.85	Pk	36.2	-23.2	11.2	-46.65	-25	-21.65	324
8.0694	-70.06	Pk	36.2	-23.2	11.4	-45.66	-25	-20.66	212
10.76057	-71.62	Pk	37.8	-20.2	10.3	-43.72	-25	-18.72	204
10.76138	-71.3	Pk	37.8	-20.2	10.6	-43.1	-25	-18.1	40

9.4.6. LTE BAND 66

LIMITS

FCC: §27.53 (h)

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

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	13259315
Date:	8/11/2020
Test Engineer:	30606
Configuration:	EUT Only
Mode	LTE Band 66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1720MHz									
3.38039	38.38	Pk	33	-27.8	-95.2	-51.62	-13	-38.62	V
3.42213	38.78	Pk	33	-28.2	-95.2	-51.62	-13	-38.62	H
5.09297	37.37	Pk	34.5	-24.6	-95.2	-47.93	-13	-34.93	H
5.13395	37.98	Pk	34.6	-25.6	-95.2	-48.22	-13	-35.22	V
6.76826	35.29	Pk	36.7	-21.8	-95.2	-45.01	-13	-32.01	H
6.84847	36.71	Pk	36.4	-23.4	-95.2	-45.49	-13	-32.49	V
Mid Channel, 1745MHz									
3.49541	-67.03	Pk	33.4	-30.2	11.9	-51.93	-13	-38.93	H
3.49547	-66.88	Pk	33.4	-30.2	11.8	-51.88	-13	-38.88	V
5.23856	-68.64	Pk	34.7	-28.8	11.1	-51.64	-13	-38.64	H
5.24576	-68.18	Pk	34.8	-28.7	11.3	-50.78	-13	-37.78	V
6.98254	-70.07	Pk	36	-25.4	10.1	-49.37	-13	-36.37	H
6.99051	-69.91	Pk	35.9	-25.3	11	-48.31	-13	-35.31	V
High Channel, 1770MHz									
3.77458	39.72	Pk	33.6	-26.9	-95.2	-48.78	-13	-35.78	V
3.78872	38.96	Pk	33.6	-27	-95.2	-49.64	-13	-36.64	H
4.79225	37.65	Pk	34.1	-25.2	-95.2	-48.65	-13	-35.65	H
5.63095	37.63	Pk	35.1	-24.2	-95.2	-46.67	-13	-33.67	V
8.42828	35.34	Pk	36.1	-20.7	-95.2	-44.46	-13	-31.46	H
8.51747	35.13	Pk	36.1	-21	-95.2	-44.97	-13	-31.97	V

9.5. FIELD STRENGTH OF SPURIOUS RADIATION, ANT4

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

9.5.1. LTE BAND 2

LIMITS

FCC: §24.238(a)

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

QPSK LTE BAND 2 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/17/2020
Test Engineer:	10641
Configuration:	EUT only
Mode	LTE Band 2 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.71815	41.55	Pk	33.3	-29.9	-95.2	-50.25	-13	-37.25	H
3.71967	40.81	Pk	33.3	-29.9	-95.2	-50.99	-13	-37.99	V
5.57842	39.16	Pk	34.9	-28	-95.2	-49.14	-13	-36.14	H
5.58123	38.33	Pk	34.9	-28	-95.2	-49.97	-13	-36.97	V
7.43857	37.45	Pk	35.8	-24.9	-95.2	-46.85	-13	-33.85	V
7.43946	36.52	Pk	35.8	-24.9	-95.2	-47.78	-13	-34.78	H
Mid Channel, 1880MHz									
3.75783	40.34	Pk	33.5	-30.2	-95.2	-51.56	-13	-38.56	V
3.75997	40.48	Pk	33.5	-30.2	-95.2	-51.42	-13	-38.42	H
5.63974	39.14	Pk	34.8	-28	-95.2	-49.26	-13	-36.26	V
5.64056	38.57	Pk	34.9	-28	-95.2	-49.73	-13	-36.73	H
7.51901	36.72	Pk	35.7	-24.4	-95.2	-47.18	-13	-34.18	H
7.51941	36.86	Pk	35.7	-24.4	-95.2	-47.04	-13	-34.04	V
High Channel, 1900MHz									
3.80113	-66.88	Pk	33.7	-30.3	11.4	-52.08	-13	-39.08	272
3.80237	-66.14	Pk	33.7	-30.3	11.3	-51.44	-13	-38.44	327
5.69893	-67.72	Pk	34.8	-28.3	10.4	-50.82	-13	-37.82	298
5.69928	-68.2	Pk	34.9	-28.3	10.5	-51.1	-13	-38.1	291
7.59917	-70.68	Pk	35.7	-24.5	10.6	-48.88	-13	-35.88	260
7.60131	-70.39	Pk	35.8	-24.6	11	-48.19	-13	-35.19	301

9.5.2. LTE BAND 7

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/17/2020
Test Engineer:	10641
Configuration:	EUT only
Mode	LTE Band 7 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.01998	39.8	Pk	34.3	-28.9	-95.2	-50	-25	-25	V
5.02232	40.16	Pk	34.3	-28.9	-95.2	-49.64	-25	-24.64	H
7.52898	36.56	Pk	35.8	-24.5	-95.2	-47.34	-25	-22.34	V
7.53105	36.83	Pk	35.8	-24.6	-95.2	-47.17	-25	-22.17	H
10.04032	34.82	Pk	37.1	-22.2	-95.2	-45.48	-25	-20.48	V
10.04081	35.47	Pk	37.1	-22.2	-95.2	-44.83	-25	-19.83	H
Mid Channel, 2535MHz									
5.06317	38.72	Pk	34.4	-28.7	-95.2	-50.78	-25	-25.78	V
5.06449	39.25	Pk	34.4	-28.7	-95.2	-50.25	-25	-25.25	H
7.60518	36.97	Pk	35.8	-24.6	-95.2	-47.03	-25	-22.03	V
7.60642	36.45	Pk	35.8	-24.6	-95.2	-47.55	-25	-22.55	H
10.13948	35.75	Pk	37.2	-22	-95.2	-44.25	-25	-19.25	V
10.13981	35.82	Pk	37.2	-22	-95.2	-44.18	-25	-19.18	H
High Channel, 2560MHz									
5.11891	39.57	Pk	34.5	-28.8	-95.2	-49.93	-25	-24.93	H
5.11942	39.14	Pk	34.6	-28.8	-95.2	-50.26	-25	-25.26	V
7.67915	36.06	Pk	35.8	-23.9	-95.2	-47.24	-25	-22.24	V
7.67992	35.93	Pk	35.8	-23.9	-95.2	-47.37	-25	-22.37	H
10.24172	35.89	Pk	37.3	-21.6	-95.2	-43.61	-25	-18.61	V
10.24274	35.5	Pk	37.3	-21.6	-95.2	-44	-25	-19	H

9.5.3. LTE BAND 25

LIMITS

FCC: §24.238(a)

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

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/17/2020
Test Engineer:	10641
Configuration:	EUT only
Mode	LTE Band 25 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1860MHz									
3.71846	33.66	Pk	33.3	-29.9	-95.2	-58.14	-13	-45.14	V
3.72174	40.57	Pk	33.3	-29.9	-95.2	-51.23	-13	-38.23	H
5.57882	38.36	Pk	34.9	-28	-95.2	-49.94	-13	-36.94	H
5.58083	31.52	Pk	34.9	-28	-95.2	-56.78	-13	-43.78	V
7.44098	28.96	Pk	35.7	-24.8	-95.2	-55.34	-13	-42.34	V
7.44139	35.72	Pk	35.7	-24.8	-95.2	-48.58	-13	-35.58	H
Mid Channel, 1882.5MHz									
3.76606	41	Pk	33.6	-30.1	-95.2	-50.7	-13	-37.7	V
3.76703	40.55	Pk	33.6	-30.1	-95.2	-51.15	-13	-38.15	H
5.64595	38.32	Pk	34.9	-28	-95.2	-49.98	-13	-36.98	V
5.64704	38.36	Pk	34.9	-28	-95.2	-49.94	-13	-36.94	H
7.53112	36.69	Pk	35.8	-24.6	-95.2	-47.31	-13	-34.31	H
7.53134	36.59	Pk	35.8	-24.6	-95.2	-47.41	-13	-34.41	V
High Channel, 1905MHz									
3.81087	-66.21	Pk	33.7	-30.2	11.2	-51.51	-13	-38.51	96
3.81093	-66.49	Pk	33.7	-30.2	11	-51.99	-13	-38.99	164
5.71399	-68.25	Pk	34.9	-28.2	10.5	-51.05	-13	-38.05	129
5.7145	-68.06	Pk	34.9	-28.2	10.6	-50.76	-13	-37.76	206
7.62066	-70.75	Pk	35.8	-24.3	10.9	-48.35	-13	-35.35	80
7.62172	-70.53	Pk	35.8	-24.2	11.4	-47.53	-13	-34.53	181

9.5.4. LTE BAND 30

LIMITS

FCC: §27.53 (a)

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

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/17/2020
Test Engineer:	10641
Configuration:	EUT Only
Mode:	LTE Band 30 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.61892	39.74	Pk	34.3	-29.5	-95.2	-50.66	-40	-10.66	V
4.62096	40.08	Pk	34.3	-29.5	-95.2	-50.32	-40	-10.32	H
6.93126	36.93	Pk	36	-25.5	-95.2	-47.77	-40	-7.77	V
6.93155	36.82	Pk	36	-25.5	-95.2	-47.88	-40	-7.88	H
9.23951	36.22	Pk	36.3	-23	-95.2	-45.68	-40	-5.68	H
9.24047	36.23	Pk	36.3	-23	-95.2	-45.67	-40	-5.67	V

9.5.5. LTE BAND 41 AND 5G NR Band n41

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	6/27/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE Band 41 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 2506MHz									
5.01363	37.97	Pk	33.7	-26	-95.2	-48.73	-25	-23.73	H
5.03231	38.14	Pk	33.7	-26	-95.2	-48.66	-25	-23.66	V
7.27474	36.35	Pk	37.1	-23.3	-95.2	-44.65	-25	-19.65	V
7.2768	35.76	Pk	37.1	-23.2	-95.2	-45.14	-25	-20.14	H
9.66702	34.72	Pk	38.7	-20.2	-95.2	-41.28	-25	-16.28	V
9.67807	34.1	Pk	38.7	-20.1	-95.2	-41.7	-25	-16.7	H
Mid Channel, 2593MHz									
5.02067	37.85	Pk	33.7	-25.9	-95.2	-48.85	-25	-23.85	V
5.12603	37.43	Pk	33.8	-26.3	-95.2	-49.47	-25	-24.47	H
7.58578	36.08	Pk	36.9	-23.9	-95.2	-45.62	-25	-20.62	V
7.61962	35.81	Pk	37	-23.6	-95.2	-45.59	-25	-20.59	H
9.86068	34.71	Pk	38.6	-20.2	-95.2	-41.39	-25	-16.39	V
10.1378	34.08	Pk	38.5	-19.9	-95.2	-41.82	-25	-16.82	H
High Channel, 2680MHz									
5.5341	37.34	Pk	33.2	-26	-95.2	-49.76	-25	-24.76	H
5.54242	37.18	Pk	33.2	-26.1	-95.2	-50.22	-25	-25.22	V
8.16736	35.72	Pk	37.3	-22.9	-95.2	-44.78	-25	-19.78	V
8.18638	36	Pk	37.3	-23	-95.2	-44.6	-25	-19.6	H
10.96967	34.04	Pk	39.4	-19.5	-95.2	-40.46	-25	-15.46	V
10.974	33.87	Pk	39.5	-19.6	-95.2	-40.63	-25	-15.63	H

QPSK 5G NR Band n41 (100.0MHZ BANDWIDTH)

Project #:	13179115
Date:	07/17/2020
Test Engineer:	19169
Configuration:	EUT Only
Mode	5G NR Band n41 QPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 2546MHz									
4.99272	39.66	Pk	34.1	-28.4	-95.2	-49.84	-25	-24.84	V
4.99357	39.59	Pk	34.1	-28.4	-95.2	-49.91	-25	-24.91	H
7.48906	36.87	Pk	36	-23.8	-95.2	-46.13	-25	-21.13	H
7.48974	36.82	Pk	36	-23.8	-95.2	-46.18	-25	-21.18	V
9.98309	35.13	Pk	37.2	-20.9	-95.2	-43.77	-25	-18.77	H
9.98568	35.41	Pk	37.3	-20.9	-95.2	-43.39	-25	-18.39	V
Mid Channel, 2593MHz									
5.1863	38.55	Pk	34.6	-27.7	-95.2	-49.75	-25	-24.75	V
5.18724	38.49	Pk	34.6	-27.7	-95.2	-49.81	-25	-24.81	H
7.77913	36.58	Pk	35.9	-23.4	-95.2	-46.12	-25	-21.12	H
7.78032	36.35	Pk	35.9	-23.4	-95.2	-46.35	-25	-21.35	V
10.36972	34.6	Pk	37.7	-20.2	-95.2	-43.1	-25	-18.1	V
10.37129	34.22	Pk	37.7	-20.2	-95.2	-43.48	-25	-18.48	H
High Channel, 2640MHz									
5.37913	38.77	Pk	34.8	-27.8	-95.2	-49.43	-25	-24.43	H
5.3806	38.91	Pk	34.8	-27.8	-95.2	-49.29	-25	-24.29	V
8.06958	36.4	Pk	36.2	-23.2	-95.2	-45.8	-25	-20.8	H
8.07046	37.13	Pk	36.2	-23.2	-95.2	-45.07	-25	-20.07	V
10.76133	35.42	Pk	37.8	-20.2	-95.2	-42.18	-25	-17.18	H
10.76186	35.73	Pk	37.7	-20.2	-95.2	-41.97	-25	-16.97	V

9.5.6. LTE BAND 48

LIMITS

FCC: §96.41

(e) 3.5 GHz Emissions and Interference Limits—

(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz .

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	9/14/2020
Test Engineer:	30606
Configuration:	EUT Only
Mode:	LTE Band 48 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3560MHz									
5.97867	25.24	RMS	35.8	-24.6	-95.2	-58.36	-40	-18.36	V
6.43052	25.26	RMS	36.4	-24	-95.2	-57.04	-40	-17.04	H
7.88038	23.74	RMS	36.1	-22.4	-95.2	-56.76	-40	-16.76	V
8.06559	23.2	RMS	36.1	-22.3	-95.2	-57.4	-40	-17.4	H
10.13824	22.76	RMS	37.5	-20.4	-95.2	-54.74	-40	-14.74	H
10.22508	22.06	RMS	37.6	-20	-95.2	-55.04	-40	-15.04	V
Mid Channel, 3625MHz									
5.51242	26.12	RMS	35	-25.5	-95.2	-58.98	-40	-18.98	H
5.6889	26.16	RMS	35.2	-25.5	-95.2	-58.84	-40	-18.84	V
7.36128	23.89	RMS	36.1	-22.9	-95.2	-57.51	-40	-17.51	H
7.76333	23.96	RMS	35.9	-22.4	-95.2	-57.14	-40	-17.14	V
9.72313	23.02	RMS	37.1	-21	-95.2	-55.48	-40	-15.48	H
9.97374	21.97	RMS	37.3	-20.1	-95.2	-55.33	-40	-15.33	V
High Channel, 3690MHz									
6.25047	24.71	RMS	36	-24.6	-95.2	-58.59	-40	-18.59	V
6.43845	25.28	RMS	36.4	-23.9	-95.2	-56.92	-40	-16.92	H
7.70479	24.02	RMS	35.9	-22.2	-95.2	-56.78	-40	-16.78	V
8.10761	24.17	RMS	36.1	-22.2	-95.2	-56.53	-40	-16.53	H
9.73258	23.07	RMS	37.2	-21.1	-95.2	-55.43	-40	-15.43	H
10.40992	22.02	RMS	37.7	-19.4	-95.2	-54.28	-40	-14.28	V

9.5.7. LTE BAND 66

LIMITS

FCC: §27.53 (h)

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

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	4/20/2020
Test Engineer:	10641
Configuration:	EUT Only
Mode	LTE Band 66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1720MHz									
3.43865	40.72	Pk	32.8	-30.4	-95.2	-52.08	-13	-39.08	H
3.44148	42.1	Pk	32.8	-30.4	-95.2	-50.7	-13	-37.7	V
5.15895	38.87	Pk	34.5	-28.6	-95.2	-50.43	-13	-37.43	H
5.16193	38.8	Pk	34.5	-28.6	-95.2	-50.5	-13	-37.5	V
6.8781	36.59	Pk	35.9	-25.1	-95.2	-47.81	-13	-34.81	V
6.88098	37.15	Pk	35.9	-25.1	-95.2	-47.25	-13	-34.25	H
Mid Channel, 1745MHz									
3.48805	-67.14	Pk	33	-30.1	11.5	-52.74	-13	-39.74	248
3.49126	-66.53	Pk	33.1	-30.1	12	-51.53	-13	-38.53	290
5.23317	-68.46	Pk	34.7	-28.9	11.3	-51.36	-13	-38.36	272
5.23426	-67.78	Pk	34.7	-28.9	11.3	-50.68	-13	-37.68	270
6.97806	-70.65	Pk	36	-25.5	10.5	-49.65	-13	-36.65	246
6.9791	-70.65	Pk	36	-25.5	10	-50.15	-13	-37.15	225
High Channel, 1770MHz									
3.53873	-66.71	Pk	33.2	-30.4	11.1	-52.81	-13	-39.81	321
3.54101	-66.76	Pk	33.1	-30.4	11.4	-52.66	-13	-39.66	250
5.30905	-68.16	Pk	35	-28.9	10.8	-51.26	-13	-38.26	273
5.31046	-67.9	Pk	35	-28.9	10.8	-51	-13	-38	262
7.07932	-70.97	Pk	36	-25.2	10.7	-49.47	-13	-36.47	265
7.07975	-70.59	Pk	36	-25.2	10.8	-48.99	-13	-35.99	276

9.5.8. 5G NR Band n77

LIMITS

FCC: §27.53

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

(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

QPSK 5G NR Band n77 (100.0MHZ BANDWIDTH)

Project #:	13179115
Date:	7/19/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	5G NR Band n77 QPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3750MHz									
7.49853	36.02	Pk	36	-23.1	-95.2	-46.28	-13	-33.28	H
7.49902	36.46	Pk	36	-23.1	-95.2	-45.84	-13	-32.84	V
11.24907	34.14	Pk	38	-19.6	-95.2	-42.66	-13	-29.66	V
11.24972	34.38	Pk	38	-19.6	-95.2	-42.42	-13	-29.42	H
14.99943	34.55	Pk	39.9	-19.5	-95.2	-40.25	-13	-27.25	H
15.00099	34.14	Pk	39.9	-19.5	-95.2	-40.66	-13	-27.66	V
Mid Channel, 3840MHz									
7.67918	35.38	Pk	35.9	-22.9	-95.2	-46.82	-13	-33.82	V
7.68073	35.71	Pk	35.9	-22.9	-95.2	-46.49	-13	-33.49	H
11.52063	34.87	Pk	38.4	-19.6	-95.2	-41.53	-13	-28.53	V
11.52087	34.5	Pk	38.4	-19.6	-95.2	-41.9	-13	-28.9	H
15.35991	35.87	Pk	41	-20.1	-95.2	-38.43	-13	-25.43	V
15.3605	35.08	Pk	41	-20.1	-95.2	-39.22	-13	-26.22	H
High Channel, 3930MHz									
7.8692	36.86	Pk	36.1	-23.5	-95.2	-45.74	-13	-32.74	H
7.8702	36.97	Pk	36.1	-23.5	-95.2	-45.63	-13	-32.63	V
11.71018	34.64	Pk	38.7	-19.8	-95.2	-41.66	-13	-28.66	V
11.71581	34.84	Pk	38.7	-19.9	-95.2	-41.56	-13	-28.56	H
15.73765	34.81	Pk	40.6	-18.8	-95.2	-38.59	-13	-25.59	V
15.75214	34.92	Pk	40.7	-19.4	-95.2	-38.98	-13	-25.98	H

9.6. FIELD STRENGTH OF SPURIOUS RADIATION, ANT7

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

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

RESULTS

9.6.1. LTE BAND 48

LIMITS

FCC: §96.41

(e) 3.5 GHz Emissions and Interference Limits—

(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz .

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	13259315
Date:	7/28/2020
Test Engineer:	19206
Configuration:	EUT Only
Mode	LTE Band 48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3560MHz									
4.93832	31.37	RMS	33.4	-26.1	-95.2	-56.13	-40	-16.13	V
5.00173	32.06	RMS	33.6	-26	-95.2	-54.94	-40	-14.94	H
7.27386	30.02	RMS	37.1	-23.3	-95.2	-50.88	-40	-10.88	H
7.27693	29.79	RMS	37.1	-23.2	-95.2	-51.01	-40	-11.01	V
9.31214	28.85	RMS	38.7	-20.9	-95.2	-47.95	-40	-7.95	H
9.63154	27.83	RMS	38.8	-20.4	-95.2	-48.27	-40	-8.27	V
Mid Channel, 3625MHz									
4.80754	32.7	RMS	33	-27	-95.2	-56	-40	-16	H
4.93613	31.57	RMS	33.4	-26.1	-95.2	-55.83	-40	-15.83	V
6.31851	30.71	RMS	34.6	-24.5	-95.2	-53.89	-40	-13.89	V
6.32346	30.2	RMS	34.5	-24.5	-95.2	-54.5	-40	-14.5	H
7.83912	28.72	RMS	37.2	-22.7	-95.2	-51.38	-40	-11.38	V
7.90129	28.75	RMS	37.3	-22.6	-95.2	-50.85	-40	-10.85	H
High Channel, 3690MHz									
5.05637	31.82	RMS	33.8	-26.2	-95.2	-55.38	-40	-15.38	H
5.06041	32.43	RMS	33.8	-26.1	-95.2	-54.57	-40	-14.57	V
7.08048	29.83	RMS	36.7	-23.7	-95.2	-51.77	-40	-11.77	H
7.27245	29.72	RMS	37.2	-23.3	-95.2	-51.08	-40	-11.08	V
9.12895	28.62	RMS	38.7	-21.2	-95.2	-48.28	-40	-8.28	H
9.28101	28.1	RMS	38.7	-21	-95.2	-48.6	-40	-8.6	V

9.6.18. 5G NR Band n77

LIMITS

FCC: §27.53

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

(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

QPSK 5G NR Band n77 (100.0MHZ BANDWIDTH)

Project #:	13179115
Date:	7/19/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	5G NR Band n77 QPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3750MHz									
7.49871	36.16	Pk	36	-23.1	-95.2	-46.14	-13	-33.14	V
7.49951	36.28	Pk	36	-23.2	-95.2	-46.12	-13	-33.12	H
11.25009	35.09	Pk	38	-19.6	-95.2	-41.71	-13	-28.71	H
11.25038	34.37	Pk	38	-19.6	-95.2	-42.43	-13	-29.43	V
14.99853	34.28	Pk	39.9	-19.5	-95.2	-40.52	-13	-27.52	V
14.99878	34.34	Pk	39.9	-19.5	-95.2	-40.46	-13	-27.46	H
Mid Channel, 3840MHz									
7.68042	35.82	Pk	35.9	-22.9	-95.2	-46.38	-13	-33.38	H
7.68047	36.75	Pk	35.9	-22.9	-95.2	-45.45	-13	-32.45	V
11.51834	34.82	Pk	38.4	-19.6	-95.2	-41.58	-13	-28.58	V
11.52134	35.05	Pk	38.4	-19.6	-95.2	-41.35	-13	-28.35	H
15.35973	35.77	Pk	41	-20.1	-95.2	-38.53	-13	-25.53	H
15.36008	35.54	Pk	41	-20.1	-95.2	-38.76	-13	-25.76	V
High Channel, 3930MHz									
7.85934	35.89	Pk	36	-23.6	-95.2	-46.91	-13	-33.91	V
7.86527	36.39	Pk	36	-23.5	-95.2	-46.31	-13	-33.31	H
11.75472	34.36	Pk	38.8	-19.7	-95.2	-41.74	-13	-28.74	V
11.80495	35.11	Pk	38.8	-19.3	-95.2	-40.59	-13	-27.59	H
15.66673	34.82	Pk	40.8	-19.4	-95.2	-38.98	-13	-25.98	H
15.71421	34.62	Pk	40.7	-18.7	-95.2	-38.58	-13	-25.58	V

9.7. FIELD STRENGTH OF SPURIOUS RADIATION, ANT8

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

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

RESULTS

9.7.1. LTE BAND 48

LIMITS

FCC: §96.41

(b) 3.5 GHz Emissions and Interference Limits—

(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	9/14/2020
Test Engineer:	30606
Configuration:	EUT Only
Mode:	LTE Band 48 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3560MHz									
5.97332	25.5	RMS	35.7	-24.5	-95.2	-58.1	-40	-18.1	H
6.37734	25.16	RMS	36.3	-24.3	-95.2	-57.44	-40	-17.44	V
7.77146	23.73	RMS	35.9	-22.5	-95.2	-57.47	-40	-17.47	H
8.58366	23.25	RMS	36.1	-21.7	-95.2	-56.95	-40	-16.95	V
9.78726	23.09	RMS	37.2	-21	-95.2	-55.01	-40	-15.01	H
10.76477	22.46	RMS	37.8	-19.2	-95.2	-53.54	-40	-13.54	V
Mid Channel, 3625MHz									
5.22779	26.51	RMS	34.6	-26.1	-95.2	-59.89	-40	-19.89	V
5.51601	25.94	RMS	35	-25.6	-95.2	-59.16	-40	-19.16	H
6.43688	25.06	RMS	36.4	-23.9	-95.2	-57.14	-40	-17.14	V
6.83693	24.43	RMS	36.4	-23.4	-95.2	-57.27	-40	-17.27	H
7.76444	23.87	RMS	35.9	-22.4	-95.2	-57.23	-40	-17.23	V
8.45934	23.66	RMS	36.2	-22	-95.2	-56.54	-40	-16.54	H
High Channel, 3690MHz									
5.57995	26.09	RMS	35	-25.7	-95.2	-59.41	-40	-19.41	V
5.96916	25.49	RMS	35.7	-24.5	-95.2	-58.21	-40	-18.21	H
7.75798	23.8	RMS	35.9	-22.4	-95.2	-57.3	-40	-17.3	V
7.81924	23.75	RMS	36	-22.3	-95.2	-57.05	-40	-17.05	H
9.43898	23.29	RMS	36.7	-21.2	-95.2	-55.51	-40	-15.51	V
10.18626	22.6	RMS	37.5	-20.4	-95.2	-54.9	-40	-14.9	H

9.7.2. 5G NR Band n77

LIMITS

FCC: §27.53

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

(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

QPSK 5G NR Band n77 (100.0MHZ BANDWIDTH)

Project #:	13179115
Date:	7/18/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	5G NR Band n77 QPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3750MHz									
7.49841	35.61	Pk	36	-23.1	-95.2	-46.69	-13	-33.69	H
7.49887	35.46	Pk	36	-23.1	-95.2	-46.84	-13	-33.84	V
11.25062	34.85	Pk	38	-19.6	-95.2	-41.95	-13	-28.95	V
11.2508	34.17	Pk	38	-19.6	-95.2	-42.63	-13	-29.63	H
14.99897	34.9	Pk	39.8	-19.5	-95.2	-40	-13	-27	H
15.00115	34.67	Pk	39.9	-19.5	-95.2	-40.13	-13	-27.13	V
Mid Channel, 3840MHz									
7.67897	36.01	Pk	35.9	-22.9	-95.2	-46.19	-13	-33.19	V
7.68209	35.86	Pk	35.9	-22.8	-95.2	-46.24	-13	-33.24	H
11.51924	34.69	Pk	38.4	-19.6	-95.2	-41.71	-13	-28.71	V
11.52086	34.79	Pk	38.4	-19.6	-95.2	-41.61	-13	-28.61	H
15.35827	35.05	Pk	41	-20.1	-95.2	-39.25	-13	-26.25	V
15.36045	35.21	Pk	41	-20.1	-95.2	-39.09	-13	-26.09	H
High Channel, 3930MHz									
7.83117	37.4	Pk	36	-23.6	-95.2	-45.4	-13	-32.4	V
7.86656	35.98	Pk	36	-23.5	-95.2	-46.72	-13	-33.72	H
11.65481	35.08	Pk	38.6	-19.7	-95.2	-41.22	-13	-28.22	V
11.71368	34.86	Pk	38.7	-19.9	-95.2	-41.54	-13	-28.54	H
15.66718	35.05	Pk	40.8	-19.4	-95.2	-38.75	-13	-25.75	V
15.72085	34.68	Pk	40.7	-18.7	-95.2	-38.52	-13	-25.52	H

9.8. FIELD STRENGTH OF SPURIOUS RADIATION, ANT9

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

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

RESULTS

9.8.1. LTE BAND 48

LIMITS

FCC: §96.41

(e) 3.5 GHz Emissions and Interference Limits—

(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz .

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	13179115
Date:	5/10/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode:	LTE Band 48 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3560MHz									
5.0562	32.27	RMS	33.8	-26.2	-95.2	-54.93	-40	-14.93	H
5.06384	32.5	RMS	33.9	-26.1	-95.2	-54.4	-40	-14.4	V
6.31319	31.58	RMS	34.6	-24.8	-95.2	-53.32	-40	-13.32	V
6.31609	30.69	RMS	34.6	-24.7	-95.2	-54.11	-40	-14.11	H
7.27304	30.25	RMS	37.2	-23.3	-95.2	-50.55	-40	-10.55	V
7.33654	30.16	RMS	36.9	-23.7	-95.2	-51.34	-40	-11.34	H
Mid Channel, 3625MHz									
4.79621	31.91	RMS	32.9	-27.1	-95.2	-56.89	-40	-16.89	H
5.12272	32.07	RMS	33.9	-26.4	-95.2	-55.13	-40	-15.13	V
6.44947	30.77	RMS	34.9	-24.8	-95.2	-53.83	-40	-13.83	H
6.50681	30.78	RMS	35.3	-24.4	-95.2	-53.02	-40	-13.02	V
8.03242	29.34	RMS	37.1	-22.7	-95.2	-50.66	-40	-10.66	H
8.03578	29.13	RMS	37.1	-22.6	-95.2	-50.77	-40	-10.77	V
High Channel, 3690MHz									
5.0672	31.42	RMS	33.8	-26.1	-95.2	-55.58	-40	-15.58	H
5.11748	31.78	RMS	33.9	-26.4	-95.2	-55.42	-40	-15.42	V
6.37822	30.5	RMS	34.6	-24.8	-95.2	-54.3	-40	-14.3	V
6.38492	30.74	RMS	34.7	-24.8	-95.2	-53.96	-40	-13.96	H
7.71444	29.89	RMS	37.1	-23.4	-95.2	-50.91	-40	-10.91	V
7.7168	29.82	RMS	37.1	-23.4	-95.2	-51.08	-40	-11.08	H

9.8.2. 5G NR Band n77

LIMITS

FCC: §27.53

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

(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

QPSK 5G NR Band n77 (100.0MHZ BANDWIDTH)

Project #:	13179115
Date:	7/19/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	5G NR Band n77 QPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 3750Mz									
7.49844	35.72	Pk	36	-23.1	-95.2	-46.58	-13	-33.58	H
7.49875	36.21	Pk	36	-23.1	-95.2	-46.09	-13	-33.09	V
11.24876	34.53	Pk	38	-19.6	-95.2	-42.27	-13	-29.27	H
11.2506	34.33	Pk	38	-19.6	-95.2	-42.47	-13	-29.47	V
14.99909	34.3	Pk	39.9	-19.5	-95.2	-40.5	-13	-27.5	V
15.00065	34.5	Pk	39.9	-19.5	-95.2	-40.3	-13	-27.3	H
Mid Channel, 3840MHz									
7.68039	35.76	Pk	35.9	-22.9	-95.2	-46.44	-13	-33.44	V
7.68106	36.15	Pk	35.9	-22.9	-95.2	-46.05	-13	-33.05	H
11.51799	35.22	Pk	38.4	-19.6	-95.2	-41.18	-13	-28.18	V
11.51805	35.03	Pk	38.4	-19.6	-95.2	-41.37	-13	-28.37	H
15.36047	35.07	Pk	41	-20.1	-95.2	-39.23	-13	-26.23	V
15.36174	36.03	Pk	41	-20	-95.2	-38.17	-13	-25.17	H
High Channel, 3930MHz									
7.85438	36.47	Pk	36	-23.6	-95.2	-46.33	-13	-33.33	H
7.85825	36.73	Pk	36	-23.6	-95.2	-46.07	-13	-33.07	V
11.79305	34.8	Pk	38.8	-19.4	-95.2	-41	-13	-28	H
11.8013	34.52	Pk	38.8	-19.3	-95.2	-41.18	-13	-28.18	V
15.69119	34.87	Pk	40.7	-19.4	-95.2	-39.03	-13	-26.03	V
15.70401	35.38	Pk	40.7	-19.2	-95.2	-38.32	-13	-25.32	H

10. SETUP PHOTOS

Please refer to 13259315-EP1V1 for setup photos

END OF REPORT

Appendix B – Reference Test Report 13336566-E8

Attached is the test report (13336566-E8) containing the reference data from the parent model as detailed in section 5.5.



TEST REPORT

Report Number. : 13336566-E8V3

Applicant : APPLE, INC
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A.

Model : A2406

FCC ID : BCG-E3546A

EUT Description : SMARTPHONE

Test Standard(s) : FCC CFR47 PART 22H, 24E, 27, 90S, 90R, AND 96

Date Of Issue:
SEPTEMBER 25, 2020

Prepared by:
UL Verification Services Inc.
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NVLAP Lab code: 200065-0

Revision History

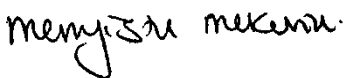
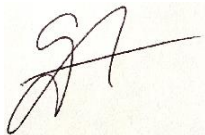
Rev.	Issue Date	Revisions	Revised By
V1	9/18/2020	Initial Review	Mengistu Mekuria
V2	9/24/2020	Addressed TCB Feedback	John Thompson
V3	9/25/2020	Addressed TCB Feedback	Glenn Escano

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1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.	
Model	A2406	
FCC ID	BCG-E3546A	
EUT Description	SMARTPHONE	
Serial Number	MODEL (A2406): C07018700VCP55J4 (Conducted), GT6D200504RR (Radiated)	
Date Tested	APRIL 21, 2020 to SEPTEMBER 16, 2020	
Applicable Standards	FCC CFR47 22H, 24E, 27, 90S, 90R, AND 96	
Test Results	COMPLIES	
UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.		
Approved & Released By:	Reviewed By:	Prepared By:
		
Mengistu Mekuria Lead Test Engineer UL Verification Services Inc.	Glenn Escano Project Engineer UL Verification Services Inc.	Sintia Andrean Laboratory Engineer UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27, Part 90, and Part 96
- [FCC KDB 971168 D01 v03r01](#): Power Meas License Digital Systems
- [FCC KDB 971168 D02 v02r01](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01 v01r01](#): Determining ERP and EIRP

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, Fremont, California, USA. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	47658 Kato Rd.
☒ Chamber A (IC:2324B-1)	☐ Chamber D (IC:22541-1)	☐ Chamber I (IC: 2324A-5)
☒ Chamber B (IC:2324B-2)	☐ Chamber E (IC:22541-2)	☐ Chamber J (IC: 2324A-6)
☐ Chamber C (IC:2324B-3)	☐ Chamber F (IC:22541-3)	☐ Chamber K (IC: 2324A-1)
	☐ Chamber G (IC:22541-4)	☐ Chamber L (IC: 2324A-3)
	☐ Chamber H (IC:22541-5)	☐ Chamber M (IC: 2324A-2)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code: 2324A.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U _{Lab}
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.39 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.07 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.52 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.24 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.37 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.17 dB
Occupied Channel Bandwidth	±0.39 %
Temperature	±0.9 °C
Supply voltages	±0.45 %
Time	±0.02 %

Uncertainty figures are valid to a confidence level of 95%.

4.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

5.2. INTRODUCTION

This application for certification is leveraging the data reuse procedures from KDB 484596 D01 based on reference FCC ID BCG-E3545A to cover variant model FCC ID BCG-E3546A. The major difference between the parent/reference model and the variant model is the depopulation in the variant model of the mmWave transmitter. All other circuitry and features are identical. The data reuse test plan was approved via manufacturer KDB inquiry.

5.3. MODEL DIFFERENCES

The manufacturer hereby declares the following for models A2341 and A2406.

A2341 and A2406 are highly similar, with the only difference being the supported cellular bands.

They have the same PCB layout, design, common components, antennas, antenna locations and housing cases.

More specifically, their cellular modem, Wi-Fi, BT, NFC, WPT and UWB transmitters are identical, and removal of cellular bands is done by software and depopulation of band-specific components associated with the removed bands.

Spot check verification and additional full radiated spurious emission test on ANT2 have been done on model A2406 in accordance with the test plan approved via KDB inquiry. Comparison of the models, upper deviation is within 3dB range and all tests are under FCC/ISED Technical Limits. The results documented for model A2341 may be applied as representative to model A2406.

5.4. SPOT CHECK VERIFICATION RESULTS SUMMARY

Spot check verification has been done on device model A2406, FCC ID: BCG-E3546A for antenna port power and radiated spurious emission tests in accordance with the Test Plan that was approved via KDB inquiry.

A2406 SPOT CHECK RESULTS								
Technology	Worst Mode	Test Item	Channel	Measured Frequency MHz	Original Model: A2341 FCC ID: BCG-E3545A	Sub Model: A2406 FCC ID: BCG-E3546A	Delta (dB)	Remarks
LTE BAND 2	QPSK @ 20 MHz BW	EIRP	Mid	1880	25.9 dBm	25.9 dBm	0	
	QPSK @ highest BW	RSE	High	7611.57	-45.03 dBm	-44.77 dBm	-0.26	Noise Floor Level
LTE BAND 5	QPSK @ 10 MHz BW	ERP	High	844	18.55 dBm	18.55 dBm	0	
	QPSK @ highest BW	RSE	High	2534.44	-52.6 dBm	-53.38 dBm	-0.78	Noise Floor Level
5G NR BAND N5	QPSK @ 20 MHz BW	ERP	Low	834	18.55 dBm	18.55 dBm	0	
	QPSK @ highest BW	RSE	Low	2495.2	-50.62 dBm	-51.75 dBm	-1.13	Noise Floor Level
LTE BAND 7	QPSK @ 20 MHz BW	EIRP	Mid	2535	24.8 dBm	24.8 dBm	0	
	QPSK @ highest BW	RSE	High	7653.08	-39.58 dBm	-44.99 dBm	-5.41	Noise Floor Level
LTE BAND 12	QPSK @ 10 MHz BW	ERP	Low	704	18.55 dBm	18.55 dBm	0	
5G NR BAND N12	QPSK @ 15 MHz BW	ERP	Low	706.5	18.55 dBm	18.55 dBm	0	
LTE BAND 13	QPSK @ 10 MHz BW	ERP	Mid	782	18.25 dBm	18.03 dBm	-0.22	
LTE BAND 14	QPSK @ 10 MHz BW	ERP	Mid	793	18.05 dBm	17.98 dBm	-0.7	
LTE BAND 17	QPSK @ 10 MHz BW	ERP	High	711	18.55 dBm	18.55 dBm	0	
LTE BAND 25	QPSK @ 20 MHz BW	EIRP	High	1905	25.9 dBm	25.9 dBm	0	
LTE BAND 26 (90S)	QPSK @ 10 MHz BW	ERP	Mid	819	18.55 dBm	18.55 dBm	0	
LTE BAND 30 (NS1)	QPSK @ 10 MHz BW	EIRP	Mid	2310	23.5 dBm	23.5 dBm	0	
LTE BAND 41	QPSK @ 20 MHz BW	EIRP	Mid	2593	25.8 dBm	25.8 dBm	0	
5G NR BAND N41	QPSK @ 100 MHz BW	EIRP	High	2640	26.1 dBm	26.1 dBm	0	
LTE BAND 48	QPSK @ 20 MHz BW	EIRP	Mid	3625	21.1 dBm	21.1 dBm	0	
LTE BAND 66	QPSK @ 20 MHz BW	EIRP	High	1770	23.8 dBm	23.8 dBm	0	
LTE BAND 71	QPSK @ 20MHz BW	ERP	Low	673	17.55 dBm	16.75 dBm	-0.8	
5G NR BAND N77	QPSK @ 100 MHz BW	EIRP	Mid	3840	23.2 dBm	23.2 dBm	0	

5.5. REFERENCE DETAIL

Reference application that contains the reused reference data.

Equipment Class	Reference FCC ID	Reference Application	Report Title/Section
PCE, CBE	BCG-E3545A	13259315-E8	FCC LTE Report/ All Sections except Radiated spurious emission on ANT2

5.6. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.28.03-1.

5.7. MAXIMUM ANTENNA GAIN

Please see table below:

LTE Bands AND 5G NR Bands	Antenna Gain (dBi)						
	ANT 1	ANT 2	ANT 3	ANT 4	ANT 7	ANT 8	ANT 9
LTE Band 71, 5G NR Band n71, 663 – 698 MHz	-6.0	-5.6	NA	NA	NA	NA	NA
LTE Band 12, 5G NR Band n12, 699 – 716 MHz	-5.0	-6.4	NA	NA	NA	NA	NA
LTE Band 17, 704 – 716 MHz	-5.0	-6.4	NA	NA	NA	NA	NA
LTE Band 13, 777 – 787 MHz	-5.3	-5.0	NA	NA	NA	NA	NA
LTE Band 14, 788 – 798 MHz	-5.5	-5.0	NA	NA	NA	NA	NA
LTE Band 26, 814 – 824 MHz (Part 90S)	-5.0	-5.8	NA	NA	NA	NA	NA
LTE Band 5, 5G NR Band n5, 824 – 849 MHz	-5.0	-5.5	NA	NA	NA	NA	NA
LTE Band 66, 5G NR Band n66, 1710 – 1780 MHz	-1.9	-3.5	-1.5	-3.2	NA	NA	NA
LTE Band 2, 5G NR Band n2, 1850 – 1910 MHz	-2.1	-3.8	0.9	-1.5	NA	NA	NA
LTE Band 25, 5G NR Band n25 1850 – 1915 MHz	-2.1	-3.8	0.9	-1.5	NA	NA	NA
LTE Band 30, 2305 – 2315 MHz	-3.4	-1.9	-0.2	-2.2	NA	NA	NA
LTE Band 7, 2500 – 2570 MHz	-2.7	-0.3	-0.2	-2.1	NA	NA	NA
LTE Band 41, 5G NR Band n41, 2496 – 2690 MHz	-1.9	-0.3	-0.2	-1.7	NA	NA	NA
5G NR Band n77, 3300 – 3980 MHz	NA	NA	NA	-2.5	-3	-4.8	-2.3
LTE Band 48, 3550 – 3700 MHz	NA	NA	NA	-3.3	-3	-4.8	-3.1

5.8. WORST-CASE CONFIGURATION AND MODE

The EUT supports the following LTE and 5G NR Bands:

Band 2, Band 4, Band 5, Band 7, Band 12, Band 13, Band 14, Band 17, Band 25, Band 26, Band 30, Band 41, Band 48, Band 66, Band 71, 5G NR Band n2, 5G NR Band n5, 5G NR Band n12, 5G NR Band n25, 5G NR Band n41, 5G NR Band n66, 5G NR Band n71, and 5G NR Band n77.

For 5G NR Band n2, 5G NR Band n5, 5G NR Band n12, 5G NR Band n25, 5G NR Band n41, 5G NR Band n66, and 5G NR Band n71 having the same operations bandwidth and Power are covered by LTE bands of Band 2, Band5, Band12, Band 25, Band 41, Band 66, and Band 71. Additional tests for 5G NR with Higher BW modes than LTE Bands as 5G NR Band n5, 5G NR Band n12, and 5G NR Band n41 were performed.

LTE Band 4 (1710-1755MHz, 5/10/15/20MHz bandwidth) is covered by LTE Band 66 because it is a subset of LTE band 66 and they have same output power.

FCC rule Part 22.905 of LTE Band 26 (824-849MHz) is covered by LTE Band 5 of same rule since they have the same output power and supported bandwidths.

For 5G NR bands, conducted spurious emission tests were conducted on wider bandwidth with inner 1RB since this is the worst bandwidth and the highest output power.

BPSK modulation applied only for 5G NR BANDS band frequencies and has the same tune up power as QPSK modulations.

The worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on QPSK, 16QAM, 64QAM, 256QAM, and BPSK, modulations. It was found that QPSK result were worst case. All testing was performed using QPSK modulations to represent the worst case. Tests were performed on the conducted test at ANT 1 antenna as worst case since it has higher output powers to the fundamental frequencies are lower than 2700MHz. For 5G NR Band n41 the worst case is ANT 2 antenna. For Band 48, and 5G NR Band n77 the worst case is ANT 7 antenna.

The EUT was investigated in three orthogonal orientations X/Y/Z on all ANT 1, ANT2, ANT3, ANT4, ANT7, ANT8 and ANT 9 antennas to determine the worst case orientation. The following table exhibit the worst case orientation for different frequency bands. The full tests of the EUT have made upon the orientations that shown in the table below.

Freq Bands	ANT1	ANT2	ANT3	ANT4	ANT7	ANT8	ANT9
663 – 849 MHz	X	X	N/A	N/A	N/A	N/A	N/A
1710 – 1915 MHz	Y	Z	Y	X	N/A	N/A	N/A
2300 – 2700 MHz	Y	Z	X	X	N/A	N/A	N/A
3300 – 3980 MHz	N/A	N/A	N/A	X	Y	X	X

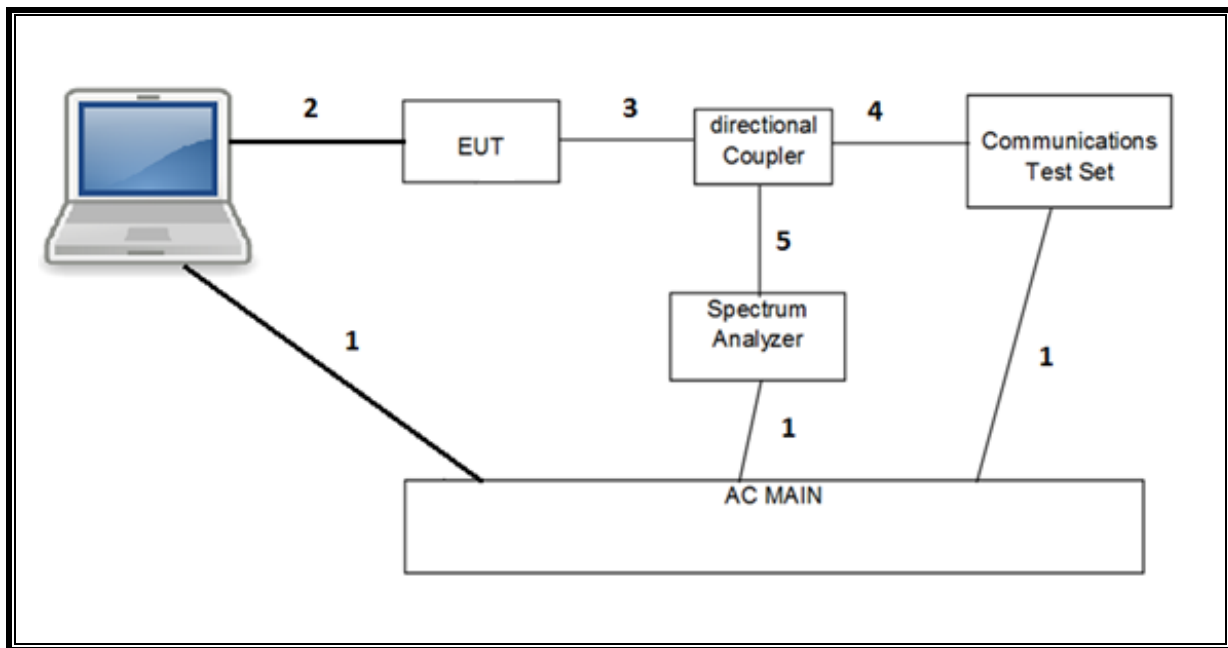
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GH WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

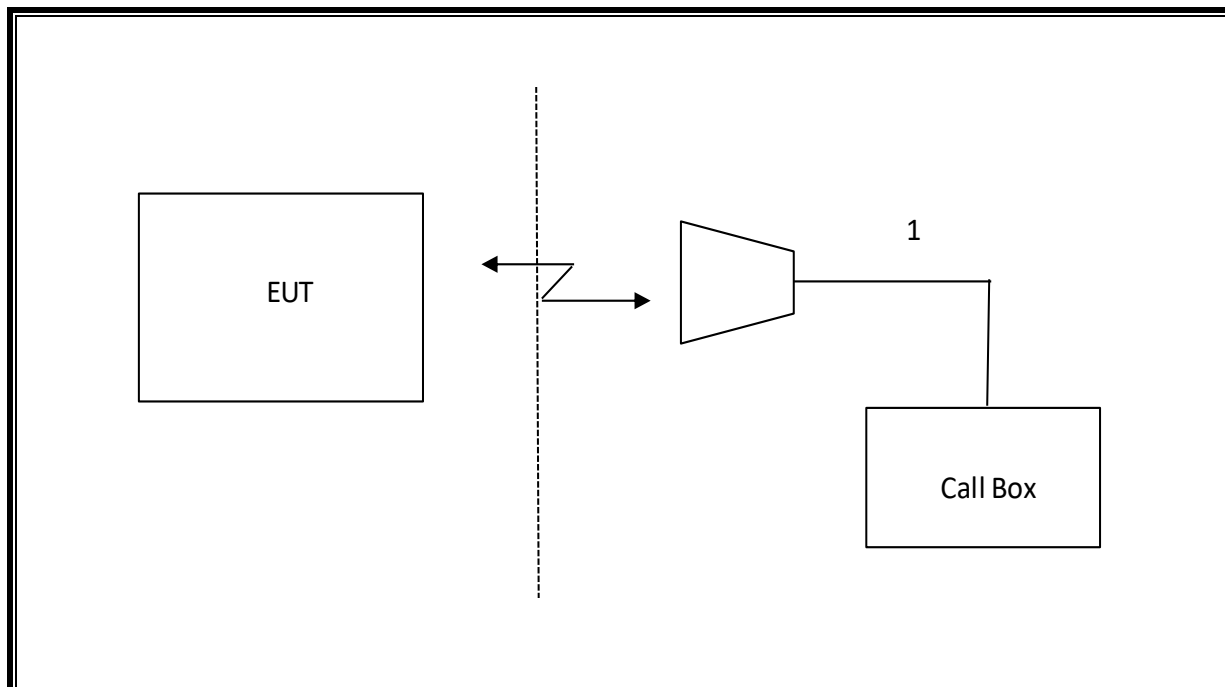
5.9. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description		Manufacturer	Model	Serial Number		FCC ID/ DoC
Laptop AC/DC adapter		Apple	85W MagSafe 2	C0651730MMMG6P4AL		
Laptop		Apple	Macbook Pro	C02PM012G3QD		
Laptop		Apple	Macbook Pro	C02P52HGG085		
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	3	US 115V	Un-shielded	2.0	N/A
2	USB	1	DC	Un-shielded	1.0	N/A
3	RF In/Out	1	EUT	Shielded	0.6	N/A
4	RF In/Out	1	Communication Test Set	Shielded	1.2	N/A
5	RF In/Out	1	Barrel	N/A	N/A	N/A
I/O CABLES (RF RADIATED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	RF In/Out	1	Antenna	Shielded	5.0	N/A

CONDUCTED SETUP



RADIATED SETUP



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Antenna, Horn 1-18GHz	A.H. Systems, Inc.	SAS-571	T961	01/25/2021
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T136	07/07/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T407	05/20/2021
Amplifier, 1 to 18GHz	MITEQ	AFS42-00101800-25-S-42	T931	05/11/2021
Amplifier, 1 to 18GHz	MITEQ	AFS42-00101800-25-S-42	T1165	08/10/2021
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	PRE0180176	07/14/2021
Filter, BRF 2495 to 2690MHz	MICRO-TRONICS	BRM50709-02	T1790	06/23/2021
Filter, BRF 1850 – 1910 MHz	Micro-Tronics	BRM50714-02	T1796	06/23/2021
Filter, BRF 824 – 848 MHz	Micro-Tronics	BRM20025	PRE0191180	06/23/2021
*Directional Coupler	KRYTAR	152610	T1161	08/14/2020
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T340	01/22/2021
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T907	01/22/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T260	02/19/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T959	02/19/2021
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T1871	02/25/2021
Power Meter, P-series single channel	Keysight	N1912A	T1245	01/22/2021
Power Sensor	Keysight	N1921A	T1225	02/23/2021
UL AUTOMATION SOFTWARE				
CLT Software	UL	UL RF	Ver 7.6, November 11, 2017	
Power Measurement Software	UL	UL RF	Ver 2.7, 2019	
Radiated test software	UL	UL RF	Ver 9.5 June 15, 2019	

NOTES:

* Testing is completed before equipment expiration date.

7. RADIATED TEST RESULTS

7.1. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT2

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

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

RESULTS

7.1.1. LTE BAND 2

LIMITS

FCC: §24.238(a)

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

QPSK LTE BAND 2 (20.0MHZ BANDWIDTH)

Project #:	13336566
Date:	7/31/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode	LTE Band 2 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.71807	38.84	Pk	30.4	-27.4	-95.2	-53.36	-13	-40.36	H
3.71831	39.27	Pk	30.4	-27.4	-95.2	-52.93	-13	-39.93	V
5.57983	37.7	Pk	33.2	-25.5	-95.2	-49.8	-13	-36.8	H
5.58098	36.97	Pk	33.2	-25.5	-95.2	-50.53	-13	-37.53	V
7.44131	35.81	Pk	36.8	-22.9	-95.2	-45.49	-13	-32.49	H
7.44167	35.31	Pk	36.8	-22.9	-95.2	-45.99	-13	-32.99	V
Mid Channel, 1880MHz									
3.75851	38.65	Pk	30.6	-27.5	-95.2	-53.45	-13	-40.45	H
3.75917	38.84	Pk	30.6	-27.5	-95.2	-53.26	-13	-40.26	V
5.63816	36.44	Pk	33.1	-24.8	-95.2	-50.46	-13	-37.46	H
5.6388	36.53	Pk	33.1	-24.8	-95.2	-50.37	-13	-37.37	V
7.52029	35.59	Pk	36.7	-23.1	-95.2	-46.01	-13	-33.01	H
7.52161	35.22	Pk	36.7	-23.1	-95.2	-46.38	-13	-33.38	V
Mid Channel, 1900MHz									
3.79851	39.41	Pk	30.9	-27.3	-95.2	-52.19	-13	-39.19	H
3.80085	39.32	Pk	30.9	-27.4	-95.2	-52.38	-13	-39.38	V
5.6997	36.32	Pk	33.1	-24.1	-95.2	-49.88	-13	-36.88	H
5.70102	36.59	Pk	33.1	-24.1	-95.2	-49.61	-13	-36.61	V
7.59844	35.98	Pk	36.8	-23.3	-95.2	-45.72	-13	-32.72	V
7.60018	36.09	Pk	36.8	-23.3	-95.2	-45.61	-13	-32.61	H

7.1.2. LTE BAND 5 AND 5G NR Band n5

LIMITS

FCC: §22.917(a)

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

QPSK LTE BAND 5 (10.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/5/2020
Test Engineer:	19140
Configuration:	EUT Only
Mode:	LTE Band 5 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 829MHz									
1.65645	41.77	Pk	25	-30.5	-95.2	-58.93	-13	-45.93	H
1.66002	41.95	Pk	25	-30.4	-95.2	-58.65	-13	-45.65	V
2.48798	39.33	Pk	29	-29.2	-95.2	-56.07	-13	-43.07	H
2.48829	39.65	Pk	29	-29.2	-95.2	-55.75	-13	-42.75	V
3.31457	38.62	Pk	31.1	-28	-95.2	-53.48	-13	-40.48	V
3.3175	38.75	Pk	31.1	-28.1	-95.2	-53.45	-13	-40.45	H
Mid Channel, 836.5MHz									
1.67226	41.88	Pk	25	-30.4	-95.2	-58.72	-13	-45.72	H
1.67418	40.62	Pk	25	-30.4	-95.2	-59.98	-13	-46.98	V
2.50845	40.67	Pk	29.1	-29.3	-95.2	-54.73	-13	-41.73	H
2.5085	40.86	Pk	29.1	-29.3	-95.2	-54.54	-13	-41.54	V
3.3449	37.73	Pk	31	-28.2	-95.2	-54.67	-13	-41.67	V
3.34685	37.97	Pk	31	-28.2	-95.2	-54.43	-13	-41.43	H
High Channel, 844MHz									
1.68905	40.59	Pk	25	-30.4	-95.2	-60.01	-13	-47.01	V
1.68946	40.4	Pk	25	-30.4	-95.2	-60.2	-13	-47.2	H
2.53167	40.72	Pk	29.2	-29.3	-95.2	-54.58	-13	-41.58	V
2.53341	40.56	Pk	29.2	-29.3	-95.2	-54.74	-13	-41.74	H
3.37536	38.48	Pk	30.8	-28	-95.2	-53.92	-13	-40.92	V
3.37763	37.96	Pk	30.8	-28.1	-95.2	-54.54	-13	-41.54	H

QPSK 5G NR BAND n5 (20.0MHZ BANDWIDTH)

Project #:	13336566
Date:	7/30/2020
Test Engineer:	19169
Configuration:	EUT Only
Mode	5G NR Band n5 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 834MHz									
1.62948	40.73	Pk	29.1	-30.8	-95.2	-55.47	-13	-42.47	V
1.67907	40.68	Pk	28.9	-30.6	-95.2	-55.52	-13	-42.52	H
2.49006	40.21	Pk	33.5	-29.8	-95.2	-50.69	-13	-37.69	H
2.5105	39.22	Pk	33.5	-29.7	-95.2	-51.48	-13	-38.48	V
3.26865	38.79	Pk	33	-28.5	-95.2	-51.21	-13	-38.21	V
3.30766	38.61	Pk	32.9	-28.5	-95.2	-51.49	-13	-38.49	H
Mid Channel, 836.5									
1.68415	40.92	Pk	29	-30.6	-95.2	-55.18	-13	-42.18	V
1.78251	40.68	Pk	30.3	-30.5	-95.2	-54.12	-13	-41.12	H
2.45417	39.52	Pk	33	-29.8	-95.2	-51.98	-13	-38.98	V
2.49248	39.52	Pk	33.5	-29.8	-95.2	-51.38	-13	-38.38	H
3.29684	39.57	Pk	33	-28.3	-95.2	-50.13	-13	-37.13	V
3.30012	38.94	Pk	33	-28.4	-95.2	-50.86	-13	-37.86	H
High Channel, 839MHz									
1.66401	40.22	Pk	28.9	-30.7	-95.2	-55.98	-13	-42.98	H
1.66913	40.28	Pk	28.9	-30.6	-95.2	-55.92	-13	-42.92	V
2.52635	39.15	Pk	33.4	-29.4	-95.2	-51.25	-13	-38.25	H
2.56957	38.79	Pk	33.2	-29.3	-95.2	-52.11	-13	-39.11	V
3.32478	38.45	Pk	33	-28.6	-95.2	-51.75	-13	-38.75	H
3.35644	38.5	Pk	33	-28.5	-95.2	-51.6	-13	-38.6	V

7.1.3. LTE BAND 7

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/1/2020
Test Engineer:	45258
Configuration:	EUT Only
Mode	LTE Band 7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz									
5.02005	38.4	Pk	33.7	-25.9	-95.2	-48.2	-25	-23.2	V
5.02135	38.15	Pk	33.7	-25.9	-95.2	-48.55	-25	-23.55	H
7.52977	35.84	Pk	36.9	-23.8	-95.2	-45.96	-25	-20.96	H
7.53029	36.63	Pk	36.9	-23.8	-95.2	-45.17	-25	-20.17	V
10.03973	34.22	Pk	38.4	-20	-95.2	-41.88	-25	-16.88	V
10.04009	33.99	Pk	38.4	-20	-95.2	-42.11	-25	-17.11	H
Mid Channel, 2535MHz									
5.06953	38.09	Pk	33.8	-26.1	-95.2	-48.71	-25	-23.71	H
5.07025	37.68	Pk	33.8	-26.1	-95.2	-49.12	-25	-24.12	V
7.60493	36.07	Pk	37	-23.7	-95.2	-45.43	-25	-20.43	V
7.60662	36.66	Pk	37	-23.7	-95.2	-44.84	-25	-19.84	H
10.14027	33.89	Pk	38.4	-19.9	-95.2	-42.11	-25	-17.11	V
10.14061	34.4	Pk	38.4	-19.9	-95.2	-41.7	-25	-16.7	H
High Channel, 2560MHz									
5.11882	37.79	Pk	33.9	-26.4	-95.2	-49.11	-25	-24.11	H
5.12096	37.18	Pk	33.9	-26.4	-95.2	-49.72	-25	-24.72	V
7.67892	35.6	Pk	37	-23.3	-95.2	-45.4	-25	-20.4	H
7.67974	36.08	Pk	37	-23.3	-95.2	-44.92	-25	-19.92	V
10.24063	34.5	Pk	38.8	-19.4	-95.2	-40.5	-25	-15.5	H
10.24124	34.34	Pk	38.8	-19.4	-95.2	-40.66	-25	-15.66	V

7.1.4. LTE BAND 12 AND 5G NR Band n12

LIMITS

FCC: §27.53 (g)

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

QPSK LTE BAND 12 (10.0MHZ BANDWIDTH)

Project #:	13336566
Date:	5/22/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	LTE Band 12 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 704MHz									
1.39825	41.78	Pk	29.3	-32.8	-95.2	-55.92	-13	-42.92	V
1.39926	40.27	Pk	29.2	-32.8	-95.2	-57.63	-13	-44.63	H
2.099	40.96	Pk	31.9	-31.8	-95.2	-53.64	-13	-40.64	H
2.10206	40.81	Pk	31.8	-31.8	-95.2	-53.89	-13	-40.89	V
2.79562	40.36	Pk	32.8	-30.8	-95.2	-52.34	-13	-39.34	H
2.80112	40.3	Pk	32.8	-30.8	-95.2	-52.4	-13	-39.4	V
Mid Channel, 707.5MHz									
1.41495	41.28	Pk	29.1	-32.7	-95.2	-56.62	-13	-43.62	H
1.41943	41.15	Pk	29.1	-32.6	-95.2	-56.65	-13	-43.65	V
2.11526	41.52	Pk	31.7	-31.8	-95.2	-53.28	-13	-40.28	V
2.12257	40.26	Pk	31.6	-31.7	-95.2	-54.54	-13	-41.54	H
2.82995	40.04	Pk	32.5	-30.6	-95.2	-52.56	-13	-39.56	V
2.83147	39.56	Pk	32.5	-30.6	-95.2	-53.04	-13	-40.04	H
High Channel, 711MHz									
1.43247	40.91	Pk	29	-32.5	-95.2	-56.89	-13	-43.89	H
1.4338	40.52	Pk	29	-32.5	-95.2	-57.28	-13	-44.28	V
2.14848	40.01	Pk	31.5	-31.5	-95.2	-54.69	-13	-41.69	H
2.15461	40.25	Pk	31.4	-31.5	-95.2	-54.55	-13	-41.55	V
2.85857	39.72	Pk	32.5	-30.7	-95.2	-53.08	-13	-40.08	V
2.8669	40.17	Pk	32.6	-30.7	-95.2	-52.63	-13	-39.63	H

QPSK 5G NR BAND n12 (15.0MHZ BANDWIDTH)

Project #:	13336566
Date:	7/29/2020
Test Engineer:	50820
Configuration:	EUT Only
Mode	5G NR Band n12 15MHz QPSK
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 706.5MHz									
1.41792	42.19	Pk	25.3	-30.7	-95.2	-57.51	-13	-44.51	H
1.41889	41.38	Pk	25.3	-30.7	-95.2	-58.32	-13	-45.32	V
2.16991	40.29	Pk	27	-29.6	-95.2	-56.91	-13	-43.91	V
2.23625	39.3	Pk	27.4	-29.5	-95.2	-57.5	-13	-44.5	H
2.99092	38.86	Pk	29.9	-28.6	-95.2	-54.54	-13	-41.54	H
3.03107	40.53	Pk	30.1	-28.5	-95.2	-52.57	-13	-39.57	V
Mid Channel, 707.5MHz									
1.47199	41.44	Pk	25	-30.6	-95.2	-58.46	-13	-45.46	V
1.48038	40.96	Pk	24.9	-30.6	-95.2	-59.04	-13	-46.04	H
2.19747	40.47	Pk	27.1	-29.6	-95.2	-56.63	-13	-43.63	V
2.20321	41.03	Pk	27.2	-29.6	-95.2	-55.97	-13	-42.97	H
2.86825	39.07	Pk	29	-28.6	-95.2	-55.13	-13	-42.13	H
2.97107	39.77	Pk	29.7	-28.7	-95.2	-53.83	-13	-40.83	V
High Channel, 708.5MHz									
1.46534	41.97	Pk	25	-30.6	-95.2	-57.93	-13	-44.93	V
1.4861	41.28	Pk	24.9	-30.6	-95.2	-58.72	-13	-45.72	H
2.32643	40.61	Pk	27.8	-29.5	-95.2	-55.69	-13	-42.69	H
2.3293	41.06	Pk	27.9	-29.5	-95.2	-55.14	-13	-42.14	V
3.20295	40.38	Pk	31.3	-28.4	-95.2	-51.32	-13	-38.32	H
3.20753	39.68	Pk	31.3	-28.4	-95.2	-52.12	-13	-39.12	V

7.1.5. LTE BAND 13

LIMITS

FCC: §27.53

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

(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

QPSK LTE BAND 13 (10.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/6/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	LTE Band 13 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 782MHz									
1.56411	41.16	Pk	28.4	-32.4	-95.2	-57.14	-40	-17.14	V
1.56747	41.53	Pk	28.4	-32.4	-95.2	-56.77	-40	-16.77	H
2.34162	39.75	Pk	32.3	-31.5	-95.2	-54.15	-13	-41.15	H
2.34334	40.37	Pk	32.3	-31.5	-95.2	-53.53	-13	-40.53	V
3.12747	39.06	Pk	32.8	-30.3	-95.2	-53.04	-13	-40.04	V
3.12798	39.32	Pk	32.8	-30.3	-95.2	-52.78	-13	-39.78	H

* Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.

7.1.6. LTE BAND 14

LIMITS

FCC: §90.543 Emission Limitations. (Band 14)

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation

QPSK LTE BAND 14 (10.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/6/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	LTE Band 14 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 793MHz									
1.58573	41.18	Pk	28.5	-32.5	-95.2	-57.22	-40	-13.00	H
1.58973	40.7	Pk	28.5	-32.5	-95.2	-57.7	-40	-17.7	V
2.37352	40.54	Pk	32.5	-31.2	-95.2	-52.86	-13	-39.86	H
2.37767	40.23	Pk	32.5	-31.2	-95.2	-53.17	-13	-40.17	V
3.1675	39.82	Pk	32.6	-30.4	-95.2	-52.68	-13	-39.68	V
3.17583	39.68	Pk	32.6	-30.2	-95.2	-52.62	-13	-39.62	H

* Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.

7.1.7. LTE BAND 17

LIMITS

FCC: §27.53 (g)

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

QPSK LTE BAND 17 (10.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/7/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	LTE Band 17 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 710MHz									
1.41766	41.28	Pk	29.1	-32.6	-95.2	-56.52	-13	-43.52	V
1.42149	40.82	Pk	29	-32.6	-95.2	-57.08	-13	-44.08	H
2.1221	40.73	Pk	31.6	-31.7	-95.2	-54.07	-13	-41.07	V
2.12815	40.41	Pk	31.6	-31.6	-95.2	-54.29	-13	-41.29	H
2.8359	39.13	Pk	32.5	-30.6	-95.2	-53.47	-13	-40.47	V
2.83818	38.81	Pk	32.5	-30.6	-95.2	-53.79	-13	-40.79	H

7.1.8. LTE BAND 25

LIMITS

FCC: §24.238(a)

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

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/6/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	LTE Band 25 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.69914	40.41	Pk	33.4	-27.5	-95.2	-48.89	-13	-35.89	H
3.70787	39.46	Pk	33.5	-27.4	-95.2	-49.64	-13	-36.64	V
5.53257	37.7	Pk	34.9	-26.7	-95.2	-49.3	-13	-36.3	V
5.55136	37.93	Pk	35	-26.6	-95.2	-48.87	-13	-35.87	H
7.39264	36.08	Pk	36.1	-23	-95.2	-46.02	-13	-33.02	V
7.39412	35.36	Pk	36.1	-23	-95.2	-46.74	-13	-33.74	H
Mid Channel, 1882.5MHz									
3.7825	39.43	Pk	33.6	-27.3	-95.2	-49.47	-13	-36.47	H
3.79068	40.8	Pk	33.6	-27.3	-95.2	-48.1	-13	-35.1	V
5.65545	37.22	Pk	35.1	-26.4	-95.2	-49.28	-13	-36.28	H
5.666	39.25	Pk	35.2	-26.5	-95.2	-47.25	-13	-34.25	V
7.54883	35.58	Pk	36	-22.6	-95.2	-46.22	-13	-33.22	H
7.54928	36.36	Pk	36	-22.6	-95.2	-45.44	-13	-32.44	V
High Channel, 1905MHz									
3.81896	39.54	Pk	33.7	-27.7	-95.2	-49.66	-13	-36.66	V
3.83088	39.28	Pk	33.7	-28	-95.2	-50.22	-13	-37.22	H
5.7445	37.56	Pk	35.2	-27	-95.2	-49.44	-13	-36.44	H
5.75518	38.09	Pk	35.3	-27	-95.2	-48.81	-13	-35.81	V
7.66631	35.39	Pk	35.9	-21.4	-95.2	-45.31	-13	-32.31	H
7.67951	35.43	Pk	35.9	-21.5	-95.2	-45.37	-13	-32.37	V

7.1.9. LTE BAND 26 (PART 90S)

LIMITS

FCC: §90.691

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

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/17/2020
Test Engineer:	30606
Configuration:	EUT Only
Mode	LTE Band 26 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 819MHz									
1.58873	40.54	Pk	28.5	-30.9	-95.2	-56.26	-13	-43.26	V
1.64468	40.8	Pk	29.1	-30.8	-95.2	-55.4	-13	-42.4	H
2.42268	40.02	Pk	32.8	-29.6	-95.2	-51.48	-13	-38.48	H
2.4824	40.13	Pk	33.4	-29.7	-95.2	-50.87	-13	-37.87	V
3.28229	39.51	Pk	33.1	-28.3	-95.2	-50.09	-13	-37.09	H
3.29538	38.5	Pk	33	-28.3	-95.2	-51.2	-13	-38.2	V

7.1.10. LTE BAND 30

LIMITS

FCC: §27.53 (a)

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

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/8/2020
Test Engineer:	19169
Configuration:	EUT Only
Mode	LTE Band 30 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	34.17	Pk	34.2	-26.8	-95.2	-53.63	-40	-13.63	H
4.62	33.51	Pk	34.2	-26.8	-95.2	-54.29	-40	-14.29	V
6.93	30.49	Pk	36.3	-24.4	-95.2	-52.81	-40	-12.81	H
6.93	30.72	Pk	36.3	-24.4	-95.2	-52.58	-40	-12.58	V
9.24	28.75	Pk	36.4	-21.8	-95.2	-51.85	-40	-11.85	H
9.24	28.98	Pk	36.4	-21.8	-95.2	-51.62	-40	-11.62	V

7.1.11. LTE BAND 41 AND 5G NR BAND n41

LIMITS

FCC: §27.53 (m)

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

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/14/2020
Test Engineer:	50822
Configuration:	EUT Only
Mode	LTE Band 41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 2506MHz									
5.0169	37.28	Pk	33.8	-26	-95.2	-49.32	-25	-24.32	V
5.02898	38.49	Pk	33.7	-26.1	-95.2	-48.41	-25	-23.41	H
7.26952	36.14	Pk	37.2	-23.4	-95.2	-44.76	-25	-19.76	V
7.27018	36.45	Pk	37.2	-23.4	-95.2	-44.55	-25	-19.55	H
10.18235	33.95	Pk	38.6	-19.7	-95.2	-41.75	-25	-16.75	H
10.19817	34.45	Pk	38.7	-19.8	-95.2	-41.05	-25	-16.05	V
Mid Channel, 2593MHz									
5.18506	37.36	Pk	33.6	-26.4	-95.2	-49.84	-25	-24.84	H
5.18595	37.73	Pk	33.6	-26.4	-95.2	-49.47	-25	-24.47	V
7.77761	35.26	Pk	37.2	-23.4	-95.2	-45.84	-25	-20.84	H
7.77828	35.27	Pk	37.2	-23.4	-95.2	-45.83	-25	-20.83	V
10.37237	33.39	Pk	39.2	-19.3	-95.2	-41.11	-25	-16.11	V
10.37373	33.91	Pk	39.2	-19.3	-95.2	-40.59	-25	-15.59	H
High Channel, 2680MHz									
4.87012	37.24	Pk	33.2	-26.7	-95.2	-50.76	-25	-25.76	H
4.88716	37.54	Pk	33.2	-26.5	-95.2	-50.16	-25	-25.16	V
6.89174	36.41	Pk	36.2	-24.5	-95.2	-46.69	-25	-21.69	H
7.19733	35.85	Pk	37.1	-23.9	-95.2	-45.75	-25	-20.75	V
10.51391	34.59	Pk	39.5	-19.3	-95.2	-39.81	-25	-14.81	H
10.62549	34.58	Pk	39.5	-19.5	-95.2	-40.02	-25	-15.02	V

QPSK 5G NR BAND n41 (100.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/19/2020
Test Engineer:	50822
Configuration:	EUT only
Mode:	5G NR Band n41 QPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Amp/Cbl (dB)	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2546MHz									
5.6184	36.57	Pk	33.1	-26	-95.2	-51.53	-25	-26.53	H
5.69459	36.08	Pk	33	-25.5	-95.2	-51.62	-25	-26.62	V
7.64943	35.75	Pk	36.9	-23.4	-95.2	-45.95	-25	-20.95	H
7.71911	35.42	Pk	37.1	-23.4	-95.2	-46.08	-25	-21.08	V
10.51225	34.14	Pk	39.5	-19.3	-95.2	-40.86	-25	-15.86	V
11.04103	33.42	Pk	39.4	-19.7	-95.2	-42.08	-25	-17.08	H
Mid Channel, 2593 MHz									
5.78972	35.98	Pk	33.3	-25.3	-95.2	-51.22	-25	-26.22	H
5.79926	36.41	Pk	33.3	-25.4	-95.2	-50.89	-25	-25.89	V
8.09561	34.96	Pk	37.2	-22.5	-95.2	-45.54	-25	-20.54	V
8.1337	35.58	Pk	37.3	-23	-95.2	-45.32	-25	-20.32	H
10.96289	34.76	Pk	39.4	-19.4	-95.2	-40.44	-25	-15.44	H
11.06168	33.8	Pk	39.4	-19.7	-95.2	-41.7	-25	-16.7	V
High Channel, 2640MHz									
5.70803	36.17	Pk	33	-25.4	-95.2	-51.43	-25	-26.43	V
5.75068	35.9	Pk	33.1	-25.1	-95.2	-51.3	-25	-26.3	H
8.0652	34.92	Pk	37.1	-22.8	-95.2	-45.98	-25	-20.98	H
8.09085	36.13	Pk	37.2	-22.5	-95.2	-44.37	-25	-19.37	V
10.58673	34.16	Pk	39.6	-19.6	-95.2	-41.04	-25	-16.04	H
10.65611	34.04	Pk	39.4	-19.7	-95.2	-41.46	-25	-16.46	V

7.1.12. LTE BAND 66

LIMITS

FCC: §27.53 (h)

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

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/8/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	LTE Band 66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.43703	40.21	Pk	33.1	-28.9	-95.2	-50.79	-13	-37.79	V
3.44953	39.5	Pk	33.1	-29.2	-95.2	-51.8	-13	-38.8	H
5.15851	38.48	Pk	34.6	-26.2	-95.2	-48.32	-13	-35.32	H
5.16245	38.72	Pk	34.5	-26.3	-95.2	-48.28	-13	-35.28	V
6.87464	36.74	Pk	36.4	-23.8	-95.2	-45.86	-13	-32.86	H
6.87964	36.32	Pk	36.4	-23.9	-95.2	-46.38	-13	-33.38	V
Mid Channel, 1745MHz									
3.48132	40.73	Pk	33.1	-29.6	-95.2	-50.97	-13	-37.97	H
3.48278	39.63	Pk	33.1	-29.6	-95.2	-52.07	-13	-39.07	V
5.22321	38.63	Pk	34.6	-27.7	-95.2	-49.67	-13	-36.67	H
5.22851	38.14	Pk	34.7	-27.8	-95.2	-50.16	-13	-37.16	V
6.97681	36.9	Pk	36.1	-24.6	-95.2	-46.8	-13	-33.8	V
6.98315	36.02	Pk	36.1	-24.6	-95.2	-47.68	-13	-34.68	H
High Channel, 1770MHz									
3.54002	39.33	Pk	33.4	-29	-95.2	-51.47	-13	-38.47	V
3.54628	39.08	Pk	33.4	-28.9	-95.2	-51.62	-13	-38.62	H
5.31669	37.64	Pk	34.7	-27.1	-95.2	-49.96	-13	-36.96	H
5.3453	38.64	Pk	34.7	-26.7	-95.2	-48.56	-13	-35.56	V
7.07689	35.6	Pk	36	-23.9	-95.2	-47.5	-13	-34.5	H
7.08931	36.56	Pk	36	-24	-95.2	-46.64	-13	-33.64	V

7.1.13. LTE BAND 71

LIMITS

FCC: §27.53 (g)

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

QPSK LTE BAND 71 (20.0MHZ BANDWIDTH)

Project #:	13336566
Date:	8/7/2020
Test Engineer:	19497
Configuration:	EUT Only
Mode	LTE Band 71 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz									
1.34095	40.77	Pk	29.8	-32.8	-95.2	-56.33	-13	-43.33	V
1.35	36.97	Pk	29.9	-32.9	-95.2	-60.23	-13	-47.23	H
2.00954	39.69	Pk	32.4	-31.9	-95.2	-54.51	-13	-41.51	V
2.02402	40.24	Pk	32.4	-31.7	-95.2	-53.76	-13	-40.76	H
2.69084	40.17	Pk	32.9	-31.2	-95.2	-52.83	-13	-39.83	H
2.70359	39.81	Pk	33	-31	-95.2	-52.89	-13	-39.89	V
Mid Channel, 680.5MHz									
1.35872	40.77	Pk	29.8	-32.9	-95.2	-56.53	-13	-43.53	V
1.36125	40.76	Pk	29.7	-32.9	-95.2	-56.64	-13	-43.64	H
2.03475	40.77	Pk	32.3	-31.8	-95.2	-53.43	-13	-40.43	V
2.04151	40.9	Pk	32.3	-31.9	-95.2	-53.4	-13	-40.4	H
2.72375	39.18	Pk	32.9	-30.8	-95.2	-53.42	-13	-40.42	H
2.73391	39.37	Pk	33	-30.8	-95.2	-53.13	-13	-40.13	V
High Channel, 688MHz									
1.3749	41.6	Pk	29.5	-32.8	-95.2	-55.9	-13	-42.9	H
1.37583	41.31	Pk	29.5	-32.7	-95.2	-56.09	-13	-43.09	V
2.06399	40.15	Pk	32.2	-31.9	-95.2	-54.25	-13	-41.25	V
2.06725	40.15	Pk	32.1	-31.8	-95.2	-54.25	-13	-41.25	H
2.74457	40.65	Pk	32.9	-30.8	-95.2	-51.95	-13	-38.95	V
2.75594	39.83	Pk	32.8	-30.8	-95.2	-52.87	-13	-39.87	H

8. SETUP PHOTOS

Please refer to 13259315-EP1 for setup photos

End of the report