



TEST REPORT

APPLICANT : START USA, INC.

PRODUCT NAME : Wireless Home Phone

MODEL NAME : SD3000

BRAND NAME : START, Consumer Cellular, Verve

FCC ID : 2AWF6-SD3000

STANDARD(S) : 47 CFR Part 2
47 CFR Part 22, Subpart H
47 CFR Part 24, Subpart E
47 CFR Part 27, Subpart D&H&L

RECEIPT DATE : 2022-06-14

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Change History		
Version	Date	Reason for change
1.0	2022-08-23	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	START USA, INC.
Applicant Address:	6860 Dallas Parkway, Suite 200, Plano, TX 75024, USA
Manufacturer:	Shenzhen Thinkstart Electronic Technology Co., Ltd.
Manufacturer Address:	Unit A2-1006, Kexing Science Park, 15 Keyuan Road, Nanshan District, Shenzhen, Guangdong, China

1.2. Equipment Under Test (EUT) Description

Product Name:	Wireless Home Phone	
Sample No.:	5#	
Hardware Version:	SD3000HV1.0	
Software Version:	SD3000SV1.0.1	
Modulation Type:	QPSK, 16QAM	
Carrier Aggregation:	Not Support	
Operation Band:	Band 2 / 4 / 5 / 12 / 30 / 66	
Frequency Range:	LTE Band 2	Tx: 1850MHz–1910MHz
		Rx: 1930MHz–1990MHz
	LTE Band 4	Tx: 1710MHz–1755MHz
		Rx: 2110MHz–2155MHz
	LTE Band 5	Tx: 824MHz–849MHz
		Rx: 869MHz–894MHz
	LTE Band 12	Tx: 699MHz - 716MHz
		Rx: 729MHz – 746MHz
	LTE Band 30	Tx: 2305MHz–2315MHz
		Rx: 2350MHz–2360MHz
	LTE Band 66	Tx: 1710MHz –1780MHz
		Rx: 2110MHz –2200MHz
Channel Bandwidth:	LTE Band 2	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 4	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 5	1.4MHz, 3MHz, 5MHz, 10MHz



	LTE Band 12	1.4MHz, 3 MHz, 5 MHz, 10MHz
	LTE Band 30	5 MHz, 10MHz
	LTE Band 66	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
Antenna Type:	Fixed External Antenna	
Antenna Gain:	LTE Band 2	4.32dBi
	LTE Band 4	1.96dBi
	LTE Band 5	1.47dBi
	LTE Band 12	0.07dBi
	LTE Band 30	0.31dBi
	LTE Band 66	2.98dBi
Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	BTE-3003
	Serial No.:	N/A
	Capacity:	3000.00mAh
	Rated Voltage:	3.70V
	Charge Limit:	4.20V
	Manufacturer:	PHENIX New Energy(Huizhou) Corporation Limited
	AC Adapter	
	Brand Name:	N/A
	Model No.:	TPA-46050200UU
	Serial No.:	N/A
	Rated Output:	5V=2000A
	Rated Input:	100-240V~50/60Hz, 0.3A
	Manufacturer:	Shenzhen Tianyin Electronics Co., Ltd.

Note 1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



1.3. Maximum E.R.P./E.I.R.P. and Emission Designator

LTE Band 2		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)		QPSK	16QAM	QPSK	16QAM
20		0.622	0.470	17M9G7D	18M0W7D
15		0.615	0.465	13M5G7D	13M5W7D
10		0.608	0.459	8M99G7D	8M96W7D
5		0.601	0.454	4M51G7D	4M51W7D
3		0.594	0.449	2M70G7D	2M70W7D
1.4		0.587	0.444	1M10G7D	1M10W7D
LTE Band 4		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)		QPSK	16QAM	QPSK	16QAM
20		0.398	0.290	17M9G7D	18M0W7D
15		0.394	0.286	13M4G7D	13M4W7D
10		0.389	0.283	8M99G7D	8M95W7D
5		0.385	0.280	4M51G7D	4M51W7D
3		0.380	0.277	2M70G7D	2M70W7D
1.4		0.376	0.274	1M10G7D	1M10W7D
LTE Band 5		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)		QPSK	16QAM	QPSK	16QAM
10		0.220	0.162	8M99G7D	8M97W7D
5		0.217	0.160	4M51G7D	4M50W7D
3		0.215	0.158	2M71G7D	2M71W7D
1.4		0.212	0.157	1M10G7D	1M10W7D
LTE Band 12		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)		QPSK	16QAM	QPSK	16QAM
10		0.147	0.114	9M00G7D	8M96W7D
5		0.146	0.112	4M51G7D	4M51W7D
3		0.144	0.111	2M70G7D	2M71W7D
1.4		0.142	0.110	1M10G7D	1M10W7D
LTE Band 30		Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
BW(MHz)		QPSK	16QAM	QPSK	16QAM
10		0.235	0.174	8M99G7D	8M95W7D
5		0.232	0.172	4M51G7D	4M51W7D



LTE Band 66 BW(MHz)	Maximum E.R.P./E.I.R.P. (W)		Emission Designator (99%OBW)	
	QPSK	16QAM	QPSK	16QAM
20	0.449	0.327	17M9G7D	17M9W7D
15	0.444	0.323	13M5G7D	13M5W7D
10	0.439	0.319	9M00G7D	8M96W7D
5	0.434	0.316	4M50G7D	4M51W7D
3	0.429	0.312	2M70G7D	2M70W7D
1.4	0.427	0.310	1M10G7D	1M10W7D



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) 24.232(c) 27.50(a)(3) 27.50(c)(10) 27.50(d)(4)	Transmitter Conducted Output Power and E.R.P./E.I.R.P.	Aug. 17, 2022	Yu Zhizheng Li Huaijie	PASS	No deviation
2.1049	Occupied Bandwidth	Jun. 17&22, 2022	Li Huaijie	PASS	No deviation
2.1055 22.355 24.235 27.54	Frequency Stability	Jun. 30, 2022	Li Huaijie	PASS	No deviation
24.232(d), 27.50(d)(5)	Peak to Average Radio	Jun. 16&17, 2022	Li Huaijie	PASS	No deviation
2.1051 22.917(a) 24.238(a) 27.53(a)(4) 27.53(g) 27.53(h)	Conducted Spurious Emissions	Jun. 17, 2022	Li Huaijie	PASS	No deviation
2.1051 22.917(a) 24.238(a) 27.53(a)(4)	Band Edge	Jun. 15&20, 2022	Li Huaijie	PASS	No deviation



27.53(g) 27.53(h)					
2.1053 22.917(a) 24.238(a) 27.53(a)(4) 27.53(g) 27.53(h)	Radiated Spurious Emissions	Jul. 31, 2022	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 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 24E, Part 27 D&H&L 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 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.

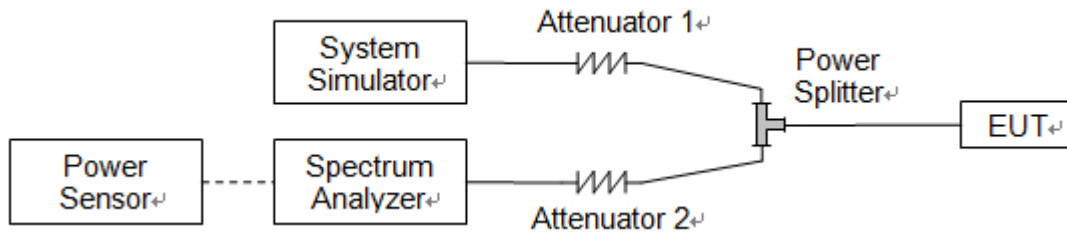
According to FCC section 27.50 (d)(4) for LTE Band 4/66, Fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat E.I.R.P.

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 (c)(10) for LTE Band 12/17, Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts E.R.P.

According to FCC section 27.50 (a)(3) for LTE Band 30, Mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average E.I.R.P. must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth.

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 2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	23.36	23.62	23.23
20	QPSK	1	49	23.25	23.45	23.50
20	QPSK	1	99	23.20	23.34	23.30
20	QPSK	50	0	22.63	22.89	22.60
20	QPSK	50	24	22.50	22.50	22.51
20	QPSK	50	50	22.46	22.40	22.41
20	QPSK	100	0	22.30	22.25	22.25
20	16QAM	1	0	22.31	22.40	22.29
20	16QAM	1	49	22.05	22.25	22.30
20	16QAM	1	99	22.00	22.14	22.10
20	16QAM	50	0	22.32	22.39	22.27
20	16QAM	50	24	22.21	22.24	22.20
20	16QAM	50	50	22.05	22.07	22.10
20	16QAM	100	0	22.00	22.02	22.00



LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	23.31	23.57	23.18
15	QPSK	1	37	23.20	23.40	23.45
15	QPSK	1	74	23.15	23.29	23.25
15	QPSK	36	0	22.58	22.84	22.55
15	QPSK	36	20	22.45	22.45	22.46
15	QPSK	36	39	22.41	22.35	22.36
15	QPSK	75	0	22.25	22.20	22.20
15	16QAM	1	0	22.26	22.35	22.24
15	16QAM	1	37	22.00	22.20	22.25
15	16QAM	1	74	22.00	22.09	22.05
15	16QAM	36	0	22.27	22.34	22.22
15	16QAM	36	20	22.16	22.19	22.15
15	16QAM	36	39	22.00	22.02	22.05
15	16QAM	75	0	21.95	21.97	21.95



LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	23.26	23.52	23.13
10	QPSK	1	25	23.15	23.35	23.40
10	QPSK	1	49	23.10	23.24	23.20
10	QPSK	25	0	22.53	22.79	22.50
10	QPSK	25	12	22.40	22.40	22.41
10	QPSK	25	25	22.36	22.30	22.31
10	QPSK	50	0	22.20	22.15	22.15
10	16QAM	1	0	22.21	22.30	22.19
10	16QAM	1	25	21.95	22.15	22.20
10	16QAM	1	49	21.95	22.04	22.00
10	16QAM	25	0	22.22	22.29	22.17
10	16QAM	25	12	22.11	22.14	22.10
10	16QAM	25	25	21.95	21.97	22.00
10	16QAM	50	0	21.90	21.92	21.90



LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	23.21	23.47	23.08
5	QPSK	1	12	23.10	23.30	23.35
5	QPSK	1	24	23.05	23.19	23.15
5	QPSK	12	0	22.48	22.74	22.45
5	QPSK	12	7	22.35	22.35	22.36
5	QPSK	12	13	22.31	22.25	22.26
5	QPSK	25	0	22.15	22.10	22.10
5	16QAM	1	0	22.16	22.25	22.14
5	16QAM	1	12	21.90	22.10	22.15
5	16QAM	1	24	21.90	21.99	21.95
5	16QAM	12	0	22.17	22.24	22.12
5	16QAM	12	7	22.06	22.09	22.05
5	16QAM	12	13	21.90	21.92	21.95
5	16QAM	25	0	21.85	21.87	21.85



LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	23.16	23.42	23.03
3	QPSK	1	8	23.05	23.25	23.30
3	QPSK	1	14	23.00	23.14	23.10
3	QPSK	8	0	22.43	22.69	22.40
3	QPSK	8	4	22.30	22.30	22.31
3	QPSK	8	7	22.26	22.20	22.21
3	QPSK	15	0	22.10	22.05	22.05
3	16QAM	1	0	22.11	22.20	22.09
3	16QAM	1	8	21.85	22.05	22.10
3	16QAM	1	14	21.85	21.94	21.90
3	16QAM	8	0	22.12	22.19	22.07
3	16QAM	8	4	22.01	22.04	22.00
3	16QAM	8	7	21.85	21.87	21.90
3	16QAM	15	0	21.80	21.82	21.80



LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	23.11	23.37	22.98
1.4	QPSK	1	3	23.00	23.20	23.25
1.4	QPSK	1	5	22.95	23.09	23.05
1.4	QPSK	3	0	22.38	22.64	22.35
1.4	QPSK	3	1	22.25	22.25	22.26
1.4	QPSK	3	3	22.21	22.15	22.16
1.4	QPSK	6	0	22.05	22.00	22.00
1.4	16QAM	1	0	22.06	22.15	22.04
1.4	16QAM	1	3	21.80	22.00	22.05
1.4	16QAM	1	5	21.80	21.89	21.85
1.4	16QAM	3	0	22.07	22.14	22.02
1.4	16QAM	3	1	21.96	21.99	21.95
1.4	16QAM	3	3	21.80	21.82	21.85
1.4	16QAM	6	0	21.75	21.77	21.75



LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	23.98	24.04	24.02
20	QPSK	1	49	23.75	23.95	23.80
20	QPSK	1	99	23.70	23.84	23.80
20	QPSK	50	0	22.82	22.89	22.71
20	QPSK	50	24	22.79	22.80	22.70
20	QPSK	50	50	22.70	22.72	22.69
20	QPSK	100	0	22.50	22.60	22.49
20	16QAM	1	0	22.60	22.66	22.57
20	16QAM	1	49	22.45	22.50	22.46
20	16QAM	1	99	22.30	22.41	22.32
20	16QAM	50	0	22.20	22.24	22.11
20	16QAM	50	24	22.10	22.13	22.02
20	16QAM	50	50	21.96	22.00	21.90
20	16QAM	100	0	21.85	21.90	21.82



LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	23.93	23.99	23.97
15	QPSK	1	37	23.70	23.90	23.75
15	QPSK	1	74	23.65	23.79	23.75
15	QPSK	36	0	22.77	22.84	22.66
15	QPSK	36	20	22.74	22.75	22.65
15	QPSK	36	39	22.65	22.67	22.64
15	QPSK	75	0	22.45	22.55	22.44
15	16QAM	1	0	22.55	22.61	22.52
15	16QAM	1	37	22.40	22.45	22.41
15	16QAM	1	74	22.25	22.36	22.27
15	16QAM	36	0	22.15	22.19	22.06
15	16QAM	36	20	22.05	22.08	21.97
15	16QAM	36	39	21.91	21.95	21.85
15	16QAM	75	0	21.80	21.85	21.77



LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	23.88	23.94	23.92
10	QPSK	1	25	23.65	23.85	23.70
10	QPSK	1	49	23.60	23.74	23.70
10	QPSK	25	0	22.72	22.79	22.61
10	QPSK	25	12	22.69	22.70	22.60
10	QPSK	25	25	22.60	22.62	22.59
10	QPSK	50	0	22.40	22.50	22.39
10	16QAM	1	0	22.50	22.56	22.47
10	16QAM	1	25	22.35	22.40	22.36
10	16QAM	1	49	22.20	22.31	22.22
10	16QAM	25	0	22.10	22.14	22.01
10	16QAM	25	12	22.00	22.03	21.92
10	16QAM	25	25	21.86	21.90	21.80
10	16QAM	50	0	21.75	21.80	21.72



LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	23.83	23.89	23.87
5	QPSK	1	12	23.60	23.80	23.65
5	QPSK	1	24	23.55	23.69	23.65
5	QPSK	12	0	22.67	22.74	22.56
5	QPSK	12	7	22.64	22.65	22.55
5	QPSK	12	13	22.55	22.57	22.54
5	QPSK	25	0	22.35	22.45	22.34
5	16QAM	1	0	22.45	22.51	22.42
5	16QAM	1	12	22.30	22.35	22.31
5	16QAM	1	24	22.15	22.26	22.17
5	16QAM	12	0	22.05	22.09	21.96
5	16QAM	12	7	21.95	21.98	21.87
5	16QAM	12	13	21.81	21.85	21.75
5	16QAM	25	0	21.70	21.75	21.67



LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	23.78	23.84	23.82
3	QPSK	1	8	23.55	23.75	23.60
3	QPSK	1	14	23.50	23.64	23.60
3	QPSK	8	0	22.62	22.69	22.51
3	QPSK	8	4	22.59	22.60	22.50
3	QPSK	8	7	22.50	22.52	22.49
3	QPSK	15	0	22.30	22.40	22.29
3	16QAM	1	0	22.40	22.46	22.37
3	16QAM	1	8	22.25	22.30	22.26
3	16QAM	1	14	22.10	22.21	22.12
3	16QAM	8	0	22.00	22.04	21.91
3	16QAM	8	4	21.90	21.93	21.82
3	16QAM	8	7	21.76	21.80	21.70
3	16QAM	15	0	21.65	21.70	21.62



LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	23.73	23.79	23.77
1.4	QPSK	1	3	23.50	23.70	23.55
1.4	QPSK	1	5	23.45	23.59	23.55
1.4	QPSK	3	0	22.57	22.64	22.46
1.4	QPSK	3	1	22.54	22.55	22.45
1.4	QPSK	3	3	22.45	22.47	22.44
1.4	QPSK	6	0	22.25	22.35	22.24
1.4	16QAM	1	0	22.35	22.41	22.32
1.4	16QAM	1	3	22.20	22.25	22.21
1.4	16QAM	1	5	22.05	22.16	22.07
1.4	16QAM	3	0	21.95	21.99	21.86
1.4	16QAM	3	1	21.85	21.88	21.77
1.4	16QAM	3	3	21.71	21.75	21.65
1.4	16QAM	6	0	21.60	21.65	21.57



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	24.03	24.10	23.89
10	QPSK	1	25	23.89	24.00	23.80
10	QPSK	1	49	23.76	23.91	23.89
10	QPSK	25	0	22.76	22.85	22.70
10	QPSK	25	12	22.56	22.60	22.50
10	QPSK	25	25	22.35	22.40	22.36
10	QPSK	50	0	22.11	22.30	22.10
10	16QAM	1	0	22.57	22.78	22.51
10	16QAM	1	25	22.50	22.56	22.57
10	16QAM	1	49	22.35	22.34	22.30
10	16QAM	25	0	22.01	22.10	22.05
10	16QAM	25	12	21.77	21.80	21.61
10	16QAM	25	25	21.60	21.65	21.60
10	16QAM	50	0	21.33	21.46	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				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	23.98	24.05	23.84
5	QPSK	1	12	23.84	23.95	23.75
5	QPSK	1	24	23.71	23.86	23.84
5	QPSK	12	0	22.71	22.80	22.65
5	QPSK	12	7	22.51	22.55	22.45
5	QPSK	12	13	22.30	22.35	22.31
5	QPSK	25	0	22.06	22.25	22.05
5	16QAM	1	0	22.52	22.73	22.46
5	16QAM	1	12	22.45	22.51	22.52
5	16QAM	1	24	22.30	22.29	22.25
5	16QAM	12	0	21.96	22.05	22.00
5	16QAM	12	7	21.72	21.75	21.56
5	16QAM	12	13	21.55	21.60	21.55
5	16QAM	25	0	21.28	21.41	21.34



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	23.93	24.00	23.79
3	QPSK	1	8	23.79	23.90	23.70
3	QPSK	1	14	23.66	23.81	23.79
3	QPSK	8	0	22.66	22.75	22.60
3	QPSK	8	4	22.46	22.50	22.40
3	QPSK	8	7	22.25	22.30	22.26
3	QPSK	15	0	22.01	22.20	22.00
3	16QAM	1	0	22.47	22.68	22.41
3	16QAM	1	8	22.40	22.46	22.47
3	16QAM	1	14	22.25	22.24	22.20
3	16QAM	8	0	21.91	22.00	21.95
3	16QAM	8	4	21.67	21.70	21.51
3	16QAM	8	7	21.50	21.55	21.50
3	16QAM	15	0	21.23	21.36	21.29



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	23.88	23.95	23.74
1.4	QPSK	1	3	23.74	23.85	23.65
1.4	QPSK	1	5	23.61	23.76	23.74
1.4	QPSK	3	0	22.61	22.70	22.55
1.4	QPSK	3	1	22.41	22.45	22.35
1.4	QPSK	3	3	22.20	22.25	22.21
1.4	QPSK	6	0	21.96	22.15	21.95
1.4	16QAM	1	0	22.42	22.63	22.36
1.4	16QAM	1	3	22.35	22.41	22.42
1.4	16QAM	1	5	22.20	22.19	22.15
1.4	16QAM	3	0	21.86	21.95	21.90
1.4	16QAM	3	1	21.62	21.65	21.46
1.4	16QAM	3	3	21.45	21.50	21.45
1.4	16QAM	6	0	21.18	21.31	21.24



LTE Band 12						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				23060	23095	23130
Frequency (MHz)				704	707.5	711
10	QPSK	1	0	23.70	23.76	23.66
10	QPSK	1	25	23.45	23.54	23.50
10	QPSK	1	49	23.28	23.26	23.30
10	QPSK	25	0	22.71	22.76	22.70
10	QPSK	25	12	22.56	22.60	22.50
10	QPSK	25	25	22.35	22.40	22.36
10	QPSK	50	0	22.11	22.30	22.10
10	16QAM	1	0	22.60	22.64	22.56
10	16QAM	1	25	22.40	22.44	22.39
10	16QAM	1	49	22.19	22.20	22.18
10	16QAM	25	0	21.68	21.70	21.60
10	16QAM	25	12	21.45	21.54	21.49
10	16QAM	25	25	21.25	21.32	21.30
10	16QAM	50	0	21.15	21.10	21.00



LTE Band 12						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				23035	23095	23155
Frequency (MHz)				701.5	707.5	713.5
5	QPSK	1	0	23.65	23.71	23.61
5	QPSK	1	12	23.40	23.49	23.45
5	QPSK	1	24	23.23	23.21	23.25
5	QPSK	12	0	22.66	22.71	22.65
5	QPSK	12	7	22.51	22.55	22.45
5	QPSK	12	13	22.30	22.35	22.31
5	QPSK	25	0	22.06	22.25	22.05
5	16QAM	1	0	22.55	22.59	22.51
5	16QAM	1	12	22.35	22.39	22.34
5	16QAM	1	24	22.14	22.15	22.13
5	16QAM	12	0	21.63	21.65	21.55
5	16QAM	12	7	21.40	21.49	21.44
5	16QAM	12	13	21.20	21.27	21.25
5	16QAM	25	0	21.10	21.05	20.95



LTE Band 12						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				23025	23095	23165
Frequency (MHz)				700.5	707.5	714.5
3	QPSK	1	0	23.60	23.66	23.56
3	QPSK	1	8	23.35	23.44	23.40
3	QPSK	1	14	23.18	23.16	23.20
3	QPSK	8	0	22.61	22.66	22.60
3	QPSK	8	4	22.46	22.50	22.40
3	QPSK	8	7	22.25	22.30	22.26
3	QPSK	15	0	22.01	22.20	22.00
3	16QAM	1	0	22.50	22.54	22.46
3	16QAM	1	8	22.30	22.34	22.29
3	16QAM	1	14	22.09	22.10	22.08
3	16QAM	8	0	21.58	21.60	21.50
3	16QAM	8	4	21.35	21.44	21.39
3	16QAM	8	7	21.15	21.22	21.20
3	16QAM	15	0	21.05	21.00	20.90



LTE Band 12						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				23017	23095	23173
Frequency (MHz)				699.7	707.5	715.3
1.4	QPSK	1	0	23.55	23.61	23.51
1.4	QPSK	1	3	23.30	23.39	23.35
1.4	QPSK	1	5	23.13	23.11	23.15
1.4	QPSK	3	0	22.56	22.61	22.55
1.4	QPSK	3	1	22.41	22.45	22.35
1.4	QPSK	3	3	22.20	22.25	22.21
1.4	QPSK	6	0	21.96	22.15	21.95
1.4	16QAM	1	0	22.45	22.49	22.41
1.4	16QAM	1	3	22.25	22.29	22.24
1.4	16QAM	1	5	22.04	22.05	22.03
1.4	16QAM	3	0	21.53	21.55	21.45
1.4	16QAM	3	1	21.30	21.39	21.34
1.4	16QAM	3	3	21.10	21.17	21.15
1.4	16QAM	6	0	21.00	20.95	20.85



LTE Band 30						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				/	27710	/
Frequency (MHz)				/	2310	/
10	QPSK	1	0	/	23.40	/
10	QPSK	1	25	/	23.20	/
10	QPSK	1	49	/	23.00	/
10	QPSK	25	0	/	22.30	/
10	QPSK	25	12	/	22.15	/
10	QPSK	25	25	/	22.09	/
10	QPSK	50	0	/	21.89	/
10	16QAM	1	0	/	22.10	/
10	16QAM	1	25	/	21.89	/
10	16QAM	1	49	/	21.71	/
10	16QAM	25	0	/	21.30	/
10	16QAM	25	12	/	21.10	/
10	16QAM	25	25	/	20.80	/
10	16QAM	50	0	/	20.56	/



LTE Band 30						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				27685	27710	27735
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	23.28	23.35	23.29
5	QPSK	1	12	23.08	23.15	23.09
5	QPSK	1	24	22.88	22.95	22.89
5	QPSK	12	0	22.18	22.25	22.19
5	QPSK	12	7	22.03	22.10	22.04
5	QPSK	12	13	21.97	22.04	21.98
5	QPSK	25	0	21.77	21.84	21.78
5	16QAM	1	0	21.98	22.05	21.99
5	16QAM	1	12	21.77	21.84	21.78
5	16QAM	1	24	21.59	21.66	21.60
5	16QAM	12	0	21.18	21.25	21.19
5	16QAM	12	7	20.98	21.05	20.99
5	16QAM	12	13	20.68	20.75	20.69
5	16QAM	25	0	20.44	20.51	20.45



LTE Band 66						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				132072	132322	132572
Frequency (MHz)				1720	1745	1770
20	QPSK	1	0	23.48	23.54	23.52
20	QPSK	1	49	23.25	23.45	23.30
20	QPSK	1	99	23.20	23.34	23.30
20	QPSK	50	0	22.32	22.39	22.21
20	QPSK	50	24	22.29	22.30	22.20
20	QPSK	50	50	22.20	22.22	22.19
20	QPSK	100	0	22.00	22.10	21.99
20	16QAM	1	0	22.10	22.16	22.07
20	16QAM	1	49	21.95	22.00	21.96
20	16QAM	1	99	21.80	21.91	21.82
20	16QAM	50	0	21.70	21.74	21.61
20	16QAM	50	24	21.60	21.63	21.52
20	16QAM	50	50	21.46	21.50	21.40
20	16QAM	100	0	21.35	21.40	21.32



LTE Band 66						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				132047	132322	132597
Frequency (MHz)				1717.5	1745	1772.5
15	QPSK	1	0	23.43	23.49	23.47
15	QPSK	1	37	23.20	23.40	23.25
15	QPSK	1	74	23.15	23.29	23.25
15	QPSK	36	0	22.27	22.34	22.16
15	QPSK	36	20	22.24	22.25	22.15
15	QPSK	36	39	22.15	22.17	22.14
15	QPSK	75	0	21.95	22.05	21.94
15	16QAM	1	0	22.05	22.11	22.02
15	16QAM	1	37	21.90	21.95	21.91
15	16QAM	1	74	21.75	21.86	21.77
15	16QAM	36	0	21.65	21.69	21.56
15	16QAM	36	20	21.55	21.58	21.47
15	16QAM	36	39	21.41	21.45	21.35
15	16QAM	75	0	21.30	21.35	21.27



LTE Band 66						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				132022	132322	132622
Frequency (MHz)				1715	1745	1775
10	QPSK	1	0	23.38	23.44	23.42
10	QPSK	1	25	23.15	23.35	23.20
10	QPSK	1	49	23.10	23.24	23.20
10	QPSK	25	0	22.22	22.29	22.11
10	QPSK	25	12	22.19	22.20	22.10
10	QPSK	25	25	22.10	22.12	22.09
10	QPSK	50	0	21.90	22.00	21.89
10	16QAM	1	0	22.00	22.06	21.97
10	16QAM	1	25	21.85	21.90	21.86
10	16QAM	1	49	21.70	21.81	21.72
10	16QAM	25	0	21.60	21.64	21.51
10	16QAM	25	12	21.50	21.53	21.42
10	16QAM	25	25	21.36	21.40	21.30
10	16QAM	50	0	21.25	21.30	21.22



LTE Band 66						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				131997	132322	132647
Frequency (MHz)				1712.5	1745	1777.5
5	QPSK	1	0	23.33	23.39	23.37
5	QPSK	1	12	23.10	23.30	23.15
5	QPSK	1	24	23.05	23.19	23.15
5	QPSK	12	0	22.17	22.24	22.06
5	QPSK	12	7	22.14	22.15	22.05
5	QPSK	12	13	22.05	22.07	22.04
5	QPSK	25	0	21.85	21.95	21.84
5	16QAM	1	0	21.95	22.01	21.92
5	16QAM	1	12	21.80	21.85	21.81
5	16QAM	1	24	21.65	21.76	21.67
5	16QAM	12	0	21.55	21.59	21.46
5	16QAM	12	7	21.45	21.48	21.37
5	16QAM	12	13	21.31	21.35	21.25
5	16QAM	25	0	21.20	21.25	21.17



LTE Band 66						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				131987	132322	132657
Frequency (MHz)				1711.5	1745	1778.5
3	QPSK	1	0	23.28	23.34	23.32
3	QPSK	1	8	23.05	23.25	23.10
3	QPSK	1	14	23.00	23.14	23.10
3	QPSK	8	0	22.12	22.19	22.01
3	QPSK	8	4	22.09	22.10	22.00
3	QPSK	8	7	22.00	22.02	21.99
3	QPSK	15	0	21.80	21.90	21.79
3	16QAM	1	0	21.90	21.96	21.87
3	16QAM	1	8	21.75	21.80	21.76
3	16QAM	1	14	21.60	21.71	21.62
3	16QAM	8	0	21.50	21.54	21.41
3	16QAM	8	4	21.40	21.43	21.32
3	16QAM	8	7	21.26	21.30	21.20
3	16QAM	15	0	21.15	21.20	21.12



LTE Band 66						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				131979	132322	132665
Frequency (MHz)				1710.7	1745	1779.3
1.4	QPSK	1	0	23.26	23.32	23.30
1.4	QPSK	1	3	23.03	23.23	23.08
1.4	QPSK	1	5	22.98	23.12	23.08
1.4	QPSK	3	0	22.10	22.17	22.00
1.4	QPSK	3	1	22.07	22.08	22.10
1.4	QPSK	3	3	22.03	22.00	22.01
1.4	QPSK	6	0	21.78	21.88	21.77
1.4	16QAM	1	0	21.88	21.94	21.85
1.4	16QAM	1	3	21.73	21.78	21.74
1.4	16QAM	1	5	21.58	21.69	21.60
1.4	16QAM	3	0	21.48	21.52	21.39
1.4	16QAM	3	1	21.38	21.41	21.30
1.4	16QAM	3	3	21.24	21.28	21.18
1.4	16QAM	6	0	21.13	21.18	21.10



Effective Radiated Power and Effective Isotropic Radiated Power

LTE Band 2				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				18700		18900		19100	
Frequency (MHz)				1860		1880		1900	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	27.68	0.586	27.94	0.622	27.55	0.569
20	QPSK	1	49	27.57	0.571	27.77	0.598	27.82	0.605
20	QPSK	1	99	27.52	0.565	27.66	0.583	27.62	0.578
20	QPSK	50	0	26.95	0.495	27.21	0.526	26.92	0.492
20	QPSK	50	24	26.82	0.481	26.82	0.481	26.83	0.482
20	QPSK	50	50	26.78	0.476	26.72	0.470	26.73	0.471
20	QPSK	100	0	26.62	0.459	26.57	0.454	26.57	0.454
20	16QAM	1	0	26.63	0.460	26.72	0.470	26.61	0.458
20	16QAM	1	49	26.37	0.434	26.57	0.454	26.62	0.459
20	16QAM	1	99	26.32	0.429	26.46	0.443	26.42	0.439
20	16QAM	50	0	26.64	0.461	26.71	0.469	26.59	0.456
20	16QAM	50	24	26.53	0.450	26.56	0.453	26.52	0.449
20	16QAM	50	50	26.37	0.434	26.39	0.436	26.42	0.439
20	16QAM	100	0	26.32	0.429	26.34	0.431	26.32	0.429



LTE Band 2				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				18675		18900		19125	
Frequency (MHz)				1857.5		1880		1902.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	27.63	0.579	27.89	0.615	27.50	0.562
15	QPSK	1	37	27.52	0.565	27.72	0.592	27.77	0.598
15	QPSK	1	74	27.47	0.558	27.61	0.577	27.57	0.571
15	QPSK	36	0	26.90	0.490	27.16	0.520	26.87	0.486
15	QPSK	36	20	26.77	0.475	26.77	0.475	26.78	0.476
15	QPSK	36	39	26.73	0.471	26.67	0.465	26.68	0.466
15	QPSK	75	0	26.57	0.454	26.52	0.449	26.52	0.449
15	16QAM	1	0	26.58	0.455	26.67	0.465	26.56	0.453
15	16QAM	1	37	26.32	0.429	26.52	0.449	26.57	0.454
15	16QAM	1	74	26.32	0.429	26.41	0.438	26.37	0.434
15	16QAM	36	0	26.59	0.456	26.66	0.463	26.54	0.451
15	16QAM	36	20	26.48	0.445	26.51	0.448	26.47	0.444
15	16QAM	36	39	26.32	0.429	26.34	0.431	26.37	0.434
15	16QAM	75	0	26.27	0.424	26.29	0.426	26.27	0.424



LTE Band 2				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				18650		18900		19150	
Frequency (MHz)				1855		1880		1905	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	27.58	0.573	27.84	0.608	27.45	0.556
10	QPSK	1	25	27.47	0.558	27.67	0.585	27.72	0.592
10	QPSK	1	49	27.42	0.552	27.56	0.570	27.52	0.565
10	QPSK	25	0	26.85	0.484	27.11	0.514	26.82	0.481
10	QPSK	25	12	26.72	0.470	26.72	0.470	26.73	0.471
10	QPSK	25	25	26.68	0.466	26.62	0.459	26.63	0.460
10	QPSK	50	0	26.52	0.449	26.47	0.444	26.47	0.444
10	16QAM	1	0	26.53	0.450	26.62	0.459	26.51	0.448
10	16QAM	1	25	26.27	0.424	26.47	0.444	26.52	0.449
10	16QAM	1	49	26.27	0.424	26.36	0.433	26.32	0.429
10	16QAM	25	0	26.54	0.451	26.61	0.458	26.49	0.446
10	16QAM	25	12	26.43	0.440	26.46	0.443	26.42	0.439
10	16QAM	25	25	26.27	0.424	26.29	0.426	26.32	0.429
10	16QAM	50	0	26.22	0.419	26.24	0.421	26.22	0.419



LTE Band 2				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				18625		18900		19175	
Frequency (MHz)				1852.5		1880		1907.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	27.53	0.566	27.79	0.601	27.40	0.550
5	QPSK	1	12	27.42	0.552	27.62	0.578	27.67	0.585
5	QPSK	1	24	27.37	0.546	27.51	0.564	27.47	0.558
5	QPSK	12	0	26.80	0.479	27.06	0.508	26.77	0.475
5	QPSK	12	7	26.67	0.465	26.67	0.465	26.68	0.466
5	QPSK	12	13	26.63	0.460	26.57	0.454	26.58	0.455
5	QPSK	25	0	26.47	0.444	26.42	0.439	26.42	0.439
5	16QAM	1	0	26.48	0.445	26.57	0.454	26.46	0.443
5	16QAM	1	12	26.22	0.419	26.42	0.439	26.47	0.444
5	16QAM	1	24	26.22	0.419	26.31	0.428	26.27	0.424
5	16QAM	12	0	26.49	0.446	26.56	0.453	26.44	0.441
5	16QAM	12	7	26.38	0.435	26.41	0.438	26.37	0.434
5	16QAM	12	13	26.22	0.419	26.24	0.421	26.27	0.424
5	16QAM	25	0	26.17	0.414	26.19	0.416	26.17	0.414



LTE Band 2				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				18615		18900		19185	
Frequency (MHz)				1851.5		1880		1908.5	
				dBm	W	dBm	W	dBm	W
3	QPSK	1	0	27.48	0.560	27.74	0.594	27.35	0.543
3	QPSK	1	8	27.37	0.546	27.57	0.571	27.62	0.578
3	QPSK	1	14	27.32	0.540	27.46	0.557	27.42	0.552
3	QPSK	8	0	26.75	0.473	27.01	0.502	26.72	0.470
3	QPSK	8	4	26.62	0.459	26.62	0.459	26.63	0.460
3	QPSK	8	7	26.58	0.455	26.52	0.449	26.53	0.450
3	QPSK	15	0	26.42	0.439	26.37	0.434	26.37	0.434
3	16QAM	1	0	26.43	0.440	26.52	0.449	26.41	0.438
3	16QAM	1	8	26.17	0.414	26.37	0.434	26.42	0.439
3	16QAM	1	14	26.17	0.414	26.26	0.423	26.22	0.419
3	16QAM	8	0	26.44	0.441	26.51	0.448	26.39	0.436
3	16QAM	8	4	26.33	0.430	26.36	0.433	26.32	0.429
3	16QAM	8	7	26.17	0.414	26.19	0.416	26.22	0.419
3	16QAM	15	0	26.12	0.409	26.14	0.411	26.12	0.409



LTE Band 2				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				18607		18900		19193	
Frequency (MHz)				1850.7		1880		1909.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	27.43	0.553	27.69	0.587	27.30	0.537
1.4	QPSK	1	3	27.32	0.540	27.52	0.565	27.57	0.571
1.4	QPSK	1	5	27.27	0.533	27.41	0.551	27.37	0.546
1.4	QPSK	3	0	26.70	0.468	26.96	0.497	26.67	0.465
1.4	QPSK	3	1	26.57	0.454	26.57	0.454	26.58	0.455
1.4	QPSK	3	3	26.53	0.450	26.47	0.444	26.48	0.445
1.4	QPSK	6	0	26.37	0.434	26.32	0.429	26.32	0.429
1.4	16QAM	1	0	26.38	0.435	26.47	0.444	26.36	0.433
1.4	16QAM	1	3	26.12	0.409	26.32	0.429	26.37	0.434
1.4	16QAM	1	5	26.12	0.409	26.21	0.418	26.17	0.414
1.4	16QAM	3	0	26.39	0.436	26.46	0.443	26.34	0.431
1.4	16QAM	3	1	26.28	0.425	26.31	0.428	26.27	0.424
1.4	16QAM	3	3	26.12	0.409	26.14	0.411	26.17	0.414
1.4	16QAM	6	0	26.07	0.405	26.09	0.406	26.07	0.405



LTE Band 4				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20050		20175		20300	
Frequency (MHz)				1720		1732.5		1745	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	25.94	0.393	26.00	0.398	25.98	0.396
20	QPSK	1	49	25.71	0.372	25.91	0.390	25.76	0.377
20	QPSK	1	99	25.66	0.368	25.80	0.380	25.76	0.377
20	QPSK	50	0	24.78	0.301	24.85	0.305	24.67	0.293
20	QPSK	50	24	24.75	0.299	24.76	0.299	24.66	0.292
20	QPSK	50	50	24.66	0.292	24.68	0.294	24.65	0.292
20	QPSK	100	0	24.46	0.279	24.56	0.286	24.45	0.279
20	16QAM	1	0	24.56	0.286	24.62	0.290	24.53	0.284
20	16QAM	1	49	24.41	0.276	24.46	0.279	24.42	0.277
20	16QAM	1	99	24.26	0.267	24.37	0.274	24.28	0.268
20	16QAM	50	0	24.16	0.261	24.20	0.263	24.07	0.255
20	16QAM	50	24	24.06	0.255	24.09	0.256	23.98	0.250
20	16QAM	50	50	23.92	0.247	23.96	0.249	23.86	0.243
20	16QAM	100	0	23.81	0.240	23.86	0.243	23.78	0.239



LTE Band 4				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20025		20175		20325	
Frequency (MHz)				1717.5		1732.5		1747.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	25.89	0.388	25.95	0.394	25.93	0.392
15	QPSK	1	37	25.66	0.368	25.86	0.385	25.71	0.372
15	QPSK	1	74	25.61	0.364	25.75	0.376	25.71	0.372
15	QPSK	36	0	24.73	0.297	24.80	0.302	24.62	0.290
15	QPSK	36	20	24.70	0.295	24.71	0.296	24.61	0.289
15	QPSK	36	39	24.61	0.289	24.63	0.290	24.60	0.288
15	QPSK	75	0	24.41	0.276	24.51	0.282	24.40	0.275
15	16QAM	1	0	24.51	0.282	24.57	0.286	24.48	0.281
15	16QAM	1	37	24.36	0.273	24.41	0.276	24.37	0.274
15	16QAM	1	74	24.21	0.264	24.32	0.270	24.23	0.265
15	16QAM	36	0	24.11	0.258	24.15	0.260	24.02	0.252
15	16QAM	36	20	24.01	0.252	24.04	0.254	23.93	0.247
15	16QAM	36	39	23.87	0.244	23.91	0.246	23.81	0.240
15	16QAM	75	0	23.76	0.238	23.81	0.240	23.73	0.236



LTE Band 4				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				20000		20175		20350	
Frequency (MHz)				1715		1732.5		1750	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	25.84	0.384	25.90	0.389	25.88	0.387
10	QPSK	1	25	25.61	0.364	25.81	0.381	25.66	0.368
10	QPSK	1	49	25.56	0.360	25.70	0.372	25.66	0.368
10	QPSK	25	0	24.68	0.294	24.75	0.299	24.57	0.286
10	QPSK	25	12	24.65	0.292	24.66	0.292	24.56	0.286
10	QPSK	25	25	24.56	0.286	24.58	0.287	24.55	0.285
10	QPSK	50	0	24.36	0.273	24.46	0.279	24.35	0.272
10	16QAM	1	0	24.46	0.279	24.52	0.283	24.43	0.277
10	16QAM	1	25	24.31	0.270	24.36	0.273	24.32	0.270
10	16QAM	1	49	24.16	0.261	24.27	0.267	24.18	0.262
10	16QAM	25	0	24.06	0.255	24.10	0.257	23.97	0.249
10	16QAM	25	12	23.96	0.249	23.99	0.251	23.88	0.244
10	16QAM	25	25	23.82	0.241	23.86	0.243	23.76	0.238
10	16QAM	50	0	23.71	0.235	23.76	0.238	23.68	0.233



LTE Band 4				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				19975		20175		20375	
Frequency (MHz)				1712.5		1732.5		1752.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	25.79	0.379	25.85	0.385	25.83	0.383
5	QPSK	1	12	25.56	0.360	25.76	0.377	25.61	0.364
5	QPSK	1	24	25.51	0.356	25.65	0.367	25.61	0.364
5	QPSK	12	0	24.63	0.290	24.70	0.295	24.52	0.283
5	QPSK	12	7	24.60	0.288	24.61	0.289	24.51	0.282
5	QPSK	12	13	24.51	0.282	24.53	0.284	24.50	0.282
5	QPSK	25	0	24.31	0.270	24.41	0.276	24.30	0.269
5	16QAM	1	0	24.41	0.276	24.47	0.280	24.38	0.274
5	16QAM	1	12	24.26	0.267	24.31	0.270	24.27	0.267
5	16QAM	1	24	24.11	0.258	24.22	0.264	24.13	0.259
5	16QAM	12	0	24.01	0.252	24.05	0.254	23.92	0.247
5	16QAM	12	7	23.91	0.246	23.94	0.248	23.83	0.242
5	16QAM	12	13	23.77	0.238	23.81	0.240	23.71	0.235
5	16QAM	25	0	23.66	0.232	23.71	0.235	23.63	0.231



LTE Band 4				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				19965		20175		20385	
Frequency (MHz)				1711.5		1732.5		1753.5	
				dBm	W	dBm	W	dBm	W
3	QPSK	1	0	25.74	0.375	25.80	0.380	25.78	0.378
3	QPSK	1	8	25.51	0.356	25.71	0.372	25.56	0.360
3	QPSK	1	14	25.46	0.352	25.60	0.363	25.56	0.360
3	QPSK	8	0	24.58	0.287	24.65	0.292	24.47	0.280
3	QPSK	8	4	24.55	0.285	24.56	0.286	24.46	0.279
3	QPSK	8	7	24.46	0.279	24.48	0.281	24.45	0.279
3	QPSK	15	0	24.26	0.267	24.36	0.273	24.25	0.266
3	16QAM	1	0	24.36	0.273	24.42	0.277	24.33	0.271
3	16QAM	1	8	24.21	0.264	24.26	0.267	24.22	0.264
3	16QAM	1	14	24.06	0.255	24.17	0.261	24.08	0.256
3	16QAM	8	0	23.96	0.249	24.00	0.251	23.87	0.244
3	16QAM	8	4	23.86	0.243	23.89	0.245	23.78	0.239
3	16QAM	8	7	23.72	0.236	23.76	0.238	23.66	0.232
3	16QAM	15	0	23.61	0.230	23.66	0.232	23.58	0.228



LTE Band 4				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				19957		20175		20393	
Frequency (MHz)				1710.7		1732.5		1754.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	25.69	0.371	25.75	0.376	25.73	0.374
1.4	QPSK	1	3	25.46	0.352	25.66	0.368	25.51	0.356
1.4	QPSK	1	5	25.41	0.348	25.55	0.359	25.51	0.356
1.4	QPSK	3	0	24.53	0.284	24.60	0.288	24.42	0.277
1.4	QPSK	3	1	24.50	0.282	24.51	0.282	24.41	0.276
1.4	QPSK	3	3	24.41	0.276	24.43	0.277	24.40	0.275
1.4	QPSK	6	0	24.21	0.264	24.31	0.270	24.20	0.263
1.4	16QAM	1	0	24.31	0.270	24.37	0.274	24.28	0.268
1.4	16QAM	1	3	24.16	0.261	24.21	0.264	24.17	0.261
1.4	16QAM	1	5	24.01	0.252	24.12	0.258	24.03	0.253
1.4	16QAM	3	0	23.91	0.246	23.95	0.248	23.82	0.241
1.4	16QAM	3	1	23.81	0.240	23.84	0.242	23.73	0.236
1.4	16QAM	3	3	23.67	0.233	23.71	0.235	23.61	0.230
1.4	16QAM	6	0	23.56	0.227	23.61	0.230	23.53	0.225



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	23.35	0.216	23.42	0.220	23.21	0.209
10	QPSK	1	25	23.21	0.209	23.32	0.215	23.12	0.205
10	QPSK	1	49	23.08	0.203	23.23	0.210	23.21	0.209
10	QPSK	25	0	22.08	0.161	22.17	0.165	22.02	0.159
10	QPSK	25	12	21.88	0.154	21.92	0.156	21.82	0.152
10	QPSK	25	25	21.67	0.147	21.72	0.149	21.68	0.147
10	QPSK	50	0	21.43	0.139	21.62	0.145	21.42	0.139
10	16QAM	1	0	21.89	0.155	22.10	0.162	21.83	0.152
10	16QAM	1	25	21.82	0.152	21.88	0.154	21.89	0.155
10	16QAM	1	49	21.67	0.147	21.66	0.147	21.62	0.145
10	16QAM	25	0	21.33	0.136	21.42	0.139	21.37	0.137
10	16QAM	25	12	21.09	0.129	21.12	0.129	20.93	0.124
10	16QAM	25	25	20.92	0.124	20.97	0.125	20.92	0.124
10	16QAM	50	0	20.65	0.116	20.78	0.120	20.71	0.118



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	23.30	0.214	23.37	0.217	23.16	0.207
5	QPSK	1	12	23.16	0.207	23.27	0.212	23.07	0.203
5	QPSK	1	24	23.03	0.201	23.18	0.208	23.16	0.207
5	QPSK	12	0	22.03	0.160	22.12	0.163	21.97	0.157
5	QPSK	12	7	21.83	0.152	21.87	0.154	21.77	0.150
5	QPSK	12	13	21.62	0.145	21.67	0.147	21.63	0.146
5	QPSK	25	0	21.38	0.137	21.57	0.144	21.37	0.137
5	16QAM	1	0	21.84	0.153	22.05	0.160	21.78	0.151
5	16QAM	1	12	21.77	0.150	21.83	0.152	21.84	0.153
5	16QAM	1	24	21.62	0.145	21.61	0.145	21.57	0.144
5	16QAM	12	0	21.28	0.134	21.37	0.137	21.32	0.136
5	16QAM	12	7	21.04	0.127	21.07	0.128	20.88	0.122
5	16QAM	12	13	20.87	0.122	20.92	0.124	20.87	0.122
5	16QAM	25	0	20.60	0.115	20.73	0.118	20.66	0.116



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	23.25	0.211	23.32	0.215	23.11	0.205
3	QPSK	1	8	23.11	0.205	23.22	0.210	23.02	0.200
3	QPSK	1	14	22.98	0.199	23.13	0.206	23.11	0.205
3	QPSK	8	0	21.98	0.158	22.07	0.161	21.92	0.156
3	QPSK	8	4	21.78	0.151	21.82	0.152	21.72	0.149
3	QPSK	8	7	21.57	0.144	21.62	0.145	21.58	0.144
3	QPSK	15	0	21.33	0.136	21.52	0.142	21.32	0.136
3	16QAM	1	0	21.79	0.151	22.00	0.158	21.73	0.149
3	16QAM	1	8	21.72	0.149	21.78	0.151	21.79	0.151
3	16QAM	1	14	21.57	0.144	21.56	0.143	21.52	0.142
3	16QAM	8	0	21.23	0.133	21.32	0.136	21.27	0.134
3	16QAM	8	4	20.99	0.126	21.02	0.126	20.83	0.121
3	16QAM	8	7	20.82	0.121	20.87	0.122	20.82	0.121
3	16QAM	15	0	20.55	0.114	20.68	0.117	20.61	0.115



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	23.20	0.209	23.27	0.212	23.06	0.202
1.4	QPSK	1	3	23.06	0.202	23.17	0.207	22.97	0.198
1.4	QPSK	1	5	22.93	0.196	23.08	0.203	23.06	0.202
1.4	QPSK	3	0	21.93	0.156	22.02	0.159	21.87	0.154
1.4	QPSK	3	1	21.73	0.149	21.77	0.150	21.67	0.147
1.4	QPSK	3	3	21.52	0.142	21.57	0.144	21.53	0.142
1.4	QPSK	6	0	21.28	0.134	21.47	0.140	21.27	0.134
1.4	16QAM	1	0	21.74	0.149	21.95	0.157	21.68	0.147
1.4	16QAM	1	3	21.67	0.147	21.73	0.149	21.74	0.149
1.4	16QAM	1	5	21.52	0.142	21.51	0.142	21.47	0.140
1.4	16QAM	3	0	21.18	0.131	21.27	0.134	21.22	0.132
1.4	16QAM	3	1	20.94	0.124	20.97	0.125	20.78	0.120
1.4	16QAM	3	3	20.77	0.119	20.82	0.121	20.77	0.119
1.4	16QAM	6	0	20.50	0.112	20.63	0.116	20.56	0.114



LTE Band 12				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				23060		23095		23130	
Frequency (MHz)				704		707.5		711	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	21.62	0.145	21.68	0.147	21.58	0.144
10	QPSK	1	25	21.37	0.137	21.46	0.140	21.42	0.139
10	QPSK	1	49	21.20	0.132	21.18	0.131	21.22	0.132
10	QPSK	25	0	20.63	0.116	20.68	0.117	20.62	0.115
10	QPSK	25	12	20.48	0.112	20.52	0.113	20.42	0.110
10	QPSK	25	25	20.27	0.106	20.32	0.108	20.28	0.107
10	QPSK	50	0	20.03	0.101	20.22	0.105	20.02	0.100
10	16QAM	1	0	20.52	0.113	20.56	0.114	20.48	0.112
10	16QAM	1	25	20.32	0.108	20.36	0.109	20.31	0.107
10	16QAM	1	49	20.11	0.103	20.12	0.103	20.10	0.102
10	16QAM	25	0	19.60	0.091	19.62	0.092	19.52	0.090
10	16QAM	25	12	19.37	0.086	19.46	0.088	19.41	0.087
10	16QAM	25	25	19.17	0.083	19.24	0.084	19.22	0.084
10	16QAM	50	0	19.07	0.081	19.02	0.080	18.92	0.078



LTE Band 12				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				23035		23095		23155	
Frequency (MHz)				701.5		707.5		713.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	21.57	0.144	21.63	0.146	21.53	0.142
5	QPSK	1	12	21.32	0.136	21.41	0.138	21.37	0.137
5	QPSK	1	24	21.15	0.130	21.13	0.130	21.17	0.131
5	QPSK	12	0	20.58	0.114	20.63	0.116	20.57	0.114
5	QPSK	12	7	20.43	0.110	20.47	0.111	20.37	0.109
5	QPSK	12	13	20.22	0.105	20.27	0.106	20.23	0.105
5	QPSK	25	0	19.98	0.100	20.17	0.104	19.97	0.099
5	16QAM	1	0	20.47	0.111	20.51	0.112	20.43	0.110
5	16QAM	1	12	20.27	0.106	20.31	0.107	20.26	0.106
5	16QAM	1	24	20.06	0.101	20.07	0.102	20.05	0.101
5	16QAM	12	0	19.55	0.090	19.57	0.091	19.47	0.089
5	16QAM	12	7	19.32	0.086	19.41	0.087	19.36	0.086
5	16QAM	12	13	19.12	0.082	19.19	0.083	19.17	0.083
5	16QAM	25	0	19.02	0.080	18.97	0.079	18.87	0.077



LTE Band 12				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				23025		23095		23165	
Frequency (MHz)				700.5		707.5		714.5	
				dBm	W	dBm	W	dBm	W
3	QPSK	1	0	21.52	0.142	21.58	0.144	21.48	0.141
3	QPSK	1	8	21.27	0.134	21.36	0.137	21.32	0.136
3	QPSK	1	14	21.10	0.129	21.08	0.128	21.12	0.129
3	QPSK	8	0	20.53	0.113	20.58	0.114	20.52	0.113
3	QPSK	8	4	20.38	0.109	20.42	0.110	20.32	0.108
3	QPSK	8	7	20.17	0.104	20.22	0.105	20.18	0.104
3	QPSK	15	0	19.93	0.098	20.12	0.103	19.92	0.098
3	16QAM	1	0	20.42	0.110	20.46	0.111	20.38	0.109
3	16QAM	1	8	20.22	0.105	20.26	0.106	20.21	0.105
3	16QAM	1	14	20.01	0.100	20.02	0.100	20.00	0.100
3	16QAM	8	0	19.50	0.089	19.52	0.090	19.42	0.087
3	16QAM	8	4	19.27	0.085	19.36	0.086	19.31	0.085
3	16QAM	8	7	19.07	0.081	19.14	0.082	19.12	0.082
3	16QAM	15	0	18.97	0.079	18.92	0.078	18.82	0.076



LTE Band 12				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				23017		23095		23173	
Frequency (MHz)				699.7		707.5		715.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	21.47	0.140	21.53	0.142	21.43	0.139
1.4	QPSK	1	3	21.22	0.132	21.31	0.135	21.27	0.134
1.4	QPSK	1	5	21.05	0.127	21.03	0.127	21.07	0.128
1.4	QPSK	3	0	20.48	0.112	20.53	0.113	20.47	0.111
1.4	QPSK	3	1	20.33	0.108	20.37	0.109	20.27	0.106
1.4	QPSK	3	3	20.12	0.103	20.17	0.104	20.13	0.103
1.4	QPSK	6	0	19.88	0.097	20.07	0.102	19.87	0.097
1.4	16QAM	1	0	20.37	0.109	20.41	0.110	20.33	0.108
1.4	16QAM	1	3	20.17	0.104	20.21	0.105	20.16	0.104
1.4	16QAM	1	5	19.96	0.099	19.97	0.099	19.95	0.099
1.4	16QAM	3	0	19.45	0.088	19.47	0.089	19.37	0.086
1.4	16QAM	3	1	19.22	0.084	19.31	0.085	19.26	0.084
1.4	16QAM	3	3	19.02	0.080	19.09	0.081	19.07	0.081
1.4	16QAM	6	0	18.92	0.078	18.87	0.077	18.77	0.075



LTE Band 30				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				/		27710		/	
Frequency (MHz)				/		2310		/	
				/	/	dBm	W	/	/
10	QPSK	1	0	/	/	23.71	0.235	/	/
10	QPSK	1	25	/	/	23.51	0.224	/	/
10	QPSK	1	49	/	/	23.31	0.214	/	/
10	QPSK	25	0	/	/	22.61	0.182	/	/
10	QPSK	25	12	/	/	22.46	0.176	/	/
10	QPSK	25	25	/	/	22.40	0.174	/	/
10	QPSK	50	0	/	/	22.20	0.166	/	/
10	16QAM	1	0	/	/	22.41	0.174	/	/
10	16QAM	1	25	/	/	22.20	0.166	/	/
10	16QAM	1	49	/	/	22.02	0.159	/	/
10	16QAM	25	0	/	/	21.61	0.145	/	/
10	16QAM	25	12	/	/	21.41	0.138	/	/
10	16QAM	25	25	/	/	21.11	0.129	/	/
10	16QAM	50	0	/	/	20.87	0.122	/	/



LTE Band 30				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				27685		27710		27735	
Frequency (MHz)				2307.5		2310		2312.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	23.59	0.229	23.66	0.232	23.60	0.229
5	QPSK	1	12	23.39	0.218	23.46	0.222	23.40	0.219
5	QPSK	1	24	23.19	0.208	23.26	0.212	23.20	0.209
5	QPSK	12	0	22.49	0.177	22.56	0.180	22.50	0.178
5	QPSK	12	7	22.34	0.171	22.41	0.174	22.35	0.172
5	QPSK	12	13	22.28	0.169	22.35	0.172	22.29	0.169
5	QPSK	25	0	22.08	0.161	22.15	0.164	22.09	0.162
5	16QAM	1	0	22.29	0.169	22.36	0.172	22.30	0.170
5	16QAM	1	12	22.08	0.161	22.15	0.164	22.09	0.162
5	16QAM	1	24	21.90	0.155	21.97	0.157	21.91	0.155
5	16QAM	12	0	21.49	0.141	21.56	0.143	21.50	0.141
5	16QAM	12	7	21.29	0.135	21.36	0.137	21.30	0.135
5	16QAM	12	13	20.99	0.126	21.06	0.128	21.00	0.126
5	16QAM	25	0	20.75	0.119	20.82	0.121	20.76	0.119



LTE Band 66				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				132072		132322		132572	
Frequency (MHz)				1720		1745		1770	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	26.46	0.443	26.52	0.449	26.50	0.447
20	QPSK	1	49	26.23	0.420	26.43	0.440	26.28	0.425
20	QPSK	1	99	26.18	0.415	26.32	0.429	26.28	0.425
20	QPSK	50	0	25.30	0.339	25.37	0.344	25.19	0.330
20	QPSK	50	24	25.27	0.337	25.28	0.337	25.18	0.330
20	QPSK	50	50	25.18	0.330	25.20	0.331	25.17	0.329
20	QPSK	100	0	24.98	0.315	25.08	0.322	24.97	0.314
20	16QAM	1	0	25.08	0.322	25.14	0.327	25.05	0.320
20	16QAM	1	49	24.93	0.311	24.98	0.315	24.94	0.312
20	16QAM	1	99	24.78	0.301	24.89	0.308	24.80	0.302
20	16QAM	50	0	24.68	0.294	24.72	0.296	24.59	0.288
20	16QAM	50	24	24.58	0.287	24.61	0.289	24.50	0.282
20	16QAM	50	50	24.44	0.278	24.48	0.281	24.38	0.274
20	16QAM	100	0	24.33	0.271	24.38	0.274	24.30	0.269



LTE Band 66				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				132047		132322		132597	
Frequency (MHz)				1717.5		1745		1772.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	26.41	0.438	26.47	0.444	26.45	0.442
15	QPSK	1	37	26.18	0.415	26.38	0.435	26.23	0.420
15	QPSK	1	74	26.13	0.410	26.27	0.424	26.23	0.420
15	QPSK	36	0	25.25	0.335	25.32	0.340	25.14	0.327
15	QPSK	36	20	25.22	0.333	25.23	0.333	25.13	0.326
15	QPSK	36	39	25.13	0.326	25.15	0.327	25.12	0.325
15	QPSK	75	0	24.93	0.311	25.03	0.318	24.92	0.310
15	16QAM	1	0	25.03	0.318	25.09	0.323	25.00	0.316
15	16QAM	1	37	24.88	0.308	24.93	0.311	24.89	0.308
15	16QAM	1	74	24.73	0.297	24.84	0.305	24.75	0.299
15	16QAM	36	0	24.63	0.290	24.67	0.293	24.54	0.284
15	16QAM	36	20	24.53	0.284	24.56	0.286	24.45	0.279
15	16QAM	36	39	24.39	0.275	24.43	0.277	24.33	0.271
15	16QAM	75	0	24.28	0.268	24.33	0.271	24.25	0.266



LTE Band 66				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				132022		132322		132622	
Frequency (MHz)				1715		1745		1775	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	26.36	0.433	26.42	0.439	26.40	0.437
10	QPSK	1	25	26.13	0.410	26.33	0.430	26.18	0.415
10	QPSK	1	49	26.08	0.406	26.22	0.419	26.18	0.415
10	QPSK	25	0	25.20	0.331	25.27	0.337	25.09	0.323
10	QPSK	25	12	25.17	0.329	25.18	0.330	25.08	0.322
10	QPSK	25	25	25.08	0.322	25.10	0.324	25.07	0.321
10	QPSK	50	0	24.88	0.308	24.98	0.315	24.87	0.307
10	16QAM	1	0	24.98	0.315	25.04	0.319	24.95	0.313
10	16QAM	1	25	24.83	0.304	24.88	0.308	24.84	0.305
10	16QAM	1	49	24.68	0.294	24.79	0.301	24.70	0.295
10	16QAM	25	0	24.58	0.287	24.62	0.290	24.49	0.281
10	16QAM	25	12	24.48	0.281	24.51	0.282	24.40	0.275
10	16QAM	25	25	24.34	0.272	24.38	0.274	24.28	0.268
10	16QAM	50	0	24.23	0.265	24.28	0.268	24.20	0.263



LTE Band 66				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				131997		132322		132647	
Frequency (MHz)				1712.5		1745		1777.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	26.31	0.428	26.37	0.434	26.35	0.432
5	QPSK	1	12	26.08	0.406	26.28	0.425	26.13	0.410
5	QPSK	1	24	26.03	0.401	26.17	0.414	26.13	0.410
5	QPSK	12	0	25.15	0.327	25.22	0.333	25.04	0.319
5	QPSK	12	7	25.12	0.325	25.13	0.326	25.03	0.318
5	QPSK	12	13	25.03	0.318	25.05	0.320	25.02	0.318
5	QPSK	25	0	24.83	0.304	24.93	0.311	24.82	0.303
5	16QAM	1	0	24.93	0.311	24.99	0.316	24.90	0.309
5	16QAM	1	12	24.78	0.301	24.83	0.304	24.79	0.301
5	16QAM	1	24	24.63	0.290	24.74	0.298	24.65	0.292
5	16QAM	12	0	24.53	0.284	24.57	0.286	24.44	0.278
5	16QAM	12	7	24.43	0.277	24.46	0.279	24.35	0.272
5	16QAM	12	13	24.29	0.269	24.33	0.271	24.23	0.265
5	16QAM	25	0	24.18	0.262	24.23	0.265	24.15	0.260



LTE Band 66				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				131987		132322		132657	
Frequency (MHz)				1711.5		1745		1778.5	
				dBm	W	dBm	W	dBm	W
3	QPSK	1	0	26.26	0.423	26.32	0.429	26.30	0.427
3	QPSK	1	8	26.03	0.401	26.23	0.420	26.08	0.406
3	QPSK	1	14	25.98	0.396	26.12	0.409	26.08	0.406
3	QPSK	8	0	25.10	0.324	25.17	0.329	24.99	0.316
3	QPSK	8	4	25.07	0.321	25.08	0.322	24.98	0.315
3	QPSK	8	7	24.98	0.315	25.00	0.316	24.97	0.314
3	QPSK	15	0	24.78	0.301	24.88	0.308	24.77	0.300
3	16QAM	1	0	24.88	0.308	24.94	0.312	24.85	0.305
3	16QAM	1	8	24.73	0.297	24.78	0.301	24.74	0.298
3	16QAM	1	14	24.58	0.287	24.69	0.294	24.60	0.288
3	16QAM	8	0	24.48	0.281	24.52	0.283	24.39	0.275
3	16QAM	8	4	24.38	0.274	24.41	0.276	24.30	0.269
3	16QAM	8	7	24.24	0.265	24.28	0.268	24.18	0.262
3	16QAM	15	0	24.13	0.259	24.18	0.262	24.10	0.257



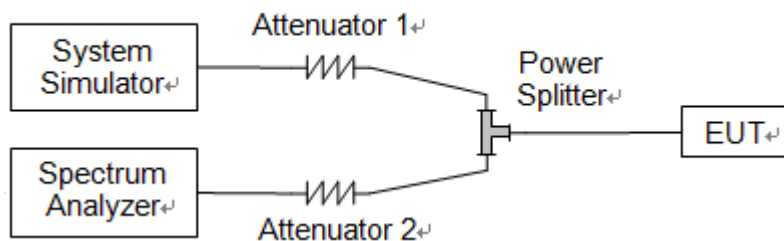
LTE Band 66				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				131979		132322		132665	
Frequency (MHz)				1710.7		1745		1779.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	26.24	0.421	26.30	0.427	26.28	0.425
1.4	QPSK	1	3	26.01	0.399	26.21	0.418	26.06	0.404
1.4	QPSK	1	5	25.96	0.394	26.10	0.407	26.06	0.404
1.4	QPSK	3	0	25.08	0.322	25.15	0.327	24.98	0.315
1.4	QPSK	3	1	25.05	0.320	25.06	0.321	25.08	0.322
1.4	QPSK	3	3	25.01	0.317	24.98	0.315	24.99	0.316
1.4	QPSK	6	0	24.76	0.299	24.86	0.306	24.75	0.299
1.4	16QAM	1	0	24.86	0.306	24.92	0.310	24.83	0.304
1.4	16QAM	1	3	24.71	0.296	24.76	0.299	24.72	0.296
1.4	16QAM	1	5	24.56	0.286	24.67	0.293	24.58	0.287
1.4	16QAM	3	0	24.46	0.279	24.50	0.282	24.37	0.274
1.4	16QAM	3	1	24.36	0.273	24.39	0.275	24.28	0.268
1.4	16QAM	3	3	24.22	0.264	24.26	0.267	24.16	0.261
1.4	16QAM	6	0	24.11	0.258	24.16	0.261	24.08	0.256

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 2				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.10	1.27
	Low	16QAM	1.10	1.29
	Mid	QPSK	1.10	1.28
	Mid	16QAM	1.10	1.31
	High	QPSK	1.10	1.28
	High	16QAM	1.10	1.29
3	Low	QPSK	2.70	2.97
	Low	16QAM	2.70	2.99
	Mid	QPSK	2.70	2.98
	Mid	16QAM	2.70	2.99
	High	QPSK	2.70	2.99
	High	16QAM	2.70	2.98
5	Low	QPSK	4.50	5.02
	Low	16QAM	4.50	5.02
	Mid	QPSK	4.51	5.00
	Mid	16QAM	4.51	4.99
	High	QPSK	4.50	4.99
	High	16QAM	4.50	4.96
10	Low	QPSK	8.99	9.83
	Low	16QAM	8.95	9.83
	Mid	QPSK	8.98	9.84
	Mid	16QAM	8.96	9.81
	High	QPSK	8.96	9.85
	High	16QAM	8.93	9.78
15	Low	QPSK	13.41	14.61
	Low	16QAM	13.41	14.73
	Mid	QPSK	13.46	14.63
	Mid	16QAM	13.45	14.77
	High	QPSK	13.49	14.71
	High	16QAM	13.46	14.70
20	Low	QPSK	17.88	19.37
	Low	16QAM	17.94	19.37
	Mid	QPSK	17.92	19.52
	Mid	16QAM	17.90	19.48
	High	QPSK	17.94	19.51
	High	16QAM	17.95	19.46



LTE Band 4				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.10	1.28
	Low	16QAM	1.10	1.28
	Mid	QPSK	1.10	1.30
	Mid	16QAM	1.10	1.29
	High	QPSK	1.10	1.28
	High	16QAM	1.10	1.30
3	Low	QPSK	2.70	2.97
	Low	16QAM	2.70	3.00
	Mid	QPSK	2.70	2.99
	Mid	16QAM	2.70	2.99
	High	QPSK	2.70	2.98
	High	16QAM	2.70	2.99
5	Low	QPSK	4.50	4.99
	Low	16QAM	4.50	4.97
	Mid	QPSK	4.51	5.03
	Mid	16QAM	4.51	5.02
	High	QPSK	4.50	5.02
	High	16QAM	4.51	5.02
10	Low	QPSK	8.96	9.80
	Low	16QAM	8.94	9.79
	Mid	QPSK	8.97	9.80
	Mid	16QAM	8.95	9.84
	High	QPSK	8.99	9.87
	High	16QAM	8.95	9.76
15	Low	QPSK	13.41	14.61
	Low	16QAM	13.42	14.69
	Mid	QPSK	13.47	14.65
	Mid	16QAM	13.43	14.81
	High	QPSK	13.44	14.59
	High	16QAM	13.43	14.80
20	Low	QPSK	17.87	19.34
	Low	16QAM	17.90	19.33
	Mid	QPSK	17.89	19.43
	Mid	16QAM	17.95	19.48
	High	QPSK	17.90	19.44
	High	16QAM	17.92	19.51



LTE Band 5				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.10	1.28
	Low	16QAM	1.10	1.29
	Mid	QPSK	1.10	1.27
	Mid	16QAM	1.10	1.29
	High	QPSK	1.10	1.33
	High	16QAM	1.10	1.32
3	Low	QPSK	2.70	3.00
	Low	16QAM	2.70	3.00
	Mid	QPSK	2.70	3.00
	Mid	16QAM	2.70	2.99
	High	QPSK	2.71	3.02
	High	16QAM	2.71	2.99
5	Low	QPSK	4.51	5.01
	Low	16QAM	4.50	5.01
	Mid	QPSK	4.50	5.01
	Mid	16QAM	4.50	5.01
	High	QPSK	4.50	5.02
	High	16QAM	4.50	5.02
10	Low	QPSK	8.99	9.93
	Low	16QAM	8.97	9.83
	Mid	QPSK	8.99	9.89
	Mid	16QAM	8.94	9.84
	High	QPSK	8.98	9.83
	High	16QAM	8.93	9.83



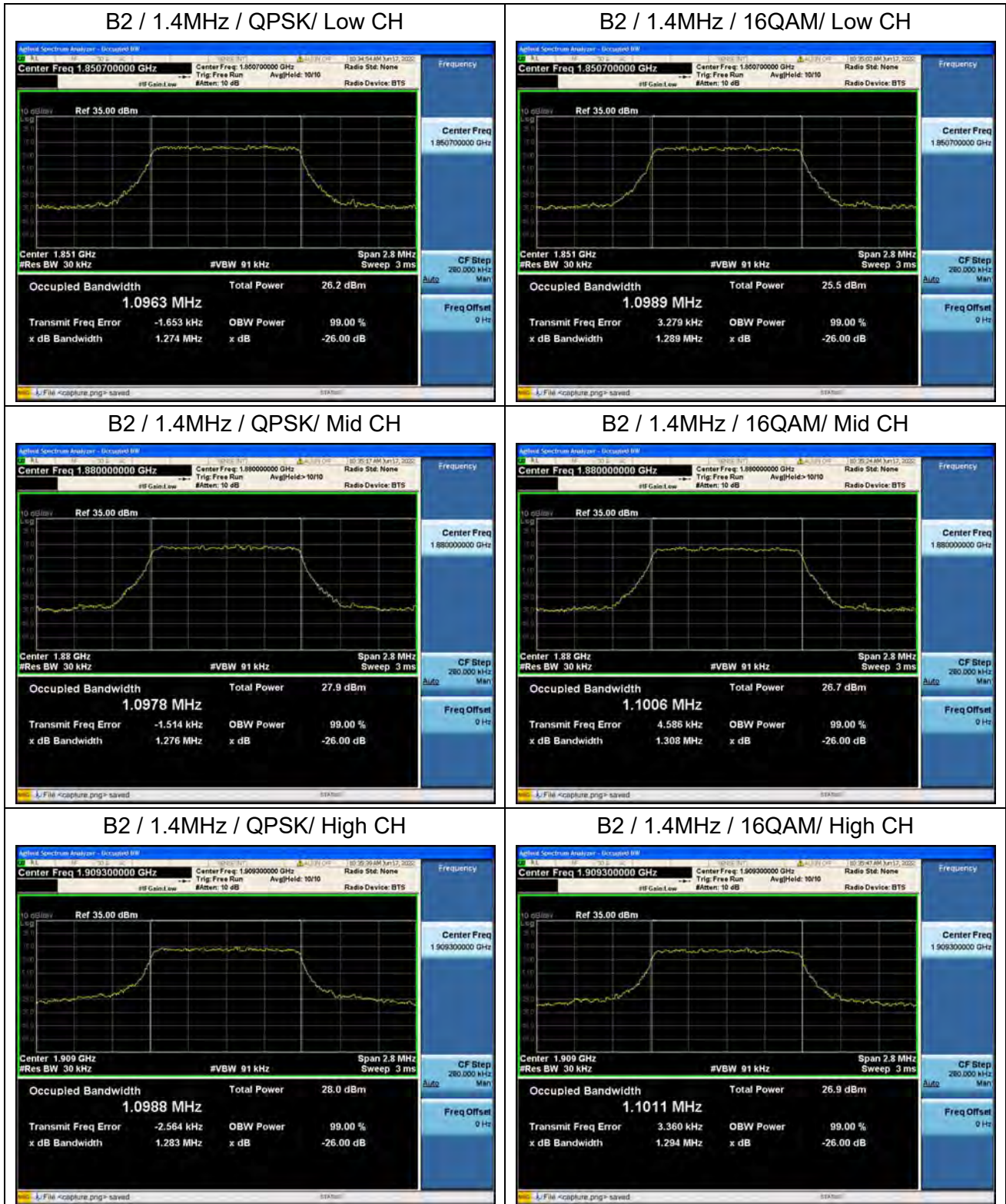
LTE Band 12				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.10	1.28
	Low	16QAM	1.10	1.29
	Mid	QPSK	1.10	1.27
	Mid	16QAM	1.10	1.27
	High	QPSK	1.10	1.27
	High	16QAM	1.10	1.31
3	Low	QPSK	2.70	2.98
	Low	16QAM	2.71	3.00
	Mid	QPSK	2.70	2.98
	Mid	16QAM	2.71	2.98
	High	QPSK	2.70	2.99
	High	16QAM	2.70	2.99
5	Low	QPSK	4.50	5.01
	Low	16QAM	4.51	5.01
	Mid	QPSK	4.51	5.00
	Mid	16QAM	4.50	4.99
	High	QPSK	4.50	5.05
	High	16QAM	4.50	4.96
10	Low	QPSK	8.98	9.89
	Low	16QAM	8.95	9.80
	Mid	QPSK	9.00	9.84
	Mid	16QAM	8.96	9.76
	High	QPSK	8.96	9.85
	High	16QAM	8.94	9.78



LTE Band 30				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5	Low	QPSK	4.50	5.03
	Low	16QAM	4.51	4.97
	Mid	QPSK	4.50	5.02
	Mid	16QAM	4.50	4.97
	High	QPSK	4.51	4.99
	High	16QAM	4.50	5.01
10	Low	QPSK	/	/
	Low	16QAM	/	/
	Mid	QPSK	8.99	9.90
	Mid	16QAM	8.95	9.76
	High	QPSK	/	/
	High	16QAM	/	/

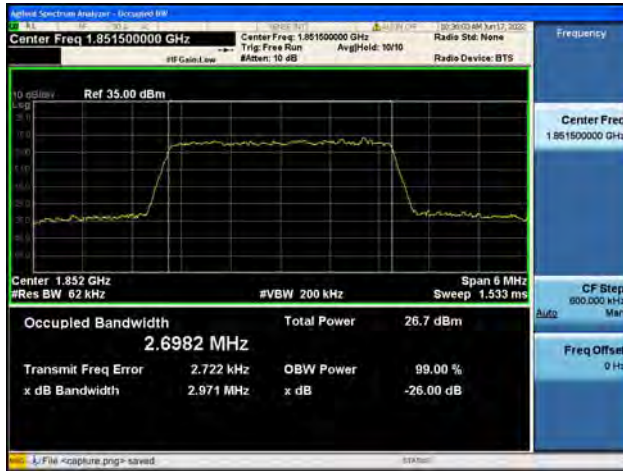


LTE Band 66				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.09	1.29
	Low	16QAM	1.10	1.30
	Mid	QPSK	1.09	1.27
	Mid	16QAM	1.10	1.28
	High	QPSK	1.10	1.26
	High	16QAM	1.10	1.30
3	Low	QPSK	2.70	2.98
	Low	16QAM	2.70	2.99
	Mid	QPSK	2.70	2.97
	Mid	16QAM	2.70	2.99
	High	QPSK	2.70	2.99
	High	16QAM	2.70	2.99
5	Low	QPSK	4.50	4.99
	Low	16QAM	4.51	4.91
	Mid	QPSK	4.50	4.97
	Mid	16QAM	4.51	4.97
	High	QPSK	4.50	5.02
	High	16QAM	4.51	5.04
10	Low	QPSK	9.00	9.86
	Low	16QAM	8.94	9.83
	Mid	QPSK	8.99	9.78
	Mid	16QAM	8.96	9.81
	High	QPSK	9.00	9.83
	High	16QAM	8.95	9.82
15	Low	QPSK	13.39	14.61
	Low	16QAM	13.43	14.61
	Mid	QPSK	13.44	14.68
	Mid	16QAM	13.44	14.64
	High	QPSK	13.46	14.70
	High	16QAM	13.45	14.60
20	Low	QPSK	17.88	19.43
	Low	16QAM	17.90	19.38
	Mid	QPSK	17.89	19.52
	Mid	16QAM	17.90	19.46
	High	QPSK	17.88	19.43
	High	16QAM	17.93	19.40

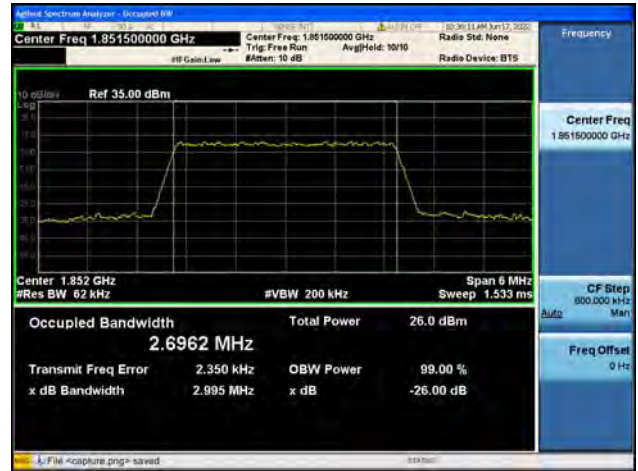




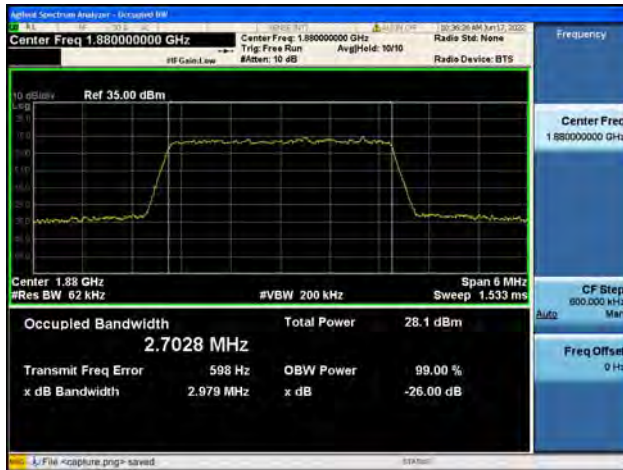
B2 / 3MHz / QPSK/ Low CH



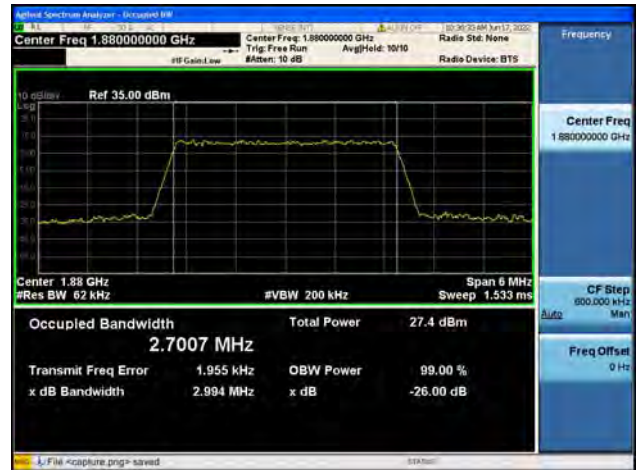
B2 / 3MHz / 16QAM/ Low CH



B2 / 3MHz / QPSK/ Mid CH



B2 / 3MHz / 16QAM/ Mid CH



B2 / 3MHz / QPSK/ High CH

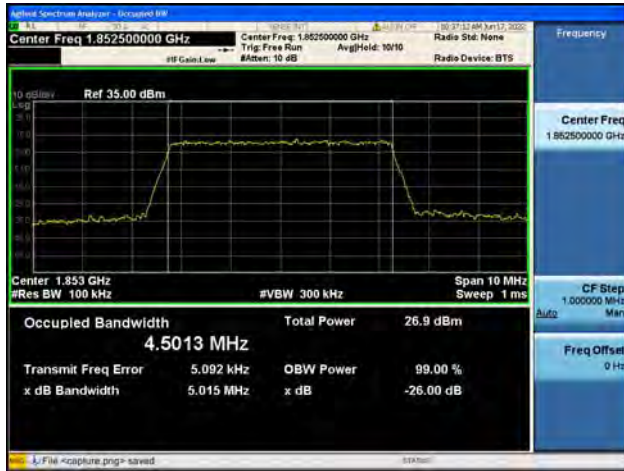


B2 / 3MHz / 16QAM/ High CH

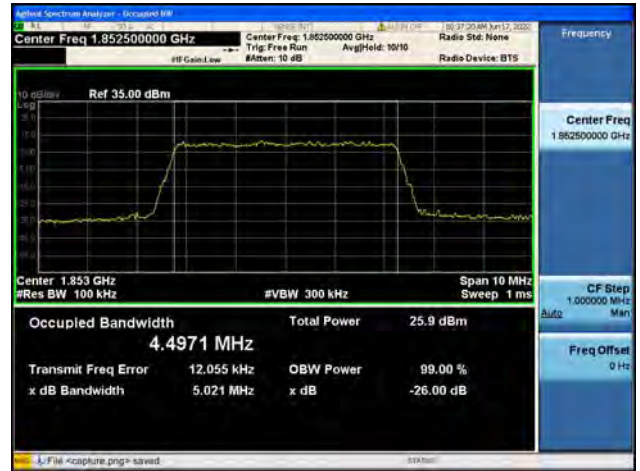




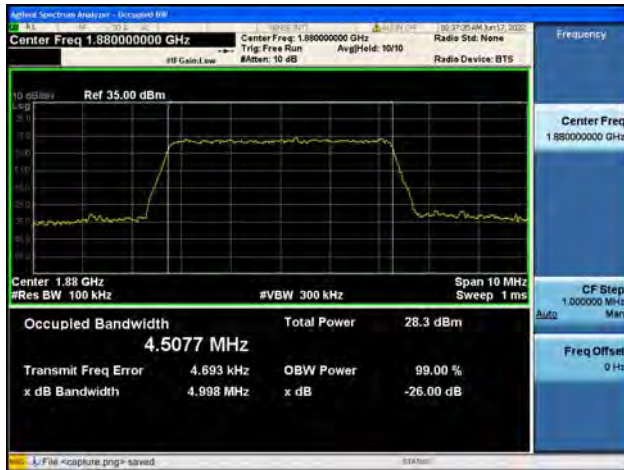
B2 / 5MHz / QPSK/ Low CH



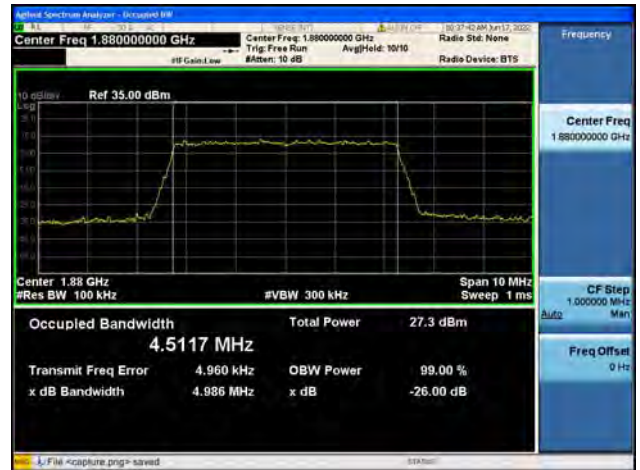
B2 / 5MHz / 16QAM/ Low CH



B2 / 5MHz / QPSK/ Mid CH



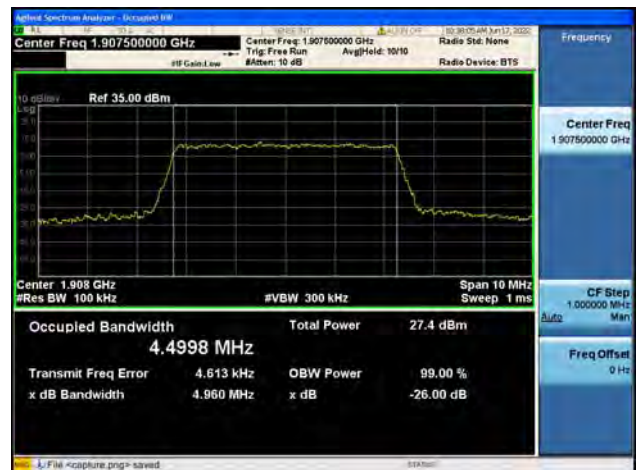
B2 / 5MHz / 16QAM/ Mid CH



B2 / 5MHz / QPSK/ High CH

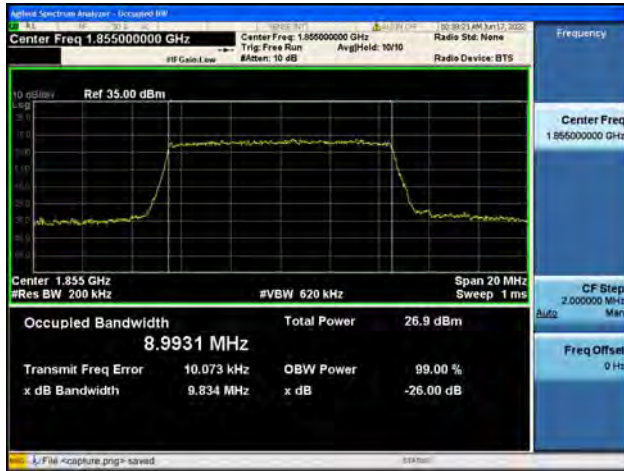


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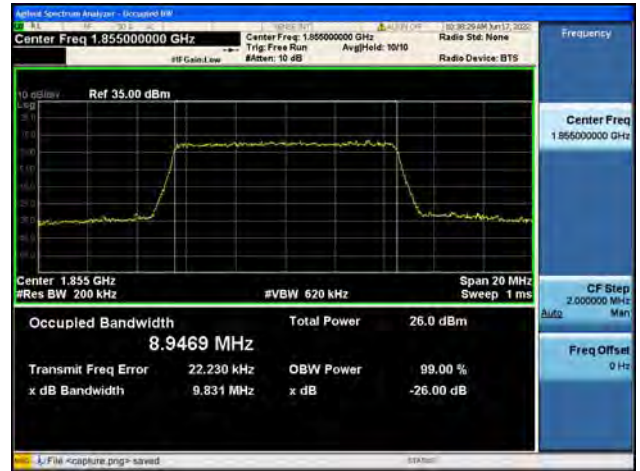




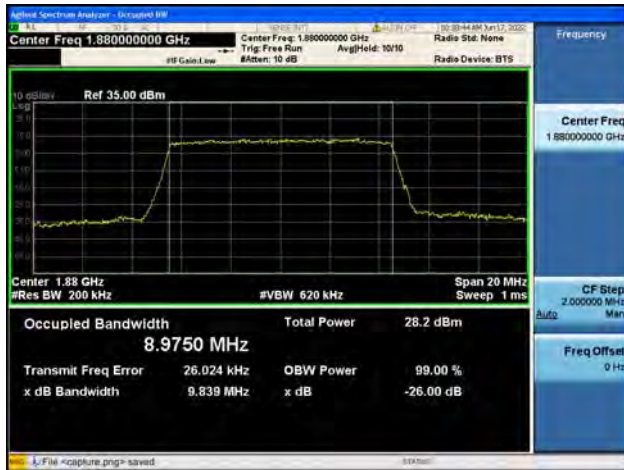
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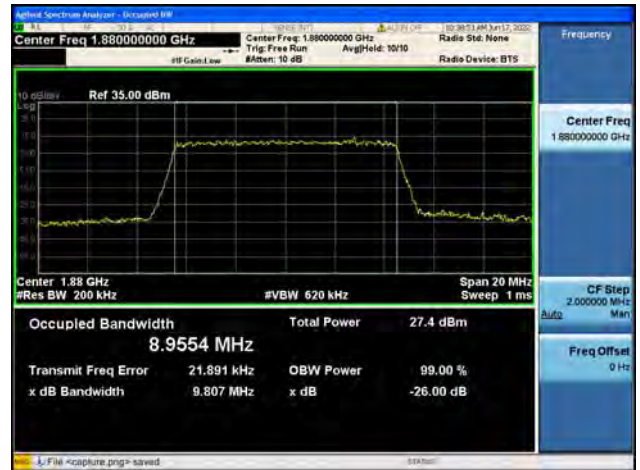
B2 / 10MHz / 16QAM/ Low CH



B2 / 10MHz / QPSK/ Mid CH



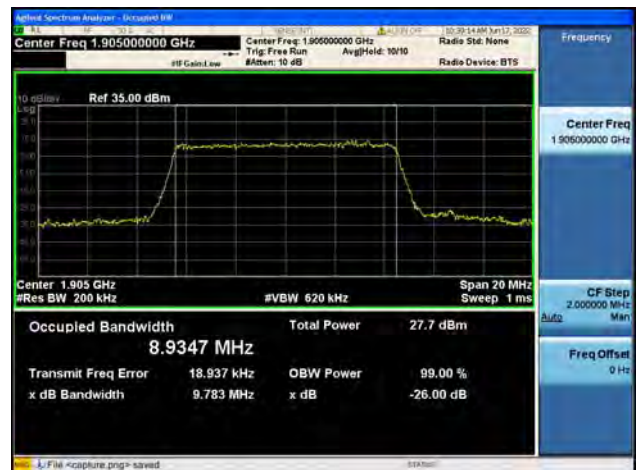
B2 / 10MHz / 16QAM/ Mid CH



B2 / 10MHz / QPSK/ High CH

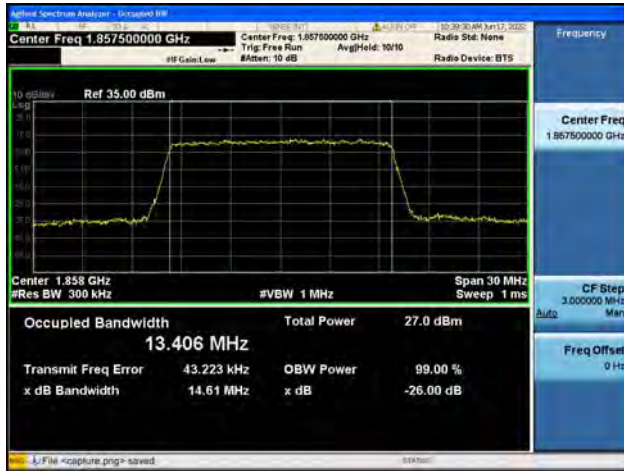


B2 / 10MHz / 16QAM/ High CH

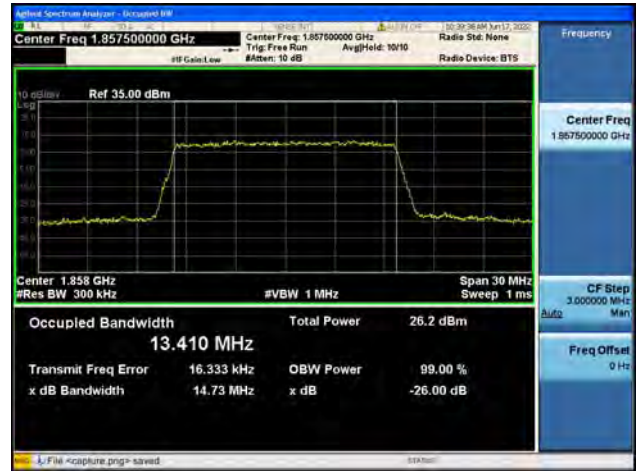




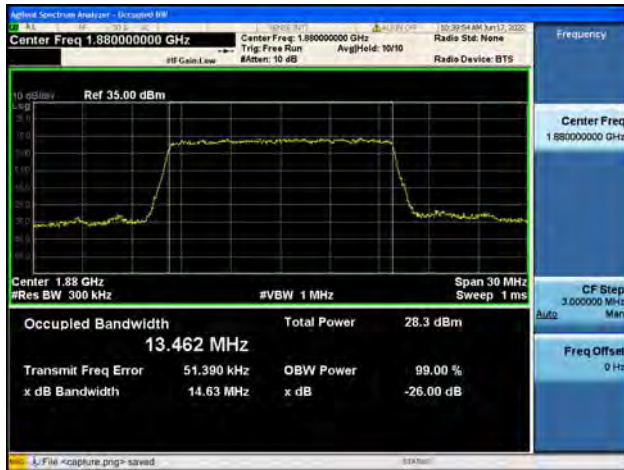
B2 / 15MHz / QPSK/ Low CH



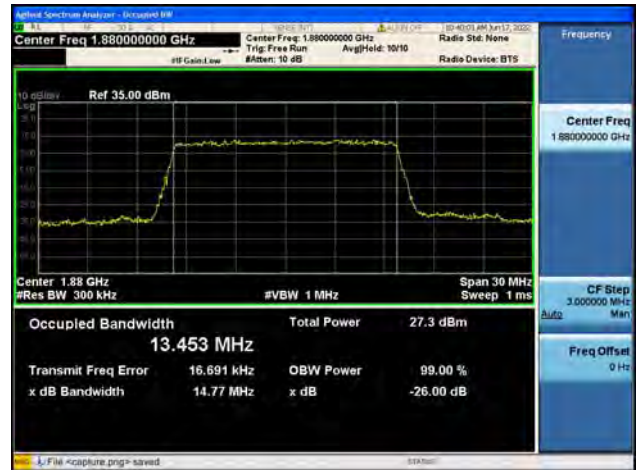
B2 / 15MHz / 16QAM/ Low CH



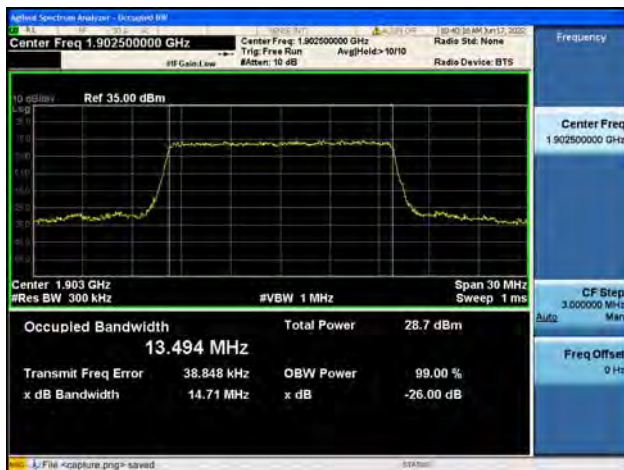
B2 / 15MHz / QPSK/ Mid CH



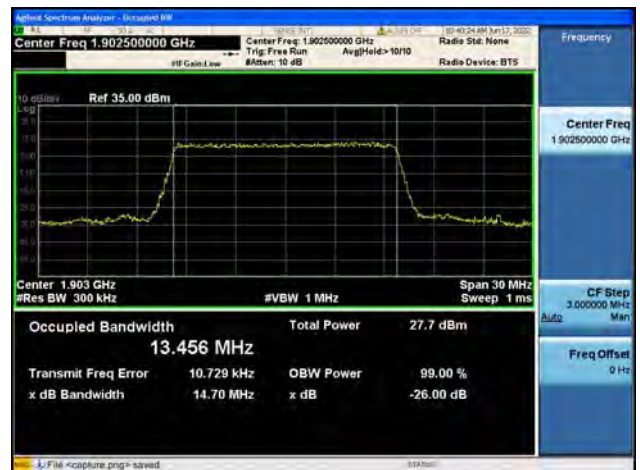
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B2 / 15MHz / QPSK/ High CH

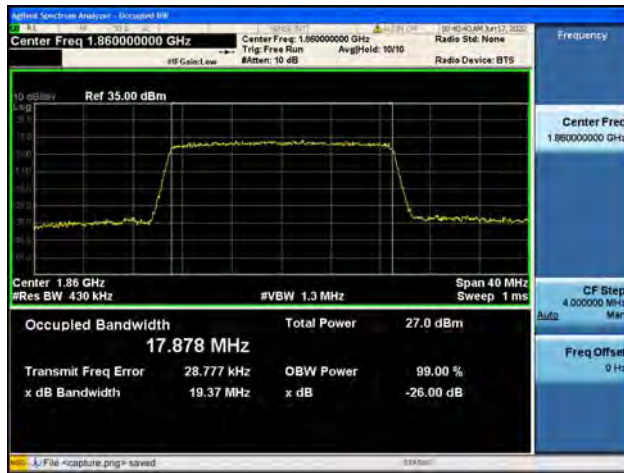


B2 / 15MHz / 16QAM/ High CH

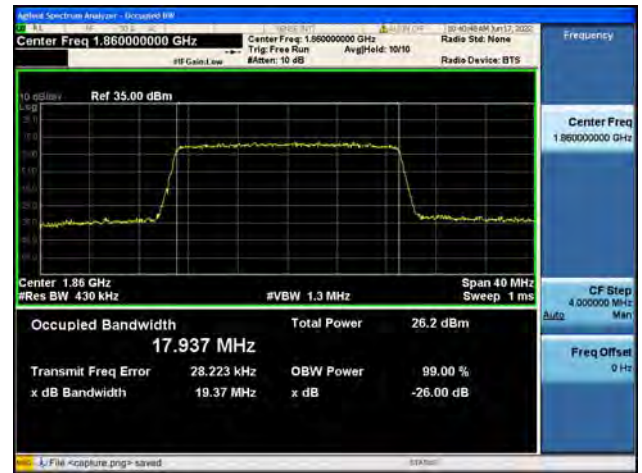




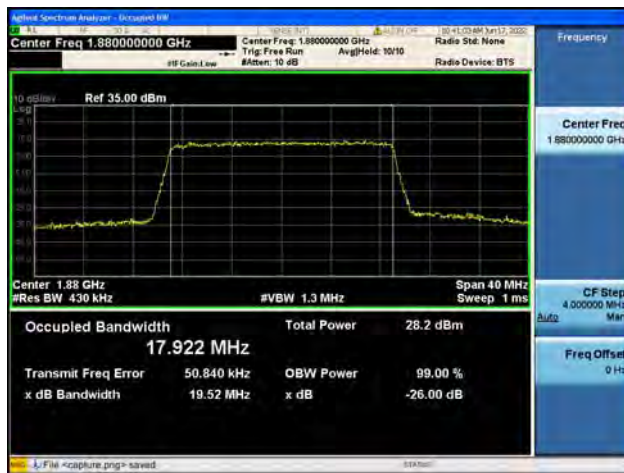
B2 / 20MHz / QPSK/ Low CH



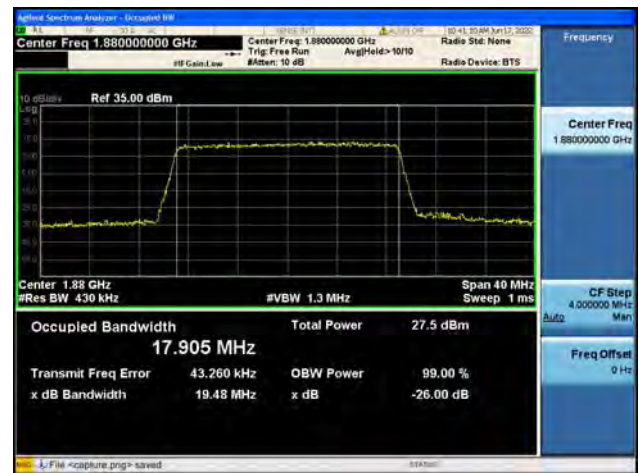
B2 / 20MHz / 16QAM/ Low CH



B2 / 20MHz / QPSK/ Mid CH



B2 / 20MHz / 16QAM/ Mid CH

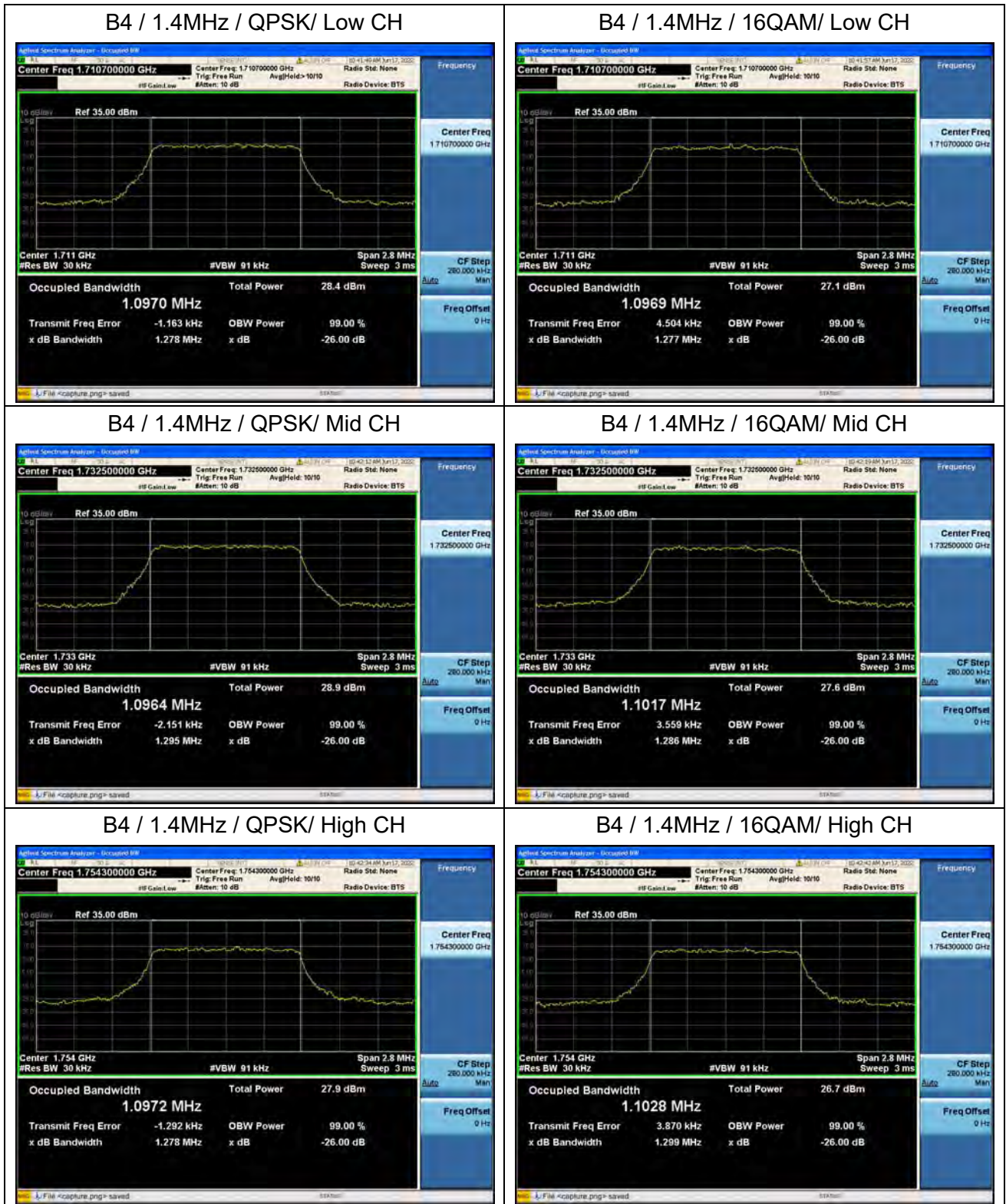


B2 / 20MHz / QPSK/ High CH



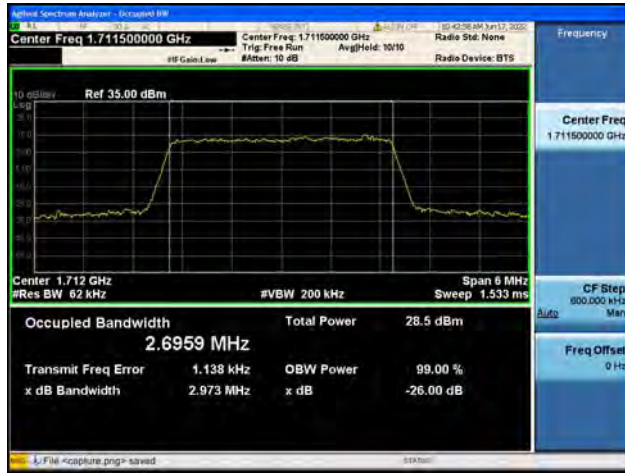
B2 / 20MHz / 16QAM/ High CH



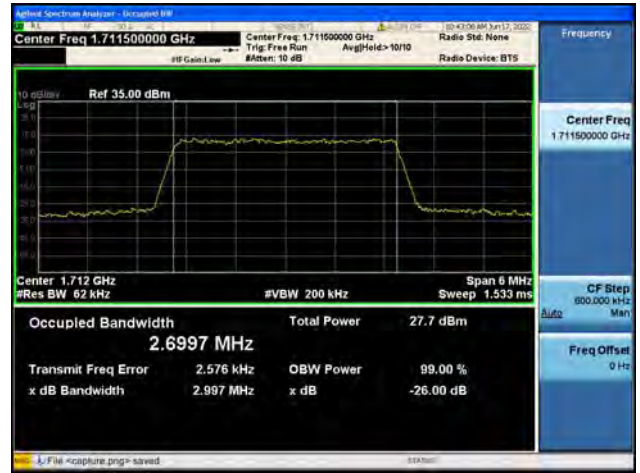




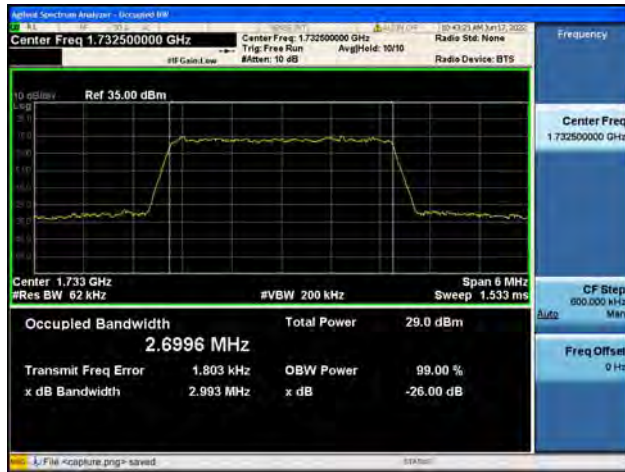
B4 / 3MHz / QPSK/ Low CH



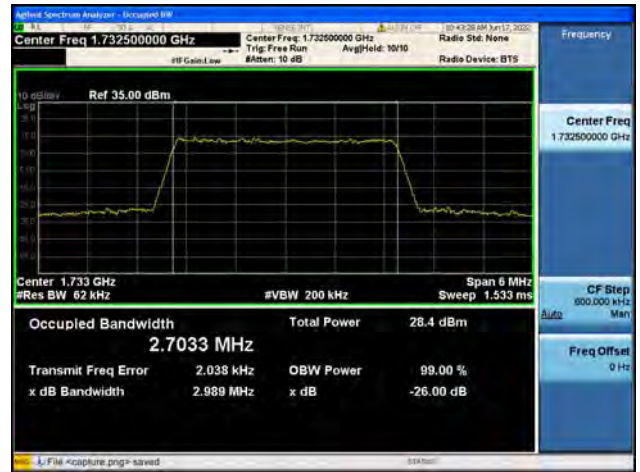
B4 / 3MHz / 16QAM/ Low CH



B4 / 3MHz / QPSK/ Mid CH



B4 / 3MHz / 16QAM/ Mid CH



B4 / 3MHz / QPSK/ High CH

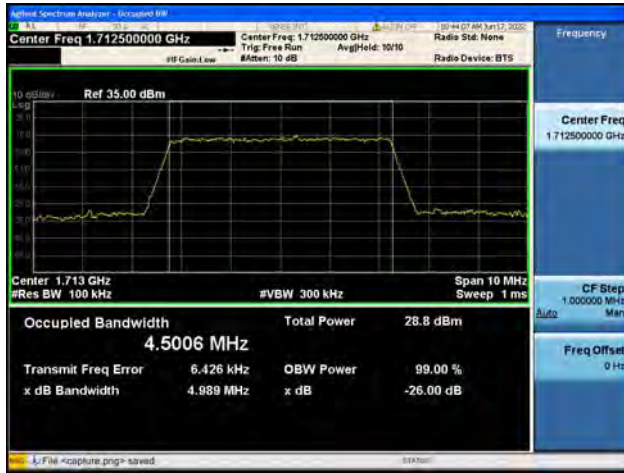


B4 / 3MHz / 16QAM/ High CH

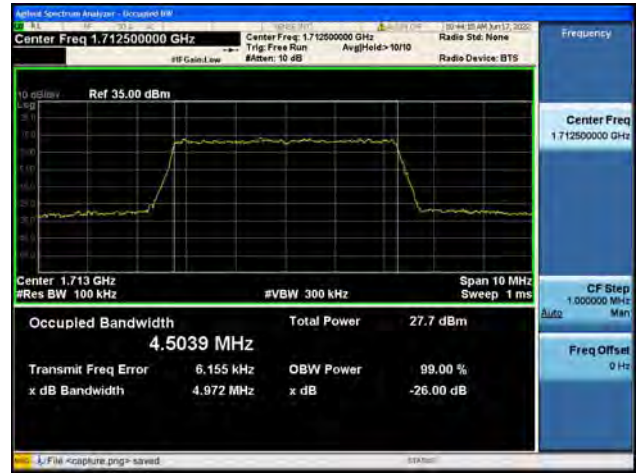




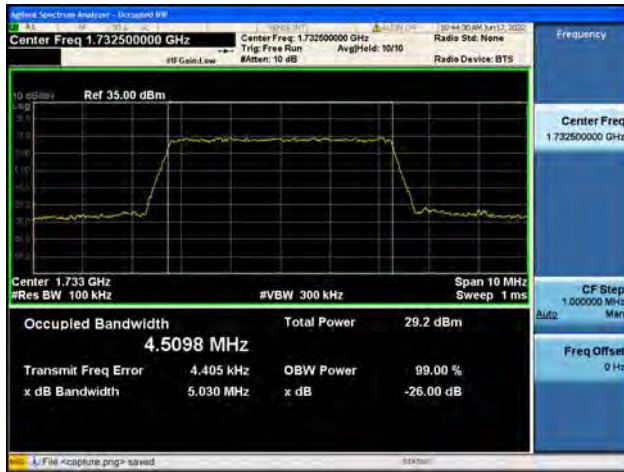
B4 / 5MHz / QPSK/ Low CH



B4 / 5MHz / 16QAM/ Low CH



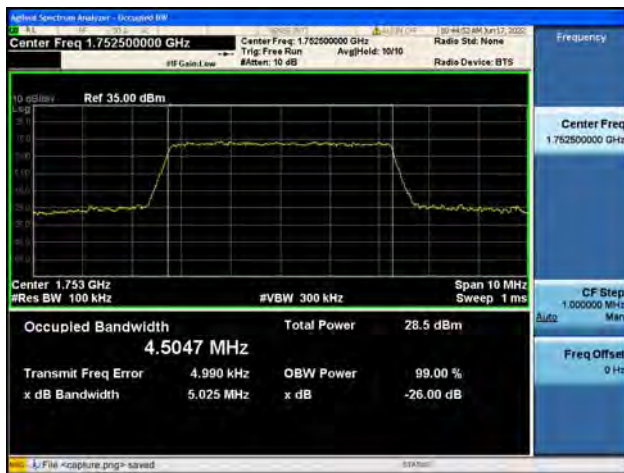
B4 / 5MHz / QPSK/ Mid CH



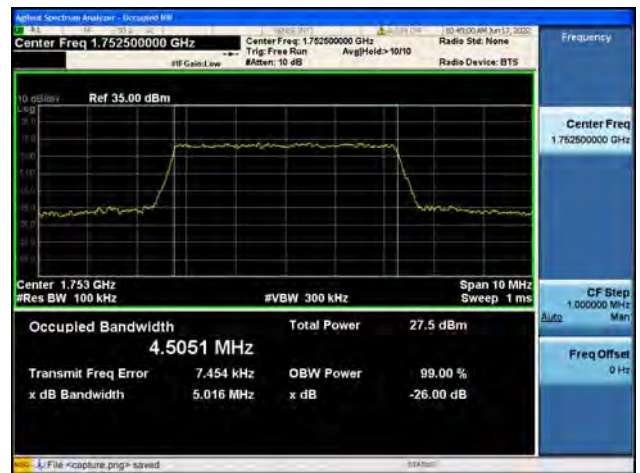
B4 / 5MHz / 16QAM/ Mid CH



B4 / 5MHz / QPSK/ High CH

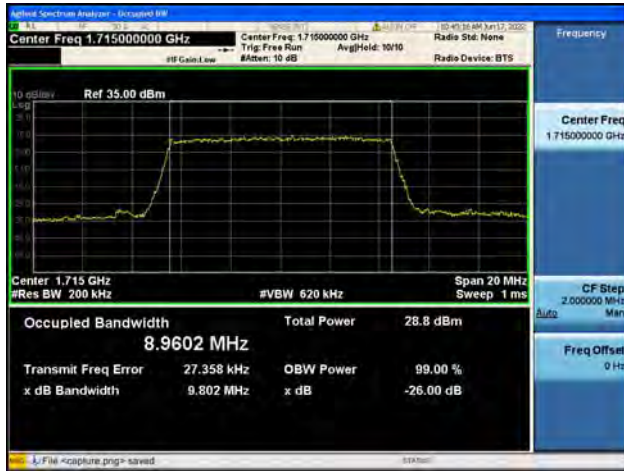


B4 / 5MHz / 16QAM/ High CH

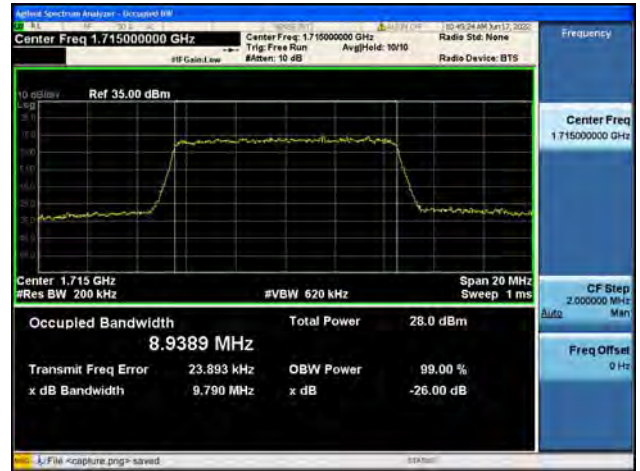




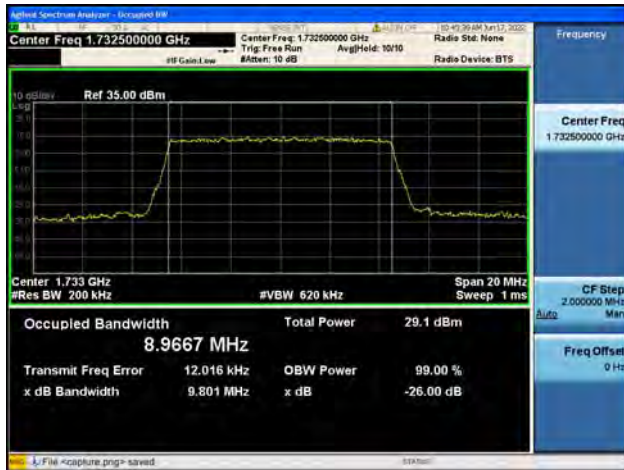
B4 / 10MHz / QPSK/ Low CH



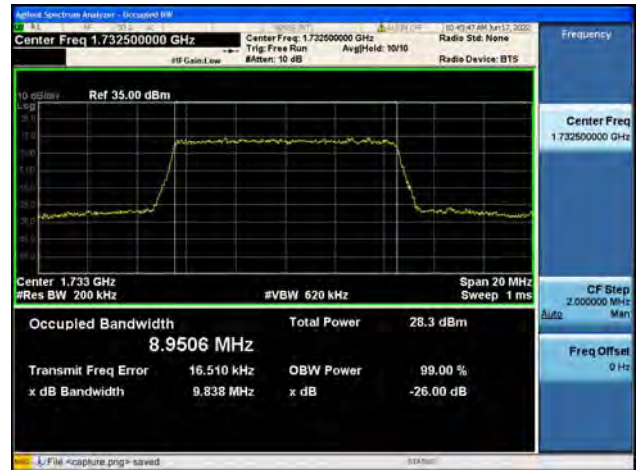
B4 / 10MHz / 16QAM/ Low CH



B4 / 10MHz / QPSK/ Mid CH



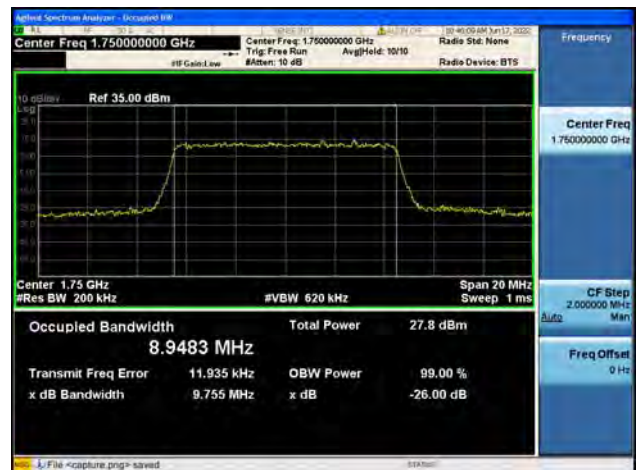
B4 / 10MHz / 16QAM/ Mid CH



B4 / 10MHz / QPSK/ High CH

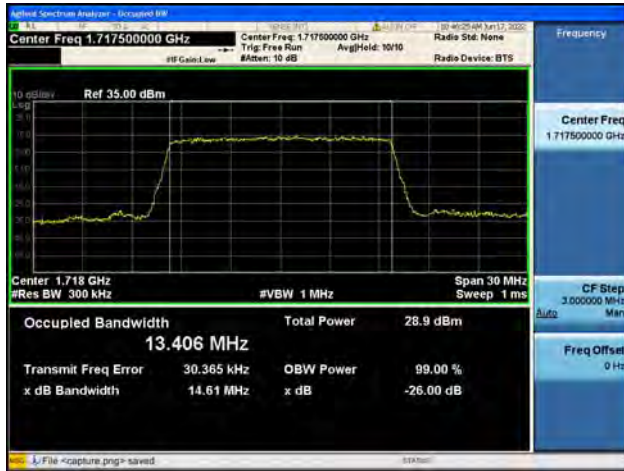


B4 / 10MHz / 16QAM/ High CH

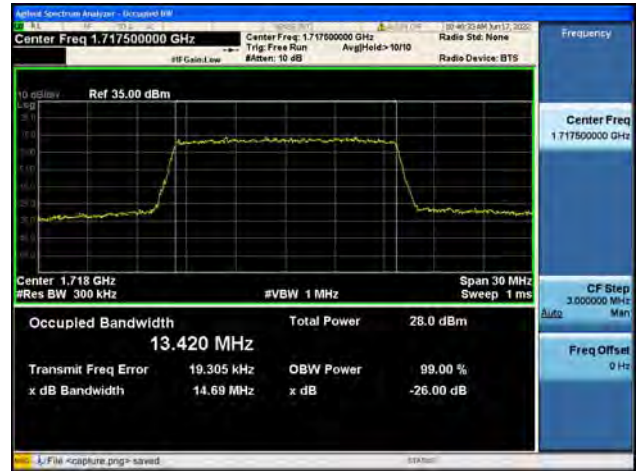




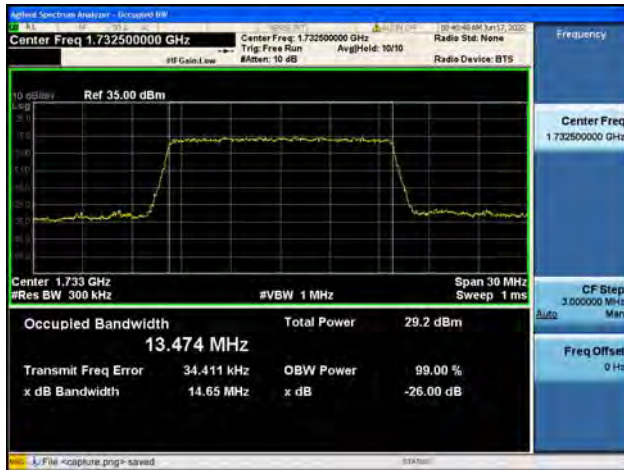
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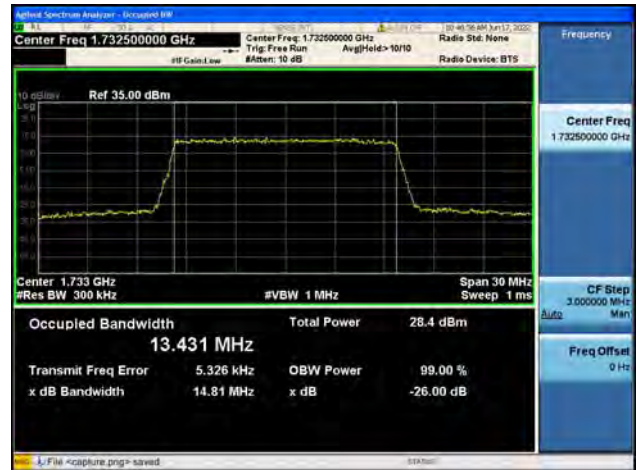
B4 / 15MHz / 16QAM/ Low CH



B4 / 15MHz / QPSK/ Mid CH



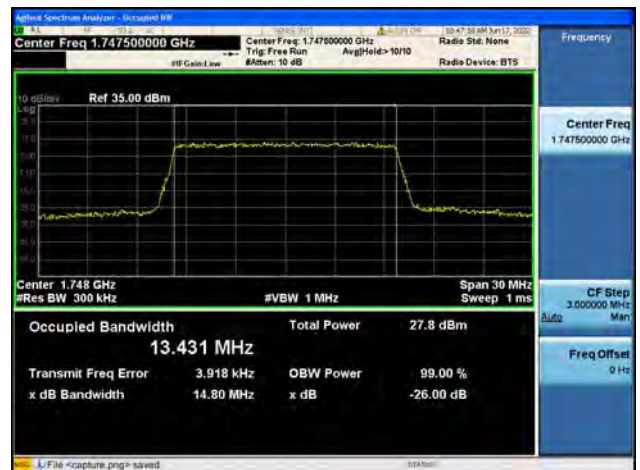
B4 / 15MHz / 16QAM/ Mid CH



B4 / 15MHz / QPSK/ High CH

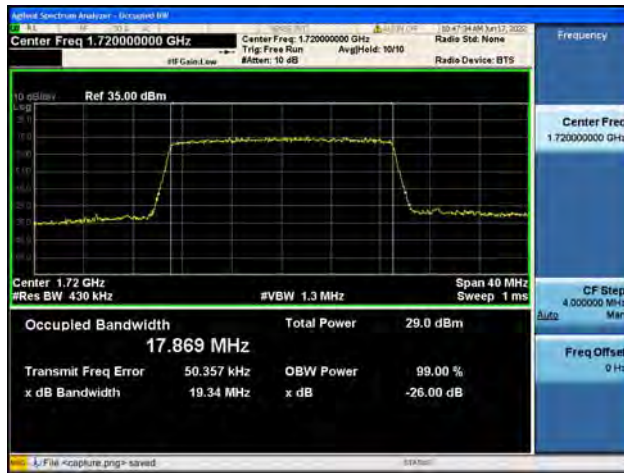


B4 / 15MHz / 16QAM/ High CH

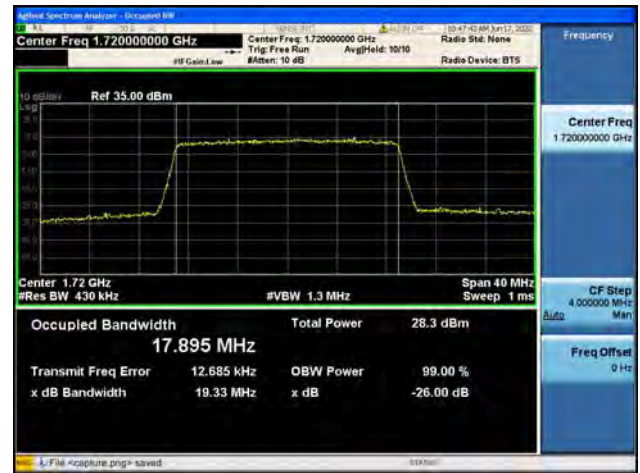




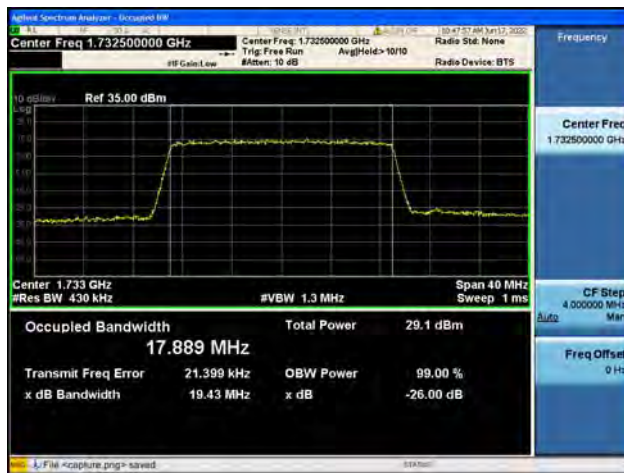
B4 / 20MHz / QPSK/ Low CH



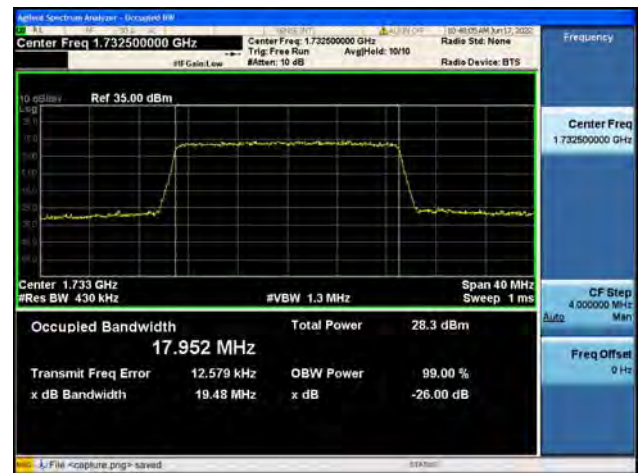
B4 / 20MHz / 16QAM/ Low CH



B4 / 20MHz / QPSK/ Mid CH



B4 / 20MHz / 16QAM/ Mid CH



B4 / 20MHz / QPSK/ High CH

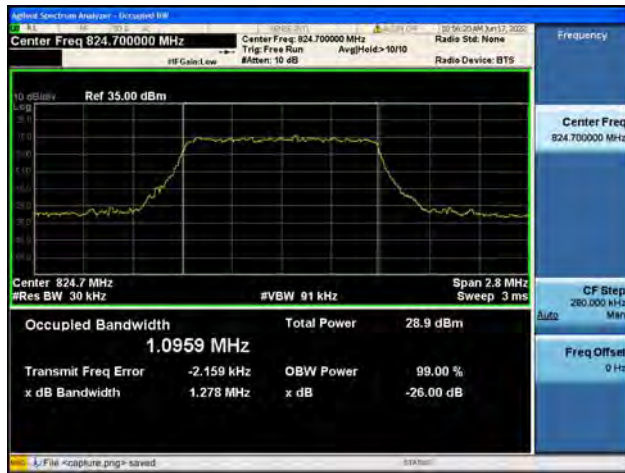


B4 / 20MHz / 16QAM/ High CH

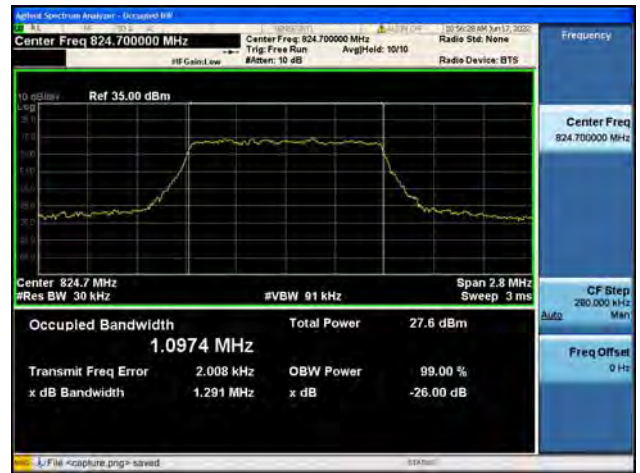




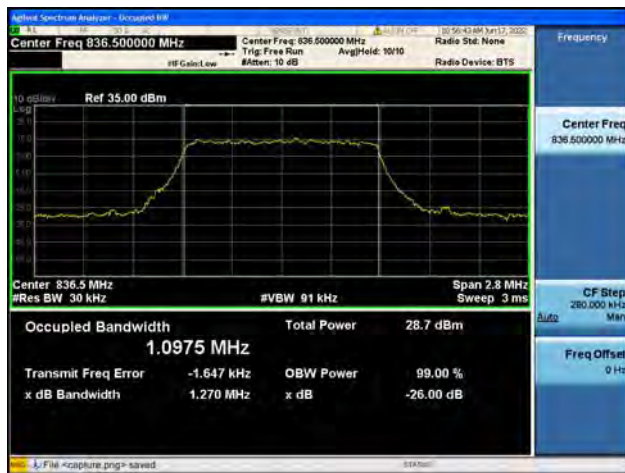
B5 / 1.4MHz / QPSK/ Low CH



B5 / 1.4MHz / 16QAM/ Low CH



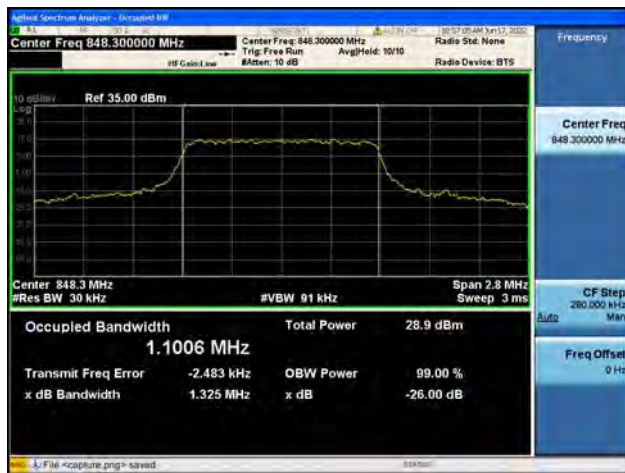
B5 / 1.4MHz / QPSK/ Mid CH



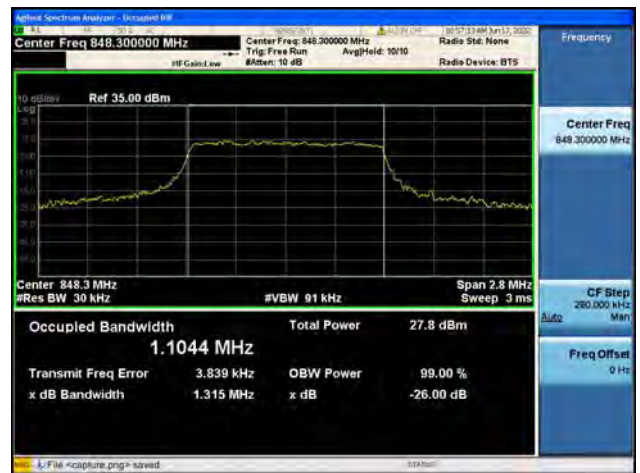
B5 / 1.4MHz / 16QAM/ Mid CH



B5 / 1.4MHz / QPSK/ High CH

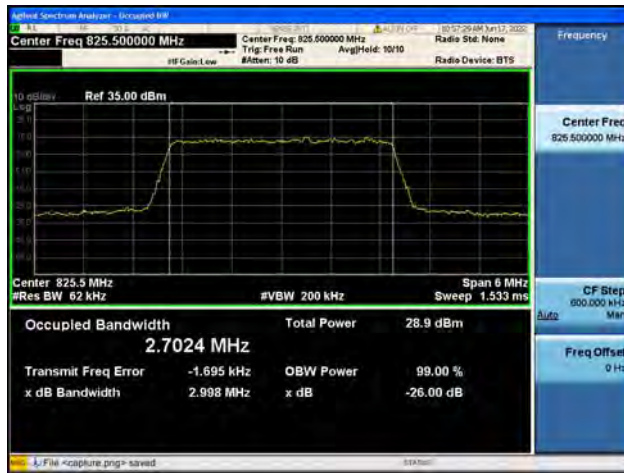


B5 / 1.4MHz / 16QAM/ High CH

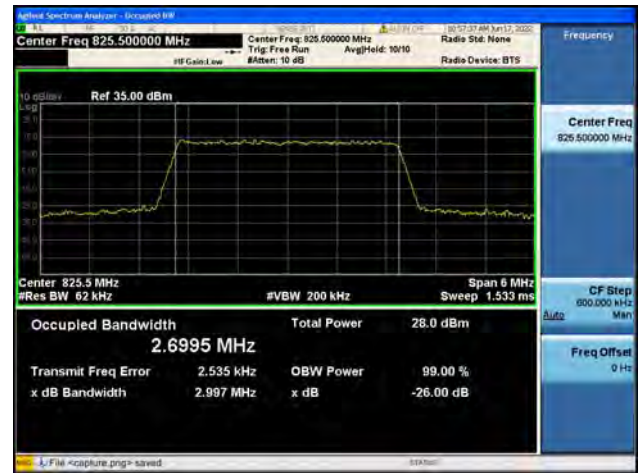




B5 / 3MHz / QPSK/ Low CH



B5 / 3MHz / 16QAM/ Low CH



B5 / 3MHz / QPSK/ Mid CH



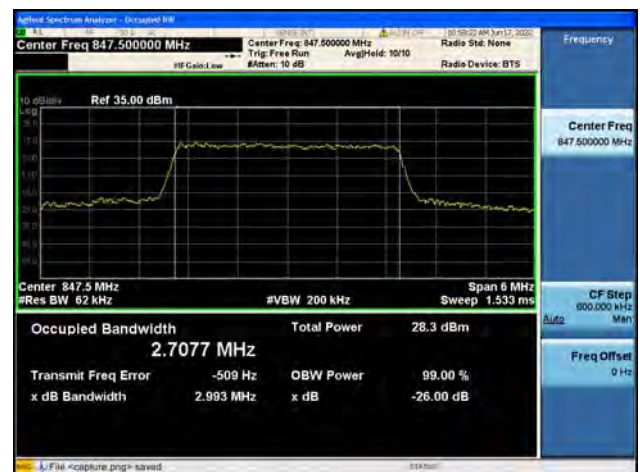
B5 / 3MHz / 16QAM/ Mid CH



B5 / 3MHz / QPSK/ High CH



B5 / 3MHz / 16QAM/ High CH





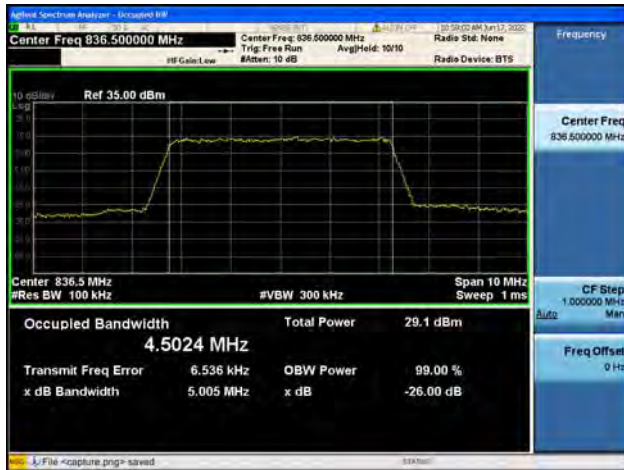
B5 / 5MHz / QPSK/ Low CH



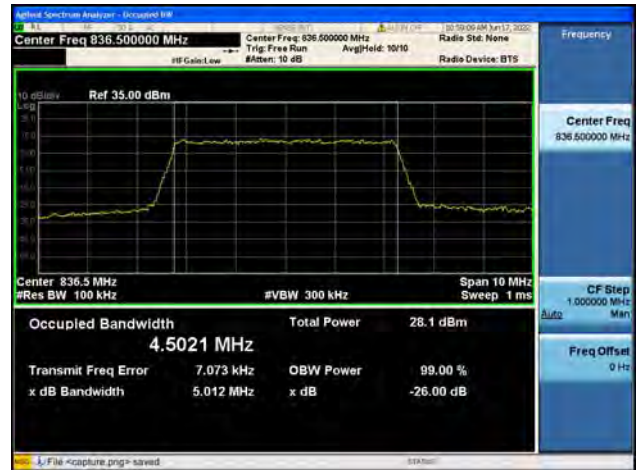
B5 / 5MHz / 16QAM/ Low CH



B5 / 5MHz / QPSK/ Mid CH



B5 / 5MHz / 16QAM/ Mid CH



B5 / 5MHz / QPSK/ High CH



B5 / 5MHz / 16QAM/ High CH





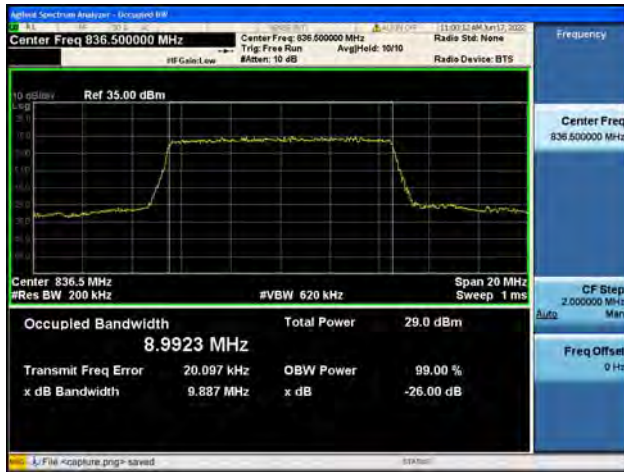
B5 / 10MHz / QPSK/ Low CH



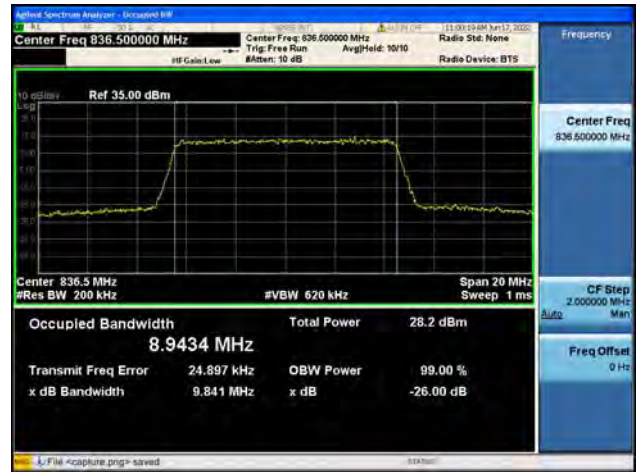
B5 / 10MHz / 16QAM/ Low CH



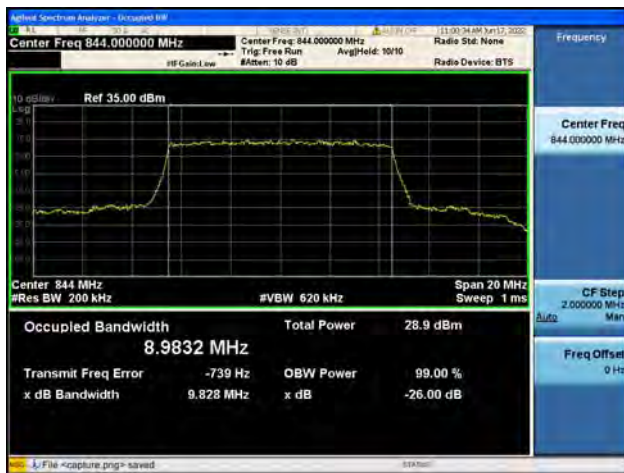
B5 / 10MHz / QPSK/ Mid CH



B5 / 10MHz / 16QAM/ Mid CH



B5 / 10MHz / QPSK/ High CH

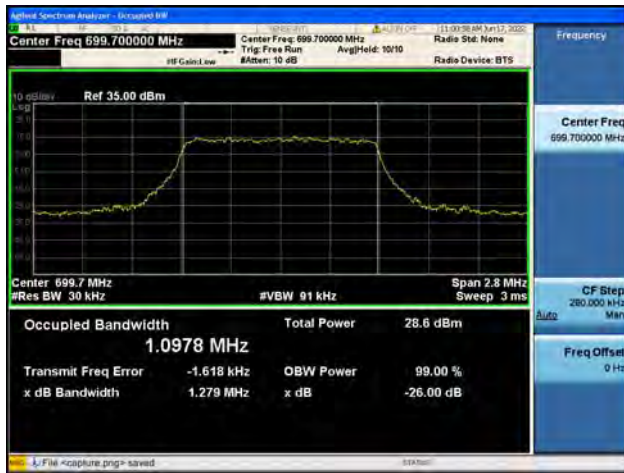


B5 / 10MHz / 16QAM/ High CH

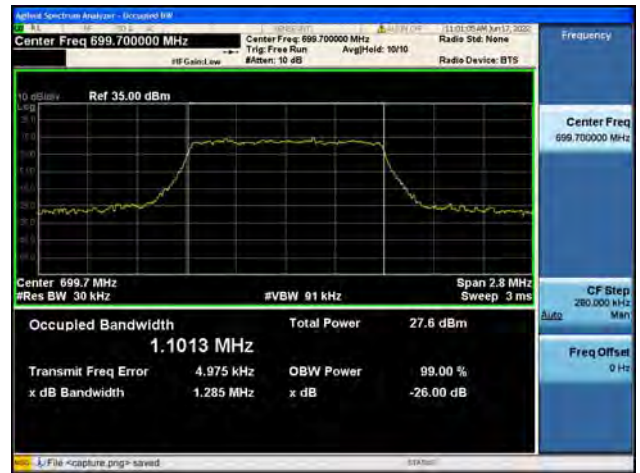




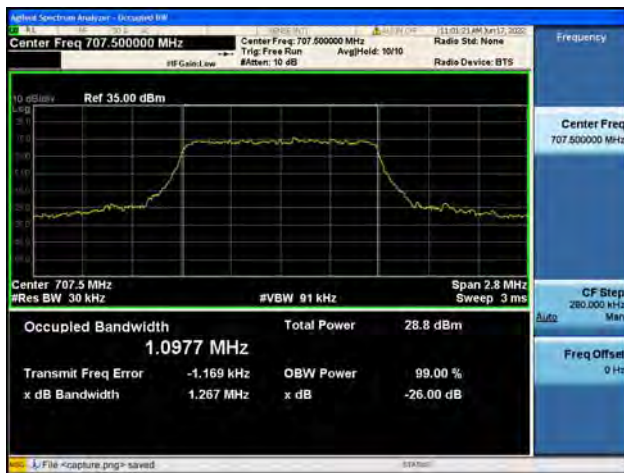
B12 / 1.4MHz / QPSK/ Low CH



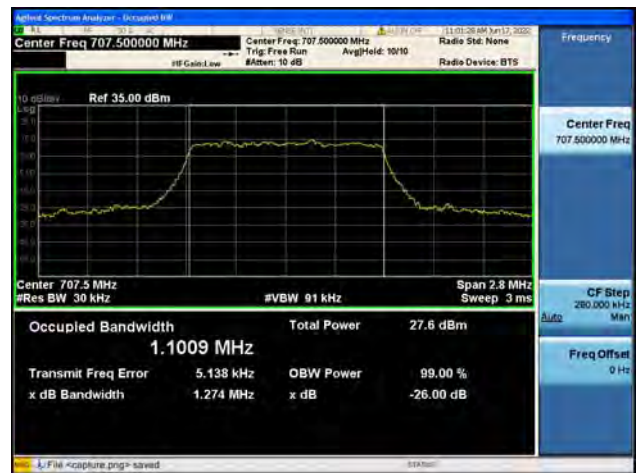
B12 / 1.4MHz / 16QAM/ Low CH



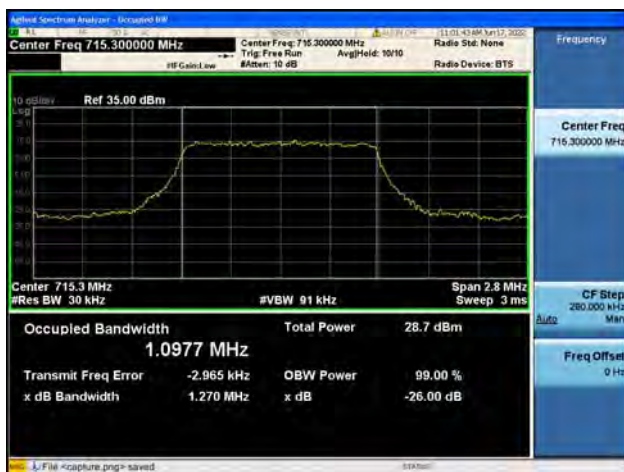
B12 / 1.4MHz / QPSK/ Mid CH



B12 / 1.4MHz / 16QAM/ Mid CH



B12 / 1.4MHz / QPSK/ High CH



B12 / 1.4MHz / 16QAM/ High CH





B12 / 3MHz / QPSK/ Low CH



B12 / 3MHz / 16QAM/ Low CH



B12 / 3MHz / QPSK/ Mid CH



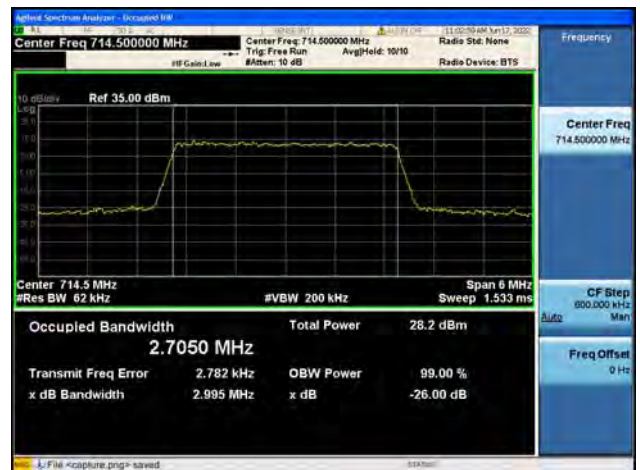
B12 / 3MHz / 16QAM/ Mid CH



B12 / 3MHz / QPSK/ High CH

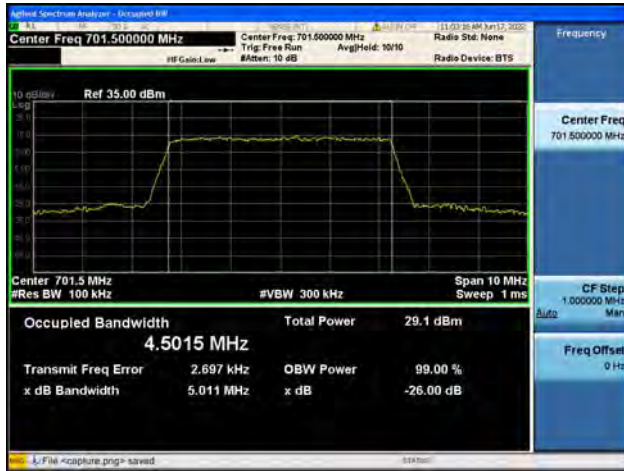


B12 / 3MHz / 16QAM/ High CH





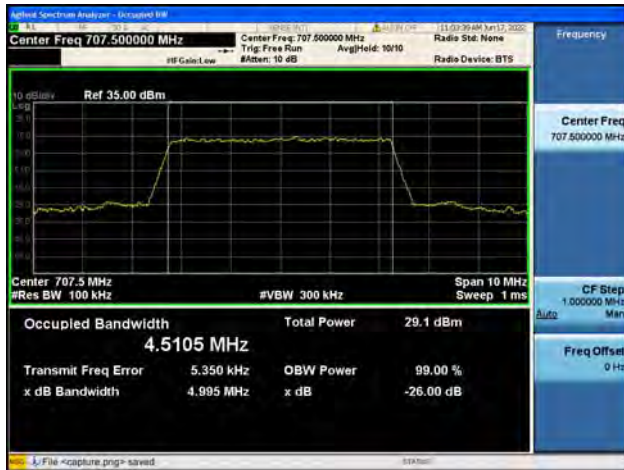
B12 / 5MHz / QPSK/ Low CH



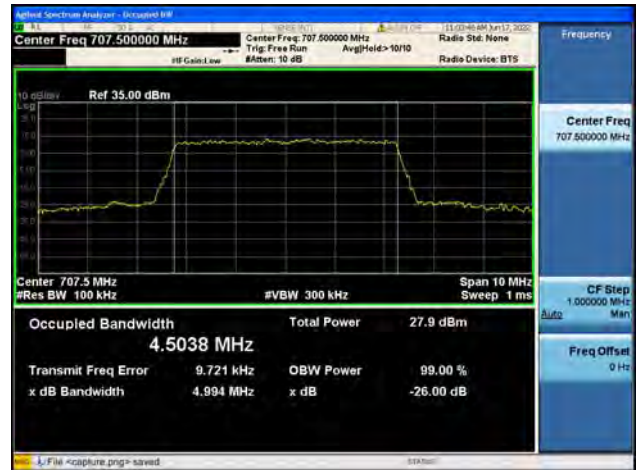
B12 / 5MHz / 16QAM/ Low CH



B12 / 5MHz / QPSK/ Mid CH



B12 / 5MHz / 16QAM/ Mid CH



B12 / 5MHz / QPSK/ High CH



B12 / 5MHz / 16QAM/ High CH

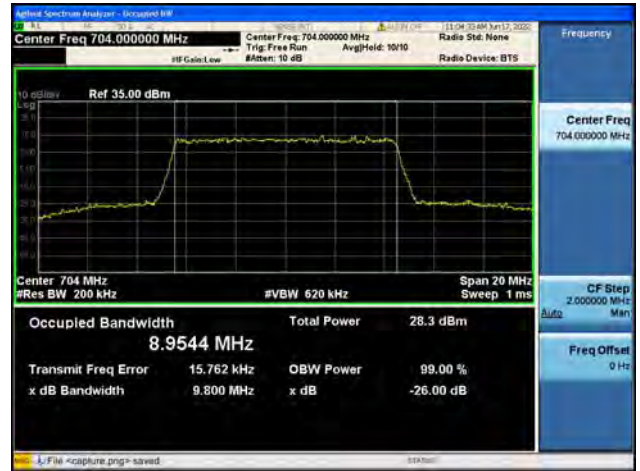




B12 / 10MHz / QPSK/ Low CH



B12 / 10MHz / 16QAM/ Low CH



B12 / 10MHz / QPSK/ Mid CH



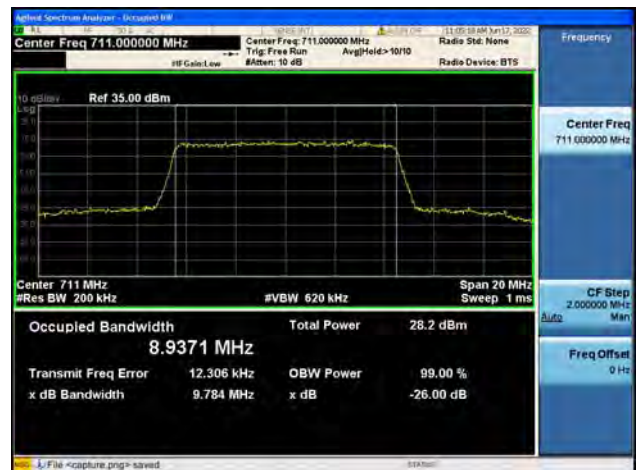
B12 / 10MHz / 16QAM/ Mid CH



B12 / 10MHz / QPSK/ High CH

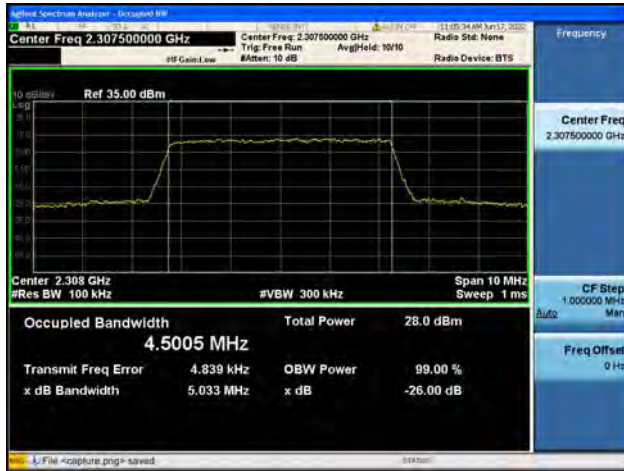


B12 / 10MHz / 16QAM/ High CH

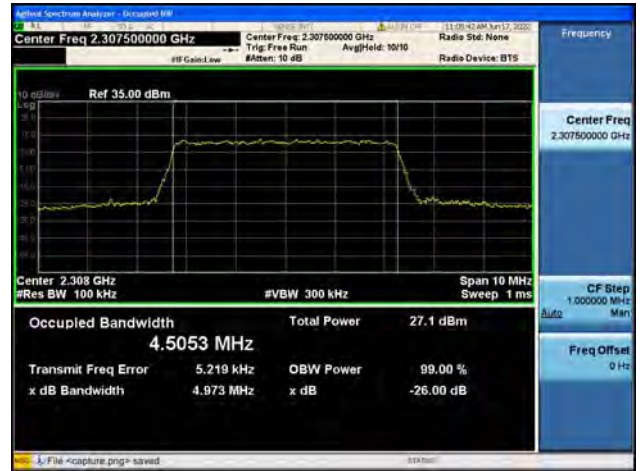




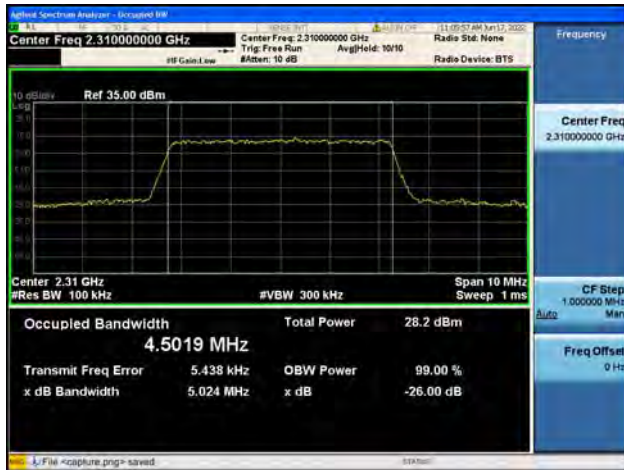
B30 / 5MHz / QPSK/ Low CH



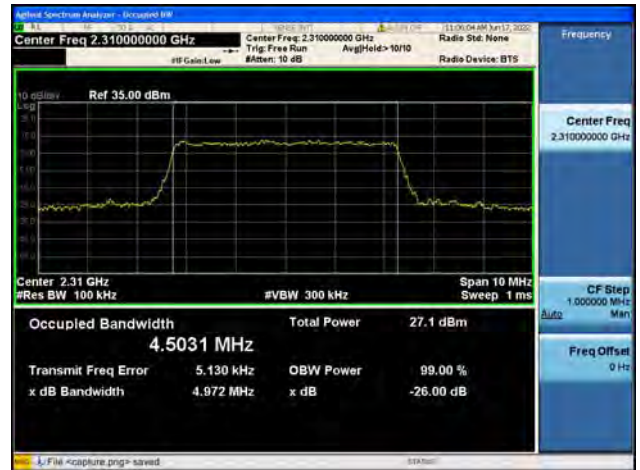
B30 / 5MHz / 16QAM/ Low CH



B30 / 5MHz / QPSK/ Mid CH



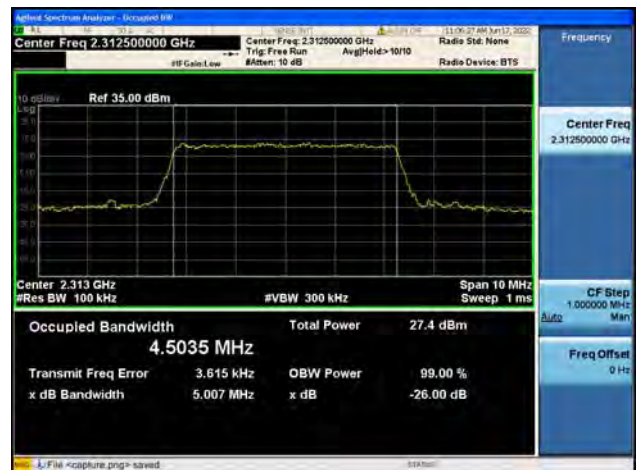
B30 / 5MHz / 16QAM/ Mid CH



B30 / 5MHz / QPSK/ High CH

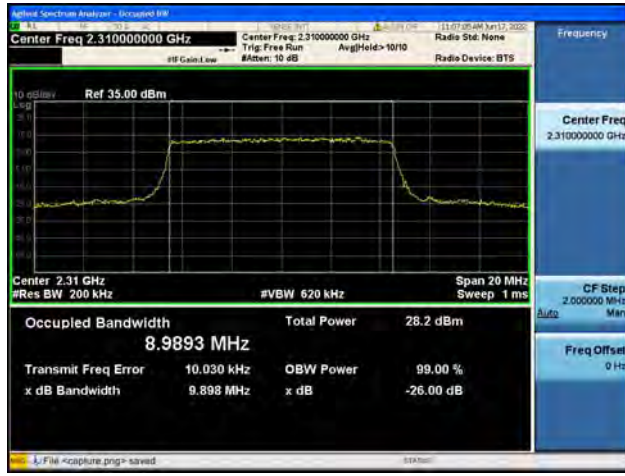


B30 / 5MHz / 16QAM/ High CH





B30 / 10MHz / QPSK/ Mid CH



B30 / 10MHz / 16QAM/ Mid CH





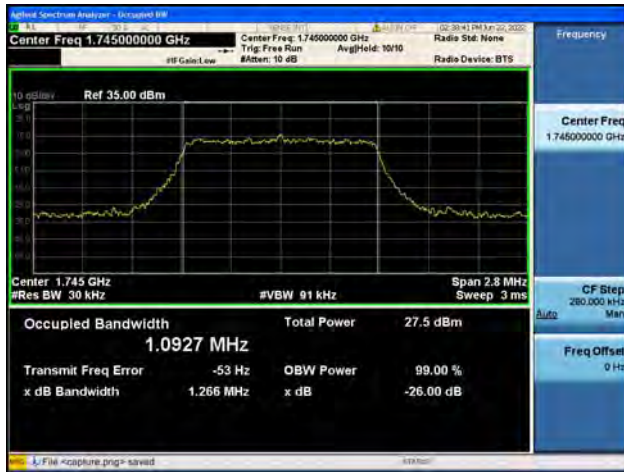
B66 / 1.4MHz / QPSK/ Low CH



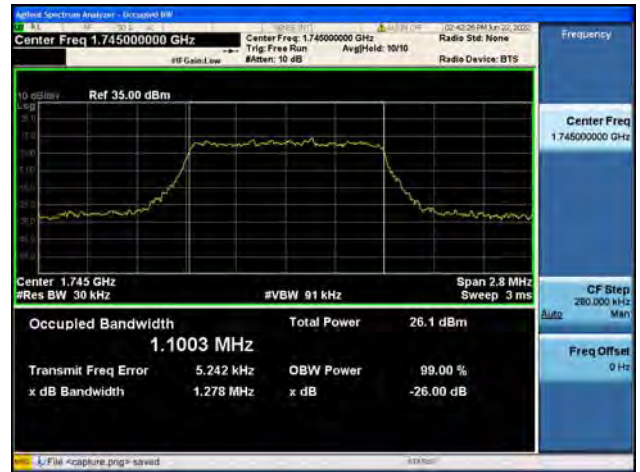
B66 / 1.4MHz / 16QAM/ Low CH



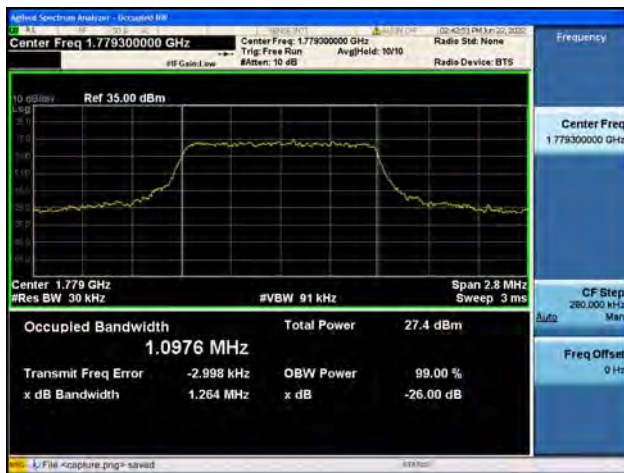
B66 / 1.4MHz / QPSK/ Mid CH



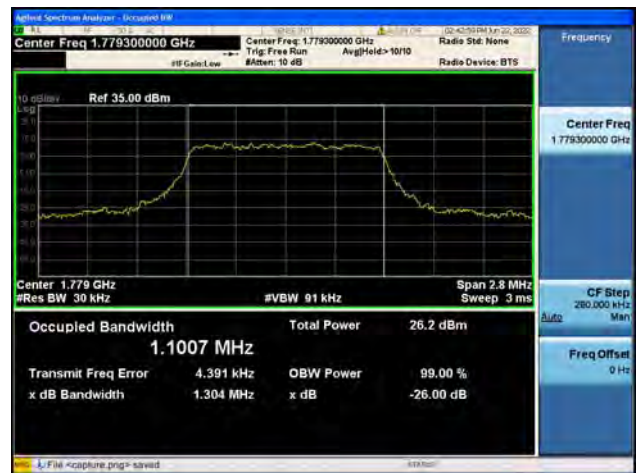
B66 / 1.4MHz / 16QAM/ Mid CH

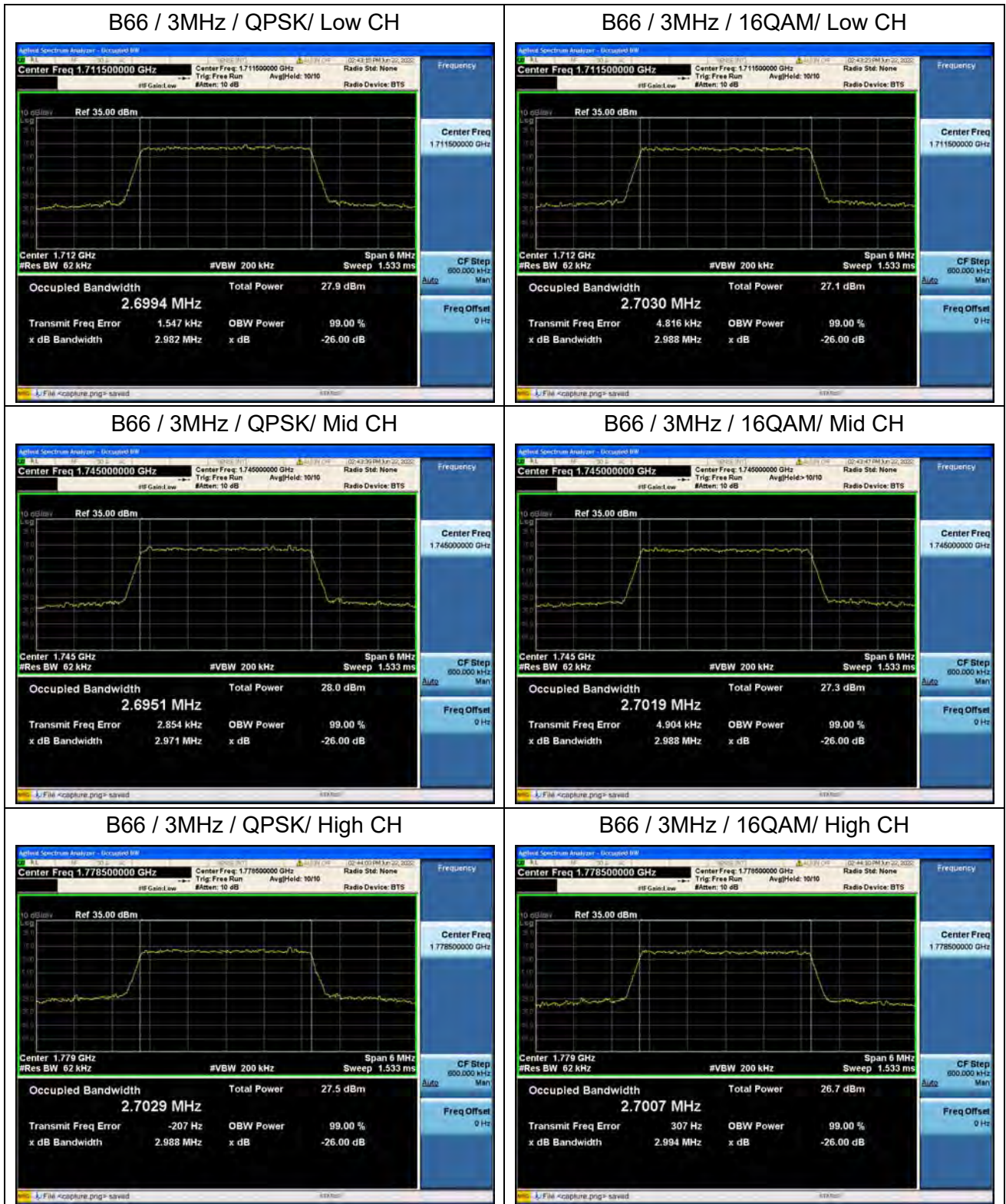


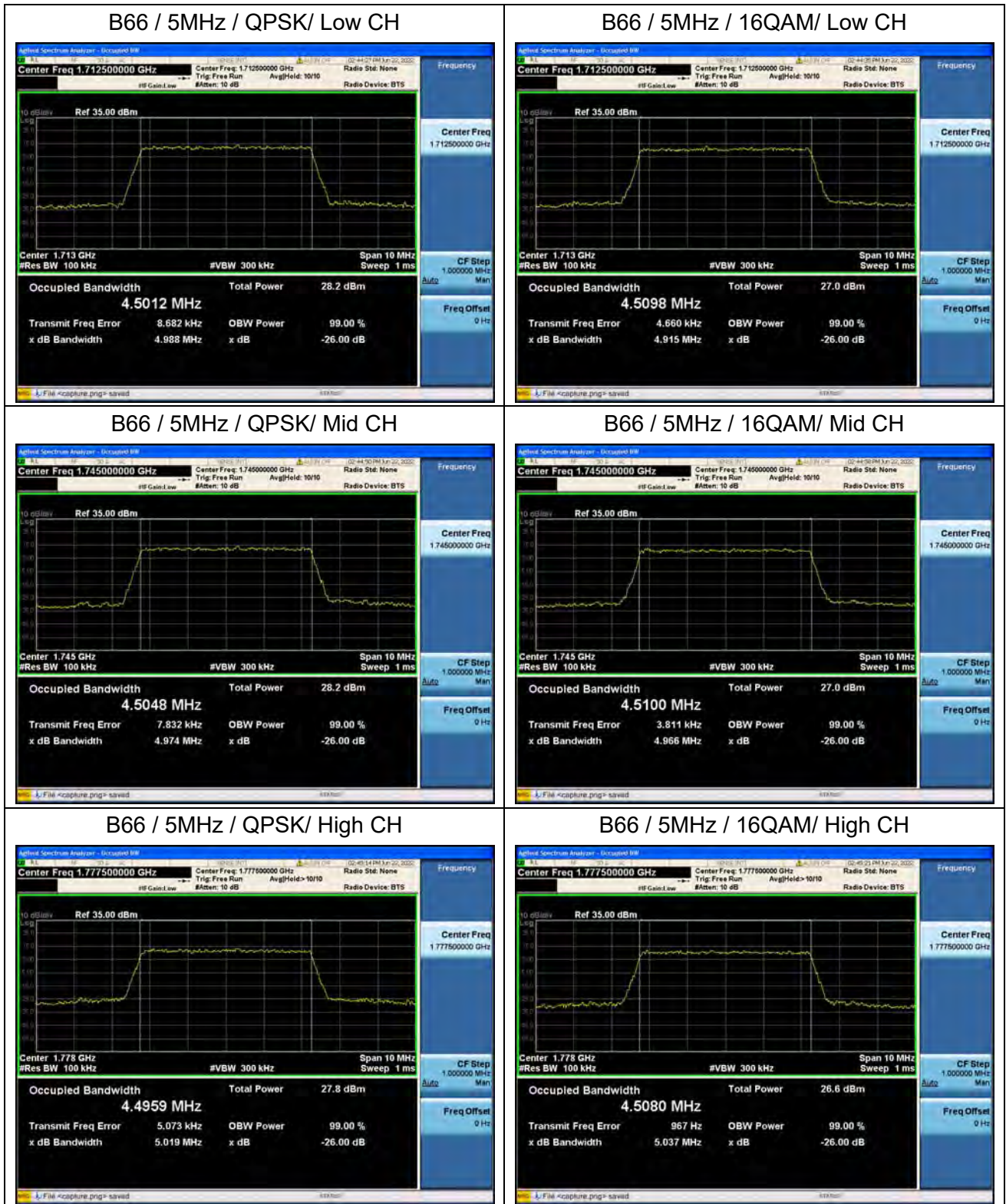
B66 / 1.4MHz / QPSK/ High CH

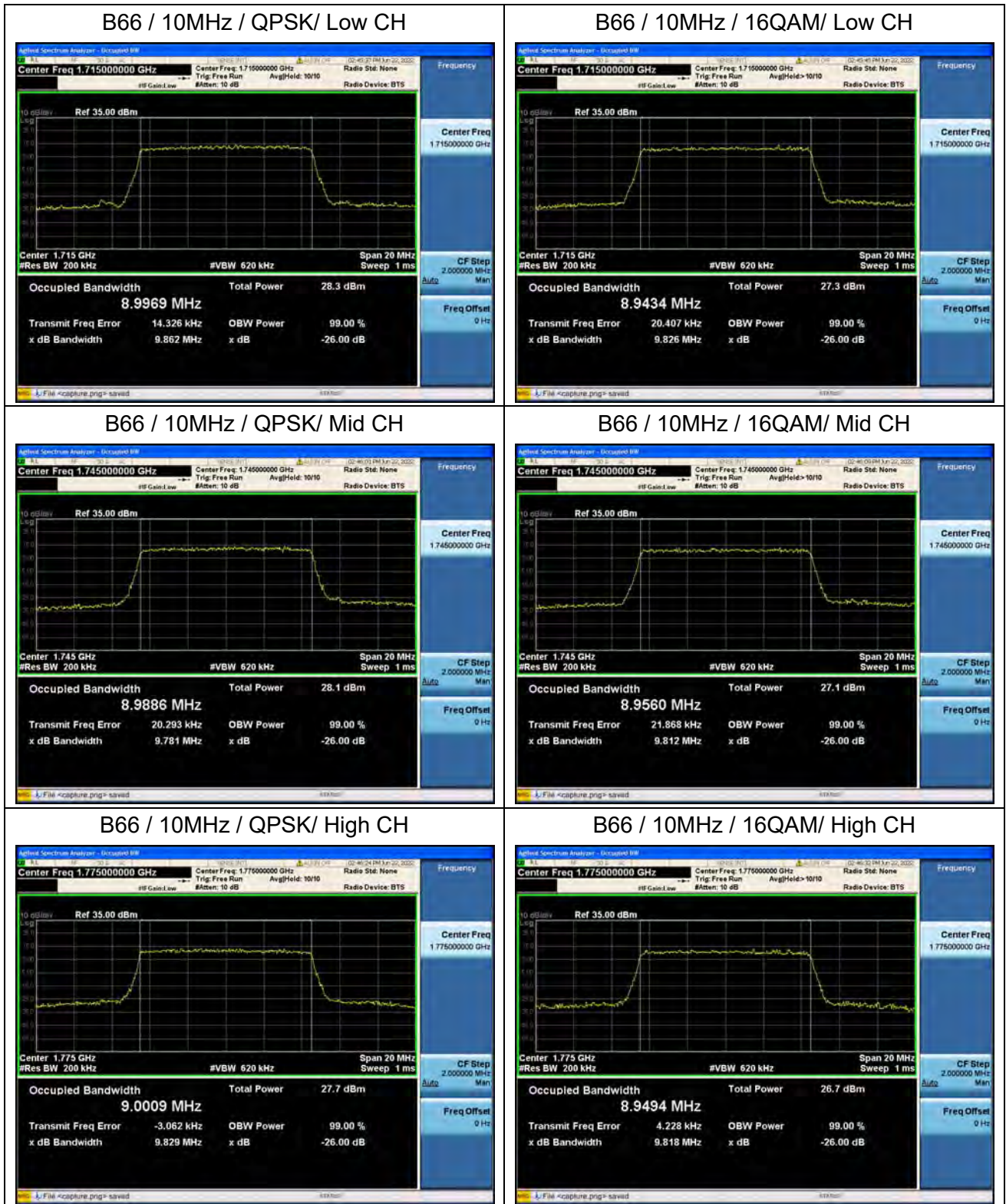


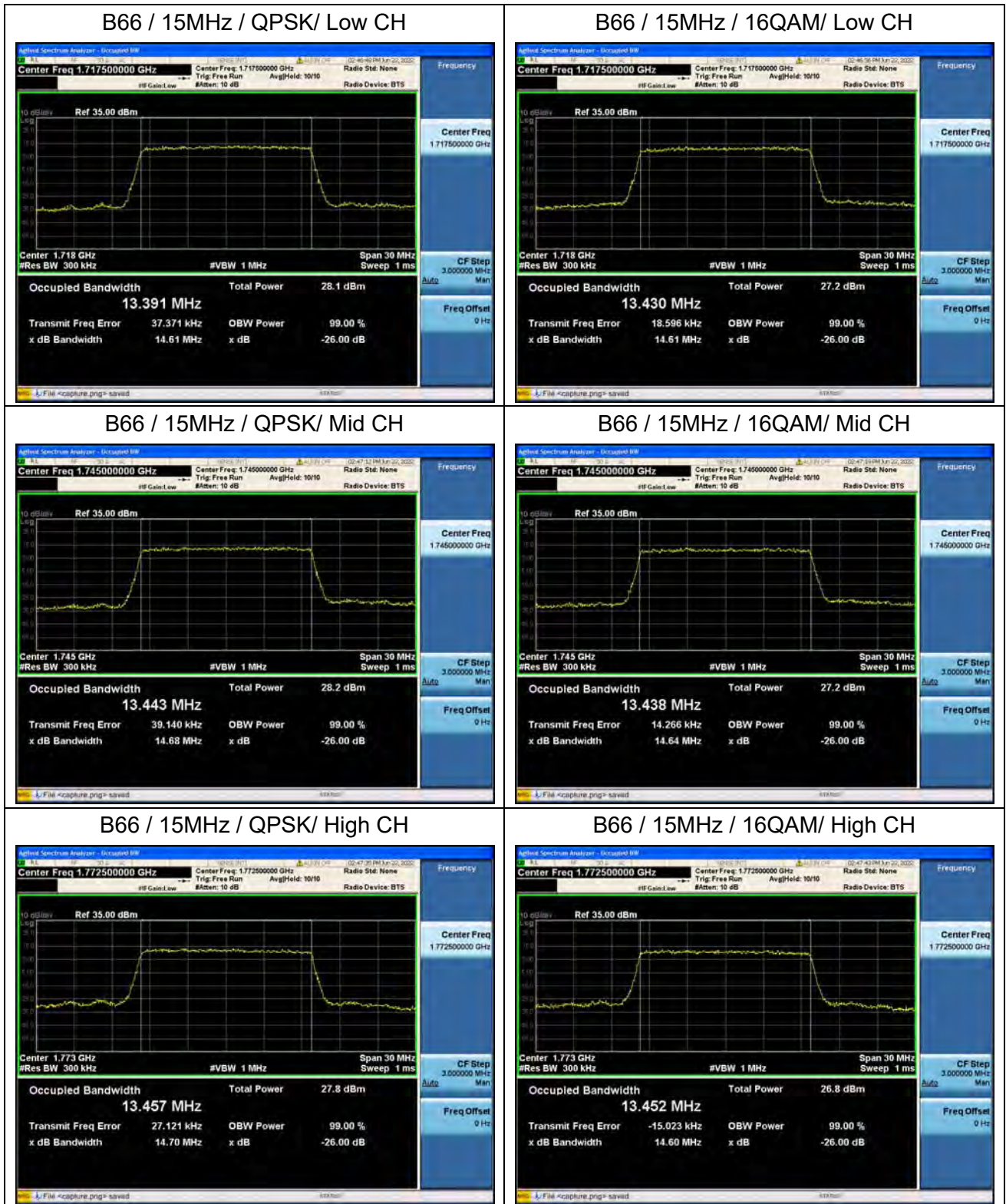
B66 / 1.4MHz / 16QAM/ High CH

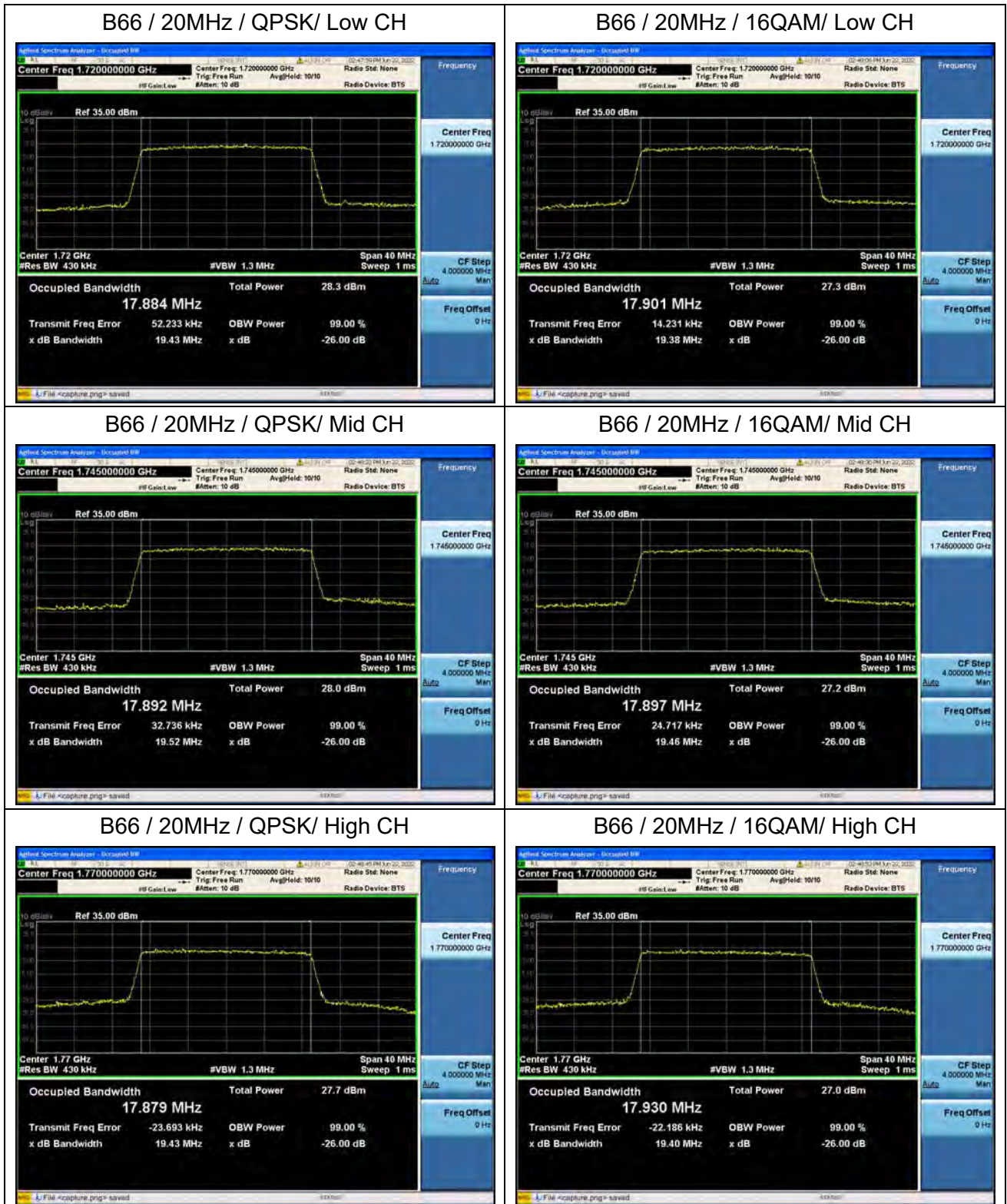












2.3. Frequency Stability

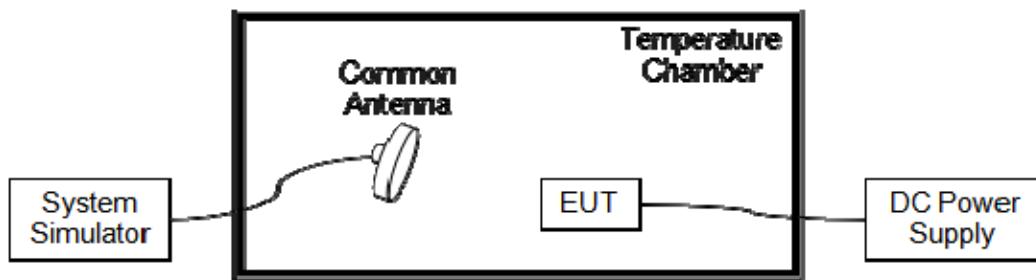
2.3.1. Requirement

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 0°C to 49°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 3.65V, 4.20V and 3.70V, which are specified by the applicant; the normal temperature here used is 20°C.

LTE Band 2, QPSK, Channel 18900, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.70	+20(Ref)	-23	-0.012	PASS
Normal		0	-32	-0.017	
Normal		+10	26	0.014	
Normal		+20	49	0.026	
Normal		+30	-45	-0.024	
Normal		+40	21	0.011	
Normal		+49	14	0.007	
High	4.20	+20	-23	-0.012	
BATT.ENDPOINT	3.65	+20	16	0.009	

LTE Band 4, QPSK, Channel 20175, Frequency 1732.5MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.70	+20(Ref)	-40	-0.023	PASS
Normal		0	33	0.019	
Normal		+10	-27	-0.016	
Normal		+20	57	0.033	
Normal		+30	21	0.012	
Normal		+40	37	0.021	
Normal		+49	-21	-0.012	
High	4.20	+20	18	0.010	
BATT.ENDPOINT	3.65	+20	-58	-0.033	



LTE Band 5, QPSK, Channel 20525, Frequency 836.5MHz Limit=±2.5ppm					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.70	+20(Ref)	27	0.032	PASS
Normal		0	-41	-0.049	
Normal		+10	51	0.061	
Normal		+20	-45	-0.054	
Normal		+30	24	0.029	
Normal		+40	41	0.049	
Normal		+49	39	0.047	
High	4.20	+20	48	0.057	
BATT.ENDPOINT	3.65	+20	-22	-0.026	

LTE Band 12, QPSK, Channel 23095, Frequency 707.5MHz Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.70	+20(Ref)	37	0.052	PASS
Normal		0	19	0.027	
Normal		+10	-44	-0.062	
Normal		+20	14	0.020	
Normal		+30	57	0.081	
Normal		+40	28	0.040	
Normal		+49	-28	-0.040	
High	4.20	+20	42	0.059	
BATT.ENDPOINT	3.65	+20	50	0.071	



LTE Band 30, QPSK, Channel 27710, Frequency 2310.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.70	+20(Ref)	31	0.013	PASS
Normal		0	17	0.007	
Normal		+10	-15	-0.006	
Normal		+20	-23	-0.010	
Normal		+30	43	0.019	
Normal		+40	-19	-0.008	
Normal		+49	36	0.016	
High	4.20	+20	-41	-0.018	
BATT.ENDPOINT	3.65	+20	-15	-0.006	

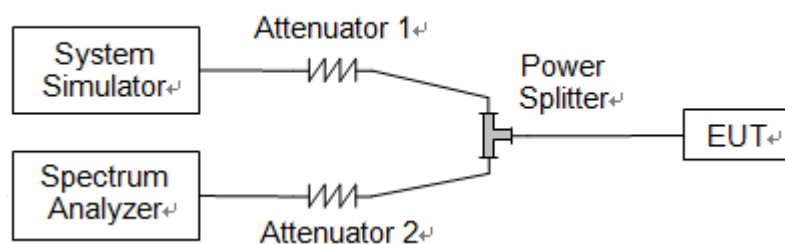
LTE Band 66, QPSK, Channel 132322, Frequency 1745.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.70	+20(Ref)	53	0.030	PASS
Normal		0	43	0.025	
Normal		+10	33	0.019	
Normal		+20	52	0.030	
Normal		+30	17	0.010	
Normal		+40	-54	-0.031	
Normal		+49	48	0.028	
High	4.20	+20	40	0.023	
BATT.ENDPOINT	3.65	+20	40	0.023	

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

Record the maximum PAPR level associated with a probability of 0.1%.



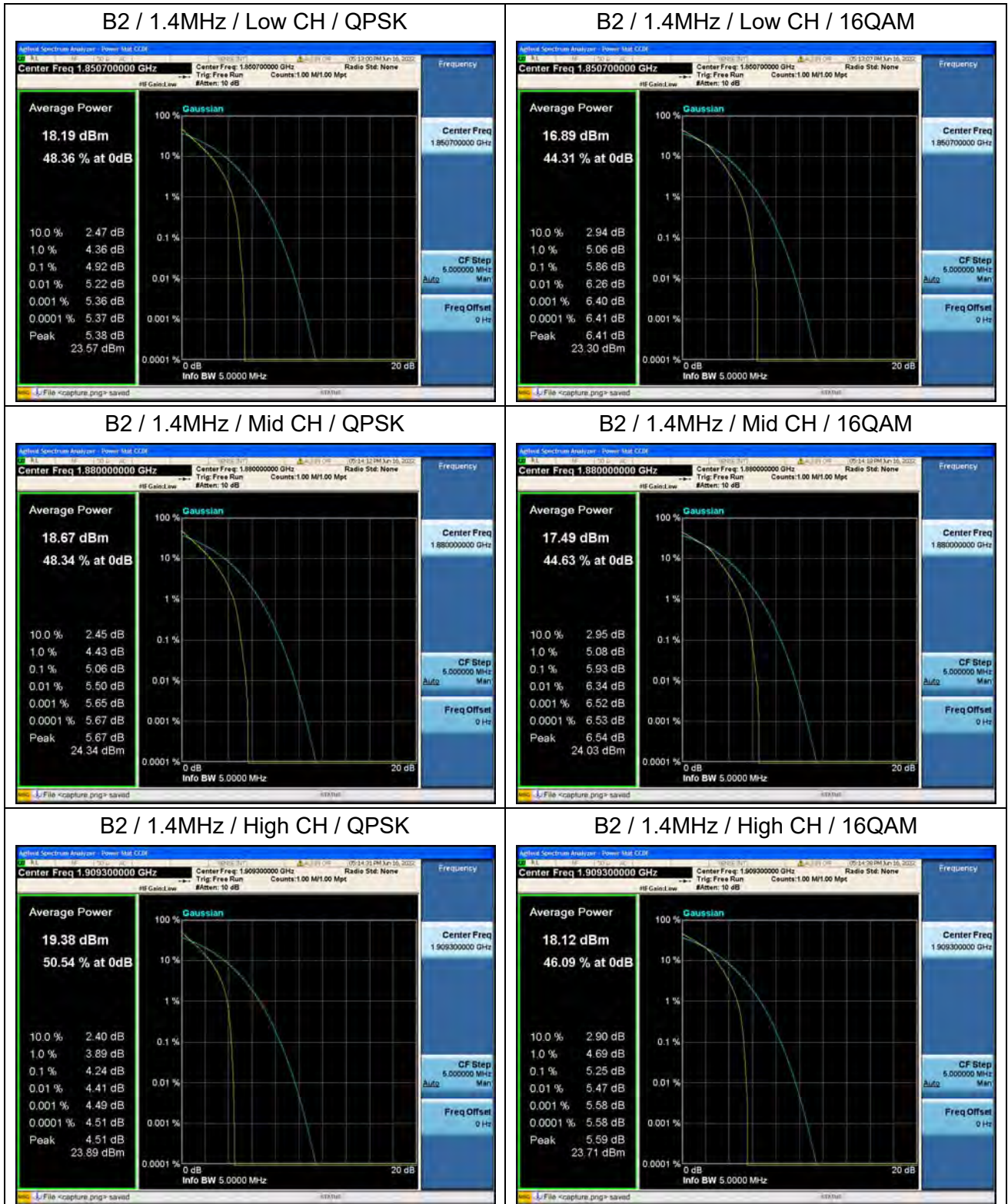
LTE Band 2					
BW(MHz)	Channel Level	Modulation	PAR Radio(dB)	Limit(dB)	Verdict
1.4	Low	QPSK	4.92	<=13	PASS
	Low	16QAM	5.86	<=13	PASS
	Mid	QPSK	5.06	<=13	PASS
	Mid	16QAM	5.93	<=13	PASS
	High	QPSK	4.24	<=13	PASS
	High	16QAM	5.25	<=13	PASS
3	Low	QPSK	5.13	<=13	PASS
	Low	16QAM	5.98	<=13	PASS
	Mid	QPSK	5.07	<=13	PASS
	Mid	16QAM	6.02	<=13	PASS
	High	QPSK	4.56	<=13	PASS
	High	16QAM	5.52	<=13	PASS
5	Low	QPSK	5.15	<=13	PASS
	Low	16QAM	5.92	<=13	PASS
	Mid	QPSK	5.14	<=13	PASS
	Mid	16QAM	5.92	<=13	PASS
	High	QPSK	4.85	<=13	PASS
	High	16QAM	5.64	<=13	PASS
10	Low	QPSK	5.11	<=13	PASS
	Low	16QAM	5.87	<=13	PASS
	Mid	QPSK	5.14	<=13	PASS
	Mid	16QAM	5.92	<=13	PASS
	High	QPSK	5.02	<=13	PASS
	High	16QAM	5.81	<=13	PASS
15	Low	QPSK	5.00	<=13	PASS
	Low	16QAM	5.82	<=13	PASS
	Mid	QPSK	5.04	<=13	PASS
	Mid	16QAM	5.86	<=13	PASS
	High	QPSK	4.94	<=13	PASS
	High	16QAM	5.76	<=13	PASS
20	Low	QPSK	5.00	<=13	PASS
	Low	16QAM	5.89	<=13	PASS
	Mid	QPSK	5.03	<=13	PASS
	Mid	16QAM	5.87	<=13	PASS
	High	QPSK	5.07	<=13	PASS
	High	16QAM	5.94	<=13	PASS



LTE Band 4					
BW(MHz)	Channel Level	Modulation	PAR Radio(dB)	Limit(dB)	Verdict
1.4	Low	QPSK	4.80	<=13	PASS
	Low	16QAM	5.64	<=13	PASS
	Mid	QPSK	5.06	<=13	PASS
	Mid	16QAM	5.88	<=13	PASS
	High	QPSK	4.32	<=13	PASS
	High	16QAM	5.32	<=13	PASS
3	Low	QPSK	4.95	<=13	PASS
	Low	16QAM	5.78	<=13	PASS
	Mid	QPSK	5.18	<=13	PASS
	Mid	16QAM	5.98	<=13	PASS
	High	QPSK	4.50	<=13	PASS
	High	16QAM	5.47	<=13	PASS
5	Low	QPSK	5.08	<=13	PASS
	Low	16QAM	5.85	<=13	PASS
	Mid	QPSK	5.23	<=13	PASS
	Mid	16QAM	6.00	<=13	PASS
	High	QPSK	4.83	<=13	PASS
	High	16QAM	5.60	<=13	PASS
10	Low	QPSK	5.11	<=13	PASS
	Low	16QAM	5.87	<=13	PASS
	Mid	QPSK	5.18	<=13	PASS
	Mid	16QAM	5.97	<=13	PASS
	High	QPSK	4.88	<=13	PASS
	High	16QAM	5.67	<=13	PASS
15	Low	QPSK	4.96	<=13	PASS
	Low	16QAM	5.84	<=13	PASS
	Mid	QPSK	5.06	<=13	PASS
	Mid	16QAM	5.90	<=13	PASS
	High	QPSK	4.77	<=13	PASS
	High	16QAM	5.66	<=13	PASS
20	Low	QPSK	5.03	<=13	PASS
	Low	16QAM	5.88	<=13	PASS
	Mid	QPSK	5.08	<=13	PASS
	Mid	16QAM	5.92	<=13	PASS
	High	QPSK	4.88	<=13	PASS
	High	16QAM	5.75	<=13	PASS

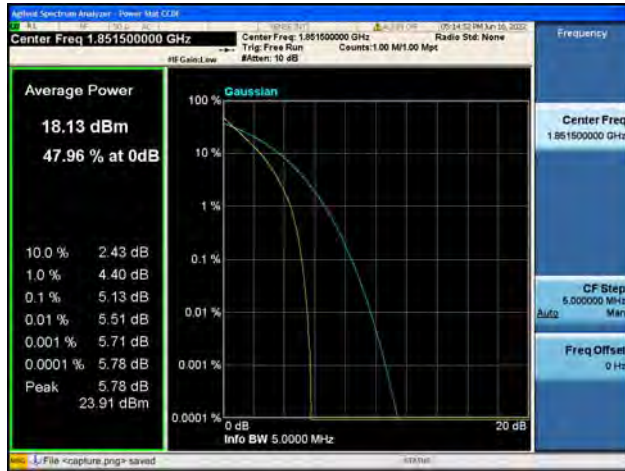


LTE Band 66					
BW(MHz)	Channel Level	Modulation	PAR Radio(dB)	Limit(dB)	Verdict
1.4	Low	QPSK	4.84	<=13	PASS
	Low	16QAM	5.74	<=13	PASS
	Mid	QPSK	4.86	<=13	PASS
	Mid	16QAM	5.72	<=13	PASS
	High	QPSK	4.07	<=13	PASS
	High	16QAM	5.21	<=13	PASS
3	Low	QPSK	5.02	<=13	PASS
	Low	16QAM	5.90	<=13	PASS
	Mid	QPSK	4.98	<=13	PASS
	Mid	16QAM	5.85	<=13	PASS
	High	QPSK	4.41	<=13	PASS
	High	16QAM	5.30	<=13	PASS
5	Low	QPSK	5.14	<=13	PASS
	Low	16QAM	5.91	<=13	PASS
	Mid	QPSK	5.03	<=13	PASS
	Mid	16QAM	5.85	<=13	PASS
	High	QPSK	4.70	<=13	PASS
	High	16QAM	5.52	<=13	PASS
10	Low	QPSK	5.08	<=13	PASS
	Low	16QAM	5.87	<=13	PASS
	Mid	QPSK	5.05	<=13	PASS
	Mid	16QAM	5.83	<=13	PASS
	High	QPSK	4.82	<=13	PASS
	High	16QAM	5.60	<=13	PASS
15	Low	QPSK	5.01	<=13	PASS
	Low	16QAM	5.87	<=13	PASS
	Mid	QPSK	4.89	<=13	PASS
	Mid	16QAM	5.77	<=13	PASS
	High	QPSK	4.70	<=13	PASS
	High	16QAM	5.53	<=13	PASS
20	Low	QPSK	5.01	<=13	PASS
	Low	16QAM	5.91	<=13	PASS
	Mid	QPSK	4.94	<=13	PASS
	Mid	16QAM	5.83	<=13	PASS
	High	QPSK	4.81	<=13	PASS
	High	16QAM	5.66	<=13	PASS





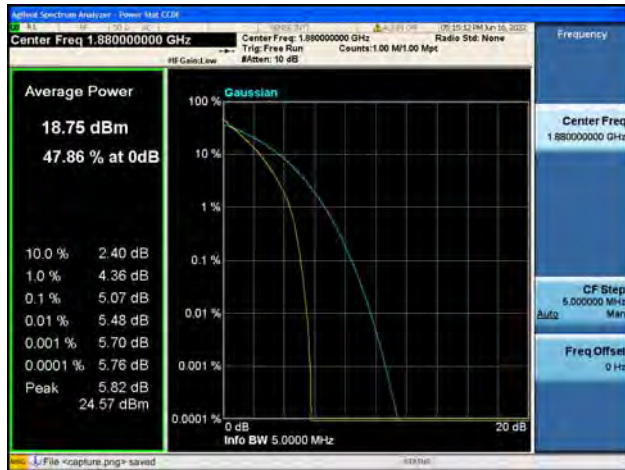
B2 / 3MHz / Low CH / QPSK



B2 / 3MHz / Low CH / 16QAM



B2 / 3MHz / Mid CH / QPSK



B2 / 3MHz / Mid CH / 16QAM



B2 / 3MHz / High CH / QPSK

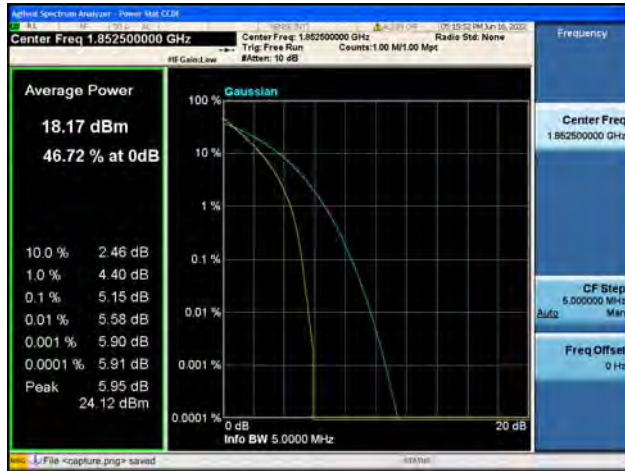


B2 / 3MHz / High CH / 16QAM





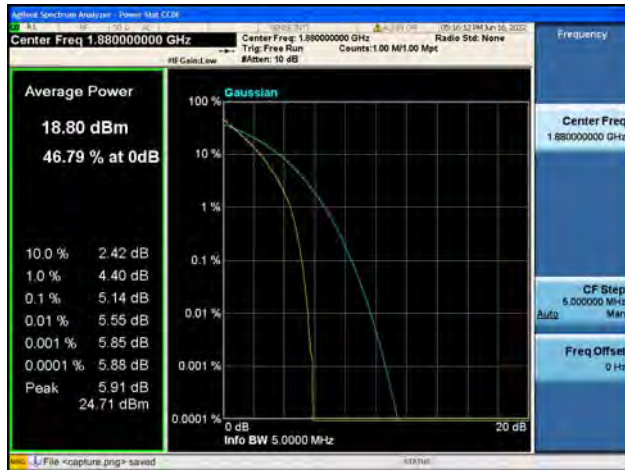
B2 / 5MHz / Low CH / QPSK



B2 / 5MHz / Low CH / 16QAM



B2 / 5MHz / Mid CH / QPSK



B2 / 5MHz / Mid CH / 16QAM



B2 / 5MHz / High CH / QPSK



B2 / 5MHz / High CH / 16QAM





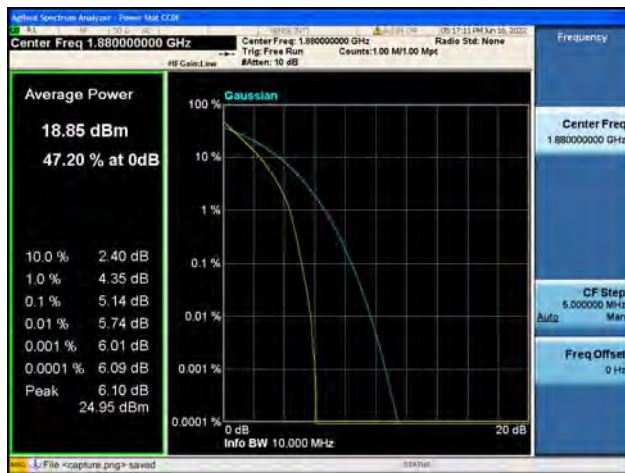
B2 / 10MHz / Low CH / QPSK



B2 / 10MHz / Low CH / 16QAM



B2 / 10MHz / Mid CH / QPSK



B2 / 10MHz / Mid CH / 16QAM



B2 / 10MHz / High CH / QPSK

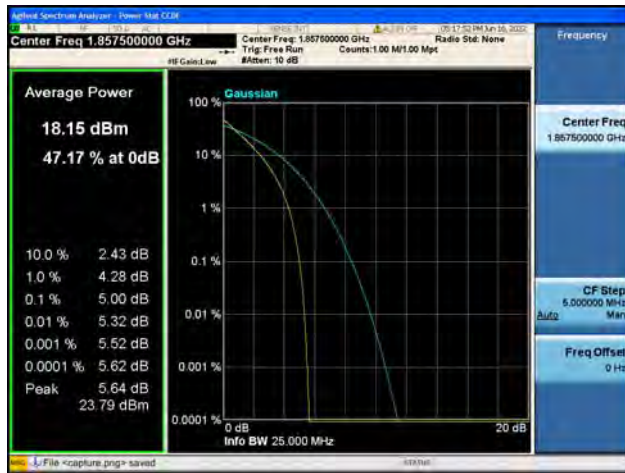


B2 / 10MHz / High CH / 16QAM





B2 / 15MHz / Low CH / QPSK



B2 / 15MHz / Low CH / 16QAM



B2 / 15MHz / Mid CH / QPSK



B2 / 15MHz / Mid CH / 16QAM



B2 / 15MHz / High CH / QPSK

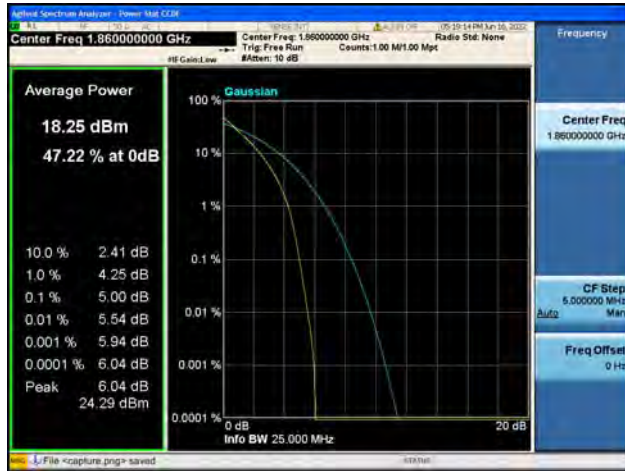


B2 / 15MHz / High CH / 16QAM

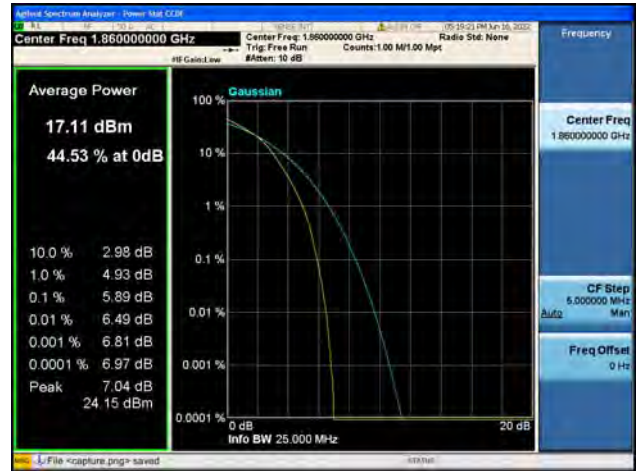




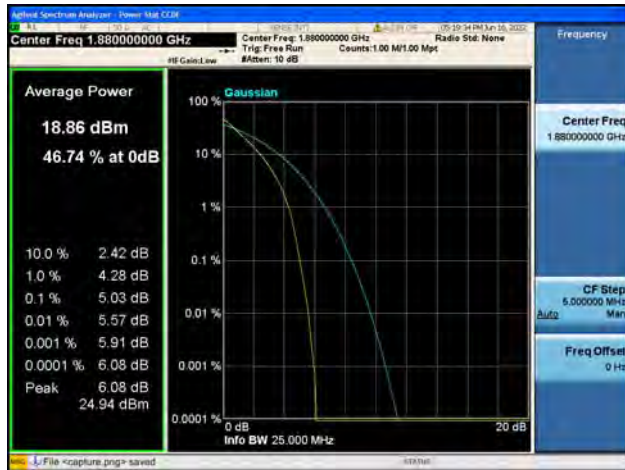
B2 / 20MHz / Low CH / QPSK



B2 / 20MHz / Low CH / 16QAM



B2 / 20MHz / Mid CH / QPSK



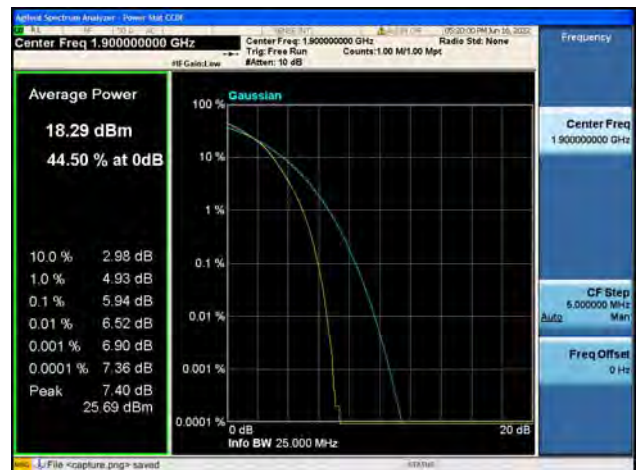
B2 / 20MHz / Mid CH / 16QAM



B2 / 20MHz / High CH / QPSK



B2 / 20MHz / High CH / 16QAM





B4 / 1.4MHz / Low CH / QPSK



B4 / 1.4MHz / Low CH / 16QAM



B4 / 1.4MHz / Mid CH / QPSK



B4 / 1.4MHz / Mid CH / 16QAM



B4 / 1.4MHz / High CH / QPSK



B4 / 1.4MHz / High CH / 16QAM





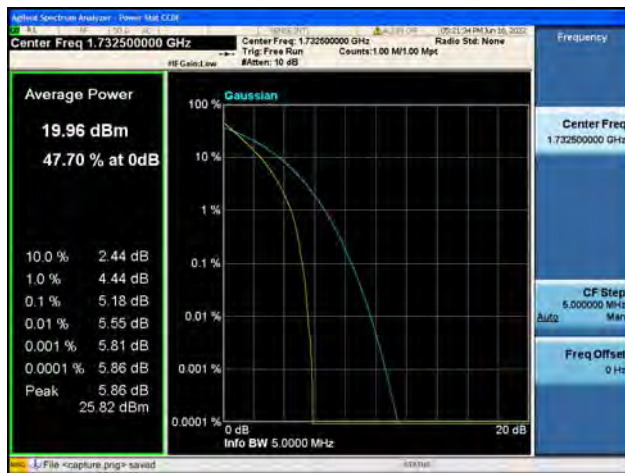
B4 / 3MHz / Low CH / QPSK



B4 / 3MHz / Low CH / 16QAM



B4 / 3MHz / Mid CH / QPSK



B4 / 3MHz / Mid CH / 16QAM



B4 / 3MHz / High CH / QPSK

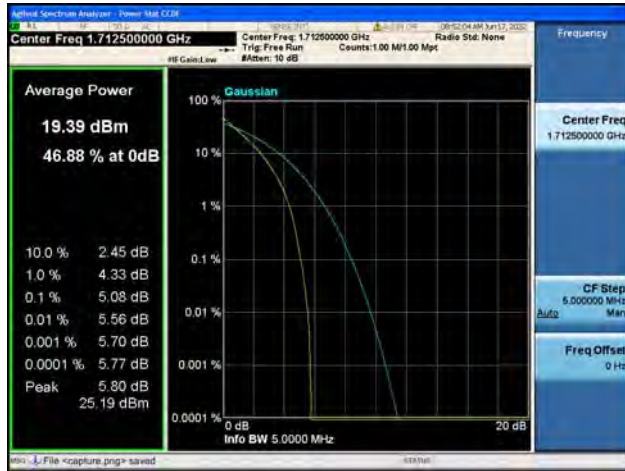


B4 / 3MHz / High CH / 16QAM





B4 / 5MHz / Low CH / QPSK



B4 / 5MHz / Low CH / 16QAM



B4 / 5MHz / Mid CH / QPSK



B4 / 5MHz / Mid CH / 16QAM



B4 / 5MHz / High CH / QPSK

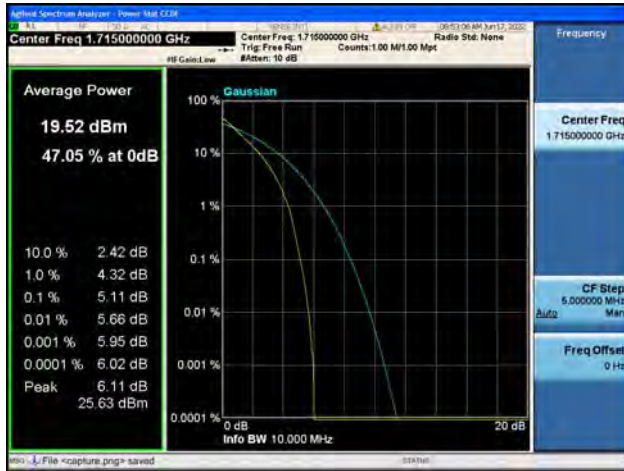


B4 / 5MHz / High CH / 16QAM





B4 / 10MHz / Low CH / QPSK



B4 / 10MHz / Low CH / 16QAM



B4 / 10MHz / Mid CH / QPSK



B4 / 10MHz / Mid CH / 16QAM



B4 / 10MHz / High CH / QPSK



B4 / 10MHz / High CH / 16QAM





B4 / 15MHz / Low CH / QPSK



B4 / 15MHz / Low CH / 16QAM



B4 / 15MHz / Mid CH / QPSK



B4 / 15MHz / Mid CH / 16QAM



B4 / 15MHz / High CH / QPSK

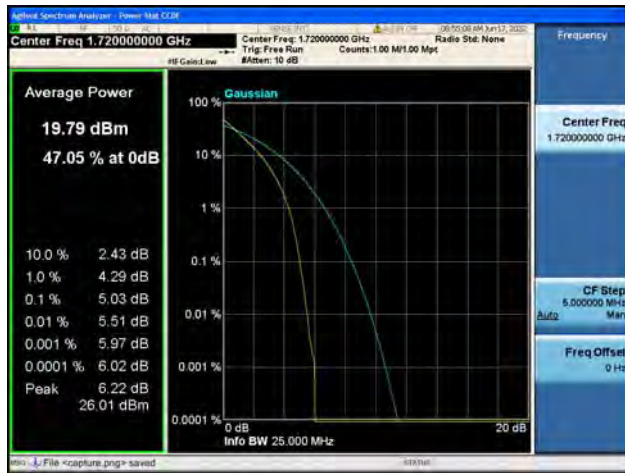


B4 / 15MHz / High CH / 16QAM





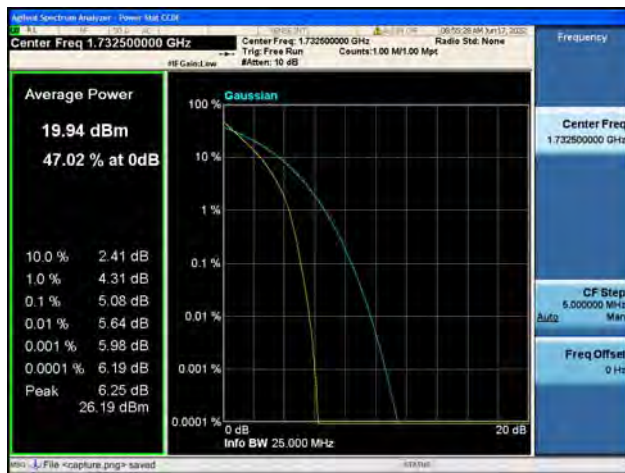
B4 / 20MHz / Low CH / QPSK



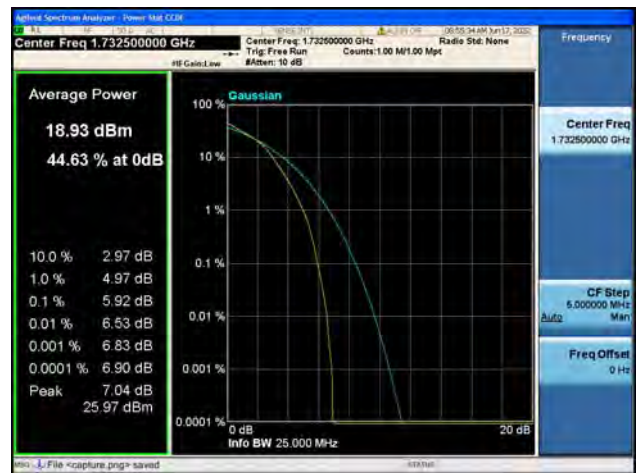
B4 / 20MHz / Low CH / 16QAM



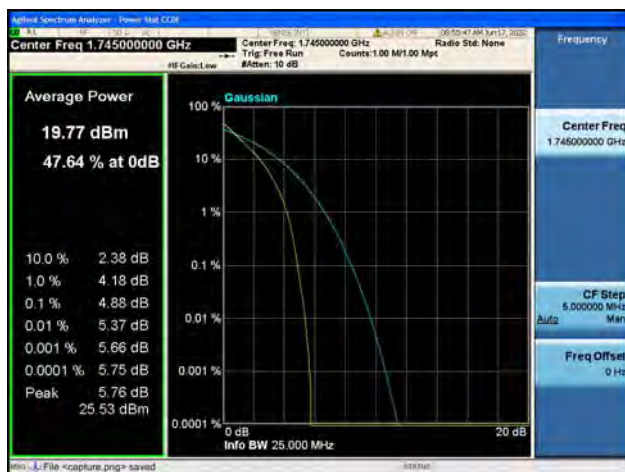
B4 / 20MHz / Mid CH / QPSK



B4 / 20MHz / Mid CH / 16QAM



B4 / 20MHz / High CH / QPSK



B4 / 20MHz / High CH / 16QAM





B66 / 1.4MHz / Low CH / QPSK



B66 / 1.4MHz / Low CH / 16QAM



B66 / 1.4MHz / Mid CH / QPSK



B66 / 1.4MHz / Mid CH / 16QAM



B66 / 1.4MHz / High CH / QPSK

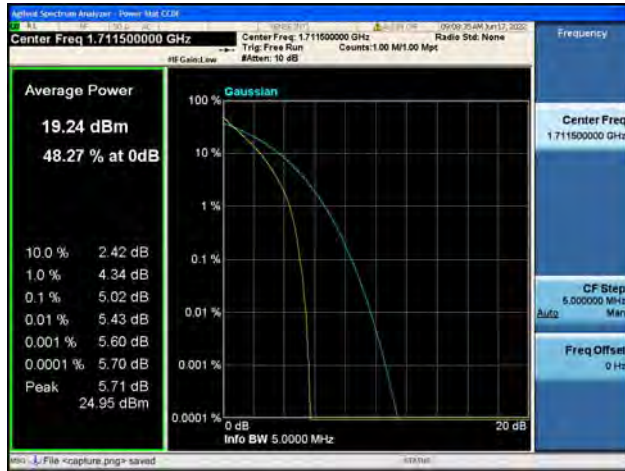


B66 / 1.4MHz / High CH / 16QAM

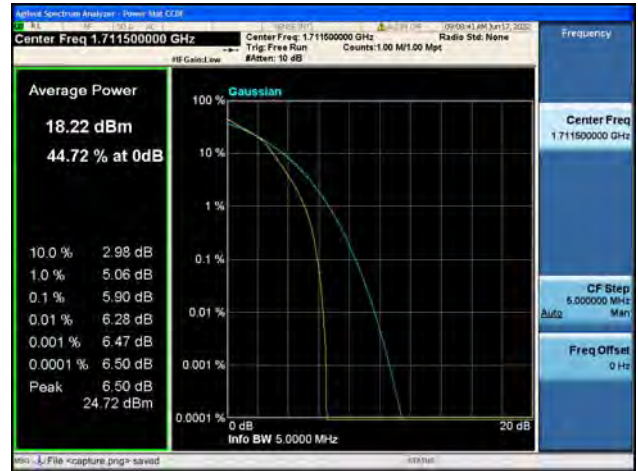




B66 / 3MHz / Low CH / QPSK



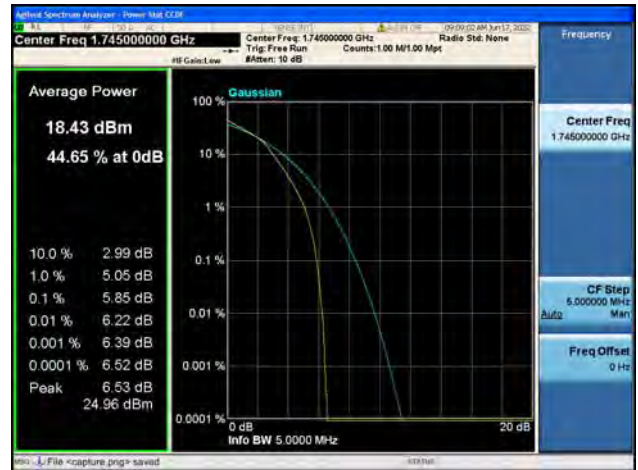
B66 / 3MHz / Low CH / 16QAM



B66 / 3MHz / Mid CH / QPSK



B66 / 3MHz / Mid CH / 16QAM



B66 / 3MHz / High CH / QPSK

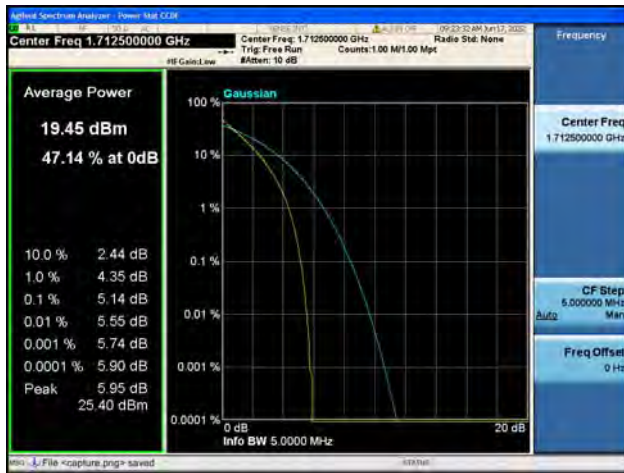


B66 / 3MHz / High CH / 16QAM





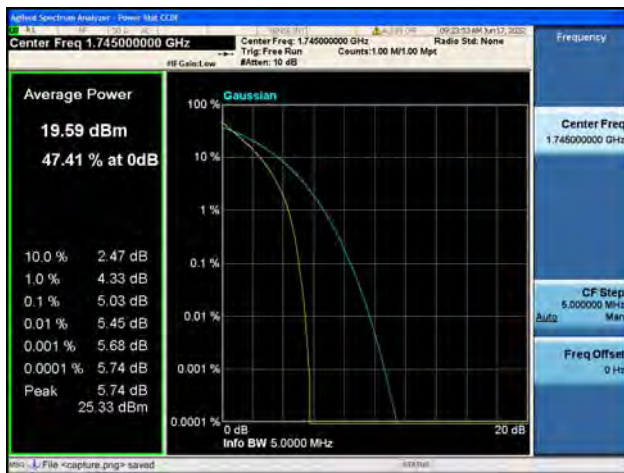
B66 / 5MHz / Low CH / QPSK



B66 / 5MHz / Low CH / 16QAM



B66 / 5MHz / Mid CH / QPSK



B66 / 5MHz / Mid CH / 16QAM



B66 / 5MHz / High CH / QPSK

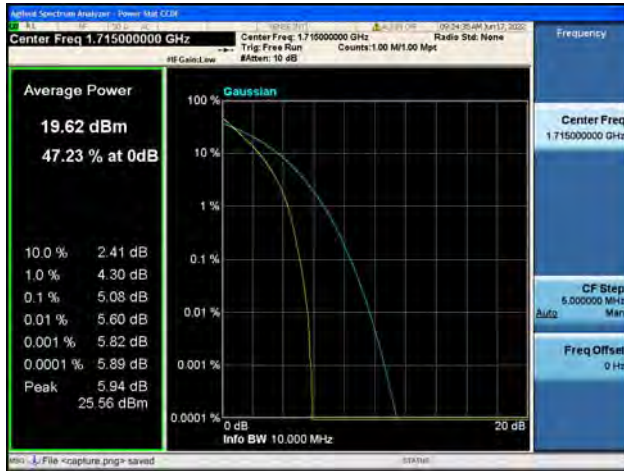


B66 / 5MHz / High CH / 16QAM





B66 / 10MHz / Low CH / QPSK



B66 / 10MHz / Low CH / 16QAM



B66 / 10MHz / Mid CH / QPSK



B66 / 10MHz / Mid CH / 16QAM



B66 / 10MHz / High CH / QPSK

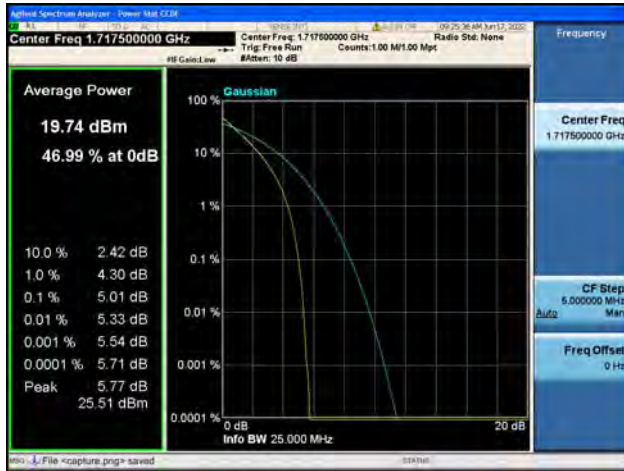


B66 / 10MHz / High CH / 16QAM

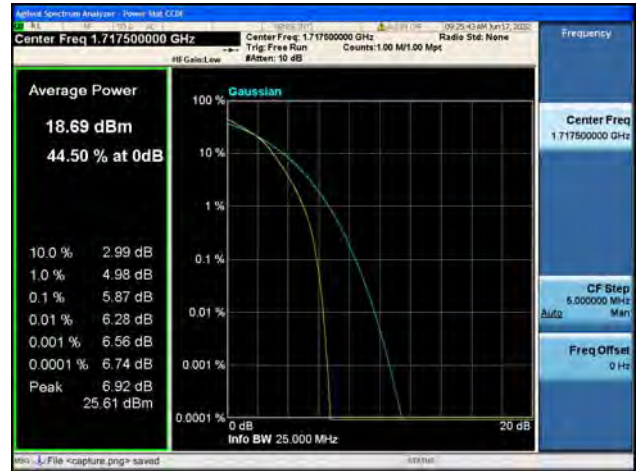




B66 / 15MHz / Low CH / QPSK



B66 / 15MHz / Low CH / 16QAM



B66 / 15MHz / Mid CH / QPSK



B66 / 15MHz / Mid CH / 16QAM



B66 / 15MHz / High CH / QPSK

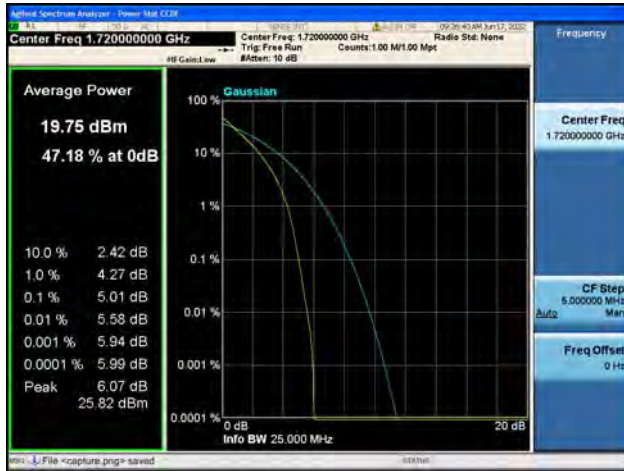


B66 / 15MHz / High CH / 16QAM





B66 / 20MHz / Low CH / QPSK



B66 / 20MHz / Low CH / 16QAM



B66 / 20MHz / Mid CH / QPSK



B66 / 20MHz / Mid CH / 16QAM



B66 / 20MHz / High CH / QPSK



B66 / 20MHz / High CH / 16QAM



2.5. Conducted Spurious Emissions

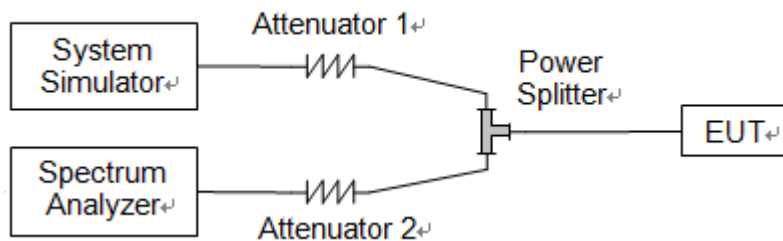
2.5.1. Requirement

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 30:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $70 + 10 \log (P)$ dB. This calculated to be -40dBm.

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

