



REPORT No.: SZ23070206W06

TEST REPORT

APPLICANT : Reliance Communications, LLC

PRODUCT NAME : Orbic Speed X 5G

MODEL NAME : R562L5

BRAND NAME : Orbic

FCC ID : 2ABGH-R562L5

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

RECEIPT DATE : 2023-09-26

TEST DATE : 2023-10-11 to 2023-12-27

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Edited by:

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Change History		
Version	Date	Reason for change
1.0	2024-04-08	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Reliance Communications, LLC
Applicant Address:	555 Wireless Blvd. Hauppauge, NY 11788, USA
Manufacturer:	MeiG Smart Technology Co., Ltd
Manufacturer Address:	2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen

1.2. Equipment Under Test (EUT) Description

Product Name:	Orbic Speed X 5G	
Sample No.:	3#	
Hardware Version:	SPEEDVZ_V1.02_PCB	
Software Version:	R562L5_8.222.41_EQ103	
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	ANT2: 0.7dBi; ANT5: 0.8dBi
Carrier Aggregation(UL):	48C	
Accessory Information:	Battery	
	Brand Name:	Orbic
	Model No.:	R562L5
	Serial No.:	N/A
	Capacity:	5000mAh
	Rated Voltage:	3.85V
	Charge Limit:	4.4V
	Manufacturer:	Shenzhen Aerospace Electronic Co.,Ltd



Accessory Information:	AC Adapter	
	Brand Name:	Orbic
	Model No.:	OACH023US1
	Serial No.:	N/A
	Rated Output:	5V $\Rightarrow$ 3A or 9V $\Rightarrow$ 2A or 12V $\Rightarrow$ 1.5A
	Rated Input:	100-240V $\sim$ 50/60Hz, 0.5A
	Manufacturer 1:	WATAI ELECTRONICS PRIVATE LIMITED
	Manufacturer 2:	KANGYIN ELECTRONIC TECHNOLOGY CO.,LTD
	USB Cable	
	Model No.:	OAUC023US1
	Manufacturer:	KANGYIN ELECTRONIC TECHNOLOGY 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

ANT 2:

LTE Band 48	Maximum E.R.P./E.I.R.P. (W)			
BW(MHz)	QPSK	16QAM	64QAM	256QAM
20	0.193	0.156	0.124	0.062
15	0.191	0.158	0.123	0.061
10	0.189	0.158	0.123	0.062
5	0.190	0.156	0.123	0.061

ANT 5:

LTE Band 48	Maximum E.R.P./E.I.R.P. (W)			
BW(MHz)	QPSK	16QAM	64QAM	256QAM
20	0.192	0.160	0.126	0.063
15	0.191	0.159	0.124	0.062
10	0.190	0.159	0.125	0.062
5	0.191	0.157	0.124	0.062

LTE Band 48	Emission Designator (99%OBW)			
BW(MHz)	QPSK	16QAM	64QAM	256QAM
20	18M0G7D	18M0W7D	17M9W7D	18M0W7D
15	13M5G7D	13M5W7D	13M5W7D	13M5W7D
10	9M02G7D	8M99W7D	9M03W7D	9M03W7D
5	4M52G7D	4M53W7D	4M51W7D	4M53W7D



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	Dec. 10, 2023	Zheng Jianhua Li Huaijie	PASS	No deviation
2.1049	Occupied Bandwidth	Oct. 17&19, 2023	Li Huaijie	PASS	No deviation
96.41(g)	Peak -Average Ratio	Oct. 17&19, 2023	Li Huaijie	PASS	No deviation
2.1055	Frequency Stability	Oct. 11, 2023	Li Huaijie	PASS	No deviation
2.1051, 96.41(e)	Conducted Spurious Emissions	Oct. 11&19, 2023	Li Huaijie	PASS	No deviation
2.1051, 96.41(e)	Band Edge	Oct. 11&18, 2023	Li Huaijie	PASS	No deviation
2.1053, 96.41(e)	Radiated Spurious Emissions	Dec. 27, 2023	Su Zhan	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: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipment. The ref offset 24.5dB contains two parts that cable loss 14.5dB and Attenuator 10dB.

Note 3: 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 4: 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.

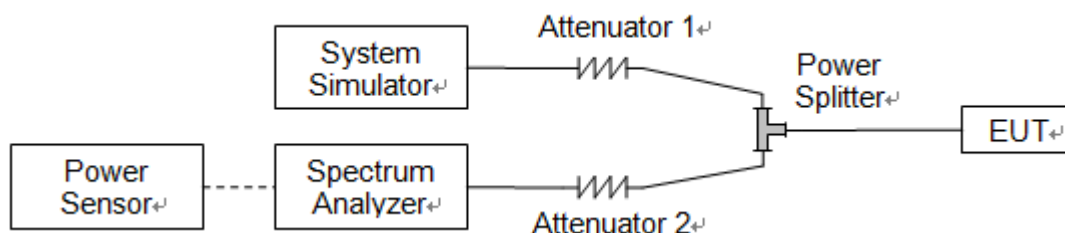
2.1.1. Requirement

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.



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 2:**

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	22.09	22.15	21.98
20	QPSK	1	49	22.00	21.90	21.88
20	QPSK	1	99	22.09	22.05	21.87
20	QPSK	50	0	21.08	21.17	21.16
20	QPSK	50	24	21.14	21.05	20.87
20	QPSK	50	50	21.16	21.01	20.74
20	QPSK	100	0	21.15	21.17	21.04
20	16QAM	1	0	21.23	21.19	21.14
20	16QAM	1	49	21.16	21.13	21.09
20	16QAM	1	99	21.09	21.18	21.06
20	16QAM	50	0	20.24	20.06	19.91
20	16QAM	50	24	20.18	20.09	19.94
20	16QAM	50	50	20.15	19.94	19.90
20	16QAM	100	0	20.06	20.09	20.04
20	64QAM	1	0	20.14	20.12	20.06
20	64QAM	1	49	20.13	20.03	19.96
20	64QAM	1	99	20.07	20.07	20.01
20	64QAM	50	0	20.19	20.00	19.77
20	64QAM	50	24	20.09	20.03	19.95
20	64QAM	50	50	19.96	19.98	19.89
20	64QAM	100	0	20.22	20.21	20.11
20	256QAM	1	0	17.19	17.17	17.11
20	256QAM	1	49	17.18	17.08	17.01
20	256QAM	1	99	17.12	17.12	17.06
20	256QAM	50	0	17.24	17.05	16.82
20	256QAM	50	24	17.14	17.08	17.00
20	256QAM	50	50	17.01	17.03	16.94
20	256QAM	100	0	17.20	17.19	17.09



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	22.01	22.11	21.86
15	QPSK	1	37	21.96	21.85	21.86
15	QPSK	1	74	21.97	21.92	21.83
15	QPSK	36	0	21.18	21.26	21.02
15	QPSK	36	20	21.14	21.12	20.92
15	QPSK	36	39	21.26	21.09	20.83
15	QPSK	75	0	21.17	21.09	20.88
15	16QAM	1	0	21.30	21.19	21.19
15	16QAM	1	37	21.18	21.22	21.10
15	16QAM	1	74	21.16	21.19	21.05
15	16QAM	36	0	20.28	20.09	19.97
15	16QAM	36	20	20.28	20.14	20.02
15	16QAM	36	39	20.15	19.96	20.00
15	16QAM	75	0	20.13	20.19	20.12
15	64QAM	1	0	20.14	20.17	20.07
15	64QAM	1	37	20.21	20.10	19.98
15	64QAM	1	74	20.15	20.07	20.08
15	64QAM	36	0	20.18	20.01	19.83
15	64QAM	36	20	20.09	20.04	20.02
15	64QAM	36	39	19.98	19.97	19.92
15	64QAM	75	0	20.15	20.09	20.09
15	256QAM	1	0	17.08	17.11	17.01
15	256QAM	1	37	17.15	17.04	16.92
15	256QAM	1	74	17.09	17.01	17.02
15	256QAM	36	0	17.12	16.95	16.77
15	256QAM	36	20	17.03	16.98	16.96
15	256QAM	36	39	16.96	16.95	16.90
15	256QAM	75	0	17.13	17.07	17.07



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	21.97	22.07	21.86
10	QPSK	1	25	21.89	21.83	21.85
10	QPSK	1	49	22.02	21.92	21.87
10	QPSK	25	0	21.25	21.22	20.96
10	QPSK	25	12	21.24	21.15	20.88
10	QPSK	25	25	21.26	21.10	20.83
10	QPSK	50	0	21.22	21.16	20.90
10	16QAM	1	0	21.30	21.21	21.18
10	16QAM	1	25	21.21	21.14	21.11
10	16QAM	1	49	21.17	21.28	21.11
10	16QAM	25	0	20.24	20.09	19.93
10	16QAM	25	12	20.26	20.15	19.94
10	16QAM	25	25	20.19	19.98	19.91
10	16QAM	50	0	20.07	20.16	20.13
10	64QAM		0	20.20	20.13	20.11
10	64QAM	1	25	20.21	20.06	19.98
10	64QAM	1	49	20.06	20.10	20.02
10	64QAM	25	0	20.19	20.01	19.87
10	64QAM	25	12	20.16	20.04	20.04
10	64QAM	25	25	20.06	20.06	19.93
10	64QAM	50	0	20.21	20.17	20.07
10	256QAM	1	0	17.14	17.07	17.05
10	256QAM	1	25	17.15	17.00	16.92
10	256QAM	1	49	17.00	17.04	16.96
10	256QAM	25	0	17.13	16.95	16.81
10	256QAM	25	12	17.10	16.98	16.98
10	256QAM	25	25	17.00	17.00	16.87
10	256QAM	50	0	17.19	17.15	17.05



LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55265	55990	56175
Frequency (MHz)				3552.5	3625	3697.5
5	QPSK	1	0	21.95	22.09	21.94
5	QPSK	1	12	21.95	21.87	21.90
5	QPSK	1	24	22.01	21.90	21.89
5	QPSK	12	0	21.25	21.23	20.97
5	QPSK	12	7	21.17	21.08	20.94
5	QPSK	12	13	21.15	21.05	20.84
5	QPSK	25	0	21.15	21.10	20.84
5	16QAM	1	0	21.24	21.24	21.23
5	16QAM	1	12	21.17	21.13	21.13
5	16QAM	1	24	21.09	21.17	21.07
5	16QAM	12	0	20.24	20.13	19.91
5	16QAM	12	7	20.18	20.13	19.96
5	16QAM	12	13	20.18	19.98	19.93
5	16QAM	25	0	20.12	20.15	20.09
5	64QAM	1	0	20.19	20.15	20.08
5	64QAM	1	12	20.13	20.07	20.03
5	64QAM	1	24	20.08	20.16	20.10
5	64QAM	12	0	20.19	20.04	19.82
5	64QAM	12	7	20.04	19.98	19.92
5	64QAM	12	13	19.94	19.94	19.87
5	64QAM	25	0	20.14	20.16	20.08
5	256QAM	1	0	17.13	17.09	17.02
5	256QAM	1	12	17.07	17.01	16.97
5	256QAM	1	24	17.02	17.10	17.04
5	256QAM	12	0	17.17	17.02	16.80
5	256QAM	12	7	17.02	16.96	16.90
5	256QAM	12	13	16.92	16.92	16.85
5	256QAM	25	0	17.12	17.14	17.06

**ANT 5:**

LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55340	55990	56640
Frequency (MHz)				3560	3625	3690
20	QPSK	1	0	21.97	22.03	21.86
20	QPSK	1	49	21.88	21.78	21.76
20	QPSK	1	99	21.97	21.93	21.75
20	QPSK	50	0	21.20	21.21	21.04
20	QPSK	50	24	21.16	21.07	20.89
20	QPSK	50	50	21.18	21.03	20.76
20	QPSK	100	0	21.17	21.19	21.06
20	16QAM	1	0	21.25	21.21	21.16
20	16QAM	1	49	21.18	21.15	21.11
20	16QAM	1	99	21.11	21.20	21.08
20	16QAM	50	0	20.26	20.08	19.93
20	16QAM	50	24	20.20	20.11	19.96
20	16QAM	50	50	20.17	19.96	19.92
20	16QAM	100	0	20.08	20.11	20.06
20	64QAM	1	0	20.16	20.14	20.08
20	64QAM	1	49	20.15	20.05	19.98
20	64QAM	1	99	20.09	20.09	20.03
20	64QAM	50	0	20.21	20.02	19.79
20	64QAM	50	24	20.11	20.05	19.97
20	64QAM	50	50	19.98	20.00	19.91
20	64QAM	100	0	20.17	20.16	20.06
20	256QAM	1	0	17.14	17.12	17.06
20	256QAM	1	49	17.13	17.03	16.96
20	256QAM	1	99	17.07	17.07	17.01
20	256QAM	50	0	17.19	17.00	16.77
20	256QAM	50	24	17.09	17.03	16.95
20	256QAM	50	50	16.96	16.98	16.89
20	256QAM	100	0	17.15	17.14	17.04



LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55315	55990	56665
Frequency (MHz)				3557.5	3625	3692.5
15	QPSK	1	0	21.92	22.02	21.77
15	QPSK	1	37	21.87	21.76	21.77
15	QPSK	1	74	21.88	21.83	21.74
15	QPSK	36	0	21.09	21.17	20.93
15	QPSK	36	20	21.05	21.03	20.83
15	QPSK	36	39	21.17	21.00	20.74
15	QPSK	75	0	21.08	21.00	20.79
15	16QAM	1	0	21.21	21.10	21.10
15	16QAM	1	37	21.09	21.13	21.01
15	16QAM	1	74	21.07	21.10	20.96
15	16QAM	36	0	20.19	20.00	19.88
15	16QAM	36	20	20.19	20.05	19.93
15	16QAM	36	39	20.06	19.87	19.91
15	16QAM	75	0	20.04	20.10	20.03
15	64QAM	1	0	20.05	20.08	19.98
15	64QAM	1	37	20.12	20.01	19.89
15	64QAM	1	74	20.06	19.98	19.99
15	64QAM	36	0	20.09	19.92	19.74
15	64QAM	36	20	20.00	19.95	19.93
15	64QAM	36	39	19.93	19.92	19.87
15	64QAM	75	0	20.10	20.04	20.04
15	256QAM	1	0	17.03	17.06	16.96
15	256QAM	1	37	17.10	16.99	16.87
15	256QAM	1	74	17.04	16.96	16.97
15	256QAM	36	0	17.07	16.90	16.72
15	256QAM	36	20	16.98	16.93	16.91
15	256QAM	36	39	16.91	16.90	16.85
15	256QAM	75	0	17.08	17.02	17.02



LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55290	55990	56690
Frequency (MHz)				3555	3625	3695
10	QPSK		0	21.88	21.98	21.77
10	QPSK	1	25	21.80	21.74	21.76
10	QPSK	1	49	21.93	21.83	21.78
10	QPSK	25	0	21.16	21.13	20.87
10	QPSK	25	12	21.15	21.06	20.79
10	QPSK	25	25	21.17	21.01	20.74
10	QPSK	50	0	21.13	21.07	20.81
10	16QAM	1	0	21.21	21.12	21.09
10	16QAM	1	25	21.12	21.05	21.02
10	16QAM	1	49	21.08	21.19	21.02
10	16QAM	25	0	20.15	20.00	19.84
10	16QAM	25	12	20.17	20.06	19.85
10	16QAM	25	25	20.10	19.89	19.82
10	16QAM	50	0	19.98	20.07	20.04
10	64QAM		0	20.11	20.04	20.02
10	64QAM	1	25	20.12	19.97	19.89
10	64QAM	1	49	19.97	20.01	19.93
10	64QAM	25	0	20.10	19.92	19.78
10	64QAM	25	12	20.07	19.95	19.95
10	64QAM	25	25	19.97	19.97	19.84
10	64QAM	50	0	20.16	20.12	20.02
10	256QAM	1	0	17.09	17.02	17.00
10	256QAM	1	25	17.10	16.95	16.87
10	256QAM	1	49	16.95	16.99	16.91
10	256QAM	25	0	17.08	16.90	16.76
10	256QAM	25	12	17.05	16.93	16.93
10	256QAM	25	25	16.95	16.95	16.82
10	256QAM	50	0	17.14	17.10	17.00



LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55265	55990	56175
Frequency (MHz)				3552.5	3625	3697.5
5	QPSK	1	0	21.86	22.00	21.85
5	QPSK	1	12	21.86	21.78	21.81
5	QPSK	1	24	21.92	21.81	21.80
5	QPSK	12	0	21.16	21.14	20.88
5	QPSK	12	7	21.08	20.99	20.85
5	QPSK	12	13	21.06	20.96	20.75
5	QPSK	25	0	21.06	21.01	20.75
5	16QAM	1	0	21.15	21.15	21.14
5	16QAM	1	12	21.08	21.04	21.04
5	16QAM	1	24	21.00	21.08	20.98
5	16QAM	12	0	20.15	20.04	19.82
5	16QAM	12	7	20.09	20.04	19.87
5	16QAM	12	13	20.09	19.89	19.84
5	16QAM	25	0	20.03	20.06	20.00
5	64QAM	1	0	20.10	20.06	19.99
5	64QAM	1	12	20.04	19.98	19.94
5	64QAM	1	24	19.99	20.07	20.01
5	64QAM	12	0	20.14	19.99	19.77
5	64QAM	12	7	19.99	19.93	19.87
5	64QAM	12	13	19.89	19.89	19.82
5	64QAM	25	0	20.09	20.11	20.03
5	256QAM	1	0	17.08	17.04	16.97
5	256QAM	1	12	17.02	16.96	16.92
5	256QAM	1	24	16.97	17.05	16.99
5	256QAM	12	0	17.12	16.97	16.75
5	256QAM	12	7	16.97	16.91	16.85
5	256QAM	12	13	16.87	16.87	16.80
5	256QAM	25	0	17.07	17.09	17.01

**Effective Radiated Power and Effective Isotropic Radiated Power:****ANT 2:**

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	22.79	0.190	22.85	0.193	22.68	0.185
20	QPSK	1	49	22.70	0.186	22.60	0.182	22.58	0.181
20	QPSK	1	99	22.79	0.190	22.75	0.188	22.57	0.181
20	QPSK	50	0	21.78	0.151	21.87	0.154	21.86	0.153
20	QPSK	50	24	21.84	0.153	21.75	0.150	21.57	0.144
20	QPSK	50	50	21.86	0.153	21.71	0.148	21.44	0.139
20	QPSK	100	0	21.85	0.153	21.87	0.154	21.74	0.149
20	16QAM	1	0	21.93	0.156	21.89	0.155	21.84	0.153
20	16QAM	1	49	21.86	0.153	21.83	0.152	21.79	0.151
20	16QAM	1	99	21.79	0.151	21.88	0.154	21.76	0.150
20	16QAM	50	0	20.94	0.124	20.76	0.119	20.61	0.115
20	16QAM	50	24	20.88	0.122	20.79	0.120	20.64	0.116
20	16QAM	50	50	20.85	0.122	20.64	0.116	20.60	0.115
20	16QAM	100	0	20.76	0.119	20.79	0.120	20.74	0.119
20	64QAM	1	0	20.84	0.121	20.82	0.121	20.76	0.119
20	64QAM	1	49	20.83	0.121	20.73	0.118	20.66	0.116
20	64QAM	1	99	20.77	0.119	20.77	0.119	20.71	0.118
20	64QAM	50	0	20.89	0.123	20.70	0.117	20.47	0.111
20	64QAM	50	24	20.79	0.120	20.73	0.118	20.65	0.116
20	64QAM	50	50	20.66	0.116	20.68	0.117	20.59	0.115
20	64QAM	100	0	20.92	0.124	20.91	0.123	20.81	0.121
20	256QAM	1	0	17.89	0.062	17.87	0.061	17.81	0.060
20	256QAM	1	49	17.88	0.061	17.78	0.060	17.71	0.059
20	256QAM	1	99	17.82	0.061	17.82	0.061	17.76	0.060
20	256QAM	50	0	17.94	0.062	17.75	0.060	17.52	0.056
20	256QAM	50	24	17.84	0.061	17.78	0.060	17.70	0.059
20	256QAM	50	50	17.71	0.059	17.73	0.059	17.64	0.058
20	256QAM	100	0	17.90	0.062	17.89	0.062	17.79	0.060



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	22.71	0.187	22.81	0.191	22.56	0.180
15	QPSK	1	37	22.66	0.185	22.55	0.180	22.56	0.180
15	QPSK	1	74	22.67	0.185	22.62	0.183	22.53	0.179
15	QPSK	36	0	21.88	0.154	21.96	0.157	21.72	0.149
15	QPSK	36	20	21.84	0.153	21.82	0.152	21.62	0.145
15	QPSK	36	39	21.96	0.157	21.79	0.151	21.53	0.142
15	QPSK	75	0	21.87	0.154	21.79	0.151	21.58	0.144
15	16QAM	1	0	22.00	0.158	21.89	0.155	21.89	0.155
15	16QAM	1	37	21.88	0.154	21.92	0.156	21.80	0.151
15	16QAM	1	74	21.86	0.153	21.89	0.155	21.75	0.150
15	16QAM	36	0	20.98	0.125	20.79	0.120	20.67	0.117
15	16QAM	36	20	20.98	0.125	20.84	0.121	20.72	0.118
15	16QAM	36	39	20.85	0.122	20.66	0.116	20.70	0.117
15	16QAM	75	0	20.83	0.121	20.89	0.123	20.82	0.121
15	64QAM	1	0	20.84	0.121	20.87	0.122	20.77	0.119
15	64QAM	1	37	20.91	0.123	20.80	0.120	20.68	0.117
15	64QAM	1	74	20.85	0.122	20.77	0.119	20.78	0.120
15	64QAM	36	0	20.88	0.122	20.71	0.118	20.53	0.113
15	64QAM	36	20	20.79	0.120	20.74	0.119	20.72	0.118
15	64QAM	36	39	20.68	0.117	20.67	0.117	20.62	0.115
15	64QAM	75	0	20.85	0.122	20.79	0.120	20.79	0.120
15	256QAM	1	0	17.78	0.060	17.81	0.060	17.71	0.059
15	256QAM	1	37	17.85	0.061	17.74	0.059	17.62	0.058
15	256QAM	1	74	17.79	0.060	17.71	0.059	17.72	0.059
15	256QAM	36	0	17.82	0.061	17.65	0.058	17.47	0.056
15	256QAM	36	20	17.73	0.059	17.68	0.059	17.66	0.058
15	256QAM	36	39	17.66	0.058	17.65	0.058	17.60	0.058
15	256QAM	75	0	17.83	0.061	17.77	0.060	17.77	0.060



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	22.67	0.185	22.77	0.189	22.56	0.180
10	QPSK	1	25	22.59	0.182	22.53	0.179	22.55	0.180
10	QPSK	1	49	22.72	0.187	22.62	0.183	22.57	0.181
10	QPSK	25	0	21.95	0.157	21.92	0.156	21.66	0.147
10	QPSK	25	12	21.94	0.156	21.85	0.153	21.58	0.144
10	QPSK	25	25	21.96	0.157	21.80	0.151	21.53	0.142
10	QPSK	50	0	21.92	0.156	21.86	0.153	21.60	0.145
10	16QAM	1	0	22.00	0.158	21.91	0.155	21.88	0.154
10	16QAM	1	25	21.91	0.155	21.84	0.153	21.81	0.152
10	16QAM	1	49	21.87	0.154	21.98	0.158	21.81	0.152
10	16QAM	25	0	20.94	0.124	20.79	0.120	20.63	0.116
10	16QAM	25	12	20.96	0.125	20.85	0.122	20.64	0.116
10	16QAM	25	25	20.89	0.123	20.68	0.117	20.61	0.115
10	16QAM	50	0	20.77	0.119	20.86	0.122	20.83	0.121
10	64QAM	1	0	20.90	0.123	20.83	0.121	20.81	0.121
10	64QAM	1	25	20.91	0.123	20.76	0.119	20.68	0.117
10	64QAM	1	49	20.76	0.119	20.80	0.120	20.72	0.118
10	64QAM	25	0	20.89	0.123	20.71	0.118	20.57	0.114
10	64QAM	25	12	20.86	0.122	20.74	0.119	20.74	0.119
10	64QAM	25	25	20.76	0.119	20.76	0.119	20.63	0.116
10	64QAM	50	0	20.91	0.123	20.87	0.122	20.77	0.119
10	256QAM	1	0	17.84	0.061	17.77	0.060	17.75	0.060
10	256QAM	1	25	17.85	0.061	17.70	0.059	17.62	0.058
10	256QAM	1	49	17.70	0.059	17.74	0.059	17.66	0.058
10	256QAM	25	0	17.83	0.061	17.65	0.058	17.51	0.056
10	256QAM	25	12	17.80	0.060	17.68	0.059	17.68	0.059
10	256QAM	25	25	17.70	0.059	17.70	0.059	17.57	0.057
10	256QAM	50	0	17.89	0.062	17.85	0.061	17.75	0.060



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	22.65	0.184	22.79	0.190	22.64	0.184
5	QPSK	1	12	22.65	0.184	22.57	0.181	22.60	0.182
5	QPSK	1	24	22.71	0.187	22.60	0.182	22.59	0.182
5	QPSK	12	0	21.95	0.157	21.93	0.156	21.67	0.147
5	QPSK	12	7	21.87	0.154	21.78	0.151	21.64	0.146
5	QPSK	12	13	21.85	0.153	21.75	0.150	21.54	0.143
5	QPSK	25	0	21.85	0.153	21.80	0.151	21.54	0.143
5	16QAM	1	0	21.94	0.156	21.94	0.156	21.93	0.156
5	16QAM	1	12	21.87	0.154	21.83	0.152	21.83	0.152
5	16QAM	1	24	21.79	0.151	21.87	0.154	21.77	0.150
5	16QAM	12	0	20.94	0.124	20.83	0.121	20.61	0.115
5	16QAM	12	7	20.88	0.122	20.83	0.121	20.66	0.116
5	16QAM	12	13	20.88	0.122	20.68	0.117	20.63	0.116
5	16QAM	25	0	20.82	0.121	20.85	0.122	20.79	0.120
5	64QAM	1	0	20.89	0.123	20.85	0.122	20.78	0.120
5	64QAM	1	12	20.83	0.121	20.77	0.119	20.73	0.118
5	64QAM	1	24	20.78	0.120	20.86	0.122	20.80	0.120
5	64QAM	12	0	20.89	0.123	20.74	0.119	20.52	0.113
5	64QAM	12	7	20.74	0.119	20.68	0.117	20.62	0.115
5	64QAM	12	13	20.64	0.116	20.64	0.116	20.57	0.114
5	64QAM	25	0	20.84	0.121	20.86	0.122	20.78	0.120
5	256QAM	1	0	17.83	0.061	17.79	0.060	17.72	0.059
5	256QAM	1	12	17.77	0.060	17.71	0.059	17.67	0.058
5	256QAM	1	24	17.72	0.059	17.80	0.060	17.74	0.059
5	256QAM	12	0	17.87	0.061	17.72	0.059	17.50	0.056
5	256QAM	12	7	17.72	0.059	17.66	0.058	17.60	0.058
5	256QAM	12	13	17.62	0.058	17.62	0.058	17.55	0.057
5	256QAM	25	0	17.82	0.061	17.84	0.061	17.76	0.060

**ANT 5:**

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	22.77	0.189	22.83	0.192	22.66	0.185
20	QPSK	1	49	22.68	0.185	22.58	0.181	22.56	0.180
20	QPSK	1	99	22.77	0.189	22.73	0.187	22.55	0.180
20	QPSK	50	0	22.00	0.158	22.01	0.159	21.84	0.153
20	QPSK	50	24	21.96	0.157	21.87	0.154	21.69	0.148
20	QPSK	50	50	21.98	0.158	21.83	0.152	21.56	0.143
20	QPSK	100	0	21.97	0.157	21.99	0.158	21.86	0.153
20	16QAM	1	0	22.05	0.160	22.01	0.159	21.96	0.157
20	16QAM	1	49	21.98	0.158	21.95	0.157	21.91	0.155
20	16QAM	1	99	21.91	0.155	22.00	0.158	21.88	0.154
20	16QAM	50	0	21.06	0.128	20.88	0.122	20.73	0.118
20	16QAM	50	24	21.00	0.126	20.91	0.123	20.76	0.119
20	16QAM	50	50	20.97	0.125	20.76	0.119	20.72	0.118
20	16QAM	100	0	20.88	0.122	20.91	0.123	20.86	0.122
20	64QAM	1	0	20.96	0.125	20.94	0.124	20.88	0.122
20	64QAM	1	49	20.95	0.124	20.85	0.122	20.78	0.120
20	64QAM	1	99	20.89	0.123	20.89	0.123	20.83	0.121
20	64QAM	50	0	21.01	0.126	20.82	0.121	20.59	0.115
20	64QAM	50	24	20.91	0.123	20.85	0.122	20.77	0.119
20	64QAM	50	50	20.78	0.120	20.80	0.120	20.71	0.118
20	64QAM	100	0	20.97	0.125	20.96	0.125	20.86	0.122
20	256QAM	1	0	17.94	0.062	17.92	0.062	17.86	0.061
20	256QAM	1	49	17.93	0.062	17.83	0.061	17.76	0.060
20	256QAM	1	99	17.87	0.061	17.87	0.061	17.81	0.060
20	256QAM	50	0	17.99	0.063	17.80	0.060	17.57	0.057
20	256QAM	50	24	17.89	0.062	17.83	0.061	17.75	0.060
20	256QAM	50	50	17.76	0.060	17.78	0.060	17.69	0.059
20	256QAM	100	0	17.95	0.062	17.94	0.062	17.84	0.061



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	22.72	0.187	22.82	0.191	22.57	0.181
15	QPSK	1	37	22.67	0.185	22.56	0.180	22.57	0.181
15	QPSK	1	74	22.68	0.185	22.63	0.183	22.54	0.179
15	QPSK	36	0	21.89	0.155	21.97	0.157	21.73	0.149
15	QPSK	36	20	21.85	0.153	21.83	0.152	21.63	0.146
15	QPSK	36	39	21.97	0.157	21.80	0.151	21.54	0.143
15	QPSK	75	0	21.88	0.154	21.80	0.151	21.59	0.144
15	16QAM	1	0	22.01	0.159	21.90	0.155	21.90	0.155
15	16QAM	1	37	21.89	0.155	21.93	0.156	21.81	0.152
15	16QAM	1	74	21.87	0.154	21.90	0.155	21.76	0.150
15	16QAM	36	0	20.99	0.126	20.80	0.120	20.68	0.117
15	16QAM	36	20	20.99	0.126	20.85	0.122	20.73	0.118
15	16QAM	36	39	20.86	0.122	20.67	0.117	20.71	0.118
15	16QAM	75	0	20.84	0.121	20.90	0.123	20.83	0.121
15	64QAM	1	0	20.85	0.122	20.88	0.122	20.78	0.120
15	64QAM	1	37	20.92	0.124	20.81	0.121	20.69	0.117
15	64QAM	1	74	20.86	0.122	20.78	0.120	20.79	0.120
15	64QAM	36	0	20.89	0.123	20.72	0.118	20.54	0.113
15	64QAM	36	20	20.80	0.120	20.75	0.119	20.73	0.118
15	64QAM	36	39	20.73	0.118	20.72	0.118	20.67	0.117
15	64QAM	75	0	20.90	0.123	20.84	0.121	20.84	0.121
15	256QAM	1	0	17.83	0.061	17.86	0.061	17.76	0.060
15	256QAM	1	37	17.90	0.062	17.79	0.060	17.67	0.058
15	256QAM	1	74	17.84	0.061	17.76	0.060	17.77	0.060
15	256QAM	36	0	17.87	0.061	17.70	0.059	17.52	0.056
15	256QAM	36	20	17.78	0.060	17.73	0.059	17.71	0.059
15	256QAM	36	39	17.71	0.059	17.70	0.059	17.65	0.058
15	256QAM	75	0	17.88	0.061	17.82	0.061	17.82	0.061



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	22.68	0.185	22.78	0.190	22.57	0.181
10	QPSK	1	25	22.60	0.182	22.54	0.179	22.56	0.180
10	QPSK	1	49	22.73	0.187	22.63	0.183	22.58	0.181
10	QPSK	25	0	21.96	0.157	21.93	0.156	21.67	0.147
10	QPSK	25	12	21.95	0.157	21.86	0.153	21.59	0.144
10	QPSK	25	25	21.97	0.157	21.81	0.152	21.54	0.143
10	QPSK	50	0	21.93	0.156	21.87	0.154	21.61	0.145
10	16QAM	1	0	22.01	0.159	21.92	0.156	21.89	0.155
10	16QAM	1	25	21.92	0.156	21.85	0.153	21.82	0.152
10	16QAM	1	49	21.88	0.154	21.99	0.158	21.82	0.152
10	16QAM	25	0	20.95	0.124	20.80	0.120	20.64	0.116
10	16QAM	25	12	20.97	0.125	20.86	0.122	20.65	0.116
10	16QAM	25	25	20.90	0.123	20.69	0.117	20.62	0.115
10	16QAM	50	0	20.78	0.120	20.87	0.122	20.84	0.121
10	64QAM	1	0	20.91	0.123	20.84	0.121	20.82	0.121
10	64QAM	1	25	20.92	0.124	20.77	0.119	20.69	0.117
10	64QAM	1	49	20.77	0.119	20.81	0.121	20.73	0.118
10	64QAM	25	0	20.90	0.123	20.72	0.118	20.58	0.114
10	64QAM	25	12	20.87	0.122	20.75	0.119	20.75	0.119
10	64QAM	25	25	20.77	0.119	20.77	0.119	20.64	0.116
10	64QAM	50	0	20.96	0.125	20.92	0.124	20.82	0.121
10	256QAM	1	0	17.89	0.062	17.82	0.061	17.80	0.060
10	256QAM	1	25	17.90	0.062	17.75	0.060	17.67	0.058
10	256QAM	1	49	17.75	0.060	17.79	0.060	17.71	0.059
10	256QAM	25	0	17.88	0.061	17.70	0.059	17.56	0.057
10	256QAM	25	12	17.85	0.061	17.73	0.059	17.73	0.059
10	256QAM	25	25	17.75	0.060	17.75	0.060	17.62	0.058
10	256QAM	50	0	17.94	0.062	17.90	0.062	17.80	0.060



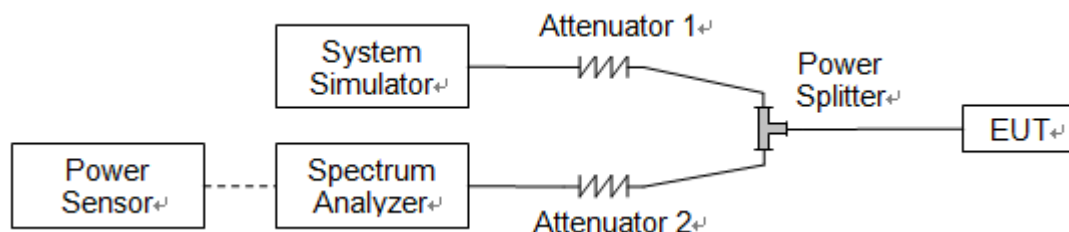
LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55265		55990		56175	
Frequency (MHz)				3552.5		3625		3697.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	22.66	0.185	22.80	0.191	22.65	0.184
5	QPSK	1	12	22.66	0.185	22.58	0.181	22.61	0.182
5	QPSK	1	24	22.72	0.187	22.61	0.182	22.60	0.182
5	QPSK	12	0	21.96	0.157	21.94	0.156	21.68	0.147
5	QPSK	12	7	21.88	0.154	21.79	0.151	21.65	0.146
5	QPSK	12	13	21.86	0.153	21.76	0.150	21.55	0.143
5	QPSK	25	0	21.86	0.153	21.81	0.152	21.55	0.143
5	16QAM	1	0	21.95	0.157	21.95	0.157	21.94	0.156
5	16QAM	1	12	21.88	0.154	21.84	0.153	21.84	0.153
5	16QAM	1	24	21.80	0.151	21.88	0.154	21.78	0.151
5	16QAM	12	0	20.95	0.124	20.84	0.121	20.62	0.115
5	16QAM	12	7	20.89	0.123	20.84	0.121	20.67	0.117
5	16QAM	12	13	20.89	0.123	20.69	0.117	20.64	0.116
5	16QAM	25	0	20.83	0.121	20.86	0.122	20.80	0.120
5	64QAM	1	0	20.90	0.123	20.86	0.122	20.79	0.120
5	64QAM	1	12	20.84	0.121	20.78	0.120	20.74	0.119
5	64QAM	1	24	20.79	0.120	20.87	0.122	20.81	0.121
5	64QAM	12	0	20.94	0.124	20.79	0.120	20.57	0.114
5	64QAM	12	7	20.79	0.120	20.73	0.118	20.67	0.117
5	64QAM	12	13	20.69	0.117	20.69	0.117	20.62	0.115
5	64QAM	25	0	20.89	0.123	20.91	0.123	20.83	0.121
5	256QAM	1	0	17.88	0.061	17.84	0.061	17.77	0.060
5	256QAM	1	12	17.82	0.061	17.76	0.060	17.72	0.059
5	256QAM	1	24	17.77	0.060	17.85	0.061	17.79	0.060
5	256QAM	12	0	17.92	0.062	17.77	0.060	17.55	0.057
5	256QAM	12	7	17.77	0.060	17.71	0.059	17.65	0.058
5	256QAM	12	13	17.67	0.058	17.67	0.058	17.60	0.058
5	256QAM	25	0	17.87	0.061	17.89	0.062	17.81	0.060

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.

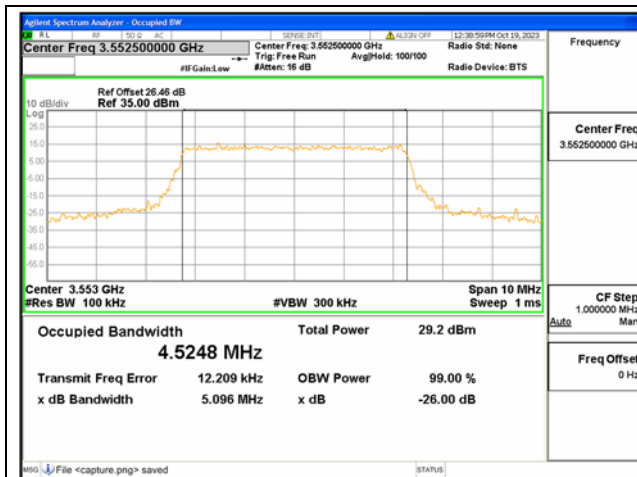
2.2.4. Test Result



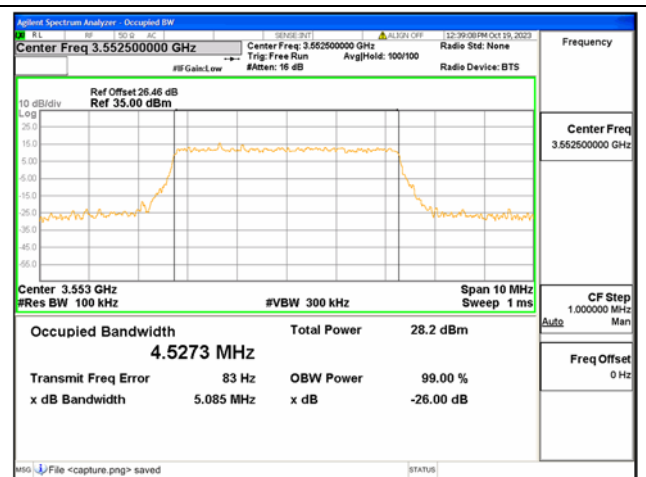
LTE Band	BW(MHz)	Channel Level	Channel	Frequency (MHz)	Modulation	99% BW (MHz)	26dB BW (MHz)	P/F
B48	5	Low	55265	3552.5	QPSK	4.52	5.10	PASS
B48	5	Low	55265	3552.5	16QAM	4.53	5.09	PASS
B48	5	Low	55265	3552.5	64QAM	4.51	5.15	PASS
B48	5	Low	55265	3552.5	256QAM	4.51	5.06	PASS
B48	5	Mid	55990	3625	QPSK	4.51	5.04	PASS
B48	5	Mid	55990	3625	16QAM	4.51	5.01	PASS
B48	5	Mid	55990	3625	64QAM	4.51	4.99	PASS
B48	5	Mid	55990	3625	256QAM	4.53	4.97	PASS
B48	5	High	56715	3697.5	QPSK	4.50	5.02	PASS
B48	5	High	56715	3697.5	16QAM	4.49	5.00	PASS
B48	5	High	56715	3697.5	64QAM	4.49	4.98	PASS
B48	5	High	56715	3697.5	256QAM	4.49	5.14	PASS
B48	10	Low	55290	3555	QPSK	9.02	9.96	PASS
B48	10	Low	55290	3555	16QAM	8.99	9.99	PASS
B48	10	Low	55290	3555	64QAM	8.99	9.97	PASS
B48	10	Low	55290	3555	256QAM	9.03	9.96	PASS
B48	10	Mid	55990	3625	QPSK	8.97	9.85	PASS
B48	10	Mid	55990	3625	16QAM	8.96	9.72	PASS
B48	10	Mid	55990	3625	64QAM	9.00	9.74	PASS
B48	10	Mid	55990	3625	256QAM	8.99	9.69	PASS
B48	10	High	56690	3695	QPSK	8.98	9.91	PASS
B48	10	High	56690	3695	16QAM	8.97	9.80	PASS
B48	10	High	56690	3695	64QAM	9.03	10.05	PASS
B48	10	High	56690	3695	256QAM	9.00	9.95	PASS
B48	15	Low	55315	3557.5	QPSK	13.47	14.87	PASS
B48	15	Low	55315	3557.5	16QAM	13.46	14.76	PASS
B48	15	Low	55315	3557.5	64QAM	13.46	14.56	PASS
B48	15	Low	55315	3557.5	256QAM	13.49	14.77	PASS
B48	15	Mid	55990	3625	QPSK	13.43	14.54	PASS
B48	15	Mid	55990	3625	16QAM	13.47	14.91	PASS
B48	15	Mid	55990	3625	64QAM	13.47	14.44	PASS
B48	15	Mid	55990	3625	256QAM	13.47	14.65	PASS
B48	15	High	56665	3692.5	QPSK	13.52	14.75	PASS
B48	15	High	56665	3692.5	16QAM	13.45	14.62	PASS
B48	15	High	56665	3692.5	64QAM	13.41	14.65	PASS



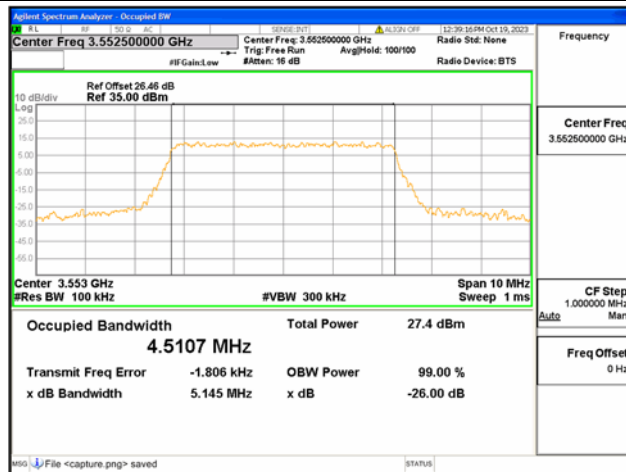
B48	15	High	56665	3692.5	256QAM	13.46	14.79	PASS
B48	20	Low	55340	3560	QPSK	17.98	19.79	PASS
B48	20	Low	55340	3560	16QAM	17.96	19.60	PASS
B48	20	Low	55340	3560	64QAM	17.94	19.77	PASS
B48	20	Low	55340	3560	256QAM	17.98	19.72	PASS
B48	20	Mid	55990	3625	QPSK	17.90	19.31	PASS
B48	20	Mid	55990	3625	16QAM	17.89	19.37	PASS
B48	20	Mid	55990	3625	64QAM	17.93	19.42	PASS
B48	20	Mid	55990	3625	256QAM	17.95	19.23	PASS
B48	20	High	56640	3690	QPSK	17.94	19.46	PASS
B48	20	High	56640	3690	16QAM	17.94	19.25	PASS
B48	20	High	56640	3690	64QAM	17.93	19.41	PASS
B48	20	High	56640	3690	256QAM	17.95	19.39	PASS



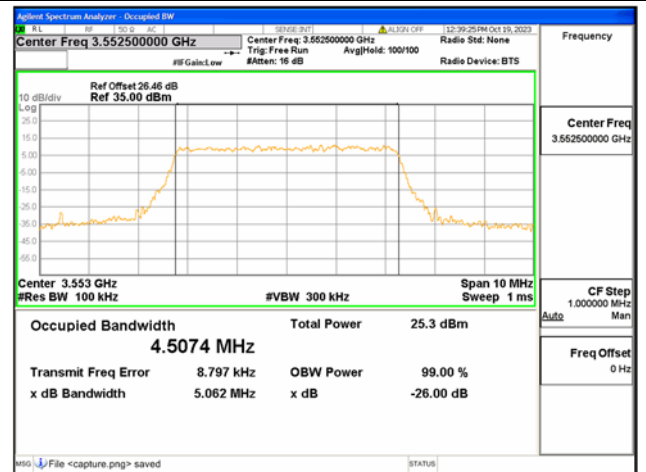
B48 / 5MHz / QPSK/ Low CH



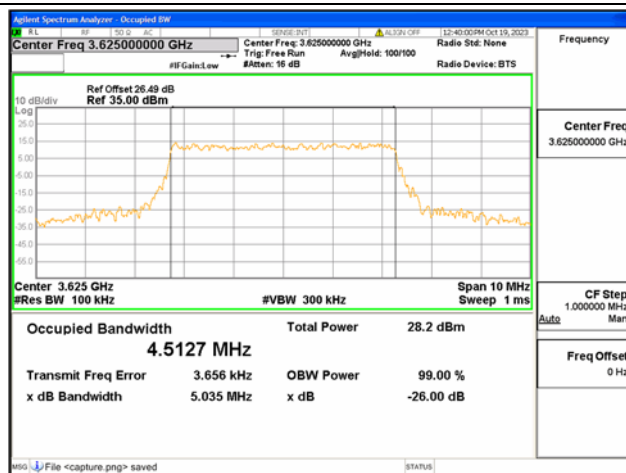
B48 / 5MHz / 16QAM/ Low CH



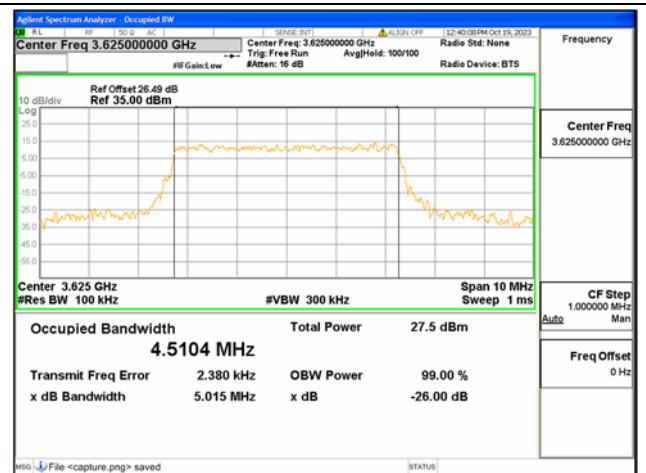
B48 / 5MHz / 64QAM/ Low CH



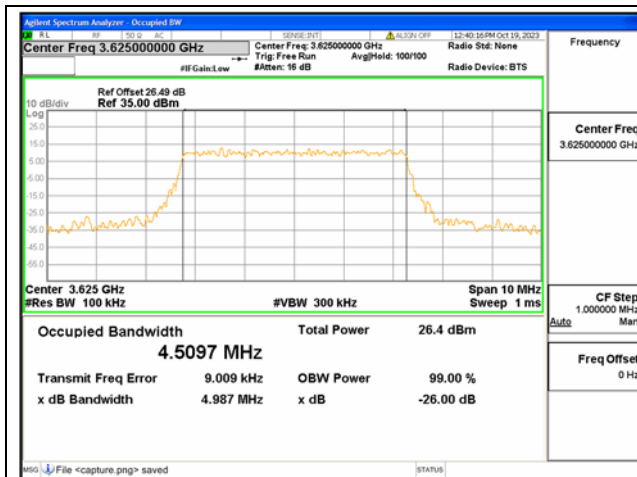
B48 / 5MHz / 256QAM/ Low CH



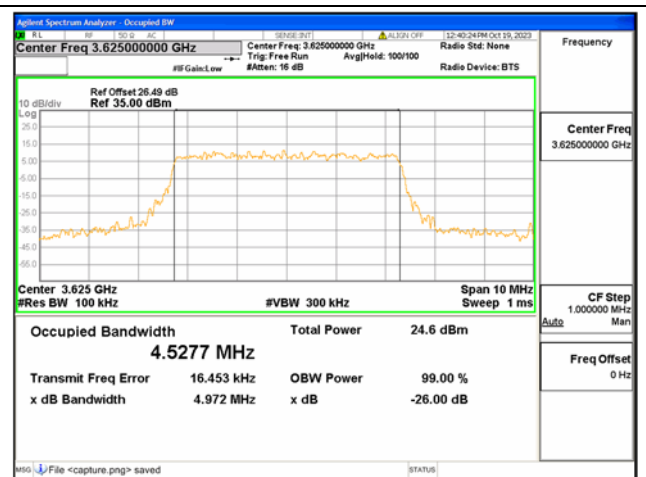
B48 / 5MHz / QPSK/ Mid CH



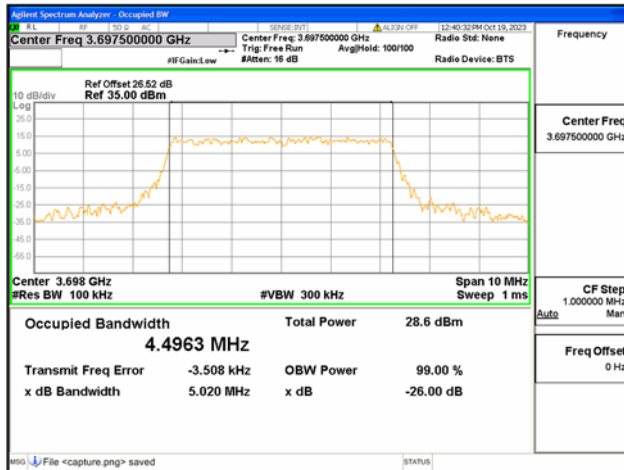
B48 / 5MHz / 16QAM/ Mid CH



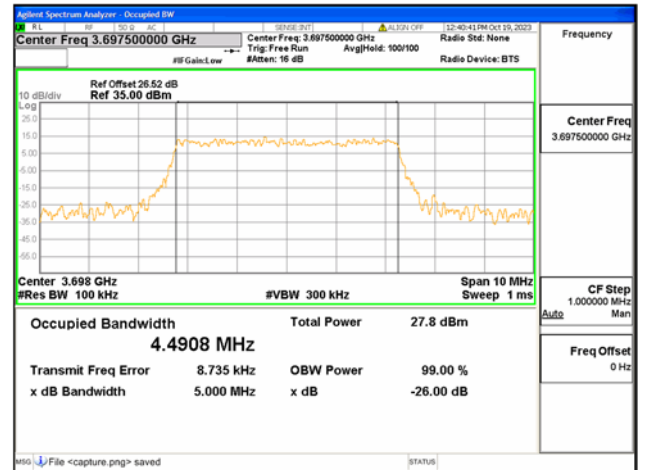
B48 / 5MHz / 64QAM/ Mid CH



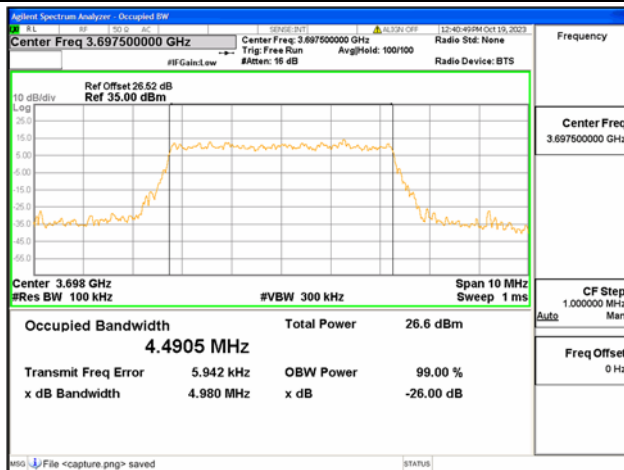
B48 / 5MHz / 256QAM/ Mid CH



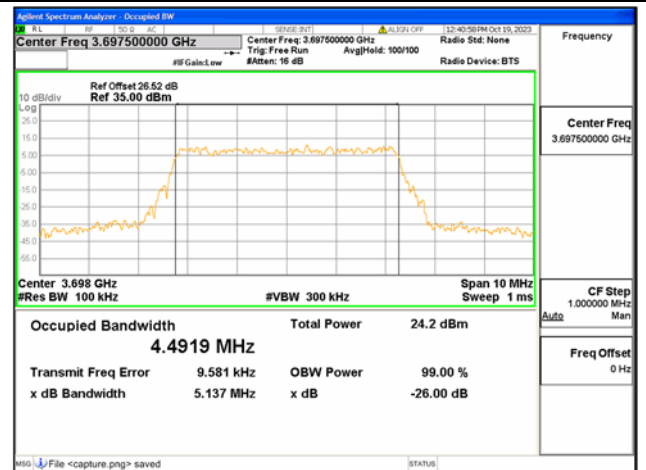
B48 / 5MHz / QPSK/ High CH



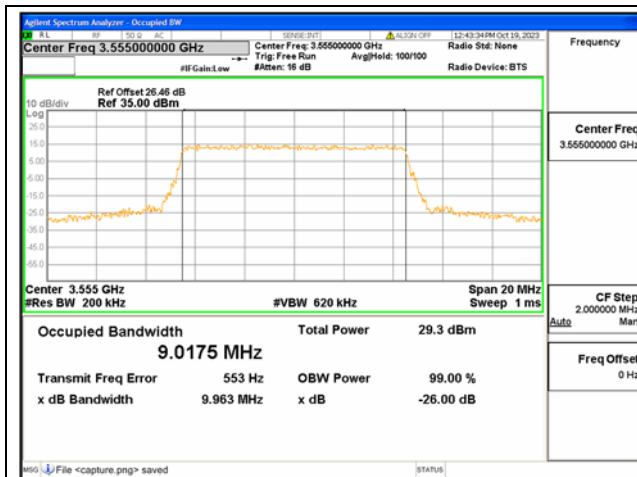
B48 / 5MHz / 16QAM/ High CH



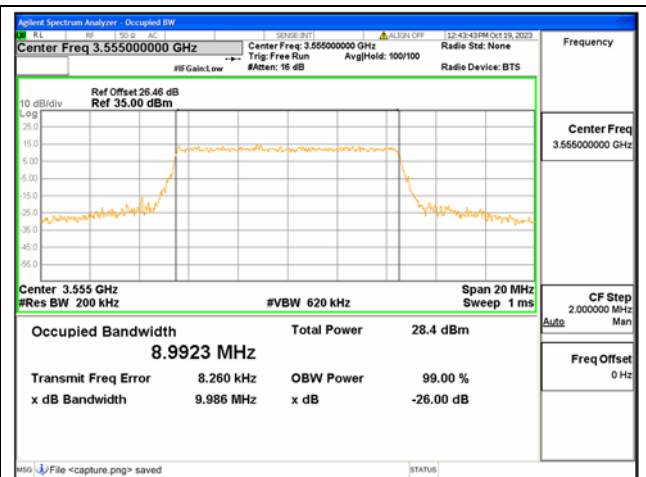
B48 / 5MHz / 64QAM/ High CH



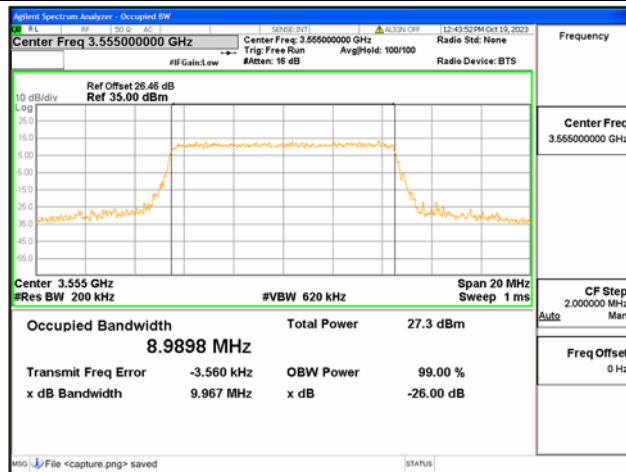
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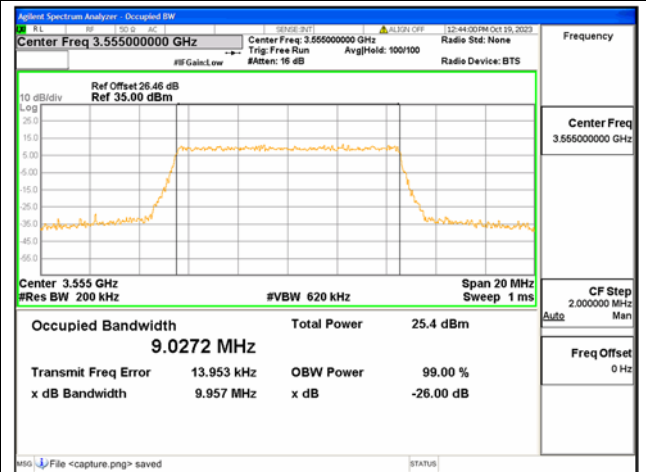
B48 / 10MHz / QPSK/ Low CH



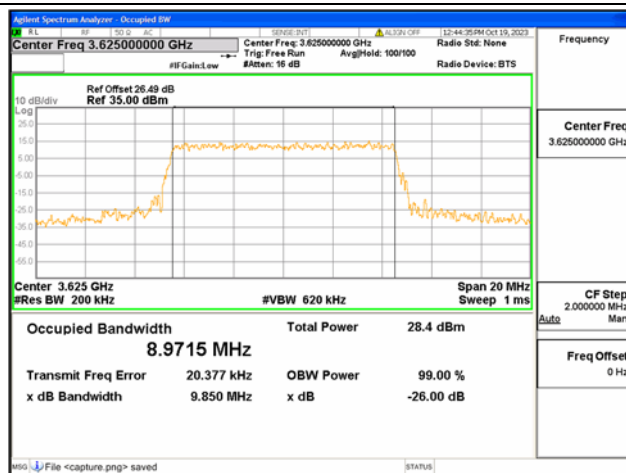
B48 / 10MHz / 16QAM/ Low CH



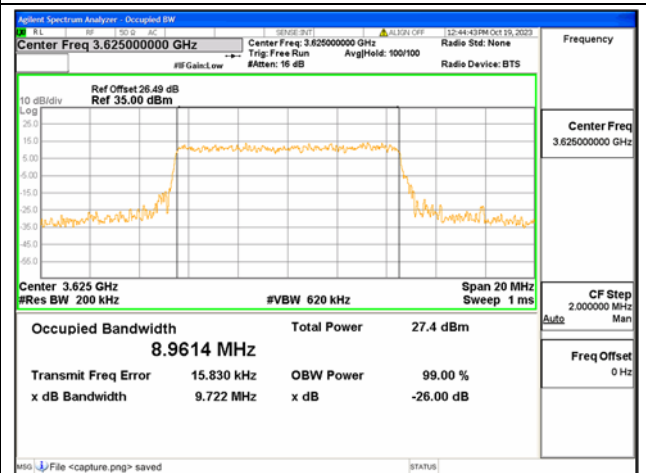
B48 / 10MHz / 64QAM/ Low CH



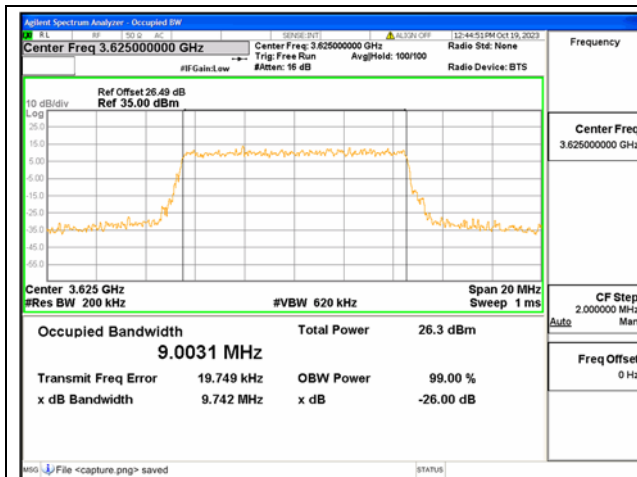
B48 / 10MHz / 256QAM/ Low CH



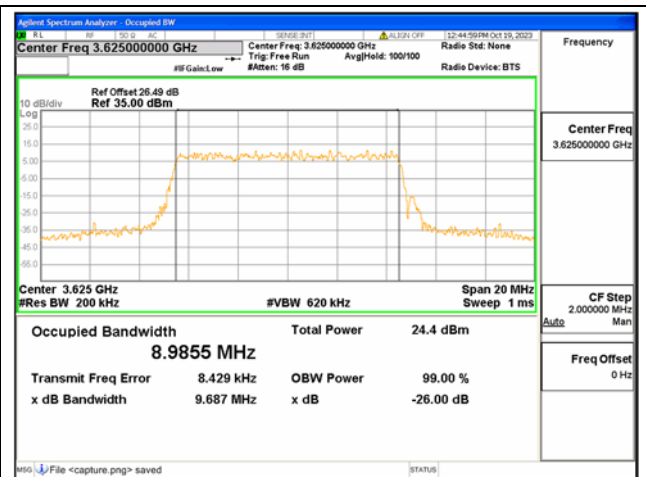
B48 / 10MHz / QPSK/ Mid CH



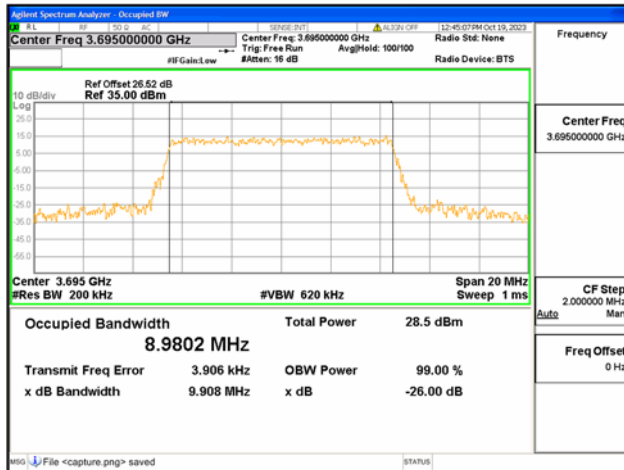
B48 / 10MHz / 16QAM/ Mid CH



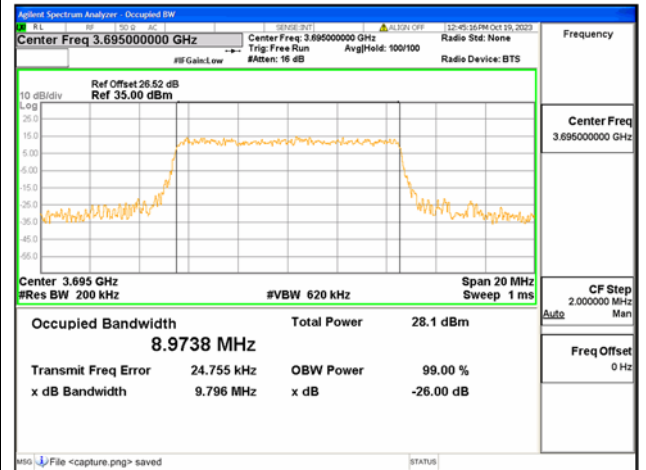
B48 / 10MHz / 64QAM/ Mid CH



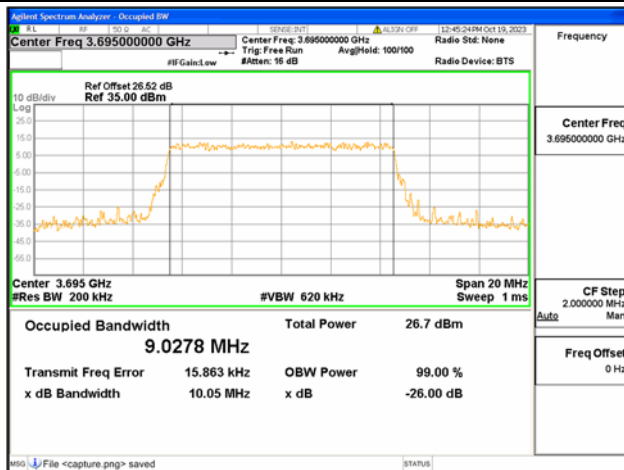
B48 / 10MHz / 256QAM/ Mid CH



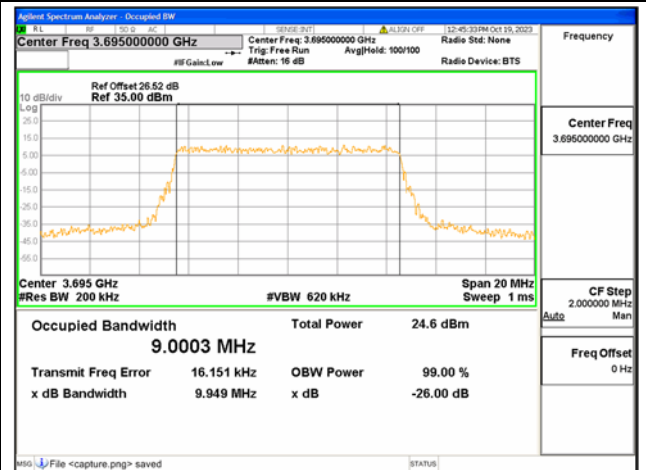
B48 / 10MHz / QPSK/ High CH



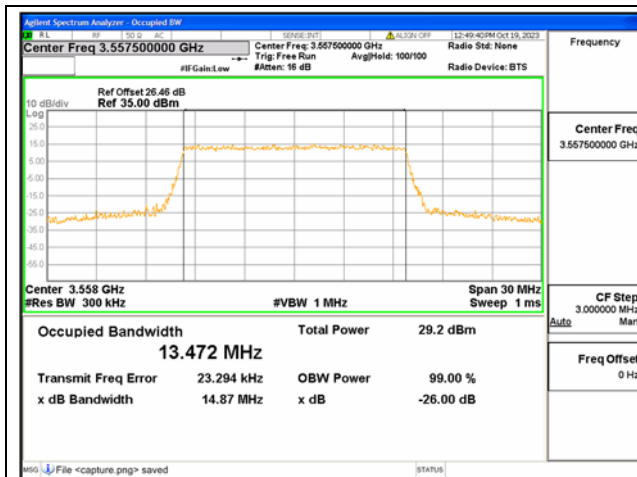
B48 / 10MHz / 16QAM/ High CH



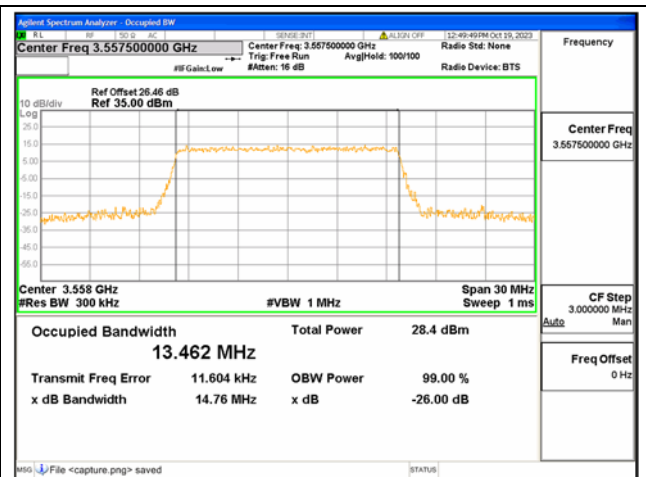
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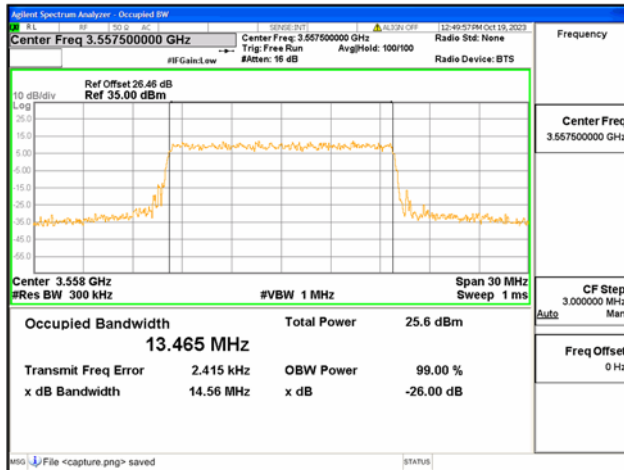
B48 / 10MHz / 256QAM/ High CH



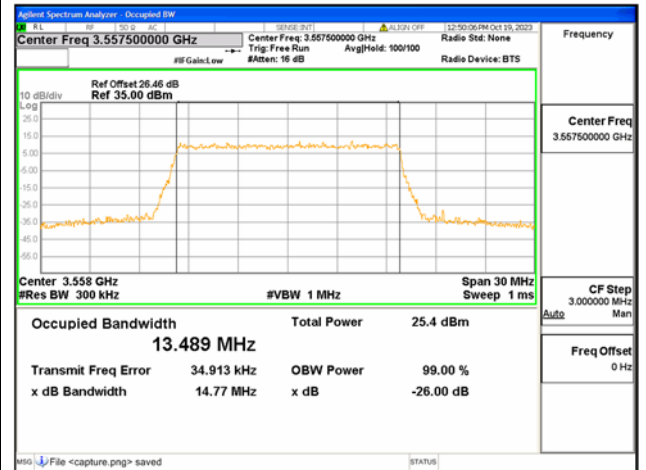
B48 / 15MHz / QPSK/ Low CH



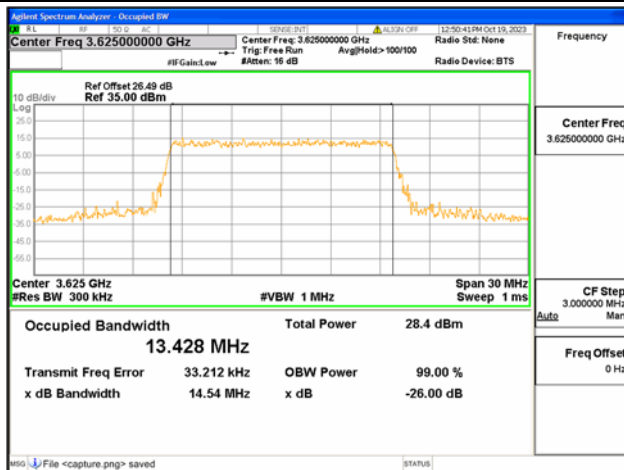
B48 / 15MHz / 16QAM/ Low CH



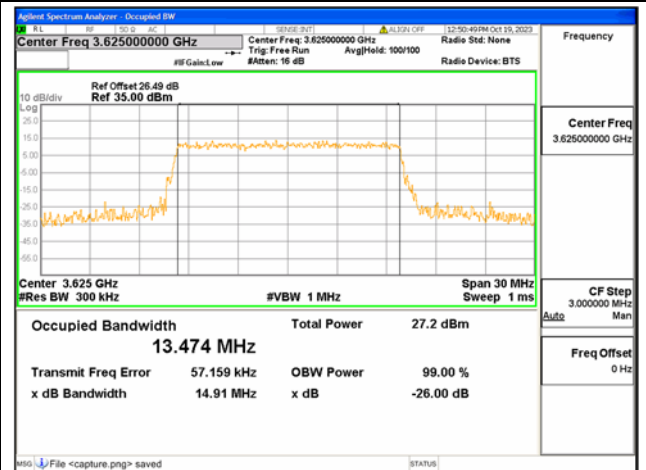
B48 / 15MHz / 64QAM/ Low CH



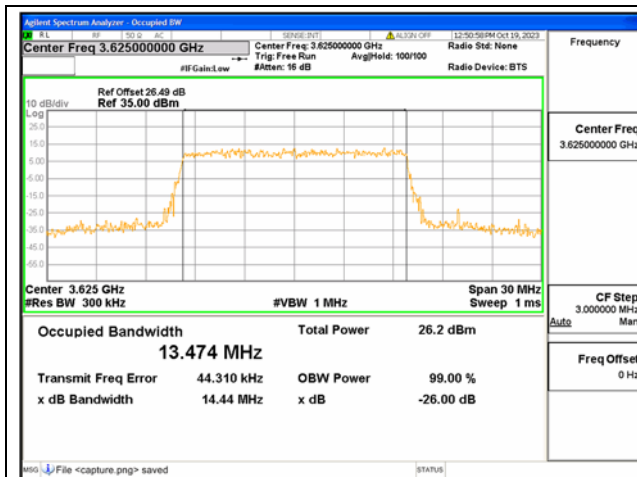
B48 / 15MHz / 256QAM/ Low CH



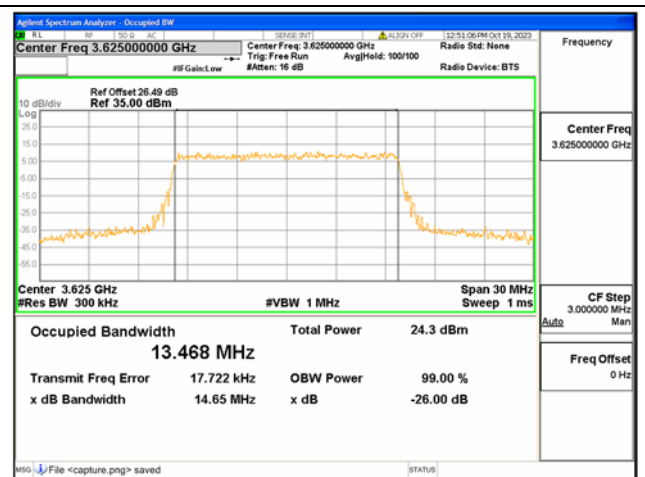
B48 / 15MHz / QPSK/ Mid CH



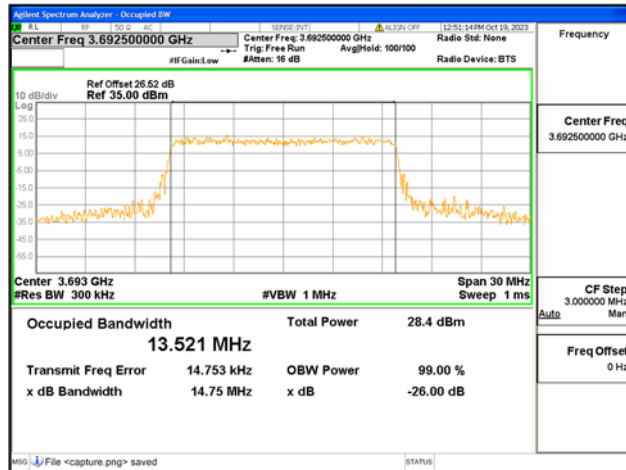
B48 / 15MHz / 16QAM/ Mid CH



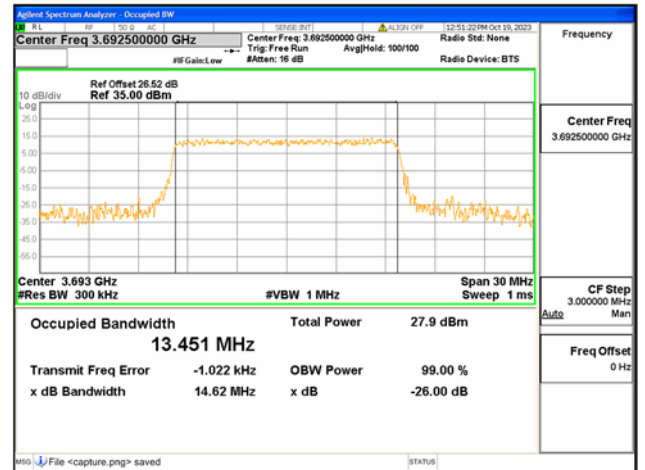
B48 / 15MHz / 64QAM/ Mid CH



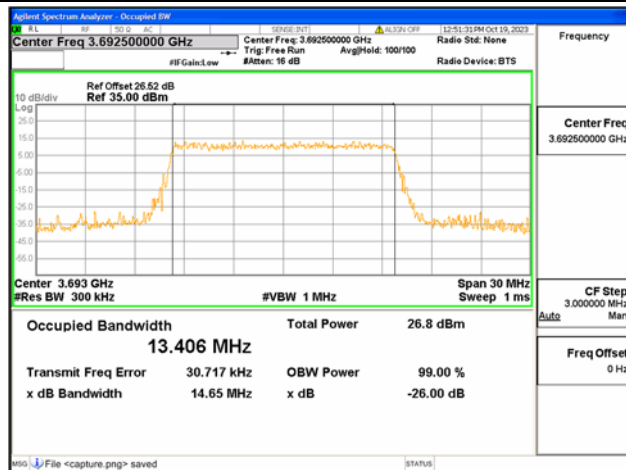
B48 / 15MHz / 256QAM/ Mid CH



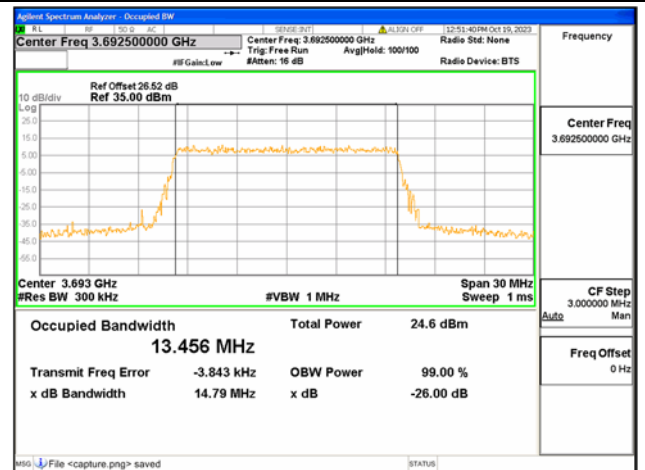
B48 / 15MHz / QPSK/ High CH



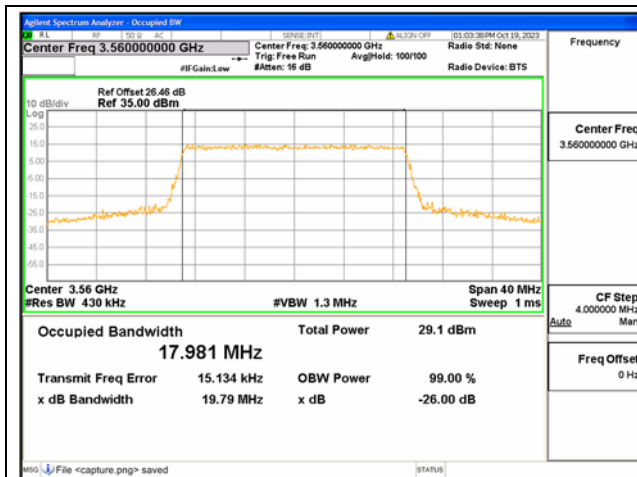
B48 / 15MHz / 16QAM/ High CH



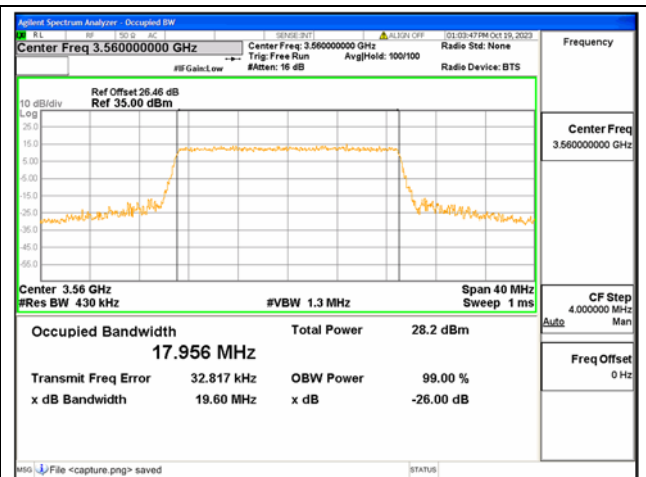
B48 / 15MHz / 64QAM/ High CH



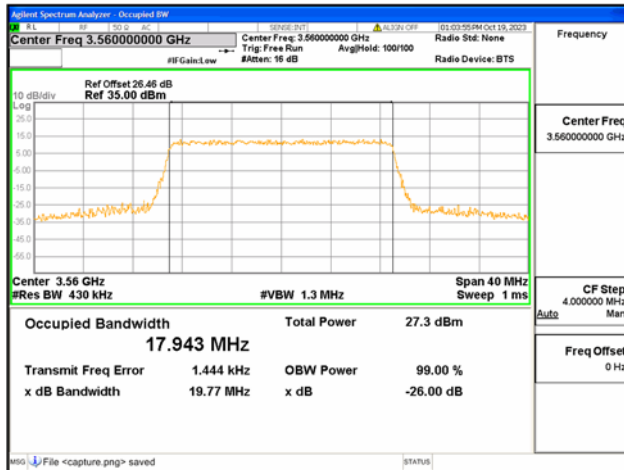
B48 / 15MHz / 256QAM/ High CH



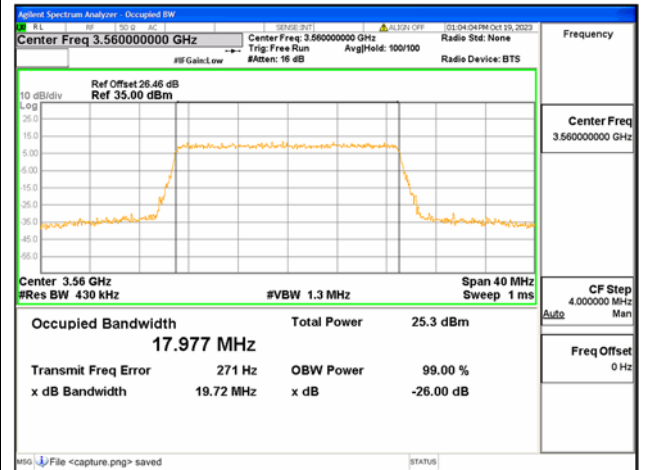
B48 / 20MHz / QPSK/ Low CH



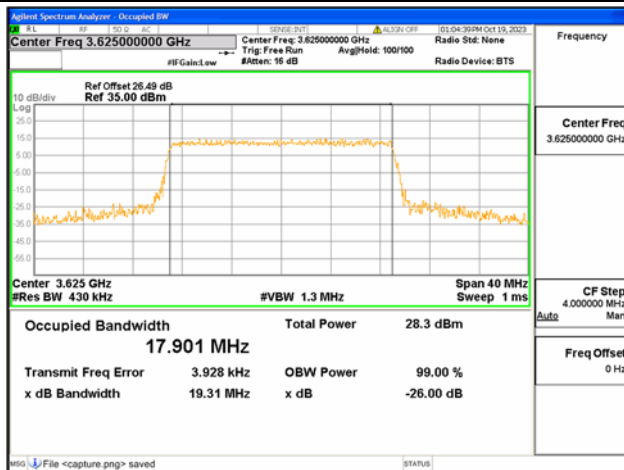
B48 / 20MHz / 16QAM/ Low CH



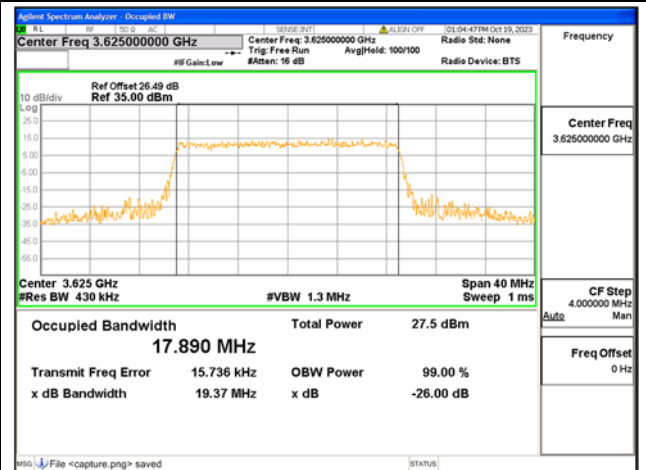
B48 / 20MHz / 64QAM/ Low CH



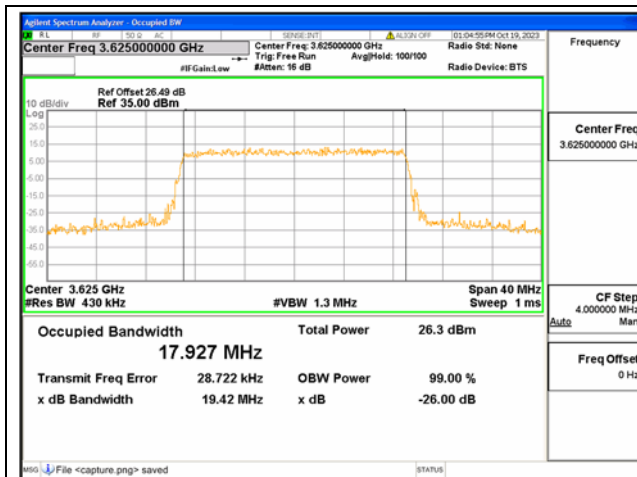
B48 / 20MHz / 256QAM/ Low CH



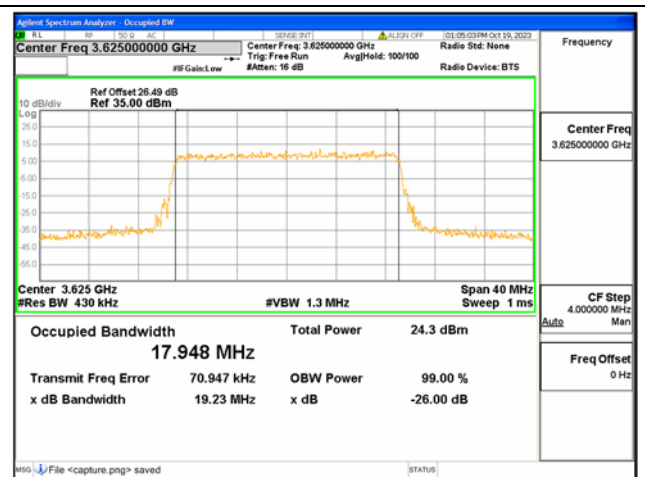
B48 / 20MHz / QPSK/ Mid CH



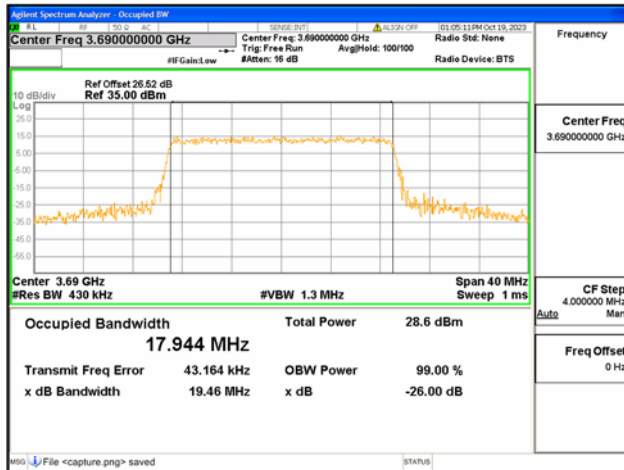
B48 / 20MHz / 16QAM/ Mid CH



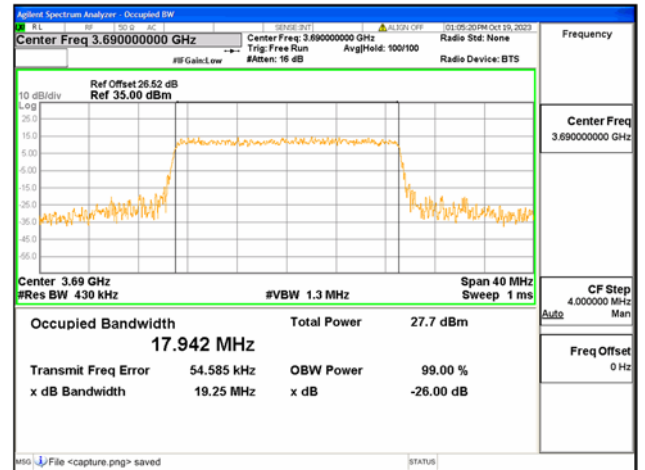
B48 / 20MHz / 64QAM/ Mid CH



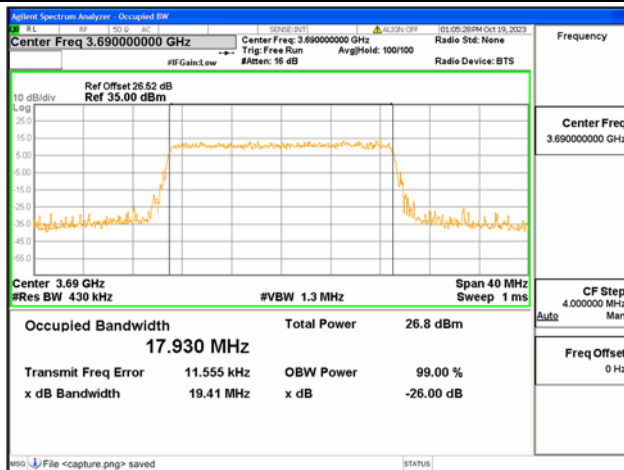
B48 / 20MHz / 256QAM/ Mid CH



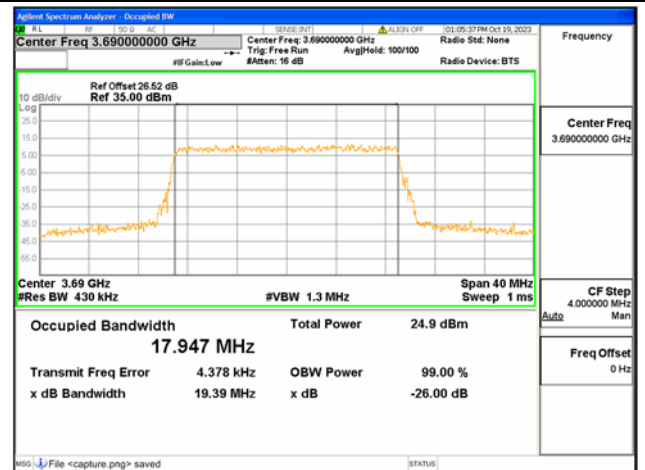
B48 / 20MHz / QPSK/ High CH



B48 / 20MHz / 16QAM/ High CH



B48 / 20MHz / 64QAM/ High CH



B48 / 20MHz / 256QAM/ High CH

2.3. Frequency Stability

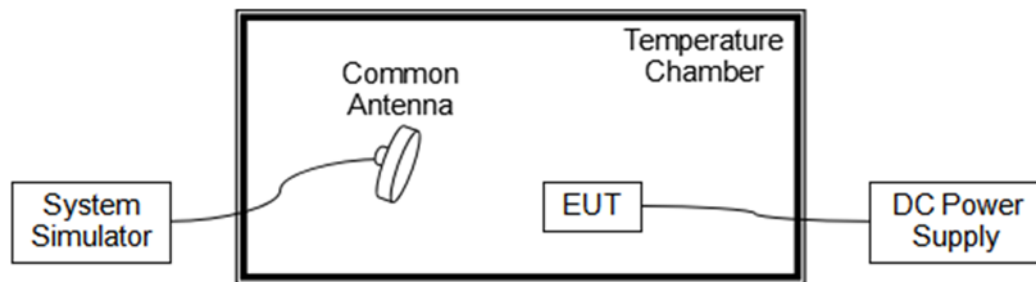
2.3.1. Requirement

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 40°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 3.80V, 4.30V and 3.60V, which are specified by the applicant; the normal temperature here used is 20°C.

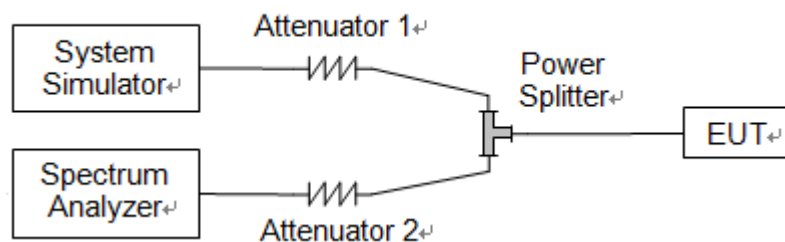
LTE Band 48, 256QAM, QPSK, Channel 55990, Frequency 3625.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
Normal	3.80	+20(Ref)	8	0.002	PASS
Normal		0	14	0.004	
Normal		+10	18	0.005	
Normal		+20	13	0.004	
Normal		+30	-4	-0.001	
Normal		+40	20	0.006	
High	4.30	+20	-11	-0.003	
BATT.ENDPOINT	3.60	+20	13	0.004	

2.4. Peak to Average Radio

2.4.1. Requirement

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

2.4.2. Test Description



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

2.4.3. Test procedure

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

2.4.4. Test Result



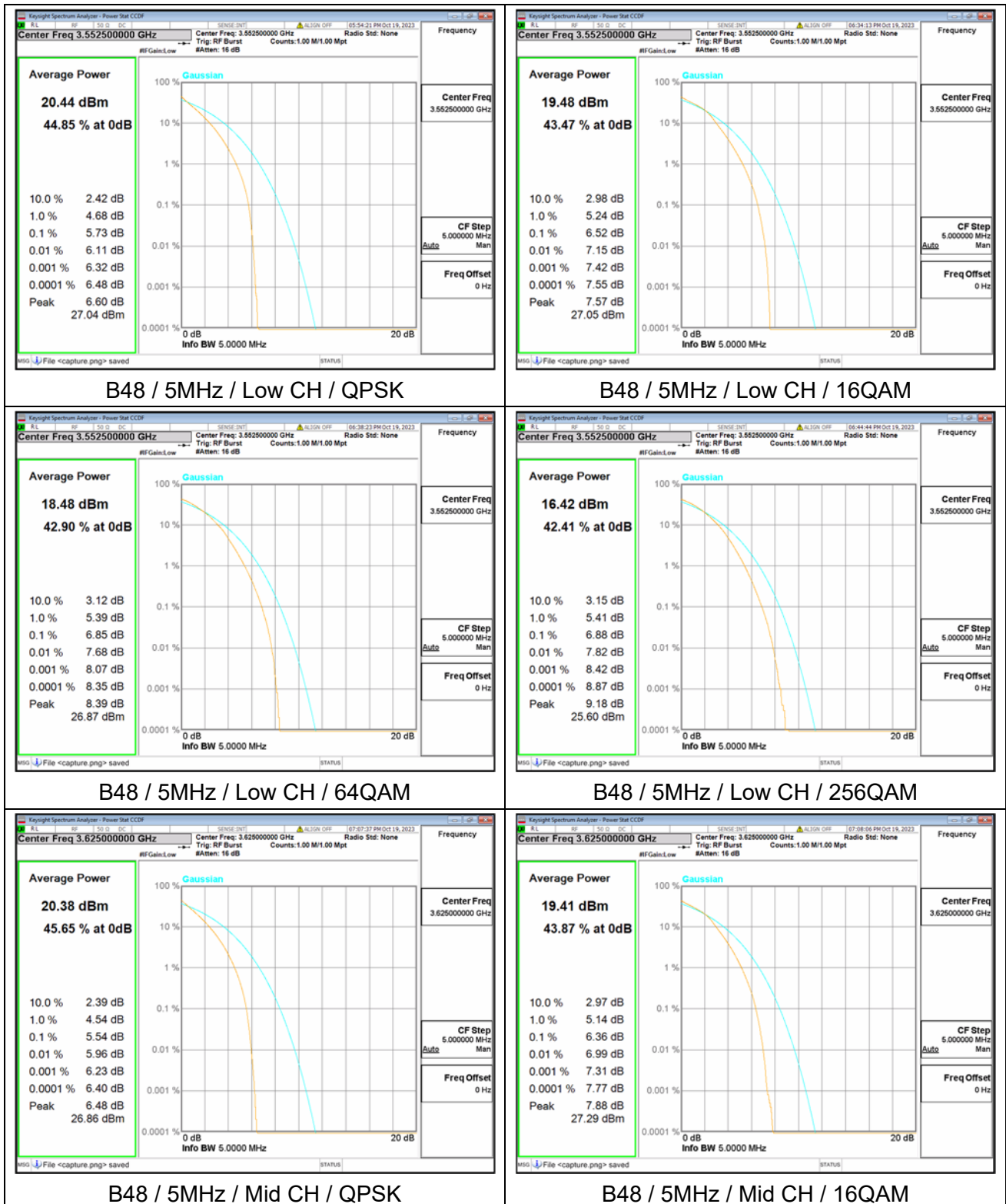
LTE Band	BW(MHz)	Channel Level	Channel	Frequency (MHz)	Modulation	Peak to Average Radio(dB)	P/F
B48	5	Low	55265	3552.5	QPSK	5.73	PASS
B48	5	Low	55265	3552.5	16QAM	6.52	PASS
B48	5	Low	55265	3552.5	64QAM	6.85	PASS
B48	5	Low	55265	3552.5	256QAM	6.88	PASS
B48	5	Mid	55990	3625	QPSK	5.54	PASS
B48	5	Mid	55990	3625	16QAM	6.36	PASS
B48	5	Mid	55990	3625	64QAM	6.47	PASS
B48	5	Mid	55990	3625	256QAM	6.90	PASS
B48	5	High	56715	3697.5	QPSK	5.58	PASS
B48	5	High	56715	3697.5	16QAM	6.37	PASS
B48	5	High	56715	3697.5	64QAM	6.68	PASS
B48	5	High	56715	3697.5	256QAM	6.80	PASS
B48	10	Low	55290	3555	QPSK	5.71	PASS
B48	10	Low	55290	3555	16QAM	6.50	PASS
B48	10	Low	55290	3555	64QAM	6.79	PASS
B48	10	Low	55290	3555	256QAM	6.88	PASS
B48	10	Mid	55990	3625	QPSK	5.77	PASS
B48	10	Mid	55990	3625	16QAM	6.36	PASS
B48	10	Mid	55990	3625	64QAM	6.78	PASS
B48	10	Mid	55990	3625	256QAM	6.84	PASS
B48	10	High	56690	3695	QPSK	5.57	PASS
B48	10	High	56690	3695	16QAM	6.41	PASS
B48	10	High	56690	3695	64QAM	6.68	PASS
B48	10	High	56690	3695	256QAM	6.79	PASS
B48	15	Low	55315	3557.5	QPSK	5.60	PASS
B48	15	Low	55315	3557.5	16QAM	6.49	PASS
B48	15	Low	55315	3557.5	64QAM	6.83	PASS
B48	15	Low	55315	3557.5	256QAM	6.84	PASS
B48	15	Mid	55990	3625	QPSK	5.41	PASS
B48	15	Mid	55990	3625	16QAM	6.29	PASS
B48	15	Mid	55990	3625	64QAM	6.67	PASS
B48	15	Mid	55990	3625	256QAM	6.79	PASS
B48	15	High	56665	3692.5	QPSK	5.44	PASS
B48	15	High	56665	3692.5	16QAM	6.27	PASS
B48	15	High	56665	3692.5	64QAM	6.72	PASS

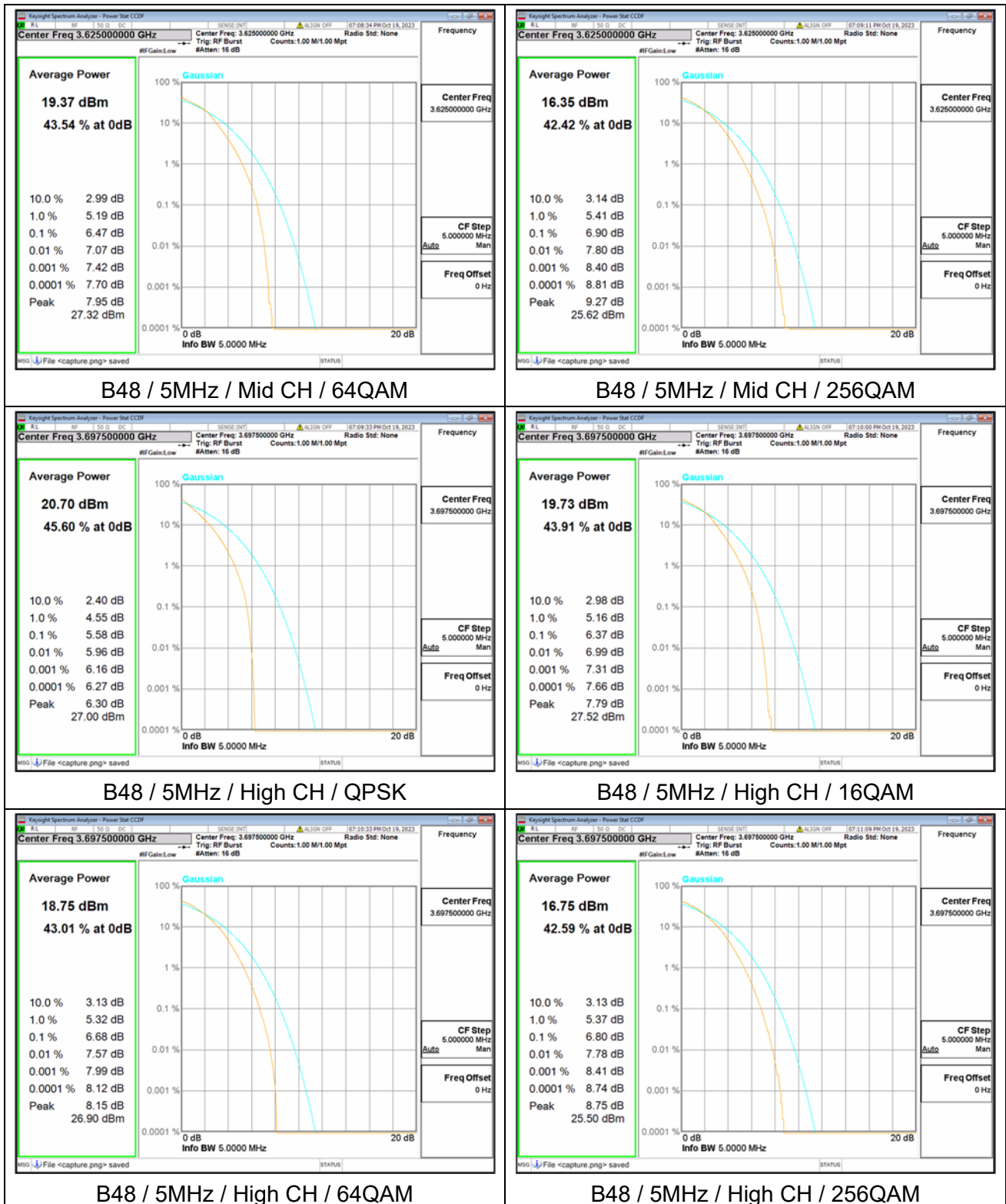


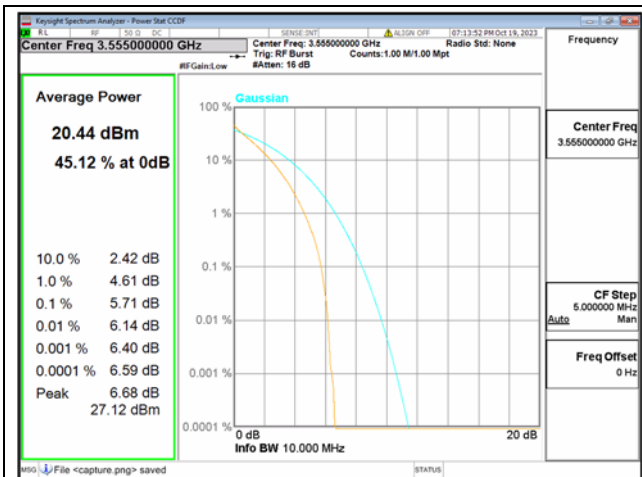
REPORT No.: SZ23070206W06

B48	15	High	56665	3692.5	256QAM	6.82	PASS
B48	20	Low	55340	3560	QPSK	5.58	PASS
B48	20	Low	55340	3560	16QAM	6.45	PASS
B48	20	Low	55340	3560	64QAM	6.82	PASS
B48	20	Low	55340	3560	256QAM	6.83	PASS
B48	20	Mid	55990	3625	QPSK	5.51	PASS
B48	20	Mid	55990	3625	16QAM	6.34	PASS
B48	20	Mid	55990	3625	64QAM	6.68	PASS
B48	20	Mid	55990	3625	256QAM	6.79	PASS
B48	20	High	56640	3690	QPSK	5.53	PASS
B48	20	High	56640	3690	16QAM	6.37	PASS
B48	20	High	56640	3690	64QAM	6.72	PASS
B48	20	High	56640	3690	256QAM	6.80	PASS

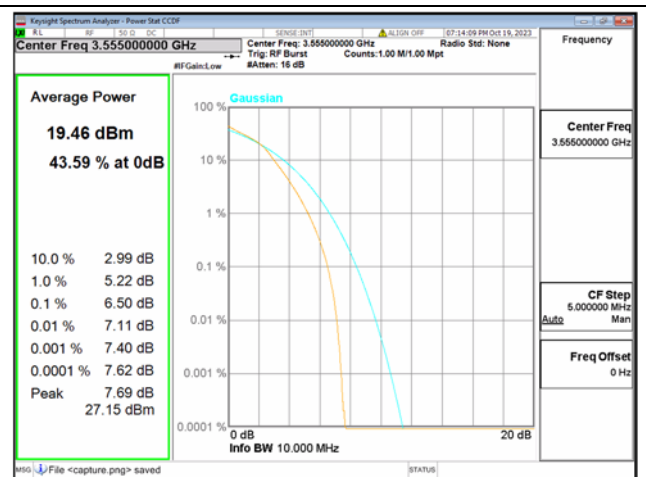




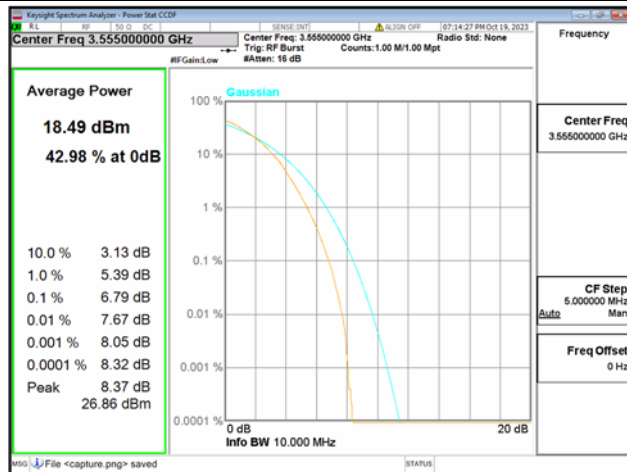




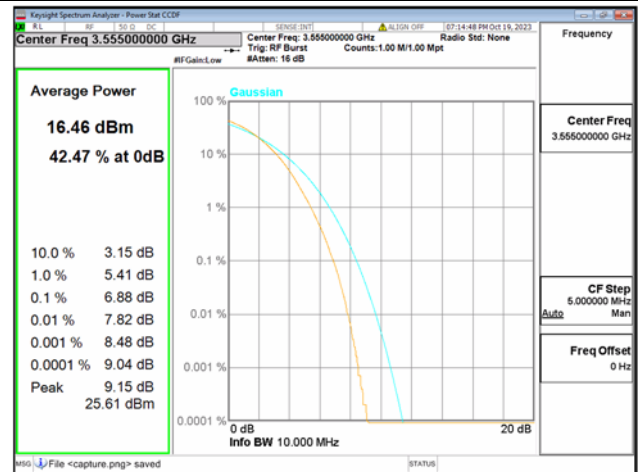
B48 / 10MHz / Low CH / QPSK



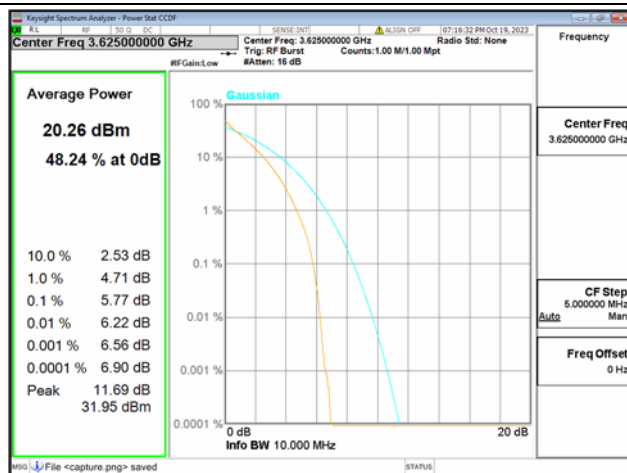
B48 / 10MHz / Low CH / 16QAM



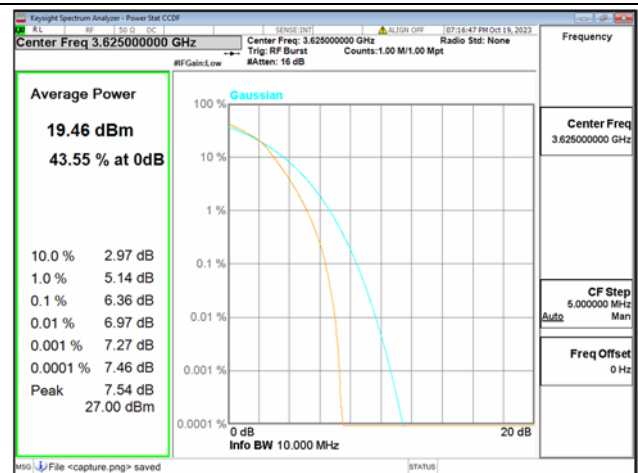
B48 / 10MHz / Low CH / 64QAM



B48 / 10MHz / Low CH / 256QAM



B48 / 10MHz / Mid CH / QPSK



B48 / 10MHz / Mid CH / 16QAM

