REPORT No.: SZ16050107W09

FCC RF TEST REPORT

APPLICANT	:	SHENZHEN ANTOP TECHNOLOGY., LTD.
PRODUCT NAME	:	Router Antenna
MODEL NAME	:	MV-9818/4G
TRADE NAME	:	N.A
BRAND NAME	:	N.A
FCC ID	:	2AG6P09819
STANDARD(S)	:	47 CFR Part 22, Subpart H 47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart H&L
ISSUE DATE	:	2016-08-12

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

MORLAB GROUP
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Tel: 86-755-36698555 Fax: 86-755-36698525
Http://www.morlab.com E-mail: service@morlab.cn

DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2016-08-12	First edition

TEST REPORT DECLARATION

Applicant	SHENZHEN ANTOP TECHNOLOGY., LTD.
Applicant Address	301, No. 1 Workshop, Longqiaohua Industrial Zone, Luotian Forest Farm, Songgang Street, Baoan District, 518100 Shenzhen City, Guang Dong Province, People's, Republic Of China
Manufacturer	SHENZHEN ANTOP TECHNOLOGY., LTD.
Manufacturer Address	301, No. 1 Workshop, Longqiaohua Industrial Zone, Luotian Forest Farm, Songgang Street, Baoan District, 518100 Shenzhen City, Guang Dong Province, People's, Republic Of China
Product Name	Router Antenna
Model Name	MV-9818/4G
Brand Name	N.A
HW Version	V1.0
SW Version	V1.0
Test Standards	47 CFR Part 22, Subpart H 47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart H&L
Test Date	2016-05-30 to 2016-06-15
Test Result	PASS

Tested by : Yuan Ling

Reviewed by : Qiu Xiaojun

Approved by : Peng Huarui

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type ..... :	Router Antenna
Serial No. ..... :	(n.a, marked #1 by test site)
Hardware Version..... :	V1.0
Software Version	V1.0
Applicant ..... :	SHENZHEN ANTOP TECHNOLOGY., LTD. 301, No. 1 Workshop, Longqiaohua Industrial Zone, Luotian Forest Farm, Songgang Street, Baoan District, 518100 Shenzhen City, Guang Dong Province, People's, Republic Of China
Manufacturer ..... :	SHENZHEN ANTOP TECHNOLOGY., LTD. 301, No. 1 Workshop, Longqiaohua Industrial Zone, Luotian Forest Farm, Songgang Street, Baoan District, 518100 Shenzhen City, Guang Dong Province, People's, Republic Of China
Modulation Type..... :	LTE Band 2: QPSK, 16QAM LTE Band 4: QPSK, 16QAM LTE Band 5: 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 17: 704MHz ~ 716MHz
Rx Frequency Range ..... :	LTE Band 2: 1930MHz ~ 1990MHz LTE Band 4: 2110MHz ~ 2155MHz LTE Band 5: 869MHz ~ 894MHz LTE Band 17: 734MHz ~ 746MHz
Emission Designator ..... :	1M10G7D (LTE Band 2, QPSK, BW 1.4MHz) 1M11W7D (LTE Band 2, 16QAM, BW 1.4MHz) 2M72G7D (LTE Band 2, QPSK, BW 3MHz) 2M72 W7D (LTE Band 2, 16QAM, BW 3MHz) 4M53G7D (LTE Band 2, QPSK, BW 5MHz) 4M52 W7D (LTE Band 2, 16QAM, BW 5MHz) 9M01G7D (LTE Band 2, QPSK, BW 10MHz) 9M00W7D (LTE Band 2, 16QAM, BW 10MHz) 13M52G7D (LTE Band 2, QPSK, BW 15MHz) 13M48W7D (LTE Band 2, 16QAM, BW 15MHz) 17M98G7D (LTE Band 2, QPSK, BW 20MHz)

18M05W7D (LTE Band 2, 16QAM, BW 20MHz)
1M11G7D (LTE Band 4, QPSK, BW 1.4MHz)
1M11W7D (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)
4M52W7D (LTE Band 4, 16QAM, BW 5MHz)
9M00G7D (LTE Band 4, QPSK, BW 10MHz)
9M00W7D (LTE Band 4, 16QAM, BW 10MHz)
13M48G7D (LTE Band 4, QPSK, BW 15MHz)
13M48W7D (LTE Band 4, 16QAM, BW 15MHz)
17M98G7D (LTE Band 4, QPSK, BW 20MHz)
18M03W7D (LTE Band 4, 16QAM, BW 20MHz)
1M10G7D (LTE Band 5, QPSK, BW 1.4MHz)
1M10W7D (LTE Band 5, 16QAM, BW 1.4MHz)
2M71G7D (LTE Band 5, QPSK, BW 3MHz)
2M72W7D (LTE Band 5, 16QAM, BW 3MHz)
4M52G7D (LTE Band 5, QPSK, BW 5MHz)
4M52W7D (LTE Band 5, 16QAM, BW 5MHz)
8M99G7D (LTE Band 5, QPSK, BW 10MHz)
8M99W7D (LTE Band 5, 16QAM, BW 10MHz)
4M54G7D (LTE Band 17, QPSK, BW 5MHz)
4M53W7D (LTE Band 17, 16QAM, BW 5MHz)
8M98G7D (LTE Band 17, QPSK, BW 10MHz)
9M01W7D (LTE Band 17, 16QAM, BW 10MHz)

Antenna Type ..... : Dedicated Antenna
Power Supply ..... 12V 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	PASS
2	24.232(d), 27.50(d)(5)	Occupied Bandwidth	PASS
3	2.1049, 22.917 24.238, 27.53(g)	Frequency Stability	PASS
4	2.1055, 22.355 24.235, 27.54	Peak to Average Radio	PASS
5	2.1051,2.1057 24.238, 27.53(g)	Conducted Spurious Emissions	PASS
6	2.1051, 2.1057, 22.917, 24.238, 27.53(g)(h), 27.53(m)(4)	Band Edge	PASS
7	22.913, 24.232, 27.50(d)(4)	Equivalent Isotropic Radiated Power	PASS
8	2.1053, 2.1057, 22.917, 24.238, 27.53(g)	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: 2009 and CISPR Publication 22: 2010. The FCC registration number is 695796.

1.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

2. 47 CFR PART 2, PART 22H & 24E & 27H&L REQUIREMENTS

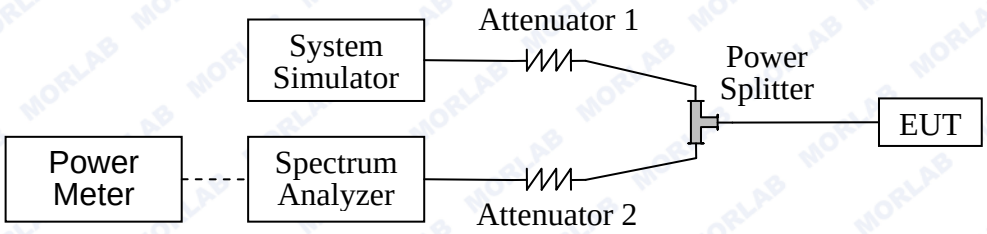
2.1 Transmitter Conducted Output Power

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	2016.03.02	2017.03.01
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2016.03.02	2017.03.01
Spectrum Analyzer	Agilent	E4445A	MY44200685	2016.03.02	2017.03.01
Power Meter	Agilent	E4418B	GB43318055	2016.03.02	2017.03.01
Power Meter	Agilent	E4418B	GB43318055	2016.03.02	2017.03.01
Power Sensor	Agilent	8482A	MY41091706	2016.03.02	2017.03.01
Power Splitter	Weinschel	1506A	NW521	2016.03.02	2017.03.01
Attenuator 1	Resnet	20dB	(n.a.)	2016.03.02	2017.03.01
Attenuator 2	Resnet	3dB	(n.a.)	2016.03.02	2017.03.01

2.1.3 Test Results

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	20MHz	L 18700	1860	QPSK	1	0	22.10
					1	49	21.84
					1	99	21.50
					50	0	21.05
					50	25	21.12
					50	49	20.49
					100	0	20.96
				16-QAM	1	0	21.04
					1	49	21.82
					1	99	20.40
					50	0	20.59
					50	25	20.64
					50	49	20.03
					100	0	19.96
		M 18900	1880	QPSK	1	0	21.47
					1	49	21.42
					1	99	21.75
					50	0	20.31
					50	25	20.22
					50	49	20.55
					100	0	20.39
				16-QAM	1	0	20.68
					1	49	20.61
					1	99	20.93
					50	0	20.87
					50	25	20.63
					50	49	19.34
					100	0	19.36
		H 19100	1900	QPSK	1	0	21.89
					1	49	21.71
					1	99	21.89
					50	0	20.72
					50	25	20.54
					50	49	20.92
					100	0	20.81
				16-QAM	1	0	21.06
					1	49	20.84
					1	99	20.96
					50	0	20.56
					50	25	20.75
					50	49	20.36
					100	0	19.87

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	15MHz	L 18675	1857.5	QPSK	1	0	21.71
					1	37	21.23
					1	74	21.54
					36	0	21.01
					36	18	21.13
					36	35	21.07
					75	0	21.05
				16-QAM	1	0	21.03
					1	37	21.11
					1	74	21.08
					36	0	21.01
					36	18	20.58
					36	35	20.68
					75	0	20.14
		M 18900	1880	QPSK	1	0	22.01
					1	37	21.98
					1	74	21.56
					36	0	21.05
					36	18	21.36
					36	35	21.08
					75	0	21.10
				16-QAM	1	0	21.40
					1	37	21.22
					1	74	21.36
					36	0	21.51
					36	18	21.29
					36	35	21.04
					75	0	20.05
		H 19125	1902.5	QPSK	1	0	21.40
					1	37	21.61
					1	74	21.52
					36	0	20.81
					36	18	21.03
					36	35	20.77
					75	0	20.79
				16-QAM	1	0	20.66
					1	37	20.45
					1	74	20.78
					36	0	20.89
					36	18	20.36
					36	35	20.03
					75	0	19.90

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	10MHz	L 18650	1855	QPSK	1	0	21.49
					1	24	21.32
					1	49	21.02
					25	0	20.88
					25	12	20.76
					25	24	20.69
					50	0	20.97
				16-QAM	1	0	20.78
					1	24	20.59
					1	49	20.67
					25	0	20.36
					25	12	20.42
					25	24	20.26
					50	0	19.98
		M 18900	1880	QPSK	1	0	21.99
					1	24	21.85
					1	49	21.94
					25	0	21.03
					25	12	21.11
					25	24	21.07
					50	0	20.96
				16-QAM	1	0	21.42
					1	24	21.31
					1	49	21.39
					25	0	21.44
					25	12	21.54
					25	24	21.23
					50	0	19.97
		H 19150	1905	QPSK	1	0	21.67
					1	24	21.54
					1	49	21.66
					25	0	20.89
					25	12	20.78
					25	24	20.96
					50	0	20.69
				16-QAM	1	0	20.37
					1	24	20.41
					1	49	20.39
					25	0	20.44
					25	12	20.36
					25	24	20.01
					50	0	19.87

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	5MHz	L 18625	1852.5	QPSK	1	0	22.05
					1	12	22.11
					1	24	22.01
					12	0	20.85
					12	6	21.03
					12	11	20.96
					25	0	20.89
				16-QAM	1	0	21.53
					1	12	21.67
					1	24	21.66
					12	0	21.52
					12	6	21.47
					12	11	21.03
					25	0	19.91
		M 18900	1880	QPSK	1	0	21.96
					1	12	21.85
					1	24	21.74
					12	0	21.04
					12	6	21.63
					12	11	21.00
					25	0	20.94
				16-QAM	1	0	20.78
					1	12	20.45
					1	24	20.61
					12	0	20.98
					12	6	20.31
					12	11	20.12
					25	0	19.98
		H 19175	1907.5	QPSK	1	0	22.01
					1	12	21.95
					1	24	21.85
					12	0	20.90
					12	6	20.66
					12	11	20.54
					25	0	20.51
				16-QAM	1	0	21.17
					1	12	21.24
					1	24	21.10
					12	0	21.22
					12	6	21.36
					12	11	21.02
					25	0	19.66

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	3MHz	L 18615	1851.5	QPSK	1	0	21.97
					1	7	21.88
					1	14	21.94
					8	0	21.63
					8	4	21.52
					8	7	21.34
					15	0	21.22
				16-QAM	1	0	21.23
					1	7	21.12
					1	14	21.10
					8	0	21.47
					8	4	21.03
					8	7	21.04
					15	0	20.18
		M 18900	1880	QPSK	1	0	21.84
					1	7	21.88
					1	14	21.82
					8	0	21.89
					8	4	21.74
					8	7	21.65
					15	0	20.92
				16-QAM	1	0	21.25
					1	7	21.36
					1	14	21.44
					8	0	21.21
					8	4	21.25
					8	7	21.03
					15	0	19.93
		H 19185	1908.5	QPSK	1	0	21.66
					1	7	20.95
					1	14	20.51
					8	0	20.48
					8	4	20.36
					8	7	20.38
					15	0	20.51
				16-QAM	1	0	20.53
					1	7	20.61
					1	14	20.36
					8	0	20.16
					8	4	20.13
					8	7	20.02
					15	0	19.72

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 2	1.4MHz	L 18607	1850.7	QPSK	1	0	21.94
					1	2	22.01
					1	5	22.05
					3	0	22.01
					3	1	22.05
					3	2	22.09
					6	0	21.06
				16-QAM	1	0	21.07
					1	2	20.93
					1	5	21.13
					3	0	21.21
					3	1	21.14
					3	2	21.36
					6	0	20.33
		M 18900	1880	QPSK	1	0	21.37
					1	2	21.31
					1	5	21.43
					3	0	21.52
					3	1	21.41
					3	2	21.21
					6	0	30.32
				16-QAM	1	0	20.11
					1	2	19.87
					1	5	20.16
					3	0	20.41
					3	2	20.23
					3	5	20.01
					6	0	19.69
		H 19193	1909.3	QPSK	1	0	20.55
					1	2	20.43
					1	5	21.72
					3	0	21.89
					3	1	21.77
					3	2	21.75
					6	0	20.96
				16-QAM	1	0	20.55
					1	2	20.44
					1	5	20.38
					3	0	20.41
					3	1	20.36
					3	2	20.21
					6	0	19.93

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	22.28
					1	49	22.21
					1	99	21.82
					50	0	21.03
					50	25	21.05
					50	49	20.76
					100	0	20.96
				16-QAM	1	0	21.39
					1	49	21.24
					1	99	20.89
					50	0	20.74
					50	25	20.63
					50	49	20.34
					100	0	19.89
		M 20175	1732.5	QPSK	1	0	22.28
					1	49	21.84
					1	99	21.98
					50	0	20.73
					50	25	20.72
					50	49	20.70
					100	0	20.71
				16-QAM	1	0	21.84
					1	49	21.54
					1	99	21.70
					50	0	21.72
					50	25	21.36
					50	49	20.51
					100	0	19.74
		H 20300	1745.0	QPSK	1	0	21.82
					1	49	21.65
					1	99	21.84
					50	0	20.77
					50	25	20.64
					50	49	20.76
					100	0	20.74
				16-QAM	1	0	21.49
					1	49	21.52
					1	99	21.45
					50	0	21.31
					50	25	21.02
					50	49	21.11
					100	0	19.73

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	15MHz	L 20025	1717.5	QPSK	1	0	22.53
					1	37	22.50
					1	74	21.80
					36	0	21.80
					36	18	21.77
					36	35	21.63
					75	0	21.71
				16-QAM	1	0	21.74
					1	37	21.45
					1	74	21.36
					36	0	21.71
					36	18	21.26
					36	35	21.32
					75	0	20.78
		M 20175	1732.5	QPSK	1	0	22.25
					1	37	21.50
					1	74	21.73
					36	0	20.82
					36	18	20.45
					36	35	20.36
					75	0	20.70
				16-QAM	1	0	21.40
					1	37	21.13
					1	74	21.36
					36	0	21.47
					36	18	21.24
					36	35	20.29
					75	0	19.87
		H 20325	1747.5	QPSK	1	0	21.88
					1	37	22.62
					1	74	22.67
					36	0	21.26
					36	18	21.17
					36	35	21.75
					75	0	21.62
				16-QAM	1	0	20.99
					1	37	20.85
					1	74	21.74
					36	0	20.36
					36	18	20.41
					36	35	20.39
					75	0	20.71

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	10MHz	L 20000	1715.0	QPSK	1	0	22.49
					1	24	22.64
					1	49	22.02
					25	0	21.70
					25	12	21.54
					25	24	21.36
					50	0	21.72
				16-QAM	1	0	21.70
					1	24	21.48
					1	49	21.40
					25	0	21.36
					25	12	21.25
					25	24	21.31
					50	0	20.71
		M 20175	1732.5	QPSK	1	0	21.66
					1	24	21.36
					1	49	21.15
					25	0	20.70
					25	12	21.03
					25	24	21.08
					50	0	20.65
				16-QAM	1	0	21.14
					1	24	21.04
					1	49	20.59
					25	0	20.67
					25	12	20.96
					25	24	20.36
					50	0	19.82
		H 20350	1750.0	QPSK	1	0	22.47
					1	24	22.64
					1	49	22.71
					25	0	21.61
					25	12	21.54
					25	24	21.38
					50	0	21.69
				16-QAM	1	0	21.12
					1	24	21.44
					1	49	21.42
					25	0	21.39
					25	12	21.30
					25	24	21.23
					50	0	20.72

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	5MHz	L 19975	1712.5	QPSK	1	0	22.73
					1	12	22.78
					1	24	22.72
					12	0	21.64
					12	6	21.53
					12	11	21.58
					25	0	21.61
				16-QAM	1	0	22.15
					1	12	22.23
					1	24	22.08
					12	0	22.04
					12	6	22.08
					12	11	21.58
					25	0	20.61
		M 20175	1732.5	QPSK	1	0	21.82
					1	12	21.22
					1	24	21.74
					12	0	20.51
					12	6	21.36
					12	11	20.69
					25	0	20.47
				16-QAM	1	0	21.38
					1	12	21.12
					1	24	21.31
					12	0	21.20
					12	6	21.36
					12	11	21.01
					25	0	19.69
		H 20375	1752.5	QPSK	1	0	22.59
					1	12	22.61
					1	24	21.85
					12	0	21.66
					12	6	21.42
					12	11	21.36
					25	0	21.64
				16-QAM	1	0	21.91
					1	12	21.62
					1	24	21.58
					12	0	21.45
					12	6	21.37
					12	11	21.31
					25	0	20.63

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	3MHz	L 19965	1711.5	QPSK	1	0	22.41
					1	7	22.45
					1	14	22.43
					8	0	22.05
					8	4	22.34
					8	7	22.11
					15	0	21.62
				16-QAM	1	0	21.68
					1	7	21.36
					1	14	21.54
					8	0	21.18
					8	4	21.02
					8	7	21.01
					15	0	20.66
		M 20175	1732.5	QPSK	1	0	22.22
					1	7	21.96
					1	14	22.09
					8	0	22.03
					8	4	22.07
					8	7	21.56
					15	0	21.28
				16-QAM	1	0	21.73
					1	7	21.48
					1	14	21.57
					8	0	21.41
					8	4	21.53
					8	7	21.49
					15	0	20.50
		H 20385	1753.5	QPSK	1	0	22.53
					1	7	22.56
					1	14	22.54
					8	0	22.34
					8	4	22.12
					8	7	21.78
					15	0	21.59
				16-QAM	1	0	21.34
					1	7	21.22
					1	14	21.04
					8	0	21.17
					8	4	21.36
					8	7	21.08
					15	0	20.56

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 4	1.4MHz	L 19957	1710.7	QPSK	1	0	22.39
					1	2	22.13
					1	5	22.17
					3	0	22.29
					3	1	21.08
					3	2	22.15
					6	0	21.41
				16-QAM	1	0	21.04
					1	2	20.85
					1	5	21.06
					3	0	21.14
					3	1	21.03
					3	2	21.21
					6	0	20.33
		M 20175	1732.5	QPSK	1	0	21.76
					1	2	21.83
					1	5	21.79
					3	0	21.92
					3	1	21.84
					3	2	21.99
					6	0	20.84
				16-QAM	1	0	20.28
					1	2	20.36
					1	5	20.49
					3	0	20.36
					3	2	20.41
					3	5	20.31
					6	0	19.87
		H 20393	1754.3	QPSK	1	0	21.83
					1	2	21.91
					1	5	21.82
					3	0	21.96
					3	1	21.87
					3	2	21.94
					6	0	20.97
				16-QAM	1	0	20.32
					1	2	20.52
					1	5	20.46
					3	0	20.56
					3	1	20.09
					3	2	20.14
					6	0	20.11

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	22.53
					1	24	22.58
					1	49	22.54
					25	0	21.45
					25	12	21.36
					25	24	21.47
					50	0	21.51
				16-QAM	1	0	20.96
					1	24	20.95
					1	49	21.43
					25	0	21.31
					25	12	21.25
					25	24	21.06
					50	0	20.51
		M 20525	836.5	QPSK	1	0	22.47
					1	24	22.29
					1	49	21.03
					25	0	21.36
					25	12	21.27
					25	24	21.09
					50	0	21.49
				16-QAM	1	0	21.92
					1	24	21.78
					1	49	20.89
					25	0	20.36
					25	12	20.14
					25	24	20.22
					50	0	20.64
		H 20600	844	QPSK	1	0	22.61
					1	24	22.36
					1	49	22.25
					25	0	21.41
					25	12	21.36
					25	24	21.36
					50	0	21.35
				16-QAM	1	0	21.37
					1	24	21.23
					1	49	21.29
					25	0	21.10
					25	12	21.14
					25	24	21.31
					50	0	20.49

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	5MHz	L 20425	826.5	QPSK	1	0	21.70
					1	12	21.41
					1	24	21.36
					12	0	20.27
					12	6	20.31
					12	11	20.25
					25	0	20.43
				16-QAM	1	0	21.17
					1	12	21.01
					1	24	21.14
					12	0	21.03
					12	6	21.01
					12	11	21.06
					25	0	19.57
		M 20525	836.5	QPSK	1	0	21.22
					1	12	20.61
					1	24	20.99
					12	0	19.77
					12	6	20.03
					12	11	19.85
					25	0	19.74
				16-QAM	1	0	20.07
					1	12	20.01
					1	24	20.03
					12	0	19.85
					12	6	19.46
					12	11	19.64
					25	0	18.91
		H 20625	846.5	QPSK	1	0	22.01
					1	12	22.03
					1	24	21.95
					12	0	20.72
					12	6	21.69
					12	11	21.36
					25	0	20.45
				16-QAM	1	0	21.51
					1	12	21.43
					1	24	21.36
					12	0	21.38
					12	6	21.03
					12	11	20.58
					25	0	19.67

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	3MHz	L 20415	825.5	QPSK	1	0	21.60
					1	7	21.56
					1	14	21.74
					8	0	21.68
					8	4	20.51
					8	7	20.75
					15	0	20.68
				16-QAM	1	0	21.04
					1	7	21.07
					1	14	21.11
					8	0	21.36
					8	4	21.21
					8	7	21.03
					15	0	19.77
		M 20525	836.5	QPSK	1	0	21.28
					1	7	21.03
					1	14	21.11
					8	0	21.23
					8	4	21.30
					8	7	20.10
					15	0	20.13
				16-QAM	1	0	20.72
					1	7	20.50
					1	14	20.56
					8	0	20.41
					8	4	20.24
					8	7	20.23
					15	0	19.33
		H 20635	847.5	QPSK	1	0	21.87
					1	7	21.35
					1	14	21.24
					8	0	21.13
					8	4	21.05
					8	7	20.74
					15	0	20.69
				16-QAM	1	0	20.84
					1	7	20.67
					1	14	20.52
					8	0	20.31
					8	4	20.37
					8	7	20.26
					15	0	19.89

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	1.4MHz	L 20407	824.7	QPSK	1	0	21.44
					1	2	21.34
					1	5	21.22
					3	0	21.50
					3	1	21.47
					3	2	21.36
					6	0	20.53
				16-QAM	1	0	20.71
					1	2	20.34
					1	5	20.47
					3	0	20.31
					3	1	20.22
					3	2	20.10
					6	0	19.63
		M 20525	836.5	QPSK	1	0	21.10
					1	2	20.97
					1	5	21.04
					3	0	21.06
					3	1	21.04
					3	2	21.09
					6	0	20.14
				16-QAM	1	0	20.03
					1	2	20.11
					1	5	20.06
					3	0	20.12
					3	2	20.31
					3	5	20.05
					6	0	19.27
		H 20643	848.3	QPSK	1	0	21.38
					1	2	21.24
					1	5	21.34
					3	0	21.28
					3	1	21.31
					3	2	21.22
					6	0	20.51
				16-QAM	1	0	20.43
					1	2	20.34
					1	5	20.37
					3	0	20.35
					3	1	20.37
					3	2	20.01
					6	0	19.78

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	23.04
					1	24	22.96
					1	49	22.81
					25	0	21.79
					25	12	21.67
					25	24	21.83
					50	0	21.75
				16-QAM	1	0	22.45
					1	24	22.34
					1	49	22.33
					25	0	22.21
					25	12	22.41
					25	24	22.01
					50	0	20.77
		M 23790	710	QPSK	1	0	22.88
					1	24	22.87
					1	49	22.85
					25	0	21.86
					25	12	21.73
					25	24	21.71
					50	0	21.79
				16-QAM	1	0	21.19
					1	24	21.33
					1	49	21.16
					25	0	21.13
					25	12	21.05
					25	24	21.01
					50	0	20.75
		H 23800	711	QPSK	1	0	22.93
					1	24	22.75
					1	49	22.34
					25	0	21.83
					25	12	21.67
					25	24	21.78
					50	0	21.77
				16-QAM	1	0	21.30
					1	24	21.22
					1	49	21.94
					25	0	21.77
					25	12	21.87
					25	24	21.34
					50	0	20.76

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	23.21
					1	12	23.10
					1	24	23.15
					12	0	21.89
					12	6	21.45
					12	11	21.90
					25	0	21.91
				16-QAM	1	0	22.60
					1	12	22.07
					1	24	22.45
					12	0	22.31
					12	6	22.43
					12	11	22.02
					25	0	21.93
		M 23790	710	QPSK	1	0	22.73
					1	12	22.91
					1	24	22.89
					12	0	21.92
					12	6	21.37
					12	11	21.92
					25	0	21.82
				16-QAM	1	0	21.16
					1	12	21.28
					1	24	21.73
					12	0	21.56
					12	6	21.34
					12	11	20.47
					25	0	20.88
		H 23825	713.5	QPSK	1	0	22.87
					1	12	22.71
					1	24	22.43
					12	0	21.86
					12	6	21.37
					12	11	21.60
					25	0	21.76
				16-QAM	1	0	21.16
					1	12	21.13
					1	24	20.89
					12	0	20.56
					12	6	20.34
					12	11	20.30
					25	0	21.73

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	1.1043	1.1003	18615	1851.5	2.7139	2.7103
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	1.340	1.303	18615	1851.5	3.059	3.068

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	4.5168	4.5137	18650	1855.0	8.9576	8.9644
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	5.102	5.093	18650	1855.0	9.889	9.894

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	13.435	13.459	18700	1860.0	17.949	17.961
Channel Bandwidth: 15MHz				**Channel Bandwidth: 20MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	14.89	14.85	18700	1860.0	19.67	19.83

Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	1.0998	1.1033	18900	1880.0	2.7167	2.7234
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	1.317	1.334	18900	1880.0	3.048	3.080

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	4.5267	4.5162	18900	1880.0	8.9962	8.9804
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	5.107	5.133	18900	1880.0	10.01	9.924

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	13.502	13.480	18900	1880.0	17.979	18.012
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	15.11	14.88	18900	1880.0	19.75	19.80

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	1.0991	1.1068	19184	1908.4	2.7137	2.7171
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	1.316	1.346	19184	1908.4	3.064	3.084

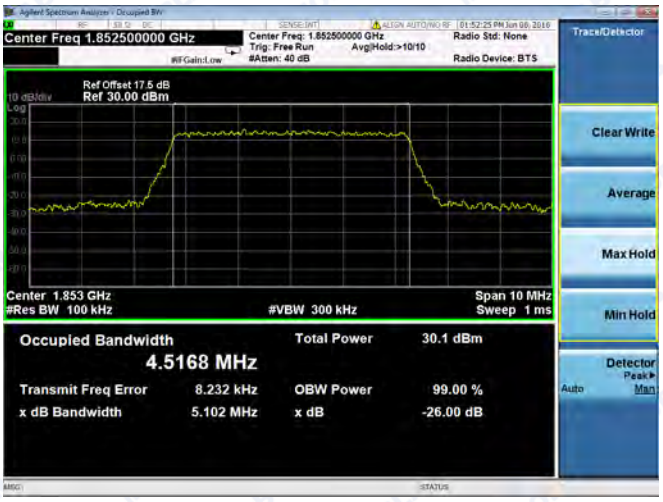
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19175	1907.5	4.5237	4.5223	19150	1905.0	9.0123	8.9998
Channel Bandwidth: 5MHz				**Channel Bandwidth: 10MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19175	1907.5	5.057	5.066	19150	1905.0	10.04	10.04

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	13.524	13.488	19100	1900.0	17.981	18.045
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	15.09	15.01	19100	1900.0	19.72	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 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	1.1050	1.1039	19965	1711.5	2.7169	2.7072
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	1.337	1.290	19965	1711.5	3.081	3.064

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	4.5291	4.5206	20000	1715.0	8.9718	8.9783
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	5.166	5.127	20000	1715.0	9.885	9.882

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	13.419	13.435	20050	1720.0	17.923	17.943
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	14.91	20050	1720.0	19.69	19.77

Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	1.0935	1.1031	20175	1732.5	2.7178	2.7189
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	1.300	1.344	20175	1732.5	3.026	3.104

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	4.5265	4.5211	20175	1732.5	9.0052	9.0035
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	5.099	5.156	20175	1732.5	9.865	9.860

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	13.485	13.480	20175	1732.5	17.984	18.034
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	15.01	14.88	20175	1732.5	19.64	19.82

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	1.0983	1.1053	20384	1753.4	2.7111	2.7237
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	1.308	1.326	20384	1753.4	3.037	3.077

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	4.5291	4.5235	20350	1750.0	8.9795	8.9818
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	5.051	5.130	20350	1750.0	9.945	9.885

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	13.460	13.458	20300	1745.0	17.969	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	15.10	14.84	20300	1745.0	19.67	19.77

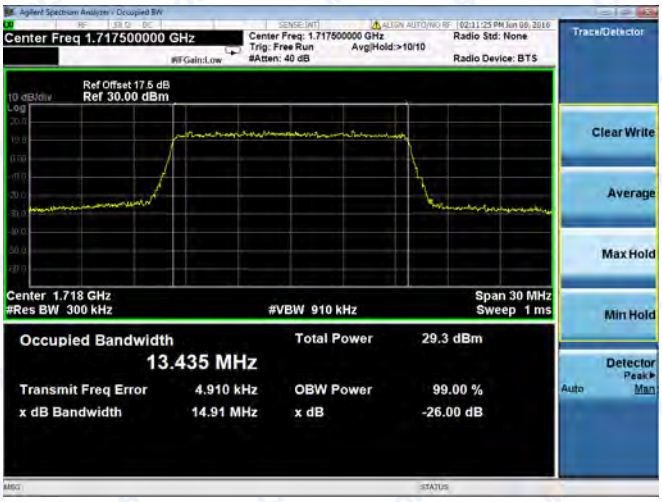
Low channel:

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	1.1010	1.1000	20415	825.5	2.7053	2.7005
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	1.330	1.281	20415	825.5	3.071	3.026

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	4.5226	4.5175	20450	829.0	8.9868	8.9857
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	5.132	5.134	20450	829.0	9.940	8.254

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	1.0968	1.0958	20525	836.5	2.7108	2.7223
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	1.302	1.309	20525	836.5	3.042	3.074