



REPORT No.: SZ24100003W10

TEST REPORT

APPLICANT : JP Morgan Chase Bank N.A

PRODUCT NAME : PAYPAD_801_GEN1

MODEL NAME : BLADE_801_GEN1

BRAND NAME : Chase

FCC ID : 2BHXP-BLAD08AA

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

RECEIPT DATE : 2025-01-10

TEST DATE : 2025-01-17 to 2025-04-21

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Change History		
Version	Date	Reason for change
1.0	2025-05-08	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	JP Morgan Chase Bank N.A
Applicant Address:	70 Fargo St, Boston, MA, USA 02210
Manufacturer:	JP Morgan Chase Bank N.A
Manufacturer Address:	70 Fargo St, Boston, MA, USA 02210

1.2. Equipment Under Test (EUT) Description

Product Name:	PAYPAD_801_GEN1	
Sample No.:	1#, 3#	
Hardware Version:	PVT	
Software Version:	BLADE_801_GEN1.BE2M.20250403+	
Modulation Type:	QPSK, 16QAM, 64QAM, 256QAM	
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	-0.11dBi
Carrier Aggregation(UL):	Not Support	
Accessory Information:	Battery	
	Brand Name:	Chase
	Model No.:	860010
	Serial No.:	N/A
	Capacity:	6150mAh
	Rated Voltage:	3.85V
	Charge Limit:	4.4V
	Manufacturer:	Shenzhen GUANGWEI Electronic Technology Co., Ltd.
	USB Cable	
	Model No.:	HC-0412

Note 1: SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for



test.

Note 2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

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	256QAM	QPSK	16QAM	64QAM	256QAM
20	0.198	0.170	0.132	0.051	17M9G7D	17M9W7D	17M9W7D	17M9W7D
15	0.196	0.168	0.131	0.051	13M5G7D	13M4W7D	13M5W7D	13M4W7D
10	0.195	0.167	0.130	0.050	8M95G7D	8M97W7D	8M99W7D	8M98W7D
5	0.193	0.166	0.129	0.050	4M49G7D	4M49W7D	4M49W7D	4M48W7D



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	Method Determination /Remark
2.1046, 96.41(b)	Transmitter Conducted Output Power and ERP/EIRP	Apr. 21, 2025	Yu Xiaoming Gan Jing	PASS	No deviation
2.1049	Occupied Bandwidth	Feb. 25, 2025	Gan Jing	PASS	No deviation
96.41(g)	Peak -Average Ratio	Feb. 25, 2025	Gan Jing	PASS	No deviation
2.1055	Frequency Stability	Apr. 21, 2025	Gan Jing	PASS	No deviation
2.1051, 96.41(e)	Conducted Spurious Emissions	Apr. 21, 2025	Gan Jing	PASS	No deviation
2.1051, 96.41(e)	Band Edge	Feb. 12, 2025	Gan Jing	PASS	No deviation
2.1053, 96.41(e)	Radiated Spurious Emissions	Feb. 23, 2025	Li Hanbin	PASS	No deviation

Note 1: The tests were performed according to the method of measurements prescribed in KDB 971168 D01 v03 and ANSI/TIA-603-E-2016.

Note 2: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.



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.

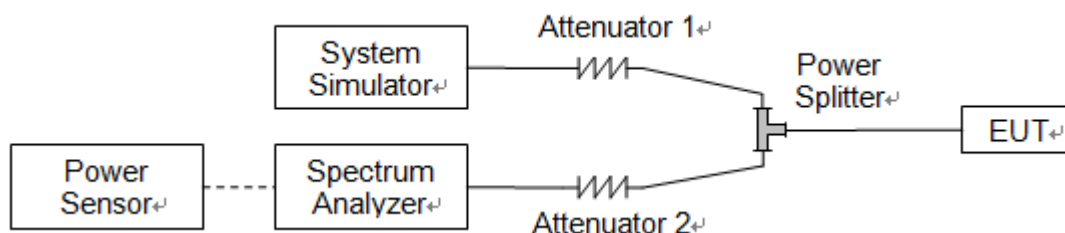
2.1.1. Requirement

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.



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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	22.91	23.07	23.02
20	QPSK	1	49	22.91	22.73	22.64
20	QPSK	1	99	22.89	22.70	22.66
20	QPSK	50	0	22.10	22.19	22.12
20	QPSK	50	24	22.01	22.10	22.01
20	QPSK	50	50	22.00	22.00	21.87
20	QPSK	100	0	21.98	22.10	22.00
20	16QAM	1	0	22.21	22.06	22.00
20	16QAM	1	49	22.26	21.99	22.01
20	16QAM	1	99	22.41	21.94	21.95
20	16QAM	50	0	21.42	21.18	21.13
20	16QAM	50	24	21.18	21.14	21.09
20	16QAM	50	50	21.21	20.94	21.10
20	16QAM	100	0	21.27	21.12	21.04
20	64QAM	1	0	21.32	21.18	21.23
20	64QAM	1	49	20.98	21.10	21.21
20	64QAM	1	99	21.11	21.13	21.22
20	64QAM	50	0	21.26	21.10	20.96
20	64QAM	50	24	21.33	21.06	21.06
20	64QAM	50	50	21.27	20.84	21.13
20	64QAM	100	0	21.17	21.24	21.01
20	256QAM	1	0	17.20	17.06	17.11
20	256QAM	1	49	16.99	16.98	17.09
20	256QAM	1	99	17.05	17.01	17.10
20	256QAM	50	0	17.13	16.97	16.91
20	256QAM	50	24	17.20	16.93	16.93
20	256QAM	50	50	17.14	16.71	17.00
20	256QAM	100	0	17.04	17.11	16.88



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	22.87	23.03	22.98
15	QPSK	1	37	22.87	22.69	22.60
15	QPSK	1	74	22.85	22.66	22.62
15	QPSK	36	0	22.06	22.15	22.08
15	QPSK	36	20	21.97	22.06	21.97
15	QPSK	36	39	21.96	21.96	21.83
15	QPSK	75	0	21.94	22.06	21.96
15	16QAM	1	0	22.17	22.02	21.96
15	16QAM	1	37	22.22	21.95	21.97
15	16QAM	1	74	22.37	21.90	21.91
15	16QAM	36	0	21.38	21.14	21.09
15	16QAM	36	20	21.14	21.10	21.05
15	16QAM	36	39	21.17	20.90	21.06
15	16QAM	75	0	21.23	21.08	21.00
15	64QAM	1	0	21.28	21.14	21.19
15	64QAM	1	37	20.94	21.06	21.17
15	64QAM	1	74	21.07	21.09	21.18
15	64QAM	36	0	21.22	21.06	20.92
15	64QAM	36	20	21.29	21.02	21.02
15	64QAM	36	39	21.23	20.80	21.09
15	64QAM	75	0	21.13	21.20	20.97
15	256QAM	1	0	17.16	17.02	17.07
15	256QAM	1	37	16.95	16.94	17.05
15	256QAM	1	74	17.01	16.97	17.06
15	256QAM	36	0	17.09	16.93	16.87
15	256QAM	36	20	17.16	16.89	16.89
15	256QAM	36	39	17.10	16.67	16.96
15	256QAM	75	0	17.00	17.07	16.84



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	22.84	23.00	22.95
10	QPSK	1	25	22.84	22.66	22.57
10	QPSK	1	49	22.82	22.63	22.59
10	QPSK	25	0	22.03	22.12	22.05
10	QPSK	25	12	21.94	22.03	21.94
10	QPSK	25	25	21.93	21.93	21.80
10	QPSK	50	0	21.91	22.03	21.93
10	16QAM	1	0	22.14	21.99	21.93
10	16QAM	1	25	22.19	21.92	21.94
10	16QAM	1	49	22.34	21.87	21.88
10	16QAM	25	0	21.35	21.11	21.06
10	16QAM	25	12	21.11	21.07	21.02
10	16QAM	25	25	21.14	20.87	21.03
10	16QAM	50	0	21.20	21.05	20.97
10	64QAM		0	21.25	21.11	21.16
10	64QAM	1	25	20.91	21.03	21.14
10	64QAM	1	49	21.04	21.06	21.15
10	64QAM	25	0	21.19	21.03	20.89
10	64QAM	25	12	21.26	20.99	20.99
10	64QAM	25	25	21.20	20.77	21.06
10	64QAM	50	0	21.10	21.17	20.94
10	256QAM	1	0	17.13	16.99	17.04
10	256QAM	1	25	16.92	16.91	17.02
10	256QAM	1	49	16.98	16.94	17.03
10	256QAM	25	0	17.06	16.90	16.84
10	256QAM	25	12	17.13	16.86	16.86
10	256QAM	25	25	17.07	16.64	16.93
10	256QAM	50	0	16.97	17.04	16.81



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	22.80	22.96	22.91
5	QPSK	1	12	22.80	22.62	22.53
5	QPSK	1	24	22.78	22.59	22.55
5	QPSK	12	0	21.99	22.08	22.01
5	QPSK	12	7	21.90	21.99	21.90
5	QPSK	12	13	21.89	21.89	21.76
5	QPSK	25	0	21.87	21.99	21.89
5	16QAM	1	0	22.10	21.95	21.89
5	16QAM	1	12	22.15	21.88	21.90
5	16QAM	1	24	22.30	21.83	21.84
5	16QAM	12	0	21.31	21.07	21.02
5	16QAM	12	7	21.07	21.03	20.98
5	16QAM	12	13	21.10	20.83	20.99
5	16QAM	25	0	21.16	21.01	20.93
5	64QAM	1	0	21.21	21.07	21.12
5	64QAM	1	12	20.87	20.99	21.10
5	64QAM	1	24	21.00	21.02	21.11
5	64QAM	12	0	21.15	20.99	20.85
5	64QAM	12	7	21.22	20.95	20.95
5	64QAM	12	13	21.16	20.73	21.02
5	64QAM	25	0	21.06	21.13	20.90
5	256QAM	1	0	17.09	16.95	17.00
5	256QAM	1	12	16.88	16.87	16.98
5	256QAM	1	24	16.94	16.90	16.99
5	256QAM	12	0	17.02	16.86	16.80
5	256QAM	12	7	17.09	16.82	16.82
5	256QAM	12	13	17.03	16.60	16.89
5	256QAM	25	0	16.93	17.00	16.77

**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	22.80	0.191	22.96	0.198	22.91	0.195
20	QPSK	1	49	22.80	0.191	22.62	0.183	22.53	0.179
20	QPSK	1	99	22.78	0.190	22.59	0.182	22.55	0.180
20	QPSK	50	0	21.99	0.158	22.08	0.161	22.01	0.159
20	QPSK	50	24	21.90	0.155	21.99	0.158	21.90	0.155
20	QPSK	50	50	21.89	0.155	21.89	0.155	21.76	0.150
20	QPSK	100	0	21.87	0.154	21.99	0.158	21.89	0.155
20	16QAM	1	0	22.10	0.162	21.95	0.157	21.89	0.155
20	16QAM	1	49	22.15	0.164	21.88	0.154	21.90	0.155
20	16QAM	1	99	22.30	0.170	21.83	0.152	21.84	0.153
20	16QAM	50	0	21.31	0.135	21.07	0.128	21.02	0.126
20	16QAM	50	24	21.07	0.128	21.03	0.127	20.98	0.125
20	16QAM	50	50	21.10	0.129	20.83	0.121	20.99	0.126
20	16QAM	100	0	21.16	0.131	21.01	0.126	20.93	0.124
20	64QAM	1	0	21.21	0.132	21.07	0.128	21.12	0.129
20	64QAM	1	49	20.87	0.122	20.99	0.126	21.10	0.129
20	64QAM	1	99	21.00	0.126	21.02	0.126	21.11	0.129
20	64QAM	50	0	21.15	0.130	20.99	0.126	20.85	0.122
20	64QAM	50	24	21.22	0.132	20.95	0.124	20.95	0.124
20	64QAM	50	50	21.16	0.131	20.73	0.118	21.02	0.126
20	64QAM	100	0	21.06	0.128	21.13	0.130	20.90	0.123
20	256QAM	1	0	17.09	0.051	16.95	0.050	17.00	0.050
20	256QAM	1	49	16.88	0.049	16.87	0.049	16.98	0.050
20	256QAM	1	99	16.94	0.049	16.90	0.049	16.99	0.050
20	256QAM	50	0	17.02	0.050	16.86	0.049	16.80	0.048
20	256QAM	50	24	17.09	0.051	16.82	0.048	16.82	0.048
20	256QAM	50	50	17.03	0.050	16.60	0.046	16.89	0.049
20	256QAM	100	0	16.93	0.049	17.00	0.050	16.77	0.048



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	22.76	0.189	22.92	0.196	22.87	0.194
15	QPSK	1	37	22.76	0.189	22.58	0.181	22.49	0.177
15	QPSK	1	74	22.74	0.188	22.55	0.180	22.51	0.178
15	QPSK	36	0	21.95	0.157	22.04	0.160	21.97	0.157
15	QPSK	36	20	21.86	0.153	21.95	0.157	21.86	0.153
15	QPSK	36	39	21.85	0.153	21.85	0.153	21.72	0.149
15	QPSK	75	0	21.83	0.152	21.95	0.157	21.85	0.153
15	16QAM	1	0	22.06	0.161	21.91	0.155	21.85	0.153
15	16QAM	1	37	22.11	0.163	21.84	0.153	21.86	0.153
15	16QAM	1	74	22.26	0.168	21.79	0.151	21.80	0.151
15	16QAM	36	0	21.27	0.134	21.03	0.127	20.98	0.125
15	16QAM	36	20	21.03	0.127	20.99	0.126	20.94	0.124
15	16QAM	36	39	21.06	0.128	20.79	0.120	20.95	0.124
15	16QAM	75	0	21.12	0.129	20.97	0.125	20.89	0.123
15	64QAM	1	0	21.17	0.131	21.03	0.127	21.08	0.128
15	64QAM	1	37	20.83	0.121	20.95	0.124	21.06	0.128
15	64QAM	1	74	20.96	0.125	20.98	0.125	21.07	0.128
15	64QAM	36	0	21.11	0.129	20.95	0.124	20.81	0.121
15	64QAM	36	20	21.18	0.131	20.91	0.123	20.91	0.123
15	64QAM	36	39	21.12	0.129	20.69	0.117	20.98	0.125
15	64QAM	75	0	21.02	0.126	21.09	0.129	20.86	0.122
15	256QAM	1	0	17.05	0.051	16.91	0.049	16.96	0.050
15	256QAM	1	37	16.84	0.048	16.83	0.048	16.94	0.049
15	256QAM	1	74	16.90	0.049	16.86	0.049	16.95	0.050
15	256QAM	36	0	16.98	0.050	16.82	0.048	16.76	0.047
15	256QAM	36	20	17.05	0.051	16.78	0.048	16.78	0.048
15	256QAM	36	39	16.99	0.050	16.56	0.045	16.85	0.048
15	256QAM	75	0	16.89	0.049	16.96	0.050	16.73	0.047



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	22.73	0.187	22.89	0.195	22.84	0.192
10	QPSK	1	25	22.73	0.187	22.55	0.180	22.46	0.176
10	QPSK	1	49	22.71	0.187	22.52	0.179	22.48	0.177
10	QPSK	25	0	21.92	0.156	22.01	0.159	21.94	0.156
10	QPSK	25	12	21.83	0.152	21.92	0.156	21.83	0.152
10	QPSK	25	25	21.82	0.152	21.82	0.152	21.69	0.148
10	QPSK	50	0	21.80	0.151	21.92	0.156	21.82	0.152
10	16QAM	1	0	22.03	0.160	21.88	0.154	21.82	0.152
10	16QAM	1	25	22.08	0.161	21.81	0.152	21.83	0.152
10	16QAM	1	49	22.23	0.167	21.76	0.150	21.77	0.150
10	16QAM	25	0	21.24	0.133	21.00	0.126	20.95	0.124
10	16QAM	25	12	21.00	0.126	20.96	0.125	20.91	0.123
10	16QAM	25	25	21.03	0.127	20.76	0.119	20.92	0.124
10	16QAM	50	0	21.09	0.129	20.94	0.124	20.86	0.122
10	64QAM	1	0	21.14	0.130	21.00	0.126	21.05	0.127
10	64QAM	1	25	20.80	0.120	20.92	0.124	21.03	0.127
10	64QAM	1	49	20.93	0.124	20.95	0.124	21.04	0.127
10	64QAM	25	0	21.08	0.128	20.92	0.124	20.78	0.120
10	64QAM	25	12	21.15	0.130	20.88	0.122	20.88	0.122
10	64QAM	25	25	21.09	0.129	20.66	0.116	20.95	0.124
10	64QAM	50	0	20.99	0.126	21.06	0.128	20.83	0.121
10	256QAM	1	0	17.02	0.050	16.88	0.049	16.93	0.049
10	256QAM	1	25	16.81	0.048	16.80	0.048	16.91	0.049
10	256QAM	1	49	16.87	0.049	16.83	0.048	16.92	0.049
10	256QAM	25	0	16.95	0.050	16.79	0.048	16.73	0.047
10	256QAM	25	12	17.02	0.050	16.75	0.047	16.75	0.047
10	256QAM	25	25	16.96	0.050	16.53	0.045	16.82	0.048
10	256QAM	50	0	16.86	0.049	16.93	0.049	16.70	0.047



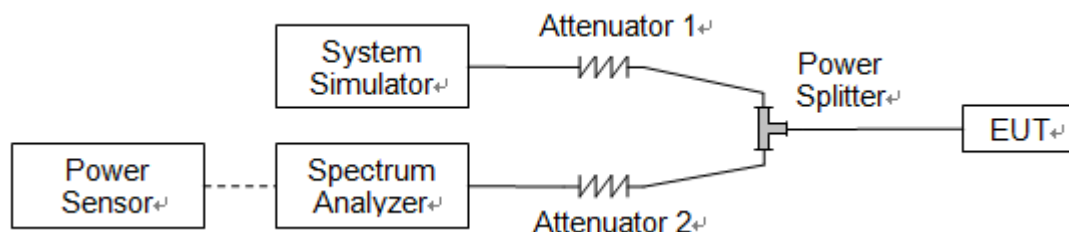
LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55265		55990		56175	
Frequency (MHz)				3552.5		3625		3697.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	22.69	0.186	22.85	0.193	22.80	0.191
5	QPSK	1	12	22.69	0.186	22.51	0.178	22.42	0.175
5	QPSK	1	24	22.67	0.185	22.48	0.177	22.44	0.175
5	QPSK	12	0	21.88	0.154	21.97	0.157	21.90	0.155
5	QPSK	12	7	21.79	0.151	21.88	0.154	21.79	0.151
5	QPSK	12	13	21.78	0.151	21.78	0.151	21.65	0.146
5	QPSK	25	0	21.76	0.150	21.88	0.154	21.78	0.151
5	16QAM	1	0	21.99	0.158	21.84	0.153	21.78	0.151
5	16QAM	1	12	22.04	0.160	21.77	0.150	21.79	0.151
5	16QAM	1	24	22.19	0.166	21.72	0.149	21.73	0.149
5	16QAM	12	0	21.20	0.132	20.96	0.125	20.91	0.123
5	16QAM	12	7	20.96	0.125	20.92	0.124	20.87	0.122
5	16QAM	12	13	20.99	0.126	20.72	0.118	20.88	0.122
5	16QAM	25	0	21.05	0.127	20.90	0.123	20.82	0.121
5	64QAM	1	0	21.10	0.129	20.96	0.125	21.01	0.126
5	64QAM	1	12	20.76	0.119	20.88	0.122	20.99	0.126
5	64QAM	1	24	20.89	0.123	20.91	0.123	21.00	0.126
5	64QAM	12	0	21.04	0.127	20.88	0.122	20.74	0.119
5	64QAM	12	7	21.11	0.129	20.84	0.121	20.84	0.121
5	64QAM	12	13	21.05	0.127	20.62	0.115	20.91	0.123
5	64QAM	25	0	20.95	0.124	21.02	0.126	20.79	0.120
5	256QAM	1	0	16.98	0.050	16.84	0.048	16.89	0.049
5	256QAM	1	12	16.77	0.048	16.76	0.047	16.87	0.049
5	256QAM	1	24	16.83	0.048	16.79	0.048	16.88	0.049
5	256QAM	12	0	16.91	0.049	16.75	0.047	16.69	0.047
5	256QAM	12	7	16.98	0.050	16.71	0.047	16.71	0.047
5	256QAM	12	13	16.92	0.049	16.49	0.045	16.78	0.048
5	256QAM	25	0	16.82	0.048	16.89	0.049	16.66	0.046

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)	P/F
B48	5	Low	55265	3552.5	QPSK	4.4882	4.8936	PASS
B48	5	Low	55265	3552.5	16QAM	4.4880	4.9671	PASS
B48	5	Low	55265	3552.5	64QAM	4.4933	5.1599	PASS
B48	5	Low	55265	3552.5	256QAM	4.4730	5.1644	PASS
B48	5	Mid	55990	3625	QPSK	4.4892	4.9804	PASS
B48	5	Mid	55990	3625	16QAM	4.4797	4.8318	PASS
B48	5	Mid	55990	3625	64QAM	4.4916	4.8737	PASS
B48	5	Mid	55990	3625	256QAM	4.4831	4.8932	PASS
B48	5	High	56715	3697.5	QPSK	4.4852	4.9463	PASS
B48	5	High	56715	3697.5	16QAM	4.4903	4.9038	PASS
B48	5	High	56715	3697.5	64QAM	4.4787	4.8877	PASS
B48	5	High	56715	3697.5	256QAM	4.4831	4.8708	PASS
B48	10	Low	55290	3555	QPSK	8.9538	10.1788	PASS
B48	10	Low	55290	3555	16QAM	8.9695	10.0141	PASS
B48	10	Low	55290	3555	64QAM	8.9791	9.7823	PASS
B48	10	Low	55290	3555	256QAM	8.9694	9.6348	PASS
B48	10	Mid	55990	3625	QPSK	8.9476	9.8180	PASS
B48	10	Mid	55990	3625	16QAM	8.9411	9.8252	PASS
B48	10	Mid	55990	3625	64QAM	8.9904	9.6059	PASS
B48	10	Mid	55990	3625	256QAM	8.9847	9.6789	PASS
B48	10	High	56690	3695	QPSK	8.9172	9.4636	PASS
B48	10	High	56690	3695	16QAM	8.9558	9.6028	PASS
B48	10	High	56690	3695	64QAM	8.9651	9.7894	PASS
B48	10	High	56690	3695	256QAM	8.9292	9.6665	PASS
B48	15	Low	55315	3557.5	QPSK	13.465	15.008	PASS
B48	15	Low	55315	3557.5	16QAM	13.431	15.014	PASS
B48	15	Low	55315	3557.5	64QAM	13.444	14.583	PASS
B48	15	Low	55315	3557.5	256QAM	13.434	14.584	PASS
B48	15	Mid	55990	3625	QPSK	13.460	14.294	PASS
B48	15	Mid	55990	3625	16QAM	13.438	14.382	PASS
B48	15	Mid	55990	3625	64QAM	13.439	14.468	PASS
B48	15	Mid	55990	3625	256QAM	13.411	14.362	PASS
B48	15	High	56665	3692.5	QPSK	13.470	14.326	PASS



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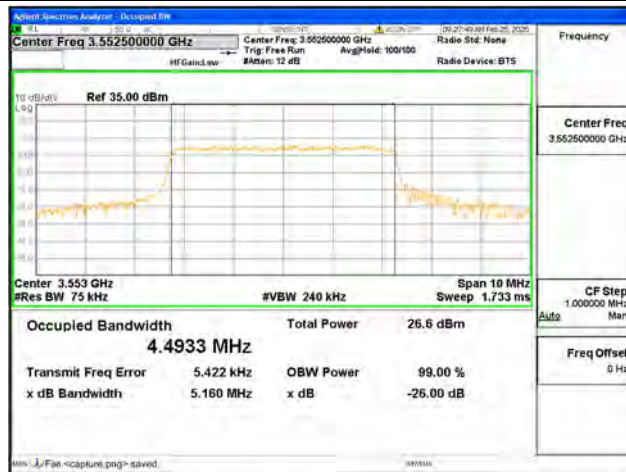
B48	15	High	56665	3692.5	16QAM	13.445	14.485	PASS
B48	15	High	56665	3692.5	64QAM	13.482	14.500	PASS
B48	15	High	56665	3692.5	256QAM	13.402	14.530	PASS
B48	20	Low	55340	3560	QPSK	17.897	19.441	PASS
B48	20	Low	55340	3560	16QAM	17.902	19.512	PASS
B48	20	Low	55340	3560	64QAM	17.897	20.252	PASS
B48	20	Low	55340	3560	256QAM	17.900	19.082	PASS
B48	20	Mid	55990	3625	QPSK	17.873	19.168	PASS
B48	20	Mid	55990	3625	16QAM	17.886	19.330	PASS
B48	20	Mid	55990	3625	64QAM	17.864	19.120	PASS
B48	20	Mid	55990	3625	256QAM	17.859	18.951	PASS
B48	20	High	56640	3690	QPSK	17.883	18.882	PASS
B48	20	High	56640	3690	16QAM	17.858	18.905	PASS
B48	20	High	56640	3690	64QAM	17.853	18.966	PASS
B48	20	High	56640	3690	256QAM	17.933	18.920	PASS



B48 / 5MHz / QPSK/ Low CH



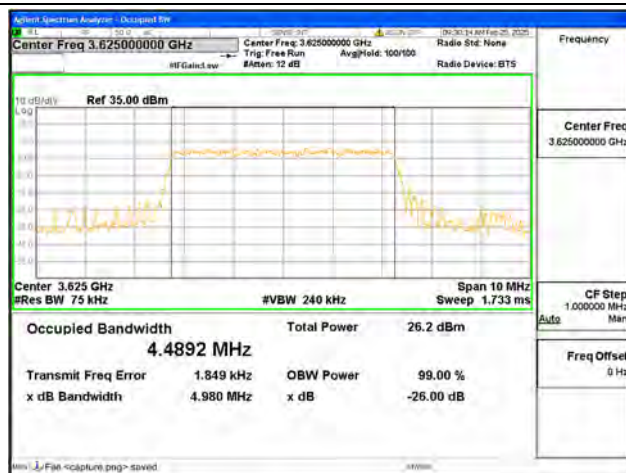
B48 / 5MHz / 16QAM/ Low CH



B48 / 5MHz / 64QAM/ Low CH



B48 / 5MHz / 256QAM/ Low CH



B48 / 5MHz / QPSK/ Mid CH



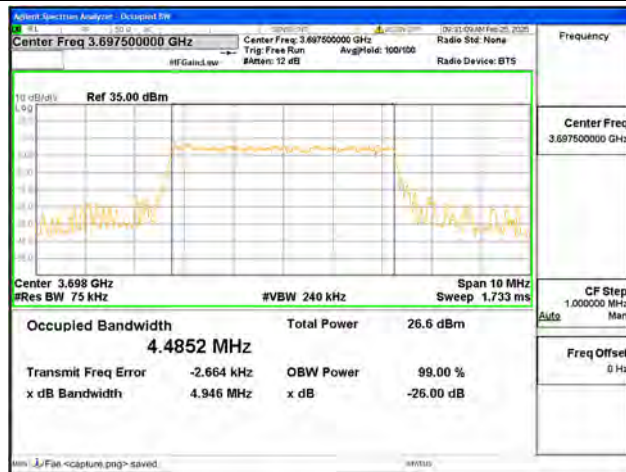
B48 / 5MHz / 16QAM/ Mid CH



B48 / 5MHz / 64QAM/ Mid CH



B48 / 5MHz / 256QAM/ Mid CH



B48 / 5MHz / QPSK/ High CH



B48 / 5MHz / 16QAM/ High CH



B48 / 5MHz / 64QAM/ High CH



B48 / 5MHz / 256QAM/ High CH



B48 / 10MHz / QPSK/ Low CH



B48 / 10MHz / 16QAM/ Low CH



B48 / 10MHz / 64QAM/ Low CH



B48 / 10MHz / 256QAM/ Low CH



B48 / 10MHz / QPSK/ Mid CH



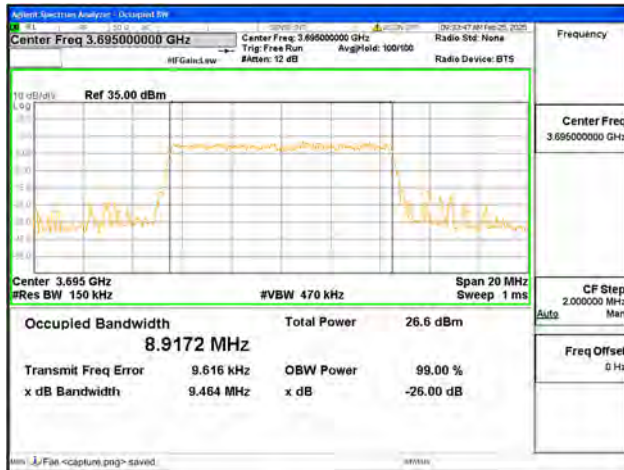
B48 / 10MHz / 16QAM/ Mid CH



B48 / 10MHz / 64QAM/ Mid CH



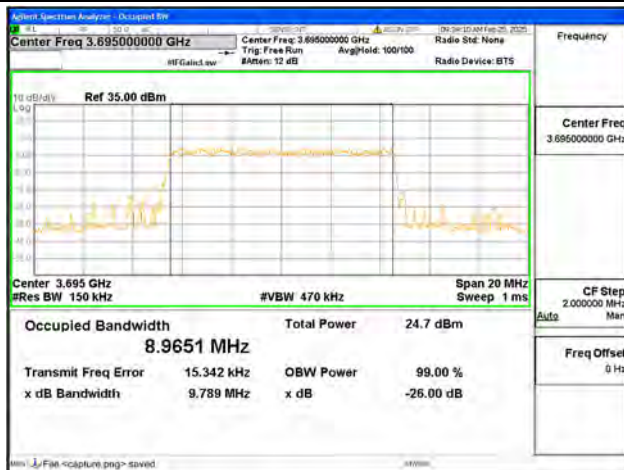
B48 / 10MHz / 256QAM/ Mid CH



B48 / 10MHz / QPSK/ High CH



B48 / 10MHz / 16QAM/ High CH



B48 / 10MHz / 64QAM/ High CH



B48 / 10MHz / 256QAM/ High CH



B48 / 15MHz / QPSK/ Low CH



B48 / 15MHz / 16QAM/ Low CH



B48 / 15MHz / 64QAM/ Low CH



B48 / 15MHz / 256QAM/ Low CH



B48 / 15MHz / QPSK/ Mid CH



B48 / 15MHz / 16QAM/ Mid CH



B48 / 15MHz / 64QAM/ Mid CH



B48 / 15MHz / 256QAM/ Mid CH



B48 / 15MHz / QPSK/ High CH



B48 / 15MHz / 16QAM/ High CH



B48 / 15MHz / 64QAM/ High CH



B48 / 15MHz / 256QAM/ High CH



B48 / 20MHz / QPSK/ Low CH



B48 / 20MHz / 16QAM/ Low CH



B48 / 20MHz / 64QAM/ Low CH



B48 / 20MHz / 256QAM/ Low CH



B48 / 20MHz / QPSK/ Mid CH



B48 / 20MHz / 16QAM/ Mid CH



B48 / 20MHz / 64QAM/ Mid CH



B48 / 20MHz / 256QAM/ Mid CH



B48 / 20MHz / QPSK/ High CH



B48 / 20MHz / 16QAM/ High CH



B48 / 20MHz / 64QAM/ High CH



B48 / 20MHz / 256QAM/ High CH

2.3. Frequency Stability

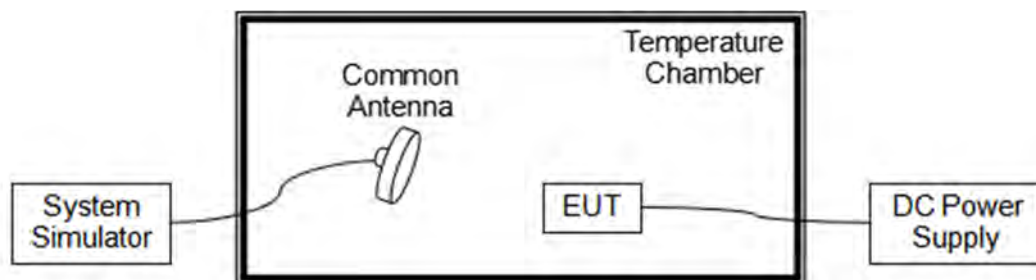
2.3.1. Requirement

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 -10°C to 50°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 3.85V, 4.4V and 3.6V, which are specified by the applicant; the normal temperature here used is 20°C.

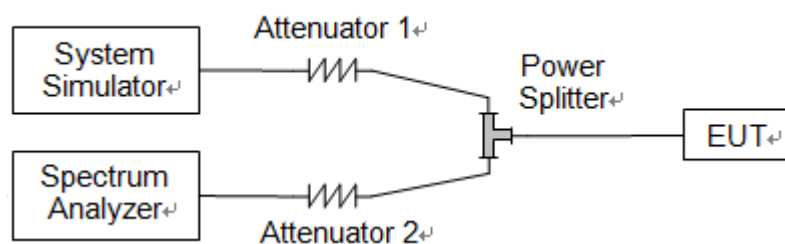
LTE Band 48, 256QAM, QPSK, Channel 55990, Frequency 3625.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	20	0.006	PASS
Normal		-10	21	0.006	
Normal		0	21	0.006	
Normal		+10	-20	-0.006	
Normal		+20	1	0.000	
Normal		+30	14	0.004	
Normal		+40	9	0.002	
Normal		+50	14	0.004	
High	4.4	+20	16	0.004	
BATT.ENDPOINT	3.6	+20	17	0.005	

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)	P/F
B48	5	Low	55265	3552.5	QPSK	5.39	PASS
B48	5	Low	55265	3552.5	16QAM	6.12	PASS
B48	5	Low	55265	3552.5	64QAM	7.10	PASS
B48	5	Low	55265	3552.5	256QAM	6.89	PASS
B48	5	Mid	55990	3625	QPSK	5.43	PASS
B48	5	Mid	55990	3625	16QAM	6.15	PASS
B48	5	Mid	55990	3625	64QAM	7.07	PASS
B48	5	Mid	55990	3625	256QAM	6.84	PASS
B48	5	High	56715	3697.5	QPSK	5.44	PASS
B48	5	High	56715	3697.5	16QAM	6.18	PASS
B48	5	High	56715	3697.5	64QAM	7.08	PASS
B48	5	High	56715	3697.5	256QAM	6.79	PASS
B48	10	Low	55290	3555	QPSK	5.49	PASS
B48	10	Low	55290	3555	16QAM	6.08	PASS
B48	10	Low	55290	3555	64QAM	6.86	PASS
B48	10	Low	55290	3555	256QAM	6.79	PASS
B48	10	Mid	55990	3625	QPSK	5.52	PASS
B48	10	Mid	55990	3625	16QAM	6.10	PASS
B48	10	Mid	55990	3625	64QAM	6.83	PASS
B48	10	Mid	55990	3625	256QAM	6.74	PASS
B48	10	High	56690	3695	QPSK	5.51	PASS
B48	10	High	56690	3695	16QAM	6.10	PASS
B48	10	High	56690	3695	64QAM	6.83	PASS
B48	10	High	56690	3695	256QAM	6.81	PASS
B48	15	Low	55315	3557.5	QPSK	5.28	PASS
B48	15	Low	55315	3557.5	16QAM	6.11	PASS
B48	15	Low	55315	3557.5	64QAM	6.73	PASS
B48	15	Low	55315	3557.5	256QAM	6.85	PASS
B48	15	Mid	55990	3625	QPSK	5.24	PASS
B48	15	Mid	55990	3625	16QAM	6.05	PASS
B48	15	Mid	55990	3625	64QAM	6.70	PASS
B48	15	Mid	55990	3625	256QAM	6.81	PASS
B48	15	High	56665	3692.5	QPSK	5.27	PASS
B48	15	High	56665	3692.5	16QAM	6.07	PASS
B48	15	High	56665	3692.5	64QAM	6.71	PASS



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B48	15	High	56665	3692.5	256QAM	6.70	PASS
B48	20	Low	55340	3560	QPSK	5.30	PASS
B48	20	Low	55340	3560	16QAM	6.11	PASS
B48	20	Low	55340	3560	64QAM	6.97	PASS
B48	20	Low	55340	3560	256QAM	6.85	PASS
B48	20	Mid	55990	3625	QPSK	5.33	PASS
B48	20	Mid	55990	3625	16QAM	6.12	PASS
B48	20	Mid	55990	3625	64QAM	6.94	PASS
B48	20	Mid	55990	3625	256QAM	6.69	PASS
B48	20	High	56640	3690	QPSK	5.36	PASS
B48	20	High	56640	3690	16QAM	6.08	PASS
B48	20	High	56640	3690	64QAM	6.92	PASS
B48	20	High	56640	3690	256QAM	6.65	PASS



B48 / 5MHz / Low CH / QPSK



B48 / 5MHz / Low CH / 16QAM



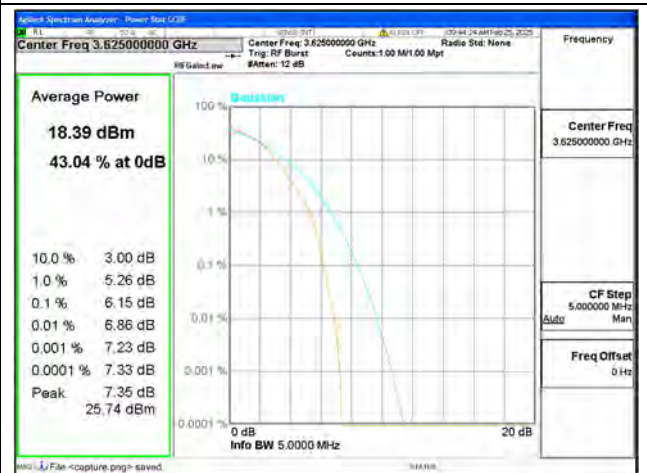
B48 / 5MHz / Low CH / 64QAM



B48 / 5MHz / Low CH / 256QAM



B48 / 5MHz / Mid CH / QPSK



B48 / 5MHz / Mid CH / 16QAM



B48 / 5MHz / Mid CH / 64QAM



B48 / 5MHz / Mid CH / 256QAM



B48 / 5MHz / High CH / QPSK



B48 / 5MHz / High CH / 16QAM



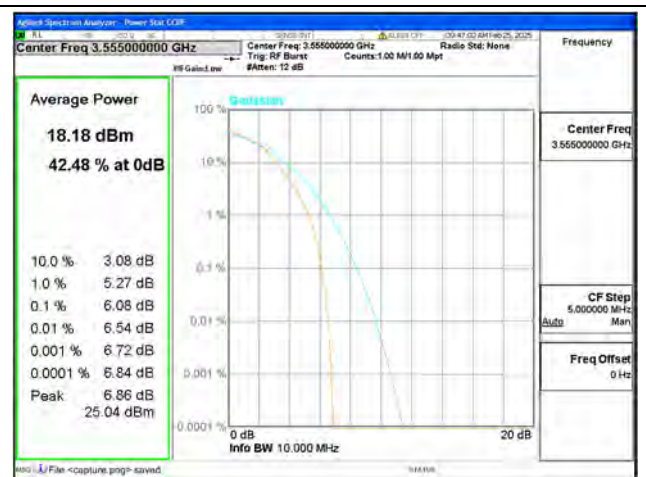
B48 / 5MHz / High CH / 64QAM



B48 / 5MHz / High CH / 256QAM



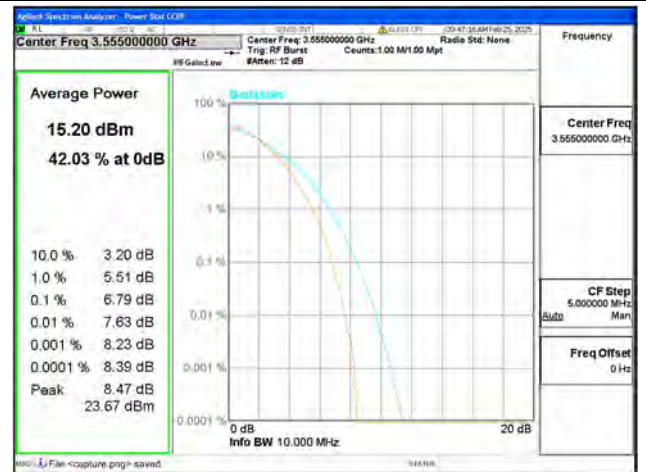
B48 / 10MHz / Low CH / QPSK



B48 / 10MHz / Low CH / 16QAM



B48 / 10MHz / Low CH / 64QAM



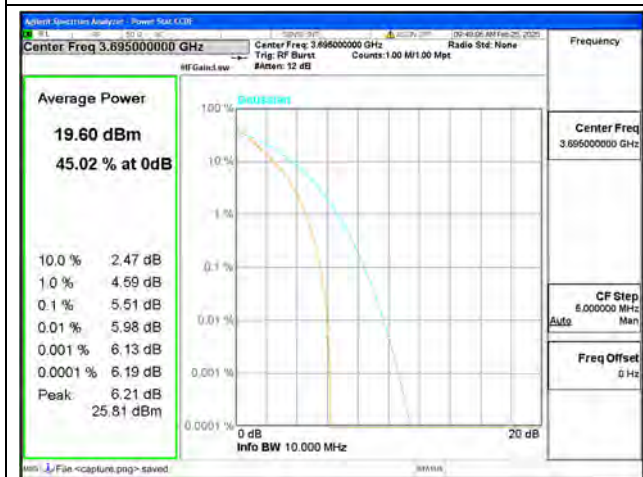
B48 / 10MHz / Low CH / 256QAM



B48 / 10MHz / Mid CH / QPSK

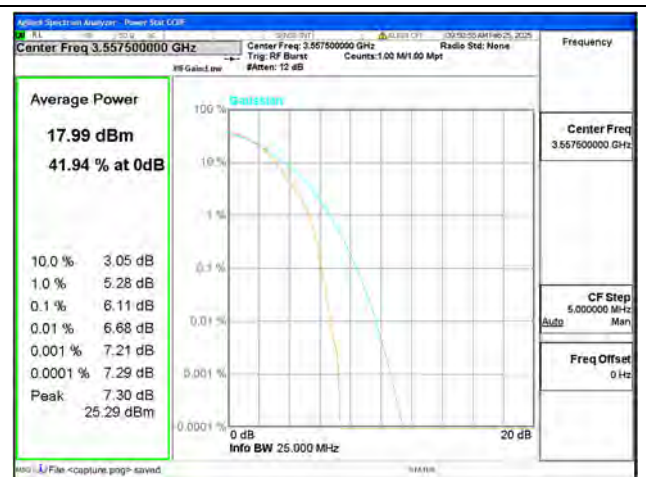


B48 / 10MHz / Mid CH / 16QAM





B48 / 15MHz / Low CH / QPSK



B48 / 15MHz / Low CH / 16QAM



B48 / 15MHz / Low CH / 64QAM



B48 / 15MHz / Low CH / 256QAM



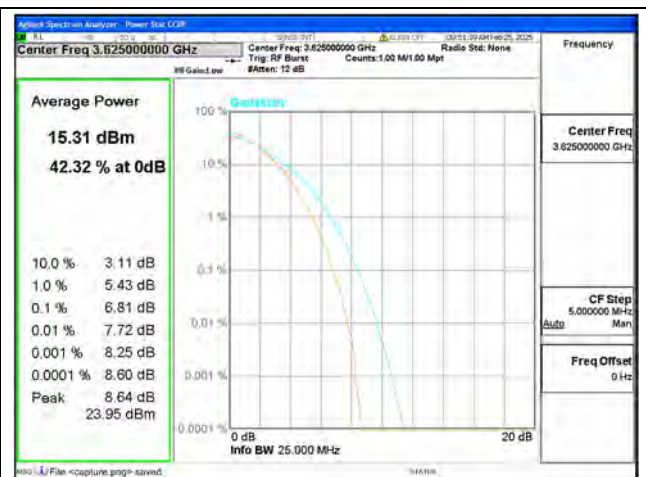
B48 / 15MHz / Mid CH / QPSK



B48 / 15MHz / Mid CH / 16QAM



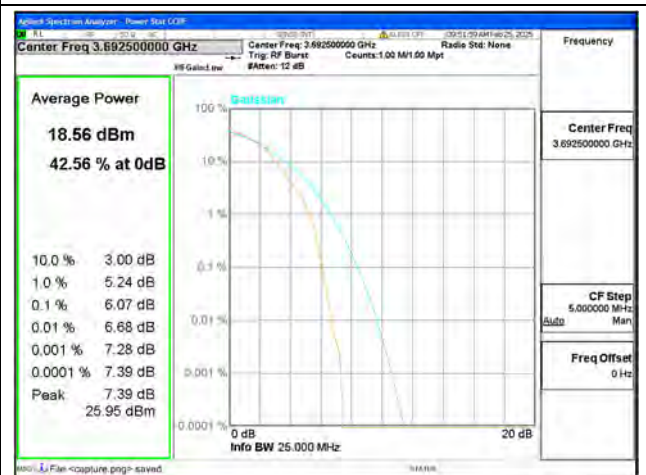
B48 / 15MHz / Mid CH / 64QAM



B48 / 15MHz / Mid CH / 256QAM



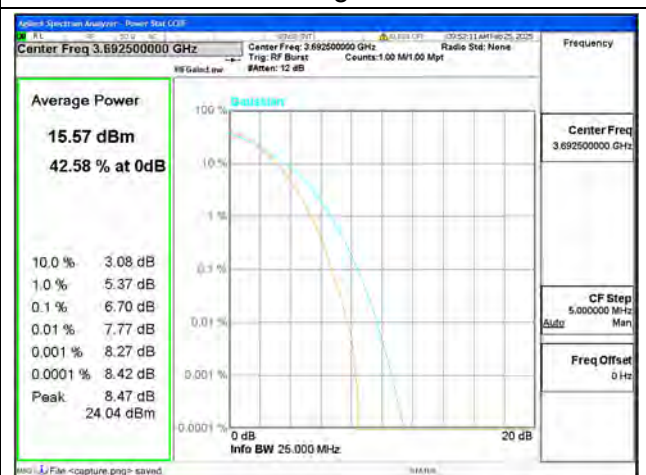
B48 / 15MHz / High CH / QPSK



B48 / 15MHz / High CH / 16QAM



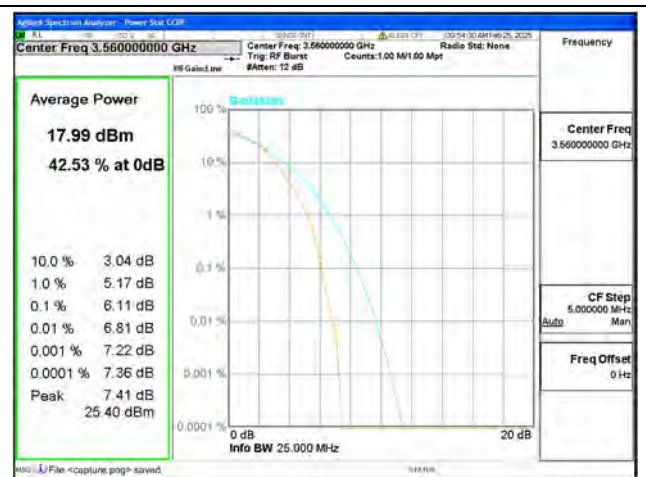
B48 / 15MHz / High CH / 64QAM



B48 / 15MHz / High CH / 256QAM



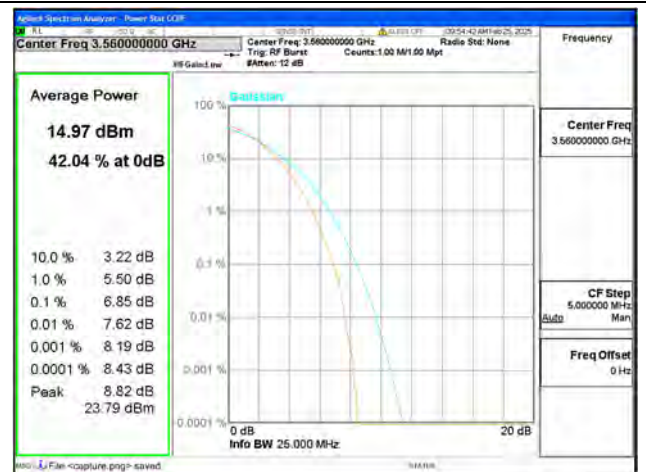
B48 / 20MHz / Low CH / QPSK



B48 / 20MHz / Low CH / 16QAM



B48 / 20MHz / Low CH / 64QAM



B48 / 20MHz / Low CH / 256QAM



B48 / 20MHz / Mid CH / QPSK



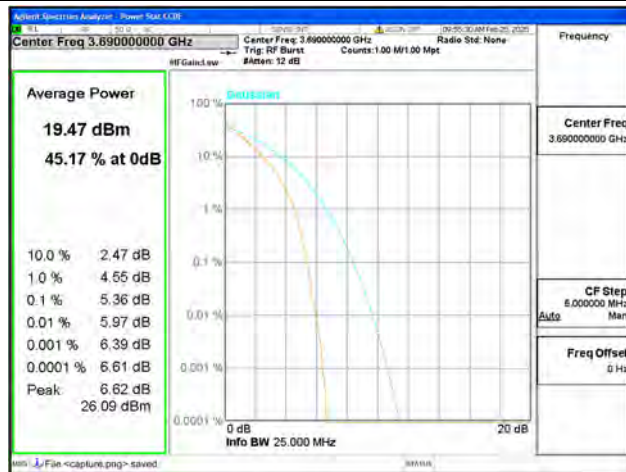
B48 / 20MHz / Mid CH / 16QAM



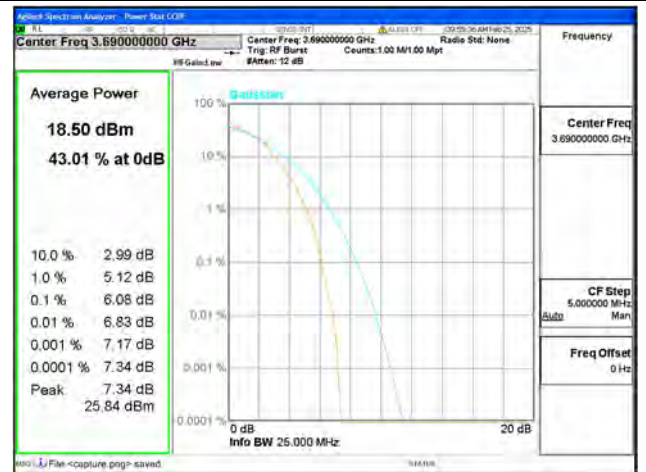
B48 / 20MHz / Mid CH / 64QAM



B48 / 20MHz / Mid CH / 256QAM



B48 / 20MHz / High CH / QPSK



B48 / 20MHz / High CH / 16QAM



B48 / 20MHz / High CH / 64QAM

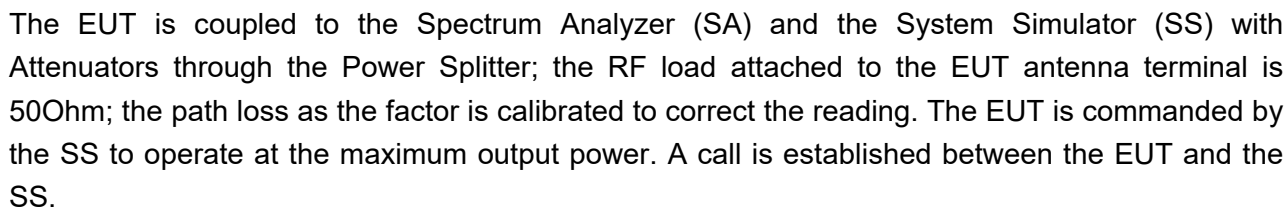


B48 / 20MHz / High CH / 256QAM



2.5.1.Requirement

2.5.2. Test Description

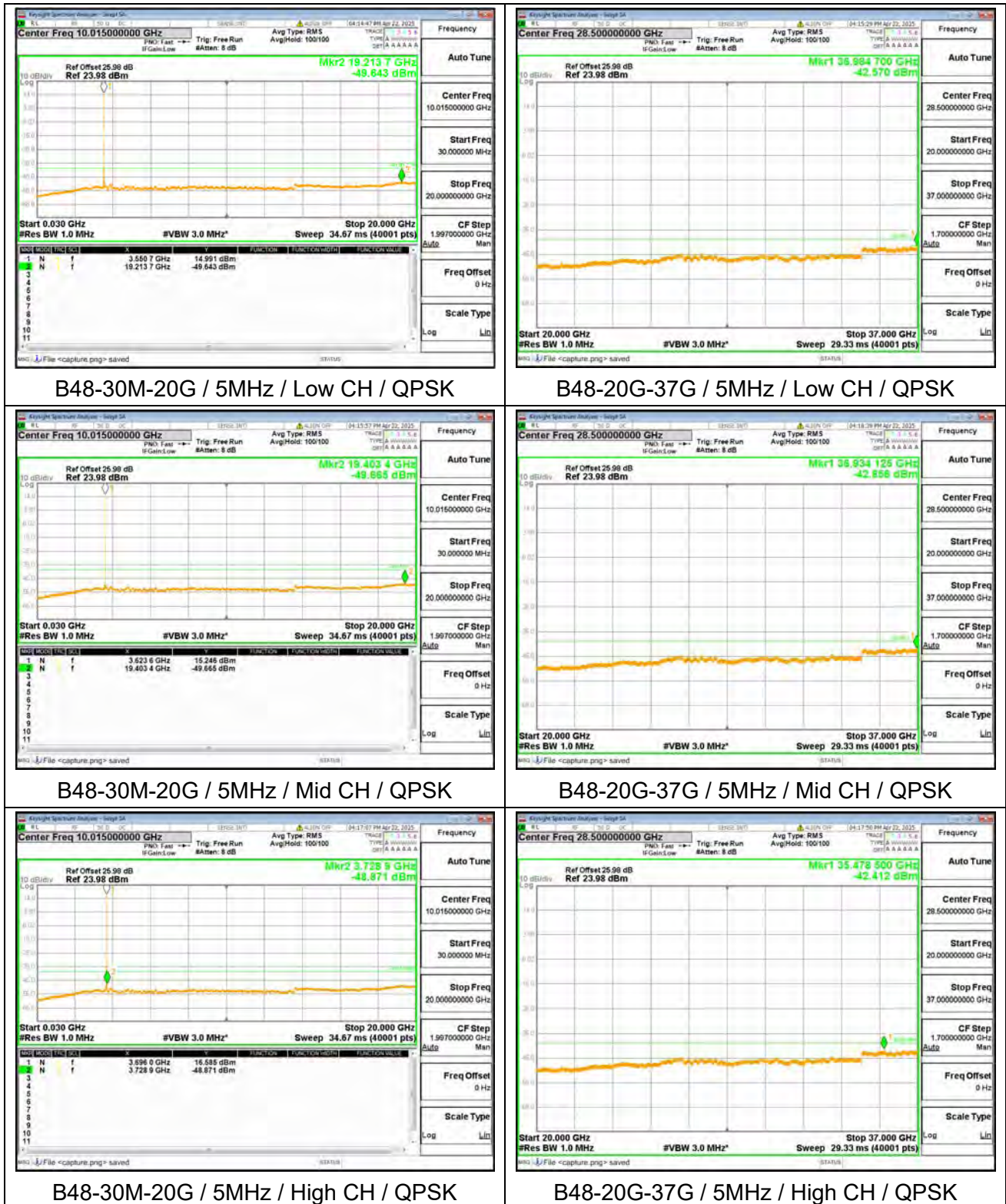


2.5.1. Test procedure

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



2.5.2. Test Result

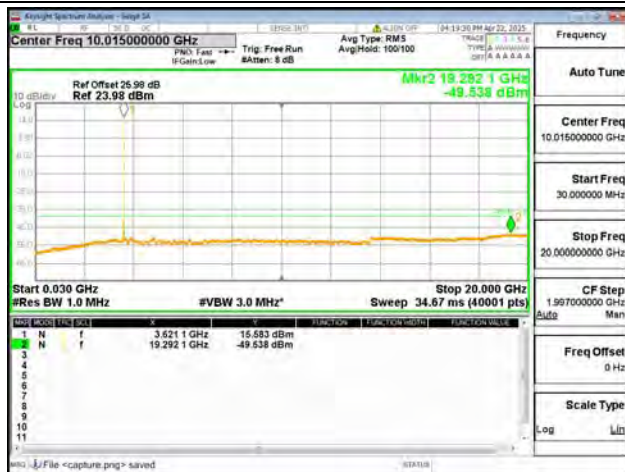




B48-30M-20G / 10MHz / Low CH / QPSK



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



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



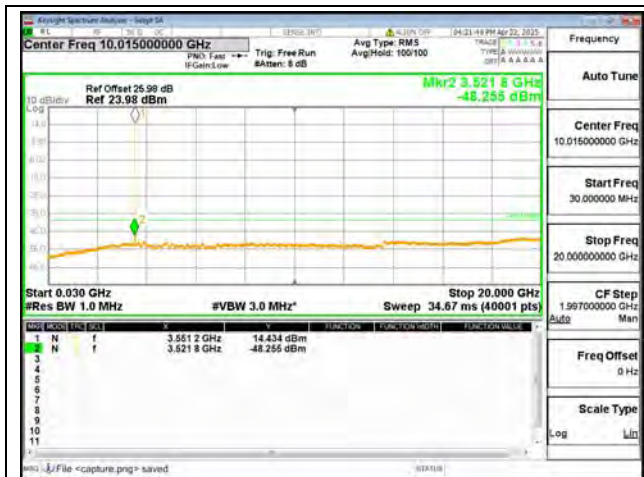
B48-20G-37G / 10MHz / Mid CH / QPSK



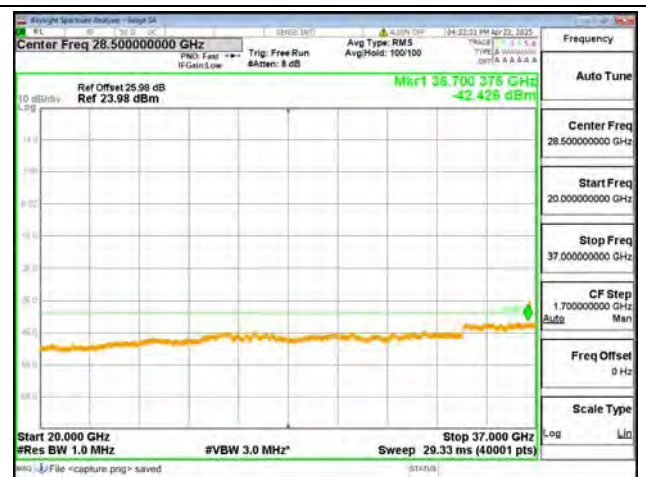
B48-30M-20G / 10MHz / High CH / QPSK



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



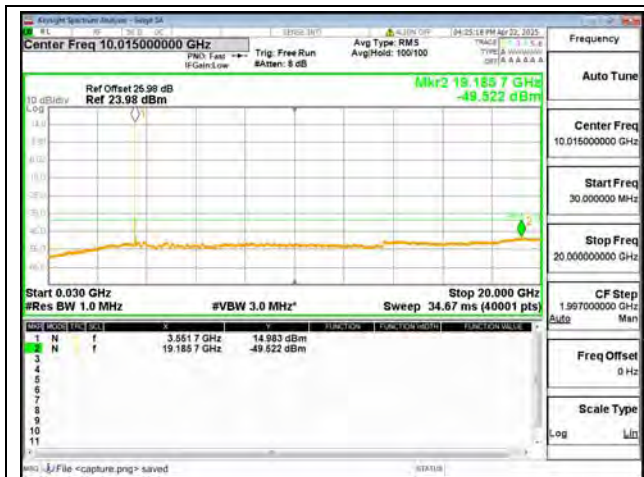
B48-20G-37G / 15MHz / Mid CH / QPSK



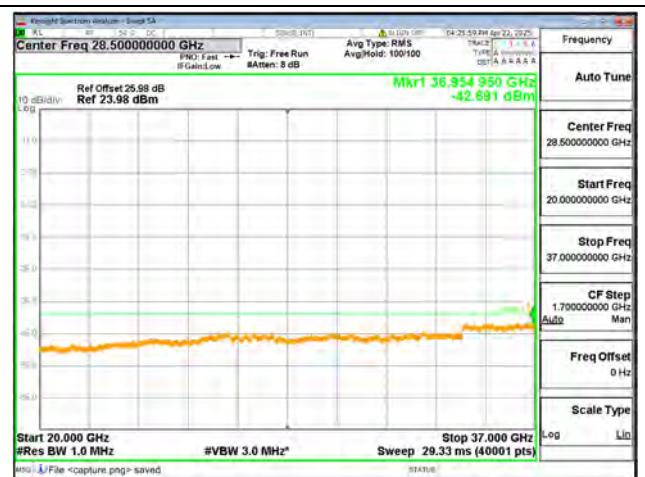
B48-30M-20G / 15MHz / High CH / QPSK



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.

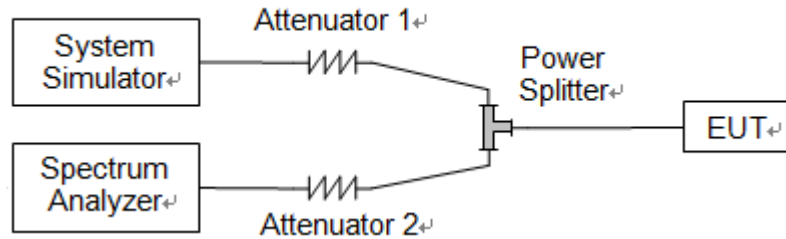
Part 96.41(e)(1)(ii)

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



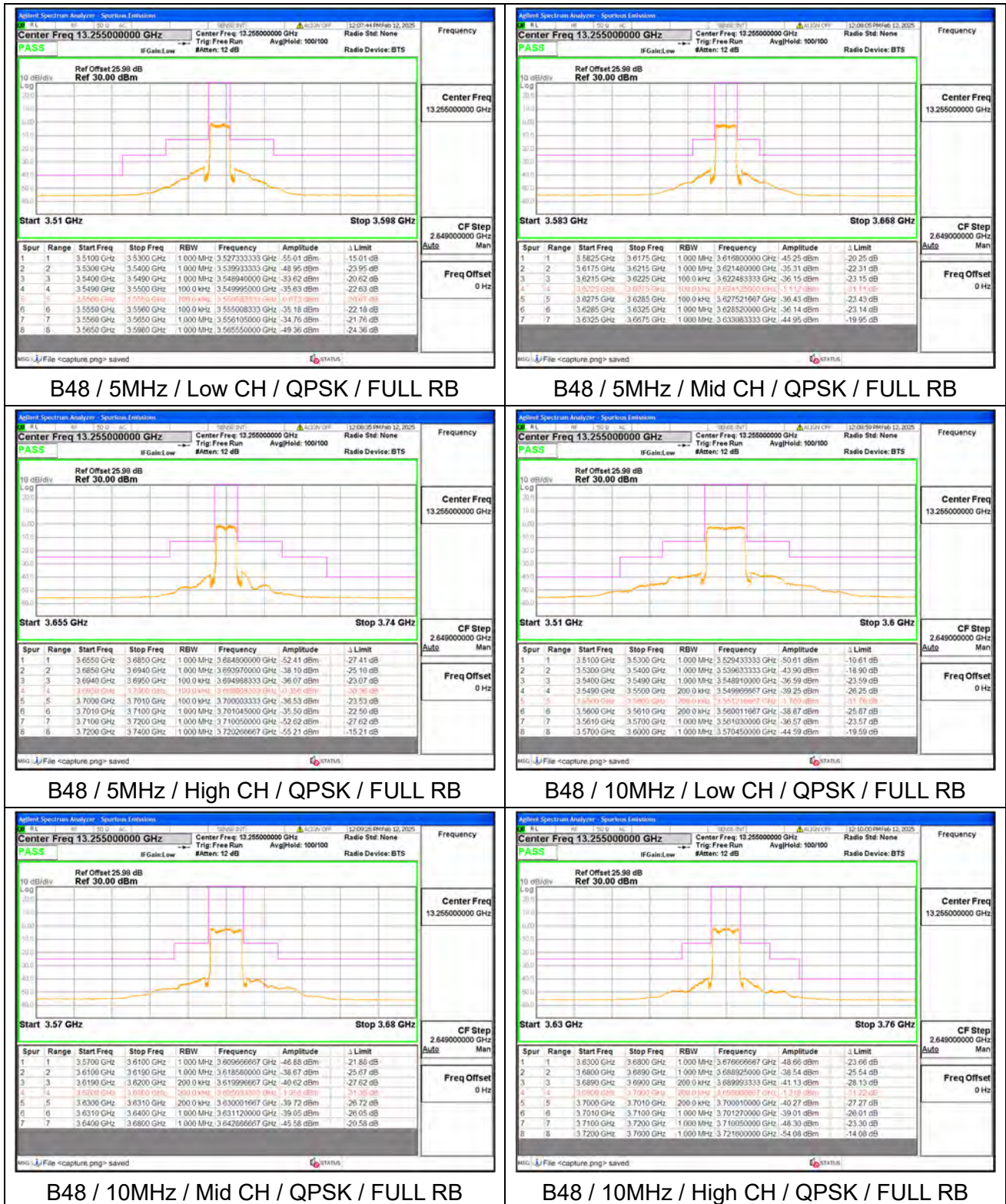
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

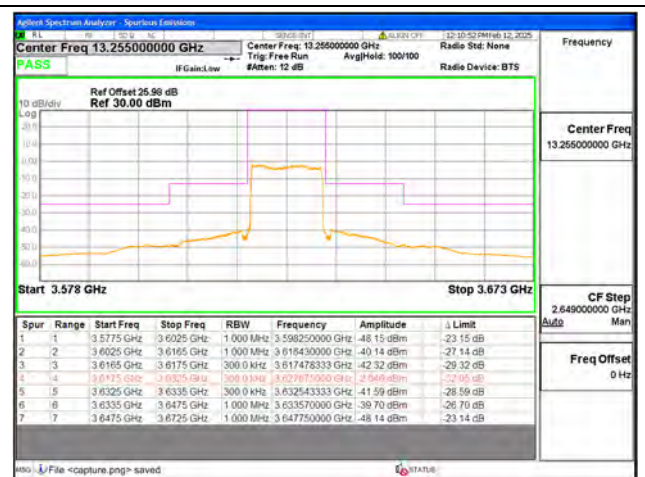


2.6.4. Test Result

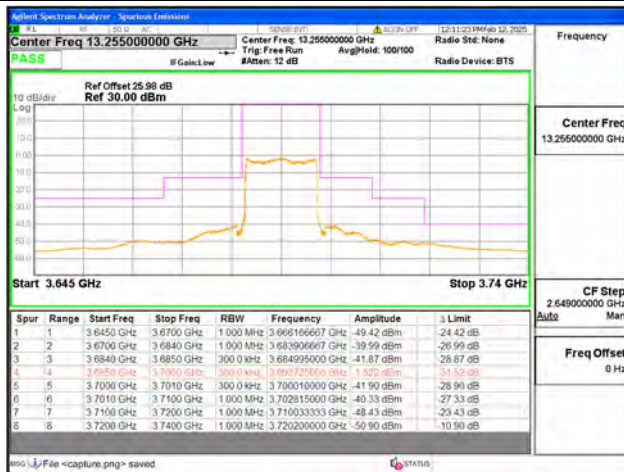




B48 / 15MHz / Low CH / QPSK / FULL RB



B48 / 15MHz / Mid CH / QPSK / FULL RB



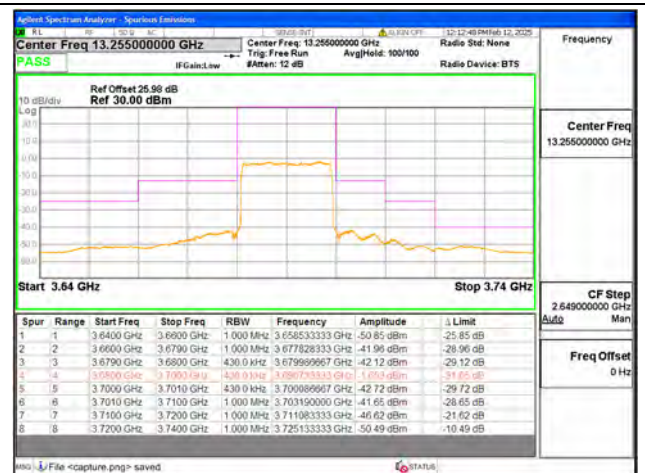
B48 / 15MHz / High CH / QPSK / FULL RB



B48 / 20MHz / Low CH / QPSK / FULL RB



B48 / 20MHz / Mid CH / QPSK / FULL RB



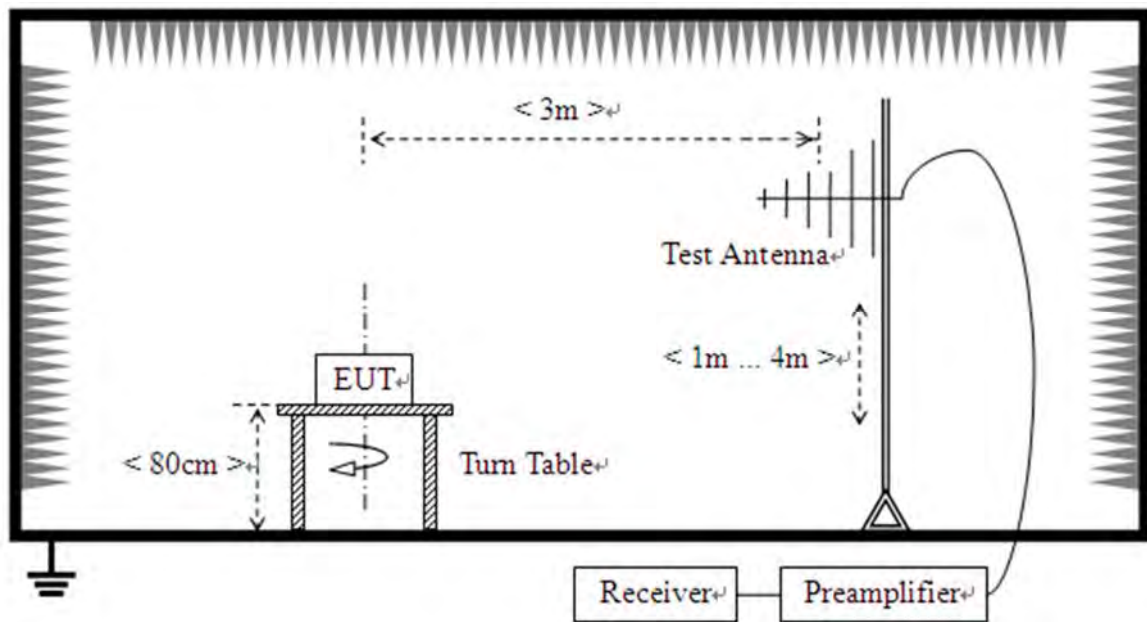
B48 / 20MHz / High CH / QPSK / FULL RB

2.7. Radiated Spurious Emissions

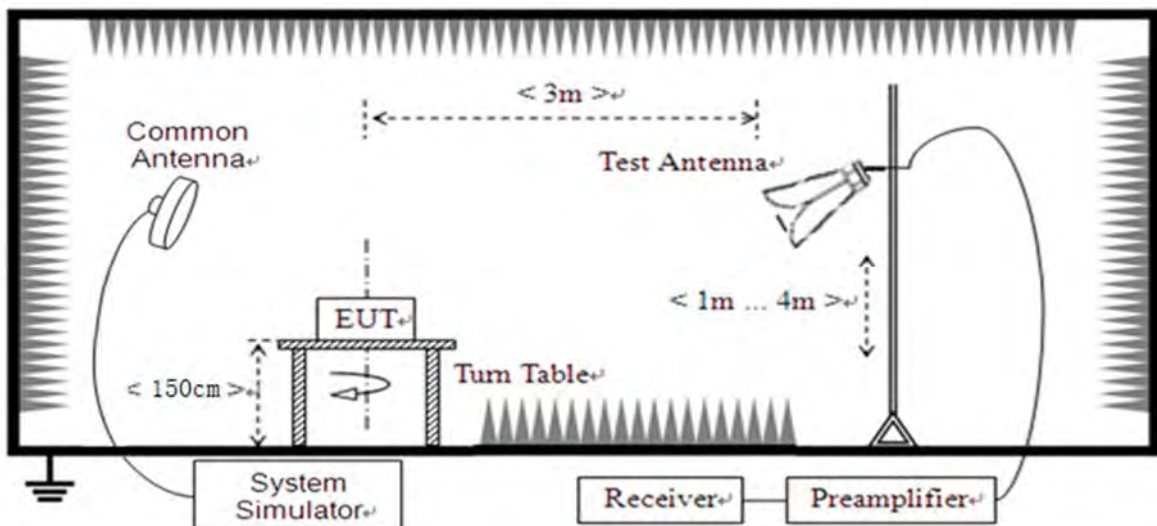
2.7.1. Requirement

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.

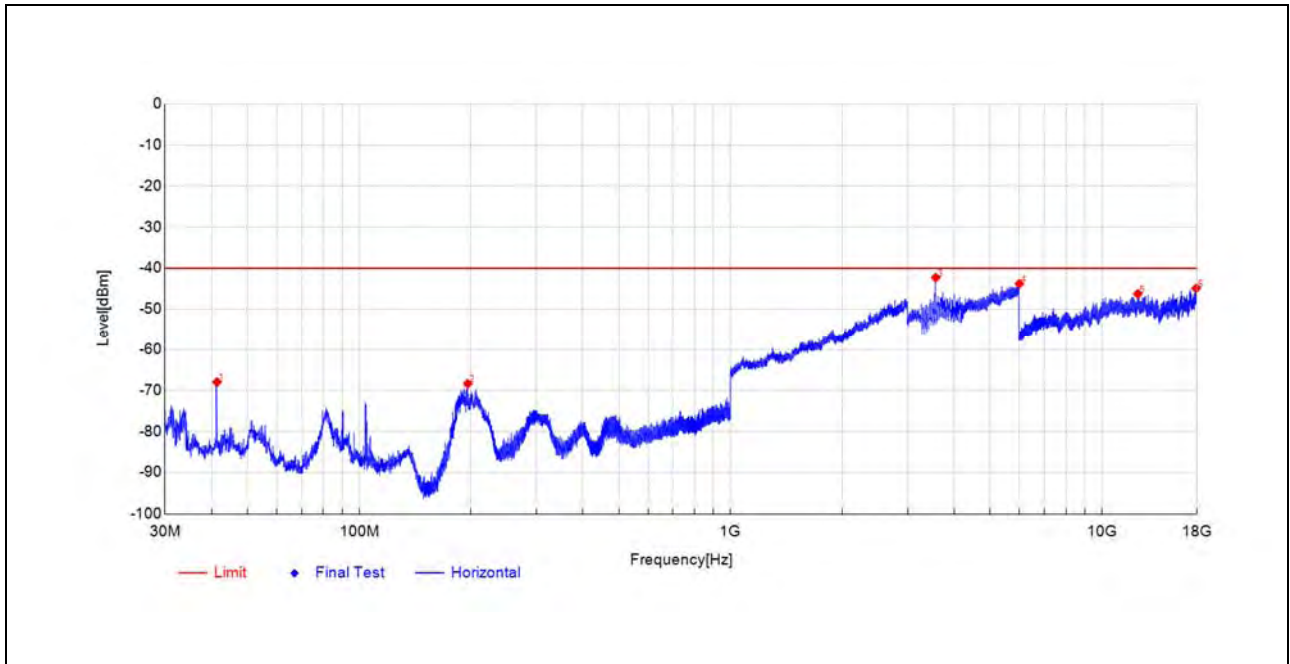
Note 4: N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

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

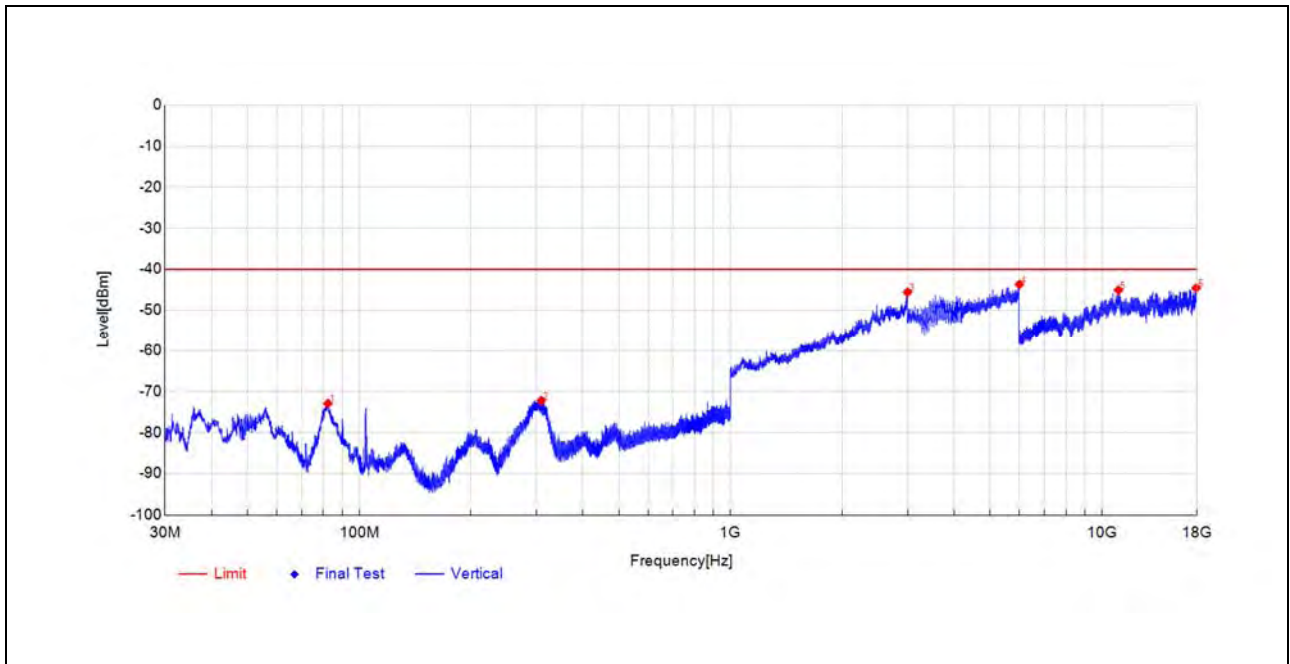


LTE Band 48

Plot for Low Channel

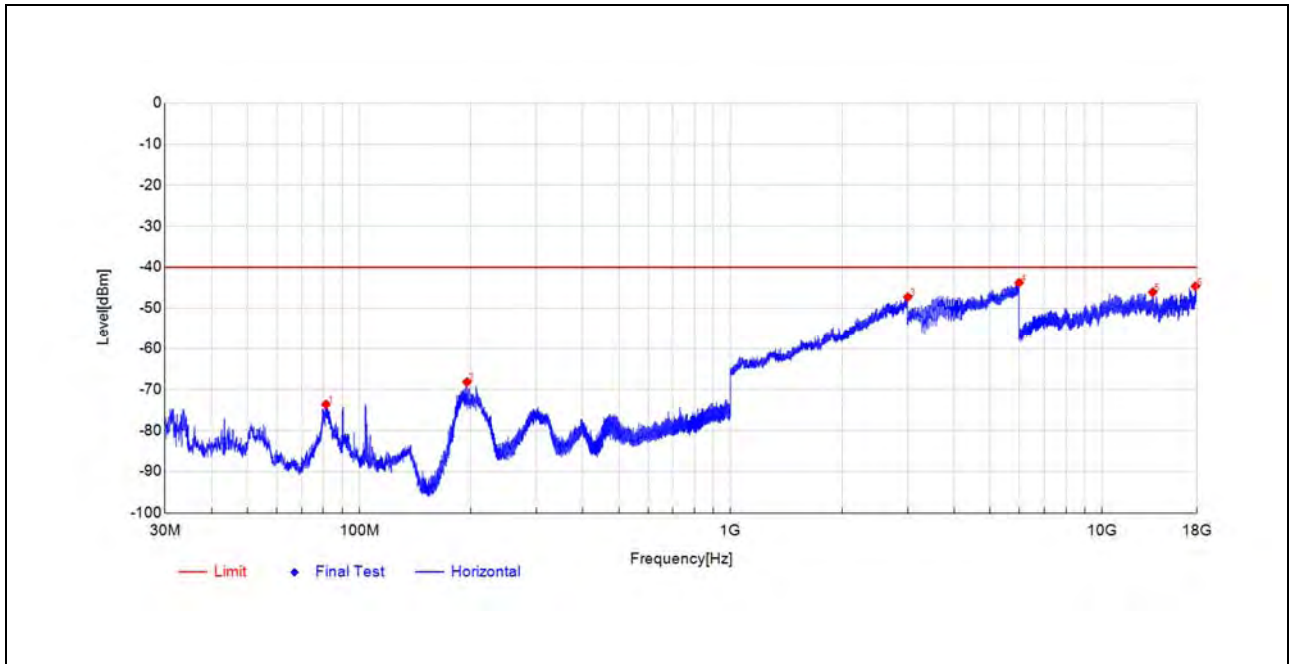


Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
41.3981	-52.73	-67.98	-15.3	-40.0	28.0	Horizontal	PK	PASS
195.9753	-50.09	-68.41	-18.3	-40.0	28.4	Horizontal	PK	PASS
3568.0947	-63.65	-42.28	21.4	-	-	Horizontal	PK	NA
5993.999	-71.96	-43.78	28.2	-40.0	3.8	Horizontal	PK	PASS
12495.270	-69.50	-46.26	23.2	-40.0	6.3	Horizontal	PK	PASS
17933.997	-69.18	-44.92	24.3	-40.0	4.9	Horizontal	PK	PASS

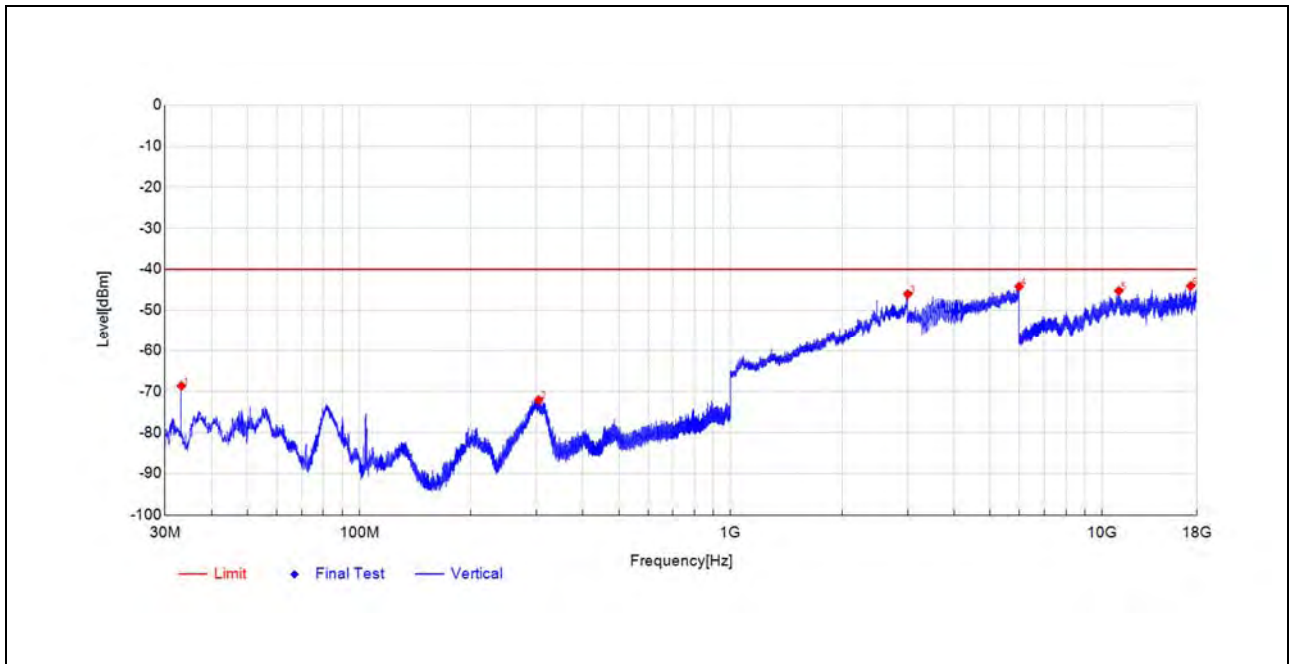


Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
82.3826	-49.95	-72.92	-23.0	-40.0	32.9	Vertical	PK	PASS
309.1315	-56.29	-72.23	-15.9	-40.0	32.2	Vertical	PK	PASS
2995.5991	-60.06	-45.57	14.5	-40.0	5.6	Vertical	PK	PASS
5995.9993	-71.36	-43.69	27.7	-40.0	3.7	Vertical	PK	PASS
11078.211	-66.97	-45.08	21.9	-40.0	5.1	Vertical	PK	PASS
17932.997	-68.98	-44.57	24.4	-40.0	4.6	Vertical	PK	PASS

Plot for Mid Channel

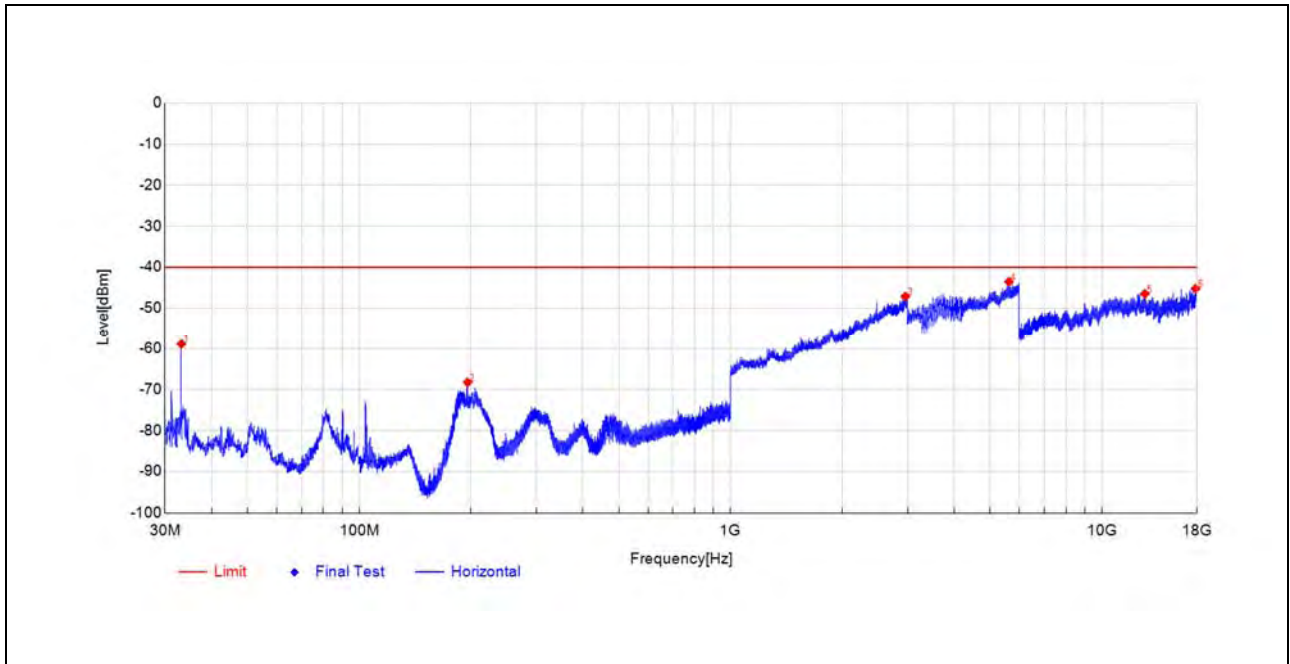


Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
81.3641	-49.87	-73.64	-23.8	-40.0	33.6	Horizontal	PK	PASS
195.0052	-49.73	-68.23	-18.5	-40.0	28.2	Horizontal	PK	PASS
3000	-60.13	-47.28	12.9	-40.0	7.3	Horizontal	PK	PASS
5985.4976	-71.87	-43.76	28.1	-40.0	3.8	Horizontal	PK	PASS
13694.320	-69.66	-46.08	23.6	-40.0	6.1	Horizontal	PK	PASS
17856.994	-68.98	-44.64	24.3	-40.0	4.6	Horizontal	PK	PASS

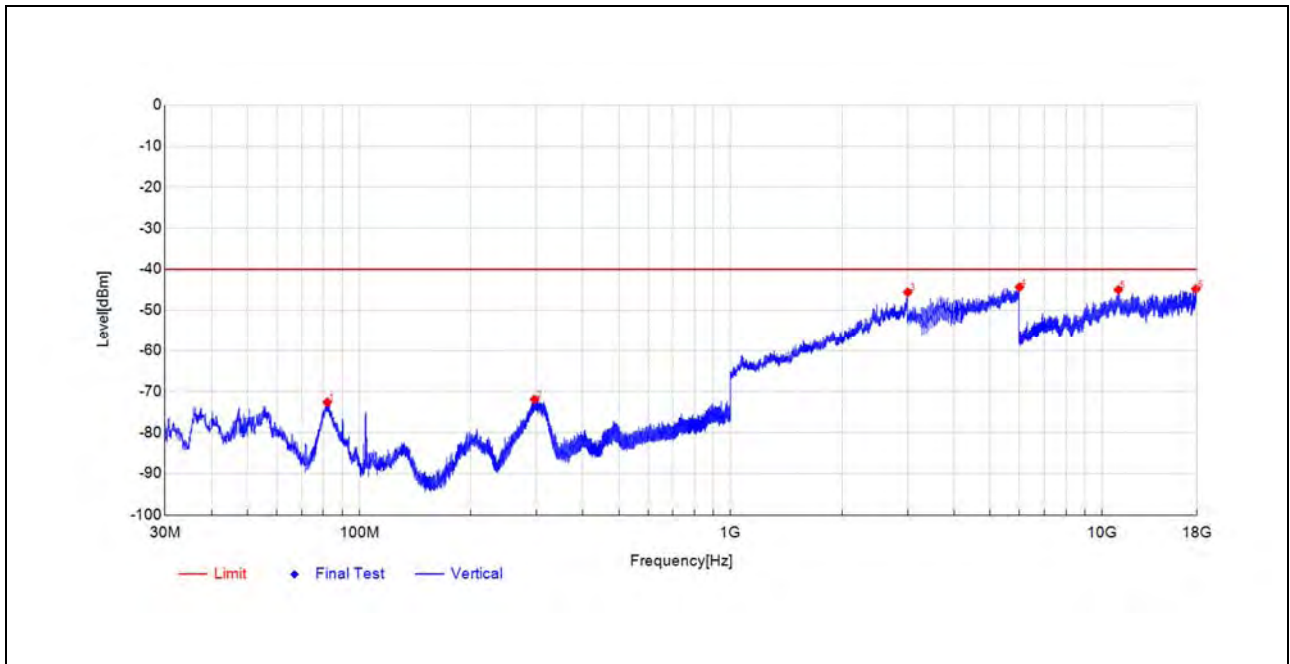


Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
33.2012	-44.53	-68.66	-24.1	-40.0	28.7	Vertical	PK	PASS
304.0387	-56.09	-72.12	-16.0	-40.0	32.1	Vertical	PK	PASS
3000	-61.11	-46.04	15.1	-40.0	6.0	Vertical	PK	PASS
5983.9973	-71.71	-44.20	27.5	-40.0	4.2	Vertical	PK	PASS
11102.212	-67.20	-45.26	21.9	-40.0	5.3	Vertical	PK	PASS
17336.972	-68.74	-44.06	24.7	-40.0	4.1	Vertical	PK	PASS

Plot for High Channel



Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
33.2012	-43.70	-58.89	-15.2	-40.0	18.9	Horizontal	PK	PASS
195.8298	-49.93	-68.29	-18.4	-40.0	28.3	Horizontal	PK	PASS
2956.3913	-59.39	-47.12	12.3	-40.0	7.1	Horizontal	PK	PASS
5616.4361	-70.13	-43.53	26.6	-40.0	3.5	Horizontal	PK	PASS
13048.293	-69.85	-46.48	23.4	-40.0	6.5	Horizontal	PK	PASS
17887.995	-69.65	-45.20	24.5	-40.0	5.2	Horizontal	PK	PASS



Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
82.0916	-49.66	-72.66	-23.0	-40.0	32.7	Vertical	PK	PASS
296.4238	-55.54	-71.97	-16.4	-40.0	32.0	Vertical	PK	PASS
2999.5999	-60.61	-45.59	15.0	-40.0	5.6	Vertical	PK	PASS
5998.9998	-72.05	-44.34	27.7	-40.0	4.3	Vertical	PK	PASS
11071.211	-66.87	-45.00	21.9	-40.0	5.0	Vertical	PK	PASS
17912.496	-69.31	-44.79	24.5	-40.0	4.8	Vertical	PK	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

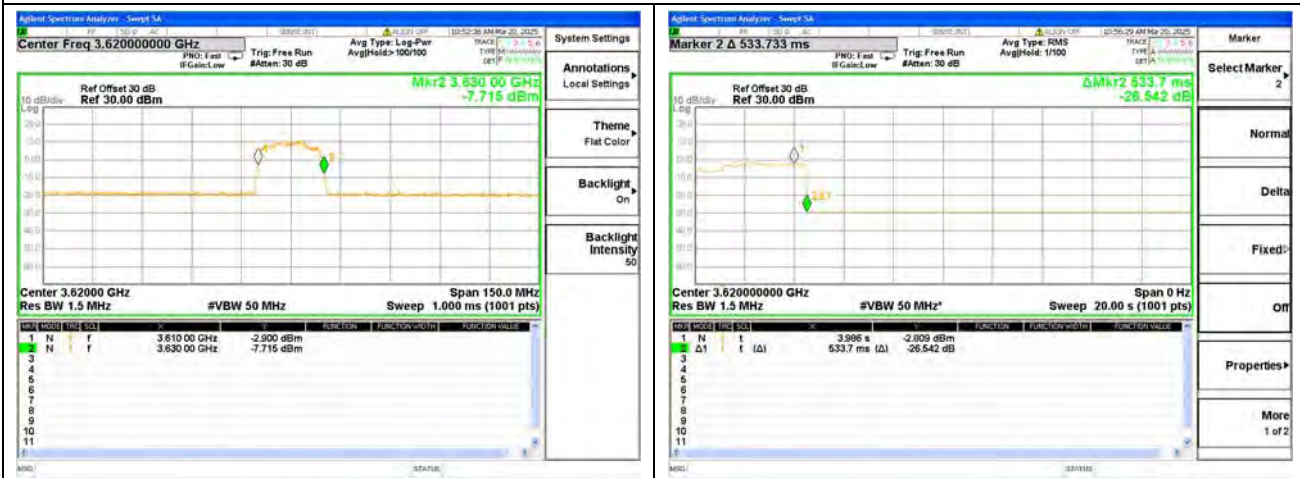
The EUT was connected via an RF cable to a certified CBSD and spectrum analyzer
Test Graph 1:

- 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

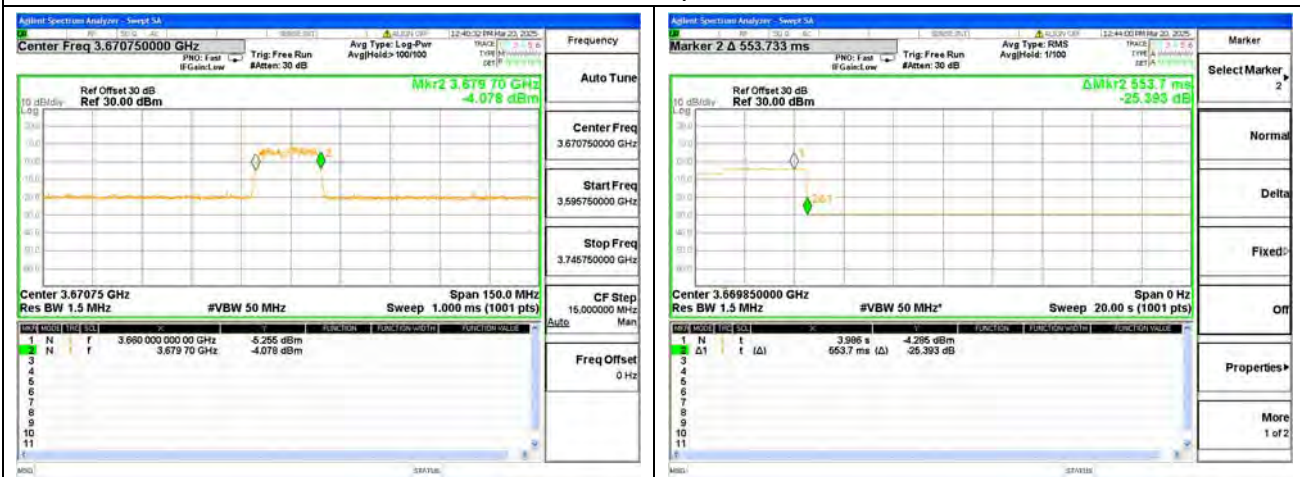


Note:

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.: SZ24100003W10

4. Test Equipment Utilized

4.1 Conducted Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Signal Analyzer	MY51511149	N9020A	Agilent	2024.06.19	2025.06.18
Communication Test Station	6200995016	MT8820C	Anritsu	2024.09.11	2025.09.10
Temperature Chamber	S022177101 00089002	KMT-36LF 1A0	KOMEG	2024.09.11	2025.09.10

4.2 List of Software Used

Description	Manufacturer	Software Version
MOR-2023E Test System	MORLAB	V7.99
JS36-RSE	Tonscend	5.0.0

**4.3 Radiated Test Equipment**

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
System Simulator	152038	CMW500	R&S	2024.09.11	2025.09.10
Receiver	MY56060145	N9020A	Agilent	2024.05.30	2025.05.29
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2024.06.22	2025.06.21
Test Antenna - Horn	9120D-963	BBHA 9120D	Schwarzbeck	2024.06.22	2025.06.21
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK- 0.5	Qualwave	2024.07.03	2025.07.02
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KK F-2	Qualwave	2024.07.03	2025.07.02
Preamplifier (10MHz-6GHz)	46732	S10M100L380 2	LUCIX CORP.	2024.05.30	2025.05.29
Preamplifier (2GHz-18GHz)	61171/61172	S020180L320 3	LUCIX CORP.	2024.05.30	2025.05.29
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-4 0C-S	Decentest	2024.05.30	2025.05.29
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 _____