REPORT No.: SZ18080124W03

TEST REPORT

APPLICANT	:	Social Bicycles LLC
PRODUCT NAME	:	Clarion Module
MODEL NAME	:	Clarion Module R6
BRAND NAME	:	JUMP Bikes
FCC ID	:	2ADEK1808R6
STANDARD(S)	:	47 CFR Part 22, Subpart H 47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart L&H
TEST DATE	:	2018-09-30 to 2018-10-12
ISSUE DATE	:	2018-10-15

Tested by: _____

Gao Mingzhou (Test Engineer)

Approved by: _____

Peng Huarui (Supervisor)

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MORLAB

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Change History		
Issue	**Date**	**Reason for change**
1.0	2018-10-15	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Social Bicycles LLC
Applicant Address:	55 Prospect ST. Suite 410 Brooklyn, New York 11201, United States
Manufacturer:	E-BUSINESS INTERNATIONAL TECHNOLOGY(SHENZHEN) CO.LTD
Manufacturer Address:	Floor 2, Tower A, New Energy Building, Nanhai Road, Nanshan, Shenzhen,China

1.2. Equipment Under Test (EUT) Description

Product Name:	Clarion Module	
Serial No:	(N/A, marked #1 by test site)	
Hardware Version:	R6	
Software Version:	1.0.3_rc1	
Modulation Type:	QPSK, 16QAM	
Operation Band:	Band 2 / 4 / 5 / 12	
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
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 5	1.4MHz, 3 MHz, 5 MHz, 10MHz
	LTE Band 12	1.4MHz, 3 MHz, 5 MHz, 10MHz
Emission Designator:	1M10G7D (LTE Band 2, QPSK, BW 1.4MHz) 1M10W7D (LTE Band 2, 16QAM, BW 1.4MHz) 2M68G7D (LTE Band 2, QPSK, BW 3MHz)	

	2M68 W7D (LTE Band 2, 16QAM, BW 3MHz) 4M47G7D (LTE Band 2, QPSK, BW 5MHz) 4M47W7D (LTE Band 2, 16QAM, BW 5MHz) 8M94G7D (LTE Band 2, QPSK, BW 10MHz) 8M93W7D (LTE Band 2, 16QAM, BW 10MHz) 13M47G7D (LTE Band 2, QPSK, BW 15MHz) 13M47W7D (LTE Band 2, 16QAM, BW 15MHz) 17M87G7D (LTE Band 2, QPSK, BW 20MHz) 17M86W7D (LTE Band 2, 16QAM, BW 20MHz) 1M10G7D (LTE Band 4, QPSK, BW 1.4MHz) 1M10W7D (LTE Band 4, 16QAM, BW 1.4MHz) 2M69G7D (LTE Band 4, QPSK, BW 3MHz) 2M68W7D (LTE Band 4, 16QAM, BW 3MHz) 4M47G7D (LTE Band 4, QPSK, BW 5MHz) 4M48W7D (LTE Band 4, 16QAM, BW 5MHz) 8M93G7D (LTE Band 4, QPSK, BW 10MHz) 8M93W7D (LTE Band 4, 16QAM, BW 10MHz) 13M42G7D (LTE Band 4, QPSK, BW 15MHz) 13M48W7D (LTE Band 4, 16QAM, BW 15MHz) 17M87G7D (LTE Band 4, QPSK, BW 20MHz) 17M86W7D (LTE Band 4, 16QAM, BW 20MHz) 1M10G7D (LTE Band 5, QPSK, BW 1.4MHz) 1M10W7D (LTE Band 5, 16QAM, BW 1.4MHz) 2M68G7D (LTE Band 5, QPSK, BW 3MHz) 2M68W7D (LTE Band 5, 16QAM, BW 3MHz) 4M47G7D (LTE Band 5, QPSK, BW 5MHz) 4M47W7D (LTE Band 5, 16QAM, BW 5MHz) 9M06G7D (LTE Band 5, QPSK, BW 10MHz) 9M07W7D (LTE Band 5, 16QAM, BW 10MHz) 1M10G7D (LTE Band 12, QPSK, BW 1.4MHz) 1M10W7D (LTE Band 12, 16QAM, BW 1.4MHz) 2M68G7D (LTE Band 12, QPSK, BW 3MHz) 2M68W7D (LTE Band 12, 16QAM, BW 3MHz) 4M47G7D (LTE Band 12, QPSK, BW 5MHz) 4M47W7D (LTE Band 12, 16QAM, BW 5MHz) 9M04G7D (LTE Band 12, QPSK, BW 10MHz) 9M05W7D (LTE Band 12, 16QAM, BW 10MHz)
Antenna Type:	Chip Antenna

Antenna Gain:	LTE Band 2	1.0 dBi
	LTE Band 4	1.0 dBi
	LTE Band 5	1.0 dBi
	LTE Band 12	1.0 dBi
Operating voltage:	Normal(NV)	5.0V
	Lowest(LV)	4.8V
	Highest(HV)	5.2V

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

1.3. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, 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 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
2.1046	Transmitter Conducted Output Power	Oct 12, 2018	Gao Mingzhou	PASS
2.1049	Occupied Bandwidth	Oct 10, 2018	Gao Mingzhou	PASS
2.1055, 22.355, 24.235, 27.54	Frequency Stability	Oct 12, 2018	Gao Mingzhou	PASS
24.232(d), 27.50(d)(5)	Peak to Average Radio	Oct 11, 2018	Gao Mingzhou	PASS
2.1051, 22.917(a) 24.238, 27.53(g)(h)	Conducted Spurious Emissions	Oct 12, 2018	Gao Mingzhou	PASS
2.1051, 22.917(a) 24.238, 27.53(g)(h)	Band Edge	Oct 11, 2018	Gao Mingzhou	PASS
22.913(a)(2), 24.232(c), 27.50(c)(10) 27.50(d)(4),	Equivalent Isotropic Radiated Power	Oct 12, 2018	Peng Xuewei	PASS
2.1051, 22.917(a), 24.238, 27.53(g)(h),	Radiated Spurious Emissions	Sep 30, 2018	Peng Xuewei	PASS
Note: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 (Oct 27, 2017) and ANSI/TIA-603-E-2016.				

1.4. 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

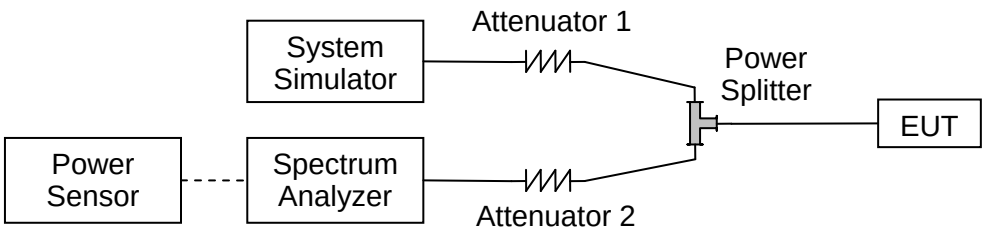
2. 47 CFR Part 2, Part 22H, Part 24E and 27 Requirements

2.1. Transmitter Conducted Output Power

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

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.

2.1.4. Result

LTE Band2						
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	23.76	24.05	23.67
20	QPSK	1	49	23.55	23.56	23.65
20	QPSK	1	99	23.93	23.61	23.71
20	QPSK	50	0	23.85	23.56	23.83
20	QPSK	50	24	23.94	23.87	23.57
20	QPSK	50	50	23.97	24.11	23.84
20	QPSK	100	0	23.26	23.98	24.00
20	16QAM	1	0	23.48	23.97	23.86
20	16QAM	1	49	23.44	23.90	24.13
20	16QAM	1	99	23.71	24.06	23.84
20	16QAM	50	0	24.16	23.67	23.54
20	16QAM	50	24	23.93	23.65	23.97
20	16QAM	50	50	24.10	23.71	24.06
20	16QAM	100	0	23.79	23.83	23.83
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	23.55	23.85	23.44
15	QPSK	1	37	23.93	23.94	23.71
15	QPSK	1	74	23.85	23.97	24.16
15	QPSK	36	0	23.94	23.26	23.93
15	QPSK	36	20	23.97	23.48	24.10
15	QPSK	36	39	23.26	23.44	23.79
15	QPSK	75	0	23.48	23.71	24.05
15	16QAM	1	0	23.44	24.16	23.56
15	16QAM	1	37	23.71	23.93	23.61
15	16QAM	1	74	24.16	24.10	23.56
15	16QAM	36	0	23.93	23.79	23.87
15	16QAM	36	20	24.10	24.05	24.11
15	16QAM	36	39	23.79	23.56	23.98
15	16QAM	75	0	24.05	23.61	23.97

Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	23.55	24.16	23.87
10	QPSK	1	25	23.93	23.93	24.11
10	QPSK	1	49	23.85	24.10	23.98
10	QPSK	25	0	23.94	23.79	23.97
10	QPSK	25	12	23.97	24.05	24.10
10	QPSK	25	25	23.26	23.56	23.79
10	QPSK	50	0	23.48	23.61	24.05
10	16QAM	1	0	23.44	23.56	23.56
10	16QAM	1	25	23.71	23.93	23.61
10	16QAM	1	49	24.16	24.10	23.56
10	16QAM	25	0	23.93	23.79	23.87
10	16QAM	25	12	24.10	24.05	24.11
10	16QAM	25	25	23.79	23.56	23.98
10	16QAM	50	0	24.05	23.61	23.97
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	23.55	23.26	23.44
5	QPSK	1	12	23.93	23.48	23.85
5	QPSK	1	24	23.85	23.44	23.94
5	QPSK	12	0	23.94	23.71	23.97
5	QPSK	12	7	23.97	23.48	23.26
5	QPSK	12	13	23.26	23.44	23.79
5	QPSK	25	0	23.48	23.71	24.05
5	16QAM	1	0	23.44	23.56	23.56
5	16QAM	1	12	23.71	23.61	23.61
5	16QAM	1	24	24.16	23.56	23.56
5	16QAM	12	0	23.93	23.87	23.87
5	16QAM	12	7	24.10	24.11	24.11
5	16QAM	12	13	23.79	23.56	23.98
5	16QAM	25	0	24.05	23.61	23.97

Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	23.55	23.85	24.10
3	QPSK	1	8	23.93	23.94	23.79
3	QPSK	1	14	23.85	23.97	24.05
3	QPSK	8	0	23.94	23.26	23.56
3	QPSK	8	4	23.97	23.55	23.61
3	QPSK	8	7	23.26	23.93	23.56
3	QPSK	15	0	23.48	23.85	24.05
3	16QAM	1	0	23.44	23.94	23.56
3	16QAM	1	8	23.71	23.97	23.61
3	16QAM	1	14	24.16	23.26	23.56
3	16QAM	8	0	23.93	23.48	23.87
3	16QAM	8	4	24.10	23.44	24.11
3	16QAM	8	7	23.79	23.56	23.98
3	16QAM	15	0	24.05	23.61	23.97
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	23.55	23.48	23.44
1.4	QPSK	1	3	23.93	23.44	23.71
1.4	QPSK	1	5	23.85	23.71	24.16
1.4	QPSK	3	0	23.94	24.16	23.93
1.4	QPSK	3	1	23.79	23.93	24.10
1.4	QPSK	3	3	24.05	24.10	23.79
1.4	QPSK	6	0	23.56	23.79	24.05
1.4	16QAM	1	0	23.61	24.05	23.56
1.4	16QAM	1	3	23.56	23.93	23.61
1.4	16QAM	1	5	23.87	24.10	23.56
1.4	16QAM	3	0	24.11	23.79	23.87
1.4	16QAM	3	1	24.10	24.05	24.11
1.4	16QAM	3	3	23.79	23.56	23.98
1.4	16QAM	6	0	24.05	23.61	23.97

LTE Band4						
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	24.11	24.27	23.99
20	QPSK	1	49	24.12	23.99	24.40
20	QPSK	1	99	24.23	24.25	24.12
20	QPSK	50	0	23.75	24.24	23.81
20	QPSK	50	24	23.74	24.25	23.99
20	QPSK	50	50	24.04	24.31	24.25
20	QPSK	100	0	23.91	24.49	24.24
20	16QAM	1	0	23.78	24.03	24.25
20	16QAM	1	49	24.12	23.74	24.31
20	16QAM	1	99	24.36	24.14	23.74
20	16QAM	50	0	24.26	23.92	24.03
20	16QAM	50	24	24.50	23.76	23.92
20	16QAM	50	50	24.01	24.13	23.76
20	16QAM	100	0	23.59	24.23	24.13
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	23.81	24.27	23.99
15	QPSK	1	37	23.99	23.99	24.40
15	QPSK	1	74	24.27	24.25	24.12
15	QPSK	36	0	23.99	24.24	23.81
15	QPSK	36	20	24.25	24.25	23.99
15	QPSK	36	39	24.24	24.31	24.25
15	QPSK	75	0	24.25	24.49	24.24
15	16QAM	1	0	24.31	24.03	24.25
15	16QAM	1	37	24.49	23.74	24.31
15	16QAM	1	74	24.36	24.14	24.49
15	16QAM	36	0	24.26	23.92	24.03
15	16QAM	36	20	24.50	23.76	23.74
15	16QAM	36	39	24.01	24.13	23.76
15	16QAM	75	0	23.59	24.23	24.13

Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	24.12	24.24	24.24
10	QPSK	1	25	23.81	24.25	24.25
10	QPSK	1	49	23.99	24.31	24.31
10	QPSK	25	0	24.25	23.74	24.49
10	QPSK	25	12	23.74	24.25	23.99
10	QPSK	25	25	24.04	24.31	24.25
10	QPSK	50	0	23.91	24.49	24.24
10	16QAM	1	0	23.78	24.03	24.25
10	16QAM	1	25	24.12	23.74	24.31
10	16QAM	1	49	24.36	24.14	23.74
10	16QAM	25	0	24.26	23.92	24.03
10	16QAM	25	12	24.50	23.76	23.92
10	16QAM	25	25	24.01	24.13	23.76
10	16QAM	50	0	23.59	24.23	24.13
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	23.76	24.27	23.99
5	QPSK	1	12	24.13	23.99	24.40
5	QPSK	1	24	24.23	24.25	24.11
5	QPSK	12	0	24.24	24.24	24.12
5	QPSK	12	7	24.25	24.25	24.23
5	QPSK	12	13	24.31	24.31	23.75
5	QPSK	25	0	24.49	24.49	23.74
5	16QAM	1	0	24.03	24.03	24.04
5	16QAM	1	12	23.74	23.74	23.91
5	16QAM	1	24	24.14	24.14	23.78
5	16QAM	12	0	24.26	23.92	24.03
5	16QAM	12	7	24.50	23.76	23.92
5	16QAM	12	13	24.01	24.13	23.76
5	16QAM	25	0	23.59	24.23	24.13

Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	24.25	24.40	24.31
3	QPSK	1	8	24.24	24.12	23.74
3	QPSK	1	14	24.25	23.81	24.03
3	QPSK	8	0	24.31	23.99	23.92
3	QPSK	8	4	24.49	24.25	23.76
3	QPSK	8	7	24.03	24.24	24.13
3	QPSK	15	0	23.74	24.25	24.24
3	16QAM	1	0	24.14	24.31	24.25
3	16QAM	1	8	23.92	23.74	24.31
3	16QAM	1	14	24.36	24.03	23.74
3	16QAM	8	0	24.26	23.92	24.03
3	16QAM	8	4	24.50	23.76	23.92
3	16QAM	8	7	24.01	24.13	23.76
3	16QAM	15	0	23.59	24.23	24.13
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	24.24	23.99	23.99
1.4	QPSK	1	3	24.25	24.40	24.40
1.4	QPSK	1	5	24.31	24.12	24.12
1.4	QPSK	3	0	24.49	23.81	23.81
1.4	QPSK	3	1	24.03	23.99	23.99
1.4	QPSK	3	3	23.74	24.25	24.25
1.4	QPSK	6	0	24.14	24.24	24.24
1.4	16QAM	1	0	23.78	24.25	24.25
1.4	16QAM	1	3	24.25	24.31	24.31
1.4	16QAM	1	5	24.31	24.14	23.74
1.4	16QAM	3	0	23.74	23.92	24.03
1.4	16QAM	3	1	24.03	23.76	23.92
1.4	16QAM	3	3	23.92	24.13	23.76
1.4	16QAM	6	0	23.76	24.23	24.13

LTE Band5						
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	24.97	25.18	25.26
10	QPSK	1	25	25.21	24.74	25.18
10	QPSK	1	49	25.07	24.95	24.24
10	QPSK	25	0	25.39	25.02	24.25
10	QPSK	25	12	24.82	24.97	24.31
10	QPSK	25	25	25.18	25.13	23.74
10	QPSK	50	0	24.92	25.25	25.13
10	16QAM	1	0	25.10	25.31	25.25
10	16QAM	1	25	25.35	25.10	25.31
10	16QAM	1	49	25.24	25.24	25.10
10	16QAM	25	0	25.15	24.89	25.24
10	16QAM	25	12	25.00	25.02	25.26
10	16QAM	25	25	24.94	25.23	25.18
10	16QAM	50	0	25.07	25.26	25.23
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	24.95	24.31	25.26
5	QPSK	1	12	25.02	23.74	25.18
5	QPSK	1	24	24.97	25.13	24.24
5	QPSK	12	0	25.13	25.25	24.25
5	QPSK	12	7	25.25	25.31	24.31
5	QPSK	12	13	25.31	25.10	23.74
5	QPSK	25	0	25.10	25.13	25.13
5	16QAM	1	0	25.10	25.31	25.25
5	16QAM	1	12	25.35	25.10	25.31
5	16QAM	1	24	25.24	25.24	25.10
5	16QAM	12	0	25.15	24.89	25.24
5	16QAM	12	7	25.00	25.02	25.26
5	16QAM	12	13	24.94	25.23	25.18
5	16QAM	25	0	25.07	25.26	25.23

Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	24.74	25.31	25.26
3	QPSK	1	8	24.95	25.02	25.18
3	QPSK	1	14	25.02	25.23	25.23
3	QPSK	8	0	24.97	25.26	24.25
3	QPSK	8	4	25.13	24.24	24.31
3	QPSK	8	7	25.25	24.25	23.74
3	QPSK	15	0	25.31	24.31	25.13
3	16QAM	1	0	25.10	23.74	25.25
3	16QAM	1	8	25.35	25.13	25.31
3	16QAM	1	14	25.24	25.25	25.10
3	16QAM	8	0	25.15	25.31	25.24
3	16QAM	8	4	25.00	25.02	25.26
3	16QAM	8	7	24.94	25.23	25.18
3	16QAM	15	0	25.07	25.26	25.23
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	25.24	25.24	25.02
1.4	QPSK	1	3	24.89	25.26	24.97
1.4	QPSK	1	5	25.02	25.18	25.13
1.4	QPSK	3	0	25.39	25.23	25.25
1.4	QPSK	3	1	24.24	24.97	25.31
1.4	QPSK	3	3	24.25	25.13	25.10
1.4	QPSK	6	0	24.31	25.25	25.24
1.4	16QAM	1	0	23.74	25.31	24.89
1.4	16QAM	1	3	25.13	25.10	25.31
1.4	16QAM	1	5	25.25	25.24	25.10
1.4	16QAM	3	0	25.15	24.89	25.24
1.4	16QAM	3	1	25.00	25.02	25.26
1.4	16QAM	3	3	24.94	25.23	25.18
1.4	16QAM	6	0	25.07	25.26	25.23

LTE Band 12						
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23060	23095	23130
Frequency (MHz)				704	707.5	711
10	QPSK	1	0	24.36	24.55	24.55
10	QPSK	1	25	24.51	24.48	24.66
10	QPSK	1	49	24.31	24.55	24.59
10	QPSK	25	0	24.72	24.66	24.47
10	QPSK	25	12	24.70	24.59	24.70
10	QPSK	25	25	24.80	24.47	24.36
10	QPSK	50	0	24.45	24.70	24.35
10	16QAM	1	0	24.51	24.36	24.63
10	16QAM	1	25	24.67	24.35	24.14
10	16QAM	1	49	24.77	24.63	24.13
10	16QAM	25	0	24.52	24.14	24.51
10	16QAM	25	12	24.64	24.13	24.33
10	16QAM	25	25	24.26	24.51	24.25
10	16QAM	50	0	24.21	24.33	24.73
Channel				23035	23095	23155
Frequency (MHz)				701.5	707.5	713.5
5	QPSK	1	0	24.36	24.55	24.55
5	QPSK	1	12	24.51	24.48	24.66
5	QPSK	1	24	24.31	24.55	24.59
5	QPSK	12	0	24.72	24.66	24.47
5	QPSK	12	7	24.70	24.59	24.70
5	QPSK	12	13	24.80	24.47	24.36
5	QPSK	25	0	24.45	24.70	24.35
5	16QAM	1	0	24.51	24.36	24.63
5	16QAM	1	12	24.67	24.35	24.14
5	16QAM	1	24	24.77	24.63	24.13
5	16QAM	12	0	24.52	24.54	24.51
5	16QAM	12	7	24.64	24.13	24.33
5	16QAM	12	13	24.26	24.51	24.25
5	16QAM	25	0	24.21	24.33	24.73

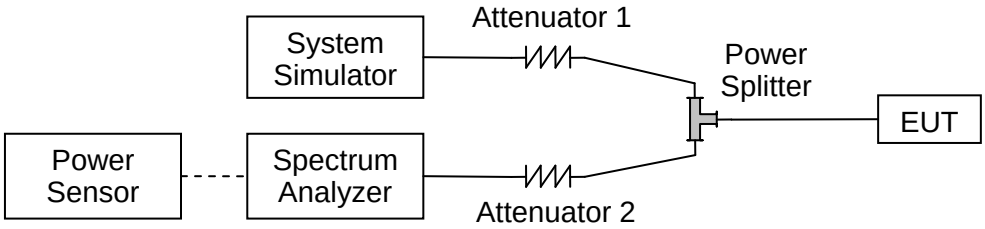
Channel				23025	23095	23165
Frequency (MHz)				700.5	707.5	714.5
3	QPSK	1	0	24.36	24.55	24.55
3	QPSK	1	8	24.51	24.48	24.66
3	QPSK	1	14	24.31	24.56	24.59
3	QPSK	8	0	24.72	24.66	24.47
3	QPSK	8	4	24.70	24.59	24.70
3	QPSK	8	7	24.80	24.47	24.36
3	QPSK	15	0	24.45	24.70	24.35
3	16QAM	1	0	24.51	24.36	24.63
3	16QAM	1	8	24.67	24.35	24.14
3	16QAM	1	14	24.77	24.68	24.13
3	16QAM	8	0	24.52	24.14	24.51
3	16QAM	8	4	24.64	24.13	24.33
3	16QAM	8	7	24.26	24.51	24.25
3	16QAM	15	0	24.21	24.33	24.73
Channel				23017	23095	23173
Frequency (MHz)				699.7	707.5	715.3
1.4	QPSK	1	0	24.21	24.55	24.55
1.4	QPSK	1	3	24.51	24.48	24.66
1.4	QPSK	1	5	24.31	24.55	24.59
1.4	QPSK	3	0	24.72	24.66	24.47
1.4	QPSK	3	1	24.70	24.59	24.79
1.4	QPSK	3	3	24.80	24.47	24.36
1.4	QPSK	6	0	24.57	24.70	24.35
1.4	16QAM	1	0	24.51	24.38	24.63
1.4	16QAM	1	3	24.67	24.35	24.14
1.4	16QAM	1	5	24.77	24.63	24.13
1.4	16QAM	3	0	24.52	24.14	24.51
1.4	16QAM	3	1	24.64	24.13	24.33
1.4	16QAM	3	3	24.26	24.51	24.25
1.4	16QAM	6	0	24.21	24.33	24.73

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: 1.4MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.090	1.274	1.097	1.280
18900	1880.0	1.098	1.278	1.098	1.282
19192	1909.2	1.098	1.309	1.099	1.287

LTE Band 2, BW: 3MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.681	2.928	2.681	2.929
18900	1880.0	2.684	2.918	2.683	2.924
19184	1908.4	2.683	2.912	2.679	2.927
LTE Band 2, BW: 5MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18625	1852.5	4.465	4.934	4.466	4.842
18900	1880.0	4.470	4.941	4.471	4.939
19175	1907.5	4.464	4.937	4.467	4.942
LTE Band 2, BW: 10MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18650	1855.0	8.938	9.648	8.931	9.646
18900	1880.0	8.933	9.655	8.931	9.655
19150	1905.0	8.930	9.697	8.934	9.636
LTE Band 2, BW: 15MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18675	1857.5	13.466	14.66	13.465	14.61
18900	1880.0	13.456	14.65	13.456	14.60
19125	1902.5	13.453	14.59	13.470	14.66
LTE Band 2, BW: 20MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18700	1860.0	17.866	19.12	17.862	19.23
18900	1880.0	17.860	19.21	17.846	19.24
19100	1900.0	17.863	19.22	17.856	19.27

LTE Band 2 99%&26dB Bandwidth

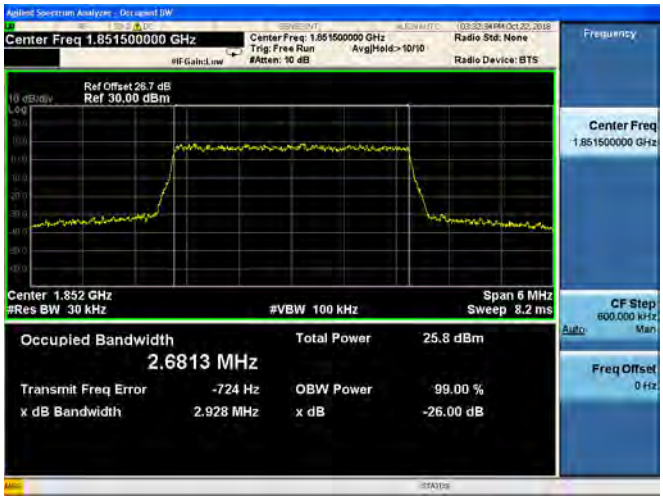
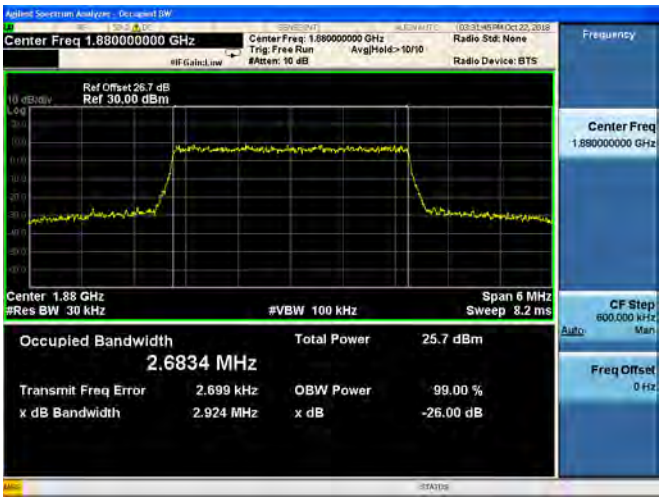
1.4MHz/QPSK/Low CH

1.4MHz/16QAM/Low CH

1.4MHz/QPSK/Mid CH

1.4MHz/16QAM/Mid CH

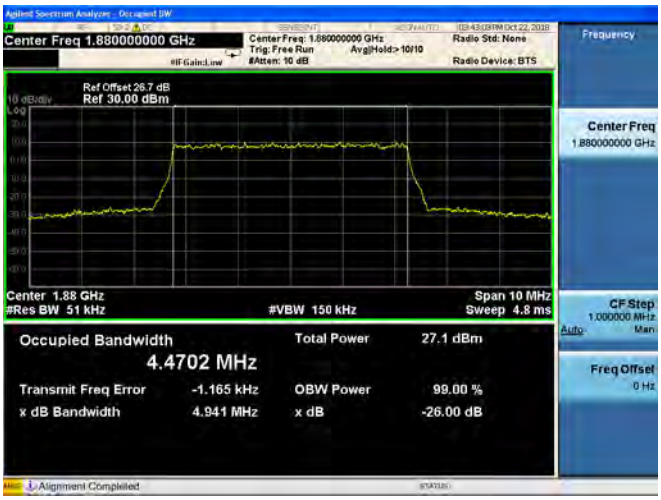
1.4MHz/QPSK/High CH	1.4MHz/16QAM/High CH

3MHz/QPSK/Low CH	3MHz/16QAM/Low CH
	
3MHz/QPSK/Mid CH	**3MHz/16QAM/Mid CH**
	
3MHz/QPSK/High CH	**3MHz/16QAM/High CH**

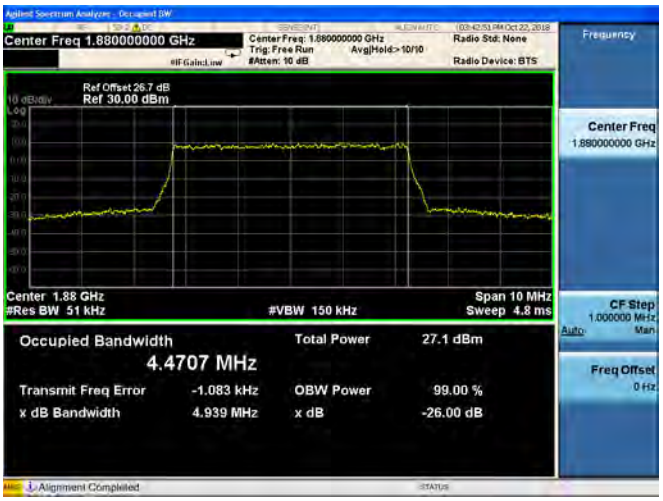
5MHz/QPSK/Low CH

5MHz/16QAM/Low CH

5MHz/QPSK/Mid CH



5MHz/16QAM/Mid CH



5MHz/QPSK/High CH

5MHz/16QAM/High CH

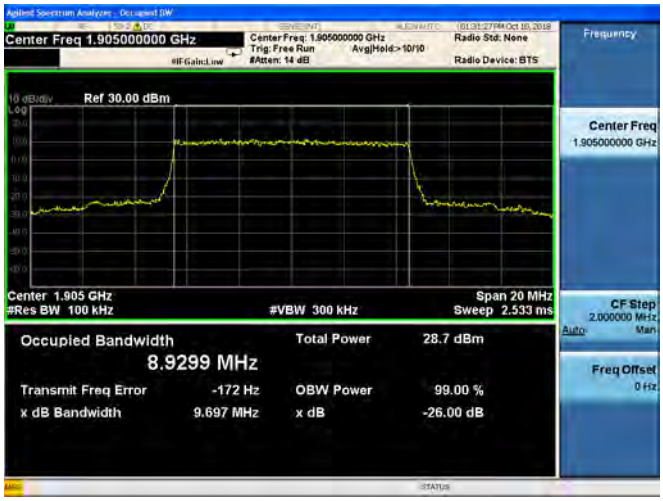
10MHz/QPSK/Low CH

10MHz/16QAM/Low CH

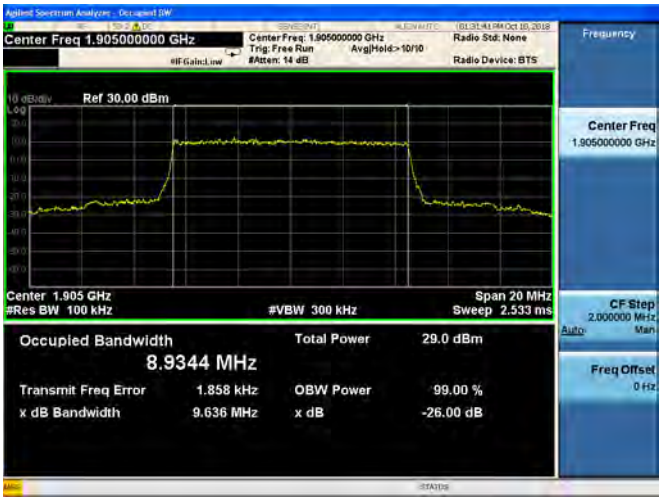
10MHz/QPSK/Mid CH

10MHz/16QAM/Mid CH

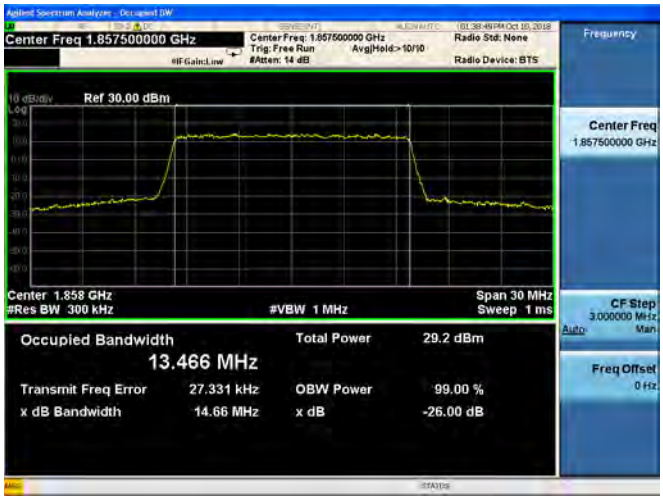
10MHz/QPSK/High CH



10MHz/16QAM/High CH



15MHz/QPSK/Low CH



15MHz/16QAM/Low CH

15MHz/QPSK/Mid CH

15MHz/16QAM/Mid CH

15MHz/QPSK/High CH

15MHz/16QAM/High CH

20MHz/QPSK/Low CH

20MHz/16QAM/Low CH

20MHz/QPSK/Mid CH

20MHz/16QAM/Mid CH

20MHz/QPSK/High CH

20MHz/16QAM/High CH

LTE Band 4, BW: 1.4MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.096	1.279	1.097	1.284
20175	1732.5	1.098	1.281	1.097	1.286
20392	1754.2	1.096	1.268	1.098	1.286
LTE Band 4, BW: 3MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.680	2.927	2.684	2.929
20175	1732.5	2.686	2.920	2.682	2.929
20384	1753.4	2.677	2.925	2.676	2.930
LTE Band 4, BW: 5MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.470	4.865	4.468	4.921
20175	1732.5	4.474	4.905	4.471	4.929
20375	1752.5	4.469	4.925	4.476	4.912
LTE Band 4, BW: 10MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20000	1715.0	8.921	9.574	8.922	9.598
20175	1732.5	8.929	9.636	8.928	9.680
20350	1750.0	8.916	9.626	8.904	9.562
LTE Band 4, BW: 15MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20025	1717.5	13.424	14.14	13.415	14.54
20175	1732.5	13.424	14.17	13.484	14.64
20325	1747.5	13.385	14.51	13.417	14.61

LTE Band 4, BW: 20MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20050	1720.0	17.824	19.13	17.831	19.13
20175	1732.5	17.870	19.35	17.858	19.30
20300	1745.0	17.797	19.18	17.776	19.18

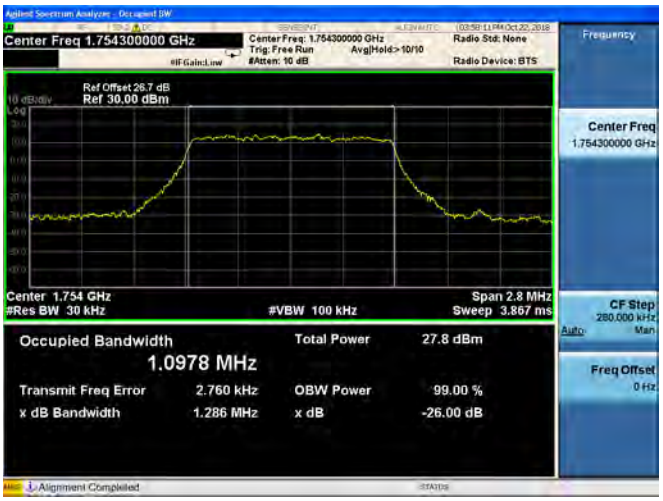
LTE Band 4 99%&26dB Bandwidth

1.4MHz/QPSK/Low CH

1.4MHz/16QAM/Low CH

1.4MHz/QPSK/Mid CH

1.4MHz/16QAM/Mid CH

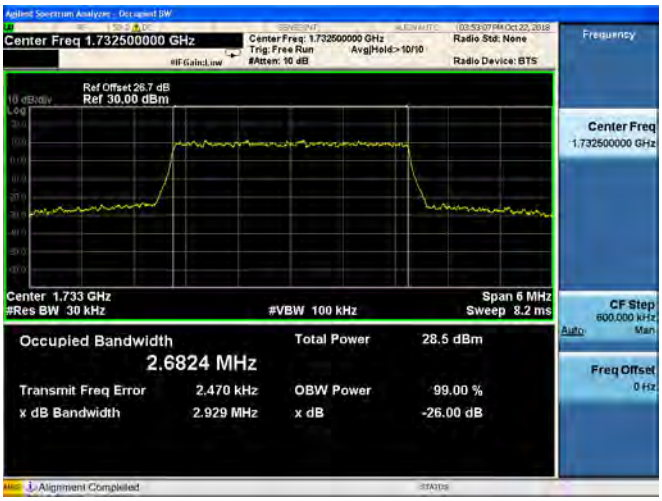
1.4MHz/QPSK/High CH	1.4MHz/16QAM/High CH
	

3MHz/QPSK/Low CH

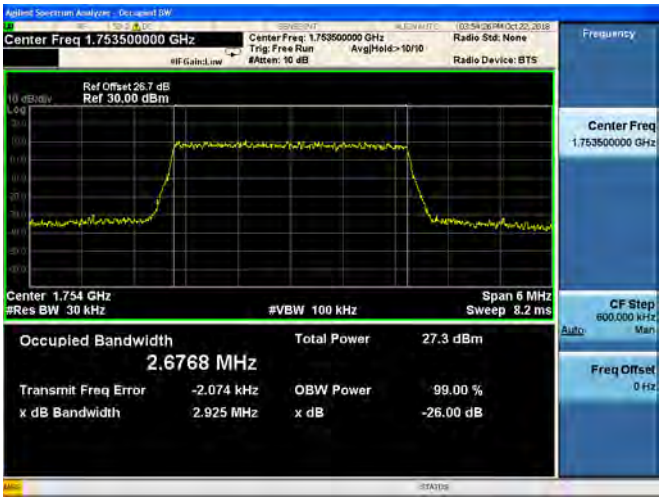
3MHz/16QAM/Low CH

3MHz/QPSK/Mid CH

3MHz/16QAM/Mid CH



3MHz/QPSK/High CH



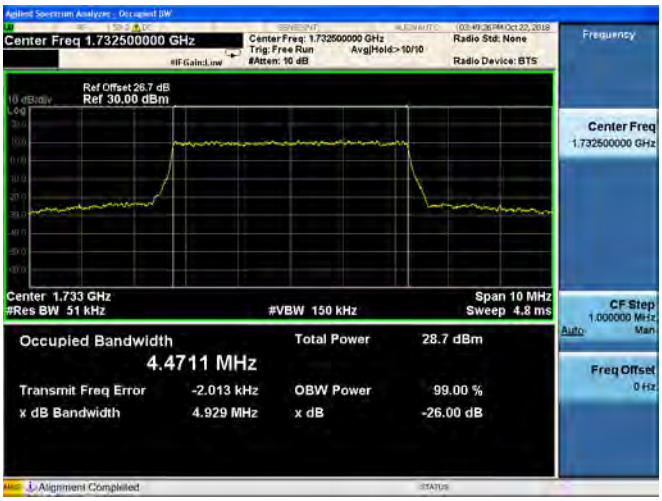
3MHz/16QAM/High CH

5MHz/QPSK/Low CH

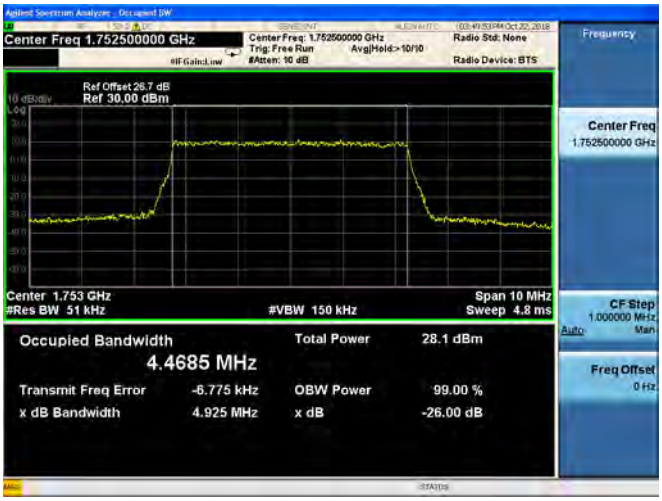
5MHz/16QAM/Low CH

5MHz/QPSK/Mid CH

5MHz/16QAM/Mid CH

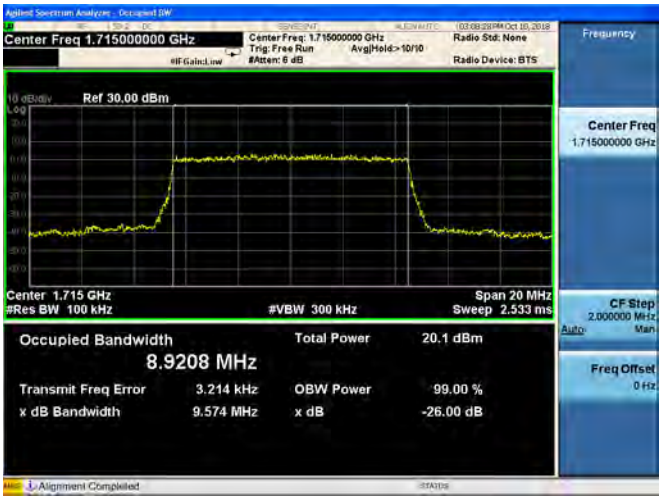


5MHz/QPSK/High CH



5MHz/16QAM/High CH

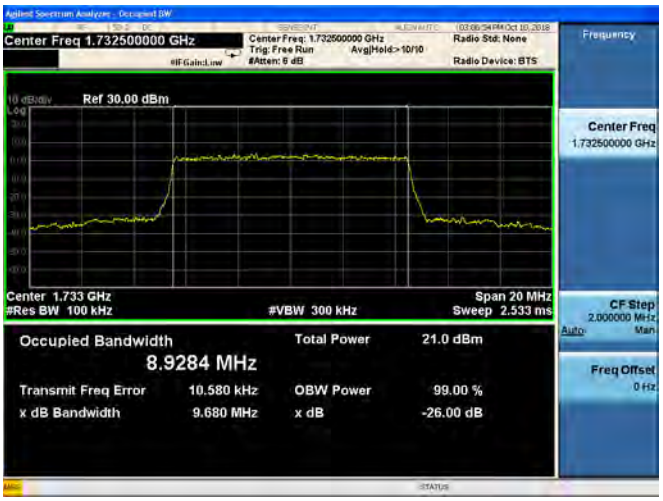
10MHz/QPSK/Low CH



10MHz/16QAM/Low CH

10MHz/QPSK/Mid CH

10MHz/16QAM/Mid CH



10MHz/QPSK/High CH

10MHz/16QAM/High CH

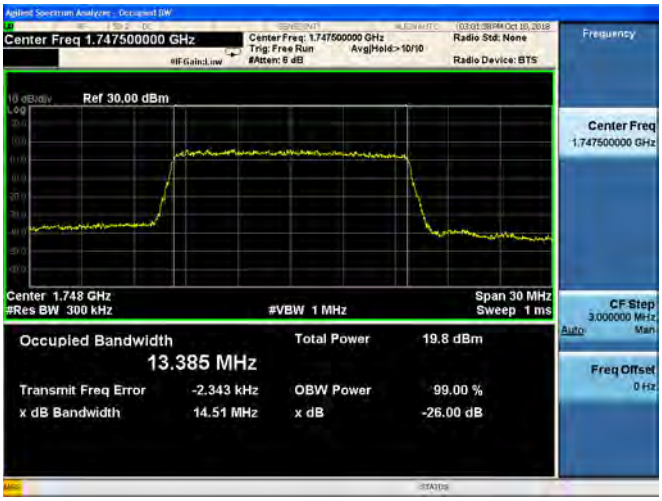
15MHz/QPSK/Low CH

15MHz/16QAM/Low CH

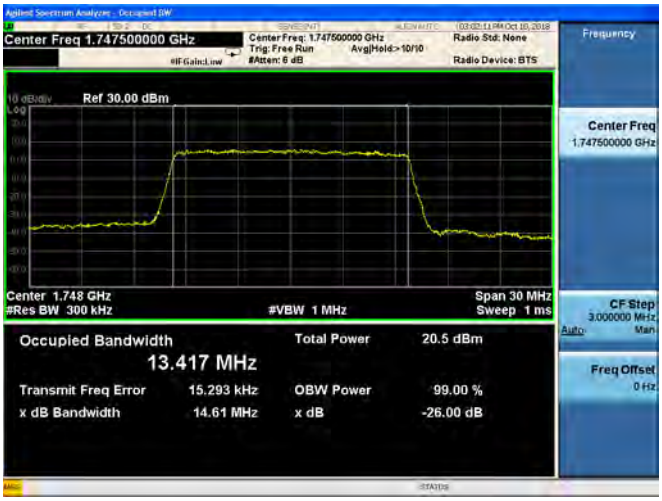
15MHz/QPSK/Mid CH

15MHz/16QAM/Mid CH

15MHz/QPSK/High CH



15MHz/16QAM/High CH



20MHz/QPSK/Low CH

20MHz/16QAM/Low CH

20MHz/QPSK/Mid CH

20MHz/16QAM/Mid CH

20MHz/QPSK/High CH

20MHz/16QAM/High CH

LTE Band 5, BW: 1.4MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20407	824.7	1.098	1.282	1.096	1.279
20525	836.5	1.098	1.282	1.095	1.269
20643	848.3	1.095	1.285	1.095	1.281
LTE Band 5, BW: 3MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20415	825.5	2.681	2.932	2.680	2.931
20525	836.5	2.684	2.933	2.683	2.936
20635	847.5	2.680	2.920	2.679	2.908
LTE Band 5, BW: 5MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20425	826.5	4.466	4.907	4.469	4.910
20525	836.5	4.470	4.910	4.469	4.917
20625	846.5	4.471	4.922	4.470	4.923
LTE Band 5, BW: 10MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20450	829.0	9.054	9.938	9.072	10.06
20525	836.5	9.055	10.06	9.050	10.06
20600	844.0	9.038	9.995	9.048	9.957

LTE Band 5 99%&26dB Bandwidth

1.4MHz/QPSK/Low CH

1.4MHz/16QAM/Low CH

1.4MHz/QPSK/Mid CH

1.4MHz/16QAM/Mid CH

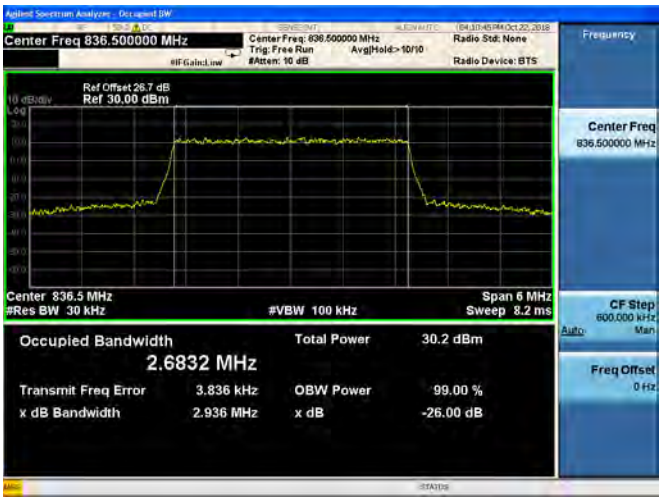
1.4MHz/QPSK/High CH	1.4MHz/16QAM/High CH

3MHz/QPSK/Low CH

3MHz/16QAM/Low CH

3MHz/QPSK/Mid CH

3MHz/16QAM/Mid CH



3MHz/QPSK/High CH

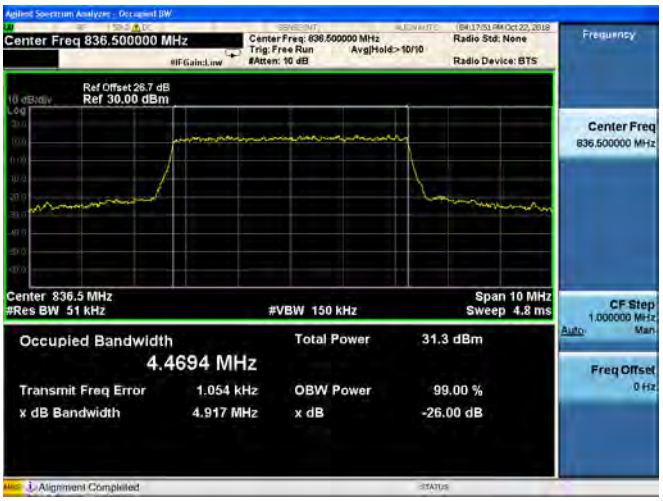
3MHz/16QAM/High CH

5MHz/QPSK/Low CH

5MHz/16QAM/Low CH

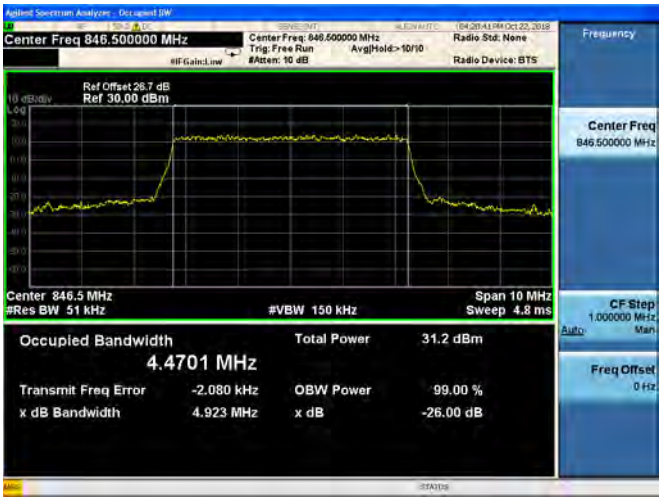
5MHz/QPSK/Mid CH

5MHz/16QAM/Mid CH



5MHz/QPSK/High CH

5MHz/16QAM/High CH



10MHz/QPSK/Low CH

10MHz/16QAM/Low CH

10MHz/QPSK/Mid CH

10MHz/16QAM/Mid CH

10MHz/QPSK/High CH

10MHz/16QAM/High CH

LTE Band 12, BW: 1.4MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
23017	699.7	1.097	1.263	1.095	1.292
23095	707.5	1.094	1.281	1.095	1.285
23173	715.3	1.095	1.271	1.095	1.278
LTE Band 12, BW: 3MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
23025	700.5	2.676	2.906	2.678	2.920
23095	707.5	2.676	2.895	2.677	2.907
23165	714.5	2.673	2.911	2.678	2.917
LTE Band 12, BW: 5MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
23035	701.5	4.468	4.939	4.468	4.937
23095	707.5	4.467	4.918	4.464	4.915
23165	714.5	4.470	4.941	4.472	4.940
LTE Band 12, BW: 10MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
23060	704.0	9.021	9.955	9.045	10.06
23095	707.5	9.041	10.10	9.043	10.08
23130	711.0	9.036	10.03	9.021	9.938

LTE Band 12 99%&26dB Bandwidth

1.4MHz/QPSK/Low CH

1.4MHz/16QAM/Low CH

1.4MHz/QPSK/Mid CH

1.4MHz/16QAM/Mid CH

1.4MHz/QPSK/High CH	1.4MHz/16QAM/High CH

3MHz/QPSK/Low CH

3MHz/16QAM/Low CH

3MHz/QPSK/Mid CH

3MHz/16QAM/Mid CH

3MHz/QPSK/High CH

3MHz/16QAM/High CH

5MHz/QPSK/Low CH

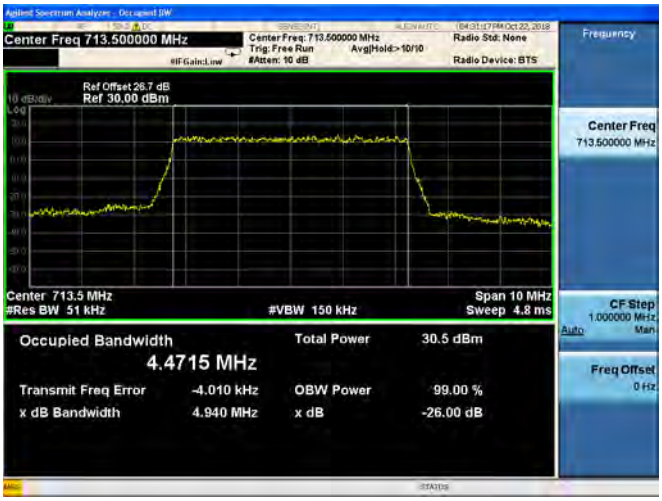
5MHz/16QAM/Low CH

5MHz/QPSK/Mid CH

5MHz/16QAM/Mid CH

5MHz/QPSK/High CH

5MHz/16QAM/High CH



10MHz/QPSK/Low CH

10MHz/16QAM/Low CH

10MHz/QPSK/Mid CH

10MHz/16QAM/Mid CH

10MHz/QPSK/High CH

10MHz/16QAM/High CH

2.3. Frequency Stability

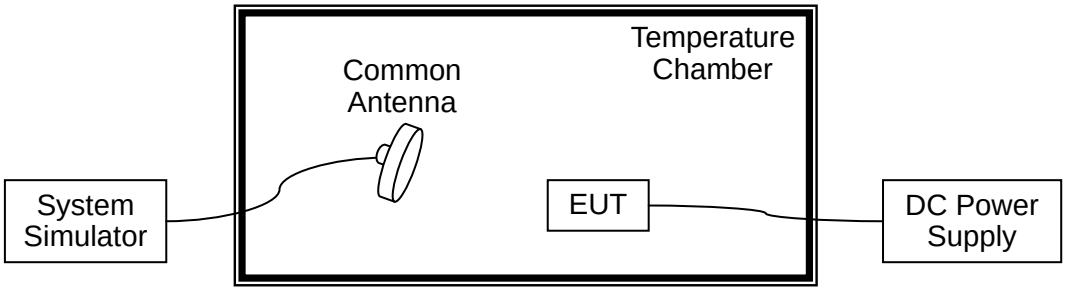
2.3.1. Requirement

According to FCC section 2.1055 & 27.54&24.235, 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.

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 3.8VDC, 4.4VDC and 3.5VDC, which are specified by the applicant; the normal temperature here used is 20°C. The frequency deviation limit is ±2.5ppm.

The testing was performed using one RB and Bandwidth setting for each band.

LTE Band 2 – QPSK - Channel 18900 – Frequency 1880.0MHz – RB 6/0 Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	5.0	-30	12.64	0.672	PASS
100		-20	-13.82	-0.735	
100		-10	7.63	0.405	
100		0	12.54	0.667	
100		+10	-11.49	-0.611	
100		+20	8.21	0.436	
100		+30	-12.24	-0.651	
100		+40	13.63	0.725	
100		+50	10.65	0.566	
115	5.2	+20	10.34	0.55	
85	4.8	+20	-14.65	-0.779	

LTE Band 4 – QPSK - Channel 20175 – Frequency 1732.5MHz – RB 6/0 Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	5.0	-30	13.29	0.767	PASS
100		-20	-11.83	-0.682	
100		-10	8.66	0.499	
100		0	10.57	0.61	
100		+10	-12.49	-0.721	
100		+20	8.31	0.479	
100		+30	-12.06	-0.696	
100		+40	9.65	0.556	
100		+50	14.32	0.826	
115	5.2	+20	12.35	0.712	
85	4.8	+20	-13.85	-0.799	

LTE Band 5 – QPSK - Channel 20525 – Frequency 836.5MHz Limit=±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	5.0	-30	12.32	0.589	PASS
100		-20	-10.84	-0.518	
100		-10	8.65	0.413	
100		0	10.54	0.504	
100		+10	-12.47	-0.596	
100		+20	8.34	0.398	
100		+30	-12.05	-0.576	
100		+40	9.64	0.461	
100		+50	8.51	0.406	
115	5.2	+20	10.25	0.49	
85	4.8	+20	-14.65	-0.701	

LTE Band 12 – QPSK - Channel 23095 – Frequency 707.5MHz – RB 6/0 Limit: Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	5.0	-30	12.42	0.702	PASS
100		-20	-10.85	-0.613	
100		-10	8.52	0.482	
100		0	10.54	0.595	
100		+10	-12.44	-0.703	
100		+20	8.57	0.484	
100		+30	-12.52	-0.707	
100		+40	9.57	0.541	
100		+50	8.47	0.478	
115	5.2	+20	10.46	0.591	
85	4.8	+20	-14.83	-0.838	

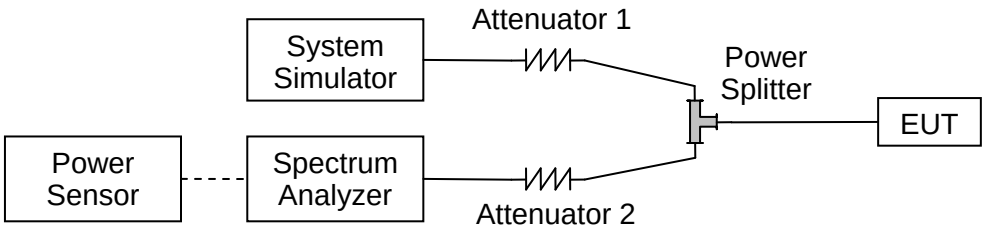
2.4. Peak to Average Radio

2.4.1. Requirement

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

2.4.2. Test Description

A. 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.

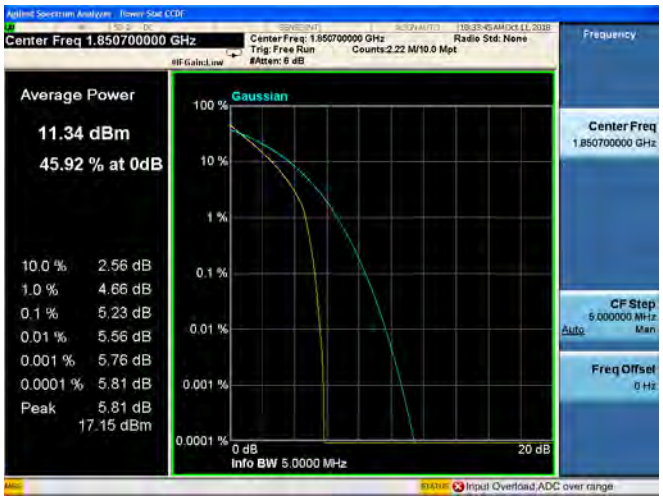
2.4.4. Test Result

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

LTE Band 2, BW: 1.4MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18607	1850.7	5.23	5.24
18900	1880.0	5.45	5.65
19192	1909.2	5.50	5.50
LTE Band 2, BW: 3MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18615	1851.5	5.32	5.32
18900	1880.0	5.46	5.46
19184	1908.4	5.51	5.52
LTE Band 2, BW: 5MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18625	1852.5	5.33	5.31
18900	1880.0	5.31	5.32
19175	1907.5	5.42	5.41
LTE Band 2, BW: 10MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18650	1855.0	4.76	4.76
18900	1880.0	4.77	4.77
19150	1905.0	4.80	4.80
LTE Band 2, BW: 15MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18675	1857.5	5.84	5.84
18900	1880.0	5.82	5.63
19125	1902.5	5.85	5.85
LTE Band 2, BW: 20MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18700	1860.0	6.46	6.43
18900	1880.0	6.44	6.45
19100	1900.0	6.45	6.45

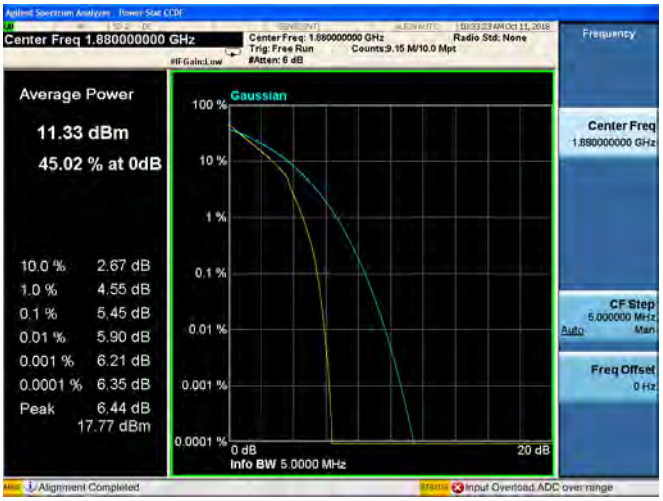
LTE Band 2 Peak to Average Radio

1.4MHz/QPSK/Low CH

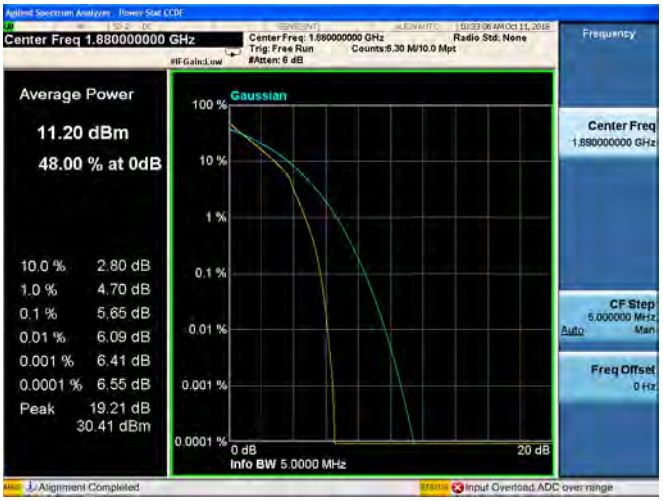


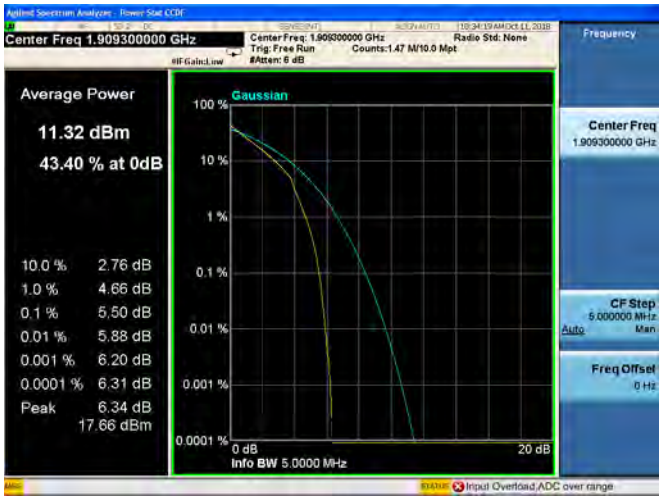
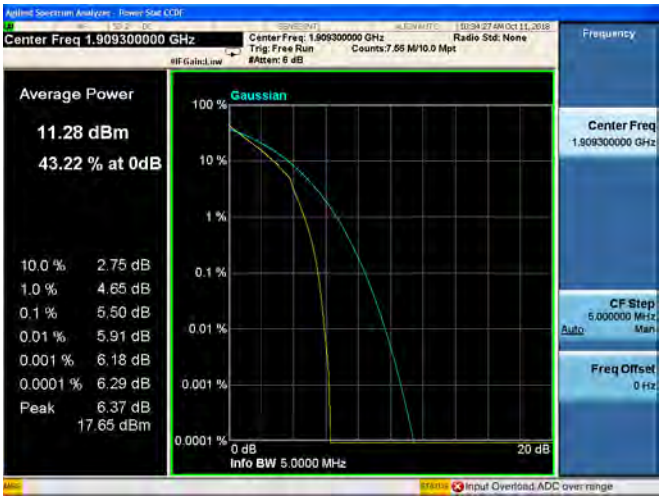
1.4MHz/16QAM/Low CH

1.4MHz/QPSK/Mid CH

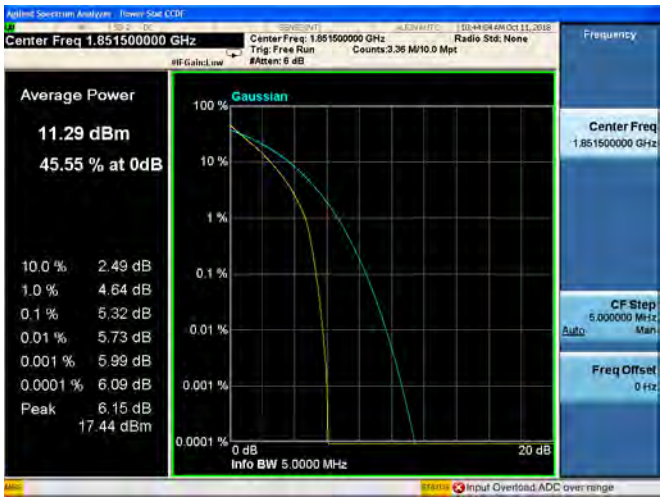


1.4MHz/16QAM/Mid CH

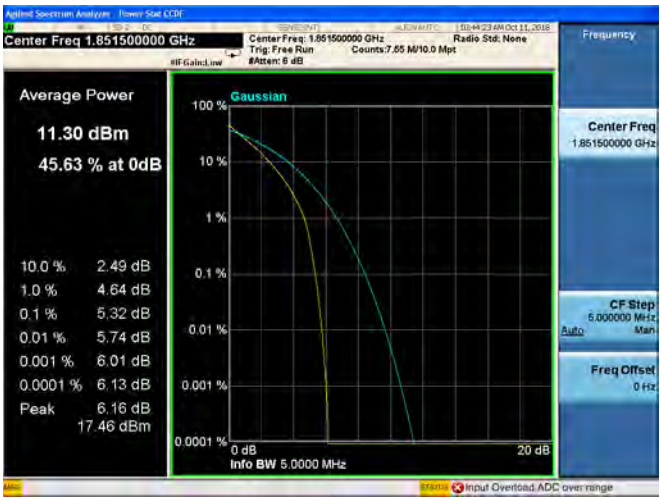


1.4MHz/QPSK/High CH	1.4MHz/16QAM/High CH
	

3MHz/QPSK/Low CH



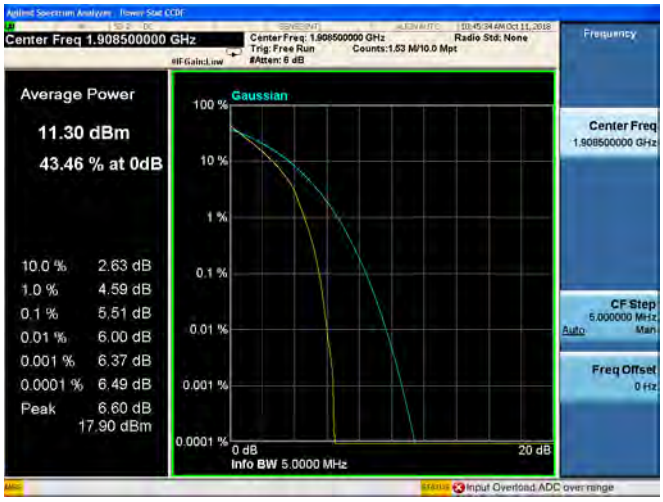
3MHz/16QAM/Low CH



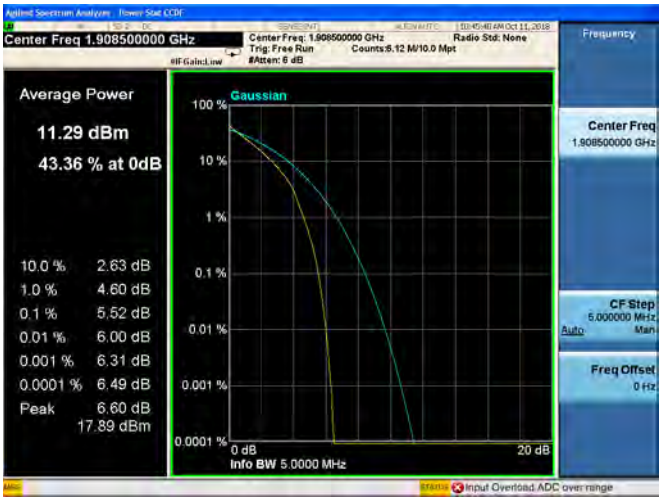
3MHz/QPSK/Mid CH

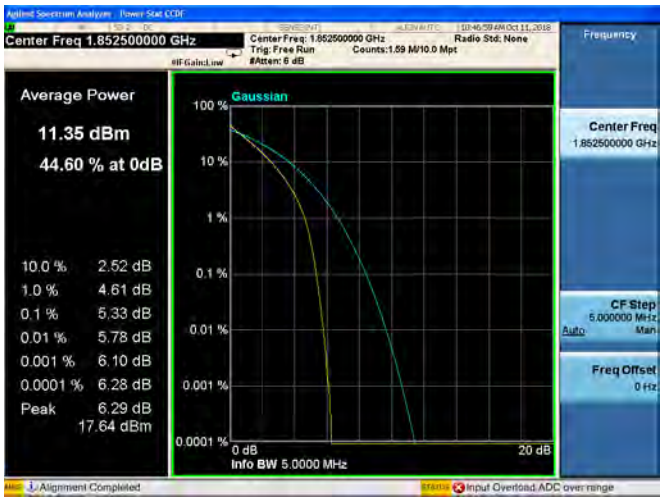
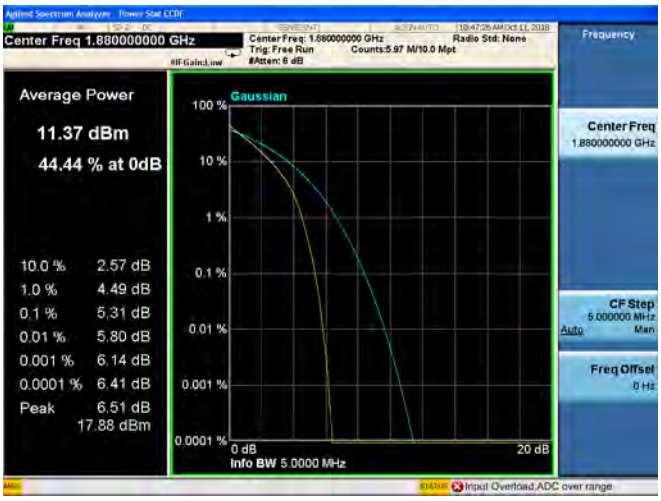
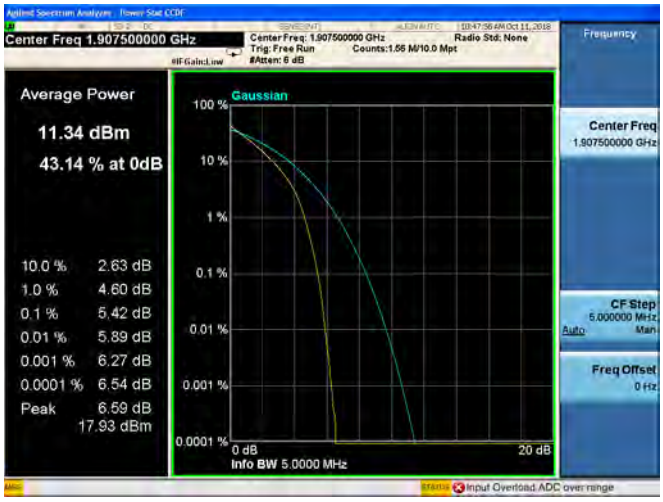
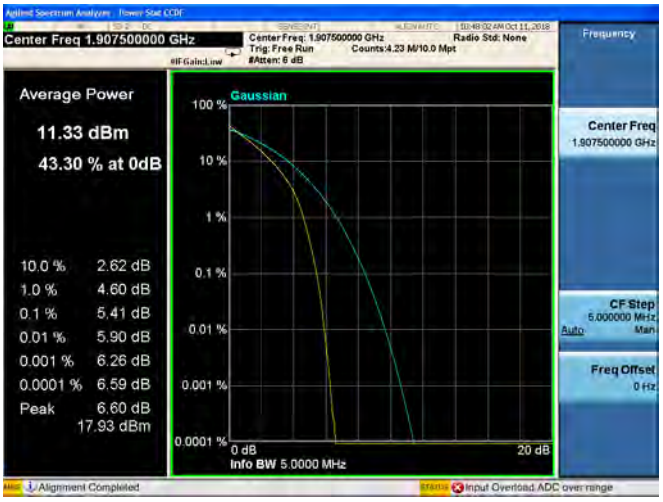
3MHz/16QAM/Mid CH

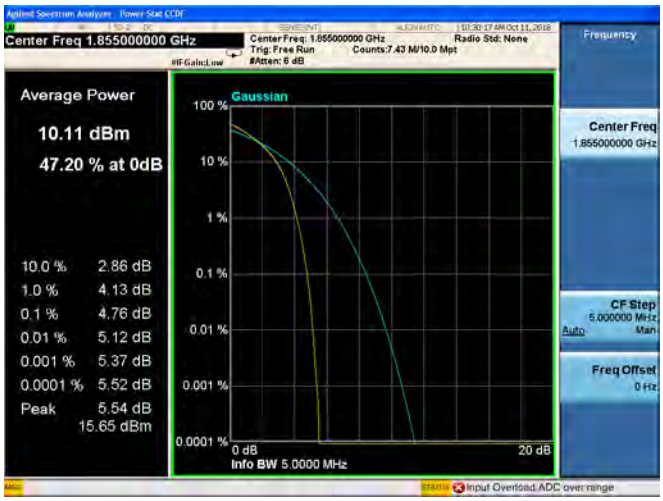
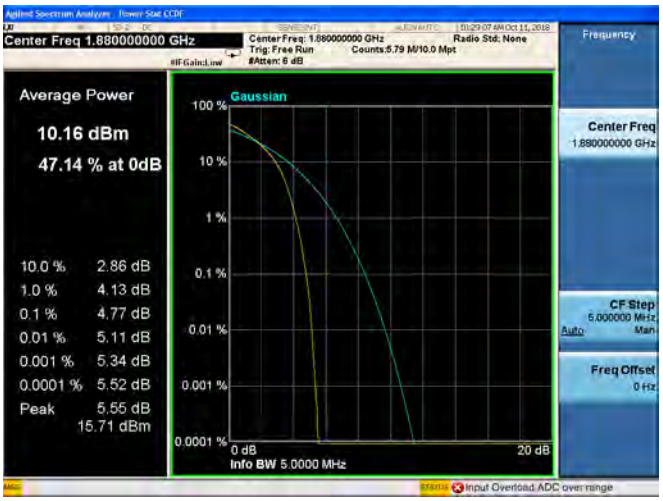
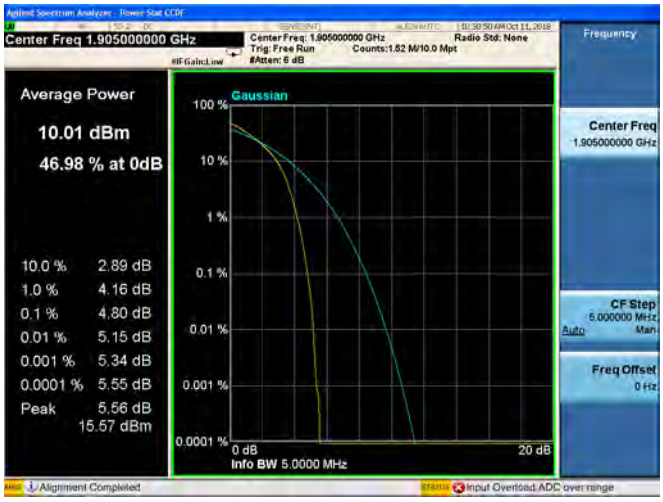
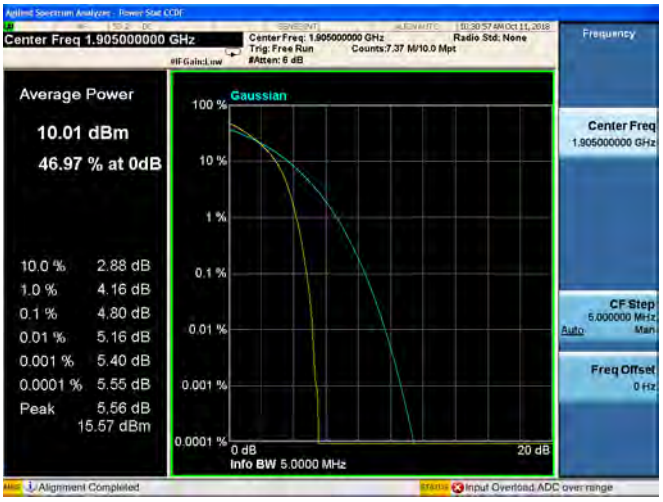
3MHz/QPSK/High CH



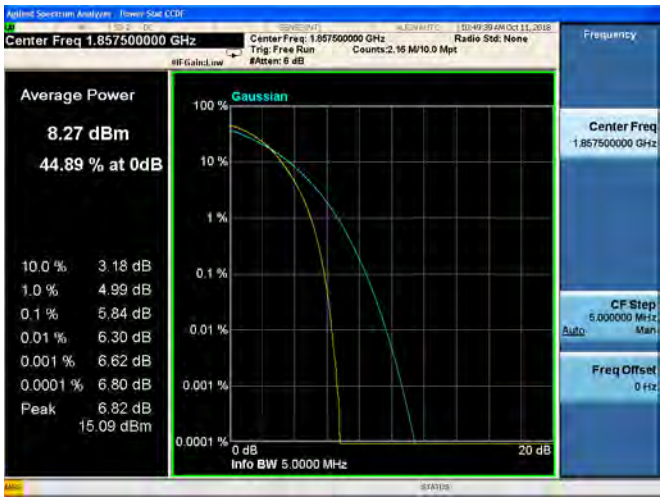
3MHz/16QAM/High CH



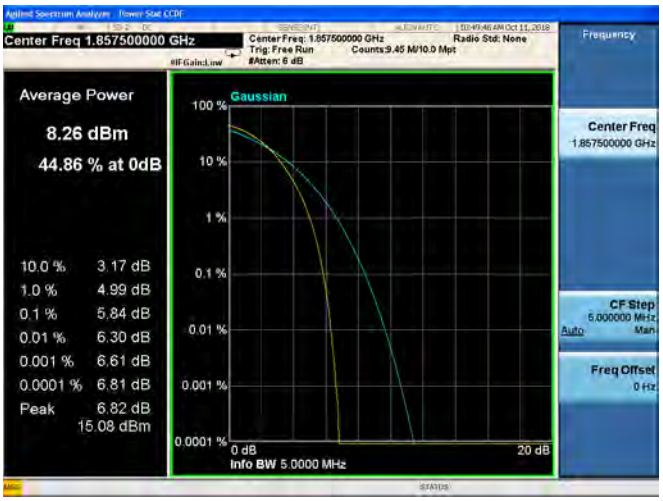
5MHz/QPSK/Low CH	5MHz/16QAM/Low CH
	
5MHz/QPSK/Mid CH	**5MHz/16QAM/Mid CH**
	
5MHz/QPSK/High CH	**5MHz/16QAM/High CH**
	

10MHz/QPSK/Low CH	10MHz/16QAM/Low CH
	
10MHz/QPSK/Mid CH	**10MHz/16QAM/Mid CH**
	
10MHz/QPSK/High CH	**10MHz/16QAM/High CH**
	

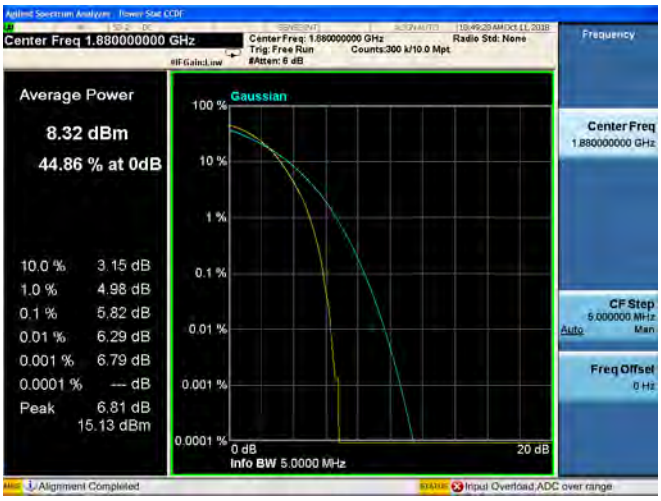
15MHz/QPSK/Low CH



15MHz/16QAM/Low CH

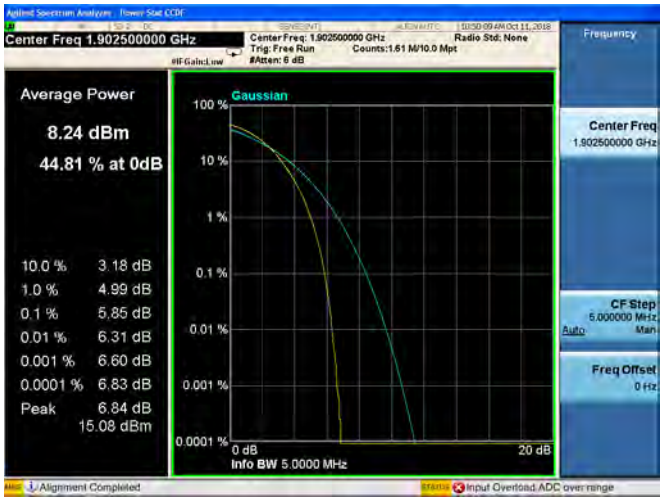


15MHz/QPSK/Mid CH

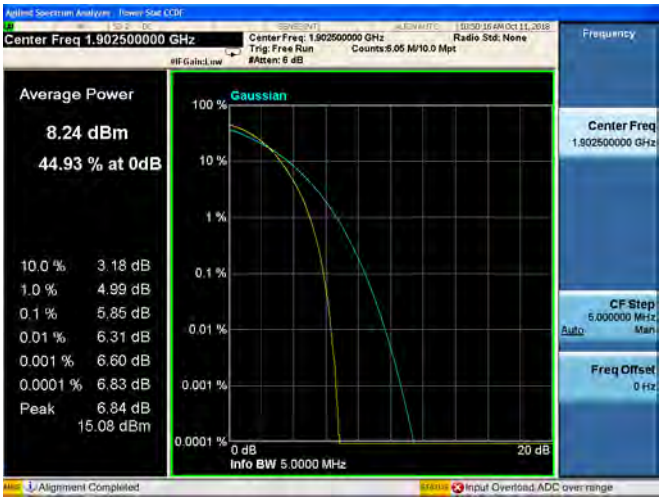


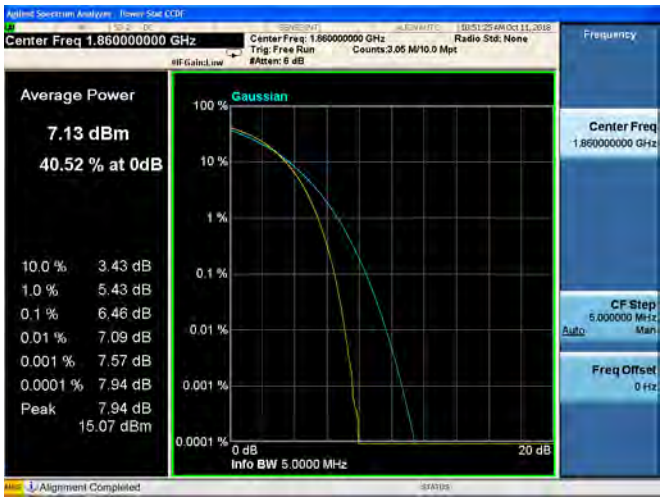
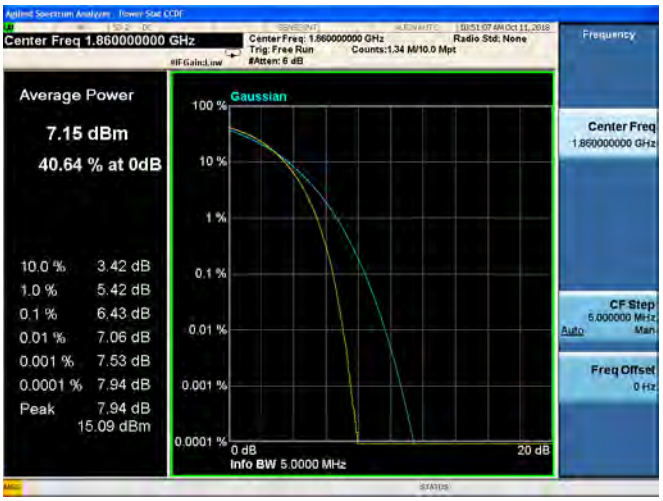
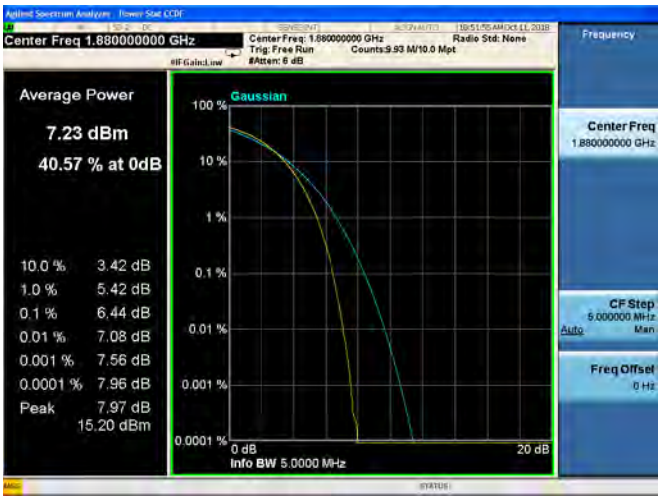
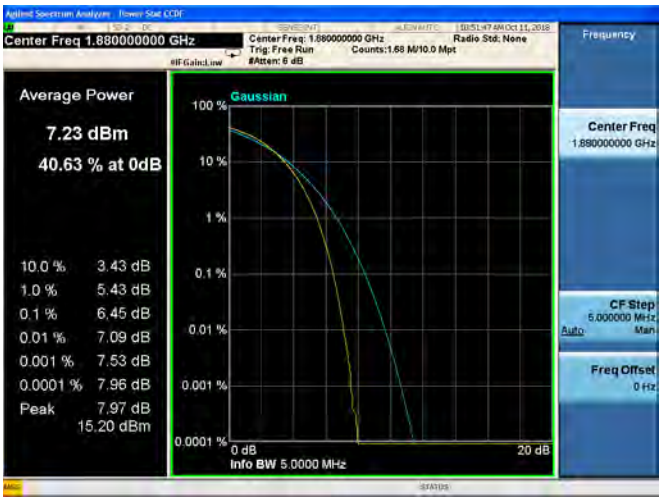
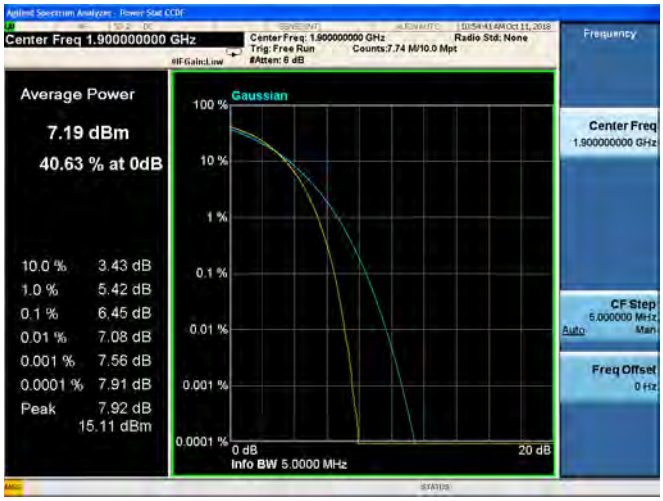
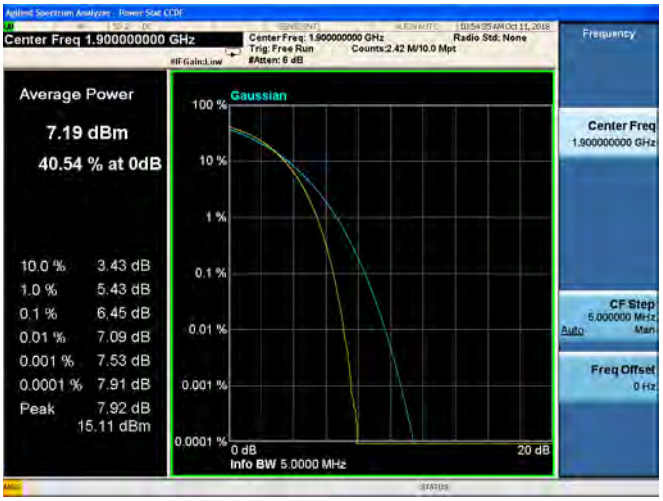
15MHz/16QAM/Mid CH

15MHz/QPSK/High CH



15MHz/16QAM/High CH

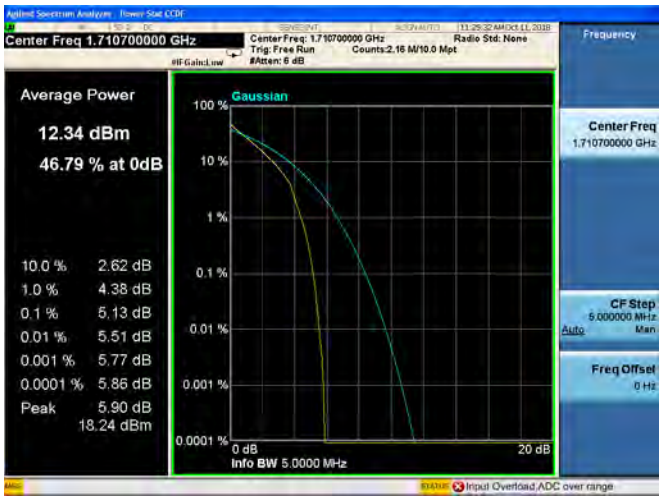


20MHz/QPSK/Low CH	20MHz/16QAM/Low CH
	
20MHz/QPSK/Mid CH	**20MHz/16QAM/Mid CH**
	
20MHz/QPSK/High CH	**20MHz/16QAM/High CH**
	

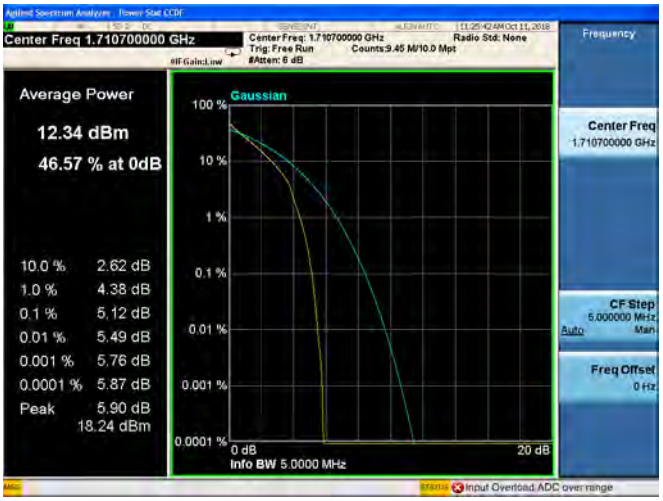
LTE Band 4, BW: 1.4MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18607	1850.7	5.13	5.12
18900	1880.0	5.39	5.36
19192	1909.2	4.69	4.70
LTE Band 4, BW: 3MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18615	1851.5	5.15	5.15
18900	1880.0	5.40	5.40
19184	1908.4	4.81	4.81
LTE Band 4, BW: 5MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18625	1852.5	5.09	5.08
18900	1880.0	5.33	5.31
19175	1907.5	4.92	4.92
LTE Band 4, BW: 10MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18650	1855.0	4.73	4.72
18900	1880.0	4.75	4.74
19150	1905.0	4.67	4.68
LTE Band 4, BW: 15MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18675	1857.5	5.82	5.82
18900	1880.0	6.46	6.45
19125	1902.5	5.81	5.81
LTE Band 4, BW: 20MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18700	1860.0	6.45	6.46
18900	1880.0	6.41	6.47
19100	1900.0	6.47	6.46

LTE Band 4 Peak to Average Radio

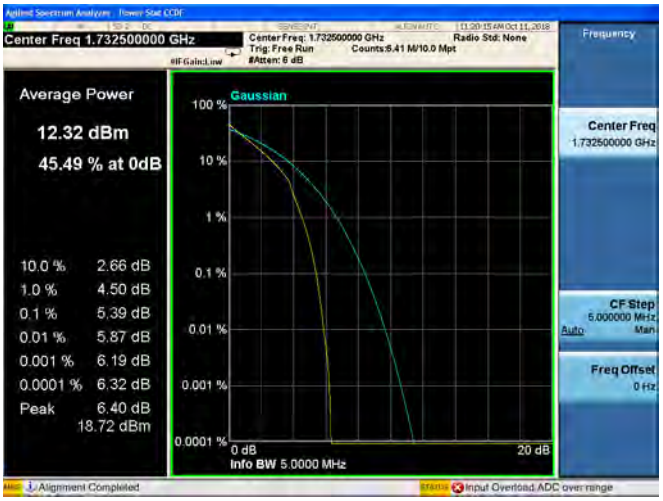
1.4MHz/QPSK/Low CH



1.4MHz/16QAM/Low CH



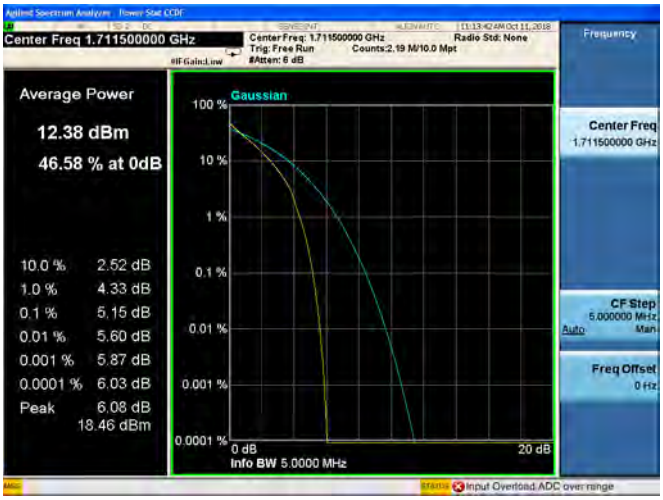
1.4MHz/QPSK/Mid CH



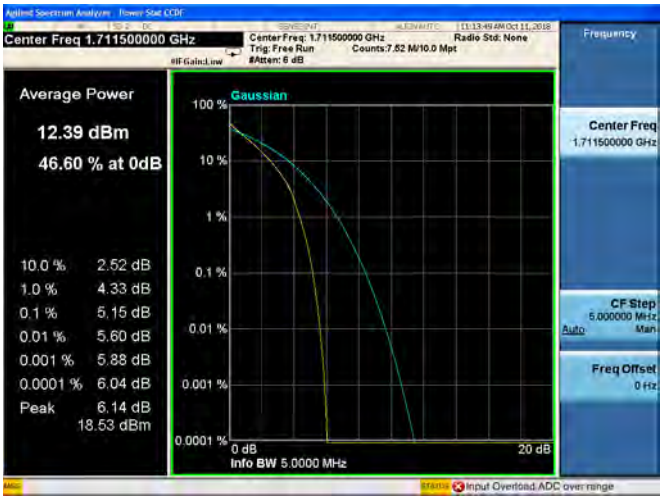
1.4MHz/16QAM/Mid CH

1.4MHz/QPSK/High CH	1.4MHz/16QAM/High CH

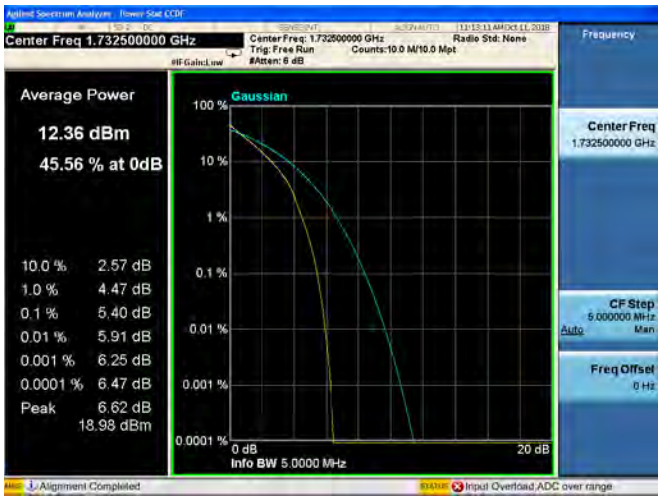
3MHz/QPSK/Low CH



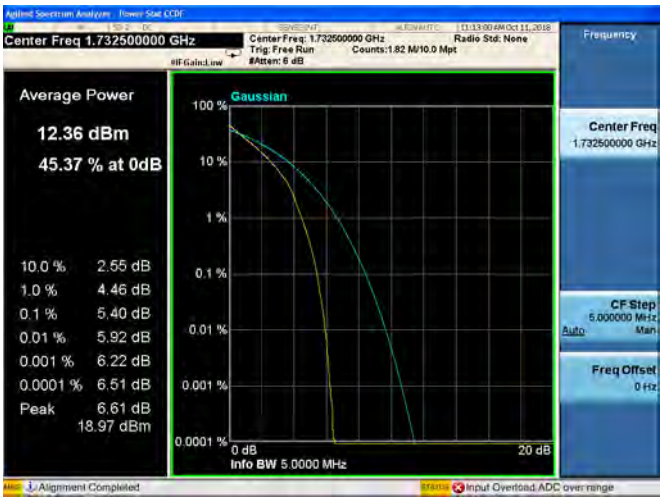
3MHz/16QAM/Low CH



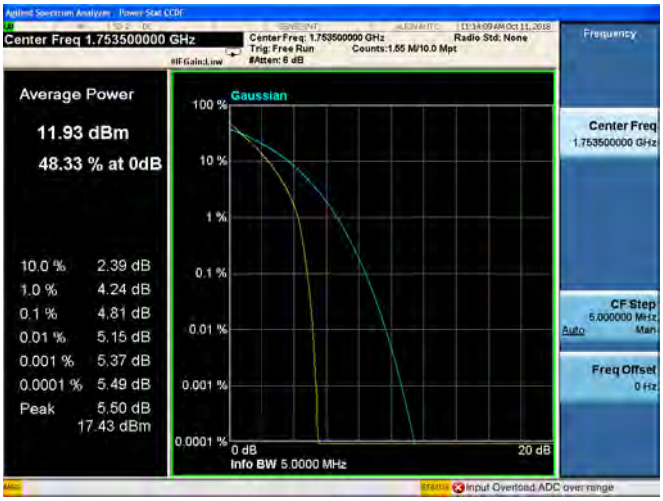
3MHz/QPSK/Mid CH



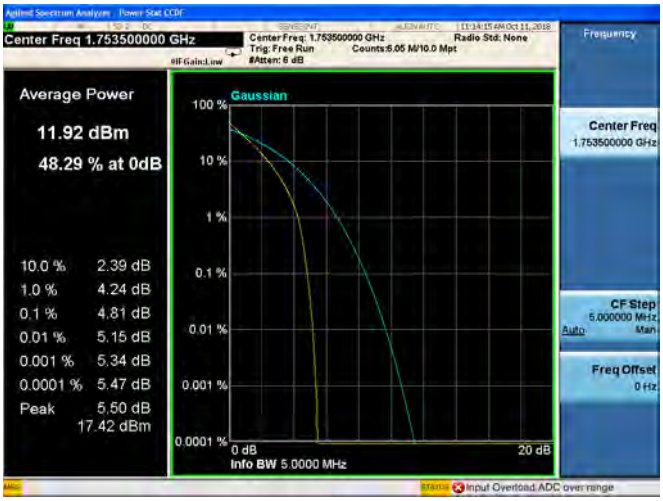
3MHz/16QAM/Mid CH



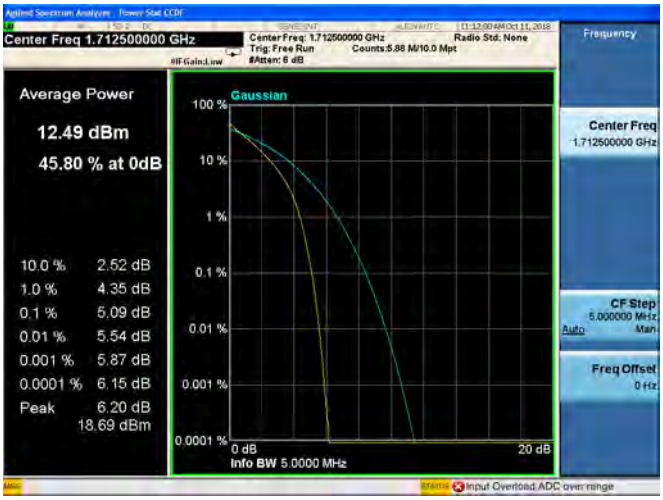
3MHz/QPSK/High CH



3MHz/16QAM/High CH

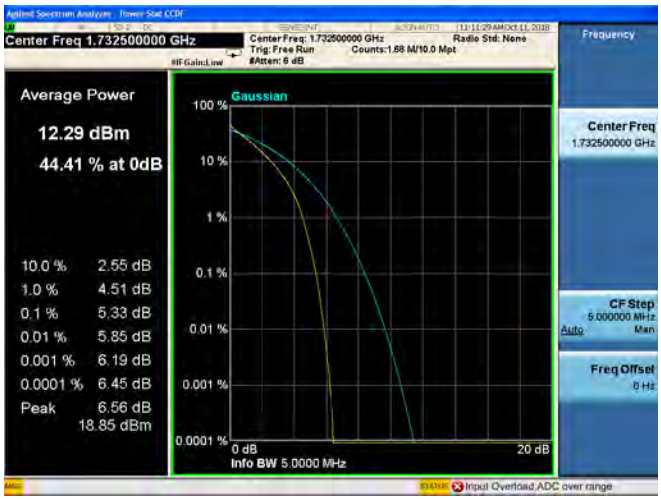


5MHz/QPSK/Low CH

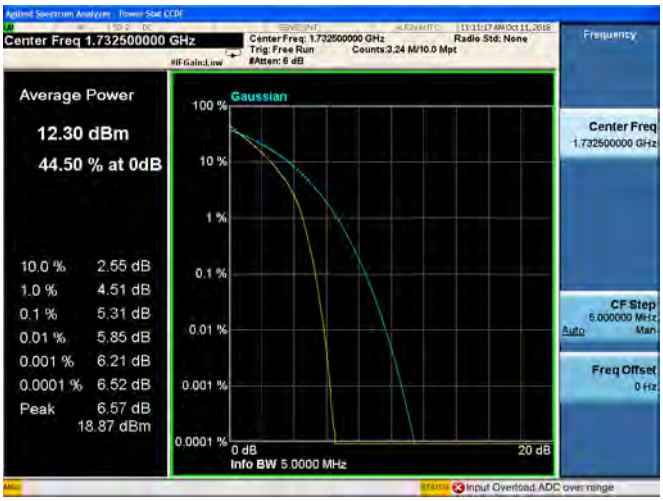


5MHz/16QAM/Low CH

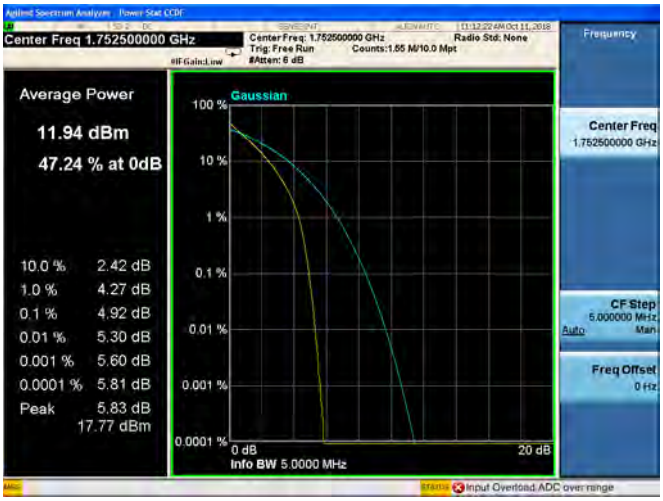
5MHz/QPSK/Mid CH



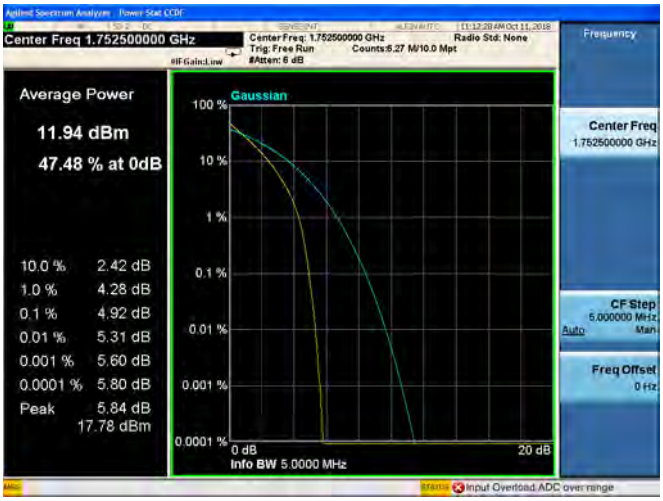
5MHz/16QAM/Mid CH



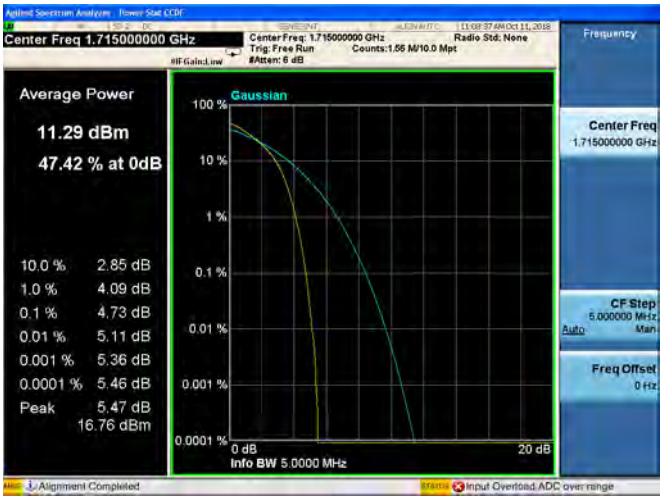
5MHz/QPSK/High CH



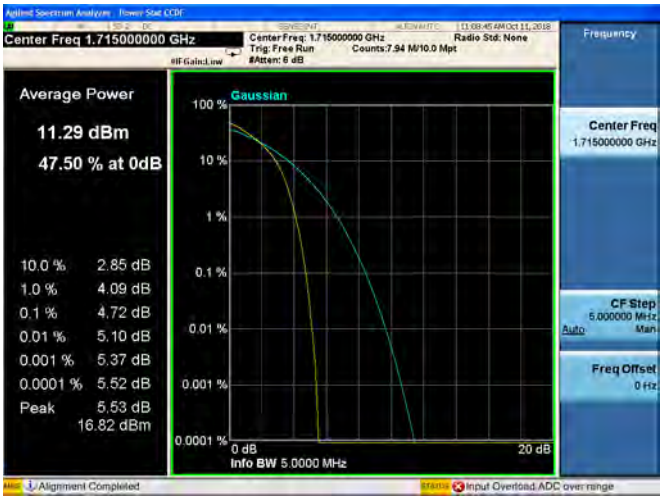
5MHz/16QAM/High CH



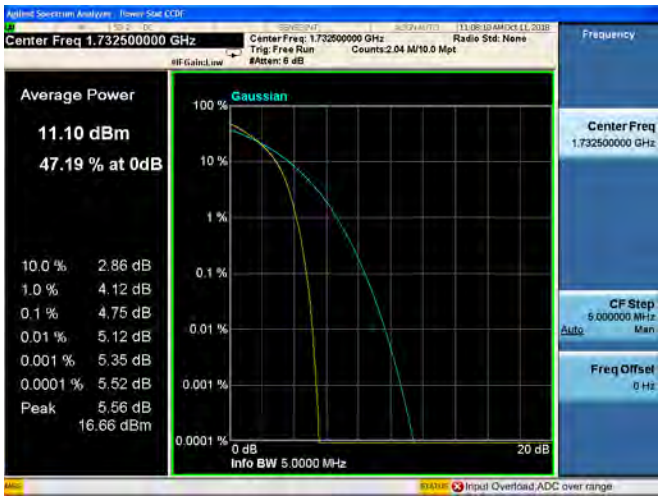
10MHz/QPSK/Low CH



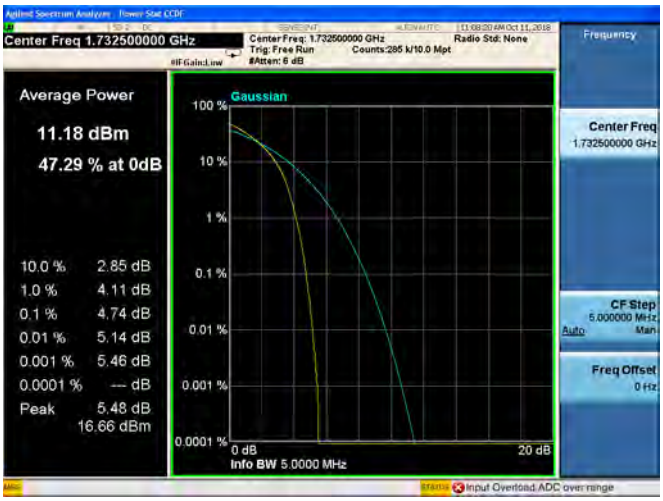
10MHz/16QAM/Low CH



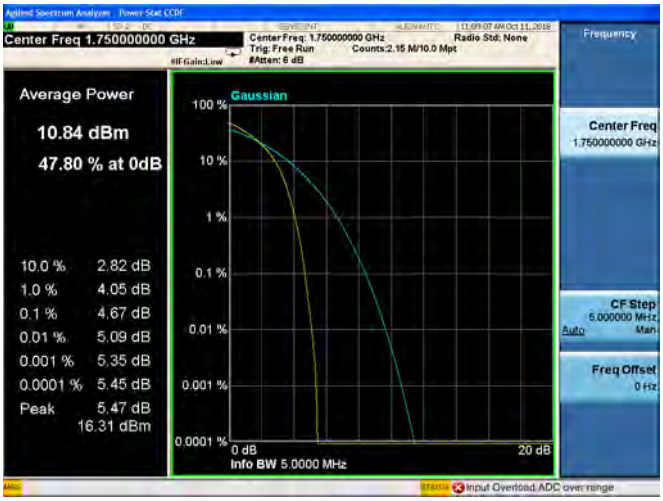
10MHz/QPSK/Mid CH



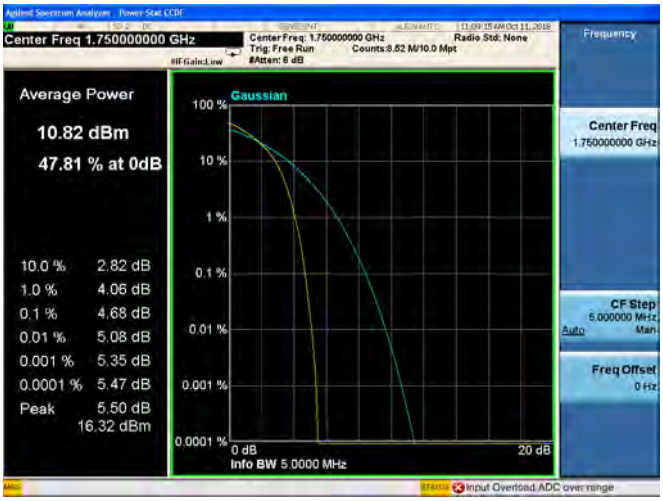
10MHz/16QAM/Mid CH



10MHz/QPSK/High CH



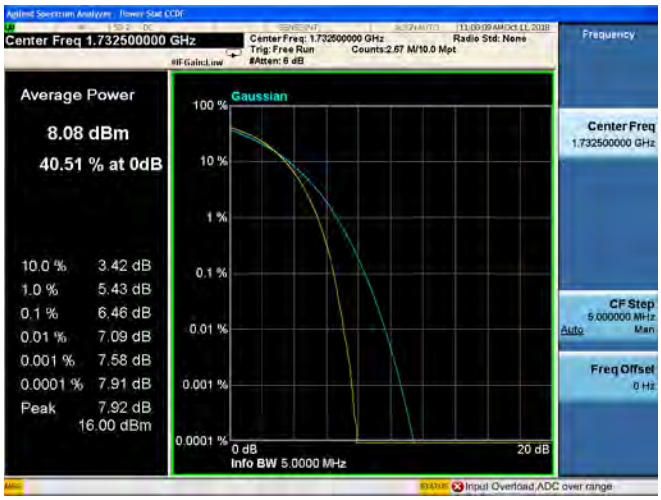
10MHz/16QAM/High CH



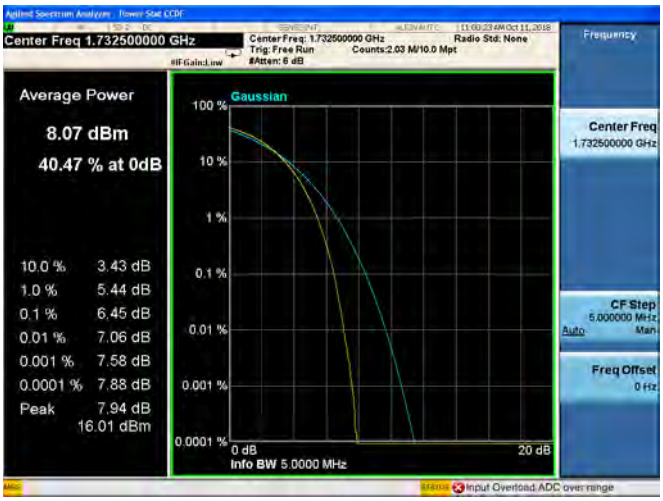
15MHz/QPSK/Low CH

15MHz/16QAM/Low CH

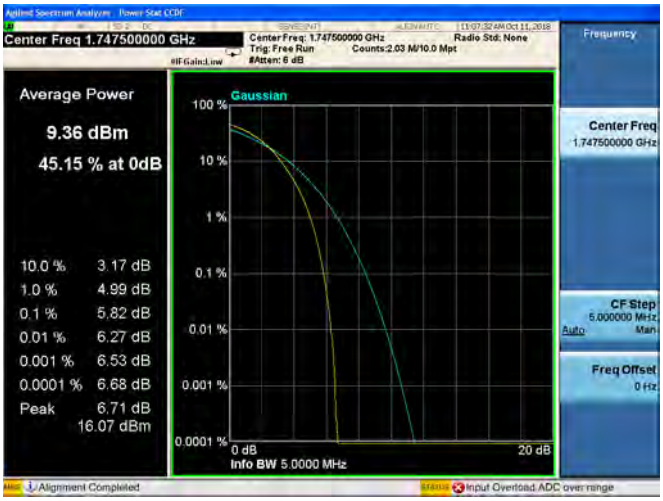
15MHz/QPSK/Mid CH



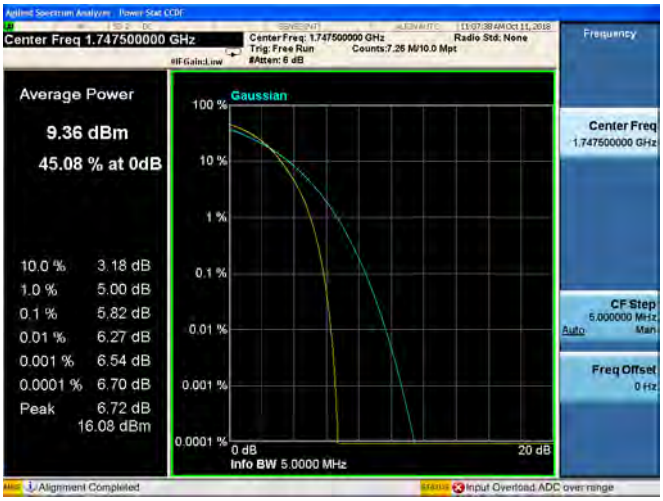
15MHz/16QAM/Mid CH



15MHz/QPSK/High CH



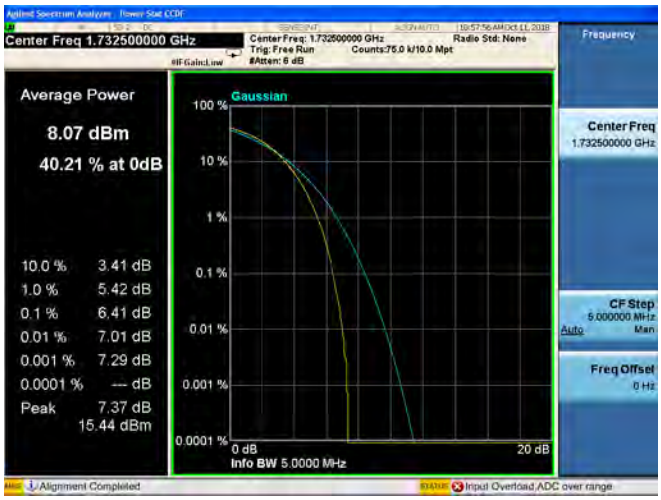
15MHz/16QAM/High CH



20MHz/QPSK/Low CH

20MHz/16QAM/Low CH

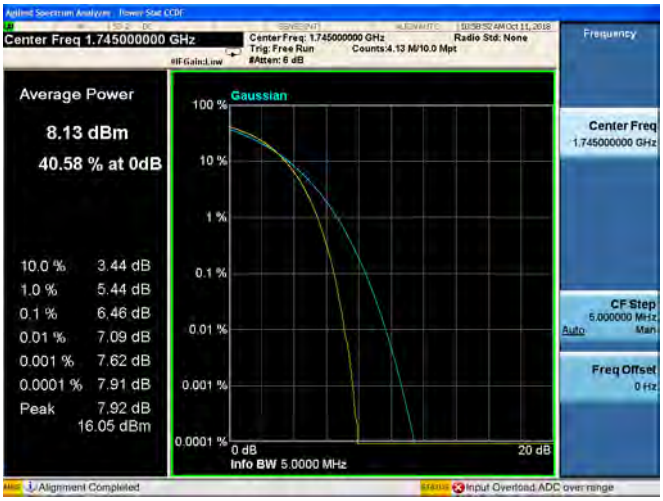
20MHz/QPSK/Mid CH



20MHz/16QAM/Mid CH

20MHz/QPSK/High CH

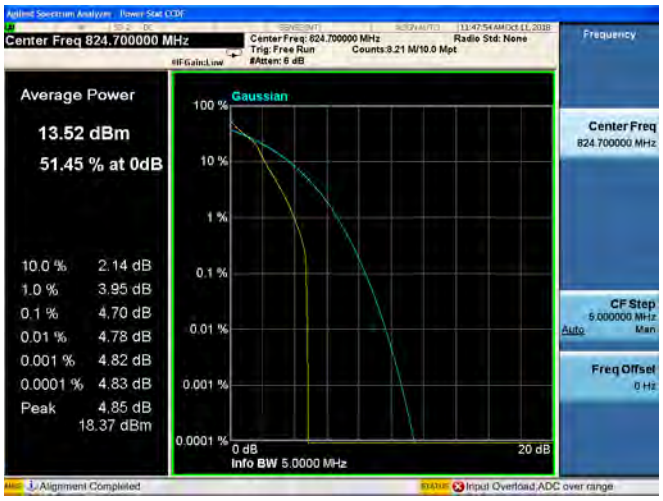
20MHz/16QAM/High CH



LTE Band 5, BW: 1.4MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
20407	824.7	4.70	4.71
20525	836.5	5.22	5.20
20643	848.3	4.98	5.00
LTE Band 5, BW: 3MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
20415	825.5	4.75	4.75
20525	836.5	4.83	4.80
20635	847.5	5.02	5.02
LTE Band 5, BW: 5MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
20425	826.5	4.92	4.91
20525	836.5	4.92	4.91
20625	846.5	5.03	5.03
LTE Band 5, BW: 10MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
20450	829.0	4.77	4.80
20525	836.5	5.42	4.78
20600	844.0	4.75	4.75

LTE Band 5 Peak to Average Radio

1.4MHz/QPSK/Low CH



1.4MHz/16QAM/Low CH

1.4MHz/QPSK/Mid CH

1.4MHz/16QAM/Mid CH

1.4MHz/QPSK/High CH	1.4MHz/16QAM/High CH