REPORT No.: SZ16010163W05

FCC RF TEST REPORT

APPLICANT	:	ZTE Corporation
PRODUCT NAME	:	LTE Digital Mobile Handset
MODEL NAME	:	ZTE Blade A511, Blade A511
TRADE NAME	:	ZTE
BRAND NAME	:	ZTE
FCC ID	:	SRQ-A511
STANDARD(S)	:	47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart H&L&M
ISSUE DATE	:	2016-04-01

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DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2016-04-01	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 A511, Blade A511
Brand Name	ZTE
HW Version	V1AMB_A
SW Version	A476_TELCEL_MxCommon_1.00
Test Standards	47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart H&L&M
Test Date	2016-03-10 to 2016-03-22
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..... :	V1AMB_A
Software Version	A476_TELCEL_MxCommon_1.00
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 7: QPSK, 16QAM LTE Band 17: QPSK, 16QAM
Tx Frequency Range..... ..... :	LTE Band 2: 1850MHz ~1910MHz LTE Band 4: 1710MHz ~1755MHz 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 7: 2620MHz ~ 2690MHz LTE Band 17: 734MHz ~ 746MHz
Emission Designator ..... :	1M11G7D (LTE Band 2, QPSK, BW 1.4MHz) 1M10W7D (LTE Band 2, 16QAM, BW 1.4MHz) 2M72G7D (LTE Band 2, QPSK, BW 3MHz) 2M71 W7D (LTE Band 2, 16QAM, BW 3MHz) 4M54G7D (LTE Band 2, QPSK, BW 5MHz) 4M55W7D (LTE Band 2, 16QAM, BW 5MHz) 9M02G7D (LTE Band 2, QPSK, BW 10MHz) 9M00W7D (LTE Band 2, 16QAM, BW 10MHz) 13M52G7D (LTE Band 2, QPSK, BW 15MHz) 13M52W7D (LTE Band 2, 16QAM, BW 15MHz) 18M02G7D (LTE Band 2, QPSK, BW 20MHz) 18M06W7D (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)
8M99G7D (LTE Band 4, QPSK, BW 10MHz)
8M99W7D (LTE Band 4, 16QAM, BW 10MHz)
13M51G7D (LTE Band 4, QPSK, BW 15MHz)
13M49W7D (LTE Band 4, 16QAM, BW 15MHz)
18M01G7D (LTE Band 4, QPSK, BW 20MHz)
18M05W7D (LTE Band 4, 16QAM, BW 20MHz)
4M54G7D (LTE Band 7, QPSK, BW 5MHz)
4M55W7D (LTE Band 7, 16QAM, BW 5MHz)
9M01G7D (LTE Band 7, QPSK, BW 10MHz)
9M01W7D (LTE Band 7, 16QAM, BW 10MHz)
13M52G7D (LTE Band 7, QPSK, BW 15MHz)
13M51W7D (LTE Band 7, 16QAM, BW 15MHz)
18M05G7D (LTE Band 7, QPSK, BW 20MHz)
18M02W7D (LTE Band 7, 16QAM, BW 20MHz)
4M54G7D (LTE Band 17, QPSK, BW 5MHz)
4M54W7D (LTE Band 17, 16QAM, BW 5MHz)
9M01G7D (LTE Band 17, QPSK, BW 10MHz)
8M99W7D (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 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
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	2.1046,24.232(c),27.50	Transmitter Conducted Output Power	PASS
2	2.1049,24.238	Occupied Bandwidth	PASS
3	2.1055, 24.235, 27.54	Frequency Stability	PASS
4	24.232,27.50	Peak to Average Radio	PASS
5	2.1051, 24.238, 27.53	Conducted Spurious Emissions	PASS
6	2.1051, 24.238, 27.53	Band Edge	PASS
7	2.1046,24.232, 27.50	Equivalent Isotropic Radiated Power	PASS
8	2.1051, 24.238(b), 27.53	Radiated Spurious Emissions	PASS

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: 2014 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 24E & 27 REQUIREMENTS

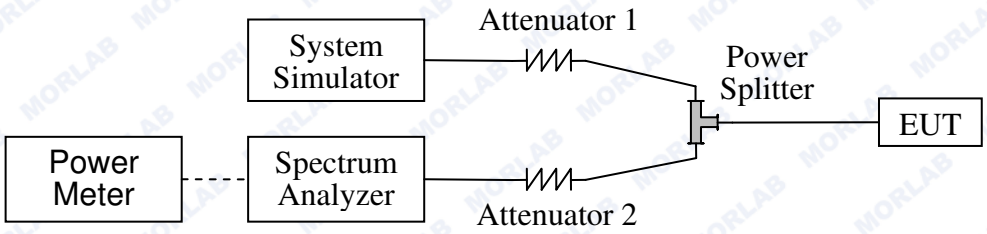
2.1 Transmitter Conducted Output Power

2.1.1 Requirement

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

2.1.2 Test Description

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	1201.0002k50/124534/wk	2015.03.26	2016.03.25
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2015.03.26	2016.03.25
Spectrum Analyzer	Agilent	E4445A	MY44200685	2015.03.26	2016.03.25
Power Meter	Agilent	E4418B	GB43318055	2015.03.26	2016.03.25
Power Meter	Agilent	E4418B	GB43318055	2015.03.26	2016.03.25
Power Sensor	Agilent	8482A	MY41091706	2015.03.26	2016.03.25
Power Splitter	Weinschel	1506A	NW521	2015.03.26	2016.03.25
Attenuator 1	Resnet	20dB	(n.a.)	2015.03.26	2016.03.25
Attenuator 2	Resnet	3dB	(n.a.)	2015.03.26	2016.03.25

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	22.07
					1	49	22.09
					1	99	22.10
					50	0	21.16
					50	25	21.13
					50	49	21.17
					100	0	21.14
				16-QAM	1	0	21.23
					1	49	21.18
					1	99	21.24
					50	0	20.56
					50	25	20.64
					50	49	20.59
					100	0	20.15
		M 18900	1880	QPSK	1	0	22.26
					1	49	22.29
					1	99	22.24
					50	0	21.22
					50	25	21.16
					50	49	21.23
					100	0	21.21
				16-QAM	1	0	21.53
					1	49	21.59
					1	99	21.45
					50	0	20.68
					50	25	20.72
					50	49	20.65
					100	0	20.24
		H 19100	1900	QPSK	1	0	22.17
					1	49	21.87
					1	99	21.66
					50	0	21.10
					50	25	21.05
					50	49	20.98
					100	0	21.06
				16-QAM	1	0	21.55
					1	49	21.33
					1	99	21.21
					50	0	20.42
					50	25	20.37
					50	49	20.39
					100	0	19.99

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	22.03
					1	37	22.05
					1	74	22.06
					36	0	21.17
					36	18	21.12
					36	35	21.09
					75	0	21.17
				16-QAM	1	0	21.19
					1	37	21.08
					1	74	21.12
					36	0	20.85
					36	18	20.76
					36	35	20.64
					75	0	20.12
		M 18900	1880	QPSK	1	0	22.12
					1	37	22.08
					1	74	22.10
					36	0	21.26
					36	18	21.29
					36	35	21.24
					75	0	21.30
				16-QAM	1	0	21.52
					1	37	21.42
					1	74	21.47
					36	0	20.88
					36	18	20.81
					36	35	20.76
					75	0	20.29
		H 19125	1902.5	QPSK	1	0	22.19
					1	37	22.12
					1	74	22.09
					36	0	21.15
					36	18	21.22
					36	35	21.19
					75	0	21.05
				16-QAM	1	0	21.11
					1	37	21.08
					1	74	21.05
					36	0	20.55
					36	18	20.49
					36	35	20.58
					75	0	19.96

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	21.99
					1	24	21.87
					1	49	21.91
					25	0	21.10
					25	12	21.08
					25	24	21.06
					50	0	21.10
				16-QAM	1	0	21.15
					1	24	21.10
					1	49	21.08
					25	0	20.54
					25	12	20.39
					25	24	20.46
					50	0	20.06
		M 18900	1880	QPSK	1	0	22.18
					1	24	22.21
					1	49	22.19
					25	0	21.16
					25	12	21.20
					25	24	21.22
					50	0	21.25
				16-QAM	1	0	21.59
					1	24	21.49
					1	49	21.45
					25	0	20.88
					25	12	20.76
					25	24	20.91
					50	0	20.25
		H 19150	1905	QPSK	1	0	21.88
					1	24	21.81
					1	49	21.76
					25	0	20.92
					25	12	20.82
					25	24	20.86
					50	0	20.89
				16-QAM	1	0	20.76
					1	24	20.71
					1	49	20.64
					25	0	20.22
					25	12	20.18
					25	24	20.16
					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	22.23
					1	12	22.18
					1	24	22.16
					12	0	21.11
					12	6	21.08
					12	11	21.04
					25	0	21.07
				16-QAM	1	0	21.56
					1	12	21.51
					1	24	21.49
					12	0	20.22
					12	6	20.19
					12	11	20.14
					25	0	20.05
		M 18900	1880	QPSK	1	0	22.14
					1	12	22.10
					1	24	22.08
					12	0	21.23
					12	6	21.31
					12	11	21.38
					25	0	21.22
				16-QAM	1	0	20.94
					1	12	20.81
					1	24	20.90
					12	0	20.51
					12	6	20.49
					12	11	20.45
					25	0	20.26
		H 19175	1907.5	QPSK	1	0	21.94
					1	12	21.88
					1	24	21.81
					12	0	20.92
					12	6	21.12
					12	11	21.08
					25	0	20.85
				16-QAM	1	0	21.02
					1	12	21.08
					1	24	21.10
					12	0	20.59
					12	6	20.61
					12	11	20.52
					25	0	19.81

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	22.17
					1	7	22.10
					1	14	22.08
					8	0	21.58
					8	4	21.61
					8	7	21.56
					15	0	21.32
				16-QAM	1	0	21.33
					1	7	21.15
					1	14	21.18
					8	0	20.85
					8	4	20.91
					8	7	20.75
					15	0	20.32
		M 18900	1880	QPSK	1	0	22.36
					1	7	22.30
					1	14	22.32
					8	0	21.89
					8	4	21.92
					8	7	21.88
					15	0	21.48
				16-QAM	1	0	21.79
					1	7	21.80
					1	14	21.69
					8	0	21.12
					8	4	21.20
					8	7	21.15
					15	0	20.51
		H 19185	1908.5	QPSK	1	0	22.16
					1	7	22.10
					1	14	22.15
					8	0	21.59
					8	4	21.61
					8	7	21.56
					15	0	21.09
				16-QAM	1	0	20.84
					1	7	20.81
					1	14	20.76
					8	0	20.35
					8	4	20.31
					8	7	20.29
					15	0	20.07

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	22.13
					1	2	22.10
					1	5	22.09
					3	0	22.30
					3	1	22.25
					3	2	22.24
					6	0	21.24
				16-QAM	1	0	21.33
					1	2	21.30
					1	5	21.28
					3	0	20.85
					3	1	20.76
					3	2	20.81
					6	0	20.15
		M 18900	1880	QPSK	1	0	22.31
					1	2	22.28
					1	5	22.26
					3	0	22.45
					3	1	22.41
					3	2	22.39
					6	0	21.45
				16-QAM	1	0	21.13
					1	2	21.09
					1	5	21.10
					3	0	20.88
					3	2	20.91
					3	5	20.82
					6	0	20.45
		H 19193	1909.3	QPSK	1	0	22.13
					1	2	22.08
					1	5	22.10
					3	0	22.03
					3	1	21.95
					3	2	21.98
					6	0	21.03
				16-QAM	1	0	20.82
					1	2	20.69
					1	5	20.72
					3	0	20.42
					3	1	20.39
					3	2	20.41
					6	0	20.02

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	22.67
					1	49	22.61
					1	99	22.59
					50	0	21.72
					50	25	21.69
					50	49	21.68
					100	0	21.66
				16-QAM	1	0	21.71
					1	49	21.67
					1	99	21.68
					50	0	21.12
					50	25	21.10
					50	49	21.05
					100	0	20.62
		M 20175	1732.5	QPSK	1	0	22.85
					1	49	22.81
					1	99	22.82
					50	0	21.73
					50	25	21.65
					50	49	21.69
					100	0	21.70
				16-QAM	1	0	22.06
					1	49	22.00
					1	99	22.03
					50	0	21.25
					50	25	21.30
					50	49	21.29
					100	0	20.71
		H 20300	1745.0	QPSK	1	0	22.72
					1	49	22.69
					1	99	22.40
					50	0	21.73
					50	25	21.68
					50	49	21.66
					100	0	21.67
				16-QAM	1	0	22.11
					1	49	22.07
					1	99	22.04
					50	0	21.15
					50	25	21.20
					50	49	21.18
					100	0	20.65

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	22.63
					1	37	22.58
					1	74	22.60
					36	0	21.81
					36	18	21.74
					36	35	21.72
					75	0	21.76
				16-QAM	1	0	21.79
					1	37	21.72
					1	74	21.62
					36	0	21.22
					36	18	21.18
					36	35	21.16
					75	0	20.74
		M 20175	1732.5	QPSK	1	0	22.71
					1	37	22.65
					1	74	22.69
					36	0	21.78
					36	18	21.70
					36	35	21.69
					75	0	21.81
				16-QAM	1	0	22.10
					1	37	22.02
					1	74	22.09
					36	0	21.56
					36	18	21.52
					36	35	21.49
					75	0	20.72
		H 20325	1747.5	QPSK	1	0	22.86
					1	37	22.72
					1	74	22.80
					36	0	21.82
					36	18	21.76
					36	35	21.79
					75	0	21.79
				16-QAM	1	0	21.74
					1	37	21.62
					1	74	21.64
					36	0	21.12
					36	18	21.09
					36	35	21.16
					75	0	20.73

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	22.61
					1	24	22.55
					1	49	22.57
					25	0	21.67
					25	12	21.61
					25	24	21.55
					50	0	21.67
				16-QAM	1	0	21.76
					1	24	21.62
					1	49	21.67
					25	0	21.12
					25	12	21.23
					25	24	21.18
					50	0	20.60
		M 20175	1732.5	QPSK	1	0	22.70
					1	24	22.64
					1	49	22.59
					25	0	21.70
					25	12	21.59
					25	24	21.62
					50	0	21.67
				16-QAM	1	0	22.04
					1	24	21.92
					1	49	21.94
					25	0	21.26
					25	12	21.32
					25	24	21.24
					50	0	20.66
		H 20350	1750.0	QPSK	1	0	22.73
					1	24	22.58
					1	49	22.67
					25	0	21.61
					25	12	21.58
					25	24	21.54
					50	0	21.62
				16-QAM	1	0	21.41
					1	24	21.32
					1	49	21.35
					25	0	20.95
					25	12	20.92
					25	24	20.83
					50	0	20.61

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	22.92
					1	12	22.85
					1	24	22.87
					12	0	22.05
					12	6	22.09
					12	11	22.15
					25	0	21.66
				16-QAM	1	0	22.11
					1	12	22.05
					1	24	22.08
					12	0	21.53
					12	6	21.49
					12	11	21.52
					25	0	20.57
		M 20175	1732.5	QPSK	1	0	22.76
					1	12	22.64
					1	24	22.72
					12	0	22.05
					12	6	22.10
					12	11	22.09
					25	0	21.68
				16-QAM	1	0	21.45
					1	12	21.51
					1	24	21.43
					12	0	21.10
					12	6	21.05
					12	11	21.08
					25	0	20.67
		H 20375	1752.5	QPSK	1	0	22.78
					1	12	22.69
					1	24	22.62
					12	0	22.25
					12	6	22.19
					12	11	22.15
					25	0	21.71
				16-QAM	1	0	21.88
					1	12	21.80
					1	24	21.75
					12	0	21.21
					12	6	21.19
					12	11	21.26
					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	22.55
					1	7	22.49
					1	14	22.51
					8	0	22.12
					8	4	22.08
					8	7	22.11
					15	0	21.67
				16-QAM	1	0	21.65
					1	7	21.60
					1	14	21.56
					8	0	21.10
					8	4	21.08
					8	7	21.16
					15	0	20.62
		M 20175	1732.5	QPSK	1	0	22.65
					1	7	22.59
					1	14	22.91
					8	0	22.02
					8	4	22.06
					8	7	21.99
					15	0	21.70
				16-QAM	1	0	22.00
					1	7	21.95
					1	14	22.06
					8	0	21.52
					8	4	21.46
					8	7	21.62
					15	0	20.70
		H 20385	1753.5	QPSK	1	0	22.71
					1	7	22.62
					1	14	22.69
					8	0	22.12
					8	4	22.09
					8	7	22.06
					15	0	21.67
				16-QAM	1	0	21.36
					1	7	21.29
					1	14	21.30
					8	0	20.92
					8	4	20.89
					8	7	20.85
					15	0	20.60

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	22.59
					1	2	22.49
					1	5	22.51
					3	0	22.68
					3	1	22.61
					3	2	22.56
					6	0	21.67
				16-QAM	1	0	21.71
					1	2	21.67
					1	5	21.64
					3	0	21.12
					3	1	21.08
					3	2	21.16
					6	0	20.55
		M 20175	1732.5	QPSK	1	0	22.64
					1	2	22.59
					1	5	22.61
					3	0	22.67
					3	1	22.56
					3	2	22.60
					6	0	21.73
				16-QAM	1	0	21.38
					1	2	21.28
					1	5	21.30
					3	0	20.92
					3	2	20.96
					3	5	20.94
					6	0	20.60
		H 20393	1754.3	QPSK	1	0	22.79
					1	2	22.71
					1	5	22.68
					3	0	22.69
					3	1	22.36
					3	2	22.30
					6	0	21.73
				16-QAM	1	0	21.47
					1	2	21.40
					1	5	21.42
					3	0	20.95
					3	1	20.92
					3	2	20.89
					6	0	20.69

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	21.74
					1	49	21.90
					1	99	21.81
					50	0	20.88
					50	25	20.84
					50	49	20.99
					100	0	20.99
				16-QAM	1	0	21.24
					1	49	21.42
					1	99	21.39
					50	0	20.68
					50	25	20.72
					50	49	20.64
					100	0	20.12
		M 21100	2535	QPSK	1	0	21.92
					1	49	21.74
					1	99	21.75
					50	0	20.95
					50	25	20.92
					50	49	20.89
					100	0	20.90
				16-QAM	1	0	21.07
					1	49	20.93
					1	99	20.95
					50	0	20.62
					50	25	20.59
					50	49	20.49
					100	0	20.12
		H 21350	2560	QPSK	1	0	21.96
					1	49	21.50
					1	99	21.18
					50	0	20.75
					50	25	20.88
					50	49	20.39
					100	0	20.60
				16-QAM	1	0	21.27
					1	49	20.94
					1	99	20.63
					50	0	20.46
					50	25	20.54
					50	49	20.59
					100	0	19.86

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	21.18
					1	37	21.12
					1	74	21.10
					36	0	20.48
					36	18	20.52
					36	35	20.49
					75	0	20.53
				16-QAM	1	0	20.44
					1	37	20.42
					1	74	20.39
					36	0	20.02
					36	18	20.09
					36	35	20.05
					75	0	19.78
		M 21100	2535	QPSK	1	0	21.48
					1	37	21.39
					1	74	21.40
					36	0	20.56
					36	18	20.50
					36	35	21.49
					75	0	20.50
				16-QAM	1	0	20.88
					1	37	20.80
					1	74	20.79
					36	0	20.11
					36	18	20.09
					36	35	20.02
					75	0	19.70
		H 21375	2562.5	QPSK	1	0	21.41
					1	37	21.32
					1	74	21.40
					36	0	20.40
					36	18	20.32
					36	35	20.36
					75	0	20.14
				16-QAM	1	0	20.38
					1	37	20.30
					1	74	20.35
					36	0	20.02
					36	18	20.06
					36	35	20.08
					75	0	19.42

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	21.76
					1	24	21.70
					1	49	21.69
					25	0	21.07
					25	12	21.02
					25	24	20.98
					50	0	21.00
				16-QAM	1	0	20.88
					1	24	20.80
					1	49	20.79
					25	0	20.52
					25	12	20.49
					25	24	20.38
					50	0	21.01
		M 21100	2535	QPSK	1	0	21.21
					1	24	21.12
					1	49	21.09
					25	0	20.47
					25	12	20.38
					25	24	20.40
					50	0	20.36
				16-QAM	1	0	21.58
					1	24	21.48
					1	49	21.39
					25	0	20.56
					25	12	20.87
					25	24	20.67
					50	0	20.12
		H 21400	2565	QPSK	1	0	21.43
					1	24	21.38
					1	49	21.39
					25	0	20.77
					25	12	20.69
					25	24	20.70
					50	0	20.69
				16-QAM	1	0	20.33
					1	24	20.29
					1	49	20.18
					25	0	20.02
					25	12	20.09
					25	24	20.05
					50	0	19.84

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	22.20
					1	12	22.08
					1	24	22.12
					12	0	21.51
					12	6	21.49
					12	11	21.42
					25	0	20.73
				16-QAM	1	0	21.58
					1	12	21.50
					1	24	21.46
					12	0	20.52
					12	6	20.43
					12	11	20.49
					25	0	19.85
		M 21100	2535	QPSK	1	0	21.97
					1	12	21.90
					1	24	21.85
					12	0	21.25
					12	6	21.31
					12	11	21.38
					25	0	20.68
				16-QAM	1	0	20.84
					1	12	20.91
					1	24	20.82
					12	0	20.26
					12	6	20.31
					12	11	20.22
					25	0	19.98
		H 21425	2567.5	QPSK	1	0	21.53
					1	12	21.42
					1	24	21.39
					12	0	20.52
					12	6	20.49
					12	11	20.42
					25	0	20.23
				16-QAM	1	0	20.94
					1	12	20.91
					1	24	20.82
					12	0	20.12
					12	6	20.20
					12	11	20.16
					25	0	19.44

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	22.83
					1	24	22.93
					1	49	22.89
					25	0	21.97
					25	12	21.92
					25	24	21.89
					50	0	21.93
				16-QAM	1	0	22.04
					1	24	22.05
					1	49	22.03
					25	0	21.59
					25	12	21.52
					25	24	21.61
					50	0	20.91
		M 23790	710	QPSK	1	0	22.85
					1	24	22.88
					1	49	22.83
					25	0	21.88
					25	12	21.80
					25	24	21.86
					50	0	21.96
				16-QAM	1	0	22.34
					1	24	22.33
					1	49	22.23
					25	0	21.25
					25	12	21.31
					25	24	21.30
					50	0	20.97
		H 23800	711	QPSK	1	0	22.98
					1	24	22.92
					1	49	22.93
					25	0	21.99
					25	12	21.92
					25	24	21.98
					50	0	21.96
				16-QAM	1	0	21.80
					1	24	21.79
					1	49	21.67
					25	0	21.15
					25	12	21.20
					25	24	21.16
					50	0	20.98

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	23.12
					1	12	23.08
					1	24	23.02
					12	0	22.25
					12	6	22.31
					12	11	22.28
					25	0	21.95
				16-QAM	1	0	22.47
					1	12	22.40
					1	24	22.38
					12	0	21.52
					12	6	21.49
					12	11	21.42
					25	0	20.98
		M 23790	710	QPSK	1	0	22.92
					1	12	22.90
					1	24	22.95
					12	0	22.15
					12	6	22.09
					12	11	22.20
					25	0	21.98
				16-QAM	1	0	21.70
					1	12	21.58
					1	24	21.60
					12	0	21.32
					12	6	21.29
					12	11	21.30
					25	0	21.07
		H 23825	713.5	QPSK	1	0	22.94
					1	12	22.86
					1	24	22.82
					12	0	22.16
					12	6	22.09
					12	11	22.18
					25	0	21.89
				16-QAM	1	0	22.13
					1	12	22.09
					1	24	22.11
					12	0	21.56
					12	6	21.39
					12	11	21.46
					25	0	20.82

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	1.0982	18615	1851.5	2.7170	2.7070
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	1.281	1.260	18615	1851.5	2.983	2.987

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	4.5352	4.5317	18650	1855.0	8.9789	8.9994
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	5.083	5.066	18650	1855.0	9.838	9.910

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	13.454	13.498	18700	1860.0	18.000	17.995
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	14.84	14.85	18700	1860.0	19.68	19.67

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	1.0969	1.1025	18900	1880.0	2.7062	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
18900	1880.0	1.268	1.276	18900	1880.0	2.969	2.991

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	4.5287	4.5293	18900	1880.0	9.0117	8.9996
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	5.034	5.096	18900	1880.0	9.989	9.877

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	13.515	13.519	18900	1880.0	18.015	18.057
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	14.90	18900	1880.0	19.67	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	1.1056	1.0997	19184	1908.4	2.7144	2.7067
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	1.276	1.268	19184	1908.4	2.985	2.993

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	4.5303	4.5489	19150	1905.0	9.0161	9.0000
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	5.085	5.057	19150	1905.0	9.941	9.923

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	13.510	13.505	19100	1900.0	17.973	18.033
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	14.91	14.83	19100	1900.0	19.62	20.43

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	1.1012	1.0988	19965	1711.5	2.7155	2.7054
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	1.296	1.268	19965	1711.5	2.982	2.984

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	4.5325	4.5277	20000	1715.0	8.9772	8.9943
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	5.115	5.043	20000	1715.0	9.890	9.918

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	13.472	13.481	20050	1720.0	17.933	17.955
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	14.85	14.82	20050	1720.0	19.34	19.44

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	1.0989	1.1038	20175	1732.5	2.7119	2.7207
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	1.274	1.284	20175	1732.5	2.993	3.009

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	4.5291	4.5324	20175	1732.5	8.9991	8.9767
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	5.088	5.072	20175	1732.5	10.07	9.839

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	13.506	13.489	20175	1732.5	18.009	18.053
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	14.93	14.78	20175	1732.5	19.53	19.69

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	1.1093	1.1000	20384	1753.4	2.7133	2.7042
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	1.295	1.278	20384	1753.4	2.978	2.991

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	4.5173	4.5448	20350	1750.0	8.9810	8.9824
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	5.015	5.089	20350	1750.0	9.944	9.912

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	13.506	13.488	20300	1745.0	17.962	17.999
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	14.92	14.82	20300	1745.0	19.56	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

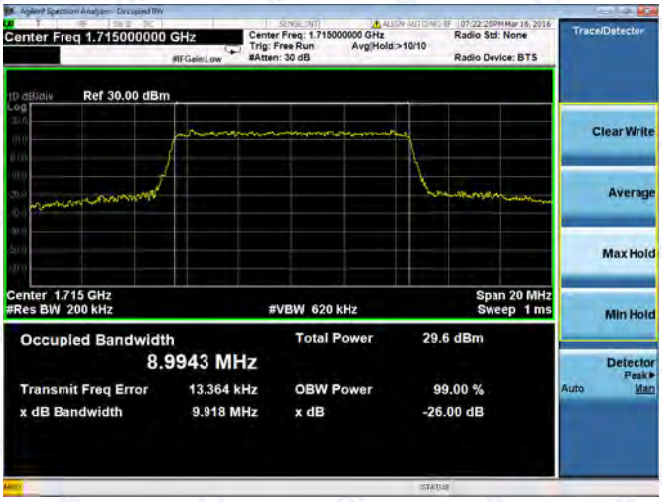
5MHz/QPSK

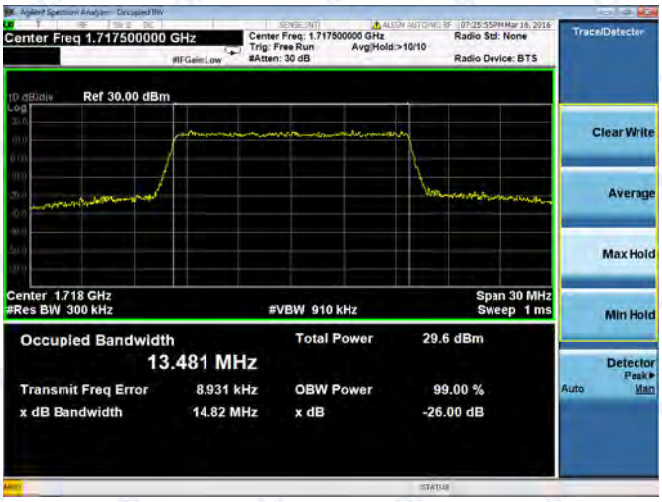
5MHz/16QAM

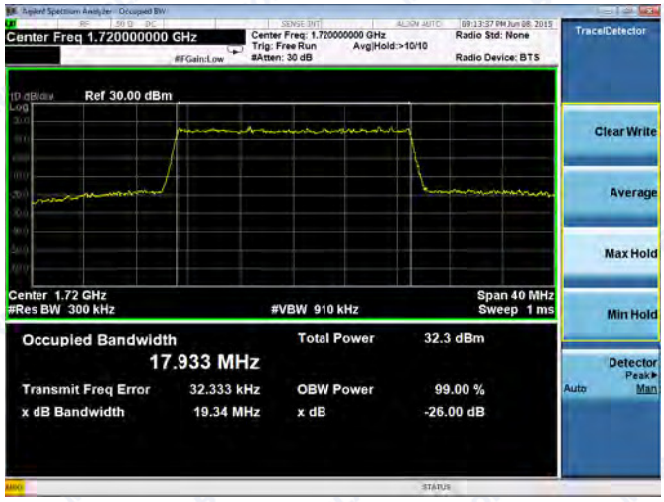
Spectrum Plot of Worst Value

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
	

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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	4.5360	4.5406	20800	2505.0	8.9742	8.9995
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	5.082	5.059	20800	2505.0	9.963	9.979

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	13.454	13.508	20850	2510.0	17.989	17.997
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	14.84	14.87	20850	2510.0	19.63	19.69

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	4.5397	4.5358	21100	2535.0	9.0131	9.0112
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	5.057	5.101	21100	2535.0	10.11	9.913

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	13.524	13.494	21100	2535.0	18.052	18.016
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	15.01	14.84	21100	2535.0	19.77	19.73

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	4.5370	4.5472	21400	2565.0	9.0005	8.9806
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	5.018	5.112	21400	2565.0	10.00	9.976

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	13.489	13.492	21350	2560.0	17.946	17.989
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	14.90	14.88	21350	2560.0	19.58	19.66

Low channel:

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	
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	
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
	

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Low channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	4.5361	4.5353	23780	709.0	9.0111	8.9891
Channel Bandwidth: 5MHz				**Channel Bandwidth: 10MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	5.102	5.063	23780	709.0	9.984	9.908

Middle channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23790	710	4.5393	5.5335	23790	710	9.0086	8.9792
Channel Bandwidth: 5MHz				**Channel Bandwidth: 10MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23790	710	5.077	5.075	23790	710	9.995	9.908

High channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23825	713.5	4.5287	4.5378	23800	711	9.0046	8.9849
Channel Bandwidth: 5MHz				**Channel Bandwidth: 10MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23825	713.5	5.044	5.077	23800	711	10.07	9.883

Low channel:

Spectrum Plot of Worst Value	
5MHz/QPSK	**5MHz/16QAM**
	

Spectrum Plot of Worst Value	
10MHz/QPSK	**10MHz/16QAM**