FCC TEST REPORT
FCC ID: 2AYE8MIFIDATA

Product Name	:	4G ROUTER
Model Name	:	LC111,LC112,LC113,LC115,LC116,LC117,LC118,GC111,GC112,GC113,GC115,B315,B525,E5573,E3372
Brand Name	:	N/A
Report No.	:	PTC20091603002E-FC02

Prepared for

ShenZhen MifiData technology Co.,Ltd.

4/F building F, Station Industrial Park ,TianBao road,ShiYan Town ,BaoAn District ,Shenzhen Guangdong, China

Prepared by

Precise Testing & Certification Corp., Ltd.

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Nov. 27, 2019	Initial Issue	
01	Dec. 18, 2020	Revised report information.	Peggy Chang

TEST RESULT CERTIFICATION

Applicant's name	:	ShenZhen MifiData technology Co.,Ltd.
Address	:	4/F building F, Station Industrial Park ,TianBao road,ShiYan Town ,BaoAn District ,Shenzhen Guangdong, China
Manufacture's name	:	ShenZhen MifiData technology Co.,Ltd.
Address	:	4/F building F, Station Industrial Park ,TianBao road,ShiYan Town ,BaoAn District ,Shenzhen Guangdong, China
Product name	:	4G ROUTER
Model name	:	LC111,LC112,LC113,LC115,LC116,LC117,LC118,GC111,GC112,GC113,GC115,B315,B525,E5573,E3372
Standards	:	FCC CFR47 Part 22, Part 24, Part 27
Test procedure	:	ANSI C63.26:2015
Test Date	:	Dec 01, 2020 to Dec. 17, 2020
Date of Issue	:	Dec. 18, 2020
Test Result	:	Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Test Engineer:

Leo Yang / Engineer

Technical Manager:

Chris Du / Manager

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1 General Information

1.1. EUT Description

Applicant		ShenZhen MifiData technology Co.,Ltd.			
Applicant Address		4/F building F, Station Industrial Park ,TianBao road,ShiYan Town ,BaoAn District ,Shenzhen Guangdong, China			
Manufacturer		ShenZhen MifiData technology Co.,Ltd.			
Manufacturer Address		4/F building F, Station Industrial Park ,TianBao road,ShiYan Town ,BaoAn District ,Shenzhen Guangdong, China			
Product Type		4G ROUTER			
Model Number		LC111,LC112,LC113,LC115,LC116,LC117,LC118,GC111,GC112,GC113,GC115,B315,B525,E5573,E3372			
Power supply:		DC 12V from adapter			
Adapter information:		MODEL: RA042-1201000US INPUT:AC100-240V 50/60Hz 0.35A Max; OUTPUT:DC 12V 1000mA			
Hardware Version:		LM321-LC111-V4.0			
Software Version:		N/A			
Mode	LTE	Band	UL Frequency (MHz)	DL Frequency (MHz)	Modulation
		2	1850.7 ~ 1909.3	1930.7 ~ 1989.3	QPSK, 16QAM
		4	1710.7 ~ 1754.3	2110.7 ~ 2154.3	QPSK, 16QAM
		5	824.7 ~ 848.3	869.7 ~ 893.3	QPSK, 16QAM
		7	2500 ~ 2570	2620 ~ 2690	QPSK, 16QAM
Channel Bandwidth		LTE Band 2	1.4M, 3M, 5MHz, 10MHz, 15MHz, 20MHz		
		LTE Band 4	1.4M, 3M, 5MHz, 10MHz, 15MHz, 20MHz		
		LTE Band 5	1.4M, 3M, 5MHz, 10MHz		
		LTE Band 7	5MHz, 10MHz, 15MHz, 20MHz		
Type of Antenna		IFA Antenna			
Antenna Gain		LTE Band 2	2.24 dBi		
		LTE Band 4	2.86 dBi		
		LTE Band 5	1.61 dBi		
		LTE Band 7	4.14 dBi		

Max. Conducted Output Average Power	LTE Band 2 (Channel Bandwidth 1.4MHz)	0.222 W
	LTE Band 2 (Channel Bandwidth 3MHz)	0.217 W
	LTE Band 2 (Channel Bandwidth 5MHz)	0.216 W
	LTE Band 2 (Channel Bandwidth 10MHz)	0.216 W
	LTE Band 2 (Channel Bandwidth 15MHz)	0.217 W
	LTE Band 2 (Channel Bandwidth 20MHz)	0.217 W
	LTE Band 4 (Channel Bandwidth 1.4MHz)	0.224 W
	LTE Band 4 (Channel Bandwidth 3MHz)	0.222 W
	LTE Band 4 (Channel Bandwidth 5MHz)	0.226 W
	LTE Band 4 (Channel Bandwidth 10MHz)	0.228 W
	LTE Band 4 (Channel Bandwidth 15MHz)	0.228 W
	LTE Band 4 (Channel Bandwidth 20MHz)	0.231 W
	LTE Band 5 (Channel Bandwidth 1.4MHz)	0.186 W
	LTE Band 5 (Channel Bandwidth 3MHz)	0.194 W
	LTE Band 5 (Channel Bandwidth 5MHz)	0.191 W
	LTE Band 5 (Channel Bandwidth 10MHz)	0.189 W
	LTE Band 7 (Channel Bandwidth 5MHz)	0.200 W
	LTE Band 7 (Channel Bandwidth 10MHz)	0.195 W
	LTE Band 7 (Channel Bandwidth 15MHz)	0.201 W
	LTE Band 7 (Channel Bandwidth 20MHz)	0.201 W

Max. E.R.P. / E.I.R.P.	LTE Band 2 (Channel Bandwidth 1.4MHz)	0.219 W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 3MHz)	0.217 W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 5MHz)	0.215 W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 10MHz)	0.224 W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 15MHz)	0.225 W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 20MHz)	0.225 W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 1.4MHz)	0.215 W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 3MHz)	0.208 W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 5MHz)	0.210 W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 10MHz)	0.213 W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 15MHz)	0.209 W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 20MHz)	0.218 W (E.I.R.P.)
	LTE Band 5 (Channel Bandwidth 1.4MHz)	0.193 W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 3MHz)	0.193 W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 5MHz)	0.193 W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 10MHz)	0.198 W (E.R.P.)
	LTE Band 7 (Channel Bandwidth 5MHz)	0.222 W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 10MHz)	0.217 W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 15MHz)	0.207 W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 20MHz)	0.209 W (E.I.R.P.)

Emission Designator	Band	QPSK	16QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1M08G7D	1M08W7D
	LTE Band 2 (Channel Bandwidth 3MHz)	2M69G7D	2M69W7D
	LTE Band 2 (Channel Bandwidth 5MHz)	4M48G7D	4M47W7D
	LTE Band 2 (Channel Bandwidth 10MHz)	8M95G7D	8M93W7D
	LTE Band 2 (Channel Bandwidth 15MHz)	13M42G7D	13M42W7D
	LTE Band 2 (Channel Bandwidth 20MHz)	17M91G7D	17M89W7D
	LTE Band 4 (Channel Bandwidth 1.4MHz)	1M08G7D	1M08W7D
	LTE Band 4 (Channel Bandwidth 3MHz)	2M69G7D	2M69W7D
	LTE Band 4 (Channel Bandwidth 5MHz)	4M48G7D	4M48W7D
	LTE Band 4 (Channel Bandwidth 10MHz)	8M94G7D	8M93W7D
	LTE Band 4 (Channel Bandwidth 15MHz)	13M37G7D	13M38W7D
	LTE Band 4 (Channel Bandwidth 20MHz)	17M91G7D	17M85W7D
	LTE Band 5 (Channel Bandwidth 1.4MHz)	1M08G7D	1M08W7D
	LTE Band 5 (Channel Bandwidth 3MHz)	2M69G7D	2M69W7D
	LTE Band 5 (Channel Bandwidth 5MHz)	4M47G7D	4M48W7D
	LTE Band 5 (Channel Bandwidth 10MHz)	8M97G7D	8M96W7D
	LTE Band 7 (Channel Bandwidth 5MHz)	4M48G7D	4M49W7D
	LTE Band 7 (Channel Bandwidth 10MHz)	8M92G7D	8M94W7D
	LTE Band 7 (Channel Bandwidth 15MHz)	13M42G7D	13M44W7D
	LTE Band 7 (Channel Bandwidth 20MHz)	17M88G7D	17M85W7D

1.2. Mode of Operation

Three channels had been tested for each channel bandwidth.

LTE Band 2						
Channel Bandwidth	1.4MHz		3MHz		5MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	18607	1850.7	18615	1851.5	18625	1852.5
Middle CH	18900	1880.0	18900	1880.0	18900	1880.0
High CH	19193	1909.3	19185	1908.5	19175	1907.5
Channel Bandwidth	10MHz		15MHz		20MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	18650	1855.0	18675	1857.5	18700	1860.0
Middle CH	18900	1880.0	18900	1880.0	18900	1880.0
High CH	19150	1905.0	19125	1902.5	19100	1900.0

LTE Band 4						
Channel Bandwidth	1.4MHz		3MHz		5MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	19957	1710.7	19965	1711.5	19975	1712.5
Middle CH	20175	1732.5	20175	1732.5	20175	1732.5
High CH	20393	1754.3	20385	1753.5	20375	1752.5
Channel Bandwidth	10MHz		15MHz		20MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	20000	1715.0	20025	1717.5	20050	1720.0
Middle CH	20175	1732.5	20175	1732.5	20175	1732.5
High CH	20350	1750.0	20325	1747.5	20300	1745.0

LTE Band 5				
Channel Bandwidth	1.4MHz		3MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	20407	824.7	20415	825.5
Middle CH	20525	836.5	20525	836.5
High CH	20643	848.3	20635	847.5
Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	20425	826.5	20450	829.0
Middle CH	20525	836.5	20525	836.5
High CH	20625	846.5	20600	844.0

LTE Band 7				
Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	20775	2502.5	20800	2505.0
Middle CH	21100	2535.0	21100	2535.0
High CH	21425	2567.5	21400	2565.0
Channel Bandwidth	15MHz		20MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	20825	2507.5	20850	2510.0
Middle CH	21100	2535.0	21100	2535.0
High CH	21375	2562.5	21350	2560.0

Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Frequency range investigated for radiated emission: 30MHz to 19000 MHz.

Band	Channel Bandwidth	Test Modes	
LTE Band 2	1.4 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 3) Link ☐ LTE(RB Size 1, RB Offset 5) Link ❒ LTE(RB Size 3, RB Offset 0) Link ☐ LTE(RB Size 3, RB Offset 2) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 8) Link ❒ LTE(RB Size 1, RB Offset 14) Link ☐ LTE(RB Size 8, RB Offset 0) Link ☐ LTE(RB Size 8, RB Offset 4) Link ☐ LTE(RB Size 8, RB Offset 8) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
	5 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 13) Link ❒ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 25) Link ❒ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 38) Link ❒ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 38, RB Offset 0) Link ☐ LTE(RB Size 38, RB Offset 18) Link ☐ LTE(RB Size 38, RB Offset 38) Link ☐ LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 50) Link ☐ LTE(RB Size 1, RB Offset 99) Link ☐ LTE(RB Size 50, RB Offset 0) Link ☐ LTE(RB Size 50, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
LTE Band 4	1.4 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 3) Link ❒ LTE(RB Size 1, RB Offset 5) Link ☐ LTE(RB Size 3, RB Offset 0) Link ☐ LTE(RB Size 3, RB Offset 2) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ❒ LTE(RB Size 1, RB Offset 8) Link ☐ LTE(RB Size 1, RB Offset 14) Link ☐ LTE(RB Size 8, RB Offset 0) Link ☐ LTE(RB Size 8, RB Offset 4) Link ☐ LTE(RB Size 8, RB Offset 8) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
	5 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 13) Link ❒ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 25) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 38) Link ☐ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 38, RB Offset 0) Link ☐ LTE(RB Size 38, RB Offset 18) Link ☐ LTE(RB Size 38, RB Offset 38) Link ☐ LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 50) Link ☐ LTE(RB Size 1, RB Offset 99) Link ☐ LTE(RB Size 50, RB Offset 0) Link ☐ LTE(RB Size 50, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

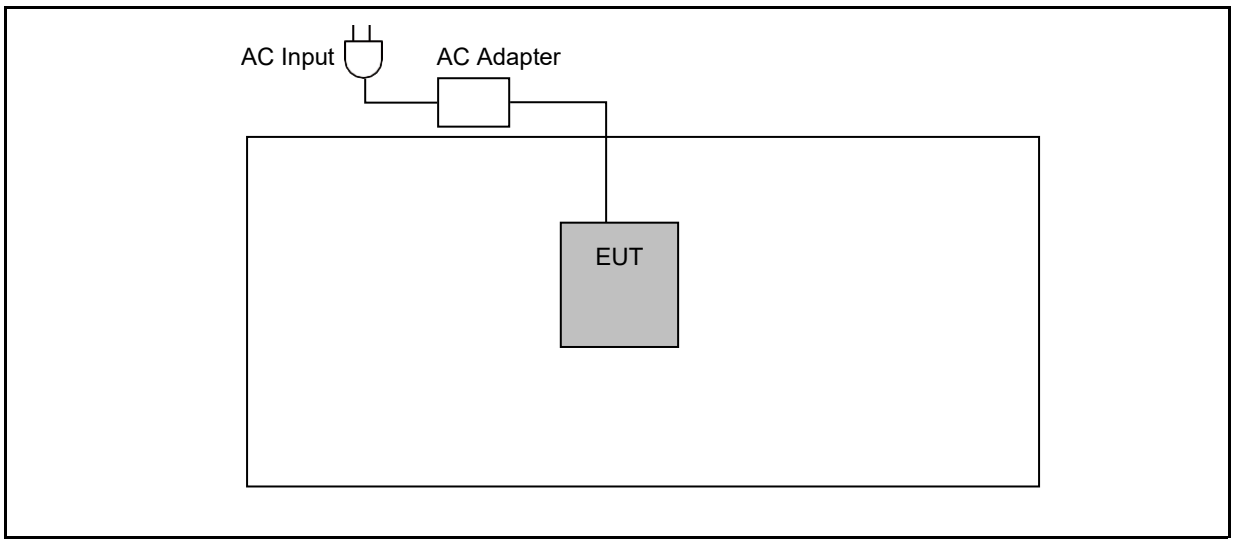
Band	Channel Bandwidth	Test Modes	
LTE Band 5	1.4 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 3) Link ☐ LTE(RB Size 1, RB Offset 5) Link ☐ LTE(RB Size 3, RB Offset 0) Link ❒ LTE(RB Size 3, RB Offset 2) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 8) Link ☐ LTE(RB Size 1, RB Offset 14) Link ☐ LTE(RB Size 8, RB Offset 0) Link ☐ LTE(RB Size 8, RB Offset 4) Link ☐ LTE(RB Size 8, RB Offset 8) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
	5 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 13) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 25) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
LTE Band 7	5 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ❒ LTE(RB Size 1, RB Offset 13) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 25) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 38) Link ❒ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 38, RB Offset 0) Link ☐ LTE(RB Size 38, RB Offset 18) Link ☐ LTE(RB Size 38, RB Offset 38) Link ☐ LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	❒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 50) Link ☐ LTE(RB Size 1, RB Offset 99) Link ☐ LTE(RB Size 50, RB Offset 0) Link ☐ LTE(RB Size 50, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

1.3. EUT Exercise Software

1	Setup the EUT and Base Station (CMW500) as shown on 1.4.
2	Turn on the power of all equipment.
3	EUT run test program test.

1.4. Configuration of Test System Details



1.5. Summary of Test Result

FCC Rule		Description	Result
§2.1046		Conducted Output Average Power	Pass
§22.913 §24.232 §27. 50		Equivalent Isotropic Radiated Power / Equivalent Radiated Power	Pass
§2.1055 §22.355 §24.235 §27. 54		Frequency Stability	Pass
§2.1049		Emission Bandwidth & Occupied Bandwidth	Pass
§24.232 §27.50		Peak to average ratio	Pass
§22.917 §24.238 §27.53		Band Edge	Pass
§2.1051 §22.917 §24.238 §27.53		Conducted Spurious Emissions	Pass
§2.1053 §22.917 §24.238 §27.53		Radiated Spurious Emissions	Pass
---		Receiver Spurious Emissions	Pass

1.6. Test facilities and accreditations

Test laboratory

Dongguan Precise Testing & Certification Corp., Ltd.

Address:Building 1, No.6 Tongxin Road, Dongcheng Street, Dongguan,China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A-1

1.7. Environmental conditions

Temperature:	15ºC~35ºC
Humidity	20%~75%
Atmospheric pressure	98kPa~101kPa

1.8. Measurement uncertainty

Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y)

Parameter	**Uncertainty**
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%	

1.9. LIST OF TEST EQUIPMENT

Equipment Name	Manufacturer	Model	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde&schwarz	ESPI7	100314	Sep. 18, 2020	1 Year
TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-872	Sep. 18, 2020	1 Year
amplifier	Hewlett-Packard	8447D	3113A06150	Sep. 18, 2020	1 Year

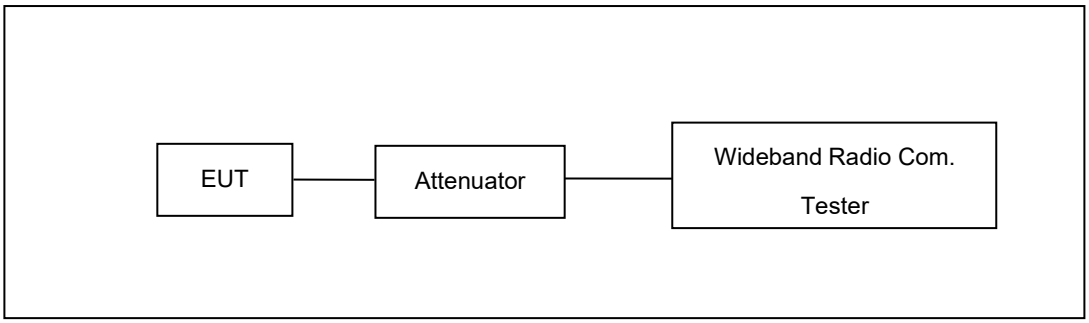
Single path vehicle AMN(LISN)	Schwarzbeck	NNBM 8124	01175	Sep. 18, 2020	1 Year
Low noise active vertical monopole antenna	Schwarzbeck	VAMP 9243	#565	Sep. 18, 2020	1 Year
Biconical antenna	Schwarzbeck	BBA 9106	#164	Sep. 18, 2020	1 Year
MXG Vector Signal Generator	Agilent	N5182A	MY49060455	Sep. 18, 2020	1 Year
ESG Series Analog signal generator	Agilent	E4421B	GB40051240	Sep. 18, 2020	1 Year
Thermometer clock humidity monitor	-	HTC-1	/	Sep. 18, 2020	1 Year
Log Periodic Antenna	Schwarzbeck	VUSLP 9111B	#312	Sep. 18, 2020	1 Year
Log Periodic Dipole Array Antenna	ETS-LINDGREN	3148B	00224524	Sep. 18, 2020	1 Year
Amplifier	EMtrace	RP06A	00117	Sep. 18, 2020	1 Year
Comprehensive test instrument	Rohde&schwarz	CMW500	149155	Sep. 18, 2020	1 Year
PXA Signal Analyzer	Agilent	N9030A	MY51350296	Sep. 18, 2020	1 Year
EMI Test Receiver	Rohde&schwarz	ESIB26	100273	Sep. 18, 2020	1 Year
Synthesized Sweeper	Agilent	83752A	3610A01957	Sep. 18, 2020	1 Year
DC Power Supply	Agilent	E3632A	MY40027695	Sep. 18, 2020	1 Year
Artificial mains network	3ctest	LISN J50	ES391180 5	Sep. 18, 2020	1 Year
Power amplifier	Space-Dtronicccs	EWLNA0118G-P40	1852001	Sep. 18, 2020	1 Year
Current Probe	SOLAR ELECTRONICS CO.	9207-1	220095-1	Sep. 18, 2020	1 Year
Loop Sensor	SOLAR ELECTRONICS CO.	7334-1	220095-2	Sep. 18, 2020	1 Year
Note: the calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).					

2 Conducted Output Average Power Test

2.1. Limit

N/A

2.2. Test Setup



2.3. Test Procedure

a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.

b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

2.4. Test Result

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	1.4 MHz	QPSK	18607	1850.7	1	0	23.01	0.200
					1	3	23.00	0.200
					1	5	23.06	0.202
					3	0	23.07	0.203
					3	2	23.05	0.202
					3	3	23.04	0.201
					6	0	22.09	0.162
			18900	1880.0	1	0	23.23	0.210
					1	3	23.20	0.209
					1	5	23.25	0.211
					3	0	23.28	0.213
					3	2	23.25	0.211
					3	3	23.22	0.210
					6	0	22.27	0.169
			19193	1909.3	1	0	23.41	0.219
					1	3	23.40	0.219
					1	5	23.41	0.219
					3	0	**23.47**	**0.222**
					3	2	23.40	0.219
					3	3	23.42	0.220
					6	0	22.48	0.177
		16QAM	18607	1850.7	1	0	21.99	0.158
					1	3	21.94	0.156
					1	5	22.06	0.161
					3	0	22.01	0.159
					3	2	22.00	0.158
					3	3	21.99	0.158
					6	0	21.87	0.154
			18900	1880.0	1	0	22.16	0.164
					1	3	22.15	0.164
					1	5	22.18	0.165
					3	0	22.19	0.166
					3	2	22.16	0.164
					3	3	22.21	0.166
					6	0	22.19	0.166
			19193	1909.3	1	0	22.36	0.172
					1	3	22.34	0.171
					1	5	22.36	0.172
					3	0	22.36	0.172
					3	2	22.38	0.173
					3	3	22.40	0.174
					6	0	22.37	0.173

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	3 MHz	QPSK	18615	1851.5	1	0	22.93	0.196
					1	8	22.93	0.196
					1	14	22.95	0.197
					8	0	21.93	0.156
					8	4	21.93	0.156
					8	8	21.96	0.157
					15	0	21.95	0.157
			18900	1880.0	1	0	23.07	0.203
					1	8	23.09	0.204
					1	14	23.12	0.205
					8	0	22.15	0.164
					8	4	22.19	0.166
					8	8	22.15	0.164
					15	0	22.14	0.164
			19185	1908.5	1	0	23.30	0.214
					1	8	23.31	0.214
					1	14	**23.36**	**0.217**
					8	0	22.33	0.171
					8	4	22.30	0.170
					8	8	22.36	0.172
					15	0	22.39	0.173
		16QAM	18615	1851.5	1	0	21.92	0.156
					1	8	21.89	0.155
					1	14	21.89	0.155
					8	0	20.96	0.125
					8	4	20.99	0.126
					8	8	20.94	0.124
					15	0	20.90	0.123
			18900	1880.0	1	0	22.05	0.160
					1	8	22.10	0.162
					1	14	22.10	0.162
					8	0	21.15	0.130
					8	4	21.14	0.130
					8	8	21.17	0.131
					15	0	21.13	0.130
			19185	1908.5	1	0	22.24	0.167
					1	8	22.17	0.165
					1	14	22.29	0.169
					8	0	21.30	0.135
					8	4	21.30	0.135
					8	8	21.33	0.136
					15	0	21.27	0.134

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	5 MHz	QPSK	18625	1852.5	1	0	22.89	0.195
					1	13	22.92	0.196
					1	24	22.92	0.196
					12	0	21.97	0.157
					12	6	21.94	0.156
					12	13	21.96	0.157
					25	0	21.98	0.158
			18900	1880.0	1	0	23.19	0.208
					1	13	23.07	0.203
					1	24	23.11	0.205
					12	0	22.15	0.164
					12	6	22.13	0.163
					12	13	22.16	0.164
					25	0	22.19	0.166
			19175	1907.5	1	0	23.28	0.213
					1	13	23.26	0.212
					1	24	**23.34**	**0.216**
					12	0	22.33	0.171
					12	6	22.33	0.171
					12	13	22.37	0.173
					25	0	22.33	0.171
		16QAM	18625	1852.5	1	0	21.86	0.153
					1	13	21.80	0.151
					1	24	21.84	0.153
					12	0	20.94	0.124
					12	6	20.92	0.124
					12	13	20.92	0.124
					25	0	20.94	0.124
			18900	1880.0	1	0	22.08	0.161
					1	13	22.05	0.160
					1	24	22.05	0.160
					12	0	21.13	0.130
					12	6	21.14	0.130
					12	13	21.14	0.130
					25	0	21.12	0.129
			19175	1907.5	1	0	22.24	0.167
					1	13	22.22	0.167
					1	24	22.28	0.169
					12	0	21.31	0.135
					12	6	21.31	0.135
					12	13	21.32	0.136
					25	0	21.31	0.135

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	10 MHz	QPSK	18650	1855.0	1	0	22.92	0.196
					1	25	22.90	0.195
					1	49	23.05	0.202
					25	0	21.95	0.157
					25	13	21.91	0.155
					25	25	21.96	0.157
					50	0	21.98	0.158
			18900	1880.0	1	0	23.15	0.207
					1	25	23.10	0.204
					1	49	23.09	0.204
					25	0	22.12	0.163
					25	13	22.14	0.164
					25	25	22.20	0.166
					50	0	22.17	0.165
			19150	1905.0	1	0	23.28	0.213
					1	25	23.26	0.212
					1	49	**23.35**	**0.216**
					25	0	22.30	0.170
					25	13	22.34	0.171
					25	25	22.35	0.172
					50	0	22.32	0.171
		16QAM	18650	1855.0	1	0	21.88	0.154
					1	25	21.85	0.153
					1	49	21.97	0.157
					25	0	20.92	0.124
					25	13	20.94	0.124
					25	25	20.90	0.123
					50	0	20.89	0.123
			18900	1880.0	1	0	22.09	0.162
					1	25	22.06	0.161
					1	49	22.02	0.159
					25	0	21.11	0.129
					25	13	21.14	0.130
					25	25	21.19	0.132
					50	0	21.07	0.128
			19150	1905.0	1	0	22.23	0.167
					1	25	22.27	0.169
					1	49	22.27	0.169
					25	0	21.28	0.134
					25	13	21.32	0.136
					25	25	21.31	0.135
					50	0	21.26	0.134

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	15 MHz	QPSK	18675	1857.5	1	0	22.94	0.197
					1	38	22.95	0.197
					1	74	23.06	0.202
					38	0	21.92	0.156
					38	18	21.92	0.156
					38	38	22.06	0.161
					75	0	21.95	0.157
			18900	1880.0	1	0	23.15	0.207
					1	38	23.09	0.204
					1	74	23.12	0.205
					38	0	22.12	0.163
					38	18	22.10	0.162
					38	38	22.19	0.166
					75	0	22.19	0.166
			19125	1902.5	1	0	23.15	0.207
					1	38	23.32	0.215
					1	74	**23.37**	**0.217**
					38	0	22.31	0.170
					38	18	22.30	0.170
					38	38	22.34	0.171
					75	0	22.40	0.174
		16QAM	18675	1857.5	1	0	21.89	0.155
					1	38	21.89	0.155
					1	74	21.95	0.157
					38	0	20.90	0.123
					38	18	20.85	0.122
					38	38	20.94	0.124
					75	0	20.91	0.123
			18900	1880.0	1	0	22.12	0.163
					1	38	22.06	0.161
					1	74	22.03	0.160
					38	0	21.00	0.126
					38	18	21.08	0.128
					38	38	21.10	0.129
					75	0	21.11	0.129
			19125	1902.5	1	0	22.10	0.162
					1	38	22.25	0.168
					1	74	22.30	0.170
					38	0	21.26	0.134
					38	18	21.27	0.134
					38	38	21.28	0.134
					75	0	21.34	0.136

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	20 MHz	QPSK	18700	1860.0	1	0	23.02	0.200
					1	50	22.94	0.197
					1	99	22.91	0.195
					50	0	22.10	0.162
					50	25	21.95	0.157
					50	50	22.05	0.160
					100	0	22.08	0.161
			18900	1880.0	1	0	23.13	0.206
					1	50	23.08	0.203
					1	99	23.12	0.205
					50	0	22.25	0.168
					50	25	22.19	0.166
					50	50	22.19	0.166
					100	0	22.21	0.166
			19100	1900.0	1	0	**23.37**	**0.217**
					1	50	23.32	0.215
					1	99	22.99	0.199
					50	0	22.38	0.173
					50	25	22.37	0.173
					50	50	22.21	0.166
					100	0	22.37	0.173
		16QAM	18700	1860.0	1	0	21.92	0.156
					1	50	22.00	0.158
					1	99	21.93	0.156
					50	0	20.89	0.123
					50	25	20.98	0.125
					50	50	20.98	0.125
					100	0	21.07	0.128
			18900	1880.0	1	0	22.08	0.161
					1	50	22.05	0.160
					1	99	22.07	0.161
					50	0	21.10	0.129
					50	25	21.10	0.129
					50	50	21.17	0.131
					100	0	21.13	0.130
			19100	1900.0	1	0	22.01	0.159
					1	50	22.28	0.169
					1	99	22.29	0.169
					50	0	21.13	0.130
					50	25	21.30	0.135
					50	50	21.30	0.135
					100	0	21.34	0.136

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	1.4 MHz	QPSK	19957	1710.7	1	0	23.49	0.223
					1	3	23.42	0.220
					1	5	23.48	0.223
					3	0	23.46	0.222
					3	2	23.44	0.221
					3	3	23.43	0.220
					6	0	22.51	0.178
			20175	1732.5	1	0	23.48	0.223
					1	3	23.45	0.221
					1	5	**23.50**	**0.224**
					3	0	23.46	0.222
					3	2	23.47	0.222
					3	3	23.48	0.223
					6	0	22.54	0.179
			20393	1754.3	1	0	23.40	0.219
					1	3	23.39	0.218
					1	5	23.43	0.220
					3	0	23.44	0.221
					3	2	23.44	0.221
					3	3	23.44	0.221
					6	0	22.47	0.177
		16QAM	19957	1710.7	1	0	22.42	0.175
					1	3	22.45	0.176
					1	5	22.41	0.174
					3	0	22.45	0.176
					3	2	22.43	0.175
					3	3	22.49	0.177
					6	0	21.38	0.137
			20175	1732.5	1	0	22.44	0.175
					1	3	22.46	0.176
					1	5	22.42	0.175
					3	0	22.47	0.177
					3	2	22.46	0.176
					3	3	22.45	0.176
					6	0	21.38	0.137
			20393	1754.3	1	0	22.35	0.172
					1	3	22.37	0.173
					1	5	22.34	0.171
					3	0	22.36	0.172
					3	2	22.33	0.171
					3	3	22.42	0.175
					6	0	21.36	0.137

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	3 MHz	QPSK	19965	1711.5	1	0	23.43	0.220
					1	8	**23.47**	**0.222**
					1	14	23.42	0.220
					8	0	22.48	0.177
					8	4	22.44	0.175
					8	8	22.48	0.177
					15	0	22.51	0.178
			20175	1732.5	1	0	23.43	0.220
					1	8	23.42	0.220
					1	14	23.42	0.220
					8	0	22.51	0.178
					8	4	22.46	0.176
					8	8	22.47	0.177
					15	0	22.47	0.177
			20385	1753.5	1	0	23.45	0.221
					1	8	23.32	0.215
					1	14	23.38	0.218
					8	0	22.51	0.178
					8	4	22.41	0.174
					8	8	22.42	0.175
					15	0	22.45	0.176
		16QAM	19965	1711.5	1	0	22.42	0.175
					1	8	22.36	0.172
					1	14	22.43	0.175
					8	0	21.48	0.141
					8	4	21.51	0.142
					8	8	21.48	0.141
					15	0	21.45	0.140
			20175	1732.5	1	0	22.40	0.174
					1	8	22.42	0.175
					1	14	22.39	0.173
					8	0	21.49	0.141
					8	4	21.51	0.142
					8	8	21.47	0.140
					15	0	21.45	0.140
			20385	1753.5	1	0	22.38	0.173
					1	8	22.30	0.170
					1	14	22.33	0.171
					8	0	21.49	0.141
					8	4	21.45	0.140
					8	8	21.41	0.138
					15	0	21.37	0.137

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	5 MHz	QPSK	19975	1712.5	1	0	23.50	0.224
					1	13	23.48	0.223
					1	24	23.52	0.225
					12	0	22.59	0.182
					12	6	22.55	0.180
					12	13	22.53	0.179
					25	0	22.53	0.179
			20175	1732.5	1	0	23.51	0.224
					1	13	23.50	0.224
					1	24	**23.55**	**0.226**
					12	0	22.57	0.181
					12	6	22.58	0.181
					12	13	22.56	0.180
					25	0	22.55	0.180
			20375	1752.5	1	0	23.48	0.223
					1	13	23.53	0.225
					1	24	23.46	0.222
					12	0	22.57	0.181
					12	6	22.58	0.181
					12	13	22.49	0.177
					25	0	22.47	0.177
		16QAM	19975	1712.5	1	0	22.50	0.178
					1	13	22.50	0.178
					1	24	22.48	0.177
					12	0	21.58	0.144
					12	6	21.56	0.143
					12	13	21.58	0.144
					25	0	21.55	0.143
			20175	1732.5	1	0	22.52	0.179
					1	13	22.46	0.176
					1	24	22.57	0.181
					12	0	21.58	0.144
					12	6	21.58	0.144
					12	13	21.58	0.144
					25	0	21.55	0.143
			20375	1752.5	1	0	22.47	0.177
					1	13	22.48	0.177
					1	24	22.39	0.173
					12	0	21.58	0.144
					12	6	21.59	0.144
					12	13	21.51	0.142
					25	0	21.51	0.142

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	10 MHz	QPSK	2000	1715.0	1	0	23.52	0.225
					1	25	23.48	0.223
					1	49	23.46	0.222
					25	0	22.56	0.180
					25	13	22.57	0.181
					25	25	22.52	0.179
					50	0	22.67	0.185
			20175	1732.5	1	0	**23.58**	**0.228**
					1	25	23.50	0.224
					1	49	23.56	0.227
					25	0	22.57	0.181
					25	13	22.54	0.179
					25	25	22.54	0.179
					50	0	22.68	0.185
			20350	1750.0	1	0	23.52	0.225
					1	25	23.50	0.224
					1	49	23.49	0.223
					25	0	22.51	0.178
					25	13	22.57	0.181
					25	25	22.56	0.180
					50	0	22.65	0.184
		16QAM	2000	1715.0	1	0	22.52	0.179
					1	25	22.46	0.176
					1	49	22.47	0.177
					25	0	21.60	0.145
					25	13	21.59	0.144
					25	25	21.52	0.142
					50	0	21.56	0.143
			20175	1732.5	1	0	22.49	0.177
					1	25	22.52	0.179
					1	49	22.63	0.183
					25	0	21.55	0.143
					25	13	21.57	0.144
					25	25	21.56	0.143
					50	0	21.60	0.145
			20350	1750.0	1	0	22.52	0.179
					1	25	22.46	0.176
					1	49	22.42	0.175
					25	0	21.59	0.144
					25	13	21.57	0.144
					25	25	21.61	0.145
					50	0	21.57	0.144

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	15 MHz	QPSK	20025	1717.5	1	0	23.56	0.227
					1	38	23.49	0.223
					1	74	23.48	0.223
					38	0	22.57	0.181
					38	18	22.54	0.179
					38	38	22.52	0.179
					75	0	22.62	0.183
			20175	1732.5	1	0	23.54	0.226
					1	38	23.53	0.225
					1	74	23.50	0.224
					38	0	22.59	0.182
					38	18	22.62	0.183
					38	38	22.62	0.183
					75	0	22.67	0.185
			20325	1747.5	1	0	**23.58**	**0.228**
					1	38	23.46	0.222
					1	74	23.46	0.222
					38	0	22.56	0.180
					38	18	22.51	0.178
					38	38	22.54	0.179
					75	0	22.59	0.182
		16QAM	20025	1717.5	1	0	22.58	0.181
					1	38	22.48	0.177
					1	74	22.48	0.177
					38	0	21.57	0.144
					38	18	21.53	0.142
					38	38	21.46	0.140
					75	0	21.56	0.143
			20175	1732.5	1	0	22.49	0.177
					1	38	22.51	0.178
					1	74	22.43	0.175
					38	0	21.56	0.143
					38	18	21.55	0.143
					38	38	21.58	0.144
					75	0	21.63	0.146
			20325	1747.5	1	0	22.62	0.183
					1	38	22.43	0.175
					1	74	22.42	0.175
					38	0	21.54	0.143
					38	18	21.48	0.141
					38	38	21.50	0.141
					75	0	21.53	0.142

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	20 MHz	QPSK	20050	1720.0	1	0	23.56	0.227
					1	50	23.47	0.222
					1	99	23.49	0.223
					50	0	22.64	0.184
					50	25	22.60	0.182
					50	50	22.57	0.181
					100	0	22.66	0.185
			20175	1732.5	1	0	23.54	0.226
					1	50	23.51	0.224
					1	99	23.45	0.221
					50	0	22.70	0.186
					50	25	22.62	0.183
					50	50	22.66	0.185
					100	0	22.67	0.185
			20300	1745.0	1	0	**23.64**	**0.231**
					1	50	23.51	0.224
					1	99	23.43	0.220
					50	0	22.74	0.188
					50	25	22.61	0.182
					50	50	22.57	0.181
					100	0	22.71	0.187
		16QAM	20050	1720.0	1	0	22.55	0.180
					1	50	22.44	0.175
					1	99	22.43	0.175
					50	0	21.55	0.143
					50	25	21.56	0.143
					50	50	21.51	0.142
					100	0	21.58	0.144
			20175	1732.5	1	0	22.52	0.179
					1	50	22.51	0.178
					1	99	22.47	0.177
					50	0	21.61	0.145
					50	25	21.57	0.144
					50	50	21.66	0.147
					100	0	21.66	0.147
			20300	1745.0	1	0	22.62	0.183
					1	50	22.49	0.177
					1	99	22.43	0.175
					50	0	21.64	0.146
					50	25	21.58	0.144
					50	50	21.56	0.143
					100	0	21.66	0.147

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	1.4 MHz	QPSK	20407	824.7	1	0	22.67	0.185
					1	3	22.65	0.184
					1	5	22.68	0.185
					3	0	22.69	0.186
					3	2	**22.70**	**0.186**
					3	3	22.65	0.184
					6	0	21.73	0.149
			20525	836.5	1	0	22.43	0.175
					1	3	22.41	0.174
					1	5	22.41	0.174
					3	0	22.46	0.176
					3	2	22.39	0.173
					3	3	22.39	0.173
					6	0	21.48	0.141
			20643	848.3	1	0	22.36	0.172
					1	3	22.35	0.172
					1	5	22.38	0.173
					3	0	22.37	0.173
					3	2	22.34	0.171
					3	3	22.35	0.172
					6	0	21.39	0.138
		16QAM	20407	824.7	1	0	21.65	0.146
					1	3	21.62	0.145
					1	5	21.61	0.145
					3	0	21.64	0.146
					3	2	21.60	0.145
					3	3	21.62	0.145
					6	0	20.52	0.113
			20525	836.5	1	0	21.38	0.137
					1	3	21.33	0.136
					1	5	21.38	0.137
					3	0	21.39	0.138
					3	2	21.41	0.138
					3	3	21.39	0.138
					6	0	20.33	0.108
			20643	848.3	1	0	21.35	0.136
					1	3	21.28	0.134
					1	5	21.31	0.135
					3	0	21.35	0.136
					3	2	21.36	0.137
					3	3	21.35	0.136
					6	0	20.26	0.106

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	3 MHz	QPSK	20415	825.5	1	0	**22.88**	**0.194**
					1	8	22.86	0.193
					1	14	22.84	0.192
					8	0	21.67	0.147
					8	4	21.62	0.145
					8	8	21.66	0.147
					15	0	21.64	0.146
			20525	836.5	1	0	22.64	0.184
					1	8	22.63	0.183
					1	14	22.63	0.183
					8	0	21.44	0.139
					8	4	21.38	0.137
					8	8	21.41	0.138
					15	0	21.38	0.137
			20635	847.5	1	0	22.55	0.180
					1	8	22.42	0.175
					1	14	22.54	0.179
					8	0	21.39	0.138
					8	4	21.35	0.136
					8	8	21.37	0.137
					15	0	21.41	0.138
		16QAM	20415	825.5	1	0	21.58	0.144
					1	8	21.48	0.141
					1	14	21.56	0.143
					8	0	20.64	0.116
					8	4	20.61	0.115
					8	8	20.61	0.115
					15	0	20.56	0.114
			20525	836.5	1	0	21.31	0.135
					1	8	21.29	0.135
					1	14	21.31	0.135
					8	0	20.39	0.109
					8	4	20.44	0.111
					8	8	20.38	0.109
					15	0	20.37	0.109
			20635	847.5	1	0	21.23	0.133
					1	8	21.26	0.134
					1	14	21.31	0.135
					8	0	20.39	0.109
					8	4	20.36	0.109
					8	8	20.35	0.108
					15	0	20.31	0.107

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	5 MHz	QPSK	20425	826.5	1	0	**22.81**	**0.191**
					1	13	22.80	0.191
					1	24	22.72	0.187
					12	0	21.62	0.145
					12	6	21.59	0.144
					12	13	21.61	0.145
					25	0	21.61	0.145
			20525	836.5	1	0	22.61	0.182
					1	13	22.59	0.182
					1	24	22.54	0.179
					12	0	21.43	0.139
					12	6	21.42	0.139
					12	13	21.41	0.138
					25	0	21.37	0.137
			20625	846.5	1	0	22.58	0.181
					1	13	22.42	0.175
					1	24	22.43	0.175
					12	0	21.33	0.136
					12	6	21.28	0.134
					12	13	21.25	0.133
					25	0	21.35	0.136
		16QAM	20425	826.5	1	0	21.55	0.143
					1	13	21.49	0.141
					1	24	21.43	0.139
					12	0	20.63	0.116
					12	6	20.61	0.115
					12	13	20.62	0.115
					25	0	20.64	0.116
			20525	836.5	1	0	21.34	0.136
					1	13	21.29	0.135
					1	24	21.28	0.134
					12	0	20.40	0.110
					12	6	20.38	0.109
					12	13	20.38	0.109
					25	0	20.36	0.109
			20625	846.5	1	0	21.16	0.131
					1	13	21.13	0.130
					1	24	21.28	0.134
					12	0	20.27	0.106
					12	6	20.25	0.106
					12	13	20.35	0.108
					25	0	20.34	0.108

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	10 MHz	QPSK	20450	829.0	1	0	**22.77**	**0.189**
					1	25	22.68	0.185
					1	49	22.59	0.182
					25	0	21.67	0.147
					25	13	21.56	0.143
					25	25	21.53	0.142
					50	0	21.52	0.142
			20525	836.5	1	0	22.67	0.185
					1	25	22.57	0.181
					1	49	22.52	0.179
					25	0	21.43	0.139
					25	13	21.37	0.137
					25	25	21.36	0.137
					50	0	21.42	0.139
			20600	844.0	1	0	22.55	0.180
					1	25	22.43	0.175
					1	49	22.54	0.179
					25	0	21.40	0.138
					25	13	21.24	0.133
					25	25	21.38	0.137
					50	0	21.44	0.139
		16QAM	20450	829.0	1	0	21.53	0.142
					1	25	21.42	0.139
					1	49	21.37	0.137
					25	0	20.62	0.115
					25	13	20.51	0.112
					25	25	20.50	0.112
					50	0	20.49	0.112
			20525	836.5	1	0	21.48	0.141
					1	25	21.32	0.136
					1	49	21.28	0.134
					25	0	20.39	0.109
					25	13	20.39	0.109
					25	25	20.40	0.110
					50	0	20.38	0.109
			20600	844.0	1	0	21.33	0.136
					1	25	21.16	0.131
					1	49	21.31	0.135
					25	0	20.37	0.109
					25	13	20.24	0.106
					25	25	20.36	0.109
					50	0	20.37	0.109

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 7	5 MHz	QPSK	20800	2505.0	1	0	**22.89**	**0.195**
					1	25	22.83	0.192
					1	49	22.86	0.193
					25	0	21.89	0.155
					25	13	21.88	0.154
					25	25	21.81	0.152
					50	0	21.80	0.151
			21100	2535.0	1	0	22.77	0.189
					1	25	22.87	0.194
					1	49	22.88	0.194
					25	0	21.88	0.154
					25	13	21.88	0.154
					25	25	21.88	0.154
					50	0	21.90	0.155
			21400	2565.0	1	0	22.86	0.193
					1	25	22.87	0.194
					1	49	22.82	0.191
					25	0	21.85	0.153
					25	13	21.85	0.153
					25	25	21.83	0.152
					50	0	21.82	0.152
		16QAM	20800	2505.0	1	0	21.81	0.152
					1	25	21.73	0.149
					1	49	21.77	0.150
					25	0	20.90	0.123
					25	13	20.91	0.123
					25	25	20.84	0.121
					50	0	20.83	0.121
			21100	2535.0	1	0	21.72	0.149
					1	25	21.81	0.152
					1	49	21.84	0.153
					25	0	20.94	0.124
					25	13	20.90	0.123
					25	25	20.94	0.124
					50	0	20.90	0.123
			21400	2565.0	1	0	21.80	0.151
					1	25	21.82	0.152
					1	49	21.79	0.151
					25	0	21.00	0.126
					25	13	21.01	0.126
					25	25	20.95	0.124
					50	0	20.90	0.123

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 7	10 MHz	QPSK	20800	2505.0	1	0	**22.89**	**0.195**
					1	25	22.83	0.192
					1	49	22.86	0.193
					25	0	21.89	0.155
					25	13	21.88	0.154
					25	25	21.81	0.152
					50	0	21.80	0.151
			21100	2535.0	1	0	22.77	0.189
					1	25	22.87	0.194
					1	49	22.88	0.194
					25	0	21.88	0.154
					25	13	21.88	0.154
					25	25	21.88	0.154
					50	0	21.90	0.155
			21400	2565.0	1	0	22.86	0.193
					1	25	22.87	0.194
					1	49	22.82	0.191
					25	0	21.85	0.153
					25	13	21.85	0.153
					25	25	21.83	0.152
					50	0	21.82	0.152
		16QAM	20800	2505.0	1	0	21.81	0.152
					1	25	21.73	0.149
					1	49	21.77	0.150
					25	0	20.90	0.123
					25	13	20.91	0.123
					25	25	20.84	0.121
					50	0	20.83	0.121
			21100	2535.0	1	0	21.72	0.149
					1	25	21.81	0.152
					1	49	21.84	0.153
					25	0	20.94	0.124
					25	13	20.90	0.123
					25	25	20.94	0.124
					50	0	20.90	0.123
			21400	2565.0	1	0	21.80	0.151
					1	25	21.82	0.152
					1	49	21.79	0.151
					25	0	21.00	0.126
					25	13	21.01	0.126
					25	25	20.95	0.124
					50	0	20.90	0.123

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 7	15 MHz	QPSK	20850	2510.0	1	0	**23.03**	**0.201**
					1	50	22.92	0.196
					1	99	22.89	0.195
					50	0	21.86	0.153
					50	25	21.79	0.151
					50	50	21.78	0.151
					100	0	21.85	0.153
			21100	2535.0	1	0	22.99	0.199
					1	50	22.87	0.194
					1	99	22.75	0.188
					50	0	21.89	0.155
					50	25	21.78	0.151
					50	50	21.75	0.150
					100	0	21.87	0.154
			21350	2560.0	1	0	22.89	0.195
					1	50	22.76	0.189
					1	99	22.88	0.194
					50	0	21.85	0.153
					50	25	21.84	0.153
					50	50	21.73	0.149
					100	0	21.84	0.153
		16QAM	20850	2510.0	1	0	21.77	0.150
					1	50	21.85	0.153
					1	99	21.92	0.156
					50	0	20.83	0.121
					50	25	20.82	0.121
					50	50	20.96	0.125
					100	0	20.94	0.124
			21100	2535.0	1	0	21.63	0.146
					1	50	21.81	0.152
					1	99	21.90	0.155
					50	0	20.84	0.121
					50	25	20.89	0.123
					50	50	20.96	0.125
					100	0	20.93	0.124
			21350	2560.0	1	0	21.73	0.149
					1	50	21.82	0.152
					1	99	21.77	0.150
					50	0	20.84	0.121
					50	25	20.91	0.123
					50	50	20.94	0.124
					100	0	20.91	0.123

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 7	20 MHz	QPSK	20850	2510.0	1	0	**23.03**	**0.201**
					1	50	22.92	0.196
					1	99	22.89	0.195
					50	0	21.86	0.153
					50	25	21.79	0.151
					50	50	21.78	0.151
					100	0	21.85	0.153
			21100	2535.0	1	0	22.99	0.199
					1	50	22.87	0.194
					1	99	22.75	0.188
					50	0	21.89	0.155
					50	25	21.78	0.151
					50	50	21.75	0.150
					100	0	21.87	0.154
			21350	2560.0	1	0	22.89	0.195
					1	50	22.76	0.189
					1	99	22.88	0.194
					50	0	21.85	0.153
					50	25	21.84	0.153
					50	50	21.73	0.149
					100	0	21.84	0.153
		16QAM	20850	2510.0	1	0	21.77	0.150
					1	50	21.85	0.153
					1	99	21.92	0.156
					50	0	20.83	0.121
					50	25	20.82	0.121
					50	50	20.96	0.125
					100	0	20.94	0.124
			21100	2535.0	1	0	21.63	0.146
					1	50	21.81	0.152
					1	99	21.90	0.155
					50	0	20.84	0.121
					50	25	20.89	0.123
					50	50	20.96	0.125
					100	0	20.93	0.124
			21350	2560.0	1	0	21.73	0.149
					1	50	21.82	0.152
					1	99	21.77	0.150
					50	0	20.84	0.121
					50	25	20.91	0.123
					50	50	20.94	0.124
					100	0	20.91	0.123

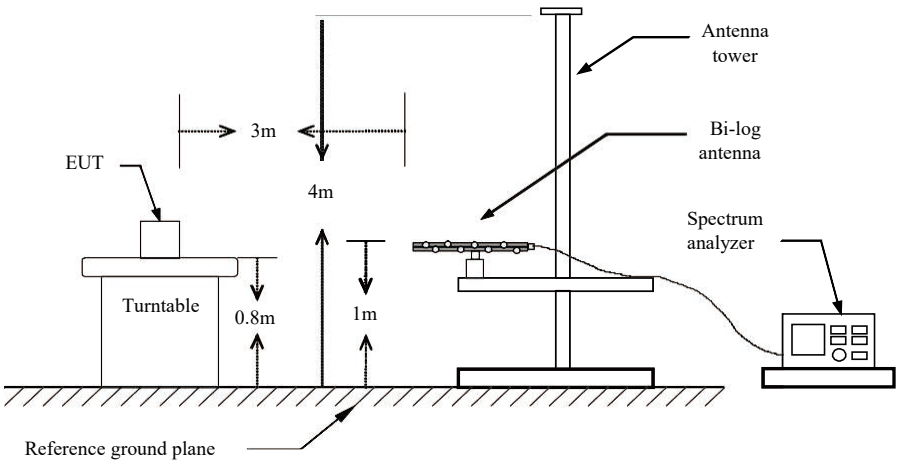
3 Effective Radiated Power / Equivalent Isotropic Radiated Power Test

3.1. Limit

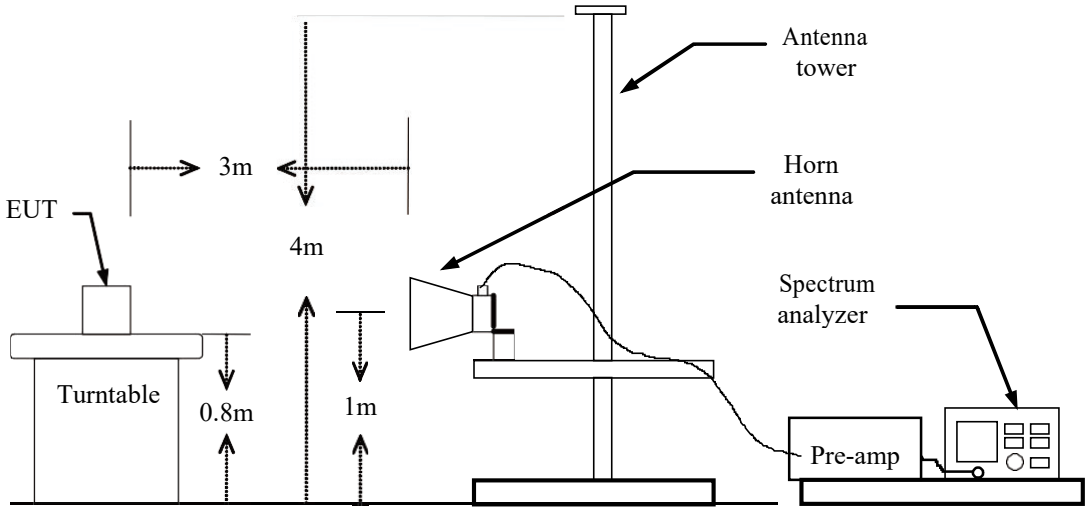
For FCC Part 27: The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 1 Watts.
For FCC Part 27.50(b)(9): Control stations and mobile stations transmitting in the 746-757 MHz, and 776-788 MHz bands are limited to 30 watts ERP.
For FCC Part 27.50(c)(9): Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.
For FCC Part 27.50(h)(2): Mobile stations are limited to 2.0 watts EIRP.
For FCC Part 22.913(a)(2): The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
For FCC Part 24.232(b): The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 2 Watts.

3.2. Test Setup

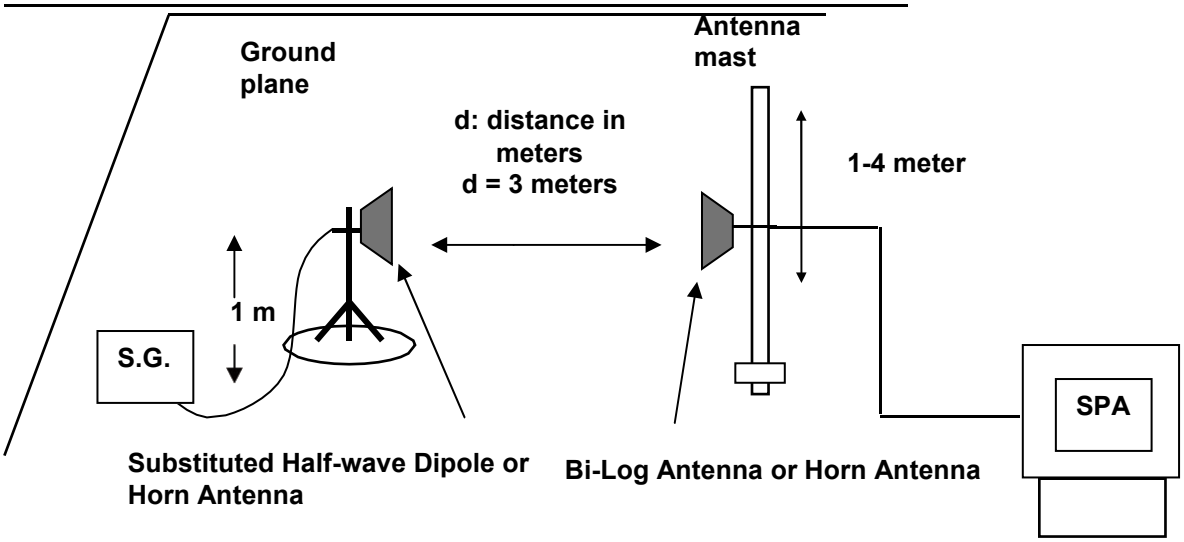
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



3.3. Test Procedure

a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RWB and VBW is 10MHz for LTE mode.

b. E.I.R.P power measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G.

d. E.I.R.P. = Output power level of S.G TX cable loss + Antenna gain of substitution horn

e. E.R.P. = E.I.R.P- 2.15 dB

3.4. Test Result

LTE Band 2								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
1.4 M	QPSK	1850.7	H	13.77	6.33	20.10	0.102	< 2
			V	17.08	6.33	**23.41**	**0.219**	< 2
		1880.0	H	13.42	6.55	19.97	0.099	< 2
			V	16.60	6.55	23.15	0.207	< 2
		1909.3	H	13.56	6.79	20.35	0.108	< 2
			V	16.24	6.79	23.03	0.201	< 2
	16QAM	1850.7	H	12.38	6.33	18.71	0.074	< 2
			V	15.34	6.33	21.67	0.147	< 2
		1880.0	H	11.88	6.54	18.42	0.070	< 2
			V	15.41	6.55	21.96	0.157	< 2
		1909.3	H	12.53	6.79	19.32	0.086	< 2
			V	15.09	6.79	21.88	0.154	< 2
3 MHz	QPSK	1851.5	H	13.84	6.33	20.17	0.104	< 2
			V	17.03	6.33	**23.36**	**0.217**	< 2
		1880.0	H	13.88	6.55	20.43	0.110	< 2
			V	16.46	6.55	23.01	0.200	< 2
		1908.5	H	12.53	6.77	19.30	0.085	< 2
			V	16.31	6.77	23.08	0.203	< 2
	16QAM	1851.5	H	12.28	6.34	18.62	0.073	< 2
			V	15.01	6.33	21.34	0.136	< 2
		1880.0	H	12.24	6.55	18.79	0.076	< 2
			V	14.70	6.55	21.25	0.133	< 2
		1908.5	H	11.90	6.76	18.66	0.073	< 2
			V	14.37	6.77	21.14	0.130	< 2
5 MHz	QPSK	1852.5	H	14.48	6.33	20.81	0.121	< 2
			V	17.00	6.33	**23.33**	**0.215**	< 2
		1880.0	H	13.90	6.54	20.44	0.111	< 2
			V	16.41	6.54	22.95	0.197	< 2
		1907.5	H	13.66	6.75	20.41	0.110	< 2
			V	16.27	6.75	23.02	0.200	< 2
	16QAM	1852.5	H	12.98	6.33	19.31	0.085	< 2
			V	15.79	6.33	22.12	0.163	< 2
		1880.0	H	12.64	6.54	19.18	0.083	< 2
			V	15.32	6.54	21.86	0.153	< 2
		1907.5	H	12.55	6.75	19.30	0.085	< 2
			V	14.76	6.75	21.51	0.142	< 2

LTE Band 2								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
10 M	QPSK	1855.0	H	14.35	6.34	20.69	0.117	< 2
			V	17.17	6.33	**23.50**	**0.224**	< 2
		1880.0	H	13.58	6.53	20.11	0.103	< 2
			V	16.33	6.53	22.86	0.193	< 2
		1905.0	H	13.58	6.71	20.29	0.107	< 2
			V	16.48	6.72	23.20	0.209	< 2
	16QAM	1855.0	H	12.86	6.33	19.19	0.083	< 2
			V	16.02	6.33	22.35	0.172	< 2
		1880.0	H	12.14	6.53	18.67	0.074	< 2
			V	14.79	6.53	21.32	0.136	< 2
		1905.0	H	12.17	6.72	18.89	0.077	< 2
			V	15.12	6.71	21.83	0.152	< 2
15 MHz	QPSK	1857.5	H	13.85	6.34	20.19	0.104	< 2
			V	17.18	6.34	**23.52**	**0.225**	< 2
		1880.0	H	13.75	6.52	20.27	0.106	< 2
			V	16.45	6.51	22.96	0.198	< 2
		1902.5	H	12.58	6.69	19.27	0.085	< 2
			V	16.35	6.69	23.04	0.201	< 2
	16QAM	1857.5	H	12.43	6.34	18.77	0.075	< 2
			V	15.64	6.34	21.98	0.158	< 2
		1880.0	H	12.36	6.51	18.87	0.077	< 2
			V	14.91	6.52	21.43	0.139	< 2
		1902.5	H	11.51	6.68	18.19	0.066	< 2
			V	15.23	6.68	21.91	0.155	< 2
20 MHz	QPSK	1860.0	H	13.96	6.34	20.30	0.107	< 2
			V	17.19	6.34	**23.53**	**0.225**	< 2
		1880.0	H	13.53	6.49	20.02	0.100	< 2
			V	16.48	6.49	22.97	0.198	< 2
		1900.0	H	13.82	6.64	20.46	0.111	< 2
			V	16.47	6.64	23.11	0.205	< 2
	16QAM	1860.0	H	12.56	6.34	18.90	0.078	< 2
			V	15.79	6.34	22.13	0.163	< 2
		1880.0	H	12.65	6.49	19.14	0.082	< 2
			V	15.09	6.49	21.58	0.144	< 2
		1900.0	H	12.68	6.64	19.32	0.086	< 2
			V	15.28	6.64	21.92	0.156	< 2

LTE Band 4								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
1.4 M	QPSK	1710.7	H	16.30	5.26	21.56	0.143	< 1
			V	18.07	5.26	**23.33**	**0.215**	< 1
		1732.5	H	15.28	5.44	20.72	0.118	< 1
			V	17.69	5.43	23.12	0.205	< 1
		1754.3	H	14.75	5.59	20.34	0.108	< 1
			V	17.43	5.59	23.02	0.200	< 1
	16QAM	1710.7	H	14.85	5.26	20.11	0.103	< 1
			V	16.82	5.26	22.08	0.161	< 1
		1732.5	H	13.81	5.43	19.24	0.084	< 1
			V	16.49	5.43	21.92	0.156	< 1
		1754.3	H	13.42	5.60	19.02	0.080	< 1
			V	16.27	5.59	21.86	0.153	< 1
3 MHz	QPSK	1711.5	H	16.11	5.26	21.37	0.137	< 1
			V	17.92	5.26	**23.18**	**0.208**	< 1
		1732.5	H	15.37	5.43	20.80	0.120	< 1
			V	17.74	5.42	23.16	0.207	< 1
		1753.5	H	15.57	5.58	21.15	0.130	< 1
			V	17.49	5.58	23.07	0.203	< 1
	16QAM	1711.5	H	14.53	5.26	19.79	0.095	< 1
			V	16.76	5.26	22.02	0.159	< 1
		1732.5	H	14.21	5.43	19.64	0.092	< 1
			V	16.46	5.43	21.89	0.155	< 1
		1753.5	H	14.27	5.58	19.85	0.097	< 1
			V	15.70	5.58	21.28	0.134	< 1
5 MHz	QPSK	1712.5	H	16.05	5.26	21.31	0.135	< 1
			V	17.96	5.26	**23.22**	**0.210**	< 1
		1732.5	H	15.40	5.41	20.81	0.121	< 1
			V	17.67	5.41	23.08	0.203	< 1
		1752.5	H	15.57	5.57	21.14	0.130	< 1
			V	17.40	5.57	22.97	0.198	< 1
	16QAM	1712.5	H	14.53	5.26	19.79	0.095	< 1
			V	16.62	5.26	21.88	0.154	< 1
		1732.5	H	14.37	5.41	19.78	0.095	< 1
			V	16.06	5.41	21.47	0.140	< 1
		1752.5	H	13.71	5.57	19.28	0.085	< 1
			V	15.89	5.57	21.46	0.140	< 1

LTE Band 4								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
10 M	QPSK	1715.0	H	15.84	5.26	21.10	0.129	< 1
			V	18.02	5.26	**23.28**	**0.213**	< 1
		1732.5	H	15.89	5.39	21.28	0.134	< 1
			V	17.76	5.39	23.15	0.207	< 1
		1750.0	H	15.96	5.54	21.50	0.141	< 1
			V	17.57	5.54	23.11	0.205	< 1
	16QAM	1715.0	H	14.65	5.27	19.92	0.098	< 1
			V	16.49	5.27	21.76	0.150	< 1
		1732.5	H	13.86	5.39	19.25	0.084	< 1
			V	16.09	5.39	21.48	0.141	< 1
		1750.0	H	13.88	5.54	19.42	0.087	< 1
			V	16.15	5.54	21.69	0.148	< 1
15 MHz	QPSK	1717.5	H	15.94	5.27	21.21	0.132	< 1
			V	17.82	5.27	23.09	0.204	< 1
		1732.5	H	15.89	5.38	21.27	0.134	< 1
			V	17.82	5.38	**23.20**	**0.209**	< 1
		1747.5	H	15.36	5.49	20.85	0.122	< 1
			V	17.58	5.49	23.07	0.203	< 1
	16QAM	1717.5	H	14.51	5.27	19.78	0.095	< 1
			V	15.78	5.27	21.05	0.127	< 1
		1732.5	H	14.52	5.38	19.90	0.098	< 1
			V	15.73	5.38	21.11	0.129	< 1
		1747.5	H	14.27	5.49	19.76	0.095	< 1
			V	15.89	5.49	21.38	0.137	< 1
20 MHz	QPSK	1720.0	H	15.82	5.27	21.09	0.129	< 1
			V	18.11	5.27	**23.38**	**0.218**	< 1
		1732.5	H	15.80	5.37	21.17	0.131	< 1
			V	17.84	5.37	23.21	0.209	< 1
		1745.0	H	15.83	5.45	21.28	0.134	< 1
			V	16.57	5.46	22.03	0.160	< 1
	16QAM	1720.0	H	14.40	5.27	19.67	0.093	< 1
			V	16.12	5.27	21.39	0.138	< 1
		1732.5	H	14.15	5.36	19.51	0.089	< 1
			V	16.07	5.36	21.43	0.139	< 1
		1745.0	H	13.87	5.45	19.32	0.086	< 1
			V	16.15	5.45	21.60	0.145	< 1

LTE Band 5								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.R.P.		Limit (W)
						(dBm)	(W)	
1.4 M	QPSK	824.7	H	9.55	10.81	20.36	0.109	< 7
			V	12.04	10.81	**22.85**	**0.193**	< 7
		836.5	H	9.37	10.82	20.19	0.104	< 7
			V	11.98	10.82	22.80	0.191	< 7
		848.3	H	9.31	10.90	20.21	0.105	< 7
			V	11.53	10.90	22.43	0.175	< 7
	16QAM	824.7	H	8.37	10.81	19.18	0.083	< 7
			V	10.55	10.82	21.37	0.137	< 7
		836.5	H	8.28	10.82	19.10	0.081	< 7
			V	10.84	10.82	21.66	0.147	< 7
		848.3	H	8.61	10.90	19.51	0.089	< 7
			V	10.43	10.90	21.33	0.136	< 7
3 MHz	QPSK	825.5	H	9.98	10.81	20.79	0.120	< 7
			V	11.81	10.81	22.62	0.183	< 7
		836.5	H	10.11	10.81	20.92	0.124	< 7
			V	12.05	10.81	**22.86**	**0.193**	< 7
		847.5	H	10.07	10.87	20.94	0.124	< 7
			V	11.97	10.87	22.84	0.192	< 7
	16QAM	825.5	H	8.54	10.81	19.35	0.086	< 7
			V	10.51	10.82	21.33	0.136	< 7
		836.5	H	8.76	10.81	19.57	0.091	< 7
			V	10.84	10.81	21.65	0.146	< 7
		847.5	H	8.73	10.87	19.60	0.091	< 7
			V	10.75	10.87	21.62	0.145	< 7
5 MHz	QPSK	826.5	H	10.05	10.82	20.87	0.122	< 7
			V	11.99	10.82	22.81	0.191	< 7
		836.5	H	10.08	10.82	20.90	0.123	< 7
			V	11.92	10.82	22.74	0.188	< 7
		846.5	H	9.85	10.85	20.70	0.117	< 7
			V	11.99	10.86	**22.85**	**0.193**	< 7
	16QAM	826.5	H	8.62	10.82	19.44	0.088	< 7
			V	10.87	10.81	21.68	0.147	< 7
		836.5	H	8.89	10.82	19.71	0.094	< 7
			V	10.76	10.82	21.58	0.144	< 7
		846.5	H	8.58	10.86	19.44	0.088	< 7
			V	10.88	10.86	21.74	0.149	< 7

LTE Band 5								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.R.P.		Limit (W)
						(dBm)	(W)	
10 M	QPSK	829.0	H	10.06	10.82	20.88	0.122	< 7
			V	12.15	10.82	**22.97**	**0.198**	< 7
		836.5	H	10.01	10.81	20.82	0.121	< 7
			V	11.64	10.81	22.45	0.176	< 7
		844.0	H	10.09	10.82	20.91	0.123	< 7
			V	12.12	10.82	22.94	0.197	< 7
	16QAM	829.0	H	8.94	10.82	19.76	0.095	< 7
			V	10.96	10.82	21.78	0.151	< 7
		836.5	H	8.86	10.81	19.67	0.093	< 7
			V	10.47	10.81	21.28	0.134	< 7
		844.0	H	8.69	10.82	19.51	0.089	< 7
			V	10.98	10.82	21.80	0.151	< 7

LTE Band 7								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
5 M	QPSK	2502.5	H	11.42	10.16	21.58	0.144	< 2
			V	13.30	10.16	**23.46**	**0.222**	< 2
		2535.0	H	10.91	10.41	21.32	0.136	< 2
			V	12.98	10.41	23.39	0.218	< 2
		2567.5	H	11.18	10.65	21.83	0.152	< 2
			V	12.42	10.65	23.07	0.203	< 2
	16QAM	2502.5	H	9.57	10.16	19.73	0.094	< 2
			V	11.14	10.16	21.30	0.135	< 2
		2535.0	H	8.83	10.41	19.24	0.084	< 2
			V	10.93	10.41	21.34	0.136	< 2
		2567.5	H	8.96	10.65	19.61	0.091	< 2
			V	11.14	10.65	21.79	0.151	< 2
10 MHz	QPSK	2502.5	H	11.06	10.16	21.22	0.132	< 2
			V	13.20	10.17	**23.37**	**0.217**	< 2
		2535.0	H	10.50	10.38	20.88	0.122	< 2
			V	12.67	10.38	23.05	0.202	< 2
		2567.5	H	10.18	10.62	20.80	0.120	< 2
			V	12.54	10.62	23.16	0.207	< 2
	16QAM	2502.5	H	9.22	10.17	19.39	0.087	< 2
			V	11.03	10.16	21.19	0.132	< 2
		2535.0	H	9.40	10.38	19.78	0.095	< 2
			V	11.34	10.38	21.72	0.149	< 2
		2567.5	H	9.15	10.62	19.77	0.095	< 2
			V	11.11	10.62	21.73	0.149	< 2
15 MHz	QPSK	2502.5	H	11.60	10.17	21.77	0.150	< 2
			V	12.96	10.17	23.13	0.206	< 2
		2535.0	H	10.30	10.38	20.68	0.117	< 2
			V	12.78	10.38	**23.16**	**0.207**	< 2
		2567.5	H	9.76	10.58	20.34	0.108	< 2
			V	12.39	10.58	22.97	0.198	< 2
	16QAM	2502.5	H	9.40	10.17	19.57	0.091	< 2
			V	10.83	10.17	21.00	0.126	< 2
		2535.0	H	8.93	10.38	19.31	0.085	< 2
			V	11.55	10.38	21.93	0.156	< 2
		2567.5	H	8.53	10.58	19.11	0.081	< 2
			V	11.25	10.58	21.83	0.152	< 2

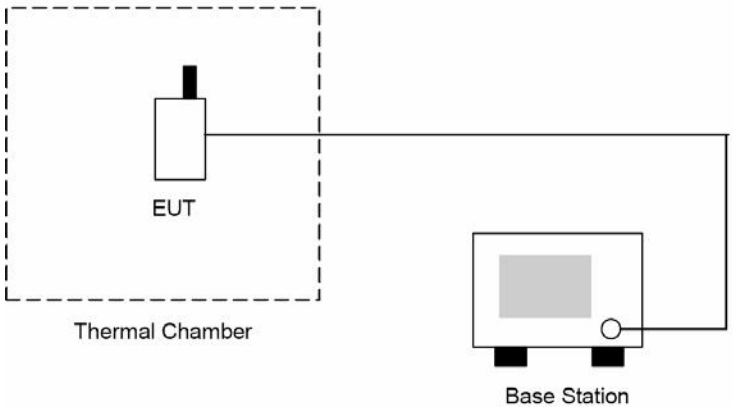
LTE Band 7								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
20 M	QPSK	2502.5	H	11.50	10.17	21.67	0.147	< 2
			V	13.04	10.17	**23.21**	**0.209**	< 2
		2535.0	H	10.46	10.36	20.82	0.121	< 2
			V	12.71	10.36	23.07	0.203	< 2
		2567.5	H	10.63	10.55	21.18	0.131	< 2
			V	12.56	10.55	23.11	0.205	< 2
	16QAM	2502.5	H	9.35	10.17	19.52	0.090	< 2
			V	11.04	10.17	21.21	0.132	< 2
		2535.0	H	9.46	10.36	19.82	0.096	< 2
			V	10.82	10.36	21.18	0.131	< 2
		2567.5	H	9.01	10.55	19.56	0.090	< 2
			V	11.29	10.55	21.84	0.153	< 2

4 Frequency Stability Test

4.1. Limit

According to the FCC rule shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with the 2.1055(a)(1) -30℃ ~ 50℃.

4.2. Setup



4.3. Test Procedure

The measurement is made according to FCC rules:

1. The EUT and test equipment were set up as shown on the following section.
2. With all power removed, the temperature was decreased to -30℃ and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.
3. With power OFF, the temperature was raised in 10℃ steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
4. The EUT was placed in a temperature chamber at 25 ± 5 ℃ and connected as the following section.
5. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
6. The temperature tests were performed for the worst case.
7. Test data was recorded.

4.4. Test Result

LTE Band 2 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1880.0	138	20	-2	-0.001	± 2.5
		120	20	6	0.003	± 2.5
		102	20	3	0.002	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1880.0	120	-30	-4	-0.002	± 2.5
		120	-20	-2	-0.001	± 2.5
		120	-10	1	0.001	± 2.5
		120	0	3	0.002	± 2.5
		120	10	5	0.003	± 2.5
		120	20	-3	-0.002	± 2.5
		120	30	-6	-0.003	± 2.5
		120	40	-9	-0.005	± 2.5
		120	50	-3	-0.002	± 2.5

LTE Band 4 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vac]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1732.5	138	20	-10	-0.006	± 2.5
		120	20	3	0.002	± 2.5
		102	20	-5	-0.003	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1732.5	120	-30	-11	-0.006	± 2.5
		120	-20	-6	-0.003	± 2.5
		120	-10	-1	-0.001	± 2.5
		120	0	13	0.008	± 2.5
		120	10	1	0.001	± 2.5
		120	20	12	0.007	± 2.5
		120	30	-5	-0.003	± 2.5
		120	40	-10	-0.006	± 2.5
		120	50	-1	-0.001	± 2.5

LTE Band 5 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	836.5	138	20	-1	-0.001	± 2.5
		120	20	-2	-0.002	± 2.5
		102	20	-7	-0.008	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	836.5	120	-30	-2	-0.002	± 2.5
		120	-20	0	0.000	± 2.5
		120	-10	11	0.013	± 2.5
		120	0	5	0.006	± 2.5
		120	10	7	0.008	± 2.5
		120	20	8	0.010	± 2.5
		120	30	3	0.004	± 2.5
		120	40	-1	-0.001	± 2.5
		120	50	-6	-0.007	± 2.5

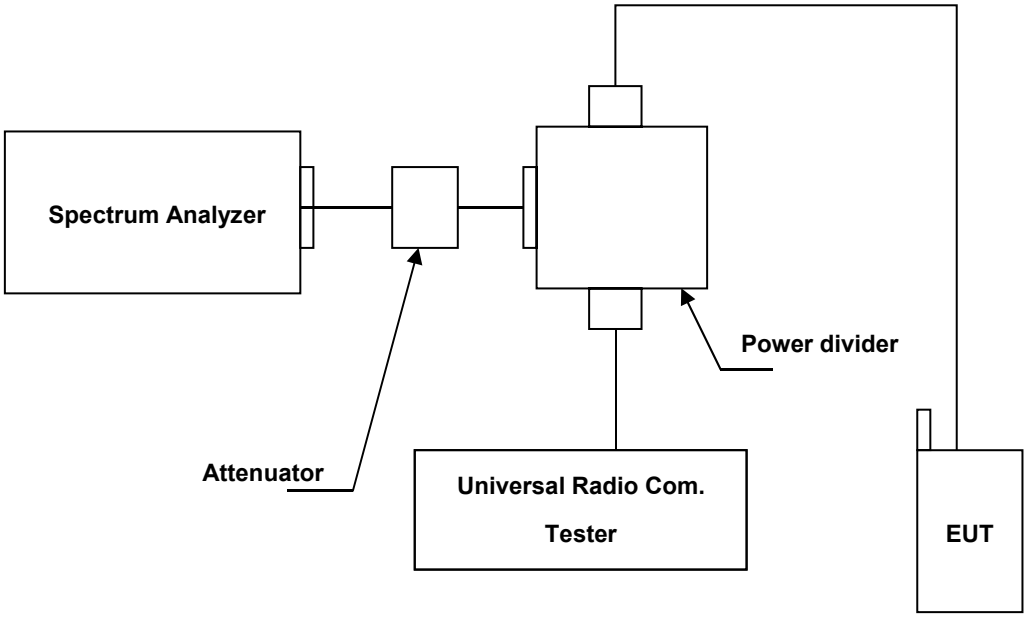
LTE Band 7 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	2535.0	138	20	5	0.002	± 2.5
		120	20	5	0.002	± 2.5
		102	20	6	0.002	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	2535.0	120	-30	-3	-0.001	± 2.5
		120	-20	-11	-0.004	± 2.5
		120	-10	10	0.004	± 2.5
		120	0	-3	-0.001	± 2.5
		120	10	1	0.000	± 2.5
		120	20	10	0.004	± 2.5
		120	30	-1	0.000	± 2.5
		120	40	-14	-0.006	± 2.5
		120	50	-4	-0.002	± 2.5

5 Emission Bandwidth & Occupied Bandwidth Test

5.1. Limit

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.
The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

5.2. Setup



5.3. Test Procedure

The measurement is made according to FCC rules:

a. The EUT makes a phone call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels. (low, middle and high operational frequency range.)

b. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

c. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

5.4. Test Result

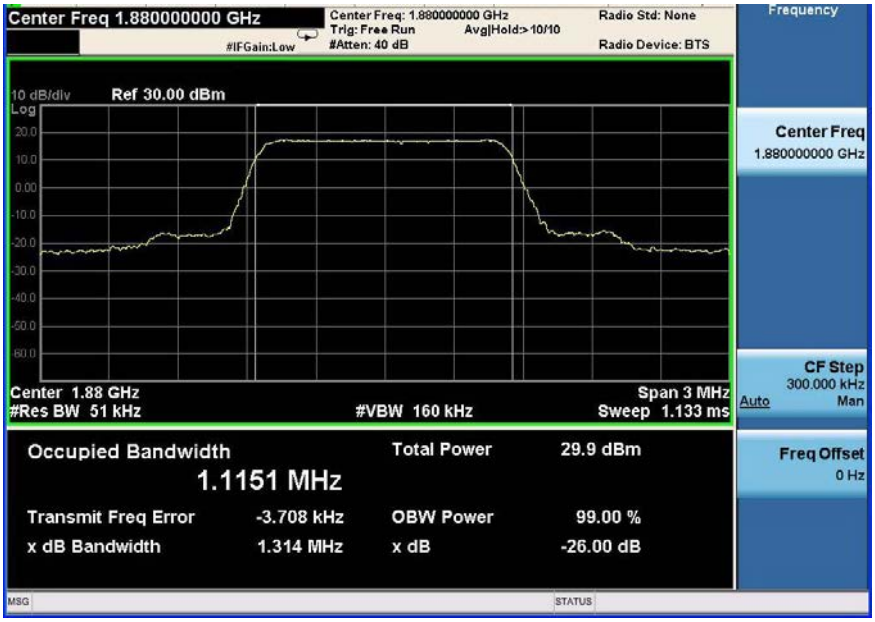
LTE Band 2				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	1850.7	1.312	1.1263
		1880.0	1.314	1.1151
		1909.3	1.306	1.1246
	3 MHz	1851.5	3.033	2.7329
		1880.0	3.050	2.7425
		1908.5	3.026	2.7396
	5 MHz	1852.5	5.062	4.5271
		1880.0	5.059	4.5476
		1907.5	5.025	4.5261
	10 MHz	1855.0	10.12	9.0437
		1880.0	10.18	9.0808
		1905.0	10.18	9.0603
	15 MHz	1857.5	14.83	13.486
		1880.0	15.01	13.537
		1902.5	14.83	13.510
	20 MHz	1860.0	19.43	17.938
		1880.0	19.32	17.937
		1900.0	19.48	17.906
16QAM	1.4 MHz	1850.7	1.291	1.113
		1880.0	1.300	1.123
		1909.3	1.311	1.115
	3 MHz	1851.5	3.025	2.737
		1880.0	3.021	2.742
		1908.5	3.018	2.729
	5 MHz	1852.5	5.067	4.556
		1880.0	5.030	4.525
		1907.5	5.105	4.541
	10 MHz	1855.0	10.06	9.039
		1880.0	10.10	9.078
		1905.0	10.05	9.064
	15 MHz	1857.5	13.51	14.88
		1880.0	13.54	14.89
		1902.5	13.50	14.69
	20 MHz	1860.0	17.94	19.50
		1880.0	17.96	19.31
		1900.0	17.91	19.36

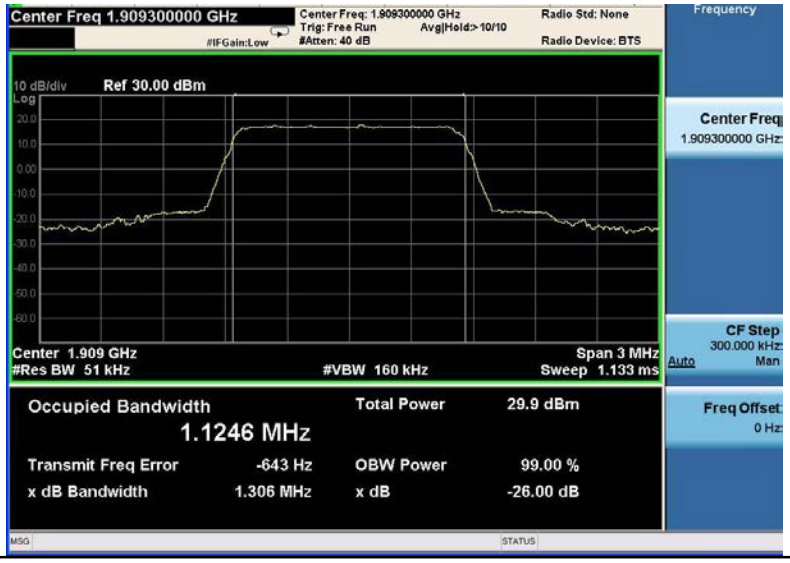
LTE Band 4				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	1710.7	1.301	1.1088
		1732.5	1.313	1.1236
		1754.3	1.309	1.1110
	3 MHz	1711.5	3.009	2.7547
		1732.5	3.041	2.7786
		1753.5	3.046	2.7545
	5 MHz	1712.5	5.080	4.5096
		1732.5	5.053	4.5211
		1752.5	4.990	4.5093
	10 MHz	1715.0	10.011	9.0306
		1732.5	9.885	9.0144
		1750.0	9.995	9.0152
	15 MHz	1717.5	14.756	13.4661
		1732.5	14.620	13.4983
		1747.5	14.553	13.4160
	20 MHz	1720.0	19.193	17.8990
		1732.5	19.288	17.9087
		1745.0	19.441	17.8692
16QAM	1.4 MHz	1710.7	1.297	1.1112
		1732.5	1.276	1.1153
		1754.3	1.300	1.1192
	3 MHz	1711.5	2.983	2.7363
		1732.5	3.022	2.7334
		1753.5	3.036	2.7335
	5 MHz	1712.5	5.024	4.5231
		1732.5	5.051	4.5058
		1752.5	5.047	4.5374
	10 MHz	1715.0	9.979	9.0343
		1732.5	9.942	9.0097
		1750.0	10.058	9.0050
	15 MHz	1717.5	14.511	13.5163
		1732.5	14.772	13.4734
		1747.5	14.628	13.4787
	20 MHz	1720.0	19.287	17.9136
		1732.5	19.211	17.8931
		1745.0	19.302	17.8845

LTE Band 5				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	824.7	1.292	1.0870
		836.5	1.296	1.0882
		848.3	1.282	1.0928
	3 MHz	825.5	2.985	2.7044
		836.5	2.974	2.7025
		847.5	2.987	2.7050
	5 MHz	826.5	4.978	4.5029
		836.5	4.997	4.4898
		846.5	4.977	4.5002
	10 MHz	829.0	9.924	8.9577
		836.5	9.867	8.9437
		844.0	9.874	8.943
16QAM	1.4 MHz	824.7	1.298	1.0936
		836.5	1.287	1.0853
		848.3	1.288	1.0865
	3 MHz	825.5	2.983	2.7044
		836.5	2.988	2.6956
		847.5	2.986	2.6992
	5 MHz	826.5	4.994	4.4938
		836.5	4.993	4.5048
		846.5	5.049	4.5042
	10 MHz	829.0	9.866	8.9543
		836.5	9.841	8.9313
		844.0	9.890	8.9315

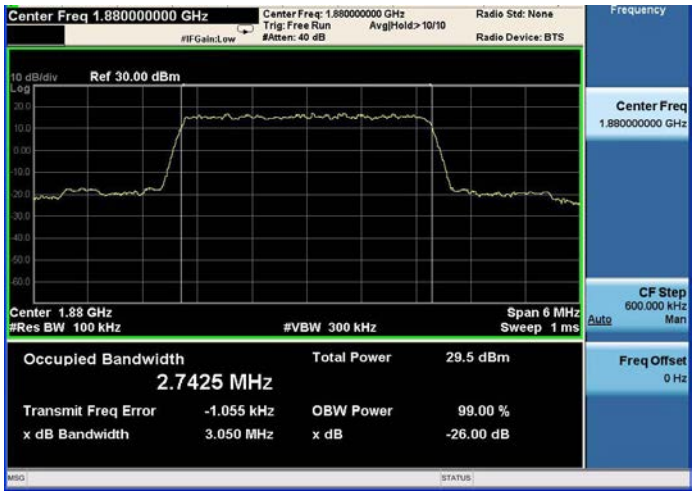
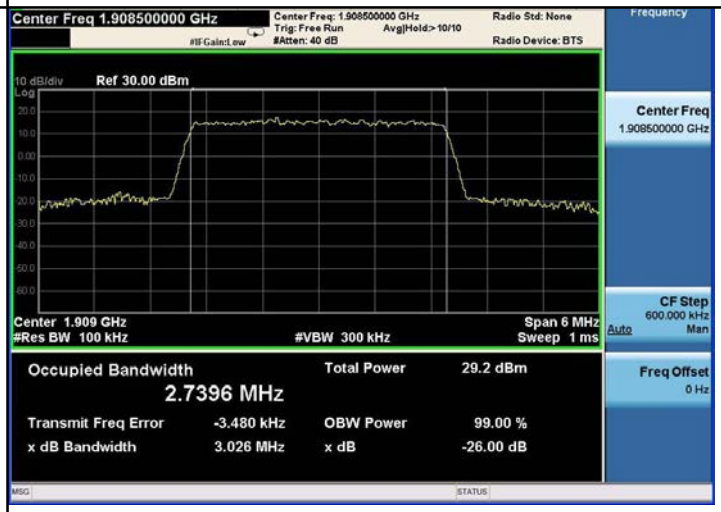
LTE Band 7				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	5 MHz	2502.5	4.975	4.5092
		2535.0	4.947	4.5243
		2567.5	5.025	4.5224
	10 MHz	2505.0	10.163	9.0060
		2535.0	9.943	9.0364
		2565.0	9.971	9.0045
	15 MHz	2507.5	14.669	13.4974
		2535.0	14.485	13.5314
		2562.5	14.737	13.5004
	20 MHz	2510.0	19.131	17.9070
		2535.0	19.302	17.8701
		2560.0	19.322	17.8716
16QAM	5 MHz	2502.5	4.5218	5.016
		2535.0	4.5276	5.019
		2567.5	4.5104	5.003
	10 MHz	2505.0	8.9961	9.956
		2535.0	9.0435	9.995
		2565.0	9.0369	10.062
	15 MHz	2507.5	13.4665	14.760
		2535.0	13.4415	14.806
		2562.5	13.5706	14.914
	20 MHz	2510.0	17.8639	19.302
		2535.0	17.9526	18.990
		2560.0	17.9075	19.218

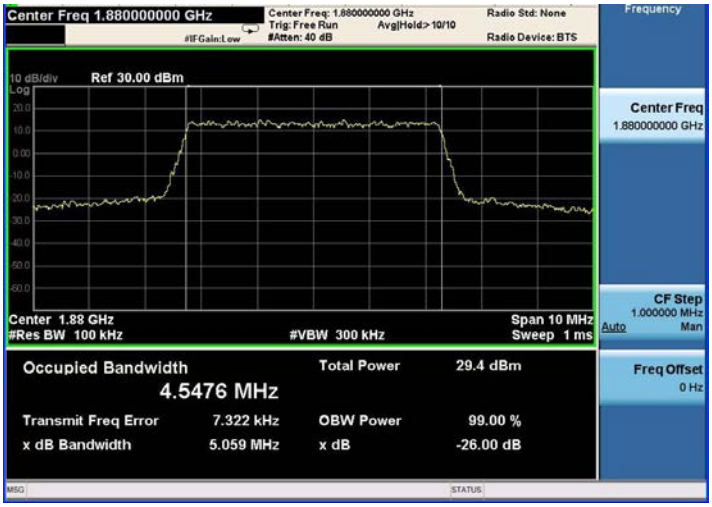
5.5. Test Graphs

LTE Band 2 (Channel Bandwidth: 1.4 MHz) _ QPSK	
1850.7 MHz	
1880.0 MHz	

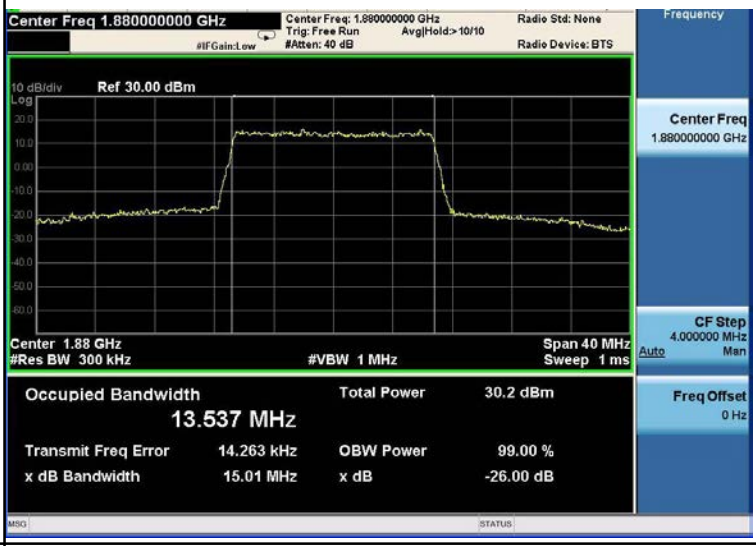
1909.3 MHz	

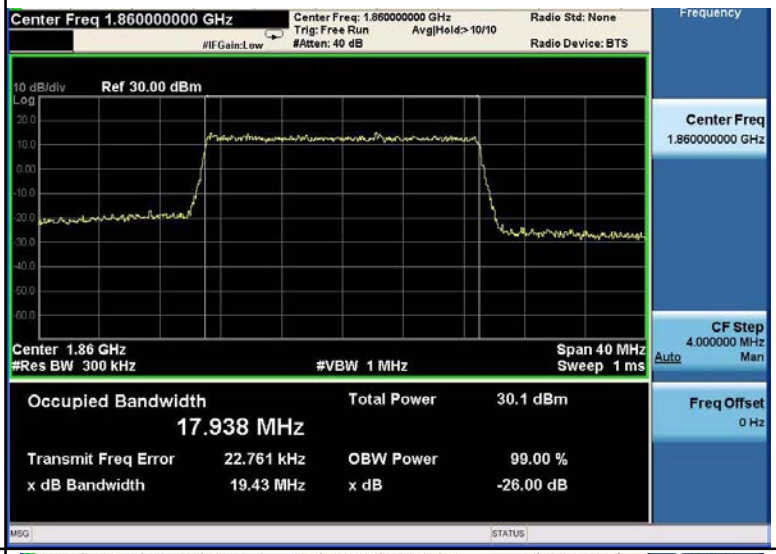
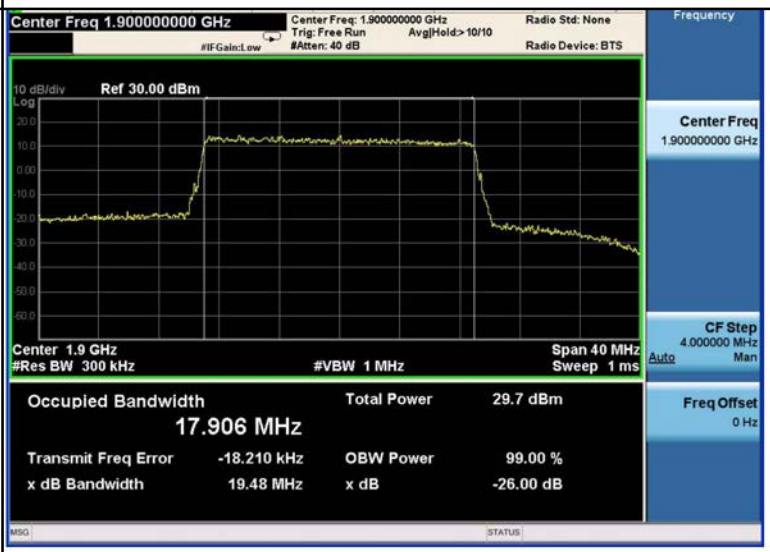
Center Freq 1.909300000 GHz
Center Freq: 1.909300000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 30.00 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
Center Freq
1.909300000 GHz
Center 1.909 GHz
#Res BW 51 kHz
#VBW 160 kHz
Span 3 MHz
Sweep 1.133 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
1.1246 MHz
Total Power
29.9 dBm
Freq Offset
0 Hz
Transmit Freq Error
-643 Hz
OBW Power
99.00 %
x dB Bandwidth
1.306 MHz
x dB
-26.00 dB
MSG
STATUS

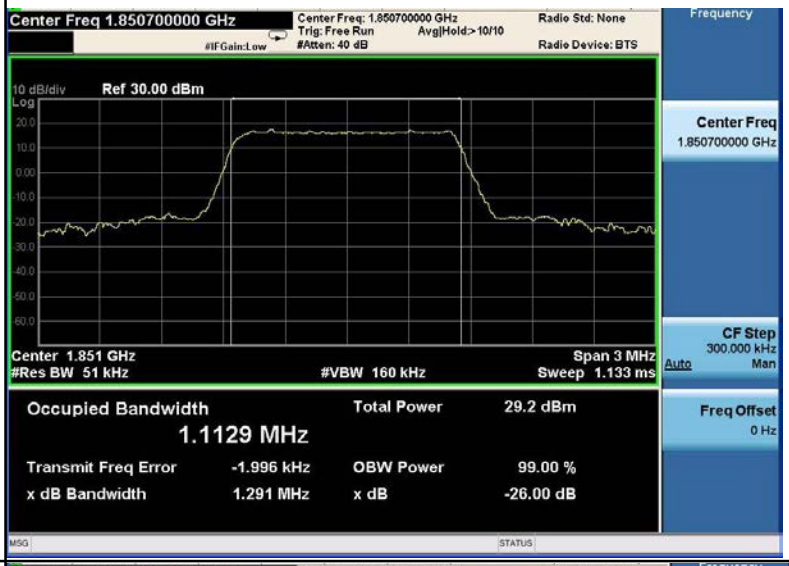
LTE Band 2 (Channel Bandwidth: 3 MHz) _ QPSK	
1851.5 MHz	
1880.0 MHz	
1908.5 MHz	

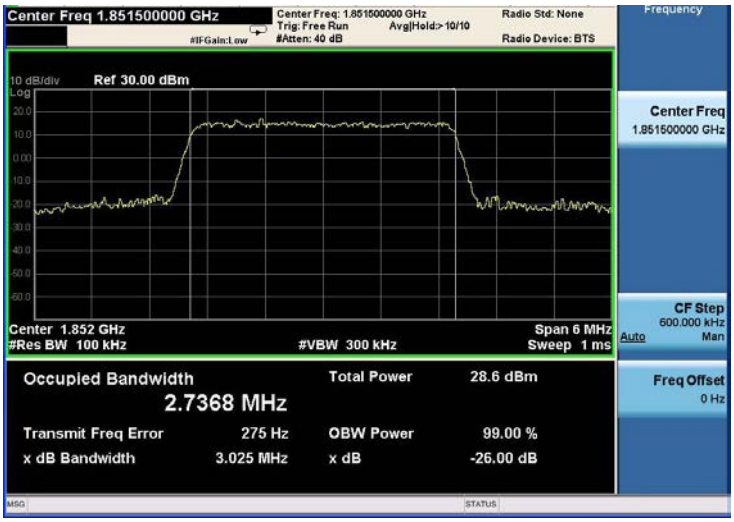
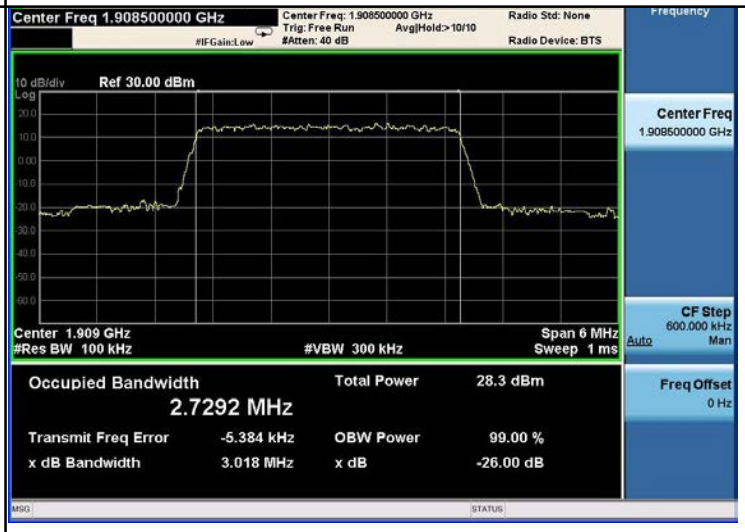
LTE Band 2 (Channel Bandwidth: 5 MHz) _ QPSK	
1852.5 MHz	
1880.0 MHz	
1907.5 MHz	

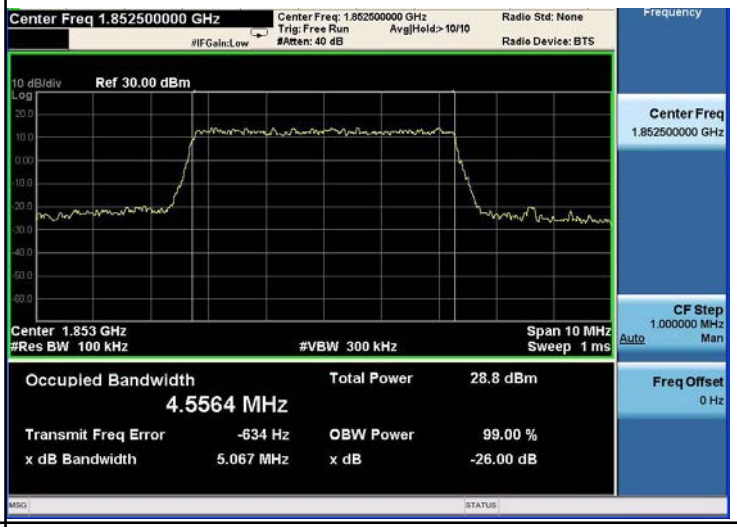
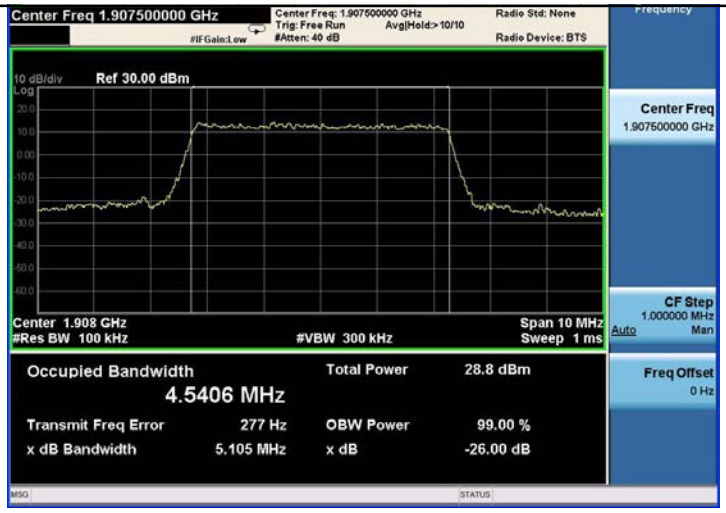
LTE Band 2 (Channel Bandwidth: 10 MHz) _ QPSK	
1855.0 MHz	
1880.0 MHz	
1905.0 MHz	

LTE Band 2 (Channel Bandwidth: 15 MHz) _ QPSK	
1857.5 MHz	
1880.0 MHz	
1902.5 MHz	

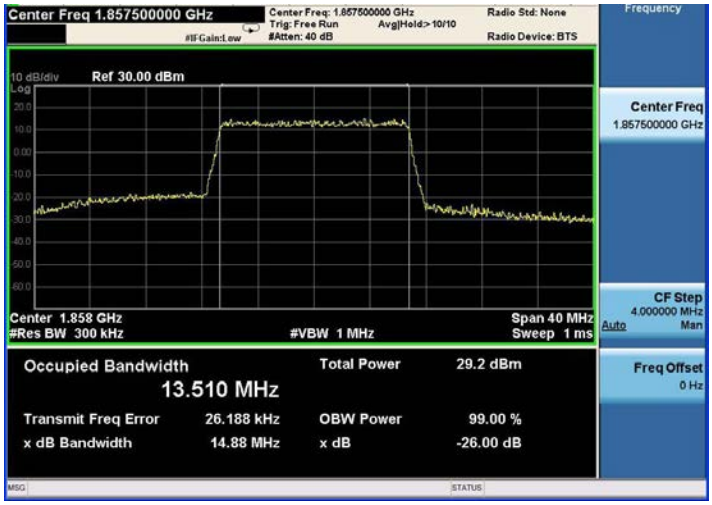
LTE Band 2 (Channel Bandwidth: 20 MHz) _ QPSK	
1860.0 MHz	
1880.0 MHz	
1900.0 MHz	

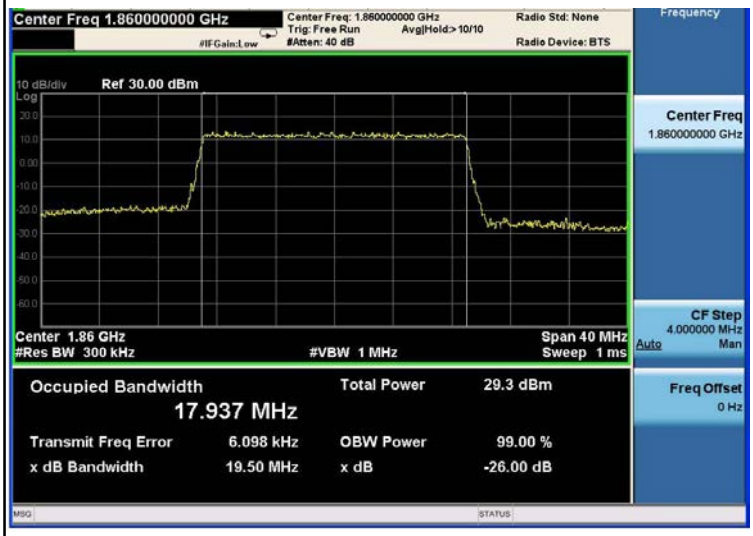
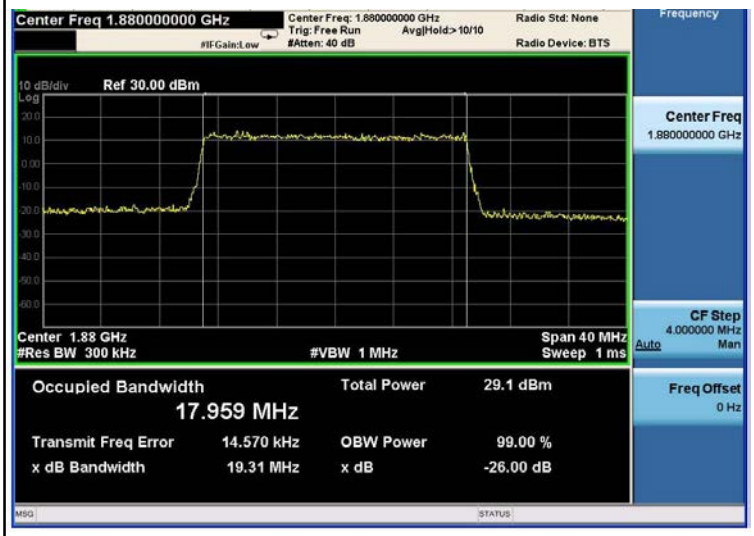
LTE Band 2 (Channel Bandwidth: 1.4 MHz) _ 16QAM	
1850.7 MHz	
1880.0 MHz	
1909.3 MHz	

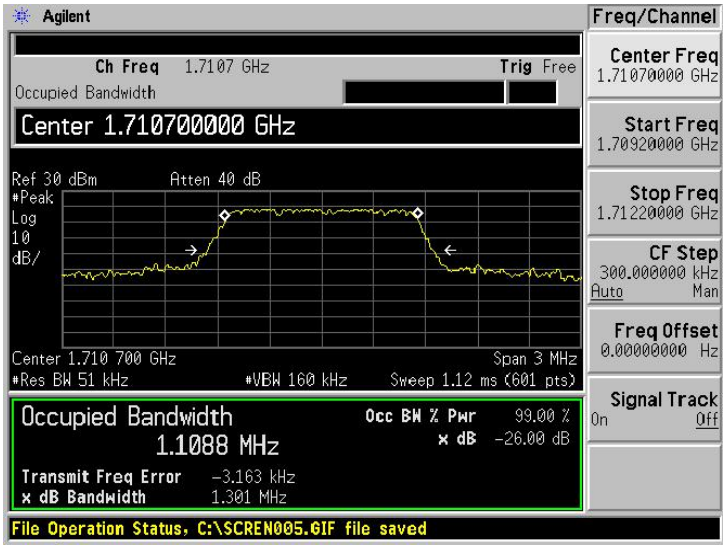
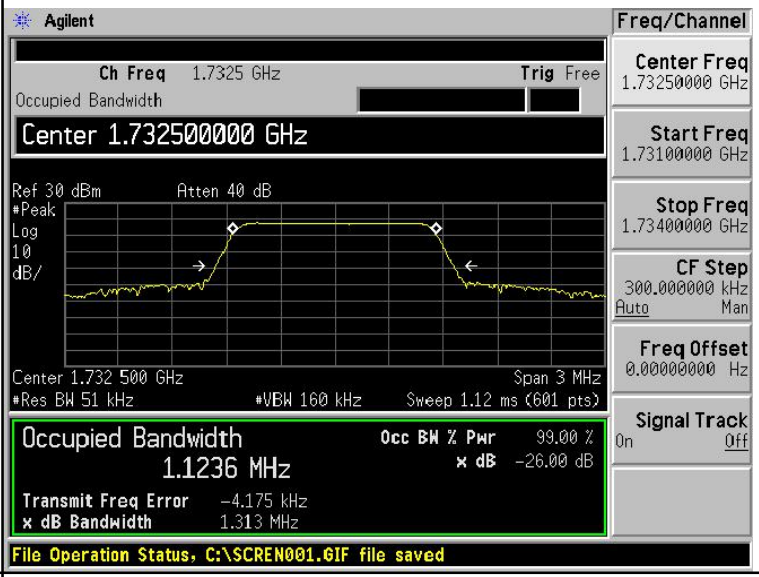
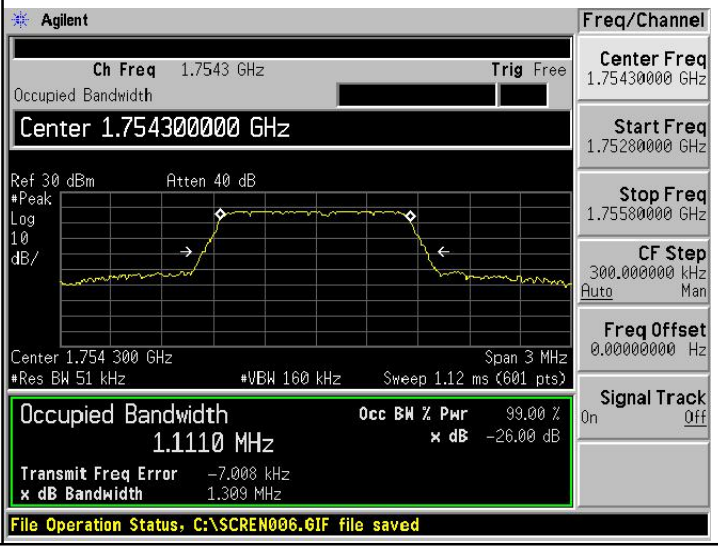
LTE Band 2 (Channel Bandwidth: 3 MHz) _ 16QAM	
1851.5 MHz	
1880.0 MHz	
1908.5 MHz	

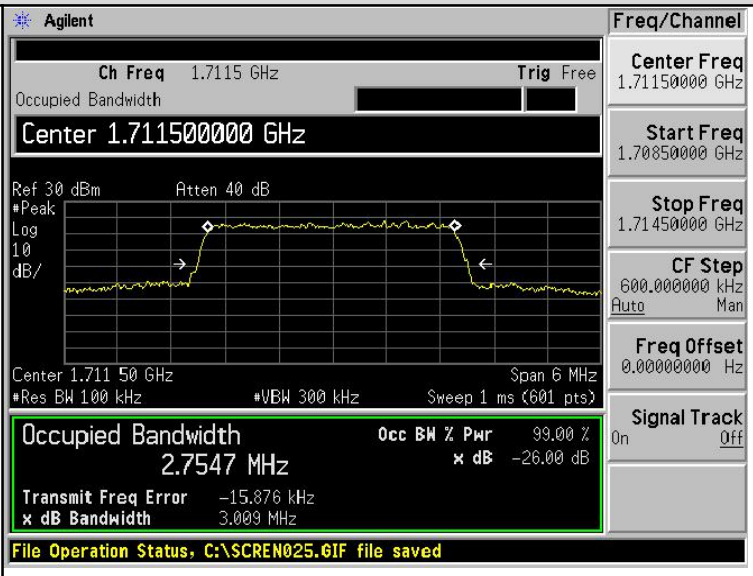
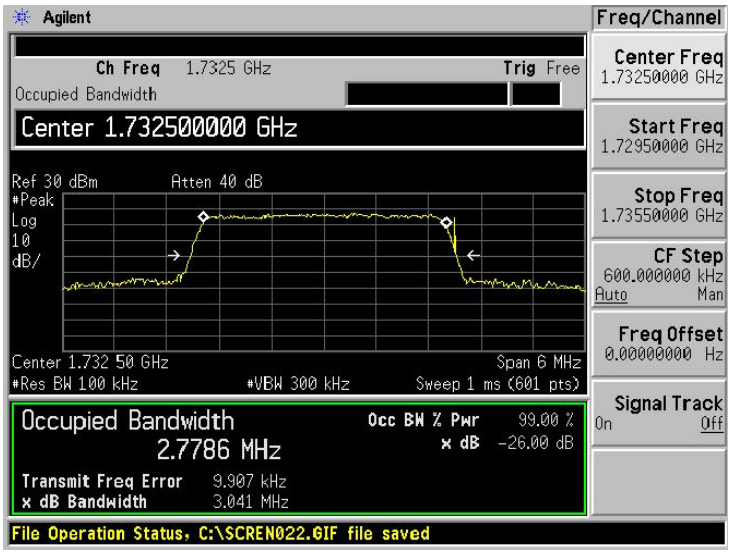
LTE Band 2 (Channel Bandwidth: 5 MHz) _ 16QAM	
1852.5 MHz	
1880.0 MHz	
1907.5 MHz	

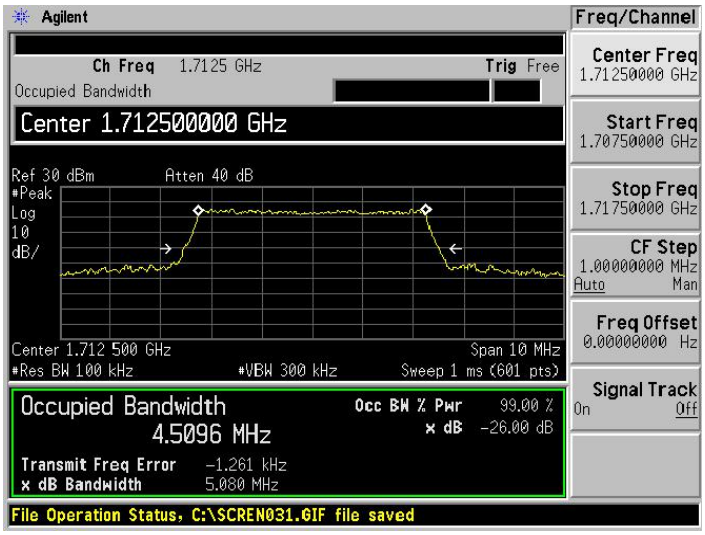
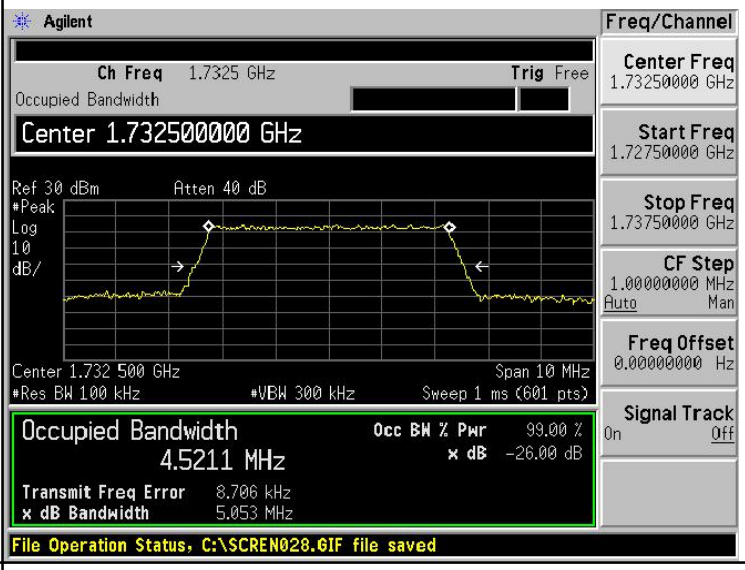
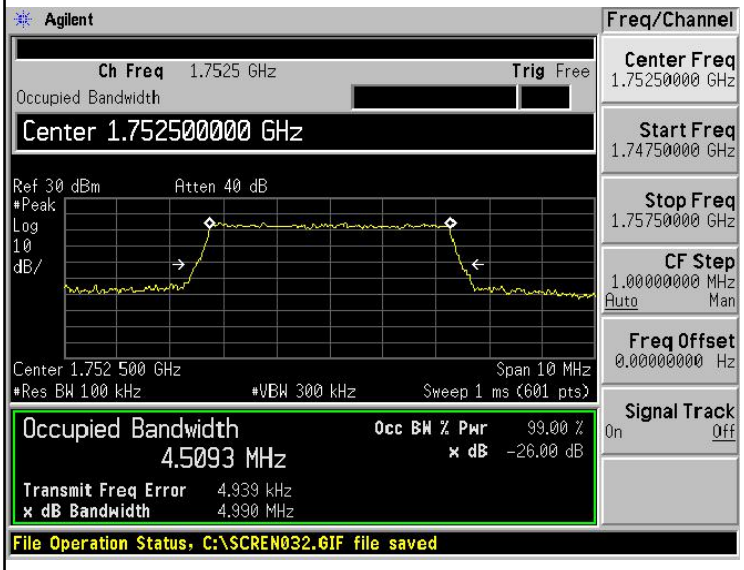
LTE Band 2 (Channel Bandwidth: 10 MHz) _ 16QAM	
1855.0 MHz	
1880.0 MHz	
1905.0 MHz	

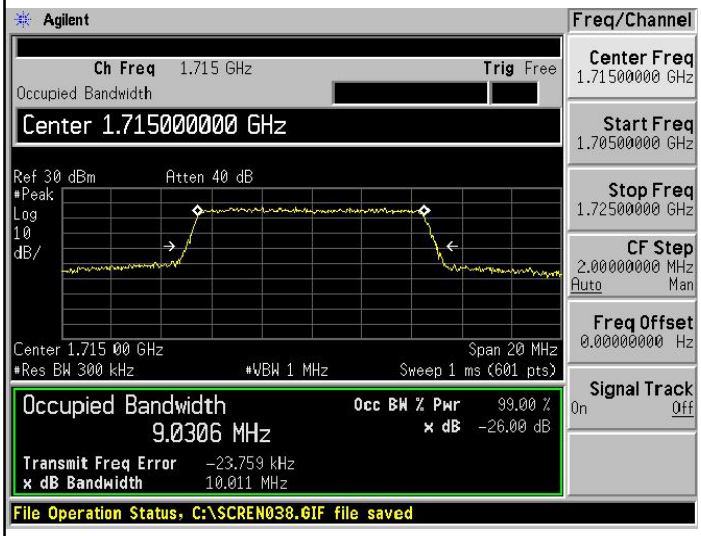
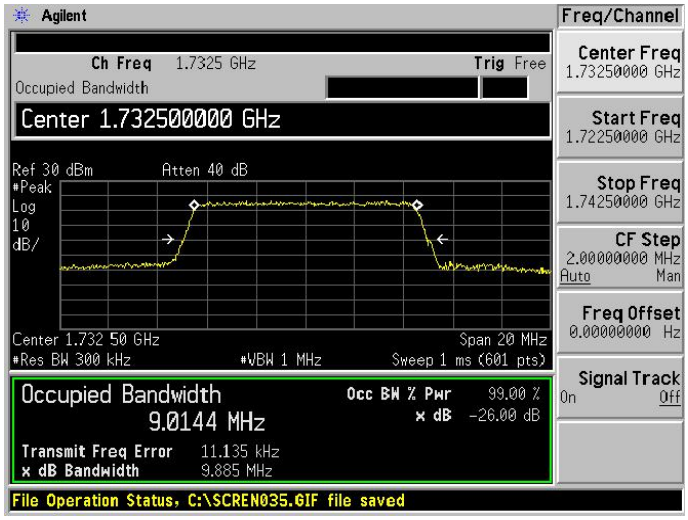
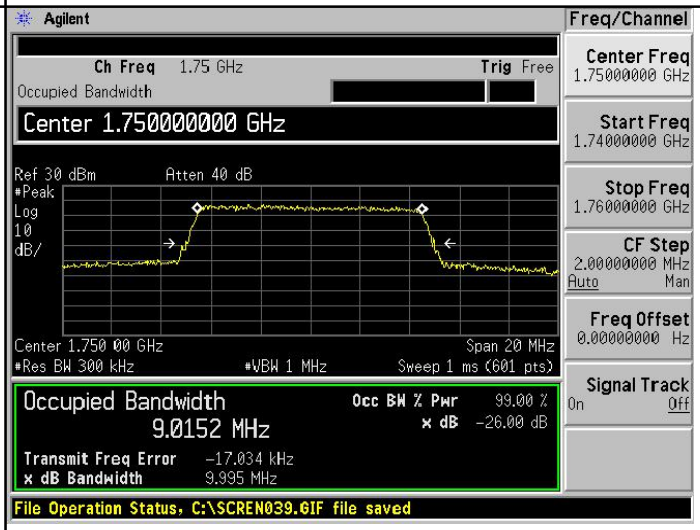
LTE Band 2 (Channel Bandwidth: 15 MHz) _ 16QAM	
1857.5 MHz	
1880.0 MHz	
1902.5 MHz	

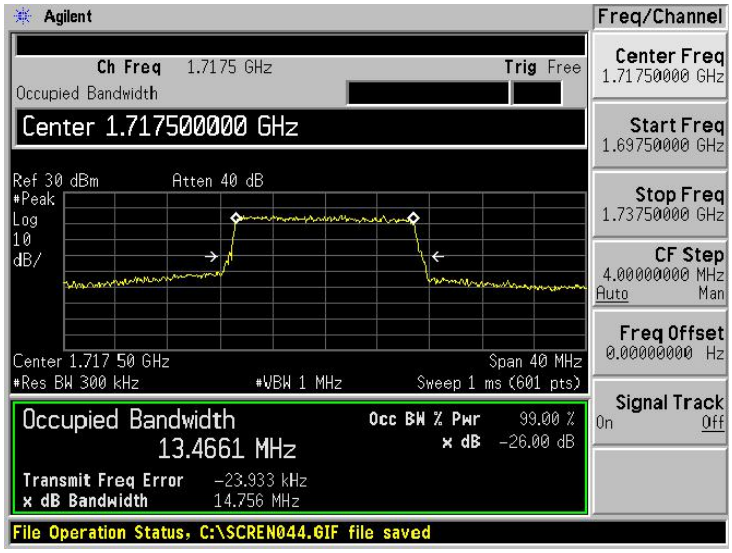
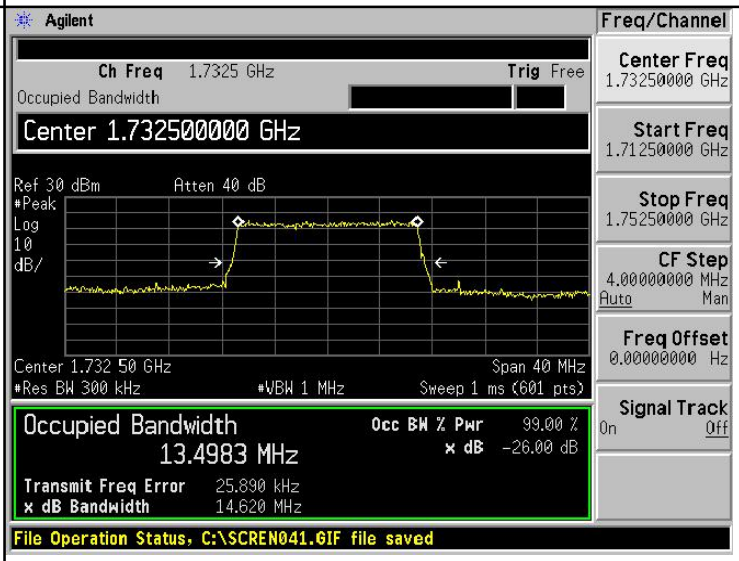
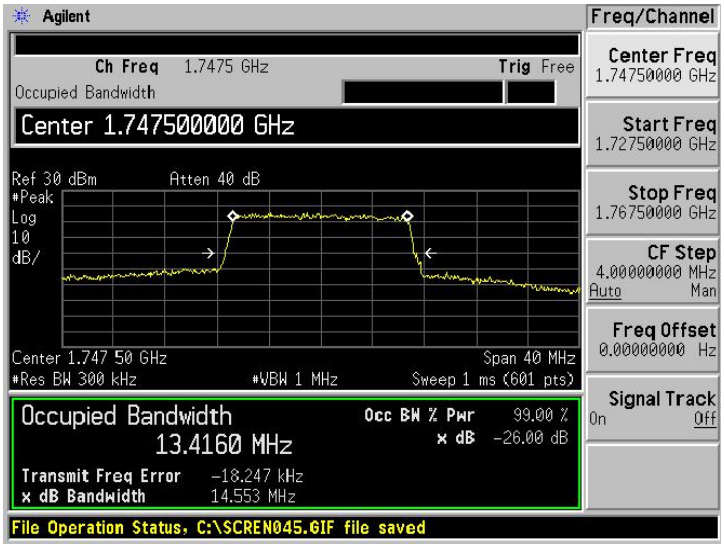
LTE Band 2 (Channel Bandwidth: 20 MHz) _ 16QAM	
1860.0 MHz	
1880.0 MHz	
1900.0 MHz	

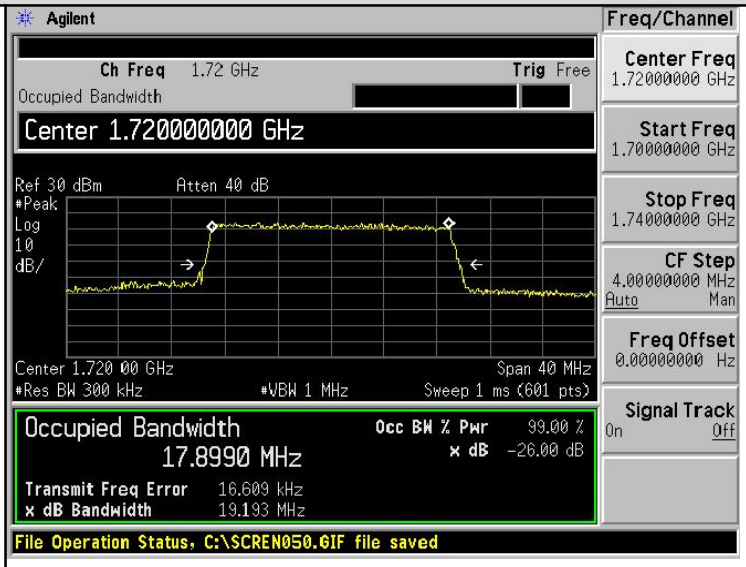
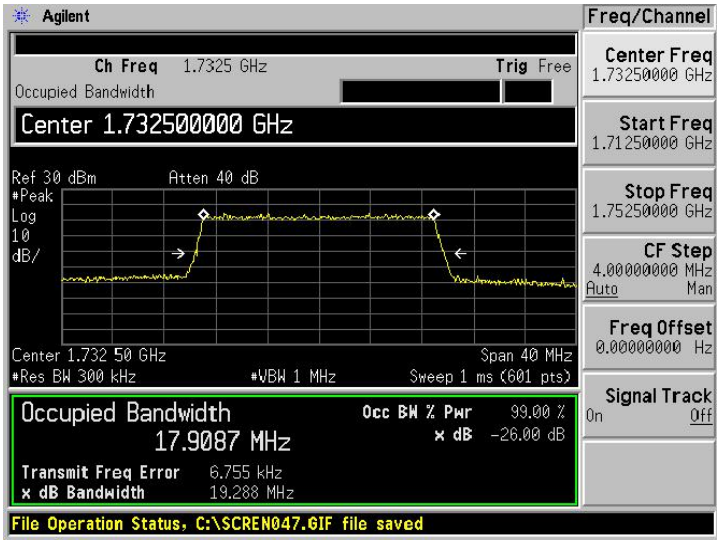
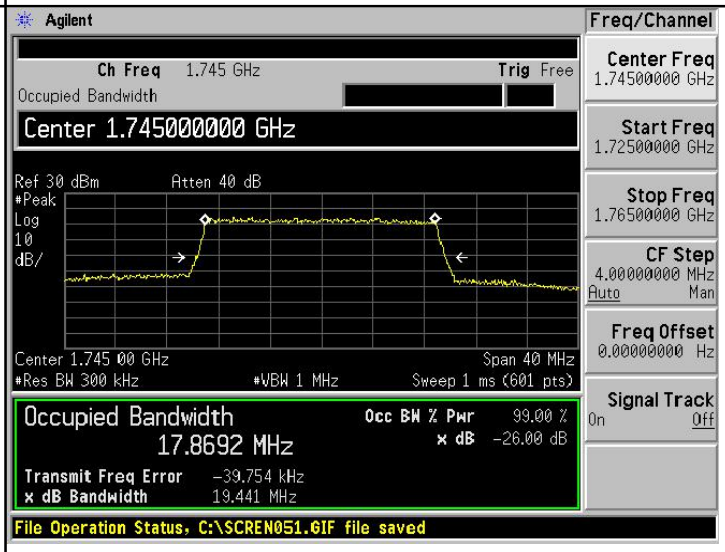
LTE Band 4 (Channel Bandwidth: 1.4 MHz) _ QPSK	
1710.7 MHz	
1732.5 MHz	
1754.3 MHz	

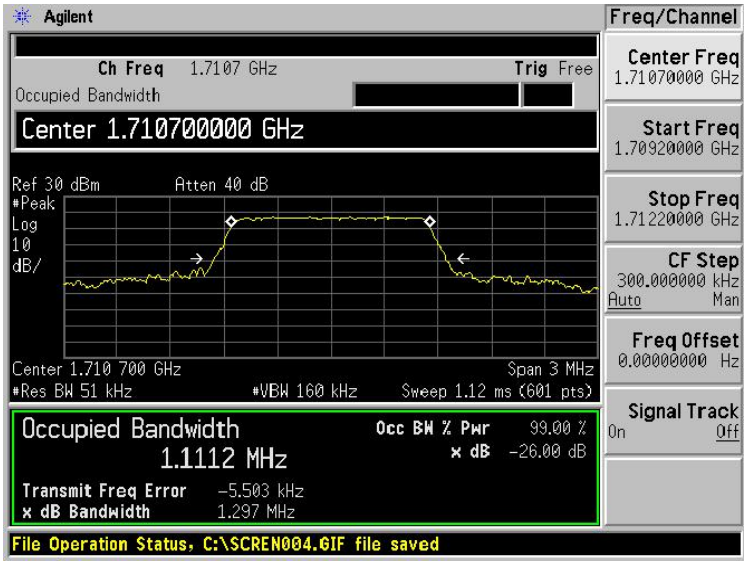
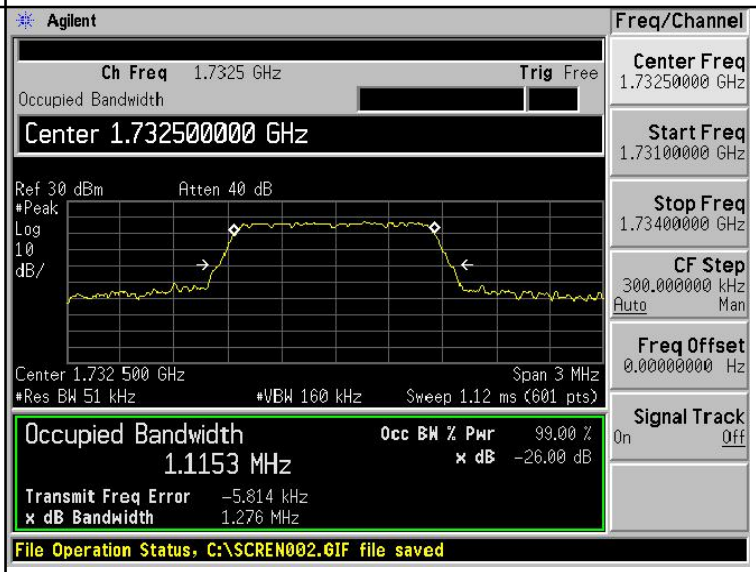
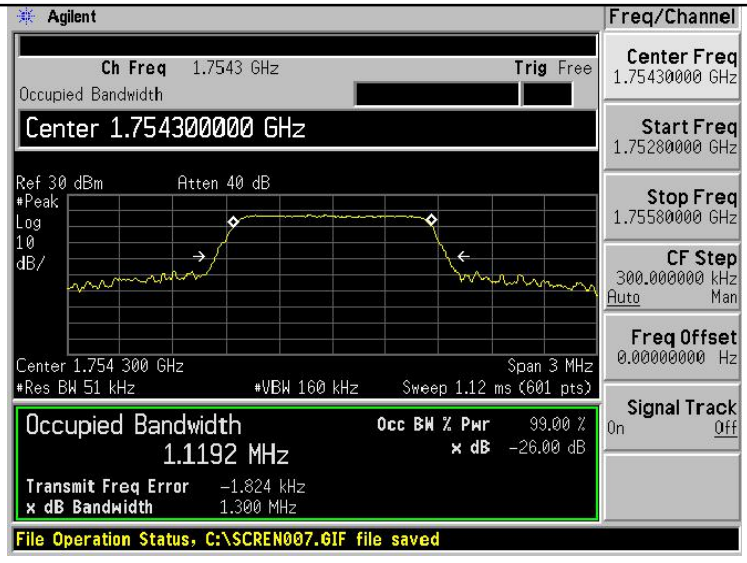
LTE Band 4 (Channel Bandwidth: 3 MHz) _ QPSK	
1711.5 MHz	
1732.5 MHz	
1753.5 MHz	

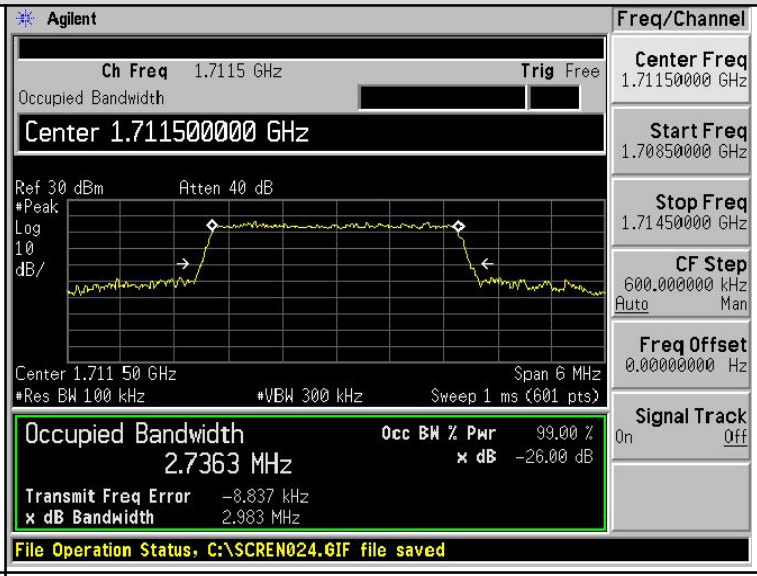
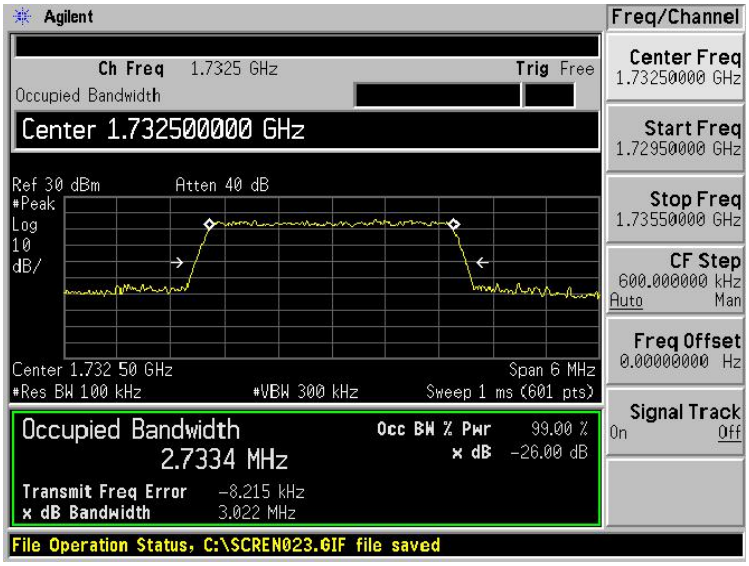
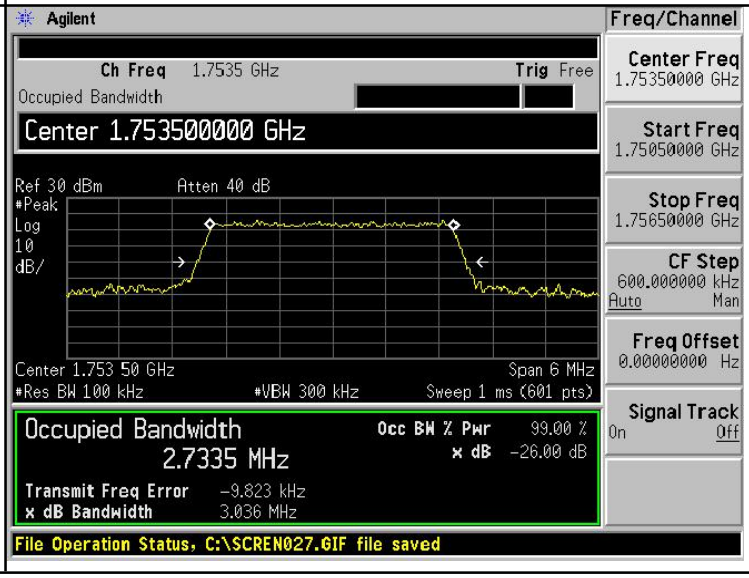
LTE Band 4 (Channel Bandwidth: 5 MHz) _ QPSK	
1712.5 MHz	
1732.5 MHz	
1752.5 MHz	

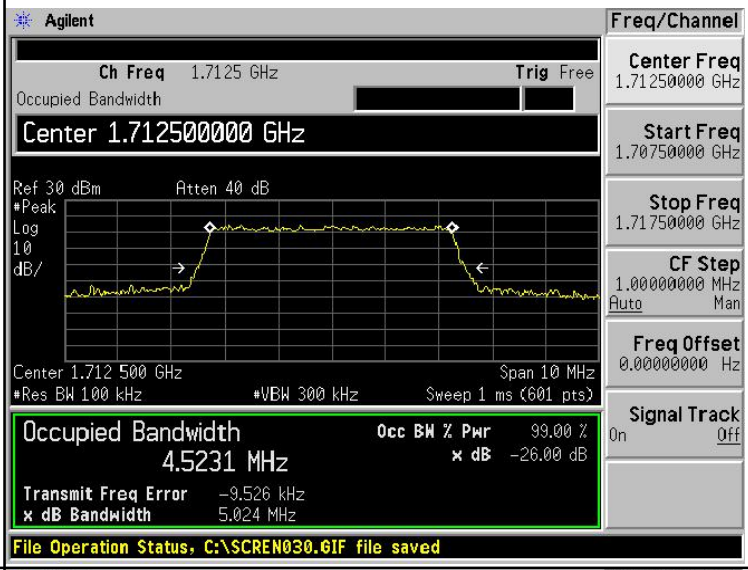
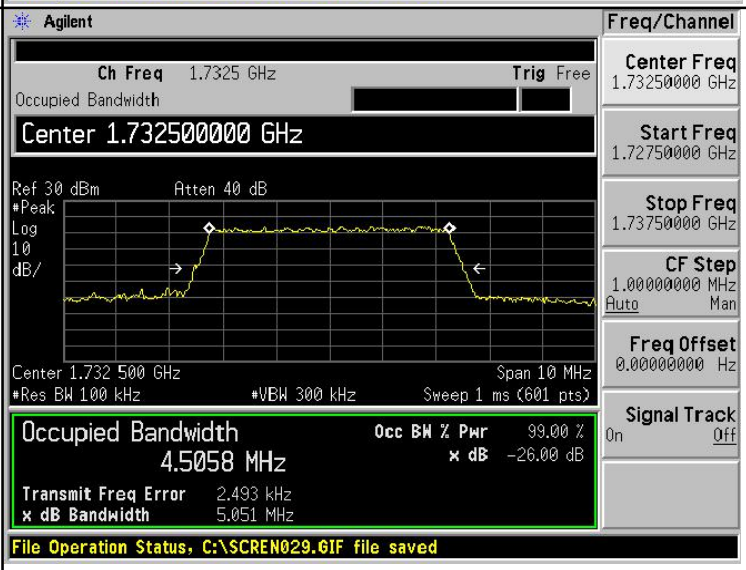
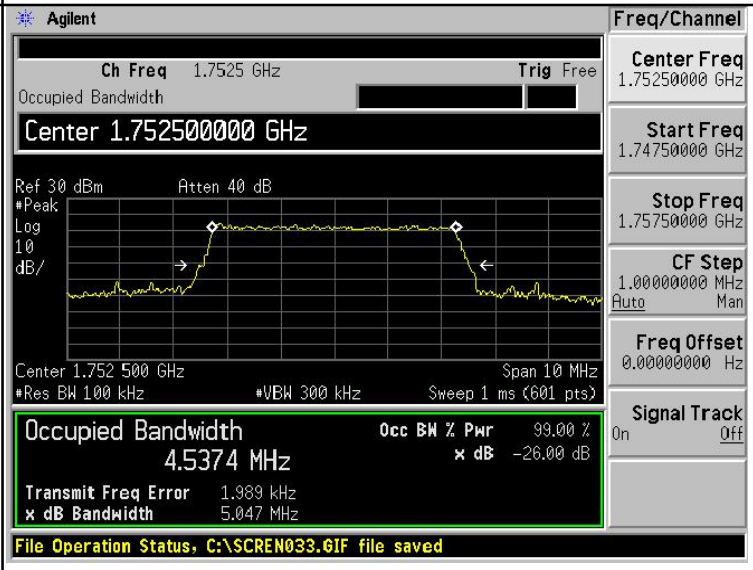
LTE Band 4 (Channel Bandwidth: 10 MHz) _ QPSK	
1715.0 MHz	
1732.5 MHz	
1750.0 MHz	

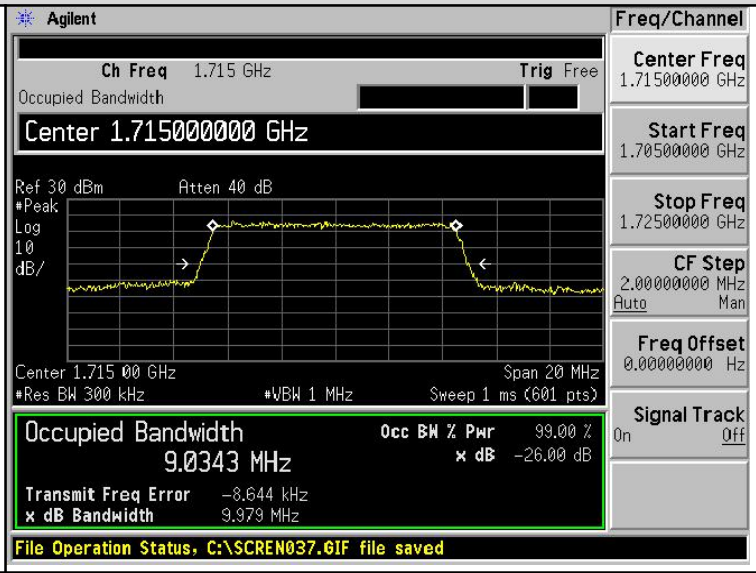
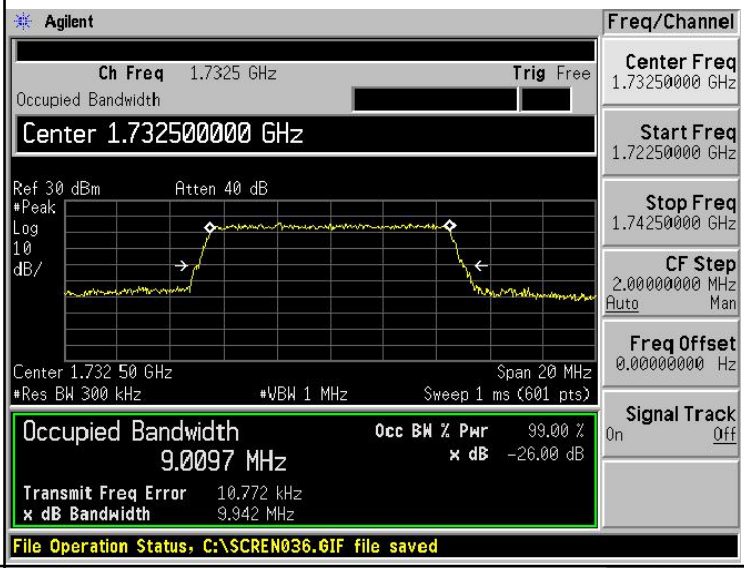
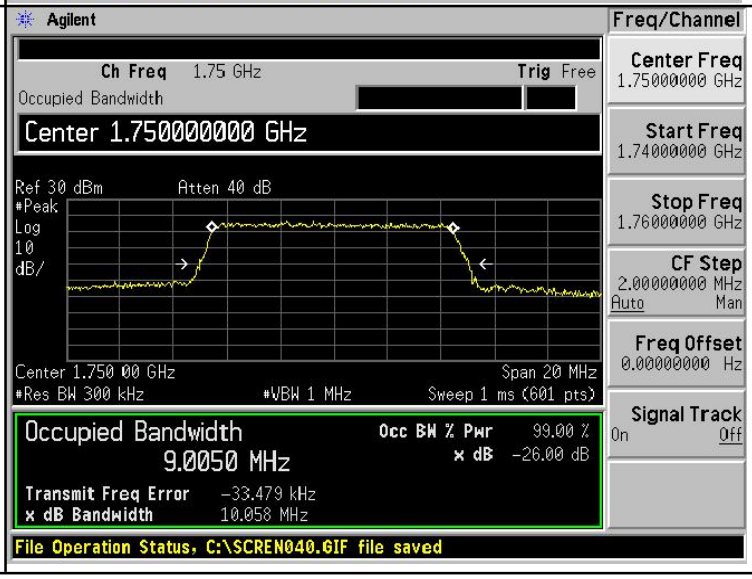
LTE Band 4 (Channel Bandwidth: 15 MHz) _ QPSK	
1717.5 MHz	
1732.5 MHz	
1747.5 MHz	

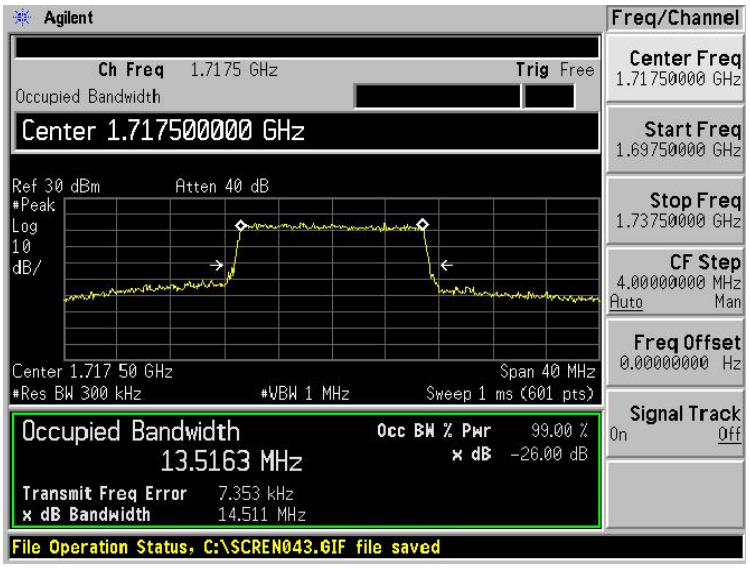
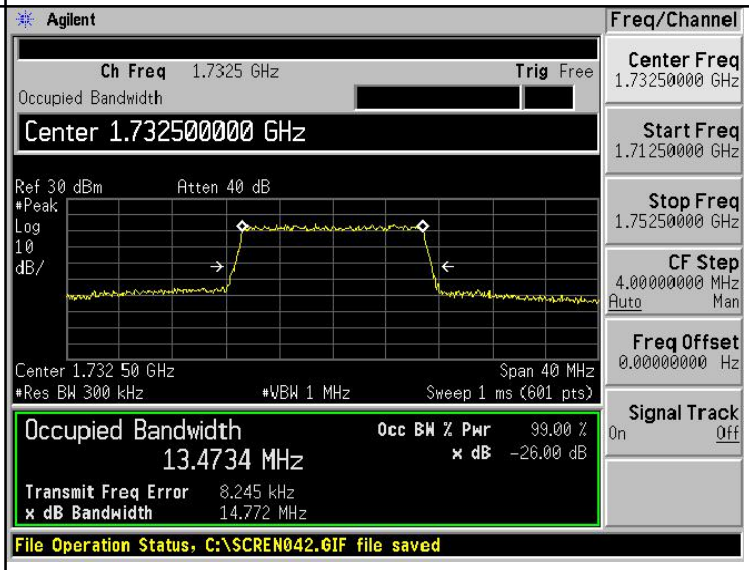
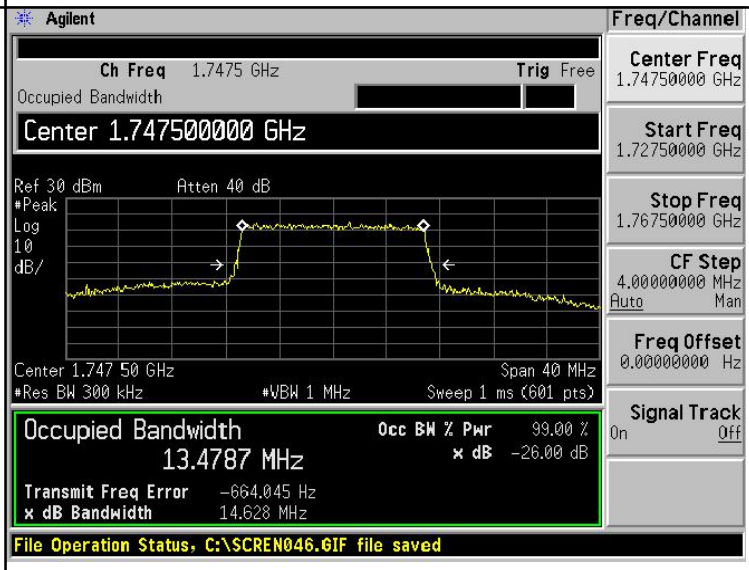
LTE Band 4 (Channel Bandwidth: 20 MHz) _ QPSK	
1720.0 MHz	
1732.5 MHz	
1745.0 MHz	

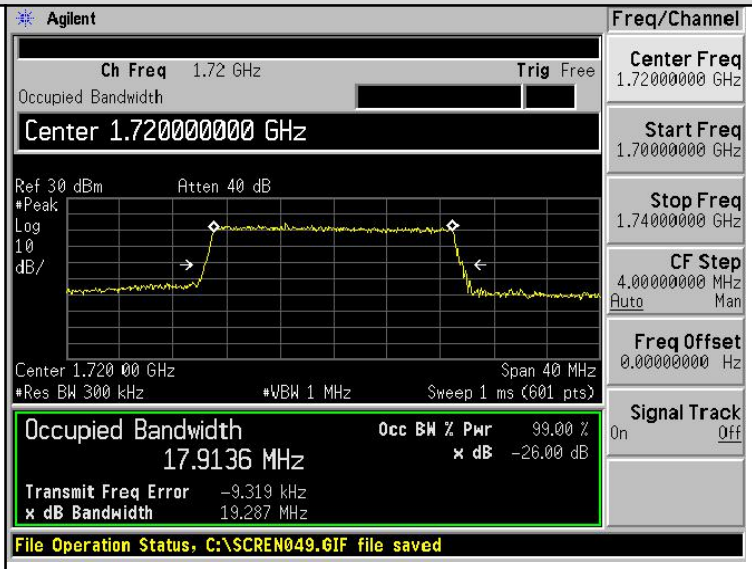
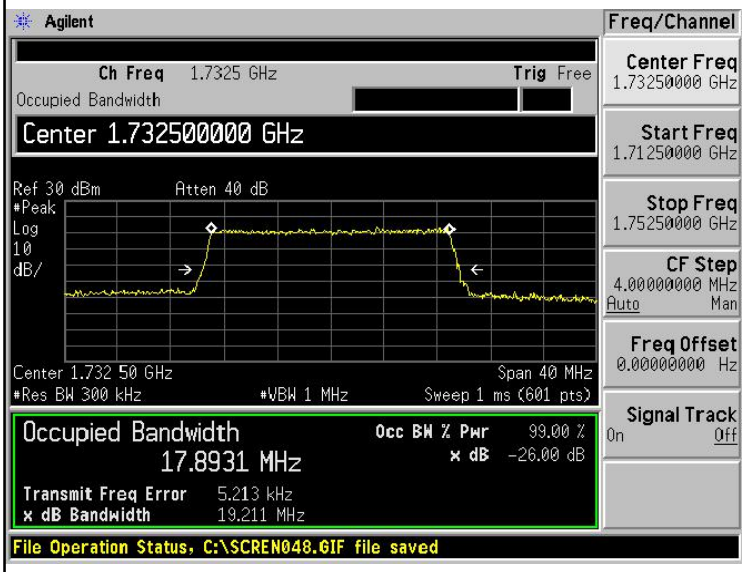
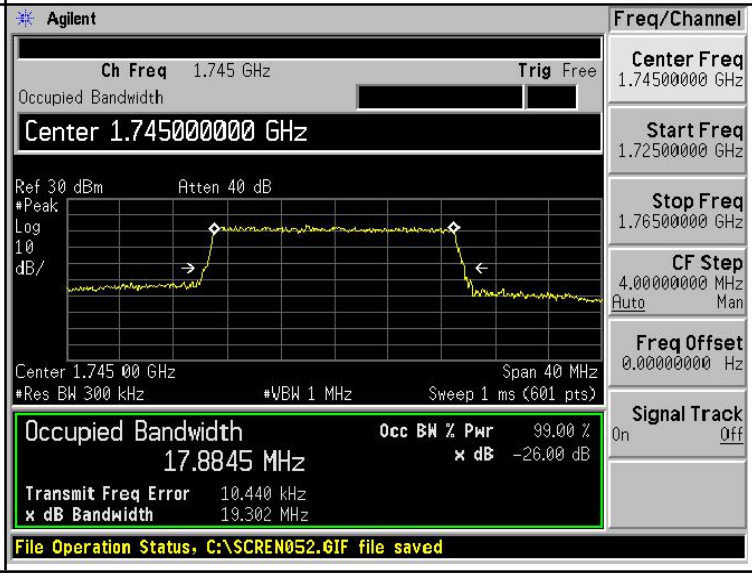
LTE Band 4 (Channel Bandwidth: 1.4 MHz) _ 16QAM	
1710.7 MHz	
1732.5 MHz	
1754.3 MHz	

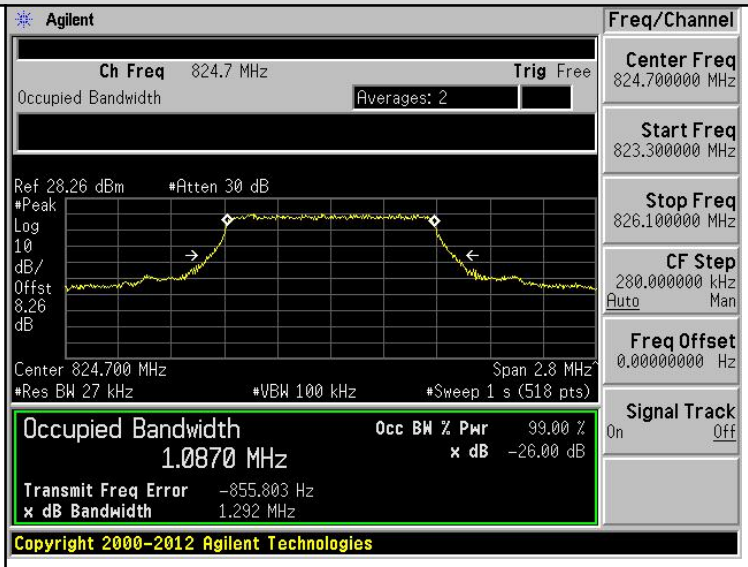
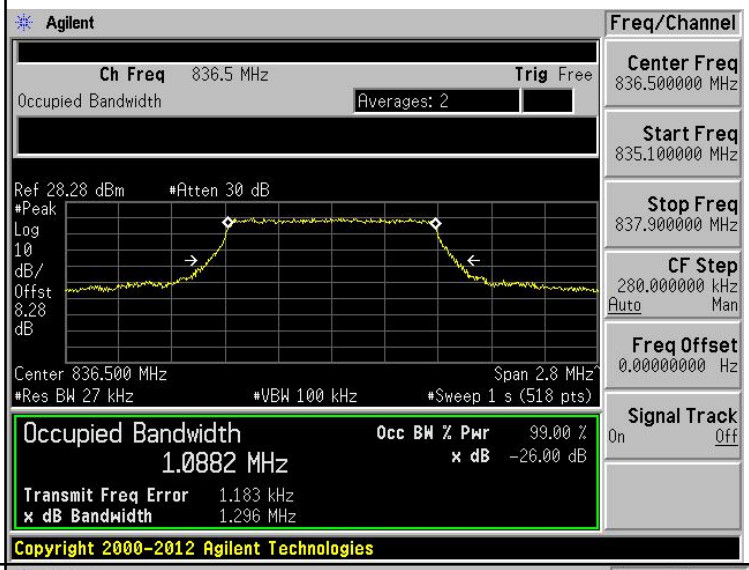
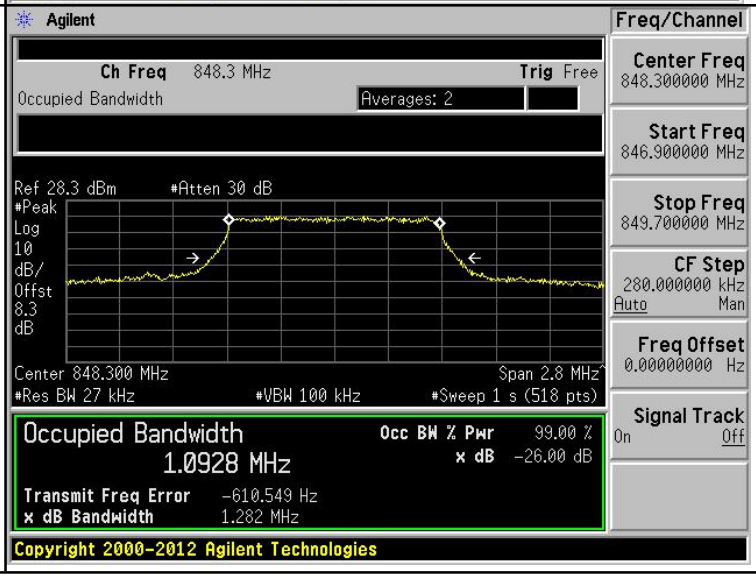
LTE Band 4 (Channel Bandwidth: 3 MHz) _ 16QAM	
1711.5 MHz	
1732.5 MHz	
1753.5 MHz	

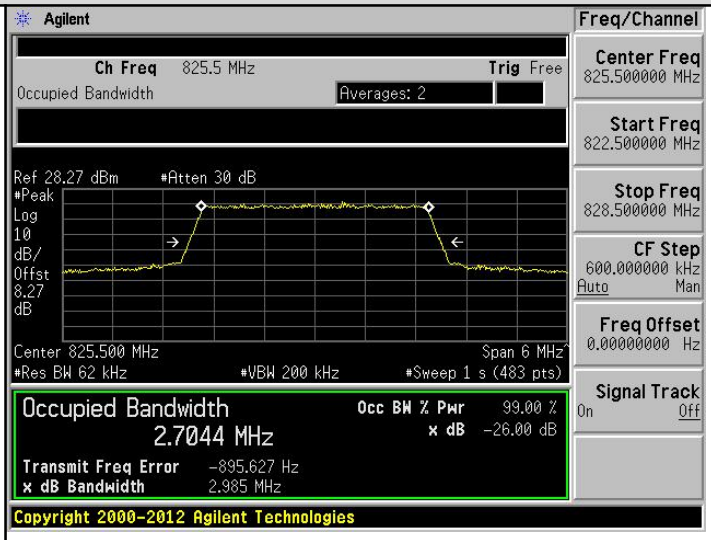
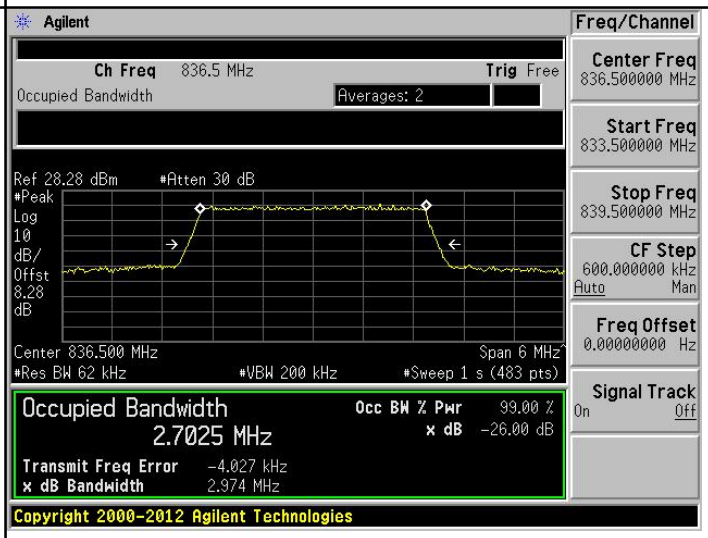
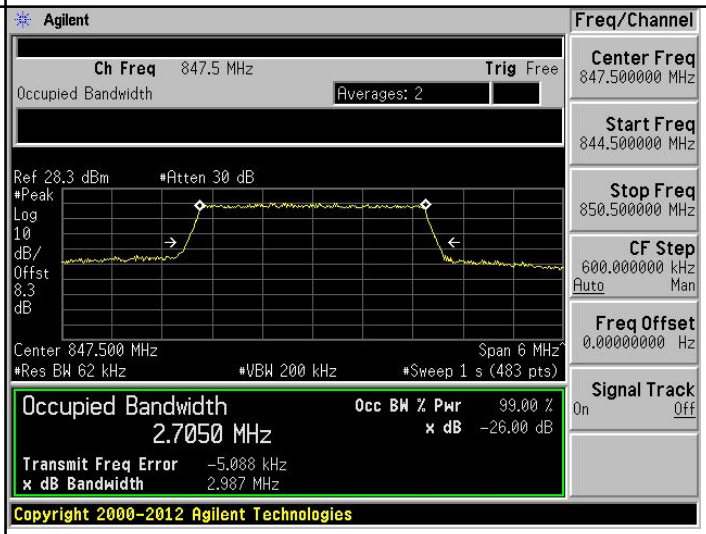
LTE Band 4 (Channel Bandwidth: 5 MHz) _ 16QAM	
1712.5 MHz	
1732.5 MHz	
1752.5 MHz	

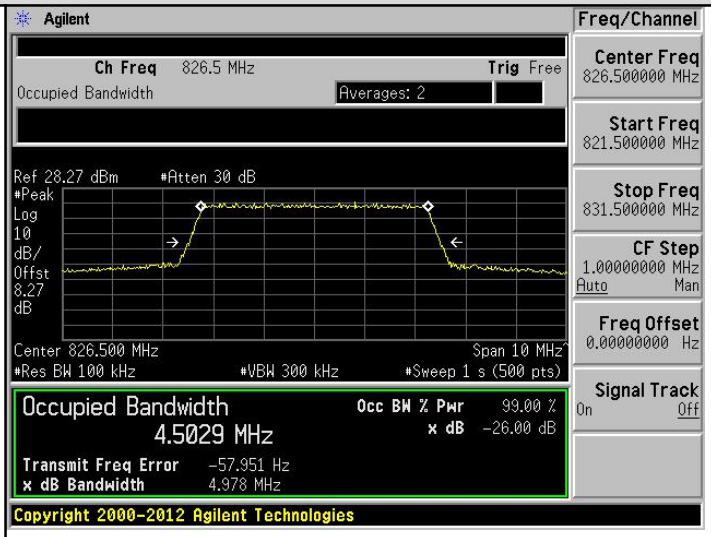
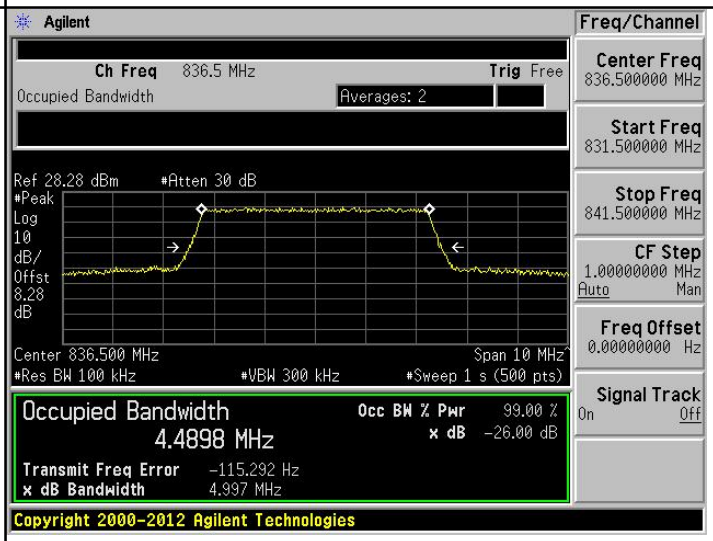
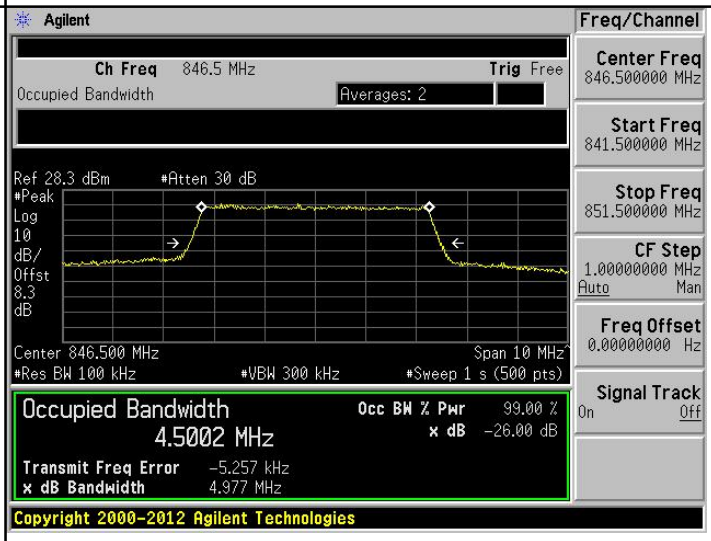
LTE Band 4 (Channel Bandwidth: 10 MHz) _ 16QAM	
1715.0 MHz	
1732.5 MHz	
1750.0 MHz	

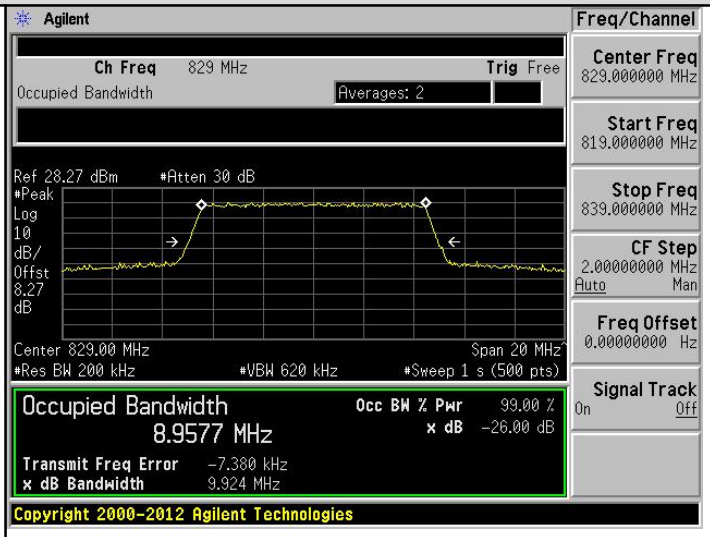
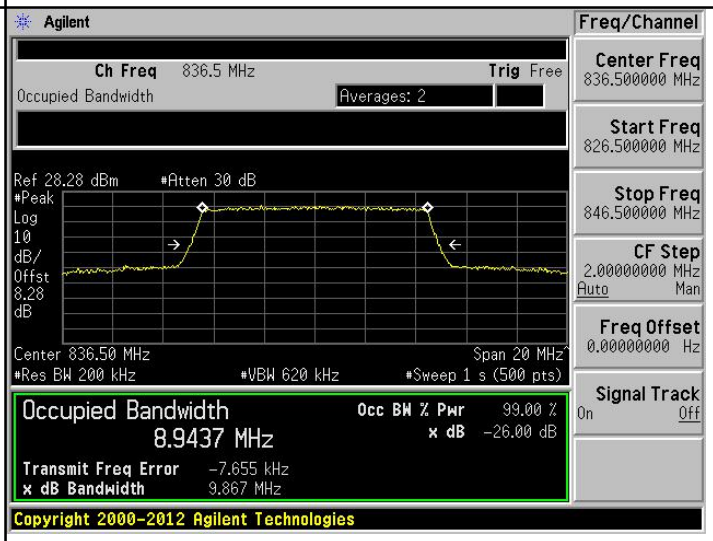
LTE Band 4 (Channel Bandwidth: 15 MHz) _ 16QAM	
1717.5 MHz	
1732.5 MHz	
1747.5 MHz	

LTE Band 4 (Channel Bandwidth: 20 MHz) _ 16QAM	
1720.0 MHz	
1732.5 MHz	
1745.0 MHz	

LTE Band 5 (Channel Bandwidth: 1.4 MHz) _ QPSK	
824.7 MHz	
836.5 MHz	
848.3 MHz	

LTE Band 5 (Channel Bandwidth: 3 MHz) _ QPSK	
825.5 MHz	
836.5 MHz	
847.5 MHz	

LTE Band 5 (Channel Bandwidth: 5 MHz) _ QPSK	
826.5 MHz	
836.5 MHz	
846.5 MHz	

LTE Band 5 (Channel Bandwidth: 10 MHz) _ QPSK	
829.0 MHz	
836.5 MHz	
844.0 MHz