



REPORT No.: SZ23110216W09

TEST REPORT

APPLICANT : Reliance Communications LLC

PRODUCT NAME : Orbic Trophy 5G

MODEL NAME : R667L5

BRAND NAME : Orbic

FCC ID : 2ABGH-R667L5

STANDARD(S) : 47 CFR Part 2
47 CFR Part 22
47 CFR Part 24
47 CFR Part 27

RECEIPT DATE : 2023-11-29

TEST DATE : 2023-12-08 to 2024-04-07

ISSUE DATE : 2024-04-22



Edited by:

Gan Jing

Gan Jing (Rapporteur)

Approved by:

Shen Junsheng

Shen Junsheng (Supervisor)

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

MORLAB

Shenzhen Morlab Communications Technology Co., Ltd.
FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555

Http://www.morlab.cn

Fax: 86-755-36698525

E-mail: service@morlab.cn





DIRECTORY

1. Technical Information	3
1.1. Applicant and Manufacturer Information	3
1.2. Equipment Under Test (EUT) Description	3
1.3. Maximum E.R.P./E.I.R.P. and Emission Designator	5
1.4. Test Standards and Results	7
1.5. Environmental Conditions	10
2. Summary Test Results And Description	11
2.1. Transmitter Conducted Output Power	11
2.2. Occupied Bandwidth	17
2.3. Peak to Average Ratio	55
2.4. Conducted Spurious Emissions	84
2.5. Band Edge	171
2.6. Radiated Spurious Emissions	194
Annex A Test Uncertainty	281
Annex B Testing Laboratory Information	282

Change History		
Version	Date	Reason for change
1.0	2024-04-22	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

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

1.2. Equipment Under Test (EUT) Description

Product Name:	Orbic Trophy 5G	
Sample No.:	1#,2#	
Hardware Version:	V1.0	
Software Version:	R667L5_v1.0.4_BLB	
Modulation Type:	QPSK, 16QAM, 64QAM	
Carrier Aggregation:	Uplink:2A_4A; 2A_5A; 2A_12A; 2A_13A; 2A_66A; 4A_5A; 4A_12A; 4A_13A; 5A_66A; 12A_66A; 13A_66A; 5B; 66B; 66C	
Channel Bandwidth:	Band 2	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	Band 4	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	Band 5	1.4MHz, 3MHz, 5MHz, 10MHz
	Band 12	1.4MHz, 3MHz, 5MHz, 10MHz
	Band 13	5 MHz, 10MHz
	66B	5MHz+5MHz,5MHz+10MHz,10MHz+5MHz, 5MHz+15MHz,15MHz+5MHz,10MHz+10MHz
	66C	5MHz+20MHz,20MHz+5MHz,10MHz+15MHz, 15MHz+10MHz,10MHz+20MHz,20MHz+10MHz 15MHz+15MHz,15MHz+20MHz,20MHz+15MHz,20 MHz+20MHz
Antenna Type:	PIFA Antenna	
Antenna Gain:	Band 2	ANT3:1.35dBi, ANT7:-2.94dBi
	Band 4	ANT3:0.31dBi
	Band 5	ANT1:-2.85dBi
	Band 13	ANT1:-4.05 dBi



	Band 66	ANT3:0.89dBi, ANT7:-0.95dBi
Accessory Information:	Battery:	
	Brand Name:	Shenbird
	Model No.:	BTE-5003
	Serial No.:	N/A
	Capacity:	5000mAh
	Rated Voltage:	3.89V
	Charge Limit:	4.48V
	Manufacturer:	Shenbird New Energy (Huizhou) Co., Ltd.
	AC Adapter:	
	Brand Name:	Orbic
	Model No.:	OACH023US1
	Serial No.:	N/A
	Rated Input:	100-240V~50/60HZ, 0.5A
	Rated Output:	5V=3A or 9V=2A or 12V=1.5A
	Manufacturer 1:	WATAI ELECTRONICS PRIVATE LIMITED
	Manufacturer 2:	KANGYIN ELECTRONIC TECHNOLOGY CO.,LTD
	USB Cable:	
	Model No.:	HX-YLMK-06
	Manufacturer:	HUIZHOU WASHIN ELECTRONICS CO.,LTD

Note1: 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

Channel bandwidth	Maximum ERP/EIRP (W)			
CA_5B	QPSK	16QAM	64QAM	256QAM
10+10	0.242	/	/	/
CA_66B	QPSK	16QAM	64QAM	256QAM
10+10	0.194	/	/	/
CA_66C	QPSK	16QAM	64QAM	256QAM
20+20	0.192	/	/	/
CA_2A-4A	QPSK	16QAM	64QAM	256QAM
20+20	0.255	/	/	/
CA_2A-5A	QPSK	16QAM	64QAM	256QAM
20+10	0.253	/	/	/
CA_2A-12A	QPSK	16QAM	64QAM	256QAM
20+10	0.244	/	/	/
CA_2A-13A	QPSK	16QAM	64QAM	256QAM
20+10	0.249	/	/	/
CA_2A-66A	QPSK	16QAM	64QAM	256QAM
20+20	0.246	/	/	/
CA_4A-5A	QPSK	16QAM	64QAM	256QAM
20+10	0.200	/	/	/
CA_4A-12A	QPSK	16QAM	64QAM	256QAM
20+10	0.195	/	/	/
CA_4A-13A	QPSK	16QAM	64QAM	256QAM
20+10	0.192	/	/	/
CA_5A-66A	QPSK	16QAM	64QAM	256QAM
10+20	0.292	/	/	/
CA_12A-66A	QPSK	16QAM	64QAM	256QAM
10+20	0.280	/	/	/
CA_13A-66A	QPSK	16QAM	64QAM	256QAM
10+20	0.276	/	/	/



Channel bandwidth	Emission Designator (99%OBW)		
LTE 5B	QPSK	16QAM	64QAM
3+5	7M50G7D	7M51W7D	7M51W7D
5+3	7M48G7D	7M52W7D	7M53W7D
5+10	13M9G7D	13M9W7D	13M9W7D
10+5	14M0G7D	13M9W7D	13M9W7D
10+10	18M8G7D	18M8W7D	18M8W7D
LTE 66B	QPSK	16QAM	64QAM
5+5	9M30G7D	9M27W7D	9M28W7D
5+10	13M9G7D	13M9W7D	13M9W7D
5+15	18M3G7D	18M3W7D	18M2W7D
10+5	14M0G7D	13M9W7D	13M9W7D
10+10	18M9G7D	18M9W7D	18M9W7D
15+5	18M3G7D	18M3W7D	18M3W7D
LTE 66C	QPSK	16QAM	64QAM
5+20	22M8G7D	22M9W7D	22M7W7D
10+15	23M2G7D	23M1W7D	23M1W7D
10+20	27M7G7D	27M7W7D	27M6W7D
15+10	23M1G7D	23M1W7D	23M1W7D
15+15	28M3G7D	28M3W7D	28M2W7D
15+20	32M5G7D	32M6W7D	32M7W7D
20+5	22M9G7D	22M8W7D	22M8W7D
20+10	27M7G7D	27M7W7D	27M7W7D
20+15	32M6G7D	32M7W7D	32M5W7D
20+20	37M5G7D	37M6W7D	37M3W7D

1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, Part 24, Part 27 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 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	Miscellaneous Wireless Communications Services

B2			
Item	FCC Rule No.	Requirements	Result
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	EIRP $\leq$ 2 W	PASS
Peak-Average Ratio	§24.232(d)	Limit $\leq$ 13 dB	PASS
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §24.238(a)(b)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)(b)	$\leq$ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	$\leq$ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §24.235	No limit	N/A



B4 & B66			
Item	FCC Rule No.	Requirements	Result
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)(4)	EIRP ≤ 1 W	PASS
Peak-Average Ratio	§27.50(d) (5)	Limit ≤ 13 dB	PASS
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	PASS
Band Edges Compliance	§2.1051, §27.53(h)(1) §27.53(h)(3)(i)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)(1)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(h)(1)	≤ -13 dBm/1MHz.	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

B5			
Item	FCC Rule No.	Requirements	Result
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913(a)(5)	ERP ≤ 7 W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §22.917(a)(b)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §22.917(a)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §22.355	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §22.355	$\leq \pm 2.5$ ppm	PASS



B13			
Item	FCC Rule No.	Requirements	Result
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(b)(10)	ERP ≤3W	PASS
Peak-Average Ratio	N/A	N/A	N/A
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edges Compliance	§2.1051, §27.53(c)(2)	Refer to section 2.6	PASS
Spurious Emission at Antenna Terminals	§2.1051, §27.53(c)(2)	≤ -13 dBm/1MHz	PASS
Field Strength of Spurious Radiation	§2.1053, §27.53(c)(2)	≤ -13 dBm/1MHz	PASS
Frequency Stability	§2.1055, §27.54	No limit	N/A

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

Test Item	Test Engineer	Result	Method Determination /Remark
Transmitter Conducted Output Power and E.R.P./E.I.R.P.	Yu Xiaoming Gan Jing	PASS	No deviation
Occupied Bandwidth	Gan Jing	PASS	No deviation
Peak to Average Radio	Gan Jing	PASS	No deviation
Conducted Spurious Emissions	Gan Jing	PASS	No deviation
Frequency stability	Gan Jing	PASS 【5】	No deviation
Band Edge	Gan Jing	PASS	No deviation
Radiated Spurious Emissions	Gao Jianrou	PASS	No deviation
Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016. Note 2: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 23.5dB contains two parts that cable loss 13.5dB 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.

Note 5: The frequency stability of Carrier aggregation bands are referred to its corresponding single band, the test results refer to the test report (Report No.: SZ23110216W07).

1.5. Environmental Conditions

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

Temperature (°C):	15-35
Relative Humidity (%):	30-60

2. Summary Test Results And Description

2.1. Transmitter Conducted Output Power

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).

According to FCC section 24.232 (c) for LTE Band 2, Mobile and portable stations are limited to 2 watts E.I.R.P. and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

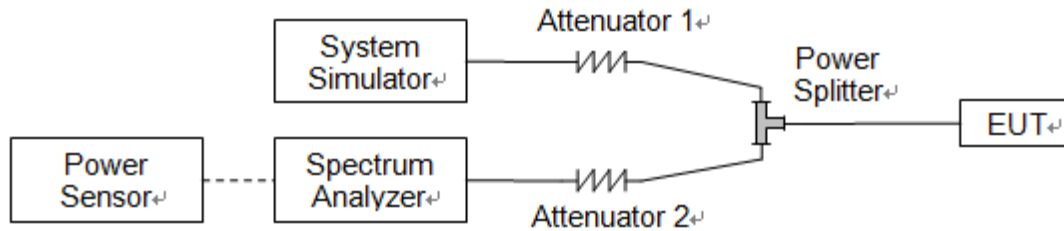
According to FCC section 27.50 (d)(4) for LTE Band 4/66, Fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat E.I.R.P.

According to FCC section 22.913 (a)(2) for LTE Band 5, the E.R.P. of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 27.50 (b)(10)for LTE Band 13, Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts E.R.P.

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.

$E.I.R.P. (dBm) = \text{Conducted Output Power (dBm)} + \text{Antenna Gain (dBi)}$

$E.R.P. (dBm) = E.I.R.P. (dBm) - 2.15$

**2.1.4. Result****Conducted Output Power**

CA_5B								
Combination:10MHz+10MHz(50RB+50RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)
			RB Size	RB Offset	RB Size	RB Offset		
20450	20549	QPSK	1	0	0	0	1	23.84
20476	20575	QPSK	1	0	0	0	1	23.77
20501	20600	QPSK	1	0	0	0	1	23.73

CA_66B								
Combination:10MHz+10MHz(50RB+50RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132022	132121	QPSK	1	0	100	0	1	22.88
132373	132472	QPSK	1	0	100	0	1	22.82
132523	132622	QPSK	1	0	100	0	1	22.79

CA_66C								
Combination:20MHz+20MHz(100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)
			RB Size	RB Offset	RB Size	RB Offset		
132072	132270	QPSK	1	0	100	0	1	22.81
132323	132521	QPSK	1	0	100	0	1	22.84
132374	132572	QPSK	1	0	100	0	1	22.79

Configure	CA Configuration	PCC				
		Band	BW (MHz)	UL Channel	UL Fre. (MHz)	UL Mode (Modulation/RB/Offset)
Inter-band	CA_2A-4A	2	20	18700	1860	QPSK/1#0
	CA_2A-5A	2	20	18700	1860	QPSK/1#0
	CA_2A-12A	2	20	18700	1860	QPSK/1#0
	CA_2A-13A	2	20	18700	1860	QPSK/1#0



REPORT No.: SZ23110216W09

	CA_2A-66A	2	20	18700	1860	QPSK/1#0
	CA_4A-5A	4	20	20050	1720	QPSK/1#0
	CA_4A-12A	4	20	20050	1720	QPSK/1#0
	CA_4A-13A	4	20	20050	1720	QPSK/1#0
	CA_5A-66A	5	10	20450	829	QPSK/1#0
	CA_12A-66A	12	10	23060	704	QPSK/1#0
	CA_13A-66A	13	10	23230	782	QPSK/1#0

SCC				
Band	BW (MHz)	UL Channel	UL Fre. (MHz)	Measured Power(dBm)
4	20	20300	1745	22.72
5	10	20600	844	22.68
12	10	23130	711	22.53
13	10	23230	782	22.61
66	20	132572	1770	22.56
5	10	20600	844	22.69
12	10	23130	711	22.6
13	10	23230	782	22.53
66	20	132572	1770	23.76
66	20	132572	1770	23.58
66	20	132572	1770	23.52

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

LTE CA_5B									
Combination:10MHz+10MHz(50RB+50RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)	Measured EIRP(W)
			RB Size	RB Offset	RB Size	RB Offset			
20450	20549	QPSK	1	0	100	0	1	23.84	0.242
20476	20575	QPSK	1	0	100	0	1	23.77	0.238
20501	20600	QPSK	1	0	100	0	1	23.73	0.236

LTE CA_66B									
Combination:20MHz+20MHz(100RB+100RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)	Measured EIRP(W)
			RB Size	RB Offset	RB Size	RB Offset			
132022	132121	QPSK	1	0	100	0	1	22.88	0.194
132373	132472	QPSK	1	0	100	0	1	22.82	0.191
132523	132622	QPSK	1	0	100	0	1	22.79	0.190

LTE CA_66C									
Combination:20MHz+20MHz(100RB+100RB)									
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Measured Power(dBm)	Measured EIRP(W)
			RB Size	RB Offset	RB Size	RB Offset			
132072	132270	QPSK	1	0	100	0	1	22.81	0.191
132323	132521	QPSK	1	0	100	0	1	22.84	0.192
132374	132572	QPSK	1	0	100	0	1	22.79	0.190

Configure	CA Configuration	PCC				
		Band	BW (MHz)	UL Channel	UL Fre. (MHz)	UL Mode (Modulation/RB/Offset)
Inter-band	CA_2A-4A	2	20	18700	1860	QPSK/1#0
	CA_2A-5A	2	20	18700	1860	QPSK/1#0
	CA_2A-12A	2	20	18700	1860	QPSK/1#0
	CA_2A-13A	2	20	18700	1860	QPSK/1#0
	CA_2A-66A	2	20	18700	1860	QPSK/1#0



	CA_4A-5A	4	20	20050	1720	QPSK/1#0
	CA_4A-12A	4	20	20050	1720	QPSK/1#0
	CA_4A-13A	4	20	20050	1720	QPSK/1#0
	CA_5A-66A	5	10	20450	829	QPSK/1#0
	CA_12A-66A	12	10	23060	704	QPSK/1#0
	CA_13A-66A	13	10	23230	782	QPSK/1#0

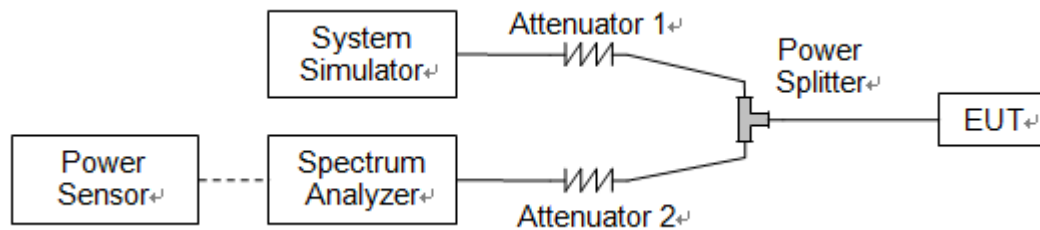
SCC					
Band	BW (MHz)	UL Channel	UL Fre. (MHz)	Measured Power(dBm)	EIRP(W)
4	20	20300	1745	24.07	0.255
5	10	20600	844	24.03	0.253
12	10	23130	711	22.53	0.244
13	10	23230	782	23.96	0.249
66	20	132572	1770	23.91	0.246
5	10	20600	844	23.00	0.200
12	10	23130	711	22.6	0.195
13	10	23230	782	22.84	0.192
66	20	132572	1770	24.65	0.292
66	20	132572	1770	23.58	0.280
66	20	132572	1770	24.41	0.276

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 50 Ohm; 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	PCC CH	SCC CH	Modulation	99% BW (MHz)	26dB BW (MHz)	Verdict
5B	3+5	Low	20416	20455	QPSK	7.50	7.96	PASS
5B	3+5	Low	20416	20455	16QAM	7.50	8.76	PASS
5B	3+5	Low	20416	20455	64QAM	7.51	9.42	PASS
5B	5+3	Low	20425	20464	QPSK	7.48	8.01	PASS
5B	5+3	Low	20425	20464	16QAM	7.51	8.30	PASS
5B	5+3	Low	20425	20464	64QAM	7.53	10.46	PASS
5B	5+10	Low	20428	20500	QPSK	13.91	14.65	PASS
5B	5+10	Low	20428	20500	16QAM	13.87	14.61	PASS
5B	5+10	Low	20428	20500	64QAM	13.88	14.60	PASS
5B	10+5	Low	20450	20522	QPSK	13.94	14.75	PASS
5B	10+5	Low	20450	20522	16QAM	13.86	14.75	PASS
5B	10+5	Low	20450	20522	64QAM	13.91	14.81	PASS
5B	10+10	Low	20450	20549	QPSK	18.78	19.94	PASS
5B	10+10	Low	20450	20549	16QAM	18.80	19.98	PASS
5B	10+10	Low	20450	20549	64QAM	18.75	19.93	PASS
5B	3+5	Mid	20501	20540	QPSK	7.50	7.98	PASS
5B	3+5	Mid	20501	20540	16QAM	7.51	9.39	PASS
5B	3+5	Mid	20501	20540	64QAM	7.49	9.01	PASS
5B	5+3	Mid	20510	20549	QPSK	7.46	8.02	PASS
5B	5+3	Mid	20510	20549	16QAM	7.52	10.06	PASS
5B	5+3	Mid	20510	20549	64QAM	7.52	10.04	PASS
5B	5+10	Mid	20478	20550	QPSK	13.91	14.77	PASS
5B	5+10	Mid	20478	20550	16QAM	13.90	14.71	PASS
5B	5+10	Mid	20478	20550	64QAM	13.88	14.67	PASS
5B	10+5	Mid	20500	20572	QPSK	13.95	14.81	PASS
5B	10+5	Mid	20500	20572	16QAM	13.88	14.76	PASS
5B	10+5	Mid	20500	20572	64QAM	13.92	14.80	PASS
5B	10+10	Mid	20476	20575	QPSK	18.80	19.94	PASS
5B	10+10	Mid	20476	20575	16QAM	18.76	19.90	PASS
5B	10+10	Mid	20476	20575	64QAM	18.79	19.86	PASS
5B	3+5	High	20586	20625	QPSK	7.49	7.92	PASS
5B	3+5	High	20586	20625	16QAM	7.51	8.91	PASS
5B	3+5	High	20586	20625	64QAM	7.50	9.24	PASS
5B	5+3	High	20595	20634	QPSK	7.47	7.98	PASS
5B	5+3	High	20595	20634	16QAM	7.52	11.11	PASS



5B	5+3	High	20595	20634	64QAM	7.53	12.10	PASS
5B	5+10	High	20528	20600	QPSK	13.84	14.62	PASS
5B	5+10	High	20528	20600	16QAM	13.85	14.63	PASS
5B	5+10	High	20528	20600	64QAM	13.82	14.63	PASS
5B	10+5	High	20550	20622	QPSK	13.88	14.81	PASS
5B	10+5	High	20550	20622	16QAM	13.84	14.75	PASS
5B	10+5	High	20550	20622	64QAM	13.87	14.77	PASS
5B	10+10	High	20501	20600	QPSK	18.74	19.94	PASS
5B	10+10	High	20501	20600	16QAM	18.77	19.90	PASS
5B	10+10	High	20501	20600	64QAM	18.73	19.84	PASS
66B	5+5	Low	131997	132045	QPSK	9.30	9.82	PASS
66B	5+5	Low	131997	132045	16QAM	9.25	9.87	PASS
66B	5+5	Low	131997	132045	64QAM	9.26	9.88	PASS
66B	5+10	Low	132000	132072	QPSK	13.92	14.71	PASS
66B	5+10	Low	132000	132072	16QAM	13.90	14.67	PASS
66B	5+10	Low	132000	132072	64QAM	13.90	14.65	PASS
66B	5+15	Low	132002	132095	QPSK	18.29	19.31	PASS
66B	5+15	Low	132002	132095	16QAM	18.24	19.20	PASS
66B	5+15	Low	132002	132095	64QAM	18.22	19.23	PASS
66B	5+5	Mid	132398	132446	QPSK	9.27	9.89	PASS
66B	5+5	Mid	132398	132446	16QAM	9.27	9.86	PASS
66B	5+5	Mid	132398	132446	64QAM	9.28	9.86	PASS
66B	5+10	Mid	132375	132447	QPSK	13.93	14.75	PASS
66B	5+10	Mid	132375	132447	16QAM	13.94	14.74	PASS
66B	5+10	Mid	132375	132447	64QAM	13.94	14.63	PASS
66B	5+15	Mid	132353	132446	QPSK	18.29	19.26	PASS
66B	5+15	Mid	132353	132446	16QAM	18.30	19.20	PASS
66B	5+15	Mid	132353	132446	64QAM	18.22	19.26	PASS
66B	5+5	High	132599	132647	QPSK	9.30	9.91	PASS
66B	5+5	High	132599	132647	16QAM	9.27	9.88	PASS
66B	5+5	High	132599	132647	64QAM	9.28	9.87	PASS
66B	5+10	High	132550	132622	QPSK	13.90	14.72	PASS
66B	5+10	High	132550	132622	16QAM	13.89	14.68	PASS
66B	5+10	High	132550	132622	64QAM	13.92	14.64	PASS
66B	5+15	High	132504	132597	QPSK	18.31	19.43	PASS
66B	5+15	High	132504	132597	16QAM	18.24	19.19	PASS
66B	5+15	High	132504	132597	64QAM	18.17	19.18	PASS
66B	10+5	Low	132022	132094	QPSK	14.00	14.76	PASS



66B	10+5	Low	132022	132094	16QAM	13.91	14.78	PASS
66B	10+5	Low	132022	132094	64QAM	13.93	14.79	PASS
66B	10+10	Low	132022	132121	QPSK	18.89	19.97	PASS
66B	10+10	Low	132022	132121	16QAM	18.85	19.92	PASS
66B	10+10	Low	132022	132121	64QAM	18.85	19.97	PASS
66B	10+5	Mid	132397	132469	QPSK	13.94	14.80	PASS
66B	10+5	Mid	132397	132469	16QAM	13.90	14.76	PASS
66B	10+5	Mid	132397	132469	64QAM	13.91	14.84	PASS
66B	10+10	Mid	132373	132472	QPSK	18.88	19.95	PASS
66B	10+10	Mid	132373	132472	16QAM	18.85	19.96	PASS
66B	10+10	Mid	132373	132472	64QAM	18.90	19.96	PASS
66B	10+5	High	132572	132644	QPSK	13.96	14.78	PASS
66B	10+5	High	132572	132644	16QAM	13.91	14.79	PASS
66B	10+5	High	132572	132644	64QAM	13.93	14.82	PASS
66B	10+10	High	132523	132622	QPSK	18.81	19.94	PASS
66B	10+10	High	132523	132622	16QAM	18.81	19.95	PASS
66B	10+10	High	132523	132622	64QAM	18.86	20.02	PASS
66B	15+5	Low	132047	132140	QPSK	18.28	19.48	PASS
66B	15+5	Low	132047	132140	16QAM	18.30	19.46	PASS
66B	15+5	Low	132047	132140	64QAM	18.27	19.37	PASS
66B	15+5	Mid	132398	132491	QPSK	18.28	19.43	PASS
66B	15+5	Mid	132398	132491	16QAM	18.31	19.44	PASS
66B	15+5	Mid	132398	132491	64QAM	18.27	19.45	PASS
66B	15+5	High	132549	132642	QPSK	18.33	19.44	PASS
66B	15+5	High	132549	132642	16QAM	18.30	19.46	PASS
66B	15+5	High	132549	132642	64QAM	18.29	19.35	PASS
66C	5+20	Low	132005	132122	QPSK	22.756	23.529	PASS
66C	5+20	Low	132005	132122	16QAM	22.850	23.614	PASS
66C	5+20	Low	132005	132122	64QAM	22.660	23.633	PASS
66C	5+20	Mid	132330	132447	QPSK	22.779	23.615	PASS
66C	5+20	Mid	132330	132447	16QAM	22.880	23.637	PASS
66C	5+20	Mid	132330	132447	64QAM	22.700	23.683	PASS
66C	5+20	High	132455	132572	QPSK	22.714	23.587	PASS
66C	5+20	High	132455	132572	16QAM	22.813	23.599	PASS
66C	5+20	High	132455	132572	64QAM	22.587	23.602	PASS
66C	10+15	Low	132025	132145	QPSK	23.179	24.163	PASS
66C	10+15	Low	132025	132145	16QAM	23.057	24.012	PASS
66C	10+15	Low	132025	132145	64QAM	23.026	24.101	PASS



REPORT No.: SZ23110216W09

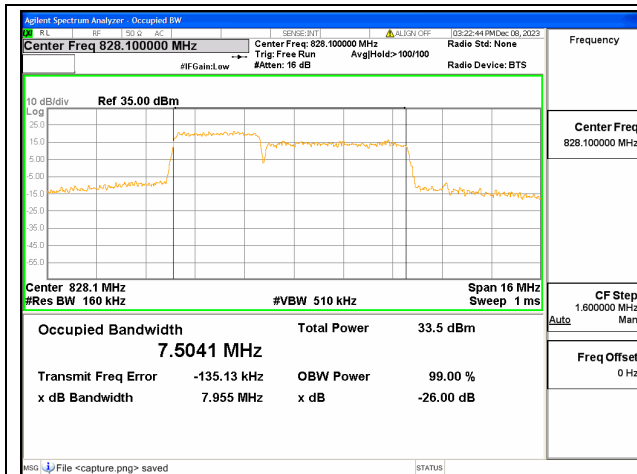
66C	10+20	Low	132027	132171	QPSK	27.643	28.780	PASS
66C	10+20	Low	132027	132171	16QAM	27.652	28.749	PASS
66C	10+20	Low	132027	132171	64QAM	27.566	28.794	PASS
66C	10+15	Mid	132351	132471	QPSK	23.110	24.222	PASS
66C	10+15	Mid	132351	132471	16QAM	23.129	24.029	PASS
66C	10+15	Mid	132351	132471	64QAM	23.064	24.054	PASS
66C	10+20	Mid	132328	132472	QPSK	27.714	28.738	PASS
66C	10+20	Mid	132328	132472	16QAM	27.683	28.824	PASS
66C	10+20	Mid	132328	132472	64QAM	27.592	28.690	PASS
66C	10+15	High	132477	132597	QPSK	23.024	24.193	PASS
66C	10+15	High	132477	132597	16QAM	23.022	23.978	PASS
66C	10+15	High	132477	132597	64QAM	22.959	24.087	PASS
66C	10+20	High	132428	132572	QPSK	27.606	28.817	PASS
66C	10+20	High	132428	132572	16QAM	27.551	28.818	PASS
66C	10+20	High	132428	132572	64QAM	27.518	28.693	PASS
66C	15+10	Low	132047	132167	QPSK	23.116	24.205	PASS
66C	15+10	Low	132047	132167	16QAM	23.075	24.233	PASS
66C	15+10	Low	132047	132167	64QAM	23.061	24.220	PASS
66C	15+15	Low	132047	132197	QPSK	28.202	29.609	PASS
66C	15+15	Low	132047	132197	16QAM	28.309	29.437	PASS
66C	15+15	Low	132047	132197	64QAM	28.201	29.522	PASS
66C	15+20	Low	132050	132221	QPSK	32.488	33.962	PASS
66C	15+20	Low	132050	132221	16QAM	32.565	33.951	PASS
66C	15+20	Low	132050	132221	64QAM	32.507	33.776	PASS
66C	15+10	Mid	132373	132493	QPSK	23.129	24.249	PASS
66C	15+10	Mid	132373	132493	16QAM	23.047	24.263	PASS
66C	15+10	Mid	132373	132493	64QAM	23.104	24.283	PASS
66C	15+15	Mid	132347	132497	QPSK	28.334	29.552	PASS
66C	15+15	Mid	132347	132497	16QAM	28.332	29.529	PASS
66C	15+15	Mid	132347	132497	64QAM	28.242	29.631	PASS
66C	15+20	Mid	132325	132496	QPSK	32.532	33.883	PASS
66C	15+20	Mid	132325	132496	16QAM	32.617	33.924	PASS
66C	15+20	Mid	132325	132496	64QAM	32.674	33.954	PASS
66C	15+10	High	132499	132619	QPSK	23.034	24.211	PASS
66C	15+10	High	132499	132619	16QAM	23.020	24.161	PASS
66C	15+10	High	132499	132619	64QAM	23.026	24.206	PASS
66C	15+15	High	132447	132597	QPSK	28.263	29.432	PASS
66C	15+15	High	132447	132597	16QAM	28.248	29.405	PASS



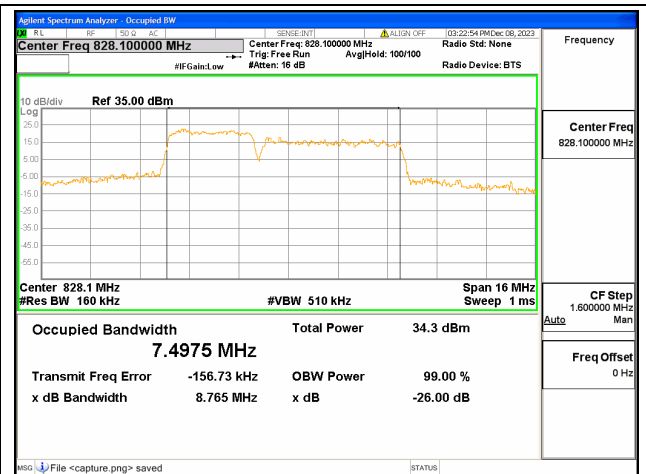
66C	15+15	High	132447	132597	64QAM	28.219	29.467	PASS
66C	15+20	High	132401	132572	QPSK	32.489	33.886	PASS
66C	15+20	High	132401	132572	16QAM	32.490	33.802	PASS
66C	15+20	High	132401	132572	64QAM	32.460	33.900	PASS
66C	20+10	Low	132072	132216	QPSK	27.672	29.092	PASS
66C	20+10	Low	132072	132216	16QAM	27.661	29.027	PASS
66C	20+10	Low	132072	132216	64QAM	27.624	29.040	PASS
66C	20+15	Low	132072	132243	QPSK	32.574	34.222	PASS
66C	20+15	Low	132072	132243	16QAM	32.623	34.017	PASS
66C	20+15	Low	132072	132243	64QAM	32.498	34.108	PASS
66C	20+5	Low	132072	132189	QPSK	22.824	23.908	PASS
66C	20+5	Low	132072	132189	16QAM	22.796	23.866	PASS
66C	20+5	Low	132072	132189	64QAM	22.833	23.979	PASS
66C	20+20	Low	132072	132270	QPSK	37.405	39.123	PASS
66C	20+20	Low	132072	132270	16QAM	37.370	39.057	PASS
66C	20+20	Low	132072	132270	64QAM	37.311	39.019	PASS
66C	20+10	Mid	132373	132517	QPSK	27.714	29.106	PASS
66C	20+10	Mid	132373	132517	16QAM	27.745	28.963	PASS
66C	20+10	Mid	132373	132517	64QAM	27.729	28.947	PASS
66C	20+15	Mid	132348	132519	QPSK	32.640	34.108	PASS
66C	20+15	Mid	132348	132519	16QAM	32.678	34.179	PASS
66C	20+15	Mid	132348	132519	64QAM	32.505	34.011	PASS
66C	20+5	Mid	132397	132514	QPSK	22.883	23.994	PASS
66C	20+5	Mid	132397	132514	16QAM	22.843	23.930	PASS
66C	20+5	Mid	132397	132514	64QAM	22.800	23.856	PASS
66C	20+20	Mid	132323	132521	QPSK	37.418	39.093	PASS
66C	20+20	Mid	132323	132521	16QAM	37.472	39.016	PASS
66C	20+20	Mid	132323	132521	64QAM	37.328	39.145	PASS
66C	20+10	High	132473	132617	QPSK	27.669	29.001	PASS
66C	20+10	High	132473	132617	16QAM	27.661	28.938	PASS
66C	20+10	High	132473	132617	64QAM	27.652	28.975	PASS
66C	20+15	High	132423	132594	QPSK	32.554	34.027	PASS
66C	20+15	High	132423	132594	16QAM	32.568	34.025	PASS
66C	20+15	High	132423	132594	64QAM	32.519	34.117	PASS
66C	20+5	High	132522	132639	QPSK	22.771	23.830	PASS
66C	20+5	High	132522	132639	16QAM	22.836	23.906	PASS
66C	20+5	High	132522	132639	64QAM	22.817	23.928	PASS
66C	20+20	High	132374	132572	QPSK	37.456	39.213	PASS



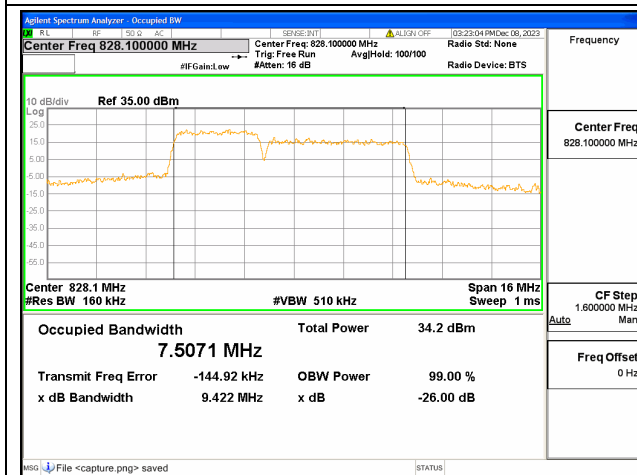
66C	20+20	High	132374	132572	16QAM	37.561	39.117	PASS
66C	20+20	High	132374	132572	64QAM	37.307	39.198	PASS



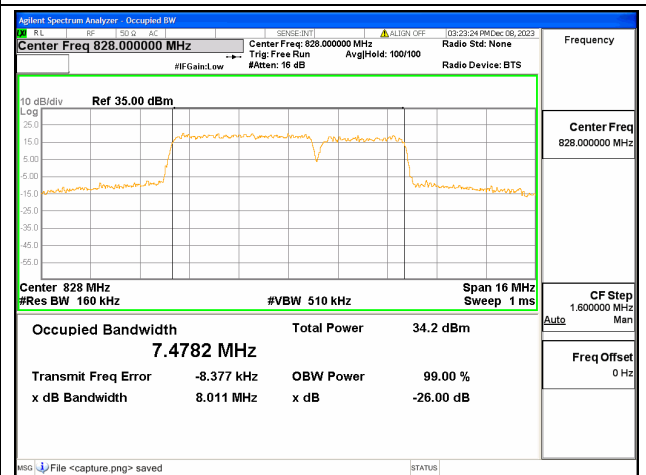
5B / 3+5MHz / QPSK/ Low CH



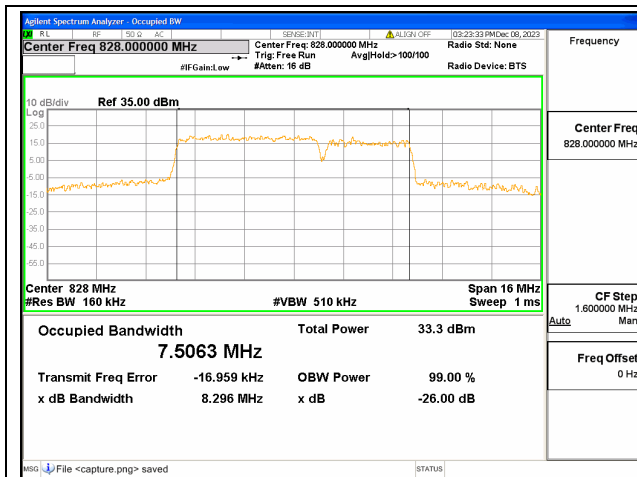
5B / 3+5MHz / 16QAM/ Low CH



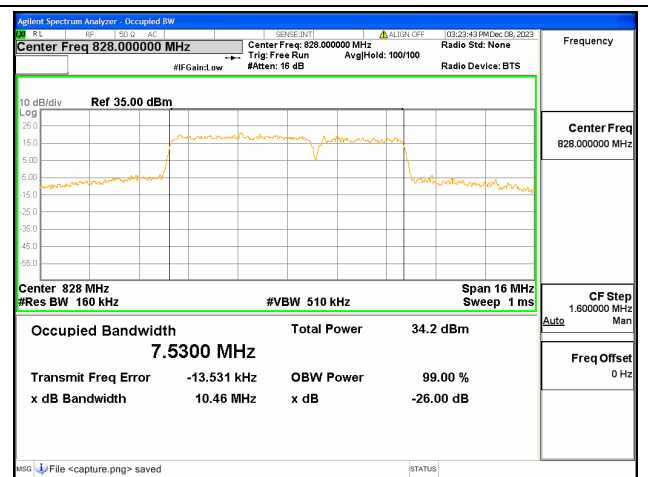
5B / 3+5MHz / 64QAM/ Low CH



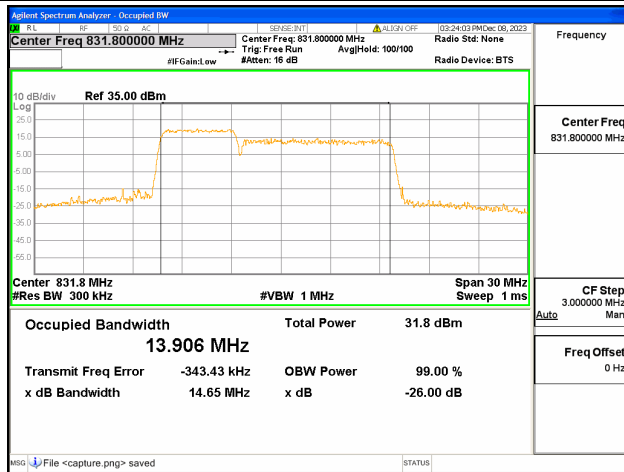
5B / 5+3MHz / QPSK/ Low CH



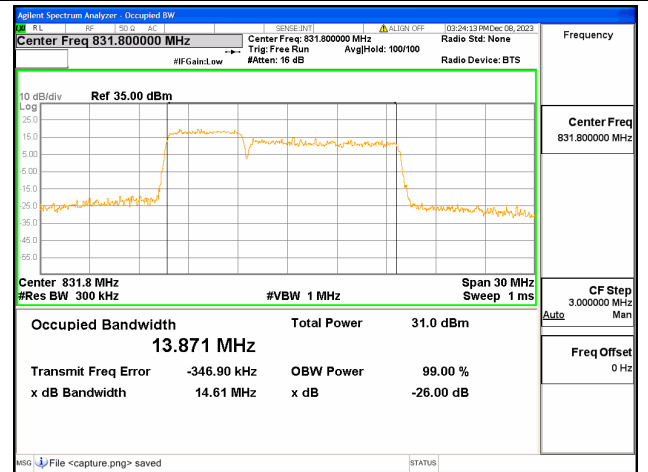
5B / 5+3MHz / 16QAM/ Low CH



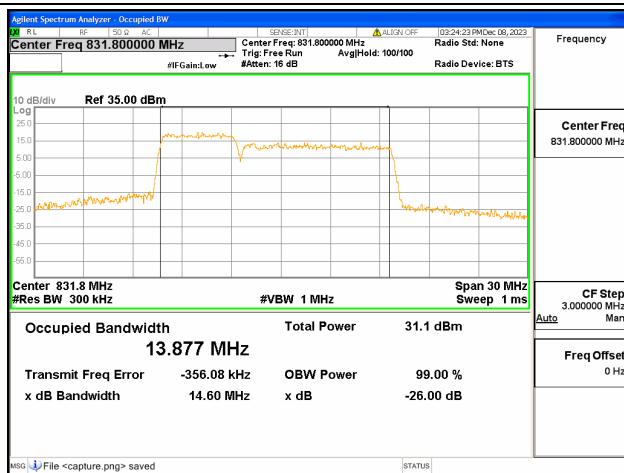
5B / 5+3MHz / 64QAM/ Low CH



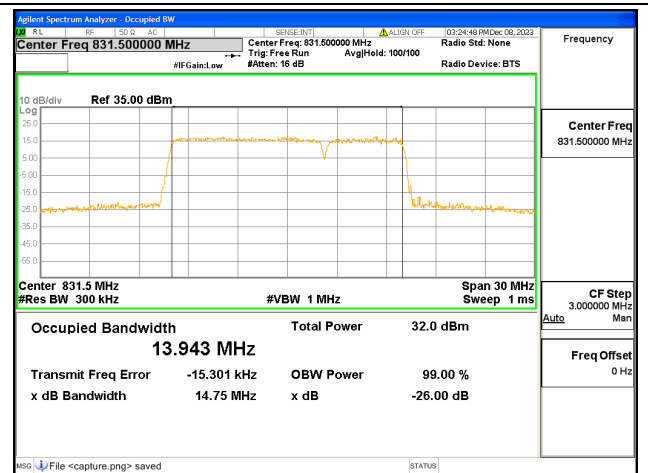
5B / 5+10MHz / QPSK/ Low CH



5B / 5+10MHz / 16QAM/ Low CH

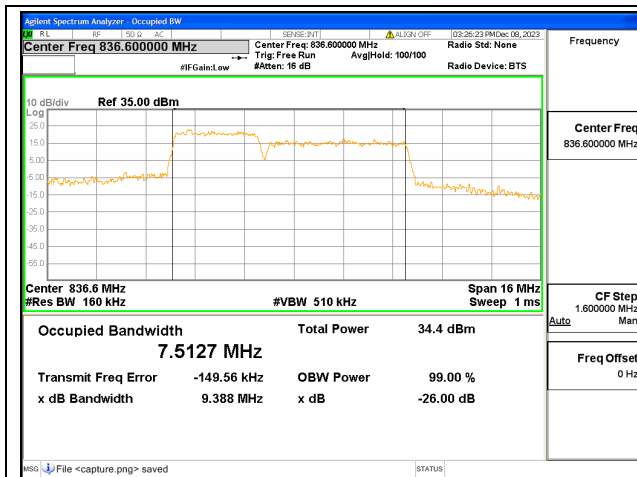


5B / 5+10MHz / 64QAM/ Low CH

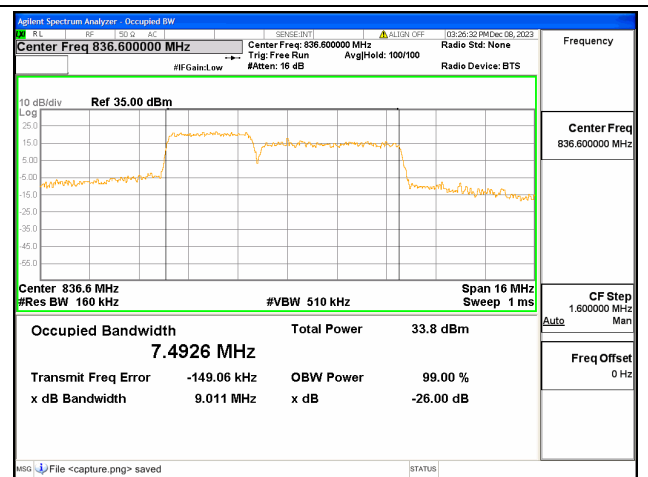


5B / 10+5MHz / QPSK/ Low CH

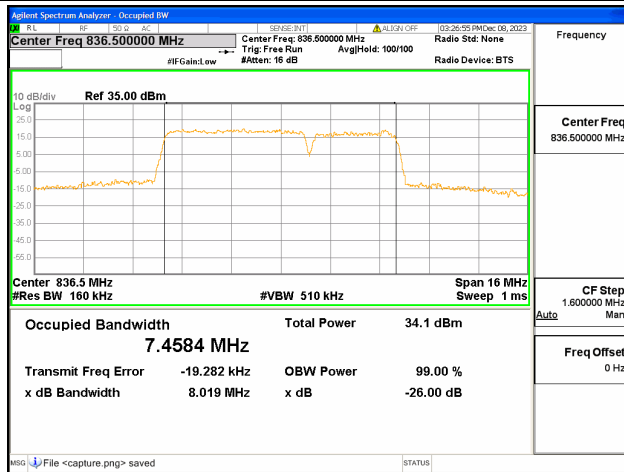




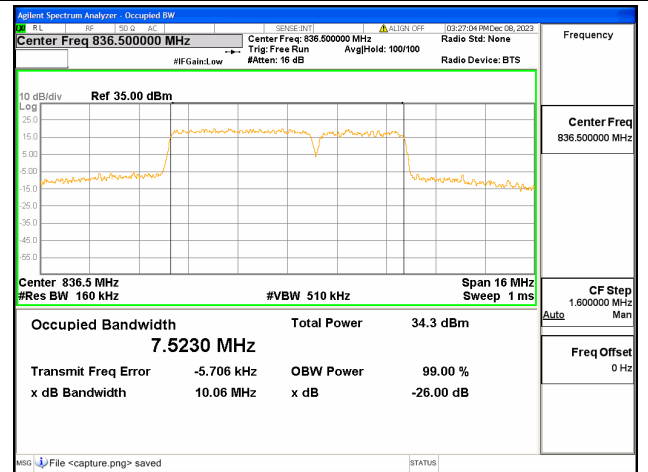
5B / 3+5MHz / 16QAM/ Mid CH



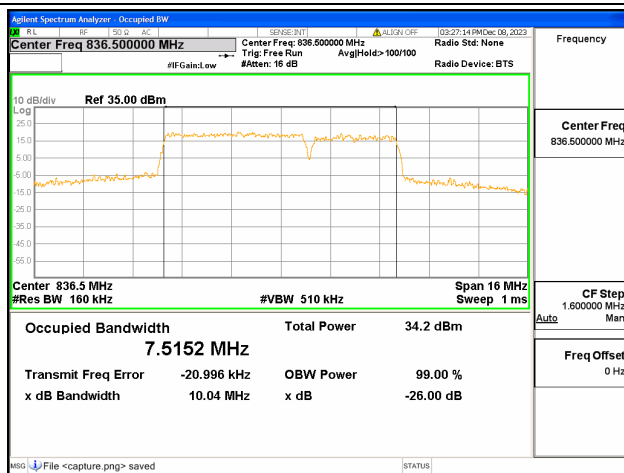
5B / 3+5MHz / 64QAM/ Mid CH



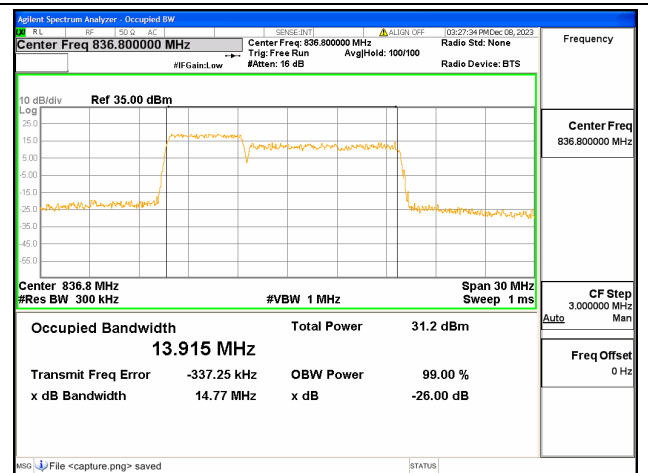
5B / 5+3MHz / QPSK/ Mid CH



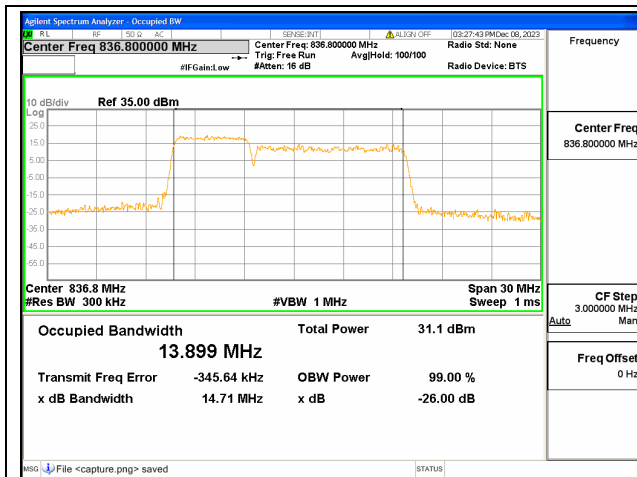
5B / 5+3MHz / 16QAM/ Mid CH



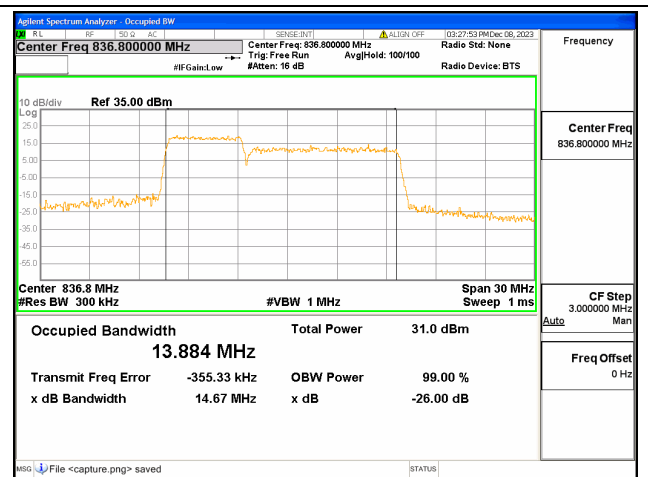
5B / 5+3MHz / 64QAM/ Mid CH



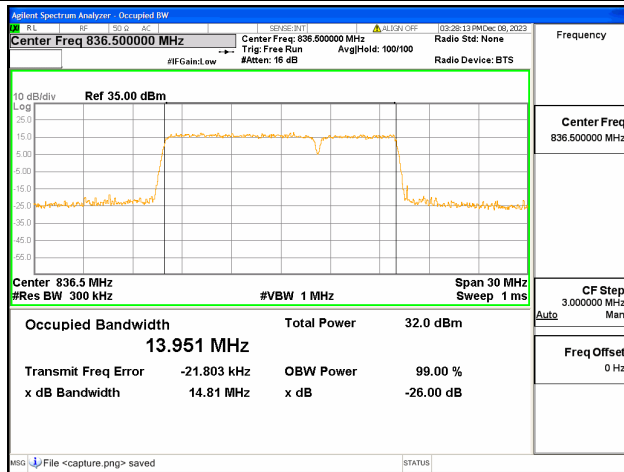
5B / 5+10MHz / QPSK/ Mid CH



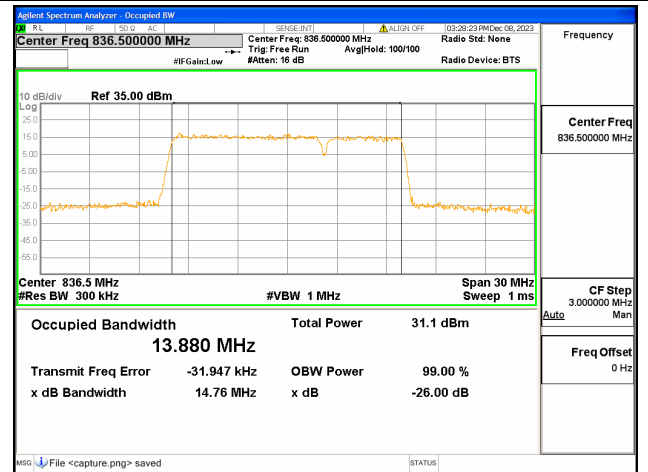
5B / 5+10MHz / 16QAM/ Mid CH



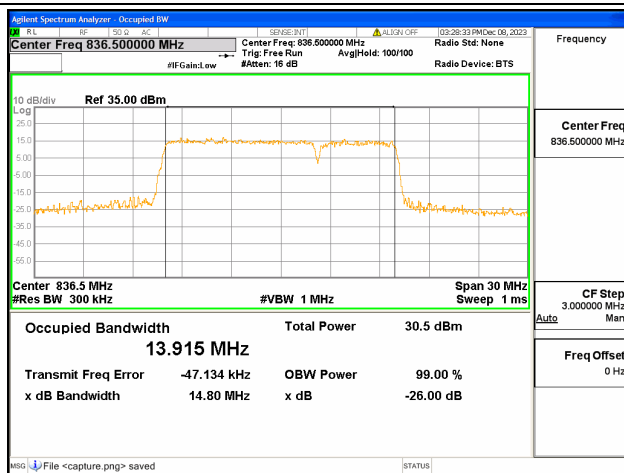
5B / 5+10MHz / 64QAM/ Mid CH



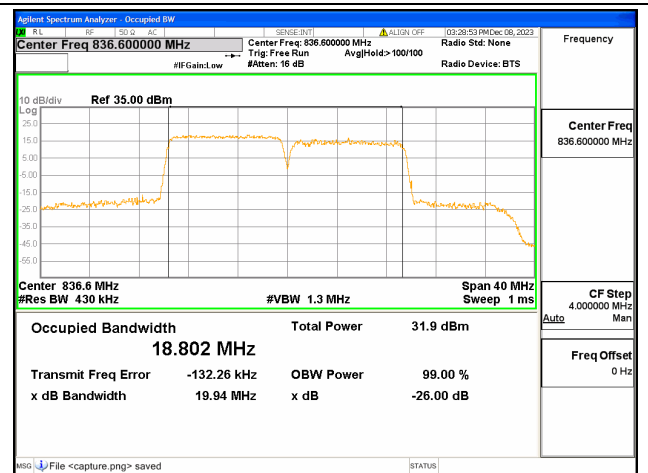
5B / 10+5MHz / QPSK/ Mid CH



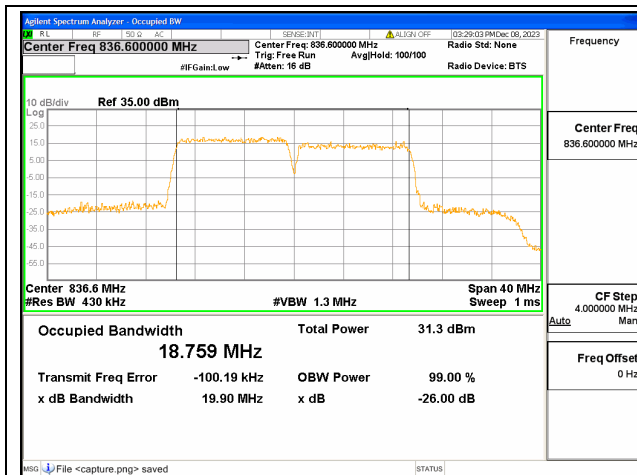
5B / 10+5MHz / 16QAM/ Mid CH



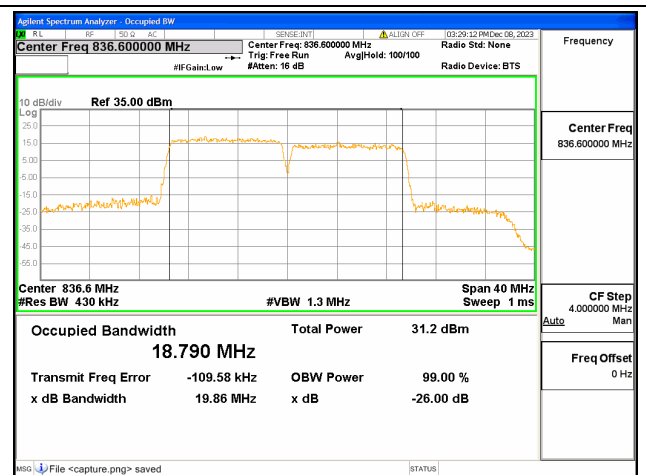
5B / 10+5MHz / 64QAM/ Mid CH



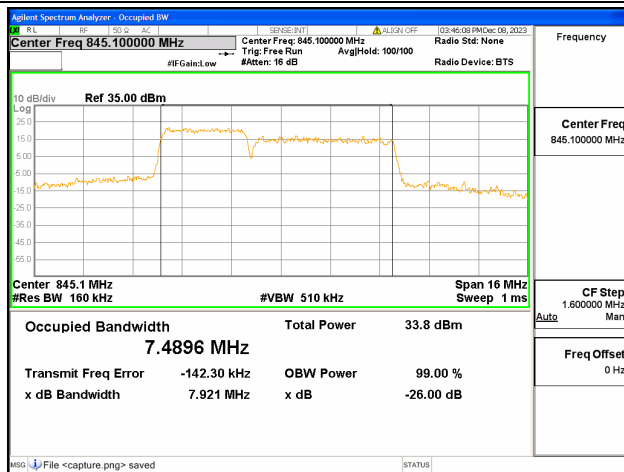
5B / 10+10MHz / QPSK/ Mid CH



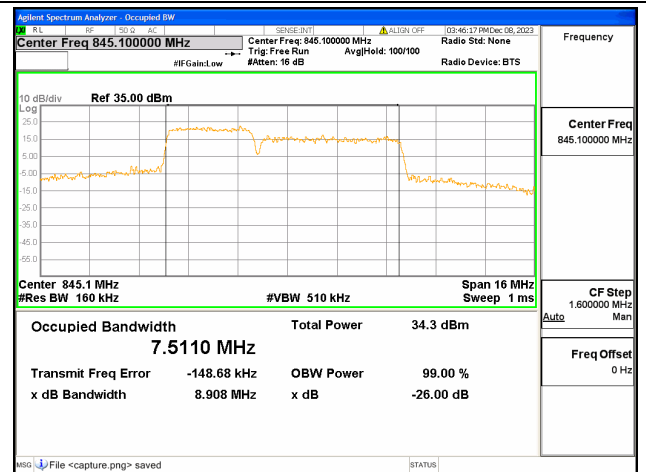
5B / 10+10MHz / 16QAM/ Mid CH



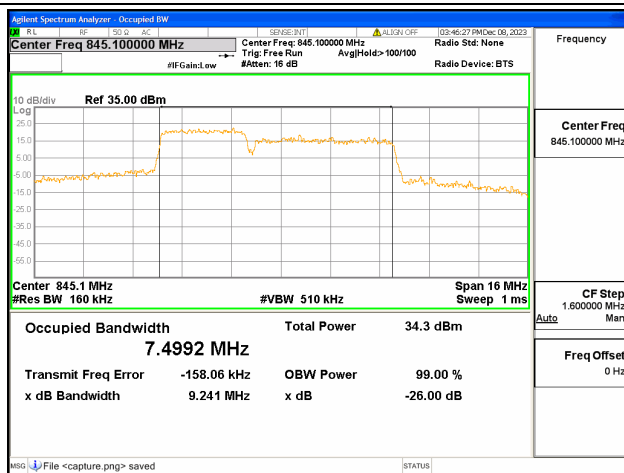
5B / 10+10MHz / 64QAM/ Mid CH



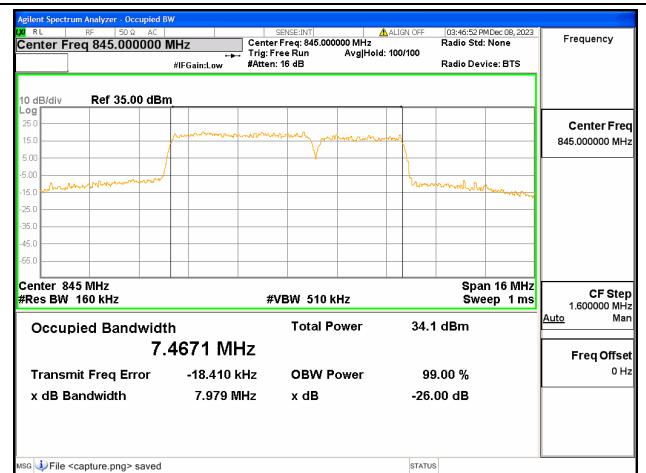
5B / 3+5MHz / QPSK/ High CH



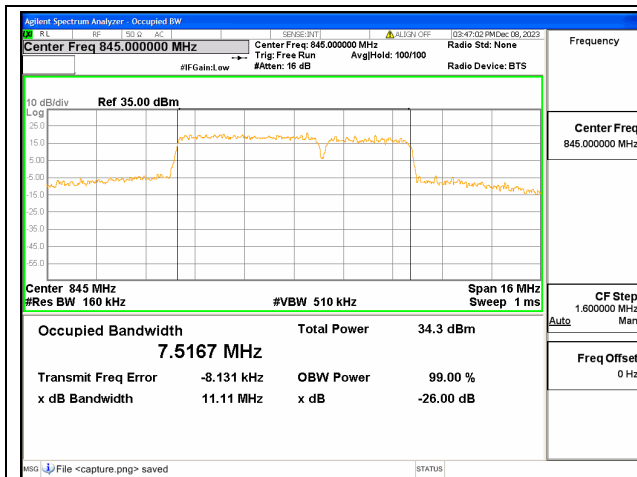
5B / 3+5MHz / 16QAM/ High CH



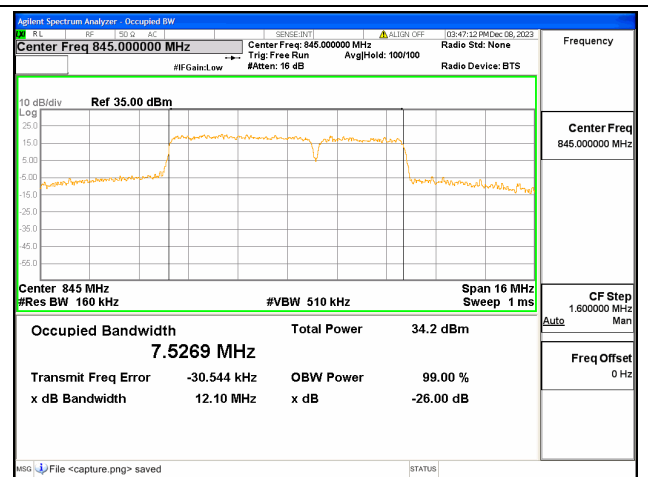
5B / 3+5MHz / 64QAM/ High CH



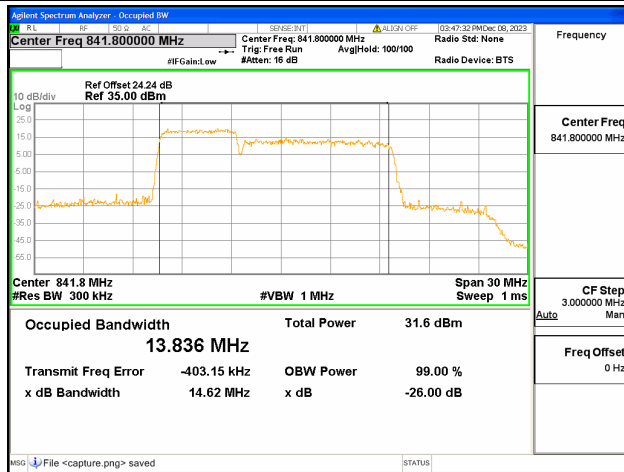
5B / 5+3MHz / QPSK/ High CH



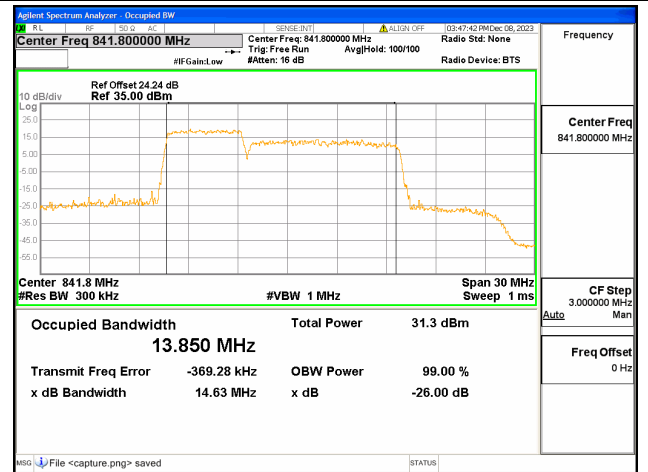
5B / 5+3MHz / 16QAM/ High CH



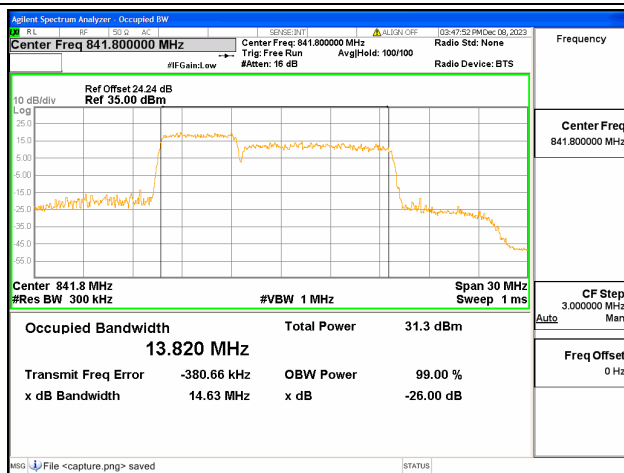
5B / 5+3MHz / 64QAM/ High CH



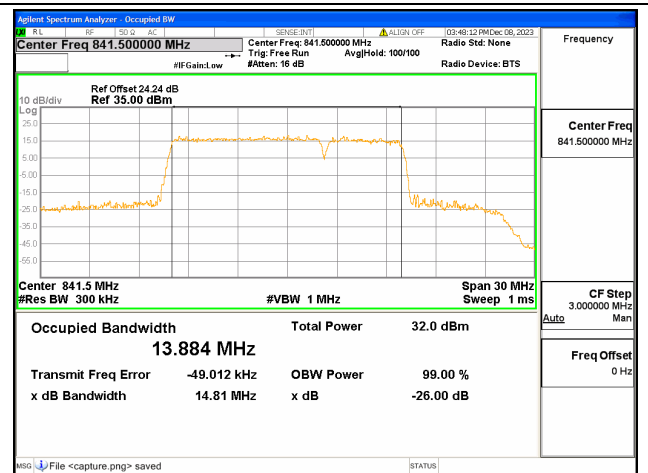
5B / 5+10MHz / QPSK/ High CH



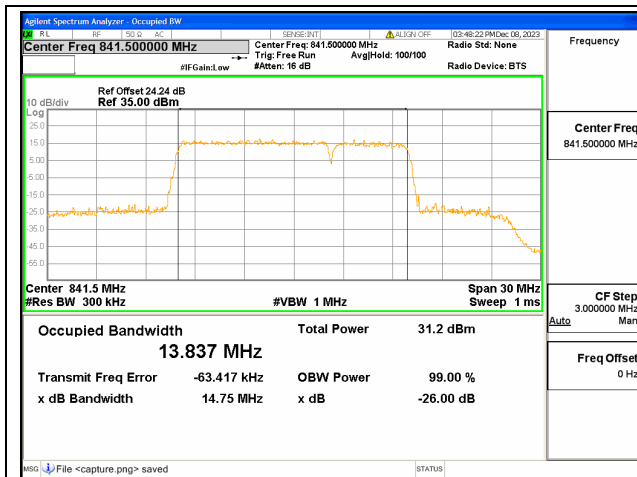
5B / 5+10MHz / 16QAM/ High CH



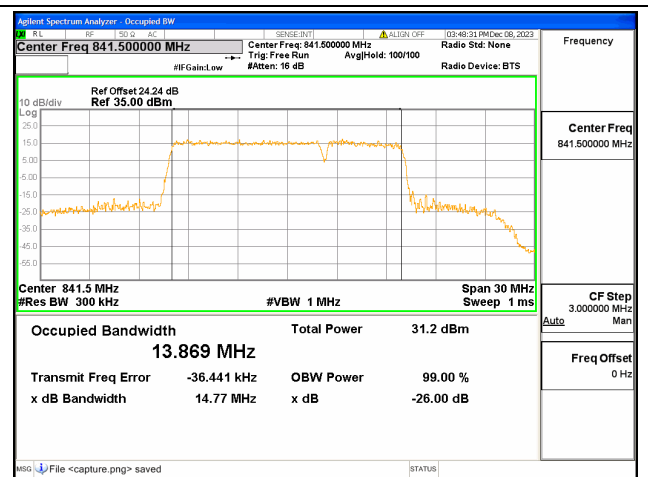
5B / 5+10MHz / 64QAM/ High CH



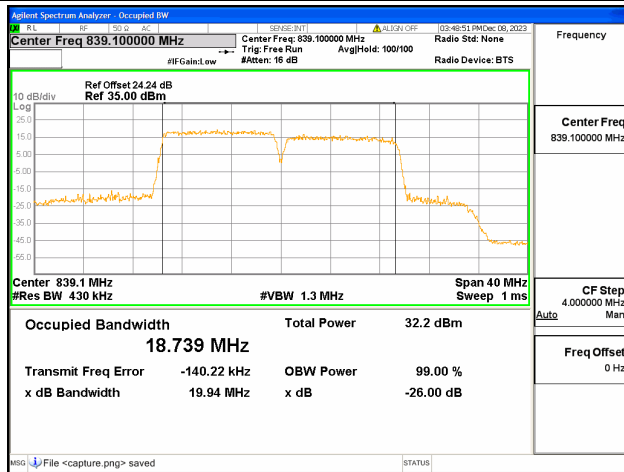
5B / 10+5MHz / QPSK/ High CH



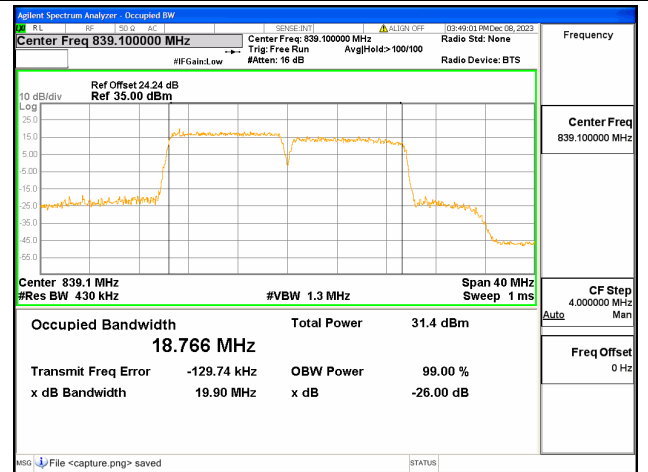
5B / 10+5MHz / 16QAM/ High CH



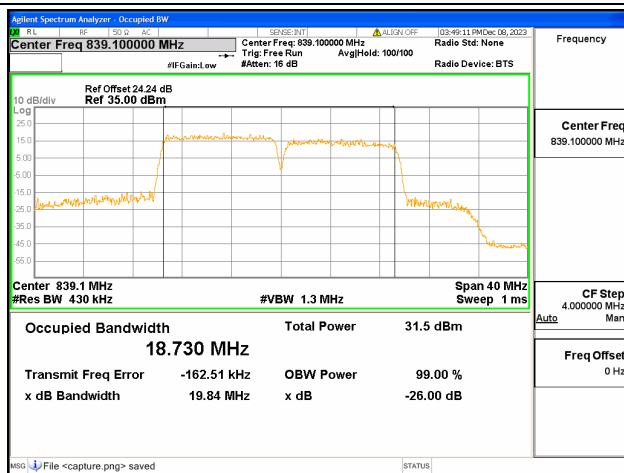
5B / 10+5MHz / 64QAM/ High CH



5B / 10+10MHz / QPSK/ High CH

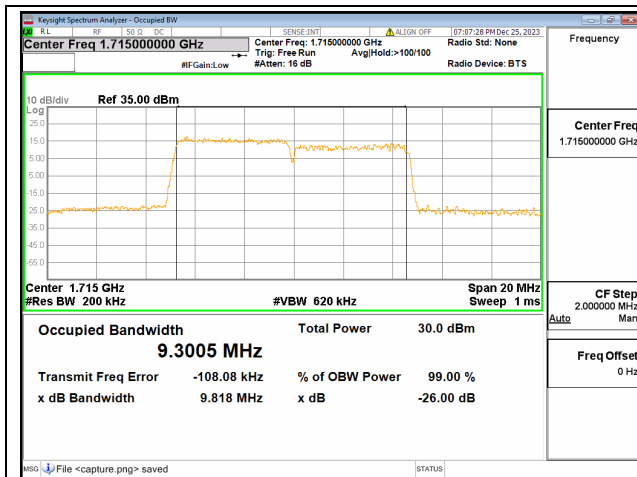


5B / 10+10MHz / 16QAM/ High CH

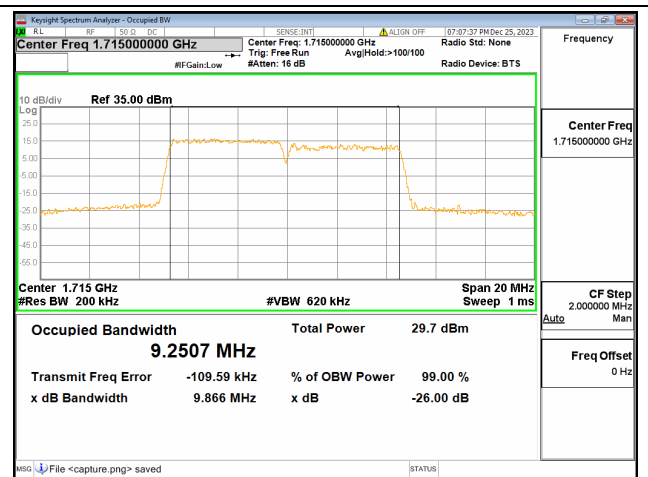


5B / 10+10MHz / 64QAM/ High CH

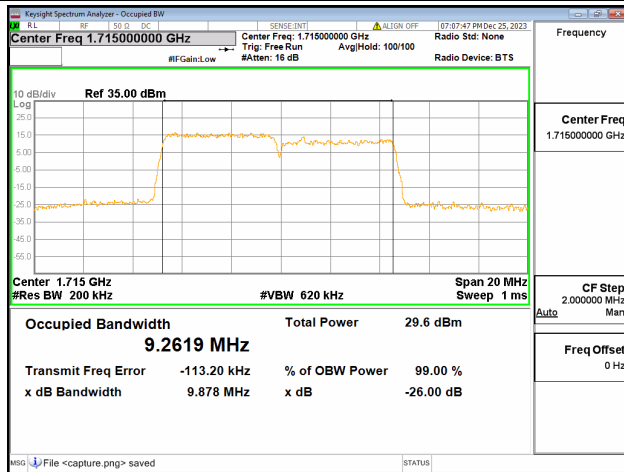
N/A



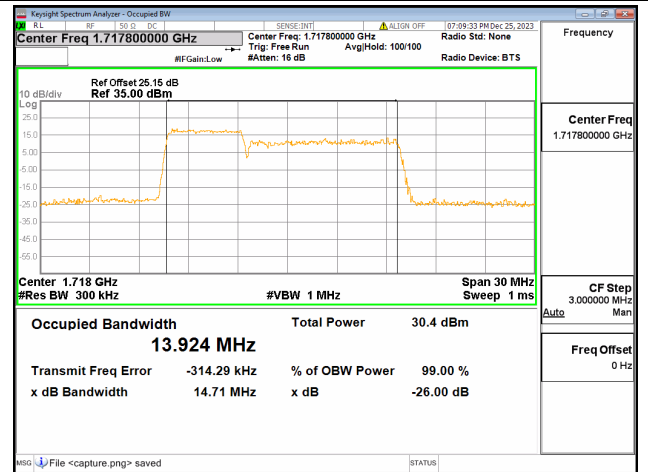
66B / 5+5MHz / QPSK/ Low CH



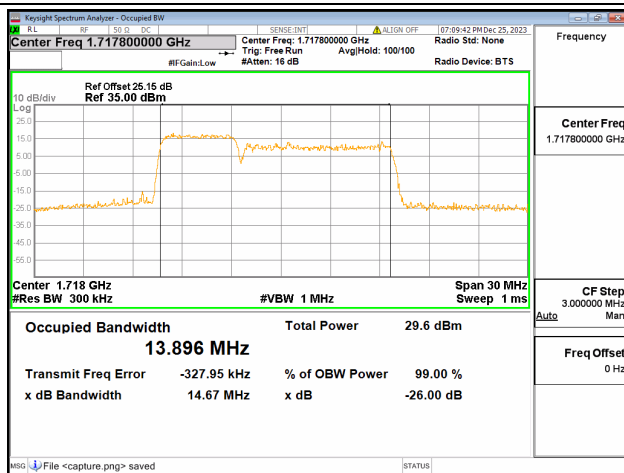
66B / 5+5MHz / 16QAM/ Low CH



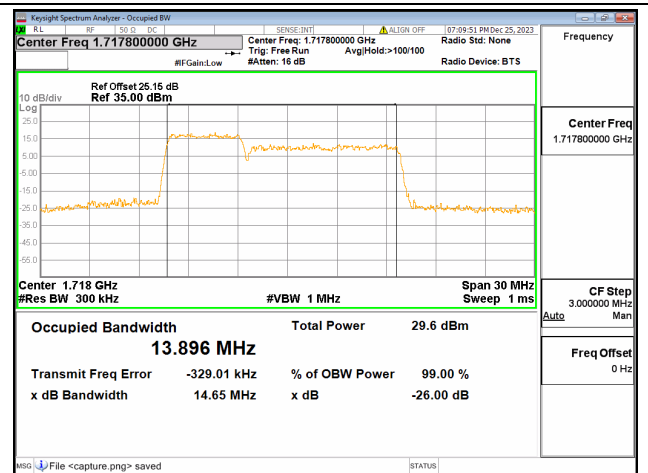
66B / 5+5MHz / 64QAM/ Low CH



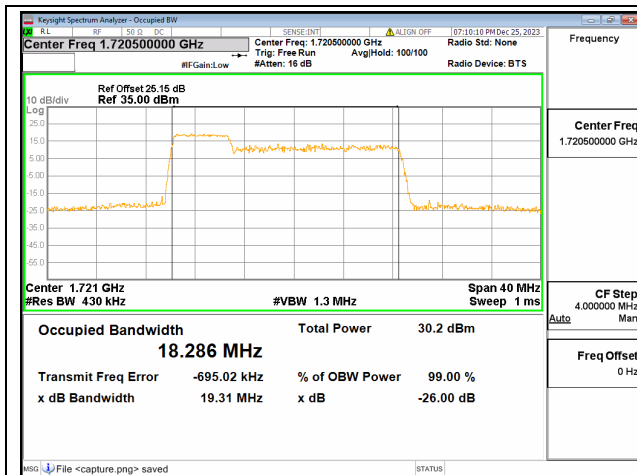
66B / 5+10MHz / QPSK/ Low CH



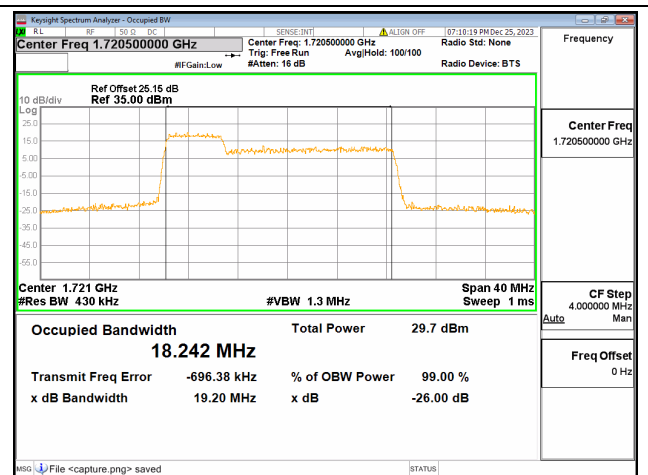
66B / 5+10MHz / 16QAM/ Low CH



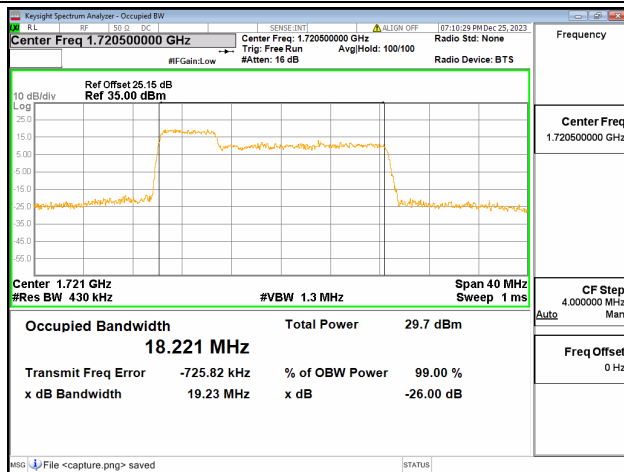
66B / 5+10MHz / 64QAM/ Low CH



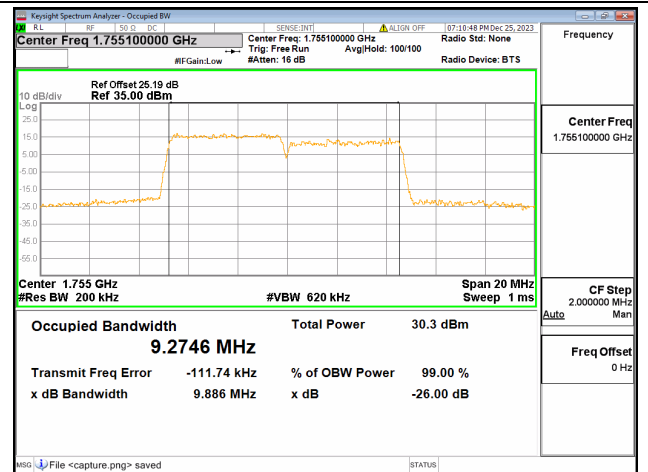
66B / 5+15MHz / QPSK/ Low CH



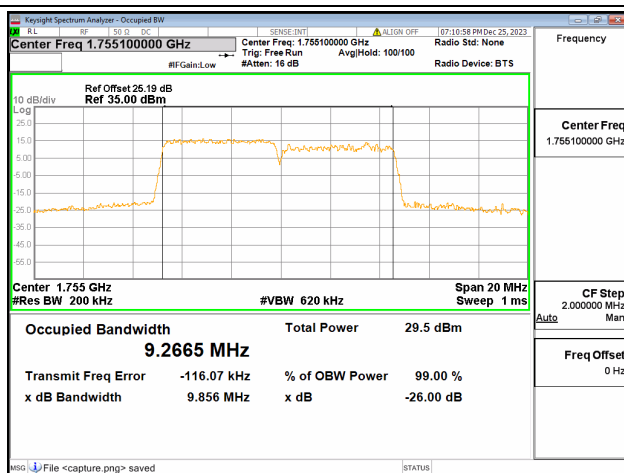
66B / 5+15MHz / 16QAM/ Low CH



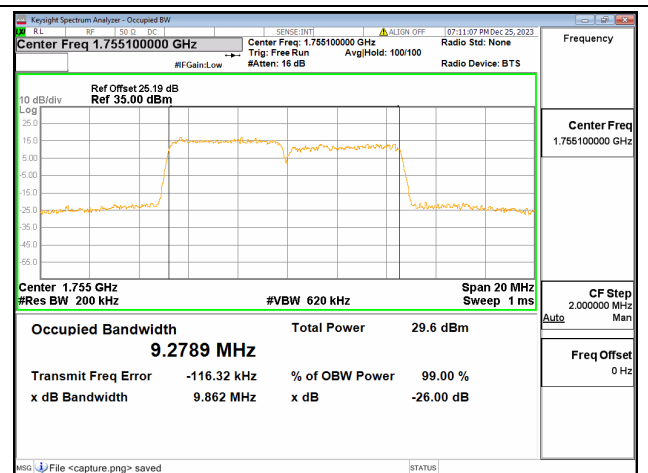
66B / 5+15MHz / 64QAM/ Low CH



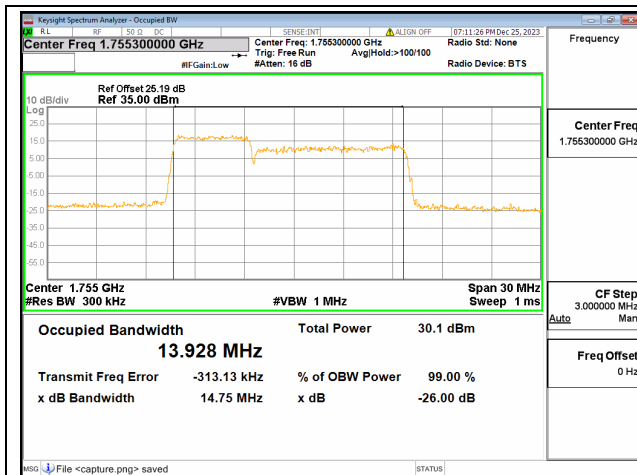
66B / 5+5MHz / QPSK/ Mid CH



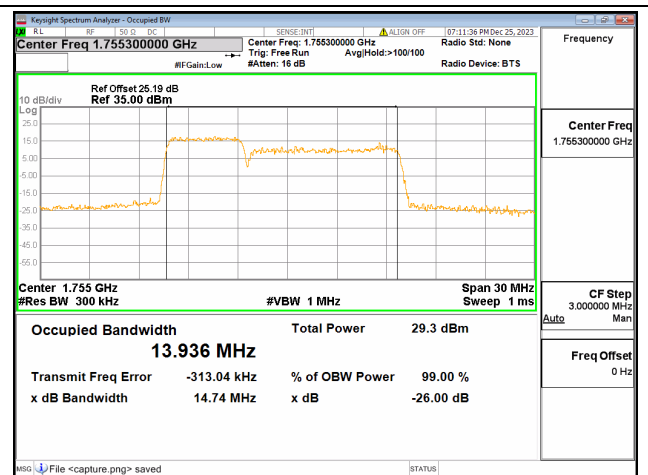
66B / 5+5MHz / 16QAM/ Mid CH



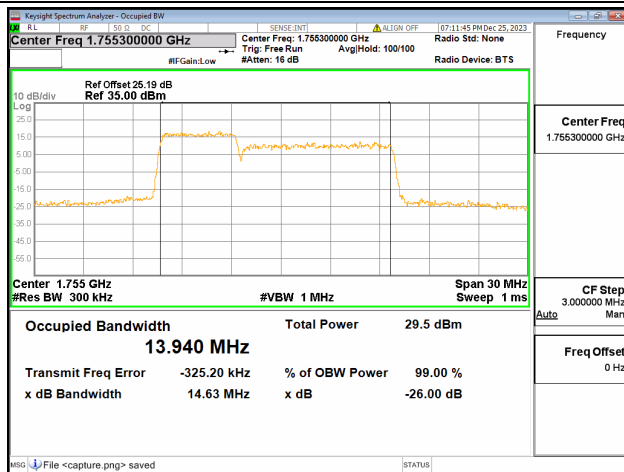
66B / 5+5MHz / 64QAM/ Mid CH



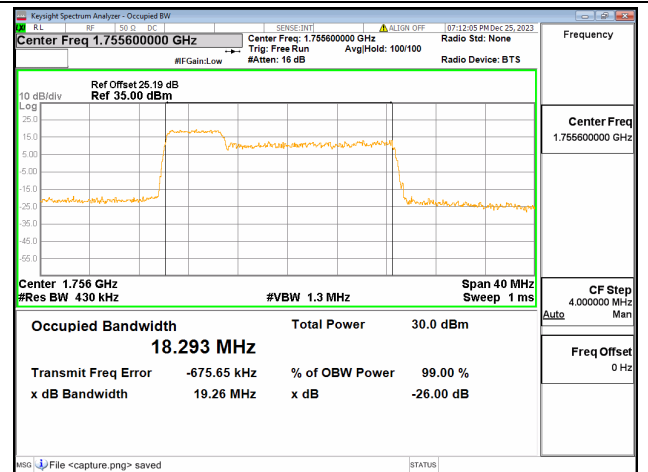
66B / 5+10MHz / QPSK/ Mid CH



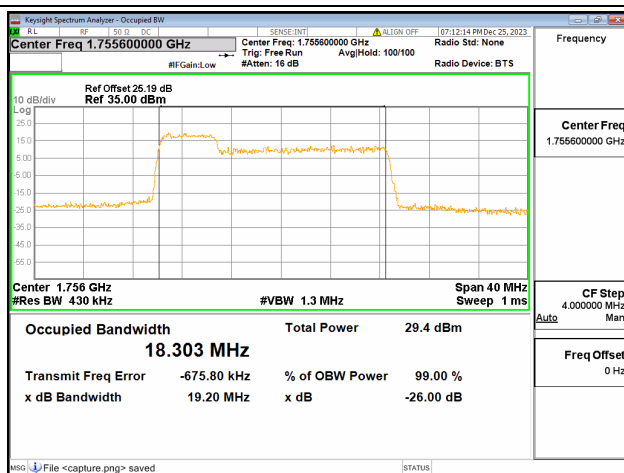
66B / 5+10MHz / 16QAM/ Mid CH



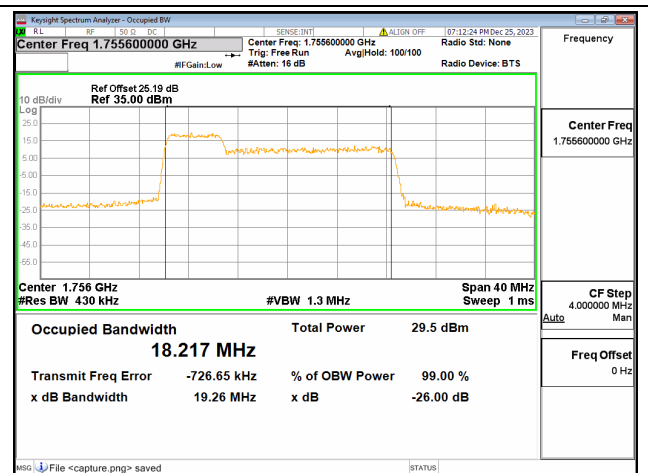
66B / 5+10MHz / 64QAM/ Mid CH



66B / 5+15MHz / QPSK/ Mid CH



66B / 5+15MHz / 16QAM/ Mid CH



66B / 5+15MHz / 64QAM/ Mid CH

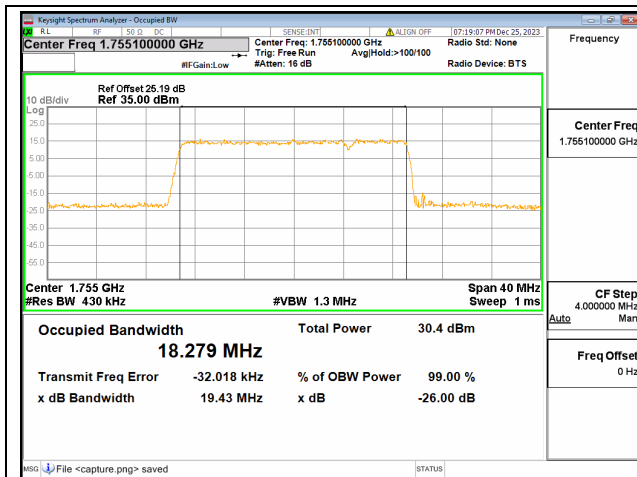




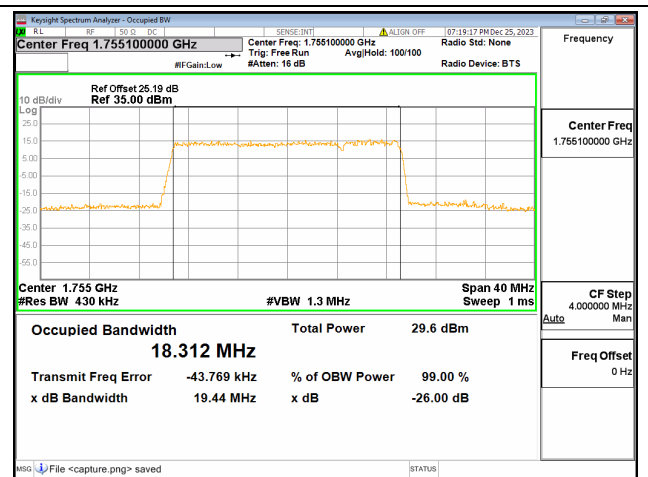




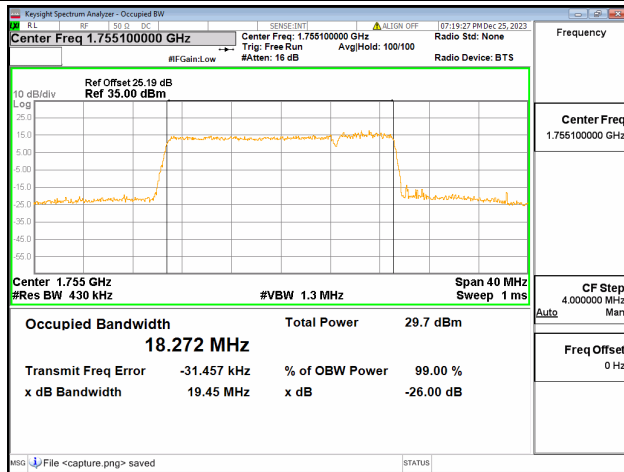




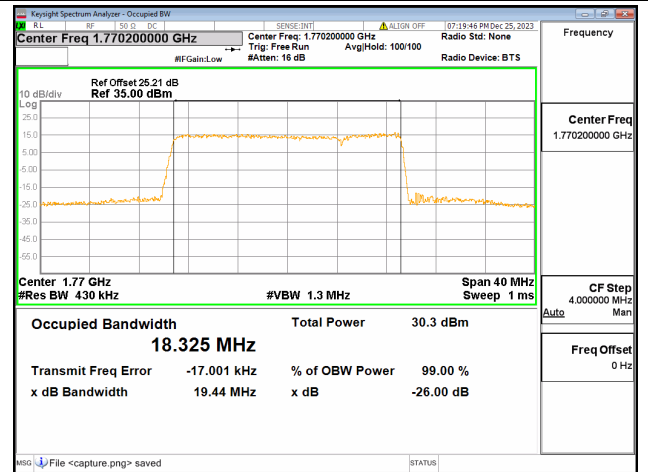
66B / 15+5MHz / QPSK/ Mid CH



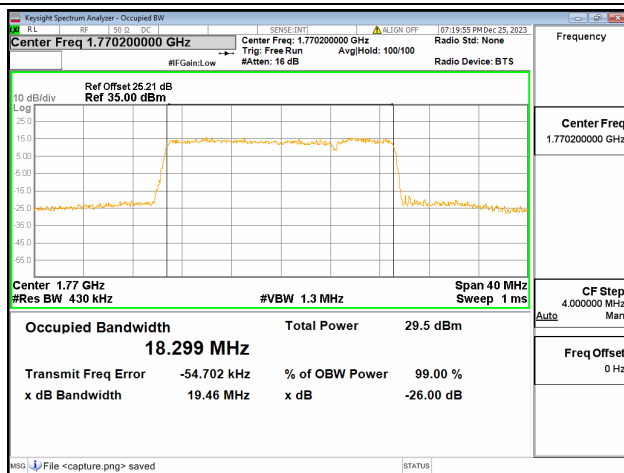
66B / 15+5MHz / 16QAM/ Mid CH



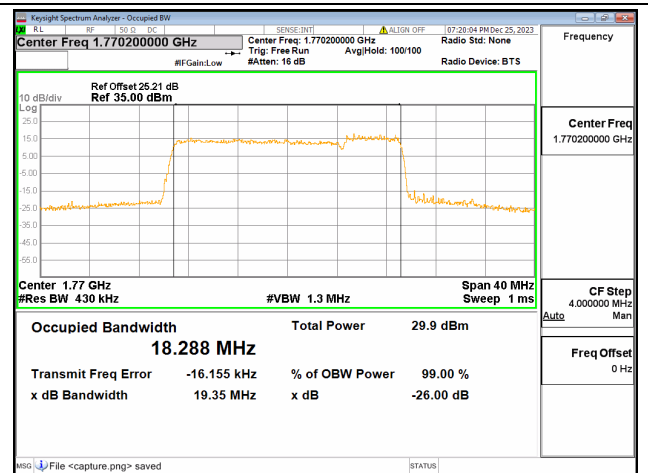
66B / 15+5MHz / 64QAM/ Mid CH



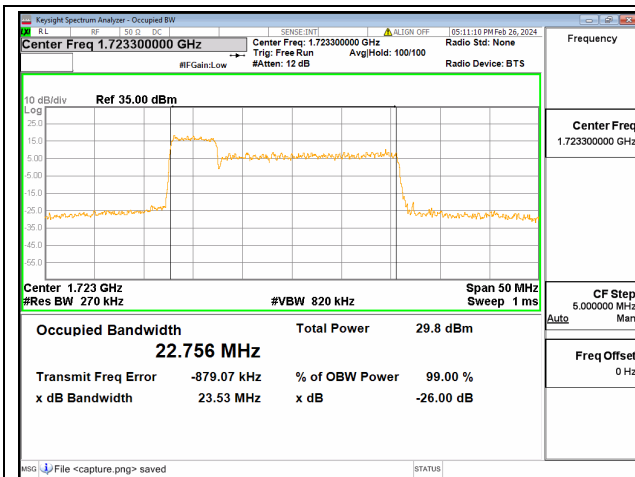
66B / 15+5MHz / QPSK/ High CH



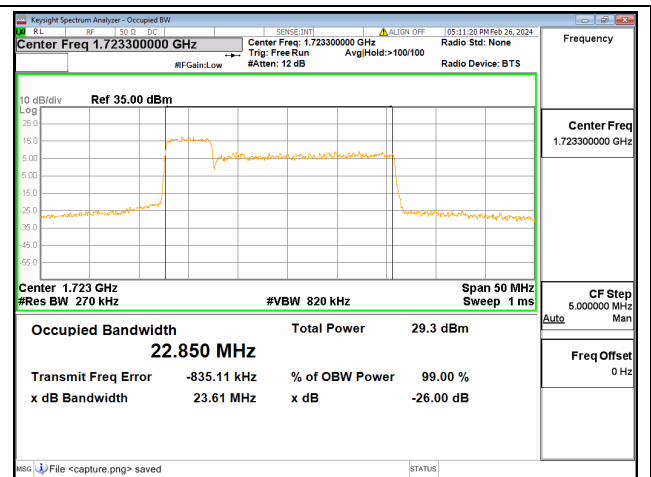
66B / 15+5MHz / 16QAM/ High CH



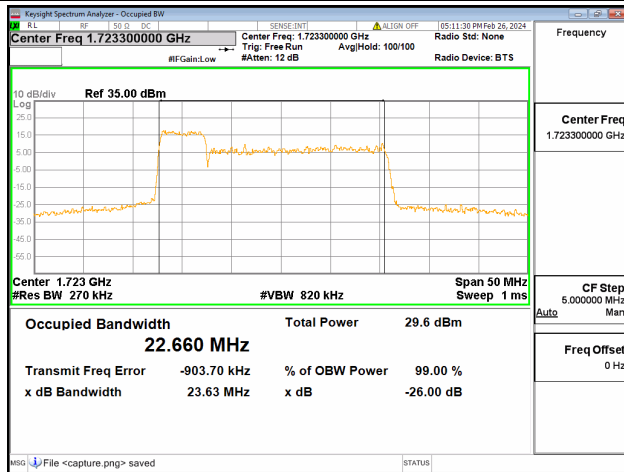
66B / 15+5MHz / 64QAM/ High CH



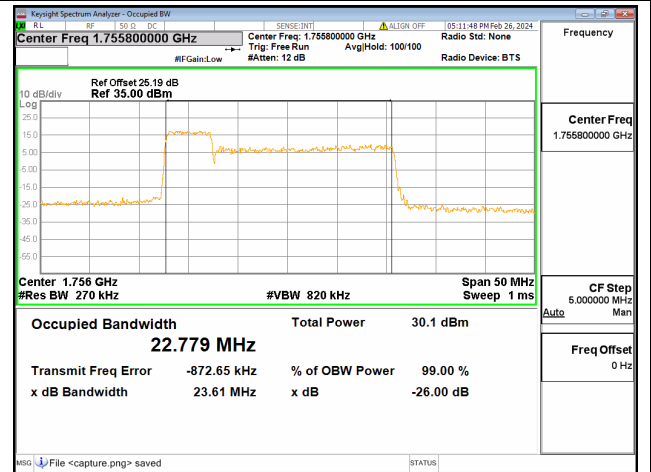
66C / 5+20MHz / QPSK/ Low CH



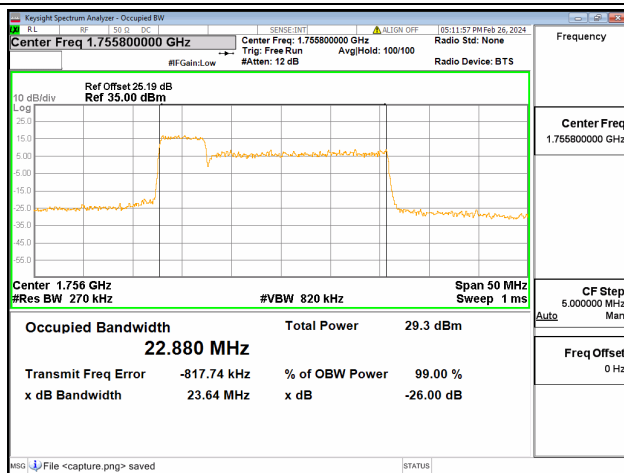
66C / 5+20MHz / 16QAM/ Low CH



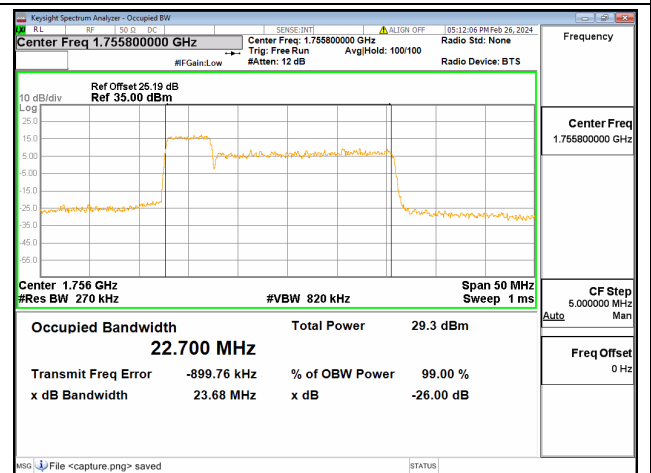
66C / 5+20MHz / 64QAM/ Low CH



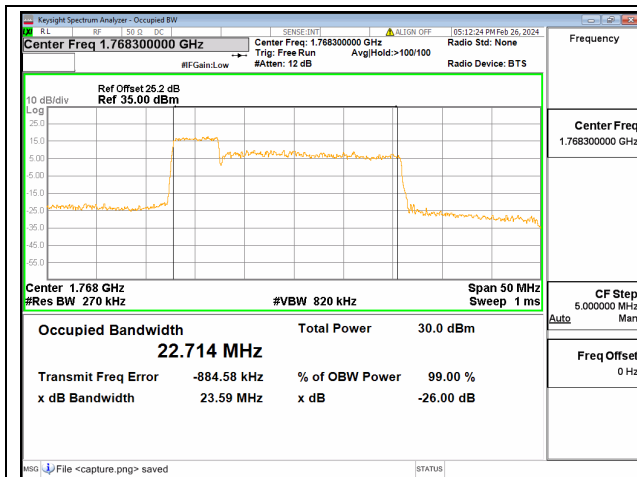
66C / 5+20MHz / QPSK/ Mid CH



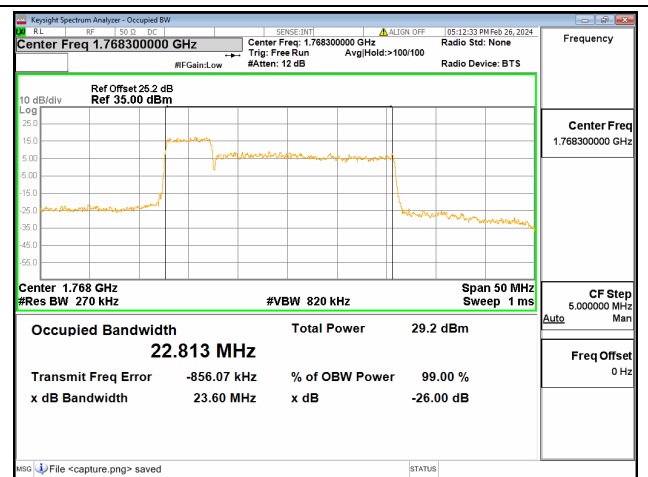
66C / 5+20MHz / 16QAM/ Mid CH



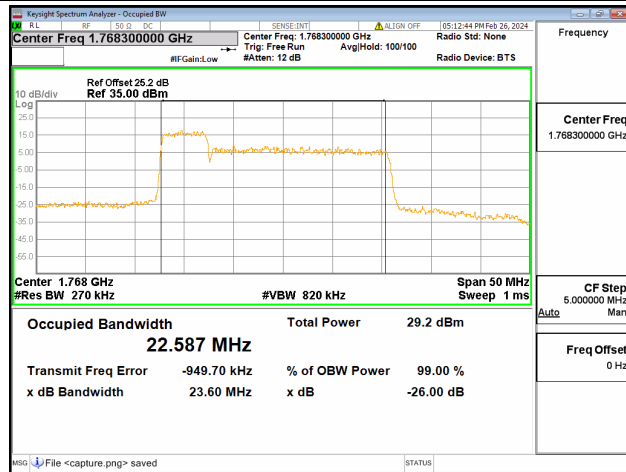
66C / 5+20MHz / 64QAM/ Mid CH



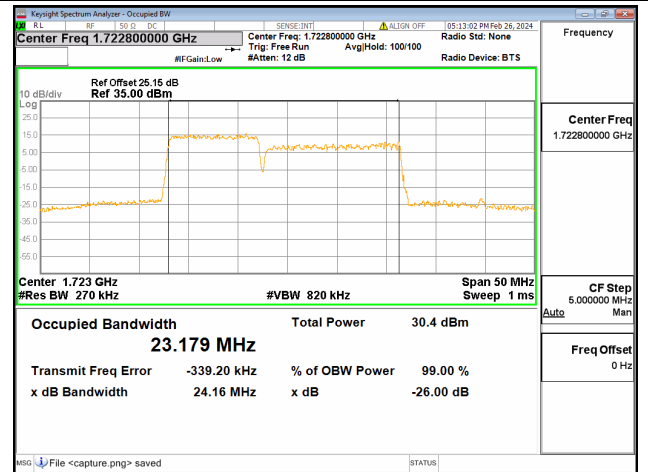
66C / 5+20MHz / QPSK/ High CH



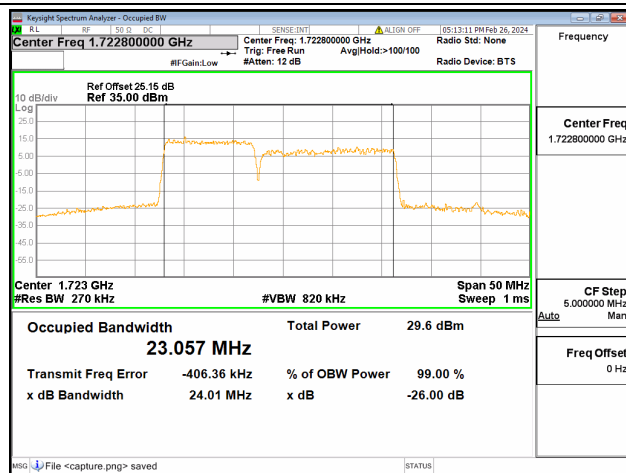
66C / 5+20MHz / 16QAM/ High CH



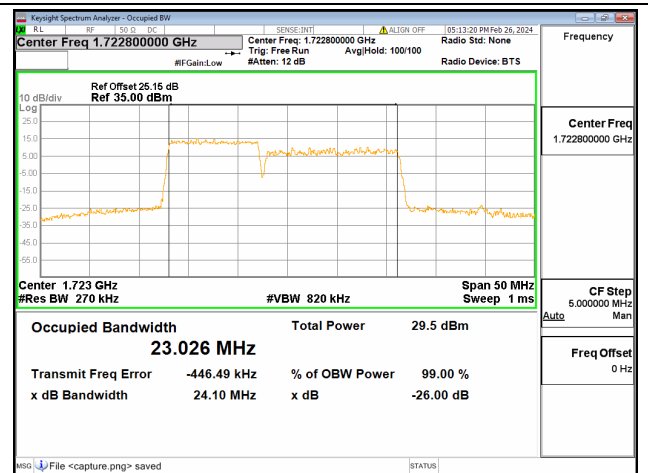
66C / 5+20MHz / 64QAM/ High CH



66C / 10+15MHz / QPSK/ Low CH



66C / 10+15MHz / 16QAM/ Low CH



66C / 10+15MHz / 64QAM/ Low CH

