REPORT No.: SZ22060332W01

TEST REPORT

APPLICANT	:	Nortek Security & Control LLC
PRODUCT NAME	:	Edge Panel
MODEL NAME	:	2GIG-EDG-NA-A
BRAND NAME	:	2GIG
FCC ID	:	EF400227
STANDARD(S)	:	47 CFR Part 2 47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart H&L
RECEIPT DATE	:	2020-07-03
TEST DATE	:	2020-07-16 to 2021-02-04
ISSUE DATE	:	2022-08-19

Edited by: Li Huaijie (Rapporteur)

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DIRECTORY

Change History		
Version	Date	Reason for change
1.0	2022-08-19	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Nortek Security & Control LLC
Applicant Address:	5919 Sea Otter Place, Carlsbad, CA 92010, United States
Manufacturer:	Flextronics Electronics Technology (Shenzhen) Co., Ltd
Manufacturer Address:	89 Yong Fu Road, Tong Fu Yu Industrial Park, Fu Yong Town, Bao An District, Shenzhen, Guangdong, 518103, China

1.2. Equipment Under Test (EUT) Description

Product Name:	Edge Panel	
Serial No.:	2#	
Hardware Version:	A	
Software Version:	0	
Modulation Type:	QPSK, 16QAM	
Operation Band:	Band 2 / 4 / 12	
Frequency Range:	LTE Band 2	Tx: 1850MHz -1910MHz
		Rx: 1930MHz -1990MHz
	LTE Band 4	Tx: 1710MHz -1755MHz
		Rx: 2110MHz - 2155MHz
	LTE Band 12	Tx: 699MHz -716MHz
		Rx: 729MHz - 746MHz
Channel Bandwidth:	LTE Band 2	1.4MHz, 3 MHz, 5 MHz, 10MHz, 15 MHz, 20 MHz
	LTE Band 4	1.4MHz, 3 MHz, 5 MHz, 10MHz, 15 MHz, 20 MHz
	LTE Band 12	1.4MHz, 3MHz, 5MHz, 10MHz
Antenna Type:	FPC Antenna	
Antenna Gain:	LTE Band 2	2.23 dBi
	LTE Band 4	1.37 dBi
	LTE Band 12	0.84 dBi

Accessory Information:	Battery	
	Brand Name:	Highpower
	Model No.:	115150
	Capacity:	4020 mAh
	Rated Voltage:	3.80 V
	Charge Limit:	4.40 V
	AC Adapter	
	Brand Name:	ZBPOWER
	Model No.:	ZB-H140017
	Rated Input:	100-240V ～ 50/60Hz 0.6A
	Rated Output:	14.00V⎓1.70A

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

Note 2: This test report is variant from the original report (Report No.: SZ21050036W01, Model: 2GIG-EDG-NA-A), apply for a renew application. Only the Zigwave andSUB-1G 900MHzchips were replaced, others are the same as before. No other changes. We have evaluated Conducted Spurious Emissions and Radiated Spurious Emissions with no different from the original report.

1.3. Maximum ERP/EIRP and Emission Designator

LTE Band 2	Maximum ERP/EIRP（W）		Emission Designator (99%OBW)	
BW(MHz)	QPSK	16QAM	QPSK	16QAM
20	0.540	0.398	18M0G7D	18M0W7D
15	0.521	0.387	13M5G7D	13M5W7D
10	0.506	0.376	9M01G7D	8M98W7D
5	0.488	0.362	4M51G7D	4M51W7D
3	0.475	0.353	2M70G7D	2M70W7D
1.4	0.460	0.342	1M10G7D	1M10W7D
LTE Band 4	**Maximum ERP/EIRP（W）**		**Emission Designator (99%OBW)**	
BW(MHz)	QPSK	16QAM	QPSK	16QAM
20	0.388	0.272	17M9G7D	18M0W7D
15	0.377	0.264	13M5G7D	13M5W7D
10	0.367	0.258	9M02G7D	8M96W7D
5	0.357	0.251	4M51G7D	4M51W7D
3	0.290	0.204	2M71G7D	2M71W7D
1.4	0.235	0.165	1M09G7D	1M10W7D
LTE Band 12	**Maximum ERP/EIRP（W）**		**Emission Designator (99%OBW)**	
BW(MHz)	QPSK	16QAM	QPSK	16QAM
10	0.243	0.179	8M99G7D	8M98W7D
5	0.237	0.175	4M51G7D	4M51W7D
3	0.232	0.171	2M70G7D	2M70W7D
1.4	0.226	0.167	1M10G7D	1M10W7D

1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 24 and 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 24	Personal Communications Services
3	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, 24.232(c), 27.50	Transmitter Conducted Output Power and ERP/EIRP	Jul 23, 2020	Chen Hao	PASS	No deviation
2.1049	Occupied Bandwidth	Jul 20 to 28, 2020	Zhou Xiaolong	PASS	No deviation
2.1055, 24.235, 27.54	Frequency Stability	Jul 20 to 28, 2020	Zhou Xiaolong	PASS	No deviation
24.232(d), 27.50(d)(5)	Peak to Average Radio	Jul 20 to 28, 2020	Zhou Xiaolong	PASS	No deviation
2.1051, 24.238, 27.53	Conducted Spurious Emissions	Jul 20 to Sep 03, 2020	Zhou Xiaolong	PASS	No deviation
2.1051, 24.238, 27.53	Band Edge	Jul 20 to 28,2020Feb 4,2021	Zhou Xiaolong	PASS	No deviation
2.1051, 24.238, 27.53	Radiated Spurious Emissions	Jul 16, 2020	Gao Jianrou	PASS	No deviation

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

Note 2: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 23.5dB contains two parts that cable loss 13.5dB and Attenuator 10dB.

Note 3: 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 24E and 27H&L Requirements

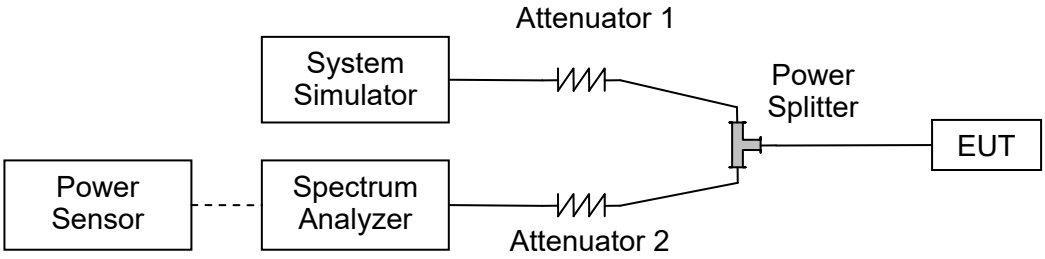
2.1. Transmitter Conducted Output Power And ERP/EIRP

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 EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.
According to FCC section 27.50 (d) for LTE Band 4, fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.

2.1.2. Test Description



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

2.1.3. Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)
ERP (dBm) = EIPR (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	24.63	24.87	25.09
20	QPSK	1	49	24.76	25.06	24.83
20	QPSK	1	99	24.65	24.62	24.76
20	QPSK	50	0	23.51	23.63	23.66
20	QPSK	50	24	23.49	23.72	23.57
20	QPSK	50	50	23.52	23.66	23.72
20	QPSK	100	0	23.33	23.59	23.73
20	16QAM	1	0	23.32	23.54	23.77
20	16QAM	1	49	23.64	23.42	23.61
20	16QAM	1	99	23.50	23.47	23.73
20	16QAM	50	0	23.14	23.26	23.29
20	16QAM	50	24	23.12	23.35	23.20
20	16QAM	50	50	23.15	23.29	23.35
20	16QAM	100	0	23.22	23.29	23.34

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	24.51	24.75	24.94
15	QPSK	1	37	24.64	24.84	24.71
15	QPSK	1	74	24.53	24.50	24.64
15	QPSK	36	0	23.39	23.51	23.54
15	QPSK	36	20	23.37	23.60	23.45
15	QPSK	36	39	23.40	23.54	23.60
15	QPSK	75	0	23.21	23.47	23.61
15	16QAM	1	0	23.20	23.42	23.65
15	16QAM	1	37	23.52	23.30	23.49
15	16QAM	1	74	23.38	23.35	23.61
15	16QAM	36	0	23.02	23.14	23.17
15	16QAM	36	20	23.00	23.23	23.08
15	16QAM	36	39	23.03	23.17	23.23
15	16QAM	75	0	23.10	23.17	23.22

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	24.38	24.62	24.81
10	QPSK	1	25	24.51	24.71	24.58
10	QPSK	1	49	24.40	24.37	24.51
10	QPSK	25	0	23.26	23.38	23.41
10	QPSK	25	12	23.24	23.47	23.32
10	QPSK	25	25	23.27	23.41	23.47
10	QPSK	50	0	23.08	23.34	23.48
10	16QAM	1	0	23.07	23.29	23.52
10	16QAM	1	25	23.39	23.17	23.36
10	16QAM	1	49	23.25	23.22	23.48
10	16QAM	25	0	22.89	23.01	23.04
10	16QAM	25	12	22.87	23.10	22.95
10	16QAM	25	25	22.90	23.04	23.10
10	16QAM	50	0	22.97	23.04	23.09

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	24.22	24.46	24.65
5	QPSK	1	12	24.35	24.55	24.42
5	QPSK	1	24	24.24	24.21	24.35
5	QPSK	12	0	23.10	23.22	23.25
5	QPSK	12	7	23.08	23.31	23.16
5	QPSK	12	13	23.11	23.25	23.31
5	QPSK	25	0	22.92	23.18	23.32
5	16QAM	1	0	22.91	23.13	23.36
5	16QAM	1	12	23.23	23.01	23.20
5	16QAM	1	24	23.09	23.06	23.32
5	16QAM	12	0	22.73	22.85	22.88
5	16QAM	12	7	22.71	22.94	22.79
5	16QAM	12	13	22.74	22.88	22.94
5	16QAM	25	0	22.81	22.88	22.93

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	24.11	24.35	24.54
3	QPSK	1	8	24.24	24.44	24.31
3	QPSK	1	14	24.13	24.10	24.24
3	QPSK	8	0	22.99	23.11	23.14
3	QPSK	8	4	22.97	23.20	23.05
3	QPSK	8	7	23.00	23.14	23.20
3	QPSK	15	0	22.81	23.07	23.21
3	16QAM	1	0	22.80	23.02	23.25
3	16QAM	1	8	23.12	22.90	23.09
3	16QAM	1	14	22.98	22.95	23.21
3	16QAM	8	0	22.62	22.74	22.77
3	16QAM	8	4	22.60	22.83	22.68
3	16QAM	8	7	22.63	22.77	22.83
3	16QAM	15	0	22.70	22.77	22.82

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	23.97	24.21	24.40
1.4	QPSK	1	3	24.10	24.30	24.17
1.4	QPSK	1	5	23.99	23.96	24.10
1.4	QPSK	3	0	22.85	22.97	23.00
1.4	QPSK	3	1	22.83	23.06	22.91
1.4	QPSK	3	3	22.86	23.00	23.06
1.4	QPSK	6	0	22.67	22.93	23.07
1.4	16QAM	1	0	22.66	22.88	23.11
1.4	16QAM	1	3	22.98	22.76	22.95
1.4	16QAM	1	5	22.84	22.81	23.07
1.4	16QAM	3	0	22.48	22.60	22.63
1.4	16QAM	3	1	22.46	22.69	22.54
1.4	16QAM	3	3	22.49	22.63	22.69
1.4	16QAM	6	0	22.56	22.63	22.68

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	24.10	24.18	24.52
20	QPSK	1	49	24.22	24.44	24.40
20	QPSK	1	99	24.38	24.43	24.25
20	QPSK	50	0	23.09	23.12	22.94
20	QPSK	50	24	23.04	23.06	22.89
20	QPSK	50	50	22.98	23.03	22.86
20	QPSK	100	0	23.12	23.05	22.87
20	16QAM	1	0	22.49	22.87	22.91
20	16QAM	1	49	22.98	22.82	22.73
20	16QAM	1	99	22.97	22.94	22.80
20	16QAM	50	0	21.47	21.50	21.32
20	16QAM	50	24	21.42	21.44	21.27
20	16QAM	50	50	21.36	21.41	21.24
20	16QAM	100	0	21.38	21.46	21.21

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	23.97	24.05	24.39
15	QPSK	1	37	24.09	24.31	24.27
15	QPSK	1	74	24.25	24.30	24.12
15	QPSK	36	0	22.96	22.99	22.81
15	QPSK	36	20	22.91	22.93	22.76
15	QPSK	36	39	22.85	22.90	22.73
15	QPSK	75	0	22.99	22.92	22.74
15	16QAM	1	0	22.36	22.74	22.78
15	16QAM	1	37	22.85	22.69	22.60
15	16QAM	1	74	22.84	22.81	22.67
15	16QAM	36	0	21.34	21.37	21.19
15	16QAM	36	20	21.29	21.31	21.14
15	16QAM	36	39	21.23	21.28	21.11
15	16QAM	75	0	21.25	21.33	21.08

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	23.86	23.94	24.28
10	QPSK	1	25	23.98	24.20	24.16
10	QPSK	1	49	24.14	24.19	24.01
10	QPSK	25	0	22.85	22.88	22.70
10	QPSK	25	12	22.80	22.82	22.65
10	QPSK	25	25	22.74	22.79	22.62
10	QPSK	50	0	22.88	22.81	22.63
10	16QAM	1	0	22.25	22.63	22.67
10	16QAM	1	25	22.74	22.58	22.49
10	16QAM	1	49	22.73	22.70	22.56
10	16QAM	25	0	21.23	21.26	21.08
10	16QAM	25	12	21.18	21.20	21.03
10	16QAM	25	25	21.12	21.17	21.00
10	16QAM	50	0	21.14	21.22	20.97

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	23.74	23.82	24.16
5	QPSK	1	12	23.86	24.08	24.04
5	QPSK	1	24	24.02	24.07	23.89
5	QPSK	12	0	22.73	22.76	22.58
5	QPSK	12	7	22.68	22.70	22.53
5	QPSK	12	13	22.62	22.67	22.50
5	QPSK	25	0	22.76	22.69	22.51
5	16QAM	1	0	22.13	22.51	22.55
5	16QAM	1	12	22.62	22.46	22.37
5	16QAM	1	24	22.61	22.58	22.44
5	16QAM	12	0	21.11	21.14	20.96
5	16QAM	12	7	21.06	21.08	20.91
5	16QAM	12	13	21.00	21.05	20.88
5	16QAM	25	0	21.02	21.10	20.85

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	22.84	22.92	23.26
3	QPSK	1	8	22.96	23.18	23.14
3	QPSK	1	14	23.12	23.17	22.99
3	QPSK	8	0	21.83	21.86	21.68
3	QPSK	8	4	21.78	21.80	21.63
3	QPSK	8	7	21.72	21.77	21.60
3	QPSK	15	0	21.86	21.79	21.61
3	16QAM	1	0	21.23	21.61	21.65
3	16QAM	1	8	21.72	21.56	21.47
3	16QAM	1	14	21.71	21.68	21.54
3	16QAM	8	0	20.21	20.24	20.06
3	16QAM	8	4	20.16	20.18	20.01
3	16QAM	8	7	20.10	20.15	19.98
3	16QAM	15	0	20.12	20.20	19.95

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	21.92	22.00	22.34
1.4	QPSK	1	3	22.04	22.26	22.22
1.4	QPSK	1	5	22.20	22.25	22.07
1.4	QPSK	3	0	20.91	20.94	20.76
1.4	QPSK	3	1	20.86	20.88	20.71
1.4	QPSK	3	3	20.80	20.85	20.68
1.4	QPSK	6	0	20.94	20.87	20.69
1.4	16QAM	1	0	20.31	20.69	20.73
1.4	16QAM	1	3	20.80	20.64	20.55
1.4	16QAM	1	5	20.79	20.76	20.62
1.4	16QAM	3	0	19.29	19.32	19.14
1.4	16QAM	3	1	19.24	19.26	19.09
1.4	16QAM	3	3	19.18	19.23	19.06
1.4	16QAM	6	0	19.20	19.28	19.03

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	25.03	25.08	25.16
10	QPSK	1	25	25.11	25.12	25.03
10	QPSK	1	49	24.82	24.96	24.95
10	QPSK	25	0	23.83	23.93	23.94
10	QPSK	25	12	23.91	23.96	23.90
10	QPSK	25	25	23.90	23.84	23.86
10	QPSK	50	0	23.85	23.88	23.96
10	16QAM	1	0	23.85	23.66	23.55
10	16QAM	1	25	23.68	23.62	23.71
10	16QAM	1	49	23.68	23.52	23.73
10	16QAM	25	0	22.76	22.87	22.97
10	16QAM	25	12	22.84	22.95	22.84
10	16QAM	25	25	22.91	22.73	22.89
10	16QAM	50	0	22.87	22.70	22.82

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	24.92	24.97	25.05
5	QPSK	1	12	25.00	25.01	24.92
5	QPSK	1	24	24.71	24.85	24.84
5	QPSK	12	0	23.72	23.82	23.83
5	QPSK	12	7	23.80	23.85	23.79
5	QPSK	12	13	23.79	23.73	23.75
5	QPSK	25	0	23.74	23.77	23.85
5	16QAM	1	0	23.74	23.55	23.44
5	16QAM	1	12	23.57	23.51	23.60
5	16QAM	1	24	23.57	23.41	23.62
5	16QAM	12	0	22.65	22.76	22.86
5	16QAM	12	7	22.73	22.84	22.73
5	16QAM	12	13	22.80	22.62	22.78
5	16QAM	25	0	22.76	22.59	22.71

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	24.83	24.88	24.96
3	QPSK	1	8	24.91	24.92	24.83
3	QPSK	1	14	24.62	24.76	24.75
3	QPSK	8	0	23.63	23.73	23.74
3	QPSK	8	4	23.71	23.76	23.70
3	QPSK	8	7	23.70	23.64	23.66
3	QPSK	15	0	23.65	23.68	23.76
3	16QAM	1	0	23.65	23.46	23.35
3	16QAM	1	8	23.48	23.42	23.51
3	16QAM	1	14	23.48	23.32	23.53
3	16QAM	8	0	22.56	22.67	22.77
3	16QAM	8	4	22.64	22.75	22.64
3	16QAM	8	7	22.71	22.53	22.69
3	16QAM	15	0	22.67	22.50	22.62

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	24.72	24.77	24.85
1.4	QPSK	1	3	24.80	24.81	24.72
1.4	QPSK	1	5	24.51	24.65	24.64
1.4	QPSK	3	0	23.52	23.62	23.63
1.4	QPSK	3	1	23.60	23.65	23.59
1.4	QPSK	3	3	23.59	23.53	23.55
1.4	QPSK	6	0	23.54	23.57	23.65
1.4	16QAM	1	0	23.54	23.35	23.24
1.4	16QAM	1	3	23.37	23.31	23.40
1.4	16QAM	1	5	23.37	23.21	23.42
1.4	16QAM	3	0	22.45	22.56	22.66
1.4	16QAM	3	1	22.53	22.64	22.53
1.4	16QAM	3	3	22.60	22.42	22.58
1.4	16QAM	6	0	22.56	22.39	22.51

Effective Radiated Power and Effective Isotropic Radiated Power:

LTE Band 2				Measured EIRP					
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	26.86	0.485	27.10	0.513	27.32	0.540
20	QPSK	1	49	26.99	0.500	27.29	0.536	27.06	0.508
20	QPSK	1	99	26.88	0.488	26.85	0.484	26.99	0.500
20	QPSK	50	0	25.74	0.375	25.86	0.385	25.89	0.388
20	QPSK	50	24	25.72	0.373	25.95	0.394	25.80	0.380
20	QPSK	50	50	25.75	0.376	25.89	0.388	25.95	0.394
20	QPSK	100	0	25.56	0.360	25.82	0.382	25.96	0.394
20	16QAM	1	0	25.55	0.359	25.77	0.378	26.00	0.398
20	16QAM	1	49	25.87	0.386	25.65	0.367	25.84	0.384
20	16QAM	1	99	25.73	0.374	25.70	0.372	25.96	0.394
20	16QAM	50	0	25.37	0.344	25.49	0.354	25.52	0.356
20	16QAM	50	24	25.35	0.343	25.58	0.361	25.43	0.349
20	16QAM	50	50	25.38	0.345	25.52	0.356	25.58	0.361
20	16QAM	100	0	25.45	0.351	25.52	0.356	25.57	0.361

LTE Band 2				Measured EIRP					
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	26.74	0.472	26.98	0.499	27.17	0.521
15	QPSK	1	37	26.87	0.486	27.07	0.509	26.94	0.494
15	QPSK	1	74	26.76	0.474	26.73	0.471	26.87	0.486
15	QPSK	36	0	25.62	0.365	25.74	0.375	25.77	0.378
15	QPSK	36	20	25.60	0.363	25.83	0.383	25.68	0.370
15	QPSK	36	39	25.63	0.366	25.77	0.378	25.83	0.383
15	QPSK	75	0	25.44	0.350	25.70	0.372	25.84	0.384
15	16QAM	1	0	25.43	0.349	25.65	0.367	25.88	0.387
15	16QAM	1	37	25.75	0.376	25.53	0.357	25.72	0.373
15	16QAM	1	74	25.61	0.364	25.58	0.361	25.84	0.384
15	16QAM	36	0	25.25	0.335	25.37	0.344	25.40	0.347
15	16QAM	36	20	25.23	0.333	25.46	0.352	25.31	0.340
15	16QAM	36	39	25.26	0.336	25.40	0.347	25.46	0.352
15	16QAM	75	0	25.33	0.341	25.40	0.347	25.45	0.351

LTE Band 2				Measured EIRP					
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	26.61	0.458	26.85	0.484	27.04	0.506
10	QPSK	1	25	26.74	0.472	26.94	0.494	26.81	0.480
10	QPSK	1	49	26.63	0.460	26.60	0.457	26.74	0.472
10	QPSK	25	0	25.49	0.354	25.61	0.364	25.64	0.366
10	QPSK	25	12	25.47	0.352	25.70	0.372	25.55	0.359
10	QPSK	25	25	25.50	0.355	25.64	0.366	25.70	0.372
10	QPSK	50	0	25.31	0.340	25.57	0.361	25.71	0.372
10	16QAM	1	0	25.30	0.339	25.52	0.356	25.75	0.376
10	16QAM	1	25	25.62	0.365	25.40	0.347	25.59	0.362
10	16QAM	1	49	25.48	0.353	25.45	0.351	25.71	0.372
10	16QAM	25	0	25.12	0.325	25.24	0.334	25.27	0.337
10	16QAM	25	12	25.10	0.324	25.33	0.341	25.18	0.330
10	16QAM	25	25	25.13	0.326	25.27	0.337	25.33	0.341
10	16QAM	50	0	25.20	0.331	25.27	0.337	25.32	0.340

LTE Band 2				Measured EIRP					
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	26.45	0.442	26.69	0.467	26.88	0.488
5	QPSK	1	12	26.58	0.455	26.78	0.476	26.65	0.462
5	QPSK	1	24	26.47	0.444	26.44	0.441	26.58	0.455
5	QPSK	12	0	25.33	0.341	25.45	0.351	25.48	0.353
5	QPSK	12	7	25.31	0.340	25.54	0.358	25.39	0.346
5	QPSK	12	13	25.34	0.342	25.48	0.353	25.54	0.358
5	QPSK	25	0	25.15	0.327	25.41	0.348	25.55	0.359
5	16QAM	1	0	25.14	0.327	25.36	0.344	25.59	0.362
5	16QAM	1	12	25.46	0.352	25.24	0.334	25.43	0.349
5	16QAM	1	24	25.32	0.340	25.29	0.338	25.55	0.359
5	16QAM	12	0	24.96	0.313	25.08	0.322	25.11	0.324
5	16QAM	12	7	24.94	0.312	25.17	0.329	25.02	0.318
5	16QAM	12	13	24.97	0.314	25.11	0.324	25.17	0.329
5	16QAM	25	0	25.04	0.319	25.11	0.324	25.16	0.328

LTE Band 2				Measured EIRP					
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	26.34	0.431	26.58	0.455	26.77	0.475
3	QPSK	1	8	26.47	0.444	26.67	0.465	26.54	0.451
3	QPSK	1	14	26.36	0.433	26.33	0.430	26.47	0.444
3	QPSK	8	0	25.22	0.333	25.34	0.342	25.37	0.344
3	QPSK	8	4	25.20	0.331	25.43	0.349	25.28	0.337
3	QPSK	8	7	25.23	0.333	25.37	0.344	25.43	0.349
3	QPSK	15	0	25.04	0.319	25.30	0.339	25.44	0.350
3	16QAM	1	0	25.03	0.318	25.25	0.335	25.48	0.353
3	16QAM	1	8	25.35	0.343	25.13	0.326	25.32	0.340
3	16QAM	1	14	25.21	0.332	25.18	0.330	25.44	0.350
3	16QAM	8	0	24.85	0.305	24.97	0.314	25.00	0.316
3	16QAM	8	4	24.83	0.304	25.06	0.321	24.91	0.310
3	16QAM	8	7	24.86	0.306	25.00	0.316	25.06	0.321
3	16QAM	15	0	24.93	0.311	25.00	0.316	25.05	0.320

LTE Band 2				Measured EIRP					
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	26.20	0.417	26.44	0.441	26.63	0.460
1.4	QPSK	1	3	26.33	0.430	26.53	0.450	26.40	0.437
1.4	QPSK	1	5	26.22	0.419	26.19	0.416	26.33	0.430
1.4	QPSK	3	0	25.08	0.322	25.20	0.331	25.23	0.333
1.4	QPSK	3	1	25.06	0.321	25.29	0.338	25.14	0.327
1.4	QPSK	3	3	25.09	0.323	25.23	0.333	25.29	0.338
1.4	QPSK	6	0	24.90	0.309	25.16	0.328	25.30	0.339
1.4	16QAM	1	0	24.89	0.308	25.11	0.324	25.34	0.342
1.4	16QAM	1	3	25.21	0.332	24.99	0.316	25.18	0.330
1.4	16QAM	1	5	25.07	0.321	25.04	0.319	25.30	0.339
1.4	16QAM	3	0	24.71	0.296	24.83	0.304	24.86	0.306
1.4	16QAM	3	1	24.69	0.294	24.92	0.310	24.77	0.300
1.4	16QAM	3	3	24.72	0.296	24.86	0.306	24.92	0.310
1.4	16QAM	6	0	24.79	0.301	24.86	0.306	24.91	0.310

LTE Band 4				Measured EIRP					
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	25.47	0.352	25.55	0.359	25.89	0.388
20	QPSK	1	49	25.59	0.362	25.81	0.381	25.77	0.378
20	QPSK	1	99	25.75	0.376	25.80	0.380	25.62	0.365
20	QPSK	50	0	24.46	0.279	24.49	0.281	24.31	0.270
20	QPSK	50	24	24.41	0.276	24.43	0.277	24.26	0.267
20	QPSK	50	50	24.35	0.272	24.40	0.275	24.23	0.265
20	QPSK	100	0	24.49	0.281	24.42	0.277	24.24	0.265
20	16QAM	1	0	23.86	0.243	24.24	0.265	24.28	0.268
20	16QAM	1	49	24.35	0.272	24.19	0.262	24.10	0.257
20	16QAM	1	99	24.34	0.272	24.31	0.270	24.17	0.261
20	16QAM	50	0	22.84	0.192	22.87	0.194	22.69	0.186
20	16QAM	50	24	22.79	0.190	22.81	0.191	22.64	0.184
20	16QAM	50	50	22.73	0.187	22.78	0.190	22.61	0.182
20	16QAM	100	0	22.75	0.188	22.83	0.192	22.58	0.181

LTE Band 4				Measured EIRP					
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	25.34	0.342	25.42	0.348	25.76	0.377
15	QPSK	1	37	25.46	0.352	25.68	0.370	25.64	0.366
15	QPSK	1	74	25.62	0.365	25.67	0.369	25.49	0.354
15	QPSK	36	0	24.33	0.271	24.36	0.273	24.18	0.262
15	QPSK	36	20	24.28	0.268	24.30	0.269	24.13	0.259
15	QPSK	36	39	24.22	0.264	24.27	0.267	24.10	0.257
15	QPSK	75	0	24.36	0.273	24.29	0.269	24.11	0.258
15	16QAM	1	0	23.73	0.236	24.11	0.258	24.15	0.260
15	16QAM	1	37	24.22	0.264	24.06	0.255	23.97	0.249
15	16QAM	1	74	24.21	0.264	24.18	0.262	24.04	0.254
15	16QAM	36	0	22.71	0.187	22.74	0.188	22.56	0.180
15	16QAM	36	20	22.66	0.185	22.68	0.185	22.51	0.178
15	16QAM	36	39	22.60	0.182	22.65	0.184	22.48	0.177
15	16QAM	75	0	22.62	0.183	22.70	0.186	22.45	0.176

LTE Band 4				Measured EIRP					
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	25.23	0.333	25.31	0.340	25.65	0.367
10	QPSK	1	25	25.35	0.343	25.57	0.361	25.53	0.357
10	QPSK	1	49	25.51	0.356	25.56	0.360	25.38	0.345
10	QPSK	25	0	24.22	0.264	24.25	0.266	24.07	0.255
10	QPSK	25	12	24.17	0.261	24.19	0.262	24.02	0.252
10	QPSK	25	25	24.11	0.258	24.16	0.261	23.99	0.251
10	QPSK	50	0	24.25	0.266	24.18	0.262	24.00	0.251
10	16QAM	1	0	23.62	0.230	24.00	0.251	24.04	0.254
10	16QAM	1	25	24.11	0.258	23.95	0.248	23.86	0.243
10	16QAM	1	49	24.10	0.257	24.07	0.255	23.93	0.247
10	16QAM	25	0	22.60	0.182	22.63	0.183	22.45	0.176
10	16QAM	25	12	22.55	0.180	22.57	0.181	22.40	0.174
10	16QAM	25	25	22.49	0.177	22.54	0.179	22.37	0.173
10	16QAM	50	0	22.51	0.178	22.59	0.182	22.34	0.171

LTE Band 4				Measured EIRP					
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	25.11	0.324	25.19	0.330	25.53	0.357
5	QPSK	1	12	25.23	0.333	25.45	0.351	25.41	0.348
5	QPSK	1	24	25.39	0.346	25.44	0.350	25.26	0.336
5	QPSK	12	0	24.10	0.257	24.13	0.259	23.95	0.248
5	QPSK	12	7	24.05	0.254	24.07	0.255	23.90	0.245
5	QPSK	12	13	23.99	0.251	24.04	0.254	23.87	0.244
5	QPSK	25	0	24.13	0.259	24.06	0.255	23.88	0.244
5	16QAM	1	0	23.50	0.224	23.88	0.244	23.92	0.247
5	16QAM	1	12	23.99	0.251	23.83	0.242	23.74	0.237
5	16QAM	1	24	23.98	0.250	23.95	0.248	23.81	0.240
5	16QAM	12	0	22.48	0.177	22.51	0.178	22.33	0.171
5	16QAM	12	7	22.43	0.175	22.45	0.176	22.28	0.169
5	16QAM	12	13	22.37	0.173	22.42	0.175	22.25	0.168
5	16QAM	25	0	22.39	0.173	22.47	0.177	22.22	0.167

LTE Band 4				Measured EIRP					
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	24.21	0.264	24.29	0.269	24.63	0.290
3	QPSK	1	8	24.33	0.271	24.55	0.285	24.51	0.282
3	QPSK	1	14	24.49	0.281	24.54	0.284	24.36	0.273
3	QPSK	8	0	23.20	0.209	23.23	0.210	23.05	0.202
3	QPSK	8	4	23.15	0.207	23.17	0.207	23.00	0.200
3	QPSK	8	7	23.09	0.204	23.14	0.206	22.97	0.198
3	QPSK	15	0	23.23	0.210	23.16	0.207	22.98	0.199
3	16QAM	1	0	22.60	0.182	22.98	0.199	23.02	0.200
3	16QAM	1	8	23.09	0.204	22.93	0.196	22.84	0.192
3	16QAM	1	14	23.08	0.203	23.05	0.202	22.91	0.195
3	16QAM	8	0	21.58	0.144	21.61	0.145	21.43	0.139
3	16QAM	8	4	21.53	0.142	21.55	0.143	21.38	0.137
3	16QAM	8	7	21.47	0.140	21.52	0.142	21.35	0.136
3	16QAM	15	0	21.49	0.141	21.57	0.144	21.32	0.136

LTE Band 4				Measured EIRP					
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	23.29	0.213	23.37	0.217	23.71	0.235
1.4	QPSK	1	3	23.41	0.219	23.63	0.231	23.59	0.229
1.4	QPSK	1	5	23.57	0.228	23.62	0.230	23.44	0.221
1.4	QPSK	3	0	22.28	0.169	22.31	0.170	22.13	0.163
1.4	QPSK	3	1	22.23	0.167	22.25	0.168	22.08	0.161
1.4	QPSK	3	3	22.17	0.165	22.22	0.167	22.05	0.160
1.4	QPSK	6	0	22.31	0.170	22.24	0.167	22.06	0.161
1.4	16QAM	1	0	21.68	0.147	22.06	0.161	22.10	0.162
1.4	16QAM	1	3	22.17	0.165	22.01	0.159	21.92	0.156
1.4	16QAM	1	5	22.16	0.164	22.13	0.163	21.99	0.158
1.4	16QAM	3	0	20.66	0.116	20.69	0.117	20.51	0.112
1.4	16QAM	3	1	20.61	0.115	20.63	0.116	20.46	0.111
1.4	16QAM	3	3	20.55	0.114	20.60	0.115	20.43	0.110
1.4	16QAM	6	0	20.57	0.114	20.65	0.116	20.40	0.110

LTE Band 12				Measured ERP					
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	23.72	0.236	23.77	0.238	23.85	0.243
10	QPSK	1	25	23.80	0.240	23.81	0.240	23.72	0.236
10	QPSK	1	49	23.51	0.224	23.65	0.232	23.64	0.231
10	QPSK	25	0	22.52	0.179	22.62	0.183	22.63	0.183
10	QPSK	25	12	22.60	0.182	22.65	0.184	22.59	0.182
10	QPSK	25	25	22.59	0.182	22.53	0.179	22.55	0.180
10	QPSK	50	0	22.54	0.179	22.57	0.181	22.65	0.184
10	16QAM	1	0	22.54	0.179	22.35	0.172	22.24	0.167
10	16QAM	1	25	22.37	0.173	22.31	0.170	22.40	0.174
10	16QAM	1	49	22.37	0.173	22.21	0.166	22.42	0.175
10	16QAM	25	0	21.45	0.140	21.56	0.143	21.66	0.147
10	16QAM	25	12	21.53	0.142	21.64	0.146	21.53	0.142
10	16QAM	25	25	21.60	0.145	21.42	0.139	21.58	0.144
10	16QAM	50	0	21.56	0.143	21.39	0.138	21.51	0.142

LTE Band 12				Measured ERP					
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	23.61	0.230	23.66	0.232	23.74	0.237
5	QPSK	1	12	23.69	0.234	23.70	0.234	23.61	0.230
5	QPSK	1	24	23.40	0.219	23.54	0.226	23.53	0.225
5	QPSK	12	0	22.41	0.174	22.51	0.178	22.52	0.179
5	QPSK	12	7	22.49	0.177	22.54	0.179	22.48	0.177
5	QPSK	12	13	22.48	0.177	22.42	0.175	22.44	0.175
5	QPSK	25	0	22.43	0.175	22.46	0.176	22.54	0.179
5	16QAM	1	0	22.43	0.175	22.24	0.167	22.13	0.163
5	16QAM	1	12	22.26	0.168	22.20	0.166	22.29	0.169
5	16QAM	1	24	22.26	0.168	22.10	0.162	22.31	0.170
5	16QAM	12	0	21.34	0.136	21.45	0.140	21.55	0.143
5	16QAM	12	7	21.42	0.139	21.53	0.142	21.42	0.139
5	16QAM	12	13	21.49	0.141	21.31	0.135	21.47	0.140
5	16QAM	25	0	21.45	0.140	21.28	0.134	21.40	0.138

LTE Band 12				Measured ERP					
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	23.52	0.225	23.57	0.228	23.65	0.232
3	QPSK	1	8	23.60	0.229	23.61	0.230	23.52	0.225
3	QPSK	1	14	23.31	0.214	23.45	0.221	23.44	0.221
3	QPSK	8	0	22.32	0.171	22.42	0.175	22.43	0.175
3	QPSK	8	4	22.40	0.174	22.45	0.176	22.39	0.173
3	QPSK	8	7	22.39	0.173	22.33	0.171	22.35	0.172
3	QPSK	15	0	22.34	0.171	22.37	0.173	22.45	0.176
3	16QAM	1	0	22.34	0.171	22.15	0.164	22.04	0.160
3	16QAM	1	8	22.17	0.165	22.11	0.163	22.20	0.166
3	16QAM	1	14	22.17	0.165	22.01	0.159	22.22	0.167
3	16QAM	8	0	21.25	0.133	21.36	0.137	21.46	0.140
3	16QAM	8	4	21.33	0.136	21.44	0.139	21.33	0.136
3	16QAM	8	7	21.40	0.138	21.22	0.132	21.38	0.137
3	16QAM	15	0	21.36	0.137	21.19	0.132	21.31	0.135

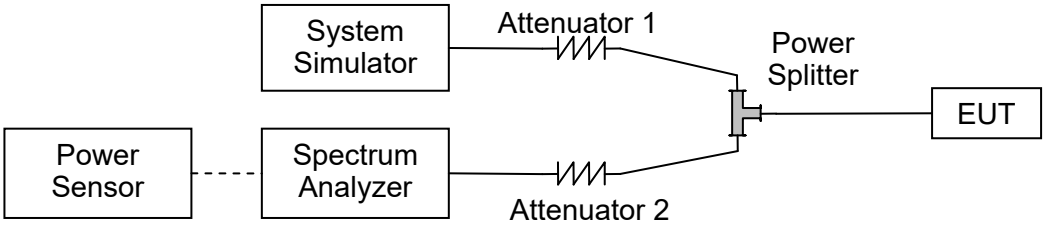
LTE Band 12				Measured ERP					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				23017		23095		23173	
Frequency (MHz)				699.7		707.5		715.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	23.41	0.219	23.46	0.222	23.54	0.226
1.4	QPSK	1	3	23.49	0.223	23.50	0.224	23.41	0.219
1.4	QPSK	1	5	23.20	0.209	23.34	0.216	23.33	0.215
1.4	QPSK	3	0	22.21	0.166	22.31	0.170	22.32	0.171
1.4	QPSK	3	1	22.29	0.169	22.34	0.171	22.28	0.169
1.4	QPSK	3	3	22.28	0.169	22.22	0.167	22.24	0.167
1.4	QPSK	6	0	22.23	0.167	22.26	0.168	22.34	0.171
1.4	16QAM	1	0	22.23	0.167	22.04	0.160	21.93	0.156
1.4	16QAM	1	3	22.06	0.161	22.00	0.158	22.09	0.162
1.4	16QAM	1	5	22.06	0.161	21.90	0.155	22.11	0.163
1.4	16QAM	3	0	21.14	0.130	21.25	0.133	21.35	0.136
1.4	16QAM	3	1	21.22	0.132	21.33	0.136	21.22	0.132
1.4	16QAM	3	3	21.29	0.135	21.11	0.129	21.27	0.134
1.4	16QAM	6	0	21.25	0.133	21.08	0.128	21.20	0.132

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	1.24
	Low	16QAM	1.10	1.24
	Mid	QPSK	1.10	1.24
	Mid	16QAM	1.10	1.23
	High	QPSK	1.10	1.23
	High	16QAM	1.10	1.23
3	Low	QPSK	2.70	2.99
	Low	16QAM	2.70	3.00
	Mid	QPSK	2.70	3.00
	Mid	16QAM	2.70	3.02
	High	QPSK	2.70	2.98
	High	16QAM	2.70	3.02
5	Low	QPSK	4.51	5.03
	Low	16QAM	4.51	4.99
	Mid	QPSK	4.50	4.97
	Mid	16QAM	4.51	4.96
	High	QPSK	4.51	4.99
	High	16QAM	4.51	4.97
10	Low	QPSK	9.00	9.86
	Low	16QAM	8.96	9.74
	Mid	QPSK	9.01	9.84
	Mid	16QAM	8.98	9.74
	High	QPSK	8.98	9.84
	High	16QAM	8.96	9.75
15	Low	QPSK	13.44	14.65
	Low	16QAM	13.47	14.63
	Mid	QPSK	13.46	14.67
	Mid	16QAM	13.46	14.78
	High	QPSK	13.45	14.65
	High	16QAM	13.47	14.68
20	Low	QPSK	17.92	19.53
	Low	16QAM	17.96	19.41
	Mid	QPSK	17.96	19.71
	Mid	16QAM	17.97	19.49
	High	QPSK	17.93	19.49
	High	16QAM	17.96	19.48

LTE Band 4				
BW(MHz)	**Channel Level**	**Modulation**	**99% BW(MHz)**	**26dB BW(MHz)**
1.4	Low	QPSK	1.09	1.23
	Low	16QAM	1.10	1.25
	Mid	QPSK	1.09	1.23
	Mid	16QAM	1.10	1.24
	High	QPSK	1.09	1.24
	High	16QAM	1.10	1.24
3	Low	QPSK	2.70	3.01
	Low	16QAM	2.70	3.01
	Mid	QPSK	2.71	3.01
	Mid	16QAM	2.71	3.00
	High	QPSK	2.70	2.98
	High	16QAM	2.70	3.02
5	Low	QPSK	4.50	5.01
	Low	16QAM	4.51	4.99
	Mid	QPSK	4.50	4.99
	Mid	16QAM	4.51	4.94
	High	QPSK	4.51	5.01
	High	16QAM	4.51	4.99
10	Low	QPSK	8.96	9.77
	Low	16QAM	8.96	9.81
	Mid	QPSK	9.02	9.77
	Mid	16QAM	8.96	9.79
	High	QPSK	8.99	9.83
	High	16QAM	8.96	9.79
15	Low	QPSK	13.48	14.60
	Low	16QAM	13.47	14.71
	Mid	QPSK	13.47	14.62
	Mid	16QAM	13.46	14.67
	High	QPSK	13.43	14.73
	High	16QAM	13.47	14.65
20	Low	QPSK	17.94	19.55
	Low	16QAM	17.96	19.43
	Mid	QPSK	17.91	19.49
	Mid	16QAM	17.91	19.53
	High	QPSK	17.93	19.44
	High	16QAM	17.92	19.51

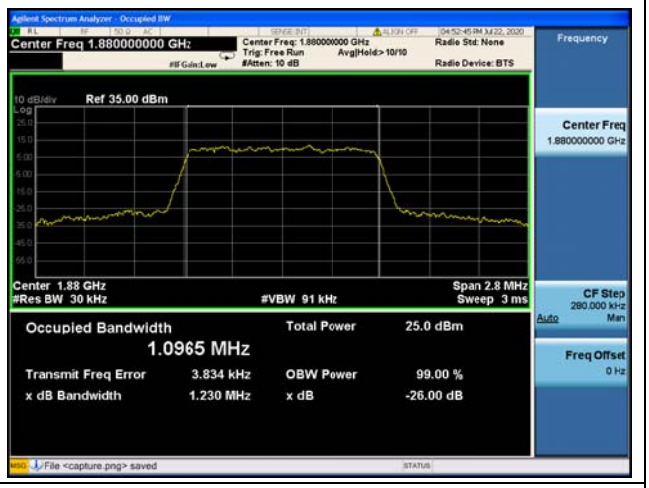
LTE Band 12				
BW(MHz)	**Channel Level**	**Modulation**	**99% BW(MHz)**	**26dB BW(MHz)**
1.4	Low	QPSK	1.09	1.24
	Low	16QAM	1.10	1.24
	Mid	QPSK	1.10	1.24
	Mid	16QAM	1.10	1.24
	High	QPSK	1.09	1.24
	High	16QAM	1.10	1.24
3	Low	QPSK	2.70	3.00
	Low	16QAM	2.70	3.00
	Mid	QPSK	2.70	3.00
	Mid	16QAM	2.70	3.00
	High	QPSK	2.70	3.01
	High	16QAM	2.70	3.00
5	Low	QPSK	4.51	4.98
	Low	16QAM	4.51	4.97
	Mid	QPSK	4.51	5.02
	Mid	16QAM	4.50	4.94
	High	QPSK	4.51	4.99
	High	16QAM	4.49	4.95
10	Low	QPSK	8.98	9.84
	Low	16QAM	8.96	9.80
	Mid	QPSK	8.99	9.85
	Mid	16QAM	8.98	9.72
	High	QPSK	8.97	9.78
	High	16QAM	8.95	9.71

Band 2 / 1.4MHz / Low CH / QPSK

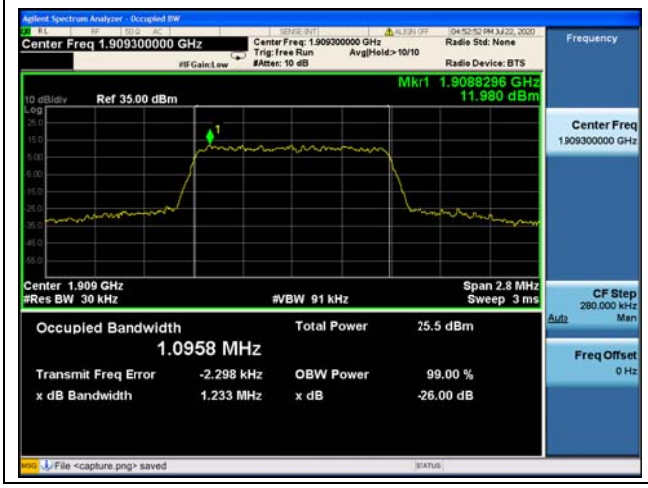
Band 2 / 1.4MHz / Low CH / 16QAM

Band 2 / 1.4MHz / Mid CH / QPSK

Band 2 / 1.4MHz / Mid CH / 16QAM

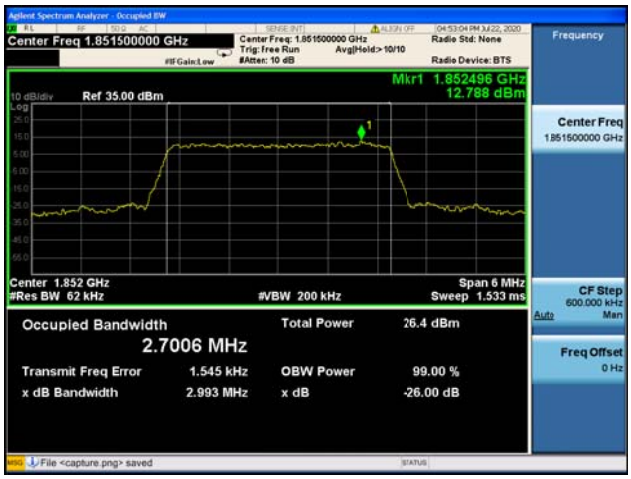


Band 2 / 1.4MHz / High CH / QPSK

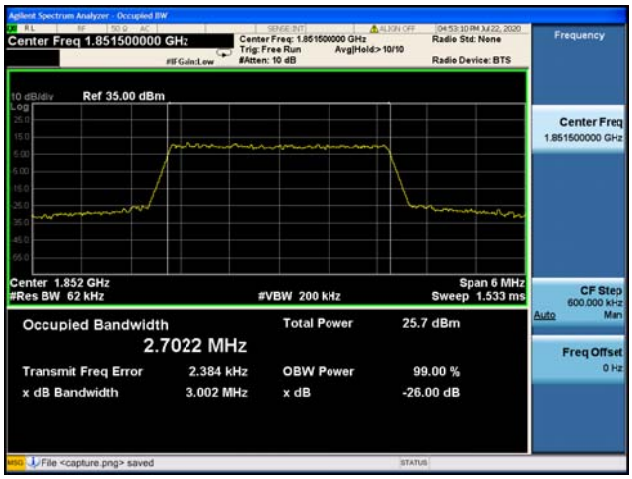


Band 2 / 1.4MHz / High CH / 16QAM

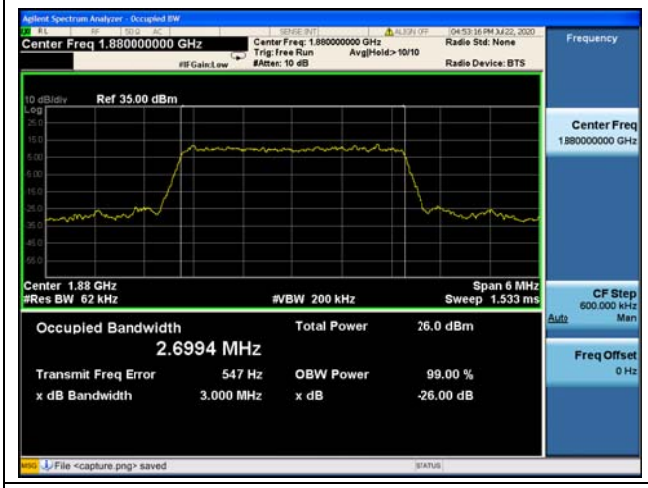
Band 2 / 3MHz / Low CH / QPSK



Band 2 / 3MHz / Low CH / 16QAM

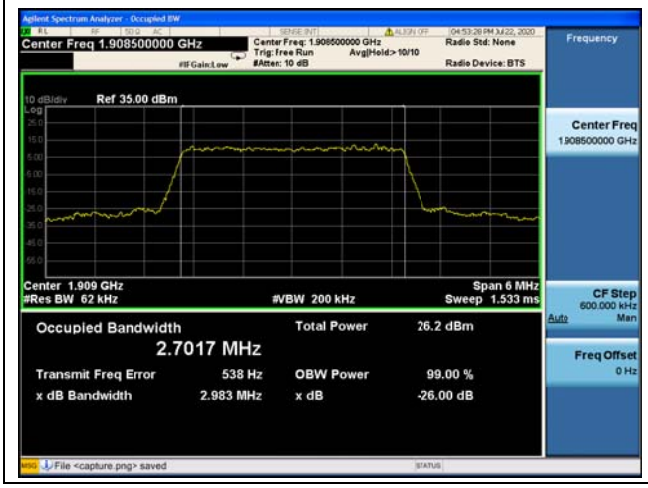


Band 2 / 3MHz / Mid CH / QPSK



Band 2 / 3MHz / Mid CH / 16QAM

Band 2 / 3MHz / High CH / QPSK

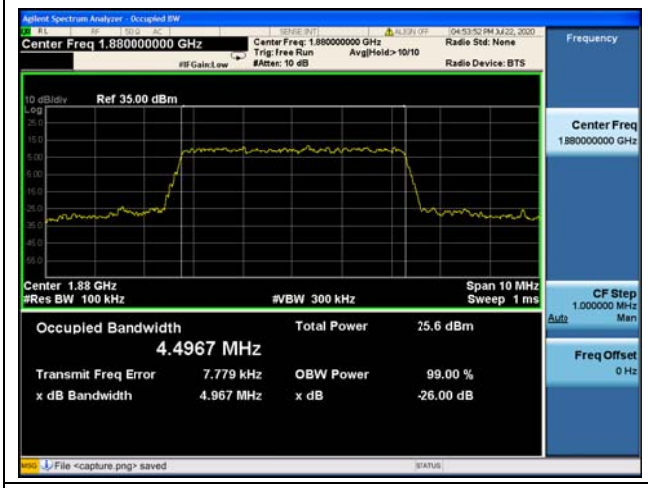


Band 2 / 3MHz / High CH / 16QAM

Band 2 / 5MHz / Low CH / QPSK

Band 2 / 5MHz / Low CH / 16QAM

Band 2 / 5MHz / Mid CH / QPSK

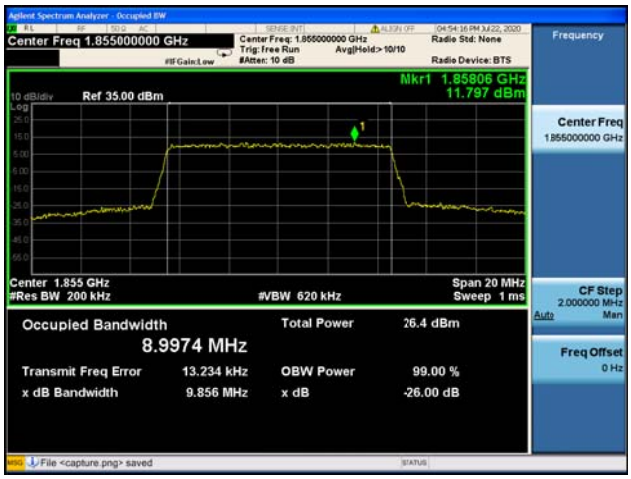


Band 2 / 5MHz / Mid CH / 16QAM

Band 2 / 5MHz / High CH / QPSK

Band 2 / 5MHz / High CH / 16QAM

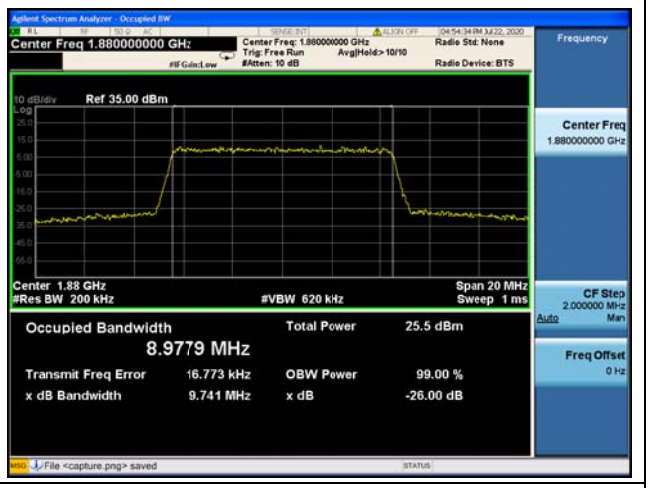
Band 2 / 10MHz / Low CH / QPSK



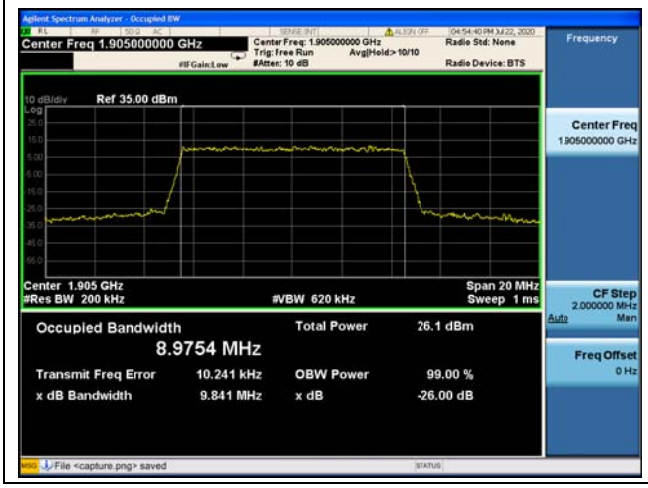
Band 2 / 10MHz / Low CH / 16QAM

Band 2 / 10MHz / Mid CH / QPSK

Band 2 / 10MHz / Mid CH / 16QAM



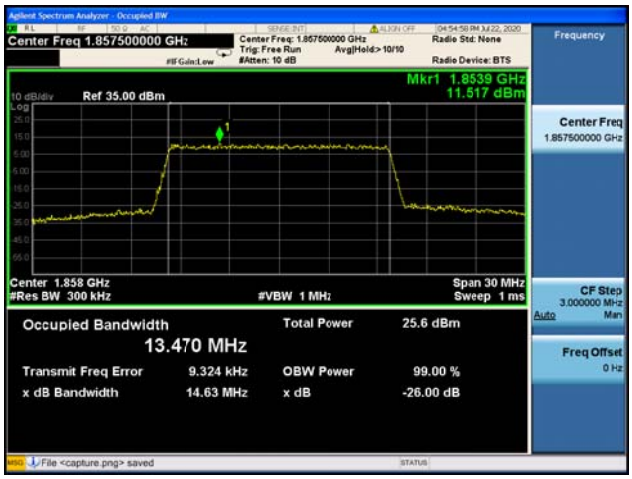
Band 2 / 10MHz / High CH / QPSK



Band 2 / 10MHz / High CH / 16QAM

Band 2 / 15MHz / Low CH / QPSK

Band 2 / 15MHz / Low CH / 16QAM

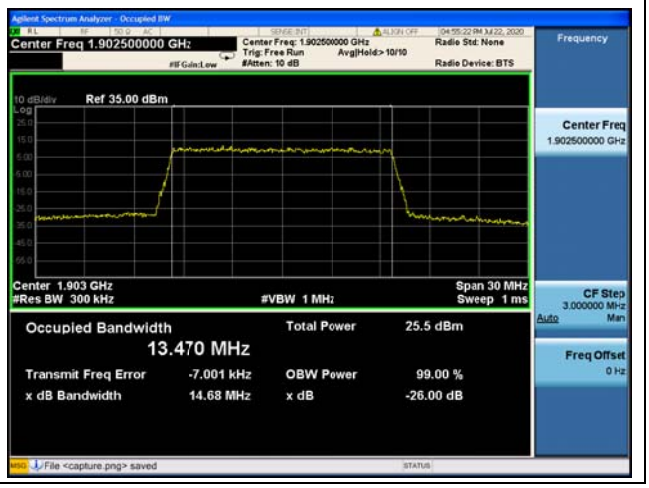


Band 2 / 15MHz / Mid CH / QPSK

Band 2 / 15MHz / Mid CH / 16QAM

Band 2 / 15MHz / High CH / QPSK

Band 2 / 15MHz / High CH / 16QAM



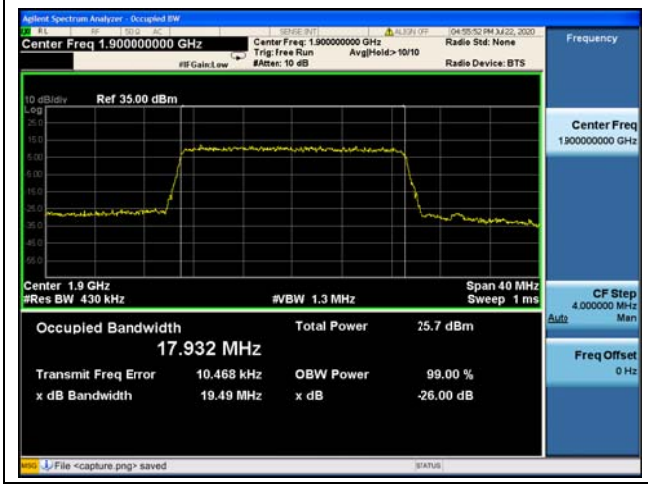
Band 2 / 20MHz / Low CH / QPSK

Band 2 / 20MHz / Low CH / 16QAM

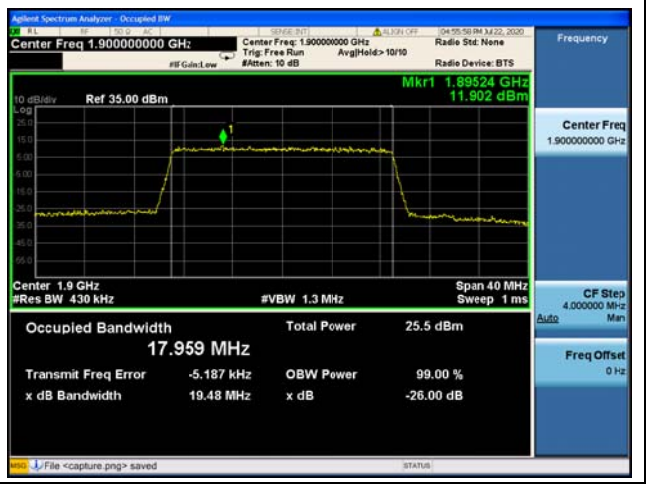
Band 2 / 20MHz / Mid CH / QPSK

Band 2 / 20MHz / Mid CH / 16QAM

Band 2 / 20MHz / High CH / QPSK

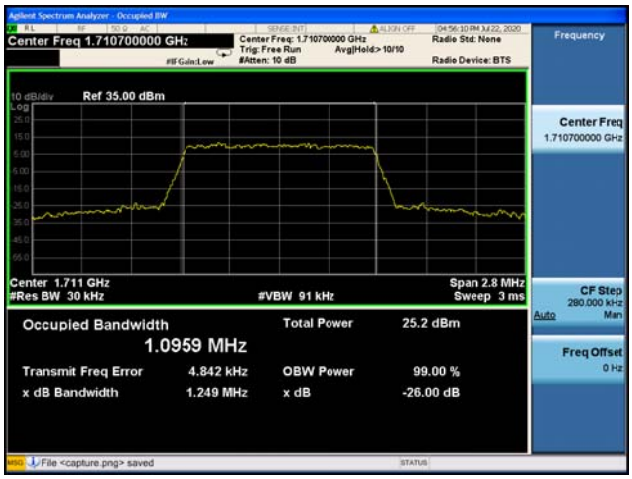


Band 2 / 20MHz / High CH / 16QAM



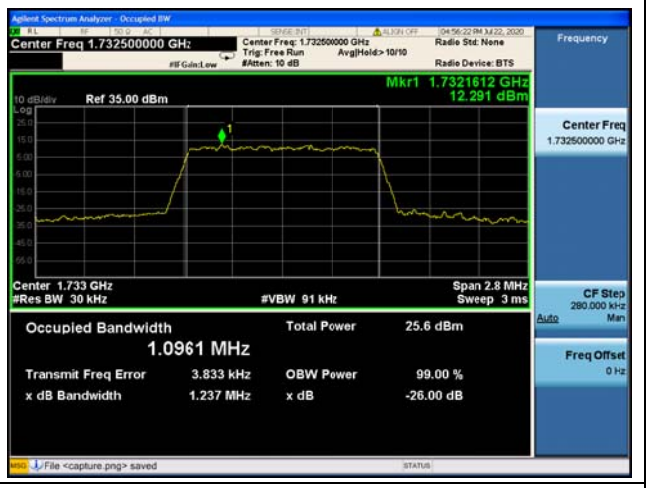
Band 4 / 1.4MHz / Low CH / QPSK

Band 4 / 1.4MHz / Low CH / 16QAM



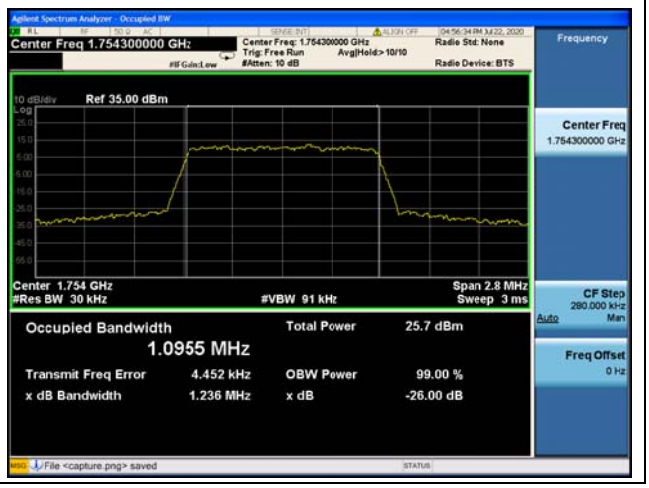
Band 4 / 1.4MHz / Mid CH / QPSK

Band 4 / 1.4MHz / Mid CH / 16QAM

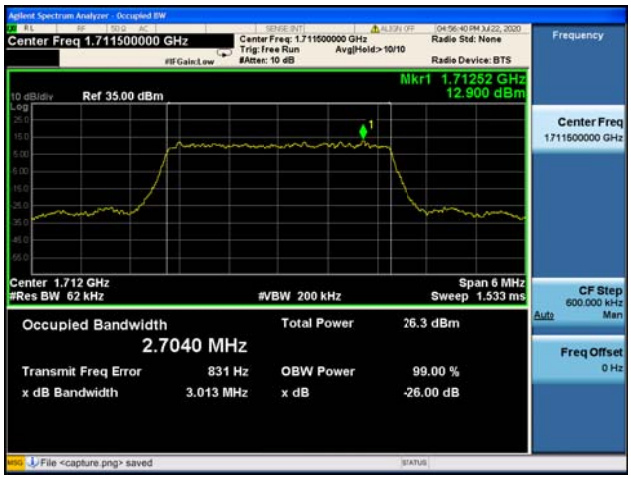


Band 4 / 1.4MHz / High CH / QPSK

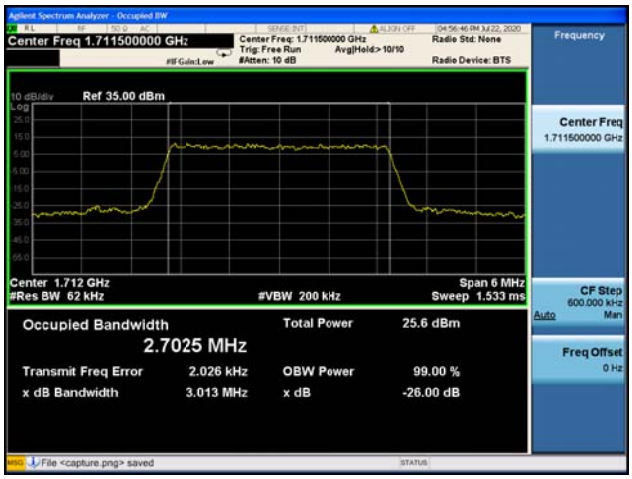
Band 4 / 1.4MHz / High CH / 16QAM



Band 4 / 3MHz / Low CH / QPSK



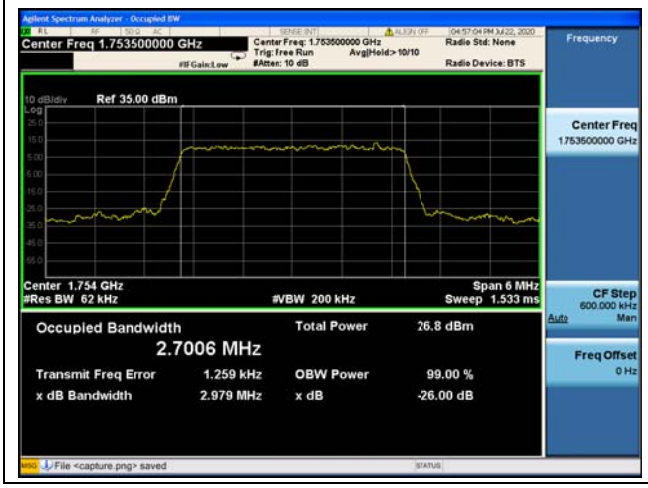
Band 4 / 3MHz / Low CH / 16QAM



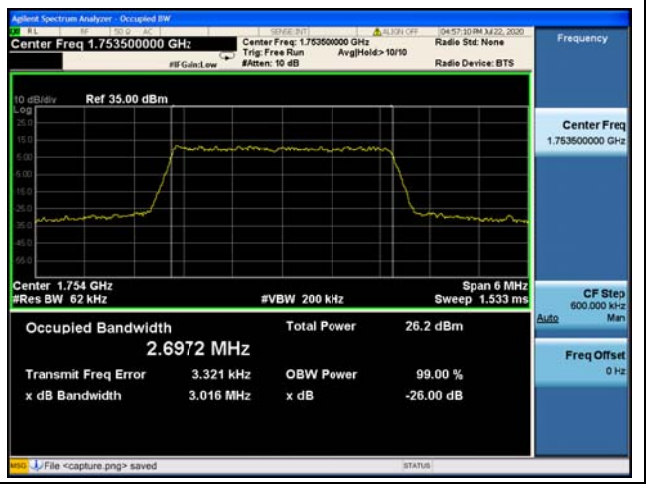
Band 4 / 3MHz / Mid CH / QPSK

Band 4 / 3MHz / Mid CH / 16QAM

Band 4 / 3MHz / High CH / QPSK



Band 4 / 3MHz / High CH / 16QAM



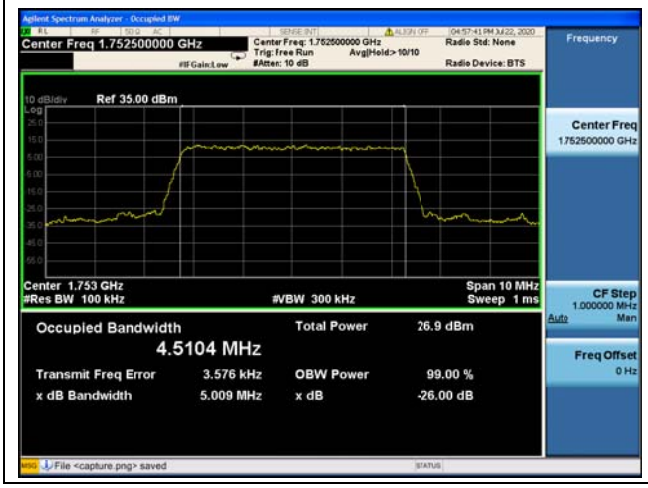
Band 4 / 5MHz / Low CH / QPSK

Band 4 / 5MHz / Low CH / 16QAM

Band 4 / 5MHz / Mid CH / QPSK

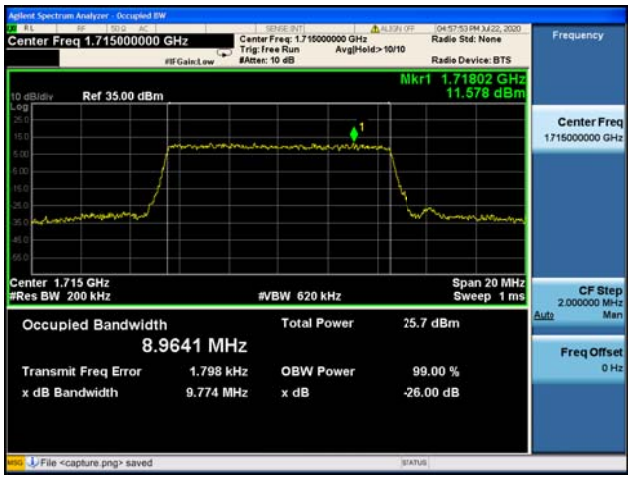
Band 4 / 5MHz / Mid CH / 16QAM

Band 4 / 5MHz / High CH / QPSK

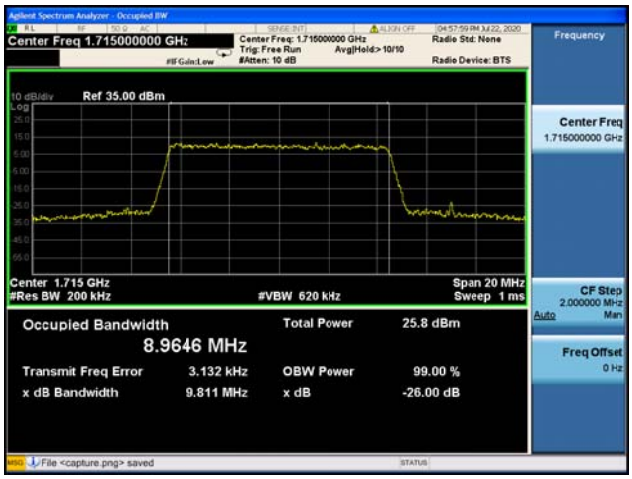


Band 4 / 5MHz / High CH / 16QAM

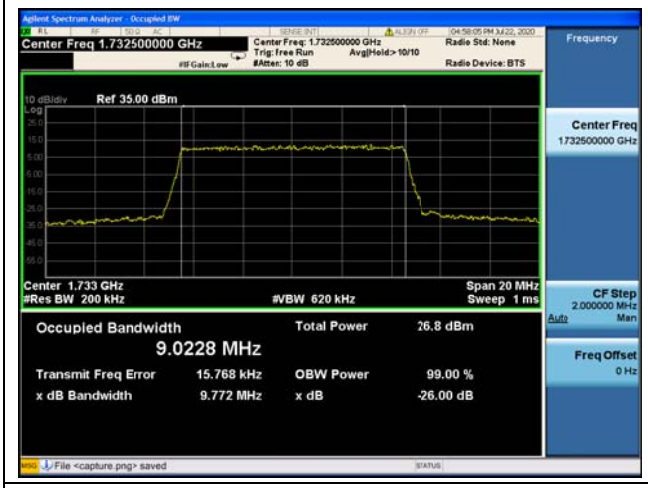
Band 4 / 10MHz / Low CH / QPSK



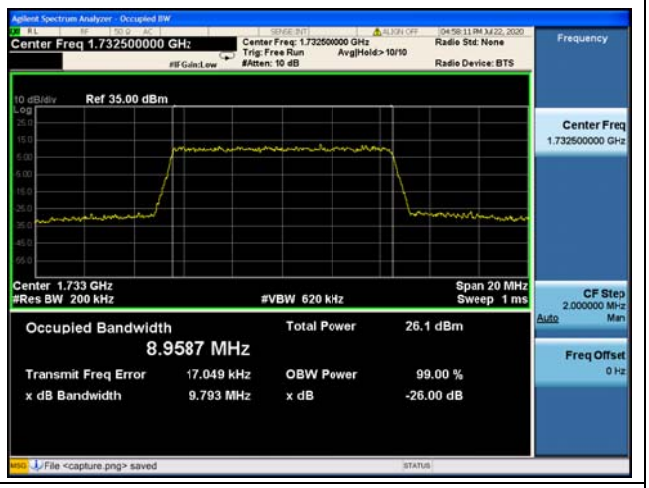
Band 4 / 10MHz / Low CH / 16QAM



Band 4 / 10MHz / Mid CH / QPSK

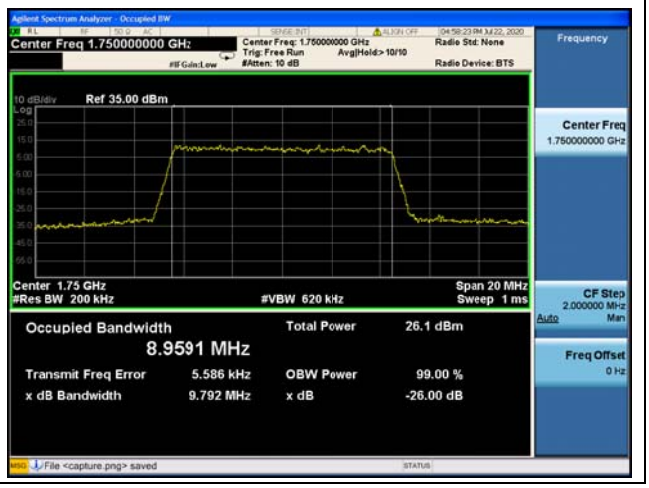


Band 4 / 10MHz / Mid CH / 16QAM

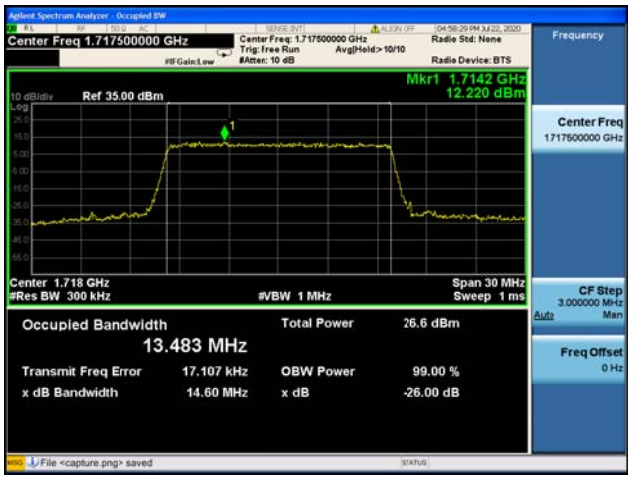


Band 4 / 10MHz / High CH / QPSK

Band 4 / 10MHz / High CH / 16QAM



Band 4 / 15MHz / Low CH / QPSK

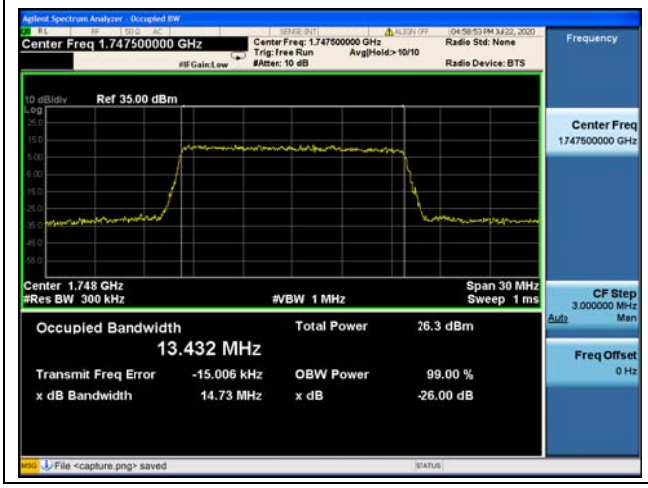


Band 4 / 15MHz / Low CH / 16QAM

Band 4 / 15MHz / Mid CH / QPSK

Band 4 / 15MHz / Mid CH / 16QAM

Band 4 / 15MHz / High CH / QPSK



Band 4 / 15MHz / High CH / 16QAM

Band 4 / 20MHz / Low CH / QPSK

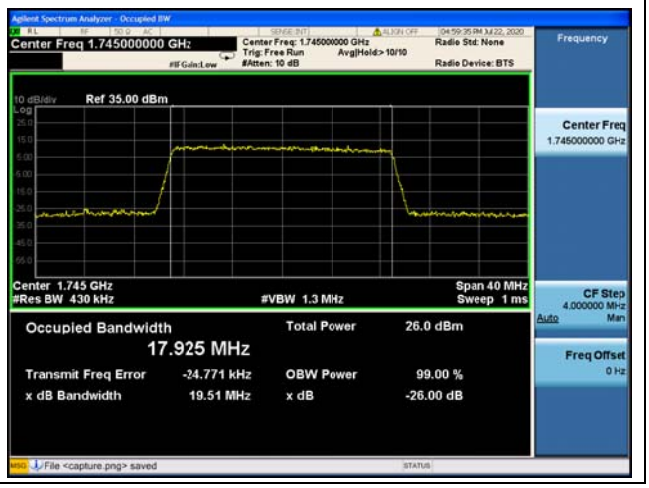
Band 4 / 20MHz / Low CH / 16QAM

Band 4 / 20MHz / Mid CH / QPSK

Band 4 / 20MHz / Mid CH / 16QAM

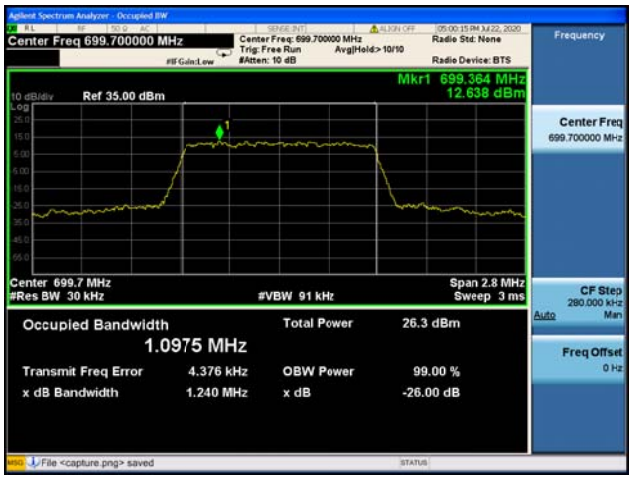
Band 4 / 20MHz / High CH / QPSK

Band 4 / 20MHz / High CH / 16QAM

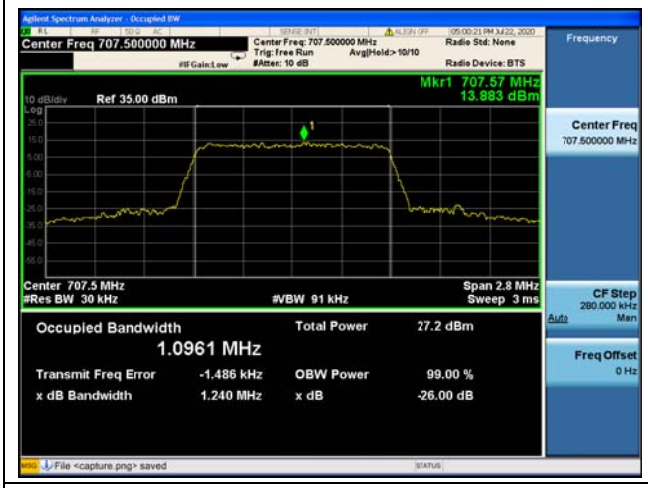


Band 12 / 1.4MHz / Low CH / QPSK

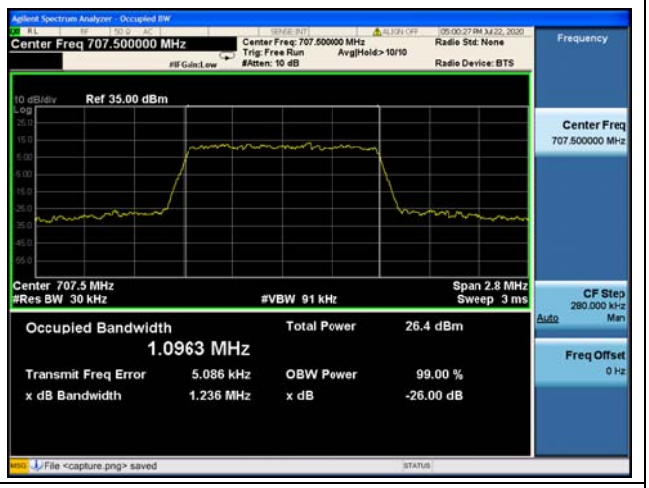
Band 12 / 1.4MHz / Low CH / 16QAM



Band 12 / 1.4MHz / Mid CH / QPSK

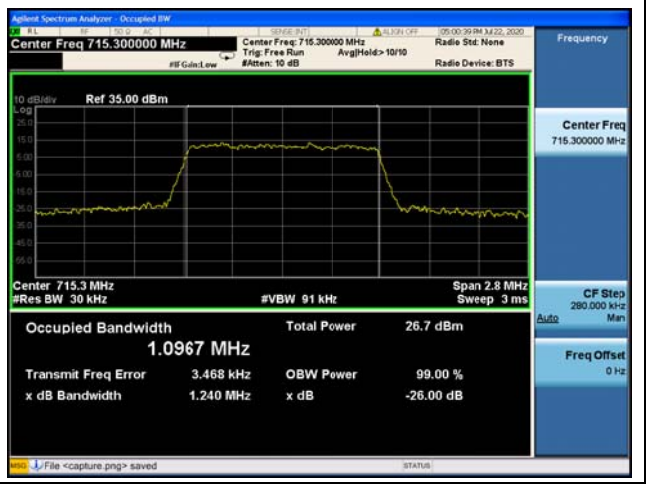


Band 12 / 1.4MHz / Mid CH / 16QAM



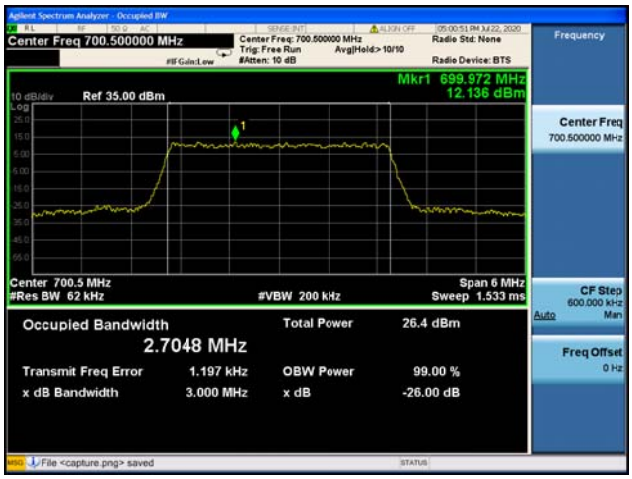
Band 12 / 1.4MHz / High CH / QPSK

Band 12 / 1.4MHz / High CH / 16QAM

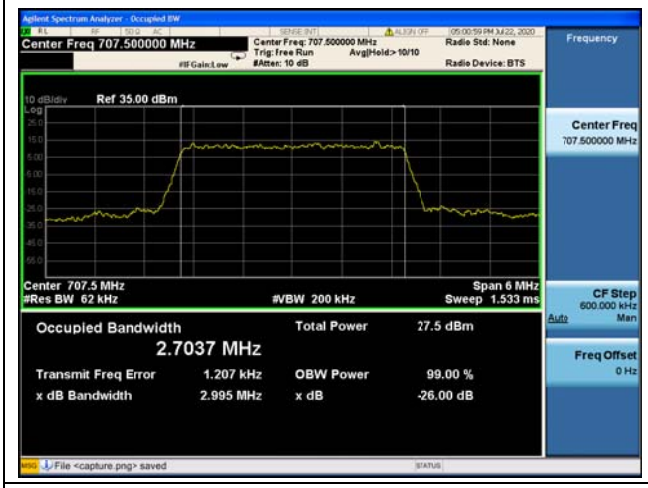


Band 12 / 3MHz / Low CH / QPSK

Band 12 / 3MHz / Low CH / 16QAM

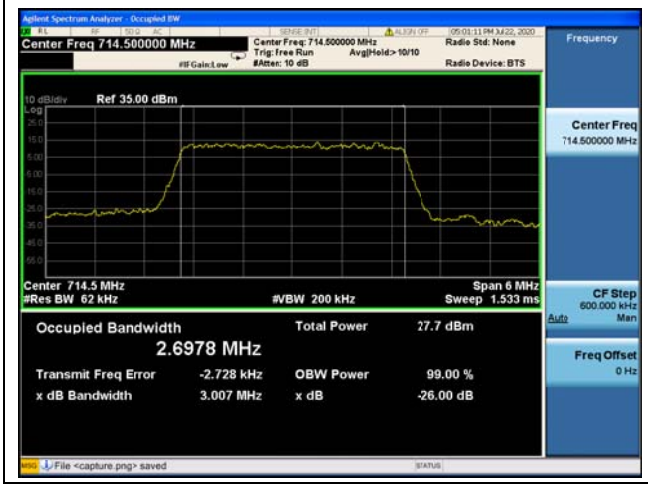


Band 12 / 3MHz / Mid CH / QPSK



Band 12 / 3MHz / Mid CH / 16QAM

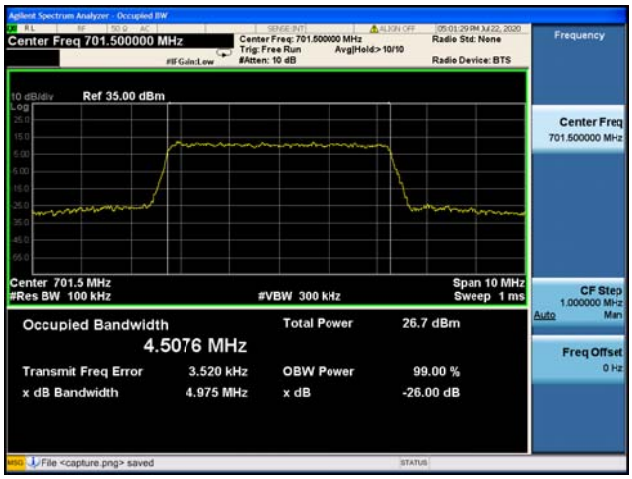
Band 12 / 3MHz / High CH / QPSK



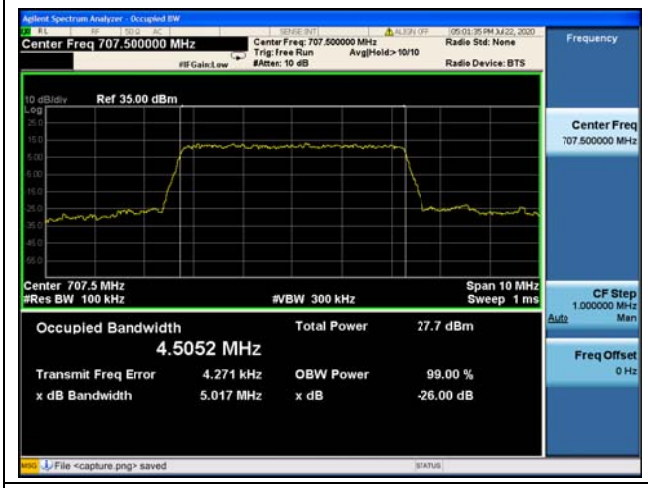
Band 12 / 3MHz / High CH / 16QAM

Band 12 / 5MHz / Low CH / QPSK

Band 12 / 5MHz / Low CH / 16QAM



Band 12 / 5MHz / Mid CH / QPSK



Band 12 / 5MHz / Mid CH / 16QAM

Band 12 / 5MHz / High CH / QPSK

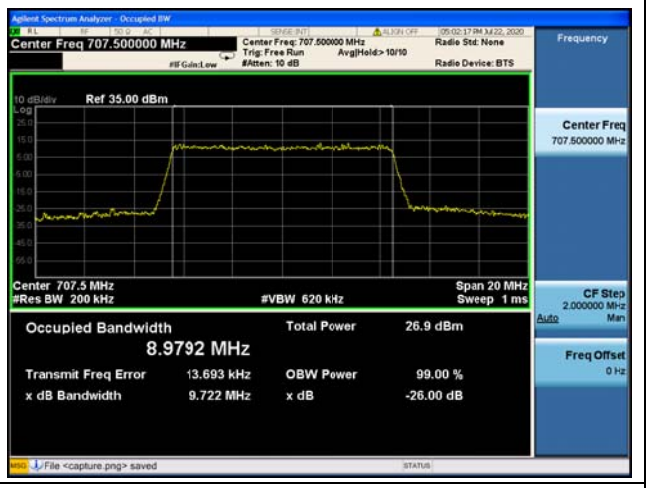
Band 12 / 5MHz / High CH / 16QAM

Band 12 / 10MHz / Low CH / QPSK

Band 12 / 10MHz / Low CH / 16QAM

Band 12 / 10MHz / Mid CH / QPSK

Band 12 / 10MHz / Mid CH / 16QAM



Band 12 / 10MHz / High CH / QPSK

Band 12 / 10MHz / High CH / 16QAM

2.3. Frequency Stability

2.3.1. Requirement

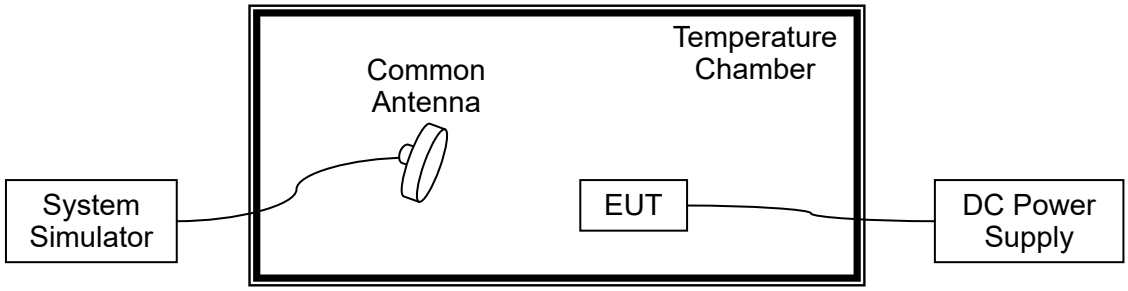
According to FCC section 2.1055 & 24.235 & 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. **According to** FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30°C to +50°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: Product operating temperature from 0°C to +40°C

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 12.00VDC, 14.00VDC and 10.00VDC, 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**
100	12.00	+20（Ref）	53	-0.028	PASS
100		0	-58	0.031	
100		+10	39	-0.021	
100		+20	-16	0.009	
100		+30	-43	0.023	
100		+40	-66	0.035	
115	14.00	+20	-15	0.008	
85	10.00	+20	53	-0.028	

LTE Band 4, QPSK, Channel 20175, Frequency 1732.5MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	12.00	+20（Ref）	53	-0.031	PASS
100		0	-43	0.025	
100		+10	-45	0.026	
100		+20	31	-0.018	
100		+30	47	-0.027	
100		+40	38	-0.022	
115	14.00	+20	-15	0.009	
85	10.00	+20	53	-0.031	

LTE Band 12, QPSK, Channel 23095, Frequency 707.5MHz Limit=±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	12.00	+20（Ref）	52	-0.073	PASS
100		0	-43	0.061	
100		+10	-37	0.052	
100		+20	70	-0.099	
100		+30	47	-0.066	
100		+40	-41	0.058	
115	14.00	+20	-42	0.059	
85	10.00	+20	47	-0.066	

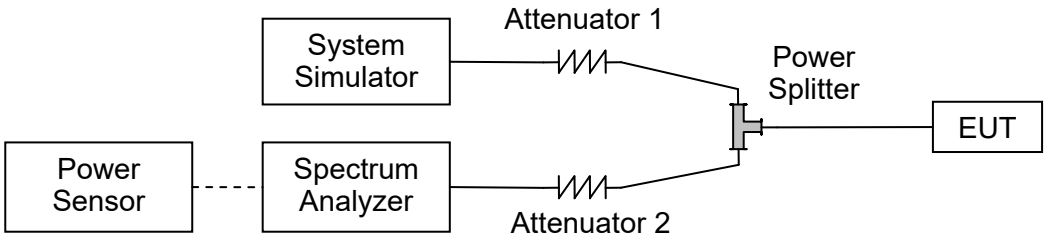
2.3. Peak to Average Radio

2.3.1. 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.

2.3.2. Test Description

Test Set:



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.

2.3.3. Test procedure

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

2.3.4. Test Result

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

LTE Band 2, QPSK, Channel 18900, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	12.00	+20（Ref）	53	-0.028	PASS
100		0	-58	0.031	
100		+10	39	-0.021	
100		+20	-16	0.009	
100		+30	-43	0.023	
100		+40	-66	0.035	
115	14.00	+20	-15	0.008	
85	10.00	+20	53	-0.028	

LTE Band 4, QPSK, Channel 20175, Frequency 1732.5MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	12.00	+20（Ref）	53	-0.031	PASS
100		0	-43	0.025	
100		+10	-45	0.026	
100		+20	31	-0.018	
100		+30	47	-0.027	
100		+40	38	-0.022	
115	14.00	+20	-15	0.009	
85	10.00	+20	53	-0.031	

LTE Band 12, QPSK, Channel 23095, Frequency 707.5MHz Limit=±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	12.00	+20（Ref）	52	-0.073	PASS
100		0	-43	0.061	
100		+10	-37	0.052	
100		+20	70	-0.099	
100		+30	47	-0.066	
100		+40	-41	0.058	
115	14.00	+20	-42	0.059	
85	10.00	+20	47	-0.066	

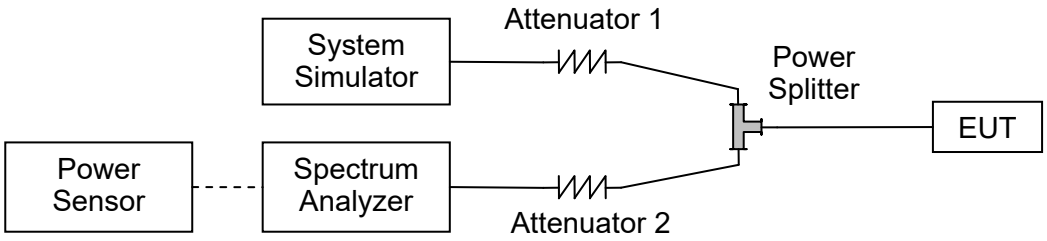
2.4. Peak to Average Radio

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

Test Set:



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%.

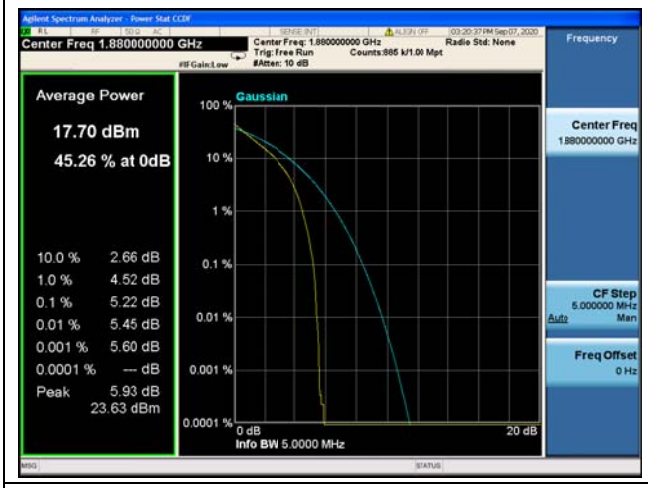
LTE Band 2					
BW(MHz)	Channel Level	Modulation	PAR Radio(dB)	Limit(dB)	Verdict
1.4	Low	QPSK	5.24	<=13	PASS
	Low	16QAM	6.19	<=13	PASS
	Mid	QPSK	5.22	<=13	PASS
	Mid	16QAM	6.21	<=13	PASS
	High	QPSK	4.90	<=13	PASS
	High	16QAM	5.84	<=13	PASS
3	Low	QPSK	5.09	<=13	PASS
	Low	16QAM	6.34	<=13	PASS
	Mid	QPSK	5.04	<=13	PASS
	Mid	16QAM	6.33	<=13	PASS
	High	QPSK	4.88	<=13	PASS
	High	16QAM	6.04	<=13	PASS
5	Low	QPSK	5.20	<=13	PASS
	Low	16QAM	6.27	<=13	PASS
	Mid	QPSK	5.20	<=13	PASS
	Mid	16QAM	6.23	<=13	PASS
	High	QPSK	5.02	<=13	PASS
	High	16QAM	6.06	<=13	PASS
10	Low	QPSK	5.08	<=13	PASS
	Low	16QAM	6.24	<=13	PASS
	Mid	QPSK	5.09	<=13	PASS
	Mid	16QAM	6.18	<=13	PASS
	High	QPSK	4.98	<=13	PASS
	High	16QAM	6.03	<=13	PASS
15	Low	QPSK	4.99	<=13	PASS
	Low	16QAM	6.12	<=13	PASS
	Mid	QPSK	5.07	<=13	PASS
	Mid	16QAM	6.14	<=13	PASS
	High	QPSK	4.86	<=13	PASS
	High	16QAM	5.93	<=13	PASS
20	Low	QPSK	4.87	<=13	PASS
	Low	16QAM	6.03	<=13	PASS
	Mid	QPSK	4.97	<=13	PASS
	Mid	16QAM	6.12	<=13	PASS
	High	QPSK	4.92	<=13	PASS
	High	16QAM	6.02	<=13	PASS

LTE Band 4					
BW(MHz)	Channel Level	Modulation	PAR Radio(dB)	Limit(dB)	Verdict
1.4	Low	QPSK	4.45	<=13	PASS
	Low	16QAM	5.32	<=13	PASS
	Mid	QPSK	4.95	<=13	PASS
	Mid	16QAM	6.00	<=13	PASS
	High	QPSK	5.17	<=13	PASS
	High	16QAM	6.23	<=13	PASS
3	Low	QPSK	4.28	<=13	PASS
	Low	16QAM	5.44	<=13	PASS
	Mid	QPSK	4.79	<=13	PASS
	Mid	16QAM	6.08	<=13	PASS
	High	QPSK	5.08	<=13	PASS
	High	16QAM	6.36	<=13	PASS
5	Low	QPSK	4.62	<=13	PASS
	Low	16QAM	5.62	<=13	PASS
	Mid	QPSK	4.92	<=13	PASS
	Mid	16QAM	6.02	<=13	PASS
	High	QPSK	5.18	<=13	PASS
	High	16QAM	6.16	<=13	PASS
10	Low	QPSK	4.74	<=13	PASS
	Low	16QAM	5.78	<=13	PASS
	Mid	QPSK	4.91	<=13	PASS
	Mid	16QAM	6.00	<=13	PASS
	High	QPSK	4.96	<=13	PASS
	High	16QAM	6.02	<=13	PASS
15	Low	QPSK	4.72	<=13	PASS
	Low	16QAM	5.82	<=13	PASS
	Mid	QPSK	4.78	<=13	PASS
	Mid	16QAM	5.92	<=13	PASS
	High	QPSK	4.78	<=13	PASS
	High	16QAM	5.87	<=13	PASS
20	Low	QPSK	4.83	<=13	PASS
	Low	16QAM	5.94	<=13	PASS
	Mid	QPSK	4.68	<=13	PASS
	Mid	16QAM	5.92	<=13	PASS
	High	QPSK	4.74	<=13	PASS
	High	16QAM	5.87	<=13	PASS

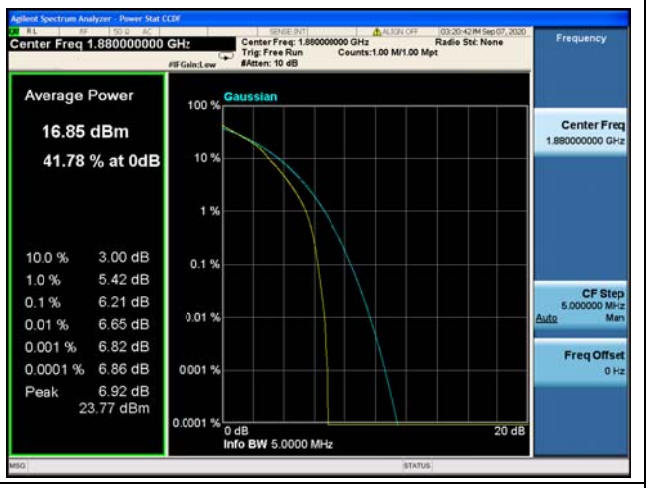
Band 2 / 1.4MHz / Low CH / QPSK

Band 2 / 1.4MHz / Low CH / 16QAM

Band 2 / 1.4MHz / Mid CH / QPSK

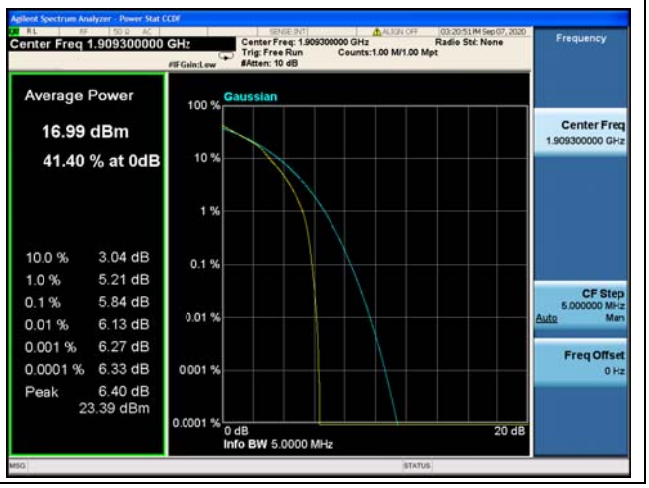


Band 2 / 1.4MHz / Mid CH / 16QAM



Band 2 / 1.4MHz / High CH / QPSK

Band 2 / 1.4MHz / High CH / 16QAM

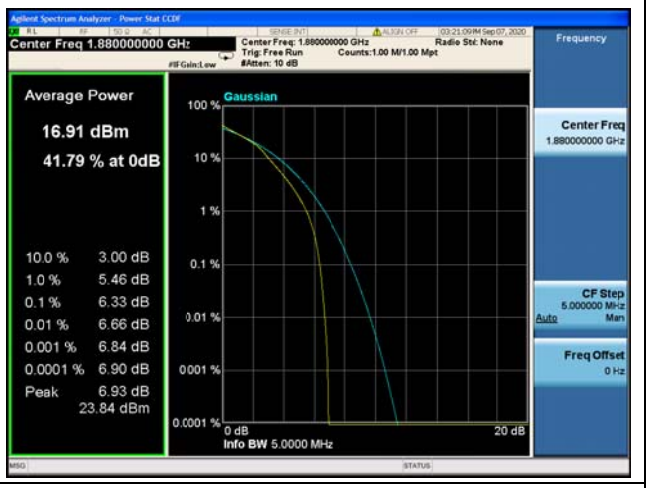


Band 2 / 3MHz / Low CH / QPSK

Band 2 / 3MHz / Low CH / 16QAM

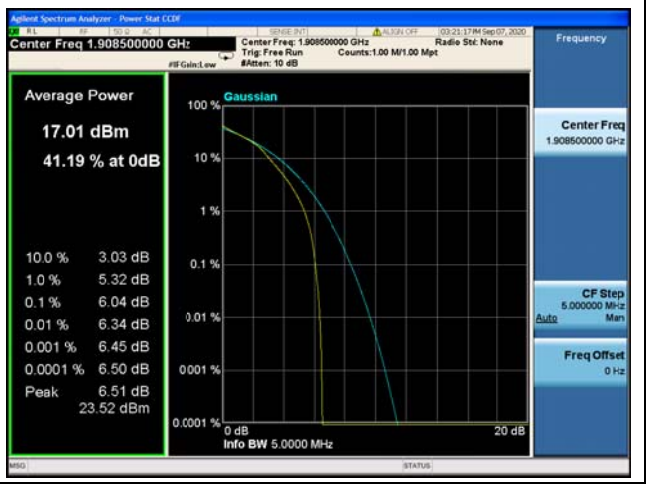
Band 2 / 3MHz / Mid CH / QPSK

Band 2 / 3MHz / Mid CH / 16QAM



Band 2 / 3MHz / High CH / QPSK

Band 2 / 3MHz / High CH / 16QAM

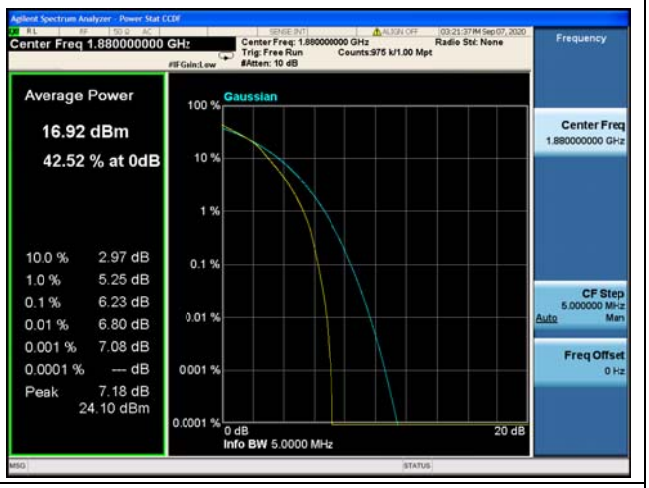


Band 2 / 5MHz / Low CH / QPSK

Band 2 / 5MHz / Low CH / 16QAM

Band 2 / 5MHz / Mid CH / QPSK

Band 2 / 5MHz / Mid CH / 16QAM



Band 2 / 5MHz / High CH / QPSK

Band 2 / 5MHz / High CH / 16QAM