



REPORT No.: SZ16030124W05

FCC RF TEST REPORT

APPLICANT : ZTE Corporation
PRODUCT NAME : LTE Digital Mobile Handset
MODEL NAME : ZTE Blade A315
TRADE NAME : ZTE
BRAND NAME : ZTE
FCC ID : SRQ-A315
STANDARD(S) : 47 CFR Part 22, Subpart H
47 CFR Part 24, Subpart E
47 CFR Part 27, Subpart H&L&M
ISSUE DATE : 2016-04-20



SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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DIRECTORY

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Change History		
Issue	Date	Reason for change
1.0	2016-04-20	First edition

**TEST REPORT DECLARATION**

Applicant	ZTE Corporation
Applicant Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R. China
Manufacturer	ZTE Corporation
Manufacturer Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R. China
Product Name	LTE Digital Mobile Handset
Model Name	ZTE Blade A315
Brand Name	ZTE
HW Version	A315_V1AMB_B
SW Version	A315_Z99_MX_9S8O21k800K101
Test Standards	47 CFR Part 22, Subpart H 47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart H&L&M
Test Date	2016-04-01 to 2016-04-19
Test Result	PASS

Tested by : Zou Jian
Zou Jian

Reviewed by : Qiu Xiaojun
Qiu Xiaojun

Approved by : Peng Huarui
Peng Huarui



1. GENERAL INFORMATION

1.1 EUT Description

EUT Type: LTE Digital Mobile Handset
Serial No.: (n.a, marked #1 by test site)
Hardware Version.....: A315_V1AMB_B
Software Version..... A315_Z99_MX_9S8O21k800K101
Applicant: ZTE Corporation
ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China
Manufacturer: ZTE Corporation
ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China
Modulation Type.....: LTE Band 2: QPSK, 16QAM
LTE Band 4: QPSK, 16QAM
LTE Band 5: QPSK, 16QAM
LTE Band 7: QPSK, 16QAM
LTE Band 28: QPSK, 16QAM
Tx Frequency Range.....: LTE Band 2: 1850MHz ~1910MHz
LTE Band 4: 1710MHz ~1755MHz
LTE Band 5: 824MHz ~ 849MHz
LTE Band 7: 2500MHz ~ 2570MHz
LTE Band 28: 703MHz ~ 748MHz
Rx Frequency Range: LTE Band 2: 1930MHz ~ 1990MHz
LTE Band 4: 2110MHz ~ 2155MHz
LTE Band 5: 869MHz ~ 894MHz
LTE Band 7: 2620MHz ~ 2690MHz
LTE Band 28: 758MHz ~ 803MHz
Emission Designator: 1M11G7D (LTE Band 2, QPSK, BW 1.4MHz)
1M11W7D (LTE Band 2, 16QAM, BW 1.4MHz)
2M72G7D (LTE Band 2, QPSK, BW 3MHz)
2M72 W7D (LTE Band 2, 16QAM, BW 3MHz)
4M54G7D (LTE Band 2, QPSK, BW 5MHz)
4M55 W7D (LTE Band 2, 16QAM, BW 5MHz)
9M00G7D (LTE Band 2, QPSK, BW 10MHz)
9M00W7D (LTE Band 2, 16QAM, BW 10MHz)
13M50G7D (LTE Band 2, QPSK, BW 15MHz)
13M52W7D (LTE Band 2, 16QAM, BW 15MHz)



18M03G7D (LTE Band 2, QPSK, BW 20MHz)
18M04W7D (LTE Band 2, 16QAM, BW 20MHz)
1M11G7D (LTE Band 4, QPSK, BW 1.4MHz)
1M10W7D (LTE Band 4, 16QAM, BW 1.4MHz)
2M71G7D (LTE Band 4, QPSK, BW 3MHz)
2M71W7D (LTE Band 4, 16QAM, BW 3MHz)
4M54G7D (LTE Band 4, QPSK, BW 5MHz)
4M54W7D (LTE Band 4, 16QAM, BW 5MHz)
9M00G7D (LTE Band 4, QPSK, BW 10MHz)
9M01W7D (LTE Band 4, 16QAM, BW 10MHz)
13M52G7D (LTE Band 4, QPSK, BW 15MHz)
13M51W7D (LTE Band 4, 16QAM, BW 15MHz)
18M03G7D (LTE Band 4, QPSK, BW 20MHz)
18M07W7D (LTE Band 4, 16QAM, BW 20MHz)
1M11G7D (LTE Band 5, QPSK, BW 1.4MHz)
1M10W7D (LTE Band 5, 16QAM, BW 1.4MHz)
2M72G7D (LTE Band 5, QPSK, BW 3MHz)
2M72W7D (LTE Band 5, 16QAM, BW 3MHz)
4M54G7D (LTE Band 5, QPSK, BW 5MHz)
4M53W7D (LTE Band 5, 16QAM, BW 5MHz)
9M07G7D (LTE Band 5, QPSK, BW 10MHz)
9M03W7D (LTE Band 5, 16QAM, BW 10MHz)
4M54G7D (LTE Band 7, QPSK, BW 5MHz)
4M54W7D (LTE Band 7, 16QAM, BW 5MHz)
9M01G7D (LTE Band 7, QPSK, BW 10MHz)
9M00W7D (LTE Band 7, 16QAM, BW 10MHz)
13M51G7D (LTE Band 7, QPSK, BW 15MHz)
13M52W7D (LTE Band 7, 16QAM, BW 15MHz)
17M99G7D (LTE Band 7, QPSK, BW 20MHz)
18M02W7D (LTE Band 7, 16QAM, BW 20MHz)
2M72G7D (LTE Band 28, 704MHz-710MHz, QPSK, BW 3MHz)
2M71W7D (LTE Band 28,704MHz-710MHz, 16QAM, BW 3MHz)
4M54G7D (LTE Band 28, 704MHz-710MHz, QPSK, BW 5MHz)
4M54W7D (LTE Band 28, 704MHz-710MHz, 16QAM, BW 5MHz)
2M72G7D (LTE Band 28, 710MHz-716MHz, QPSK, BW 3MHz)
2M71W7D (LTE Band 28, 710MHz-716MHz, 16QAM, BW 3MHz)
4M53G7D (LTE Band 28, 710MHz-716MHz, QPSK, BW 5MHz)
4M54W7D (LTE Band 28, 710MHz-716MHz, 16QAM, BW 5MHz)



- 2M72G7D (LTE Band 28, 734MHz-740MHz, QPSK, BW 3MHz)
- 2M72W7D (LTE Band 28, 734MHz-740MHz, 16QAM, BW 3MHz)
- 4M54G7D (LTE Band 28, 734MHz-740MHz, QPSK, BW 5MHz)
- 4M55W7D (LTE Band 28, 734MHz-740MHz, 16QAM, BW 5MHz)
- 2M72G7D (LTE Band 28, 740MHz-746MHz, QPSK, BW 3MHz)
- 2M71W7D (LTE Band 28, 740MHz-746MHz, 16QAM, BW 3MHz)
- 4M53G7D (LTE Band 28, 740MHz-746MHz, QPSK, BW 5MHz)
- 4M55W7D (LTE Band 28, 740MHz-746MHz, 16QAM, BW 5MHz)

Antenna Type.....: PIFA Antenna
Power Supply..... 3.8V DC Power

1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2 and Part 22, Part 24, Part 27 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-09 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-09 Edition)	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:

No.	Section	Description	Result
1	2.1046	Transmitter Conducted Output Power	<u>PASS</u>
2	24.232(d), 27.50(d)(5)	Occupied Bandwidth	<u>PASS</u>
3	2.1049, 22.917 24.238, 27.53(g)	Frequency Stability	<u>PASS</u>
4	2.1055, 22.355 24.235, 27.54	Peak to Average Ratio	<u>PASS</u>
5	2.1051, 2.1057 24.238, 27.53(g)	Conducted Spurious Emissions	<u>PASS</u>
6	2.1051, 2.1057, 22.917, 24.238, 27.53(g)(h), 27.53(m)(4)	Band Edge	<u>PASS</u>
7	22.913, 24.232, 27.50(d)(4)	Equivalent Isotropic Radiated Power	<u>PASS</u>
8	2.1053, 2.1057, 22.917, 24.238, 27.53(g)	Radiated Spurious Emissions	<u>PASS</u>

1.3 Facilities and Accreditations

1.3.1 Facilities

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572.

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China 518101. The test site is constructed in conformance with the requirements of TIA/EIA 603.D: 2010, ANSI C63.4: 2009 and CISPR Publication 22: 2010. The FCC registration number is 695796.

1.3.2 Test Environment 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 & 24E & 27H&L&M REQUIREMENTS

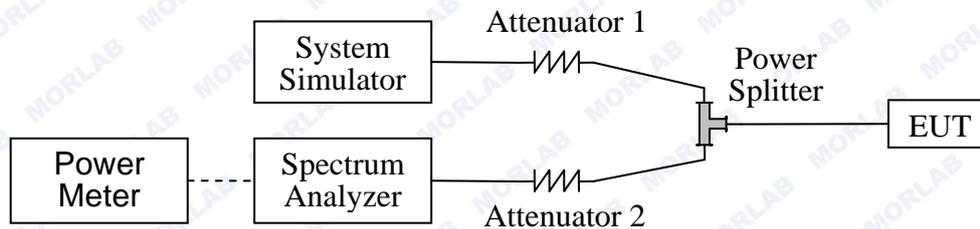
2.1 Transmitter Conducted Output Power

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

Test Setup:



The EUT, which is powered by the Battery, 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.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k5 0/124534/wk	2016.03.02	2016.03.01
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2016.03.02	2016.03.01
Spectrum Analyzer	Agilent	E4445A	MY44200685	2016.03.02	2016.03.01
Power Meter	Agilent	E4418B	GB43318055	2016.03.02	2016.03.01
Power Meter	Agilent	E4418B	GB43318055	2016.03.02	2016.03.01
Power Sensor	Agilent	8482A	MY41091706	2016.03.02	2016.03.01
Power Splitter	Weinschel	1506A	NW521	2016.03.02	2016.03.01
Attenuator 1	Resnet	20dB	(n.a.)	2016.03.02	2016.03.01
Attenuator 2	Resnet	3dB	(n.a.)	2016.03.02	2016.03.01

2.1.3 Test Results



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	20MHz	L 18700	1860	QPSK	1	0	22.03
					1	49	22.11
					1	99	22.06
					50	0	21.21
					50	25	21.08
					50	49	21.13
				100	0	21.20	
				16-QAM	1	0	21.25
					1	49	21.31
					1	99	21.17
					50	0	20.56
					50	25	20.61
		50	49		20.49		
		M 18900	1880	QPSK	1	0	22.31
					1	49	22.26
					1	99	22.24
					50	0	21.01
					50	25	21.02
					50	49	20.91
				100	0	20.94	
				16-QAM	1	0	21.43
					1	49	21.32
					1	99	21.21
					50	0	20.56
					50	25	20.67
		50	49		20.49		
		H 19100	1900	QPSK	1	0	22.04
					1	49	22.08
					1	99	21.79
					50	0	20.83
50	25				21.25		
50	49				21.05		
100	0			20.86			
16-QAM	1			0	21.19		
	1			49	21.33		
	1			99	20.41		
	50			0	20.23		
	50			25	20.31		
	50	49	20.18				
100	0	19.97					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	15MHz	L 18675	1857.5	QPSK	1	0	21.71
					1	37	21.58
					1	74	21.61
					36	0	21.01
					36	18	21.09
					36	35	20.98
				16-QAM	75	0	21.05
					1	0	21.03
					1	37	20.96
					1	74	20.95
					36	0	20.45
					36	18	20.52
		M 18900	1880	QPSK	36	35	20.48
					75	0	20.14
					1	0	22.01
					1	37	21.98
					1	74	21.56
					36	0	21.05
				16-QAM	36	18	20.78
					36	35	20.89
					75	0	21.10
					1	0	21.40
					1	37	21.34
					1	74	21.29
		H 19125	1902.5	QPSK	36	0	20.75
					36	18	20.64
					36	35	20.64
					75	0	20.79
					1	0	21.40
					1	37	21.34
16-QAM	1			74	21.29		
	36			0	20.81		
	36			18	20.75		
	36			35	20.64		
	75			0	20.79		
	1			0	20.66		
1	37	20.56					
1	74	20.64					
36	0	20.23					
36	18	20.21					
36	35	20.19					
75	0	19.90					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	10MHz	L 18650	1855	QPSK	1	0	21.49
					1	24	21.38
					1	49	21.40
					25	0	20.88
					25	12	20.81
					25	24	20.72
				16-QAM	50	0	20.97
					1	0	20.78
					1	24	20.64
					1	49	20.73
					25	0	20.21
					25	12	20.19
		M 18900	1880	QPSK	25	24	20.12
					50	0	19.98
					1	0	21.99
					1	24	21.59
					1	49	21.64
					25	0	21.03
				16-QAM	25	12	20.88
					25	24	20.92
					50	0	20.96
					1	0	21.42
					1	24	21.38
					1	49	21.40
		H 19150	1905	QPSK	25	0	20.12
					25	12	20.25
					25	24	20.17
					50	0	19.97
					1	0	21.67
					1	24	21.58
16-QAM	1			49	21.61		
	25			0	20.89		
	25			12	20.76		
	25			24	20.79		
	50			0	20.69		
	1			0	20.37		
1	24	20.22					
1	49	20.34					
25	0	20.12					
25	12	20.21					
25	24	20.14					
50	0	19.87					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	5MHz	L 18625	1852.5	QPSK	1	0	22.05
					1	12	22.12
					1	24	22.06
					12	0	20.85
					12	6	20.79
					12	11	20.64
				25	0	20.89	
				16-QAM	1	0	21.53
					1	12	21.52
					1	24	21.49
					12	0	20.85
					12	6	20.76
		12	11		20.72		
		M 18900	1880	QPSK	1	0	21.96
					1	12	21.91
					1	24	21.82
					12	0	21.04
					12	6	20.92
					12	11	20.93
				25	0	20.94	
				16-QAM	1	0	20.78
					1	12	20.54
					1	24	20.49
					12	0	20.18
					12	6	20.21
		12	11		20.12		
		25	0	19.98			
		H 19175	1907.5	QPSK	1	0	22.01
					1	12	21.92
					1	24	21.97
12	0				20.90		
12	6				20.82		
12	11				20.75		
25	0			20.51			
16-QAM	1			0	21.17		
	1			12	21.08		
	1			24	21.14		
	12			0	20.52		
	12			6	20.46		
	12	11	20.39				
25	0	19.66					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	3MHz	L 18615	1851.5	QPSK	1	0	21.97
					1	7	21.88
					1	14	21.94
					8	0	21.51
					8	4	21.48
					8	7	21.55
				16-QAM	15	0	21.22
					1	0	21.23
					1	7	21.19
					1	14	21.15
					8	0	20.56
					8	4	20.48
		M 18900	1880	QPSK	8	7	20.59
					15	0	20.18
					1	0	21.84
					1	7	21.88
					1	14	21.82
					8	0	21.36
				16-QAM	8	4	21.43
					8	7	21.39
					15	0	20.92
					1	0	21.25
					1	7	21.18
					1	14	21.26
		H 19185	1908.5	QPSK	8	0	20.45
					8	4	20.59
					8	7	20.64
					15	0	19.93
					1	0	21.66
					1	7	20.95
16-QAM	1			14	20.51		
	8			0	20.88		
	8			4	20.75		
	8			7	20.76		
	15			0	20.51		
	1			0	20.53		
1	7	20.49					
1	14	20.48					
8	0	20.12					
8	4	20.15					
8	7	20.20					
15	0	19.72					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	1.4MHz	L 18607	1850.7	QPSK	1	0	21.90
					1	2	21.85
					1	5	21.79
					3	0	21.96
					3	1	21.87
					3	2	21.68
				6	0	21.14	
				16-QAM	1	0	21.23
					1	2	21.18
					1	5	21.09
					3	0	20.61
					3	1	20.59
		3	2		20.45		
		M 18900	1880	QPSK	1	0	21.89
					1	2	21.93
					1	5	21.88
					3	0	21.82
					3	1	21.82
					3	2	21.56
				6	0	21.01	
				16-QAM	1	0	20.66
					1	2	20.59
					1	5	20.72
					3	0	20.32
					3	2	20.24
		3	5		20.18		
		H 19193	1909.3	QPSK	1	0	20.91
					1	2	20.60
					1	5	20.49
					3	0	20.69
3	1				20.59		
3	2				20.72		
6	0			20.04			
16-QAM	1			0	20.05		
	1			2	20.02		
	1			5	19.94		
	3			0	19.67		
	3			1	19.72		
	3	2	19.81				
6	0	19.35					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	20MHz	L 20050	1720.0	QPSK	1	0	22.34
					1	49	22.00
					1	99	21.13
					50	0	21.41
					50	25	21.38
					50	49	20.91
				100	0	21.37	
				16-QAM	1	0	21.46
					1	49	21.45
					1	99	20.45
					50	0	20.51
					50	25	20.39
		50	49		20.45		
		M 20175	1732.5	QPSK	1	0	22.15
					1	49	21.19
					1	99	21.83
					50	0	20.69
					50	25	21.43
					50	49	20.37
				100	0	20.56	
				16-QAM	1	0	21.47
					1	49	20.62
					1	99	21.13
					50	0	20.59
					50	25	20.45
		50	49		20.51		
		H 20300	1745.0	QPSK	1	0	21.40
					1	49	22.19
					1	99	22.45
					50	0	20.73
50	25				21.40		
50	49				21.47		
100	0			21.25			
16-QAM	1			0	20.89		
	1			49	21.69		
	1			99	21.85		
	50			0	20.85		
	50			25	20.92		
	50	49	20.79				
100	0	20.45					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	15MHz	L 20025	1717.5	QPSK	1	0	22.53
					1	37	22.50
					1	74	21.80
					36	0	21.80
					36	18	21.75
					36	35	21.76
				75	0	21.71	
				16-QAM	1	0	21.74
					1	37	21.68
					1	74	21.70
					36	0	21.01
					36	18	21.15
		36	35		21.14		
		M 20175	1732.5	QPSK	1	0	22.25
					1	37	21.50
					1	74	21.73
					36	0	20.82
					36	18	20.72
					36	35	20.64
				75	0	20.70	
				16-QAM	1	0	21.40
					1	37	21.32
					1	74	21.29
					36	0	20.25
					36	18	20.32
		36	35		20.19		
		H 20325	1747.5	QPSK	1	0	21.88
					1	37	22.62
					1	74	22.67
					36	0	21.26
					36	18	21.56
					36	35	21.75
				75	0	21.62	
				16-QAM	1	0	20.99
					1	37	21.08
					1	74	21.74
36	0				21.12		
36	18				21.09		
36	35	21.16					
75	0	20.71					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	10MHz	L 20000	1715.0	QPSK	1	0	22.49
					1	24	22.64
					1	49	22.02
					25	0	21.70
					25	12	21.68
					25	24	21.71
		50	0	21.72			
		16-QAM	1	0	21.70		
			1	24	21.65		
			1	49	21.40		
			25	0	21.25		
			25	12	21.34		
	25		24	21.36			
	M 20175	1732.5	QPSK	1	0	21.66	
				1	24	21.36	
				1	49	21.15	
				25	0	20.70	
				25	12	20.64	
				25	24	20.72	
	16-QAM	50	0	20.71			
		1	0	21.14			
		1	24	21.15			
		1	49	20.59			
		25	0	20.15			
25		12	20.23				
H 20350	1750.0	QPSK	25	24	20.19		
			50	0	19.82		
			1	0	22.47		
			1	24	22.64		
			1	49	22.71		
			25	0	21.61		
	16-QAM	25	12	21.52			
		25	24	21.49			
		50	0	21.69			
		1	0	21.12			
		1	24	21.38			
		1	49	21.42			
25	0	21.12					
25	12	21.25					
25	24	21.31					
50	0	20.72					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	5MHz	L 19975	1712.5	QPSK	1	0	22.73
					1	12	22.78
					1	24	22.72
					12	0	21.64
					12	6	21.58
					12	11	21.49
				16-QAM	25	0	21.61
					1	0	22.15
					1	12	22.12
					1	24	22.08
					12	0	21.59
					12	6	21.42
		M 20175	1732.5	QPSK	12	11	21.38
					25	0	20.61
					1	0	21.82
					1	12	21.22
					1	24	21.74
					12	0	20.51
				16-QAM	12	6	20.49
					12	11	20.42
					25	0	20.47
					1	0	21.38
					1	12	21.28
					1	24	21.31
		H 20375	1752.5	QPSK	12	0	20.59
					12	6	20.48
					12	11	20.51
					25	0	19.69
					1	0	22.59
					1	12	22.61
				16-QAM	1	24	22.48
					12	0	21.66
					12	6	21.62
					12	11	21.60
					25	0	21.64
					1	0	21.91
16-QAM	1	12	21.89				
	1	24	21.75				
	12	0	21.29				
	12	6	21.16				
	12	11	21.18				
	25	0	20.63				



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	3MHz	L 19965	1711.5	QPSK	1	0	22.41
					1	7	22.45
					1	14	22.43
					8	0	21.85
					8	4	21.95
					8	7	21.88
				16-QAM	15	0	21.62
					1	0	21.68
					1	7	21.72
					1	14	21.62
					8	0	21.23
					8	4	21.30
		M 20175	1732.5	QPSK	8	7	21.20
					15	0	20.66
					1	0	22.22
					1	7	21.96
					1	14	22.09
					8	0	21.87
				16-QAM	8	4	21.67
					8	7	21.72
					15	0	21.28
					1	0	21.73
					1	7	21.48
					1	14	21.57
		H 20385	1753.5	QPSK	8	0	21.12
					8	4	21.09
					8	7	21.16
					15	0	20.50
					1	0	22.53
					1	7	22.56
16-QAM	1			14	22.54		
	8			0	21.89		
	8			4	21.94		
	8			7	22.08		
	15			0	21.59		
	1			0	21.34		
16-QAM	1	7	21.28				
	1	14	21.19				
	8	0	20.86				
	8	4	20.73				
	8	7	20.79				
	15	0	20.56				



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)	
					RB Size	RB Offset		
LTE Band 4	1.4MHz	L 19957	1710.7	QPSK	1	0	22.43	
					1	2	22.55	
					1	5	22.46	
					3	0	22.62	
					3	1	22.58	
					3	2	22.49	
				16-QAM	6	0	21.39	
					1	0	21.48	
					1	2	21.45	
					1	5	21.41	
					3	0	21.12	
					3	1	21.09	
		M 20175	1732.5	QPSK	1732.5	3	2	21.19
						6	0	20.39
						1	0	22.01
						1	2	21.85
						1	5	22.00
						3	0	21.98
				16-QAM	3	1	21.86	
					3	2	21.79	
					6	0	21.17	
					1	0	20.96	
					1	2	20.91	
					1	5	20.85	
		H 20393	1754.3	QPSK	1754.3	3	0	20.56
						3	2	20.61
						3	5	20.72
						6	0	20.36
						1	0	22.45
						1	2	22.54
16-QAM	1			5	22.52			
	3			0	22.40			
	3			1	22.28			
	3			2	22.34			
	6			0	21.45			
	1			0	21.19			
				QPSK	1	2	21.14	
					1	5	21.16	
					3	0	20.84	
					3	1	20.79	
				16-QAM	3	2	20.72	
					6	0	20.48	



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	10MHz	L 20450	829	QPSK	1	0	21.43
					1	24	21.43
					1	49	20.61
					25	0	20.67
					25	12	20.40
					25	24	20.34
				50	0	20.57	
				16-QAM	1	0	20.81
					1	24	20.88
					1	49	20.03
					25	0	19.98
					25	12	19.85
		25	24		19.82		
		M 20525	836.5	QPSK	1	0	21.49
					1	24	20.65
					1	49	21.08
					25	0	20.05
					25	12	20.38
					25	24	19.84
				50	0	19.96	
				16-QAM	1	0	20.99
					1	24	20.19
					1	49	20.58
					25	0	20.49
25	12				20.39		
25	24	20.28					
50	0	19.14					
H 20600	844	QPSK	1	0	21.41		
			1	24	21.31		
			1	49	20.84		
			25	0	20.28		
			25	12	20.31		
			25	24	20.45		
		50	0	20.52			
		16-QAM	1	0	20.17		
			1	24	20.37		
			1	49	19.79		
			25	0	19.81		
			25	12	19.78		
25	24		19.64				
50	0	19.71					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	5MHz	L 20425	826.5	QPSK	1	0	21.70
					1	12	21.68
					1	24	21.59
					12	0	20.27
					12	6	20.19
					12	11	20.45
				16-QAM	25	0	20.43
					1	0	21.17
					1	12	21.09
					1	24	21.10
					12	0	20.45
					12	6	20.39
		M 20525	836.5	QPSK	12	11	20.49
					25	0	19.57
					1	0	21.22
					1	12	20.61
					1	24	20.99
					12	0	19.77
				16-QAM	12	6	19.68
					12	11	19.62
					25	0	19.74
					1	0	20.07
					1	12	20.12
					1	24	20.09
		H 20625	846.5	QPSK	12	0	19.55
					12	6	19.46
					12	11	19.49
					25	0	18.91
					1	0	22.01
					1	12	21.98
				16-QAM	1	24	21.89
					12	0	20.72
					12	6	20.86
					12	11	20.72
					25	0	20.45
					1	0	21.51
	1	12	21.46				
	1	24	21.39				
	12	0	20.45				
	12	6	20.52				
	12	11	20.45				
	25	0	19.67				



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	3MHz	L 20415	825.5	QPSK	1	0	21.60
					1	7	21.56
					1	14	21.74
					8	0	21.32
					8	4	21.24
					8	7	21.15
				16-QAM	15	0	20.68
					1	0	21.04
					1	7	20.95
					1	14	20.81
					8	0	20.45
					8	4	20.39
		M 20525	836.5	QPSK	8	7	20.42
					15	0	19.77
					1	0	21.28
					1	7	21.03
					1	14	21.11
					8	0	20.45
				16-QAM	8	4	20.41
					8	7	20.45
					15	0	20.13
					1	0	20.72
					1	7	20.50
					1	14	20.56
		H 20635	847.5	QPSK	8	0	20.35
					8	4	20.14
					8	7	20.22
					15	0	19.33
					1	0	21.87
					1	7	21.35
				16-QAM	1	14	21.45
					8	0	21.12
					8	4	21.21
					8	7	21.30
					15	0	20.69
					1	0	20.84
16-QAM	1	7	20.76				
	1	14	20.72				
	8	0	20.45				
	8	4	20.31				
	8	7	20.22				
	15	0	19.89				



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	1.4MHz	L 20407	824.7	QPSK	1	0	21.44
					1	2	21.38
					1	5	21.42
					3	0	21.50
					3	1	21.42
					3	2	21.38
				16-QAM	6	0	20.53
					1	0	20.71
					1	2	20.69
					1	5	20.58
					3	0	20.12
					3	1	20.26
		M 20525	836.5	QPSK	3	2	20.18
					6	0	19.63
					1	0	21.10
					1	2	20.97
					1	5	21.04
					3	0	21.06
				16-QAM	3	1	21.04
					3	2	21.09
					6	0	20.14
					1	0	20.03
					1	2	20.12
					1	5	20.06
		H 20643	848.3	QPSK	3	0	19.85
					3	2	19.92
					3	5	19.76
					6	0	19.27
					1	0	21.38
					1	2	21.29
16-QAM	1			5	21.24		
	3			0	21.28		
	3			1	20.89		
	3			2	20.91		
	6			0	20.51		
	1			0	20.43		
1	2	20.42					
1	5	20.34					
3	0	20.12					
3	1	20.05					
3	2	20.03					
6	0	19.78					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)	
					RB Size	RB Offset		
LTE Band 7	20MHz	L 20850	2510	QPSK	1	0	20.52	
					1	49	21.61	
					1	99	22.18	
					50	0	20.33	
					50	25	21.12	
					50	49	21.52	
				16-QAM	100	0	20.88	
					1	0	19.69	
					1	49	20.88	
					1	99	21.52	
					50	0	21.42	
					50	25	21.32	
		M 21100	2535	QPSK	2535	50	49	21.28
						100	0	20.10
						1	0	22.85
						1	49	21.77
						1	99	21.48
						50	0	21.44
				16-QAM	50	25	21.08	
					50	49	20.59	
					100	0	21.06	
					1	0	21.80	
					1	49	21.03	
					1	99	20.74	
		H 21350	2560	QPSK	2560	50	0	20.68
						50	25	20.49
						50	49	20.46
						100	0	20.24
						1	0	21.68
						1	49	22.32
16-QAM	1			99	20.10			
	50			0	21.54			
	50			25	21.12			
	50			49	21.01			
	100			0	21.32			
	1			0	21.15			
1	49	21.77						
1	99	19.72						
50	0	21.21						
50	25	21.08						
50	49	21.18						
100	0	20.47						



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 7	15MHz	L 20825	2507.5	QPSK	1	0	20.17
					1	37	20.98
					1	74	21.94
					36	0	19.87
					36	18	20.85
					36	35	20.99
				75	0	20.42	
				16-QAM	1	0	19.54
					1	37	20.49
					1	74	21.44
					36	0	20.89
					36	18	21.12
		36	35		21.22		
		M 21100	2535	QPSK	75	0	19.63
					1	0	21.98
					1	37	21.05
					1	74	20.70
					36	0	20.94
					36	18	20.85
				16-QAM	36	35	20.23
					75	0	20.64
					1	0	21.55
					1	37	20.68
					1	74	20.31
					36	0	20.12
		H 21375	2562.5	QPSK	36	18	20.49
					36	35	20.85
					75	0	19.82
					1	0	22.36
					1	37	21.98
1	74				19.77		
16-QAM	36			0	21.76		
	36			18	21.08		
	36			35	20.38		
	75			0	20.99		
	1			0	21.46		
	1			37	21.16		
1	74	19.05					
36	0	20.59					
36	18	20.49					
36	35	20.82					
75	0	20.27					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 7	10MHz	L 20800	2505	QPSK	1	0	20.64
					1	24	21.26
					1	49	21.59
					25	0	20.74
					25	12	21.15
					25	24	21.21
				50	0	20.96	
				16-QAM	1	0	20.63
					1	24	21.19
					1	49	21.57
					25	0	20.95
					25	12	20.82
		25	24		20.46		
		M 21100	2535	QPSK	1	0	21.53
					1	24	20.88
					1	49	20.63
					25	0	20.60
					25	12	20.45
					25	24	20.18
				50	0	20.44	
				16-QAM	1	0	21.11
					1	24	20.50
					1	49	20.24
					25	0	20.35
					25	12	20.18
		25	24		20.15		
		H 21400	2565	QPSK	1	0	22.94
					1	24	21.83
					1	49	20.11
					25	0	21.71
25	12				20.89		
25	24				20.39		
50	0			21.19			
16-QAM	1			0	21.82		
	1			24	21.16		
	1			49	19.35		
	25			0	20.56		
	25			12	20.75		
	25	24	20.79				
50	0	20.28					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 7	5MHz	L 20775	2502.5	QPSK	1	0	20.87
					1	12	20.68
					1	24	21.33
					12	0	19.63
					12	6	20.38
					12	11	20.00
				25	0	19.79	
				16-QAM	1	0	20.44
					1	12	20.33
					1	24	20.92
					12	0	20.45
					12	6	20.38
		12	11		20.49		
		M 21100	2535	QPSK	1	0	22.15
					1	12	21.20
					1	24	21.48
					12	0	20.77
					12	6	20.64
					12	11	20.40
				25	0	20.62	
				16-QAM	1	0	21.00
					1	12	20.18
					1	24	20.43
					12	0	20.42
					12	6	20.31
		12	11		20.29		
		25	0	19.87			
		H 21425	2567.5	QPSK	1	0	21.98
					1	12	20.47
					1	24	19.93
12	0				20.46		
12	6				20.52		
12	11				19.33		
25	0			19.92			
16-QAM	1			0	21.31		
	1			12	19.97		
	1			24	19.44		
	12			0	20.15		
	12			6	20.15		
	12	11	20.20				
25	0	19.09					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (704-710 MHz)	5MHz	L 27235	705.5	QPSK	1	0	22.41
					1	12	22.00
					1	24	22.29
					12	0	21.85
					12	6	21.96
					12	11	21.86
				25	0	21.12	
				16-QAM	1	0	21.77
					1	12	21.46
					1	24	21.81
					12	0	21.52
					12	6	21.49
		12	11		21.42		
		M 27250	707	QPSK	1	0	22.23
					1	12	22.14
					1	24	22.15
					12	0	21.28
					12	6	21.19
					12	11	21.24
				25	0	21.24	
				16-QAM	1	0	21.06
					1	12	20.97
					1	24	21.04
					12	0	20.95
					12	6	20.85
		12	11		20.78		
		25	0	20.35			
		H 27265	708.5	QPSK	1	0	22.17
					1	12	22.16
					1	24	22.18
					12	0	21.85
					12	6	21.85
					12	11	21.79
				25	0	21.28	
				16-QAM	1	0	21.52
					1	12	21.59
1	24				21.59		
12	0				21.49		
12	6				21.39		
12	11	21.45					
25	0	20.31					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (704-710 MHz)	3MHz	L 27225	704.5	QPSK	1	0	22.07
					1	7	21.78
					1	14	21.89
					8	0	21.51
					8	4	21.59
					8	7	21.49
				15	0	21.24	
				16-QAM	1	0	21.32
					1	7	21.28
					1	14	21.19
					8	0	20.56
					8	4	20.49
		8	7		20.48		
		M 27250	707	QPSK	1	0	22.12
					1	7	22.10
					1	14	22.06
					8	0	21.85
					8	4	21.74
					8	7	21.69
				15	0	21.20	
				16-QAM	1	0	21.57
					1	7	21.58
					1	14	21.54
					8	0	21.23
					8	4	21.19
		8	7		21.20		
		H 27265	709.5	QPSK	1	0	22.10
					1	7	22.09
					1	14	22.02
					8	0	21.56
8	4				21.67		
8	7				21.48		
15	0			21.21			
16-QAM	1			0	20.95		
	1			7	20.89		
	1			14	20.78		
	8			0	20.56		
	8			4	20.49		
	8	7	20.39				
15	0	20.24					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (710-716 MHz)	5MHz	L 27295	711.5	QPSK	1	0	22.16
					1	12	22.16
					1	24	22.19
					12	0	21.35
					12	6	21.39
					12	11	21.35
				16-QAM	25	0	21.25
					1	0	21.60
					1	12	21.52
					1	24	21.23
					12	0	21.26
					12	6	21.56
		M 27310	713	QPSK	12	11	21.23
					25	0	20.27
					1	0	22.15
					1	12	22.15
					1	24	22.19
					12	0	21.56
				16-QAM	12	6	21.64
					12	11	21.78
					25	0	21.24
					1	0	21.01
					1	12	20.92
					1	24	20.89
		H 27325	714.5	QPSK	12	0	20.45
					12	6	20.56
					12	11	20.49
					25	0	20.32
					1	0	22.16
					1	12	22.12
16-QAM	1			24	22.09		
	12			0	21.89		
	12			6	21.75		
	12			11	21.56		
	25			0	21.31		
	1			0	21.02		
1	12	21.04					
1	24	21.09					
12	0	20.59					
12	6	20.64					
12	11	20.72					
25	0	20.35					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (710-716 MHz)	3MHz	L 27285	710.5	QPSK	1	0	22.02
					1	7	22.09
					1	14	22.09
					8	0	21.56
					8	4	21.61
					8	7	21.72
				15	0	21.24	
				16-QAM	1	0	21.29
					1	7	21.36
					1	14	21.31
					8	0	20.85
					8	4	20.89
		8	7		20.76		
		M 27310	713	QPSK	1	0	22.09
					1	7	22.15
					1	14	22.14
					8	0	21.89
					8	4	21.91
					8	7	21.75
				15	0	21.25	
				16-QAM	1	0	21.58
					1	7	21.62
					1	14	21.57
					8	0	21.02
					8	4	20.95
		8	7		20.88		
		H 27335	715.5	QPSK	1	0	22.17
					1	7	22.26
					1	14	22.28
					8	0	21.85
8	4				21.79		
8	7				21.81		
15	0			21.30			
16-QAM	1			0	21.01		
	1			7	21.09		
	1			14	21.10		
	8			0	20.86		
	8			4	20.79		
	8	7	20.86				
15	0	20.29					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (734-740 MHz)	5MHz	L 27535	735.5	QPSK	1	0	22.17
					1	12	21.68
					1	24	21.72
					12	0	21.25
					12	6	21.26
					12	11	20.19
				16-QAM	25	0	20.95
					1	0	21.51
					1	12	21.13
					1	24	21.23
					12	0	20.46
					12	6	20.59
		M 27550	737	QPSK	12	11	20.64
					25	0	20.07
					1	0	22.29
					1	12	21.74
					1	24	21.84
					12	0	21.22
				16-QAM	12	6	21.26
					12	11	21.32
					25	0	20.78
					1	0	21.75
					1	12	21.23
					1	24	21.44
		H 27565	738.5	QPSK	12	0	21.12
					12	6	20.98
					12	11	20.95
					25	0	19.86
					1	0	22.13
					1	12	21.47
16-QAM	1			24	21.84		
	12			0	21.41		
	12			6	21.61		
	12			11	21.54		
	25			0	20.63		
	1			0	21.00		
1	12	20.34					
1	24	20.72					
12	0	20.25					
12	6	20.18					
12	11	20.09					
25	0	19.81					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (734-740 MHz)	3MHz	L 27525	734.5	QPSK	1	0	22.02
					1	7	21.95
					1	14	21.99
					8	0	21.56
					8	4	21.51
					8	7	21.39
				15	0	21.24	
				16-QAM	1	0	21.30
					1	7	21.28
					1	14	21.19
					8	0	20.86
					8	4	20.89
		8	7		20.91		
		M 27550	737	QPSK	1	0	22.10
					1	7	22.04
					1	14	22.09
					8	0	21.45
					8	4	21.41
					8	7	21.39
				15	0	21.18	
				16-QAM	1	0	21.53
					1	7	21.54
					1	14	21.61
					8	0	20.85
					8	4	20.45
		8	7		20.75		
		H 27575	739.5	QPSK	1	0	22.14
					1	7	22.10
					1	14	22.19
					8	0	21.85
8	4				21.79		
8	7				21.58		
15	0			21.14			
16-QAM	1			0	20.97		
	1			7	20.89		
	1			14	20.75		
	8			0	20.56		
	8			4	20.38		
	8	7	20.46				
15	0	20.17					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (740-746 MHz)	5MHz	L 27595	741.5	QPSK	1	0	22.01
					1	12	21.89
					1	24	21.92
					12	0	21.45
					12	6	21.35
					12	11	21.56
				25	0	20.50	
				16-QAM	1	0	21.47
					1	12	21.42
					1	24	21.49
					12	0	20.59
					12	6	20.62
		12	11		20.38		
		M 27610	743	QPSK	1	0	22.29
					1	12	21.80
					1	24	22.19
					12	0	21.56
					12	6	21.60
					12	11	21.82
				25	0	20.70	
				16-QAM	1	0	21.80
					1	12	21.27
					1	24	21.18
					12	0	21.05
					12	6	21.02
		12	11		21.02		
		25	0	19.74			
		H 27625	744.5	QPSK	1	0	22.04
					1	12	22.01
					1	24	21.92
12	0				21.52		
12	6				21.48		
12	11				21.39		
25	0			20.63			
16-QAM	1			0	21.42		
	1			12	21.38		
	1			24	21.49		
	12			0	20.75		
	12			6	20.72		
	12	11	20.85				
25	0	19.69					



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (740-746 MHz)	3MHz	L 27585	740.5	QPSK	1	0	21.89
					1	7	21.75
					1	14	21.64
					8	0	21.32
					8	4	21.28
					8	7	21.45
				15	0	20.83	
				16-QAM	1	0	21.17
					1	7	21.10
					1	14	21.18
					8	0	20.81
					8	4	20.75
		8	7		20.69		
		M 27610	743	QPSK	1	0	21.97
					1	7	21.91
					1	14	21.84
					8	0	21.21
					8	4	21.18
					8	7	21.19
				15	0	20.90	
				16-QAM	1	0	21.51
					1	7	21.48
					1	14	21.39
					8	0	20.85
					8	4	20.74
		8	7		20.79		
		H 27635	745.5	QPSK	1	0	21.96
					1	7	21.91
					1	14	21.82
					8	0	21.42
8	4				21.38		
8	7				21.49		
15	0			21.08			
16-QAM	1			0	20.87		
	1			7	20.75		
	1			14	20.73		
	8			0	20.52		
	8			4	20.49		
	8	7	20.38				
15	0	20.13					



2.2 Occupied Bandwidth

2.2.1 Definition

According to FCC section 2.1049 and 27.53(g), 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

See section 2.1.2 of this report.

2.2.3 Test Results

LTE Band 2

Low channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.0998	1.0991	18615	1851.5	2.7146	2.7096
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.353	1.280	18615	1851.5	2.982	2.989

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.5375	4.5346	18650	1855.0	8.9744	8.9980
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	5.105	5.053	18650	1855.0	9.889	9.960

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	13.464	13.516	18700	1860.0	17.974	18.022
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	14.89	14.88	18700	1860.0	19.66	19.77



Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	1.0998	1.1047	18900	1880.0	2.7101	2.7154

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	1.274	1.295	18900	1880.0	2.985	2.995

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	4.5160	4.5321	18900	1880.0	9.0056	9.0086

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	5.048	5.096	18900	1880.0	10.13	9.875

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	13.483	13.499	18900	1880.0	17.979	18.037

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	14.85	14.90	18900	1880.0	19.65	19.72



High channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19192	1909.2	1.1139	1.1094	19184	1908.4	2.724	2.7138

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19192	1909.2	1.951	1.784	19184	1908.4	3.631	3.045

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19175	1907.5	4.5410	4.5493	19150	1905.0	8.9785	8.9715

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19175	1907.5	5.112	5.116	19150	1905.0	9.931	9.935

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19125	1902.5	13.496	13.510	19100	1900.0	18.026	18.027

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19125	1902.5	14.95	14.85	19100	1900.0	19.71	19.76

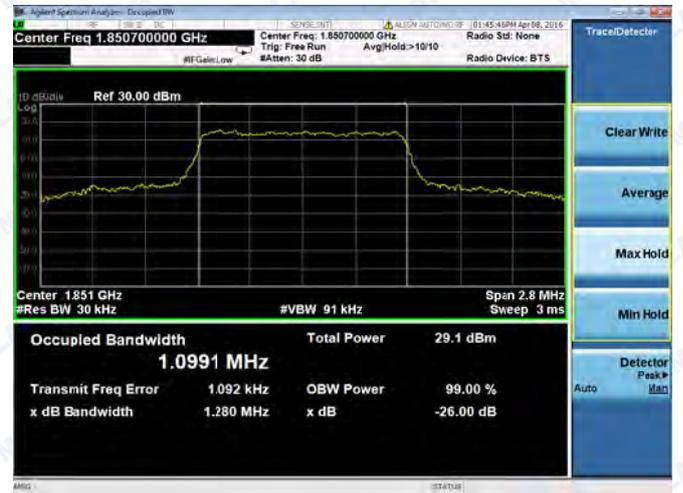
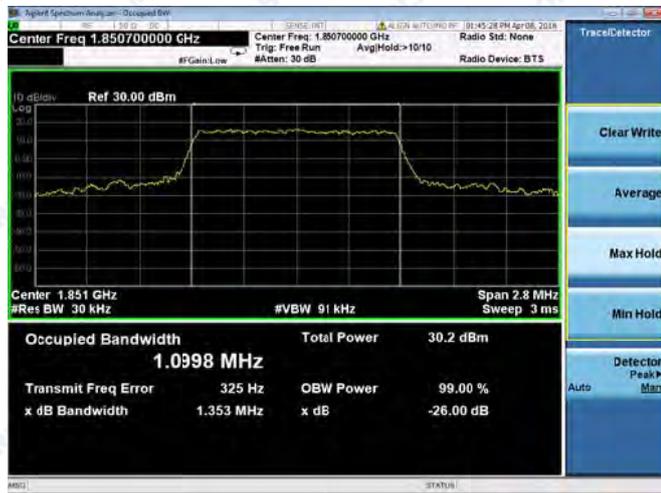


Low channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM





Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

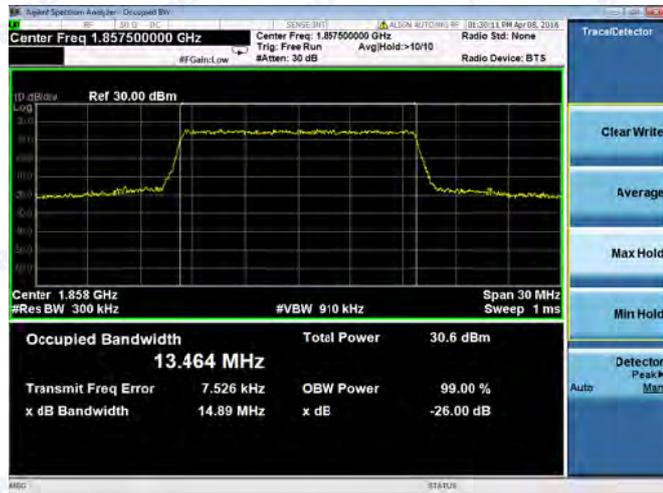




Spectrum Plot of Worst Value

15MHz/QPSK

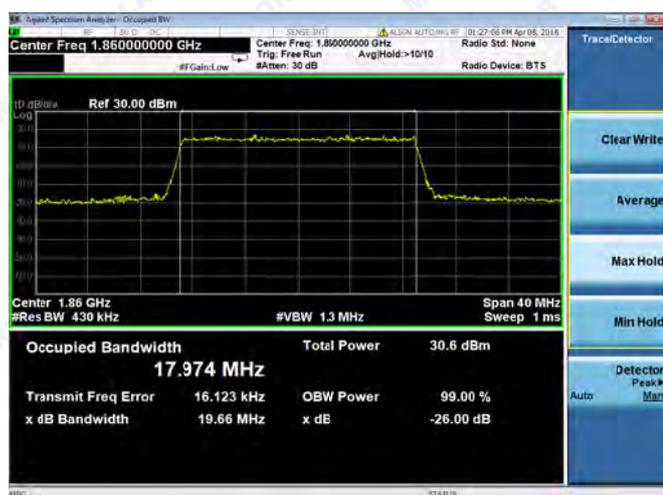
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



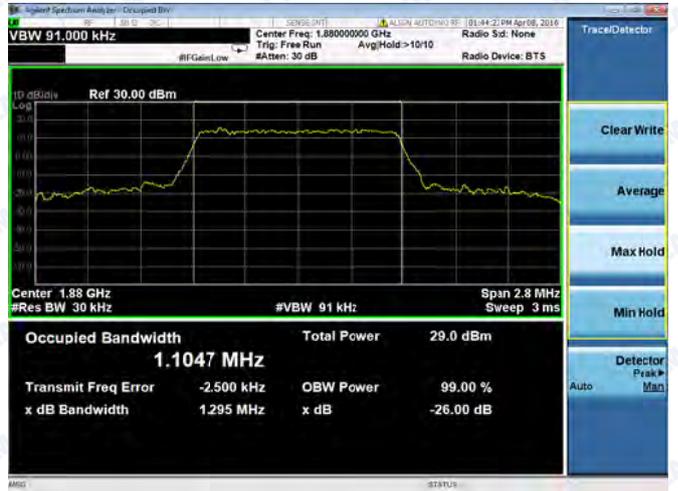
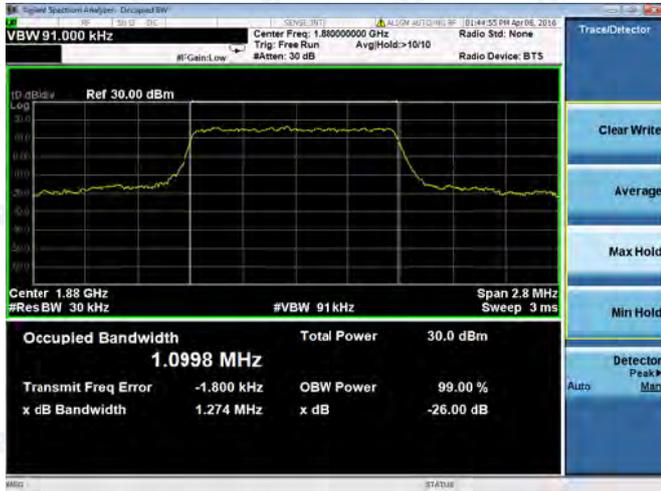


Middle channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

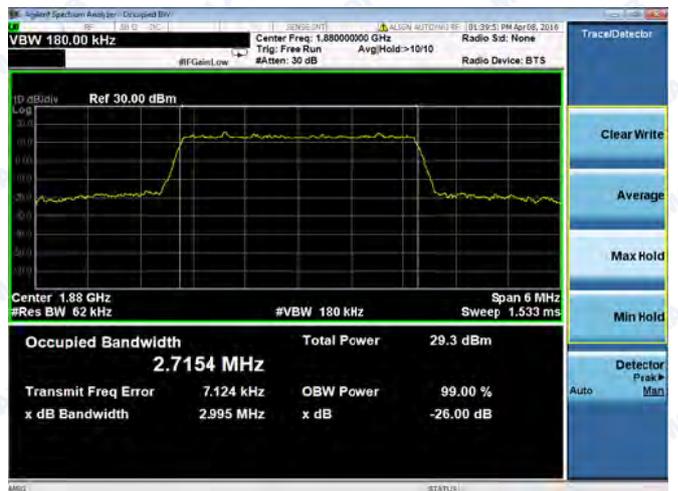
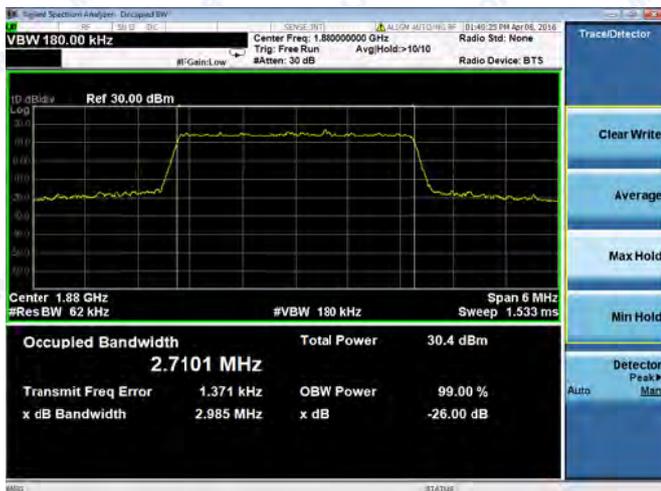
1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

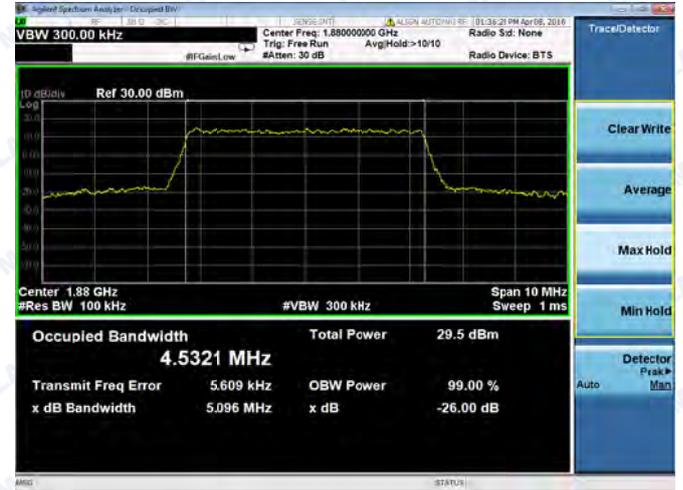
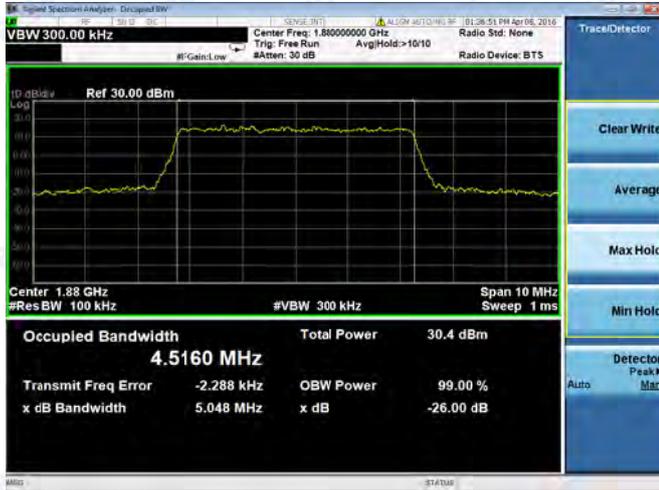




Spectrum Plot of Worst Value

5MHz/QPSK

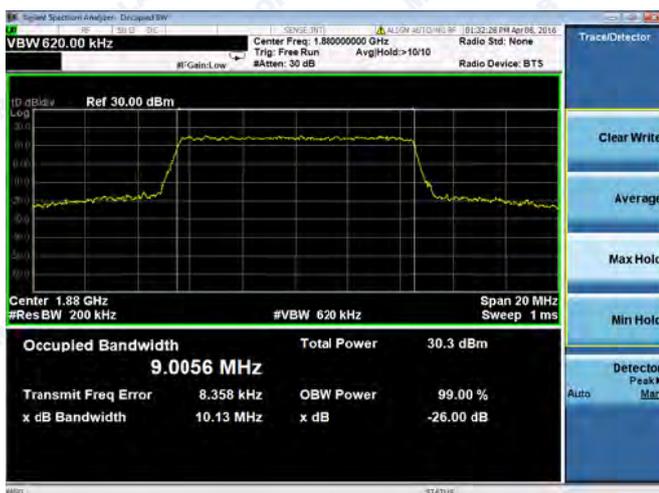
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

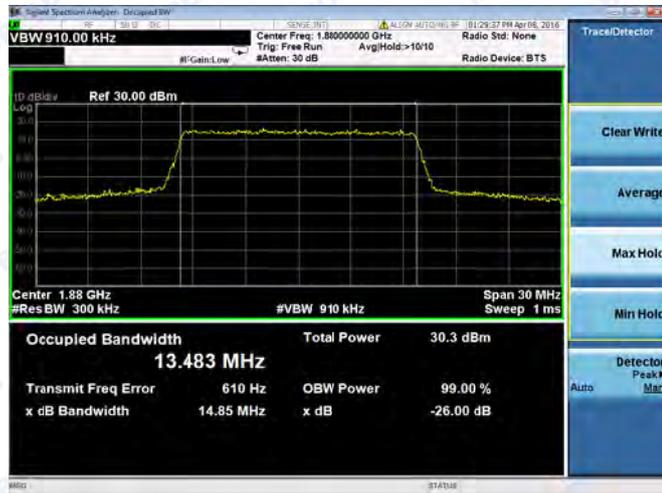
10MHz/16QAM



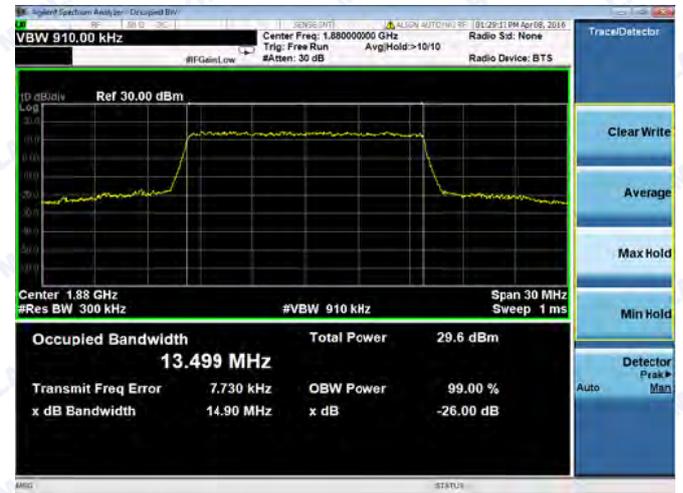


Spectrum Plot of Worst Value

15MHz/QPSK

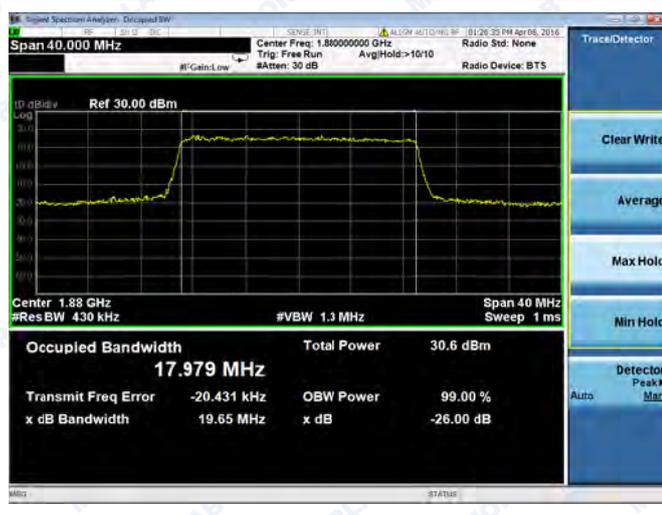


15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK



20MHz/16QAM



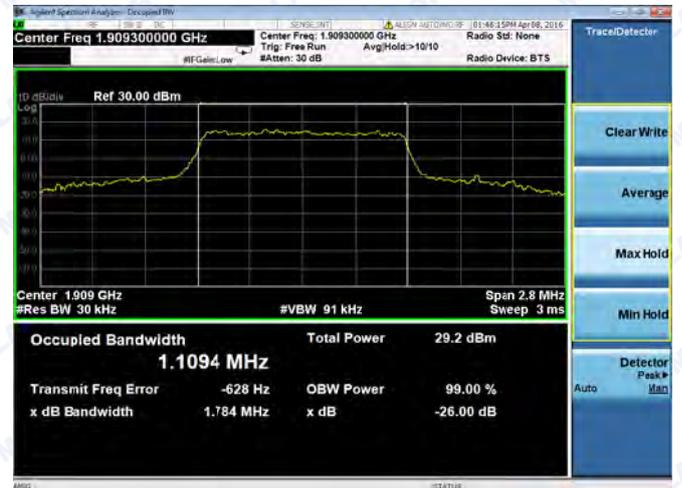
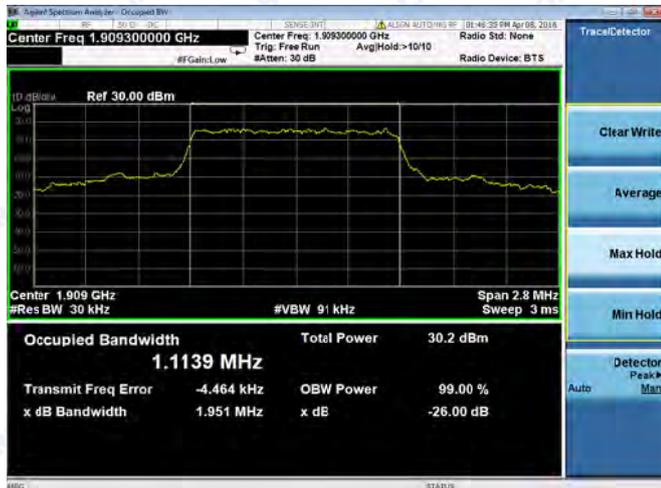


High channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

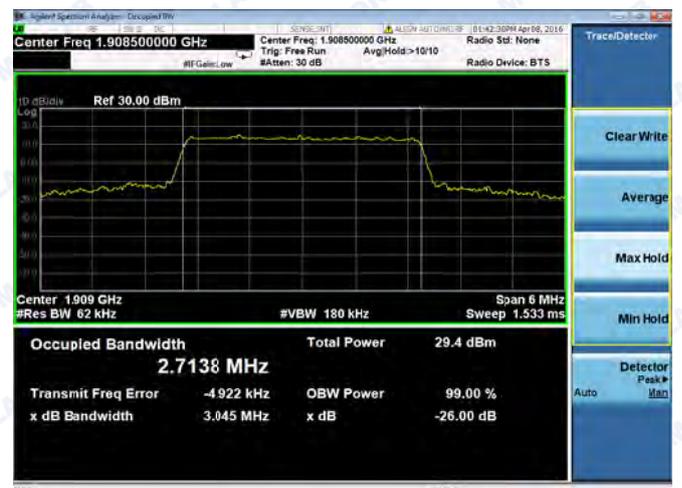
1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

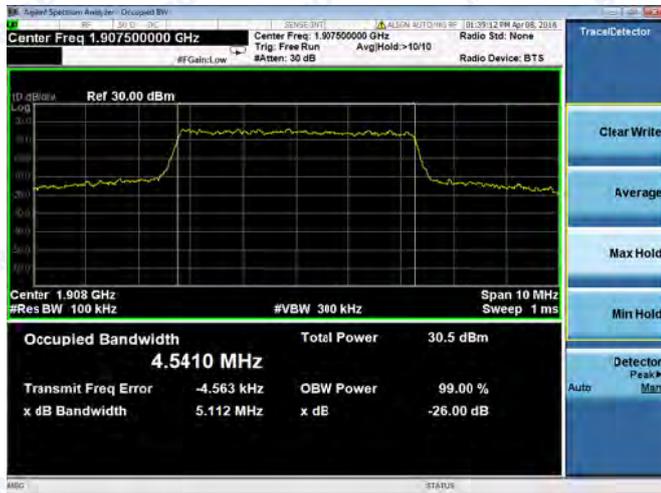




Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

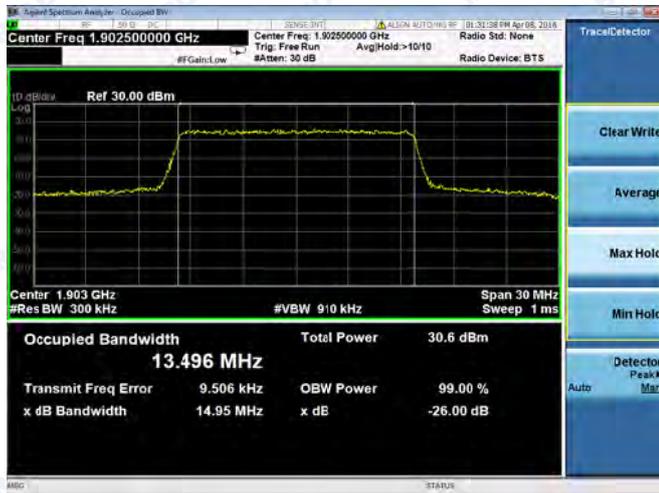




Spectrum Plot of Worst Value

15MHz/QPSK

15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM





LTE Band 4

Low channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	1.0990	1.0925	19965	1711.5	2.7142	2.7051

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	1.281	1.261	19965	1711.5	2.966	2.980

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	4.5375	4.5340	20000	1715.0	8.9770	8.9900

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	5.106	5.051	20000	1715.0	9.952	9.866

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	13.441	13.495	20050	1720.0	17.957	17.959

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	14.88	14.87	20050	1720.0	19.56	19.58



Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	1.0971	1.1028	20175	1732.5	2.7105	2.7114

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	1.265	1.280	20175	1732.5	2.971	3.008

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	4.5411	4.5346	20175	1732.5	9.0091	9.0122

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	5.086	5.073	20175	1732.5	10.09	9.883

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	13.528	13.508	20175	1732.5	18.034	18.069

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	14.94	14.78	20175	1732.5	19.71	19.63



High channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20392	1754.2	1.1080	1.0986	20384	1753.4	2.7095	2.7035

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20392	1754.2	1.268	1.265	20384	1753.4	2.971	2.996

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20375	1752.5	4.5310	4.5440	20350	1750.0	8.9941	8.9857

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20375	1752.5	5.074	5.065	20350	1750.0	9.950	9.926

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20325	1747.5	13.499	13.501	20300	1745.0	18.033	18.005

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20325	1747.5	14.89	14.80	20300	1745.0	19.78	19.67

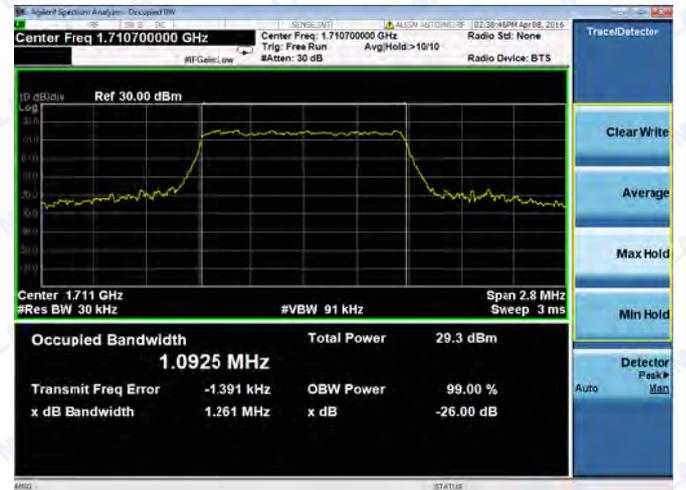
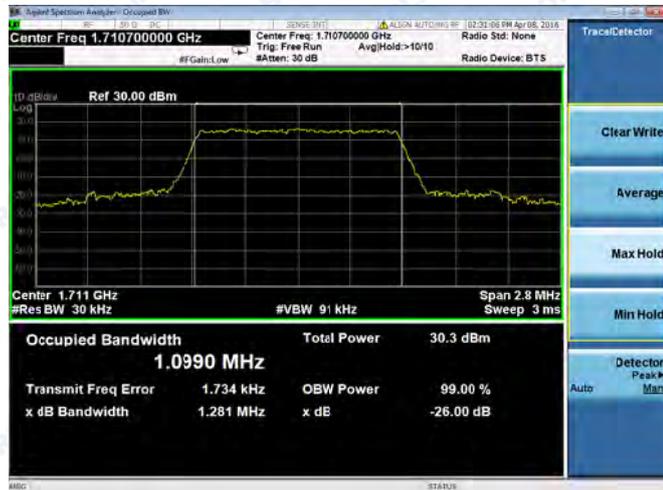


Low channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

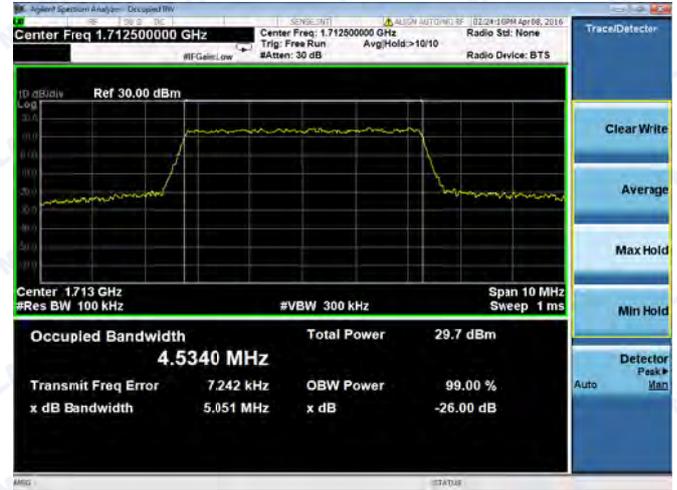
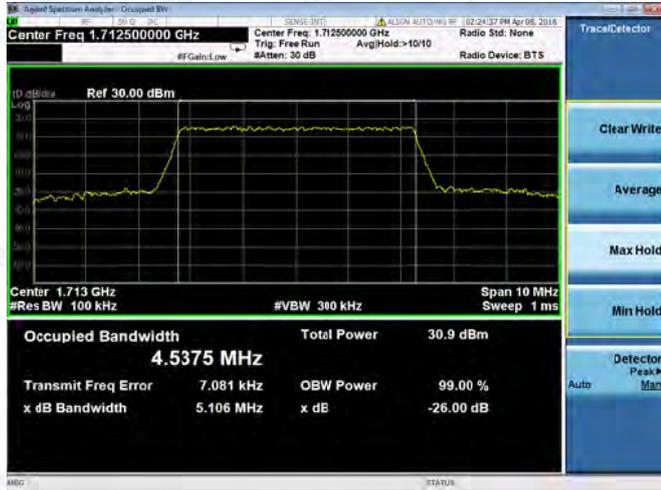




Spectrum Plot of Worst Value

5MHz/QPSK

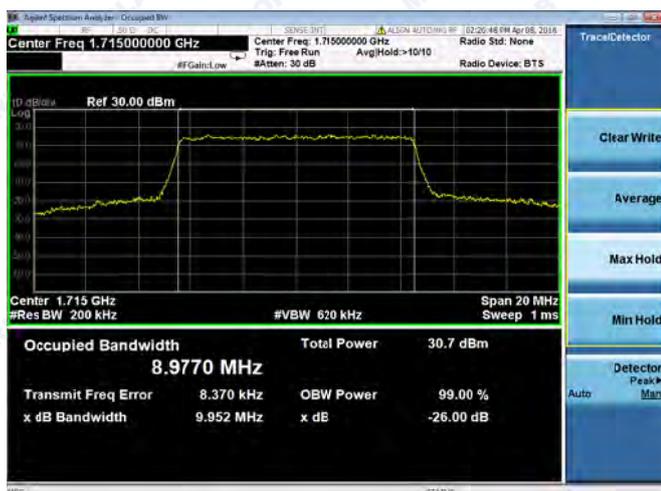
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

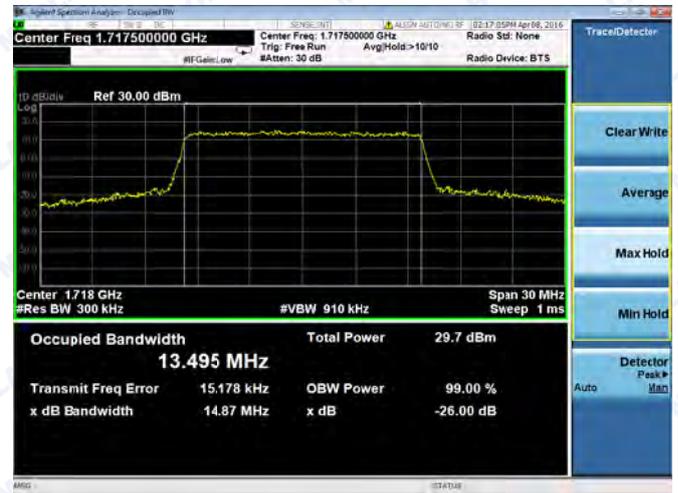
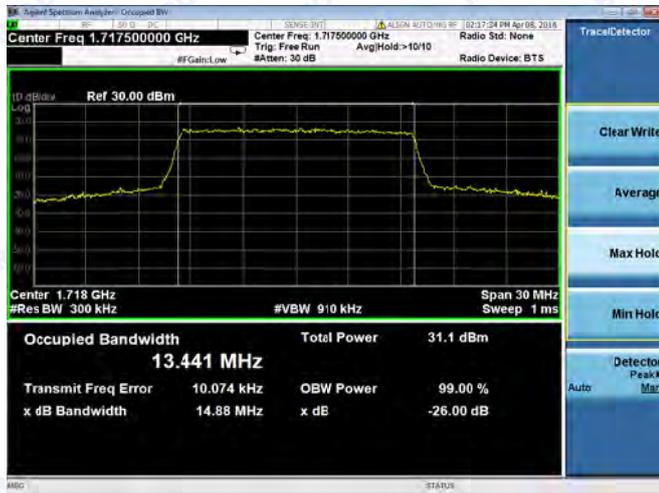




Spectrum Plot of Worst Value

15MHz/QPSK

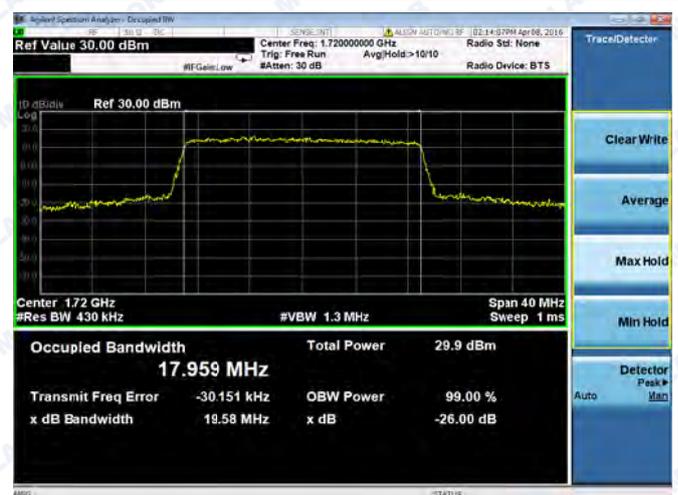
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



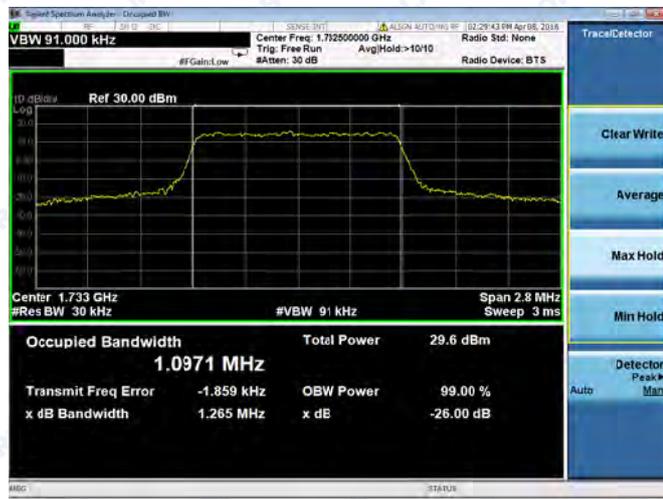


Middle channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

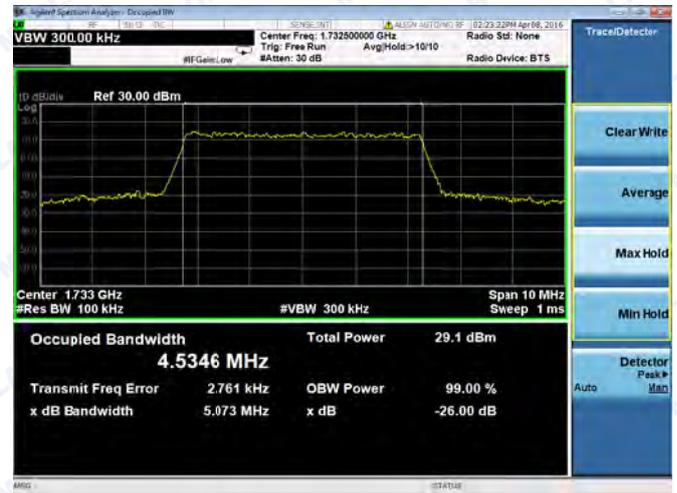
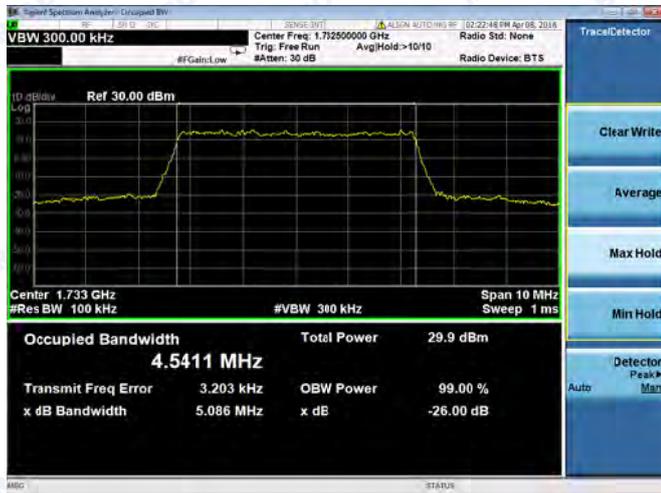




Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

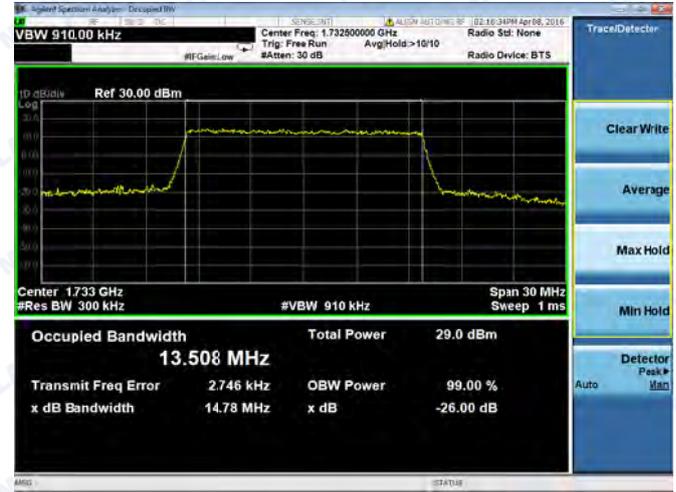
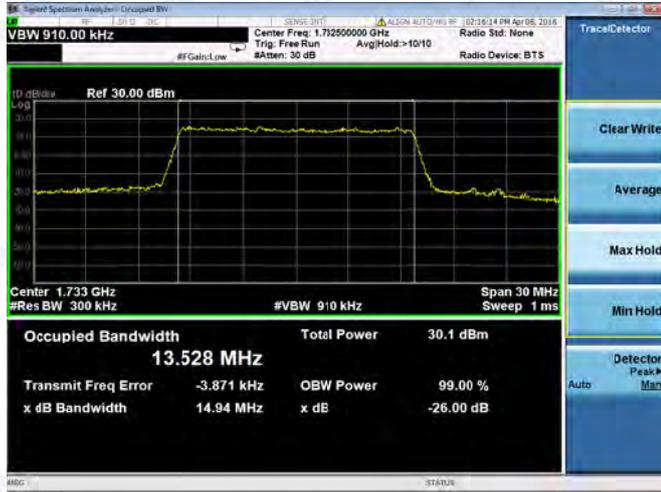




Spectrum Plot of Worst Value

15MHz/QPSK

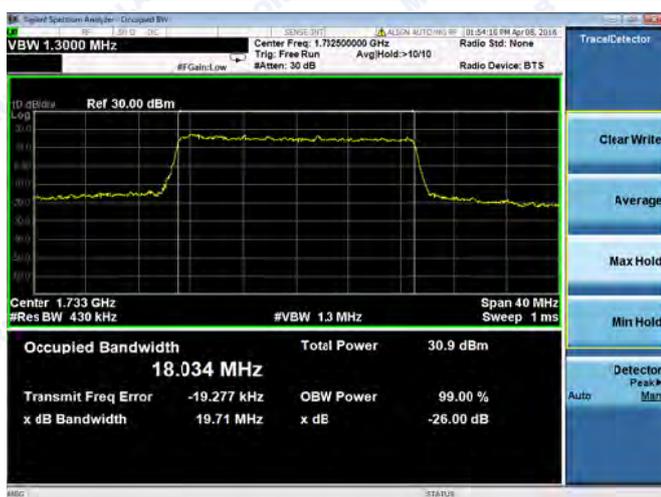
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM





High channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

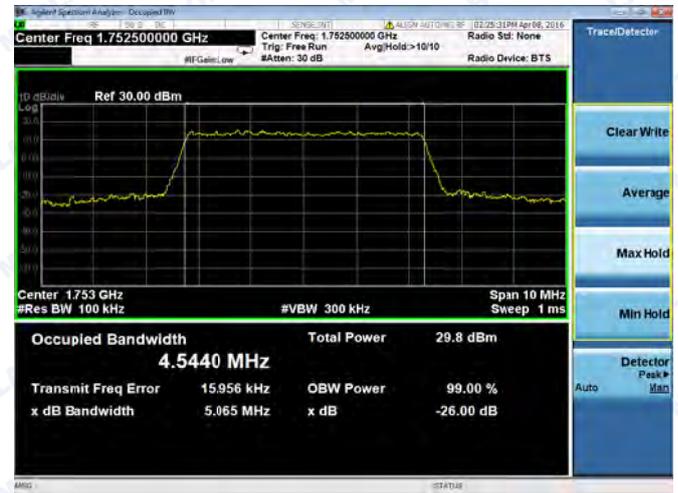




Spectrum Plot of Worst Value

5MHz/QPSK

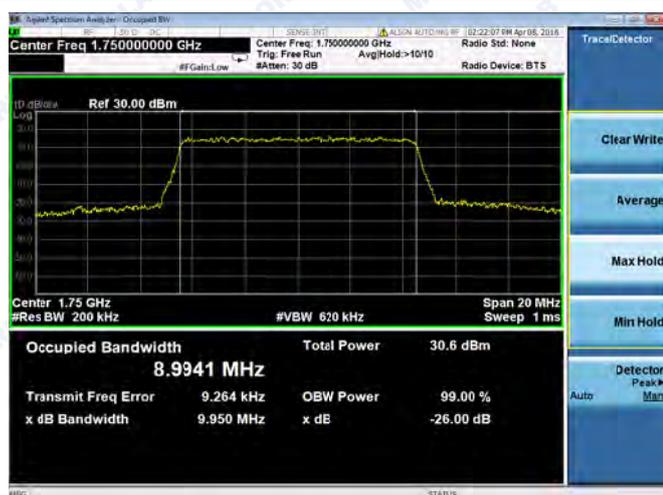
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

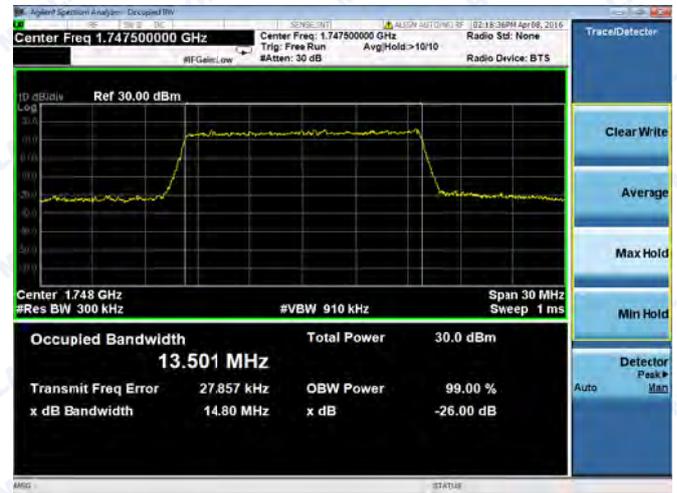
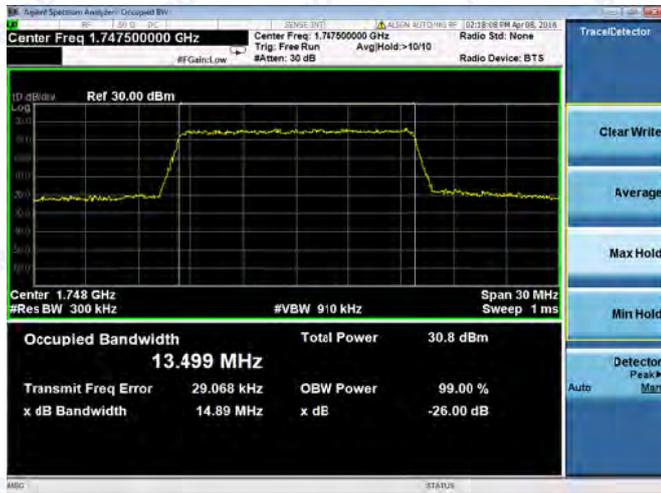




Spectrum Plot of Worst Value

15MHz/QPSK

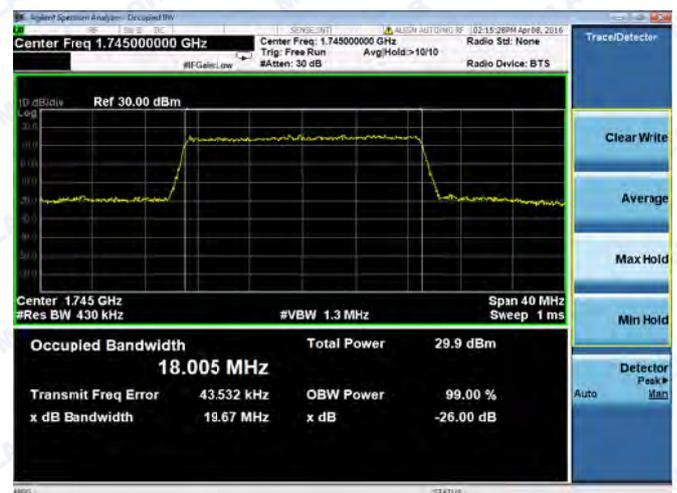
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM





LTE Band 5

Low channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20407	824.7	1.0998	1.0922	20415	825.5	2.7198	2.7052

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20407	824.7	1.289	1.268	20415	825.5	2.971	2.966

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20425	826.5	4.5388	4.5323	20450	829.0	8.9525	8.9693

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20425	826.5	5.086	5.063	20450	829.0	9.922	9.922

Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	1.0983	1.1034	20525	836.5	2.7107	2.7186

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	1.275	1.279	20525	836.5	2.975	3.010



Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	4.5356	4.5330	20525	836.5	9.0701	9.0347
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	5.058	5.043	20525	836.5	10.05	9.993

High channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20643	848.3	1.1091	1.1025	20635	847.5	2.7053	2.7163
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20643	848.3	1.281	1.291	20635	847.5	2.982	3.014

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20625	846.5	4.5258	4.5124	20600	844.0	8.9850	8.9727
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20625	846.5	5.005	5.067	20600	844.0	9.885	9.927

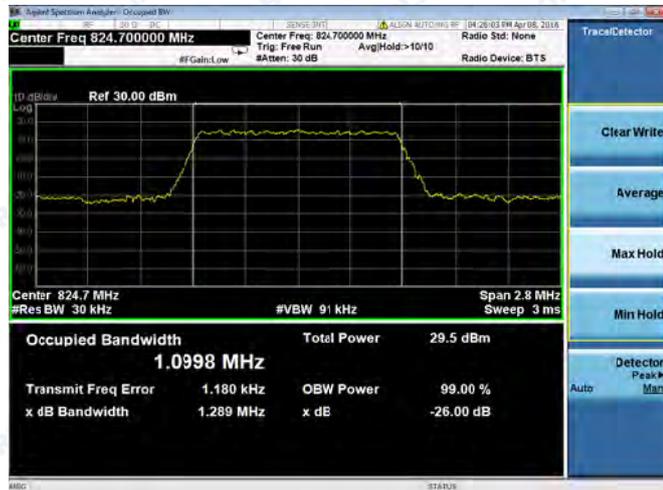


Low channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM





Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

