



TEST REPORT

APPLICANT : SEUIC Technologies Co., Ltd.

PRODUCT NAME : Handheld RFID Reader

MODEL NAME : AUTOID UTouch

BRAND NAME : Seuic

FCC ID : 2AC68-AUTOIDUTOUCH

STANDARD(S) : 47 CFR Part 22, Subpart H
: 47 CFR Part 27, Subpart M

RECEIPT DATE : 2021-11-01

TEST DATE : 2021-11-01 to 2021-12-02

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Edited by: Peng Mi
Peng Mi (Rapporteur)

Approved by: Shen Junsheng
Shen Junsheng (Supervisor)

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Change History		
Version	Date	Reason for change
1.0	2021-12-20	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	SEUIC Technologies Co., Ltd.
Applicant Address:	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, 210061, Nanjing City, Jiangsu Province, China
Manufacturer:	SEUIC Technologies Co., Ltd.
Manufacturer Address:	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, 210061, Nanjing City, Jiangsu Province, China

1.2. Equipment Under Test (EUT) Description

Product Name:	Handheld RFID Reader	
Sample No.:	4#	
Hardware Version:	SLB761XC-64B_MB_PCBA_V1.00	
Software Version:	V0.2.6.1	
Modulation Type:	QPSK, 16QAM	
Carrier Aggregation:	Not Support	
Operation Band:	Band 5 / 7 / 38 / 41	
Frequency Range:	LTE Band 5	Tx: 824MHz–849MHz
		Rx: 869MHz–894MHz
	LTE Band 7	Tx: 2500MHz–2570MHz
		Rx: 2620MHz–2690MHz
	LTE Band 38	Tx: 2570MHz–2620MHz
		Rx: 2570MHz–2620MHz
	LTE Band 41	Tx: 2555MHz–2655MHz
		Rx: 2555MHz–2655MHz
Channel Bandwidth:	LTE Band 5	1.4MHz, 3MHz, 5MHz, 10MHz
	LTE Band 7	5 MHz, 10MHz, 15MHz, 20MHz
	LTE Band 38	5 MHz, 10MHz, 15MHz, 20MHz
	LTE Band 41	5 MHz, 10MHz, 15MHz, 20MHz



Antenna Type:	Fixed Internal Antenna	
Antenna Gain:	LTE Band 5	0.80dBi
	LTE Band 7	2.50dBi
	LTE Band 38	2.60dBi
	LTE Band 41	2.50dBi
Accessory Information:	Battery 1	
	Brand Name:	N/A
	Model No.:	D500HB-V1(1S2P)
	Serial No.:	N/A
	Capacity:	6200mAh
	Rated Voltage:	3.6V
	Charge Limit:	4.2V
	Manufacturer:	Suzhou Xinfeibo Electronic Technology Co.,ltd.
	Battery 2	
	Brand Name:	N/A
	Model No.:	BOB320724
	Serial No.:	N/A
	Capacity:	57mAh
	Rated Voltage:	3.8V
	Charge Limit:	4.35V
	Manufacturer:	DONGGUAN BOB ELECTRONICS CO.,LTD
	AC Adapter	
	Brand Name:	Tianyin
	Model No.:	TPA-23A050200UU01
	Serial No.:	N/A
	Rated Output:	5V=2A
	Rated Input:	100-240V~50/60Hz, 0.3A
	Manufacturer:	Shenzhen Tianyin Electronics Co.,Ltd
USB Cable		
Model No.:	2305018-2	

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

LTE Band 5		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)	QPSK	16QAM	QPSK	16QAM	
10	0.166	0.131	8M99G7D	8M96W7D	
5	0.165	0.127	4M50G7D	4M50W7D	
3	0.160	0.125	2M70G7D	2M70W7D	
1.4	0.156	0.122	1M10G7D	1M10W7D	
LTE Band 7		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)	QPSK	16QAM	QPSK	16QAM	
20	0.276	0.230	17M9G7D	17M9W7D	
15	0.269	0.224	13M4G7D	13M4W7D	
10	0.262	0.218	8M97G7D	8M96W7D	
5	0.254	0.212	4M49G7D	4M51W7D	
LTE Band 38		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)	QPSK	16QAM	QPSK	16QAM	
20	0.341	0.261	18M0G7D	18M0W7D	
15	0.333	0.255	13M5G7D	13M5W7D	
10	0.316	0.248	8M96G7D	8M97W7D	
5	0.308	0.242	4M51G7D	4M51W7D	
LTE Band 41		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)	QPSK	16QAM	QPSK	16QAM	
20	0.313	0.259	18M0G7D	18M0W7D	
15	0.305	0.253	13M5G7D	13M5W7D	
10	0.290	0.246	8M96G7D	8M96W7D	
5	0.290	0.246	4M51G7D	4M50W7D	



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 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

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 22.913(a)(2) 27.50(h)(2)	Transmitter Conducted Output Power and E.R.P./E.I.R.P.	Dec 02, 2021	Tan Xiaowei Huang Zhiye	PASS	No deviation
2.1049	Occupied Bandwidth	Nov 03, 2021	Li Huaijie	PASS	No deviation
2.1055 22.355 24.235 27.54	Frequency Stability	Nov 08, 2021	Li Huaijie	PASS	No deviation
24.232(d), 27.50(d)(5)	Peak to Average Ratio	N/A	N/A	N/A	N/A
2.1051 22.917(a) 27.53(m)(4)	Conducted Spurious Emissions	Nov 03, 2021	Li Huaijie	PASS	No deviation
2.1051 22.917(a) 27.53(m)(4)	Band Edge	Nov 03, 2021	Li Huaijie	PASS	No deviation
2.1051 22.917(a) 27.53(m)(4)	Radiated Spurious Emissions	Nov 14, 2021	Huang Zhiye	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 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 22H, Part 27M Requirements

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

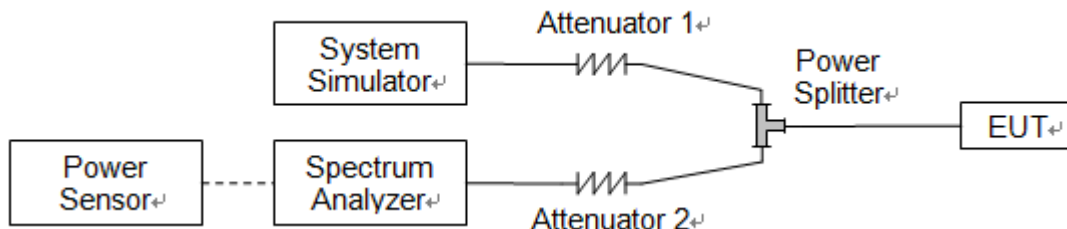
2.1.1. Requirement

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).

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 (h)(2) for LTE Band 7/38/41, Mobile and other user stations. Mobile stations are limited to 2 watts E.I.R.P. All user stations are limited to 2 watts transmitter output power.

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) = Conducted Output Power (dBm) + Antenna Gain (dBi)

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

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

LTE Band 5						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	23.45	23.56	23.43
10	QPSK	1	25	23.30	23.51	23.48
10	QPSK	1	49	23.38	23.41	23.28
10	QPSK	25	0	22.60	22.65	22.63
10	QPSK	25	12	22.53	22.44	22.41
10	QPSK	25	25	22.55	22.49	22.56
10	QPSK	50	0	22.51	22.65	22.48
10	16QAM	1	0	22.50	22.51	22.40
10	16QAM	1	25	22.50	22.22	22.19
10	16QAM	1	49	22.22	22.28	22.33
10	16QAM	25	0	21.53	21.46	21.43
10	16QAM	25	12	21.61	21.51	21.55
10	16QAM	25	25	21.50	21.50	21.50
10	16QAM	50	0	21.62	21.49	21.49



LTE Band 5						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	23.35	23.52	23.33
5	QPSK	1	12	23.20	23.50	23.38
5	QPSK	1	24	23.28	23.31	23.18
5	QPSK	12	0	22.50	22.55	22.53
5	QPSK	12	7	22.43	22.34	22.31
5	QPSK	12	13	22.45	22.39	22.46
5	QPSK	25	0	22.35	22.45	22.28
5	16QAM	1	0	22.39	22.40	22.29
5	16QAM	1	12	22.39	22.11	22.08
5	16QAM	1	24	22.11	22.17	22.22
5	16QAM	12	0	21.43	21.36	21.33
5	16QAM	12	7	21.51	21.41	21.45
5	16QAM	12	13	21.40	21.40	21.40
5	16QAM	25	0	21.52	21.39	21.39



LTE Band 5						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	23.23	23.40	23.21
3	QPSK	1	8	23.08	23.38	23.26
3	QPSK	1	14	23.16	23.19	23.06
3	QPSK	8	0	22.38	22.43	22.41
3	QPSK	8	4	22.31	22.22	22.19
3	QPSK	8	7	22.33	22.27	22.34
3	QPSK	15	0	22.23	22.33	22.16
3	16QAM	1	0	22.30	22.31	22.20
3	16QAM	1	8	22.30	22.02	21.99
3	16QAM	1	14	22.02	22.08	22.13
3	16QAM	8	0	21.31	21.24	21.21
3	16QAM	8	4	21.39	21.29	21.33
3	16QAM	8	7	21.28	21.28	21.28
3	16QAM	15	0	21.40	21.27	21.27



LTE Band 5						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	23.12	23.29	23.10
1.4	QPSK	1	3	22.97	23.27	23.15
1.4	QPSK	1	5	23.05	23.08	22.95
1.4	QPSK	3	0	22.27	22.32	22.30
1.4	QPSK	3	1	22.20	22.11	22.08
1.4	QPSK	3	3	22.22	22.16	22.23
1.4	QPSK	6	0	22.12	22.22	22.05
1.4	16QAM	1	0	22.19	22.20	22.09
1.4	16QAM	1	3	22.19	21.91	21.88
1.4	16QAM	1	5	21.91	21.97	22.02
1.4	16QAM	3	0	21.20	21.13	21.10
1.4	16QAM	3	1	21.28	21.18	21.22
1.4	16QAM	3	3	21.17	21.17	21.17
1.4	16QAM	6	0	21.29	21.16	21.16



LTE Band 7						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20850	21100	21350
Frequency (MHz)				2510	2535	2560
20	QPSK	1	0	21.74	21.91	21.80
20	QPSK	1	49	21.68	21.83	21.73
20	QPSK	1	99	21.70	21.71	21.73
20	QPSK	50	0	20.70	20.83	20.72
20	QPSK	50	24	20.62	20.66	20.66
20	QPSK	50	50	20.65	20.71	20.54
20	QPSK	100	0	20.58	20.57	20.63
20	16QAM	1	0	20.89	20.99	21.12
20	16QAM	1	49	20.86	20.97	20.98
20	16QAM	1	99	20.79	21.05	20.88
20	16QAM	50	0	19.67	19.60	19.67
20	16QAM	50	24	19.68	19.69	19.50
20	16QAM	50	50	19.75	19.68	19.69
20	16QAM	100	0	19.63	19.65	19.63



LTE Band 7						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20825	21100	21375
Frequency (MHz)				2507.5	2535	2562.5
15	QPSK	1	0	21.63	21.80	21.69
15	QPSK	1	37	21.57	21.72	21.62
15	QPSK	1	74	21.59	21.60	21.62
15	QPSK	36	0	20.59	20.72	20.61
15	QPSK	36	20	20.51	20.55	20.55
15	QPSK	36	39	20.54	20.60	20.43
15	QPSK	75	0	20.47	20.46	20.52
15	16QAM	1	0	20.78	20.88	21.01
15	16QAM	1	37	20.75	20.86	20.87
15	16QAM	1	74	20.68	20.94	20.77
15	16QAM	36	0	19.56	19.49	19.56
15	16QAM	36	20	19.57	19.58	19.39
15	16QAM	36	39	19.64	19.57	19.58
15	16QAM	75	0	19.52	19.54	19.52



LTE Band 7						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20800	21100	21400
Frequency (MHz)				2505	2535	2565
10	QPSK	1	0	21.51	21.68	21.57
10	QPSK	1	25	21.45	21.60	21.50
10	QPSK	1	49	21.47	21.48	21.50
10	QPSK	25	0	20.47	20.60	20.49
10	QPSK	25	12	20.39	20.43	20.43
10	QPSK	25	25	20.42	20.48	20.31
10	QPSK	50	0	20.35	20.34	20.40
10	16QAM	1	0	20.66	20.76	20.89
10	16QAM	1	25	20.63	20.74	20.75
10	16QAM	1	49	20.56	20.82	20.65
10	16QAM	25	0	19.44	19.37	19.44
10	16QAM	25	12	19.45	19.46	19.27
10	16QAM	25	25	19.52	19.45	19.46
10	16QAM	50	0	19.40	19.42	19.40



LTE Band 7						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20775	21100	21425
Frequency (MHz)				2502.5	2535	2567.5
5	QPSK	1	0	21.38	21.55	21.44
5	QPSK	1	12	21.32	21.47	21.37
5	QPSK	1	24	21.34	21.35	21.37
5	QPSK	12	0	20.34	20.47	20.36
5	QPSK	12	7	20.26	20.30	20.30
5	QPSK	12	13	20.29	20.35	20.18
5	QPSK	25	0	20.22	20.21	20.27
5	16QAM	1	0	20.53	20.63	20.76
5	16QAM	1	12	20.50	20.61	20.62
5	16QAM	1	24	20.43	20.69	20.52
5	16QAM	12	0	19.31	19.24	19.31
5	16QAM	12	7	19.32	19.33	19.14
5	16QAM	12	13	19.39	19.32	19.33
5	16QAM	25	0	19.27	19.29	19.27



LTE Band 38						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				37850	38000	38150
Frequency (MHz)				2580	2595	2610
20	QPSK	1	0	22.62	22.73	22.64
20	QPSK	1	49	22.57	22.41	22.51
20	QPSK	1	99	22.38	22.51	22.46
20	QPSK	50	0	21.76	21.80	21.70
20	QPSK	50	24	21.55	21.48	21.61
20	QPSK	50	50	21.51	21.62	21.49
20	QPSK	100	0	21.54	21.48	21.37
20	16QAM	1	0	21.41	21.48	21.50
20	16QAM	1	49	21.34	21.57	21.52
20	16QAM	1	99	21.24	21.39	21.23
20	16QAM	50	0	20.29	20.37	20.33
20	16QAM	50	24	20.21	20.45	20.25
20	16QAM	50	50	20.25	20.43	20.21
20	16QAM	100	0	21.31	20.26	20.28



LTE Band 38						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				37825	38000	38175
Frequency (MHz)				2577.5	2595	2612.5
15	QPSK	1	0	22.59	22.62	22.42
15	QPSK	1	37	22.37	22.52	22.34
15	QPSK	1	74	22.28	22.42	22.38
15	QPSK	36	0	21.65	21.69	21.59
15	QPSK	36	20	21.44	21.37	21.50
15	QPSK	36	39	21.38	21.51	21.37
15	QPSK	75	0	21.43	21.37	21.36
15	16QAM	1	0	21.30	21.37	21.39
15	16QAM	1	37	21.23	21.46	21.41
15	16QAM	1	74	21.13	21.28	21.12
15	16QAM	36	0	20.18	20.26	20.22
15	16QAM	36	20	20.10	20.34	20.14
15	16QAM	36	39	20.14	20.32	20.10
15	16QAM	75	0	20.20	20.15	20.17



LTE Band 38						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				37800	38000	38200
Frequency (MHz)				2575	2595	2615
10	QPSK	1	0	22.39	22.40	22.30
10	QPSK	1	25	22.14	22.18	22.18
10	QPSK	1	49	22.06	22.06	22.09
10	QPSK	25	0	21.43	21.47	21.47
10	QPSK	25	12	21.32	21.25	21.38
10	QPSK	25	25	21.19	21.26	21.16
10	QPSK	50	0	21.31	21.25	21.14
10	16QAM	1	0	21.18	21.25	21.27
10	16QAM	1	25	21.11	21.34	21.29
10	16QAM	1	49	21.01	21.16	21.00
10	16QAM	25	0	20.06	20.14	20.10
10	16QAM	25	12	19.98	20.22	20.02
10	16QAM	25	25	20.02	20.20	19.98
10	16QAM	50	0	20.08	20.03	20.05



LTE Band 38						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				37775	38000	38225
Frequency (MHz)				2572.5	2595	2617.5
5	QPSK	1	0	22.28	22.29	22.19
5	QPSK	1	12	22.03	22.07	22.07
5	QPSK	1	24	21.95	21.95	21.98
5	QPSK	12	0	21.42	21.46	21.36
5	QPSK	12	7	21.21	21.14	21.27
5	QPSK	12	13	21.09	21.11	21.16
5	QPSK	25	0	21.20	21.14	21.03
5	16QAM	1	0	21.07	21.14	21.16
5	16QAM	1	12	21.00	21.23	21.18
5	16QAM	1	24	20.90	21.05	20.89
5	16QAM	12	0	19.95	20.03	19.99
5	16QAM	12	7	19.87	20.11	19.91
5	16QAM	12	13	19.91	20.09	19.87
5	16QAM	25	0	19.97	19.92	19.94



LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				40340	40740	41140
Frequency (MHz)				2565	2605	2645
20	QPSK	1	0	22.35	22.46	22.45
20	QPSK	1	49	22.25	22.23	22.37
20	QPSK	1	99	22.19	22.31	22.27
20	QPSK	50	0	21.46	21.57	21.40
20	QPSK	50	24	21.31	21.41	21.35
20	QPSK	50	50	21.48	21.32	21.48
20	QPSK	100	0	21.27	21.31	21.15
20	16QAM	1	0	21.45	21.43	21.50
20	16QAM	1	49	21.29	21.43	21.63
20	16QAM	1	99	21.32	21.28	21.55
20	16QAM	50	0	20.22	20.12	20.12
20	16QAM	50	24	20.25	20.12	20.03
20	16QAM	50	50	20.18	20.29	19.97
20	16QAM	100	0	20.18	20.16	20.11



LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				40315	40740	41165
Frequency (MHz)				2562.5	2605	2647.5
15	QPSK	1	0	22.24	22.28	22.34
15	QPSK	1	37	22.04	22.12	22.21
15	QPSK	1	74	22.01	22.02	22.19
15	QPSK	36	0	21.34	21.25	21.29
15	QPSK	36	20	21.20	21.12	21.14
15	QPSK	36	39	21.37	21.21	21.27
15	QPSK	75	0	21.06	21.20	21.04
15	16QAM	1	0	21.34	21.32	21.39
15	16QAM	1	37	21.19	21.34	21.52
15	16QAM	1	74	21.21	21.27	21.44
15	16QAM	36	0	20.11	20.01	20.01
15	16QAM	36	20	20.14	20.01	19.92
15	16QAM	36	39	20.07	20.18	19.86
15	16QAM	75	0	20.07	20.05	19.91



LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				40290	40740	41190
Frequency (MHz)				2560	2605	2650
10	QPSK	1	0	22.12	22.13	22.12
10	QPSK	1	25	21.92	22.00	21.97
10	QPSK	1	49	22.01	21.90	21.85
10	QPSK	25	0	21.37	21.34	21.17
10	QPSK	25	12	21.08	21.00	21.02
10	QPSK	25	25	21.25	21.09	21.25
10	QPSK	50	0	20.94	21.08	20.92
10	16QAM	1	0	21.22	21.20	21.27
10	16QAM	1	25	21.06	21.30	21.40
10	16QAM	1	49	21.09	21.15	21.32
10	16QAM	25	0	19.99	19.89	19.89
10	16QAM	25	12	20.02	19.89	19.80
10	16QAM	25	25	19.95	20.06	19.74
10	16QAM	50	0	19.95	19.93	19.81



LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				40265	40740	41215
Frequency (MHz)				2557.5	2605	2652.5
5	QPSK	1	0	22.01	22.12	22.11
5	QPSK	1	12	21.81	21.89	21.82
5	QPSK	1	24	21.93	21.79	21.93
5	QPSK	12	0	21.26	21.23	21.06
5	QPSK	12	7	20.97	20.89	20.91
5	QPSK	12	13	21.14	20.98	21.14
5	QPSK	25	0	20.83	20.97	20.81
5	16QAM	1	0	21.11	21.09	21.16
5	16QAM	1	12	20.95	21.40	21.29
5	16QAM	1	24	20.98	20.94	21.21
5	16QAM	12	0	19.88	19.78	19.78
5	16QAM	12	7	19.91	19.78	19.69
5	16QAM	12	13	19.84	19.95	19.63
5	16QAM	25	0	19.84	19.82	19.63



Effective Radiated Power and Effective Isotropic Radiated Power

LTE Band 5				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20450		20525		20600	
Frequency (MHz)				829		836.5		844	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	22.10	0.162	22.21	0.166	22.08	0.161
10	QPSK	1	25	21.95	0.157	22.16	0.164	22.13	0.163
10	QPSK	1	49	22.03	0.160	22.06	0.161	21.93	0.156
10	QPSK	25	0	21.25	0.133	21.30	0.135	21.28	0.134
10	QPSK	25	12	21.18	0.131	21.09	0.129	21.06	0.128
10	QPSK	25	25	21.20	0.132	21.14	0.130	21.21	0.132
10	QPSK	50	0	21.16	0.131	21.30	0.135	21.13	0.130
10	16QAM	1	0	21.15	0.130	21.16	0.131	21.05	0.127
10	16QAM	1	25	21.15	0.130	20.87	0.122	20.84	0.121
10	16QAM	1	49	20.87	0.122	20.93	0.124	20.98	0.125
10	16QAM	25	0	20.18	0.104	20.11	0.103	20.08	0.102
10	16QAM	25	12	20.26	0.106	20.16	0.104	20.20	0.105
10	16QAM	25	25	20.15	0.104	20.15	0.104	20.15	0.104
10	16QAM	50	0	20.27	0.106	20.14	0.103	20.14	0.103



LTE Band 5				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20425		20525		20625	
Frequency (MHz)				826.5		836.5		846.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	22.00	0.158	22.17	0.165	21.98	0.158
5	QPSK	1	12	21.85	0.153	22.15	0.164	22.03	0.160
5	QPSK	1	24	21.93	0.156	21.96	0.157	21.83	0.152
5	QPSK	12	0	21.15	0.130	21.20	0.132	21.18	0.131
5	QPSK	12	7	21.08	0.128	20.99	0.126	20.96	0.125
5	QPSK	12	13	21.10	0.129	21.04	0.127	21.11	0.129
5	QPSK	25	0	21.00	0.126	21.10	0.129	20.93	0.124
5	16QAM	1	0	21.04	0.127	21.05	0.127	20.94	0.124
5	16QAM	1	12	21.04	0.127	20.76	0.119	20.73	0.118
5	16QAM	1	24	20.76	0.119	20.82	0.121	20.87	0.122
5	16QAM	12	0	20.08	0.102	20.01	0.100	19.98	0.100
5	16QAM	12	7	20.16	0.104	20.06	0.101	20.10	0.102
5	16QAM	12	13	20.05	0.101	20.05	0.101	20.05	0.101
5	16QAM	25	0	20.17	0.104	20.04	0.101	20.04	0.101



LTE Band 5				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20415		20525		20635	
Frequency (MHz)				825.5		836.5		847.5	
				dBm	W	dBm	W	dBm	W
3	QPSK	1	0	21.88	0.154	22.05	0.160	21.86	0.153
3	QPSK	1	8	21.73	0.149	22.03	0.160	21.91	0.155
3	QPSK	1	14	21.81	0.152	21.84	0.153	21.71	0.148
3	QPSK	8	0	21.03	0.127	21.08	0.128	21.06	0.128
3	QPSK	8	4	20.96	0.125	20.87	0.122	20.84	0.121
3	QPSK	8	7	20.98	0.125	20.92	0.124	20.99	0.126
3	QPSK	15	0	20.88	0.122	20.98	0.125	20.81	0.121
3	16QAM	1	0	20.95	0.124	20.96	0.125	20.85	0.122
3	16QAM	1	8	20.95	0.124	20.67	0.117	20.64	0.116
3	16QAM	1	14	20.67	0.117	20.73	0.118	20.78	0.120
3	16QAM	8	0	19.96	0.099	19.89	0.097	19.86	0.097
3	16QAM	8	4	20.04	0.101	19.94	0.099	19.98	0.100
3	16QAM	8	7	19.93	0.098	19.93	0.098	19.93	0.098
3	16QAM	15	0	20.05	0.101	19.92	0.098	19.92	0.098



LTE Band 5				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20407		20525		20643	
Frequency (MHz)				824.7		836.5		848.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	21.77	0.150	21.94	0.156	21.75	0.150
1.4	QPSK	1	3	21.62	0.145	21.92	0.156	21.80	0.151
1.4	QPSK	1	5	21.70	0.148	21.73	0.149	21.60	0.145
1.4	QPSK	3	0	20.92	0.124	20.97	0.125	20.95	0.124
1.4	QPSK	3	1	20.85	0.122	20.76	0.119	20.73	0.118
1.4	QPSK	3	3	20.87	0.122	20.81	0.121	20.88	0.122
1.4	QPSK	6	0	20.77	0.119	20.87	0.122	20.70	0.117
1.4	16QAM	1	0	20.84	0.121	20.85	0.122	20.74	0.119
1.4	16QAM	1	3	20.84	0.121	20.56	0.114	20.53	0.113
1.4	16QAM	1	5	20.56	0.114	20.62	0.115	20.67	0.117
1.4	16QAM	3	0	19.85	0.097	19.78	0.095	19.75	0.094
1.4	16QAM	3	1	19.93	0.098	19.83	0.096	19.87	0.097
1.4	16QAM	3	3	19.82	0.096	19.82	0.096	19.82	0.096
1.4	16QAM	6	0	19.94	0.099	19.81	0.096	19.81	0.096



LTE Band 7				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20850		21100		21350	
Frequency (MHz)				2510		2535		2560	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	24.24	0.265	24.41	0.276	24.30	0.269
20	QPSK	1	49	24.18	0.262	24.33	0.271	24.23	0.265
20	QPSK	1	99	24.20	0.263	24.21	0.264	24.23	0.265
20	QPSK	50	0	23.20	0.209	23.33	0.215	23.22	0.210
20	QPSK	50	24	23.12	0.205	23.16	0.207	23.16	0.207
20	QPSK	50	50	23.15	0.207	23.21	0.209	23.04	0.201
20	QPSK	100	0	23.08	0.203	23.07	0.203	23.13	0.206
20	16QAM	1	0	23.39	0.218	23.49	0.223	23.62	0.230
20	16QAM	1	49	23.36	0.217	23.47	0.222	23.48	0.223
20	16QAM	1	99	23.29	0.213	23.55	0.226	23.38	0.218
20	16QAM	50	0	22.17	0.165	22.10	0.162	22.17	0.165
20	16QAM	50	24	22.18	0.165	22.19	0.166	22.00	0.158
20	16QAM	50	50	22.25	0.168	22.18	0.165	22.19	0.166
20	16QAM	100	0	22.13	0.163	22.15	0.164	22.13	0.163



LTE Band 7				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20825		21100		21375	
Frequency (MHz)				2507.5		2535		2562.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	24.13	0.259	24.30	0.269	24.19	0.262
15	QPSK	1	37	24.07	0.255	24.22	0.264	24.12	0.258
15	QPSK	1	74	24.09	0.256	24.10	0.257	24.12	0.258
15	QPSK	36	0	23.09	0.204	23.22	0.210	23.11	0.205
15	QPSK	36	20	23.01	0.200	23.05	0.202	23.05	0.202
15	QPSK	36	39	23.04	0.201	23.10	0.204	22.93	0.196
15	QPSK	75	0	22.97	0.198	22.96	0.198	23.02	0.200
15	16QAM	1	0	23.28	0.213	23.38	0.218	23.51	0.224
15	16QAM	1	37	23.25	0.211	23.36	0.217	23.37	0.217
15	16QAM	1	74	23.18	0.208	23.44	0.221	23.27	0.212
15	16QAM	36	0	22.06	0.161	21.99	0.158	22.06	0.161
15	16QAM	36	20	22.07	0.161	22.08	0.161	21.89	0.155
15	16QAM	36	39	22.14	0.164	22.07	0.161	22.08	0.161
15	16QAM	75	0	22.02	0.159	22.04	0.160	22.02	0.159



LTE Band 7				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20800		21100		21400	
Frequency (MHz)				2505		2535		2565	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	24.01	0.252	24.18	0.262	24.07	0.255
10	QPSK	1	25	23.95	0.248	24.10	0.257	24.00	0.251
10	QPSK	1	49	23.97	0.249	23.98	0.250	24.00	0.251
10	QPSK	25	0	22.97	0.198	23.10	0.204	22.99	0.199
10	QPSK	25	12	22.89	0.195	22.93	0.196	22.93	0.196
10	QPSK	25	25	22.92	0.196	22.98	0.199	22.81	0.191
10	QPSK	50	0	22.85	0.193	22.84	0.192	22.90	0.195
10	16QAM	1	0	23.16	0.207	23.26	0.212	23.39	0.218
10	16QAM	1	25	23.13	0.206	23.24	0.211	23.25	0.211
10	16QAM	1	49	23.06	0.202	23.32	0.215	23.15	0.207
10	16QAM	25	0	21.94	0.156	21.87	0.154	21.94	0.156
10	16QAM	25	12	21.95	0.157	21.96	0.157	21.77	0.150
10	16QAM	25	25	22.02	0.159	21.95	0.157	21.96	0.157
10	16QAM	50	0	21.90	0.155	21.92	0.156	21.90	0.155



LTE Band 7				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20775		21100		21425	
Frequency (MHz)				2502.5		2535		2567.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	23.88	0.244	24.05	0.254	23.94	0.248
5	QPSK	1	12	23.82	0.241	23.97	0.249	23.87	0.244
5	QPSK	1	24	23.84	0.242	23.85	0.243	23.87	0.244
5	QPSK	12	0	22.84	0.192	22.97	0.198	22.86	0.193
5	QPSK	12	7	22.76	0.189	22.80	0.191	22.80	0.191
5	QPSK	12	13	22.79	0.190	22.85	0.193	22.68	0.185
5	QPSK	25	0	22.72	0.187	22.71	0.187	22.77	0.189
5	16QAM	1	0	23.03	0.201	23.13	0.206	23.26	0.212
5	16QAM	1	12	23.00	0.200	23.11	0.205	23.12	0.205
5	16QAM	1	24	22.93	0.196	23.19	0.208	23.02	0.200
5	16QAM	12	0	21.81	0.152	21.74	0.149	21.81	0.152
5	16QAM	12	7	21.82	0.152	21.83	0.152	21.64	0.146
5	16QAM	12	13	21.89	0.155	21.82	0.152	21.83	0.152
5	16QAM	25	0	21.77	0.150	21.79	0.151	21.77	0.150



LTE Band 38				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				37850		38000		38150	
Frequency (MHz)				2580		2595		2610	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	25.22	0.333	25.33	0.341	25.24	0.334
20	QPSK	1	49	25.17	0.329	25.01	0.317	25.11	0.324
20	QPSK	1	99	24.98	0.315	25.11	0.324	25.06	0.321
20	QPSK	50	0	24.36	0.273	24.40	0.275	24.30	0.269
20	QPSK	50	24	24.15	0.260	24.08	0.256	24.21	0.264
20	QPSK	50	50	24.11	0.258	24.22	0.264	24.09	0.256
20	QPSK	100	0	24.14	0.259	24.08	0.256	23.97	0.249
20	16QAM	1	0	24.01	0.252	24.08	0.256	24.10	0.257
20	16QAM	1	49	23.94	0.248	24.17	0.261	24.12	0.258
20	16QAM	1	99	23.84	0.242	23.99	0.251	23.83	0.242
20	16QAM	50	0	22.89	0.195	22.97	0.198	22.93	0.196
20	16QAM	50	24	22.81	0.191	23.05	0.202	22.85	0.193
20	16QAM	50	50	22.85	0.193	23.03	0.201	22.81	0.191
20	16QAM	100	0	23.91	0.246	22.86	0.193	22.88	0.194



LTE Band 38				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				37825		38000		38175	
Frequency (MHz)				2577.5		2595		2612.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	25.19	0.330	25.22	0.333	25.02	0.318
15	QPSK	1	37	24.97	0.314	25.12	0.325	24.94	0.312
15	QPSK	1	74	24.88	0.308	25.02	0.318	24.98	0.315
15	QPSK	36	0	24.25	0.266	24.29	0.269	24.19	0.262
15	QPSK	36	20	24.04	0.254	23.97	0.249	24.10	0.257
15	QPSK	36	39	23.98	0.250	24.11	0.258	23.97	0.249
15	QPSK	75	0	24.03	0.253	23.97	0.249	23.96	0.249
15	16QAM	1	0	23.90	0.245	23.97	0.249	23.99	0.251
15	16QAM	1	37	23.83	0.242	24.06	0.255	24.01	0.252
15	16QAM	1	74	23.73	0.236	23.88	0.244	23.72	0.236
15	16QAM	36	0	22.78	0.190	22.86	0.193	22.82	0.191
15	16QAM	36	20	22.70	0.186	22.94	0.197	22.74	0.188
15	16QAM	36	39	22.74	0.188	22.92	0.196	22.70	0.186
15	16QAM	75	0	22.80	0.191	22.75	0.188	22.77	0.189



LTE Band 38				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				37800		38000		38200	
Frequency (MHz)				2575		2595		2615	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	24.99	0.316	25.00	0.316	24.90	0.309
10	QPSK	1	25	24.74	0.298	24.78	0.301	24.78	0.301
10	QPSK	1	49	24.66	0.292	24.66	0.292	24.69	0.294
10	QPSK	25	0	24.03	0.253	24.07	0.255	24.07	0.255
10	QPSK	25	12	23.92	0.247	23.85	0.243	23.98	0.250
10	QPSK	25	25	23.79	0.239	23.86	0.243	23.76	0.238
10	QPSK	50	0	23.91	0.246	23.85	0.243	23.74	0.237
10	16QAM	1	0	23.78	0.239	23.85	0.243	23.87	0.244
10	16QAM	1	25	23.71	0.235	23.94	0.248	23.89	0.245
10	16QAM	1	49	23.61	0.230	23.76	0.238	23.60	0.229
10	16QAM	25	0	22.66	0.185	22.74	0.188	22.70	0.186
10	16QAM	25	12	22.58	0.181	22.82	0.191	22.62	0.183
10	16QAM	25	25	22.62	0.183	22.80	0.191	22.58	0.181
10	16QAM	50	0	22.68	0.185	22.63	0.183	22.65	0.184



LTE Band 38				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				37775		38000		38225	
Frequency (MHz)				2572.5		2595		2617.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	24.88	0.308	24.89	0.308	24.79	0.301
5	QPSK	1	12	24.63	0.290	24.67	0.293	24.67	0.293
5	QPSK	1	24	24.55	0.285	24.55	0.285	24.58	0.287
5	QPSK	12	0	24.02	0.252	24.06	0.255	23.96	0.249
5	QPSK	12	7	23.81	0.240	23.74	0.237	23.87	0.244
5	QPSK	12	13	23.69	0.234	23.71	0.235	23.76	0.238
5	QPSK	25	0	23.80	0.240	23.74	0.237	23.63	0.231
5	16QAM	1	0	23.67	0.233	23.74	0.237	23.76	0.238
5	16QAM	1	12	23.60	0.229	23.83	0.242	23.78	0.239
5	16QAM	1	24	23.50	0.224	23.65	0.232	23.49	0.223
5	16QAM	12	0	22.55	0.180	22.63	0.183	22.59	0.182
5	16QAM	12	7	22.47	0.177	22.71	0.187	22.51	0.178
5	16QAM	12	13	22.51	0.178	22.69	0.186	22.47	0.177
5	16QAM	25	0	22.57	0.181	22.52	0.179	22.54	0.179



LTE Band 41				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				40340		40740		41140	
Frequency (MHz)				2565		2605		2645	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	24.85	0.305	24.96	0.313	24.95	0.313
20	QPSK	1	49	24.75	0.299	24.73	0.297	24.87	0.307
20	QPSK	1	99	24.69	0.294	24.81	0.303	24.77	0.300
20	QPSK	50	0	23.96	0.249	24.07	0.255	23.90	0.245
20	QPSK	50	24	23.81	0.240	23.91	0.246	23.85	0.243
20	QPSK	50	50	23.98	0.250	23.82	0.241	23.98	0.250
20	QPSK	100	0	23.77	0.238	23.81	0.241	23.65	0.232
20	16QAM	1	0	23.95	0.248	23.93	0.247	24.00	0.251
20	16QAM	1	49	23.79	0.239	23.93	0.247	24.13	0.259
20	16QAM	1	99	23.82	0.241	23.78	0.239	24.05	0.254
20	16QAM	50	0	22.72	0.187	22.62	0.183	22.62	0.183
20	16QAM	50	24	22.75	0.188	22.62	0.183	22.53	0.179
20	16QAM	50	50	22.68	0.185	22.79	0.190	22.47	0.177
20	16QAM	100	0	22.68	0.185	22.66	0.185	22.61	0.182



LTE Band 41				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				40315		40740		41165	
Frequency (MHz)				2562.5		2605		2647.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	24.74	0.298	24.78	0.301	24.84	0.305
15	QPSK	1	37	24.54	0.285	24.62	0.290	24.71	0.296
15	QPSK	1	74	24.51	0.282	24.52	0.283	24.69	0.294
15	QPSK	36	0	23.84	0.242	23.75	0.237	23.79	0.239
15	QPSK	36	20	23.70	0.234	23.62	0.230	23.64	0.231
15	QPSK	36	39	23.87	0.244	23.71	0.235	23.77	0.238
15	QPSK	75	0	23.56	0.227	23.70	0.235	23.54	0.226
15	16QAM	1	0	23.84	0.242	23.82	0.241	23.89	0.245
15	16QAM	1	37	23.69	0.234	23.84	0.242	24.02	0.253
15	16QAM	1	74	23.71	0.235	23.77	0.238	23.94	0.248
15	16QAM	36	0	22.61	0.183	22.51	0.178	22.51	0.178
15	16QAM	36	20	22.64	0.184	22.51	0.178	22.42	0.175
15	16QAM	36	39	22.57	0.181	22.68	0.185	22.36	0.172
15	16QAM	75	0	22.57	0.181	22.55	0.180	22.41	0.174



LTE Band 41				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				40290		40740		41190	
Frequency (MHz)				2560		2605		2650	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	24.62	0.290	24.63	0.290	24.62	0.290
10	QPSK	1	25	24.42	0.277	24.50	0.282	24.47	0.280
10	QPSK	1	49	24.51	0.282	24.40	0.276	24.35	0.272
10	QPSK	25	0	23.87	0.244	23.84	0.242	23.67	0.233
10	QPSK	25	12	23.58	0.228	23.50	0.224	23.52	0.225
10	QPSK	25	25	23.75	0.237	23.59	0.229	23.75	0.237
10	QPSK	50	0	23.44	0.221	23.58	0.228	23.42	0.220
10	16QAM	1	0	23.72	0.236	23.70	0.235	23.77	0.238
10	16QAM	1	25	23.56	0.227	23.80	0.240	23.90	0.246
10	16QAM	1	49	23.59	0.229	23.65	0.232	23.82	0.241
10	16QAM	25	0	22.49	0.178	22.39	0.174	22.39	0.174
10	16QAM	25	12	22.52	0.179	22.39	0.174	22.30	0.170
10	16QAM	25	25	22.45	0.176	22.56	0.180	22.24	0.168
10	16QAM	50	0	22.45	0.176	22.43	0.175	22.31	0.170



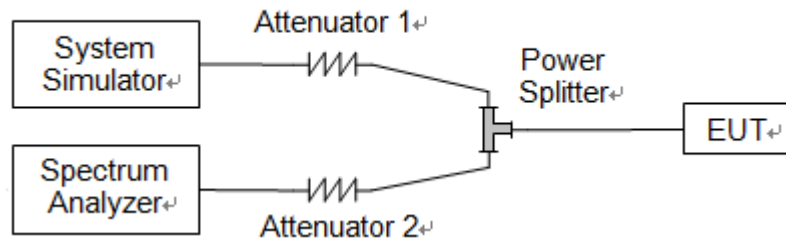
LTE Band 41				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				40265		40740		41215	
Frequency (MHz)				2557.5		2605		2652.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	24.51	0.282	24.62	0.290	24.61	0.289
5	QPSK	1	12	24.31	0.270	24.39	0.275	24.32	0.270
5	QPSK	1	24	24.43	0.277	24.29	0.269	24.43	0.277
5	QPSK	12	0	23.76	0.238	23.73	0.236	23.56	0.227
5	QPSK	12	7	23.47	0.222	23.39	0.218	23.41	0.219
5	QPSK	12	13	23.64	0.231	23.48	0.223	23.64	0.231
5	QPSK	25	0	23.33	0.215	23.47	0.222	23.31	0.214
5	16QAM	1	0	23.61	0.230	23.59	0.229	23.66	0.232
5	16QAM	1	12	23.45	0.221	23.90	0.246	23.79	0.239
5	16QAM	1	24	23.48	0.223	23.44	0.221	23.71	0.235
5	16QAM	12	0	22.38	0.173	22.28	0.169	22.28	0.169
5	16QAM	12	7	22.41	0.174	22.28	0.169	22.19	0.166
5	16QAM	12	13	22.34	0.172	22.45	0.176	22.13	0.163
5	16QAM	25	0	22.34	0.172	22.32	0.171	22.13	0.163

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 5				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.09	1.31
	Low	16QAM	1.10	1.30
	Mid	QPSK	1.10	1.28
	Mid	16QAM	1.09	1.28
	High	QPSK	1.10	1.27
	High	16QAM	1.10	1.30
3	Low	QPSK	2.70	2.99
	Low	16QAM	2.69	3.00
	Mid	QPSK	2.70	2.98
	Mid	16QAM	2.70	2.99
	High	QPSK	2.70	3.00
	High	16QAM	2.70	2.99
5	Low	QPSK	4.50	5.04
	Low	16QAM	4.50	5.00
	Mid	QPSK	4.50	5.02
	Mid	16QAM	4.50	4.97
	High	QPSK	4.50	5.03
	High	16QAM	4.50	5.01
10	Low	QPSK	8.98	9.83
	Low	16QAM	8.96	9.87
	Mid	QPSK	8.99	9.88
	Mid	16QAM	8.96	9.80
	High	QPSK	8.98	9.80
	High	16QAM	8.95	9.82



LTE Band 7				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5	Low	QPSK	4.49	4.99
	Low	16QAM	4.48	5.0
	Mid	QPSK	4.49	4.98
	Mid	16QAM	4.51	4.99
	High	QPSK	4.49	5.01
	High	16QAM	4.49	4.97
10	Low	QPSK	8.97	9.82
	Low	16QAM	8.96	9.87
	Mid	QPSK	8.97	9.87
	Mid	16QAM	8.93	9.75
	High	QPSK	8.97	9.81
	High	16QAM	8.93	9.78
15	Low	QPSK	13.44	14.66
	Low	16QAM	13.44	14.76
	Mid	QPSK	13.44	14.64
	Mid	16QAM	13.44	14.61
	High	QPSK	13.43	14.72
	High	16QAM	13.43	14.71
20	Low	QPSK	17.89	19.31
	Low	16QAM	17.93	19.5
	Mid	QPSK	17.90	19.34
	Mid	16QAM	17.92	19.44
	High	QPSK	17.89	19.41
	High	16QAM	17.91	19.49



LTE Band 38				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5	Low	QPSK	4.48	4.87
	Low	16QAM	4.51	5.37
	Mid	QPSK	4.51	5.96
	Mid	16QAM	4.51	5.29
	High	QPSK	4.50	5.5
	High	16QAM	4.51	5.32
10	Low	QPSK	8.96	10.3
	Low	16QAM	8.96	12.84
	Mid	QPSK	8.95	10.08
	Mid	16QAM	8.97	9.95
	High	QPSK	8.96	9.79
	High	16QAM	8.96	10.19
15	Low	QPSK	13.46	22.58
	Low	16QAM	13.46	19.63
	Mid	QPSK	13.46	21.57
	Mid	16QAM	13.45	17.76
	High	QPSK	13.44	21.18
	High	16QAM	13.46	15.68
20	Low	QPSK	17.92	19.36
	Low	16QAM	17.86	28.55
	Mid	QPSK	17.93	19.62
	Mid	16QAM	17.87	32.21
	High	QPSK	17.95	19.83
	High	16QAM	17.97	30.85



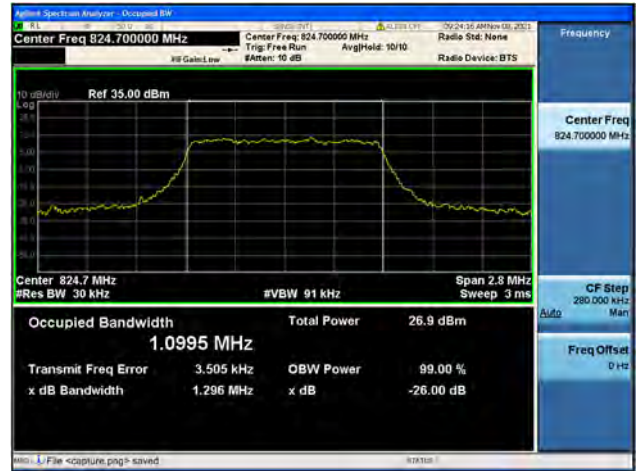
LTE Band 41				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5	Low	QPSK	4.50	5.28
	Low	16QAM	4.50	5.22
	Mid	QPSK	4.51	5.50
	Mid	16QAM	4.50	5.36
	High	QPSK	4.49	5.17
	High	16QAM	4.49	5.13
10	Low	QPSK	8.95	10.79
	Low	16QAM	8.96	10.42
	Mid	QPSK	8.96	10.83
	Mid	16QAM	8.95	10.71
	High	QPSK	8.96	9.84
	High	16QAM	8.95	10.70
15	Low	QPSK	13.48	16.91
	Low	16QAM	13.44	18.43
	Mid	QPSK	13.45	16.61
	Mid	16QAM	13.50	17.93
	High	QPSK	13.42	14.83
	High	16QAM	13.45	15.39
20	Low	QPSK	17.96	19.31
	Low	16QAM	17.97	21.89
	Mid	QPSK	17.97	19.98
	Mid	16QAM	17.95	19.66
	High	QPSK	17.92	19.59
	High	16QAM	17.92	19.93



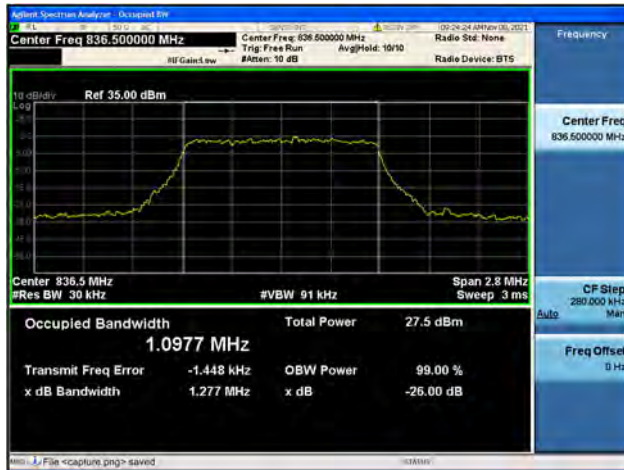
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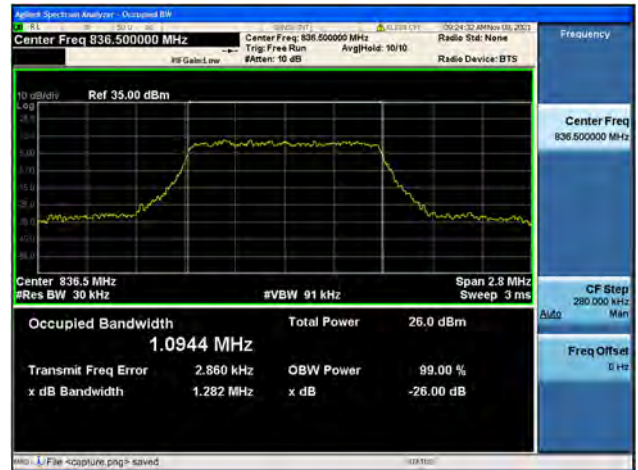
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Band5 / 1.4MHz / Mid CH / QPSK



Band5 / 1.4MHz / Mid CH / 16QAM



Band5 / 1.4MHz / High CH / QPSK



Band5 / 1.4MHz / High CH / 16QAM





Band5 / 3MHz / Low CH / QPSK



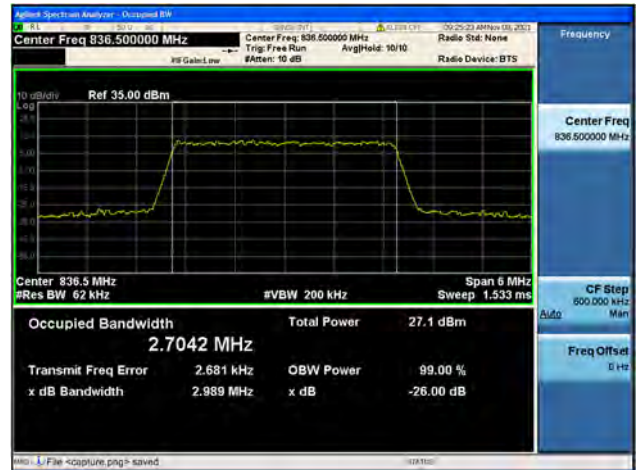
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Band5 / 3MHz / Mid CH / QPSK



Band5 / 3MHz / Mid CH / 16QAM



Band5 / 3MHz / High CH / QPSK



Band5 / 3MHz / High CH / 16QAM





Band5 / 5MHz / Low CH / QPSK



Band5 / 5MHz / Low CH / 16QAM



Band5 / 5MHz / Mid CH / QPSK



Band5 / 5MHz / Mid CH / 16QAM



Band5 / 5MHz / High CH / QPSK



Band5 / 5MHz / High CH / 16QAM





Band5 / 10MHz / Low CH / QPSK



Band5 / 10MHz / Low CH / 16QAM



Band5 / 10MHz / Mid CH / QPSK



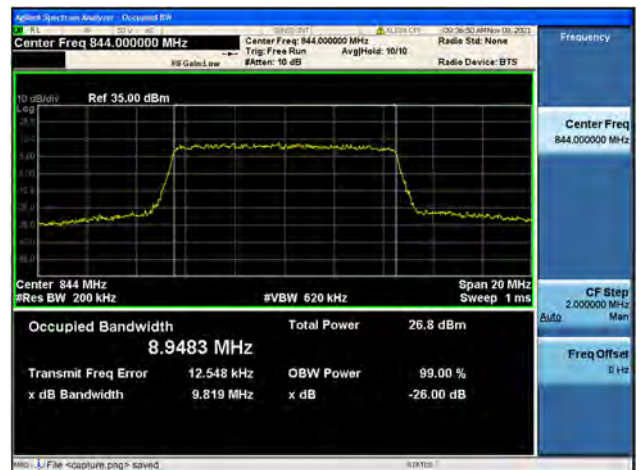
Band5 / 10MHz / Mid CH / 16QAM



Band5 / 10MHz / High CH / QPSK

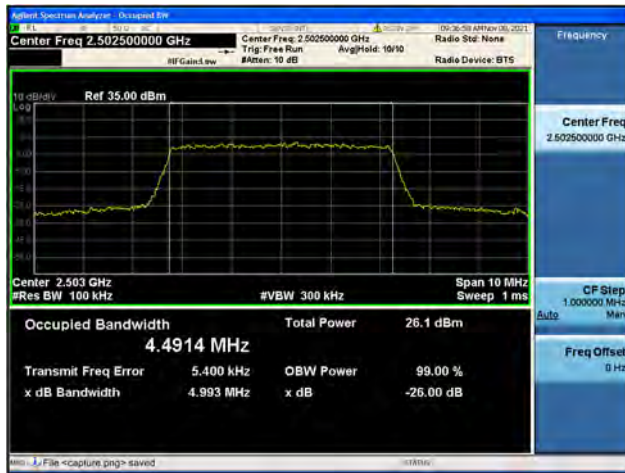


Band5 / 10MHz / High CH / 16QAM





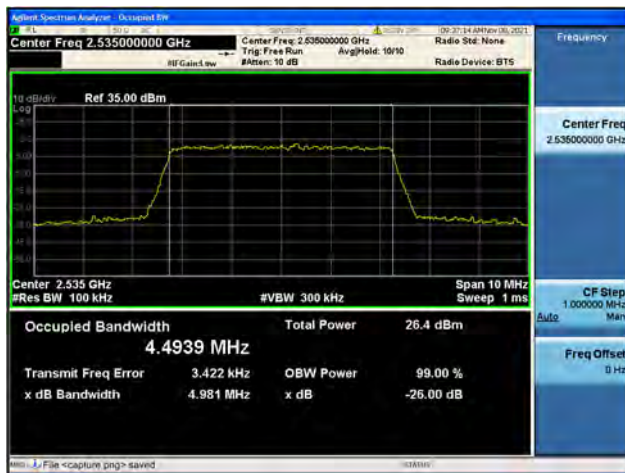
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Band7 / 5MHz / Low CH / 16QAM



Band7 / 5MHz / Mid CH / QPSK



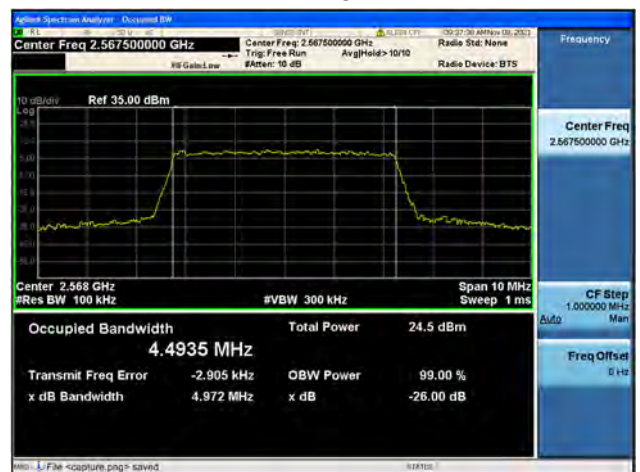
Band7 / 5MHz / Mid CH / 16QAM



Band7 / 5MHz / High CH / QPSK



Band7 / 5MHz / High CH / 16QAM





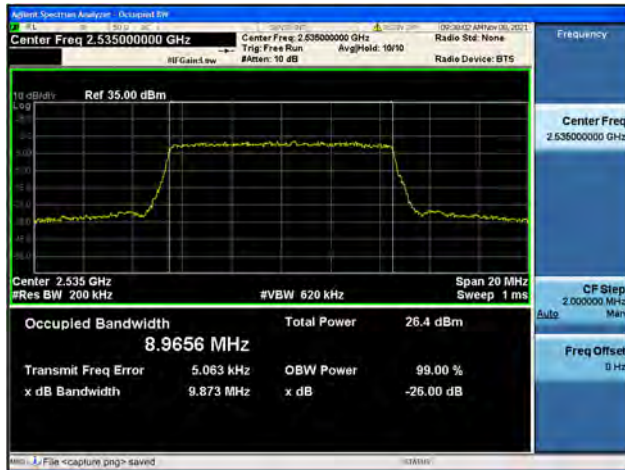
Band7 / 10MHz / Low CH / QPSK



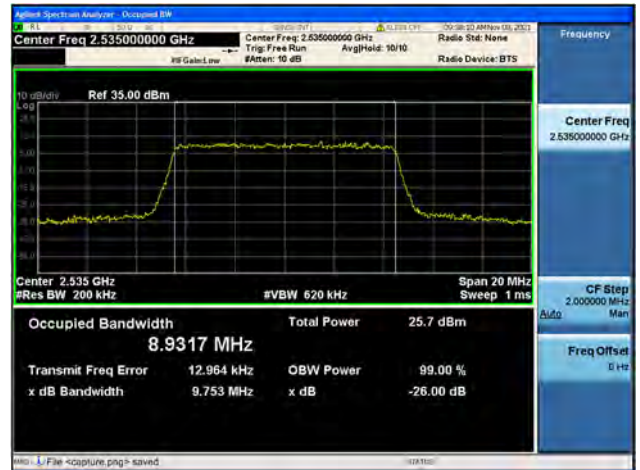
Band7 / 10MHz / Low CH / 16QAM



Band7 / 10MHz / Mid CH / QPSK



Band7 / 10MHz / Mid CH / 16QAM



Band7 / 10MHz / High CH / QPSK

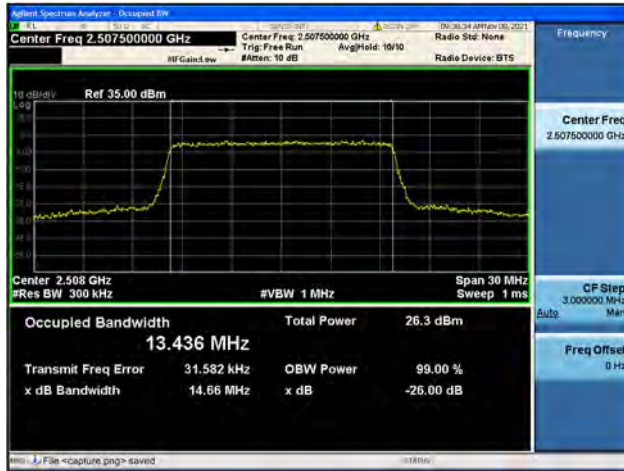


Band7 / 10MHz / High CH / 16QAM





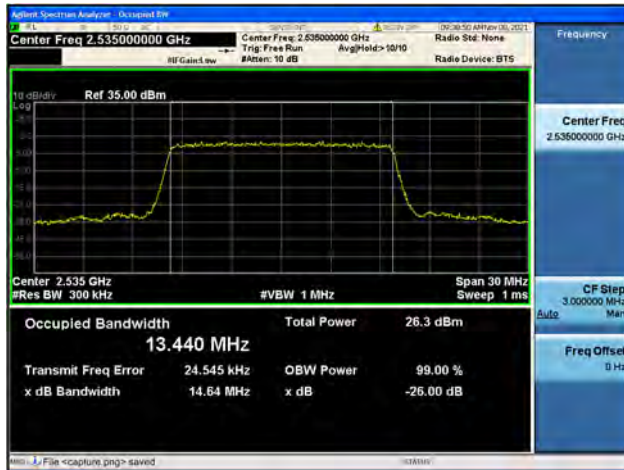
Band7 / 15MHz / Low CH / QPSK



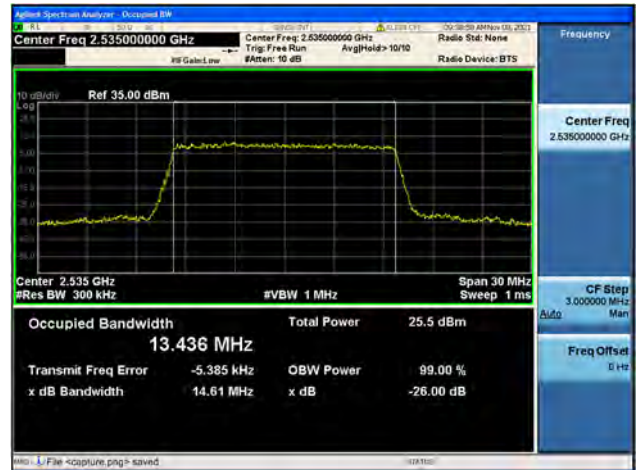
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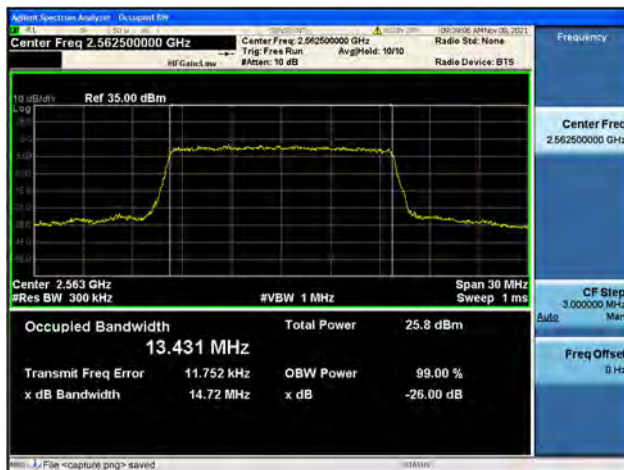
Band7 / 15MHz / Mid CH / QPSK



Band7 / 15MHz / Mid CH / 16QAM



Band7 / 15MHz / High CH / QPSK



Band7 / 15MHz / High CH / 16QAM





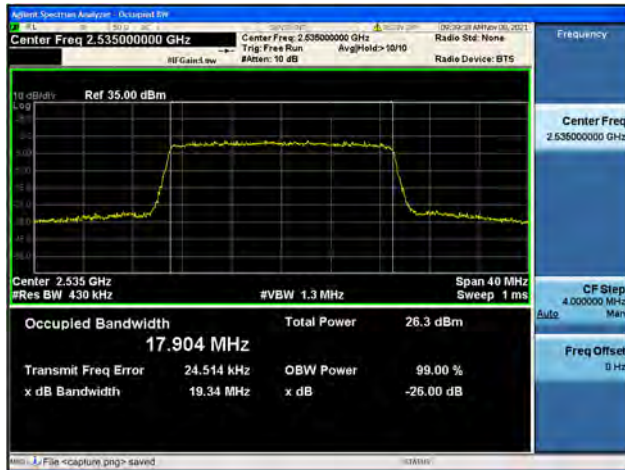
Band7 / 20MHz / Low CH / QPSK



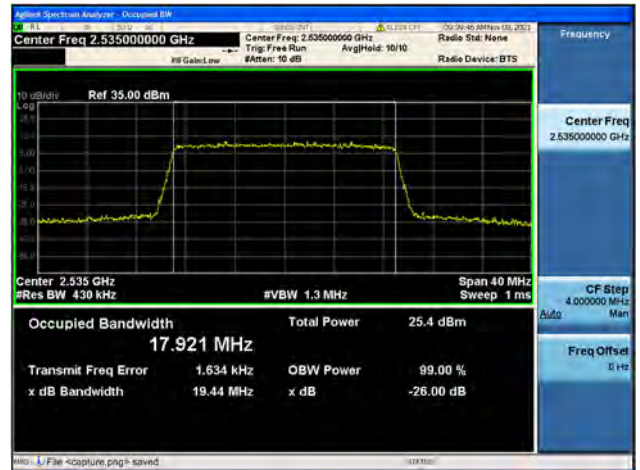
Band7 / 20MHz / Low CH / 16QAM



Band7 / 20MHz / Mid CH / QPSK



Band7 / 20MHz / Mid CH / 16QAM



Band7 / 20MHz / High CH / QPSK

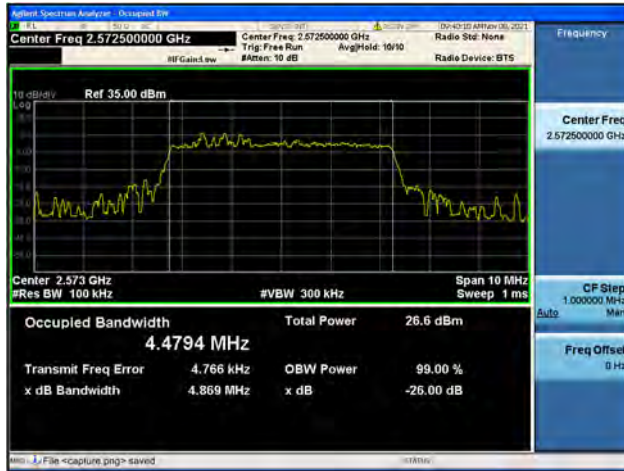


Band7 / 20MHz / High CH / 16QAM

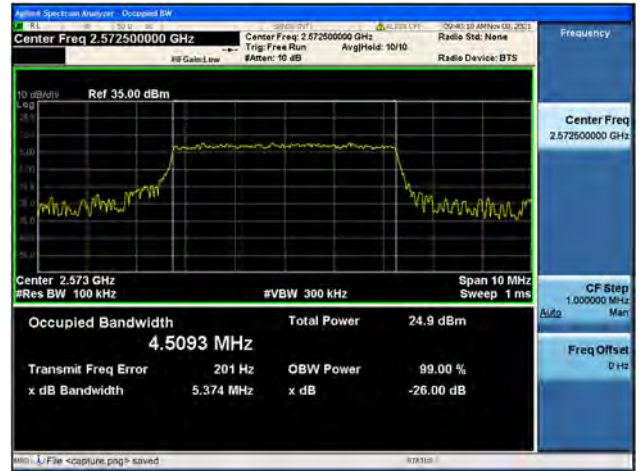




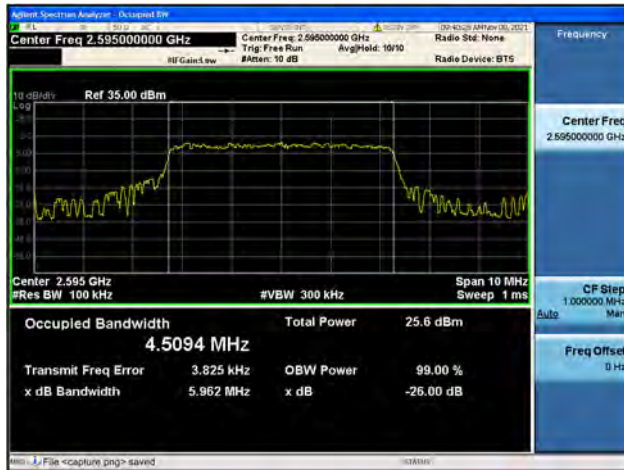
Band38 / 5MHz / Low CH / QPSK



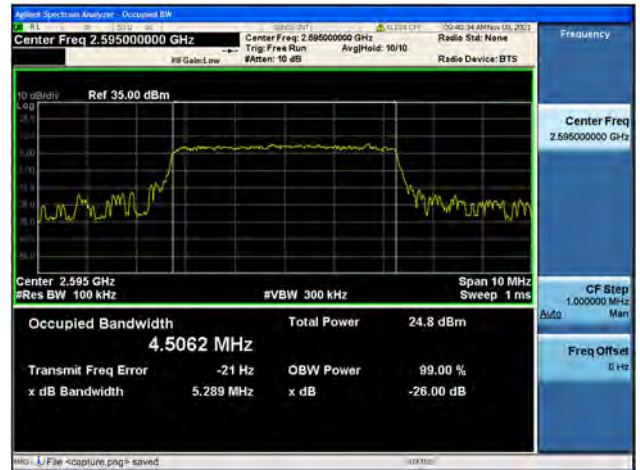
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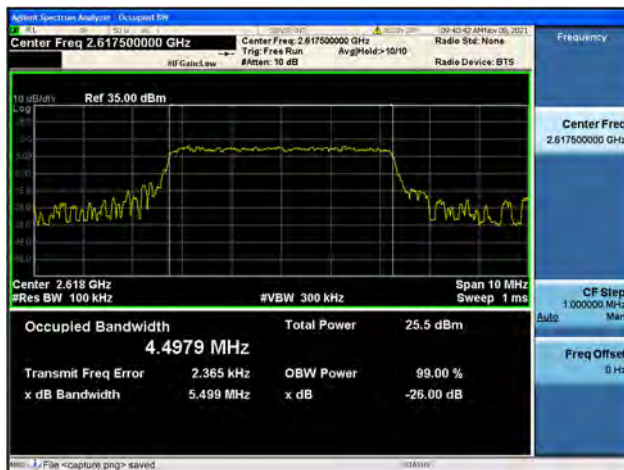
Band38 / 5MHz / Mid CH / QPSK



Band38 / 5MHz / Mid CH / 16QAM



Band38 / 5MHz / High CH / QPSK

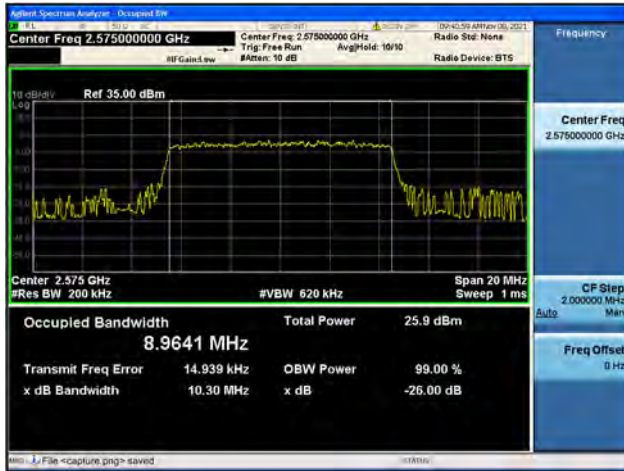


Band38 / 5MHz / High CH / 16QAM





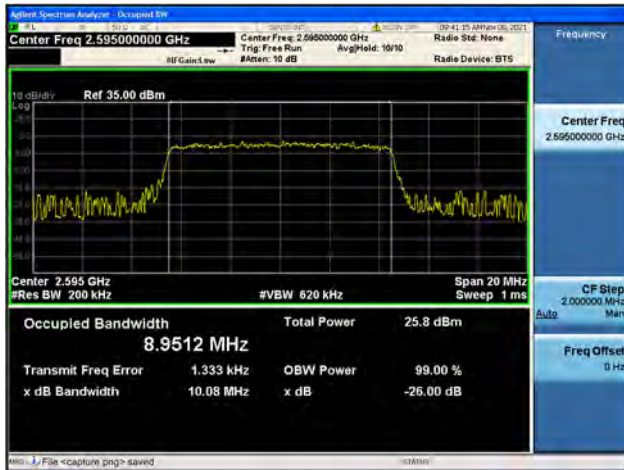
Band38 / 10MHz / Low CH / QPSK



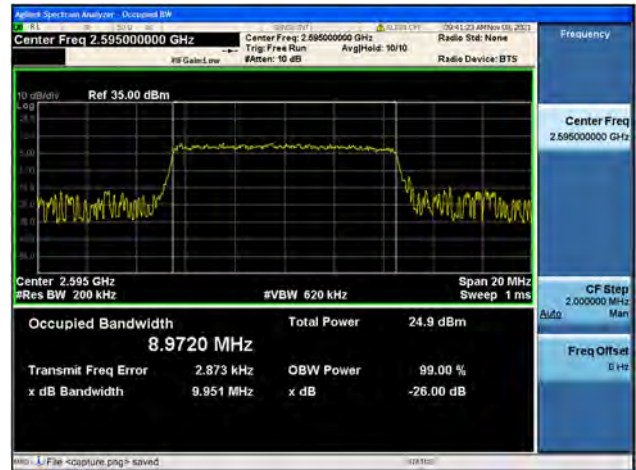
Band38 / 10MHz / Low CH / 16QAM



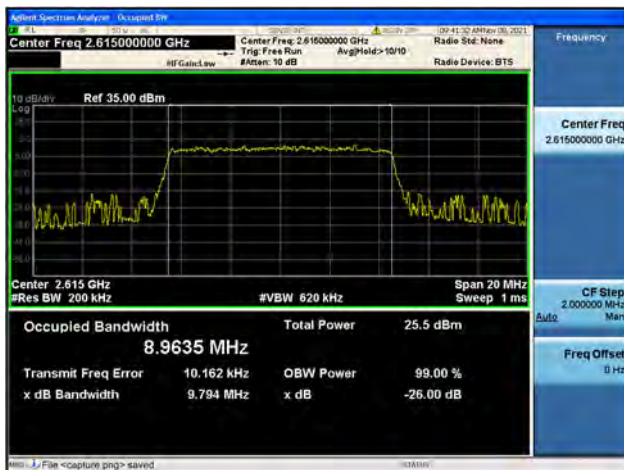
Band38 / 10MHz / Mid CH / QPSK



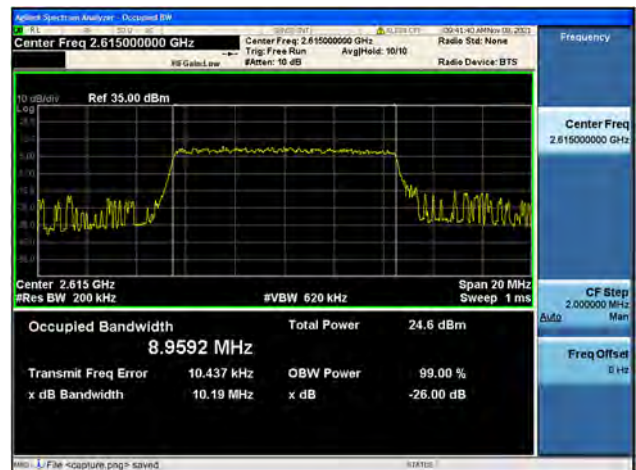
Band38 / 10MHz / Mid CH / 16QAM



Band38 / 10MHz / High CH / QPSK

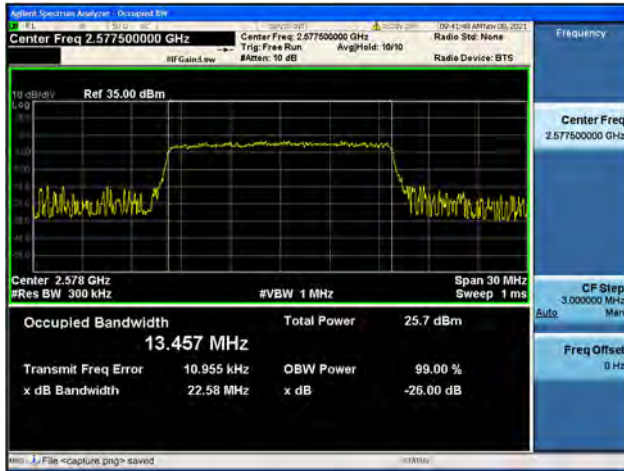


Band38 / 10MHz / High CH / 16QAM

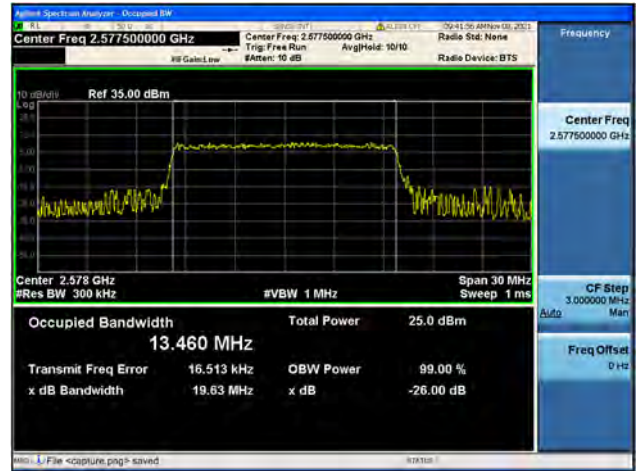




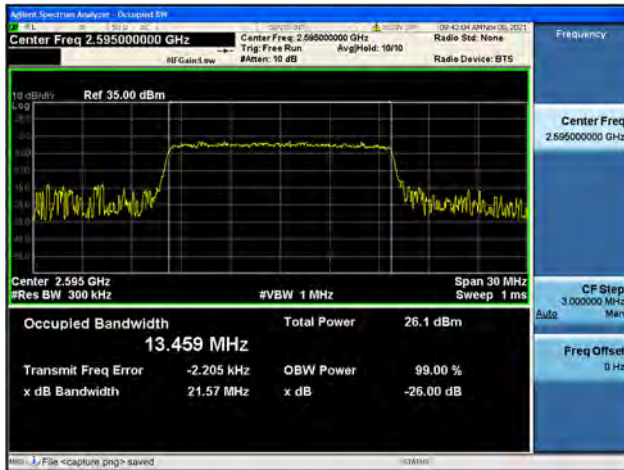
Band38 / 15MHz / Low CH / QPSK



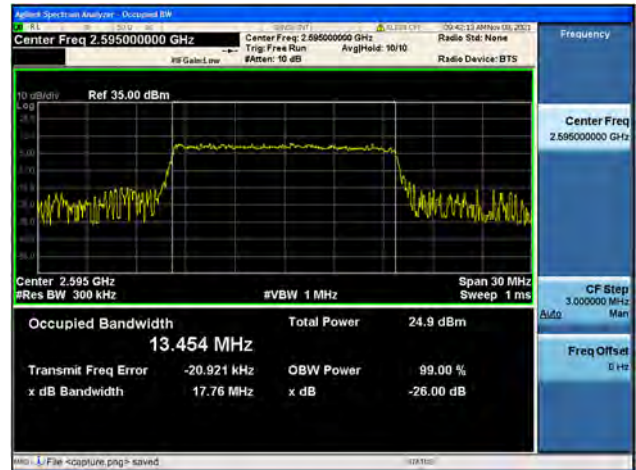
Band38 / 15MHz / Low CH / 16QAM



Band38 / 15MHz / Mid CH / QPSK



Band38 / 15MHz / Mid CH / 16QAM



Band38 / 15MHz / High CH / QPSK

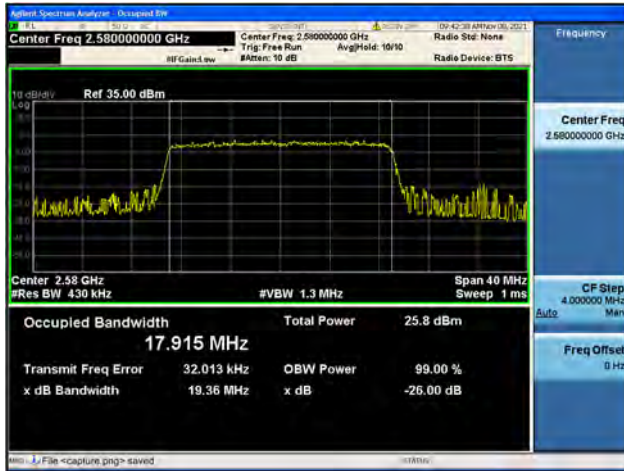


Band38 / 15MHz / High CH / 16QAM

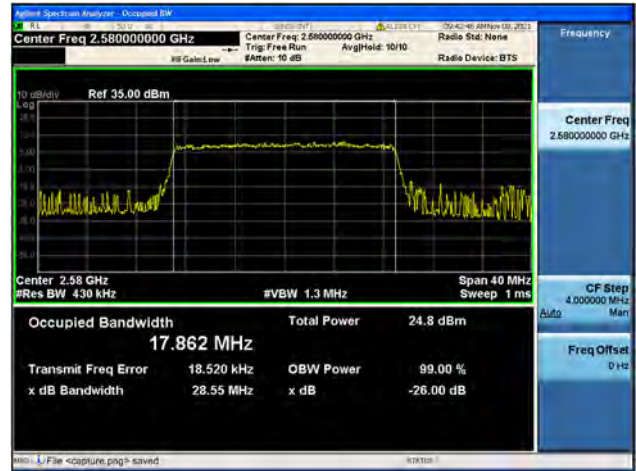




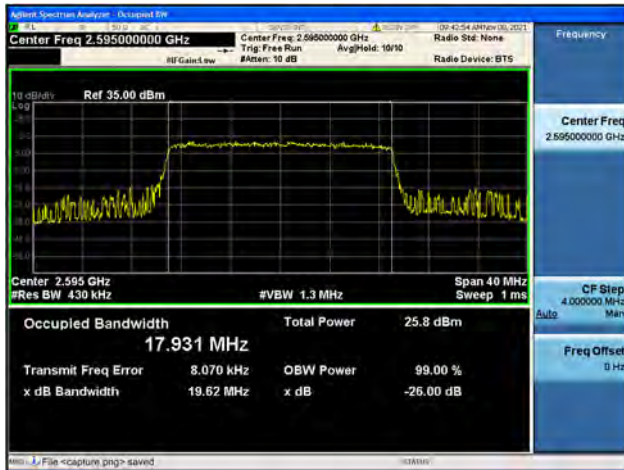
Band38 / 20MHz / Low CH / QPSK



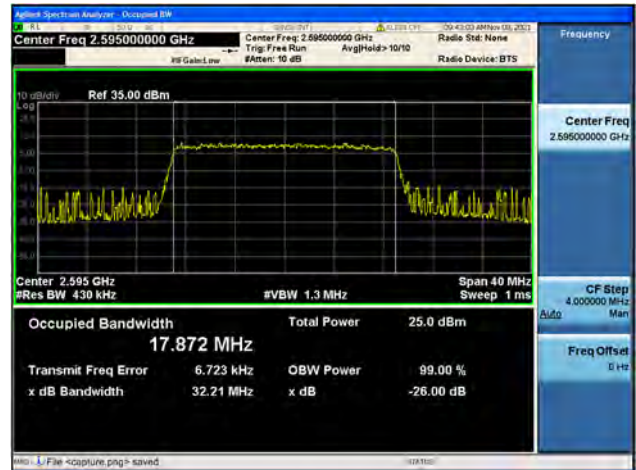
Band38 / 20MHz / Low CH / 16QAM



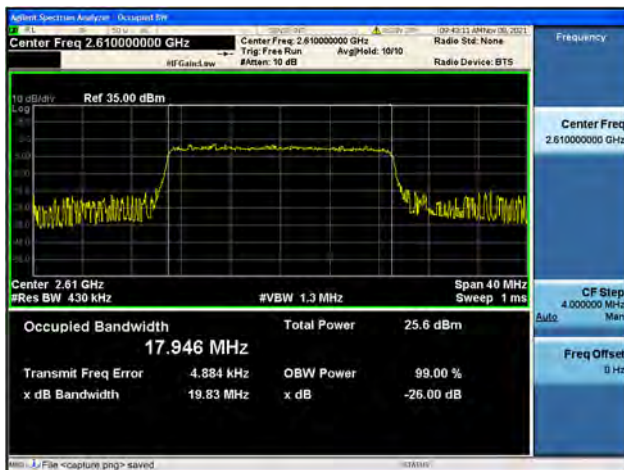
Band38 / 20MHz / Mid CH / QPSK



Band38 / 20MHz / Mid CH / 16QAM

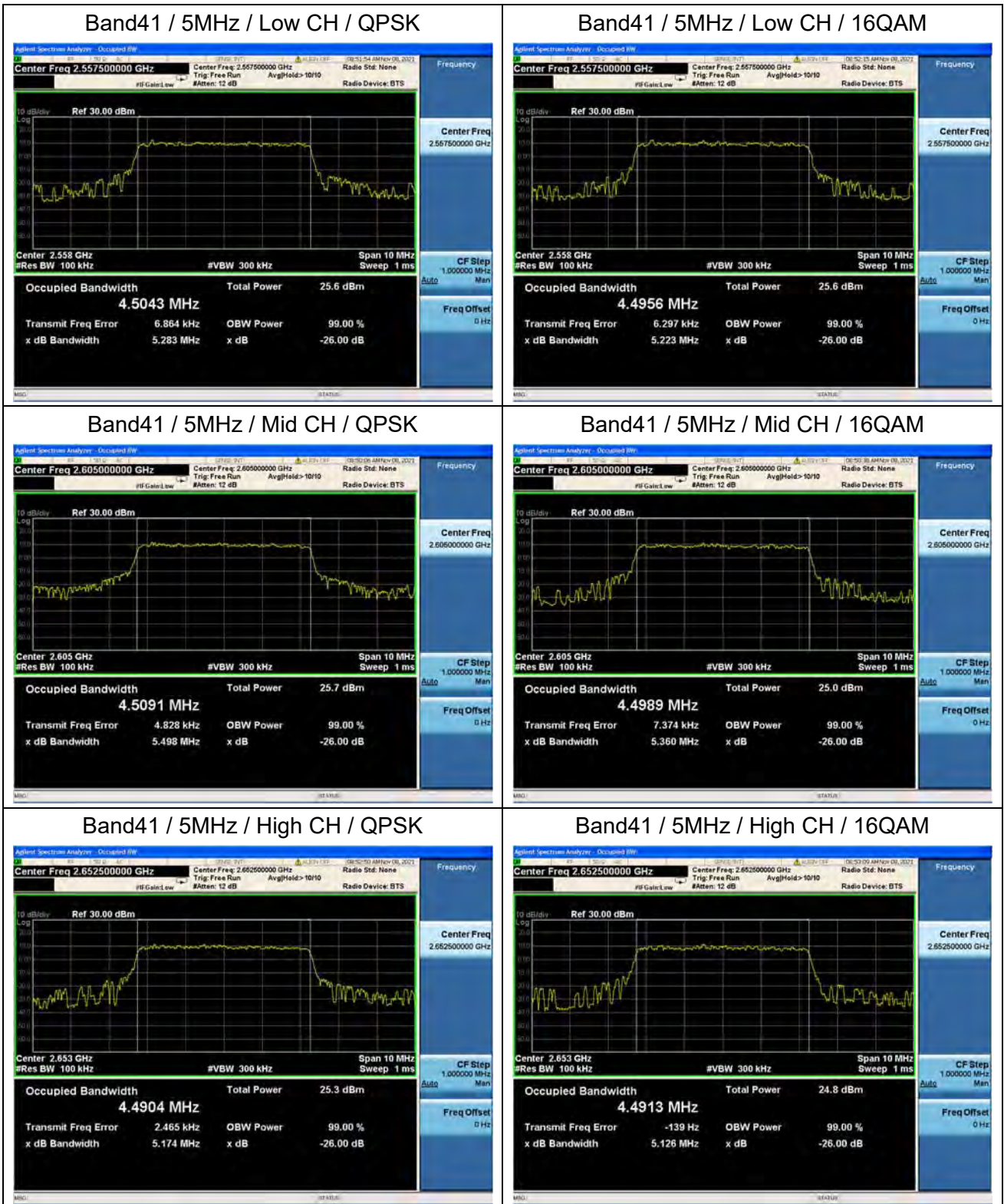


Band38 / 20MHz / High CH / QPSK



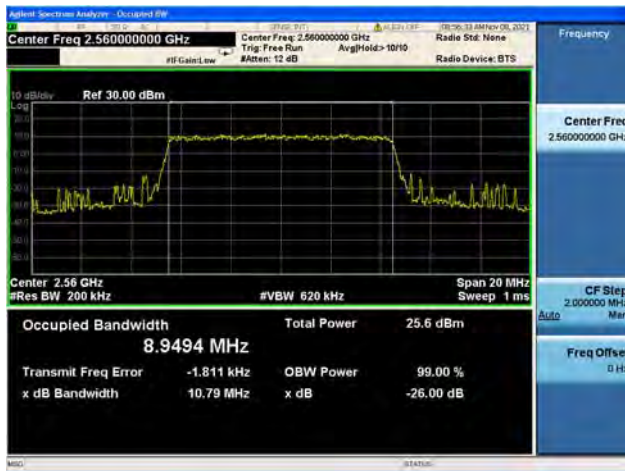
Band38 / 20MHz / High CH / 16QAM



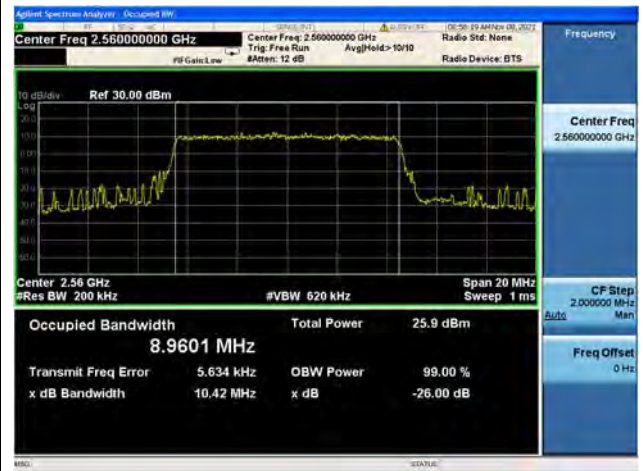




Band41 / 10MHz / Low CH / QPSK



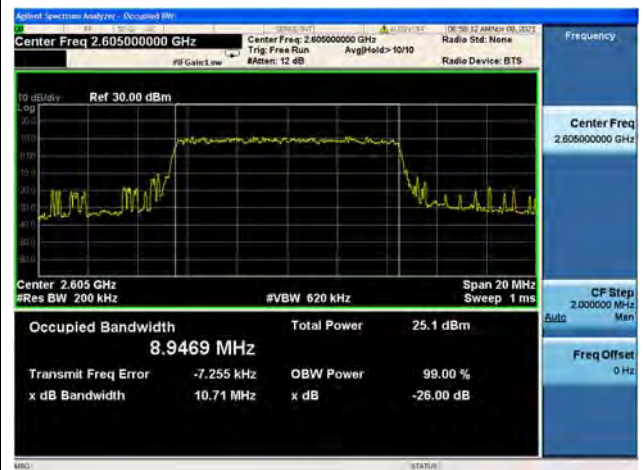
Band41 / 10MHz / Low CH / 16QAM



Band41 / 10MHz / Mid CH / QPSK



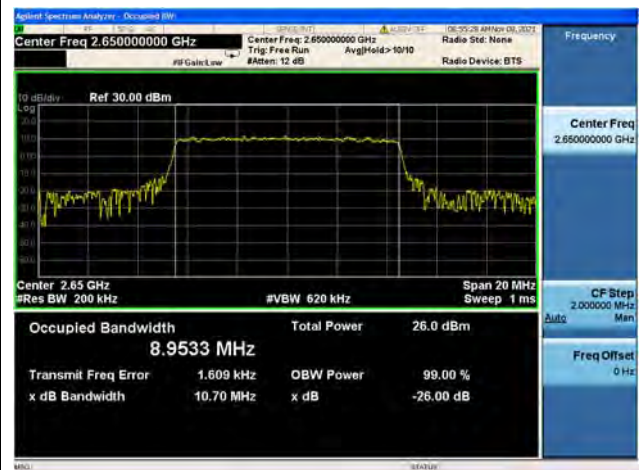
Band41 / 10MHz / Mid CH / 16QAM



Band41 / 10MHz / High CH / QPSK

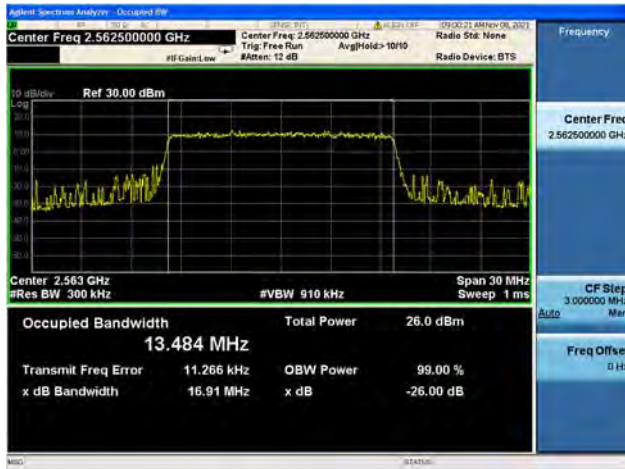


Band41 / 10MHz / High CH / 16QAM

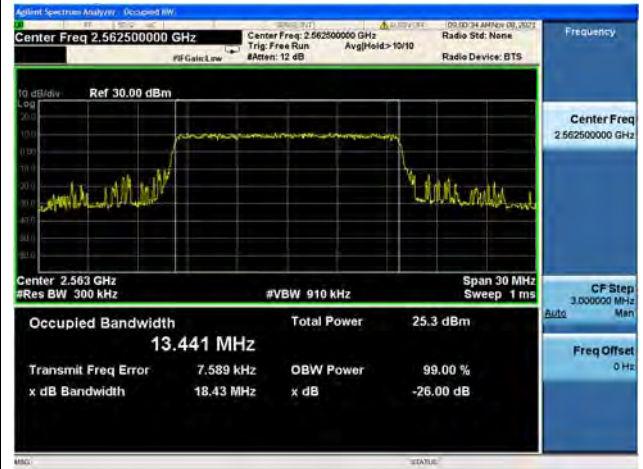




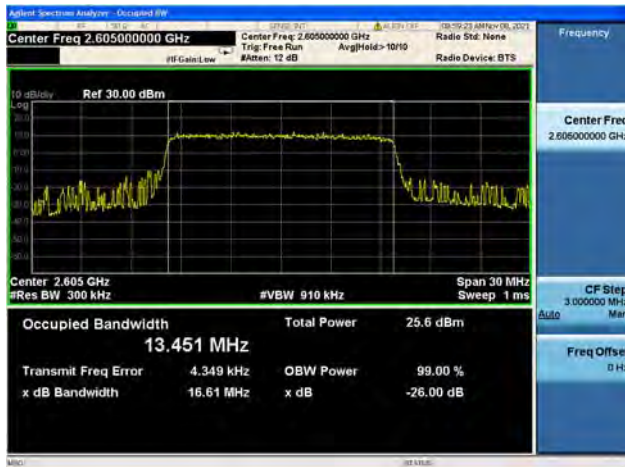
Band41 / 15MHz / Low CH / QPSK



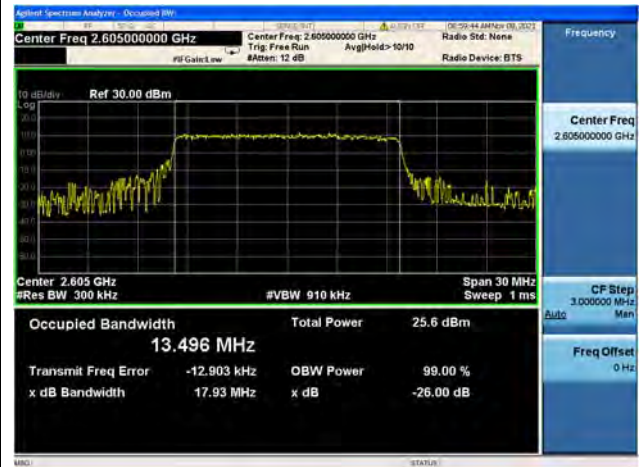
Band41 / 15MHz / Low CH / 16QAM



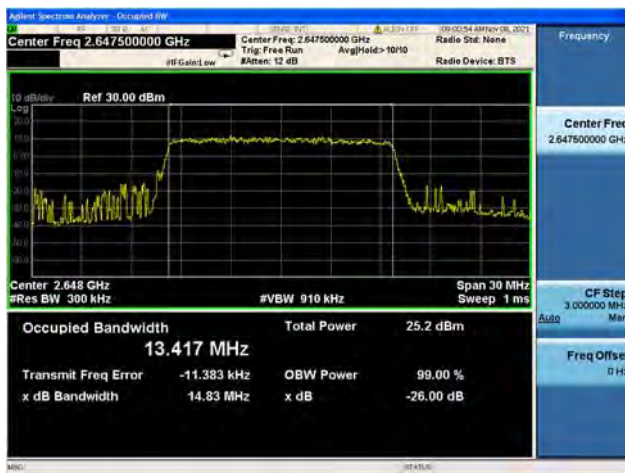
Band41 / 15MHz / Mid CH / QPSK



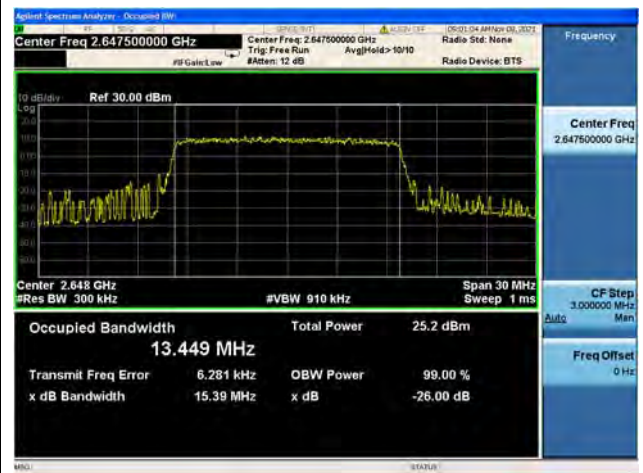
Band41 / 15MHz / Mid CH / 16QAM



Band41 / 15MHz / High CH / QPSK



Band41 / 15MHz / High CH / 16QAM

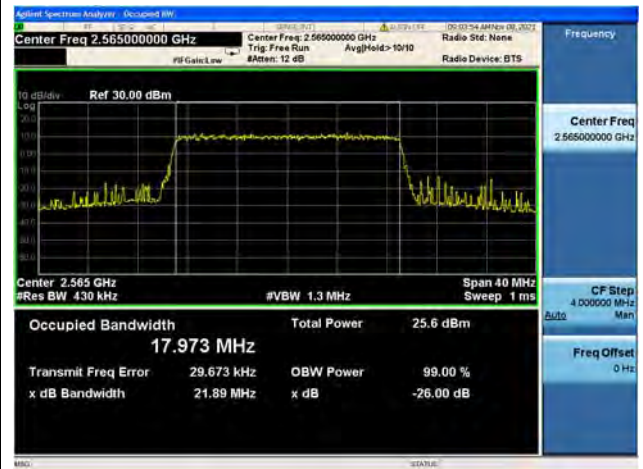




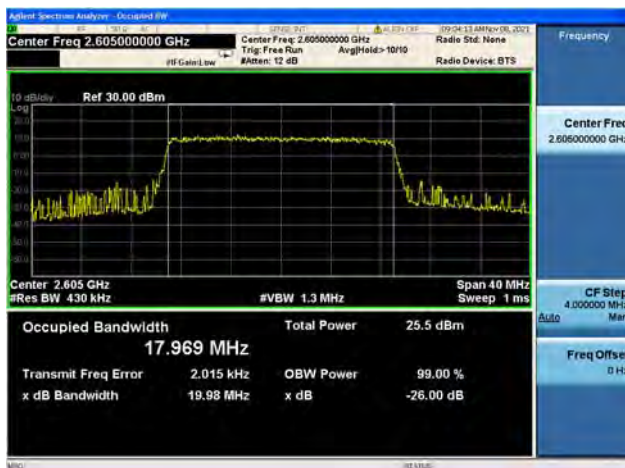
Band41 / 20MHz / Low CH / QPSK



Band41 / 20MHz / Low CH / 16QAM



Band41 / 20MHz / Mid CH / QPSK



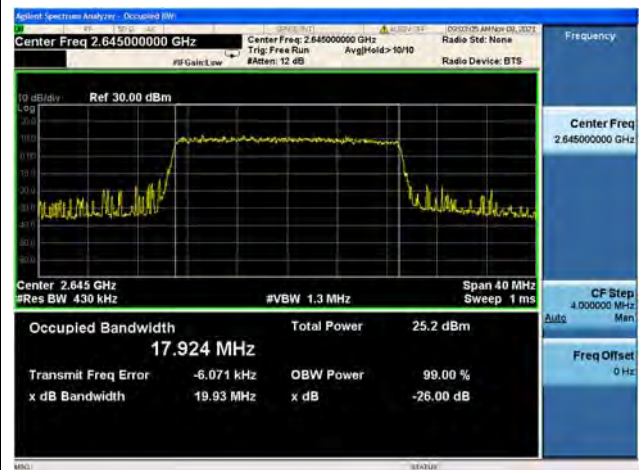
Band41 / 20MHz / Mid CH / 16QAM



Band41 / 20MHz / High CH / QPSK



Band41 / 20MHz / High CH / 16QAM



2.3. Frequency Stability

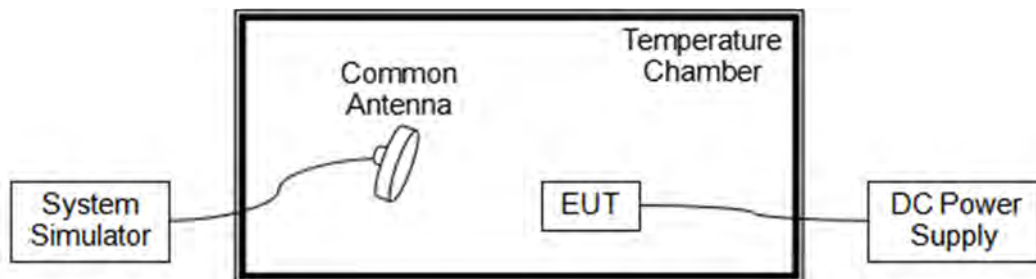
2.3.1. Requirement

According to FCC section 2.1055, 24.235, 27.54, 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 -20°C to 50°C , which are specified by the applicant.

2.3.2. Test Description



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

2.3.3. Test Procedure

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



2.3.4. Test Result

The nominal, highest and lowest extreme voltages are separately 3.85V, 4.40V and 3.45V, which are specified by the applicant; the normal temperature here used is 20°C.

LTE Band 5, QPSK, Channel 20525, Frequency 836.5MHz					
Limit=±2.5ppm					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.60	+20(Ref)	-33	-0.039	PASS
100		-20	21	0.025	
100		-10	34	0.041	
100		0	-47	-0.056	
100		+10	-35	-0.042	
100		+20	-16	-0.019	
100		+30	-20	-0.024	
100		+40	22	0.026	
100		+50	-37	-0.044	
115	4.20	+20	34	0.041	
85	3.00	+20	51	0.061	

LTE Band 7, QPSK, Channel 21100, Frequency 2535MHz					
Limit= Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.60	+20(Ref)	-20	-0.008	PASS
100		-20	40	0.016	
100		-10	52	0.021	
100		0	-16	-0.006	
100		+10	46	0.018	
100		+20	15	0.006	
100		+30	48	0.019	
100		+40	-40	-0.016	
100		+50	-37	-0.015	
115	4.20	+20	19	0.007	
85	3.00	+20	53	0.021	



LTE Band 38, QPSK, Channel 38000, Frequency 2595.0MHz Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.60	+20(Ref)	-28	-0.011	PASS
100		-20	40	0.015	
100		-10	31	0.012	
100		0	34	0.013	
100		+10	43	0.017	
100		+20	37	0.014	
100		+30	37	0.014	
100		+40	-18	-0.007	
100		+50	36	0.014	
115		4.20	+20	51	
85	3.00	+20	23	0.009	

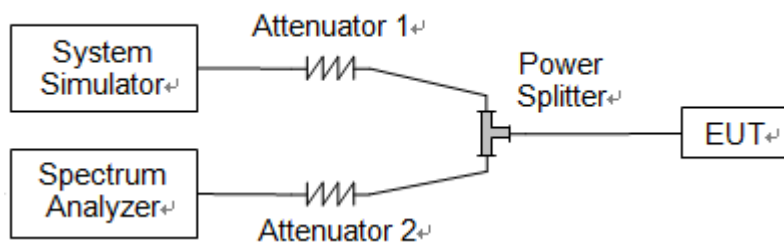
LTE Band 41, QPSK, Channel 40620, Frequency 2593MHz Limit=±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.60	+20(Ref)	17	0.007	PASS
100		-20	-13	-0.005	
100		-10	33	0.013	
100		0	-16	-0.006	
100		+10	-46	-0.018	
100		+20	49	0.019	
100		+30	54	0.021	
100		+40	-35	-0.013	
100		+50	-34	-0.013	
115		4.20	+20	-21	
85	3.00	+20	35	0.013	

2.4. Peak to Average Ratio

2.4.1. Requirement

According to FCC section 24.232(d) and 27.50(d), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

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

This test case does not apply this kind of EUT.

2.5. Conducted Spurious Emissions

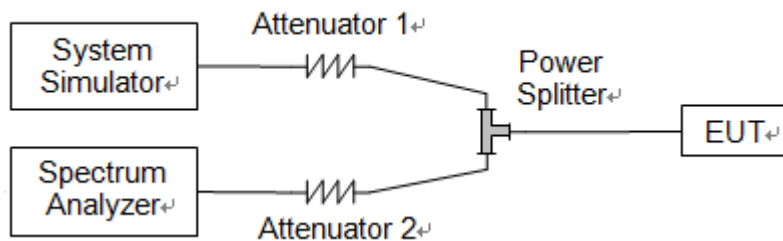
2.5.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43+10*\log(P)$ dB. This calculated to be -13dBm.

Additional requirement for LTE Band 7, 38, 41:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. This calculated to be -25dBm.

2.5.2. Test Description



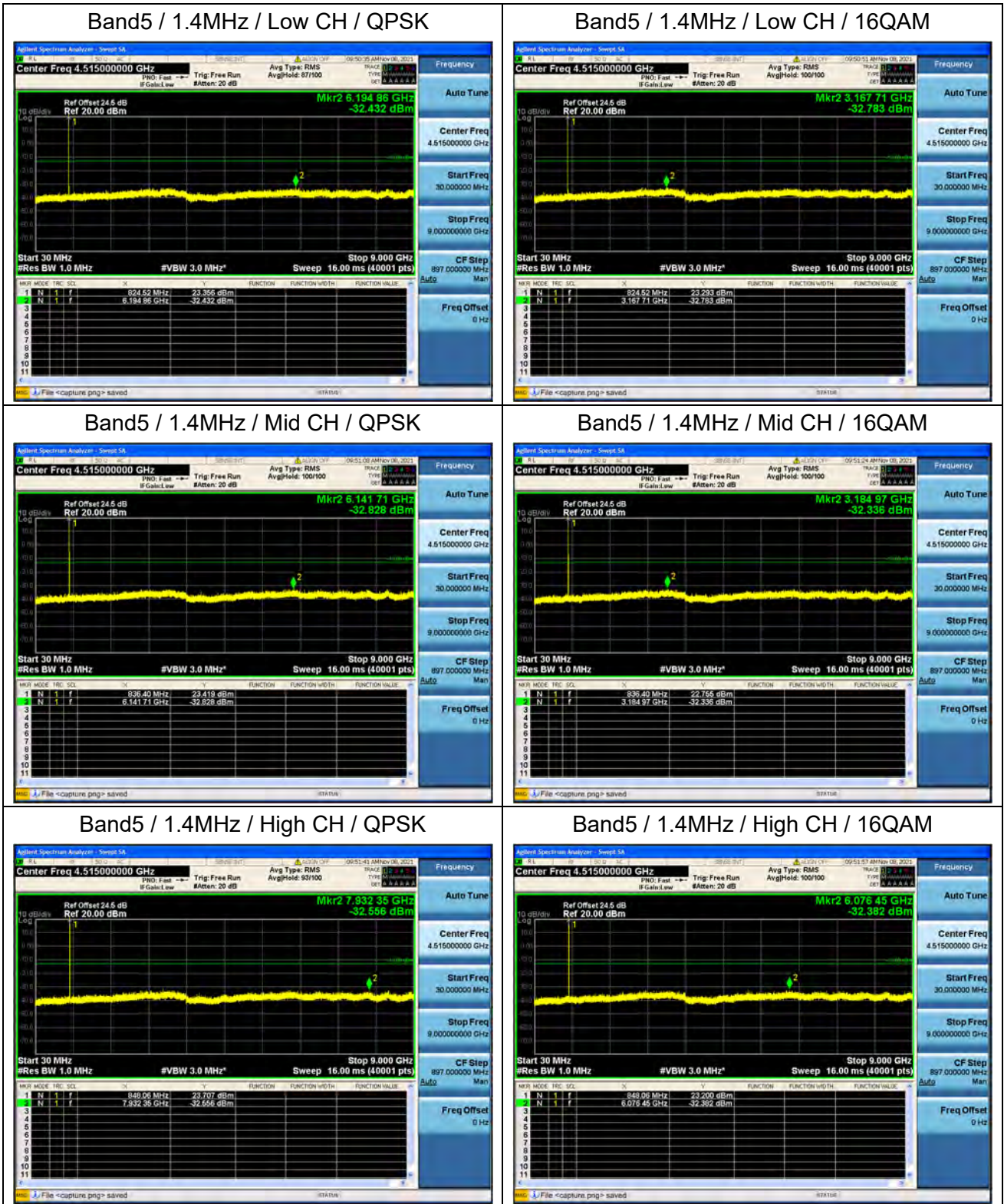
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

2.5.3. Test Procedure

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

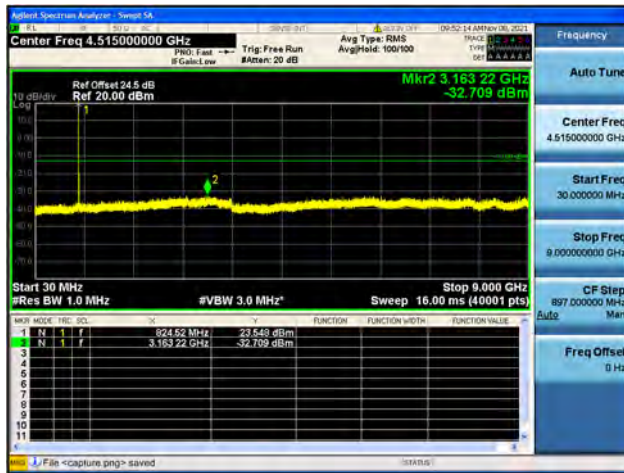


2.5.4. Test Result

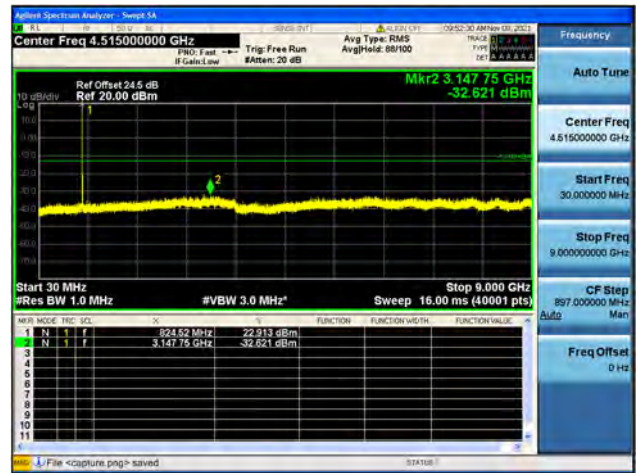




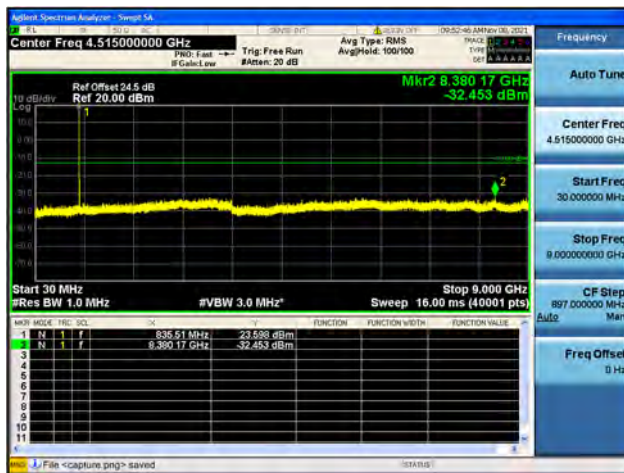
Band5 / 3MHz / Low CH / QPSK



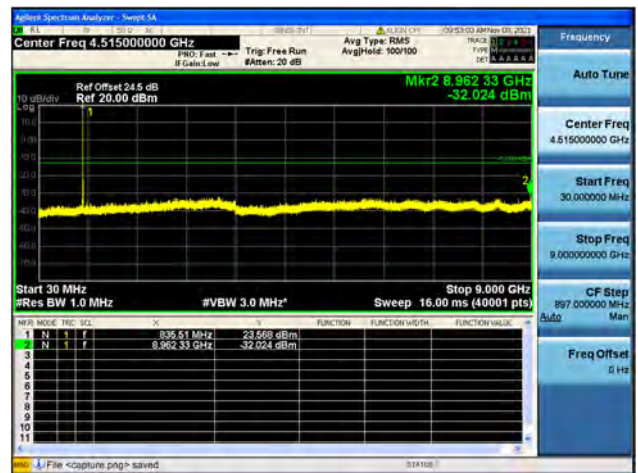
Band5 / 3MHz / Low CH / 16QAM



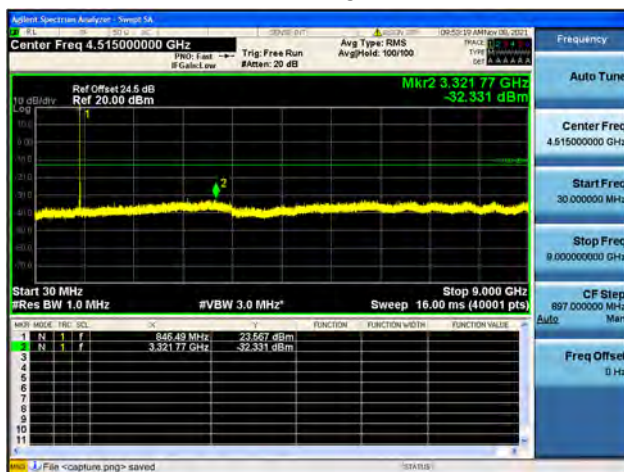
Band5 / 3MHz / Mid CH / QPSK



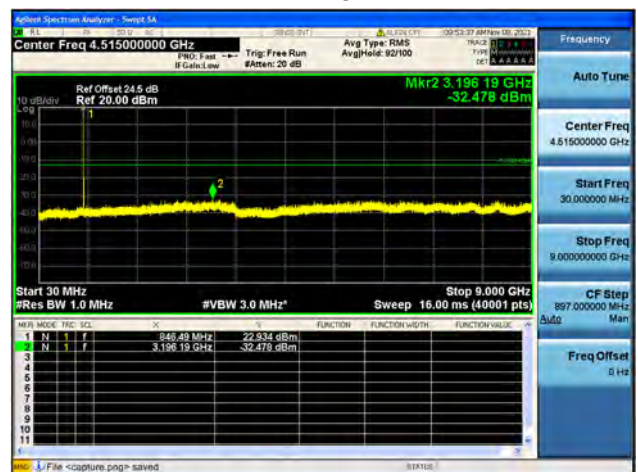
Band5 / 3MHz / Mid CH / 16QAM



Band5 / 3MHz / High CH / QPSK

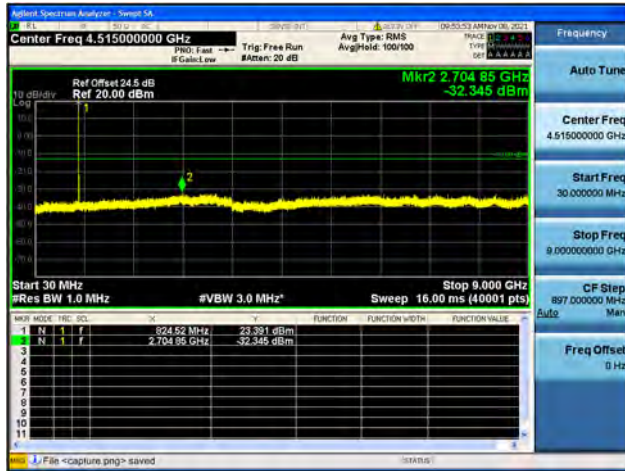


Band5 / 3MHz / High CH / 16QAM





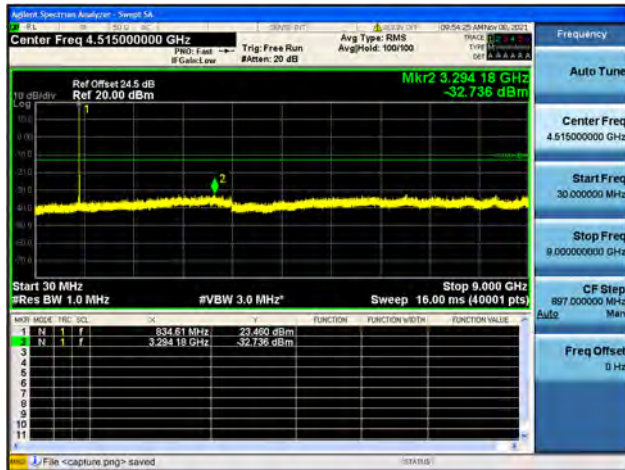
Band5 / 5MHz / Low CH / QPSK



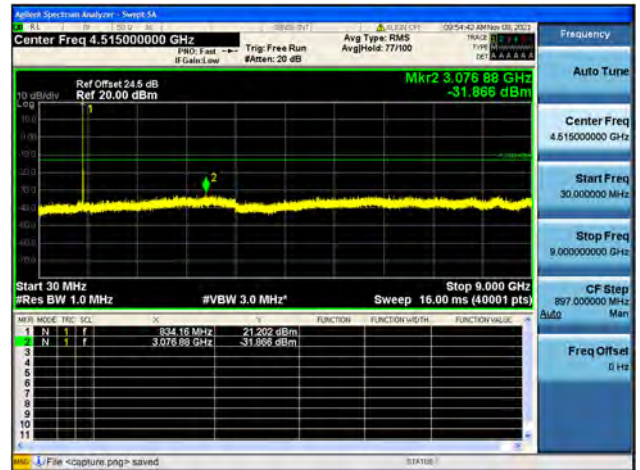
Band5 / 5MHz / Low CH / 16QAM



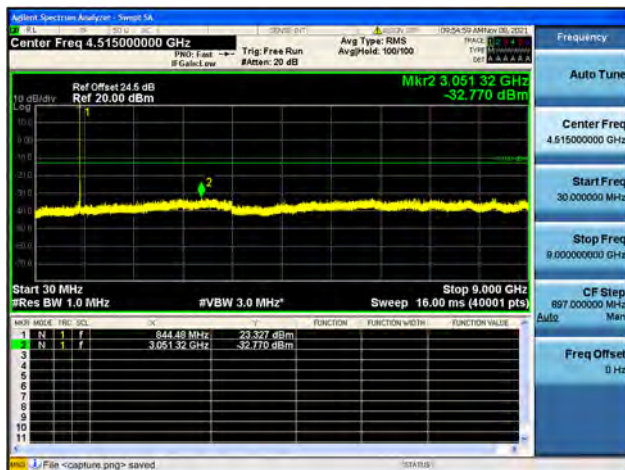
Band5 / 5MHz / Mid CH / QPSK



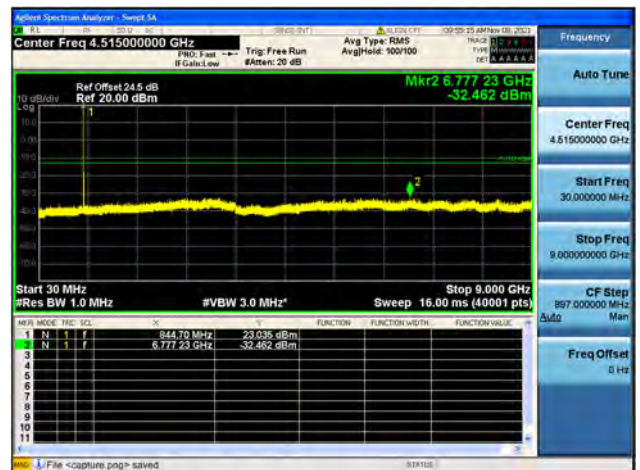
Band5 / 5MHz / Mid CH / 16QAM



Band5 / 5MHz / High CH / QPSK

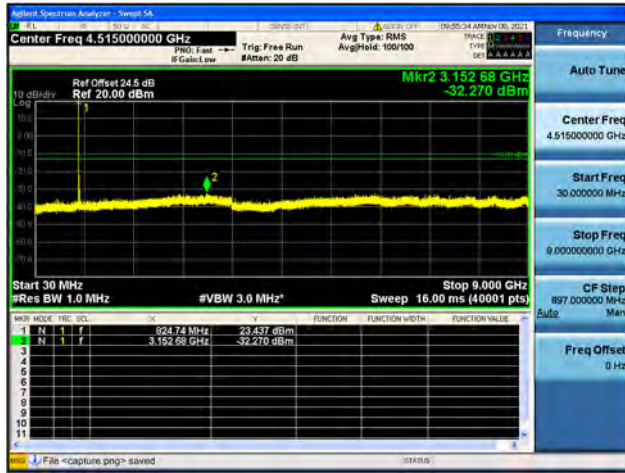


Band5 / 5MHz / High CH / 16QAM





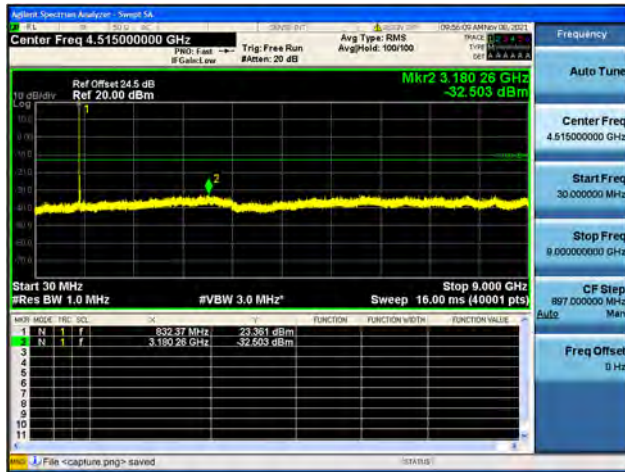
Band5 / 10MHz / Low CH / QPSK



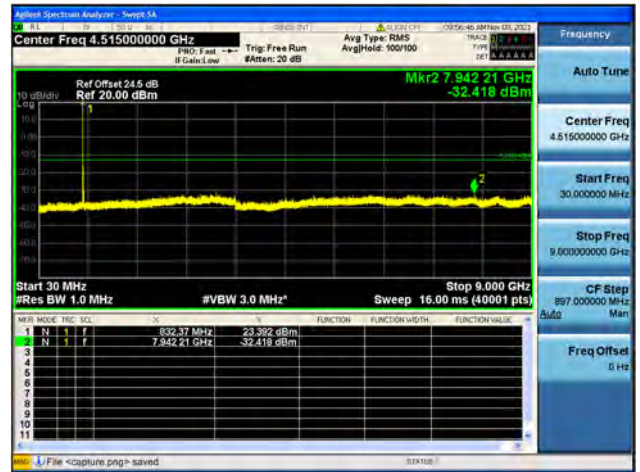
Band5 / 10MHz / Low CH / 16QAM



Band5 / 10MHz / Mid CH / QPSK



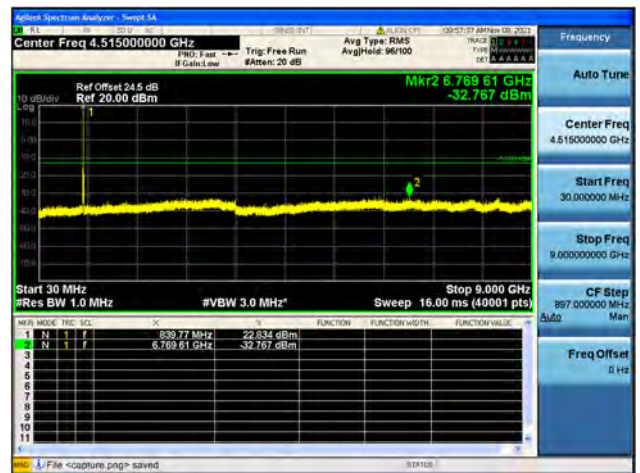
Band5 / 10MHz / Mid CH / 16QAM



Band5 / 10MHz / High CH / QPSK

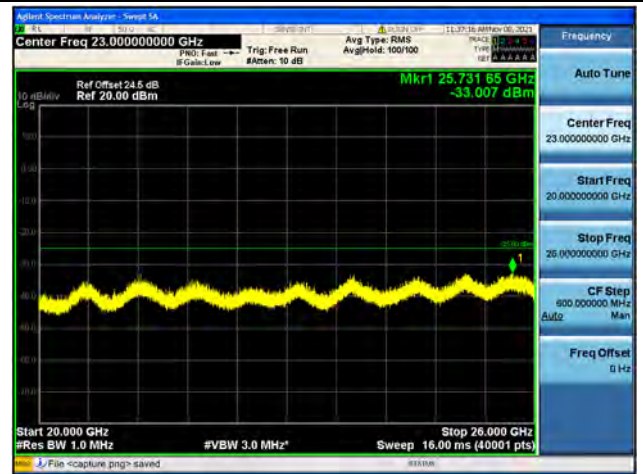
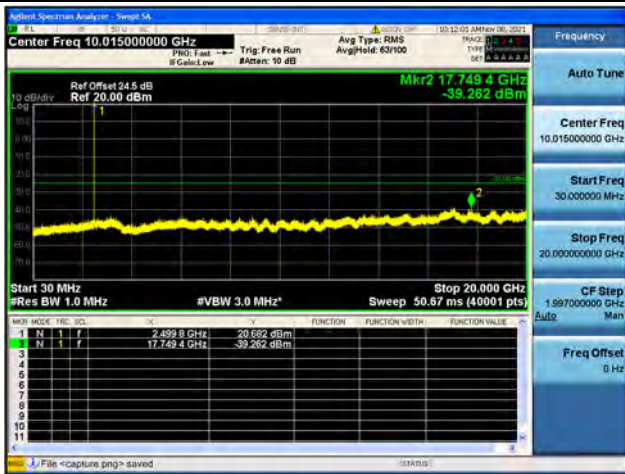


Band5 / 10MHz / High CH / 16QAM

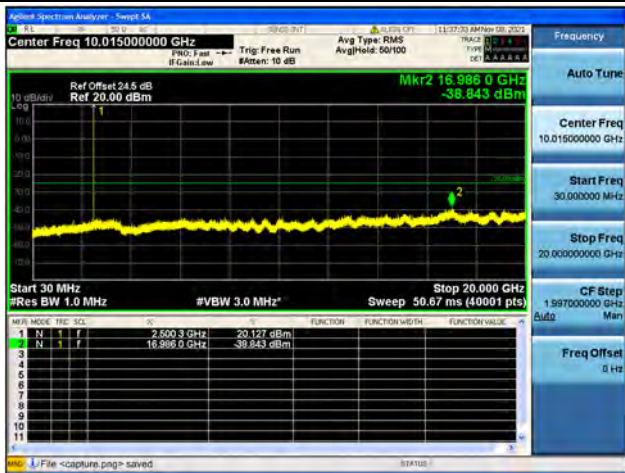




Band 7 / 5MHz / Low CH / QPSK



Band 7 / 5MHz / Low CH / 16QAM

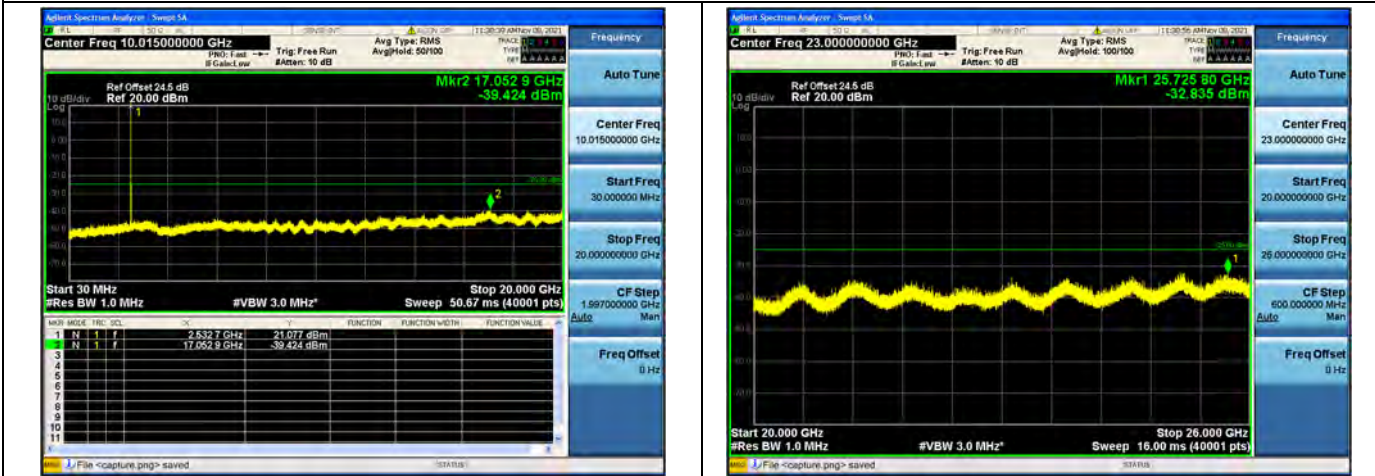




Band 7 / 5MHz / Mid CH / QPSK



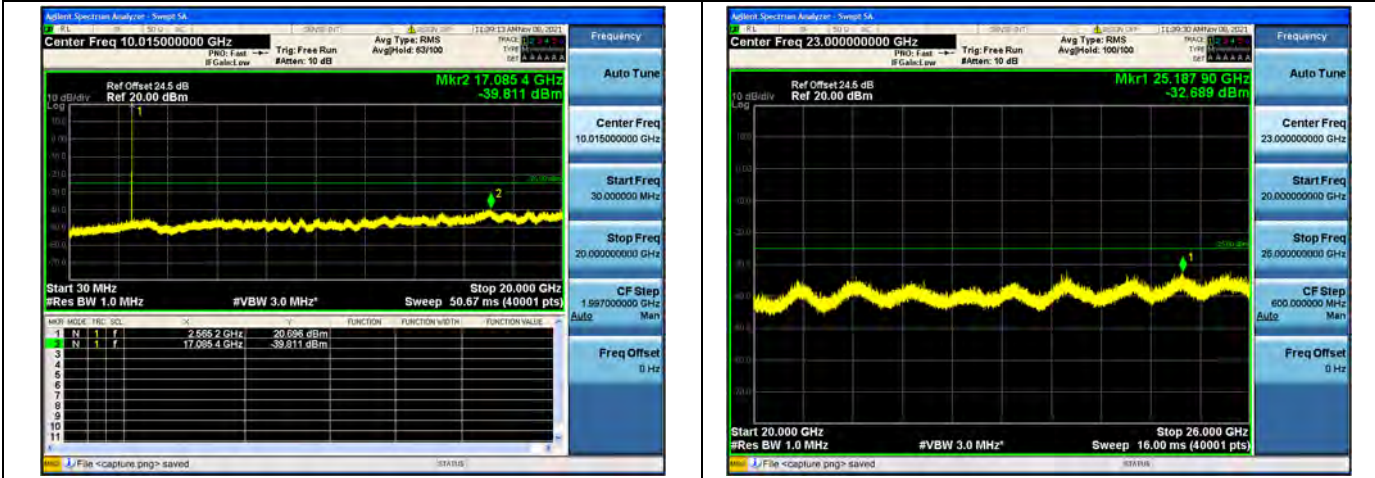
Band 7 / 5MHz / Mid CH / 16QAM



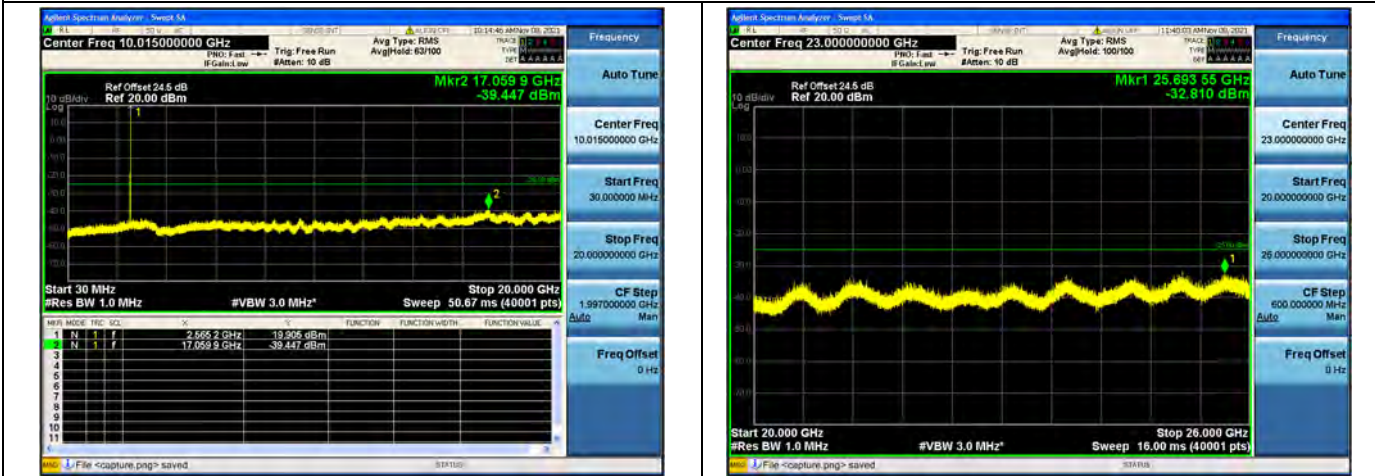
Band 7 / 5MHz / High CH / QPSK



Band 7 / 5MHz / High CH / QPSK

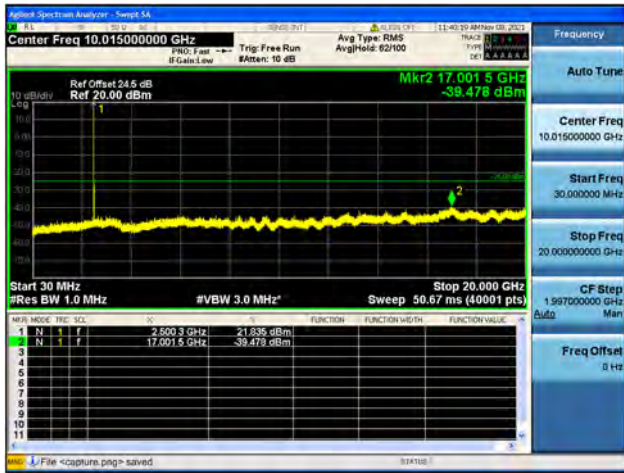


Band 7 / 5MHz / High CH / 16QAM

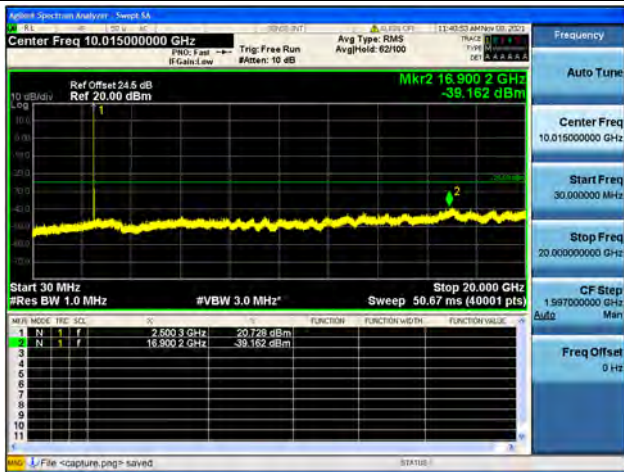




Band 7 / 10MHz / Low CH / QPSK

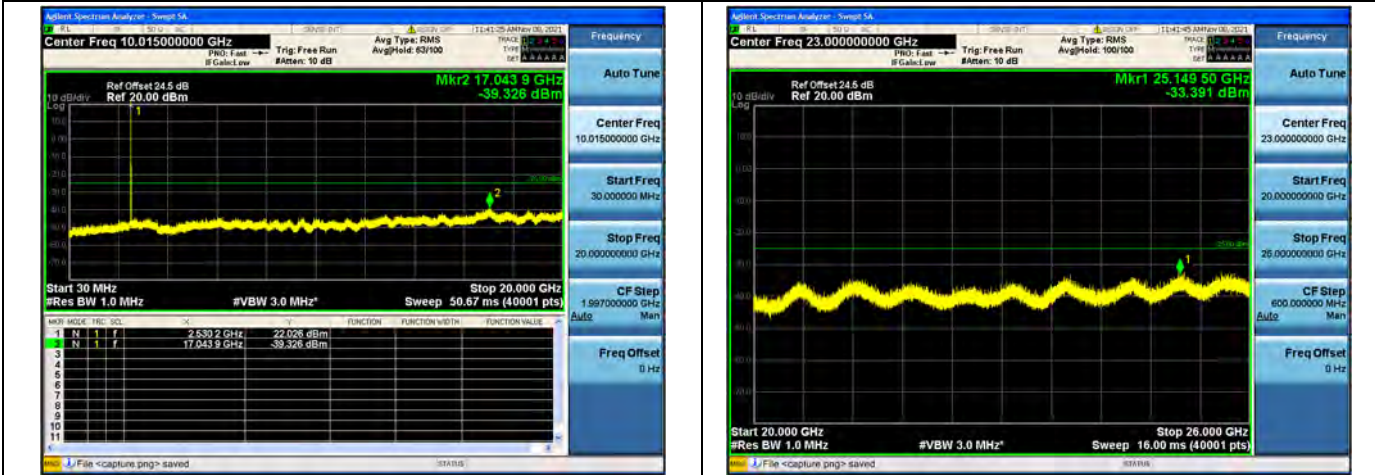


Band 7 / 10MHz / Low CH / 16QAM

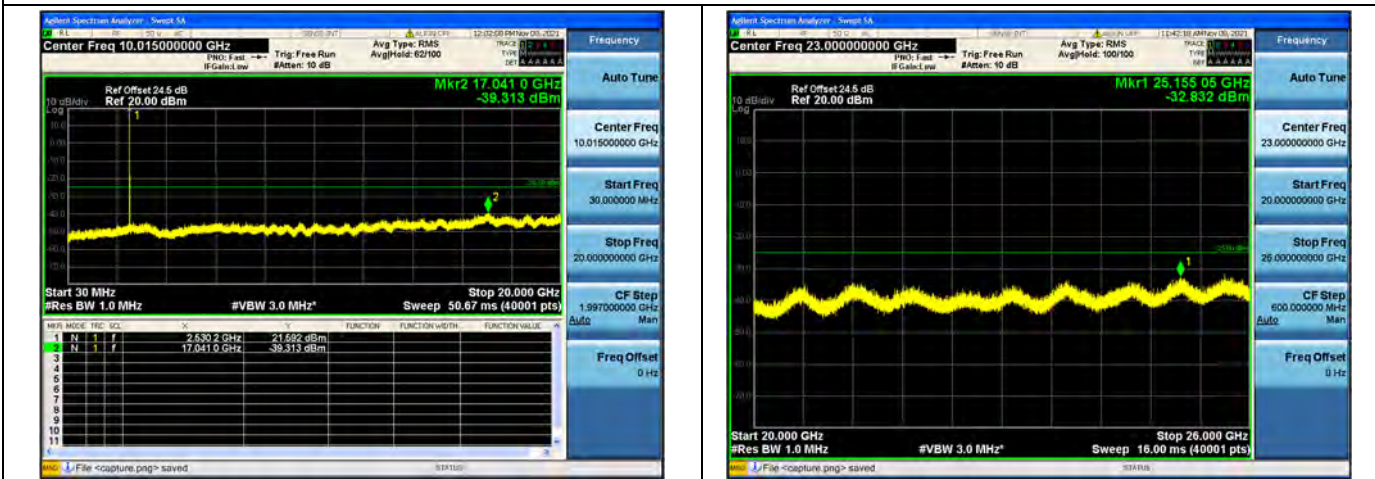




Band 7 / 10MHz / Mid CH / QPSK



Band 7 / 10MHz / Mid CH / 16QAM

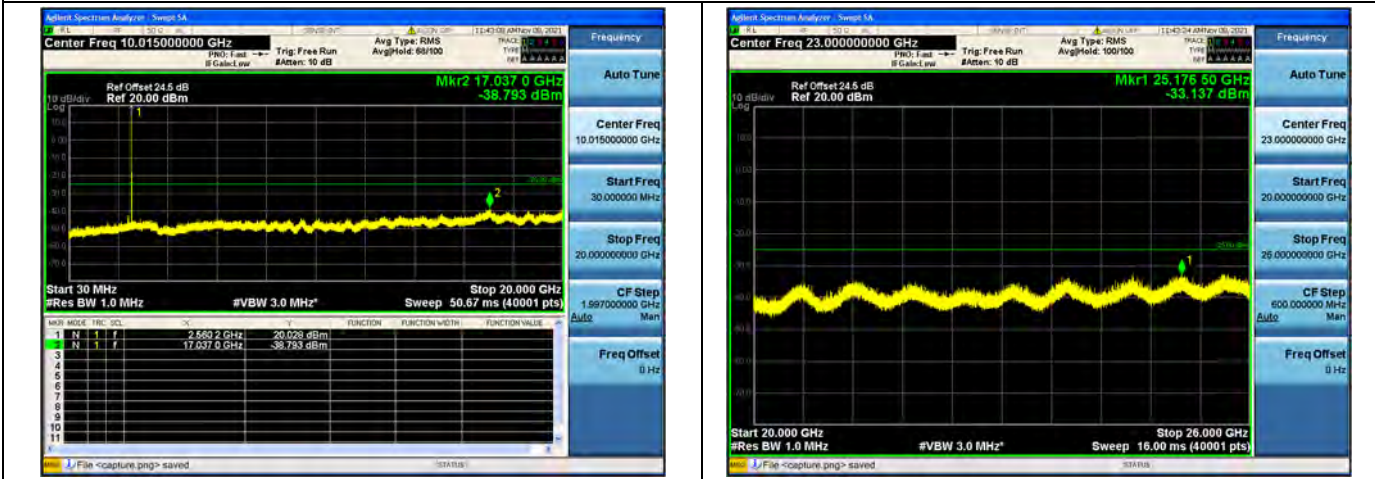




Band 7 / 10MHz / High CH / QPSK

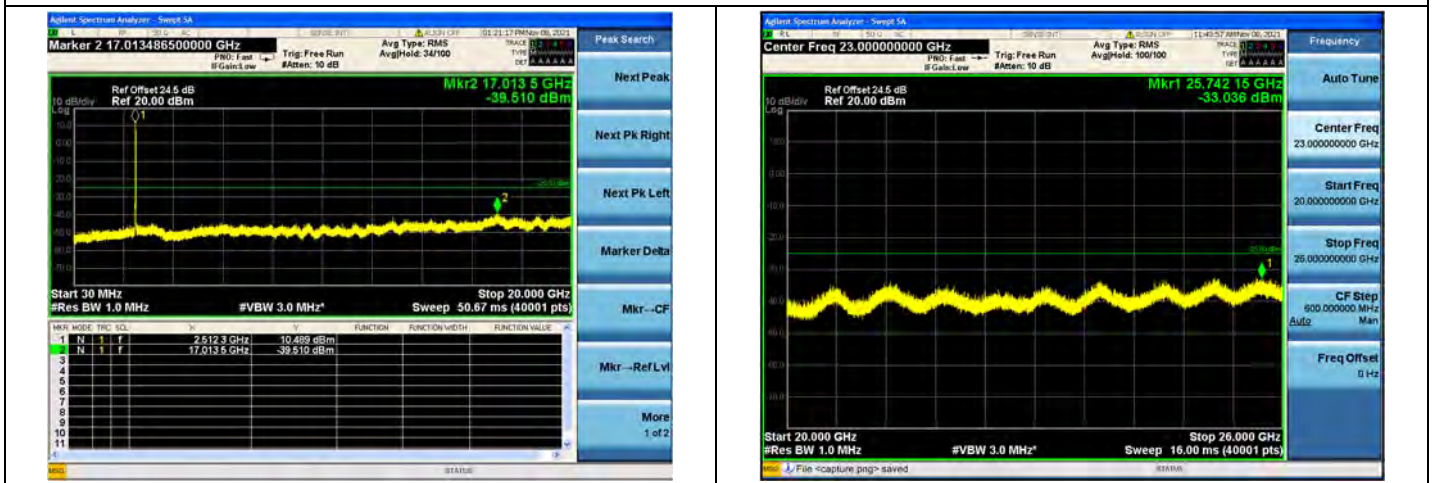


Band 7 / 10MHz / High CH / 16QAM

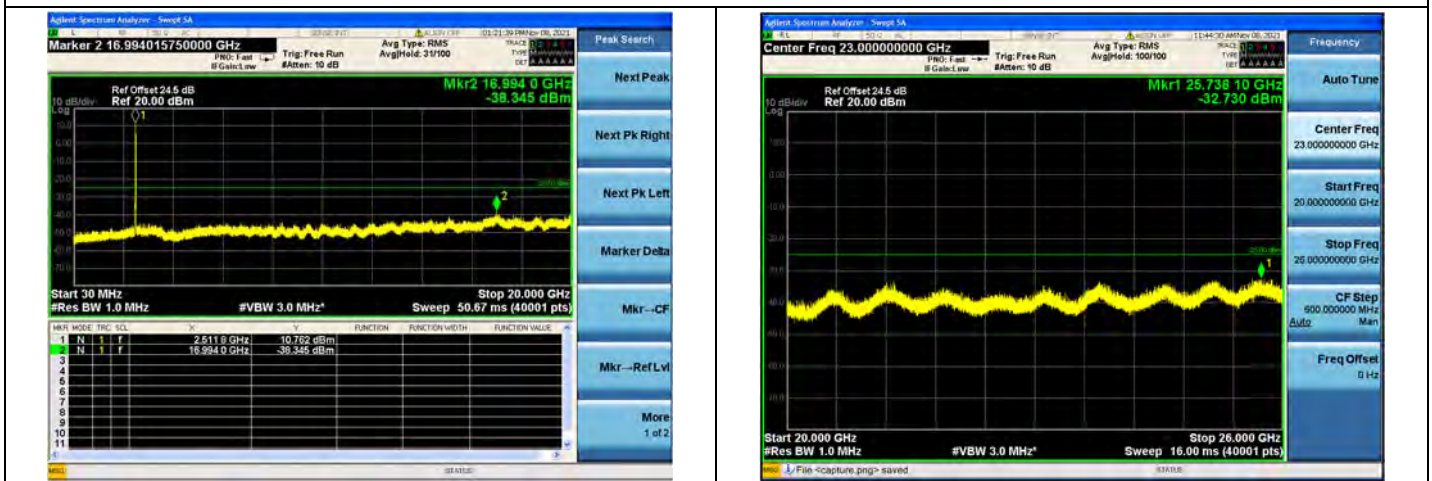




Band 7 / 15MHz / Low CH / QPSK

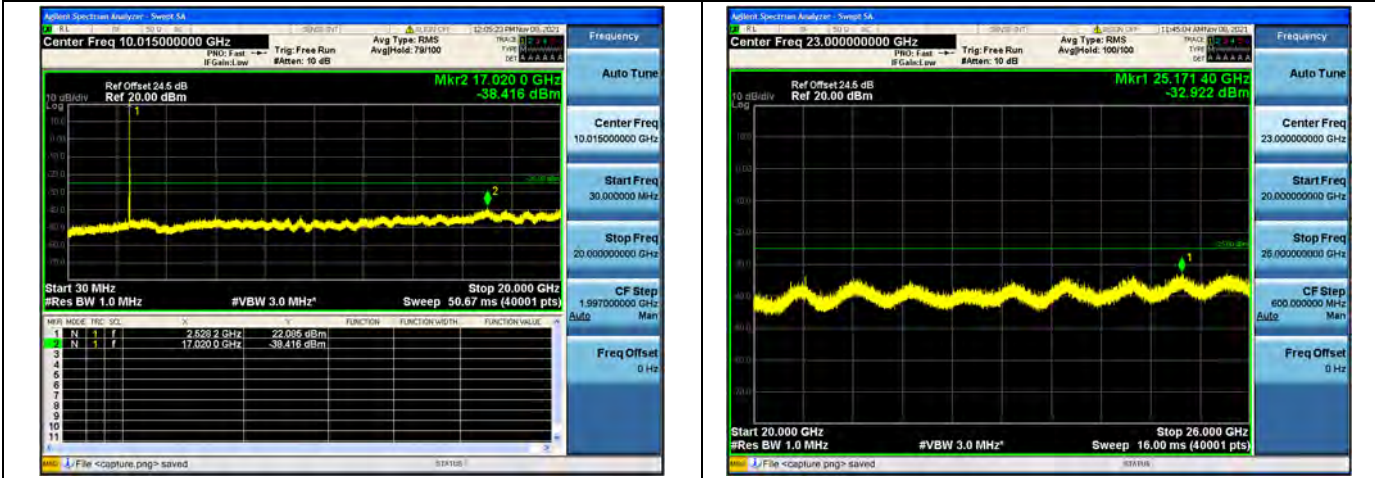


Band 7 / 15MHz / Low CH / 16QAM

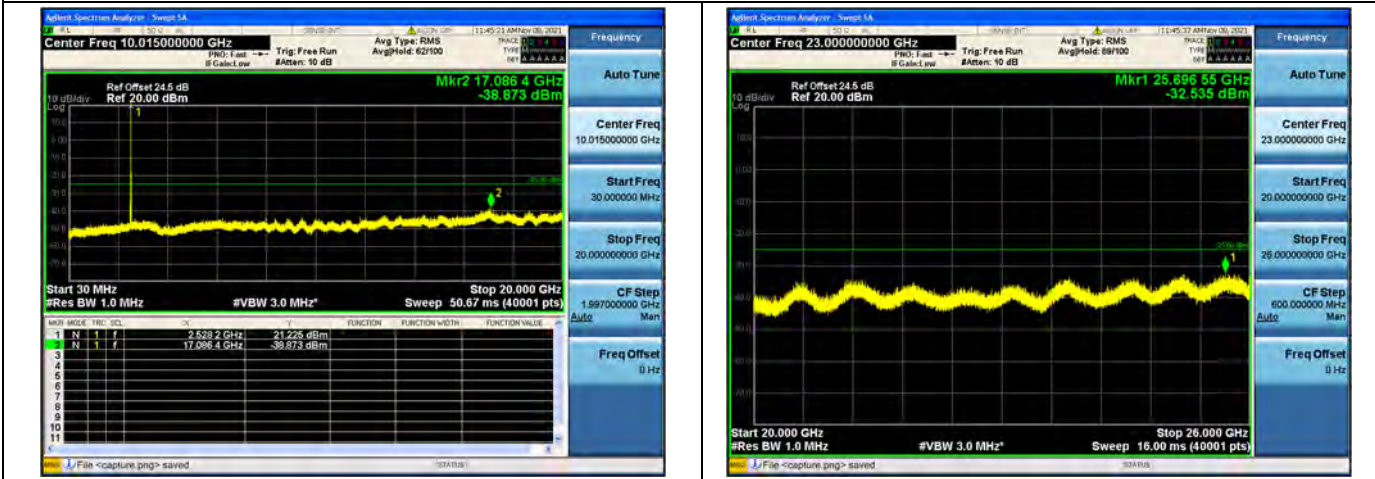




Band 7 / 15MHz / Mid CH / QPSK



Band 7 / 15MHz / Mid CH / 16QAM

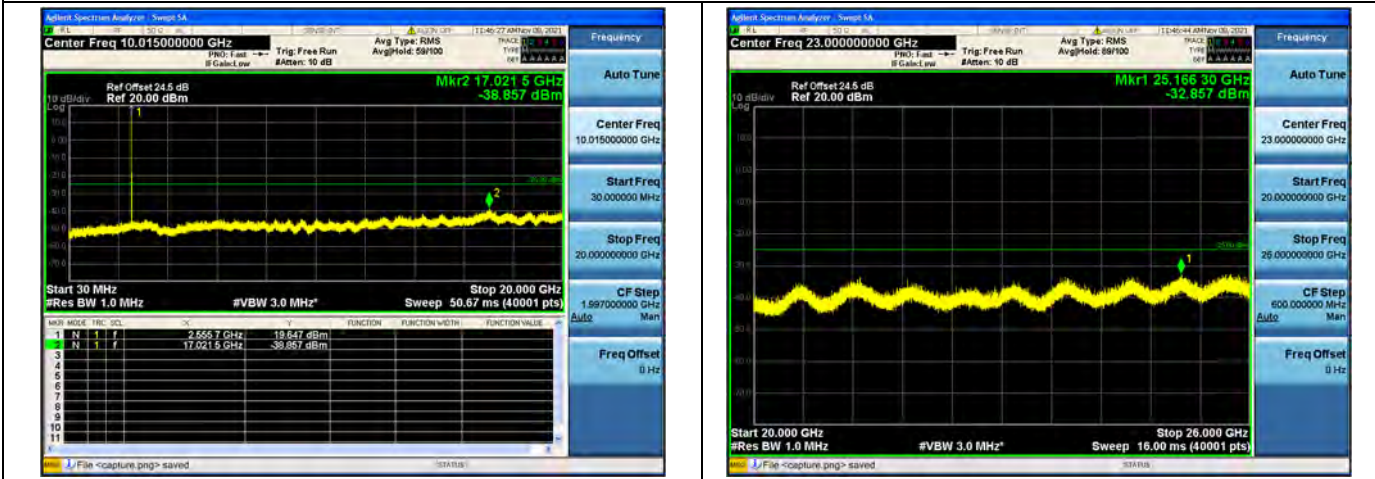




Band 7 / 15MHz / High CH / QPSK

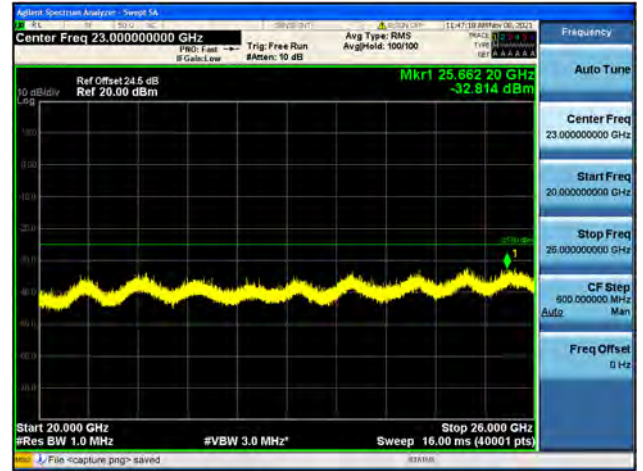
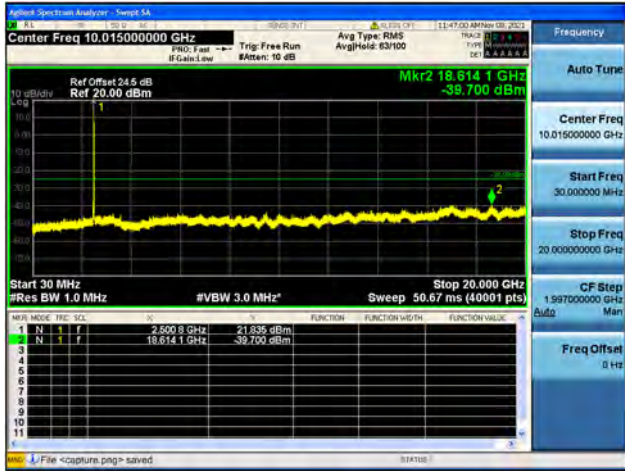


Band 7 / 15MHz / High CH / 16QAM

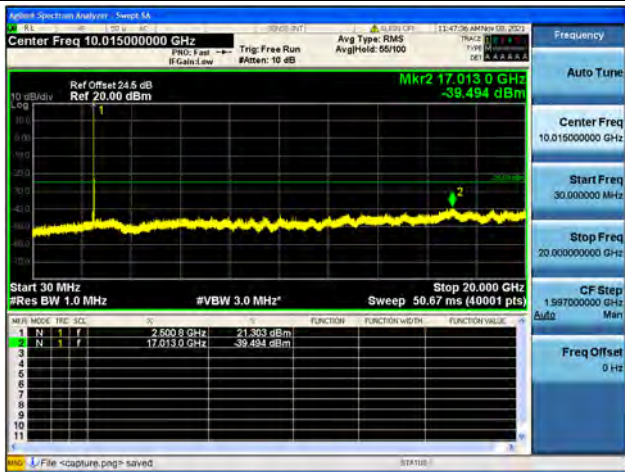




Band 7 / 20MHz / Low CH / QPSK



Band 7 / 20MHz / Low CH / 16QAM





Band 7 / 20MHz / Mid CH / QPSK

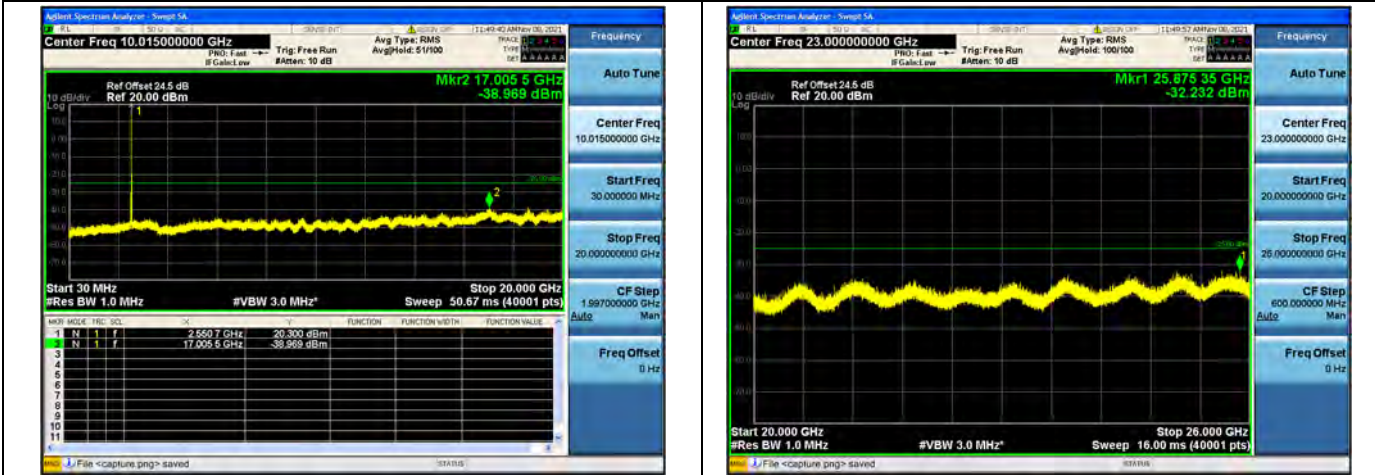


Band 7 / 20MHz / Mid CH / 16QAM

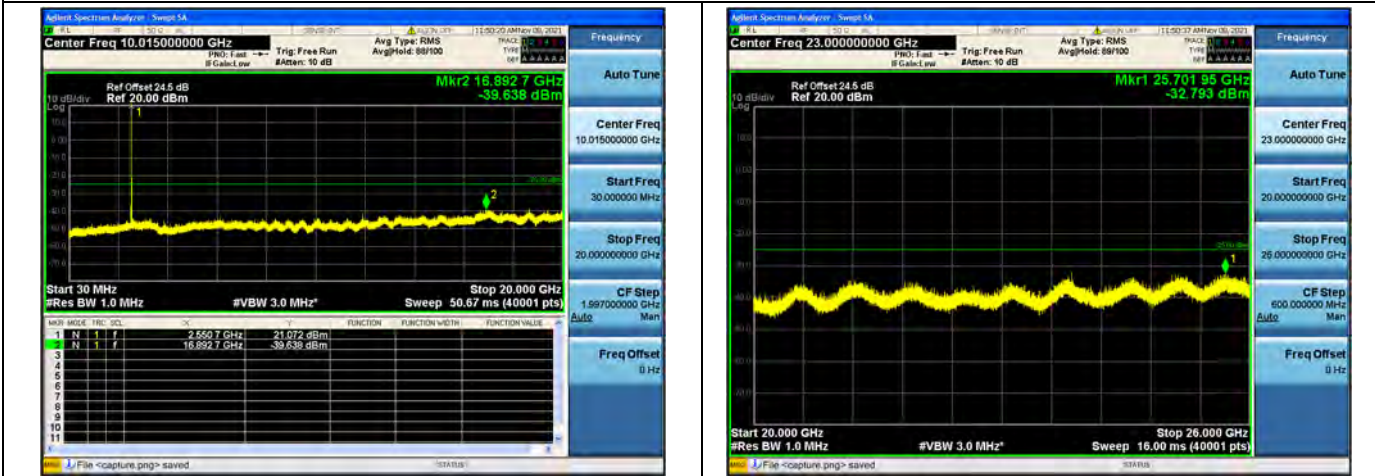




Band 7 / 20MHz / High CH / QPSK

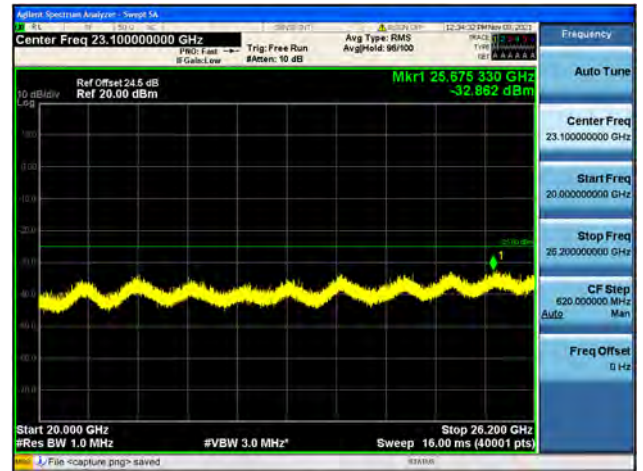
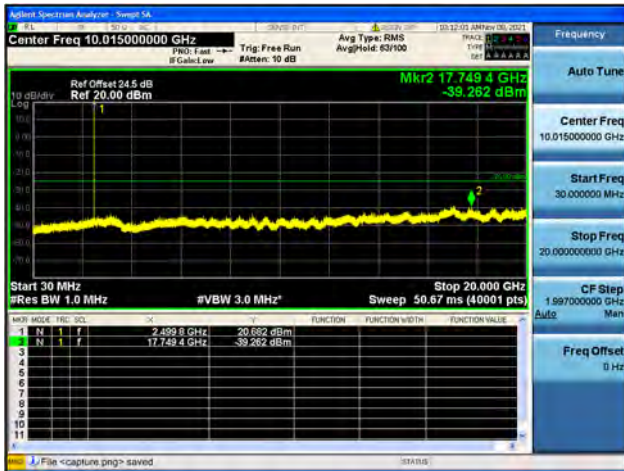


Band 7 / 20MHz / High CH / 16QAM

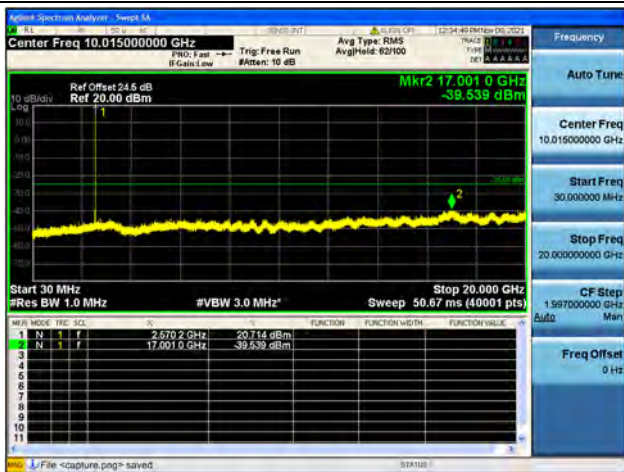




Band 38 / 5MHz / Low CH / QPSK

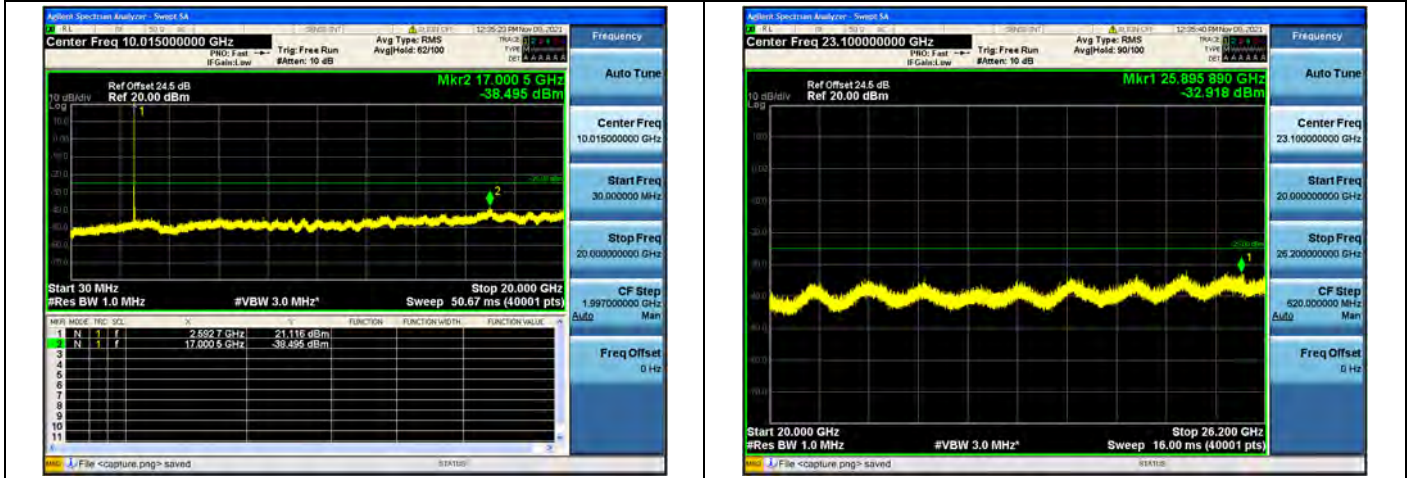


Band 38 / 5MHz / Low CH / 16QAM

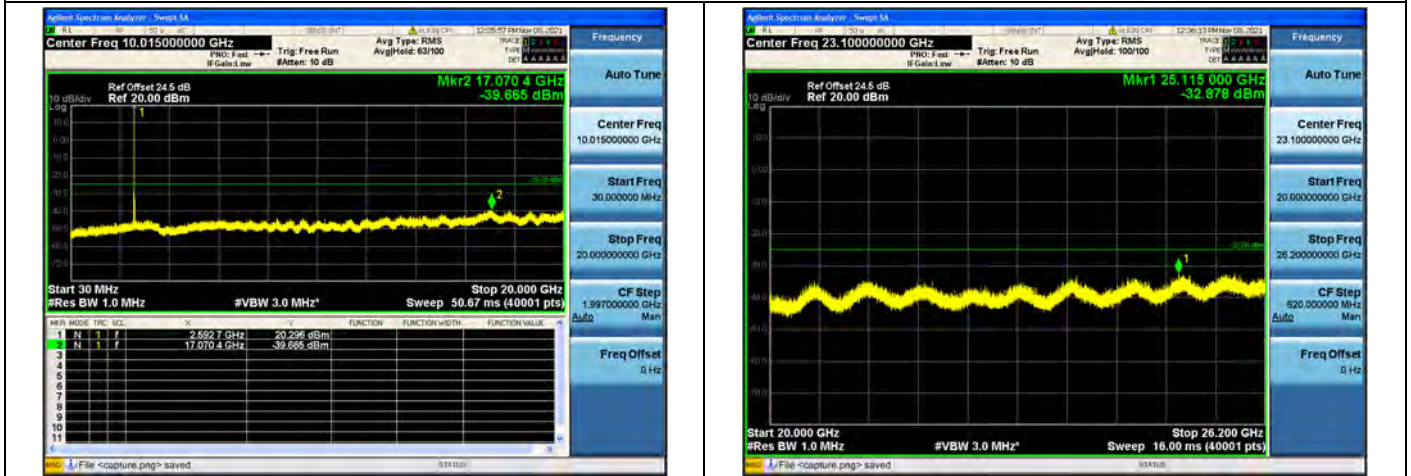




Band 38 / 5MHz / Mid CH / QPSK

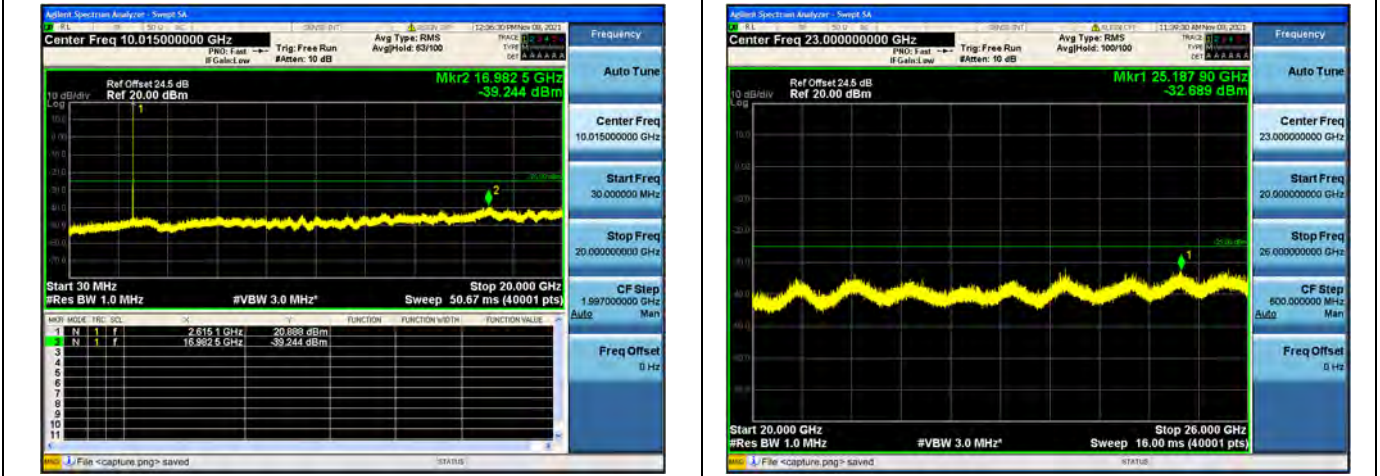


Band 38 / 5MHz / Mid CH / 16QAM

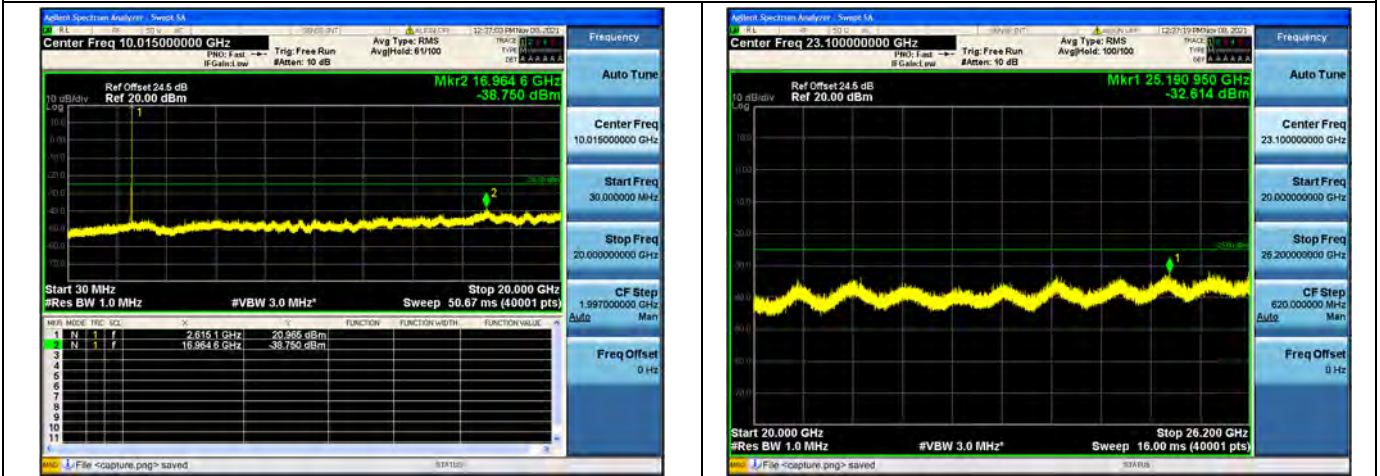




Band 38 / 5MHz / High CH / QPSK



Band 38 / 5MHz / High CH / 16QAM

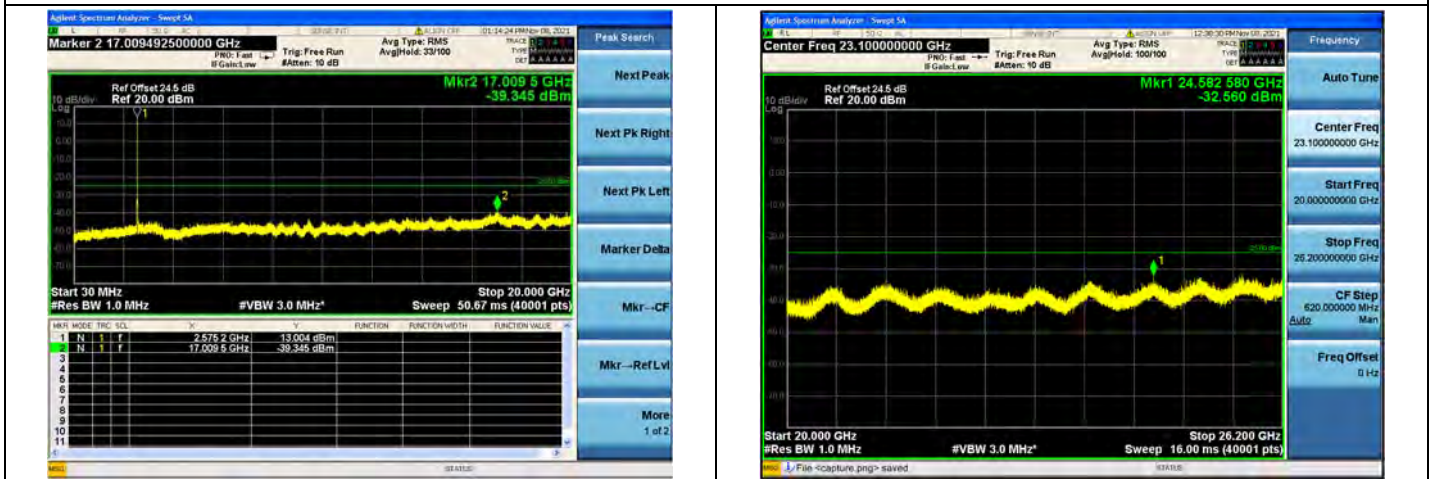




Band 38 / 10MHz / Low CH / QPSK

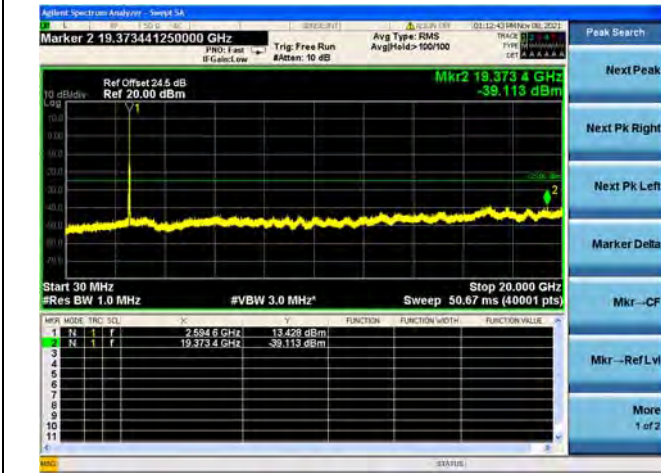


Band 38 / 10MHz / Low CH / 16QAM

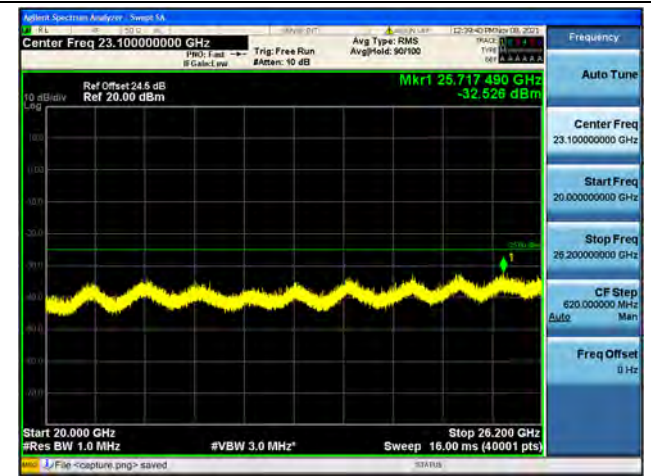
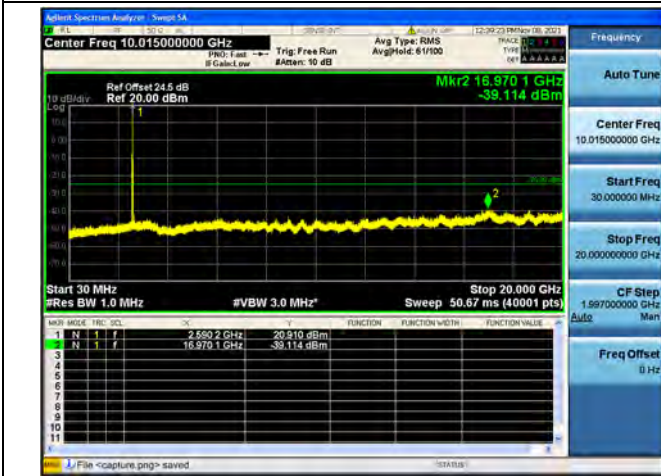




Band 38 / 10MHz / Mid CH / QPSK

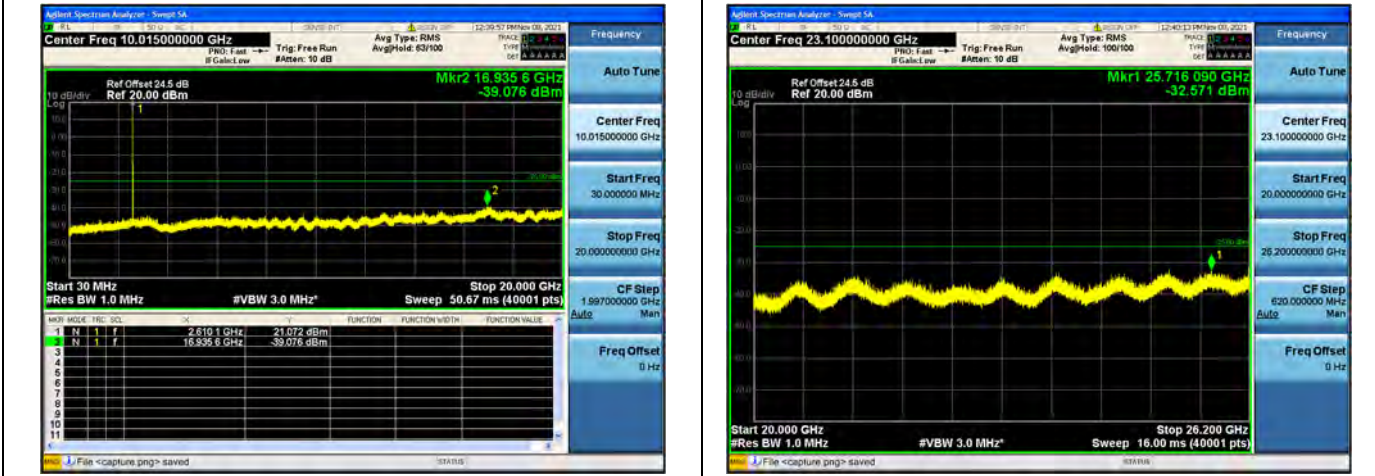


Band 38 / 10MHz / Mid CH / 16QAM





Band 38 / 10MHz / High CH / QPSK



Band 38 / 10MHz / High CH / 16QAM

