



REPORT No.: SZ25120016W04

TEST REPORT

APPLICANT : Reliance Communications LLC

PRODUCT NAME : Orbic Trophy 5G

MODEL NAME : R667L5U

BRAND NAME : Orbic

FCC ID : 2ABGH-R667L5U

STANDARD(S) : 47 CFR Part 2
47 CFR Part 96

RECEIPT DATE : 2023-11-07

TEST DATE : 2023-12-01 to 2024-02-29

ISSUE DATE : 2026-01-21



Edited by:

Zeng Xiaoying
Zeng Xiaoying (Rapporteur)

Approved by:

Shen Junsheng
Shen Junsheng (Supervisor)

NOTE: This document is issued by Shenzhen Morlab Communications Technology Co., Ltd., the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.

MORLAB

Shenzhen Morlab Communications Technology Co., Ltd.
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555

Http://www.morlab.cn

Fax: 86-755-36698525

E-mail: service@morlab.cn





DIRECTORY

1. Technical Information	3
1.1. Applicant and Manufacturer Information	3
1.2. Equipment Under Test (EUT) Description	3
1.3. Maximum E.R.P./E.I.R.P. and Emission Designator	4
1.4. Test Standards and Results	5
1.5. Environmental Conditions	6
2. 47 CFR Part 2, Part 96 Requirements	7
2.1. Transmitter Conducted Output Power and E.R.P./E.I.R.P.	7
2.2. Occupied Bandwidth	16
2.3. Frequency Stability	25
2.4. Peak to Average Ratio	27
2.5. Conducted Spurious Emissions	36
2.6. Band Edge	41
2.7. Radiated Spurious Emissions	45
2.8. End User Device Additional Requirements (CBSD Protocol)	51
Annex A Test Uncertainty	53
Annex B Testing Laboratory Information	54

Change History		
Version	Date	Reason for change
1.0	2026-01-21	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Reliance Communications LLC
Applicant Address:	555 Wireless Blvd. Hauppauge, NY 11788, USA
Manufacturer:	Unimaxcomm
Manufacturer Address:	35F,HBC HuiLong Center Building-II Minzhi Street,Longhua, Shenzhen, P.R. China 518110

1.2. Equipment Under Test (EUT) Description

Product Name:	Orbic Trophy 5G	
Sample No.:	1#	
Hardware Version:	V1.0	
Software Version:	R667L5U_v1.1.2_BVZ	
Modulation Type:	QPSK, 16QAM, 64QAM	
Operation Band:	Band 48	
Frequency Range:	LTE Band 48	Tx: 3550MHz–3700MHz
		Rx: 3550MHz–3700MHz
Channel Bandwidth	LTE Band 48	5MHz, 10MHz, 15MHz, 20MHz
Antenna Type:	PIFA Antenna	
Antenna Gain:	LTE Band 48	0.33Bi
Accessory Information:	Battery	
	Brand Name:	Shenbird
	Model No.:	BTE-5003
	Serial No.:	N/A
	Capacity:	5000mAh
	Rated Voltage:	3.89V
	Charge Limit:	4.48V
	Manufacturer:	Shenbird New Energy (Huizhou) Co., Ltd.
	AC Adapter	
	Brand Name:	Orbic
	Model No.:	OACH023US1
	Serial No.:	N/A



	Rated Output:	5V=3A, 9V=2A, 12V=1.5A
	Rated Input:	100-240V~50/60Hz, 0.5A
	Manufacturer 1:	WATAI ELECTRONICS PRIVATE LIMITED
	Manufacturer 2:	KANGYIN ELECTRONIC TECHNOLOGY CO.,LTD
	USB Cable	
	Model No.:	HX-YLMK-06
	Manufacturer:	HUIZHOU WASHIN ELECTRONICS CO.,LTD

Note 1: The EUT description presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 2: This is a variant report of original report (Report No.: SZ23040391W08, FCC ID: 2ABGH-R667L5U). Based on the similarity between before, only change pin to pin RF chip, PCB board, external color and product name, disable mmW function, the others are the same as before. Due to the above changes, we have retested the worst case of conducted and radiated missions, with no deterioration in results and no data updates.

1.3. Maximum E.R.P./E.I.R.P. and Emission Designator

LTE Band 48	Maximum E.R.P./E.I.R.P. (W)			Emission Designator (99%OBW)		
BW(MHz)	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20	0.165	0.135	0.106	18M0G7D	17M9W7D	18M0W7D
15	0.164	0.136	0.105	13M5G7D	13M5W7D	13M5W7D
10	0.163	0.134	0.104	9M00G7D	9M00W7D	8M99W7D
5	0.164	0.136	0.107	4M50G7D	4M51W7D	4M51W7D



1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2 and Part 96 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 96	CITIZENS BROADBAND RADIO SERVICE

Test detailed items/section required by FCC rules and results are as below:

Section	Description	Test Date	Test Engineer	Result	Remark
2.1046, 96.41(b)	Transmitter Conducted Output Power and E.R.P./E.I.R.P.	Feb. 29, 2024	Shen Biaohong Gan Jing	PASS	/
2.1049	Occupied Bandwidth	Dec. 22, 2023	Gan Jing	PASS	/
96.41(g)	Peak -Average Ratio	Dec. 22, 2023	Gan Jing	PASS	/
2.1055	Frequency Stability	Dec. 29, 2023	Gan Jing	PASS	/
2.1051, 96.41(e)	Conducted Spurious Emissions	Dec. 26, 2023	Gan Jing	PASS	/
2.1051, 96.41(e)	Band Edge	Dec. 22, 2023	Gan Jing	PASS	/
2.1053, 96.41(e)	Radiated Spurious Emissions	Jan. 12, 2024	Gao Jianrou	PASS	/

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

Note 2: Any additions, deviation, or exclusions from the method shall be noted in the "Remark".

Note 3: The antenna gain presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information.



1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106

2.47 CFR Part 2, Part 96 Requirements

2.1. Transmitter Conducted Output Power and E.R.P./E.I.R.P.

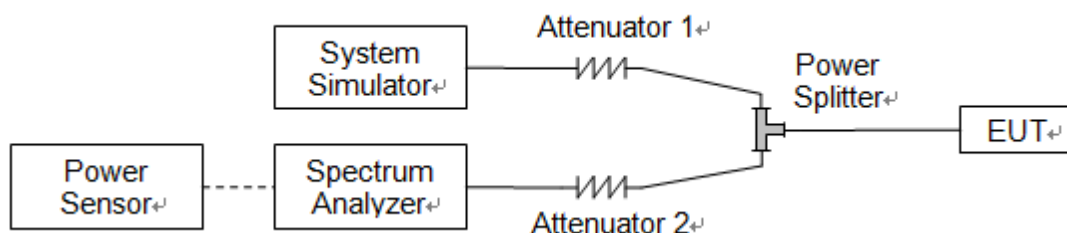
2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

The maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the table as below. paragraph

Device	Maximum EIRP (dBm/10 megahertz)	Maximum PSD (dBm/MHz)
End User Device	23	n/a
Category A CBSD	30	20
Category B CBSD ¹	47	37

2.1.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.



2.1.3. Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

$EIRP \text{ (dBm)} = \text{Conducted Output Power (dBm)} + \text{Antenna Gain (dBi)}$

$ERP \text{ (dBm)} = EIPR \text{ (dBm)} - 2.15$

2.1.4. Result

Conducted Output Power:

LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55340	55990	56640
Frequency (MHz)				3560	3625	3690
20	QPSK	1	0	21.71	21.85	21.69
20	QPSK	1	49	21.67	21.75	21.64
20	QPSK	1	99	21.58	21.69	21.74
20	QPSK	50	0	20.71	20.84	20.76
20	QPSK	50	24	20.75	20.69	20.61
20	QPSK	50	50	20.70	20.72	20.56
20	QPSK	100	0	20.65	20.70	20.57
20	16QAM	1	0	20.92	20.97	20.92
20	16QAM	1	49	20.91	20.92	20.74
20	16QAM	1	99	20.80	20.90	20.86
20	16QAM	50	0	19.82	19.87	19.69
20	16QAM	50	24	19.60	19.60	19.77
20	16QAM	50	50	19.66	19.69	19.61
20	16QAM	100	0	19.50	19.74	19.51
20	64QAM	1	0	19.74	19.94	19.67
20	64QAM	1	49	19.77	19.64	19.90
20	64QAM	1	99	19.64	19.70	19.90
20	64QAM	50	0	18.55	18.79	18.63
20	64QAM	50	24	18.72	18.69	18.57
20	64QAM	50	50	18.53	18.65	18.65
20	64QAM	100	0	18.67	18.71	18.52



LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55315	55990	56665
Frequency (MHz)				3557.5	3625	3692.5
15	QPSK	1	0	21.69	21.83	21.75
15	QPSK	1	37	21.71	21.78	21.78
15	QPSK	1	74	21.73	21.66	21.70
15	QPSK	36	0	20.61	20.86	20.78
15	QPSK	36	20	20.70	20.70	20.56
15	QPSK	36	39	20.57	20.68	20.54
15	QPSK	75	0	20.70	20.68	20.73
15	16QAM	1	0	20.91	21.00	20.82
15	16QAM	1	37	20.78	20.82	20.83
15	16QAM	1	74	20.83	20.87	20.85
15	16QAM	36	0	19.74	19.79	19.72
15	16QAM	36	20	19.70	19.53	19.78
15	16QAM	36	39	19.60	19.54	19.78
15	16QAM	75	0	19.57	19.82	19.65
15	64QAM	1	0	19.65	19.90	19.76
15	64QAM	1	37	19.55	19.71	19.87
15	64QAM	1	74	19.78	19.66	19.88
15	64QAM	36	0	18.69	18.72	18.69
15	64QAM	36	20	18.58	18.81	18.61
15	64QAM	36	39	18.53	18.61	18.56
15	64QAM	75	0	18.67	18.67	18.58



LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55290	55990	56690
Frequency (MHz)				3555	3625	3695
10	QPSK		0	21.76	21.80	21.67
10	QPSK	1	25	21.58	21.65	21.67
10	QPSK	1	49	21.68	21.67	21.67
10	QPSK	25	0	20.71	20.86	20.72
10	QPSK	25	12	20.71	20.60	20.58
10	QPSK	25	25	20.54	20.66	20.52
10	QPSK	50	0	20.69	20.92	20.81
10	16QAM	1	0	20.75	20.91	20.90
10	16QAM	1	25	20.86	20.83	20.89
10	16QAM	1	49	20.77	20.85	20.94
10	16QAM	25	0	19.84	19.86	19.57
10	16QAM	25	12	19.75	19.50	19.60
10	16QAM	25	25	19.53	19.73	19.73
10	16QAM	50	0	19.54	19.72	19.46
10	64QAM	1	0	19.72	19.83	19.76
10	64QAM	1	25	19.66	19.65	19.74
10	64QAM	1	49	19.68	19.73	19.78
10	64QAM	25	0	18.68	18.69	18.76
10	64QAM	25	12	18.71	18.84	18.51
10	64QAM	25	25	18.66	18.59	18.65
10	64QAM	50	0	18.54	18.79	18.52



LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55265	55990	56175
Frequency (MHz)				3552.5	3625	3697.5
5	QPSK	1	0	21.58	21.81	21.60
5	QPSK	1	12	21.64	21.70	21.55
5	QPSK	1	24	21.65	21.78	21.66
5	QPSK	12	0	20.61	20.84	20.74
5	QPSK	12	7	20.87	20.57	20.64
5	QPSK	12	13	20.55	20.63	20.61
5	QPSK	25	0	20.72	20.75	20.68
5	16QAM	1	0	20.84	21.01	20.79
5	16QAM	1	12	20.91	20.83	20.73
5	16QAM	1	24	20.89	20.94	20.81
5	16QAM	12	0	19.82	19.79	19.58
5	16QAM	12	7	19.65	19.57	19.66
5	16QAM	12	13	19.59	19.58	19.72
5	16QAM	25	0	19.43	19.75	19.58
5	64QAM	1	0	19.66	19.97	19.80
5	64QAM	1	12	19.65	19.68	19.74
5	64QAM	1	24	19.77	19.67	19.79
5	64QAM	12	0	18.79	18.79	18.65
5	64QAM	12	7	18.56	18.77	18.59
5	64QAM	12	13	18.55	18.60	18.55
5	64QAM	25	0	18.52	18.62	18.71

**Effective Radiated Power and Effective Isotropic Radiated Power:**

LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55340		55990		56640	
Frequency (MHz)				3560		3625		3690	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	22.04	0.160	22.18	0.165	22.02	0.159
20	QPSK	1	49	22.00	0.158	22.08	0.161	21.97	0.157
20	QPSK	1	99	21.91	0.155	22.02	0.159	22.07	0.161
20	QPSK	50	0	21.04	0.127	21.17	0.131	21.09	0.129
20	QPSK	50	24	21.08	0.128	21.02	0.126	20.94	0.124
20	QPSK	50	50	21.03	0.127	21.05	0.127	20.89	0.123
20	QPSK	100	0	20.98	0.125	21.03	0.127	20.90	0.123
20	16QAM	1	0	21.25	0.133	21.30	0.135	21.25	0.133
20	16QAM	1	49	21.24	0.133	21.25	0.133	21.07	0.128
20	16QAM	1	99	21.13	0.130	21.23	0.133	21.19	0.132
20	16QAM	50	0	20.15	0.104	20.20	0.105	20.02	0.100
20	16QAM	50	24	19.93	0.098	19.93	0.098	20.10	0.102
20	16QAM	50	50	19.99	0.100	20.02	0.100	19.94	0.099
20	16QAM	100	0	19.83	0.096	20.07	0.102	19.84	0.096
20	64QAM	1	0	20.07	0.102	20.27	0.106	20.00	0.100
20	64QAM	1	49	20.10	0.102	19.97	0.099	20.23	0.105
20	64QAM	1	99	19.97	0.099	20.03	0.101	20.23	0.105
20	64QAM	50	0	18.88	0.077	19.12	0.082	18.96	0.079
20	64QAM	50	24	19.05	0.080	19.02	0.080	18.90	0.078
20	64QAM	50	50	18.86	0.077	18.98	0.079	18.98	0.079
20	64QAM	100	0	19.00	0.079	19.04	0.080	18.85	0.077



LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55315		55990		56665	
Frequency (MHz)				3557.5		3625		3692.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	22.02	0.159	22.16	0.164	22.08	0.161
15	QPSK	1	37	22.04	0.160	22.11	0.163	22.11	0.163
15	QPSK	1	74	22.06	0.161	21.99	0.158	22.03	0.160
15	QPSK	36	0	20.94	0.124	21.19	0.132	21.11	0.129
15	QPSK	36	20	21.03	0.127	21.03	0.127	20.89	0.123
15	QPSK	36	39	20.90	0.123	21.01	0.126	20.87	0.122
15	QPSK	75	0	21.03	0.127	21.01	0.126	21.06	0.128
15	16QAM	1	0	21.24	0.133	21.33	0.136	21.15	0.130
15	16QAM	1	37	21.11	0.129	21.15	0.130	21.16	0.131
15	16QAM	1	74	21.16	0.131	21.20	0.132	21.18	0.131
15	16QAM	36	0	20.07	0.102	20.12	0.103	20.05	0.101
15	16QAM	36	20	20.03	0.101	19.86	0.097	20.11	0.103
15	16QAM	36	39	19.93	0.098	19.87	0.097	20.11	0.103
15	16QAM	75	0	19.90	0.098	20.15	0.104	19.98	0.100
15	64QAM	1	0	19.98	0.100	20.23	0.105	20.09	0.102
15	64QAM	1	37	19.88	0.097	20.04	0.101	20.20	0.105
15	64QAM	1	74	20.11	0.103	19.99	0.100	20.21	0.105
15	64QAM	36	0	19.02	0.080	19.05	0.080	19.02	0.080
15	64QAM	36	20	18.91	0.078	19.14	0.082	18.94	0.078
15	64QAM	36	39	18.86	0.077	18.94	0.078	18.89	0.077
15	64QAM	75	0	19.00	0.079	19.00	0.079	18.91	0.078



LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55290		55990		56690	
Frequency (MHz)				3555		3625		3695	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	22.09	0.162	22.13	0.163	22.00	0.158
10	QPSK	1	25	21.91	0.155	21.98	0.158	22.00	0.158
10	QPSK	1	49	22.01	0.159	22.00	0.158	22.00	0.158
10	QPSK	25	0	21.04	0.127	21.19	0.132	21.05	0.127
10	QPSK	25	12	21.04	0.127	20.93	0.124	20.91	0.123
10	QPSK	25	25	20.87	0.122	20.99	0.126	20.85	0.122
10	QPSK	50	0	21.02	0.126	21.25	0.133	21.14	0.130
10	16QAM	1	0	21.08	0.128	21.24	0.133	21.23	0.133
10	16QAM	1	25	21.19	0.132	21.16	0.131	21.22	0.132
10	16QAM	1	49	21.10	0.129	21.18	0.131	21.27	0.134
10	16QAM	25	0	20.17	0.104	20.19	0.104	19.90	0.098
10	16QAM	25	12	20.08	0.102	19.83	0.096	19.93	0.098
10	16QAM	25	25	19.86	0.097	20.06	0.101	20.06	0.101
10	16QAM	50	0	19.87	0.097	20.05	0.101	19.79	0.095
10	64QAM	1	0	20.05	0.101	20.16	0.104	20.09	0.102
10	64QAM	1	25	19.99	0.100	19.98	0.100	20.07	0.102
10	64QAM	1	49	20.01	0.100	20.06	0.101	20.11	0.103
10	64QAM	25	0	19.01	0.080	19.02	0.080	19.09	0.081
10	64QAM	25	12	19.04	0.080	19.17	0.083	18.84	0.077
10	64QAM	25	25	18.99	0.079	18.92	0.078	18.98	0.079
10	64QAM	50	0	18.87	0.077	19.12	0.082	18.85	0.077



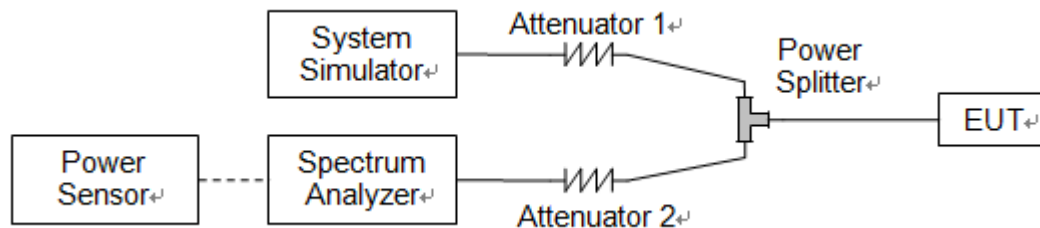
LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55265		55990		56175	
Frequency (MHz)				3552.5		3625		3697.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	21.91	0.155	22.14	0.164	21.93	0.156
5	QPSK	1	12	21.97	0.157	22.03	0.160	21.88	0.154
5	QPSK	1	24	21.98	0.158	22.11	0.163	21.99	0.158
5	QPSK	12	0	20.94	0.124	21.17	0.131	21.07	0.128
5	QPSK	12	7	21.20	0.132	20.90	0.123	20.97	0.125
5	QPSK	12	13	20.88	0.122	20.96	0.125	20.94	0.124
5	QPSK	25	0	21.05	0.127	21.08	0.128	21.01	0.126
5	16QAM	1	0	21.17	0.131	21.34	0.136	21.12	0.129
5	16QAM	1	12	21.24	0.133	21.16	0.131	21.06	0.128
5	16QAM	1	24	21.22	0.132	21.27	0.134	21.14	0.130
5	16QAM	12	0	20.15	0.104	20.12	0.103	19.91	0.098
5	16QAM	12	7	19.98	0.100	19.90	0.098	19.99	0.100
5	16QAM	12	13	19.92	0.098	19.91	0.098	20.05	0.101
5	16QAM	25	0	19.76	0.095	20.08	0.102	19.91	0.098
5	64QAM	1	0	19.99	0.100	20.30	0.107	20.13	0.103
5	64QAM	1	12	19.98	0.100	20.01	0.100	20.07	0.102
5	64QAM	1	24	20.10	0.102	20.00	0.100	20.12	0.103
5	64QAM	12	0	19.12	0.082	19.12	0.082	18.98	0.079
5	64QAM	12	7	18.89	0.077	19.10	0.081	18.92	0.078
5	64QAM	12	13	18.88	0.077	18.93	0.078	18.88	0.077
5	64QAM	25	0	18.85	0.077	18.95	0.079	19.04	0.080

2.2. Occupied Bandwidth

2.2.1. Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

2.2.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.2.3. Test procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.

**2.2.4. Test Result**

LTE Band	BW(MHz)	Channel Level	Channel	Frequency (MHz)	Modulation	99% BW (MHz)	26dB BW (MHz)	Verdict
B48	5	Low	55265	3552.5	QPSK	4.4985	4.8777	PASS
B48	5	Low	55265	3552.5	16QAM	4.5128	5.1552	PASS
B48	5	Low	55265	3552.5	64QAM	4.4962	5.1284	PASS
B48	5	Mid	55990	3625	QPSK	4.4990	4.9149	PASS
B48	5	Mid	55990	3625	16QAM	4.4928	5.0158	PASS
B48	5	Mid	55990	3625	64QAM	4.5077	4.8594	PASS
B48	5	High	56715	3697.5	QPSK	4.5039	4.8853	PASS
B48	5	High	56715	3697.5	16QAM	4.5144	4.8917	PASS
B48	5	High	56715	3697.5	64QAM	4.5032	5.0905	PASS
B48	10	Low	55290	3555	QPSK	8.9957	9.9898	PASS
B48	10	Low	55290	3555	16QAM	8.9799	9.9589	PASS
B48	10	Low	55290	3555	64QAM	8.9812	9.8011	PASS
B48	10	Mid	55990	3625	QPSK	8.9674	10.1742	PASS
B48	10	Mid	55990	3625	16QAM	8.9983	9.9978	PASS
B48	10	Mid	55990	3625	64QAM	8.9663	9.6353	PASS
B48	10	High	56690	3695	QPSK	8.9809	9.6248	PASS
B48	10	High	56690	3695	16QAM	8.9912	9.5274	PASS
B48	10	High	56690	3695	64QAM	8.9928	9.9501	PASS
B48	15	Low	55315	3557.5	QPSK	13.488	14.875	PASS
B48	15	Low	55315	3557.5	16QAM	13.487	14.724	PASS
B48	15	Low	55315	3557.5	64QAM	13.446	14.908	PASS
B48	15	Mid	55990	3625	QPSK	13.416	14.381	PASS
B48	15	Mid	55990	3625	16QAM	13.472	14.527	PASS
B48	15	Mid	55990	3625	64QAM	13.454	14.850	PASS
B48	15	High	56665	3692.5	QPSK	13.471	14.400	PASS
B48	15	High	56665	3692.5	16QAM	13.435	14.328	PASS
B48	15	High	56665	3692.5	64QAM	13.443	14.355	PASS
B48	20	Low	55340	3560	QPSK	18.034	19.404	PASS
B48	20	Low	55340	3560	16QAM	17.942	19.408	PASS
B48	20	Low	55340	3560	64QAM	17.967	19.679	PASS
B48	20	Mid	55990	3625	QPSK	17.940	19.242	PASS
B48	20	Mid	55990	3625	16QAM	17.949	19.153	PASS
B48	20	Mid	55990	3625	64QAM	17.911	19.423	PASS



REPORT No.: SZ25120016W04

B48	20	High	56640	3690	QPSK	17.869	19.728	PASS
B48	20	High	56640	3690	16QAM	17.881	20.069	PASS
B48	20	High	56640	3690	64QAM	17.936	19.201	PASS



B48 / 5MHz / QPSK/ Low CH



B48 / 5MHz / 16QAM/ Low CH



B48 / 5MHz / 64QAM/ Low CH



B48 / 5MHz / QPSK/ Mid CH



B48 / 5MHz / 16QAM/ Mid CH



B48 / 5MHz / 64QAM/ Mid CH



B48 / 5MHz / QPSK/ High CH



B48 / 5MHz / 16QAM/ High CH



B48 / 5MHz / 64QAM/ High CH



B48 / 10MHz / QPSK/ Low CH



B48 / 10MHz / 16QAM/ Low CH



B48 / 10MHz / 64QAM/ Low CH



B48 / 10MHz / QPSK/ Mid CH



B48 / 10MHz / 16QAM/ Mid CH



B48 / 10MHz / 64QAM/ Mid CH



B48 / 10MHz / QPSK/ High CH



B48 / 10MHz / 16QAM/ High CH



B48 / 10MHz / 64QAM/ High CH



B48 / 15MHz / QPSK/ Low CH



B48 / 15MHz / 16QAM/ Low CH



B48 / 15MHz / 64QAM/ Low CH



B48 / 15MHz / QPSK/ Mid CH



B48 / 15MHz / 16QAM/ Mid CH



B48 / 15MHz / 64QAM/ Mid CH



B48 / 15MHz / QPSK/ High CH



B48 / 15MHz / 16QAM/ High CH



B48 / 15MHz / 64QAM/ High CH



B48 / 20MHz / QPSK/ Low CH



B48 / 20MHz / 16QAM/ Low CH



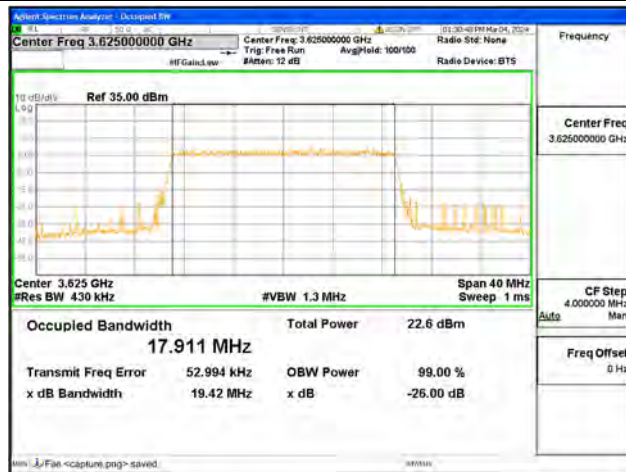
B48 / 20MHz / 64QAM/ Low CH



B48 / 20MHz / QPSK/ Mid CH



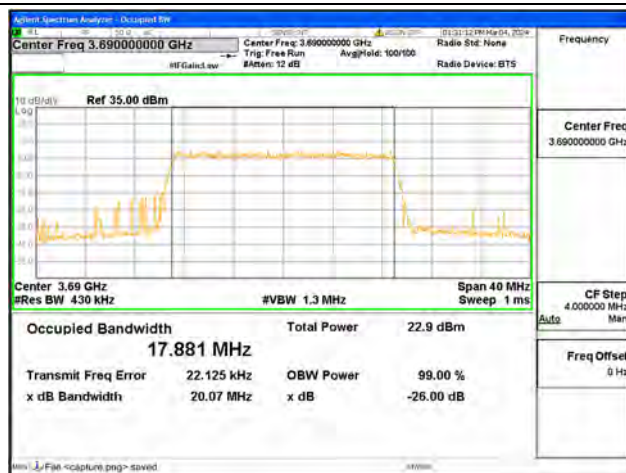
B48 / 20MHz / 16QAM/ Mid CH



B48 / 20MHz / 64QAM/ Mid CH



B48 / 20MHz / QPSK/ High CH



B48 / 20MHz / 16QAM/ High CH



B48 / 20MHz / 64QAM/ High CH

2.3. Frequency Stability

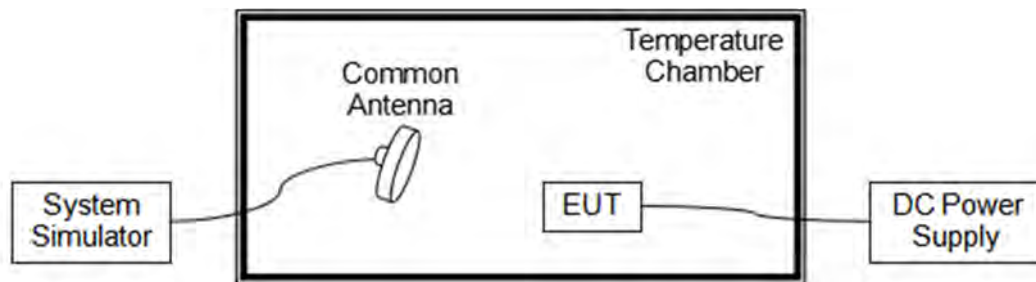
2.3.1. Requirement

According to FCC section 2.1055 & 90.213, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -30°C to $+50^{\circ}\text{C}$ at intervals of not more than 10°C .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

Note: The operating temperature of EUT is from 0°C to 45°C , which are specified by the applicant.

2.3.2. Test Description



The EUT which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

2.3.3. Test procedure

KDB 971168 D01v03 Section 9.0 and ANSI/TIA-603-E-2016.



2.3.4. Test Result

The nominal, highest and lowest extreme voltages are separately 3.89V, 4.48V and 3.50V, which are specified by the applicant; the normal temperature here used is 20°C.

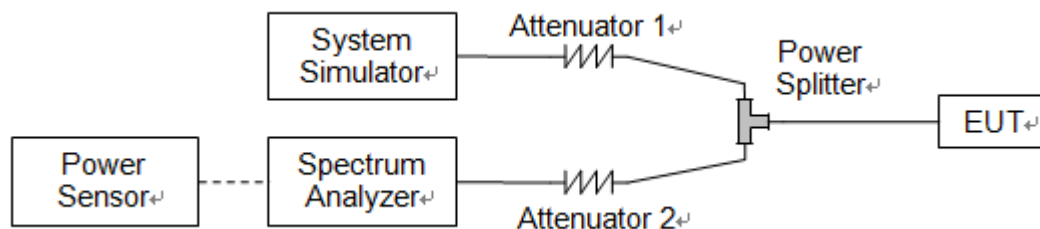
LTE Band 48, QPSK, Channel 55990, Frequency 3625.0MHz Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
Normal	3.89	+20(Ref)	17	0.005	PASS
Normal		0	-15	-0.004	
Normal		+10	4	0.001	
Normal		+20	15	0.004	
Normal		+30	-12	-0.003	
Normal		+40	15	0.004	
Normal		+45	-11	-0.003	
High	4.48	+20	19	0.005	
BATT.ENDPOINT	3.50	+20	16	0.004	

2.4. Peak to Average Radio

2.4.1. Requirement

According to FCC 96.41(g), the peak-to-average power ratio (PAPR) of any CBSD transmitter output power must not exceed 13 dB.

2.4.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.4.3. Test procedure

KDB 971168 D01v03 Section 5.7 and ANSI/TIA-603-E-2016.

**2.4.4. Test Result**

LTE Band	BW(MHz)	Channel Level	Channel	Frequency (MHz)	Modulation	Peak to Average Radio(dB)	Verdict
B48	5	Low	55265	3552.5	QPSK	5.44	PASS
B48	5	Low	55265	3552.5	16QAM	6.18	PASS
B48	5	Low	55265	3552.5	64QAM	6.95	PASS
B48	5	Mid	55990	3625	QPSK	5.48	PASS
B48	5	Mid	55990	3625	16QAM	6.21	PASS
B48	5	Mid	55990	3625	64QAM	6.99	PASS
B48	5	High	56715	3697.5	QPSK	5.42	PASS
B48	5	High	56715	3697.5	16QAM	6.19	PASS
B48	5	High	56715	3697.5	64QAM	6.96	PASS
B48	10	Low	55290	3555	QPSK	5.48	PASS
B48	10	Low	55290	3555	16QAM	6.16	PASS
B48	10	Low	55290	3555	64QAM	6.71	PASS
B48	10	Mid	55990	3625	QPSK	5.54	PASS
B48	10	Mid	55990	3625	16QAM	6.22	PASS
B48	10	Mid	55990	3625	64QAM	6.75	PASS
B48	10	High	56690	3695	QPSK	5.53	PASS
B48	10	High	56690	3695	16QAM	6.16	PASS
B48	10	High	56690	3695	64QAM	6.74	PASS
B48	15	Low	55315	3557.5	QPSK	5.26	PASS
B48	15	Low	55315	3557.5	16QAM	6.13	PASS
B48	15	Low	55315	3557.5	64QAM	6.92	PASS
B48	15	Mid	55990	3625	QPSK	5.32	PASS
B48	15	Mid	55990	3625	16QAM	6.45	PASS
B48	15	Mid	55990	3625	64QAM	7.06	PASS
B48	15	High	56665	3692.5	QPSK	5.29	PASS
B48	15	High	56665	3692.5	16QAM	6.12	PASS
B48	15	High	56665	3692.5	64QAM	7.07	PASS
B48	20	Low	55340	3560	QPSK	5.26	PASS
B48	20	Low	55340	3560	16QAM	6.15	PASS
B48	20	Low	55340	3560	64QAM	6.95	PASS
B48	20	Mid	55990	3625	QPSK	5.37	PASS
B48	20	Mid	55990	3625	16QAM	6.24	PASS
B48	20	Mid	55990	3625	64QAM	6.95	PASS



REPORT No.: SZ25120016W04

B48	20	High	56640	3690	QPSK	5.38	PASS
B48	20	High	56640	3690	16QAM	6.25	PASS
B48	20	High	56640	3690	64QAM	6.69	PASS



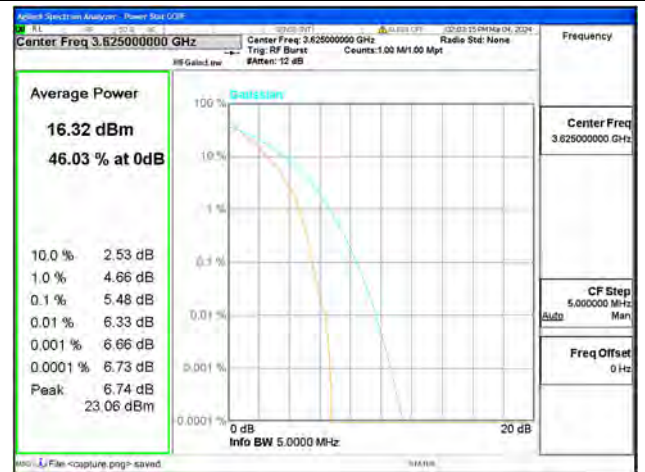
B48 / 5MHz / Low CH / QPSK



B48 / 5MHz / Low CH / 16QAM



B48 / 5MHz / Low CH / 64QAM



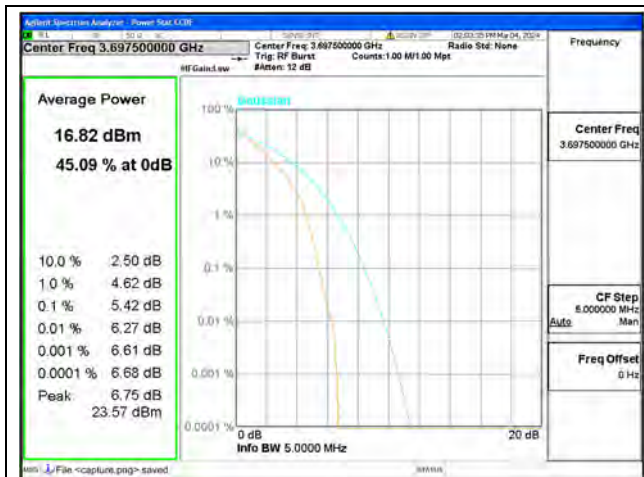
B48 / 5MHz / Mid CH / QPSK



B48 / 5MHz / Mid CH / 16QAM



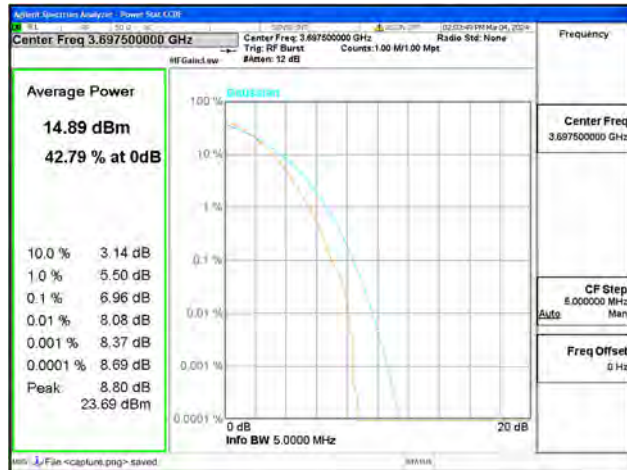
B48 / 5MHz / Mid CH / 64QAM



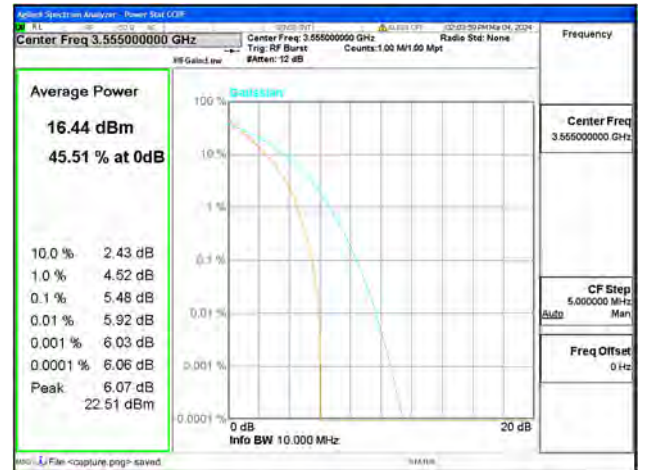
B48 / 5MHz / High CH / QPSK



B48 / 5MHz / High CH / 16QAM



B48 / 5MHz / High CH / 64QAM



B48 / 10MHz / Low CH / QPSK



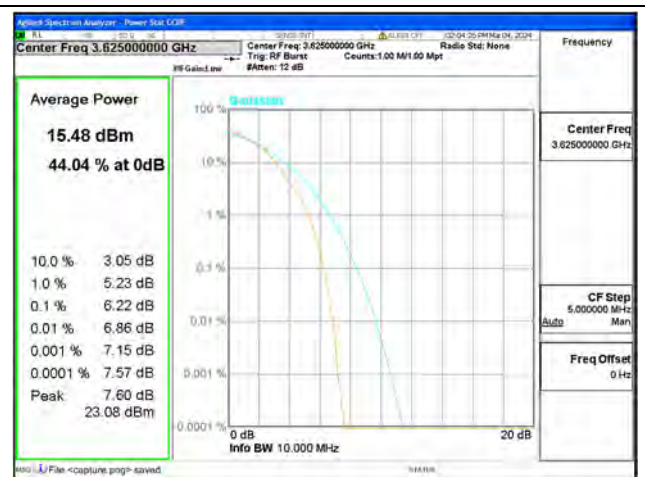
B48 / 10MHz / Low CH / 16QAM



B48 / 10MHz / Low CH / 64QAM



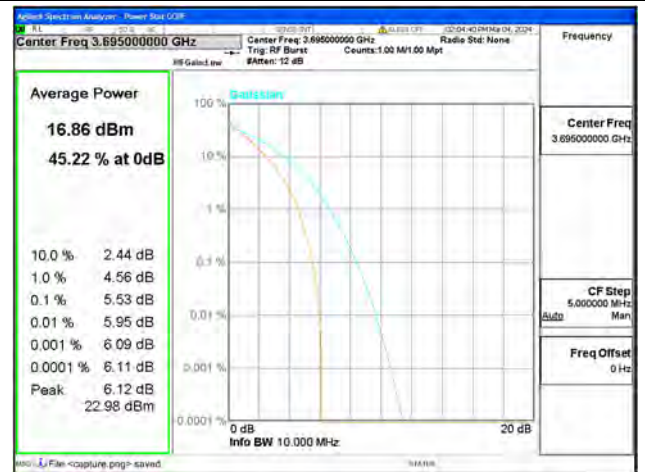
B48 / 10MHz / Mid CH / QPSK



B48 / 10MHz / Mid CH / 16QAM



B48 / 10MHz / Mid CH / 64QAM



B48 / 10MHz / High CH / QPSK



B48 / 10MHz / High CH / 16QAM



B48 / 10MHz / High CH / 64QAM



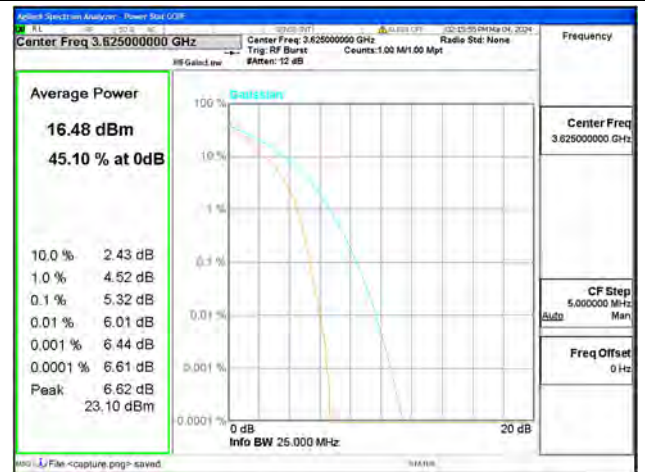
B48 / 15MHz / Low CH / QPSK



B48 / 15MHz / Low CH / 16QAM



B48 / 15MHz / Low CH / 64QAM



B48 / 15MHz / Mid CH / QPSK



B48 / 15MHz / Mid CH / 16QAM



B48 / 15MHz / Mid CH / 64QAM



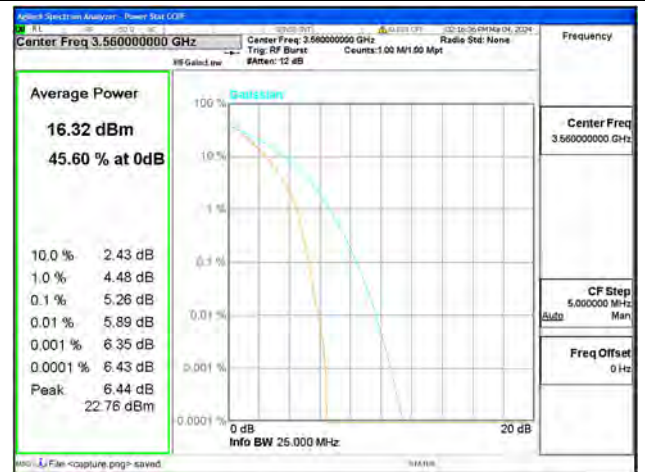
B48 / 15MHz / High CH / QPSK



B48 / 15MHz / High CH / 16QAM



B48 / 15MHz / High CH / 64QAM



B48 / 20MHz / Low CH / QPSK



B48 / 20MHz / Low CH / 16QAM



B48 / 20MHz / Low CH / 64QAM



B48 / 20MHz / Mid CH / QPSK



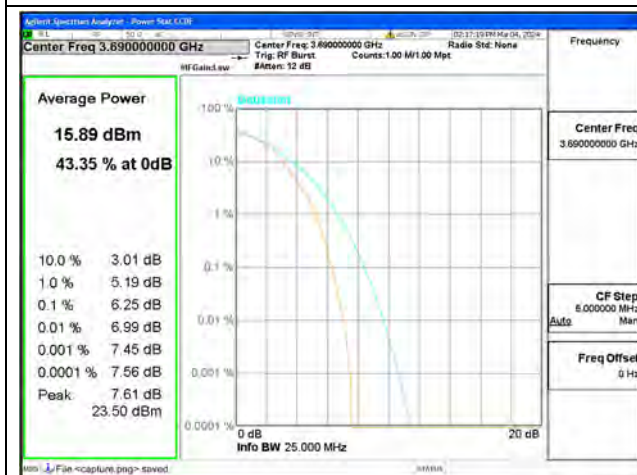
B48 / 20MHz / Mid CH / 16QAM



B48 / 20MHz / Mid CH / 64QAM



B48 / 20MHz / High CH / QPSK



B48 / 20MHz / High CH / 16QAM



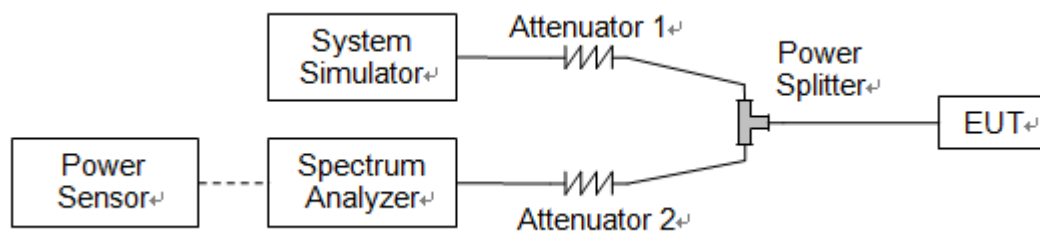
B48 / 20MHz / High CH / 64QAM

2.5. Conducted Spurious Emissions

2.5.1. Requirement

According to FCC section 96.41(e), the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz .

2.5.2. Test Description



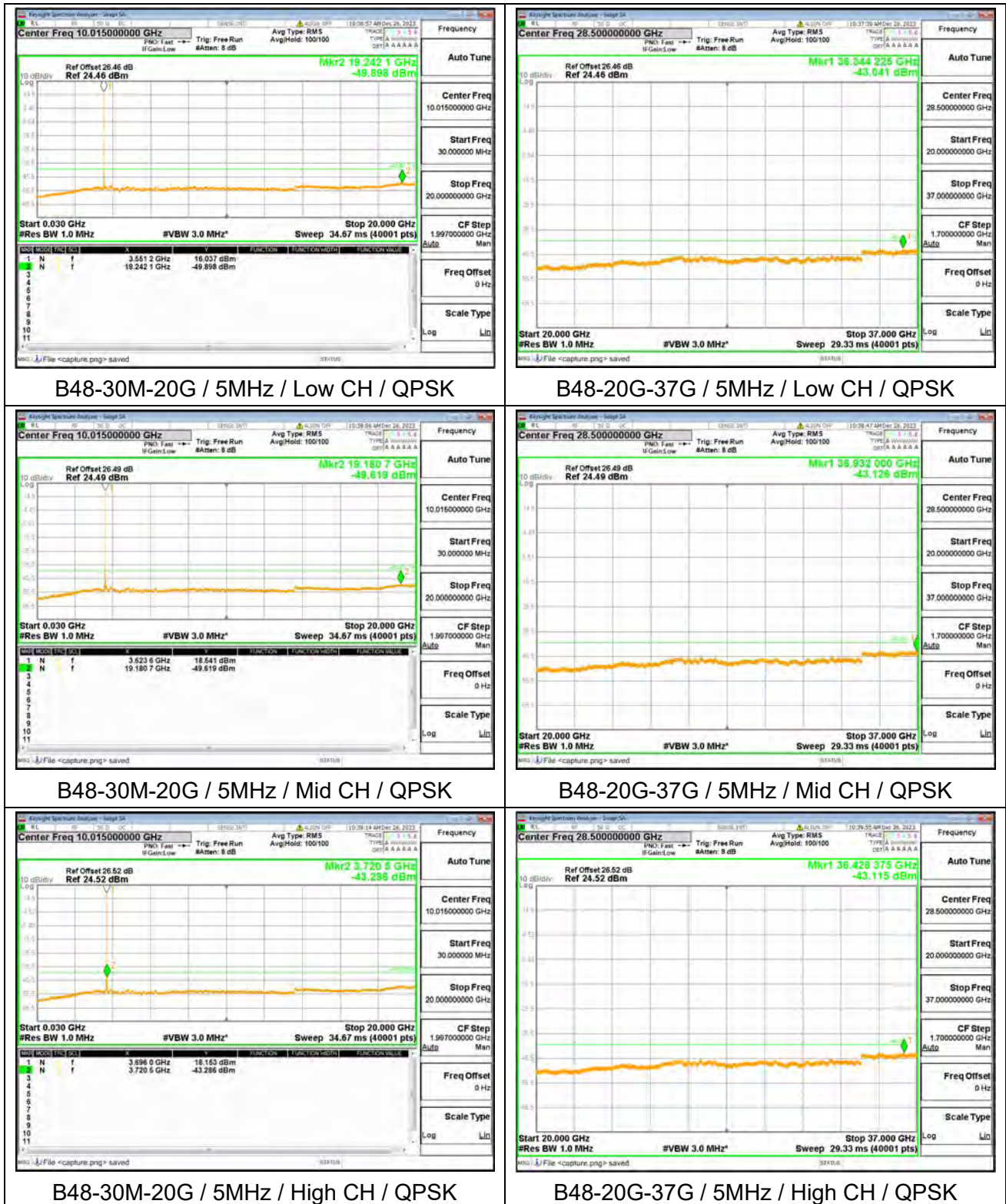
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

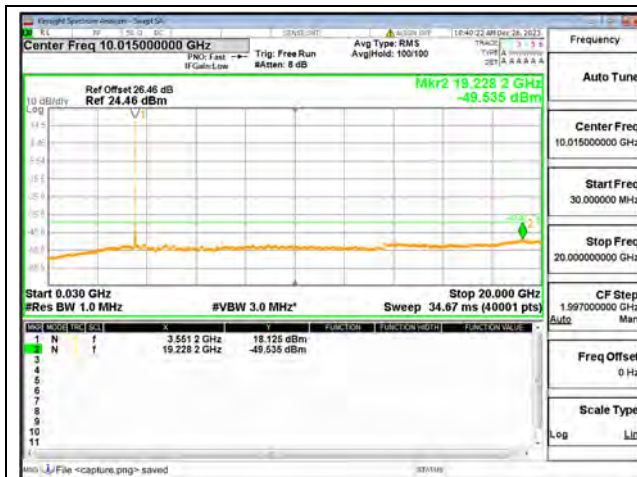
2.5.1. Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

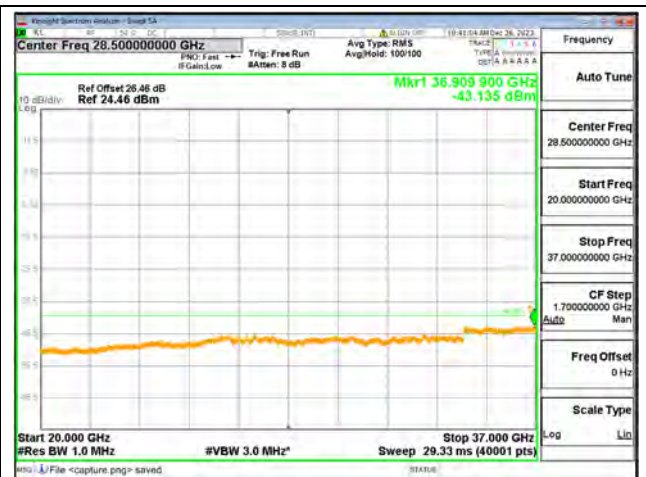


2.5.2. Test Result

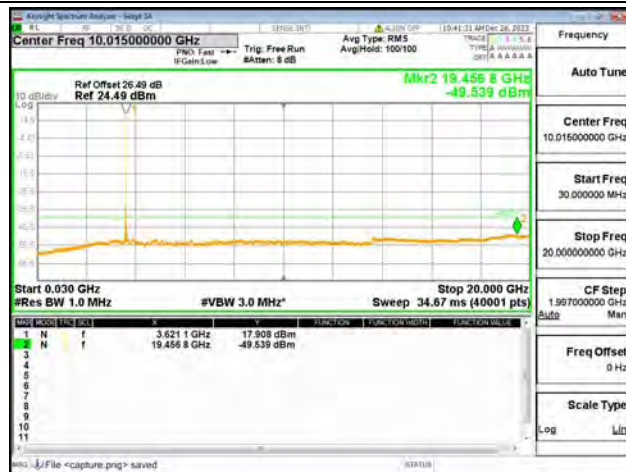




B48-30M-20G / 10MHz / Low CH / QPSK



B48-20G-37G / 10MHz / Low CH / QPSK



B48-30M-20G / 10MHz / Mid CH / QPSK



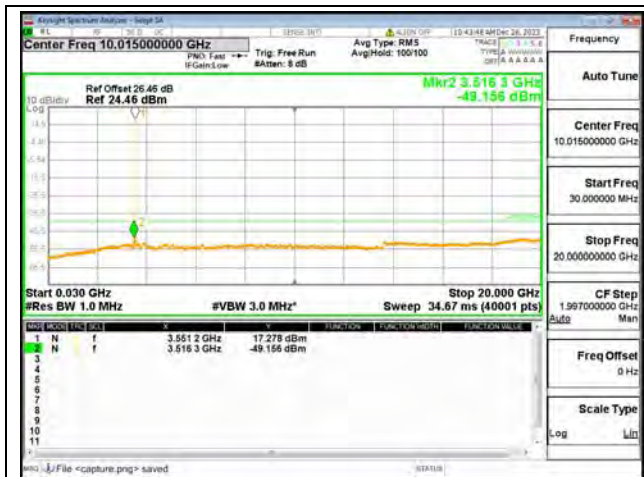
B48-20G-37G / 10MHz / Mid CH / QPSK



B48-30M-20G / 10MHz / High CH / QPSK



B48-20G-37G / 10MHz / High CH / QPSK



B48-30M-20G / 15MHz / Low CH / QPSK



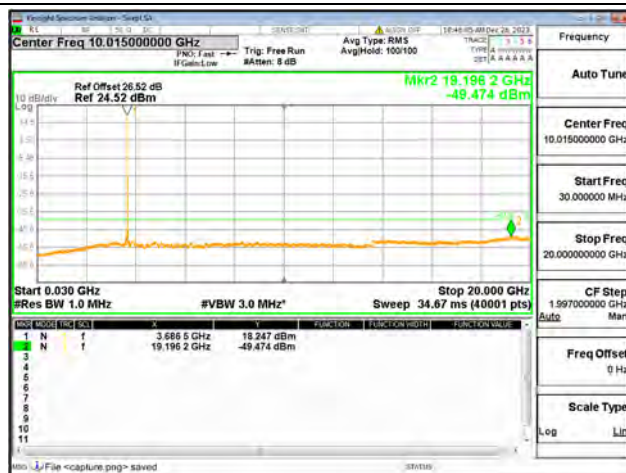
B48-20G-37G / 15MHz / Low CH / QPSK



B48-30M-20G / 15MHz / Mid CH / QPSK



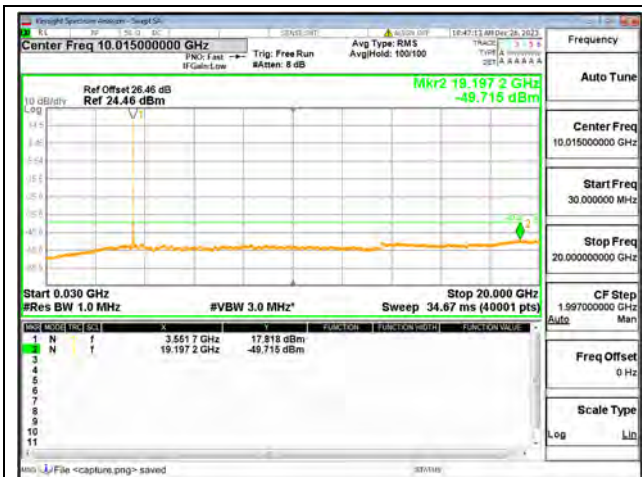
B48-20G-37G / 15MHz / Mid CH / QPSK



B48-30M-20G / 15MHz / High CH / QPSK



B48-20G-37G / 15MHz / High CH / QPSK



B48-30M-20G / 20MHz / Low CH / QPSK



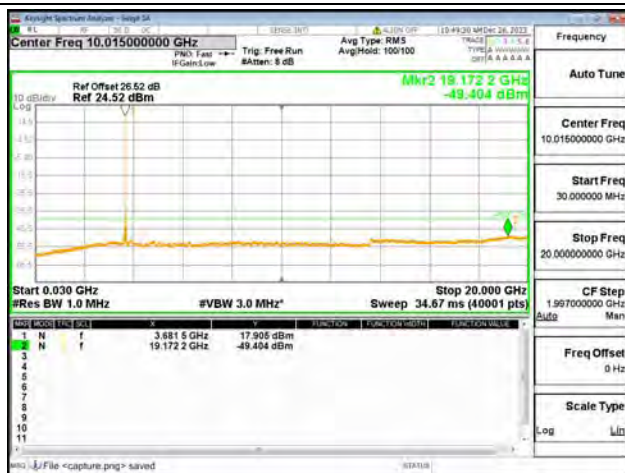
B48-20G-37G / 20MHz / Low CH / QPSK



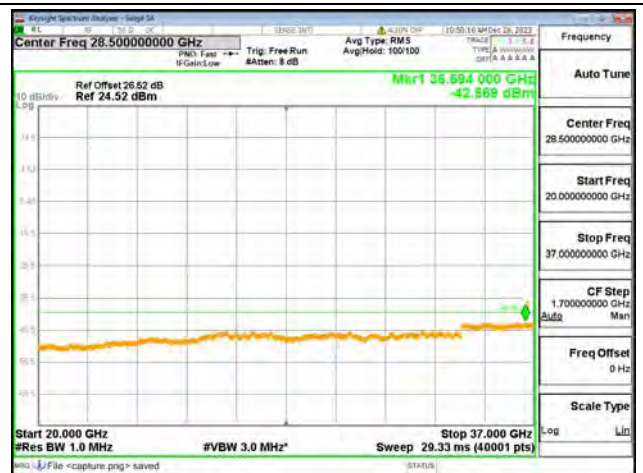
B48-30M-20G / 20MHz / Mid CH / QPSK



B48-20G-37G / 20MHz / Mid CH / QPSK



B48-30M-20G / 20MHz / High CH / QPSK



B48-20G-37G / 20MHz / High CH / QPSK



2.6. Band Edge

2.6.1. Requirement

Part 96.41(e)(1)(i)

For channel and frequency assignments made by the SAS to CBSDs, the conducted power of any CBSD emission outside the fundamental emission bandwidth as specified in paragraph (e)(3) of this section (whether the emission is inside or outside of the authorized band) shall not exceed -13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any CBSD emission shall not exceed -25 dBm/MHz.

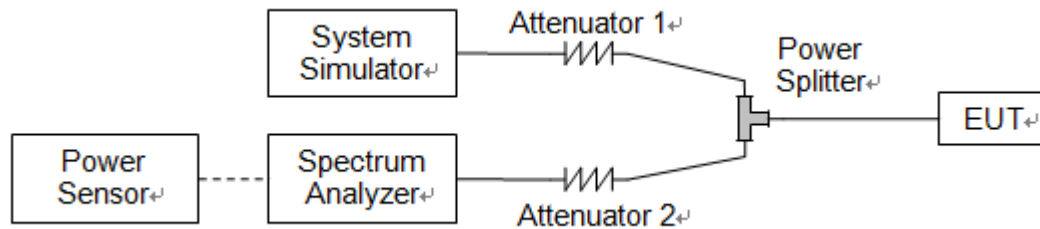
Part 96.41(e)(1)(ii)

For channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed -25 dBm/MHz.

Part 96.41(e)(2)

For CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz.

2.6.2. Test Description



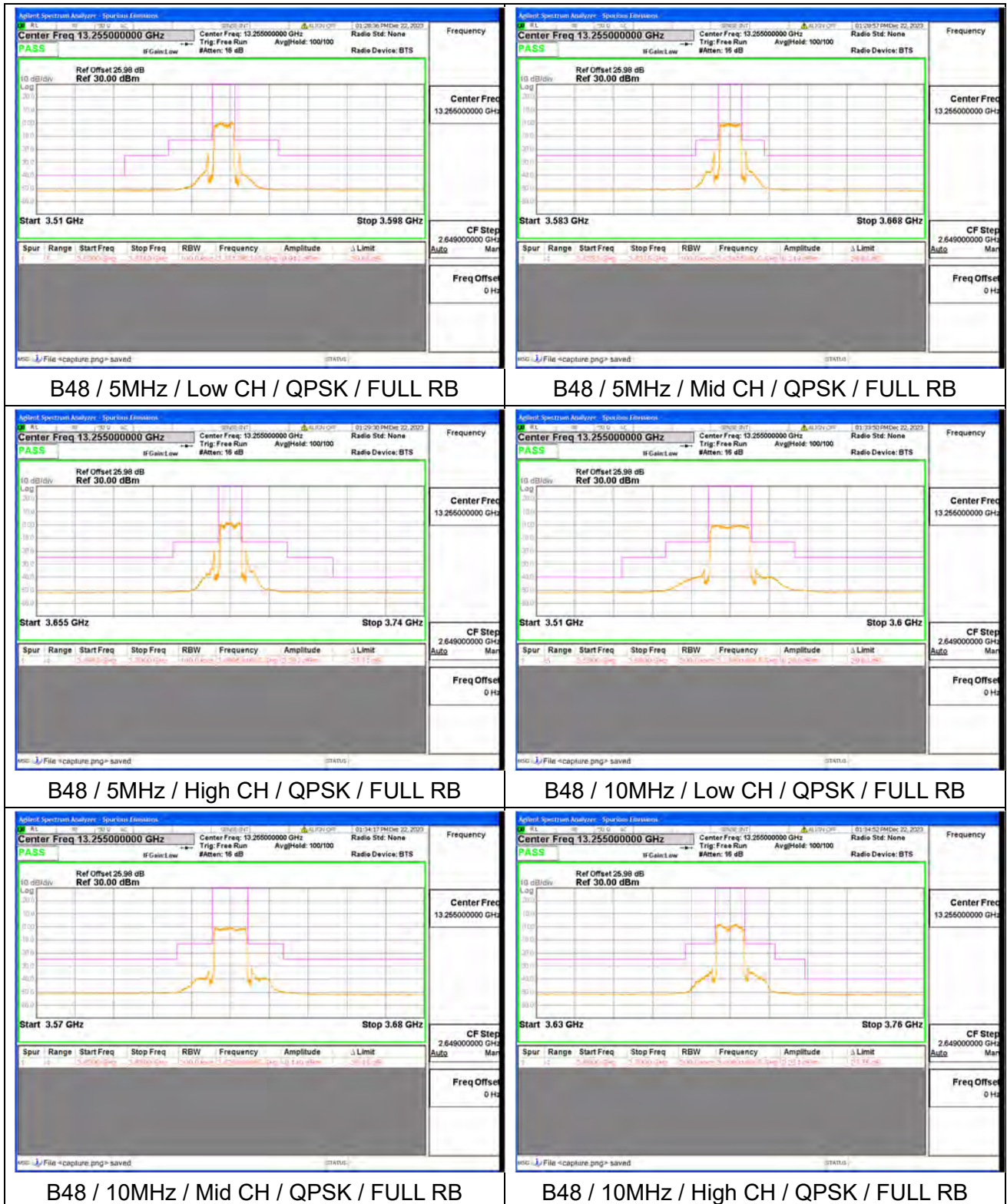
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.6.3. Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.



2.6.4. Test Result



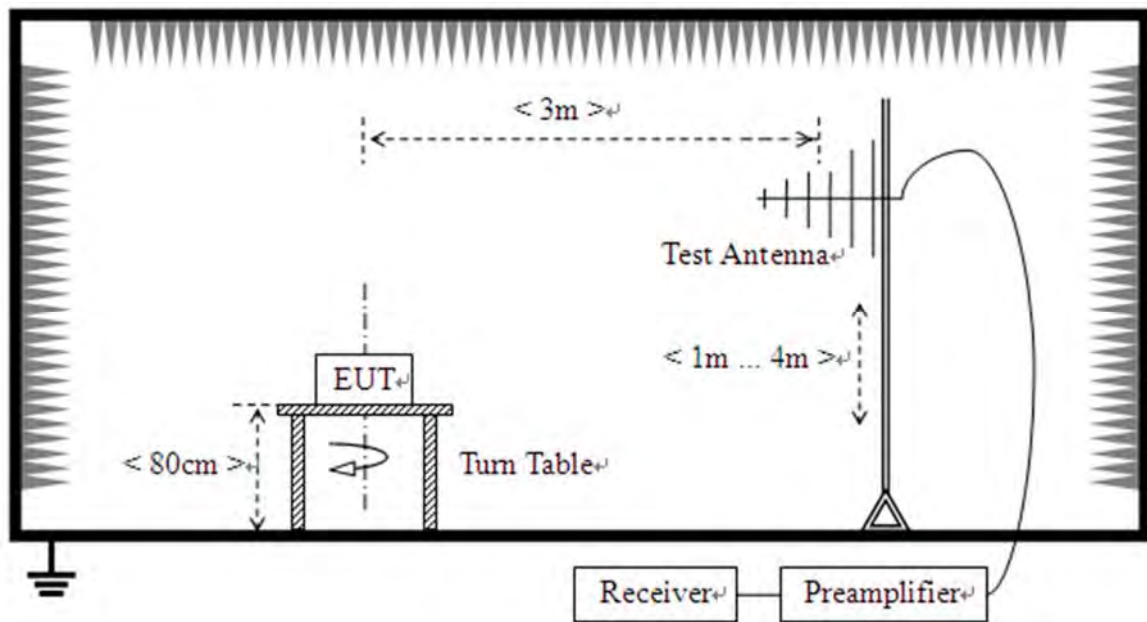


2.7. Radiated Spurious Emissions

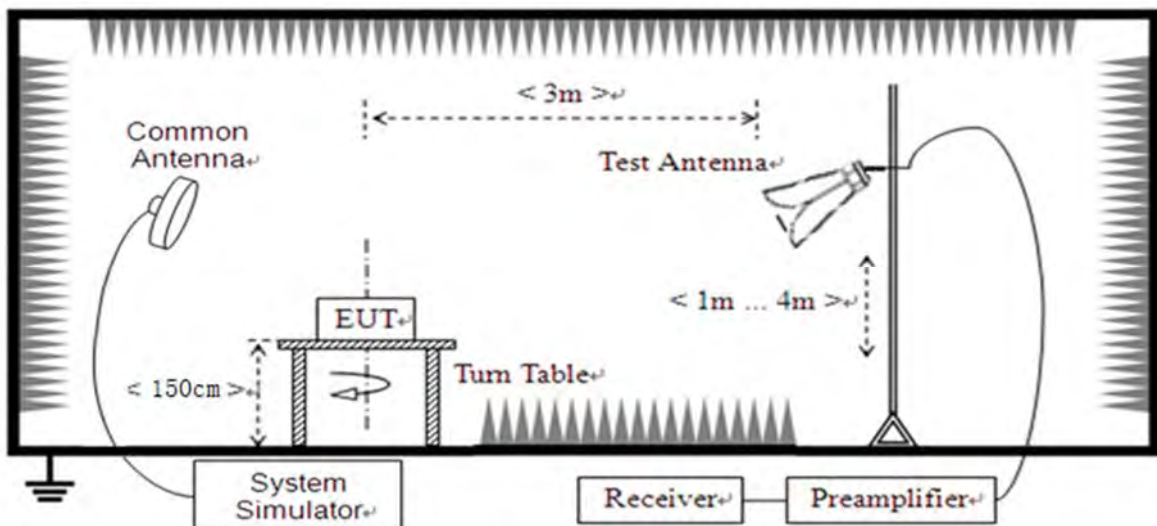
2.7.1. Requirement

The power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz .

2.7.2. Test Description



(For the test frequency from 30MHz to 1GHz)



(For the test frequency above 1GHz)



The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.7.3.Test procedure

KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E-2016.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements.



2.7.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the test spectrum analyze, so spectrum analyze reading is the final values which contain the data of A_{TOT} .

Note1: The power of the EUT transmitting frequency should be ignored.

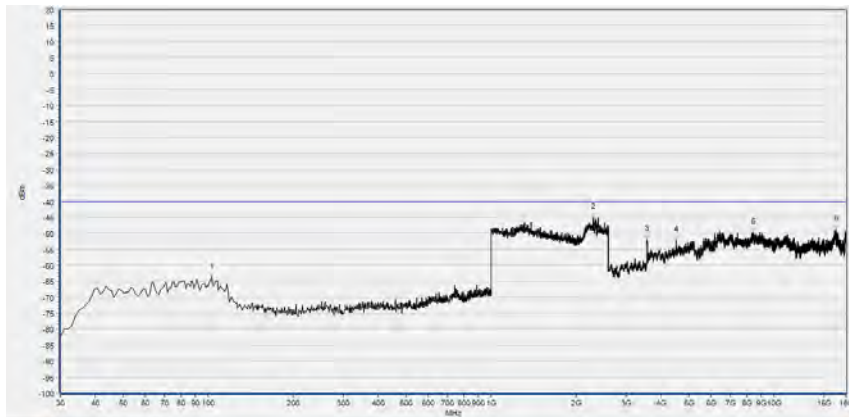
Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note3: All bandwidth and modulation were considered and evaluated respectively by performing full test for each band, only the worst cases (Max Bandwidth and QPSK mode) were recorded in this test report.

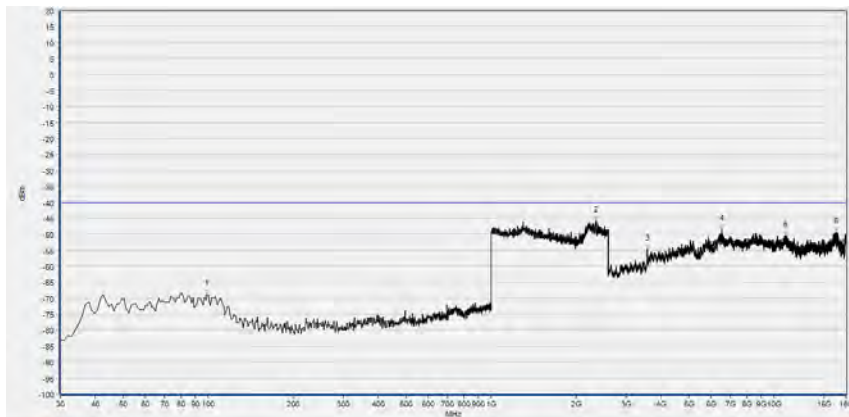
Note 4: N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

Note5: The amplitude of emissions(18GHz to 10th harmonics) which are attenuated more than 20 dB below the limit are not be reported.

LTE Band 48, 20MHz BW, Low Channel, QPSK

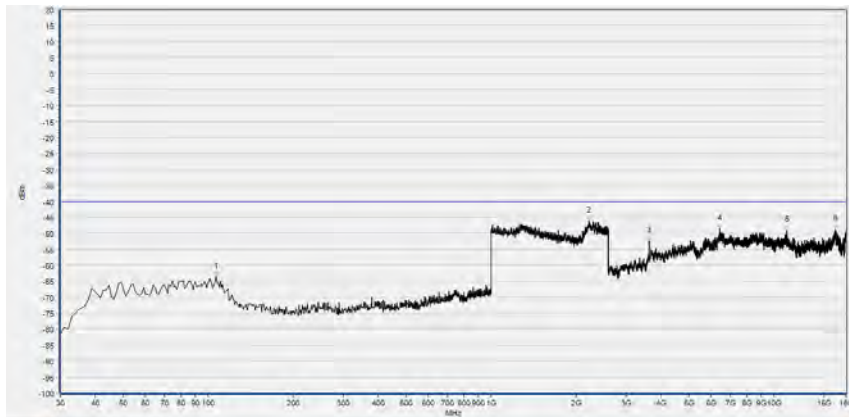


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	102.823	-63.88	-40.00	Horizontal	PASS
2	2297.297	-45.12	-40.00	Horizontal	PASS
3	3561.152	-51.93	-40.00	Horizontal	N/A
4	4500.740	-52.11	-40.00	Horizontal	PASS
5	8453.171	-49.82	-40.00	Horizontal	PASS
6	16570.594	-48.82	-40.00	Horizontal	PASS

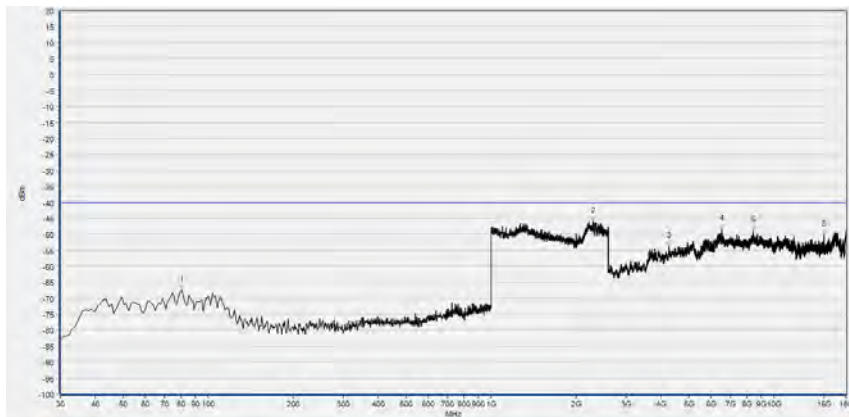


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	98.939	-68.76	-40.00	Vertical	PASS
2	2346.947	-45.64	-40.00	Vertical	PASS
3	3567.313	-54.73	-40.00	Vertical	N/A
4	6530.866	-48.40	-40.00	Vertical	PASS
5	10960.792	-50.45	-40.00	Vertical	PASS
6	16552.110	-49.20	-40.00	Vertical	PASS

LTE Band 48, 20MHz BW, Mid Channel, QPSK

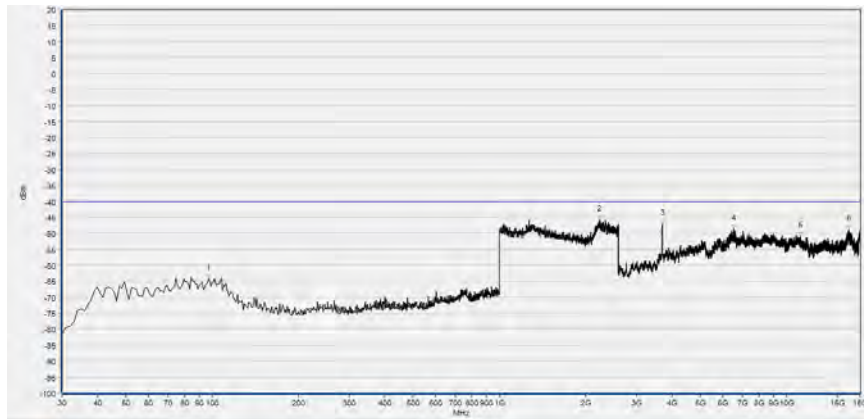


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	106.707	-63.56	-40.00	Horizontal	PASS
2	2217.217	-46.11	-40.00	Horizontal	PASS
3	3625.845	-52.49	-40.00	Horizontal	N/A
4	6447.690	-48.66	-40.00	Horizontal	PASS
5	11139.468	-49.04	-40.00	Horizontal	PASS
6	16515.143	-48.83	-40.00	Horizontal	PASS

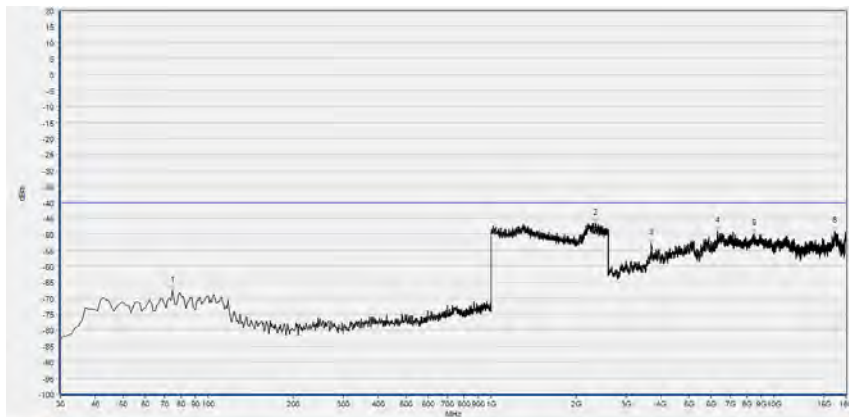


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	80.490	-67.47	-40.00	Vertical	PASS
2	2297.297	-46.00	-40.00	Vertical	PASS
3	4254.291	-53.72	-40.00	Vertical	PASS
4	6527.786	-48.44	-40.00	Vertical	PASS
5	8462.412	-48.78	-40.00	Vertical	PASS
6	15008.722	-50.19	-40.00	Vertical	PASS

LTE Band 48, 20MHz BW, High Channel, QPSK



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	96.997	-64.31	-40.00	Horizontal	PASS
2	2236.436	-45.59	-40.00	Horizontal	PASS
3	3690.538	-47.12	-40.00	Horizontal	N/A
4	6530.866	-48.66	-40.00	Horizontal	PASS
5	11151.790	-50.79	-40.00	Horizontal	PASS
6	16490.498	-48.76	-40.00	Horizontal	PASS



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	74.665	-67.70	-40.00	Vertical	PASS
2	2342.142	-46.65	-40.00	Vertical	PASS
3	3687.457	-52.94	-40.00	Vertical	N/A
4	6327.546	-49.12	-40.00	Vertical	PASS
5	8483.977	-49.77	-40.00	Vertical	PASS
6	16422.725	-49.07	-40.00	Vertical	PASS



2.8. End User Device Additional Requirements (CBSD Protocol)

2.8.1. Requirement

According to FCC section Part 96.47,

- (a) End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.
- (b) Any device operated at higher power than specified for End User Devices in Part 96.41 will be classified as, and subject to, the operational requirements of a CBSD.

2.8.2. Test Description

End user device additional requirements (CBSD Protocol) are tested per the test procedures listed below. During testing, the EUT is connected to a certified CBSD (kingsignal LBS7320 FCC ID: 2AVFNLBS7320) as a companion device to show compliance with Part 96.47. End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operation power level within 10 seconds of receiving instructions from its associated CBSD.

2.8.3. Test Procedure

KDB 940660 D01 Part 96 CBRS Eqpt v02.

2.8.4. Test Result

The EUT was connected via an RF cable to a certified CBSD and spectrum analyzer
Test Graph 1:

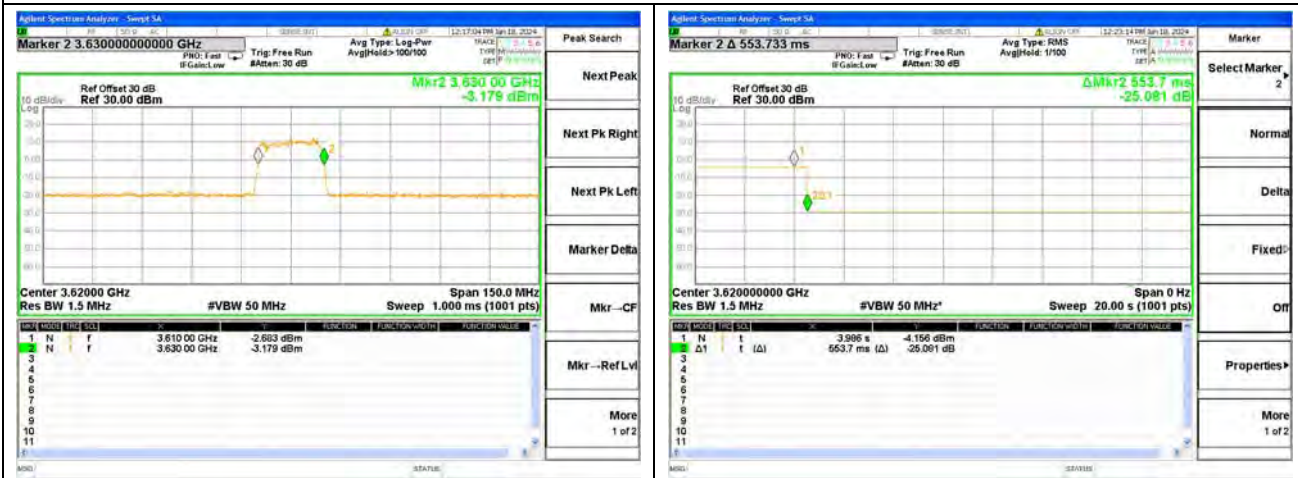
- a. Setup frequency with 3610MHz - 3630MHz
- b. Check EUT Tx frequency.
- c. Disable AP service and check EUT stop transmission within 10s.

Test Graph 2:

- a. Setup frequency with 3660MHz - 3680MHz
- b. Check EUT Tx frequency.
- c. Disable AP service and check EUT stop transmission within 10s



Test Graph 1

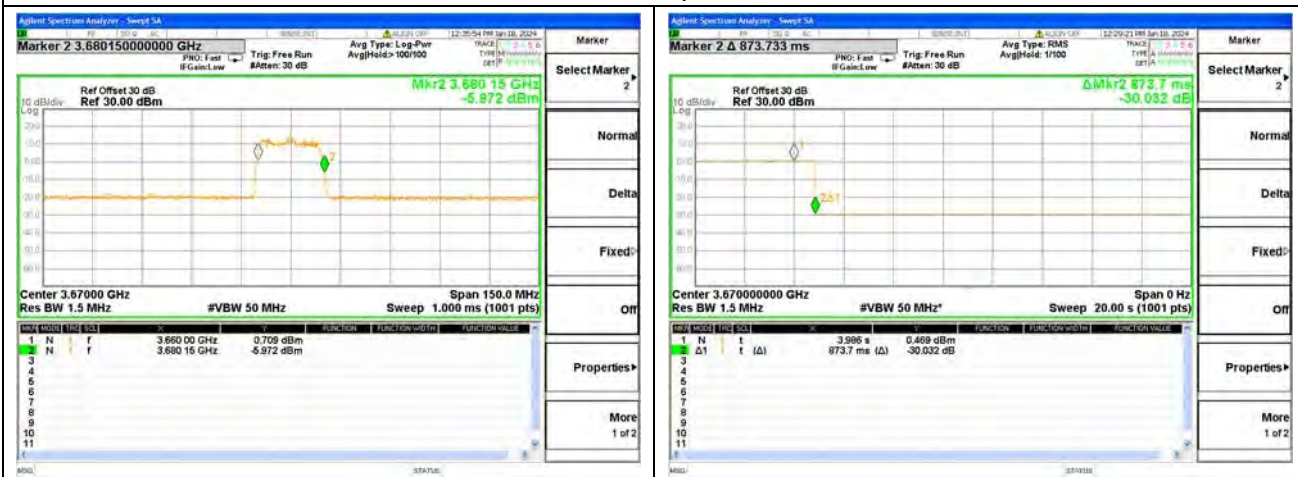


Note:

Marker 1: CBSD sends instructions to discontinue LTE operations.

Marker 2: EUT discontinues operation

Test Graph 2



Note:

Marker 1: CBSD sends instructions to discontinue LTE operations.

Marker 2: EUT discontinues operation



Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test Items	Uncertainty
Output Power	± 2.22 dB
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	± 2.77 dB
Band Edge	± 2.77 dB
Equivalent Isotropic Radiated Power	± 2.22 dB
Radiated Spurious Emissions	± 6 dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.



Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



REPORT No.: SZ25120016W04

4. Test Equipment Utilized

4.1 Conducted Test Equipment

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY51511149	N9020A	Agilent	2023.06.21	2024.06.20
Communication Test Station	6200995016	MT8820C	Anritsu	2023.06.21	2024.06.20
Temperature Chamber	S022177101 00089002	KMT-36LF 1A0	KOMEG	2023.09.19	2024.09.18

4.2 List of Software Used

Description	Manufacturer	Software Version
Morlab FCC LTE Test System	MORLAB	V6.45
MORLAB EMCR	MORLAB	V1.2

**4.3 Radiated Test Equipment**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
System Simulator	152038	CMW500	R&S	2023.10.17	2024.10.16
Receiver	MY54130016	N9038A	Agilent	2023.06.21	2024.06.20
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2023.07.01	2024.06.30
Test Antenna - Horn	9120D-963	BBHA 9120D	Schwarzbeck	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KK F-2	Qualwave	2023.07.04	2024.07.03
Preamplifier (10MHz-6GHz)	46732	S10M100L380 2	LUCIX CORP.	2023.07.04	2024.07.03
Preamplifier (2GHz-18GHz)	61171/61172	S020180L320 3	LUCIX CORP.	2023.06.27	2024.06.26
Notch Filter	N/A	WRCGV -LTE B48	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.05.10	2025.05.09

_____ END OF REPORT _____