LTE Band 66 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	16.46	16.47	16.48	1	0	16.41	16.44	16.46
	1	37	16.75	16.76	16.72	1	50	16.69	16.67	16.67
	1	74	16.43	16.49	16.46	1	99	16.38	16.44	16.39
	37	0	15.65	15.56	15.66	50	0	16.73	15.45	15.69
	37	19	15.64	15.62	15.64	50	25	15.62	15.61	15.63
	37	39	16.57	15.68	15.55	50	50	15.49	15.71	15.45
	75	0	15.64	15.59	15.61	100	0	15.61	15.61	15.59
16QAM	1	0	15.77	15.83	15.83	1	0	15.67	15.81	15.87
	1	37	16.05	16.14	16.15	1	50	15.97	16.02	16.03
	1	74	15.86	15.88	15.80	1	99	15.75	15.77	15.74
	37	0	14.58	14.55	14.63	50	0	14.69	14.43	14.65
	37	19	14,58	14.57	14.58	50	25	14.58	14.56	14.58
	37	39	14.52	14.63	14.50	50	50	14.44	14.65	14.43
	75	0	14.58	14.58	14.56	100	0	14.59	14.56	14.57
64QAM	1	0	14.71	14.69	14.67	1	0	14.61	14.58	14.63
	1	37	14.95	14.99	14.97	1	50	14.85	14.85	14.89
	1	74	14.60	14.68	14.67	1	99	14.63	14.62	14.64
	37	0	13.59	13.49	13.63	50	0	13.70	13.43	13.66
	37	19	13.57	13.57	13.59	50	25	13.58	13.58	13.58
	37	39	13.55	13.61	13.48	50	50	13.44	13.67	13.41
	75	0	13.57	13.58	13.56	100	0	13.56	13.56	13.52

Pre-scan all bandwidth and RB, find worse case mode are chosen to the report, the LTE worse case mode applicability and tested channel detail as below:

Item	Band	Bandwidth (MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
ERP/EIRP	2	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	5	☒	☒	☒	☒	--	--	☒	☒	☒	☒	☐	☐	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	25	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	66	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
Conducted output power	2	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	5	☒	☒	☒	☒	--	--	☒	☒	☒	☒	☒	☒	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒
	25	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	66	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

Item	Band	Bandwidth(MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
99%&26dB Bandwidth	2	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	5	☒	☒	☒	☒	--	--	☒	☒	☒	☐	☐	☒	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☐	☐	☒	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☐	☐	☒	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☐	☐	☒	☒	☒	☒
	25	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	66	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
peak-to-average ratio	2	☐	☐	☐	☐	☐	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	4	☐	☐	☐	☐	☐	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	5	☐	☐	☐	☒	--	--	☒	☒	☒	☒	☐	☒	☒	☐	☒
	7	-	-	☐	☐	☐	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	12	☐	☐	☐	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	13	-	-	☐	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	17	-	-	☐	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	25	☐	☐	☐	☐	☐	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	41	-	-	☐	☐	☐	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	66	☐	☐	☐	☐	☐	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒

Item	Band	Bandwidth(MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Band Edge at antenna terminals	2	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	5	☒	☒	☒	☒	--	--	☒	☒	☒	☒	☐	☒	☒	☐	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	25	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	66	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
Spurious emissions at antenna terminals	2	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	5	☒	☒	☒	☒	--	--	☒	☒	☒	☒	☐	☐	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	25	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	66	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒

Item	Band	Bandwidth(MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Field strength of spurious radiation	2	☐	☐	☐	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☒	☒
	4	☐	☐	☐	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☒	☒
	5	☐	☐	☐	☒	--	--	☒	☐	☐	☒	☐	☐	☒	☒	☒
	7	-	-	☐	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☒	☒
	12	☐	☐	☐	☒	-	-	☒	☐	☐	☒	☐	☐	☒	☒	☒
	13	-	-	☐	☒	-	-	☒	☐	☐	☒	☐	☐	☒	☒	☒
	17	-	-	☐	☒	-	-	☒	☐	☐	☒	☐	☐	☒	☒	☒
	25	☐	☐	☐	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☒	☒
	41	-	-	☐	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☒	☒
	66	☐	☐	☐	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☒	☒
Frequency stability	2	☐	☐	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	4	☐	☐	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	5	☐	☐	☐	☒	--	--	☒	☐	☐	☐	☐	☒	☐	☒	☐
	7	-	-	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	12	☐	☐	☐	☒	-	-	☒	☐	☐	☐	☐	☒	☐	☒	☐
	13	-	-	☐	☒	-	-	☒	☐	☐	☐	☐	☒	☐	☒	☐
	17	-	-	☐	☒	-	-	☒	☐	☐	☐	☐	☒	☐	☒	☐
	25	☐	☐	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	41	-	-	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	66	☐	☐	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐

Remark:
The mark "☒" means is chosen for testing; The mark "☐" means is not chosen for testing;
The mark "-" means is not supported bandwidth

5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION

5.1 REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 22	Public Mobile Services
3	FCC 47 CFR Part 27	Miscellaneous Wireless Communications Services
4	FCC 47 CFR Part 24	Personal Communications Services
5	FCC 47 CFR Part 90	Private Land Mobile Radio Services
6	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
7	KDB 971168 D01	KDB 971168 D01 Power Meas License Digital Systems v03r01

5.2 ERP OR EIRP

Test Requirement: FCC 47 CFR Part 2.1046(a)
LTE Band 2 & LTE Band 25: FCC 47 CFR Part 24.232(c)
LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.50(d)(4)
LTE Band 5: FCC 47 CFR Part 22.913(a)
LTE Band 7 & Band 41: FCC 47 CFR Part 27.50(h)(2)
LTE Band 12 & Band 17: FCC 47 CFR Part 27.50(c)(10)
LTE Band 13: FCC 47 CFR Part 27.50(b)(10)

Test Method: KDB 971168 D01v03r01 Section 5.6 & ANSI C63.26-2015

Limit:

FCC 47 CFR Part 22.913(a):
The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

FCC 47 CFR Part 24.232(c):
Mobile and portable stations are limited to 2 watts EIRP.

FCC 47 CFR Part 27.50(d)(4):
Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

FCC 47 CFR Part 27.50(c)(10):
Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

FCC 47 CFR Part 27.50(h)(2):
Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

FCC 47 CFR Part 27.50(b)(10):
Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

FCC 47 CFR Part 90.635:
(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.
(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).
Table—Equivalent Power and Antenna Heights for Base Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for a 32 km (20 mi) Service Area Radius

Antenna height (ATT) meters (feet)	Effective radiated power (watts)[1 2 4]

Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	[3]1,000

1. Power is given in terms of effective radiated power (ERP).
2. Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.
3. Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).
4. Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson and Miguel.

Test Procedure:

$$\textbf{ERP or EIRP} = P_{Meas} + G_T - L_C$$

where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

1) L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

Test Setup: Refer to section 4.2.1 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: Pass

Test Data: See table below

5.2.1 LTE Band 2

LTE Band 2 Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 1.4MHz					
Lowest	20.97	20.10	19.43	33.01	Pass
Middle	20.99	20.35	19.53	33.01	Pass
Highest	21.12	20.55	19.68	33.01	Pass
Channel Bandwidth: 3MHz					
Lowest	21.05	20.41	19.52	33.01	Pass
Middle	21.07	20.54	19.65	33.01	Pass
Highest	21.11	20.68	19.76	33.01	Pass
Channel Bandwidth: 5MHz					
Lowest	21.05	21.19	19.56	33.01	Pass
Middle	21.14	20.23	19.70	33.01	Pass
Highest	20.96	20.37	19.79	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	21.00	20.48	19.44	33.01	Pass
Middle	21.06	20.56	19.64	33.01	Pass
Highest	20.97	20.59	19.87	33.01	Pass
Channel Bandwidth: 15MHz					
Lowest	21.04	20.49	19.55	33.01	Pass
Middle	21.08	20.55	20.52	33.01	Pass
Highest	20.99	20.52	19.68	33.01	Pass
Channel Bandwidth: 20MHz					
Lowest	20.97	20.29	19.52	33.01	Pass
Middle	21.05	20.45	19.61	33.01	Pass
Highest	21.31	20.41	19.64	33.01	Pass

5.2.2 LTE Band 4

LTE Band 4 Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 1.4MHz					
Lowest	17.27	16.61	15.43	30.00	Pass
Middle	17.31	16.54	15.47	30.00	Pass
Highest	17.29	16.66	15.52	30.00	Pass
Channel Bandwidth: 3MHz					
Lowest	17.40	16.74	15.57	30.00	Pass
Middle	17.37	16.62	15.47	30.00	Pass
Highest	17.43	16.63	15.58	30.00	Pass
Channel Bandwidth: 5MHz					
Lowest	17.40	16.78	15.59	30.00	Pass
Middle	17.16	16.70	15.51	30.00	Pass
Highest	17.15	16.80	15.62	30.00	Pass
Channel Bandwidth: 10MHz					
Lowest	17.33	16.69	15.51	30.00	Pass
Middle	17.29	16.65	15.46	30.00	Pass
Highest	17.36	16.72	15.48	30.00	Pass
Channel Bandwidth: 15MHz					
Lowest	17.39	16.72	15.59	30.00	Pass
Middle	17.37	16.75	16.68	30.00	Pass
Highest	17.39	16.68	15.62	30.00	Pass
Channel Bandwidth: 20MHz					
Lowest	17.27	16.69	16.28	30.00	Pass
Middle	17.57	16.66	14.13	30.00	Pass
Highest	17.36	16.67	14.30	30.00	Pass

5.2.3 LTE Band 5

LTE Band 5 Maximum ERP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 1.4MHz					
Lowest	15.37	15.07	14.05	38.45	Pass
Middle	15.58	14.57	13.65	38.45	Pass
Highest	15.45	14.44	13.33	38.45	Pass
Channel Bandwidth: 3MHz					
Lowest	15.36	15.11	14.07	38.45	Pass
Middle	15.47	14.67	13.60	38.45	Pass
Highest	15.39	14.64	13.40	38.45	Pass
Channel Bandwidth: 5MHz					
Lowest	15.47	15.12	13.98	38.45	Pass
Middle	15.48	14.53	13.63	38.45	Pass
Highest	15.46	14.63	13.42	38.45	Pass
Channel Bandwidth: 10MHz					
Lowest	15.55	15.17	14.12	38.45	Pass
Middle	15.57	14.70	13.70	38.45	Pass
Highest	15.56	14.65	13.48	38.45	Pass

5.2.4 LTE Band 7

LTE Band 7 Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	20.07	19.51	18.35	33.01	Pass
Middle	19.99	19.38	18.36	33.01	Pass
Highest	19.85	19.32	18.17	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	20.18	19.40	18.45	33.01	Pass
Middle	19.98	19.38	18.34	33.01	Pass
Highest	19.89	19.20	18.10	33.01	Pass
Channel Bandwidth: 15MHz					
Lowest	20.07	19.50	18.34	33.01	Pass
Middle	20.09	19.54	18.38	33.01	Pass
Highest	19.96	19.37	18.08	33.01	Pass
Channel Bandwidth: 20MHz					
Lowest	20.25	19.54	18.48	33.01	Pass
Middle	20.10	19.55	18.43	33.01	Pass
Highest	20.05	19.38	18.26	33.01	Pass

5.2.5 LTE Band 12

LTE Band 12 Maximum ERP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 1.4MHz					
Lowest	14.68	13.76	12.56	34.77	Pass
Middle	14.73	13.61	12.48	34.77	Pass
Highest	14.50	14.14	13.13	34.77	Pass
Channel Bandwidth: 3MHz					
Lowest	14.56	13.67	12.61	34.77	Pass
Middle	14.67	13.55	12.62	34.77	Pass
Highest	14.54	14.15	13.06	34.77	Pass
Channel Bandwidth: 5MHz					
Lowest	14.55	13.77	12.62	34.77	Pass
Middle	14.74	13.68	12.41	34.77	Pass
Highest	14.68	14.02	13.12	34.77	Pass
Channel Bandwidth: 10MHz					
Lowest	14.74	13.89	12.66	34.77	Pass
Middle	14.77	13.70	12.42	34.77	Pass
Highest	14.72	14.18	13.16	34.77	Pass

5.2.6 LTE Band 13

LTE Band 13 Maximum ERP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	14.09	13.37	12.23	34.77	Pass
Middle	14.00	13.29	12.21	34.77	Pass
Highest	14.05	13.15	12.07	34.77	Pass
Channel Bandwidth: 10MHz					
Lowest	/	/	/	34.77	Pass
Middle	14.20	13.35	12.31	34.77	Pass
Highest	/	/	/	34.77	Pass

5.2.7 LTE Band 17

LTE Band 17 Maximum ERP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	14.79	13.76	12.79	33.01	Pass
Middle	14.67	13.49	12.55	33.01	Pass
Highest	14.72	14.09	13.10	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	14.82	13.80	12.83	33.01	Pass
Middle	14.83	13.66	12.66	33.01	Pass
Highest	14.80	14.23	13.24	33.01	Pass

5.2.8 LTE Band 25

LTE Band 25 Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 1.4MHz					
Lowest	20.14	18.75	18.38	33.01	Pass
Middle	20.27	18.86	18.52	33.01	Pass
Highest	20.36	18.93	18.56	33.01	Pass
Channel Bandwidth: 3MHz					
Lowest	20.17	18.76	18.35	33.01	Pass
Middle	20.29	18.94	18.53	33.01	Pass
Highest	20.38	18.99	18.68	33.01	Pass
Channel Bandwidth: 5MHz					
Lowest	20.19	18.85	18.37	33.01	Pass
Middle	20.26	18.93	18.55	33.01	Pass
Highest	20.38	18.90	18.64	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	20.16	18.75	18.40	33.01	Pass
Middle	20.26	18.86	18.51	33.01	Pass
Highest	20.31	18.96	18.58	33.01	Pass
Channel Bandwidth: 15MHz					
Lowest	20.21	18.84	18.45	33.01	Pass
Middle	20.28	18.88	19.02	33.01	Pass
Highest	20.39	19.02	18.62	33.01	Pass
Channel Bandwidth: 20MHz					
Lowest	20.42	18.75	18.42	33.01	Pass
Middle	20.24	18.92	18.48	33.01	Pass
Highest	20.35	18.93	18.53	33.01	Pass

5.2.9 LTE Band 41

LTE Band 41 Maximum EIRP (dBm)					
Channel	**QPSK; RB:1**	**16QAM; RB:1**	**64QAM; RB:1**	**Limit (dBm)**	**Result**
Channel Bandwidth: 5MHz					
Lowest	21.70	20.83	19.61	33.01	Pass
Middle	21.55	20.46	19.28	33.01	Pass
Highest	21.48	20.52	19.30	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	21.73	20.84	19.51	33.01	Pass
Middle	21.58	20.47	19.30	33.01	Pass
Highest	21.56	20.63	19.47	33.01	Pass
Channel Bandwidth: 15MHz					
Lowest	21.67	20.74	19.51	33.01	Pass
Middle	21.54	20.41	19.32	33.01	Pass
Highest	21.54	20.62	19.40	33.01	Pass
Channel Bandwidth: 20MHz					
Lowest	21.77	20.89	19.69	33.01	Pass
Middle	21.61	20.59	19.46	33.01	Pass
Highest	21.67	20.67	19.48	33.01	Pass

5.2.10 LTE Band 41 CA

LTE Band 41 CA Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5+20MHz					
Lowest	21.04	20.55	19.08	33.01	Pass
Middle	20.83	20.45	19.11	33.01	Pass
Highest	20.86	20.46	19.05	33.01	Pass
Channel Bandwidth: 20+5MHz					
Lowest	20.93	20.22	19.19	33.01	Pass
Middle	20.85	20.09	19.15	33.01	Pass
Highest	20.98	20.35	19.13	33.01	Pass
Channel Bandwidth: 10+20MHz					
Lowest	21.01	20.13	19.03	33.01	Pass
Middle	20.97	20.03	19.07	33.01	Pass
Highest	20.89	20.06	19.14	33.01	Pass
Channel Bandwidth: 20+10MHz					
Lowest	20.93	20.34	19.13	33.01	Pass
Middle	20.92	20.06	19.19	33.01	Pass
Highest	20.86	19.87	19.23	33.01	Pass
Channel Bandwidth: 15+15MHz					
Lowest	20.94	20.14	19.17	33.01	Pass
Middle	20.83	19.70	19.13	33.01	Pass
Highest	20.96	20.09	19.19	33.01	Pass
Channel Bandwidth: 15+20MHz					
Lowest	20.95	20.23	19.21	33.01	Pass
Middle	20.87	19.99	19.22	33.01	Pass
Highest	19.22	20.13	19.28	33.01	Pass
Channel Bandwidth: 20+15MHz					
Lowest	21.01	20.25	19.22	33.01	Pass
Middle	20.87	19.88	19.25	33.01	Pass
Highest	20.86	19.27	19.27	33.01	Pass
Channel Bandwidth: 20+20MHz					
Lowest	20.91	20.66	18.83	33.01	Pass
Middle	20.88	20.34	18.89	33.01	Pass
Highest	20.87	20.56	18.85	33.01	Pass

5.2.11 LTE Band 66

LTE Band 66 Maximum EIRP (dBm)					
Channel	**QPSK; RB:1**	**16QAM; RB:1**	**64QAM; RB:1**	**Limit (dBm)**	**Result**
Channel Bandwidth: 1.4MHz					
Lowest	17.61	16.91	15.76	30.00	Pass
Middle	17.62	16.99	15.82	30.00	Pass
Highest	17.60	16.98	15.80	30.00	Pass
Channel Bandwidth: 3MHz					
Lowest	17.63	17.01	15.77	30.00	Pass
Middle	17.39	17.02	15.89	30.00	Pass
Highest	17.61	17.07	15.84	30.00	Pass
Channel Bandwidth: 5MHz					
Lowest	17.64	16.92	15.80	30.00	Pass
Middle	17.61	17.06	15.86	30.00	Pass
Highest	17.48	16.99	15.90	30.00	Pass
Channel Bandwidth: 10MHz					
Lowest	17.59	16.85	15.77	30.00	Pass
Middle	17.60	16.94	15.79	30.00	Pass
Highest	17.60	17.03	15.77	30.00	Pass
Channel Bandwidth: 15MHz					
Lowest	17.65	16.95	15.85	30.00	Pass
Middle	17.66	17.04	17.05	30.00	Pass
Highest	17.62	17.05	15.87	30.00	Pass
Channel Bandwidth: 20MHz					
Lowest	17.59	16.87	15.75	30.00	Pass
Middle	17.57	16.92	15.75	30.00	Pass
Highest	17.57	16.93	15.79	30.00	Pass

5.3 CONDUCTED OUTPUT POWER

Test Requirement:
FCC 47 CFR Part 2.1046(a)
LTE Band 2 & LTE Band 25: FCC 47 CFR Part 24.232(c)
LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.50(d)(4)
LTE Band 5: FCC 47 CFR Part 22.913(a)
LTE Band 7 & Band 38 & Band 41: FCC 47 CFR Part 27.50(h)(2)
LTE Band 12 & Band 17: FCC 47 CFR Part 27.50(c)(10)
LTE Band 13: FCC 47 CFR Part 27.50(b)(10)

Test Method: KDB 971168 D01v03r01 & ANSI C63.26-2015

Limit:

FCC 47 CFR Part 22.913(a):
The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

FCC 47 CFR Part 24.232(c):
Mobile and portable stations are limited to 2 watts EIRP.

FCC 47 CFR Part 27.50(d)(4):
Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

FCC 47 CFR Part 27.50(c)(10):
Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

FCC 47 CFR Part 27.50(h)(2):
Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

FCC 47 CFR Part 27.50(b)(10):
Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

FCC 47 CFR Part 90.635:
(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.
(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).
Table—Equivalent Power and Antenna Heights for Base Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for a 32 km (20 mi) Service Area Radius

Antenna height (ATT) meters (feet)	Effective radiated power (watts)[1 2 4]
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	[3]1,000

1. Power is given in terms of effective radiated power (ERP).
2. Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park,

Sierra Peak, Mount Lukens, and Mount Wilson.

3. Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).
4. Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson and Miguel.

Test Procedure:

The EUT was set up for the maximum power with LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.2.2 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: Pass

Test Data: The full result refer to section 4.5 for details.

5.4 PEAK-TO-AVERAGE RATIO

Test Requirement:
LTE Band 2 & LTE Band 25: FCC 47 CFR Part 24.232(d)
LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.50(d)(5)
LTE Band 5 : FCC 47 CFR Part 22.913(a)
LTE Band 7 & Band 41: FCC 47 CFR Part 27.50(d)(5)
LTE Band 12 & Band 17: FCC 47 CFR Part 27.50(d)(5)
LTE Band 13: FCC 47 CFR Part 27.50(d)(5)

Test Method: KDB 971168 D01v03r01 Section 5.7

Limit: In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

Test Procedure:

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer.

a) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth
b) Set the number of counts to a value that stabilizes the measured CCDF curve
c) Record the maximum PAPR level associated with a probability of 0.1 %

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.2.2 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: Pass

Test Data: See table below

5.4.1 LTE Band 2

LTE Band 2 Peak-to-average ratio (dB)						
Channel Bandwidth(MHz)	RB Configuration	QPSK	16QAM	64QAM	Limit (dB)	Result
1.4	Full RB	4.43	5.51	5.45	13	Pass
3	Full RB	4.61	5.51	5.48	13	Pass
5	Full RB	4.64	5.48	5.59	13	Pass
10	Full RB	4.84	5.59	5.62	13	Pass
15	Full RB	4.93	5.71	5.71	13	Pass
20	Full RB	4.49	5.77	5.68	13	Pass

LTE Band 2 / 1.4 MHz

QPSK

16QAM

LTE Band 2 / 3 MHz

QPSK

16QAM

LTE Band 2 / 5 MHz

QPSK

16QAM

LTE Band 2 / 10 MHz

QPSK

16QAM

LTE Band 2 / 15 MHz

QPSK

16QAM

LTE Band 2 / 20 MHz

QPSK

16QAM

LTE Band 2 / 64QAM

1.4 MHz

3 MHz

5 MHz

10 MHz

15 MHz

20MHz

5.4.2 LTE Band 4

LTE Band 4 Peak-to-average ratio (dB)						
Channel Bandwidth(MHz)	RB Configuration	QPSK	16QAM	64QAM	Limit (dB)	Result
1.4	Full RB	4.58	5.39	5.45	13	Pass
3	Full RB	4.75	5.54	5.62	13	Pass
5	Full RB	4.72	5.65	5.62	13	Pass
10	Full RB	4.78	5.68	5.57	13	Pass
15	Full RB	5.01	5.68	5.74	13	Pass
20	Full RB	4.90	5.74	5.77	13	Pass

LTE Band 4 / 1.4 MHz

QPSK

16QAM

LTE Band 4 / 3 MHz

QPSK

16QAM

LTE Band 4 / 5 MHz

QPSK

16QAM

LTE Band 4 / 10 MHz

QPSK

16QAM

LTE Band 4 / 15 MHz

QPSK

16QAM

LTE Band 4 / 20 MHz

QPSK

16QAM

LTE Band 4 / 64QAM

1.4 MHz

3 MHz

5 MHz

10 MHz

15 MHz

20MHz

5.4.3 LTE Band 5

LTE Band 5 Peak-to-average ratio (dB)						
Channel Bandwidth(MHz)	RB Configuration	QPSK	16QAM	64QAM	Limit (dB)	Result
1.4	Full RB	5.59	6.43	6.84	13	Pass
3	Full RB	5.65	6.41	6.29	13	Pass
5	Full RB	5.68	6.38	6.38	13	Pass
10	Full RB	5.65	6.38	6.43	13	Pass

LTE Band 5 / 1.4 MHz

QPSK

16QAM

LTE Band 5 / 3 MHz

QPSK

16QAM

LTE Band 5 / 5 MHz

QPSK

16QAM

LTE Band 5 / 10 MHz

QPSK

16QAM

LTE Band 5 / 64QAM

1.4 MHz

3 MHz

5 MHz

10 MHz

5.4.4 LTE Band 7

LTE Band 2 Peak-to-average ratio (dB)						
Channel Bandwidth(MHz)	RB Configuration	QPSK	16QAM	64QAM	Limit (dB)	Result
5	Full RB	4.99	5.86	5.80	13	Pass
10	Full RB	4.96	5.74	5.74	13	Pass
15	Full RB	5.16	5.83	5.86	13	Pass
20	Full RB	4.96	5.83	5.88	13	Pass

LTE Band 7 / 5 MHz

QPSK

16QAM

LTE Band 7 / 10 MHz

QPSK

16QAM

LTE Band 7 / 15 MHz

QPSK

16QAM

LTE Band 7 / 20 MHz

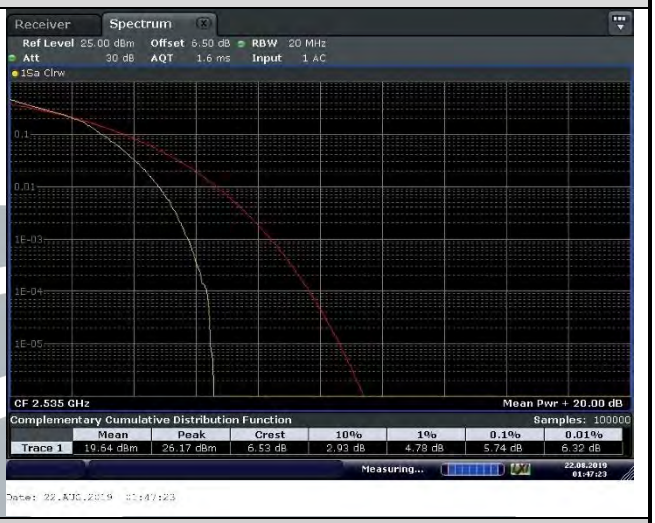
QPSK

16QAM

LTE Band 7 / 64QAM

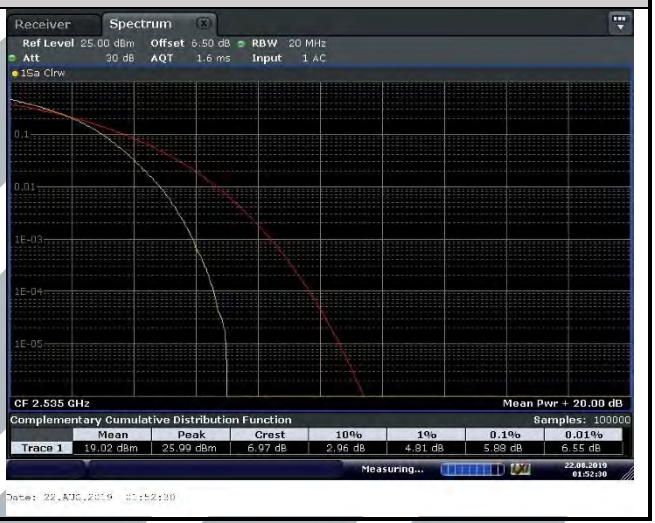
5 MHz

10 MHz



15 MHz

20MHz



5.4.5 LTE Band 12

LTE Band 2 Peak-to-average ratio (dB)						
Channel Bandwidth(MHz)	RB Configuration	QPSK	16QAM	64QAM	Limit (dB)	Result
1.4	Full RB	6.00	6.35	6.32	13	Pass
3	Full RB	5.83	6.93	6.70	13	Pass
5	Full RB	5.88	6.55	6.67	13	Pass
10	Full RB	5.86	6.61	6.58	13	Pass

LTE Band 12 / 1.4 MHz

QPSK

16QAM

LTE Band 12 / 3 MHz

QPSK

16QAM

LTE Band 12 / 5 MHz

QPSK

16QAM

LTE Band 12 / 10 MHz

QPSK

16QAM

LTE Band 12 / 64QAM

1.4 MHz

3 MHz

5 MHz

10 MHz

5.4.6 LTE Band 13

LTE Band 2 Peak-to-average ratio (dB)						
Channel Bandwidth(MHz)	RB Configuration	QPSK	16QAM	64QAM	Limit (dB)	Result
5	Full RB	5.68	6.38	6.29	13	Pass
10	Full RB	5.45	6.26	6.17	13	Pass

LTE Band 13 / 5 MHz

QPSK

16QAM

LTE Band 13 / 10 MHz

QPSK

16QAM