



REPORT No.: SZ15060145W02

FCC RF TEST REPORT

APPLICANT : ZTE Corporation
PRODUCT NAME : LTE Digital Mobile Phone Handset
MODEL NAME : NX521J
TRADE NAME : nubia
BRAND NAME : nubia
FCC ID : SRQ-NX521J
STANDARD(S) : 47 CFR Part 22, Subpart H
47 CFR Part 24, Subpart E
47 CFR Part 27, Subpart H&L&M
ISSUE DATE : 2015-8-3



SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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DIRECTORY

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Change History		
Issue	Date	Reason for change
1.0	2015-8-3	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 Phone Handset
Model Name	NX521J
Brand Name	nubia
HW Version	NX521JMB_B
SW Version	NX521J_Telcel_V1.02
Test Standards	47 CFR Part 22, Subpart H 47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart H&L&M
Test Date	2015-7-3 to 2015-7-31
Test Result	PASS

Tested by : Zou Jian
Zou Jian(Test Engineer)

Reviewed by : Qiu Xiaojun
Qiu Xiaojun(RF Manager)

Approved by : Zeng Dexin
Zeng Dexin(Chief Engineer)



1. GENERAL INFORMATION

1.1 EUT Description

EUT Type: LTE Digital Mobile Phone Handset
Serial No.: (n.a, marked #1 by test site)
Hardware Version.....: NX521JMB_B
Software Version..... NX521J_Telcel_V1.02
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 17: 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 17: 704MHz ~ 716MHz
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 17: 734MHz ~ 746MHz
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)
2M73 W7D (LTE Band 2, 16QAM, BW 3MHz)
4M53G7D (LTE Band 2, QPSK, BW 5MHz)
4M53W7D (LTE Band 2, 16QAM, BW 5MHz)
9M01G7D (LTE Band 2, QPSK, BW 10MHz)
9M01W7D (LTE Band 2, 16QAM, BW 10MHz)
13M50G7D (LTE Band 2, QPSK, BW 15MHz)
13M49W7D (LTE Band 2, 16QAM, BW 15MHz)



- 17M96G7D (LTE Band 2, QPSK, BW 20MHz)
- 17M96W7D (LTE Band 2, 16QAM, BW 20MHz)
- 1M11G7D (LTE Band 4, QPSK, BW 1.4MHz)
- 1M10W7D (LTE Band 4, 16QAM, BW 1.4MHz)
- 2M72G7D (LTE Band 4, QPSK, BW 3MHz)
- 2M72W7D (LTE Band 4, 16QAM, BW 3MHz)
- 4M53G7D (LTE Band 4, QPSK, BW 5MHz)
- 4M53W7D (LTE Band 4, 16QAM, BW 5MHz)
- 9M02G7D (LTE Band 4, QPSK, BW 10MHz)
- 9M01W7D (LTE Band 4, 16QAM, BW 10MHz)
- 13M51G7D (LTE Band 4, QPSK, BW 15MHz)
- 13M51W7D (LTE Band 4, 16QAM, BW 15MHz)
- 18M02G7D (LTE Band 4, QPSK, BW 20MHz)
- 18M02W7D (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)
- 2M73W7D (LTE Band 5, 16QAM, BW 3MHz)
- 4M53G7D (LTE Band 5, QPSK, BW 5MHz)
- 4M53W7D (LTE Band 5, 16QAM, BW 5MHz)
- 9M03G7D (LTE Band 5, QPSK, BW 10MHz)
- 9M03W7D (LTE Band 5, 16QAM, BW 10MHz)
- 4M53G7D (LTE Band 7, QPSK, BW 5MHz)
- 4M54W7D (LTE Band 7, 16QAM, BW 5MHz)
- 9M02G7D (LTE Band 7, QPSK, BW 10MHz)
- 9M02W7D (LTE Band 7, 16QAM, BW 10MHz)
- 13M51G7D (LTE Band 7, QPSK, BW 15MHz)
- 13M51W7D (LTE Band 7, 16QAM, BW 15MHz)
- 18M03G7D (LTE Band 7, QPSK, BW 20MHz)
- 18M03W7D (LTE Band 7, 16QAM, BW 20MHz)
- 4M54G7D (LTE Band 17, QPSK, BW 5MHz)
- 4M53W7D (LTE Band 17, 16QAM, BW 5MHz)
- 8M96G7D (LTE Band 17, QPSK, BW 10MHz)
- 8M95W7D (LTE Band 17, 16QAM, BW 10MHz)

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 & 27L REQUIREMENTS

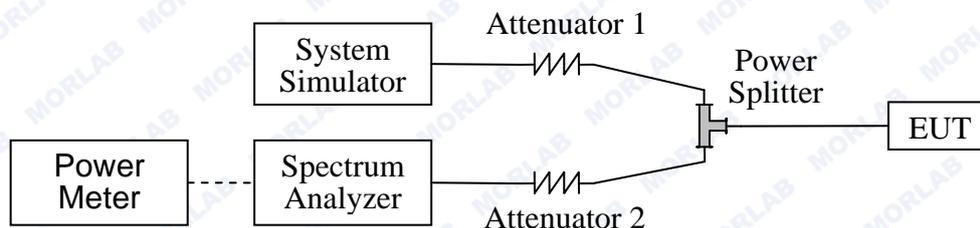
2.1 Transmitter Conducted Output Power

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	2015.02.26	2016.02.25
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2015.02.26	2016.02.25
Spectrum Analyzer	Agilent	E4445A	MY44200685	2015.02.26	2016.02.25
Power Meter	Agilent	E4418B	GB43318055	2015.02.26	2016.02.25
Power Meter	Agilent	E4418B	GB43318055	2015.02.26	2016.02.25
Power Sensor	Agilent	8482A	MY41091706	2015.02.26	2016.02.25
Power Splitter	Weinschel	1506A	NW521	2015.02.26	2016.02.25
Attenuator 1	Resnet	20dB	(n.a.)	2015.02.26	2016.02.25
Attenuator 2	Resnet	3dB	(n.a.)	2015.02.26	2016.02.25

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	22.28
					1	49	22.15
					1	99	21.92
					50	0	21.30
					50	25	21.28
					50	49	21.03
				100	0	21.30	
				16-QAM	1	0	21.56
					1	49	21.63
					1	99	21.02
					50	0	20.88
					50	25	20.84
		50	49		20.86		
		M 18900	1880	QPSK	1	0	22..32
					1	49	22.27
					1	99	22.08
					50	0	21.33
					50	25	21.20
					50	49	21.11
				100	0	21.31	
				16-QAM	1	0	21.50
					1	49	21.71
					1	99	20.71
					50	0	20.55
					50	25	20.59
		50	49		20.62		
		H 19100	1900	QPSK	1	0	22.43
					1	49	22.36
					1	99	21.92
					50	0	21.25
50	25				21.20		
50	49				21.12		
100	0			21.20			
16-QAM	1			0	22.07		
	1			49	21.91		
	1			99	21.47		
	50			0	20.89		
	50			25	20.92		
	50	49	20.79				
100	0	20.30					



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	22.26
					1	37	22.29
					1	74	22.30
					36	0	21.20
					36	18	21.21
					36	35	21.25
				75	0	21.12	
				16-QAM	1	0	21.38
					1	37	21.27
					1	74	21.82
					36	0	21.35
					36	18	21.29
		36	35		21.39		
		M 18900	1880	QPSK	75	0	19.99
					1	0	22.43
					1	37	22.31
					1	74	22.40
					36	0	21.38
					36	18	21.12
				16-QAM	36	35	20.96
					75	0	21.16
					1	0	21.21
					1	37	21.11
					1	74	21.08
					36	0	21.05
		H 19125	1902.5	QPSK	36	18	20.98
					36	35	20.89
					75	0	20.30
					1	0	22.28
					1	37	22.46
1	74				22.49		
16-QAM	36			0	21.31		
	36			18	21.22		
	36			35	21.28		
	75			0	21.16		
	1			0	21.12		
	1			37	21.13		
1	74	21.18					
36	0	20.56					
36	18	20.61					
36	35	20.59					
75	0	20.13					



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	22.00
					1	24	22.00
					1	49	22.07
					25	0	22.15
					25	12	21.12
					25	24	21.17
				50	0	21.13	
				16-QAM	1	0	21.11
					1	24	21.34
					1	49	21.23
					25	0	21.65
					25	12	20.88
		25	24		20.89		
		M 18900	1880	QPSK	1	0	20.15
					1	24	22.09
					1	49	22.20
					25	0	22.19
					25	12	21.18
					25	24	21.15
				50	0	21.10	
				16-QAM	1	0	21.19
					1	24	21.26
					1	49	21.06
					25	0	21.32
					25	12	20.98
		25	24		20.88		
		50	0	20.87			
		H 19150	1905	QPSK	1	0	20.08
					1	24	22.20
					1	49	22.02
25	0				21.98		
25	12				21.23		
25	24				21.05		
50	0			21.08			
16-QAM	1			0	21.04		
	1			24	21.02		
	1			49	20.67		
	25			0	20.19		
	25			12	20.54		
	25	24	20.44				
50	0	20.39					



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	22.23
					1	12	22.28
					1	24	22.18
					12	0	21.77
					12	6	21.70
					12	11	21.69
				16-QAM	25	0	21.26
					1	0	20.86
					1	12	20.88
					1	24	20.76
					12	0	20.35
					12	6	20.29
		M 18900	1880	QPSK	12	11	20.31
					25	0	19.93
					1	0	22.16
					1	12	22.09
					1	24	22.13
					12	0	21.86
				16-QAM	12	6	21.79
					12	11	21.82
					25	0	21.32
					1	0	20.45
					1	12	20.49
					1	24	20.61
		H 19175	1907.5	QPSK	12	0	20.50
					12	6	20.45
					12	11	20.46
					25	0	20.39
					1	0	22.51
					1	12	22.15
				16-QAM	1	24	22.21
					12	0	21.76
					12	6	21.70
					12	11	21.81
					25	0	21.34
					1	0	21.83
1	12	21.64					
1	24	21.91					
12	0	21.52					
12	6	21.59					
12	11	21.61					
25	0	20.34					



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	21.87
					1	14	21.97
					8	0	21.59
					8	4	21.61
					8	7	21.55
				16-QAM	15	0	21.01
					1	0	21.74
					1	7	21.88
					1	14	21.73
					8	0	20.88
					8	4	20.86
		M 18900	1880	QPSK	8	7	20.79
					15	0	19.95
					1	0	22.58
					1	7	22.38
					1	14	22.04
					8	0	22.24
				16-QAM	8	4	21.29
					8	7	21.21
					15	0	21.19
					1	0	21.60
					1	7	21.56
					1	14	21.58
		H 19185	1908.5	QPSK	8	0	21.21
					8	4	21.18
					8	7	21.09
					15	0	20.15
					1	0	21.85
					1	7	21.83
16-QAM	1			14	21.77		
	8			0	21.35		
	8			4	21.28		
	8			7	21.30		
	15			0	20.98		
	1			0	21.44		
					1	7	21.23
					1	14	21.50
					8	0	21.28
					8	4	21.30
					8	7	21.34
					15	0	20.08



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	21.74
					1	2	21.89
					1	5	21.92
					3	0	22.03
					3	1	22.00
					3	2	21.99
				16-QAM	6	0	21.05
					1	0	21.11
					1	2	21.45
					1	5	21.33
					3	0	21.08
					3	1	21.18
		M 18900	1880	QPSK	3	2	21.12
					6	0	20.27
					1	0	22.20
					1	2	22.10
					1	5	22.16
					3	0	22.18
				16-QAM	3	1	22.16
					3	2	22.25
					6	0	21.18
					1	0	21.12
					1	2	21.25
					1	5	21.31
		H 19193	1909.3	QPSK	3	0	21.16
					3	2	21.18
					3	5	21.21
					6	0	20.21
					1	0	22.02
					1	2	22.28
16-QAM	1			5	22.08		
	3			0	22.19		
	3			1	22.18		
	3			2	22.06		
	6			0	21.15		
	1			0	21.24		
1	2	21.34					
1	5	21.20					
3	0	21.18					
3	1	21.20					
3	2	21.12					
6	0	20.32					



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	22.38
					1	49	22.22
					1	99	21.96
					50	0	21.23
					50	25	21.20
					50	49	21.19
				16-QAM	100	0	21.11
					1	0	20.93
					1	49	21.50
					1	99	21.13
					50	0	20.89
					50	25	20.88
		M 20175	1732.5	QPSK	50	49	20.92
					100	0	20.25
					1	0	22.49
					1	49	22.41
					1	99	22.05
					50	0	21.25
				16-QAM	50	25	21.19
					50	49	21.18
					100	0	21.28
					1	0	21.69
					1	49	21.19
					1	99	20.99
		H 20300	1745.0	QPSK	50	0	20.56
					50	25	20.61
					50	49	20.49
					100	0	20.22
					1	0	22.42
					1	49	22.31
16-QAM	1			99	22.12		
	50			0	21.21		
	50			25	21.10		
	50			49	21.23		
	100			0	21.13		
	1			0	21.89		
1	49	22.06					
1	99	21.73					
50	0	20.95					
50	25	20.92					
50	49	20.89					
100	0	20.31					



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	22.28
					1	37	22.41
					1	74	22.43
					36	0	21.19
					36	18	21.20
					36	35	21.23
				16-QAM	75	0	21.12
					1	0	21.71
					1	37	21.86
					1	74	21.90
					36	0	21.26
					36	18	21.30
		M 20175	1732.5	QPSK	36	35	21.29
					75	0	20.29
					1	0	22.13
					1	37	22.20
					1	74	22.10
					36	0	21.38
				16-QAM	36	18	21.25
					36	35	21.20
					75	0	21.34
					1	0	21.29
					1	37	21.11
					1	74	21.13
		H 20325	1747.5	QPSK	36	0	20.88
					36	18	20.90
					36	35	20.84
					75	0	20.34
					1	0	21.96
					1	37	21.99
				16-QAM	1	74	21.86
					36	0	21.13
					36	18	21.09
					36	35	21.12
					75	0	21.10
					1	0	20.93
1	37	20.99					
1	74	20.97					
36	0	20.61					
36	18	20.55					
36	35	20.49					
75	0	20.19					



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	21.19				
					1	24	20.80				
					1	49	20.74				
					25	0	19.83				
					25	12	19.81				
					25	24	19.78				
				16-QAM	50	0	19.75				
					1	0	19.72				
					1	24	20.06				
					1	49	19.77				
					25	0	19.35				
					25	12	19.31				
		M 20175	1732.5	QPSK	25	24	19.36				
					50	0	18.85				
					1	0	20.77				
					1	24	20.75				
					1	49	20.82				
					25	0	19.83				
				16-QAM	25	12	19.81				
					25	24	19.80				
					50	0	19.77				
					1	0	19.3				
					1	24	19.74				
					1	49	19.85				
		H 20350	1750.0	QPSK	25	0	19.34				
					25	12	19.33				
					25	24	19.26				
					50	0	18.48				
					1	0	20.48				
					1	24	20.35				
16-QAM	1			49	20.55						
	25			0	19.47						
	25			12	19.46						
	25			24	19.44						
	50			0	19.48						
	1			0	19.66						
				16-QAM	1	24	19.65				
					1	49	19.19				
					25	0	19.08				
					25	12	19.14				
									25	24	19.19
									50	0	18.28



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	21.08
					1	12	20.92
					1	24	20.86
					12	0	20.39
					12	6	20.45
					12	11	20.40
				25	0	19.83	
				16-QAM	1	0	19.41
					1	12	19.36
					1	24	19.38
					12	0	19.09
					12	6	19.11
		12	11		19.04		
		M 20175	1732.5	QPSK	1	0	20.55
					1	12	20.48
					1	24	20.51
					12	0	20.28
					12	6	20.41
					12	11	20.31
				25	0	19.76	
				16-QAM	1	0	19.11
					1	12	19.09
					1	24	19.05
					12	0	18.84
					12	6	18.76
		12	11		18.68		
		25	0	18.53			
		H 20375	1752.5	QPSK	1	0	20.78
					1	12	20.68
					1	24	20.56
12	0				20.39		
12	6				20.29		
12	11				20.32		
25	0			19.51			
16-QAM	1			0	19.76		
	1			12	19.68		
	1			24	19.66		
	12			0	18.74		
	12			6	19.03		
	12	11	18.93				
25	0	18.30					



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	20.86
					1	7	20.94
					1	14	20.80
					8	0	20.48
					8	4	20.31
					8	7	20.41
				15	0	19.89	
				16-QAM	1	0	19.68
					1	7	19.70
					1	14	19.88
					8	0	19.81
					8	4	19.74
		8	7		19.80		
		M 20175	1732.5	QPSK	1	0	20.70
					1	7	20.68
					1	14	20.71
					8	0	20.41
					8	4	20.39
					8	7	20.26
				15	0	19.78	
				16-QAM	1	0	19.39
					1	7	19.27
					1	14	19.28
					8	0	19.06
					8	4	18.98
		8	7		18.89		
		H 20385	1753.5	QPSK	1	0	20.48
					1	7	20.46
					1	14	20.50
					8	0	20.31
8	4				20.29		
8	7				20.32		
15	0			19.62			
16-QAM	1			0	19.25		
	1			7	19.19		
	1			14	19.22		
	8			0	19.02		
	8			4	18.89		
	8	7	18.92				
15	0	18.53					



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	20.86
					1	2	20.94
					1	5	20.80
					3	0	20.48
					3	1	20.31
					3	2	20.41
				16-QAM	6	0	20.78
					1	0	20.84
					1	2	20.87
					1	5	20.91
					3	0	21.01
					3	1	20.95
		M 20175	1732.5	QPSK	3	2	19.98
					6	0	20.01
					1	0	20.00
					1	2	19.94
					1	5	19.38
					3	0	19.30
				16-QAM	3	1	19.26
					3	2	18.75
					6	0	20.63
					1	0	20.70
					1	2	20.61
					1	5	20.68
		H 20393	1754.3	QPSK	3	0	20.65
					3	2	20.71
					3	5	19.71
					6	0	19.67
					1	0	19.57
					1	2	19.62
16-QAM	1			5	19.31		
	3			0	19.26		
	3			1	19.09		
	3			2	18.77		
	6			0	20.45		
	1			0	20.39		
16-QAM	1	2	20.49				
	1	5	20.62				
	3	0	20.58				
	3	1	20.50				
	3	2	19.66				
	6	0	19.51				



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	22.21
					1	24	21.96
					1	49	22.17
					25	0	21.24
					25	12	21.12
					25	24	21.10
				16-QAM	50	0	21.17
					1	0	21.27
					1	24	20.96
					1	49	21.42
					25	0	21.12
					25	12	21.09
		M 20525	836.5	QPSK	25	24	21.10
					50	0	20.33
					1	0	21.96
					1	24	22.01
					1	49	22.02
					25	0	21.26
				16-QAM	25	12	21.15
					25	24	21.14
					50	0	21.24
					1	0	21.12
					1	24	20.55
					1	49	20.63
H 20600	844	QPSK	25	0	20.45		
			25	12	20.51		
			25	24	20.44		
			50	0	20.16		
			1	0	22.24		
			1	24	21.97		
		16-QAM	1	49	22.22		
			25	0	21.15		
			25	12	21.14		
			25	24	21.17		
			50	0	21.09		
			1	0	21.46		
1	24	21.75					
1	49	21.78					
25	0	20.42					
25	12	20.54					
25	24	20.44					
50	0	20.28					



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	<u>22.27</u>
					1	12	<u>22.23</u>
					1	24	<u>22.25</u>
					12	0	<u>21.15</u>
					12	6	<u>21.18</u>
					12	11	<u>21.13</u>
				25	0	<u>20.44</u>	
				16-QAM	1	0	<u>21.17</u>
					1	12	<u>21.15</u>
					1	24	<u>21.04</u>
					12	0	<u>20.03</u>
					12	6	<u>20.04</u>
		12	11		<u>20.05</u>		
		M 20525	836.5	QPSK	1	0	<u>21.96</u>
					1	12	<u>21.86</u>
					1	24	<u>21.82</u>
					12	0	<u>21.03</u>
					12	6	<u>21.05</u>
					12	11	<u>21.09</u>
				25	0	<u>20.48</u>	
				16-QAM	1	0	<u>20.97</u>
					1	12	<u>20.96</u>
					1	24	<u>20.29</u>
					12	0	<u>19.82</u>
					12	6	<u>19.81</u>
		12	11		<u>19.89</u>		
		H 20625	846.5	QPSK	1	0	<u>21.93</u>
					1	12	<u>22.05</u>
					1	24	<u>22.07</u>
					12	0	<u>21.07</u>
12	6				<u>21.08</u>		
12	11				<u>21.05</u>		
25	0			<u>20.43</u>			
16-QAM	1			0	<u>21.43</u>		
	1			12	<u>21.39</u>		
	1			24	<u>21.38</u>		
	12			0	<u>20.25</u>		
	12			6	<u>20.15</u>		
	12	11	<u>20.08</u>				
25	0	<u>20.04</u>					



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	<u>22.15</u>
					1	7	<u>22.13</u>
					1	14	<u>21.16</u>
					8	0	<u>21.18</u>
					8	4	<u>21.22</u>
					8	7	<u>21.19</u>
				15	0	<u>20.34</u>	
				16-QAM	1	0	<u>21.64</u>
					1	7	<u>21.65</u>
					1	14	<u>21.77</u>
					8	0	<u>20.58</u>
					8	4	<u>20.63</u>
		8	7		<u>20.62</u>		
		M 20525	836.5	QPSK	1	0	<u>22.15</u>
					1	7	<u>22.12</u>
					1	14	<u>21.92</u>
					8	0	<u>21.18</u>
					8	4	<u>21.19</u>
					8	7	<u>21.18</u>
				15	0	<u>20.31</u>	
				16-QAM	1	0	<u>21.21</u>
					1	7	<u>21.34</u>
					1	14	<u>21.13</u>
					8	0	<u>20.12</u>
					8	4	<u>20.15</u>
		8	7		<u>20.14</u>		
		15	0	<u>20.12</u>			
		H 20635	847.5	QPSK	1	0	<u>21.93</u>
					1	7	<u>21.92</u>
					1	14	<u>21.90</u>
8	0				<u>21.07</u>		
8	4				<u>21.08</u>		
8	7				<u>21.10</u>		
15	0			<u>20.41</u>			
16-QAM	1			0	<u>20.21</u>		
	1			7	<u>20.15</u>		
	1			14	<u>20.16</u>		
	8			0	<u>19.52</u>		
	8			4	<u>19.65</u>		
	8	7	<u>19.50</u>				
15	0	<u>19.68</u>					



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	<u>22.37</u>
					1	2	<u>22.32</u>
					1	5	<u>22.30</u>
					3	0	<u>22.32</u>
					3	1	<u>22.29</u>
					3	2	<u>22.27</u>
				6	0	<u>20.34</u>	
				16-QAM	1	0	<u>21.53</u>
					1	2	<u>21.54</u>
					1	5	<u>21.56</u>
					3	0	<u>21.45</u>
					3	1	<u>21.39</u>
		3	2		<u>21.41</u>		
		M 20525	836.5	QPSK	1	0	<u>22.01</u>
					1	2	<u>22.06</u>
					1	5	<u>22.08</u>
					3	0	<u>22.03</u>
					3	1	<u>22.05</u>
					3	2	<u>22.01</u>
				6	0	<u>20.35</u>	
				16-QAM	1	0	<u>21.03</u>
					1	2	<u>21.15</u>
					1	5	<u>21.00</u>
					3	0	<u>21.06</u>
					3	2	<u>21.08</u>
		3	5		<u>21.12</u>		
		6	0	<u>20.33</u>			
		H 20643	848.3	QPSK	1	0	<u>21.93</u>
					1	2	<u>21.90</u>
					1	5	<u>21.94</u>
3	0				<u>22.06</u>		
3	1				<u>22.05</u>		
3	2				<u>21.98</u>		
6	0			<u>20.29</u>			
16-QAM	1			0	<u>20.73</u>		
	1			2	<u>20.71</u>		
	1			5	<u>20.61</u>		
	3			0	<u>20.69</u>		
	3			1	<u>20.62</u>		
	3	2	<u>20.58</u>				
6	0	<u>20.05</u>					



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	21.21
					1	49	21.10
					1	99	21.03
					50	0	21.14
					50	25	20.88
					50	49	20.81
				100	0	20.08	
				16-QAM	1	0	20.67
					1	49	20.51
					1	99	19.07
					50	0	19.90
					50	25	19.48
		50	49		19.82		
		M 21100	2535	QPSK	1	0	21.34
					1	49	21.24
					1	99	21.05
					50	0	21.16
					50	25	21.08
					50	49	20.08
				100	0	20.18	
				16-QAM	1	0	19.94
					1	49	19.85
					1	99	19.26
					50	0	20.57
					50	25	20.46
		50	49		20.39		
		100	0	19.21			
		H 21350	2560	QPSK	1	0	21.35
					1	49	21.25
					1	99	21.19
50	0				21.20		
50	25				21.08		
50	49				21.16		
100	0			21.14			
16-QAM	1			0	20.87		
	1			49	20.51		
	1			99	19.33		
	50			0	20.77		
	50			25	20.52		
	50	49	20.48				
100	0	19.16					



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	20.85	
					1	37	20.71	
					1	74	20.56	
					36	0	19.31	
					36	18	19.42	
					36	35	19.38	
				16-QAM	75	0	19.44	
					1	0	19.55	
					1	37	19.48	
					1	74	19.38	
					36	0	19.06	
					36	18	18.87	
		M 21100	2535	QPSK	2535	36	35	18.99
						75	0	18.39
						1	0	21.01
						1	37	20.76
						1	74	20.60
						36	0	19.53
				16-QAM	36	18	19.58	
					36	35	19.62	
					75	0	19.27	
					1	0	19.28	
					1	37	19.11	
					1	74	18.93	
		H 21375	2562.5	QPSK	2562.5	36	0	18.78
						36	18	18.70
						36	35	18.65
						75	0	18.49
						1	0	20.82
						1	37	20.58
16-QAM	1			74	20.48			
	36			0	19.49			
	36			18	19.51			
	36			35	19.65			
	75			0	19.38			
	1			0	19.58			
1	37	19.50						
1	74	19.47						
36	0	18.72						
36	18	18.81						
36	35	18.65						
75	0	18.21						



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	20.84
					1	24	20.97
					1	49	20.96
					25	0	19.55
					25	12	19.61
					25	24	19.48
				16-QAM	50	0	19.61
					1	0	20.11
					1	24	20.08
					1	49	19.97
					25	0	19.73
					25	12	19.65
		M 21100	2535	QPSK	25	24	19.51
					50	0	18.54
					1	0	20.71
					1	24	20.48
					1	49	20.42
					25	0	19.27
				16-QAM	25	12	19.31
					25	24	19.29
					50	0	19.37
					1	0	19.51
					1	24	19.31
					1	49	19.10
		H 21400	2565	QPSK	25	0	18.65
					25	12	18.85
					25	24	18.71
					50	0	18.26
					1	0	20.55
					1	24	20.44
16-QAM	1			49	20.30		
	25			0	19.45		
	25			12	19.31		
	25			24	19.28		
	50			0	19.38		
	1			0	18.99		
					1	24	18.96
					1	49	18.83
					25	0	18.85
					25	12	18.74
					25	24	18.65
					50	0	18.34
					50	0	18.34



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	20.66	
					1	12	20.58	
					1	24	20.68	
					12	0	19.75	
					12	6	20.09	
					12	11	19.87	
				16-QAM	25	0	19.44	
					1	0	19.51	
					1	12	19.48	
					1	24	19.13	
					12	0	19.21	
					12	6	19.17	
		M 21100	2535	QPSK	2535	12	11	18.65
						25	0	18.46
						1	0	20.43
						1	12	20.39
						1	24	20.17
						12	0	19.06
				16-QAM	12	6	19.26	
					12	11	19.11	
					25	0	19.36	
					1	0	19.06	
					1	12	18.96	
					1	24	19.21	
		H 21425	2567.5	QPSK	2567.5	12	0	19.09
						12	6	18.96
						12	11	18.98
						25	0	18.28
						1	0	20.43
						1	12	20.38
16-QAM	1			24	20.34			
	12			0	20.03			
	12			6	19.99			
	12			11	19.85			
	25			0	19.42			
	1			0	19.31			
1	12	19.26						
1	24	19.16						
12	0	19.09						
12	6	19.21						
12	11	19.16						
25	0	18.89						



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)				
					RB Size	RB Offset					
LTE Band 17	10MHz	L 23780	709	QPSK	1	0	21.95				
					1	24	21.96				
					1	49	22.17				
					25	0	21.16				
					25	12	21.17				
					25	24	21.13				
				16-QAM	50	0	21.14				
					1	0	21.75				
					1	24	21.28				
					1	49	21.16				
					25	0	20.98				
					25	12	20.89				
		M 23790	710	QPSK	25	24	20.88				
					50	0	20.12				
					1	0	22.15				
					1	24	22.18				
					1	49	22.17				
					25	0	21.21				
				16-QAM	25	12	21.15				
					25	24	21.14				
					50	0	21.16				
					1	0	21.49				
					1	24	21.40				
					1	49	21.00				
		H 23800	711	QPSK	25	0	20.94				
					25	12	20.81				
					25	24	20.80				
					50	0	20.17				
					1	0	22.06				
					1	24	21.90				
16-QAM	1			49	21.98						
	25			0	21.17						
	25			12	21.14						
	25			24	21.16						
	50			0	21.15						
	1			0	20.46						
				16-QAM	1	24	20.41				
					1	49	20.70				
					25	0	20.55				
					25	12	20.49				
									25	24	20.47
									50	0	20.04



Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 17	5MHz	L 23755	706.5	QPSK	1	0	22.13
					1	12	22.29
					1	24	22.25
					12	0	21.06
					12	6	21.17
					12	11	21.23
				25	0	21.12	
				16-QAM	1	0	22.15
					1	12	22.14
					1	24	21.93
					12	0	21.52
					12	6	21.43
		12	11		21.46		
		M 23790	710	QPSK	1	0	21.95
					1	12	21.88
					1	24	22.02
					12	0	21.04
					12	6	21.01
					12	11	20.95
				25	0	21.06	
				16-QAM	1	0	20.69
					1	12	20.07
					1	24	20.11
					12	0	20.18
					12	6	20.12
		12	11		20.11		
		25	0	20.01			
		H 23825	713.5	QPSK	1	0	22.02
					1	12	22.05
					1	24	21.95
12	0				21.19		
12	6				21.16		
12	11				21.15		
25	0			21.08			
16-QAM	1			0	21.18		
	1			12	21.39		
	1			24	21.40		
	12			0	20.84		
	12			6	20.85		
	12	11	20.89				
25	0	19.91					



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	1.1009	1.1023	18615	1851.5	2.7186	2.7100
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	1.322	1.319	18615	1851.5	3.000	3.016

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	4.5285	4.5335	18650	1855.0	8.9942	8.9997
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	5.041	5.052	18650	1855.0	9.951	9.983

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	13.499	13.490	18700	1860.0	17.964	17.957
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	14.78	14.74	18700	1860.0	19.54	19.66



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	1.0985	1.1054	18900	1880.0	2.7160	2.7311

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	1.316	1.317	18900	1880.0	3.004	3.021

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	4.5290	4.5307	18900	1880.0	9.0066	9.0072

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	5.013	5.035	18900	1880.0	10.02	9.870

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	13.493	13.480	18900	1880.0	17.945	17.924

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	14.86	14.74	18900	1880.0	19.42	19.66



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	1.1050	1.1017	19184	1908.4	2.7176	2.7116

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	1.314	1.328	19184	1908.4	3.017	3.015

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	4.5189	4.5317	19150	1905.0	8.9867	8.9764

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	5.002	5.039	19150	1905.0	9.954	9.904

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	13.411	13.464	19100	1900.0	17.949	17.924

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	14.72	14.74	19100	1900.0	19.57	19.66

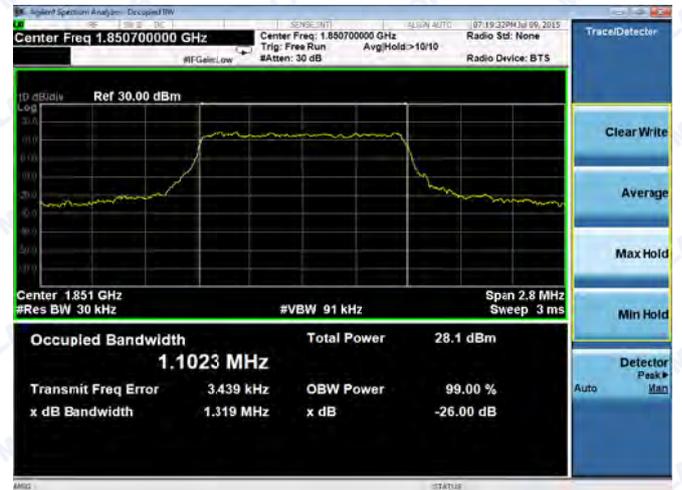
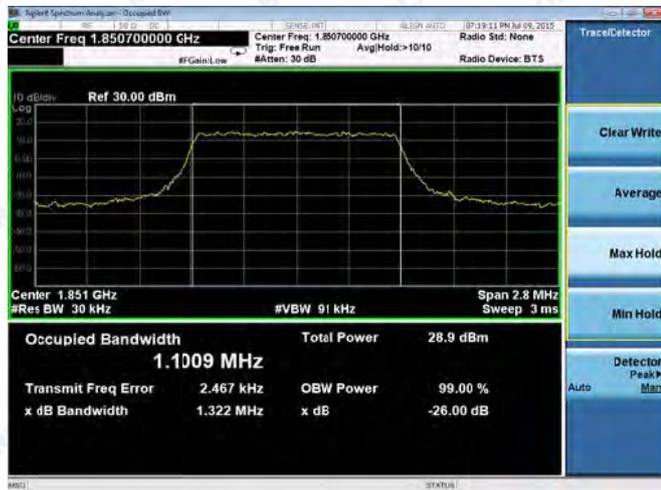


Low channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

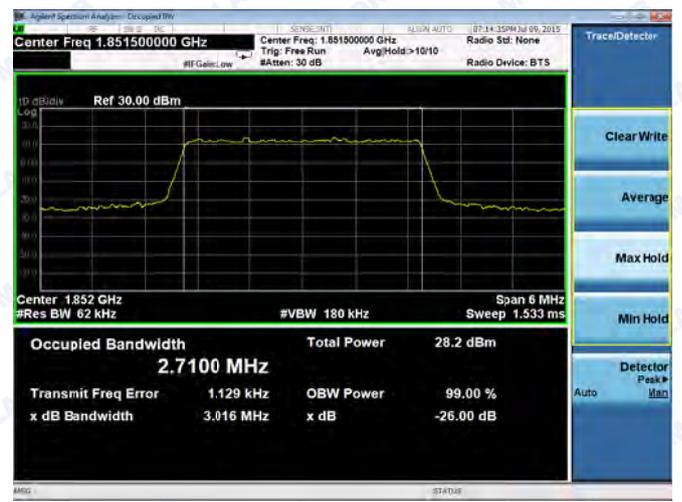
1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

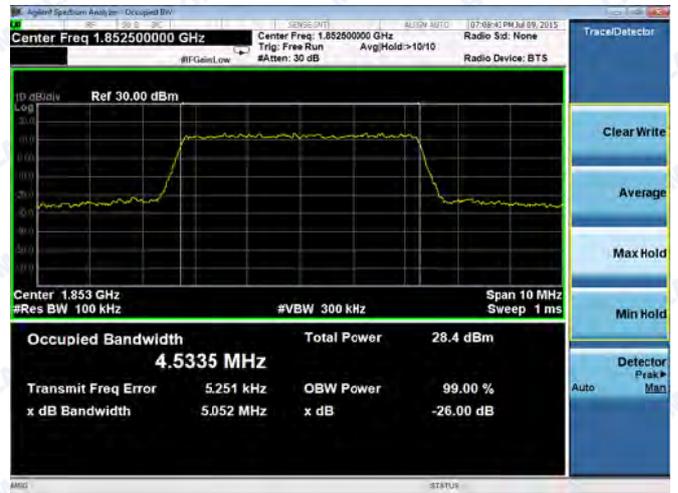




Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

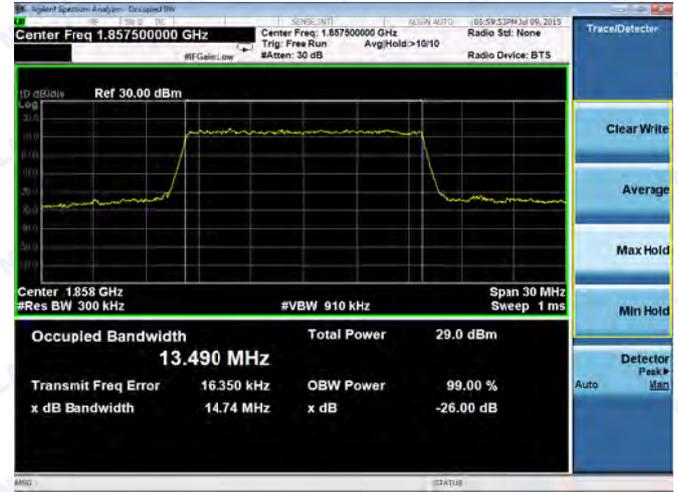
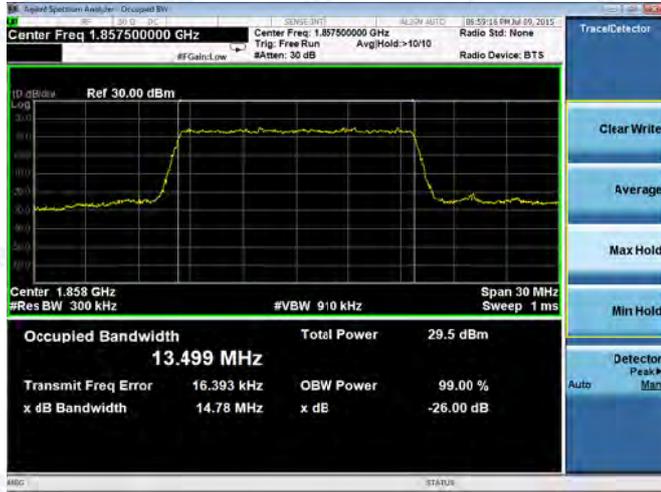




Spectrum Plot of Worst Value

15MHz/QPSK

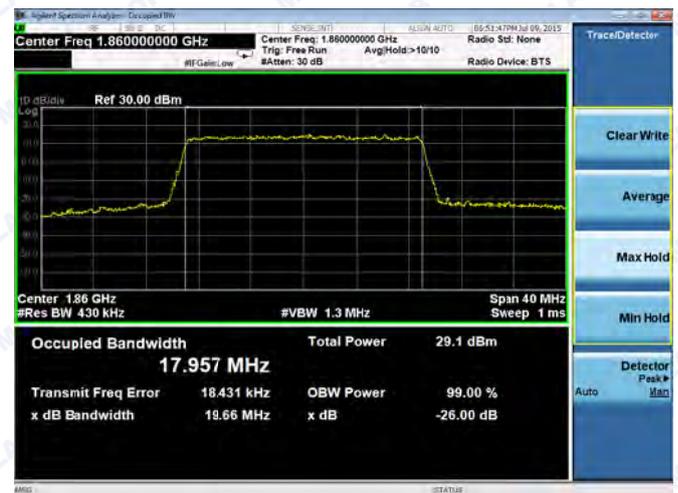
15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



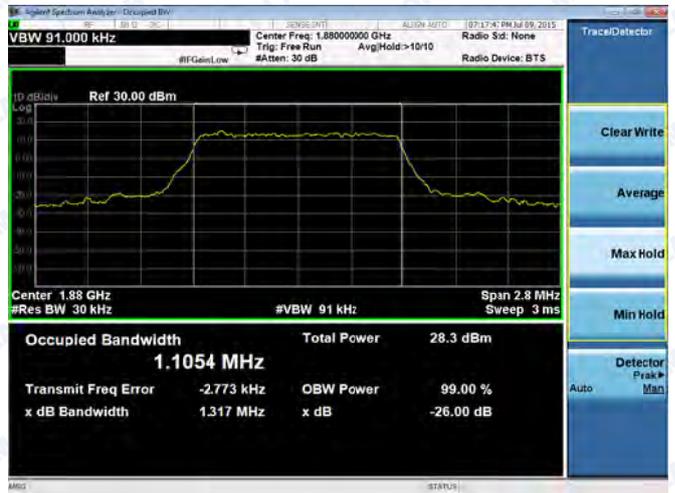
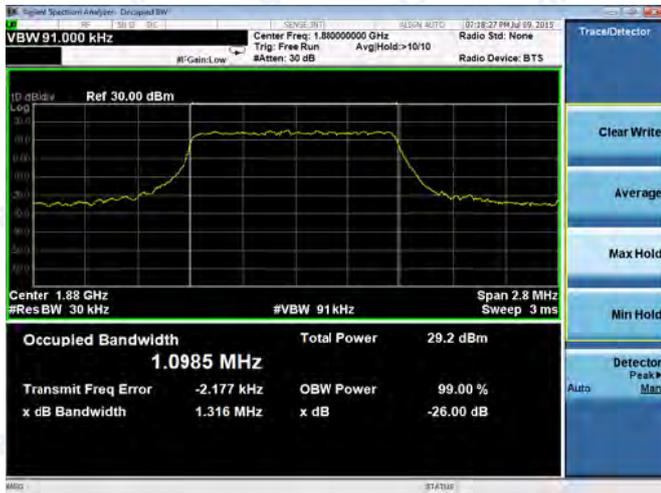


Middle channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

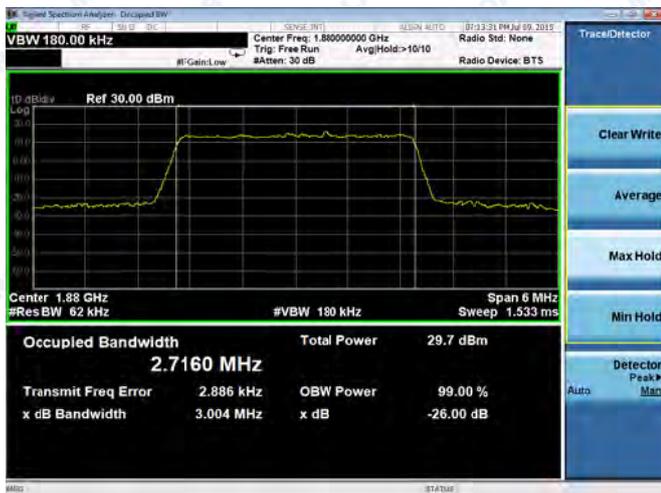
1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

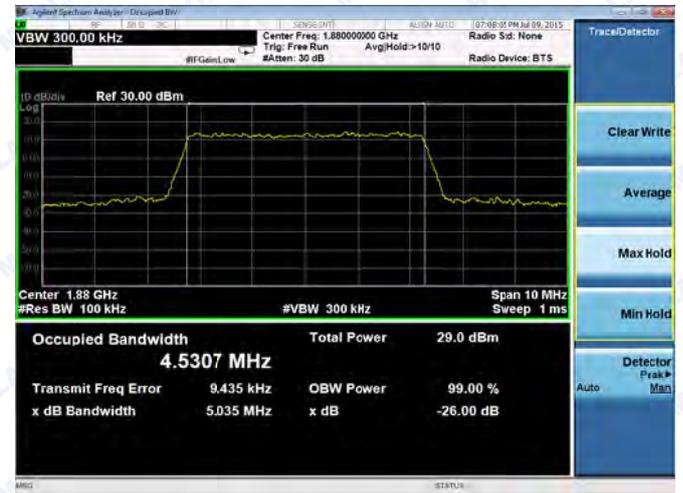




Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

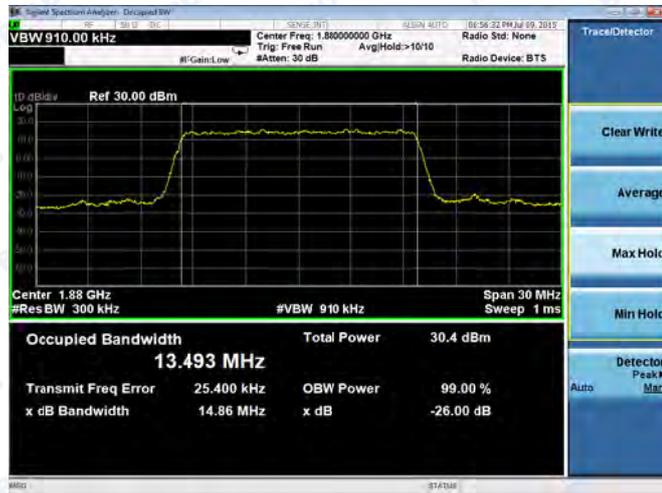
10MHz/16QAM



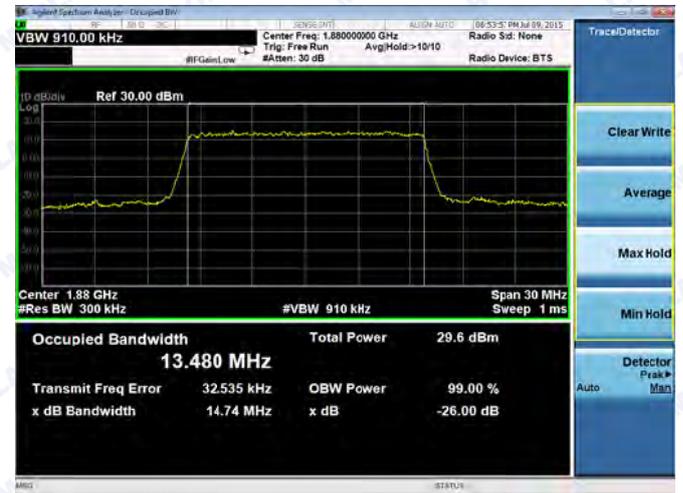


Spectrum Plot of Worst Value

15MHz/QPSK



15MHz/16QAM

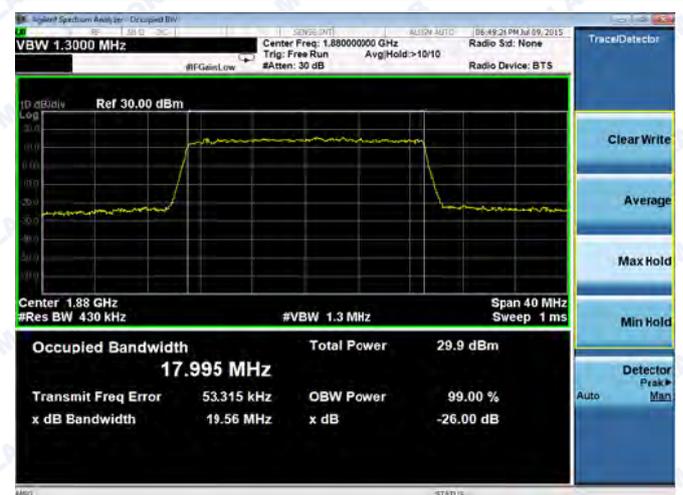


Spectrum Plot of Worst Value

20MHz/QPSK



20MHz/16QAM



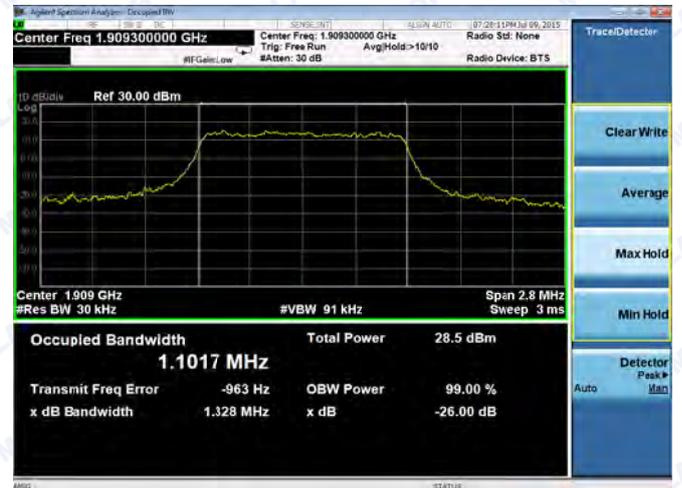
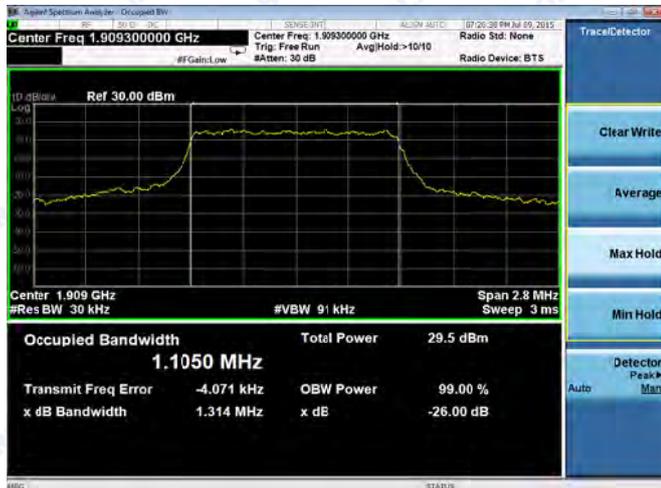


High channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

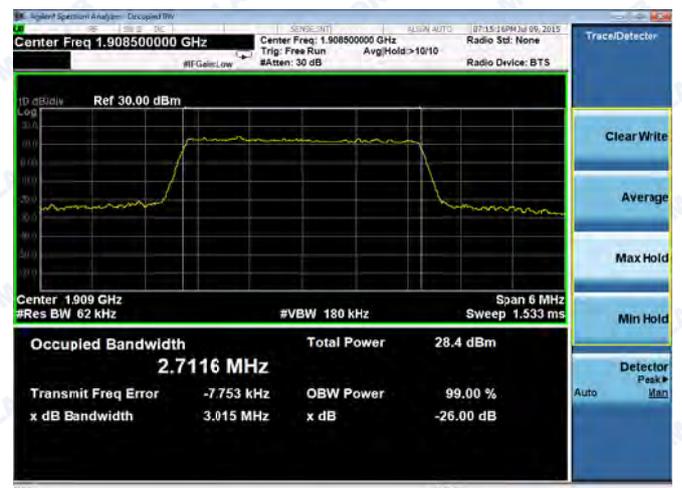
1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

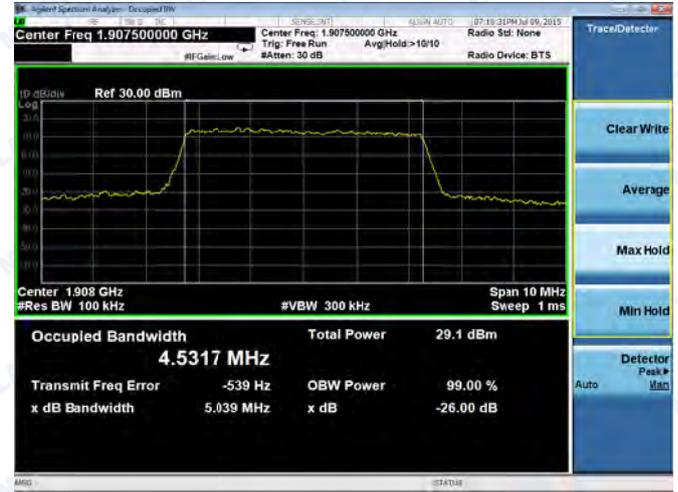




Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

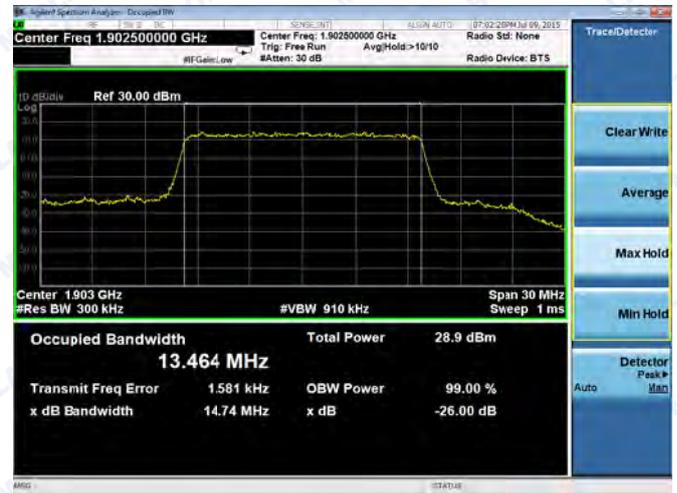
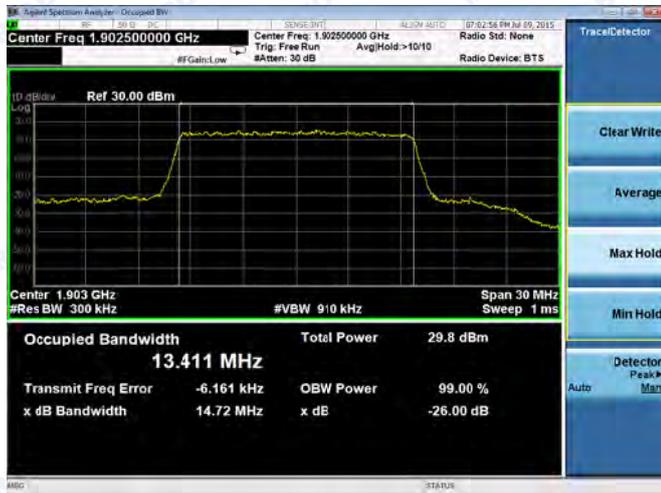




Spectrum Plot of Worst Value

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	1.1017	1.0990	19965	1711.5	2.7169	2.7092

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	1.328	1.286	19965	1711.5	2.999	3.006

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	4.5259	4.5268	20000	1715.0	8.9961	9.0061

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	5.070	5.038	20000	1715.0	9.972	9.906

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	13.459	13.498	20050	1720.0	17.958	17.966

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	14.79	14.78	20050	1720.0	19.50	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	1.1030	1.1023	20175	1732.5	2.7127	2.7227
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	1.301	1.297	20175	1732.5	3.014	3.021

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	4.5310	4.5170	20175	1732.5	9.0234	8.9961
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	5.006	5.061	20175	1732.5	10.07	9.879

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	13.514	13.508	20175	1732.5	17.965	18.023
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	14.87	14.79	20175	1732.5	19.54	19.59



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	1.1075	1.0988	20384	1753.4	2.7155	2.7083
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	1.287	1.309	20384	1753.4	3.009	3.014

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	4.5272	4.5267	20350	1750.0	9.0126	8.9959
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	5.048	5.045	20350	1750.0	9.976	9.944

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	13.481	13.501	20300	1745.0	18.015	17.993
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	14.87	14.85	20300	1745.0	19.70	19.65

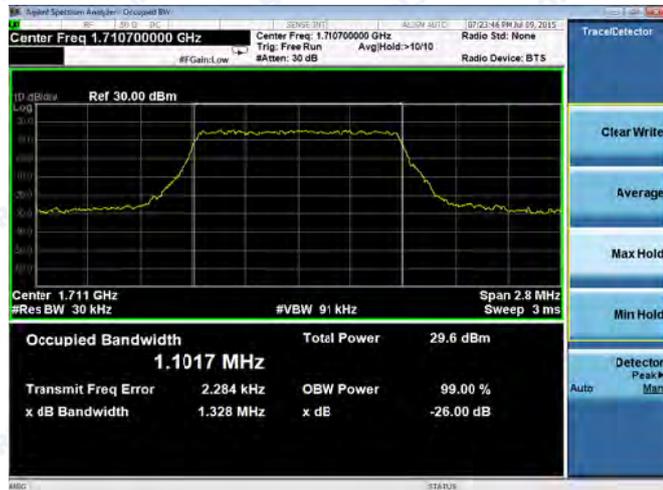


Low channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

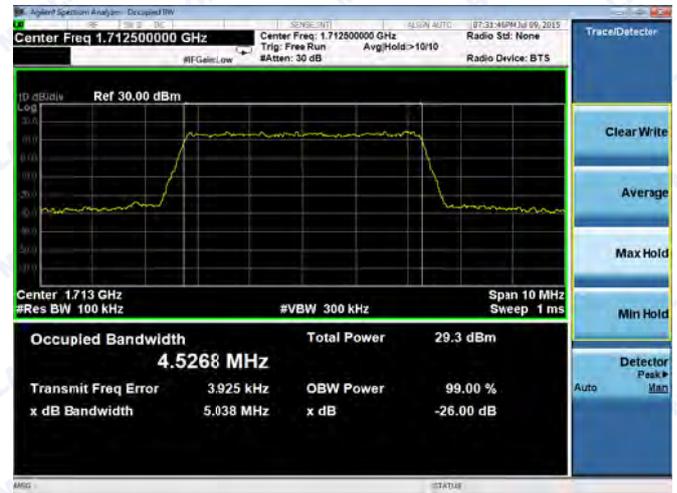




Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

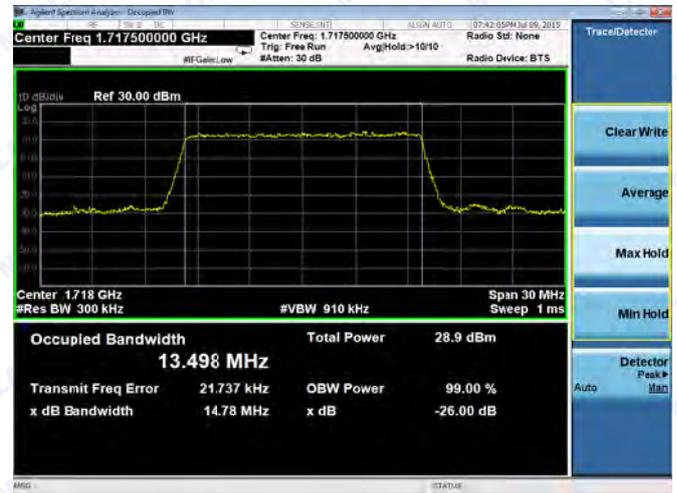
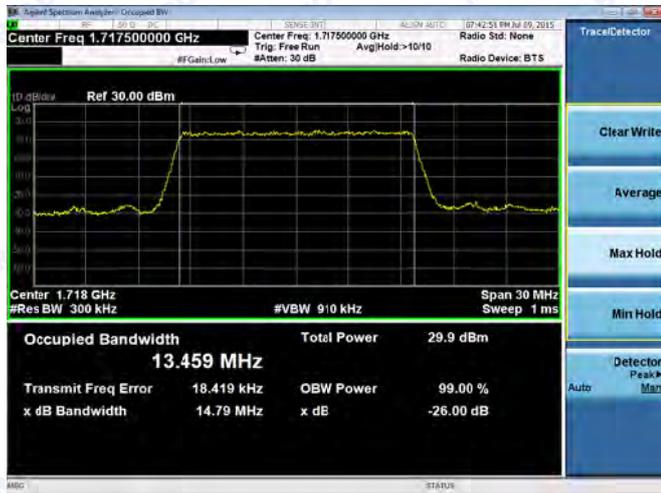




Spectrum Plot of Worst Value

15MHz/QPSK

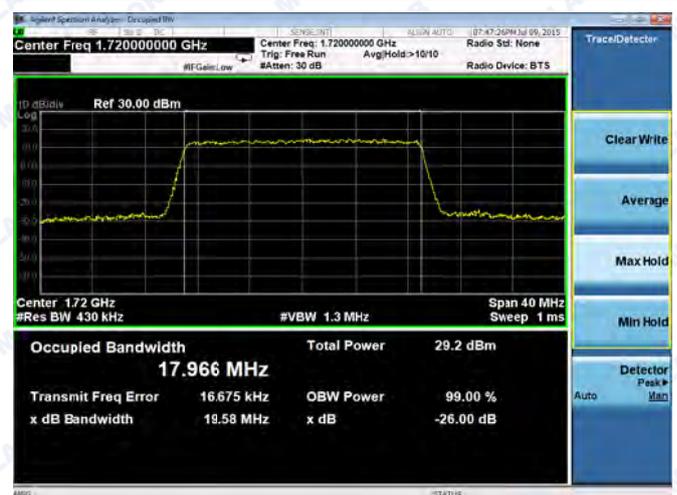
15MHz/16QAM



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

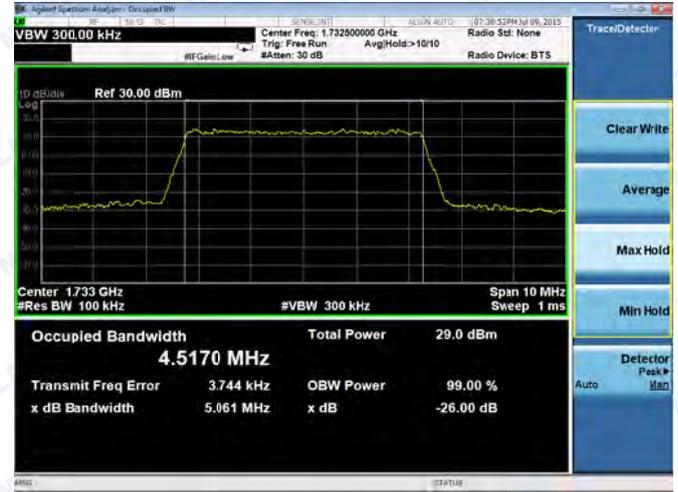
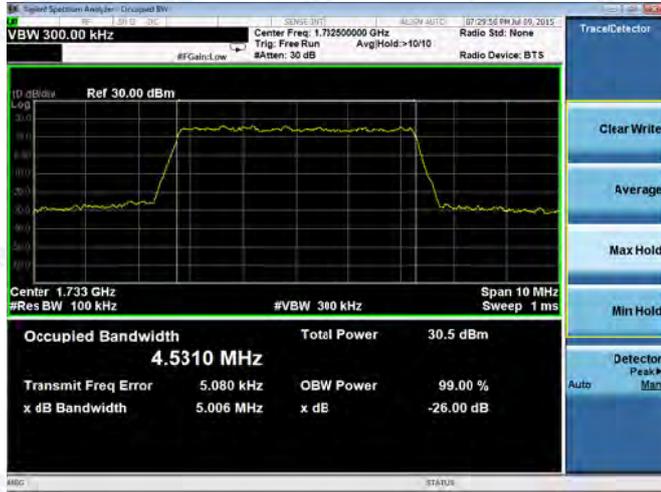




Spectrum Plot of Worst Value

5MHz/QPSK

5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

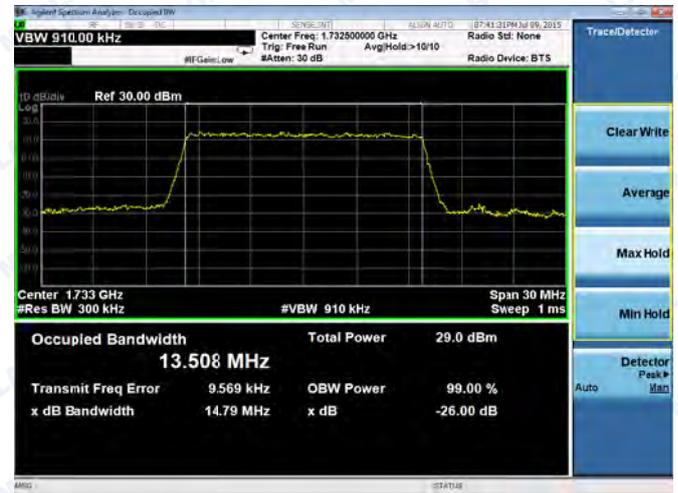
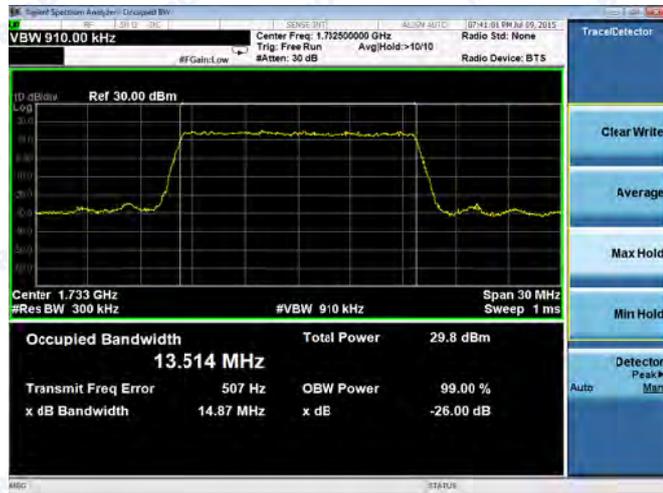




Spectrum Plot of Worst Value

15MHz/QPSK

15MHz/16QAM



Spectrum Plot of Worst Value

20MHz/QPSK

20MHz/16QAM



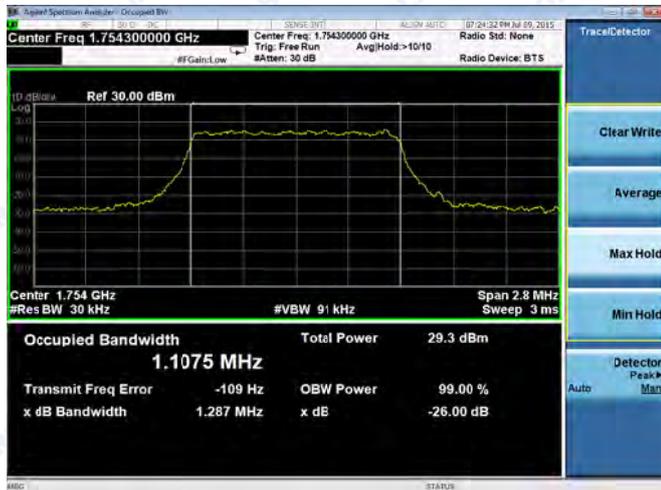


High channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

1.4MHz/16QAM



Spectrum Plot of Worst Value

3MHz/QPSK

3MHz/16QAM

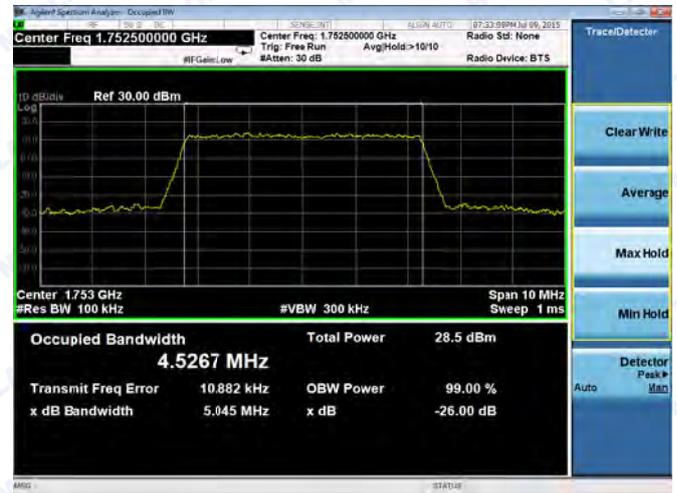




Spectrum Plot of Worst Value

5MHz/QPSK

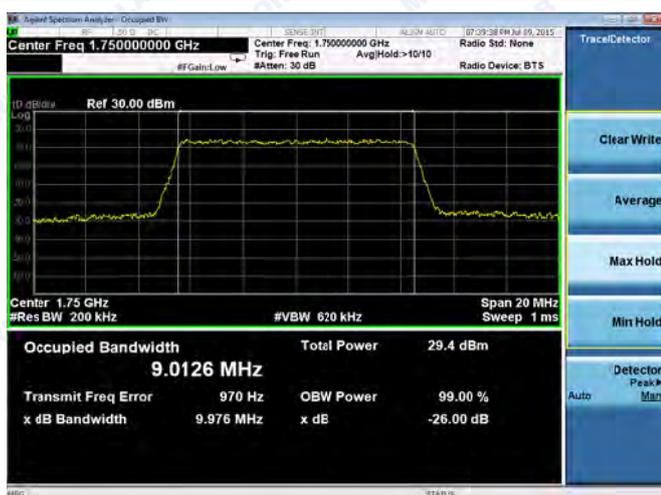
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM

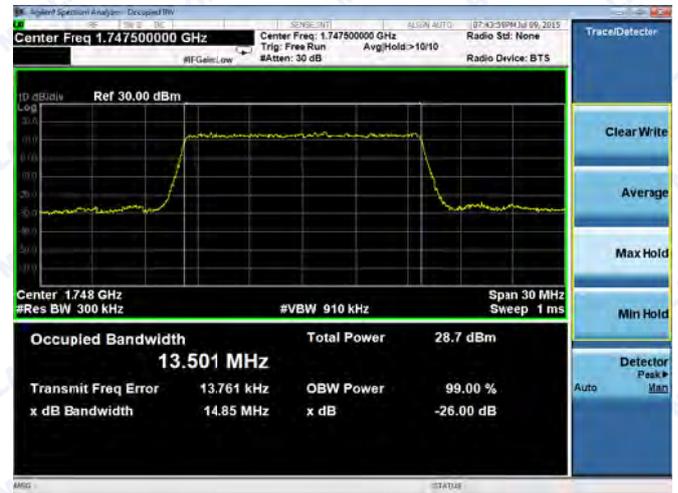
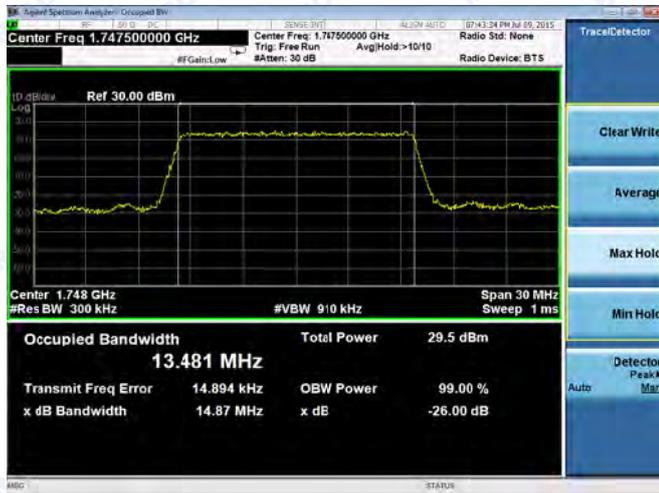




Spectrum Plot of Worst Value

15MHz/QPSK

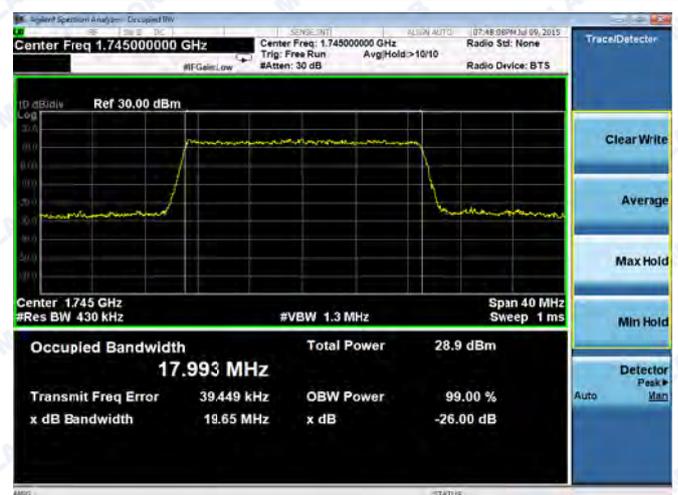
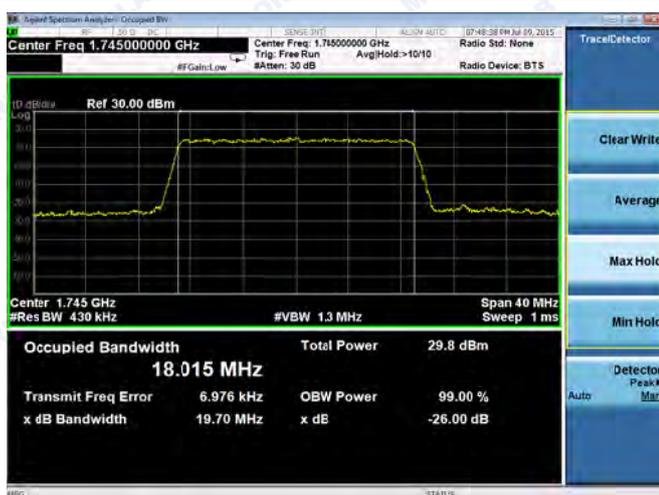
15MHz/16QAM



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	1.1003	1.1003	20415	825.5	2.7193	2.7081

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	1.299	1.292	20415	825.5	2.999	3.009

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	4.5248	4.5222	20450	829.0	8.9885	8.9909

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	5.061	5.055	20450	829.0	9.924	9.937

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	1.0990	1.1029	20525	836.5	2.7149	2.7268

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	1.304	1.298	20525	836.5	3.007	3.019



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	4.5278	4.5280	20525	836.5	9.0279	9.0251
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	5.027	5.053	20525	836.5	10.06	9.936

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	1.1101	1.0992	20635	847.5	2.7172	2.7088
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	1.291	1.293	20635	847.5	3.012	3.008

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	4.5250	4.5305	20600	844.0	8.9813	8.9788
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	4.979	5.009	20600	844.0	9.942	9.946

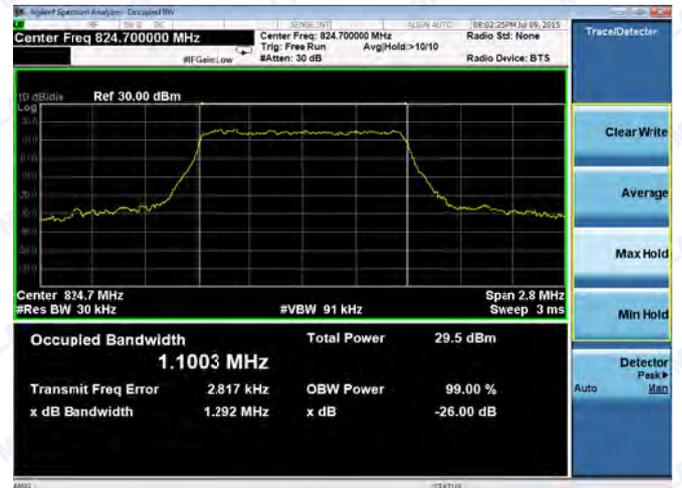
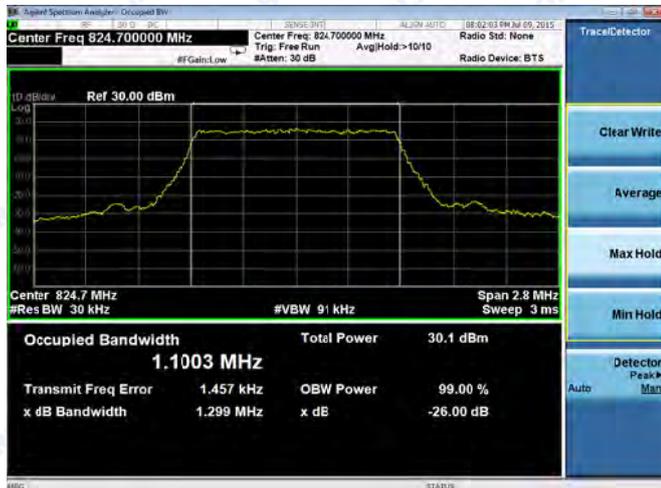


Low channel:

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

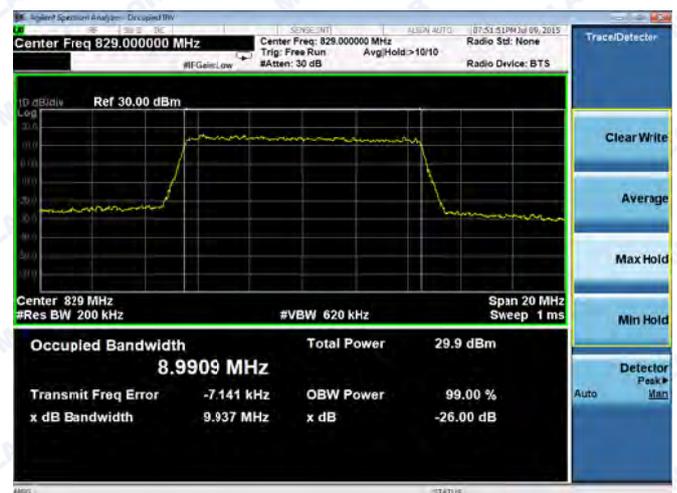
5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK

10MHz/16QAM



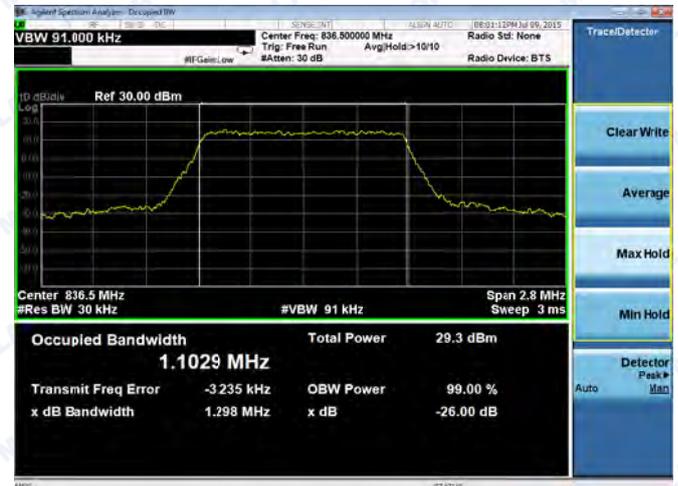


Middle channel:

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



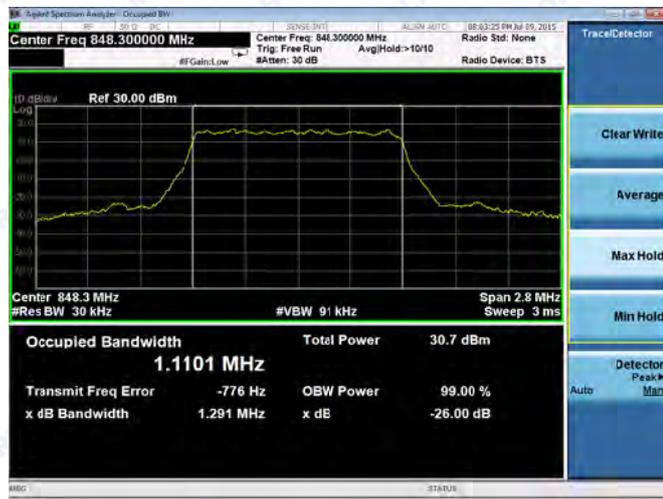


High channel:

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





LTE Band 7

Low channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20775	2502.5	4.5304	4.5267	20800	2505.0	8.9969	9.0071
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20775	2502.5	5.058	5.039	20800	2505.0	9.977	9.972

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20825	2507.5	13.450	13.479	20850	2510.0	17.952	17.952
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20825	2507.5	14.79	14.81	20850	2510.0	19.51	19.70

Middle channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	4.5319	4.5254	21100	2535.0	9.0173	9.0162
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	5.026	5.061	21100	2535.0	10.07	9.893



Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	13.505	13.507	21100	2535.0	17.981	18.027
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21100	2535.0	14.89	14.77	21100	2535.0	19.54	19.66

High channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21425	2567.5	4.5232	4.5358	21400	2565.0	9.0129	9.0008
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21425	2567.5	5.012	5.040	21400	2565.0	10.01	9.960

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21375	2562.5	13.503	13.500	21350	2560.0	18.031	17.984
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
21375	2562.5	14.85	14.81	21350	2560.0	19.77	19.67