



REPORT No.: SZ24070315W10

TEST REPORT

APPLICANT : OnePlus Technology (Shenzhen)
Co., Ltd.

PRODUCT NAME : Mobile Phone

MODEL NAME : CPH2647

BRAND NAME : Oneplus

FCC ID : 2ABZ2-OP23869

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

RECEIPT DATE : 2024-08-12

TEST DATE : 2024-08-15 to 2024-09-23

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Edited by:

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Change History		
Version	Date	Reason for change
1.0	2024-10-08	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	OnePlus Technology (Shenzhen) Co., Ltd.
Applicant Address:	18C02, 18C03, 18C04, and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, P.R. China.
Manufacturer:	OnePlus Technology (Shenzhen) Co., Ltd.
Manufacturer Address:	18C02, 18C03, 18C04, and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, P.R. China.

1.2. Equipment Under Test (EUT) Description

Product Name:	Mobile Phone	
Sample No.:	4#	
Hardware Version:	11	
Software Version:	OxygenOS 15.0	
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:	IFA Antenna	
Antenna Gain:	LTE Band 48	ANT 4: 0.70dBi; ANT 8: -2.70dBi; ANT 9: -2.10dBi; ANT 11: 1.20dBi
Carrier Aggregation(UL):	2A-4A, 2A-5A, 2A-7A, 2A-12A, 2A-13A, 2A-66A, 2A-71A, 4A-5A, 4A-12A, 4A-13A, 4A-17A, 4A-71A, 5A-7A, 5A-30A, 5A-66A, 7C, 7A-12A, 12B, 12A-30A, 12A-66A, 13A-66A, 38C, 41C, 48C, 66B, 66C, 66A-71A	



Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	BLPB25
	Serial No.:	N/A
	Capacity:	5860mAh
	Rated Voltage:	3.92V
	Charge Limit:	4.53V
	Manufacturer:	Sunwoda Electronic CO.,LTD.
	AC Adapter	
	Brand Name:	N/A
	Model No.:	VCB80AUH
	Serial No.:	N/A
	Rated Output:	5V=2A; 5-11V=5A; 5-11V=7.3A
	Rated Input:	100-240V~50/60Hz, 2.0A
	Manufacturer 1:	Dongguan Aohai Technology Co.,Ltd.
	Manufacturer 2:	Huizhou Golden Lake Industrial Co., Ltd.

Note 1: 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

Note 1: Consider and evaluate all antennas separately by fully testing each band; This test report only records the worst-case scenario.

ANT 8:

LTE Band 48	Maximum E.R.P./E.I.R.P. (W)			
BW(MHz)	QPSK	16QAM	64QAM	256QAM
20	0.150	0.129	0.100	0.037
15	0.140	0.126	0.099	0.037
10	0.139	0.126	0.099	0.037
5	0.140	0.128	0.099	0.036

LTE Band 48	Emission Designator (99%OBW)			
BW(MHz)	QPSK	16QAM	64QAM	256QAM
20	17M9G7D	17M9W7D	17M9W7D	17M9W7D
15	13M4G7D	13M5W7D	13M4W7D	13M4W7D
10	8M96G7D	8M96W7D	8M93W7D	8M97W7D
5	4M48G7D	4M48W7D	4M48W7D	4M50W7D



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	Sep. 18, 2024	Chen Hao Gan Jing	PASS	No deviation
2.1049	Occupied Bandwidth	Aug. 22, 2024	Gan Jing	PASS	No deviation
96.41(g)	Peak -Average Ratio	Sep. 19, 2024	Gan Jing	PASS	No deviation
2.1055	Frequency Stability	Sep. 18, 2024	Gan Jing	PASS	No deviation
2.1051, 96.41(e)	Conducted Spurious Emissions	Sep. 19, 2024	Gan Jing	PASS	No deviation
2.1051, 96.41(e)	Band Edge	Sep. 02, 2024	Gan Jing	PASS	No deviation
2.1053, 96.41(e)	Radiated Spurious Emissions	Sep. 06 to 21, 2024	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.

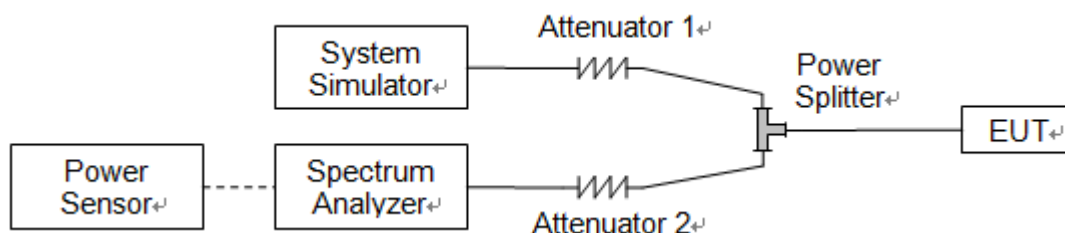
2.1.1. Requirement

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:****ANT 4:**

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	20.76	20.92	20.87
20	QPSK	1	49	20.76	20.58	20.49
20	QPSK	1	99	20.74	20.55	20.51
20	QPSK	50	0	19.95	20.04	19.97
20	QPSK	50	24	19.86	19.95	19.86
20	QPSK	50	50	19.85	19.85	19.72
20	QPSK	100	0	19.83	19.95	19.85
20	16QAM	1	0	20.06	19.91	19.85
20	16QAM	1	49	20.11	19.84	19.86
20	16QAM	1	99	20.26	19.79	19.80
20	16QAM	50	0	19.27	19.03	18.98
20	16QAM	50	24	19.03	18.99	18.94
20	16QAM	50	50	19.06	18.79	18.95
20	16QAM	100	0	19.12	18.97	18.89
20	64QAM	1	0	19.17	19.03	19.08
20	64QAM	1	49	18.83	18.95	19.06
20	64QAM	1	99	18.96	18.98	19.07
20	64QAM	50	0	19.11	18.95	18.81
20	64QAM	50	24	19.18	18.91	18.91
20	64QAM	50	50	19.12	18.69	18.98
20	64QAM	100	0	19.02	19.09	18.86
20	256QAM	1	0	14.85	14.71	14.76
20	256QAM	1	49	14.51	14.63	14.74
20	256QAM	1	99	14.64	14.66	14.75
20	256QAM	50	0	14.78	14.62	14.48
20	256QAM	50	24	14.85	14.58	14.58
20	256QAM	50	50	14.79	14.36	14.65
20	256QAM	100	0	14.69	14.76	14.53



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	20.64	20.39	20.36
15	QPSK	1	37	20.55	20.36	20.28
15	QPSK	1	74	20.53	20.28	20.26
15	QPSK	36	0	20.14	19.84	19.81
15	QPSK	36	20	20.21	19.89	19.74
15	QPSK	36	39	20.09	19.84	19.63
15	QPSK	75	0	20.05	19.92	19.77
15	16QAM	1	0	19.97	19.84	19.76
15	16QAM	1	37	20.08	19.83	19.82
15	16QAM	1	74	20.17	19.75	19.78
15	16QAM	36	0	19.19	18.97	18.91
15	16QAM	36	20	18.97	18.87	18.87
15	16QAM	36	39	18.98	18.69	18.84
15	16QAM	75	0	19.06	18.94	18.87
15	64QAM	1	0	19.05	18.99	18.98
15	64QAM	1	37	18.76	18.85	18.98
15	64QAM	1	74	18.91	18.96	19.06
15	64QAM	36	0	19.06	18.89	18.72
15	64QAM	36	20	19.11	18.85	18.87
15	64QAM	36	39	19.11	18.62	18.88
15	64QAM	75	0	19.00	19.02	18.80
15	256QAM	1	0	14.84	14.62	14.65
15	256QAM	1	37	14.50	14.62	14.66
15	256QAM	1	74	14.60	14.64	14.70
15	256QAM	36	0	14.66	14.55	14.38
15	256QAM	36	20	14.78	14.55	14.57
15	256QAM	36	39	14.67	14.25	14.62
15	256QAM	75	0	14.57	14.69	14.50



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	20.61	20.49	20.46
10	QPSK	1	25	20.56	20.41	20.26
10	QPSK	1	49	20.50	20.33	20.25
10	QPSK	25	0	19.80	19.47	19.49
10	QPSK	25	12	19.80	19.51	19.40
10	QPSK	25	25	19.80	19.46	19.36
10	QPSK	50	0	19.79	19.50	19.43
10	16QAM	1	0	20.01	19.81	19.76
10	16QAM	1	25	20.04	19.82	19.74
10	16QAM	1	49	20.19	19.76	19.76
10	16QAM	25	0	19.24	18.93	18.89
10	16QAM	25	12	18.97	18.91	18.82
10	16QAM	25	25	18.98	18.77	18.89
10	16QAM	50	0	19.02	18.87	18.80
10	64QAM		0	19.12	18.92	19.06
10	64QAM	1	25	18.73	18.93	19.05
10	64QAM	1	49	18.90	18.86	18.95
10	64QAM	25	0	19.08	18.90	18.74
10	64QAM	25	12	19.09	18.88	18.90
10	64QAM	25	25	19.00	18.59	18.86
10	64QAM	50	0	18.95	19.05	18.82
10	256QAM	1	0	14.83	14.68	14.65
10	256QAM	1	25	14.39	14.54	14.70
10	256QAM	1	49	14.52	14.58	14.65
10	256QAM	25	0	14.76	14.60	14.36
10	256QAM	25	12	14.84	14.48	14.50
10	256QAM	25	25	14.77	14.31	14.57
10	256QAM	50	0	14.66	14.72	14.44



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	20.62	20.45	20.38
5	QPSK	1	12	20.50	20.31	20.22
5	QPSK	1	24	20.50	20.37	20.27
5	QPSK	12	0	20.08	19.80	19.81
5	QPSK	12	7	20.12	19.89	19.78
5	QPSK	12	13	20.10	19.80	19.67
5	QPSK	25	0	20.11	19.84	19.73
5	16QAM	1	0	20.03	20.22	20.17
5	16QAM	1	12	20.10	20.12	20.19
5	16QAM	1	24	20.23	20.11	20.11
5	16QAM	12	0	19.20	18.96	18.97
5	16QAM	12	7	18.92	18.94	18.92
5	16QAM	12	13	19.05	18.74	18.93
5	16QAM	25	0	19.00	18.91	18.86
5	64QAM	1	0	19.13	18.94	19.06
5	64QAM	1	12	18.82	18.85	19.01
5	64QAM	1	24	18.91	18.90	19.01
5	64QAM	12	0	19.00	18.94	18.70
5	64QAM	12	7	19.11	18.81	18.85
5	64QAM	12	13	19.06	18.62	18.93
5	64QAM	25	0	19.01	19.08	18.81
5	256QAM	1	0	14.78	14.65	14.64
5	256QAM	1	12	14.45	14.62	14.70
5	256QAM	1	24	14.53	14.56	14.73
5	256QAM	12	0	14.74	14.60	14.41
5	256QAM	12	7	14.78	14.57	14.50
5	256QAM	12	13	14.74	14.24	14.58
5	256QAM	25	0	14.60	14.67	14.41



ANT 8:

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	24.29	24.45	24.40
20	QPSK	1	49	24.29	24.11	24.02
20	QPSK	1	99	24.27	24.08	24.04
20	QPSK	50	0	23.48	23.57	23.50
20	QPSK	50	24	23.39	23.48	23.39
20	QPSK	50	50	23.38	23.38	23.25
20	QPSK	100	0	23.36	23.48	23.38
20	16QAM	1	0	23.59	23.44	23.38
20	16QAM	1	49	23.64	23.37	23.39
20	16QAM	1	99	23.79	23.32	23.33
20	16QAM	50	0	22.80	22.56	22.51
20	16QAM	50	24	22.56	22.52	22.47
20	16QAM	50	50	22.59	22.32	22.48
20	16QAM	100	0	22.65	22.50	22.42
20	64QAM	1	0	22.70	22.56	22.61
20	64QAM	1	49	22.36	22.48	22.59
20	64QAM	1	99	22.49	22.51	22.60
20	64QAM	50	0	22.64	22.48	22.34
20	64QAM	50	24	22.71	22.44	22.44
20	64QAM	50	50	22.65	22.22	22.51
20	64QAM	100	0	22.55	22.62	22.39
20	256QAM	1	0	18.38	18.24	18.29
20	256QAM	1	49	18.04	18.16	18.27
20	256QAM	1	99	18.17	18.19	18.28
20	256QAM	50	0	18.31	18.15	18.01
20	256QAM	50	24	18.38	18.11	18.11
20	256QAM	50	50	18.32	17.89	18.18
20	256QAM	100	0	18.22	18.29	18.06



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	24.17	23.92	23.89
15	QPSK	1	37	24.08	23.89	23.81
15	QPSK	1	74	24.06	23.81	23.79
15	QPSK	36	0	23.67	23.37	23.34
15	QPSK	36	20	23.74	23.42	23.27
15	QPSK	36	39	23.62	23.37	23.16
15	QPSK	75	0	23.58	23.45	23.30
15	16QAM	1	0	23.50	23.37	23.29
15	16QAM	1	37	23.61	23.36	23.35
15	16QAM	1	74	23.70	23.28	23.31
15	16QAM	36	0	22.72	22.50	22.44
15	16QAM	36	20	22.50	22.40	22.40
15	16QAM	36	39	22.51	22.22	22.37
15	16QAM	75	0	22.59	22.47	22.40
15	64QAM	1	0	22.58	22.52	22.51
15	64QAM	1	37	22.29	22.38	22.51
15	64QAM	1	74	22.44	22.49	22.59
15	64QAM	36	0	22.59	22.42	22.25
15	64QAM	36	20	22.64	22.38	22.40
15	64QAM	36	39	22.64	22.15	22.41
15	64QAM	75	0	22.53	22.55	22.33
15	256QAM	1	0	18.37	18.15	18.18
15	256QAM	1	37	18.03	18.15	18.19
15	256QAM	1	74	18.13	18.17	18.23
15	256QAM	36	0	18.19	18.08	17.91
15	256QAM	36	20	18.31	18.08	18.10
15	256QAM	36	39	18.20	17.78	18.15
15	256QAM	75	0	18.10	18.22	18.03



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	24.14	24.02	23.99
10	QPSK	1	25	24.09	23.94	23.79
10	QPSK	1	49	24.03	23.86	23.78
10	QPSK	25	0	23.33	23.00	23.02
10	QPSK	25	12	23.33	23.04	22.93
10	QPSK	25	25	23.33	22.99	22.89
10	QPSK	50	0	23.32	23.03	22.96
10	16QAM	1	0	23.54	23.34	23.29
10	16QAM	1	25	23.57	23.35	23.27
10	16QAM	1	49	23.72	23.29	23.29
10	16QAM	25	0	22.77	22.46	22.42
10	16QAM	25	12	22.50	22.44	22.35
10	16QAM	25	25	22.51	22.30	22.42
10	16QAM	50	0	22.55	22.40	22.33
10	64QAM		0	22.65	22.45	22.59
10	64QAM	1	25	22.26	22.46	22.58
10	64QAM	1	49	22.43	22.39	22.48
10	64QAM	25	0	22.61	22.43	22.27
10	64QAM	25	12	22.62	22.41	22.43
10	64QAM	25	25	22.53	22.12	22.39
10	64QAM	50	0	22.48	22.58	22.35
10	256QAM	1	0	18.36	18.21	18.18
10	256QAM	1	25	17.92	18.07	18.23
10	256QAM	1	49	18.05	18.11	18.18
10	256QAM	25	0	18.29	18.13	17.89
10	256QAM	25	12	18.37	18.01	18.03
10	256QAM	25	25	18.30	17.84	18.10
10	256QAM	50	0	18.19	18.25	17.97



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	24.15	23.98	23.91
5	QPSK	1	12	24.03	23.84	23.75
5	QPSK	1	24	24.03	23.90	23.80
5	QPSK	12	0	23.61	23.33	23.34
5	QPSK	12	7	23.65	23.42	23.31
5	QPSK	12	13	23.63	23.33	23.20
5	QPSK	25	0	23.64	23.37	23.26
5	16QAM	1	0	23.56	23.75	23.70
5	16QAM	1	12	23.63	23.65	23.72
5	16QAM	1	24	23.76	23.64	23.64
5	16QAM	12	0	22.73	22.49	22.50
5	16QAM	12	7	22.45	22.47	22.45
5	16QAM	12	13	22.58	22.27	22.46
5	16QAM	25	0	22.53	22.44	22.39
5	64QAM	1	0	22.66	22.47	22.59
5	64QAM	1	12	22.35	22.38	22.54
5	64QAM	1	24	22.44	22.43	22.54
5	64QAM	12	0	22.53	22.47	22.23
5	64QAM	12	7	22.64	22.34	22.38
5	64QAM	12	13	22.59	22.15	22.46
5	64QAM	25	0	22.54	22.61	22.34
5	256QAM	1	0	18.31	18.18	18.17
5	256QAM	1	12	17.98	18.15	18.23
5	256QAM	1	24	18.06	18.09	18.26
5	256QAM	12	0	18.27	18.13	17.94
5	256QAM	12	7	18.31	18.10	18.03
5	256QAM	12	13	18.27	17.77	18.11
5	256QAM	25	0	18.13	18.20	17.94

**ANT 9:**

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	23.42	23.58	23.53
20	QPSK	1	49	23.42	23.24	23.15
20	QPSK	1	99	23.40	23.21	23.17
20	QPSK	50	0	22.61	22.70	22.63
20	QPSK	50	24	22.52	22.61	22.52
20	QPSK	50	50	22.51	22.51	22.38
20	QPSK	100	0	22.49	22.61	22.51
20	16QAM	1	0	22.72	22.57	22.51
20	16QAM	1	49	22.77	22.50	22.52
20	16QAM	1	99	22.92	22.45	22.46
20	16QAM	50	0	21.93	21.69	21.64
20	16QAM	50	24	21.69	21.65	21.60
20	16QAM	50	50	21.72	21.45	21.61
20	16QAM	100	0	21.78	21.63	21.55
20	64QAM	1	0	21.83	21.69	21.74
20	64QAM	1	49	21.49	21.61	21.72
20	64QAM	1	99	21.62	21.64	21.73
20	64QAM	50	0	21.77	21.61	21.47
20	64QAM	50	24	21.84	21.57	21.57
20	64QAM	50	50	21.78	21.35	21.64
20	64QAM	100	0	21.68	21.75	21.52
20	256QAM	1	0	17.51	17.37	17.42
20	256QAM	1	49	17.17	17.29	17.40
20	256QAM	1	99	17.30	17.32	17.41
20	256QAM	50	0	17.44	17.28	17.14
20	256QAM	50	24	17.51	17.24	17.24
20	256QAM	50	50	17.45	17.02	17.31
20	256QAM	100	0	17.35	17.42	17.19



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	23.30	23.05	23.02
15	QPSK	1	37	23.21	23.02	22.94
15	QPSK	1	74	23.19	22.94	22.92
15	QPSK	36	0	22.80	22.50	22.47
15	QPSK	36	20	22.87	22.55	22.40
15	QPSK	36	39	22.75	22.50	22.29
15	QPSK	75	0	22.71	22.58	22.43
15	16QAM	1	0	22.63	22.50	22.42
15	16QAM	1	37	22.74	22.49	22.48
15	16QAM	1	74	22.83	22.41	22.44
15	16QAM	36	0	21.85	21.63	21.57
15	16QAM	36	20	21.63	21.53	21.53
15	16QAM	36	39	21.64	21.35	21.50
15	16QAM	75	0	21.72	21.60	21.53
15	64QAM	1	0	21.71	21.65	21.64
15	64QAM	1	37	21.42	21.51	21.64
15	64QAM	1	74	21.57	21.62	21.72
15	64QAM	36	0	21.72	21.55	21.38
15	64QAM	36	20	21.77	21.51	21.53
15	64QAM	36	39	21.77	21.28	21.54
15	64QAM	75	0	21.66	21.68	21.46
15	256QAM	1	0	17.50	17.28	17.31
15	256QAM	1	37	17.16	17.28	17.32
15	256QAM	1	74	17.26	17.30	17.36
15	256QAM	36	0	17.32	17.21	17.04
15	256QAM	36	20	17.44	17.21	17.23
15	256QAM	36	39	17.33	16.91	17.28
15	256QAM	75	0	17.23	17.35	17.16



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	23.27	23.15	23.12
10	QPSK	1	25	23.22	23.07	22.92
10	QPSK	1	49	23.16	22.99	22.91
10	QPSK	25	0	22.46	22.13	22.15
10	QPSK	25	12	22.46	22.17	22.06
10	QPSK	25	25	22.46	22.12	22.02
10	QPSK	50	0	22.45	22.16	22.09
10	16QAM	1	0	22.67	22.47	22.42
10	16QAM	1	25	22.70	22.48	22.40
10	16QAM	1	49	22.85	22.42	22.42
10	16QAM	25	0	21.90	21.59	21.55
10	16QAM	25	12	21.63	21.57	21.48
10	16QAM	25	25	21.64	21.43	21.55
10	16QAM	50	0	21.68	21.53	21.46
10	64QAM		0	21.78	21.58	21.72
10	64QAM	1	25	21.39	21.59	21.71
10	64QAM	1	49	21.56	21.52	21.61
10	64QAM	25	0	21.74	21.56	21.40
10	64QAM	25	12	21.75	21.54	21.56
10	64QAM	25	25	21.66	21.25	21.52
10	64QAM	50	0	21.61	21.71	21.48
10	256QAM	1	0	17.49	17.34	17.31
10	256QAM	1	25	17.05	17.20	17.36
10	256QAM	1	49	17.18	17.24	17.31
10	256QAM	25	0	17.42	17.26	17.02
10	256QAM	25	12	17.50	17.14	17.16
10	256QAM	25	25	17.43	16.97	17.23
10	256QAM	50	0	17.32	17.38	17.10



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	23.28	23.11	23.04
5	QPSK	1	12	23.16	22.97	22.88
5	QPSK	1	24	23.16	23.03	22.93
5	QPSK	12	0	22.74	22.46	22.47
5	QPSK	12	7	22.78	22.55	22.44
5	QPSK	12	13	22.76	22.46	22.33
5	QPSK	25	0	22.77	22.50	22.39
5	16QAM	1	0	22.69	22.88	22.83
5	16QAM	1	12	22.76	22.78	22.85
5	16QAM	1	24	22.89	22.77	22.77
5	16QAM	12	0	21.86	21.62	21.63
5	16QAM	12	7	21.58	21.60	21.58
5	16QAM	12	13	21.71	21.40	21.59
5	16QAM	25	0	21.66	21.57	21.52
5	64QAM	1	0	21.79	21.60	21.72
5	64QAM	1	12	21.48	21.51	21.67
5	64QAM	1	24	21.57	21.56	21.67
5	64QAM	12	0	21.66	21.60	21.36
5	64QAM	12	7	21.77	21.47	21.51
5	64QAM	12	13	21.72	21.28	21.59
5	64QAM	25	0	21.67	21.74	21.47
5	256QAM	1	0	17.44	17.31	17.30
5	256QAM	1	12	17.11	17.28	17.36
5	256QAM	1	24	17.19	17.22	17.39
5	256QAM	12	0	17.40	17.26	17.07
5	256QAM	12	7	17.44	17.23	17.16
5	256QAM	12	13	17.40	16.90	17.24
5	256QAM	25	0	17.26	17.33	17.07



ANT 11:

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	20.33	20.49	20.44
20	QPSK	1	49	20.33	20.15	20.06
20	QPSK	1	99	20.31	20.12	20.08
20	QPSK	50	0	19.52	19.61	19.54
20	QPSK	50	24	19.43	19.52	19.43
20	QPSK	50	50	19.42	19.42	19.29
20	QPSK	100	0	19.40	19.52	19.42
20	16QAM	1	0	19.63	19.48	19.42
20	16QAM	1	49	19.68	19.41	19.43
20	16QAM	1	99	19.83	19.36	19.37
20	16QAM	50	0	18.84	18.60	18.55
20	16QAM	50	24	18.60	18.56	18.51
20	16QAM	50	50	18.63	18.36	18.52
20	16QAM	100	0	18.69	18.54	18.46
20	64QAM	1	0	18.74	18.60	18.65
20	64QAM	1	49	18.40	18.52	18.63
20	64QAM	1	99	18.53	18.55	18.64
20	64QAM	50	0	18.68	18.52	18.38
20	64QAM	50	24	18.75	18.48	18.48
20	64QAM	50	50	18.69	18.26	18.55
20	64QAM	100	0	18.59	18.66	18.43
20	256QAM	1	0	14.42	14.28	14.33
20	256QAM	1	49	14.08	14.20	14.31
20	256QAM	1	99	14.21	14.23	14.32
20	256QAM	50	0	14.35	14.19	14.05
20	256QAM	50	24	14.42	14.15	14.15
20	256QAM	50	50	14.36	13.93	14.22
20	256QAM	100	0	14.26	14.33	14.10



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	20.21	19.96	19.93
15	QPSK	1	37	20.12	19.93	19.85
15	QPSK	1	74	20.10	19.85	19.83
15	QPSK	36	0	19.71	19.41	19.38
15	QPSK	36	20	19.78	19.46	19.31
15	QPSK	36	39	19.66	19.41	19.20
15	QPSK	75	0	19.62	19.49	19.34
15	16QAM	1	0	19.54	19.41	19.33
15	16QAM	1	37	19.65	19.40	19.39
15	16QAM	1	74	19.74	19.32	19.35
15	16QAM	36	0	18.76	18.54	18.48
15	16QAM	36	20	18.54	18.44	18.44
15	16QAM	36	39	18.55	18.26	18.41
15	16QAM	75	0	18.63	18.51	18.44
15	64QAM	1	0	18.62	18.56	18.55
15	64QAM	1	37	18.33	18.42	18.55
15	64QAM	1	74	18.48	18.53	18.63
15	64QAM	36	0	18.63	18.46	18.29
15	64QAM	36	20	18.68	18.42	18.44
15	64QAM	36	39	18.68	18.19	18.45
15	64QAM	75	0	18.57	18.59	18.37
15	256QAM	1	0	14.41	14.19	14.22
15	256QAM	1	37	14.07	14.19	14.23
15	256QAM	1	74	14.17	14.21	14.27
15	256QAM	36	0	14.23	14.12	13.95
15	256QAM	36	20	14.35	14.12	14.14
15	256QAM	36	39	14.24	13.82	14.19
15	256QAM	75	0	14.14	14.26	14.07



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	20.18	20.06	20.03
10	QPSK	1	25	20.13	19.98	19.83
10	QPSK	1	49	20.07	19.90	19.82
10	QPSK	25	0	19.37	19.04	19.06
10	QPSK	25	12	19.37	19.08	18.97
10	QPSK	25	25	19.37	19.03	18.93
10	QPSK	50	0	19.36	19.07	19.00
10	16QAM	1	0	19.58	19.38	19.33
10	16QAM	1	25	19.61	19.39	19.31
10	16QAM	1	49	19.76	19.33	19.33
10	16QAM	25	0	18.81	18.50	18.46
10	16QAM	25	12	18.54	18.48	18.39
10	16QAM	25	25	18.55	18.34	18.46
10	16QAM	50	0	18.59	18.44	18.37
10	64QAM		0	18.69	18.49	18.63
10	64QAM	1	25	18.30	18.50	18.62
10	64QAM	1	49	18.47	18.43	18.52
10	64QAM	25	0	18.65	18.47	18.31
10	64QAM	25	12	18.66	18.45	18.47
10	64QAM	25	25	18.57	18.16	18.43
10	64QAM	50	0	18.52	18.62	18.39
10	256QAM	1	0	14.40	14.25	14.22
10	256QAM	1	25	13.96	14.11	14.27
10	256QAM	1	49	14.09	14.15	14.22
10	256QAM	25	0	14.33	14.17	13.93
10	256QAM	25	12	14.41	14.05	14.07
10	256QAM	25	25	14.34	13.88	14.14
10	256QAM	50	0	14.23	14.29	14.01



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	20.19	20.02	19.95
5	QPSK	1	12	20.07	19.88	19.79
5	QPSK	1	24	20.07	19.94	19.84
5	QPSK	12	0	19.65	19.37	19.38
5	QPSK	12	7	19.69	19.46	19.35
5	QPSK	12	13	19.67	19.37	19.24
5	QPSK	25	0	19.68	19.41	19.30
5	16QAM	1	0	19.60	19.79	19.74
5	16QAM	1	12	19.67	19.69	19.76
5	16QAM	1	24	19.80	19.68	19.68
5	16QAM	12	0	18.77	18.53	18.54
5	16QAM	12	7	18.49	18.51	18.49
5	16QAM	12	13	18.62	18.31	18.50
5	16QAM	25	0	18.57	18.48	18.43
5	64QAM	1	0	18.70	18.51	18.63
5	64QAM	1	12	18.39	18.42	18.58
5	64QAM	1	24	18.48	18.47	18.58
5	64QAM	12	0	18.57	18.51	18.27
5	64QAM	12	7	18.68	18.38	18.42
5	64QAM	12	13	18.63	18.19	18.50
5	64QAM	25	0	18.58	18.65	18.38
5	256QAM	1	0	14.35	14.22	14.21
5	256QAM	1	12	14.02	14.19	14.27
5	256QAM	1	24	14.10	14.13	14.30
5	256QAM	12	0	14.31	14.17	13.98
5	256QAM	12	7	14.35	14.14	14.07
5	256QAM	12	13	14.31	13.81	14.15
5	256QAM	25	0	14.17	14.24	13.98

**Effective Radiated Power and Effective Isotropic Radiated Power:****ANT 8:**

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	21.59	0.144	21.75	0.150	21.70	0.148
20	QPSK	1	49	21.59	0.144	21.41	0.138	21.32	0.136
20	QPSK	1	99	21.57	0.144	21.38	0.137	21.34	0.136
20	QPSK	50	0	20.78	0.120	20.87	0.122	20.80	0.120
20	QPSK	50	24	20.69	0.117	20.78	0.120	20.69	0.117
20	QPSK	50	50	20.68	0.117	20.68	0.117	20.55	0.114
20	QPSK	100	0	20.66	0.116	20.78	0.120	20.68	0.117
20	16QAM	1	0	20.89	0.123	20.74	0.119	20.68	0.117
20	16QAM	1	49	20.94	0.124	20.67	0.117	20.69	0.117
20	16QAM	1	99	21.09	0.129	20.62	0.115	20.63	0.116
20	16QAM	50	0	20.10	0.102	19.86	0.097	19.81	0.096
20	16QAM	50	24	19.86	0.097	19.82	0.096	19.77	0.095
20	16QAM	50	50	19.89	0.097	19.62	0.092	19.78	0.095
20	16QAM	100	0	19.95	0.099	19.80	0.095	19.72	0.094
20	64QAM	1	0	20.00	0.100	19.86	0.097	19.91	0.098
20	64QAM	1	49	19.66	0.092	19.78	0.095	19.89	0.097
20	64QAM	1	99	19.79	0.095	19.81	0.096	19.90	0.098
20	64QAM	50	0	19.94	0.099	19.78	0.095	19.64	0.092
20	64QAM	50	24	20.01	0.100	19.74	0.094	19.74	0.094
20	64QAM	50	50	19.95	0.099	19.52	0.090	19.81	0.096
20	64QAM	100	0	19.85	0.097	19.92	0.098	19.69	0.093
20	256QAM	1	0	15.68	0.037	15.54	0.036	15.59	0.036
20	256QAM	1	49	15.34	0.034	15.46	0.035	15.57	0.036
20	256QAM	1	99	15.47	0.035	15.49	0.035	15.58	0.036
20	256QAM	50	0	15.61	0.036	15.45	0.035	15.31	0.034
20	256QAM	50	24	15.68	0.037	15.41	0.035	15.41	0.035
20	256QAM	50	50	15.62	0.036	15.19	0.033	15.48	0.035
20	256QAM	100	0	15.52	0.036	15.59	0.036	15.36	0.034



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	21.47	0.140	21.22	0.132	21.19	0.132
15	QPSK	1	37	21.38	0.137	21.19	0.132	21.11	0.129
15	QPSK	1	74	21.36	0.137	21.11	0.129	21.09	0.129
15	QPSK	36	0	20.97	0.125	20.67	0.117	20.64	0.116
15	QPSK	36	20	21.04	0.127	20.72	0.118	20.57	0.114
15	QPSK	36	39	20.92	0.124	20.67	0.117	20.46	0.111
15	QPSK	75	0	20.88	0.122	20.75	0.119	20.60	0.115
15	16QAM	1	0	20.80	0.120	20.67	0.117	20.59	0.115
15	16QAM	1	37	20.91	0.123	20.66	0.116	20.65	0.116
15	16QAM	1	74	21.00	0.126	20.58	0.114	20.61	0.115
15	16QAM	36	0	20.02	0.100	19.80	0.095	19.74	0.094
15	16QAM	36	20	19.80	0.095	19.70	0.093	19.70	0.093
15	16QAM	36	39	19.81	0.096	19.52	0.090	19.67	0.093
15	16QAM	75	0	19.89	0.097	19.77	0.095	19.70	0.093
15	64QAM	1	0	19.88	0.097	19.82	0.096	19.81	0.096
15	64QAM	1	37	19.59	0.091	19.68	0.093	19.81	0.096
15	64QAM	1	74	19.74	0.094	19.79	0.095	19.89	0.097
15	64QAM	36	0	19.89	0.097	19.72	0.094	19.55	0.090
15	64QAM	36	20	19.94	0.099	19.68	0.093	19.70	0.093
15	64QAM	36	39	19.94	0.099	19.45	0.088	19.71	0.094
15	64QAM	75	0	19.83	0.096	19.85	0.097	19.63	0.092
15	256QAM	1	0	15.67	0.037	15.45	0.035	15.48	0.035
15	256QAM	1	37	15.33	0.034	15.45	0.035	15.49	0.035
15	256QAM	1	74	15.43	0.035	15.47	0.035	15.53	0.036
15	256QAM	36	0	15.49	0.035	15.38	0.035	15.21	0.033
15	256QAM	36	20	15.61	0.036	15.38	0.035	15.40	0.035
15	256QAM	36	39	15.50	0.035	15.08	0.032	15.45	0.035
15	256QAM	75	0	15.40	0.035	15.52	0.036	15.33	0.034



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	21.44	0.139	21.32	0.136	21.29	0.135
10	QPSK	1	25	21.39	0.138	21.24	0.133	21.09	0.129
10	QPSK	1	49	21.33	0.136	21.16	0.131	21.08	0.128
10	QPSK	25	0	20.63	0.116	20.30	0.107	20.32	0.108
10	QPSK	25	12	20.63	0.116	20.34	0.108	20.23	0.105
10	QPSK	25	25	20.63	0.116	20.29	0.107	20.19	0.104
10	QPSK	50	0	20.62	0.115	20.33	0.108	20.26	0.106
10	16QAM	1	0	20.84	0.121	20.64	0.116	20.59	0.115
10	16QAM	1	25	20.87	0.122	20.65	0.116	20.57	0.114
10	16QAM	1	49	21.02	0.126	20.59	0.115	20.59	0.115
10	16QAM	25	0	20.07	0.102	19.76	0.095	19.72	0.094
10	16QAM	25	12	19.80	0.095	19.74	0.094	19.65	0.092
10	16QAM	25	25	19.81	0.096	19.60	0.091	19.72	0.094
10	16QAM	50	0	19.85	0.097	19.70	0.093	19.63	0.092
10	64QAM	1	0	19.95	0.099	19.75	0.094	19.89	0.097
10	64QAM	1	25	19.56	0.090	19.76	0.095	19.88	0.097
10	64QAM	1	49	19.73	0.094	19.69	0.093	19.78	0.095
10	64QAM	25	0	19.91	0.098	19.73	0.094	19.57	0.091
10	64QAM	25	12	19.92	0.098	19.71	0.094	19.73	0.094
10	64QAM	25	25	19.83	0.096	19.42	0.087	19.69	0.093
10	64QAM	50	0	19.78	0.095	19.88	0.097	19.65	0.092
10	256QAM	1	0	15.66	0.037	15.51	0.036	15.48	0.035
10	256QAM	1	25	15.22	0.033	15.37	0.034	15.53	0.036
10	256QAM	1	49	15.35	0.034	15.41	0.035	15.48	0.035
10	256QAM	25	0	15.59	0.036	15.43	0.035	15.19	0.033
10	256QAM	25	12	15.67	0.037	15.31	0.034	15.33	0.034
10	256QAM	25	25	15.60	0.036	15.14	0.033	15.40	0.035
10	256QAM	50	0	15.49	0.035	15.55	0.036	15.27	0.034



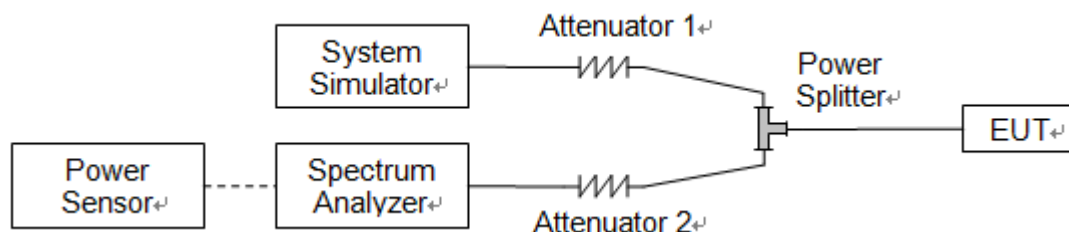
LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55265		55990		56175	
Frequency (MHz)				3552.5		3625		3697.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	21.45	0.140	21.28	0.134	21.21	0.132
5	QPSK	1	12	21.33	0.136	21.14	0.130	21.05	0.127
5	QPSK	1	24	21.33	0.136	21.20	0.132	21.10	0.129
5	QPSK	12	0	20.91	0.123	20.63	0.116	20.64	0.116
5	QPSK	12	7	20.95	0.124	20.72	0.118	20.61	0.115
5	QPSK	12	13	20.93	0.124	20.63	0.116	20.50	0.112
5	QPSK	25	0	20.94	0.124	20.67	0.117	20.56	0.114
5	16QAM	1	0	20.86	0.122	21.05	0.127	21.00	0.126
5	16QAM	1	12	20.93	0.124	20.95	0.124	21.02	0.126
5	16QAM	1	24	21.06	0.128	20.94	0.124	20.94	0.124
5	16QAM	12	0	20.03	0.101	19.79	0.095	19.80	0.095
5	16QAM	12	7	19.75	0.094	19.77	0.095	19.75	0.094
5	16QAM	12	13	19.88	0.097	19.57	0.091	19.76	0.095
5	16QAM	25	0	19.83	0.096	19.74	0.094	19.69	0.093
5	64QAM	1	0	19.96	0.099	19.77	0.095	19.89	0.097
5	64QAM	1	12	19.65	0.092	19.68	0.093	19.84	0.096
5	64QAM	1	24	19.74	0.094	19.73	0.094	19.84	0.096
5	64QAM	12	0	19.83	0.096	19.77	0.095	19.53	0.090
5	64QAM	12	7	19.94	0.099	19.64	0.092	19.68	0.093
5	64QAM	12	13	19.89	0.097	19.45	0.088	19.76	0.095
5	64QAM	25	0	19.84	0.096	19.91	0.098	19.64	0.092
5	256QAM	1	0	15.61	0.036	15.48	0.035	15.47	0.035
5	256QAM	1	12	15.28	0.034	15.45	0.035	15.53	0.036
5	256QAM	1	24	15.36	0.034	15.39	0.035	15.56	0.036
5	256QAM	12	0	15.57	0.036	15.43	0.035	15.24	0.033
5	256QAM	12	7	15.61	0.036	15.40	0.035	15.33	0.034
5	256QAM	12	13	15.57	0.036	15.07	0.032	15.41	0.035
5	256QAM	25	0	15.43	0.035	15.50	0.035	15.24	0.033

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	4.4647	4.9241	PASS
B48	5	Low	55265	3552.5	16QAM	4.4796	4.9991	PASS
B48	5	Low	55265	3552.5	64QAM	4.4847	5.0712	PASS
B48	5	Low	55265	3552.5	256QAM	4.5011	4.9193	PASS
B48	5	Mid	55990	3625	QPSK	4.4787	4.9502	PASS
B48	5	Mid	55990	3625	16QAM	4.4779	4.9301	PASS
B48	5	Mid	55990	3625	64QAM	4.4682	4.8665	PASS
B48	5	Mid	55990	3625	256QAM	4.4771	4.9331	PASS
B48	5	High	56715	3697.5	QPSK	4.4747	5.0008	PASS
B48	5	High	56715	3697.5	16QAM	4.4812	4.9336	PASS
B48	5	High	56715	3697.5	64QAM	4.4748	4.9159	PASS
B48	5	High	56715	3697.5	256QAM	4.4830	4.8562	PASS
B48	10	Low	55290	3555	QPSK	8.9468	9.7565	PASS
B48	10	Low	55290	3555	16QAM	8.9555	9.6529	PASS
B48	10	Low	55290	3555	64QAM	8.9345	9.8439	PASS
B48	10	Low	55290	3555	256QAM	8.9685	9.7009	PASS
B48	10	Mid	55990	3625	QPSK	8.9645	9.9200	PASS
B48	10	Mid	55990	3625	16QAM	8.9523	9.6558	PASS
B48	10	Mid	55990	3625	64QAM	8.9321	9.6136	PASS
B48	10	Mid	55990	3625	256QAM	8.9481	9.6642	PASS
B48	10	High	56690	3695	QPSK	8.9505	9.4694	PASS
B48	10	High	56690	3695	16QAM	8.9433	9.7246	PASS
B48	10	High	56690	3695	64QAM	8.9295	9.6075	PASS
B48	10	High	56690	3695	256QAM	8.9485	9.9233	PASS
B48	15	Low	55315	3557.5	QPSK	13.422	14.412	PASS
B48	15	Low	55315	3557.5	16QAM	13.421	14.679	PASS
B48	15	Low	55315	3557.5	64QAM	13.418	14.524	PASS
B48	15	Low	55315	3557.5	256QAM	13.412	14.527	PASS
B48	15	Mid	55990	3625	QPSK	13.406	14.342	PASS
B48	15	Mid	55990	3625	16QAM	13.454	14.324	PASS
B48	15	Mid	55990	3625	64QAM	13.399	14.530	PASS
B48	15	Mid	55990	3625	256QAM	13.392	14.344	PASS
B48	15	High	56665	3692.5	QPSK	13.386	14.193	PASS
B48	15	High	56665	3692.5	16QAM	13.399	14.754	PASS
B48	15	High	56665	3692.5	64QAM	13.435	14.381	PASS



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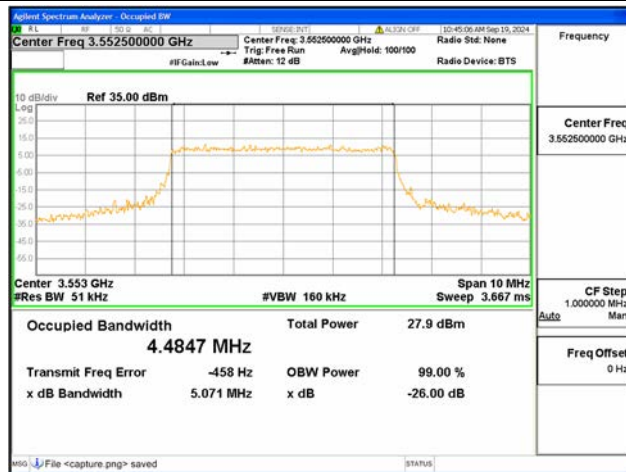
B48	15	High	56665	3692.5	256QAM	13.427	14.634	PASS
B48	20	Low	55340	3560	QPSK	17.871	19.238	PASS
B48	20	Low	55340	3560	16QAM	17.911	19.257	PASS
B48	20	Low	55340	3560	64QAM	17.919	19.406	PASS
B48	20	Low	55340	3560	256QAM	17.860	19.172	PASS
B48	20	Mid	55990	3625	QPSK	17.881	18.880	PASS
B48	20	Mid	55990	3625	16QAM	17.829	19.070	PASS
B48	20	Mid	55990	3625	64QAM	17.912	18.917	PASS
B48	20	Mid	55990	3625	256QAM	17.855	19.122	PASS
B48	20	High	56640	3690	QPSK	17.888	19.052	PASS
B48	20	High	56640	3690	16QAM	17.848	19.039	PASS
B48	20	High	56640	3690	64QAM	17.861	19.168	PASS
B48	20	High	56640	3690	256QAM	17.892	19.247	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



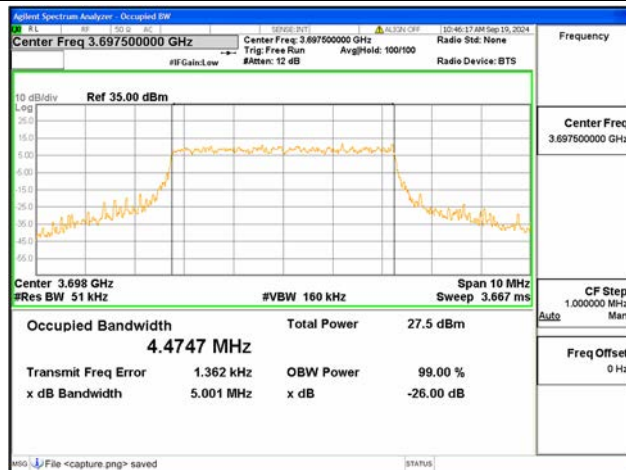
B48 / 5MHz / 16QAM/ Mid CH



B48 / 5MHz / 64QAM/ Mid CH



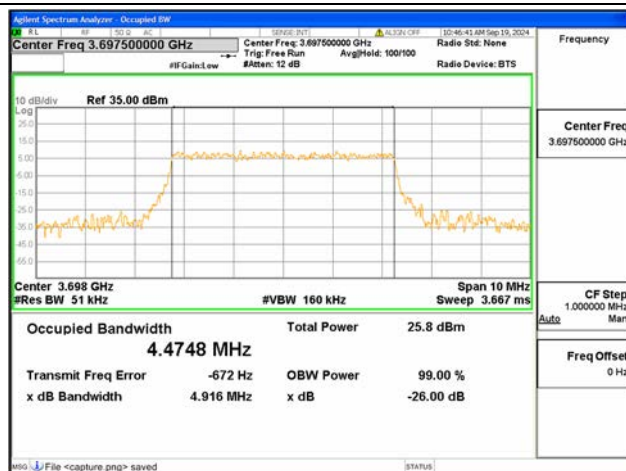
B48 / 5MHz / 256QAM/ Mid CH



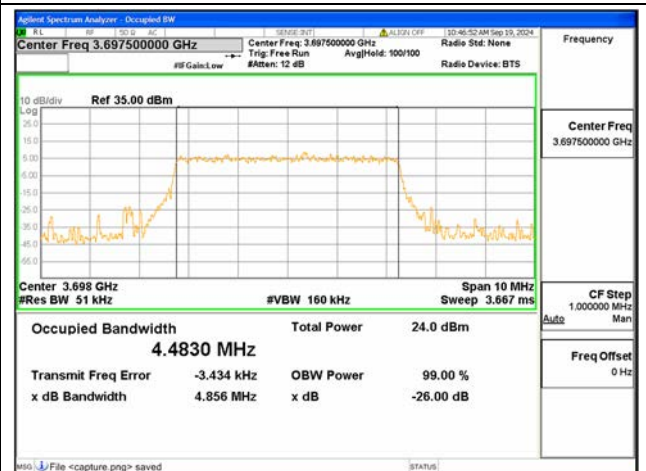
B48 / 5MHz / QPSK/ High CH



B48 / 5MHz / 16QAM/ High CH



B48 / 5MHz / 64QAM/ High CH



B48 / 5MHz / 256QAM/ High CH



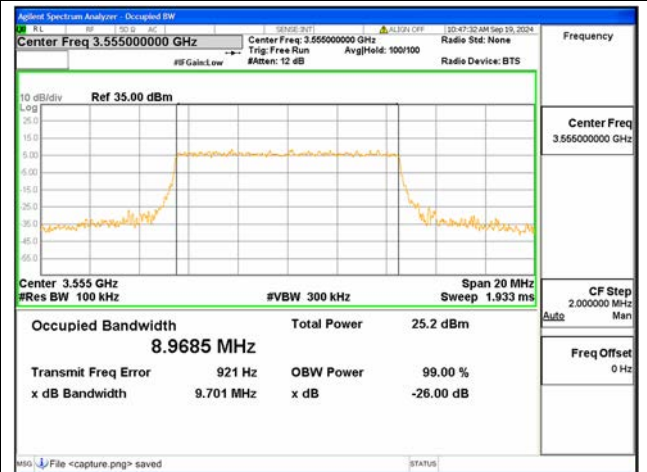
B48 / 10MHz / QPSK/ Low CH



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



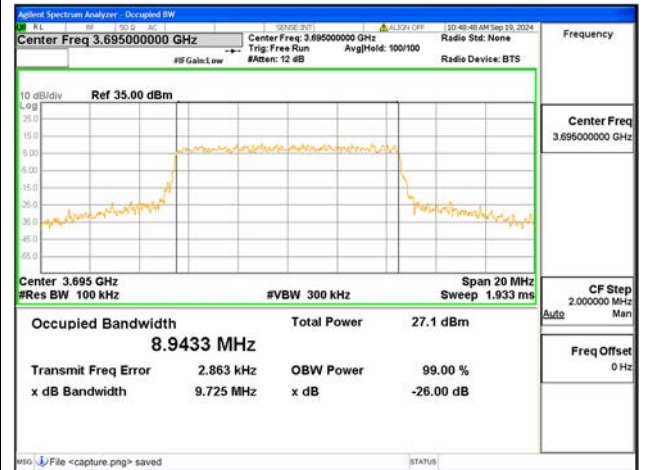
B48 / 10MHz / 64QAM/ Mid CH



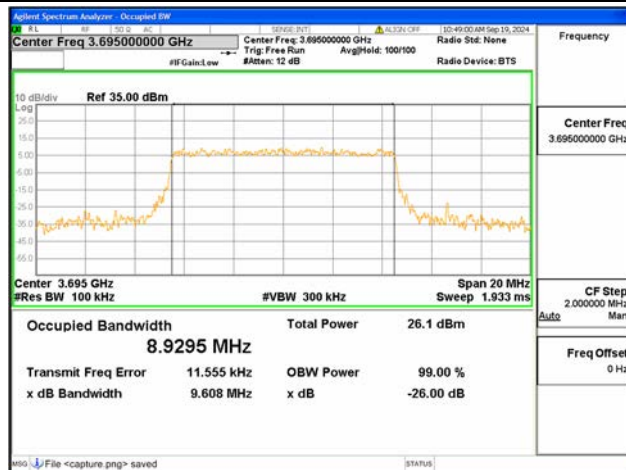
B48 / 10MHz / 256QAM/ Mid CH



B48 / 10MHz / QPSK/ High CH



B48 / 10MHz / 16QAM/ High CH



B48 / 10MHz / 64QAM/ High CH



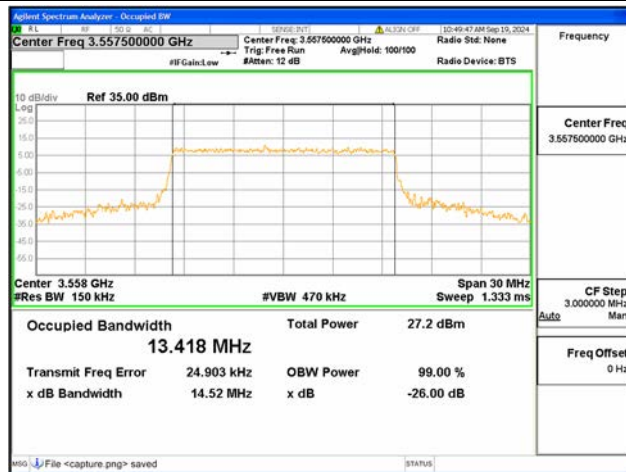
B48 / 10MHz / 256QAM/ High CH



B48 / 15MHz / QPSK/ Low CH



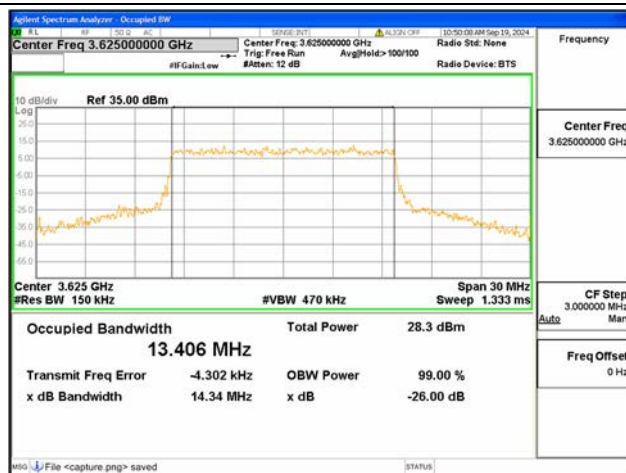
B48 / 15MHz / 16QAM/ Low CH



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



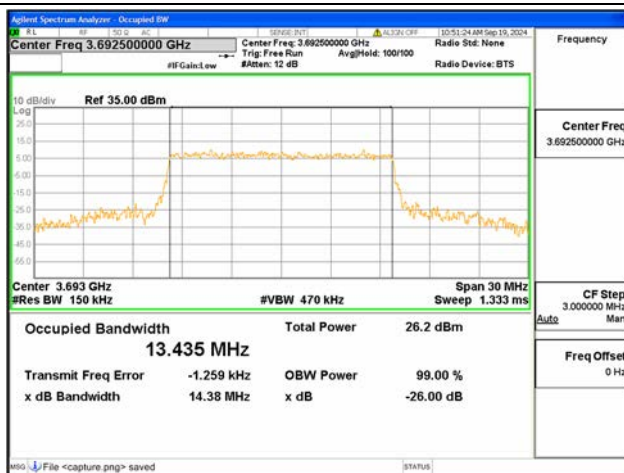
B48 / 15MHz / 256QAM/ Mid CH



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



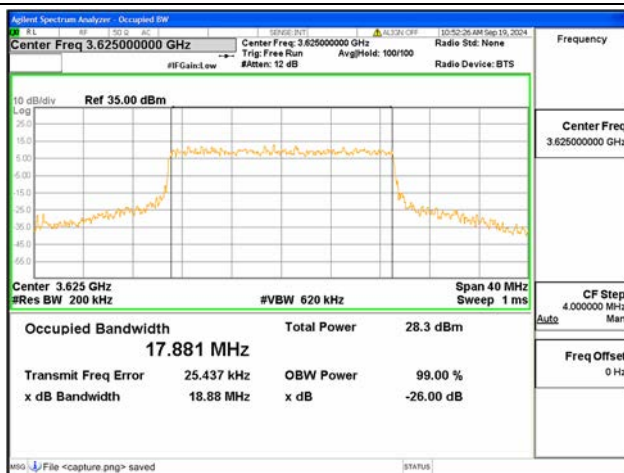
B48 / 20MHz / 16QAM/ Low CH



B48 / 20MHz / 64QAM/ Low CH



B48 / 20MHz / 256QAM/ Low CH



B48 / 20MHz / QPSK/ Mid CH



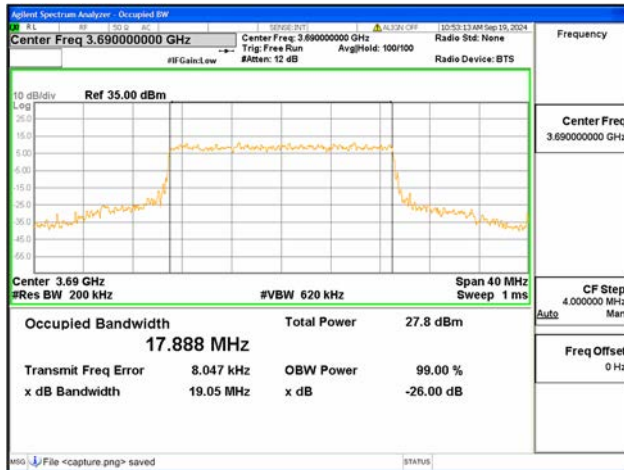
B48 / 20MHz / 16QAM/ Mid CH



B48 / 20MHz / 64QAM/ Mid CH



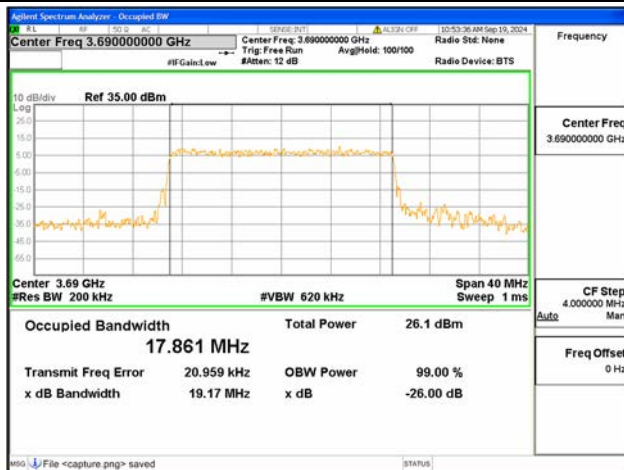
B48 / 20MHz / 256QAM/ Mid CH



B48 / 20MHz / QPSK/ High CH



B48 / 20MHz / 16QAM/ High CH



B48 / 20MHz / 64QAM/ High CH



B48 / 20MHz / 256QAM/ High CH

2.3. Frequency Stability

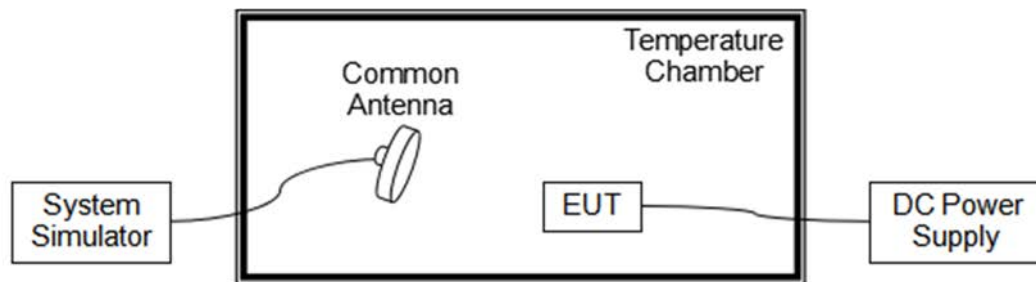
2.3.1. Requirement

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 0°C to 35°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 3.93V, 4.53V and 3.50V, which are specified by the applicant; the normal temperature here used is 20°C.

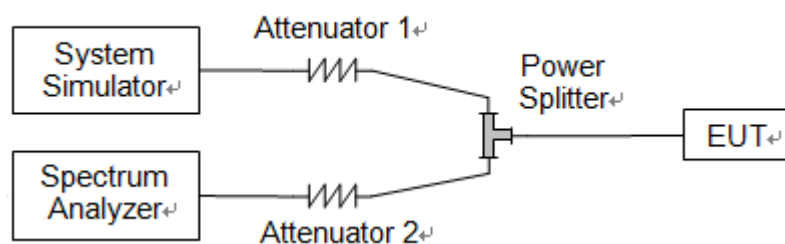
LTE Band 48, 256QAM, QPSK, Channel 55990, Frequency 3625.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
Normal	3.93	+20(Ref)	13	0.004	PASS
Normal		0	15	0.004	
Normal		+10	19	0.005	
Normal		+20	13	0.004	
Normal		+30	-15	-0.004	
Normal		+35	-5	-0.001	
High	4.53	+20	17	0.005	
BATT.ENDPOINT	3.50	+20	19	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)	Verdict
B48	5	Low	55265	3552.5	QPSK	4.48	PASS
B48	5	Low	55265	3552.5	16QAM	5.53	PASS
B48	5	Low	55265	3552.5	64QAM	6.39	PASS
B48	5	Low	55265	3552.5	256QAM	6.67	PASS
B48	5	Mid	55990	3625	QPSK	4.49	PASS
B48	5	Mid	55990	3625	16QAM	5.53	PASS
B48	5	Mid	55990	3625	64QAM	6.44	PASS
B48	5	Mid	55990	3625	256QAM	6.83	PASS
B48	5	High	56715	3697.5	QPSK	4.56	PASS
B48	5	High	56715	3697.5	16QAM	5.65	PASS
B48	5	High	56715	3697.5	64QAM	6.57	PASS
B48	5	High	56715	3697.5	256QAM	6.78	PASS
B48	10	Low	55290	3555	QPSK	4.54	PASS
B48	10	Low	55290	3555	16QAM	5.54	PASS
B48	10	Low	55290	3555	64QAM	6.41	PASS
B48	10	Low	55290	3555	256QAM	6.47	PASS
B48	10	Mid	55990	3625	QPSK	4.54	PASS
B48	10	Mid	55990	3625	16QAM	5.57	PASS
B48	10	Mid	55990	3625	64QAM	6.43	PASS
B48	10	Mid	55990	3625	256QAM	6.50	PASS
B48	10	High	56690	3695	QPSK	4.59	PASS
B48	10	High	56690	3695	16QAM	5.65	PASS
B48	10	High	56690	3695	64QAM	6.59	PASS
B48	10	High	56690	3695	256QAM	6.85	PASS
B48	15	Low	55315	3557.5	QPSK	4.36	PASS
B48	15	Low	55315	3557.5	16QAM	5.31	PASS
B48	15	Low	55315	3557.5	64QAM	6.18	PASS
B48	15	Low	55315	3557.5	256QAM	6.61	PASS
B48	15	Mid	55990	3625	QPSK	4.41	PASS
B48	15	Mid	55990	3625	16QAM	5.37	PASS
B48	15	Mid	55990	3625	64QAM	6.27	PASS
B48	15	Mid	55990	3625	256QAM	6.64	PASS
B48	15	High	56665	3692.5	QPSK	4.45	PASS
B48	15	High	56665	3692.5	16QAM	5.45	PASS
B48	15	High	56665	3692.5	64QAM	6.37	PASS

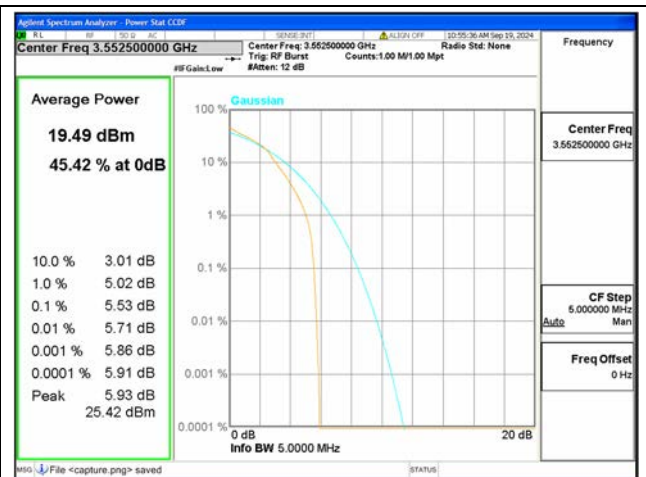


REPORT No.: SZ24070315W10

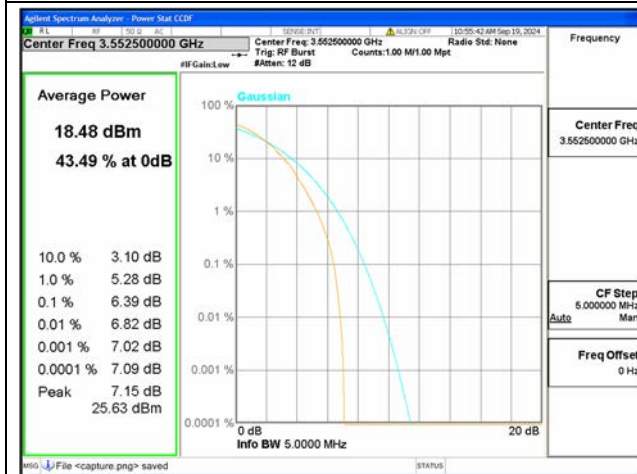
B48	15	High	56665	3692.5	256QAM	6.65	PASS
B48	20	Low	55340	3560	QPSK	4.50	PASS
B48	20	Low	55340	3560	16QAM	5.56	PASS
B48	20	Low	55340	3560	64QAM	6.32	PASS
B48	20	Low	55340	3560	256QAM	6.77	PASS
B48	20	Mid	55990	3625	QPSK	4.60	PASS
B48	20	Mid	55990	3625	16QAM	5.63	PASS
B48	20	Mid	55990	3625	64QAM	6.38	PASS
B48	20	Mid	55990	3625	256QAM	7.02	PASS
B48	20	High	56640	3690	QPSK	4.61	PASS
B48	20	High	56640	3690	16QAM	5.70	PASS
B48	20	High	56640	3690	64QAM	6.48	PASS
B48	20	High	56640	3690	256QAM	7.06	PASS



B48 / 5MHz / Low CH / QPSK



B48 / 5MHz / Low CH / 16QAM



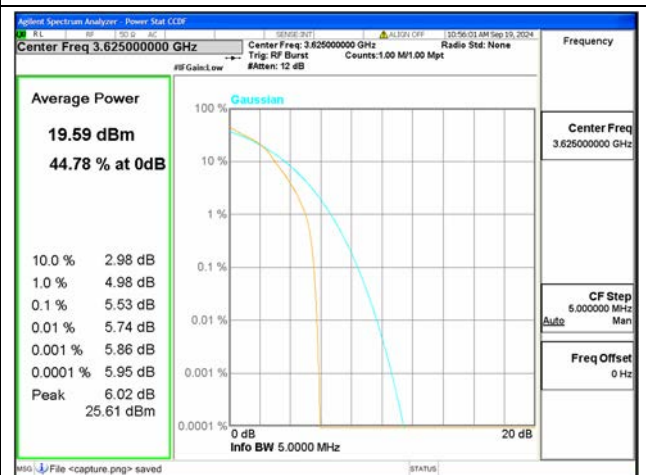
B48 / 5MHz / Low CH / 64QAM



B48 / 5MHz / Low CH / 256QAM



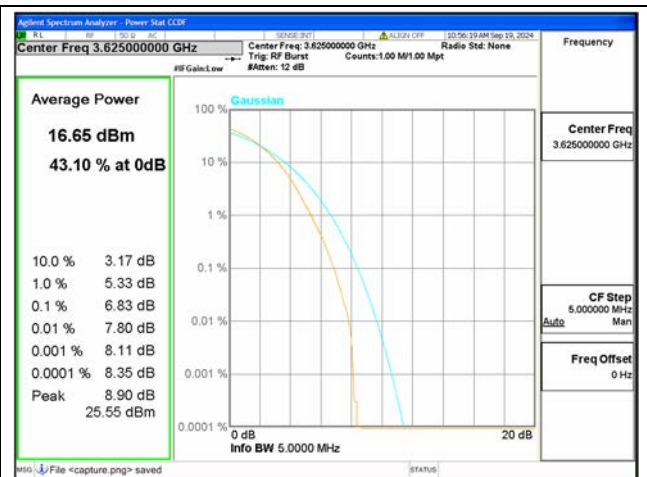
B48 / 5MHz / Mid CH / QPSK



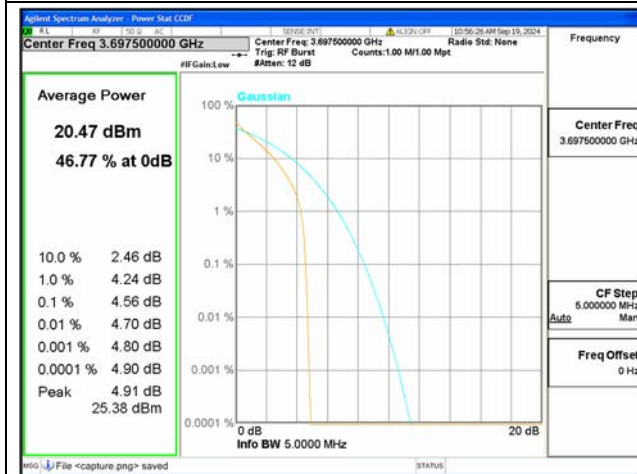
B48 / 5MHz / Mid CH / 16QAM



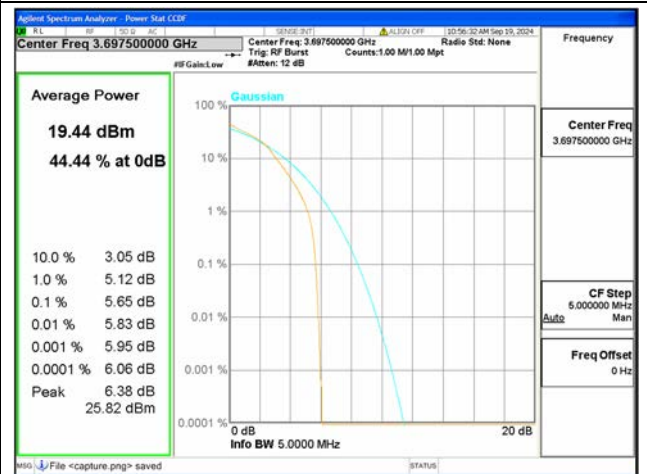
B48 / 5MHz / Mid CH / 64QAM



B48 / 5MHz / Mid CH / 256QAM



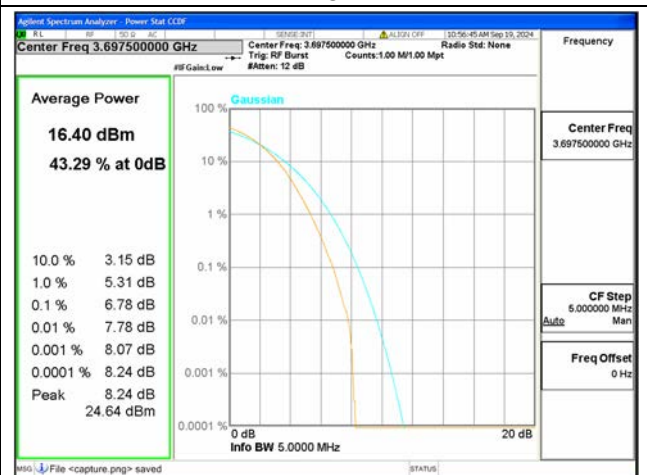
B48 / 5MHz / High CH / QPSK



B48 / 5MHz / High CH / 16QAM



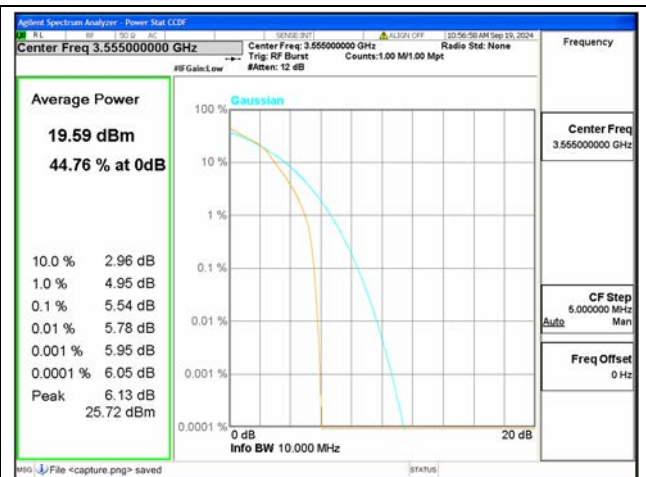
B48 / 5MHz / High CH / 64QAM



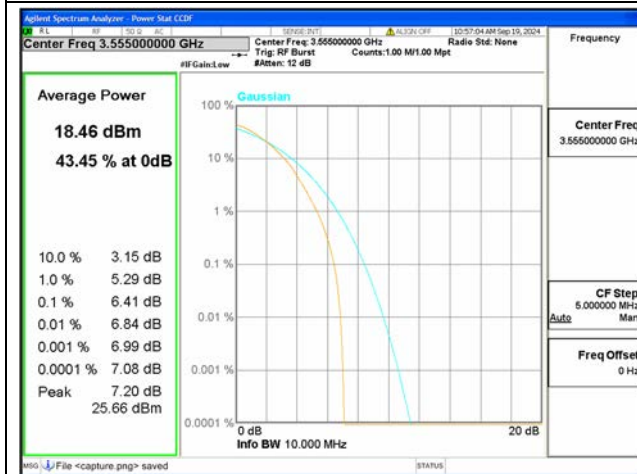
B48 / 5MHz / High CH / 256QAM



B48 / 10MHz / Low CH / QPSK



B48 / 10MHz / Low CH / 16QAM



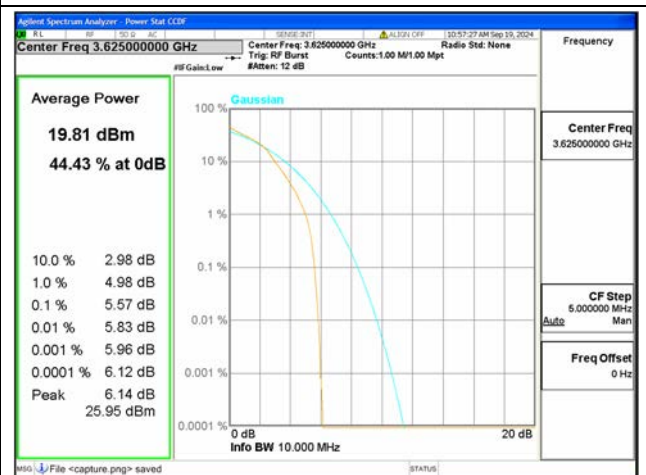
B48 / 10MHz / Low CH / 64QAM



B48 / 10MHz / Low CH / 256QAM



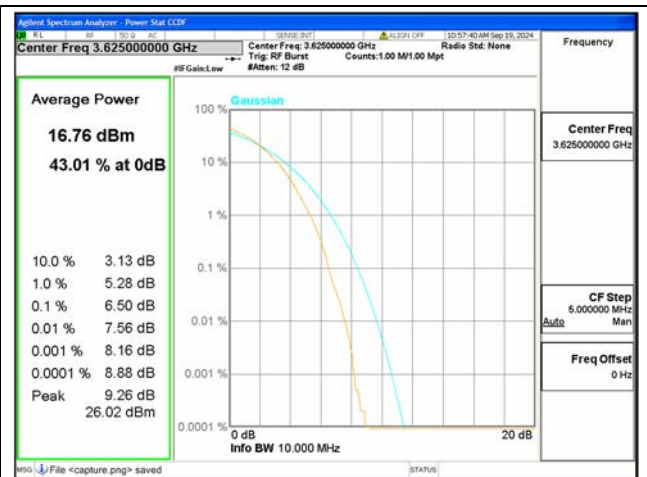
B48 / 10MHz / Mid CH / QPSK



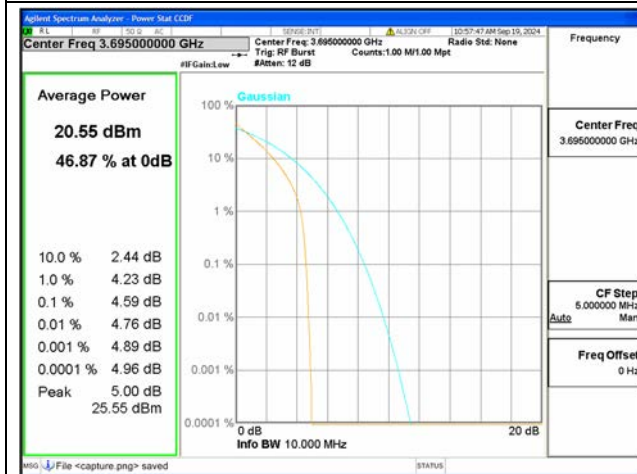
B48 / 10MHz / Mid CH / 16QAM



B48 / 10MHz / Mid CH / 64QAM



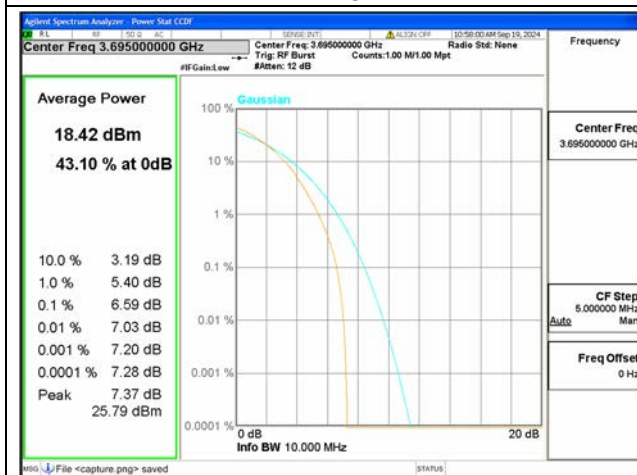
B48 / 10MHz / Mid CH / 256QAM



B48 / 10MHz / High CH / QPSK



B48 / 10MHz / High CH / 16QAM



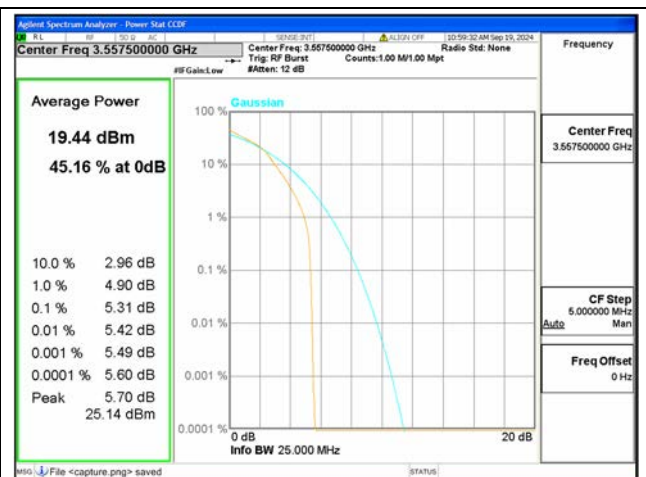
B48 / 10MHz / High CH / 64QAM



B48 / 10MHz / High CH / 256QAM



B48 / 15MHz / Low CH / QPSK



B48 / 15MHz / Low CH / 16QAM



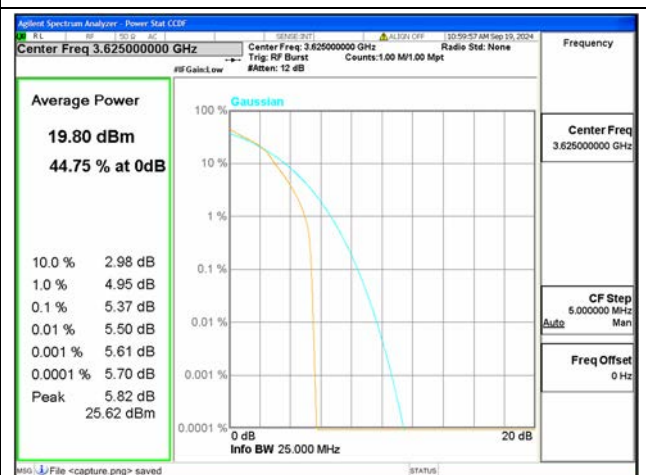
B48 / 15MHz / Low CH / 64QAM



B48 / 15MHz / Low CH / 256QAM



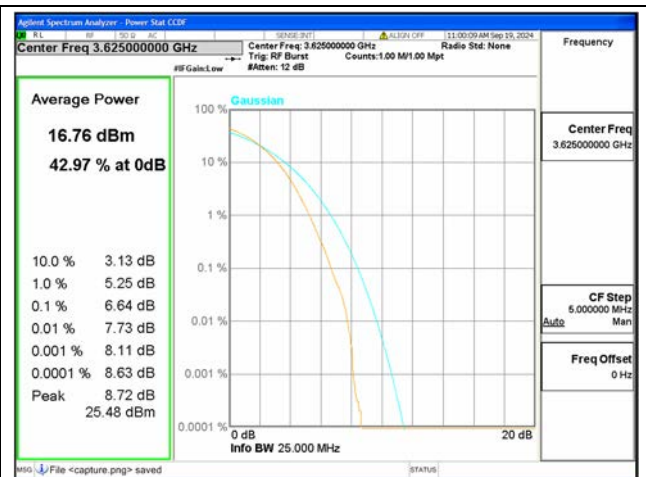
B48 / 15MHz / Mid CH / QPSK



B48 / 15MHz / Mid CH / 16QAM



B48 / 15MHz / Mid CH / 64QAM



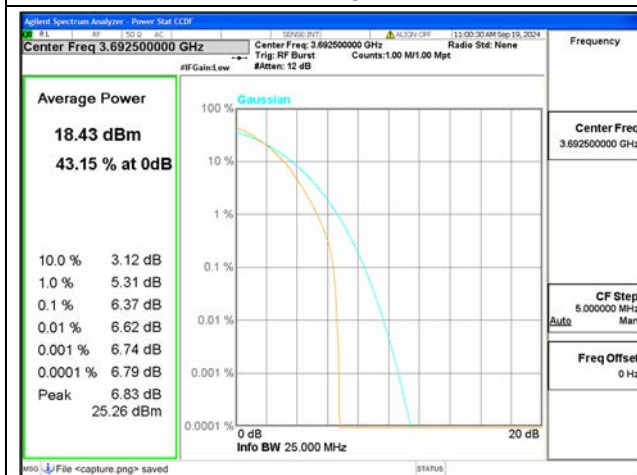
B48 / 15MHz / Mid CH / 256QAM



B48 / 15MHz / High CH / QPSK



B48 / 15MHz / High CH / 16QAM



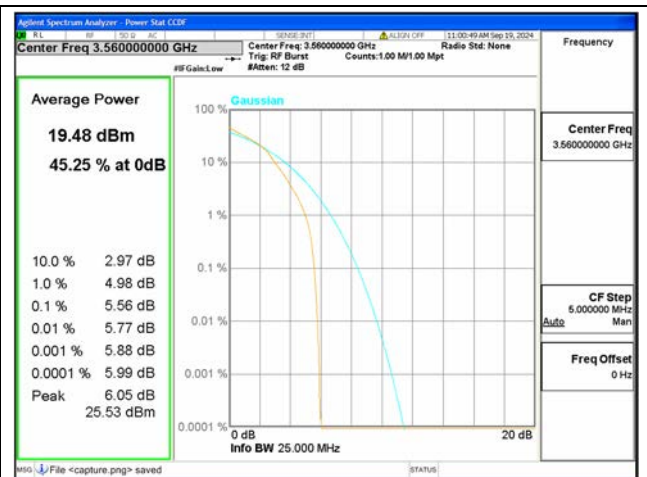
B48 / 15MHz / High CH / 64QAM



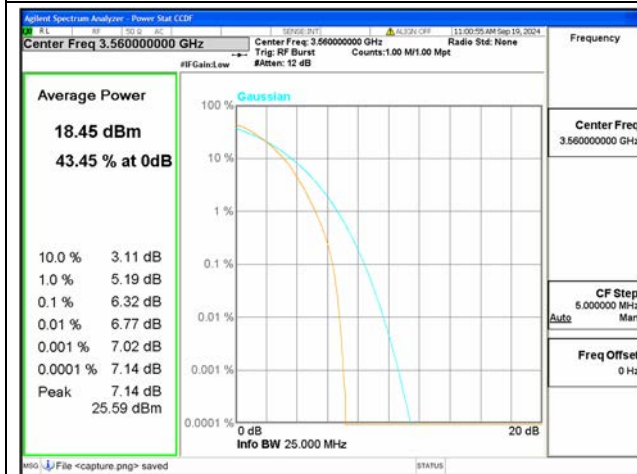
B48 / 15MHz / High CH / 256QAM



B48 / 20MHz / Low CH / QPSK



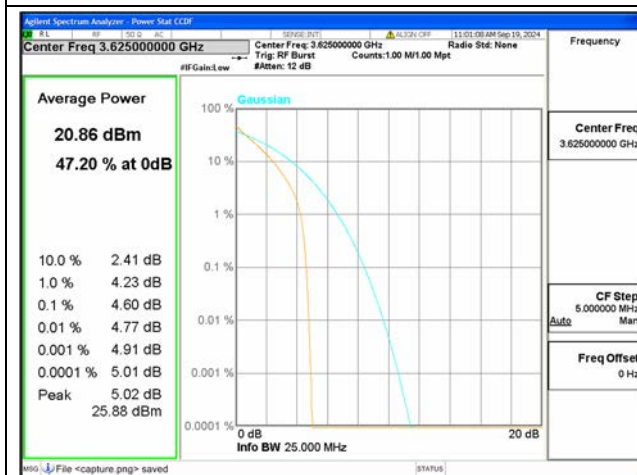
B48 / 20MHz / Low CH / 16QAM



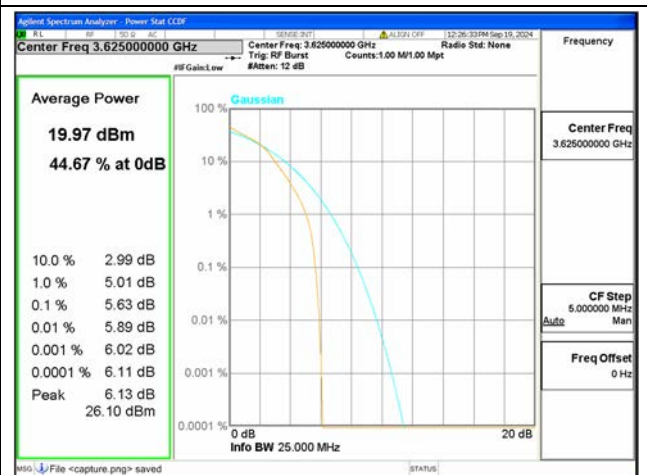
B48 / 20MHz / Low CH / 64QAM



B48 / 20MHz / Low CH / 256QAM



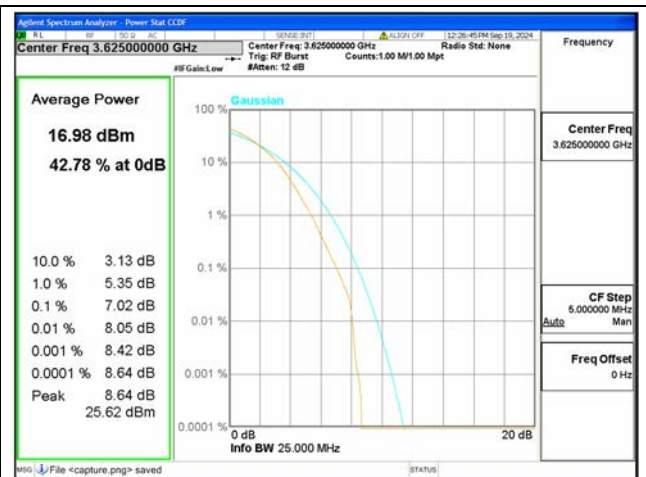
B48 / 20MHz / Mid CH / QPSK



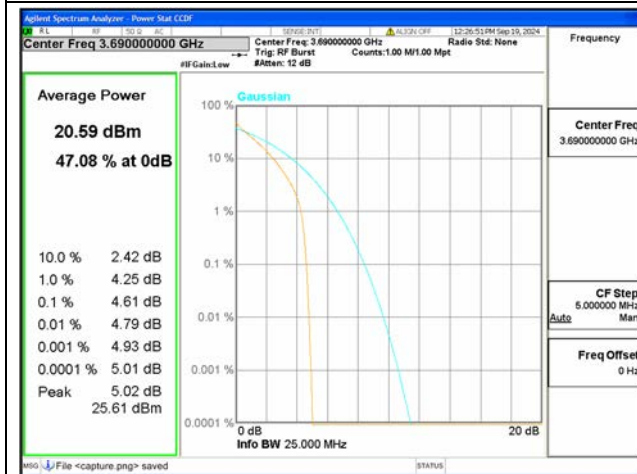
B48 / 20MHz / Mid CH / 16QAM



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



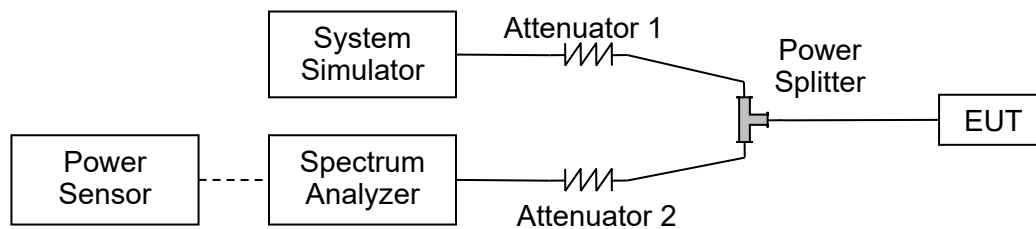
B48 / 20MHz / High CH / 256QAM

2.5. 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



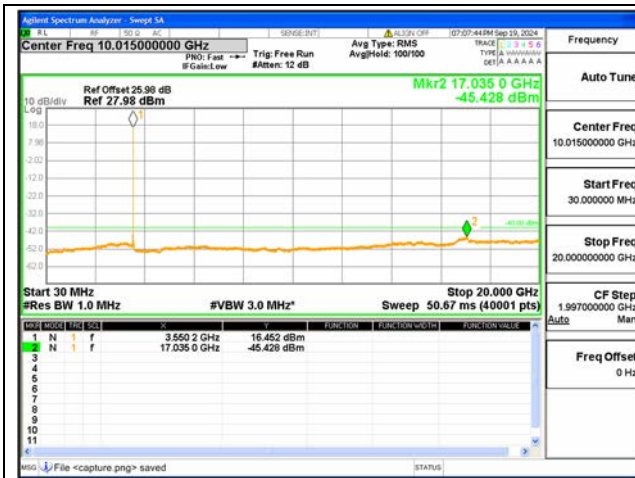
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum 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 / 5MHz / Low CH / QPSK



B48-20G-37G / 5MHz / Low CH / QPSK



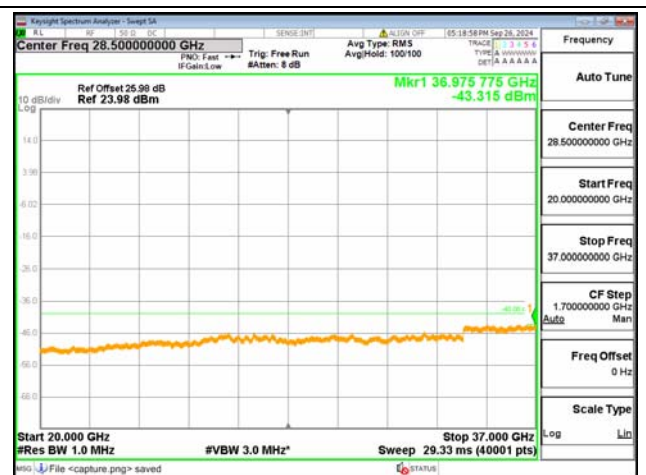
B48-30M-20G / 5MHz / Mid CH / QPSK



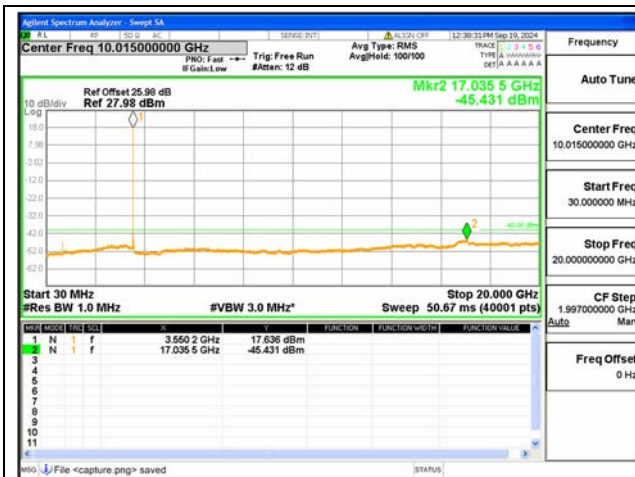
B48-20G-37G / 5MHz / Mid CH / QPSK



B48-30M-20G / 5MHz / High CH / QPSK



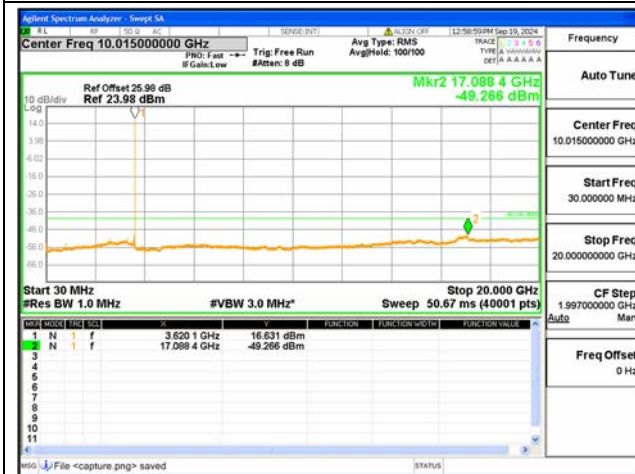
B48-20G-37G / 5MHz / High CH / QPSK



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



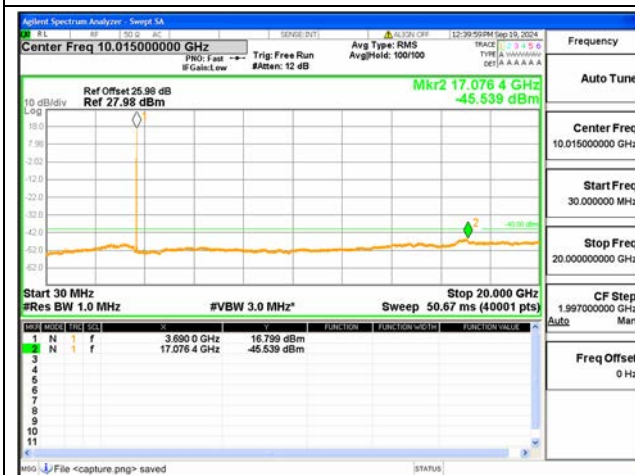
B48-20G-37G / 10MHz / Low CH / QPSK



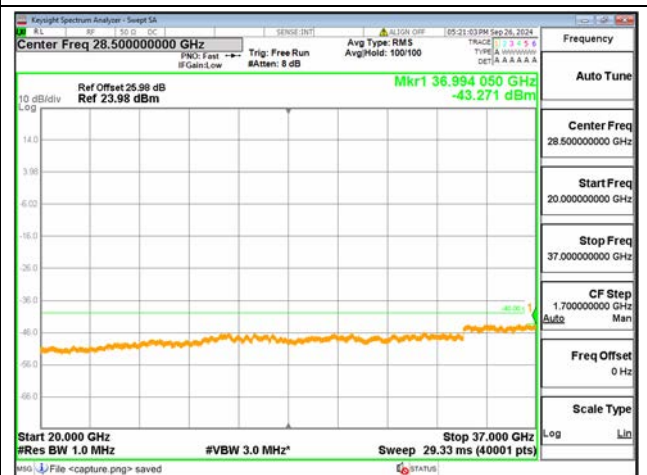
B48-30M-20G / 10MHz / Mid CH / QPSK



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



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



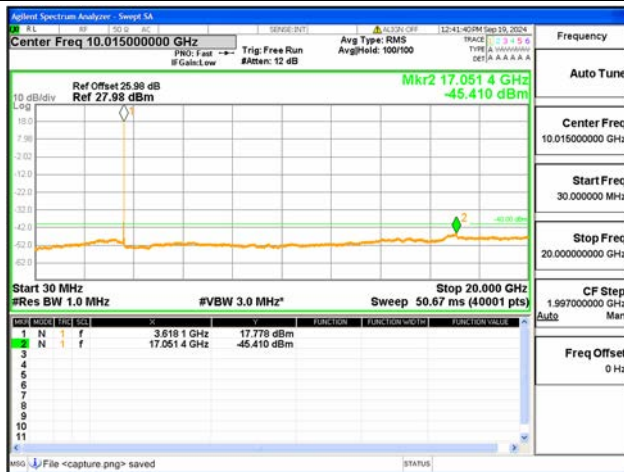
B48-20G-37G / 10MHz / High CH / QPSK



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



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



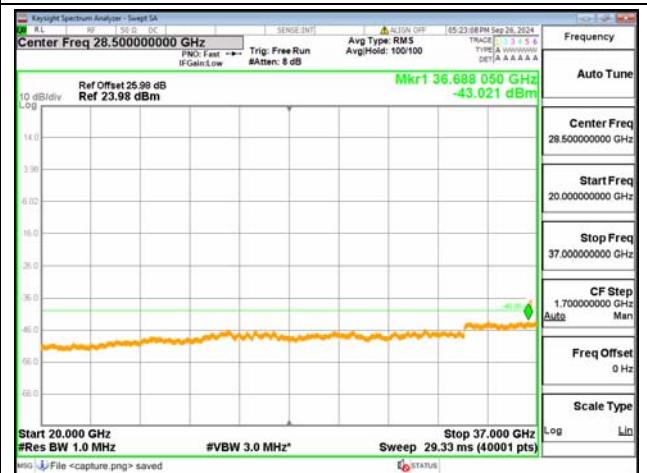
B48-30M-20G / 15MHz / Mid CH / QPSK



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



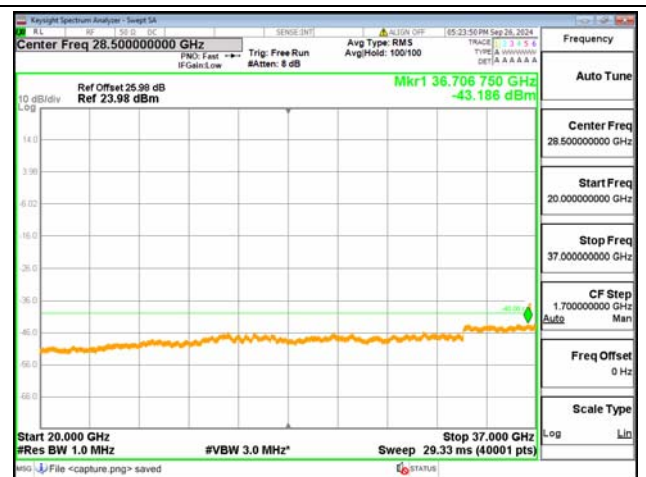
B48-30M-20G / 15MHz / High CH / QPSK



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



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



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



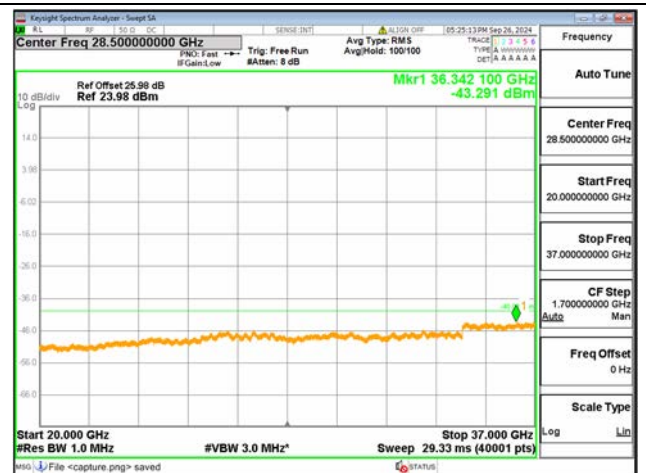
B48-30M-20G / 20MHz / Mid CH / QPSK



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.

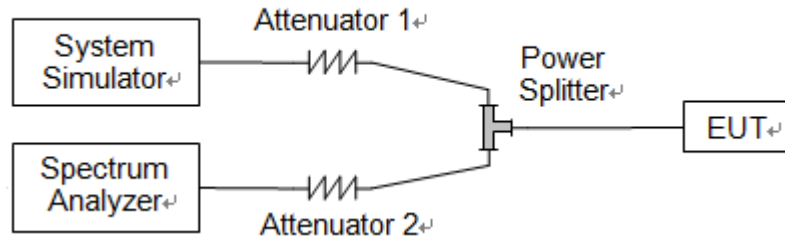
Part 96.41(e)(1)(ii)

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



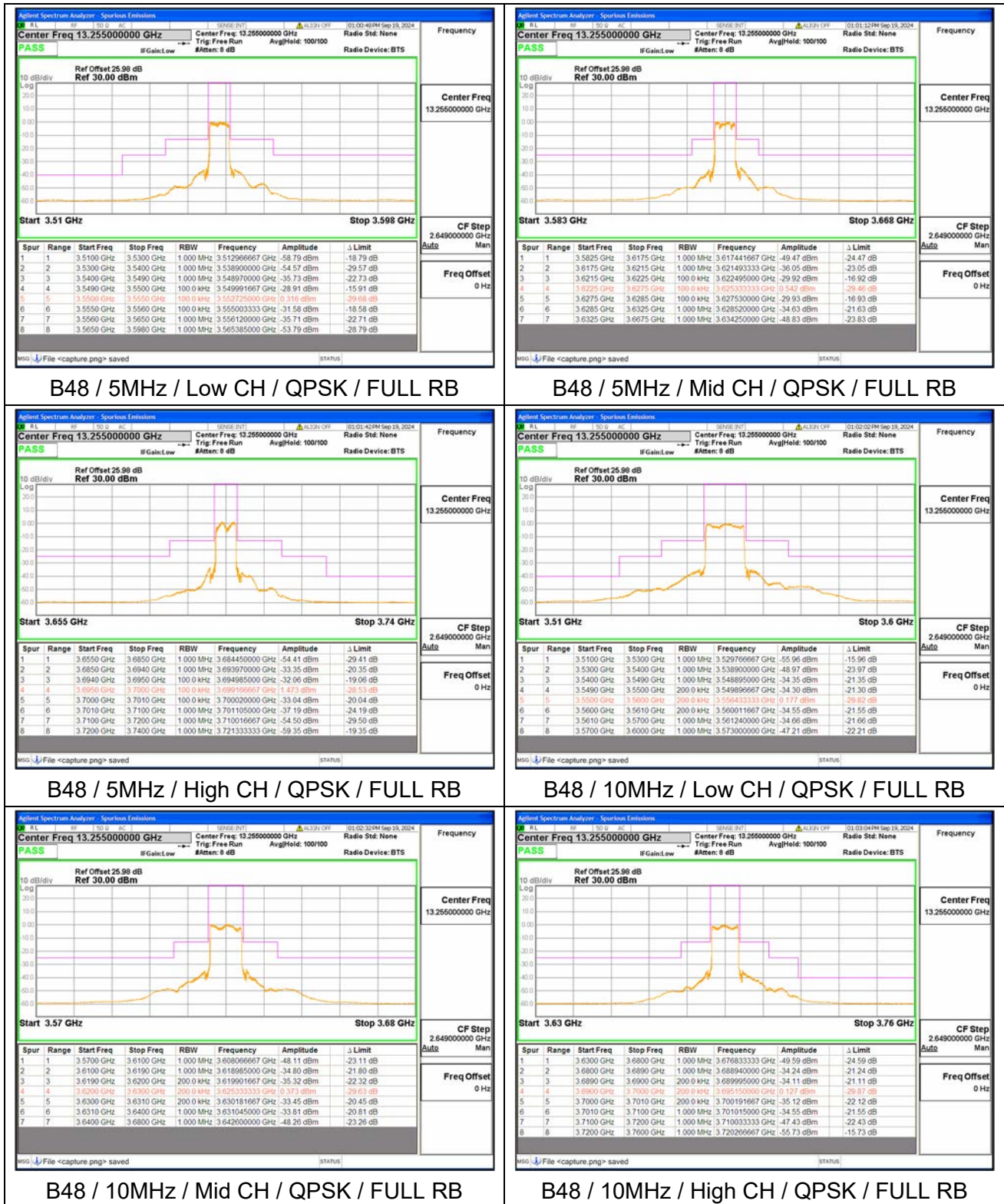
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

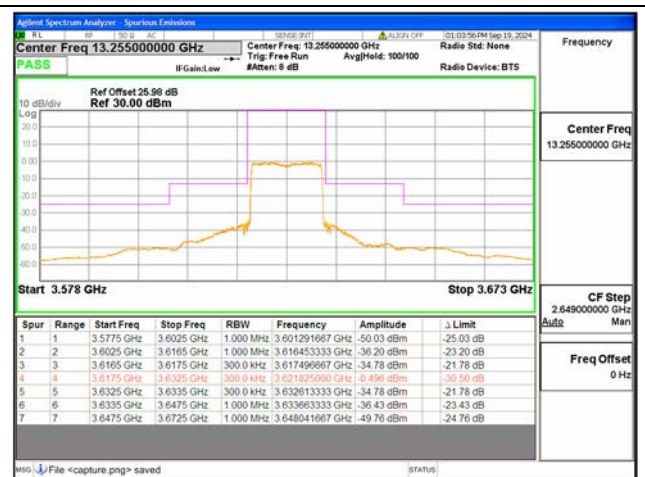


2.6.4. Test Result





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



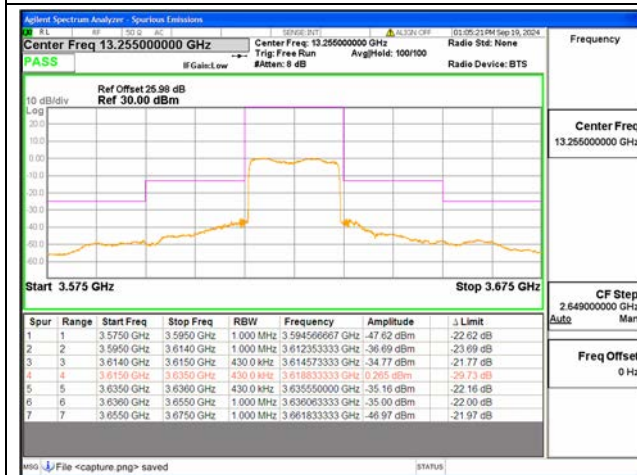
B48 / 15MHz / Mid CH / QPSK / FULL RB



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