REPORT No.: SZ16030070W06

FCC RF TEST REPORT

APPLICANT	:	ZTE Corporation
PRODUCT NAME	:	LTE Digital Mobile Phone
MODEL NAME	:	NX529J
TRADE NAME	:	Nubia
BRAND NAME	:	Nubia
FCC ID	:	SRQ-NX529J
STANDARD(S)	:	47 CFR Part 22, Subpart H 47 CFR Part 27, Subpart M
ISSUE DATE	:	2016-04-18

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

NOTE: This document is issued by MORLAB, the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.

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 Http://www.morlab.com Fax: 86-755-36698525 E-mail: service@morlab.cn

DIRECTORY

TEST REPORT DECLARATION 4

1. GENERAL INFORMATION 5

1.1 EUT DESCRIPTION 5
1.2 TEST STANDARDS AND RESULTS 6
1.3 FACILITIES AND ACCREDITATIONS 7
1.3.1 FACILITIES 7
1.3.2 TEST ENVIRONMENT CONDITIONS 7

2. 47 CFR PART 2, PART 22H & 27M REQUIREMENTS 8

2.1 TRANSMITTER CONDUCTED OUTPUT POWER 8
2.1.1 REQUIREMENT 8
2.1.2 TEST DESCRIPTION 8
2.1.3 TEST RESULTS 8
2.2 OCCUPIED BANDWIDTH 22
2.2.1 DEFINITION 25
2.2.2 TEST DESCRIPTION 25
2.2.3 TEST RESULTS 25
2.3 FREQUENCY STABILITY 58
2.3.1 REQUIREMENT 58
2.3.2 TEST DESCRIPTION 58
2.3.3 TEST VERDICT 59
2.4 PEAK TO AVERAGE RADIO 61
2.4.1 REQUIREMENT 61
2.4.2 TEST DESCRIPTION 61
2.4.3 TEST RESULT 61
2.5 CONDUCTED SPURIOUS EMISSIONS 68
2.5.1 TEST REQUIREMENT 68
2.5.2 TEST PROCEDURE 68
2.5.3 TEST RESULT 68
2.6 BAND EDGE 117
2.6.1 REQUIREMENT 117
2.6.2 TEST DESCRIPTION 117

2.6.3 TEST RESULT 117
2.7 TRANSMITTER RADIATED POWER (EIRP/ERP) 142
2.7.1 REQUIREMENT 142
2.7.2 TEST DESCRIPTION 142
2.7.3 TEST RESULT 143
2.8 RADIATED SPURIOUS EMISSIONS 150
2.8.1 REQUIREMENT 150
2.8.2 TEST DESCRIPTION 150
2.8.3 TEST RESULT 150

Change History		
Issue	Date	Reason for change
1.0	2016-04-18	First edition

TEST REPORT DECLARATION

Applicant	ZTE Corporation
Applicant Address	#889 Bibo Road, Zhangjiang Hi-tech Park Shanghai, P.R. China Shanghai
Manufacturer	ZTE Corporation
Manufacturer Address	#889 Bibo Road, Zhangjiang Hi-tech Park Shanghai, P.R. China Shanghai
Product Name	LTE Digital Mobile Phone
Model Name	NX529J
Brand Name	Nubia
HW Version	P2
SW Version	NX529J_Z69_EN_NSXPK1JD00K104
Test Standards	47 CFR Part 22, Subpart H 47 CFR Part 27, Subpart M
Test Date	2016-03-17 to 2016-04-15
Test Result	PASS

Tested by : Yuan Ling

Reviewed by : Qiu Xiaojun

Approved by : Peng Huarui

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type ..... :	LTE Digital Mobile Phone
Serial No. ..... :	(n.a, marked #1 by test site)
Hardware Version..... :	P2
Software Version	NX529J_Z69_EN_NSXPK1JD00K104
Applicant ..... :	ZTE Corporation #889 Bibo Road, Zhangjiang Hi-tech Park Shanghai, P.R. China Shanghai
Manufacturer ..... :	ZTE Corporation #889 Bibo Road, Zhangjiang Hi-tech Park Shanghai, P.R. China Shanghai
Modulation Type..... :	LTE Band 5: QPSK, 16QAM LTE Band 7: QPSK, 16QAM LTE Band 28: QPSK, 16QAM
Tx Frequency Range..... ..... :	LTE Band 5: 824MHz ~ 849MHz LTE Band 7: 2500MHz ~ 2570MHz LTE Band 28: 704MHz ~ 746MHz
Rx Frequency Range ..... :	LTE Band 5: 869MHz ~ 894MHz LTE Band 7: 2620MHz ~ 2690MHz LTE Band 28: 759MHz ~ 801MHz
Emission Designator ..... :	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) 9M04G7D (LTE Band 5, QPSK, BW 10MHz) 9M03W7D (LTE Band 5, 16QAM, BW 10MHz) 4M53G7D (LTE Band 7, QPSK, BW 5MHz) 4M52W7D (LTE Band 7, 16QAM, BW 5MHz) 8M96G7D (LTE Band 7, QPSK, BW 10MHz) 8M96W7D (LTE Band 7, 16QAM, BW 10MHz) 13M44G7D (LTE Band 7, QPSK, BW 15MHz) 13M44W7D (LTE Band 7, 16QAM, BW 15MHz) 18M01G7D (LTE Band 7, QPSK, BW 20MHz) 18M00W7D (LTE Band 7, 16QAM, BW 20MHz) 2M71G7D (LTE Band 28, 704MHz-710MHz, QPSK, BW 3MHz)

2M71W7D (LTE Band 28,704MHz-710MHz, 16QAM, BW 3MHz)
4M52G7D (LTE Band 28, 704MHz-710MHz, QPSK, BW 5MHz)
4M51W7D (LTE Band 28, 704MHz-710MHz, 16QAM, BW 5MHz)
2M71G7D (LTE Band 28, 710MHz-716MHz, QPSK, BW 3MHz)
2M72W7D (LTE Band 28, 710MHz-716MHz, 16QAM, BW 3MHz)
4M51G7D (LTE Band 28, 710MHz-716MHz, QPSK, BW 5MHz)
4M51W7D (LTE Band 28, 710MHz-716MHz, 16QAM, BW 5MHz)
2M71G7D (LTE Band 28, 734MHz-740MHz, QPSK, BW 3MHz)
2M71W7D (LTE Band 28, 734MHz-740MHz, 16QAM, BW 3MHz)
4M51G7D (LTE Band 28, 734MHz-740MHz, QPSK, BW 5MHz)
4M51W7D (LTE Band 28, 734MHz-740MHz, 16QAM, BW 5MHz)
2M71G7D (LTE Band 28, 740MHz-746MHz, QPSK, BW 3MHz)
2M71W7D (LTE Band 28, 740MHz-746MHz, 16QAM, BW 3MHz)
4M51G7D (LTE Band 28, 740MHz-746MHz, QPSK, BW 5MHz)
4M51W7D (LTE Band 28, 740MHz-746MHz, 16QAM, BW 5MHz)

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

1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2 and Part 22, Part 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 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	27.50(d)(5)	Occupied Bandwidth	PASS
3	2.1049, 22.917,27.53(g)	Frequency Stability	PASS
4	2.1055, 27.54	Peak to Average Radio	PASS
5	2.1051,2.1057,27.53(g)	Conducted Spurious Emissions	PASS
6	2.1051, 2.1057, 22.917, 27.53(g)(h),27.53(m)(4)	Band Edge	PASS
7	22.913,27.50(d)(4)	Equivalent Isotropic Radiated Power	PASS
8	2.1053, 2.1057, 22.917, 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: 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 22H & 27M REQUIREMENTS

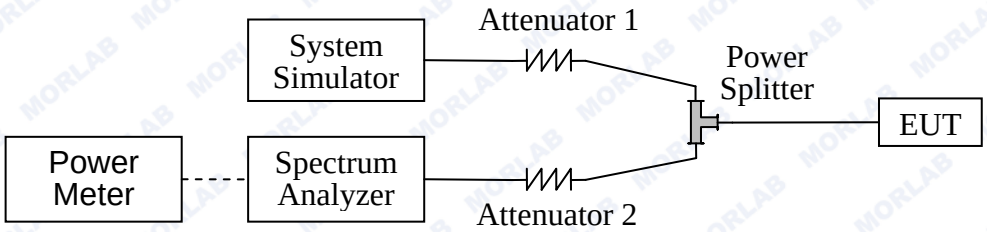
2.1 Transmitter Conducted Output Power

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	2016.03.01
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2016.03.02	2016.03.01
Spectrum Analyzer	Agilent	E4445A	MY44200685	2016.03.02	2016.03.01
Power Meter	Agilent	E4418B	GB43318055	2016.03.02	2016.03.01
Power Meter	Agilent	E4418B	GB43318055	2016.03.02	2016.03.01
Power Sensor	Agilent	8482A	MY41091706	2016.03.02	2016.03.01
Power Splitter	Weinschel	1506A	NW521	2016.03.02	2016.03.01
Attenuator 1	Resnet	20dB	(n.a.)	2016.03.02	2016.03.01
Attenuator 2	Resnet	3dB	(n.a.)	2016.03.02	2016.03.01

2.1.3 Test Results

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 5	10MHz	L 20450	829	QPSK	1	0	22.36
					1	24	22.72
					1	49	22.42
					25	0	21.60
					25	12	21.63
					25	24	21.59
					50	0	21.63
				16-QAM	1	0	22.17
					1	24	22.04
					1	49	21.96
					25	0	21.37
					25	12	20.89
					25	24	21.03
					50	0	20.23
		M 20525	836.5	QPSK	1	0	22.67
					1	24	22.82
					1	49	22.91
					25	0	21.67
					25	12	21.68
					25	24	21.68
					50	0	21.69
				16-QAM	1	0	21.79
					1	24	22.03
					1	49	21.38
					25	0	21.74
					25	12	21.65
					25	24	21.01
					50	0	20.56
		H 20600	844	QPSK	1	0	22.65
					1	24	22.49
					1	49	22.25
					25	0	21.32
					25	12	21.39
					25	24	21.37
					50	0	21.38
				16-QAM	1	0	21.75
					1	24	21.77
					1	49	21.19
					25	0	21.48
					25	12	21.35
					25	24	21.11
					50	0	20.42

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	23.21
					1	12	23.10
					1	24	23.02
					12	0	22.83
					12	6	22.42
					12	11	21.96
					25	0	22.28
				16-QAM	1	0	23.58
					1	12	23.43
					1	24	23.22
					12	0	22.74
					12	6	22.68
					12	11	21.95
					25	0	21.23
		M 20525	836.5	QPSK	1	0	21.80
					1	12	21.84
					1	24	21.77
					12	0	21.70
					12	6	21.55
					12	11	21.27
					25	0	21.18
				16-QAM	1	0	21.80
					1	12	21.73
					1	24	21.91
					12	0	22.13
					12	6	22.04
					12	11	21.56
					25	0	21.30
		H 20625	846.5	QPSK	1	0	23.15
					1	12	23.05
					1	24	23.21
					12	0	22.45
					12	6	22.64
					12	11	22.37
					25	0	22.24
				16-QAM	1	0	22.58
					1	12	21.96
					1	24	22.01
					12	0	21.82
					12	6	21.71
					12	11	21.65
					25	0	21.24

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	22.49
					1	7	22.62
					1	14	22.29
					8	0	21.44
					8	4	21.33
					8	7	21.35
					15	0	21.45
				16-QAM	1	0	22.19
					1	7	22.05
					1	14	22.03
					8	0	22.12
					8	4	22.02
					8	7	21.90
					15	0	20.28
		M 20525	836.5	QPSK	1	0	22.31
					1	7	22.25
					1	14	22.38
					8	0	21.36
					8	4	21.34
					8	7	21.34
					15	0	21.37
				16-QAM	1	0	21.62
					1	7	21.75
					1	14	21.73
					8	0	21.93
					8	4	22.05
					8	7	22.11
					15	0	20.38
		H 20635	847.5	QPSK	1	0	22.33
					1	7	22.29
					1	14	2214.
					8	0	21.28
					8	4	21.30
					8	7	21.21
					15	0	21.27
				16-QAM	1	0	21.68
					1	7	21.65
					1	14	21.59
					8	0	21.63
					8	4	21.54
					8	7	21.32
					15	0	20.39

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	22.42
					1	2	22.56
					1	5	22.30
					3	0	22.61
					3	1	22.54
					3	2	22.46
					6	0	21.47
				16-QAM	1	0	21.85
					1	2	21.93
					1	5	21.76
					3	0	21.83
					3	1	21.74
					3	2	21.74
					6	0	20.75
		M 20525	836.5	QPSK	1	0	22.53
					1	2	22.68
					1	5	22.69
					3	0	22.27
					3	1	22.35
					3	2	22.44
					6	0	21.43
				16-QAM	1	0	21.67
					1	2	21.86
					1	5	21.63
					3	0	21.77
					3	2	21.64
					3	5	21.63
					6	0	20.21
		H 20643	848.3	QPSK	1	0	22.04
					1	2	22.34
					1	5	22.05
					3	0	22.13
					3	1	22.15
					3	2	22.21
					6	0	21.23
				16-QAM	1	0	21.65
					1	2	21.68
					1	5	21.62
					3	0	21.55
					3	1	21.35
					3	2	21.15
					6	0	20.65

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	22.21
					1	49	22.36
					1	99	22.05
					50	0	21.08
					50	25	21.23
					50	49	21.30
					100	0	21.11
				16-QAM	1	0	21.15
					1	49	21.04
					1	99	20.15
					50	0	21.09
					50	25	21.01
					50	49	20.12
					100	0	20.18
		M 21100	2535	QPSK	1	0	21.92
					1	49	22.19
					1	99	21.84
					50	0	21.02
					50	25	20.78
					50	49	20.86
					100	0	21.00
				16-QAM	1	0	21.22
					1	49	21.49
					1	99	20.57
					50	0	20.96
					50	25	20.99
					50	49	21.11
					100	0	19.97
		H 21350	2560	QPSK	1	0	22.12
					1	49	22.51
					1	99	22.29
					50	0	21.15
					50	25	21.12
					50	49	21.09
					100	0	21.11
				16-QAM	1	0	21.52
					1	49	21.62
					1	99	21.27
					50	0	22.55
					50	25	21.86
					50	49	21.37
					100	0	20.15

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	22.19
					1	37	22.35
					1	74	22.06
					36	0	21.07
					36	18	21.24
					36	35	21.31
					75	0	21.12
				16-QAM	1	0	21.15
					1	37	21.03
					1	74	20.14
					36	0	21.08
					36	18	21.10
					36	35	20.11
					75	0	20.16
		M 21100	2535	QPSK	1	0	21.82
					1	37	22.20
					1	74	21.84
					36	0	21.13
					36	18	20.78
					36	35	20.87
					75	0	21.01
				16-QAM	1	0	21.23
					1	37	21.48
					1	74	20.56
					36	0	20.97
					36	18	20.98
					36	35	21.13
					75	0	19.96
		H 21375	2562.5	QPSK	1	0	22.11
					1	37	22.51
					1	74	22.30
					36	0	21.15
					36	18	21.17
					36	35	21.09
					75	0	21.21
				16-QAM	1	0	21.52
					1	37	21.72
					1	74	21.27
					36	0	22.45
					36	18	21.86
					36	35	21.35
					75	0	20.15

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	22.46
					1	24	22.23
					1	49	22.02
					25	0	21.01
					25	12	21.02
					25	24	21.03
					50	0	21.10
				16-QAM	1	0	21.90
					1	24	21.92
					1	49	21.65
					25	0	21.75
					25	12	21.42
					25	24	21.32
					50	0	20.27
		M 21100	2535	QPSK	1	0	22.13
					1	24	22.16
					1	49	22.11
					25	0	21.30
					25	12	21.21
					25	24	21.29
					50	0	21.27
				16-QAM	1	0	21.22
					1	24	21.17
					1	49	20.87
					25	0	20.76
					25	12	20.64
					25	24	20.35
					50	0	20.30
		H 21400	2565	QPSK	1	0	21.92
					1	24	22.23
					1	49	22.15
					25	0	21.13
					25	12	21.08
					25	24	21.05
					50	0	21.10
				16-QAM	1	0	21.09
					1	24	21.39
					1	49	20.87
					25	0	20.75
					25	12	20.64
					25	24	20.59
					50	0	20.05

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	22.17
					1	12	22.18
					1	24	22.15
					12	0	21.03
					12	6	21.09
					12	11	21.05
					25	0	21.01
				16-QAM	1	0	22.06
					1	12	22.15
					1	24	22.43
					12	0	21.75
					12	6	21.68
					12	11	21.59
					25	0	20.05
		M 21100	2535	QPSK	1	0	21.99
					1	12	22.02
					1	24	22.03
					12	0	21.22
					12	6	21.18
					12	11	21.28
					25	0	21.29
				16-QAM	1	0	21.03
					1	12	21.56
					1	24	21.88
					12	0	21.35
					12	6	21.28
					12	11	21.24
					25	0	21.03
		H 21425	2567.5	QPSK	1	0	22.13
					1	12	21.96
					1	24	21.94
					12	0	21.07
					12	6	21.11
					12	11	21.05
					25	0	21.22
				16-QAM	1	0	20.40
					1	12	20.77
					1	24	20.54
					12	0	20.68
					12	6	20.60
					12	11	20.59
					25	0	20.36

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (704-710 MHz)	3MHz	L 27225	704.5	QPSK	1	0	22.14
					1	7	22.31
					1	14	22.34
					8	0	21.12
					8	4	21.13
					8	7	21.09
					15	0	21.19
				16-QAM	1	0	21.29
					1	7	21.07
					1	14	20.43
					8	0	20.28
					8	4	20.34
					8	7	20.24
					15	0	20.05
		M 27250	707	QPSK	1	0	22.12
					1	7	22.23
					1	14	21.96
					8	0	21.14
					8	4	21.09
					8	7	21.15
					15	0	21.16
				16-QAM	1	0	21.41
					1	7	21.35
					1	14	21.06
					8	0	20.78
					8	4	20.81
					8	7	20.68
					15	0	20.11
		H 27265	709.5	QPSK	1	0	22.15
					1	7	22.14
					1	14	22.95
					8	0	21.18
					8	4	20.96
					8	7	21.04
					15	0	21.17
				16-QAM	1	0	21.21
					1	7	21.16
					1	14	21.02
					8	0	20.75
					8	4	20.69
					8	7	20.72
					15	0	20.23

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (704-710 MHz)	5MHz	L 27235	705.5	QPSK	1	0	21.86
					1	12	22.03
					1	24	22.06
					12	0	20.84
					12	6	20.85
					12	11	20.81
					25	0	20.91
				16-QAM	1	0	21.01
					1	12	20.79
					1	24	20.15
					12	0	20.00
					12	6	20.06
					12	11	19.96
					25	0	19.77
		M 27250	707	QPSK	1	0	21.84
					1	12	21.95
					1	24	21.68
					12	0	20.86
					12	6	20.81
					12	11	20.87
					25	0	20.88
				16-QAM	1	0	21.13
					1	12	21.07
					1	24	20.78
					12	0	20.50
					12	6	20.53
					12	11	20.40
					25	0	19.83
		H 27265	708.5	QPSK	1	0	21.87
					1	12	21.86
					1	24	22.67
					12	0	20.90
					12	6	20.68
					12	11	20.76
					25	0	20.89
				16-QAM	1	0	20.93
					1	12	20.88
					1	24	20.74
					12	0	20.47
					12	6	20.41
					12	11	20.44
					25	0	19.95

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (710-716 MHz)	3MHz	L 27285	710.5	QPSK	1	0	22.49
					1	7	22.53
					1	14	22.16
					8	0	21.46
					8	4	21.39
					8	7	21.48
					15	0	21.37
				16-QAM	1	0	22.01
					1	7	21.67
					1	14	22.13
					8	0	21.32
					8	4	21.28
					8	7	21.32
					15	0	20.34
		M 27310	713	QPSK	1	0	22.09
					1	7	22.05
					1	14	22.12
					8	0	21.01
					8	4	21.13
					8	7	21.10
					15	0	21.14
				16-QAM	1	0	21.33
					1	7	21.60
					1	14	21.21
					8	0	20.59
					8	4	20.76
					8	7	20.64
					15	0	20.16
		H 27335	715.5	QPSK	1	0	22.45
					1	7	22.89
					1	14	22.57
					8	0	21.38
					8	4	21.57
					8	7	21.51
					15	0	21.43
				16-QAM	1	0	21.68
					1	7	21.72
					1	14	22.59
					8	0	21.35
					8	4	21.32
					8	7	21.28
					15	0	20.45

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (710-716 MHz)	5MHz	L 27295	711.5	QPSK	1	0	21.95
					1	12	22.12
					1	24	22.15
					12	0	20.93
					12	6	20.94
					12	11	20.90
					25	0	22.30
				16-QAM	1	0	22.34
					1	12	21.97
					1	24	21.27
					12	0	21.20
					12	6	21.29
					12	11	21.18
					25	0	21.82
		M 27310	713	QPSK	1	0	21.48
					1	12	21.94
					1	24	21.13
					12	0	21.09
					12	6	21.13
					12	11	20.15
					25	0	21.90
				16-QAM	1	0	21.86
					1	12	21.93
					1	24	20.82
					12	0	20.94
					12	6	20.91
					12	11	20.95
					25	0	21.14
		H 27325	714.5	QPSK	1	0	21.41
					1	12	21.02
					1	24	20.40
					12	0	20.57
					12	6	20.45
					12	11	19.97
					25	0	22.26
				16-QAM	1	0	22.70
					1	12	22.38
					1	24	21.19
					12	0	21.38
					12	6	21.32
					12	11	21.24
					25	0	21.49

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (734-740 MHz)	3MHz	L 27525	734.5	QPSK	1	0	22.25
					1	7	22.06
					1	14	22.26
					8	0	21.03
					8	4	20.91
					8	7	20.86
					15	0	20.97
				16-QAM	1	0	21.63
					1	7	21.57
					1	14	21.72
					8	0	21.13
					8	4	21.20
					8	7	21.19
					15	0	20.18
		M 27550	737	QPSK	1	0	21.97
					1	7	21.88
					1	14	21.77
					8	0	20.92
					8	4	20.88
					8	7	20.92
					15	0	20.98
				16-QAM	1	0	21.11
					1	7	21.82
					1	14	21.03
					8	0	20.56
					8	4	20.48
					8	7	20.54
					15	0	19.78
		H 27575	739.5	QPSK	1	0	22.03
					1	7	21.98
					1	14	21.80
					8	0	20.96
					8	4	21.06
					8	7	21.18
					15	0	21.16
				16-QAM	1	0	21.10
					1	7	21.18
					1	14	20.87
					8	0	20.35
					8	4	20.41
					8	7	20.39
					15	0	19.94

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (734-740 MHz)	5MHz	L 27535	735.5	QPSK	1	0	21.85
					1	12	22.22
					1	24	22.21
					12	0	20.86
					12	6	20.55
					12	11	20.89
					25	0	22.12
				16-QAM	1	0	21.98
					1	12	21.91
					1	24	21.58
					12	0	21.33
					12	6	21.68
					12	11	21.25
					25	0	21.77
		M 27550	737	QPSK	1	0	21.55
					1	12	21.91
					1	24	21.24
					12	0	21.01
					12	6	21.21
					12	11	20.59
					25	0	21.21
				16-QAM	1	0	21.78
					1	12	21.88
					1	24	20.99
					12	0	20.91
					12	6	20.92
					12	11	20.87
					25	0	21.04
		H 27565	738.5	QPSK	1	0	21.45
					1	12	21.12
					1	24	20.58
					12	0	20.68
					12	6	20.79
					12	11	19.99
					25	0	22.01
				16-QAM	1	0	22.75
					1	12	22.41
					1	24	21.22
					12	0	21.41
					12	6	21.28
					12	11	21.36
					25	0	21.59

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (740-746 MHz)	3MHz	L 27585	740.5	QPSK	1	0	22.65
					1	7	22.01
					1	14	22.34
					8	0	21.25
					8	4	20.99
					8	7	20.89
					15	0	20.97
				16-QAM	1	0	21.64
					1	7	21.57
					1	14	21.65
					8	0	21.22
					8	4	21.20
					8	7	21.11
					15	0	20.58
		M 27610	743	QPSK	1	0	21.97
					1	7	21.99
					1	14	21.41
					8	0	20.99
					8	4	20.51
					8	7	20.52
					15	0	20.58
				16-QAM	1	0	21.01
					1	7	21.51
					1	14	21.13
					8	0	20.99
					8	4	20.58
					8	7	20.78
					15	0	19.42
		H 27635	745.5	QPSK	1	0	22.04
					1	7	21.22
					1	14	21.87
					8	0	20.90
					8	4	21.04
					8	7	21.22
					15	0	21.24
				16-QAM	1	0	21.15
					1	7	21.20
					1	14	20.97
					8	0	20.45
					8	4	20.47
					8	7	20.39
					15	0	19.94

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		Average Power (dBm)
					RB Size	RB Offset	
LTE Band 28 (740-746 MHz)	5MHz	L 27595	741.5	QPSK	1	0	21.87
					1	12	22.12
					1	24	22.16
					12	0	20.93
					12	6	21.55
					12	11	20.90
					25	0	22.34
				16-QAM	1	0	22.37
					1	12	21.88
					1	24	21.27
					12	0	21.12
					12	6	21.31
					12	11	21.26
					25	0	21.79
		M 27610	743	QPSK	1	0	21.55
					1	12	21.89
					1	24	21.16
					12	0	21.09
					12	6	21.10
					12	11	20.58
					25	0	22.69
				16-QAM	1	0	21.74
					1	12	21.88
					1	24	20.97
					12	0	21.05
					12	6	20.91
					12	11	21.22
					25	0	21.14
		H 27625	744.5	QPSK	1	0	21.45
					1	12	21.21
					1	24	21.01
					12	0	20.97
					12	6	20.68
					12	11	19.97
					25	0	22.26
				16-QAM	1	0	22.01
					1	12	22.24
					1	24	21.58
					12	0	21.69
					12	6	21.32
					12	11	21.78
					25	0	21.89

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 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	1.1033	1.0969	20415	825.5	2.7087	2.7057
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	1.324	1.279	20415	825.5	2.986	3.001

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	4.4914	4.4988	20450	829.0	8.9234	8.9142
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	4.997	4.996	20450	829.0	9.823	9.748

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	1.0967	1.1045	20525	836.5	2.7110	2.7236
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	1.299	1.307	20525	836.5	2.986	3.017

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	4.5241	4.5186	20525	836.5	9.0415	9.0340
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	5.021	5.054	20525	836.5	10.05	9.967

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	1.0973	1.1023	20635	847.5	2.7112	2.7126
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	1.318	1.313	20635	847.5	2.983	3.014

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20625	846.5	4.4938	4.4956	20600	844.0	8.8756	8.8862
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	4.944	4.997	20600	844.0	9.741	9.696

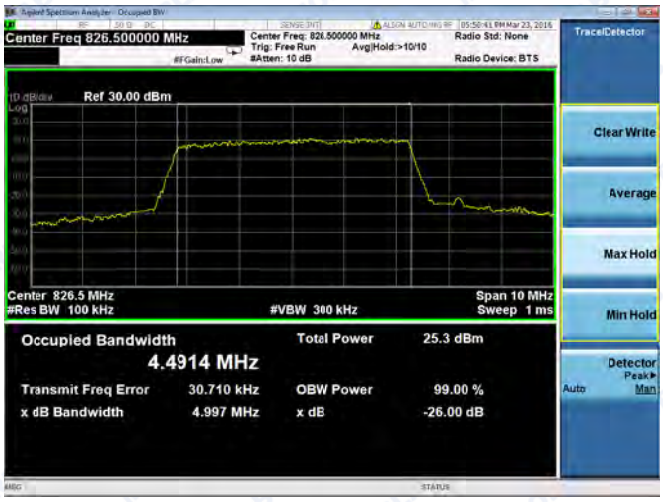
Low channel:

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

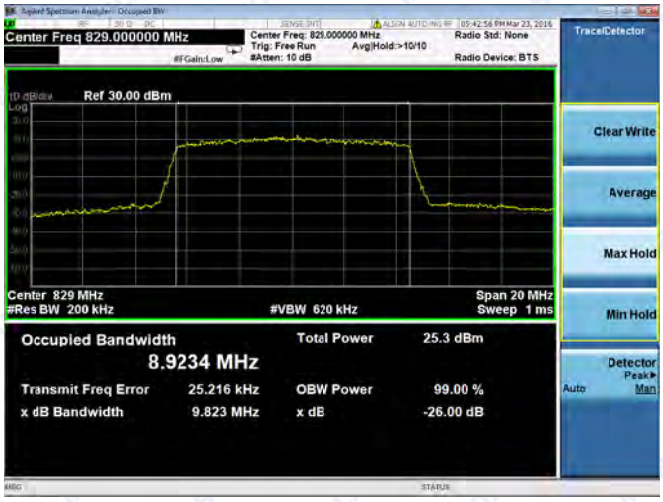
5MHz/QPSK



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	4.5077	4.5045	20800	2505.0	8.9412	8.9477
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	4.987	5.008	20800	2505.0	9.737	9.889

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	13.385	13.415	20850	2510.0	17.925	17.922
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	14.56	14.66	20850	2510.0	19.40	19.52

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	4.5332	4.5154	21100	2535.0	8.9692	8.9592
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	5.044	5.004	21100	2535.0	9.933	9.864

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	13.423	13.420	21100	2535.0	17.925	17.922
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	14.67	14.67	21100	2535.0	19.40	19.52

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	4.5050	4.5224	21400	2565.0	8.9625	8.9584
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	4.979	5.042	21400	2565.0	9.945	9.854

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	13.445	13.440	21350	2560.0	18.007	18.003
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	14.80	14.75	21350	2560.0	19.66	19.53

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

LTE Band 28 (704MHz-710MHz)

Low channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27225	704.5	2.7060	2.6995	27235	705.5	4.5205	4.5112
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27225	704.5	2.986	2.995	27235	705.5	5.001	5.022

Middle channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27250	707	2.7020	2.7088	27250	707	4.4960	4.5077
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27250	707	2.990	2.987	27250	707	4.995	5.011

High channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27275	709.5	2.7069	2.7136	27265	708.5	4.5038	4.5102
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27275	709.5	2.973	2.980	27265	708.5	4.958	5.033

LTE Band 28 (710MHz-716MHz)

Low channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27285	710.5	2.7134	2.7052	27295	711.5	4.5128	4.5138
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27285	710.5	2.277	3.009	27295	711.5	5.035	4.988

Middle channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27310	713	2.7048	2.7169	27310	713	4.5136	4.5056
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27310	713	2.997	3.006	27310	713	4.958	4.976

High Channel：

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27335	715.5	2.7075	2.7098	27325	714.5	4.5026	4.5036
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27335	715.5	2.985	3.014	27325	714.5	5.001	5.042

LTE Band 28 (734MHz-740MHz)

Low channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27525	734.5	2.7092	2.7043	27535	735.5	4.5043	4.5029
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27525	734.5	2.989	2.993	27535	735.5	5.012	5.000

Middle channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27550	737	2.7058	2.7115	27550	737	4.5117	4.5093
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27550	737	2.992	2.006	27550	737	4.970	4.963

High Channel：

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27575	739.5	2.7079	2.7089	27565	738.5	4.5077	4.5068
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27575	739.5	2.989	3.024	27565	738.5	4.959	5.032

LTE Band 28 (740MHz-746MHz)

Low channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27585	740.5	2.7146	2.7048	27595	741.5	4.5116	4.5054
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27585	740.5	2.985	2.993	27595	741.5	5.004	5.004

Middle channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27610	743	2.7101	2.7110	27610	743	4.5061	4.5110
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27610	743	3.012	3.028	27610	743	5.022	4.986

High channel:

Channel Bandwidth: 3MHz				Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27635	745.5	2.7106	2.7001	27625	744.5	4.5031	4.5109
Channel Bandwidth: 3MHz				**Channel Bandwidth: 5MHz**			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
27635	745.5	2.989	2.988	27625	744.5	4.989	5.025

Band 28 (704MHz-710MHz)

Low channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

Middle channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

High channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

Band 28 (710MHz-716MHz)

Low channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

Middle channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

High channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

Band 28 (734MHz-740MHz)

Low channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

Middle channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

High channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

Band 28 (740MHz-746MHz)

Low channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

Middle channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

High channel:

Spectrum Plot of Worst Value	
3MHz/QPSK	**3MHz/16QAM**

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

2.3 Frequency Stability

2.3.1 Requirement

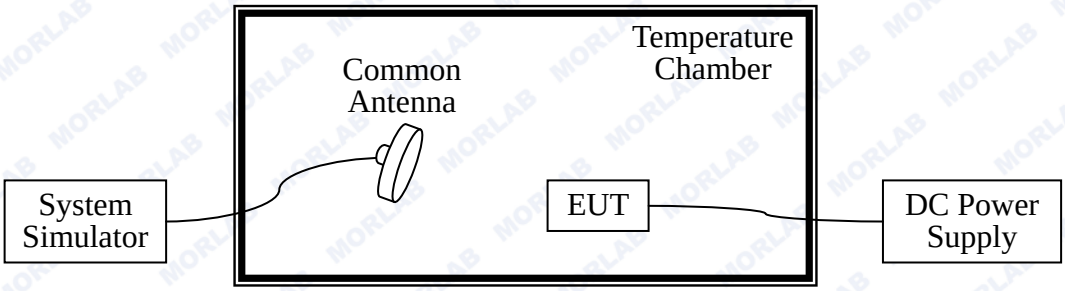
According to FCC section 2.1055 and FCC section 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.

(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.3.2 Test Description

Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

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
DC Power Supply	Good Will	GPS-3030DD	EF920938	2016.03.02	2017.03.01
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2016.03.02	2017.03.01

2.3.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.2VDC and 3.45VDC, which are specified by the applicant; the normal temperature here used is 20°C. The frequency deviation limit is ±2.5ppm.

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

LTE Band 5 – QPSK - Channel 20525 – Frequency 836.5MHz – RB 6/0 Limit: 836.5 MHz*2.5ppm=2091.25Hz				
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Result**
100	3.8	-30	9.31	PASS
100		-20	-1.74	
100		-10	-1.78	
100		0	7.68	
100		+10	1.59	
100		+20	9.55	
100		+30	6.41	
100		+40	8.6	
100		+50	-2.18	
115	4.2	+20	0.53	
85	3.45	+20	-1.59	

TE Band 7 – QPSK - Channel 21100 – Frequency 2535MHz – RB 25/0 Limit: 2535MHz*2.5ppm=6337.5Hz				
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Result**
100	3.8	-30	14.21	PASS
100		-20	-8.01	
100		-10	11.48	
100		0	13.39	
100		+10	12.21	
100		+20	11.13	
100		+30	-9.24	
100		+40	12.48	
100		+50	11.43	
115	4.2	+20	13.21	
85	3.45	+20	14.56	

TE Band 28– QPSK - Channel 27250 –Frequency 707MHz – RB 25/0 Limit: 707MHz*2.5ppm=1767.5Hz				
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Result**
100	3.8	-30	12.66	PASS
100		-20	-9.56	
100		-10	9.93	
100		0	11.84	
100		+10	10.66	
100		+20	9.58	
100		+30	-10.79	
100		+40	10.93	
100		+50	9.88	
115	4.2	+20	11.66	
85	3.45	+20	13.01	