

FCC 47 CFR RF Test Report

Product Type : Wireless Mobile HotSpot
Applicant : Netgear Inc.
Address : 350 East Plumeria Drive, San Jose, CA 95134
Trade Name : Netgear
Model Number : AirCard 781S
Test Specification : FCC 47 CFR PART 22H: Oct, 2012
FCC 47 CFR PART 24E: Oct, 2012
FCC 47 CFR PART 27: Oct. 2012
ANSI C63.4: 2009
ANSI/TIA-603-C-2004
Application Purpose : Original
Receive Date : Aug. 09, 2013
Test Period : Aug. 22 ~ Aug. 29, 2013
Issue Date : Oct. 01, 2013

Issue by

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Taiwan Accreditation Eoundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Sep. 17, 2013	Initial Issue	
01	Oct. 01, 2013	Revised report information.	Joyce Liao

Verification of Compliance

Issued Date: 10/01/2013

Product Type : Wireless Mobile HotSpot

Applicant : Netgear Inc.

Address : 350 East Plumeria Drive, San Jose, CA 95134

Model Number : AirCard 781S

FCC ID : PY3AirCard 781S

Applicable Standard : FCC 47 CFR PART 22H: Oct, 2012
FCC 47 CFR PART 24E: Oct, 2012
FCC 47 CFR PART 27: Oct. 2012
ANSI C63.4: 2009
ANSI/TIA-603-C-2004

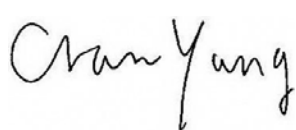
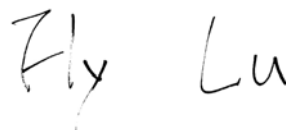
Test Result : Complied

Application Purpose : Original

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The above equipment was tested by A Test Lab Techno Corp. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2009 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 27L. The test results of this report relate only to the tested sample identified in this report.

Approved By :  Reviewed By : 

(Manager) (Cran Yang) (Testing Engineer) (Fly Lu)

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1 General Information

1.1. EUT Description

Applicant		Netgear Inc.									
Applicant Address		350 East Plumeria Drive, San Jose, CA 95134									
Manufacturer		Netgear Inc.									
Manufacturer Address		350 East Plumeria Drive, San Jose, CA 95134									
Product Type		Wireless Mobile HotSpot									
Model Number		AirCard 781S									
FCC ID		PY3AirCard 781S									
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				
		17	706.5 ~ 713.5		736.5 ~ 743.5		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 17	5MHz, 10MHz								
Antenna Type		Hybrid dipole and monopole Antenna									
Antenna Gain		LTE Band 2		1.9 dBi							
		LTE Band 4		1.2 dBi							
		LTE Band 5		0.1 dBi							
		LTE Band 17		0.4 dBi							
Max. Conducted Output		Operate Band				Average Power		With CA power (5M)		With CA power (10M)	
		LTE Band 2 (Channel Bandwidth 1.4MHz) :				0.173 W		---		---	
		LTE Band 2 (Channel Bandwidth 3MHz) :				0.172 W		---		---	
		LTE Band 2 (Channel Bandwidth 5MHz) :				0.172 W		0.171 W		0.171 W	
		LTE Band 2 (Channel Bandwidth 10MHz) :				0.177 W		0.176 W		0.177 W	
		LTE Band 2 (Channel Bandwidth 15MHz) :				0.174 W		---		---	
		LTE Band 2 (Channel Bandwidth 20MHz) :				0.176 W		---		---	
		LTE Band 4 (Channel Bandwidth 1.4MHz) :				0.184 W		---		---	
		LTE Band 4 (Channel Bandwidth 3MHz) :				0.185 W		---		---	
		LTE Band 4 (Channel Bandwidth 5MHz) :				0.185 W		0.184 W		0.183 W	
		LTE Band 4 (Channel Bandwidth 10MHz) :				0.187 W		0.185 W		0.183 W	
		LTE Band 4 (Channel Bandwidth 15MHz) :				0.197 W		---		---	
		LTE Band 4 (Channel Bandwidth 20MHz) :				0.194 W		---		---	
		LTE Band 5 (Channel Bandwidth 1.4MHz) :				0.203 W		---		---	
		LTE Band 5 (Channel Bandwidth 3MHz) :				0.204 W		---		---	
		LTE Band 5 (Channel Bandwidth 5MHz) :				0.200 W		---		---	
		LTE Band 5 (Channel Bandwidth 10MHz) :				0.207 W		---		---	
		LTE Band 17 (Channel Bandwidth 5MHz) :				0.203 W		---		---	
		LTE Band 17 (Channel Bandwidth 10MHz) :				0.208 W		---		---	



Max. E.R.P. / E.I.R.P.	LTE Band 2 (Channel Bandwidth 1.4MHz) :	0.149	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 3MHz) :	0.154	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 5MHz) :	0.149	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 10MHz) :	0.167	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 15MHz) :	0.148	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 20MHz) :	0.162	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 1.4MHz) :	0.170	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 3MHz) :	0.166	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 5MHz) :	0.161	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 10MHz) :	0.142	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 15MHz) :	0.150	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 20MHz) :	0.143	W (E.I.R.P.)
	LTE Band 5 (Channel Bandwidth 1.4MHz) :	0.118	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 3MHz) :	0.126	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 5MHz) :	0.136	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 10MHz) :	0.107	W (E.R.P.)
	LTE Band 17 (Channel Bandwidth 5MHz) :	0.122	W (E.R.P.)
	LTE Band 17 (Channel Bandwidth 10MHz) :	0.113	W (E.R.P.)
Emission Designator	Band	QPSK	16QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz):	1M08G7D	1M08D7D
	LTE Band 2 (Channel Bandwidth 3MHz) :	2M69G7D	2M69G7D
	LTE Band 2 (Channel Bandwidth 5MHz) :	4M47G7D	4M48D7D
	LTE Band 2 (Channel Bandwidth 10MHz) :	8M93G7D	8M93D7D
	LTE Band 2 (Channel Bandwidth 15MHz) :	13M4G7D	13M4G7D
	LTE Band 2 (Channel Bandwidth 20MHz) :	17M8G7D	17M8D7D
	LTE Band 4 (Channel Bandwidth 1.4MHz) :	1M07G7D	1M08D7D
	LTE Band 4 (Channel Bandwidth 3MHz) :	2M69G7D	2M68D7D
	LTE Band 4 (Channel Bandwidth 5MHz) :	4M46G7D	4M47D7D
	LTE Band 4 (Channel Bandwidth 10MHz) :	8M94G7D	8M92D7D
	LTE Band 4 (Channel Bandwidth 15MHz) :	13M4G7D	13M4D7D
	LTE Band 4 (Channel Bandwidth 20MHz) :	17M8G7D	17M8D7D
	LTE Band 5 (Channel Bandwidth 1.4MHz) :	1M08G7D	1M08D7D
	LTE Band 5 (Channel Bandwidth 3MHz) :	2M69G7D	2M69D7D
	LTE Band 5 (Channel Bandwidth 5MHz) :	4M48G7D	4M48D7D
	LTE Band 5 (Channel Bandwidth 10MHz) :	8M94G7D	8M94D7D
	LTE Band 17 (Channel Bandwidth 5MHz) :	4M47G7D	4M48D7D
	LTE Band 17 (Channel Bandwidth 10MHz) :	8M94G7D	8M92D7D

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	5MHz		10MHz	
	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	15MHz		20MHz	
	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 17				
Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	23755	706.5	23780	709.0
Middle CH	23790	710.0	23790	710.0
High CH	23825	713.5	23800	711.0

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.

By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, then the final test was executed the worst condition and test data were recorded in 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 7) 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 7) 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 12) 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 11) 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 24) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 24) 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 37) Link ☐ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 36, RB Offset 0) Link ☐ LTE(RB Size 36, RB Offset 18) Link ☐ LTE(RB Size 36, RB Offset 35) 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 49) 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 49) 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 7) 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 7) 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 12) 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 11) 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 24) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 24) 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 37) Link ☐ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 36, RB Offset 0) Link ☐ LTE(RB Size 36, RB Offset 18) Link ☐ LTE(RB Size 36, RB Offset 35) 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 49) 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 49) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

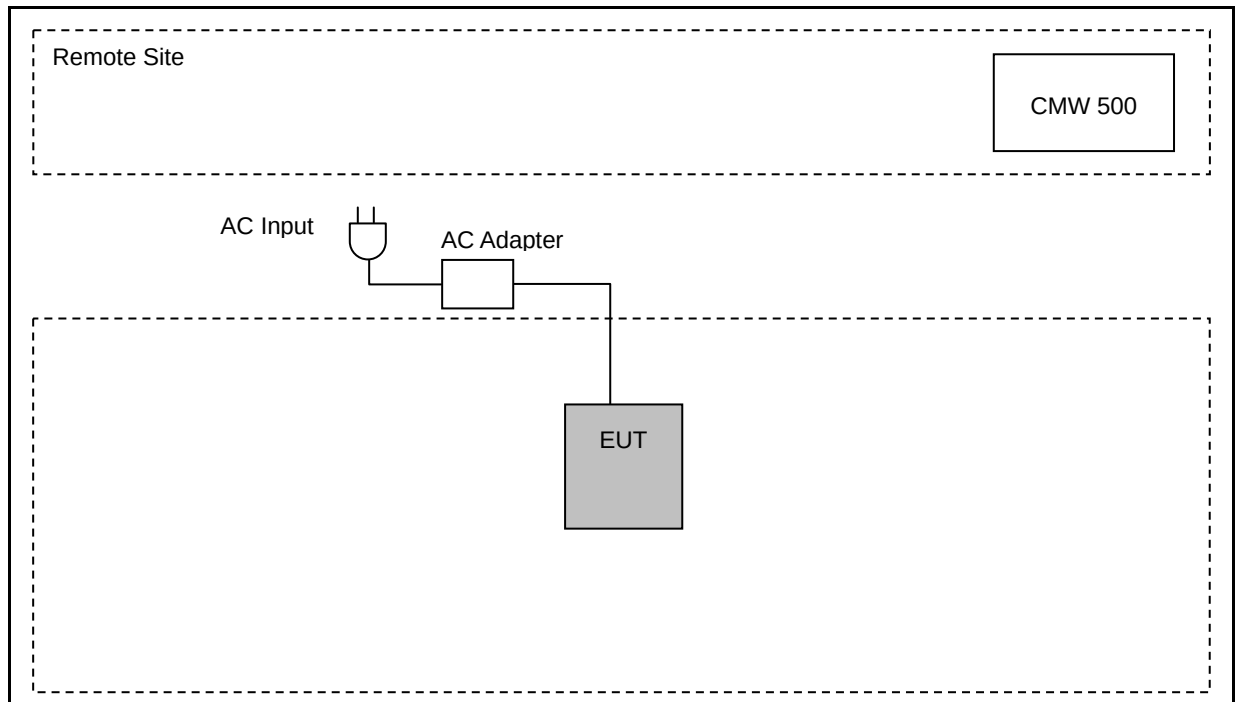
Band	Channel Bandwidth	Test Modes	
LTE Band 5	1.4 MHz	☒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 3) Link ☐ LTE(RB Size 1, RB Offset 5) Link ☐ LTE(RB Size 3, RB Offset 0) Link ☐ LTE(RB Size 3, RB Offset 2) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	☒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 7) 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 7) 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 12) 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 11) 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 24) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 24) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
LTE Band 17	5 MHz	☒ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 12) 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 11) 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 24) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 24) Link ☐ LTE(RB Size 50, 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. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

1.6. Summary of Test Result

FCC Rule	IC Standards	Description	Result
§2.1046	---	Conducted Output Average Power	Pass
§22.913 §24.232 §27.54	RSS-132, 4.4 RSS-133, 6.4	Equivalent Isotropic Radiated Power / Equivalent Radiated Power	Pass
§2.1055 §22.355 §24.235 §27.54	RSS-132, 4.3 RSS-133, 6.3	Frequency Stability	Pass
§2.1049	RSS-Gen, 4.6	Occupied Bandwidth	Pass
§24.232 §27.50	---	Peak to average ratio	Pass
§2.1051 §22.917 §24.238 §27.53	RSS-Gen, 4.6	Band Edge and Emission Mask	Pass
§2.1051 §22.917 §24.238 §27.53	RSS-132, 4.5 RSS-133, 6.5	Conducted Spurious Emissions	Pass
§2.1053 §22.917 §24.238 §27.53	RSS-132, 4.5 RSS-133, 6.5 RSS-Gen, 4.10	Field Strength of Spurious Radiation Test	Pass

2 Conducted Output Average Power Test

2.1. Limit

N/A

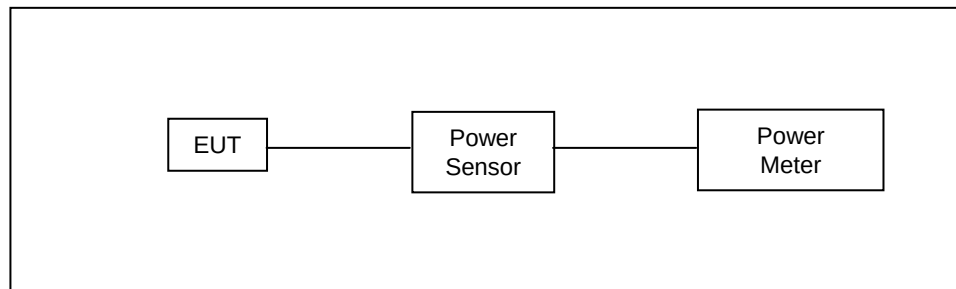
2.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Wideband Radio Communication Test	R & S	CMW500	103168	11/30/2012	(1)
Wideband Power Sensor	Agilent	N1921A	MY45241957	12/19/2012	(1)
Single Channel PK Power Meter	Agilent	N1911A	MY45101619	12/19/2012	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

2.3. Test Setup



2.4. Test Procedure

- The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

2.5. Uncertainty

The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

2.6. Test Result

Model Number	AirCard 781S		
Test Item	Conducted Output Average Power		
Date of Test	08/22/2013	Test Site	TE05

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	22.10	0.162
					1	3	22.06	0.161
					1	5	22.06	0.161
					3	0	22.08	0.161
					3	2	22.02	0.159
					3	3	22.05	0.160
			18900	1880.0	6	0	21.13	0.130
					1	0	22.29	0.169
					1	3	22.25	0.168
					1	5	22.28	0.169
					3	0	22.27	0.169
					3	2	22.26	0.168
					3	3	22.21	0.166
					6	0	21.19	0.132
			19193	1909.3	1	0	22.38	0.173
					1	3	22.37	0.173
					1	5	22.36	0.172
					3	0	22.35	0.172
					3	2	22.36	0.172
					3	3	22.32	0.171
		16QAM	18607	1850.7	6	0	21.40	0.138
					1	0	21.61	0.145
					1	3	21.58	0.144
					1	5	21.60	0.145
					3	0	21.59	0.144
					3	2	21.59	0.144
			18900	1880.0	3	3	21.60	0.145
					6	0	20.65	0.116
					1	0	21.72	0.149
					1	3	21.71	0.148
					1	5	21.70	0.148
					3	0	21.75	0.150
			19193	1909.3	3	2	21.77	0.150
					3	3	21.78	0.151
					6	0	20.78	0.120
					1	0	21.89	0.155
					1	3	21.79	0.151
					1	5	21.79	0.151
					3	0	21.83	0.152
					3	2	21.85	0.153
					3	3	21.76	0.150
					6	0	20.91	0.123

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	22.06	0.161
					1	7	22.00	0.158
					1	14	22.03	0.160
					8	0	21.07	0.128
					8	4	21.02	0.126
					8	7	21.02	0.126
			18900	1880.0	15	0	20.97	0.125
					1	0	22.28	0.169
					1	7	22.22	0.167
					1	14	22.23	0.167
					8	0	21.17	0.131
					8	4	21.13	0.130
					8	7	21.11	0.129
					15	0	21.10	0.129
			19185	1908.5	1	0	22.35	0.172
					1	7	22.32	0.171
					1	14	22.33	0.171
					8	0	21.30	0.135
					8	4	21.24	0.133
					8	7	21.27	0.134
		16QAM	18615	1851.5	15	0	21.17	0.131
					1	0	21.18	0.131
					1	7	21.15	0.130
					1	14	21.12	0.129
					8	0	20.10	0.102
					8	4	20.08	0.102
			18900	1880.0	8	7	20.07	0.102
					15	0	20.08	0.102
					1	0	21.27	0.134
					1	7	21.26	0.134
					1	14	21.24	0.133
					8	0	20.22	0.105
					8	4	20.21	0.105
					8	7	20.16	0.104
			19185	1908.5	15	0	20.20	0.105
					1	0	21.30	0.135
					1	7	21.27	0.134
					1	14	21.29	0.135
					8	0	20.17	0.104
					8	4	20.15	0.104
					8	7	20.16	0.104
					15	0	20.12	0.103

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power		With CA power Pcc:B2 Scc:B17(5M)		With CA power Pcc:B2 Scc:B17(10M)	
					Size	Offse	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
LTE Band 2	5 MHz	QPSK	18625	1852.5	1	0	22.11	0.163	22.10	0.162	22.10	0.162
					1	12	22.02	0.159	22.00	0.158	21.98	0.158
					1	24	22.08	0.161	22.04	0.160	22.06	0.161
					12	0	21.04	0.127	21.02	0.126	21.01	0.126
					12	6	21.01	0.126	20.98	0.125	20.99	0.126
					12	11	21.00	0.126	20.97	0.125	20.98	0.125
					25	0	20.93	0.124	20.89	0.123	20.89	0.123
			18900	1880.0	1	0	22.22	0.167	22.19	0.166	22.19	0.166
					1	12	22.20	0.166	22.17	0.165	22.18	0.165
					1	24	22.19	0.166	22.15	0.164	22.17	0.165
					12	0	21.11	0.129	21.10	0.129	21.08	0.128
					12	6	21.09	0.129	21.05	0.127	21.07	0.128
					12	11	21.07	0.128	21.04	0.127	21.03	0.127
					25	0	20.96	0.125	20.93	0.124	20.93	0.124
			19175	1907.5	1	0	22.36	0.172	22.33	0.171	22.34	0.171
					1	12	22.31	0.170	22.28	0.169	22.28	0.169
					1	24	22.33	0.171	22.32	0.171	22.30	0.170
					12	0	21.21	0.132	21.20	0.132	21.19	0.132
					12	6	21.13	0.130	21.11	0.129	21.11	0.129
					12	11	21.20	0.132	21.17	0.131	21.18	0.131
					25	0	21.04	0.127	21.03	0.127	21.01	0.126
		16QAM	18625	1852.5	1	0	21.13	0.130	21.11	0.129	21.12	0.129
					1	12	21.00	0.126	20.99	0.126	20.98	0.125
					1	24	21.11	0.129	21.09	0.129	21.07	0.128
					12	0	20.03	0.101	19.99	0.100	20.00	0.100
					12	6	20.00	0.100	19.98	0.100	19.97	0.099
					12	11	20.02	0.100	20.00	0.100	19.99	0.100
					25	0	19.87	0.097	19.83	0.096	19.85	0.097
			18900	1880.0	1	0	21.19	0.132	21.17	0.131	21.16	0.131
					1	12	21.17	0.131	21.14	0.130	21.13	0.130
					1	24	21.16	0.131	21.14	0.130	21.13	0.130
					12	0	20.26	0.106	20.24	0.106	20.25	0.106
					12	6	20.20	0.105	20.18	0.104	20.17	0.104
					12	11	20.17	0.104	20.16	0.104	20.16	0.104
					25	0	20.12	0.103	20.10	0.102	20.08	0.102
			19175	1907.5	1	0	21.30	0.135	21.26	0.134	21.27	0.134
					1	12	21.24	0.133	21.22	0.132	21.23	0.133
					1	24	21.28	0.134	21.25	0.133	21.25	0.133
					12	0	20.28	0.107	20.25	0.106	20.27	0.106
					12	6	20.18	0.104	20.16	0.104	20.15	0.104
					12	11	20.27	0.106	20.24	0.106	20.25	0.106
					25	0	20.06	0.101	20.02	0.100	20.04	0.101

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power		With CA power Pcc:B2 Scc:B17(5M)		With CA power Pcc:B2 Scc:B17(10M)	
					Size	Offse	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
LTE Band 2	10 MHz	QPSK	18650	1855.0	1	0	22.13	0.163	22.09	0.162	22.10	0.162
					1	24	22.10	0.162	22.08	0.161	22.06	0.161
					1	49	22.03	0.160	22.01	0.159	22.00	0.158
					25	0	20.95	0.124	20.92	0.124	20.91	0.123
					25	12	20.91	0.123	20.88	0.122	20.88	0.122
					25	24	20.93	0.124	20.90	0.123	20.89	0.123
			18900	1880.0	50	0	20.87	0.122	20.86	0.122	20.83	0.121
					1	0	22.24	0.167	22.21	0.166	22.21	0.166
					1	24	22.23	0.167	22.20	0.166	22.19	0.166
					1	49	22.23	0.167	22.22	0.167	22.20	0.166
					25	0	21.04	0.127	21.02	0.126	21.01	0.126
					25	12	20.98	0.125	20.94	0.124	20.95	0.124
			19150	1905.0	25	24	20.92	0.124	20.89	0.123	20.90	0.123
					50	0	21.45	0.140	21.43	0.139	21.43	0.139
					1	0	22.48	0.177	22.45	0.176	22.47	0.177
					1	24	22.31	0.170	22.29	0.169	22.28	0.169
					1	49	22.34	0.171	22.32	0.171	22.31	0.170
					25	0	21.05	0.127	21.01	0.126	21.03	0.127
		16QAM	18650	1855.0	25	12	21.04	0.127	21.03	0.127	21.03	0.127
					25	24	21.02	0.126	21.00	0.126	20.99	0.126
					50	0	20.93	0.124	20.91	0.123	20.91	0.123
					1	0	21.11	0.129	21.09	0.129	21.10	0.129
					1	24	21.08	0.128	21.06	0.128	21.06	0.128
					1	49	21.01	0.126	20.99	0.126	20.97	0.125
			18900	1880.0	25	0	19.91	0.098	19.88	0.097	19.88	0.097
					25	12	19.84	0.096	19.81	0.096	19.83	0.096
					25	24	19.90	0.098	19.87	0.097	19.89	0.097
					50	0	19.73	0.094	19.69	0.093	19.70	0.093
					1	0	21.17	0.131	21.15	0.130	21.13	0.130
					1	24	21.14	0.130	21.13	0.130	21.12	0.129
			19150	1905.0	1	49	21.16	0.131	21.14	0.130	21.14	0.130
					25	0	20.04	0.101	20.01	0.100	20.02	0.100
					25	12	20.02	0.100	19.98	0.100	19.99	0.100
					25	24	20.00	0.100	19.97	0.099	19.99	0.100
					50	0	19.93	0.098	19.91	0.098	19.91	0.098
					1	0	21.39	0.138	21.36	0.137	21.36	0.137
					1	24	21.19	0.132	21.17	0.131	21.18	0.131
					1	49	21.27	0.134	21.25	0.133	21.23	0.133
					25	0	20.11	0.103	20.09	0.102	20.08	0.102
					25	12	20.04	0.101	20.03	0.101	20.01	0.100
					25	24	20.09	0.102	20.08	0.102	20.07	0.102
					50	0	19.97	0.099	19.94	0.099	19.93	0.098

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	22.16	0.164
					1	37	22.14	0.164
					1	74	22.05	0.160
					36	0	20.98	0.125
					36	18	20.97	0.125
					36	35	20.91	0.123
			18900	1880.0	75	0	21.39	0.138
					1	0	22.38	0.173
					1	37	22.37	0.173
					1	74	22.25	0.168
					36	0	21.01	0.126
					36	18	20.99	0.126
					36	35	20.92	0.124
					75	0	20.94	0.124
			19125	1902.5	1	0	22.40	0.174
					1	37	22.38	0.173
					1	74	22.36	0.172
					36	0	21.05	0.127
					36	18	21.05	0.127
					36	35	20.99	0.126
		16QAM	18675	1857.5	75	0	20.98	0.125
					1	0	21.08	0.128
					1	37	21.05	0.127
					1	74	20.95	0.124
					36	0	19.90	0.098
					36	18	19.86	0.097
			18900	1880.0	36	35	19.84	0.096
					75	0	19.80	0.095
					1	0	21.25	0.133
					1	37	21.12	0.129
					1	74	21.02	0.126
					36	0	20.12	0.103
					36	18	20.00	0.100
					36	35	19.94	0.099
			19125	1902.5	75	0	19.92	0.098
					1	0	21.30	0.135
					1	37	21.27	0.134
					1	74	21.24	0.133
					36	0	20.15	0.104
					36	18	20.11	0.103
					36	35	19.99	0.100
					75	0	20.00	0.100

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	22.24	0.167
					1	49	22.14	0.164
					1	99	22.20	0.166
					50	0	20.85	0.122
					50	25	20.80	0.120
					50	49	20.82	0.121
			18900	1880.0	100	0	20.84	0.121
					1	0	22.26	0.168
					1	49	22.24	0.167
					1	99	22.23	0.167
					50	0	20.92	0.124
					50	25	20.86	0.122
					50	49	20.85	0.122
					100	0	20.94	0.124
			19100	1900.0	1	0	22.45	0.176
					1	49	22.41	0.174
					1	99	22.38	0.173
					50	0	21.06	0.128
					50	25	21.02	0.126
					50	49	21.04	0.127
		16QAM	18700	1860.0	100	0	20.99	0.126
					1	0	21.16	0.131
					1	49	21.06	0.128
					1	99	21.12	0.129
					50	0	19.82	0.096
					50	25	19.80	0.095
			18900	1880.0	50	49	19.79	0.095
					100	0	19.78	0.095
					1	0	21.21	0.132
					1	49	21.18	0.131
					1	99	21.20	0.132
					50	0	19.92	0.098
					50	25	19.91	0.098
					50	49	19.89	0.097
			19100	1900.0	100	0	19.99	0.100
					1	0	21.30	0.135
					1	49	21.28	0.134
					1	99	21.26	0.134
					50	0	20.08	0.102
					50	25	20.04	0.101
					50	49	20.06	0.101
					100	0	19.94	0.099

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	22.64	0.184
					1	3	22.63	0.183
					1	5	22.59	0.182
					3	0	22.57	0.181
					3	2	22.58	0.181
					3	3	22.58	0.181
			20175	1732.5	6	0	21.55	0.143
					1	0	22.63	0.183
					1	3	22.61	0.182
					1	5	22.59	0.182
					3	0	22.61	0.182
					3	2	22.62	0.183
					3	3	22.61	0.182
					6	0	21.64	0.146
			20393	1754.3	1	0	22.51	0.178
					1	3	22.45	0.176
					1	5	22.49	0.177
					3	0	22.50	0.178
					3	2	22.45	0.176
					3	3	22.50	0.178
					6	0	21.52	0.142
		16QAM	19957	1710.7	1	0	21.68	0.147
					1	3	21.66	0.147
					1	5	21.67	0.147
					3	0	21.66	0.147
					3	2	21.64	0.146
					3	3	21.62	0.145
			20175	1732.5	6	0	20.63	0.116
					1	0	21.71	0.148
					1	3	21.69	0.148
					1	5	21.68	0.147
					3	0	21.68	0.147
					3	2	21.70	0.148
					3	3	21.68	0.147
					6	0	20.67	0.117
			20393	1754.3	1	0	21.68	0.147
					1	3	21.65	0.146
					1	5	21.67	0.147
					3	0	21.64	0.146
					3	2	21.58	0.144
					3	3	21.62	0.145
					6	0	20.61	0.115

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	22.68	0.185
					1	7	22.65	0.184
					1	14	22.67	0.185
					8	0	21.54	0.143
					8	4	21.59	0.144
					8	7	21.59	0.144
			20175	1732.5	15	0	21.54	0.143
					1	0	22.67	0.185
					1	7	22.64	0.184
					1	14	22.59	0.182
					8	0	21.59	0.144
					8	4	21.55	0.143
					8	7	21.53	0.142
					15	0	21.52	0.142
			20385	1753.5	1	0	22.50	0.178
					1	7	22.48	0.177
					1	14	22.45	0.176
					8	0	21.43	0.139
					8	4	21.48	0.141
					8	7	21.47	0.140
		16QAM	19965	1711.5	15	0	21.43	0.139
					1	0	21.73	0.149
					1	7	21.60	0.145
					1	14	21.68	0.147
					8	0	20.52	0.113
					8	4	20.60	0.115
			20175	1732.5	8	7	20.56	0.114
					15	0	20.59	0.115
					1	0	21.64	0.146
					1	7	21.60	0.145
					1	14	21.57	0.144
					8	0	20.57	0.114
					8	4	20.54	0.113
					8	7	20.54	0.113
			20385	1753.5	15	0	20.56	0.114
					1	0	21.58	0.144
					1	7	21.50	0.141
					1	14	21.57	0.144
					8	0	20.42	0.110
					8	4	20.45	0.111
					8	7	20.44	0.111
					15	0	20.48	0.112

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power		With CA power Pcc:B2 Scc:B17(5M)		With CA power Pcc:B2 Scc:B17(10M)	
					Size	Offse	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
LTE Band 4	5 MHz	QPSK	19975	1712.5	1	0	22.66	0.185	22.64	0.184	22.63	0.183
					1	12	22.63	0.183	22.59	0.182	22.61	0.182
					1	24	22.58	0.181	22.54	0.179	22.56	0.180
					12	0	21.48	0.141	21.45	0.140	21.46	0.140
					12	6	21.60	0.145	21.56	0.143	21.59	0.144
					12	11	21.57	0.144	21.53	0.142	21.55	0.143
					25	0	21.41	0.138	21.39	0.138	21.39	0.138
			20175	1732.5	1	0	22.63	0.183	22.60	0.182	22.61	0.182
					1	12	22.62	0.183	22.59	0.182	22.61	0.182
					1	24	22.52	0.179	22.49	0.177	22.49	0.177
					12	0	21.53	0.142	21.52	0.142	21.50	0.141
					12	6	21.51	0.142	21.48	0.141	21.49	0.141
					12	11	21.45	0.140	21.42	0.139	21.43	0.139
					25	0	21.34	0.136	21.32	0.136	21.32	0.136
			20375	1752.5	1	0	22.44	0.175	22.41	0.174	22.42	0.175
					1	12	22.35	0.172	22.34	0.171	22.34	0.171
					1	24	22.37	0.173	22.36	0.172	22.33	0.171
					12	0	21.39	0.138	21.35	0.136	21.35	0.136
					12	6	21.35	0.136	21.32	0.136	21.33	0.136
					12	11	21.46	0.140	21.43	0.139	21.42	0.139
					25	0	21.20	0.132	21.19	0.132	21.17	0.131
		16QAM	19975	1712.5	1	0	21.69	0.148	21.67	0.147	21.66	0.147
					1	12	21.64	0.146	21.60	0.145	21.62	0.145
					1	24	21.61	0.145	21.57	0.144	21.59	0.144
					12	0	20.54	0.113	20.51	0.112	20.51	0.112
					12	6	20.60	0.115	20.58	0.114	20.56	0.114
					12	11	20.64	0.116	20.63	0.116	20.61	0.115
					25	0	20.47	0.111	20.44	0.111	20.46	0.111
			20175	1732.5	1	0	21.58	0.144	21.57	0.144	21.55	0.143
					1	12	21.57	0.144	21.55	0.143	21.54	0.143
					1	24	21.56	0.143	21.54	0.143	21.55	0.143
					12	0	20.61	0.115	20.58	0.114	20.59	0.115
					12	6	20.60	0.115	20.56	0.114	20.58	0.114
					12	11	20.55	0.114	20.51	0.112	20.54	0.113
					25	0	20.41	0.110	20.38	0.109	20.38	0.109
			20375	1752.5	1	0	21.53	0.142	21.49	0.141	21.51	0.142
					1	12	21.48	0.141	21.44	0.139	21.45	0.140
					1	24	21.49	0.141	21.48	0.141	21.47	0.140
					12	0	20.45	0.111	20.44	0.111	20.42	0.110
					12	6	20.43	0.110	20.41	0.110	20.39	0.109
					12	11	20.52	0.113	20.49	0.112	20.48	0.112
					25	0	20.24	0.106	20.21	0.105	20.20	0.105

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power		With CA power Pcc:B2 Scc:B17(5M)		With CA power Pcc:B2 Scc:B17(10M)	
					Size	Offse	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
LTE Band 4	10 MHz	QPSK	20000	1715.0	1	0	22.72	0.187	22.68	0.185	22.69	0.186
					1	24	22.69	0.186	22.65	0.184	22.67	0.185
					1	49	22.58	0.181	22.57	0.181	22.55	0.180
					25	0	21.58	0.144	21.56	0.143	21.56	0.143
					25	12	21.50	0.141	21.47	0.140	21.48	0.141
					25	24	21.42	0.139	21.39	0.138	21.41	0.138
					50	0	21.28	0.134	21.27	0.134	21.26	0.134
			20175	1732.5	1	0	22.71	0.187	22.67	0.185	22.68	0.185
					1	24	22.66	0.185	22.64	0.184	22.63	0.183
					1	49	22.50	0.178	22.47	0.177	22.47	0.177
					25	0	21.54	0.143	21.51	0.142	21.51	0.142
					25	12	21.53	0.142	21.50	0.141	21.51	0.142
					25	24	21.48	0.141	21.45	0.140	21.45	0.140
					50	0	21.38	0.137	21.34	0.136	21.36	0.137
			20350	1750.0	1	0	22.55	0.180	22.53	0.179	22.51	0.178
					1	24	22.42	0.175	22.39	0.173	22.40	0.174
					1	49	22.54	0.179	22.51	0.178	22.53	0.179
					25	0	21.30	0.135	21.28	0.134	21.28	0.134
					25	12	21.27	0.134	21.24	0.133	21.23	0.133
					25	24	21.33	0.136	21.32	0.136	21.31	0.135
					50	0	21.25	0.133	21.23	0.133	21.24	0.133
		16QAM	20000	1715.0	1	0	21.77	0.150	21.75	0.150	21.75	0.150
					1	24	21.73	0.149	21.71	0.148	21.72	0.149
					1	49	21.53	0.142	21.49	0.141	21.52	0.142
					25	0	20.60	0.115	20.57	0.114	20.57	0.114
					25	12	20.50	0.112	20.47	0.111	20.47	0.111
					25	24	20.45	0.111	20.44	0.111	20.41	0.110
					50	0	20.27	0.106	20.24	0.106	20.26	0.106
			20175	1732.5	1	0	21.68	0.147	21.66	0.147	21.67	0.147
					1	24	21.65	0.146	21.64	0.146	21.63	0.146
					1	49	21.50	0.141	21.48	0.141	21.49	0.141
					25	0	20.55	0.114	20.54	0.113	20.53	0.113
					25	12	20.50	0.112	20.46	0.111	20.49	0.112
					25	24	20.46	0.111	20.43	0.110	20.44	0.111
					50	0	20.43	0.110	20.41	0.110	20.41	0.110
			20350	1750.0	1	0	21.63	0.146	21.59	0.144	21.60	0.145
					1	24	21.51	0.142	21.50	0.141	21.48	0.141
					1	49	21.63	0.146	21.62	0.145	21.60	0.145
					25	0	20.37	0.109	20.34	0.108	20.35	0.108
					25	12	20.30	0.107	20.28	0.107	20.28	0.107
					25	24	20.36	0.109	20.35	0.108	20.32	0.108
					50	0	20.27	0.106	20.25	0.106	20.25	0.106

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	22.83	0.192
					1	37	22.73	0.187
					1	74	22.81	0.191
					36	0	21.63	0.146
					36	18	21.56	0.143
					36	35	21.48	0.141
			20175	1732.5	75	0	21.53	0.142
					1	0	22.94	0.197
					1	37	22.82	0.191
					1	74	22.66	0.185
					36	0	21.65	0.146
					36	18	21.63	0.146
					36	35	21.52	0.142
					75	0	21.52	0.142
			20325	1747.5	1	0	22.74	0.188
					1	37	22.64	0.184
					1	74	22.72	0.187
					36	0	21.40	0.138
					36	18	21.40	0.138
					36	35	21.33	0.136
		16QAM	20025	1717.5	75	0	21.36	0.137
					1	0	21.81	0.152
					1	37	21.70	0.148
					1	74	21.80	0.151
					36	0	20.64	0.116
					36	18	20.54	0.113
			20175	1732.5	36	35	20.51	0.112
					75	0	20.47	0.111
					1	0	21.90	0.155
					1	37	21.81	0.152
					1	74	21.65	0.146
					36	0	20.67	0.117
					36	18	20.62	0.115
					36	35	20.57	0.114
					75	0	20.56	0.114
			20325	1747.5	1	0	21.74	0.149
					1	37	21.67	0.147
					1	74	21.73	0.149
					36	0	20.44	0.111
					36	18	20.46	0.111
					36	35	20.35	0.108
					75	0	20.40	0.110

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	22.78	0.190
					1	49	22.67	0.185
					1	99	22.67	0.185
					50	0	21.46	0.140
					50	25	21.45	0.140
					50	49	21.45	0.140
			20175	1732.5	100	0	21.52	0.142
					1	0	22.87	0.194
					1	49	22.78	0.190
					1	99	22.53	0.179
					50	0	21.56	0.143
					50	25	21.45	0.140
					50	49	21.37	0.137
					100	0	21.49	0.141
			20300	1745.0	1	0	22.66	0.185
					1	49	22.60	0.182
					1	99	22.60	0.182
					50	0	21.31	0.135
					50	25	21.22	0.132
					50	49	21.23	0.133
		16QAM	20050	1720.0	100	0	21.26	0.134
					1	0	21.80	0.151
					1	49	21.68	0.147
					1	99	21.62	0.145
					50	0	20.47	0.111
					50	25	20.46	0.111
			20175	1732.5	50	49	20.46	0.111
					100	0	20.45	0.111
					1	0	21.88	0.154
					1	49	21.76	0.150
					1	99	21.56	0.143
					50	0	20.57	0.114
					50	25	20.51	0.112
					50	49	20.37	0.109
			20300	1745.0	100	0	20.50	0.112
					1	0	21.68	0.147
					1	49	21.67	0.147
					1	99	21.66	0.147
					50	0	20.40	0.110
					50	25	20.23	0.105
					50	49	20.26	0.106
					100	0	20.28	0.107

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	22.93	0.196
					1	3	22.92	0.196
					1	5	22.92	0.196
					3	0	22.88	0.194
					3	2	22.88	0.194
					3	3	22.87	0.194
			20525	836.5	6	0	21.94	0.156
					1	0	22.98	0.199
					1	3	22.97	0.198
					1	5	22.97	0.198
					3	0	22.91	0.195
					3	2	22.97	0.198
					3	3	22.90	0.195
					6	0	21.96	0.157
			20643	848.3	1	0	23.08	0.203
					1	3	22.99	0.199
					1	5	23.03	0.201
					3	0	23.06	0.202
					3	2	23.03	0.201
					3	3	23.05	0.202
					6	0	22.05	0.160
		16QAM	20407	824.7	1	0	21.97	0.157
					1	3	21.96	0.157
					1	5	21.94	0.156
					3	0	21.96	0.157
					3	2	21.97	0.157
					3	3	21.96	0.157
			20525	836.5	6	0	20.96	0.125
					1	0	21.99	0.158
					1	3	21.95	0.157
					1	5	21.97	0.157
					3	0	21.93	0.156
					3	2	21.97	0.157
					3	3	21.95	0.157
					6	0	21.00	0.126
			20643	848.3	1	0	22.19	0.166
					1	3	22.11	0.163
					1	5	22.08	0.161
					3	0	22.18	0.165
					3	2	22.16	0.164
					3	3	22.08	0.161
					6	0	21.08	0.128

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	23.02	0.200
					1	7	22.94	0.197
					1	14	23.01	0.200
					8	0	21.92	0.156
					8	4	22.03	0.160
					8	7	21.99	0.158
			20525	836.5	15	0	21.88	0.154
					1	0	23.04	0.201
					1	7	23.00	0.200
					1	14	23.02	0.200
					8	0	21.95	0.157
					8	4	21.97	0.157
					8	7	21.93	0.156
					15	0	21.93	0.156
			20635	847.5	1	0	23.09	0.204
					1	7	22.96	0.198
					1	14	23.07	0.203
					8	0	22.02	0.159
					8	4	21.96	0.157
					8	7	22.05	0.160
					15	0	21.91	0.155
		16QAM	20415	825.5	1	0	22.05	0.160
					1	7	21.96	0.157
					1	14	22.00	0.158
					8	0	20.92	0.124
					8	4	20.95	0.124
					8	7	20.95	0.124
			20525	836.5	15	0	20.86	0.122
					1	0	22.02	0.159
					1	7	21.99	0.158
					1	14	22.01	0.159
					8	0	20.95	0.124
					8	4	20.97	0.125
					8	7	20.98	0.125
					15	0	20.97	0.125
			20635	847.5	1	0	22.07	0.161
					1	7	22.03	0.160
					1	14	22.04	0.160
					8	0	20.98	0.125
					8	4	20.98	0.125
					8	7	21.03	0.127
					15	0	20.99	0.126

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	22.96	0.198
					1	12	22.95	0.197
					1	24	22.95	0.197
					12	0	21.75	0.150
					12	6	21.84	0.153
					12	11	21.87	0.154
			20525	836.5	25	0	21.76	0.150
					1	0	22.96	0.198
					1	12	22.92	0.196
					1	24	22.94	0.197
					12	0	21.80	0.151
					12	6	21.79	0.151
					12	11	21.81	0.152
					25	0	21.77	0.150
			20625	846.5	1	0	23.00	0.200
					1	12	22.93	0.196
					1	24	22.96	0.198
					12	0	21.94	0.156
					12	6	21.88	0.154
					12	11	21.86	0.153
		16QAM	20425	826.5	25	0	21.76	0.150
					1	0	21.99	0.158
					1	12	21.96	0.157
					1	24	21.97	0.157
					12	0	20.83	0.121
					12	6	20.91	0.123
			20525	836.5	12	11	20.93	0.124
					25	0	20.77	0.119
					1	0	21.92	0.156
					1	12	21.83	0.152
					1	24	21.88	0.154
					12	0	20.86	0.122
					12	6	20.88	0.122
					12	11	20.89	0.123
					25	0	20.79	0.120
			20625	846.5	1	0	21.98	0.158
					1	12	21.93	0.156
					1	24	21.94	0.156
					12	0	20.98	0.125
					12	6	20.95	0.124
					12	11	20.93	0.124
					25	0	20.82	0.121

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	23.07	0.203
					1	24	23.05	0.202
					1	49	23.06	0.202
					25	0	21.94	0.156
					25	12	21.92	0.156
					25	24	21.87	0.154
			20525	836.5	50	0	21.87	0.154
					1	0	23.11	0.205
					1	24	23.07	0.203
					1	49	23.09	0.204
					25	0	21.93	0.156
					25	12	21.89	0.155
					25	24	21.91	0.155
					50	0	21.85	0.153
			20600	844.0	1	0	23.17	0.207
					1	24	23.15	0.207
					1	49	23.07	0.203
					25	0	22.00	0.158
					25	12	21.88	0.154
					25	24	21.94	0.156
		16QAM	20450	829.0	50	0	21.80	0.151
					1	0	22.10	0.162
					1	24	22.08	0.161
					1	49	22.02	0.159
					25	0	20.94	0.124
					25	12	20.91	0.123
			20525	836.5	25	24	20.89	0.123
					50	0	20.87	0.122
					1	0	22.07	0.161
					1	24	22.02	0.159
					1	49	22.03	0.160
					25	0	20.99	0.126
					25	12	20.94	0.124
					25	24	20.97	0.125
			20600	844.0	50	0	20.87	0.122
					1	0	22.17	0.165
					1	24	22.15	0.164
					1	49	22.11	0.163
					25	0	21.01	0.126
					25	12	20.93	0.124
					25	24	20.97	0.125
					50	0	20.89	0.123

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 17	5 MHz	QPSK	23755	706.5	1	0	22.91	0.195
					1	12	22.84	0.192
					1	24	22.88	0.194
					12	0	21.70	0.148
					12	6	21.68	0.147
					12	11	21.78	0.151
			23790	710.0	25	0	21.63	0.146
					1	0	22.91	0.195
					1	12	22.81	0.191
					1	24	22.90	0.195
					12	0	21.83	0.152
					12	6	21.81	0.152
					12	11	21.84	0.153
					25	0	21.71	0.148
		16QAM	23825	713.5	1	0	23.08	0.203
					1	12	22.93	0.196
					1	24	23.05	0.202
					12	0	21.84	0.153
					12	6	21.88	0.154
					12	11	21.86	0.153
			23755	706.5	25	0	21.80	0.151
					1	0	21.94	0.156
					1	12	21.83	0.152
					1	24	21.91	0.155
					12	0	20.86	0.122
					12	6	20.82	0.121
					12	11	20.84	0.121
			23790	710.0	25	0	20.74	0.119
					1	0	21.91	0.155
					1	12	21.85	0.153
					1	24	21.90	0.155
					12	0	20.88	0.122
					12	6	20.87	0.122
					12	11	20.86	0.122
			23825	713.5	25	0	20.75	0.119
					1	0	21.93	0.156
					1	12	21.90	0.155
					1	24	21.91	0.155
					12	0	20.92	0.124
					12	6	20.89	0.123
					12	11	20.88	0.122
					25	0	20.82	0.121

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 17	10 MHz	QPSK	23780	709.0	1	0	23.04	0.201
					1	24	22.98	0.199
					1	49	23.03	0.201
					25	0	21.70	0.148
					25	12	21.74	0.149
					25	24	21.88	0.154
			23790	710.0	50	0	21.77	0.150
					1	0	23.06	0.202
					1	24	22.89	0.195
					1	49	23.04	0.201
					25	0	21.73	0.149
					25	12	21.86	0.153
					25	24	21.94	0.156
			23800	711.0	50	0	21.74	0.149
					1	0	23.19	0.208
					1	24	22.92	0.196
					1	49	23.17	0.207
					25	0	21.74	0.149
					25	12	21.83	0.152
					25	24	21.89	0.155
					50	0	21.79	0.151
		16QAM	23780	709.0	1	0	22.05	0.160
					1	24	21.97	0.157
					1	49	22.03	0.160
					25	0	20.77	0.119
					25	12	20.81	0.121
					25	24	20.91	0.123
			23790	710.0	50	0	20.84	0.121
					1	0	22.01	0.159
					1	24	21.96	0.157
					1	49	21.99	0.158
					25	0	20.74	0.119
					25	12	20.84	0.121
					25	24	20.96	0.125
			23800	711.0	50	0	20.81	0.121
					1	0	22.07	0.161
					1	24	21.89	0.155
					1	49	22.04	0.160
					25	0	20.75	0.119
					25	12	20.88	0.122
					25	24	20.92	0.124
					50	0	20.77	0.119

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 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 Instruments

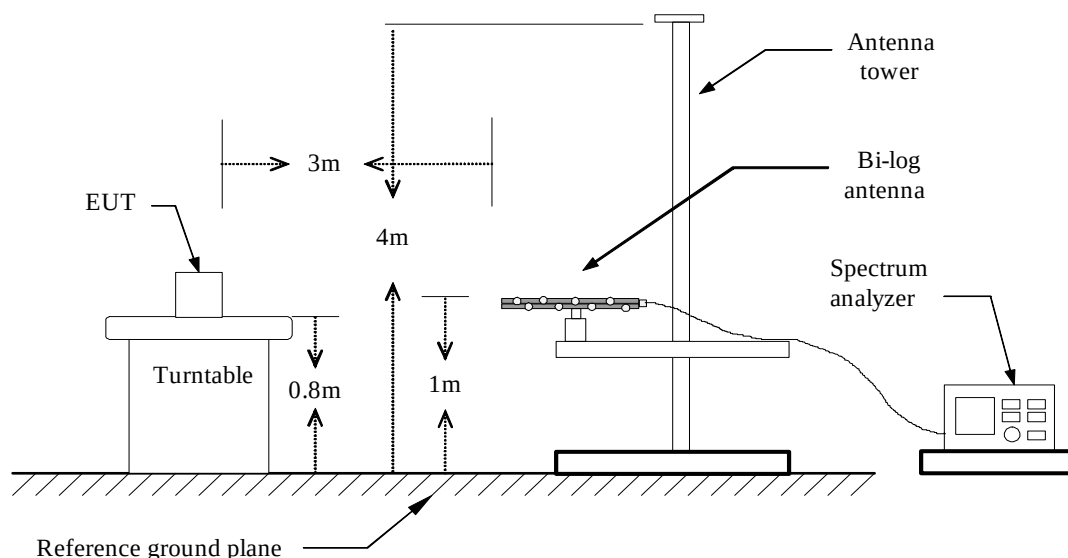
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/21/2013	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/21/2013	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2013	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2013	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/16/2013	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/10/2013	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/13/2013	(1)
Test Site	ATL	TE01	888001	08/28/2012	(1)

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

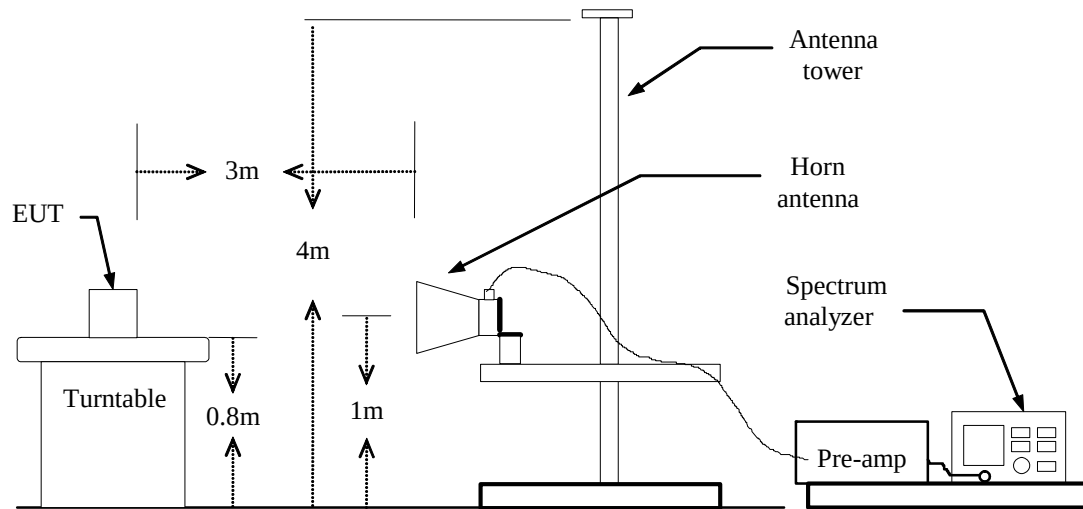
Note: N.C.R. = No Calibration Request.

3.3. Test Setup

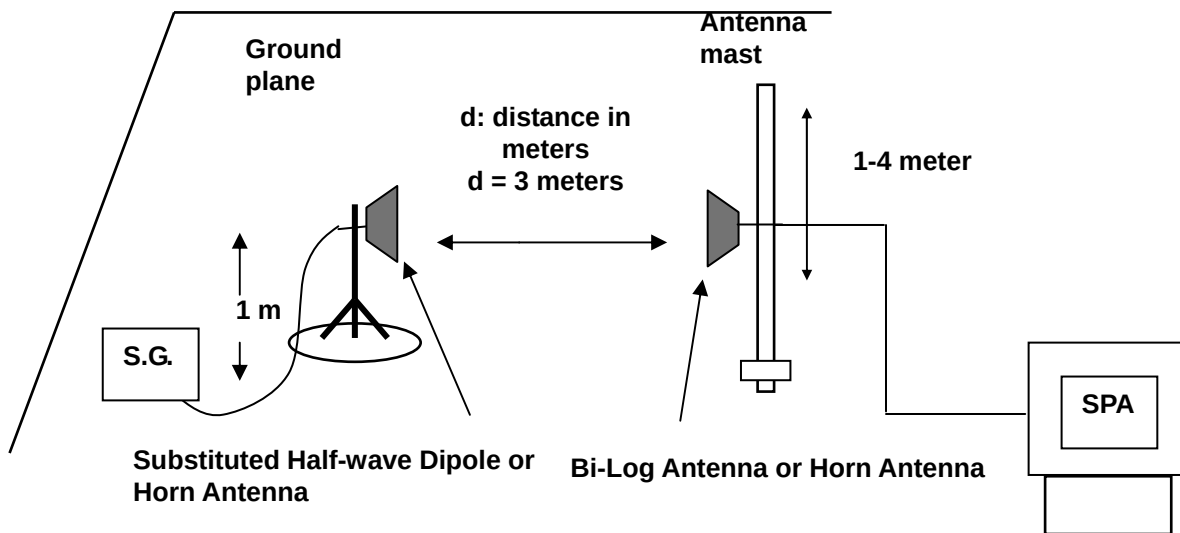
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



3.4. 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 and 5MHz for WCDMA mode.
- b. Pre Scan has been conducted and radiation three axis to determine the worst case mode all possible combinations between available modulations.
- c. 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.
- d. 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.
- e. $E.I.R.P. = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$
- f. $E.R.P. = E.I.R.P. - 2.15 \text{ dB}$

3.5. Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is $\pm 3.072 \text{ dB}$.

3.6. Test Result

Model Number	AirCard 781S		
Test Item	E.I.R.P. / E.R.P.		
Date of Test	08/26/2013	Test Site	TC03

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	2.61	13.55	16.16	0.041	< 2
			V	10.35	11.39	21.74	0.149	< 2
		1880.0	H	3.13	13.58	16.71	0.047	< 2
			V	9.79	11.64	21.43	0.139	< 2
		1909.3	H	2.87	13.62	16.49	0.045	< 2
			V	9.70	11.90	21.60	0.145	< 2
	16QAM	1850.7	H	1.34	13.55	14.89	0.031	< 2
			V	9.26	11.39	20.65	0.116	< 2
		1880.0	H	3.93	13.58	17.51	0.056	< 2
			V	9.15	11.63	20.78	0.120	< 2
		1909.3	H	1.42	13.62	15.04	0.032	< 2
			V	7.49	11.90	19.39	0.087	< 2
3 MHz	QPSK	1851.5	H	2.37	13.55	15.92	0.039	< 2
			V	10.02	11.39	21.41	0.138	< 2
		1880.0	H	3.77	13.59	17.36	0.054	< 2
			V	10.03	11.64	21.67	0.147	< 2
		1908.5	H	4.51	13.60	18.11	0.065	< 2
			V	10.01	11.87	21.88	0.154	< 2
	16QAM	1851.5	H	3.24	13.55	16.79	0.048	< 2
			V	8.65	11.39	20.04	0.101	< 2
		1880.0	H	2.67	13.59	16.26	0.042	< 2
			V	8.07	11.64	19.71	0.094	< 2
		1908.5	H	4.02	13.60	17.62	0.058	< 2
			V	7.67	11.86	19.53	0.090	< 2
5 MHz	QPSK	1852.5	H	2.65	13.55	16.20	0.042	< 2
			V	10.20	11.39	21.59	0.144	< 2
		1880.0	H	3.03	13.58	16.61	0.046	< 2
			V	10.10	11.63	21.73	0.149	< 2
		1907.5	H	4.80	13.60	18.40	0.069	< 2
			V	9.88	11.86	21.74	0.149	< 2
	16QAM	1852.5	H	-0.64	13.55	12.91	0.020	< 2
			V	8.84	11.39	20.23	0.105	< 2
		1880.0	H	2.29	13.58	15.87	0.039	< 2
			V	8.37	11.63	20.00	0.100	< 2
		1907.5	H	2.46	13.60	16.06	0.040	< 2
			V	8.04	11.85	19.89	0.097	< 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	4.97	13.55	18.52	0.071	< 2
			V	10.57	11.40	21.97	0.157	< 2
		1880.0	H	4.97	13.58	18.55	0.072	< 2
			V	10.27	11.61	21.88	0.154	< 2
		1905.0	H	4.13	13.61	17.74	0.059	< 2
			V	10.41	11.83	22.24	0.167	< 2
	16QAM	1855.0	H	2.62	13.55	16.17	0.041	< 2
			V	9.94	11.40	21.34	0.136	< 2
		1880.0	H	4.90	13.58	18.48	0.070	< 2
			V	10.06	11.61	21.67	0.147	< 2
		1905.0	H	4.00	13.61	17.61	0.058	< 2
			V	9.76	11.82	21.58	0.144	< 2
15 MHz	QPSK	1857.5	H	4.31	13.55	17.86	0.061	< 2
			V	10.12	11.40	21.52	0.142	< 2
		1880.0	H	2.08	13.58	15.66	0.037	< 2
			V	10.12	11.59	21.71	0.148	< 2
		1902.5	H	1.80	13.61	15.41	0.035	< 2
			V	9.84	11.78	21.62	0.145	< 2
	16QAM	1857.5	H	2.31	13.56	15.87	0.039	< 2
			V	7.95	11.40	19.35	0.086	< 2
		1880.0	H	2.93	13.58	16.51	0.045	< 2
			V	8.76	11.59	20.35	0.108	< 2
		1902.5	H	4.17	13.60	17.77	0.060	< 2
			V	8.50	11.78	20.28	0.107	< 2
20 MHz	QPSK	1860.0	H	4.73	13.56	18.29	0.067	< 2
			V	10.70	11.40	22.10	0.162	< 2
		1880.0	H	4.28	13.56	17.84	0.061	< 2
			V	9.92	11.56	21.48	0.141	< 2
		1900.0	H	4.12	13.58	17.70	0.059	< 2
			V	9.57	11.73	21.30	0.135	< 2
	16QAM	1860.0	H	2.98	13.56	16.54	0.045	< 2
			V	8.10	11.39	19.49	0.089	< 2
		1880.0	H	1.61	13.57	15.18	0.033	< 2
			V	8.76	11.56	20.32	0.108	< 2
		1900.0	H	-0.24	13.58	13.34	0.022	< 2
			V	7.62	11.73	19.35	0.086	< 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	3.62	13.41	17.03	0.050	< 1
			V	11.43	10.19	21.62	0.145	< 1
		1732.5	H	1.49	13.43	14.92	0.031	< 1
			V	11.92	10.39	22.31	0.170	< 1
		1754.3	H	4.34	13.46	17.80	0.060	< 1
			V	11.29	10.56	21.85	0.153	< 1
	16QAM	1710.7	H	1.57	13.41	14.98	0.031	< 1
			V	10.11	10.19	20.30	0.107	< 1
		1732.5	H	-0.27	13.43	13.16	0.021	< 1
			V	10.24	10.38	20.62	0.115	< 1
		1754.3	H	-0.45	13.46	13.01	0.020	< 1
			V	9.48	10.56	20.04	0.101	< 1
3 MHz	QPSK	1711.5	H	-0.32	13.41	13.09	0.020	< 1
			V	12.01	10.19	22.20	0.166	< 1
		1732.5	H	0.95	13.44	14.39	0.027	< 1
			V	11.46	10.38	21.84	0.153	< 1
		1753.5	H	0.27	13.45	13.72	0.024	< 1
			V	11.15	10.55	21.70	0.148	< 1
	16QAM	1711.5	H	1.18	13.41	14.59	0.029	< 1
			V	9.60	10.19	19.79	0.095	< 1
		1732.5	H	1.51	13.44	14.95	0.031	< 1
			V	9.08	10.38	19.46	0.088	< 1
		1753.5	H	0.16	13.45	13.61	0.023	< 1
			V	8.95	10.55	19.50	0.089	< 1
5 MHz	QPSK	1712.5	H	0.94	13.41	14.35	0.027	< 1
			V	11.87	10.20	22.07	0.161	< 1
		1732.5	H	-1.31	13.43	12.12	0.016	< 1
			V	11.44	10.36	21.80	0.151	< 1
		1752.5	H	-0.86	13.46	12.60	0.018	< 1
			V	10.72	10.54	21.26	0.134	< 1
	16QAM	1712.5	H	-1.26	13.41	12.15	0.016	< 1
			V	8.81	10.19	19.00	0.079	< 1
		1732.5	H	-0.61	13.43	12.82	0.019	< 1
			V	10.32	10.37	20.69	0.117	< 1
		1752.5	H	-2.37	13.46	11.09	0.013	< 1
			V	9.92	10.54	20.46	0.111	< 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	0.96	13.41	14.37	0.027	< 1
			V	11.31	10.20	21.51	0.142	< 1
		1732.5	H	-0.48	13.44	12.96	0.020	< 1
			V	10.70	10.35	21.05	0.127	< 1
		1750.0	H	1.53	13.45	14.98	0.031	< 1
			V	11.02	10.50	21.52	0.142	< 1
	16QAM	1715.0	H	0.80	13.41	14.21	0.026	< 1
			V	9.73	10.19	19.92	0.098	< 1
		1732.5	H	0.77	13.44	14.21	0.026	< 1
			V	9.99	10.35	20.34	0.108	< 1
		1750.0	H	-0.83	13.45	12.62	0.018	< 1
			V	9.61	10.50	20.11	0.103	< 1
15 MHz	QPSK	1717.5	H	1.86	13.42	15.28	0.034	< 1
			V	11.03	10.21	21.24	0.133	< 1
		1732.5	H	2.42	13.44	15.86	0.039	< 1
			V	11.00	10.34	21.34	0.136	< 1
		1747.5	H	-0.04	13.44	13.40	0.022	< 1
			V	11.32	10.45	21.77	0.150	< 1
	16QAM	1717.5	H	1.10	13.42	14.52	0.028	< 1
			V	9.98	10.21	20.19	0.104	< 1
		1732.5	H	1.57	13.43	15.00	0.032	< 1
			V	9.52	10.33	19.85	0.097	< 1
		1747.5	H	-0.47	13.44	12.97	0.020	< 1
			V	9.55	10.45	20.00	0.100	< 1
20 MHz	QPSK	1720.0	H	1.55	13.42	14.97	0.031	< 1
			V	11.28	10.21	21.49	0.141	< 1
		1732.5	H	2.03	13.43	15.46	0.035	< 1
			V	11.14	10.31	21.45	0.140	< 1
		1745.0	H	1.28	13.44	14.72	0.030	< 1
			V	11.14	10.41	21.55	0.143	< 1
	16QAM	1720.0	H	0.75	13.42	14.17	0.026	< 1
			V	9.44	10.21	19.65	0.092	< 1
		1732.5	H	2.99	13.43	16.42	0.044	< 1
			V	10.56	10.31	20.87	0.122	< 1
		1745.0	H	-0.42	13.44	13.02	0.020	< 1
			V	9.49	10.41	19.90	0.098	< 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	3.63	9.81	15.59	0.036	< 7
			V	9.43	9.14	20.72	0.118	< 7
		836.5	H	2.91	9.92	14.98	0.031	< 7
			V	8.34	9.19	19.68	0.093	< 7
		848.3	H	4.24	10.33	16.72	0.047	< 7
			V	8.12	9.31	19.58	0.091	< 7
	16QAM	824.7	H	1.81	9.80	13.76	0.024	< 7
			V	5.83	9.15	17.13	0.052	< 7
		836.5	H	3.79	9.92	15.86	0.039	< 7
			V	5.56	9.19	16.90	0.049	< 7
		848.3	H	4.63	10.32	17.10	0.051	< 7
			V	6.80	9.31	18.26	0.067	< 7
3 MHz	QPSK	825.5	H	5.07	9.80	17.02	0.050	< 7
			V	8.62	9.14	19.91	0.098	< 7
		836.5	H	4.48	9.91	16.54	0.045	< 7
			V	9.66	9.18	20.99	0.126	< 7
		847.5	H	4.47	10.24	16.86	0.049	< 7
			V	9.52	9.27	20.94	0.124	< 7
	16QAM	825.5	H	2.42	9.81	14.38	0.027	< 7
			V	6.51	9.15	17.81	0.060	< 7
		836.5	H	4.29	9.91	16.35	0.043	< 7
			V	6.42	9.18	17.75	0.060	< 7
		847.5	H	2.24	10.24	14.63	0.029	< 7
			V	6.26	9.28	17.69	0.059	< 7
5 MHz	QPSK	826.5	H	3.63	9.81	15.59	0.036	< 7
			V	8.45	9.15	19.75	0.094	< 7
		836.5	H	2.80	9.90	14.85	0.031	< 7
			V	8.49	9.18	19.82	0.096	< 7
		846.5	H	4.14	10.17	16.46	0.044	< 7
			V	9.95	9.25	21.35	0.136	< 7
	16QAM	826.5	H	2.29	9.81	14.25	0.027	< 7
			V	6.50	9.14	17.79	0.060	< 7
		836.5	H	2.83	9.90	14.88	0.031	< 7
			V	5.94	9.18	17.27	0.053	< 7
		846.5	H	3.75	10.16	16.06	0.040	< 7
			V	6.64	9.25	18.04	0.064	< 7

LTE Band 5								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
10 M	QPSK	829.0	H	4.35	9.81	16.31	0.043	< 7
			V	8.24	9.15	19.54	0.090	< 7
		836.5	H	2.93	9.88	14.96	0.031	< 7
			V	8.97	9.17	20.29	0.107	< 7
		844.0	H	3.56	9.95	15.66	0.037	< 7
			V	8.37	9.20	19.72	0.094	< 7
	16QAM	829.0	H	4.03	9.81	15.99	0.040	< 7
			V	6.26	9.15	17.56	0.057	< 7
		836.5	H	3.02	9.88	15.05	0.032	< 7
			V	5.82	9.17	17.14	0.052	< 7
		844.0	H	2.14	9.95	14.24	0.027	< 7
			V	7.15	9.20	18.50	0.071	< 7

LTE Band 17								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.R.P.		Limit (W)
						(dBm)	(W)	
5 MHz	QPSK	706.5	H	3.79	4.92	10.86	0.012	< 3
			V	10.08	8.19	20.42	0.110	< 3
		710.0	H	5.24	5.02	12.41	0.017	< 3
			V	10.10	8.30	20.55	0.114	< 3
		713.5	H	4.26	5.11	11.52	0.014	< 3
			V	10.28	8.43	20.86	0.122	< 3
	16QAM	706.5	H	3.30	4.92	10.37	0.011	< 3
			V	9.21	8.20	19.56	0.090	< 3
		710.0	H	4.05	5.02	11.22	0.013	< 3
			V	6.53	8.30	16.98	0.050	< 3
		713.5	H	3.60	5.11	10.86	0.012	< 3
			V	6.79	8.41	17.35	0.054	< 3
10 MHz	QPSK	709.0	H	3.12	4.93	10.20	0.010	< 3
			V	8.40	8.20	18.75	0.075	< 3
		710.0	H	3.60	4.95	10.70	0.012	< 3
			V	10.14	8.23	20.52	0.113	< 3
		711.0	H	4.46	4.98	11.59	0.014	< 3
			V	8.89	8.26	19.30	0.085	< 3
	16QAM	709.0	H	2.85	4.94	9.94	0.010	< 3
			V	6.51	8.20	16.86	0.049	< 3
		710.0	H	3.57	4.95	10.67	0.012	< 3
			V	6.64	8.23	17.02	0.050	< 3
		711.0	H	2.26	4.98	9.39	0.009	< 3
			V	7.36	8.26	17.77	0.060	< 3

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°C ~ 50°C.

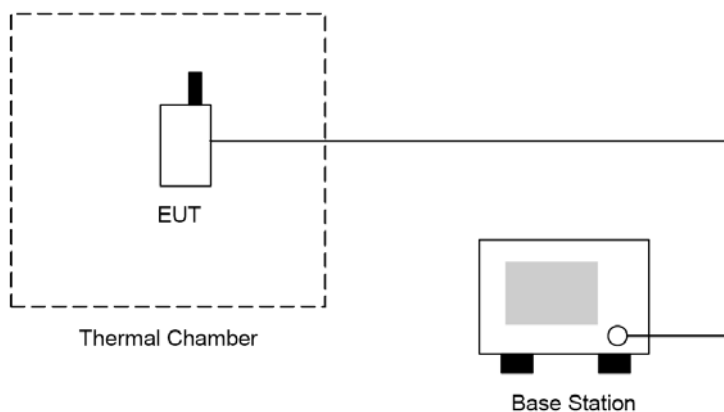
4.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Wideband Radio Communication Test	R & S	CMW500	103168	11/30/2012	(1)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	08/07/2013	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

4.3. Setup



4.4. 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°C 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°C 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 $25 \pm 5^{\circ}\text{C}$ 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.

4.5. Uncertainty

The measurement uncertainty is defined as for Frequency Stability measurement is $\pm 10\text{Hz}$.

4.6. Test Result

Model Number	AirCard 781S		
Test Item	Frequency Stability		
Date of Test	08/23/2013	Test Site	TE05

LTE Band 2 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	1880.0	4.25	20	5	0.003	± 2.5
		3.70	20	7	0.004	± 2.5
		3.50	20	4	0.002	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	1880.0	3.70	-30	-6	-0.003	± 2.5
		3.70	-20	-9	-0.005	± 2.5
		3.70	-10	-11	-0.006	± 2.5
		3.70	0	-2	-0.001	± 2.5
		3.70	10	1	0.001	± 2.5
		3.70	20	6	0.003	± 2.5
		3.70	30	8	0.004	± 2.5
		3.70	40	5	0.003	± 2.5
		3.70	50	-3	-0.002	± 2.5

LTE Band 4 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
15 MHz	1732.5	4.25	20	-6	-0.003	± 2.5
		3.70	20	-2	-0.001	± 2.5
		3.50	20	1	0.001	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
15 MHz	1732.5	3.70	-30	-12	-0.007	± 2.5
		3.70	-20	-9	-0.005	± 2.5
		3.70	-10	1	0.001	± 2.5
		3.70	0	3	0.002	± 2.5
		3.70	10	7	0.004	± 2.5
		3.70	20	-9	-0.005	± 2.5
		3.70	30	-5	-0.003	± 2.5
		3.70	40	-4	-0.002	± 2.5
		3.70	50	-7	-0.004	± 2.5

LTE Band 5 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	836.5	4.25	20	-5	-0.006	± 2.5
		3.70	20	-7	-0.008	± 2.5
		3.50	20	-8	-0.010	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	836.5	3.70	-30	-9	-0.011	± 2.5
		3.70	-20	8	0.010	± 2.5
		3.70	-10	5	0.006	± 2.5
		3.70	0	4	0.005	± 2.5
		3.70	10	1	0.001	± 2.5
		3.70	20	-7	-0.008	± 2.5
		3.70	30	-4	-0.005	± 2.5
		3.70	40	-5	-0.006	± 2.5
		3.70	50	-2	-0.002	± 2.5

LTE Band 17 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	710.0	4.25	20	6	0.008	± 2.5
		3.70	20	3	0.004	± 2.5
		3.50	20	-4	-0.006	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	710.0	3.70	-30	-8	-0.011	± 2.5
		3.70	-20	-4	-0.006	± 2.5
		3.70	-10	-3	-0.004	± 2.5
		3.70	0	-7	-0.010	± 2.5
		3.70	10	9	0.013	± 2.5
		3.70	20	5	0.007	± 2.5
		3.70	30	8	0.011	± 2.5
		3.70	40	7	0.010	± 2.5
		3.70	50	-3	-0.004	± 2.5

5 26dB Bandwidth and 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.

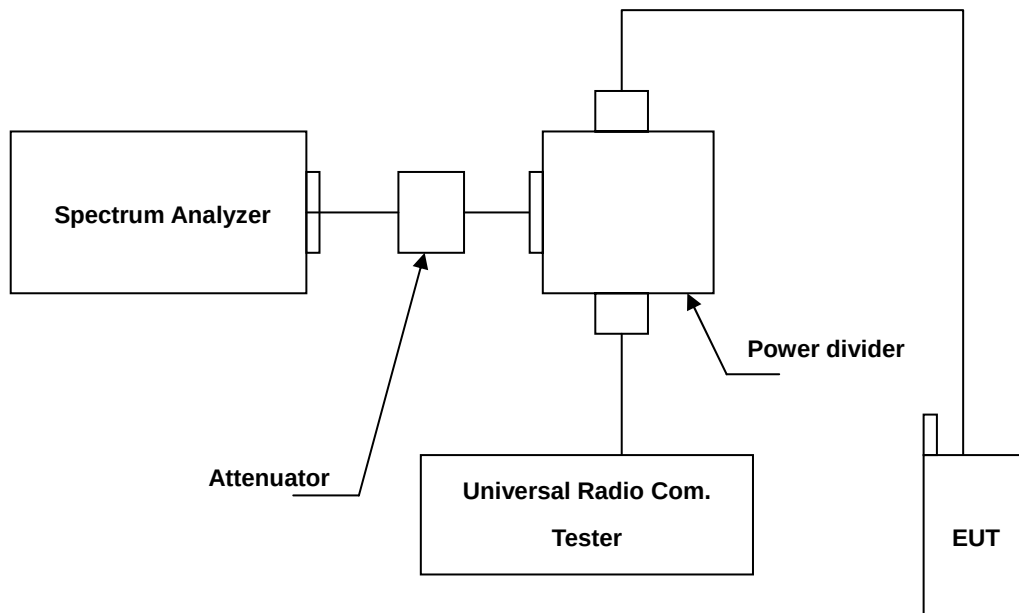
5.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/30/2012	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

5.3. Setup



5.4. 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.

5.5. Uncertainty

The measurement uncertainty is defined as $\pm 10\text{Hz}$

5.6. Test Result

Model Number	AirCard 781S		
Test Item	26dB Bandwidth and Occupied Bandwidth		
Date of Test	08/22/2013	Test Site	TE05

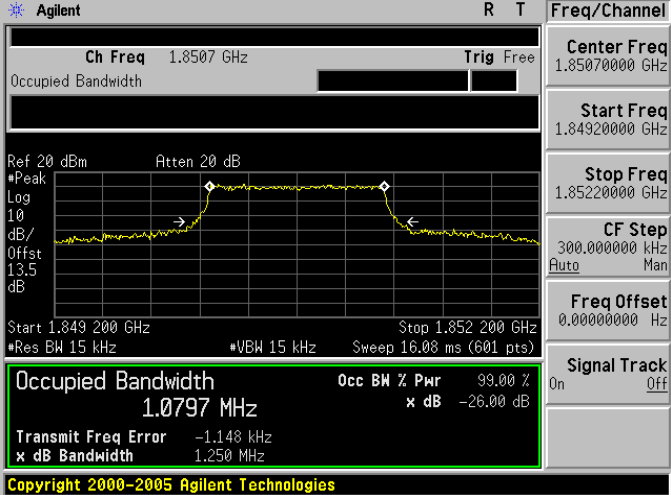
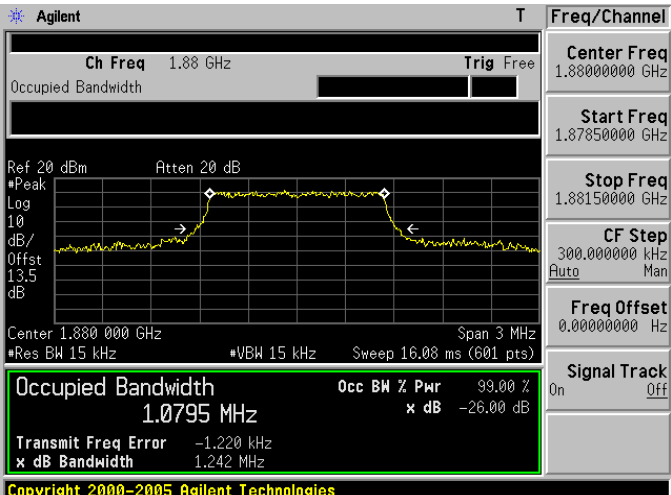
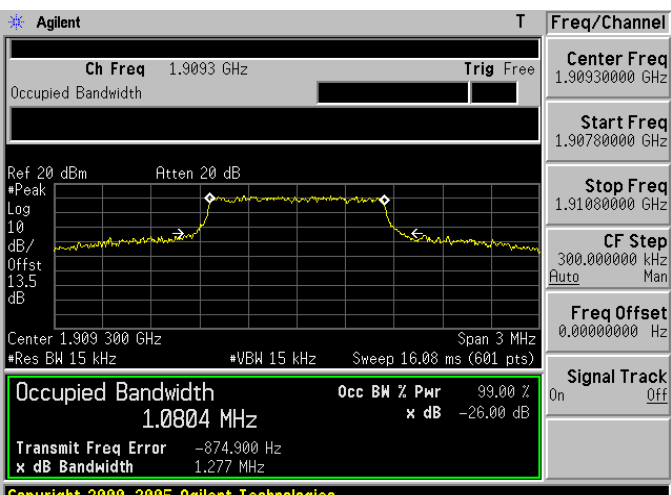
LTE Band 2				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	1850.7	1.250	1.0797
		1880.0	1.242	1.0795
		1909.3	1.277	1.0804
	3 MHz	1851.5	2.942	2.6914
		1880.0	2.911	2.6927
		1908.5	3.130	2.6946
	5 MHz	1852.5	4.902	4.4786
		1880.0	4.860	4.4603
		1907.5	4.937	4.4767
	10 MHz	1855.0	9.705	8.9344
		1880.0	9.584	8.9218
		1905.0	9.710	8.9292
	15 MHz	1857.5	14.373	13.4255
		1880.0	14.341	13.3688
		1902.5	14.405	13.4238
	20 MHz	1860.0	18.787	17.8098
		1880.0	19.041	17.8132
		1900.0	19.097	17.8232
16QAM	1.4 MHz	1850.7	1.265	1.0837
		1880.0	1.217	1.0804
		1909.3	1.466	1.0851
	3 MHz	1851.5	2.928	2.6829
		1880.0	2.919	2.6914
		1908.5	2.945	2.6925
	5 MHz	1852.5	4.854	4.4580
		1880.0	4.815	4.4826
		1907.5	5.827	4.4715
	10 MHz	1855.0	9.498	8.9232
		1880.0	9.638	8.9135
		1905.0	9.787	8.9346
	15 MHz	1857.5	14.281	13.4249
		1880.0	14.337	13.3938
		1902.5	14.428	13.4087
	20 MHz	1860.0	19.007	17.8297
		1880.0	19.016	17.8606
		1900.0	18.939	17.8373

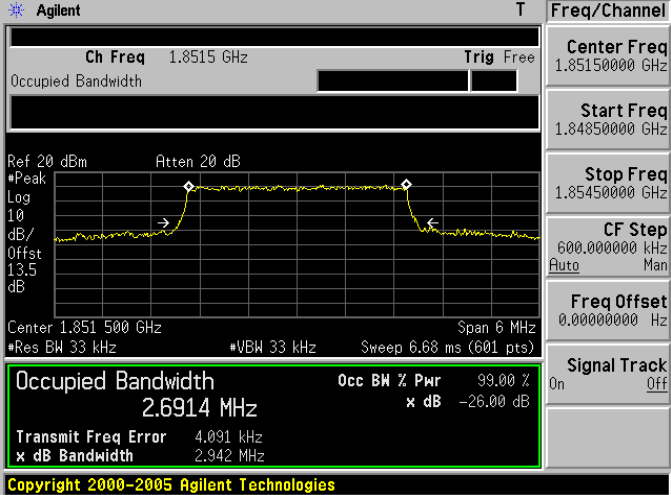
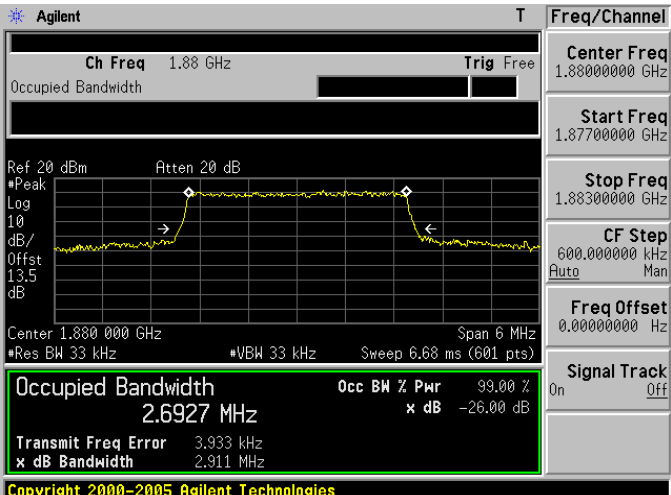
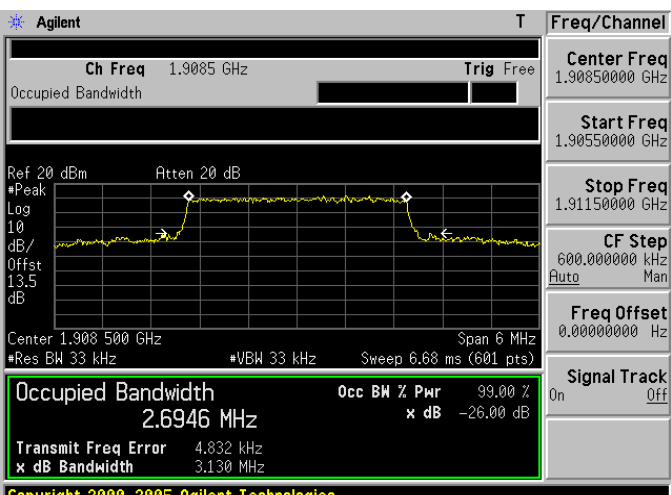
LTE Band 4				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	1710.7	1.240	1.0766
		1732.5	1.229	1.0777
		1754.3	1.234	1.0784
	3 MHz	1711.5	2.935	2.6921
		1732.5	2.942	2.6895
		1753.5	2.910	2.6873
	5 MHz	1712.5	4.956	4.4678
		1732.5	4.884	4.4635
		1752.5	4.880	4.4568
	10 MHz	1715.0	9.642	8.9329
		1732.5	9.697	8.9348
		1750.0	9.647	8.9432
	15 MHz	1717.5	14.344	13.3937
		1732.5	14.457	13.4460
		1747.5	14.278	13.3738
	20 MHz	1720.0	19.126	17.8514
		1732.5	18.909	17.8514
		1745.0	19.037	17.7862
16QAM	1.4 MHz	1710.7	1.230	1.0789
		1732.5	1.250	1.0789
		1754.3	1.228	1.0805
	3 MHz	1711.5	2.930	2.6851
		1732.5	2.926	2.6875
		1753.5	2.928	2.6816
	5 MHz	1712.5	4.840	4.4690
		1732.5	4.849	4.4710
		1752.5	4.810	4.4664
	10 MHz	1715.0	9.615	8.9153
		1732.5	9.619	8.9249
		1750.0	9.513	8.9087
	15 MHz	1717.5	14.326	13.3846
		1732.5	14.328	13.4247
		1747.5	14.364	13.3560
	20 MHz	1720.0	18.753	17.8283
		1732.5	19.065	17.8838
		1745.0	18.996	17.8082

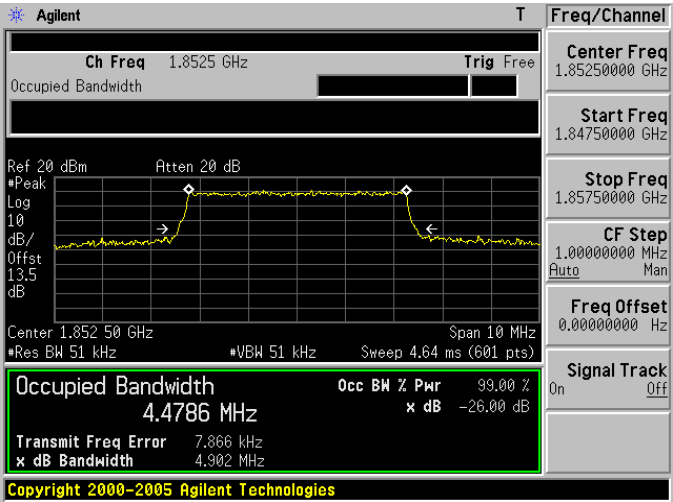
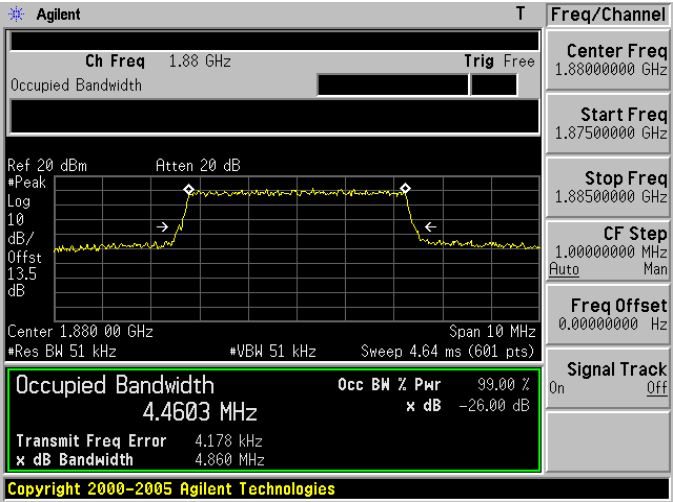
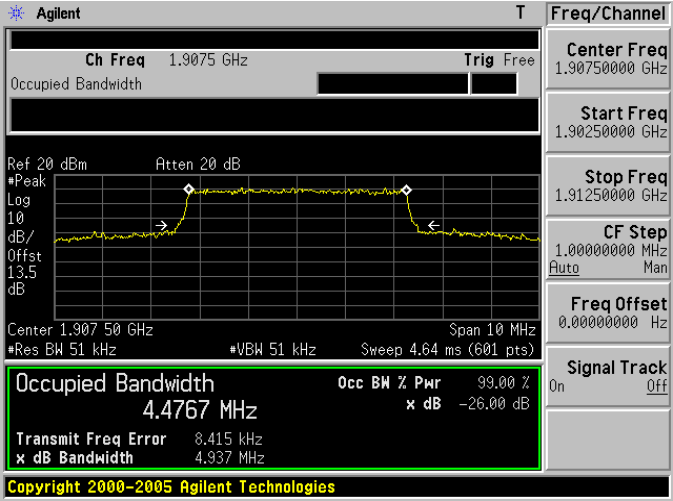
LTE Band 5				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	824.7	1.231	1.0773
		836.5	1.321	1.0848
		848.3	1.224	1.0768
	3 MHz	825.5	2.902	2.6867
		836.5	3.071	2.6951
		847.5	2.931	2.6908
	5 MHz	826.5	4.834	4.4683
		836.5	4.917	4.4813
		846.5	4.863	4.4804
	10 MHz	829.0	9.652	8.9495
		836.5	9.566	8.9395
		844.0	9.628	8.9348
16QAM	1.4 MHz	824.7	1.253	1.0805
		836.5	1.656	1.0888
		848.3	1.263	1.0830
	3 MHz	825.5	2.938	2.6830
		836.5	3.690	2.6956
		847.5	2.912	2.6827
	5 MHz	826.5	4.851	4.4603
		836.5	6.342	4.4864
		846.5	4.796	4.4657
	10 MHz	829.0	9.616	8.9445
		836.5	9.693	8.9362
		844.0	9.629	8.9419

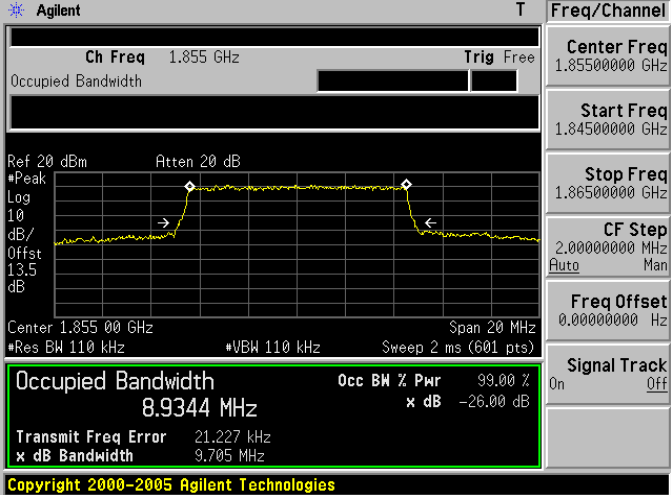
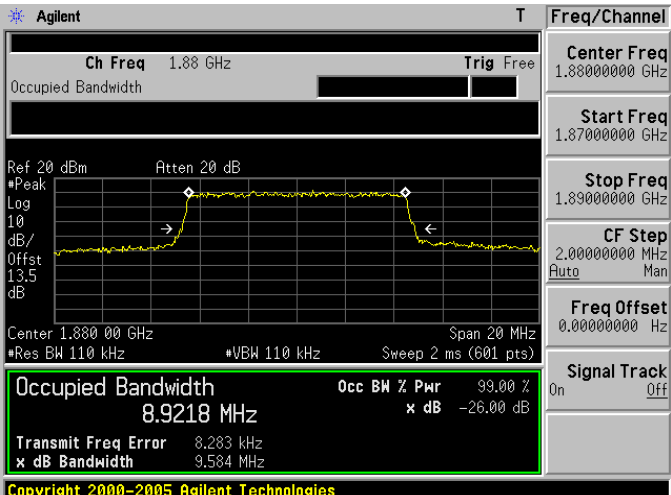
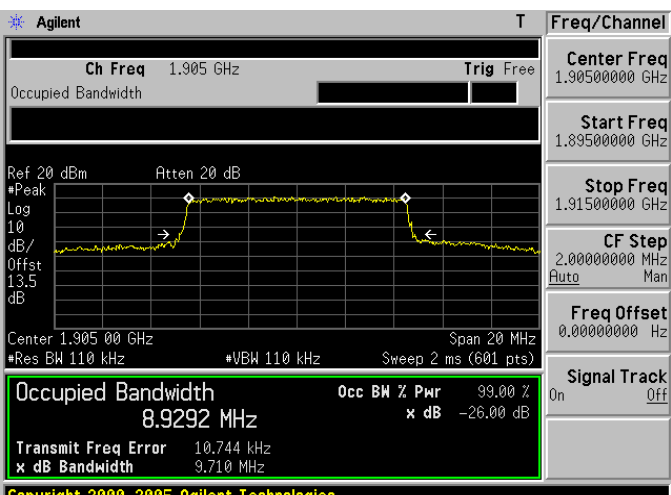
LTE Band 17				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	5 MHz	706.5	5.025	4.4768
		710.0	4.827	4.4643
		713.5	4.835	4.4664
	10 MHz	709.0	9.693	8.9452
		710.0	9.514	8.9141
		711.0	9.599	8.9107
16QAM	5 MHz	706.5	4.863	4.4831
		710.0	4.851	4.4743
		713.5	4.827	4.4640
	10 MHz	709.0	9.690	8.9263
		710.0	9.731	8.9284
		711.0	9.541	8.8982

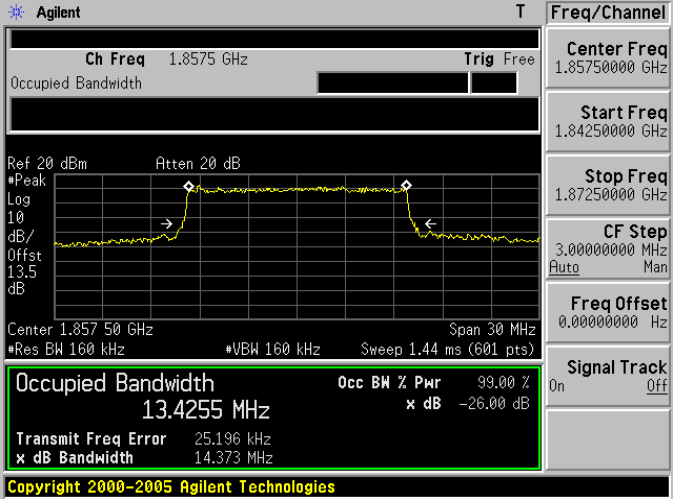
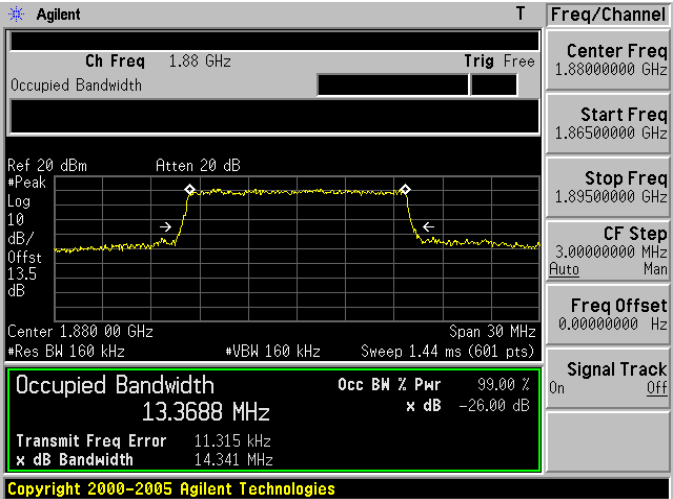
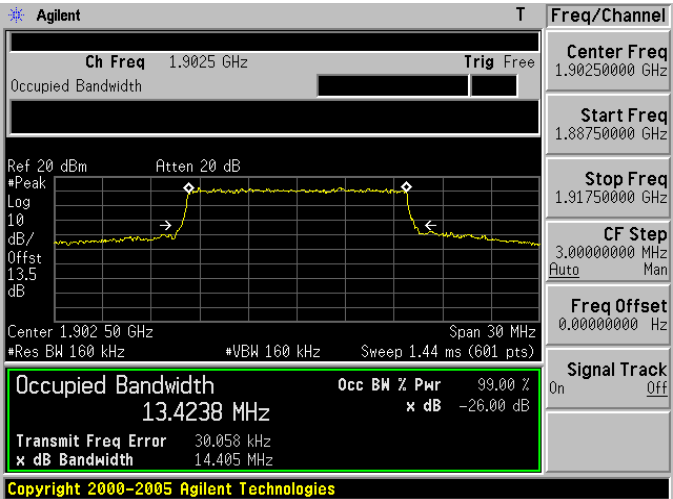
5.7. Test Graphs

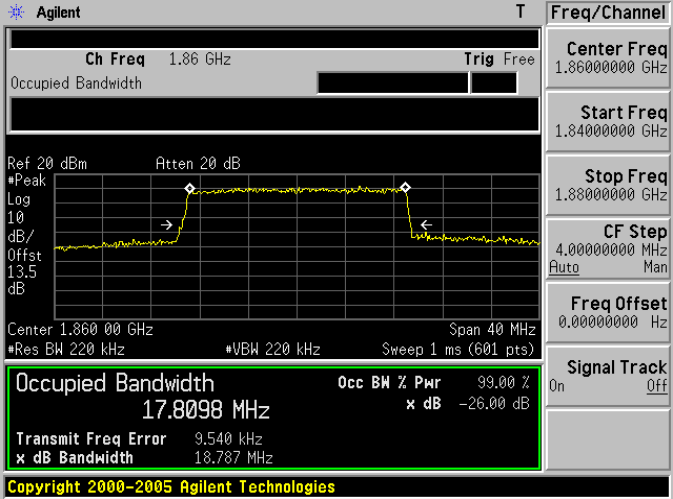
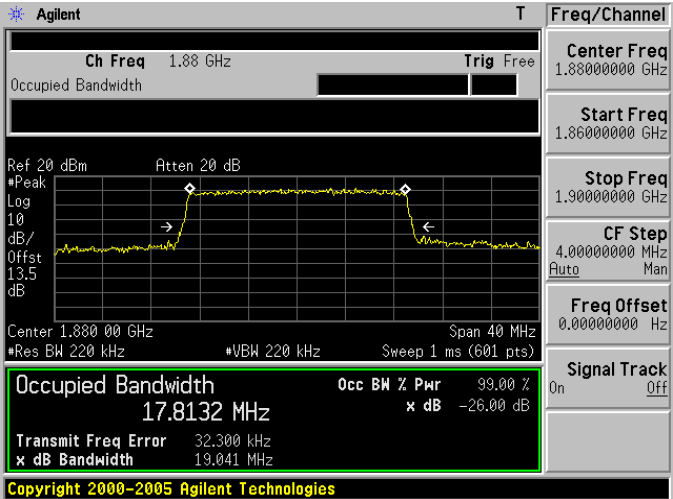
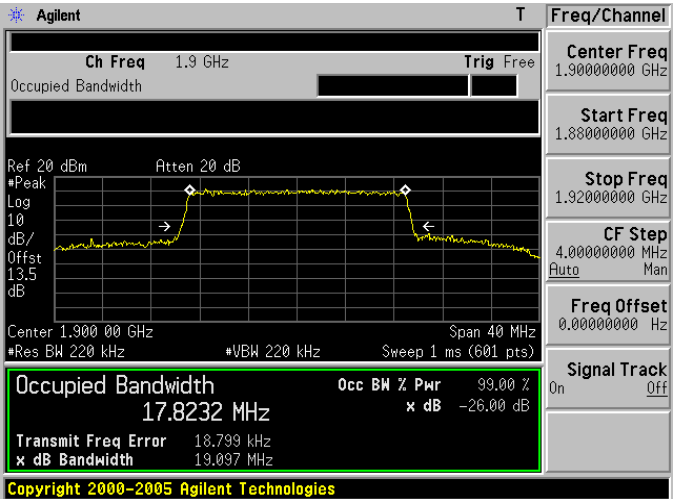
LTE Band 2 (Channel Bandwidth: 1.4 MHz) _ QPSK	
1850.7 MHz	 Agilent R T Freq/Channel Ch Freq 1.8507 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Start 1.849 200 GHz Stop 1.852 200 GHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0797 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.148 kHz x dB Bandwidth 1.250 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.85070000 GHz Start Freq 1.84920000 GHz Stop Freq 1.85220000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1880.0 MHz	 Agilent T Freq/Channel Ch Freq 1.88 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.880 000 GHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0795 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.220 kHz x dB Bandwidth 1.242 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.88000000 GHz Start Freq 1.87850000 GHz Stop Freq 1.88150000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1909.3 MHz	 Agilent T Freq/Channel Ch Freq 1.9093 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.909 300 GHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0804 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -874.900 Hz x dB Bandwidth 1.277 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.90930000 GHz Start Freq 1.90780000 GHz Stop Freq 1.91080000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

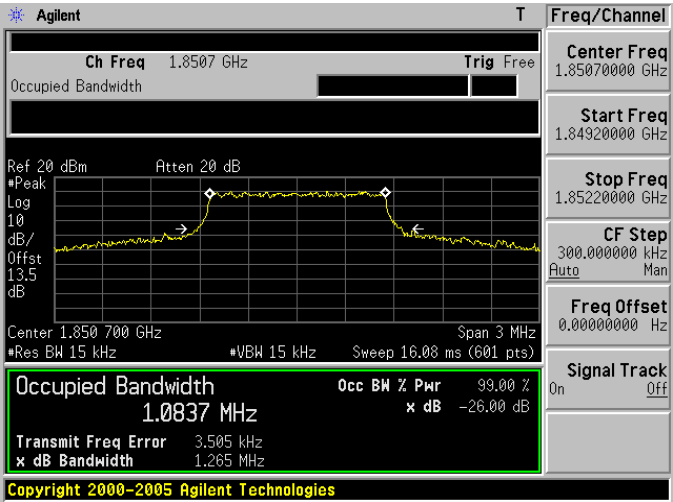
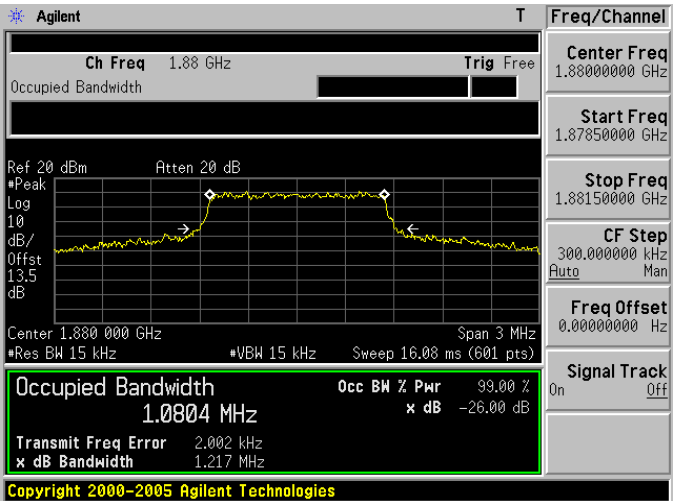
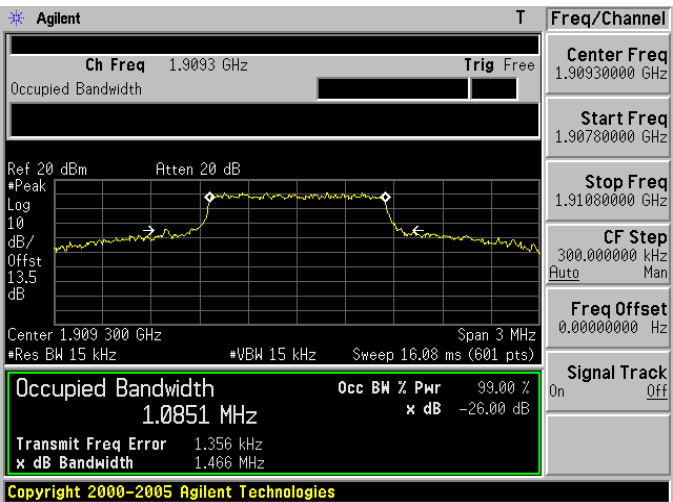
LTE Band 2 (Channel Bandwidth: 3 MHz) _ QPSK	
1851.5 MHz	 Agilent T Freq/Channel Ch Freq 1.8515 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offset 13.5 dB Center 1.851 500 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6914 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 4.091 kHz x dB Bandwidth 2.942 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.85150000 GHz Start Freq 1.84850000 GHz Stop Freq 1.85450000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1880.0 MHz	 Agilent T Freq/Channel Ch Freq 1.88 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offset 13.5 dB Center 1.880 000 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6927 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.933 kHz x dB Bandwidth 2.911 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.88000000 GHz Start Freq 1.87700000 GHz Stop Freq 1.88300000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1908.5 MHz	 Agilent T Freq/Channel Ch Freq 1.9085 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offset 13.5 dB Center 1.908 500 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6946 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 4.832 kHz x dB Bandwidth 3.130 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.90850000 GHz Start Freq 1.90550000 GHz Stop Freq 1.91150000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

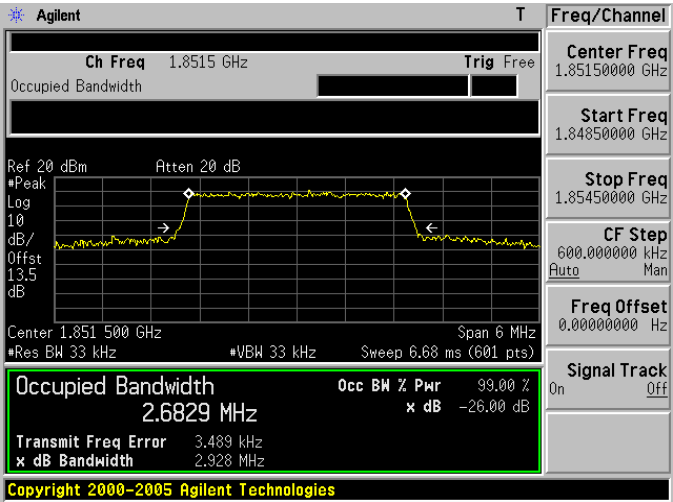
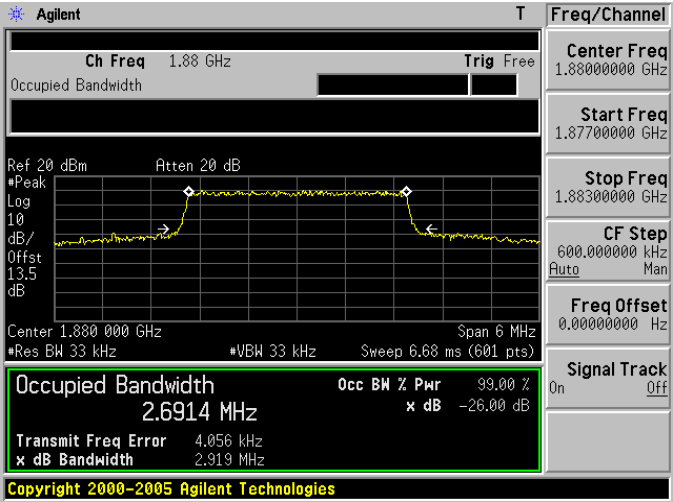
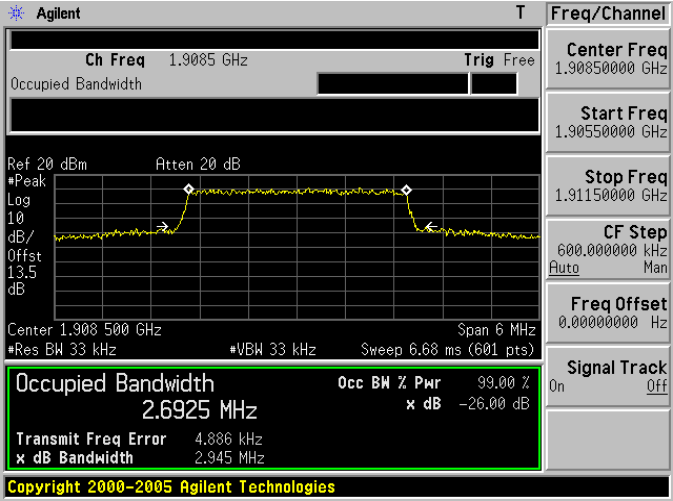
LTE Band 2 (Channel Bandwidth: 5 MHz) _ QPSK	
1852.5 MHz	 Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Copyright 2000-2005 Agilent Technologies
1907.5 MHz	 Copyright 2000-2005 Agilent Technologies

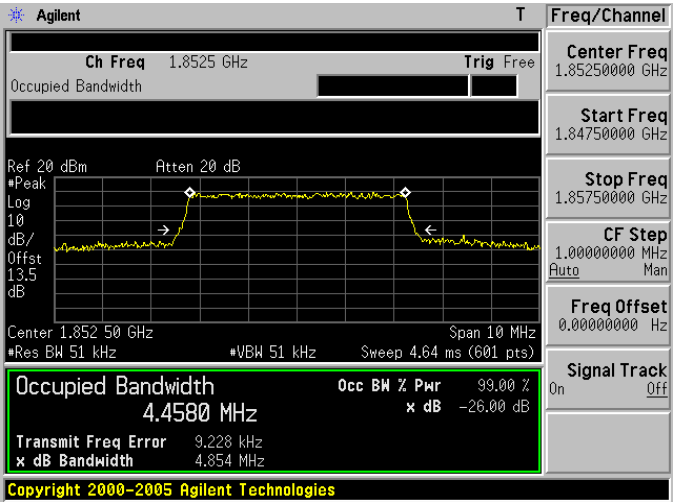
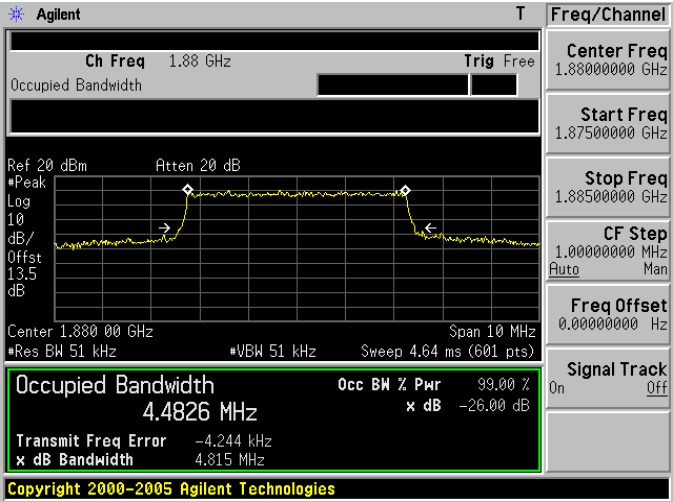
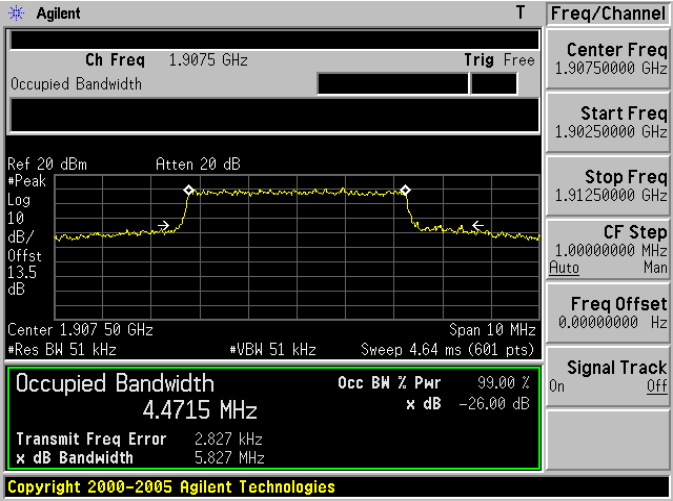
LTE Band 2 (Channel Bandwidth: 10 MHz) _ QPSK	
1855.0 MHz	 Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Copyright 2000-2005 Agilent Technologies
1905.0 MHz	 Copyright 2000-2005 Agilent Technologies

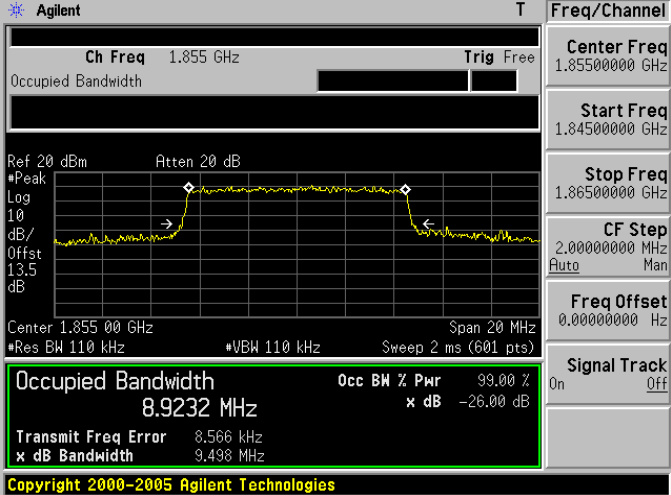
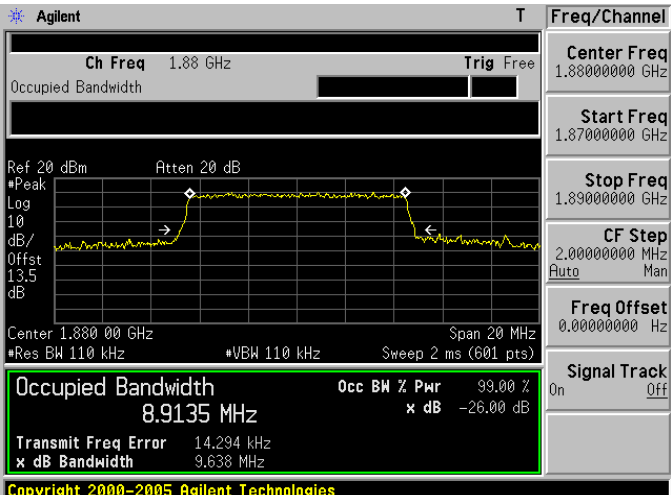
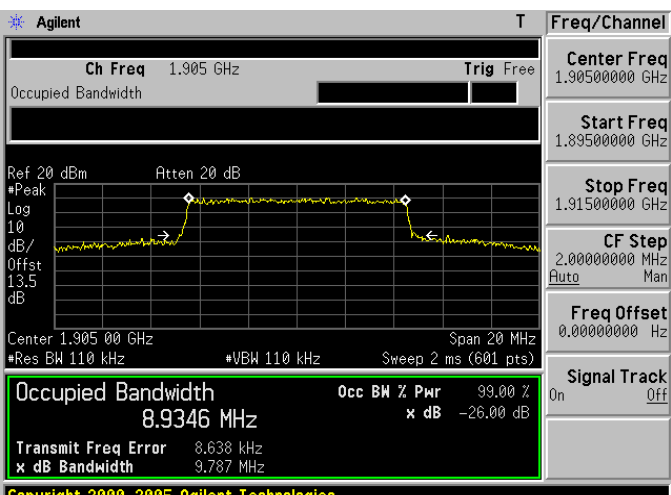
LTE Band 2 (Channel Bandwidth: 15 MHz) _ QPSK	
1857.5 MHz	 Agilent T Freq/Channel Ch Freq 1.8575 GHz Trig Free Center Freq 1.85750000 GHz Start Freq 1.84250000 GHz Stop Freq 1.87250000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.857 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.4255 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 25.196 kHz x dB Bandwidth 14.373 MHz Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Agilent T Freq/Channel Ch Freq 1.88 GHz Trig Free Center Freq 1.88000000 GHz Start Freq 1.86500000 GHz Stop Freq 1.89500000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.880 00 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.3688 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 11.315 kHz x dB Bandwidth 14.341 MHz Copyright 2000-2005 Agilent Technologies
1902.5 MHz	 Agilent T Freq/Channel Ch Freq 1.9025 GHz Trig Free Center Freq 1.90250000 GHz Start Freq 1.88750000 GHz Stop Freq 1.91750000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.902 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.4238 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 30.058 kHz x dB Bandwidth 14.405 MHz Copyright 2000-2005 Agilent Technologies

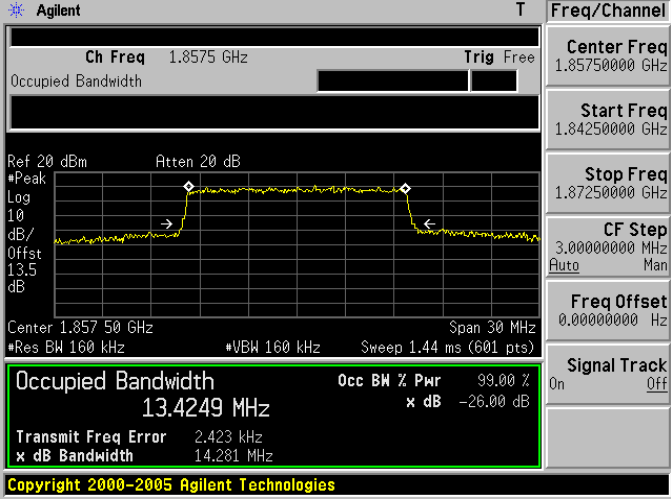
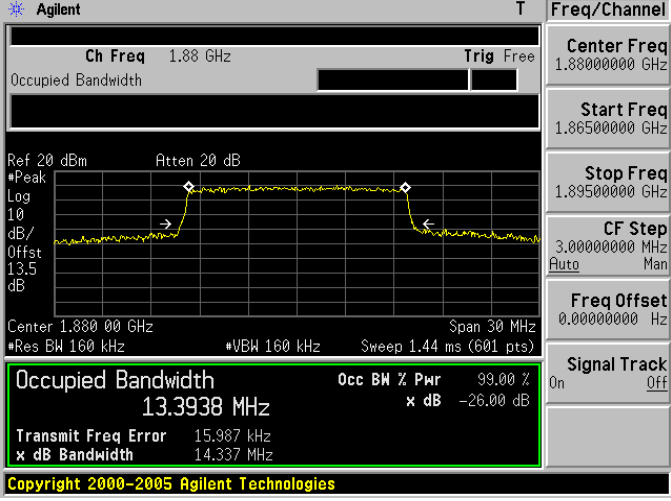
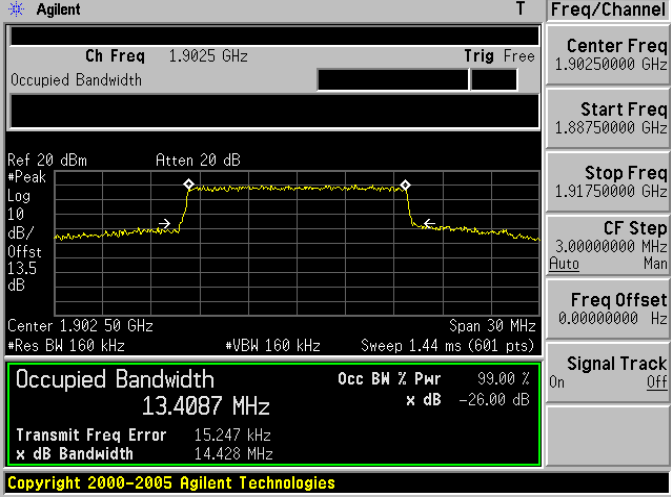
LTE Band 2 (Channel Bandwidth: 20 MHz) _ QPSK	
1860.0 MHz	 Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Copyright 2000-2005 Agilent Technologies
1900.0 MHz	 Copyright 2000-2005 Agilent Technologies

LTE Band 2 (Channel Bandwidth: 1.4 MHz) _ 16QAM	
1850.7 MHz	 Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Copyright 2000-2005 Agilent Technologies
1909.3 MHz	 Copyright 2000-2005 Agilent Technologies

LTE Band 2 (Channel Bandwidth: 3 MHz) _ 16QAM	
1851.5 MHz	 Agilent T Freq/Channel Ch Freq 1.8515 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.851 500 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6829 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.489 kHz x dB Bandwidth 2.928 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.85150000 GHz Start Freq 1.84850000 GHz Stop Freq 1.85450000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1880.0 MHz	 Agilent T Freq/Channel Ch Freq 1.88 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.880 000 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6914 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 4.056 kHz x dB Bandwidth 2.919 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.88000000 GHz Start Freq 1.87700000 GHz Stop Freq 1.88300000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1908.5 MHz	 Agilent T Freq/Channel Ch Freq 1.9085 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.908 500 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6925 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 4.886 kHz x dB Bandwidth 2.945 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.90850000 GHz Start Freq 1.90550000 GHz Stop Freq 1.91150000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

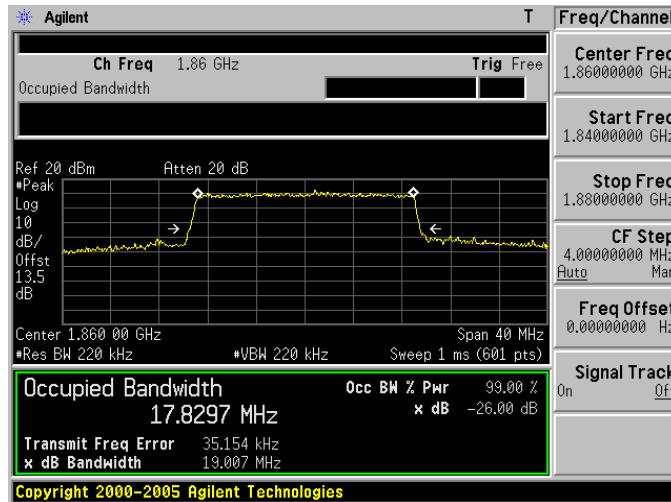
LTE Band 2 (Channel Bandwidth: 5 MHz) _ 16QAM	
1852.5 MHz	 Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Copyright 2000-2005 Agilent Technologies
1907.5 MHz	 Copyright 2000-2005 Agilent Technologies

LTE Band 2 (Channel Bandwidth: 10 MHz) _ 16QAM	
1855.0 MHz	 Agilent T Freq/Channel Ch Freq 1.855 GHz Trig Free Center Freq 1.85500000 GHz Start Freq 1.84500000 GHz Stop Freq 1.86500000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.855 00 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9232 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 8.566 kHz x dB Bandwidth 9.498 MHz Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Agilent T Freq/Channel Ch Freq 1.88 GHz Trig Free Center Freq 1.88000000 GHz Start Freq 1.87000000 GHz Stop Freq 1.89000000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.880 00 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9135 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 14.294 kHz x dB Bandwidth 9.638 MHz Copyright 2000-2005 Agilent Technologies
1905.0 MHz	 Agilent T Freq/Channel Ch Freq 1.905 GHz Trig Free Center Freq 1.90500000 GHz Start Freq 1.89500000 GHz Stop Freq 1.91500000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.905 00 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9346 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 8.638 kHz x dB Bandwidth 9.787 MHz Copyright 2000-2005 Agilent Technologies

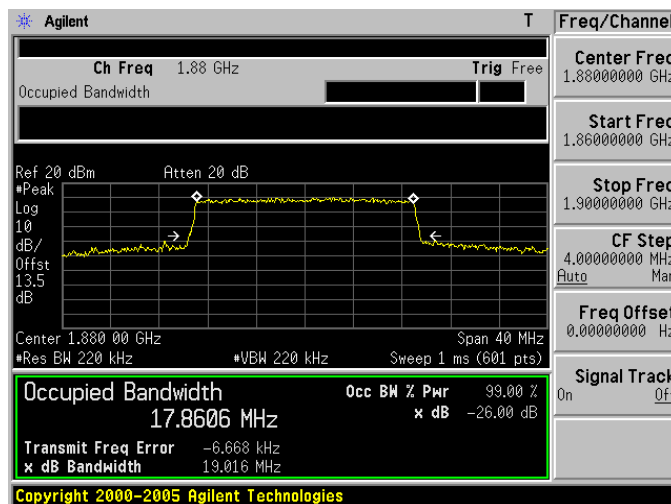
LTE Band 2 (Channel Bandwidth: 15 MHz) _ 16QAM	
1857.5 MHz	 Copyright 2000-2005 Agilent Technologies
1880.0 MHz	 Copyright 2000-2005 Agilent Technologies
1902.5 MHz	 Copyright 2000-2005 Agilent Technologies

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

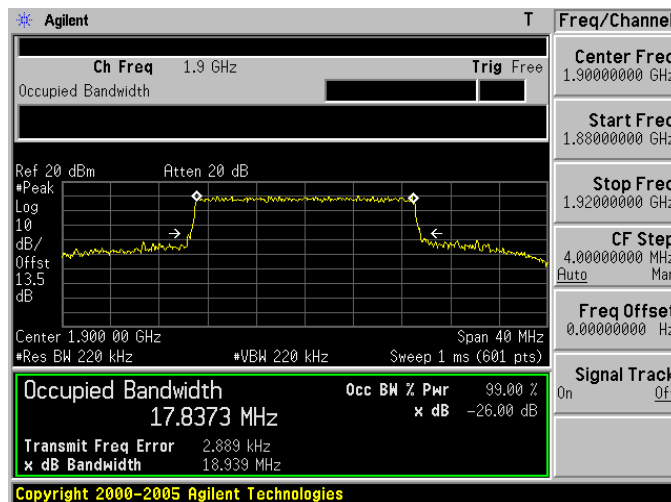
1860.0 MHz

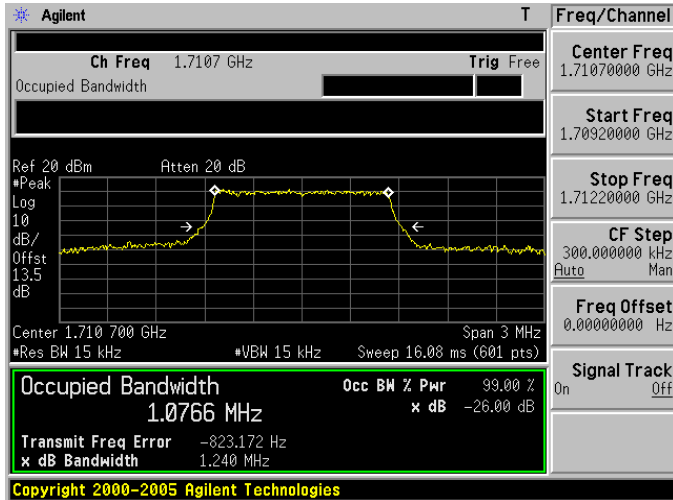
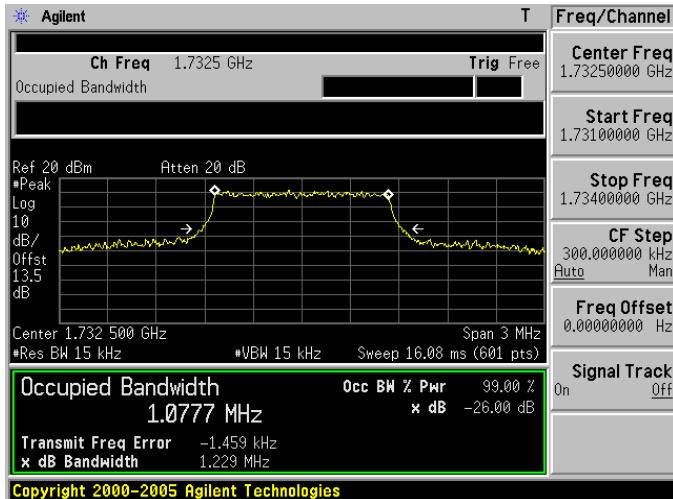
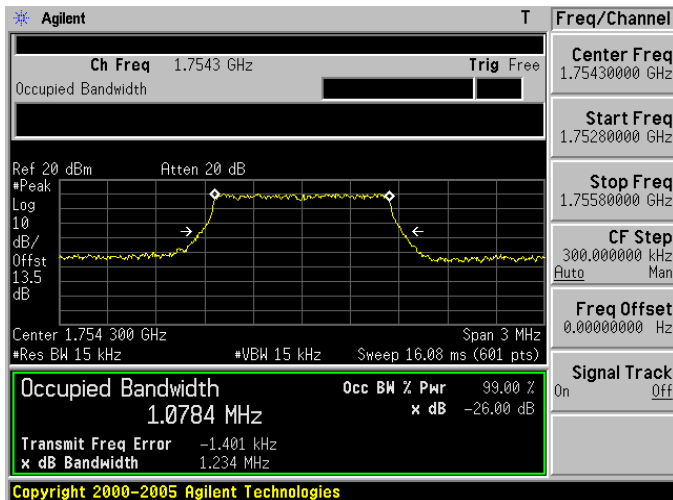


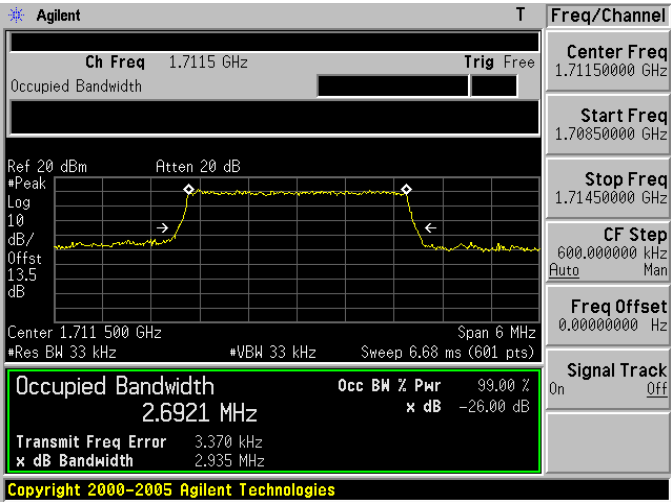
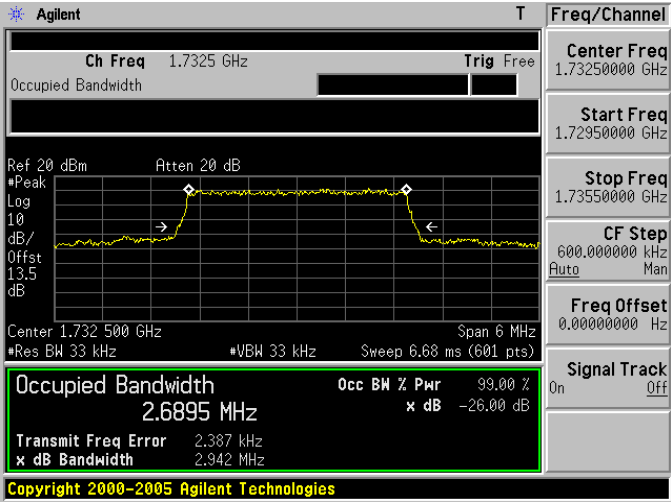
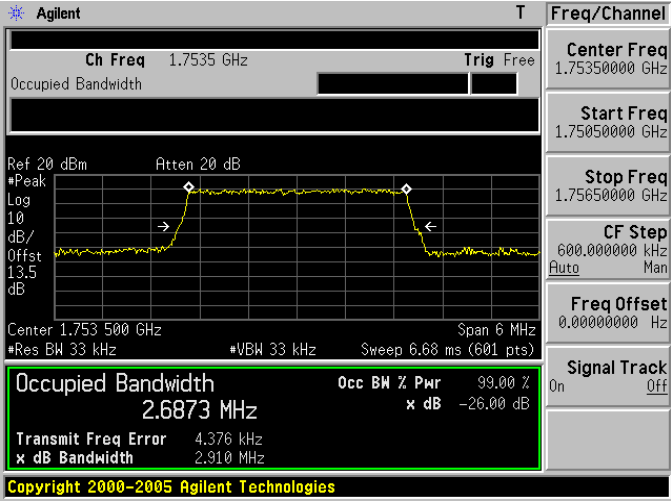
1880.0 MHz

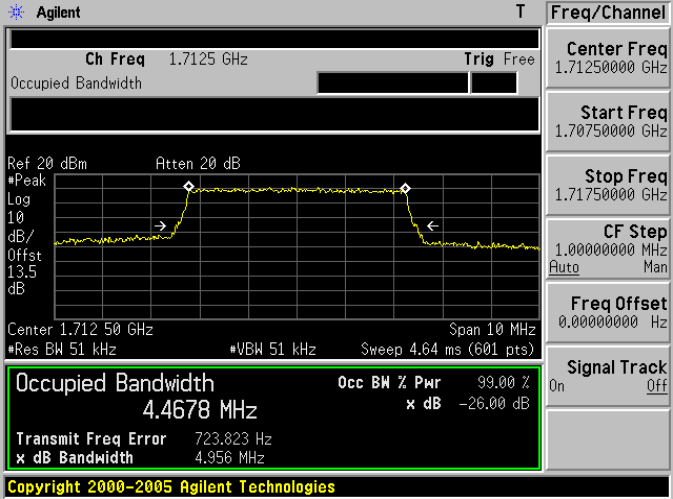
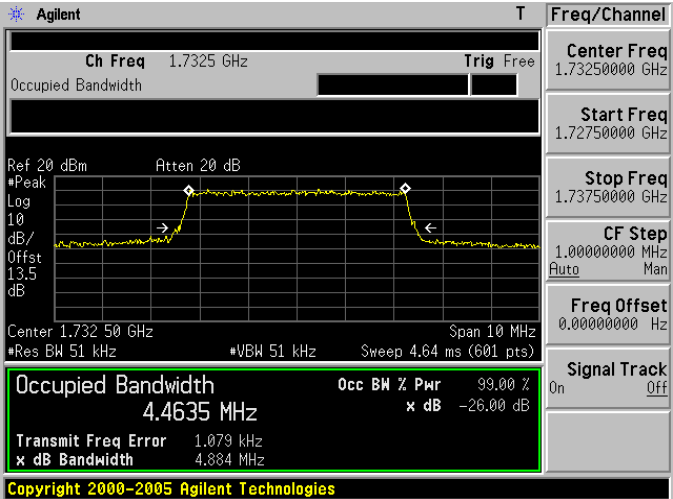
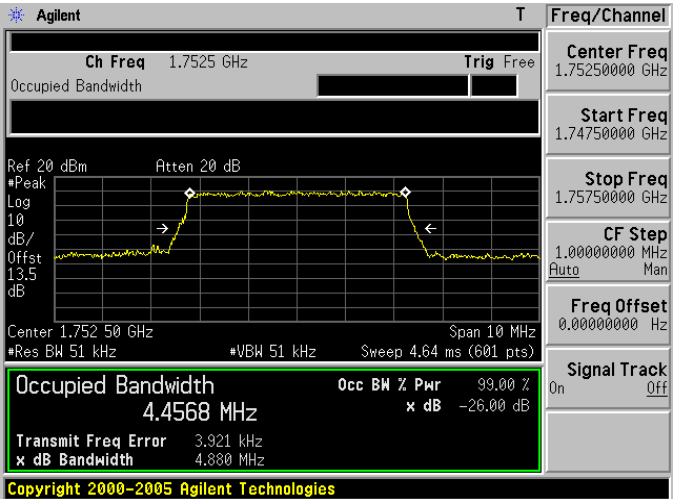


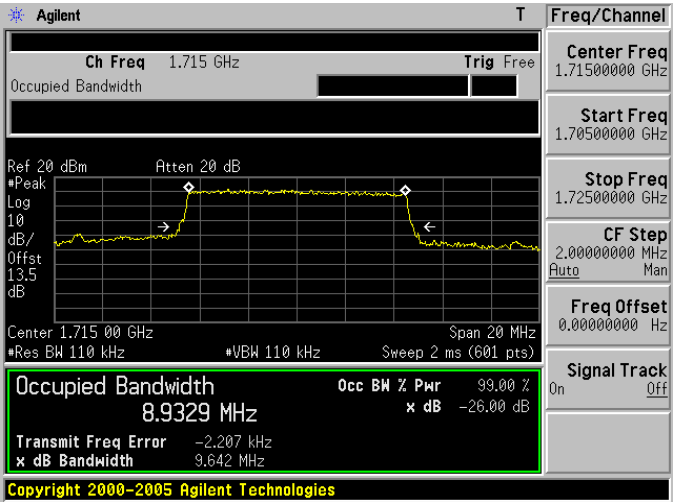
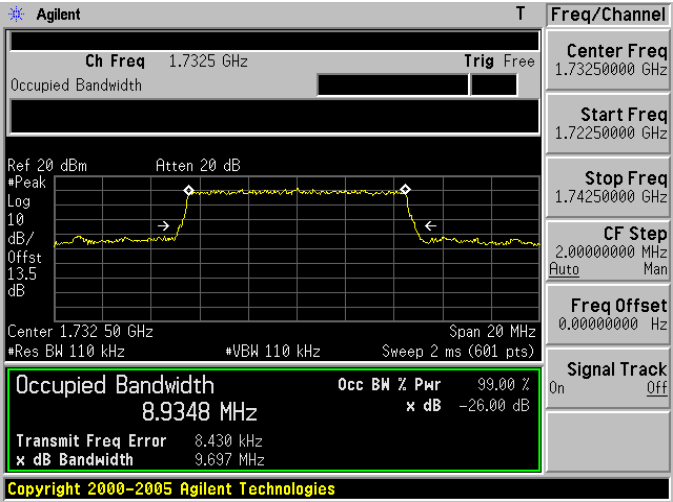
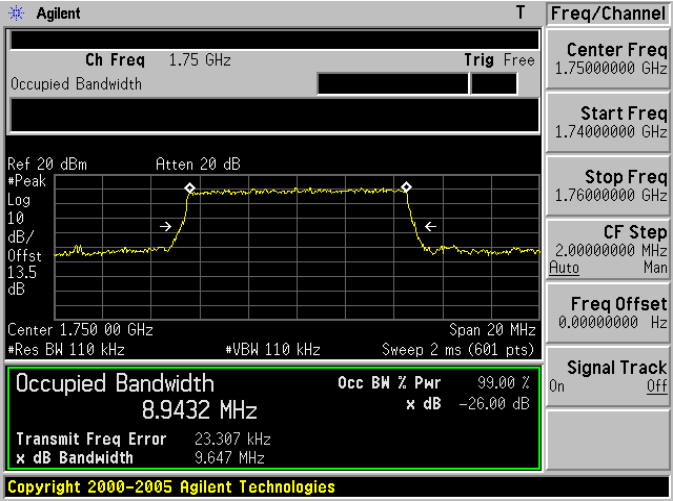
1900.0 MHz

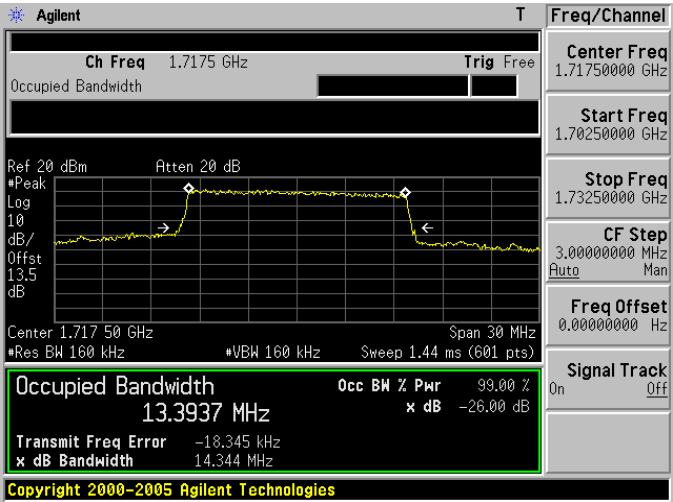
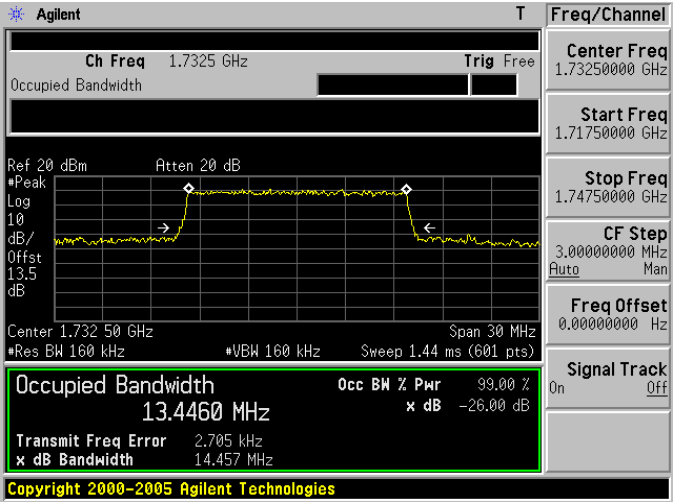
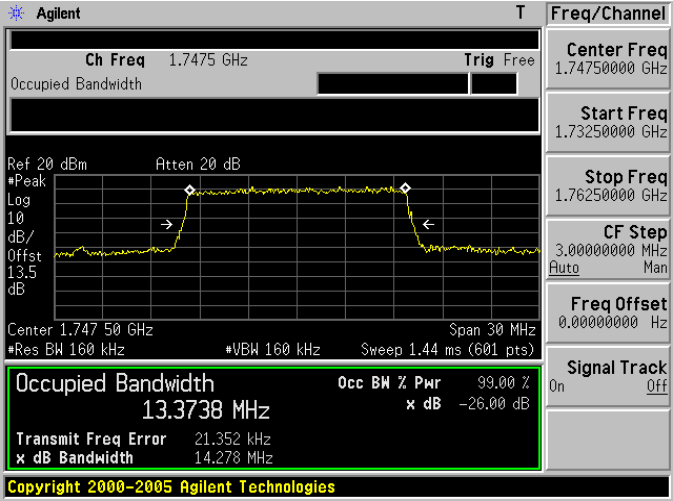


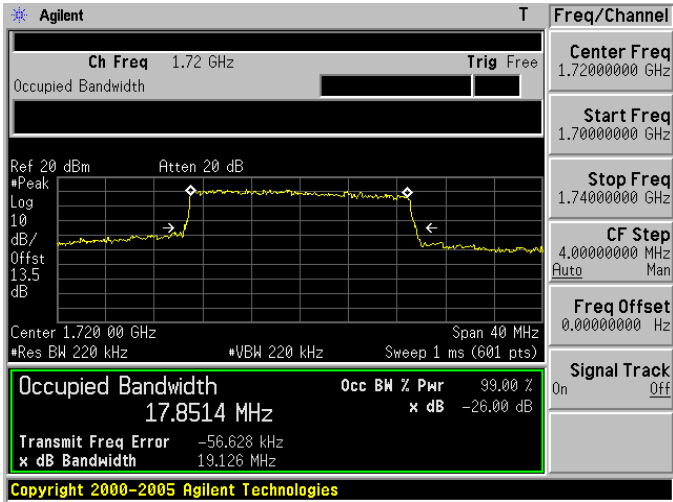
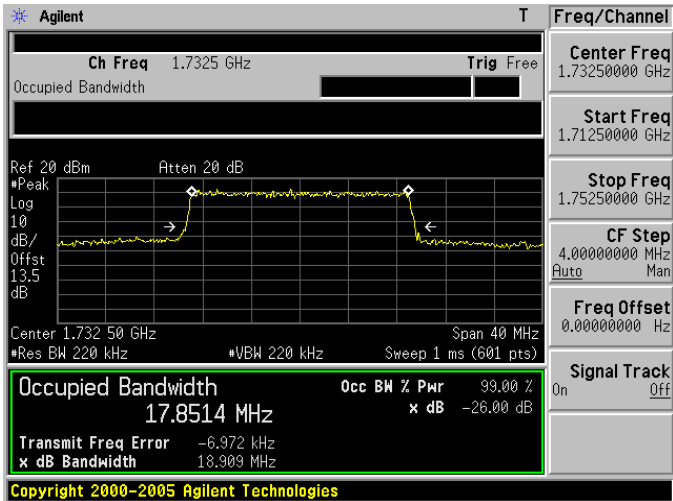
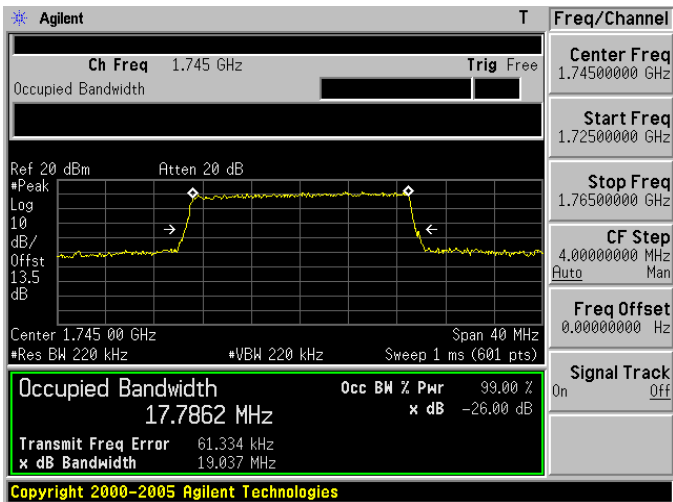
LTE Band 4 (Channel Bandwidth: 1.4 MHz) _ QPSK	
1710.7 MHz	 Agilent T Freq/Channel Ch Freq 1.7107 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.710 700 GHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0766 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -823.172 Hz x dB Bandwidth 1.240 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.7107000 GHz Start Freq 1.7092000 GHz Stop Freq 1.7122000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1732.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7325 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.732 500 GHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0777 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.459 kHz x dB Bandwidth 1.229 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.7325000 GHz Start Freq 1.7310000 GHz Stop Freq 1.7340000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1754.3 MHz	 Agilent T Freq/Channel Ch Freq 1.7543 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.754 300 GHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0784 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.401 kHz x dB Bandwidth 1.234 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.7543000 GHz Start Freq 1.7528000 GHz Stop Freq 1.7558000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

LTE Band 4 (Channel Bandwidth: 3 MHz) _ QPSK	
1711.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7115 GHz Trig Free Center Freq 1.71150000 GHz Start Freq 1.70850000 GHz Stop Freq 1.71450000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.711 500 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6921 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.370 kHz x dB Bandwidth 2.935 MHz Copyright 2000-2005 Agilent Technologies
1732.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7325 GHz Trig Free Center Freq 1.73250000 GHz Start Freq 1.72950000 GHz Stop Freq 1.73550000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.732 500 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6895 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.387 kHz x dB Bandwidth 2.942 MHz Copyright 2000-2005 Agilent Technologies
1753.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7535 GHz Trig Free Center Freq 1.75350000 GHz Start Freq 1.75050000 GHz Stop Freq 1.75650000 GHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.753 500 GHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6873 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 4.376 kHz x dB Bandwidth 2.910 MHz Copyright 2000-2005 Agilent Technologies

LTE Band 4 (Channel Bandwidth: 5 MHz) _ QPSK	
1712.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7125 GHz Trig Free Center Freq 1.71250000 GHz Start Freq 1.70750000 GHz Stop Freq 1.71750000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.712 50 GHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4678 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 723.823 Hz x dB Bandwidth 4.956 MHz Copyright 2000-2005 Agilent Technologies
1732.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7325 GHz Trig Free Center Freq 1.73250000 GHz Start Freq 1.72750000 GHz Stop Freq 1.73750000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.732 50 GHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4635 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.079 kHz x dB Bandwidth 4.884 MHz Copyright 2000-2005 Agilent Technologies
1752.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7525 GHz Trig Free Center Freq 1.75250000 GHz Start Freq 1.74750000 GHz Stop Freq 1.75750000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.752 50 GHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4568 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.921 kHz x dB Bandwidth 4.880 MHz Copyright 2000-2005 Agilent Technologies

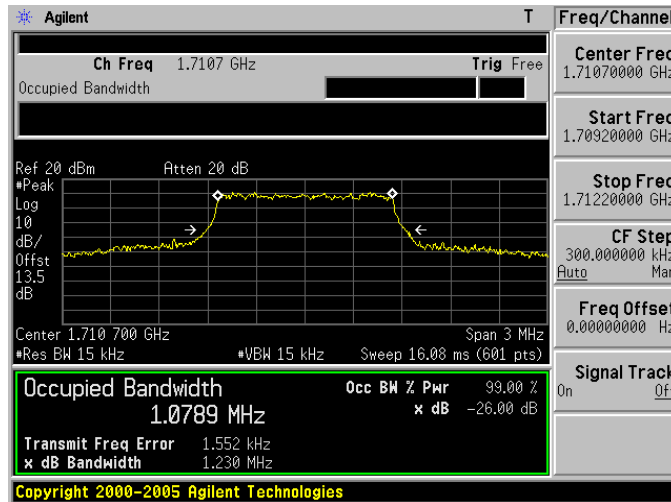
LTE Band 4 (Channel Bandwidth: 10 MHz) _ QPSK	
1715.0 MHz	 Agilent T Freq/Channel Ch Freq 1.715 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.715 00 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9329 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -2.207 kHz x dB Bandwidth 9.642 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.71500000 GHz Start Freq 1.70500000 GHz Stop Freq 1.72500000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1732.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7325 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.732 50 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9348 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 8.430 kHz x dB Bandwidth 9.697 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.73250000 GHz Start Freq 1.72250000 GHz Stop Freq 1.74250000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1750.0 MHz	 Agilent T Freq/Channel Ch Freq 1.75 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.750 00 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9432 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 23.307 kHz x dB Bandwidth 9.647 MHz Copyright 2000-2005 Agilent Technologies Center Freq 1.75000000 GHz Start Freq 1.74000000 GHz Stop Freq 1.76000000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

LTE Band 4 (Channel Bandwidth: 15 MHz) _ QPSK	
1717.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7175 GHz Trig Free Center Freq 1.71750000 GHz Start Freq 1.70250000 GHz Stop Freq 1.73250000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.717 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.3937 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -18.345 kHz x dB Bandwidth 14.344 MHz Copyright 2000-2005 Agilent Technologies
1732.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7325 GHz Trig Free Center Freq 1.73250000 GHz Start Freq 1.71750000 GHz Stop Freq 1.74750000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.732 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.4460 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.705 kHz x dB Bandwidth 14.457 MHz Copyright 2000-2005 Agilent Technologies
1747.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7475 GHz Trig Free Center Freq 1.74750000 GHz Start Freq 1.73250000 GHz Stop Freq 1.76250000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.747 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.3738 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 21.352 kHz x dB Bandwidth 14.278 MHz Copyright 2000-2005 Agilent Technologies

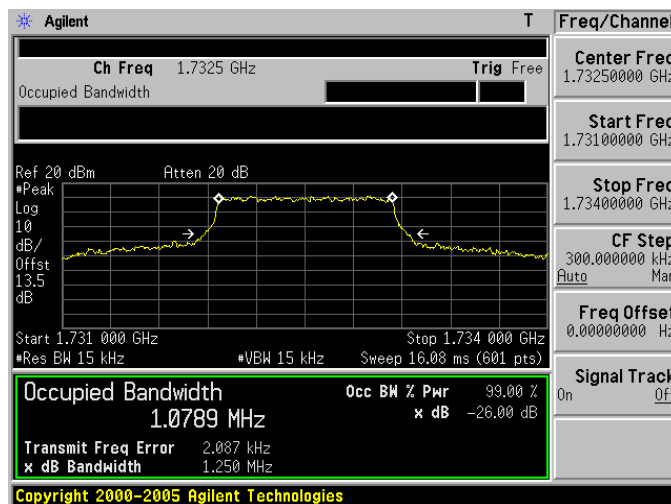
LTE Band 4 (Channel Bandwidth: 20 MHz) _ QPSK	
1720.0 MHz	 Agilent T Freq/Channel Ch Freq 1.72 GHz Trig Free Center Freq 1.7200000 GHz Start Freq 1.7000000 GHz Stop Freq 1.7400000 GHz CF Step 4.0000000 MHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.5 dB Center 1.720 00 GHz Span 40 MHz Res BW 220 kHz VBW 220 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 17.8514 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -56.628 kHz x dB Bandwidth 19.126 MHz Copyright 2000-2005 Agilent Technologies
1732.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7325 GHz Trig Free Center Freq 1.7325000 GHz Start Freq 1.7125000 GHz Stop Freq 1.7525000 GHz CF Step 4.0000000 MHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.5 dB Center 1.732 50 GHz Span 40 MHz Res BW 220 kHz VBW 220 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 17.8514 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -6.972 kHz x dB Bandwidth 18.909 MHz Copyright 2000-2005 Agilent Technologies
1745.0 MHz	 Agilent T Freq/Channel Ch Freq 1.745 GHz Trig Free Center Freq 1.7450000 GHz Start Freq 1.7250000 GHz Stop Freq 1.7650000 GHz CF Step 4.0000000 MHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.5 dB Center 1.745 00 GHz Span 40 MHz Res BW 220 kHz VBW 220 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 17.7862 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 61.334 kHz x dB Bandwidth 19.037 MHz Copyright 2000-2005 Agilent Technologies

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

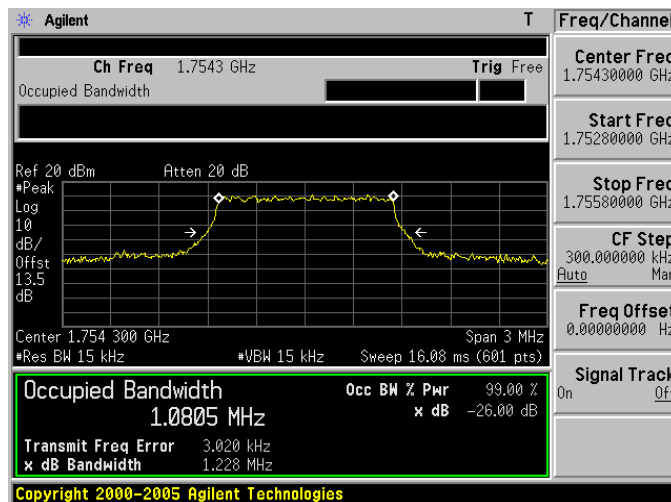
1710.7 MHz

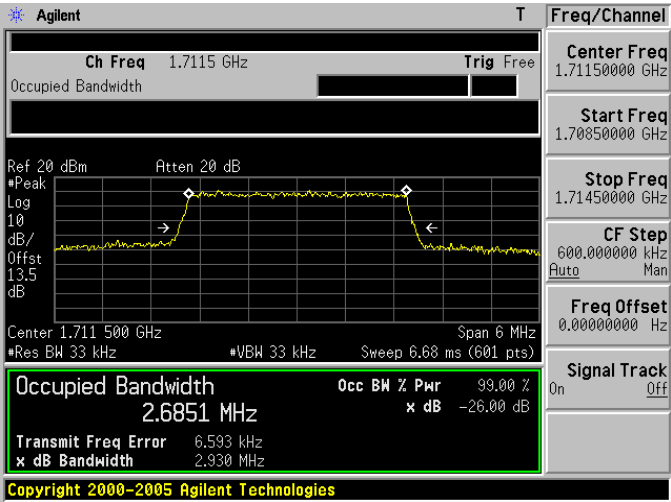
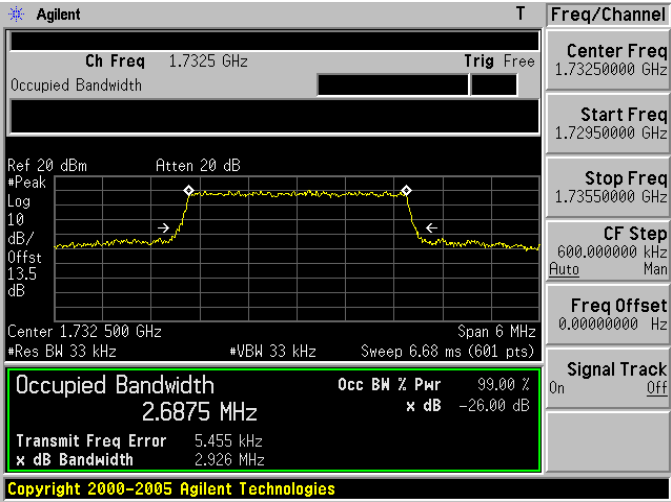
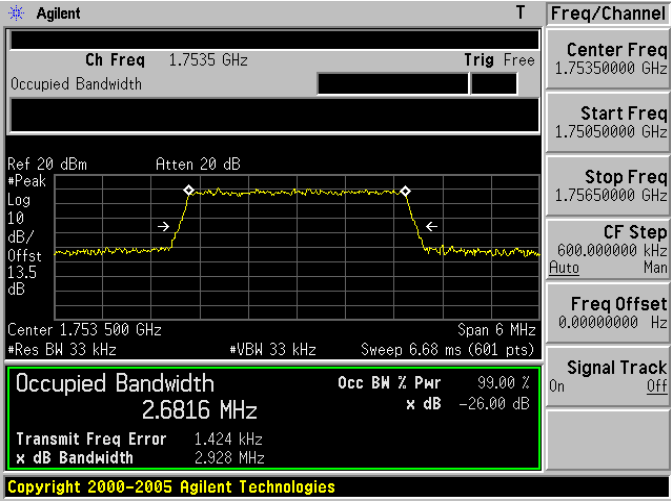


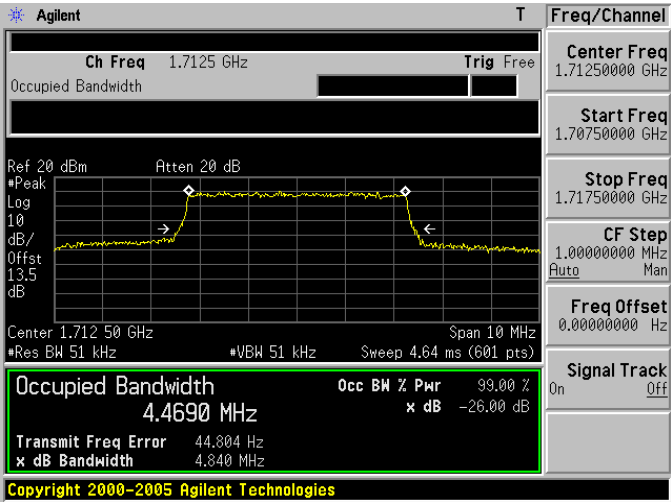
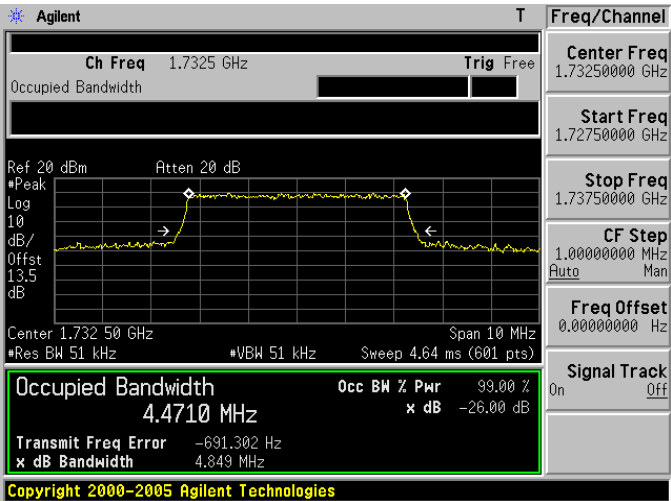
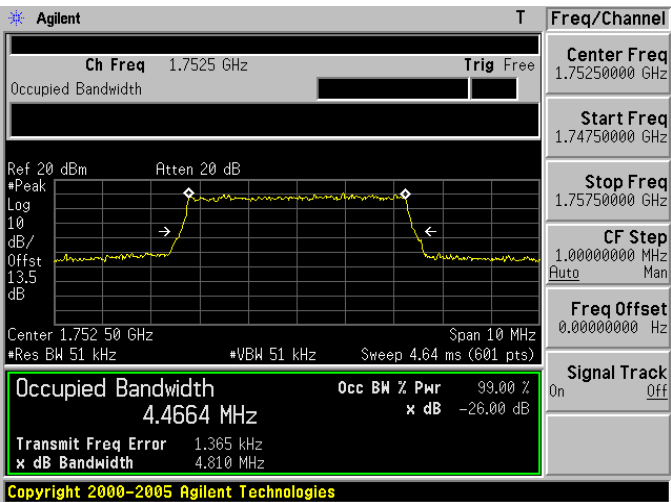
1732.5 MHz

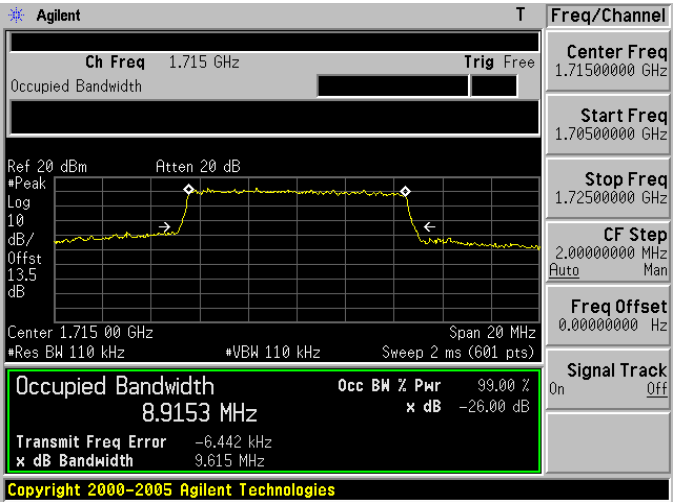
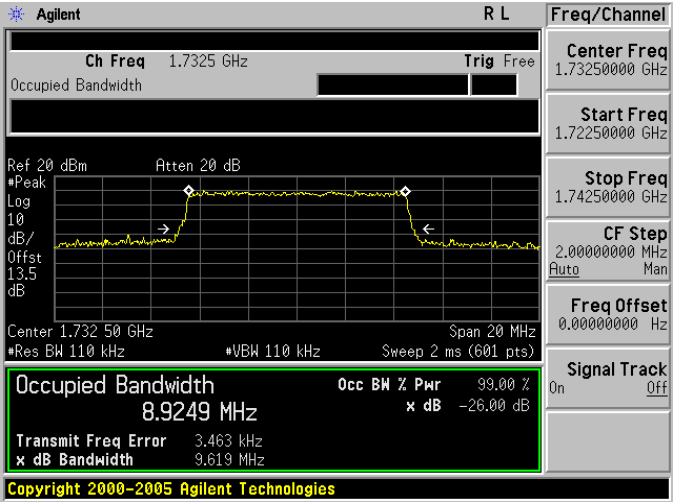
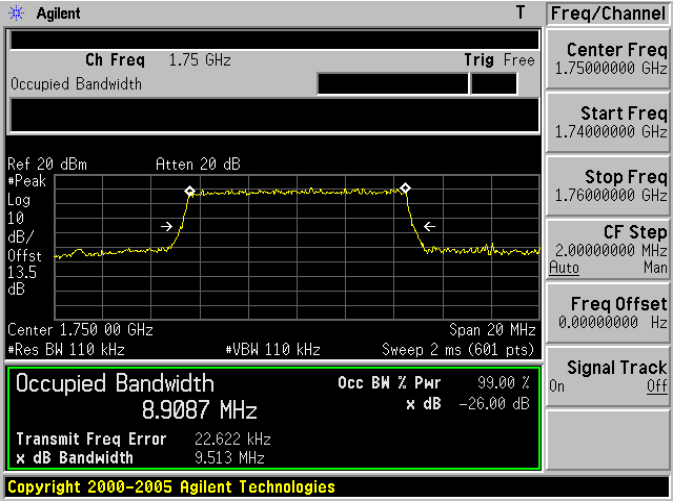


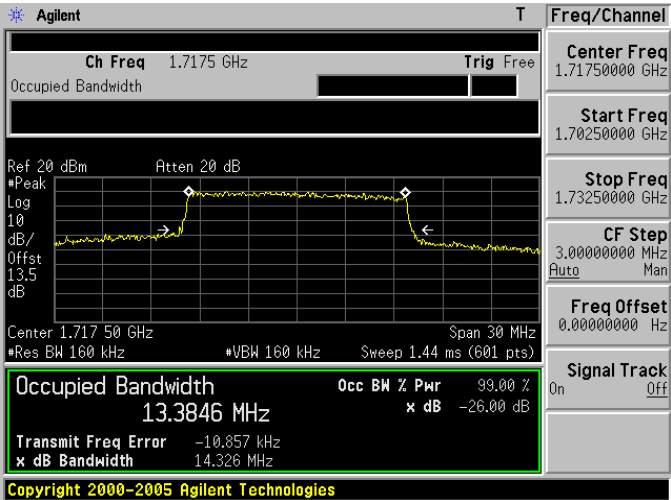
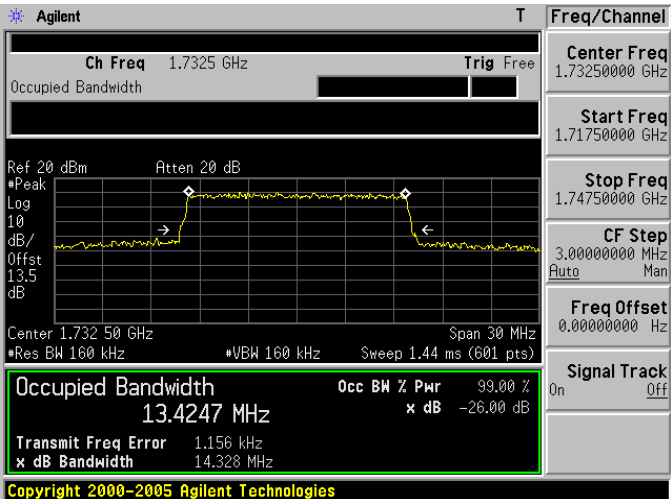
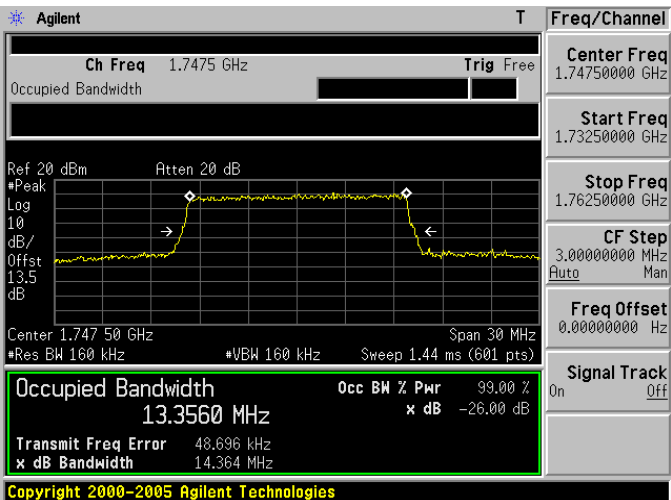
1754.3 MHz



LTE Band 4 (Channel Bandwidth: 3 MHz) _ 16QAM	
1711.5 MHz	 Copyright 2000-2005 Agilent Technologies
1732.5 MHz	 Copyright 2000-2005 Agilent Technologies
1753.5 MHz	 Copyright 2000-2005 Agilent Technologies

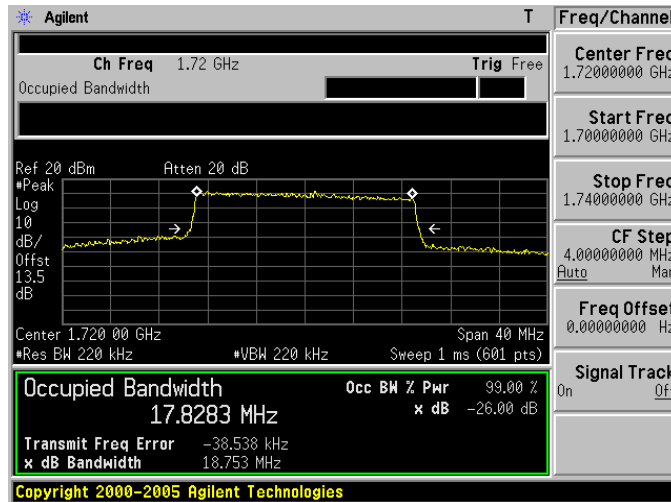
LTE Band 4 (Channel Bandwidth: 5 MHz) _ 16QAM	
1712.5 MHz	 Copyright 2000-2005 Agilent Technologies
1732.5 MHz	 Copyright 2000-2005 Agilent Technologies
1752.5 MHz	 Copyright 2000-2005 Agilent Technologies

LTE Band 4 (Channel Bandwidth: 10 MHz) _ 16QAM	
1715.0 MHz	 Agilent T Freq/Channel Ch Freq 1.715 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offset 13.5 dB Center 1.715 00 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9153 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -6.442 kHz x dB Bandwidth 9.615 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.71500000 GHz Start Freq 1.70500000 GHz Stop Freq 1.72500000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1732.5 MHz	 Agilent R L Freq/Channel Ch Freq 1.7325 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offset 13.5 dB Center 1.732 50 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9249 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.463 kHz x dB Bandwidth 9.619 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.73250000 GHz Start Freq 1.72250000 GHz Stop Freq 1.74250000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
1750.0 MHz	 Agilent T Freq/Channel Ch Freq 1.75 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offset 13.5 dB Center 1.750 00 GHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9087 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 22.622 kHz x dB Bandwidth 9.513 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.75000000 GHz Start Freq 1.74000000 GHz Stop Freq 1.76000000 GHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

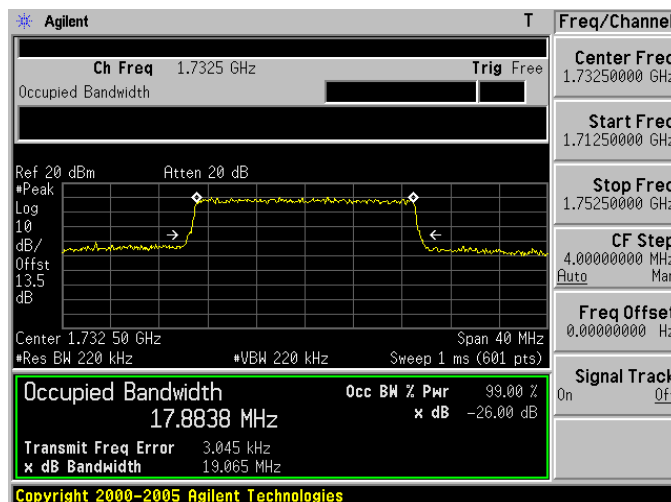
LTE Band 4 (Channel Bandwidth: 15 MHz) _ 16QAM	
1717.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7175 GHz Trig Free Center Freq 1.71750000 GHz Start Freq 1.70250000 GHz Stop Freq 1.73250000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.717 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.3846 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -10.857 kHz x dB Bandwidth 14.326 MHz Copyright 2000-2005 Agilent Technologies
1732.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7325 GHz Trig Free Center Freq 1.73250000 GHz Start Freq 1.71750000 GHz Stop Freq 1.74750000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.732 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.4247 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.156 kHz x dB Bandwidth 14.328 MHz Copyright 2000-2005 Agilent Technologies
1747.5 MHz	 Agilent T Freq/Channel Ch Freq 1.7475 GHz Trig Free Center Freq 1.74750000 GHz Start Freq 1.73250000 GHz Stop Freq 1.76250000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.5 dB Center 1.747 50 GHz Span 30 MHz Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts) Occupied Bandwidth 13.3560 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 48.696 kHz x dB Bandwidth 14.364 MHz Copyright 2000-2005 Agilent Technologies

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

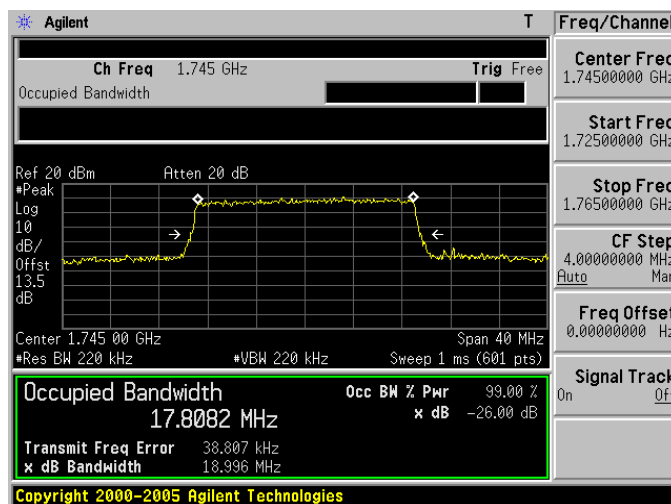
1720.0 MHz

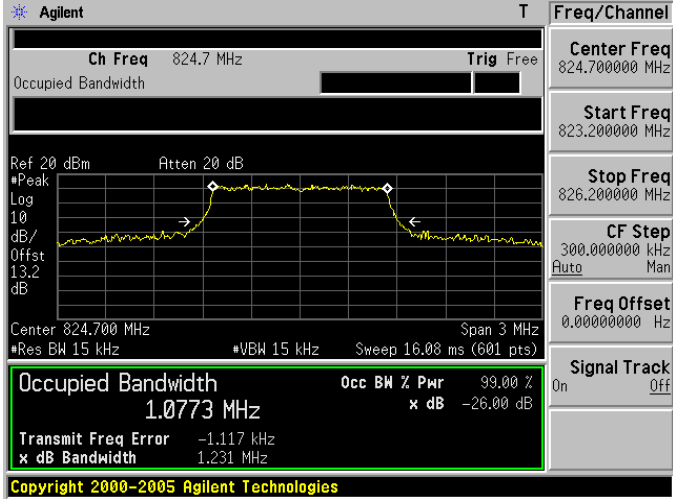
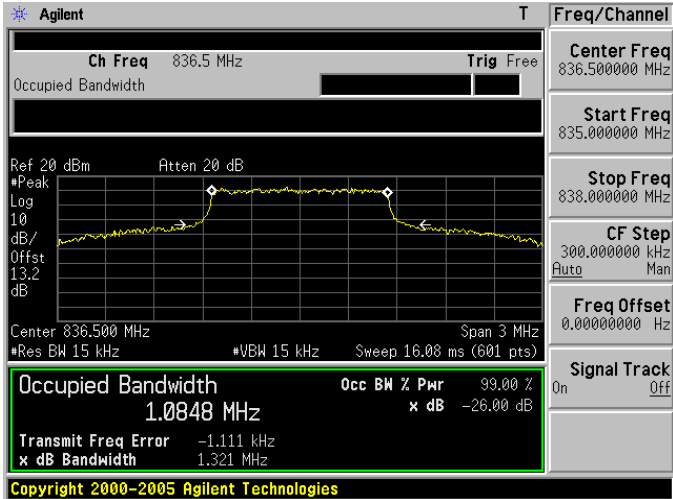
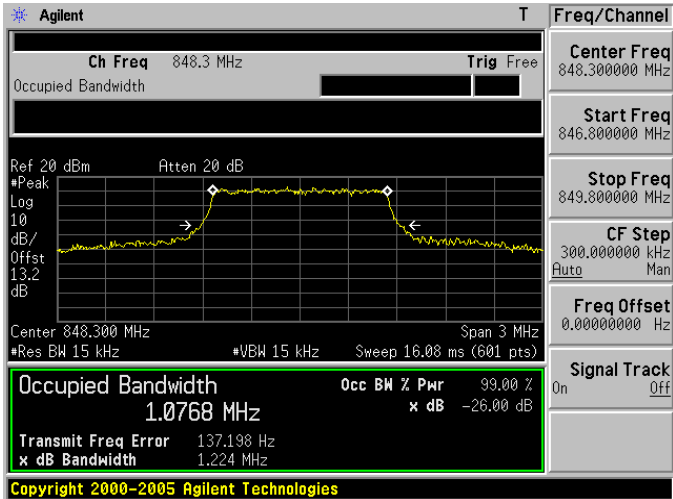


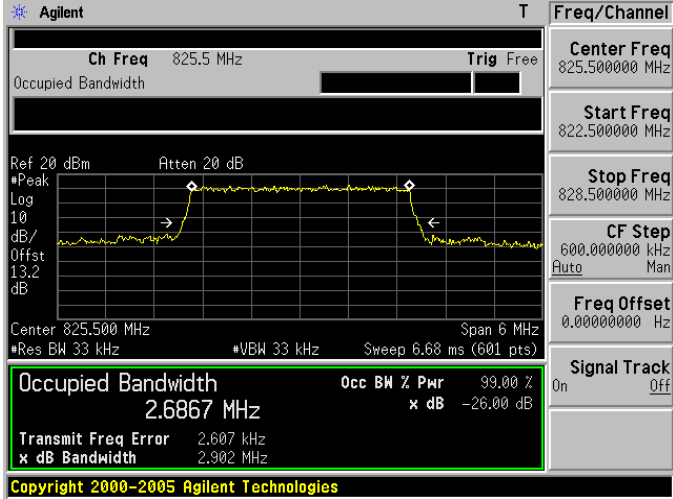
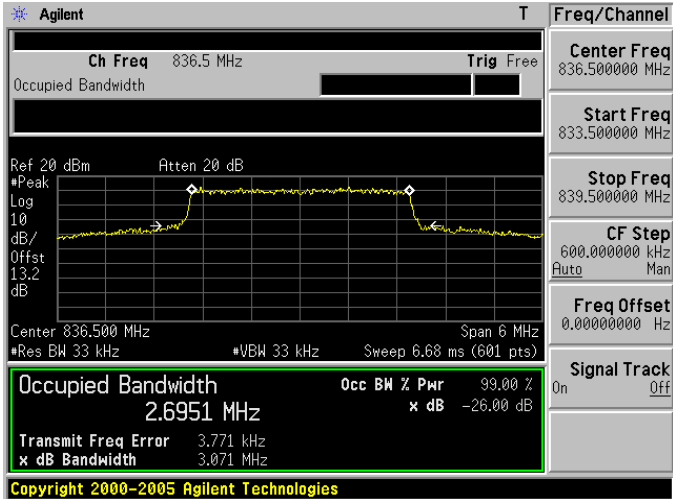
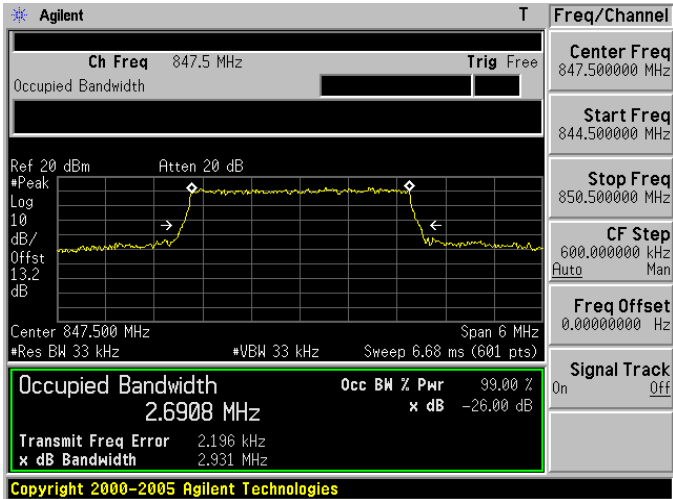
1732.5 MHz

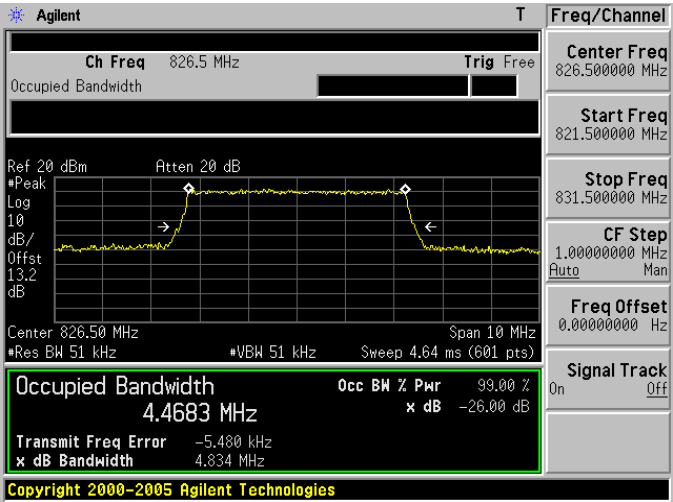
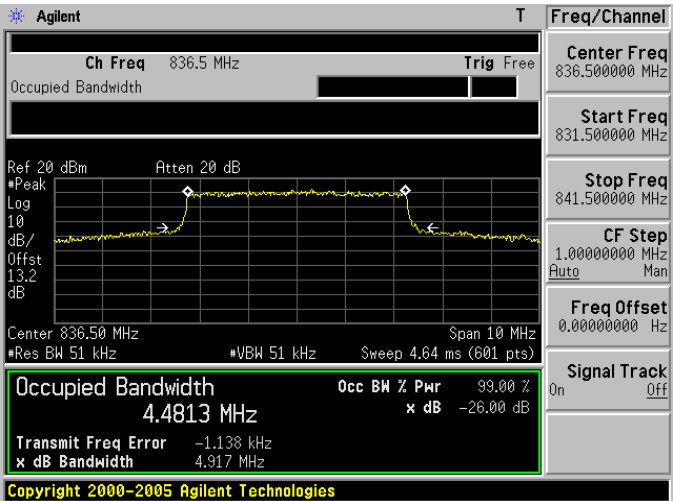
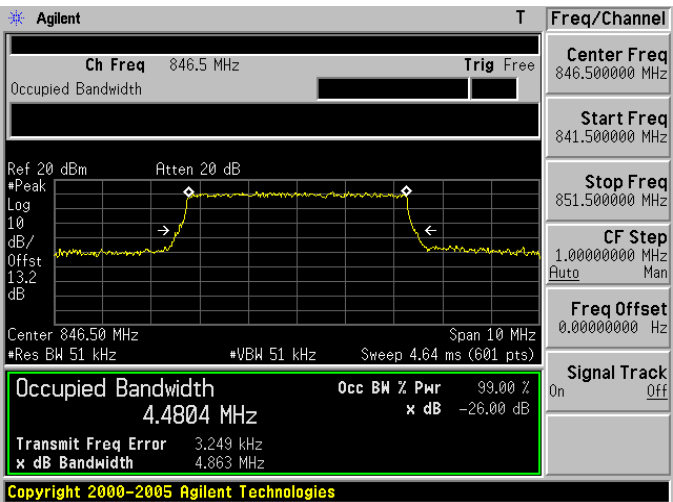


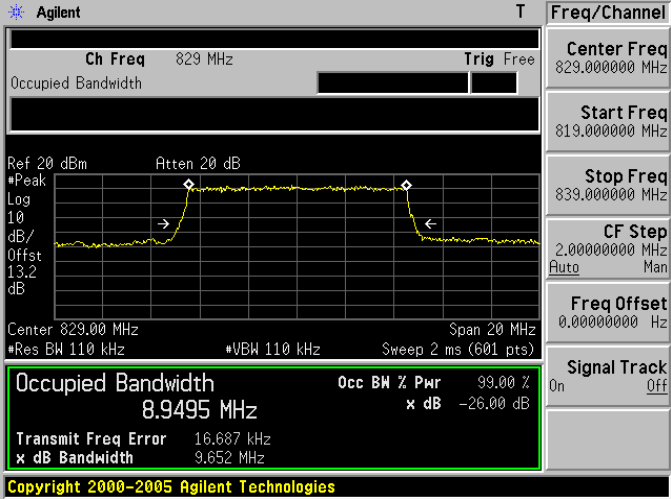
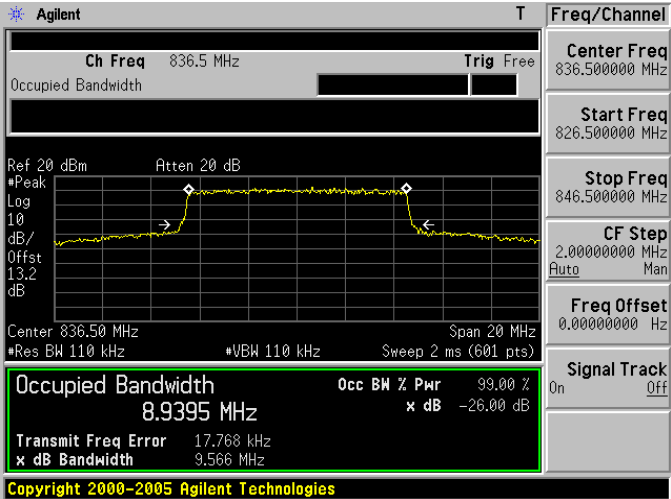
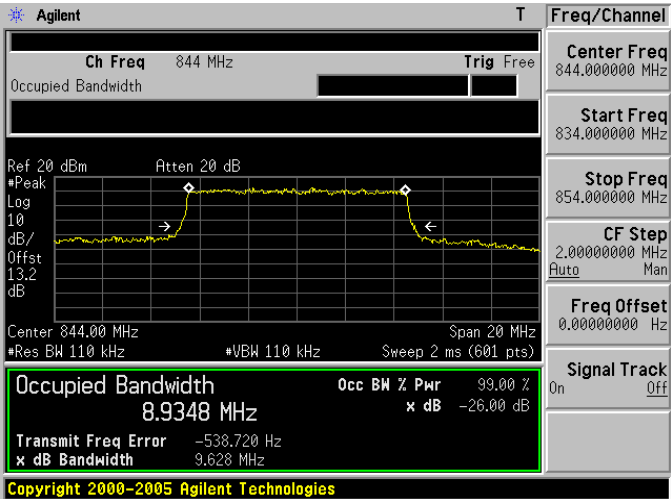
1745.0 MHz

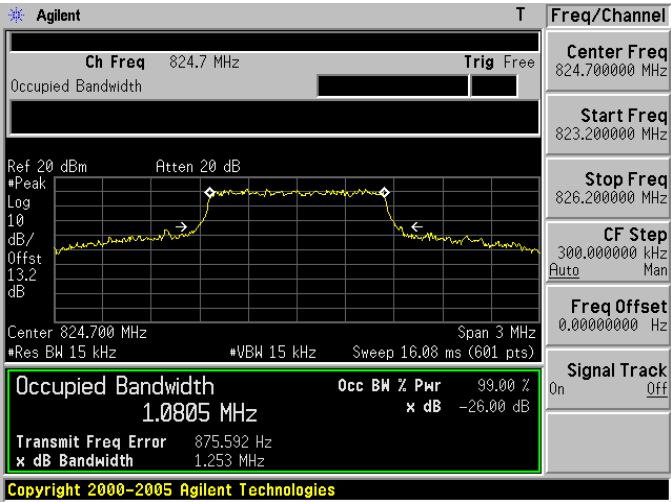
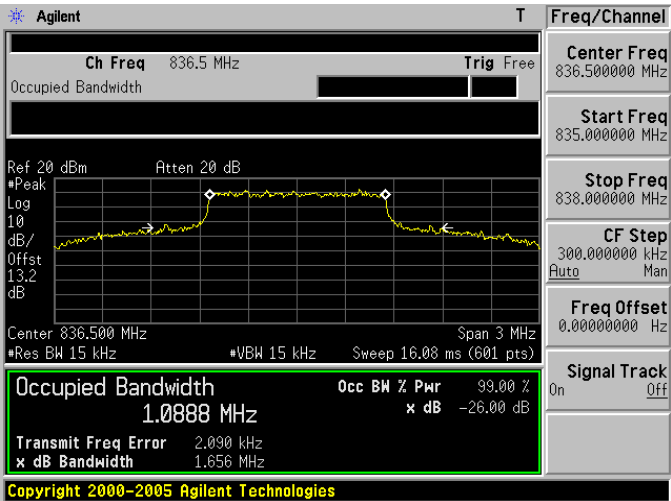
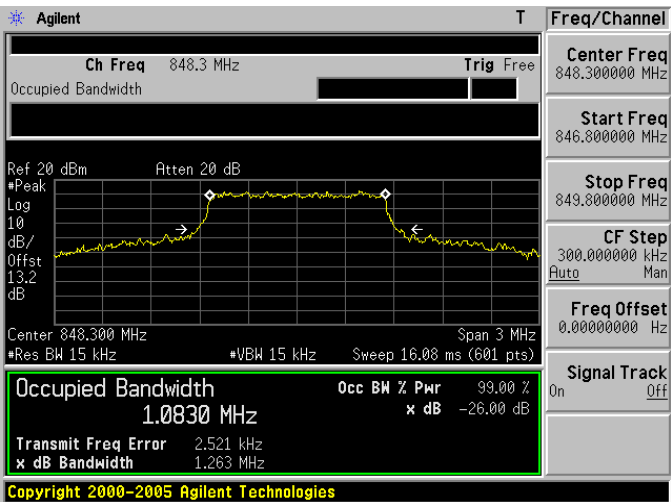


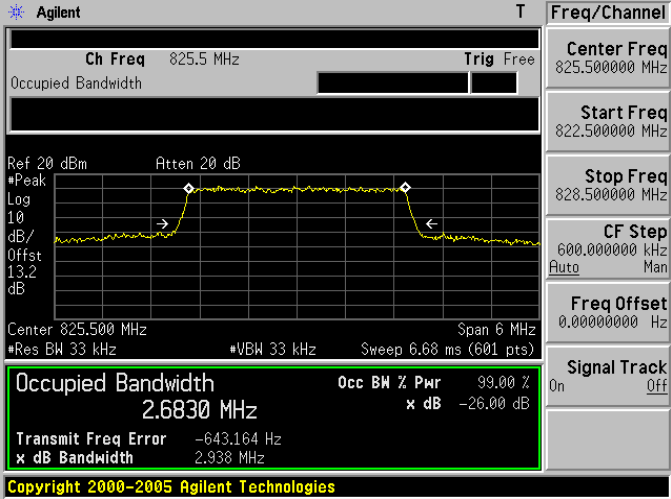
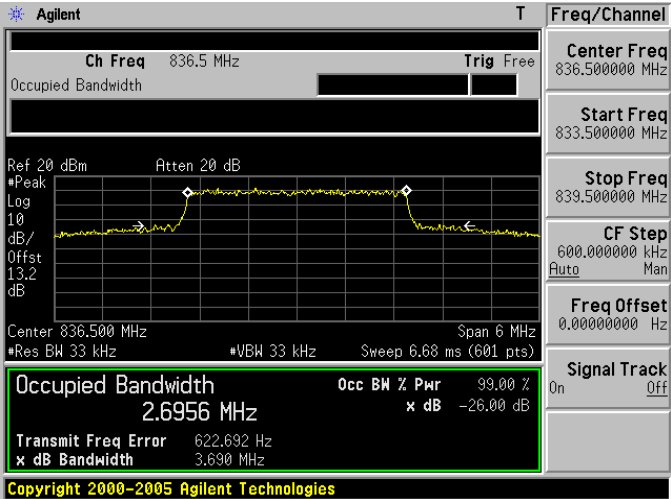
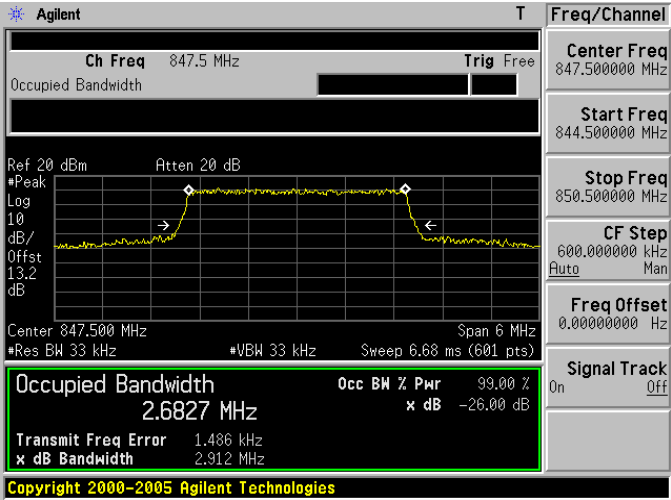
LTE Band 5 (Channel Bandwidth: 1.4 MHz) _ QPSK	
824.7 MHz	 Agilent T Freq/Channel Ch Freq 824.7 MHz Trig Free Center Freq 824.700000 MHz Start Freq 823.200000 MHz Stop Freq 826.200000 MHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offset 13.2 dB Center 824.700 MHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0773 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.117 kHz x dB Bandwidth 1.231 MHz Copyright 2000-2005 Agilent Technologies
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Center Freq 836.500000 MHz Start Freq 835.000000 MHz Stop Freq 838.000000 MHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offset 13.2 dB Center 836.500 MHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0848 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.111 kHz x dB Bandwidth 1.321 MHz Copyright 2000-2005 Agilent Technologies
848.3 MHz	 Agilent T Freq/Channel Ch Freq 848.3 MHz Trig Free Center Freq 848.300000 MHz Start Freq 846.800000 MHz Stop Freq 849.800000 MHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offset 13.2 dB Center 848.300 MHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0768 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 137.198 Hz x dB Bandwidth 1.224 MHz Copyright 2000-2005 Agilent Technologies

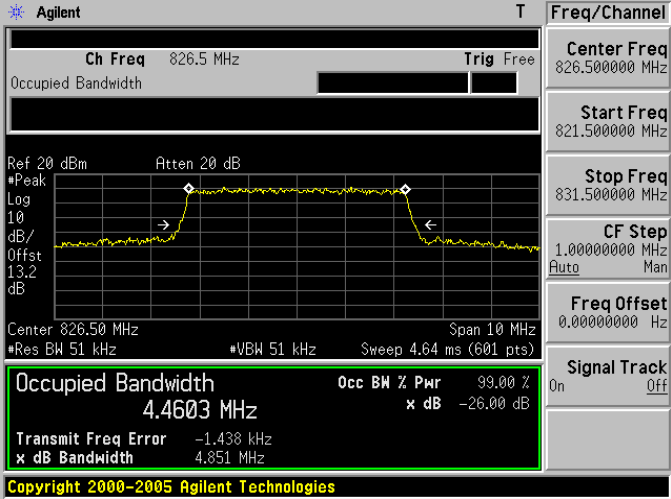
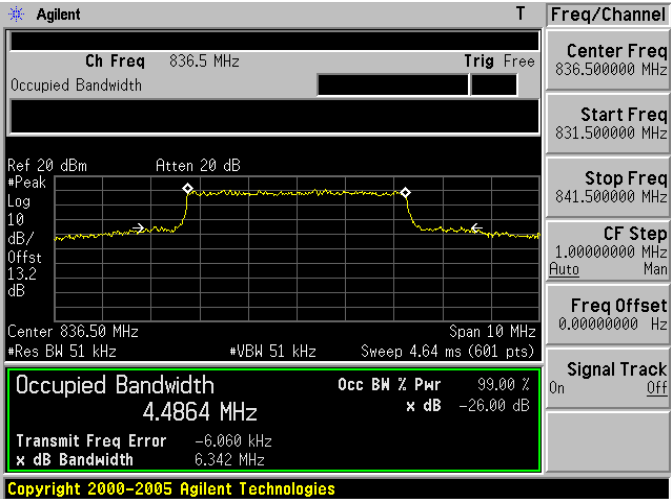
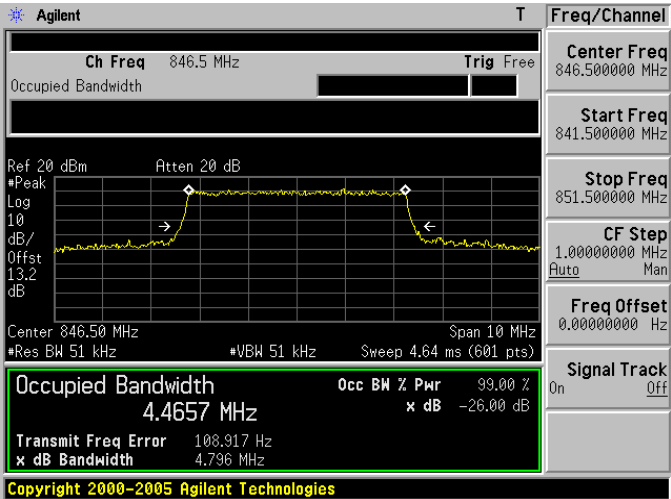
LTE Band 5 (Channel Bandwidth: 3 MHz) _ QPSK	
825.5 MHz	 Agilent T Freq/Channel Ch Freq 825.5 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 825.500 MHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6867 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.607 kHz x dB Bandwidth 2.902 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 825.500000 MHz Start Freq 822.500000 MHz Stop Freq 828.500000 MHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 836.500 MHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6951 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.771 kHz x dB Bandwidth 3.071 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 836.500000 MHz Start Freq 833.500000 MHz Stop Freq 839.500000 MHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
847.5 MHz	 Agilent T Freq/Channel Ch Freq 847.5 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 847.500 MHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6908 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.196 kHz x dB Bandwidth 2.931 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 847.500000 MHz Start Freq 844.500000 MHz Stop Freq 850.500000 MHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

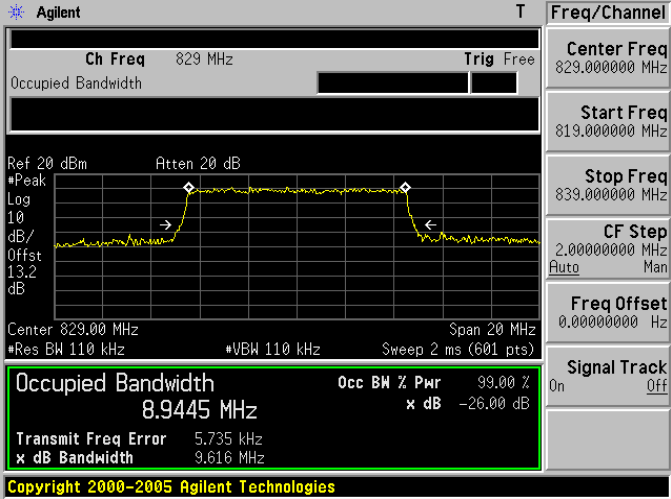
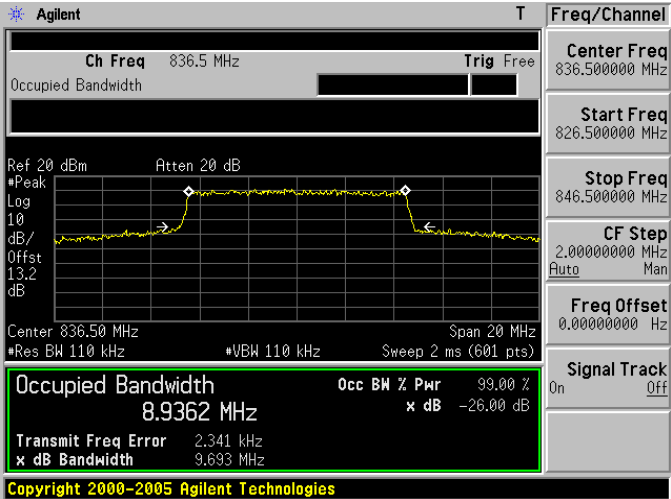
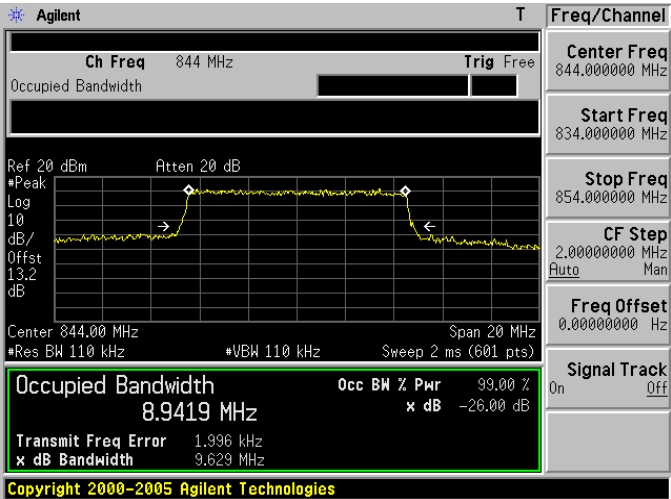
LTE Band 5 (Channel Bandwidth: 5 MHz) _ QPSK	
826.5 MHz	 Agilent T Freq/Channel Ch Freq 826.5 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 826.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4683 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -5.480 kHz x dB Bandwidth 4.834 MHz Copyright 2000-2005 Agilent Technologies Center Freq 826.500000 MHz Start Freq 821.500000 MHz Stop Freq 831.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 836.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4813 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.138 kHz x dB Bandwidth 4.917 MHz Copyright 2000-2005 Agilent Technologies Center Freq 836.500000 MHz Start Freq 831.500000 MHz Stop Freq 841.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
846.5 MHz	 Agilent T Freq/Channel Ch Freq 846.5 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 846.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4804 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.249 kHz x dB Bandwidth 4.863 MHz Copyright 2000-2005 Agilent Technologies Center Freq 846.500000 MHz Start Freq 841.500000 MHz Stop Freq 851.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

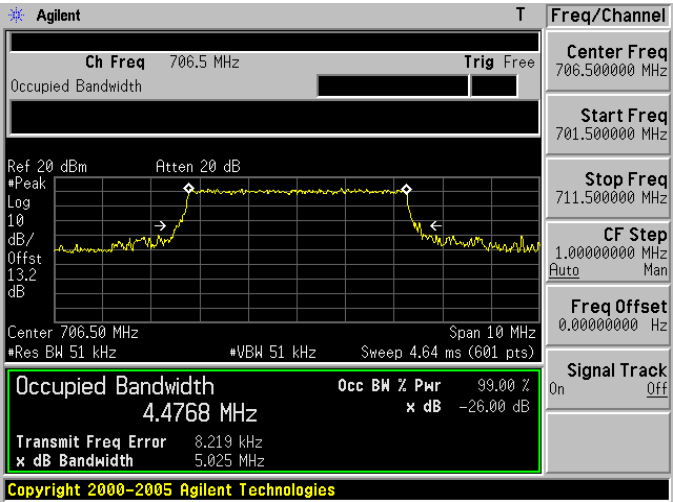
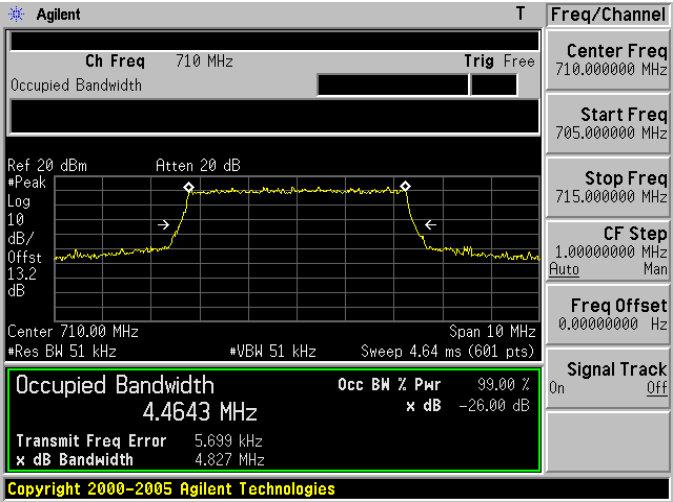
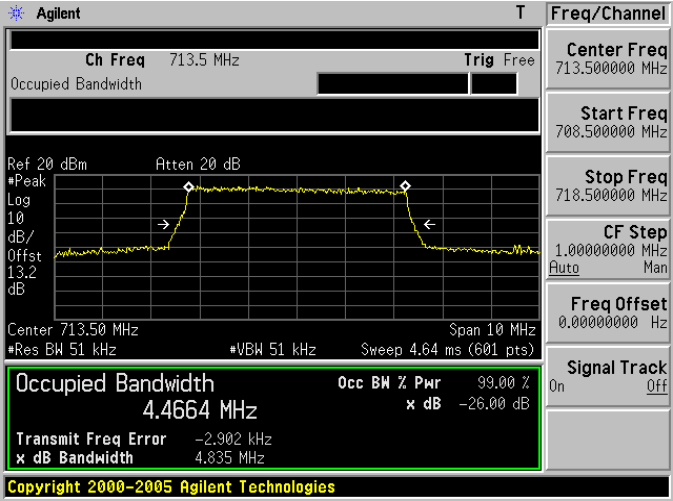
LTE Band 5 (Channel Bandwidth: 10 MHz) _ QPSK	
829.0 MHz	 Agilent T Freq/Channel Ch Freq 829 MHz Trig Free Center Freq 829.000000 MHz Start Freq 819.000000 MHz Stop Freq 839.000000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 829.00 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9495 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 16.687 kHz x dB Bandwidth 9.652 MHz Copyright 2000-2005 Agilent Technologies
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Center Freq 836.500000 MHz Start Freq 826.500000 MHz Stop Freq 846.500000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 836.50 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9395 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 17.768 kHz x dB Bandwidth 9.566 MHz Copyright 2000-2005 Agilent Technologies
844.0 MHz	 Agilent T Freq/Channel Ch Freq 844 MHz Trig Free Center Freq 844.000000 MHz Start Freq 834.000000 MHz Stop Freq 854.000000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 844.00 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9348 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -538.720 Hz x dB Bandwidth 9.628 MHz Copyright 2000-2005 Agilent Technologies

LTE Band 5 (Channel Bandwidth: 1.4 MHz) _ 16QAM	
824.7 MHz	 Agilent T Freq/Channel Ch Freq 824.7 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 824.700 MHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0805 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 875.592 Hz x dB Bandwidth 1.253 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 824.700000 MHz Start Freq 823.200000 MHz Stop Freq 826.200000 MHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 836.500 MHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0888 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.090 kHz x dB Bandwidth 1.656 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 836.500000 MHz Start Freq 835.000000 MHz Stop Freq 838.000000 MHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
848.3 MHz	 Agilent T Freq/Channel Ch Freq 848.3 MHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 848.300 MHz Span 3 MHz Res BW 15 kHz VBW 15 kHz Sweep 16.08 ms (601 pts) Occupied Bandwidth 1.0830 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.521 kHz x dB Bandwidth 1.263 MHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 848.300000 MHz Start Freq 846.800000 MHz Stop Freq 849.800000 MHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

LTE Band 5 (Channel Bandwidth: 3 MHz) _ 16QAM	
825.5 MHz	 Agilent T Freq/Channel Ch Freq 825.5 MHz Trig Free Center Freq 825.500000 MHz Start Freq 822.500000 MHz Stop Freq 828.500000 MHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 825.500 MHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6830 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -643.164 Hz x dB Bandwidth 2.938 MHz Copyright 2000-2005 Agilent Technologies
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Center Freq 836.500000 MHz Start Freq 833.500000 MHz Stop Freq 839.500000 MHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 836.500 MHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6956 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 622.692 Hz x dB Bandwidth 3.690 MHz Copyright 2000-2005 Agilent Technologies
847.5 MHz	 Agilent T Freq/Channel Ch Freq 847.5 MHz Trig Free Center Freq 847.500000 MHz Start Freq 844.500000 MHz Stop Freq 850.500000 MHz CF Step 600.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 847.500 MHz Span 6 MHz Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts) Occupied Bandwidth 2.6827 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.486 kHz x dB Bandwidth 2.912 MHz Copyright 2000-2005 Agilent Technologies

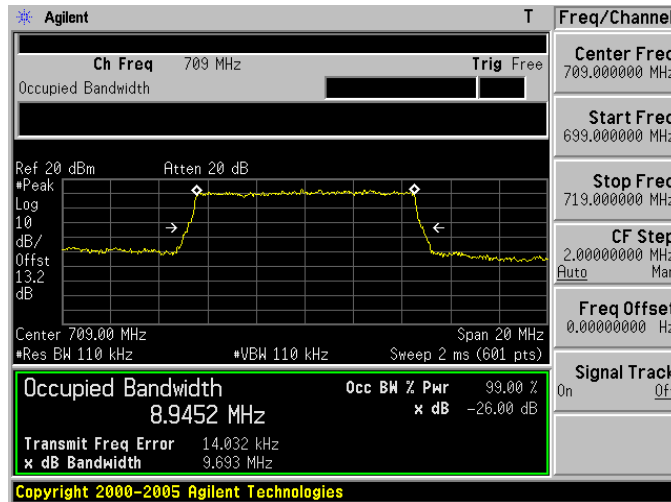
LTE Band 5 (Channel Bandwidth: 5 MHz) _ 16QAM	
826.5 MHz	 Agilent T Freq/Channel Ch Freq 826.5 MHz Trig Free Center Freq 826.500000 MHz Start Freq 821.500000 MHz Stop Freq 831.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.2 dB Center 826.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4603 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.438 kHz x dB Bandwidth 4.851 MHz Copyright 2000-2005 Agilent Technologies
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Center Freq 836.500000 MHz Start Freq 831.500000 MHz Stop Freq 841.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.2 dB Center 836.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4864 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -6.060 kHz x dB Bandwidth 6.342 MHz Copyright 2000-2005 Agilent Technologies
846.5 MHz	 Agilent T Freq/Channel Ch Freq 846.5 MHz Trig Free Center Freq 846.500000 MHz Start Freq 841.500000 MHz Stop Freq 851.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.2 dB Center 846.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4657 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 108.917 Hz x dB Bandwidth 4.796 MHz Copyright 2000-2005 Agilent Technologies

LTE Band 5 (Channel Bandwidth: 10 MHz) _ 16QAM	
829.0 MHz	 Agilent T Freq/Channel Ch Freq 829 MHz Trig Free Center Freq 829.000000 MHz Start Freq 819.000000 MHz Stop Freq 839.000000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 829.00 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9445 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 5.735 kHz x dB Bandwidth 9.616 MHz Copyright 2000-2005 Agilent Technologies
836.5 MHz	 Agilent T Freq/Channel Ch Freq 836.5 MHz Trig Free Center Freq 836.500000 MHz Start Freq 826.500000 MHz Stop Freq 846.500000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 836.50 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9362 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.341 kHz x dB Bandwidth 9.693 MHz Copyright 2000-2005 Agilent Technologies
844.0 MHz	 Agilent T Freq/Channel Ch Freq 844 MHz Trig Free Center Freq 844.000000 MHz Start Freq 834.000000 MHz Stop Freq 854.000000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak 10 dB/Offst 13.2 dB Center 844.00 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9419 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.996 kHz x dB Bandwidth 9.629 MHz Copyright 2000-2005 Agilent Technologies

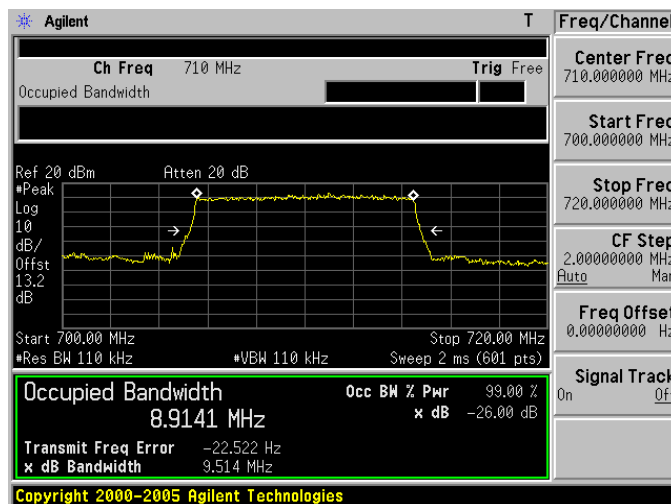
LTE Band 17 (Channel Bandwidth: 5 MHz) _ QPSK	
706.5 MHz	 Agilent T Freq/Channel Ch Freq 706.5 MHz Trig Free Center Freq 706.500000 MHz Start Freq 701.500000 MHz Stop Freq 711.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offset 13.2 dB Center 706.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4768 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 8.219 kHz x dB Bandwidth 5.025 MHz Copyright 2000-2005 Agilent Technologies
710.0 MHz	 Agilent T Freq/Channel Ch Freq 710 MHz Trig Free Center Freq 710.000000 MHz Start Freq 705.000000 MHz Stop Freq 715.000000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offset 13.2 dB Center 710.00 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4643 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 5.699 kHz x dB Bandwidth 4.827 MHz Copyright 2000-2005 Agilent Technologies
713.5 MHz	 Agilent T Freq/Channel Ch Freq 713.5 MHz Trig Free Center Freq 713.500000 MHz Start Freq 708.500000 MHz Stop Freq 718.500000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offset 13.2 dB Center 713.50 MHz Span 10 MHz Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts) Occupied Bandwidth 4.4664 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -2.902 kHz x dB Bandwidth 4.835 MHz Copyright 2000-2005 Agilent Technologies

LTE Band 17 (Channel Bandwidth: 10 MHz) _ QPSK

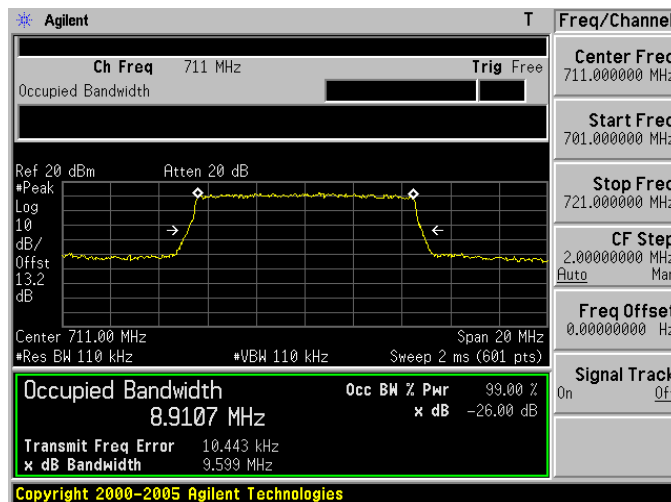
709.0 MHz



710.0 MHz

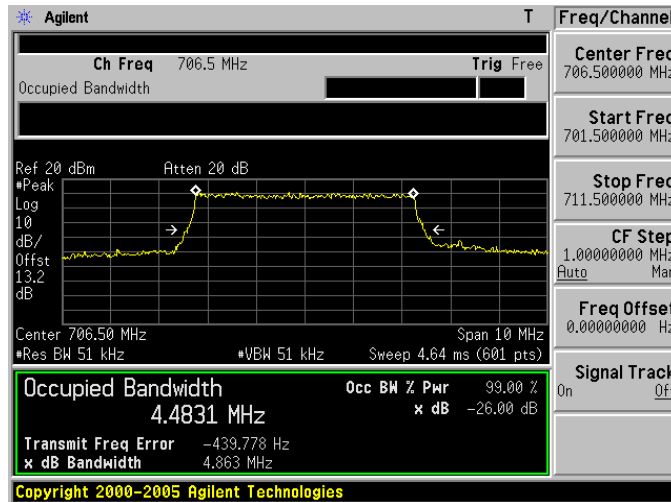


711.0 MHz

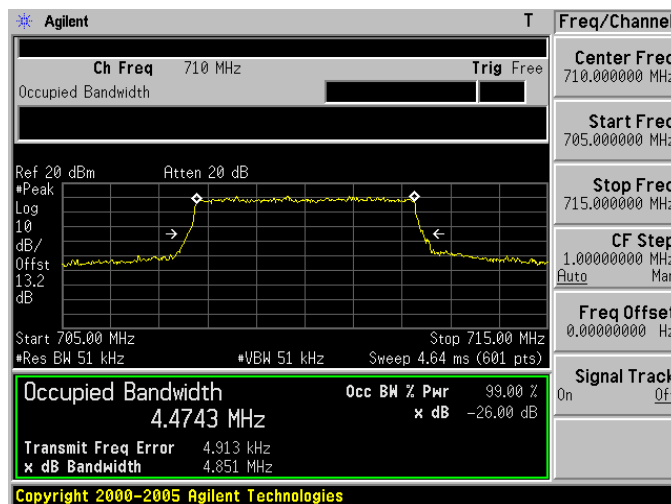


LTE Band 17 (Channel Bandwidth: 5 MHz) _ 16QAM

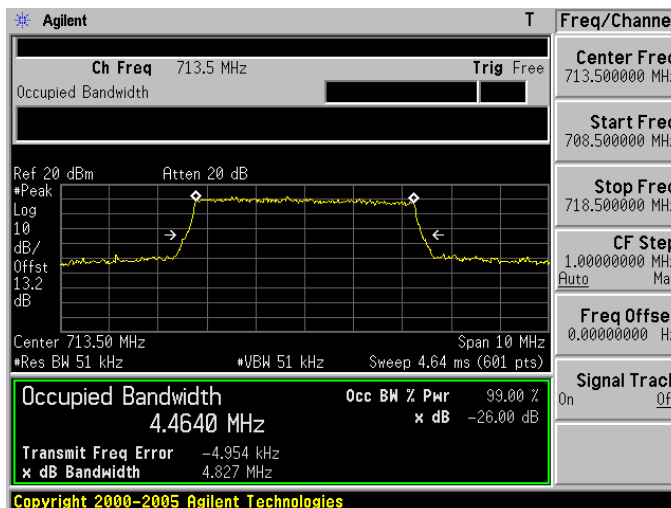
706.5 MHz

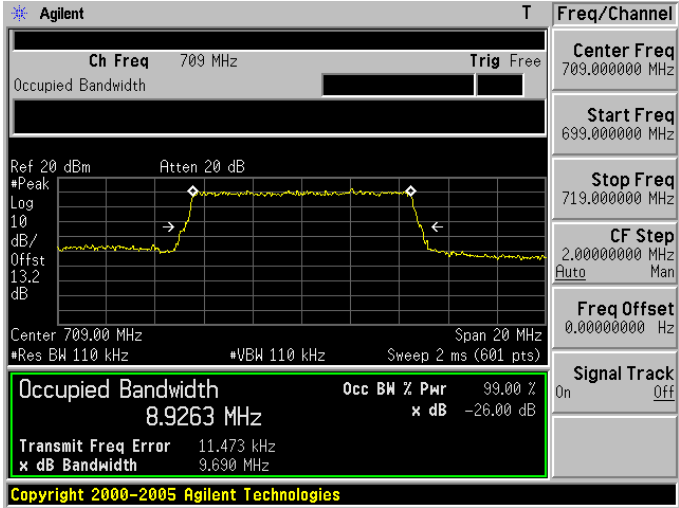
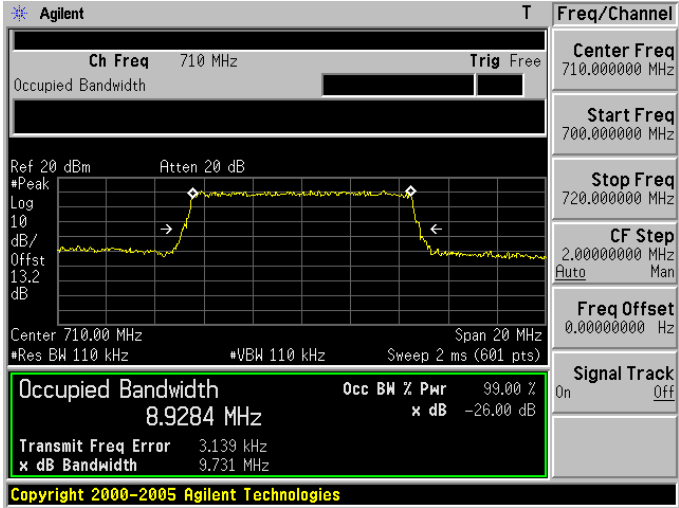
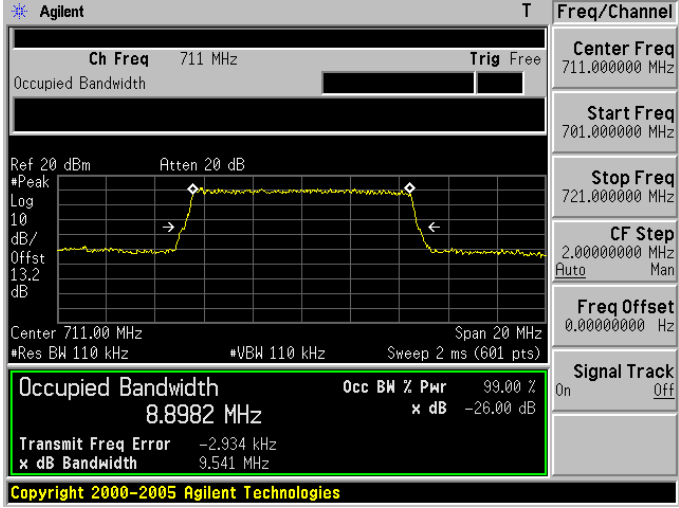


710.0 MHz



713.5 MHz



LTE Band 17 (Channel Bandwidth: 10 MHz) _ 16QAM	
709.0 MHz	 Agilent T Freq/Channel Ch Freq 709 MHz Trig Free Center Freq 709.000000 MHz Start Freq 699.000000 MHz Stop Freq 719.000000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.2 dB Center 709.00 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9263 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 11.473 kHz x dB Bandwidth 9.690 MHz Copyright 2000-2005 Agilent Technologies
710.0 MHz	 Agilent T Freq/Channel Ch Freq 710 MHz Trig Free Center Freq 710.000000 MHz Start Freq 700.000000 MHz Stop Freq 720.000000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.2 dB Center 710.00 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.9284 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.139 kHz x dB Bandwidth 9.731 MHz Copyright 2000-2005 Agilent Technologies
711.0 MHz	 Agilent T Freq/Channel Ch Freq 711 MHz Trig Free Center Freq 711.000000 MHz Start Freq 701.000000 MHz Stop Freq 721.000000 MHz CF Step 2.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 20 dBm Atten 20 dB Peak Log 10 dB/Offst 13.2 dB Center 711.00 MHz Span 20 MHz Res BW 110 kHz VBW 110 kHz Sweep 2 ms (601 pts) Occupied Bandwidth 8.8982 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -2.934 kHz x dB Bandwidth 9.541 MHz Copyright 2000-2005 Agilent Technologies

6 Peak to Average Ratio Test

6.1. Limit

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

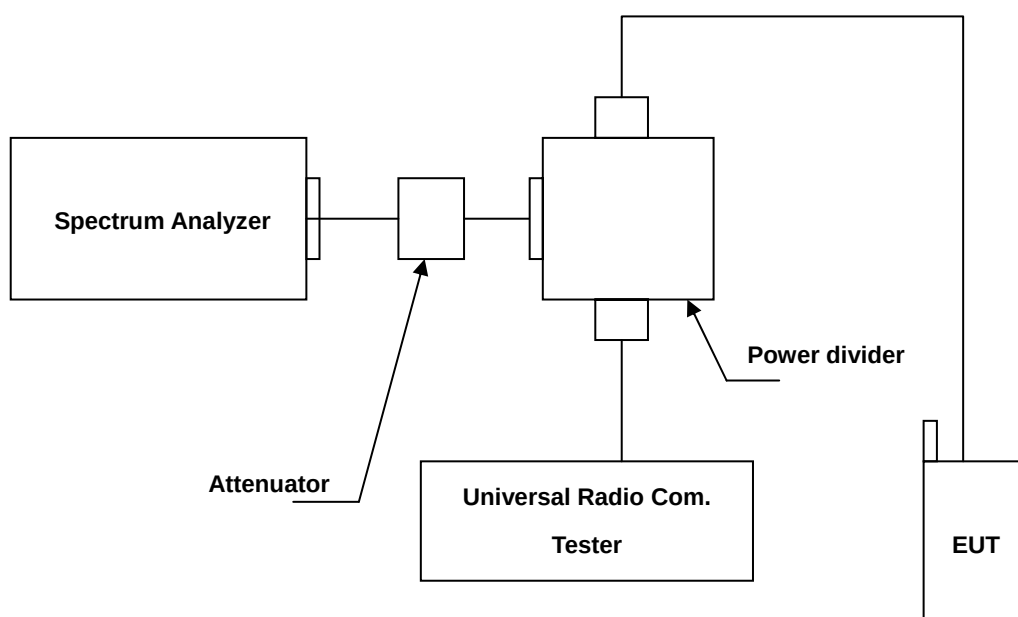
6.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/30/2012	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

6.3. Setup



6.4. Test Procedure

The measurement is made according to FCC rules:

- a. Set resolution/measurement bandwidth signal's occupied bandwidth;
- b. Set the number of counts to a value that stabilizes the measured CCDF curve;
- c. Record the maximum PAPR level associated with a probability of 0.1%.

6.5. Uncertainty

The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

6.6. Test Result

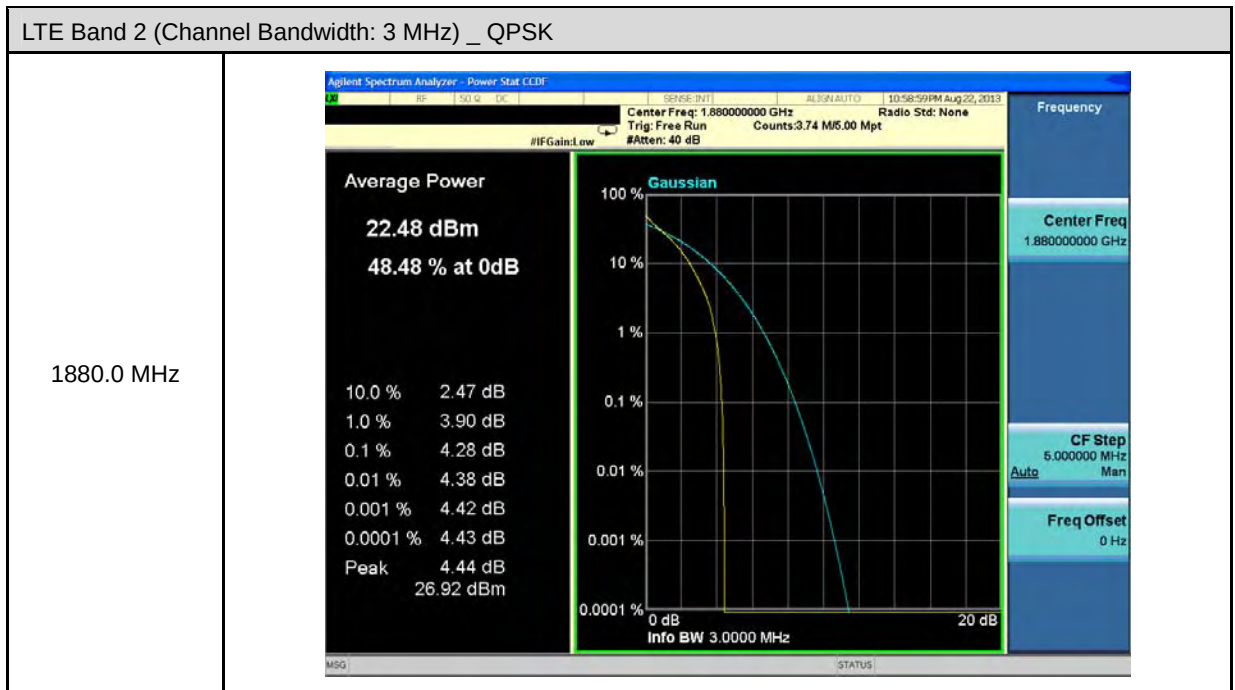
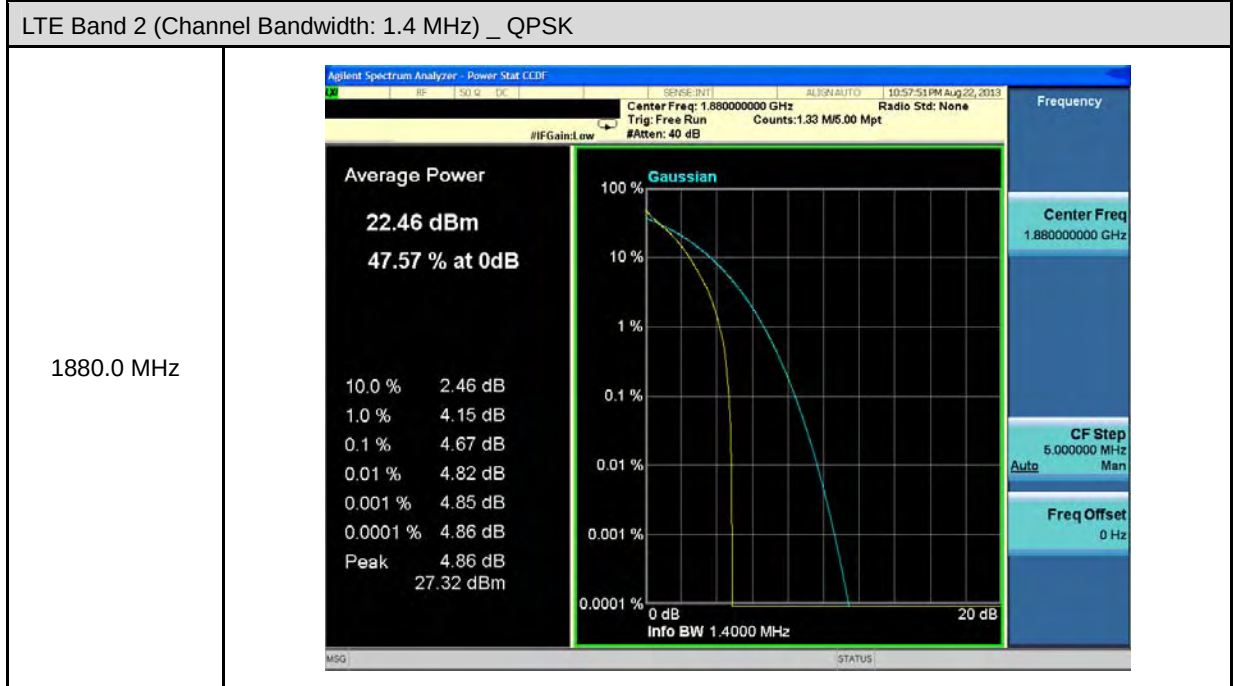
Model Number	AirCard 781S		
Test Item	Peak to Average Ratio		
Date of Test	08/22/2013	Test Site	TE05

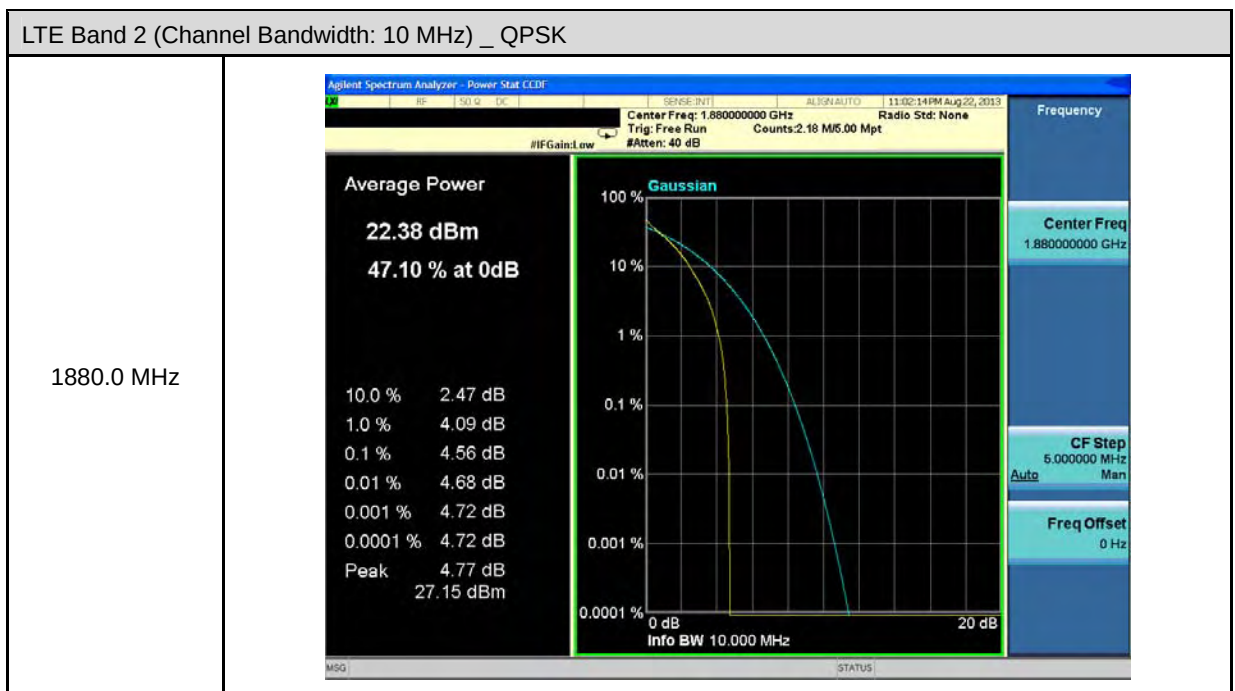
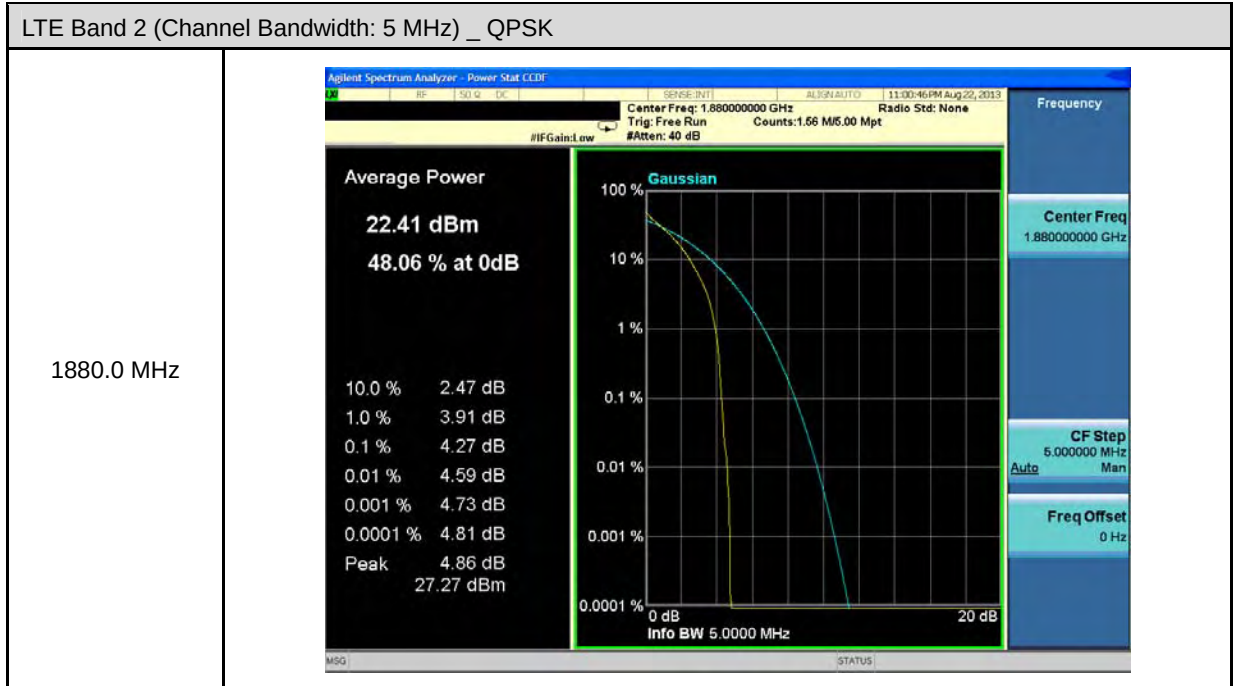
LTE Band 2				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	1.4 MHz	1880.0	4.67	< 13
	3 MHz	1880.0	4.28	< 13
	5 MHz	1880.0	4.27	< 13
	10 MHz	1880.0	4.56	< 13
	15 MHz	1880.0	4.16	< 13
	20 MHz	1880.0	4.52	< 13
16QAM	1.4 MHz	1880.0	5.37	< 13
	3 MHz	1880.0	5.32	< 13
	5 MHz	1880.0	5.32	< 13
	10 MHz	1880.0	5.25	< 13
	15 MHz	1880.0	5.21	< 13
	20 MHz	1880.0	5.28	< 13

LTE Band 4				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	1.4 MHz	1732.5	3.62	< 13
	3 MHz	1732.5	3.42	< 13
	5 MHz	1732.5	3.35	< 13
	10 MHz	1732.5	3.32	< 13
	15 MHz	1732.5	3.28	< 13
	20 MHz	1732.5	3.37	< 13
16QAM	1.4 MHz	1732.5	4.11	< 13
	3 MHz	1732.5	4.07	< 13
	5 MHz	1732.5	3.99	< 13
	10 MHz	1732.5	3.87	< 13
	15 MHz	1732.5	3.82	< 13
	20 MHz	1732.5	3.91	< 13

LTE Band 17				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	5 MHz	710.0	4.72	< 13
	10 MHz	710.0	4.48	< 13
16QAM	5 MHz	710.0	5.68	< 13
	10 MHz	710.0	5.74	< 13

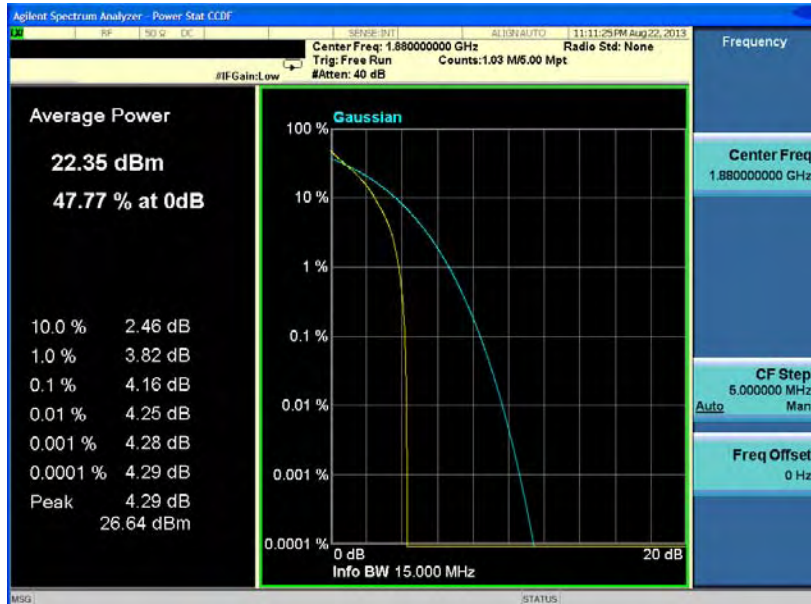
6.7. Test Graphs





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

1880.0 MHz



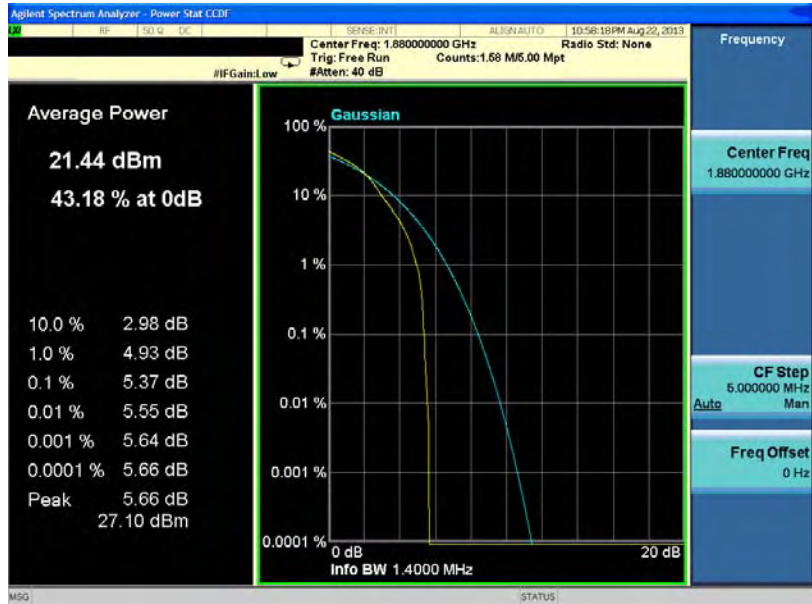
LTE Band 2 (Channel Bandwidth: 20 MHz) _ QPSK

1880.0 MHz



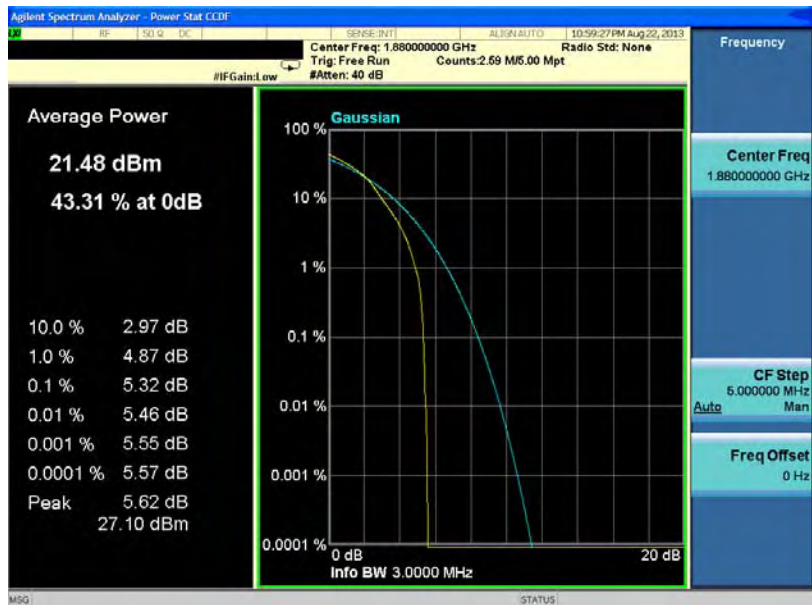
LTE Band 2 (Channel Bandwidth: 1.4 MHz) _ 16QAM

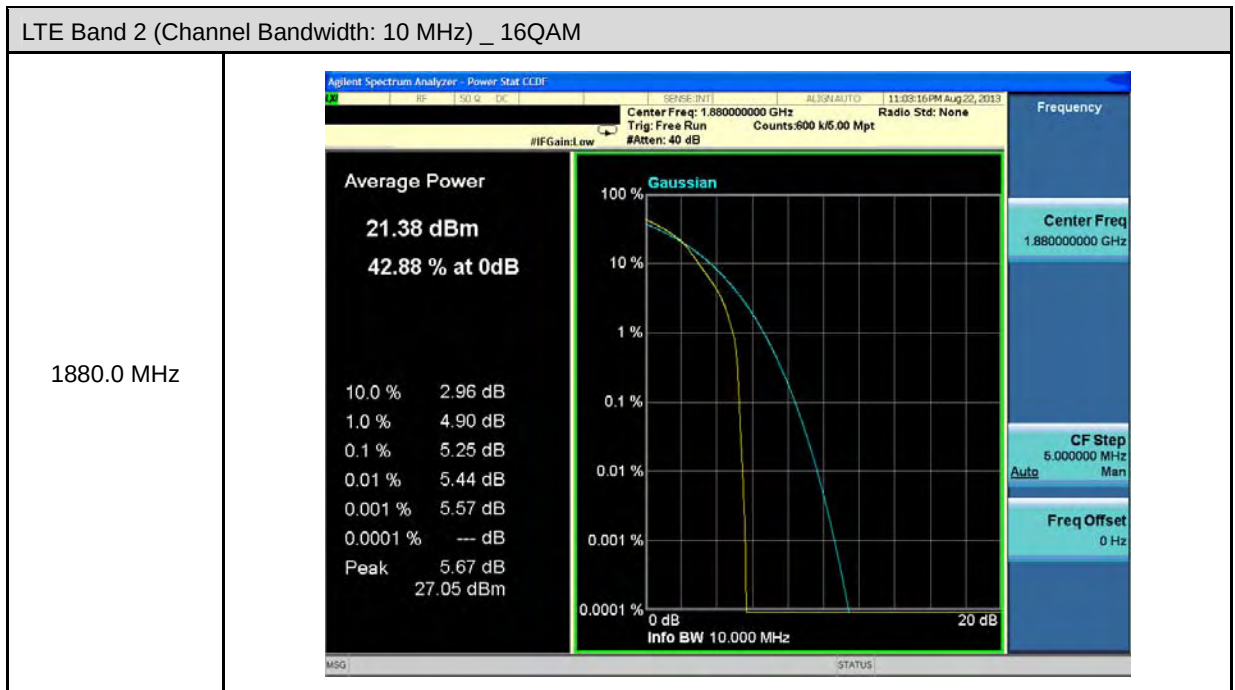
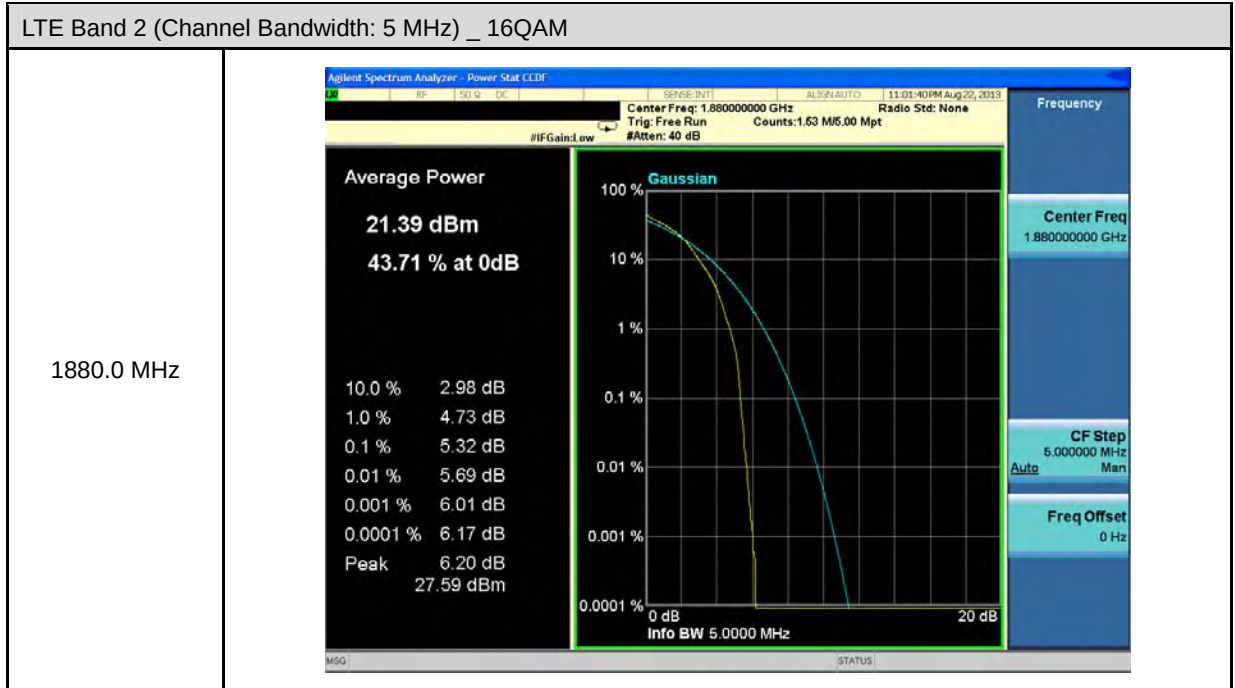
1880.0 MHz



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

1880.0 MHz





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

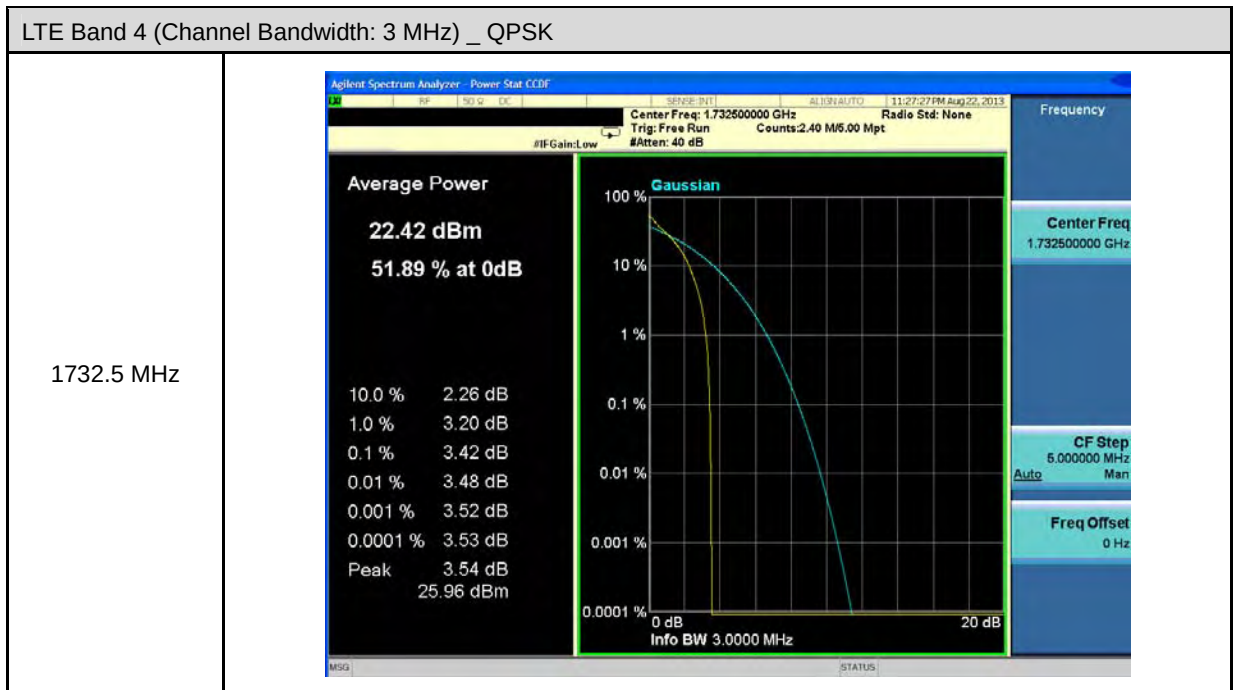
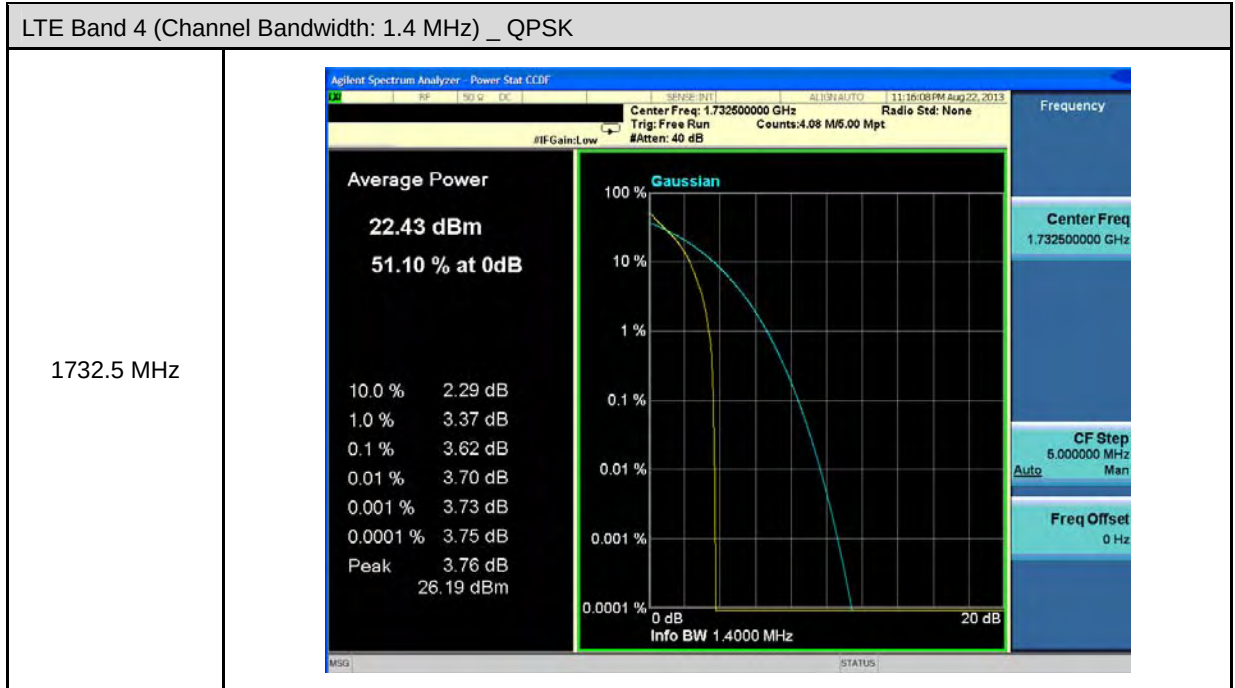
1880.0 MHz



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

1880.0 MHz





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

1732.5 MHz



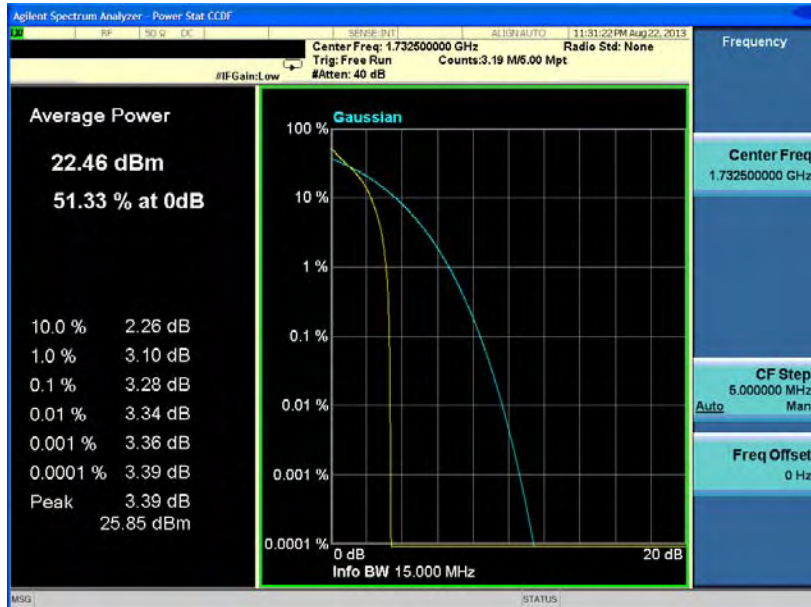
LTE Band 4 (Channel Bandwidth: 10 MHz) _ QPSK

1732.5 MHz



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

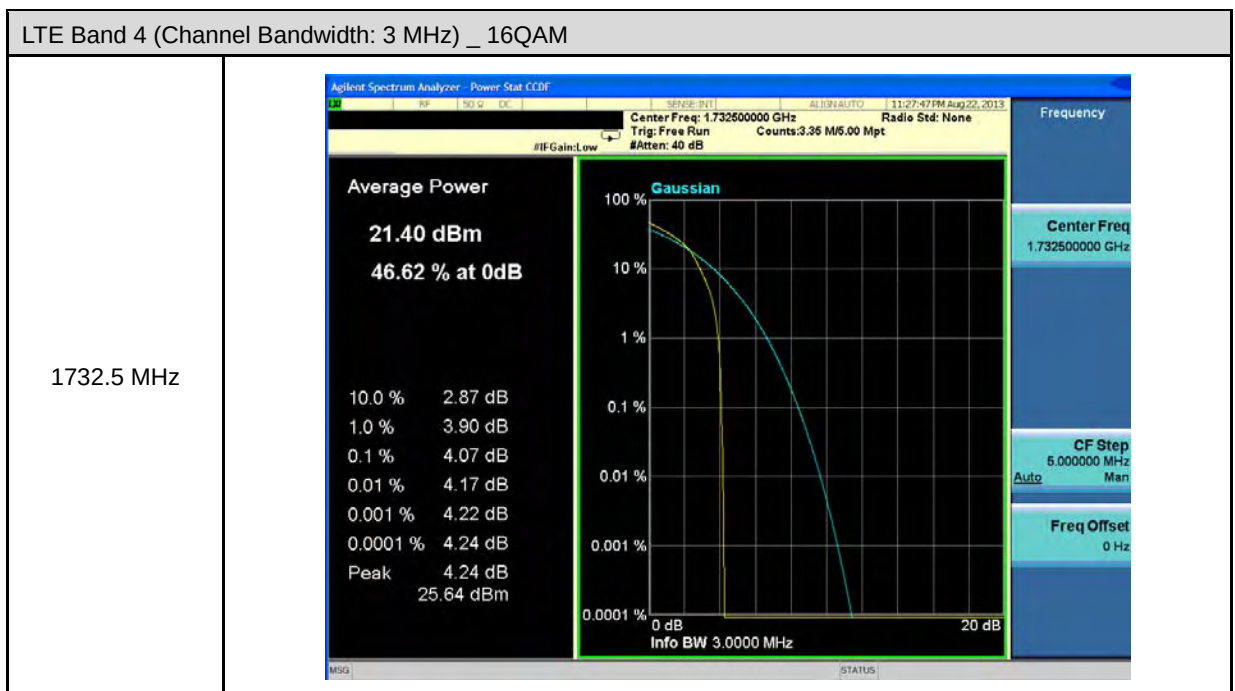
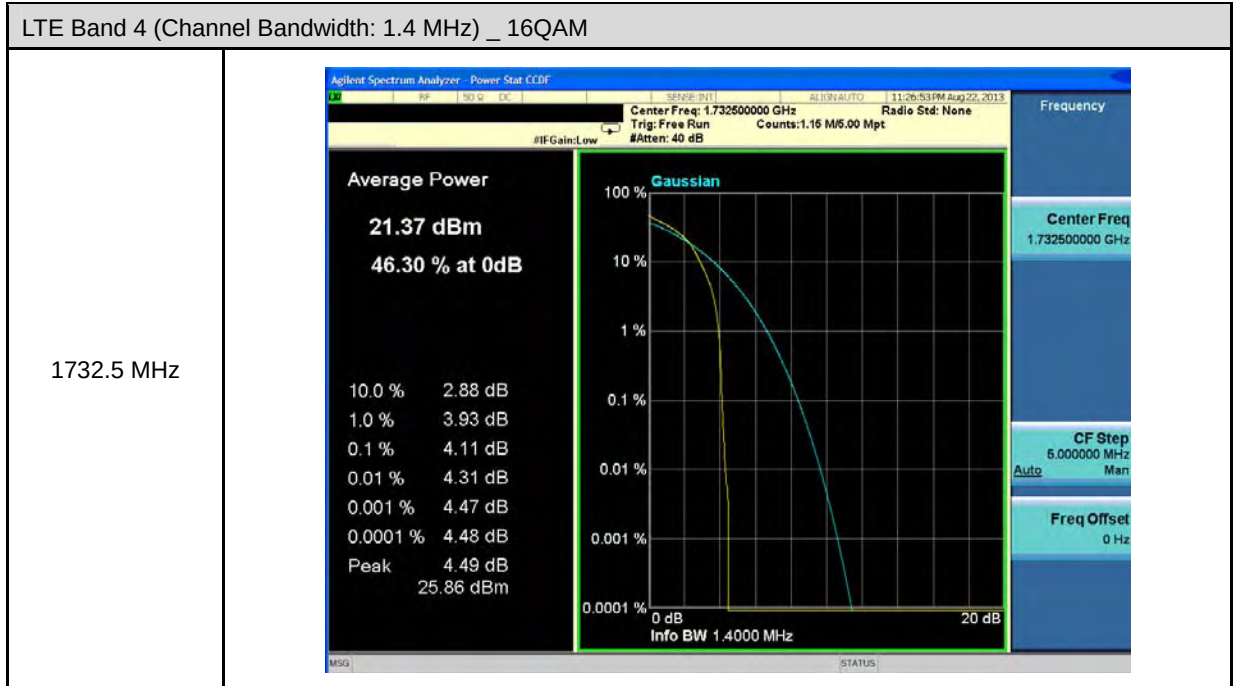
1732.5 MHz



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

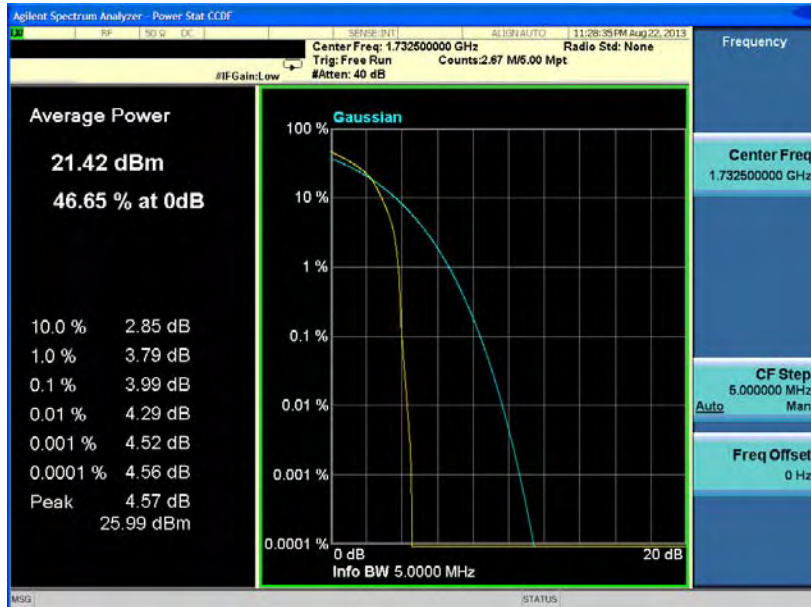
1732.5 MHz





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

1732.5 MHz



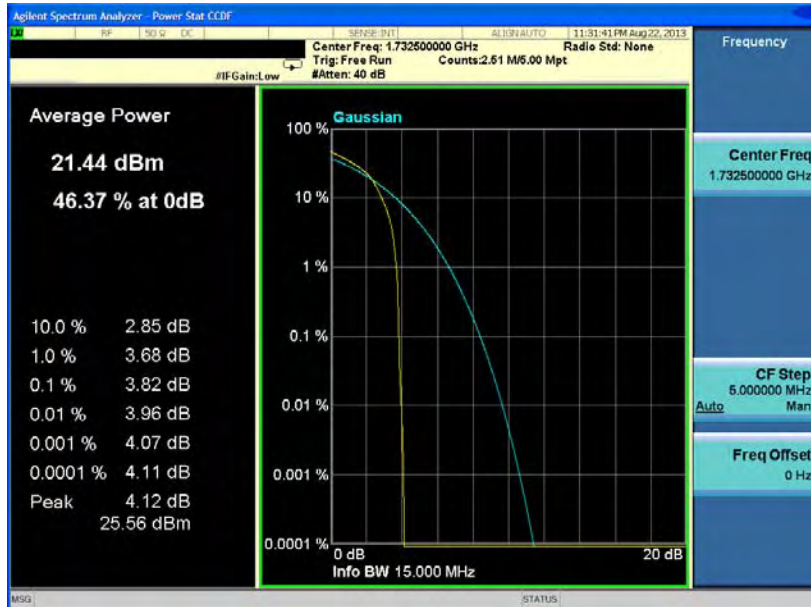
LTE Band 4 (Channel Bandwidth: 10 MHz) _ 16QAM

1732.5 MHz



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

1732.5 MHz



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

1732.5 MHz



LTE Band 17 (Channel Bandwidth: 5 MHz) _ QPSK

710.0 MHz



LTE Band 17 (Channel Bandwidth: 10 MHz) _ QPSK

710.0 MHz



LTE Band 17 (Channel Bandwidth: 5 MHz) _ 16QAM

710.0 MHz



LTE Band 17 (Channel Bandwidth: 10 MHz) _ 16QAM

710.0 MHz



7 Band Edge Test

7.1. Limit

The Band Edge Limit:

§22.917(a), §24.238(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

§27.53

(m)(4) For mobile digital stations, the attenuation factor shall be not less than $43 + 10 \log (P)$ dB at the channel edge and $55 + 10 \log (P)$ dB at 5.5 megahertz from the channel edges. (Channel edges are defined under §27.5 (i) Frequency assignment for the BRS/EBS band)

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Band edge compliance with Part 27 is demonstrated by two plots for each measurement. The first uses a measurement bandwidth $\geq 1\%$ of the emission bandwidth to show compliance at the channel edge with the -13dBm limit (required attenuation of $-43\log(P)$). The second plots under LTE BAND 41EMISSION MASK uses a measurement bandwidth of 1MHz to show compliance with the -13dBm limit 1MHz or more from the channel edge and -25dBm limit for signals 5.5MHz and more from the channel edge.

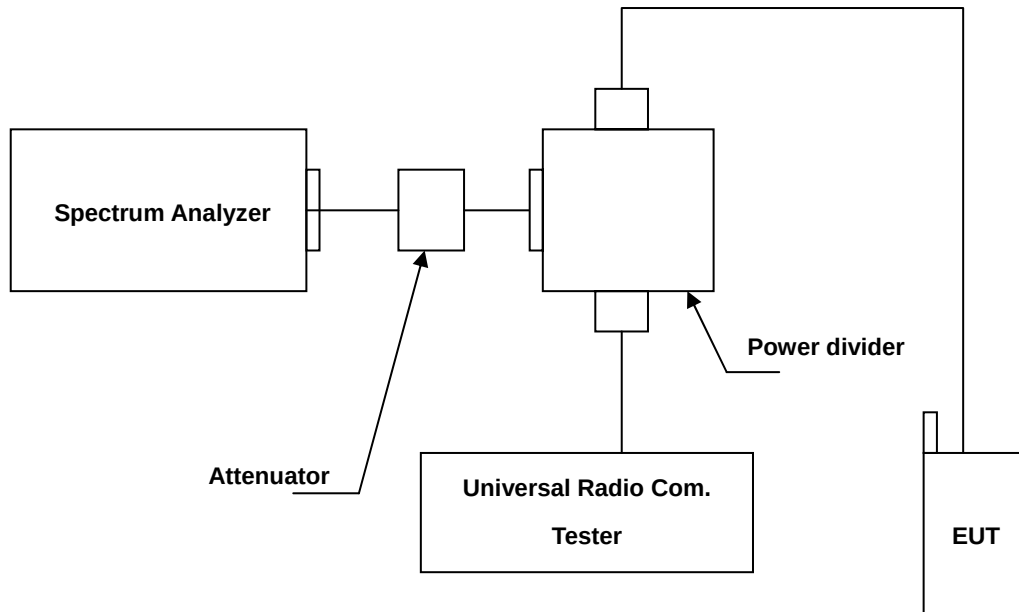
7.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/30/2012	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

7.3. Setup



7.4. Test Procedure

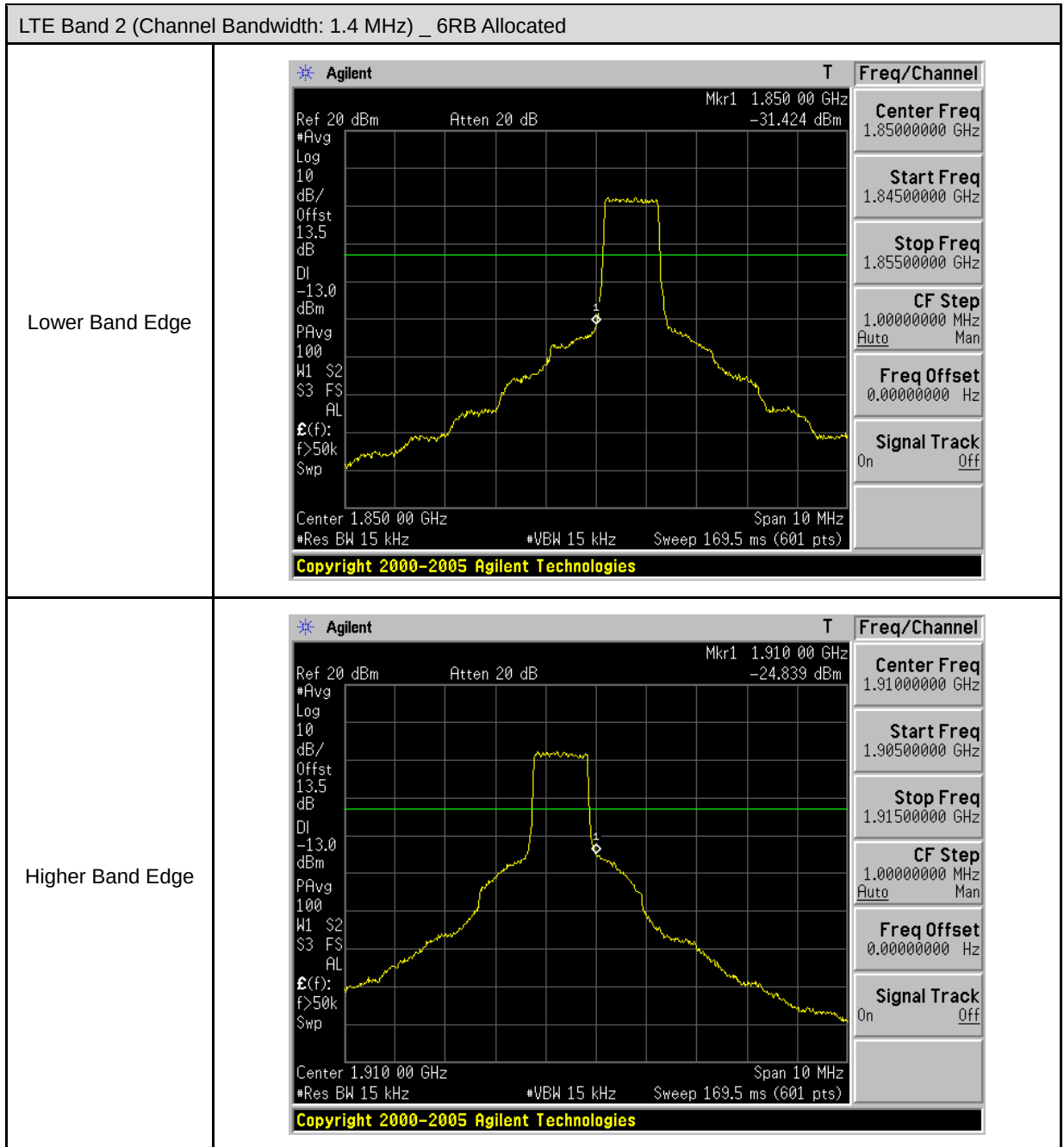
The measurement is made according to FCC rules:

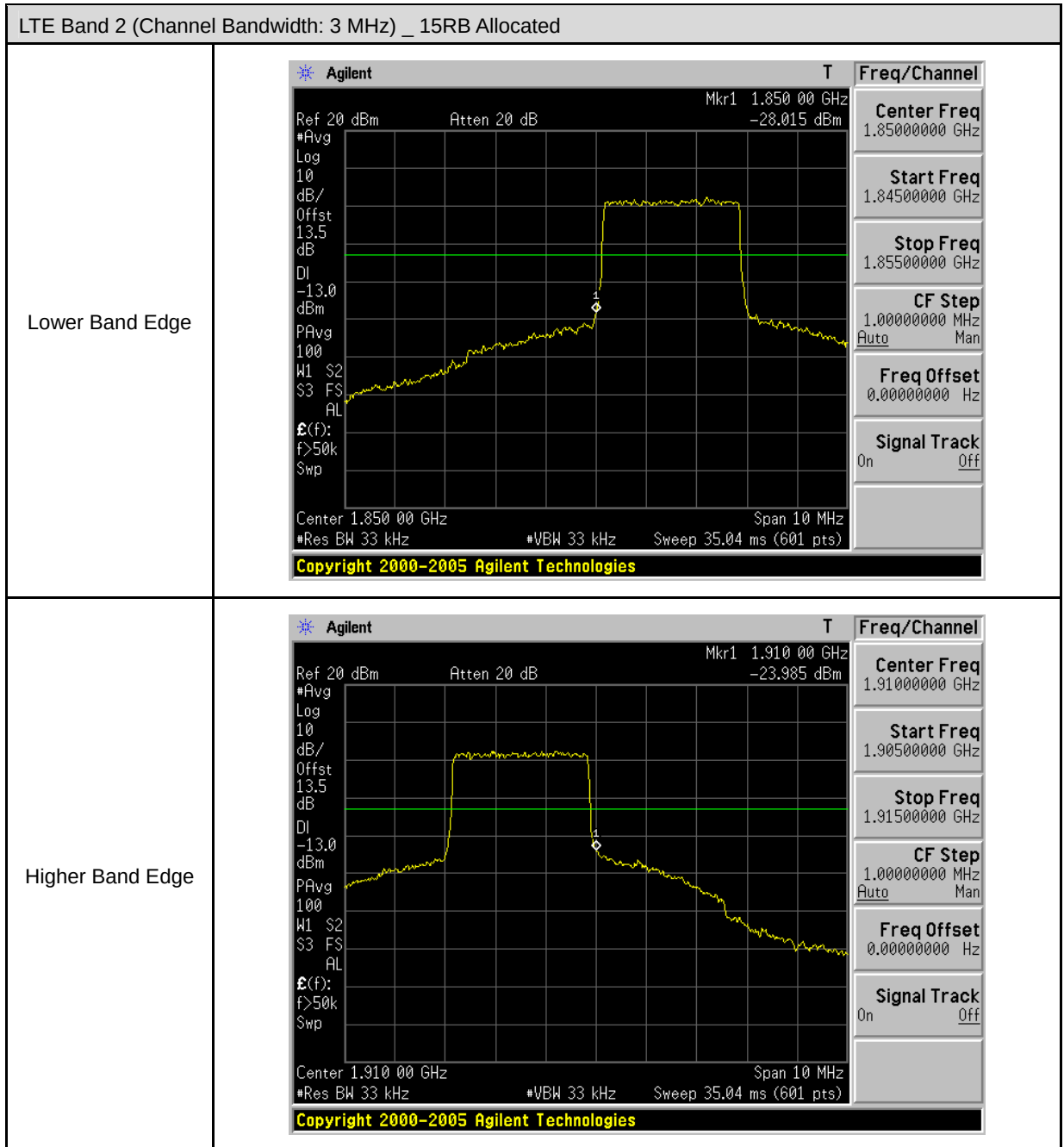
- The EUT was set up for the maximum peak power with LTE/WCDMA link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.)
- The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer. This splitter loss and cable loss are the worst loss 7.2 dB in the transmitted path track.
- The center frequency of spectrum is the band edge frequency and span is 10 MHz. RB of the resolution bandwidth of at least one percent of the emission bandwidth.
- Record the max trace plot into the test report.

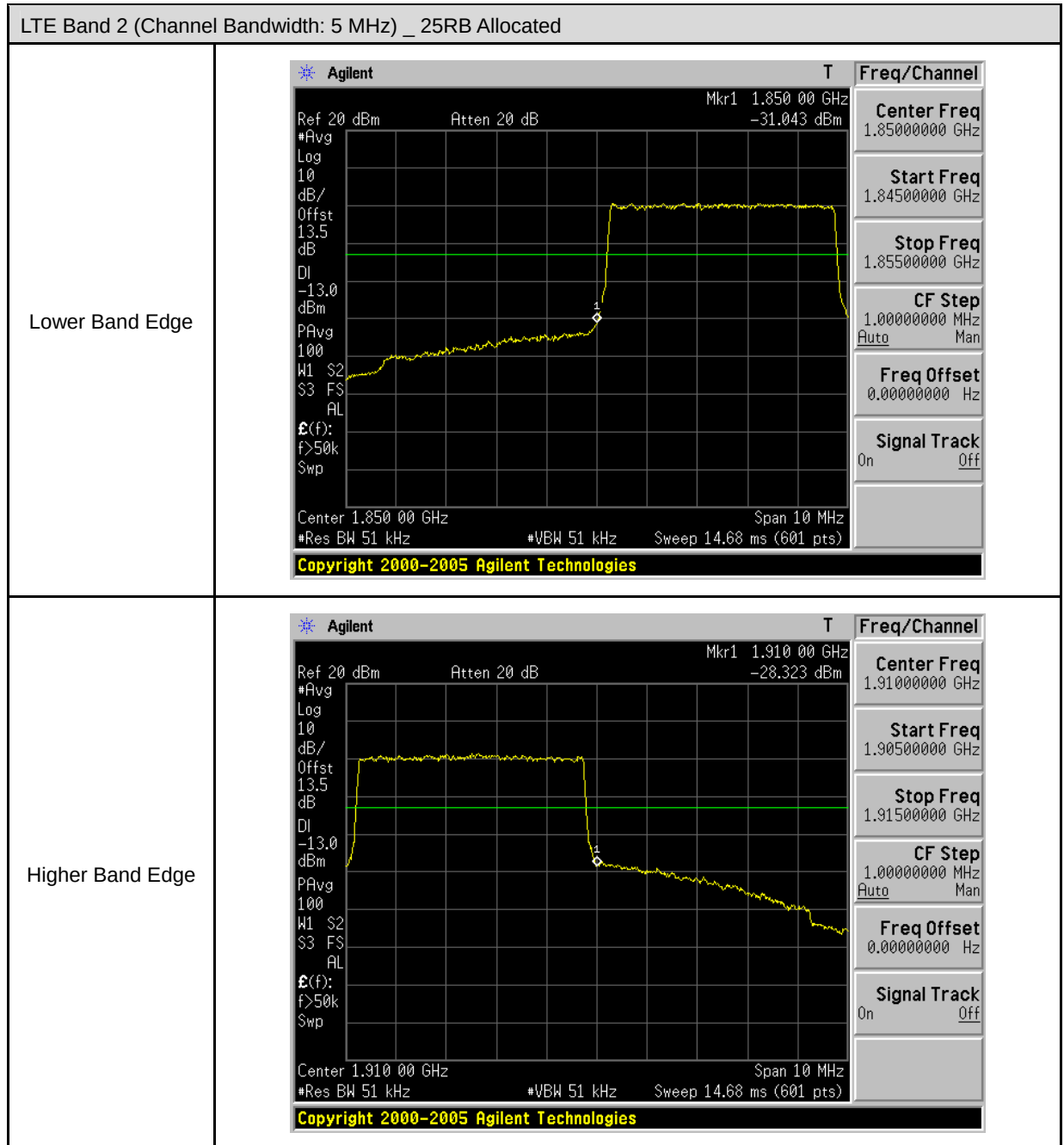
7.5. Uncertainty

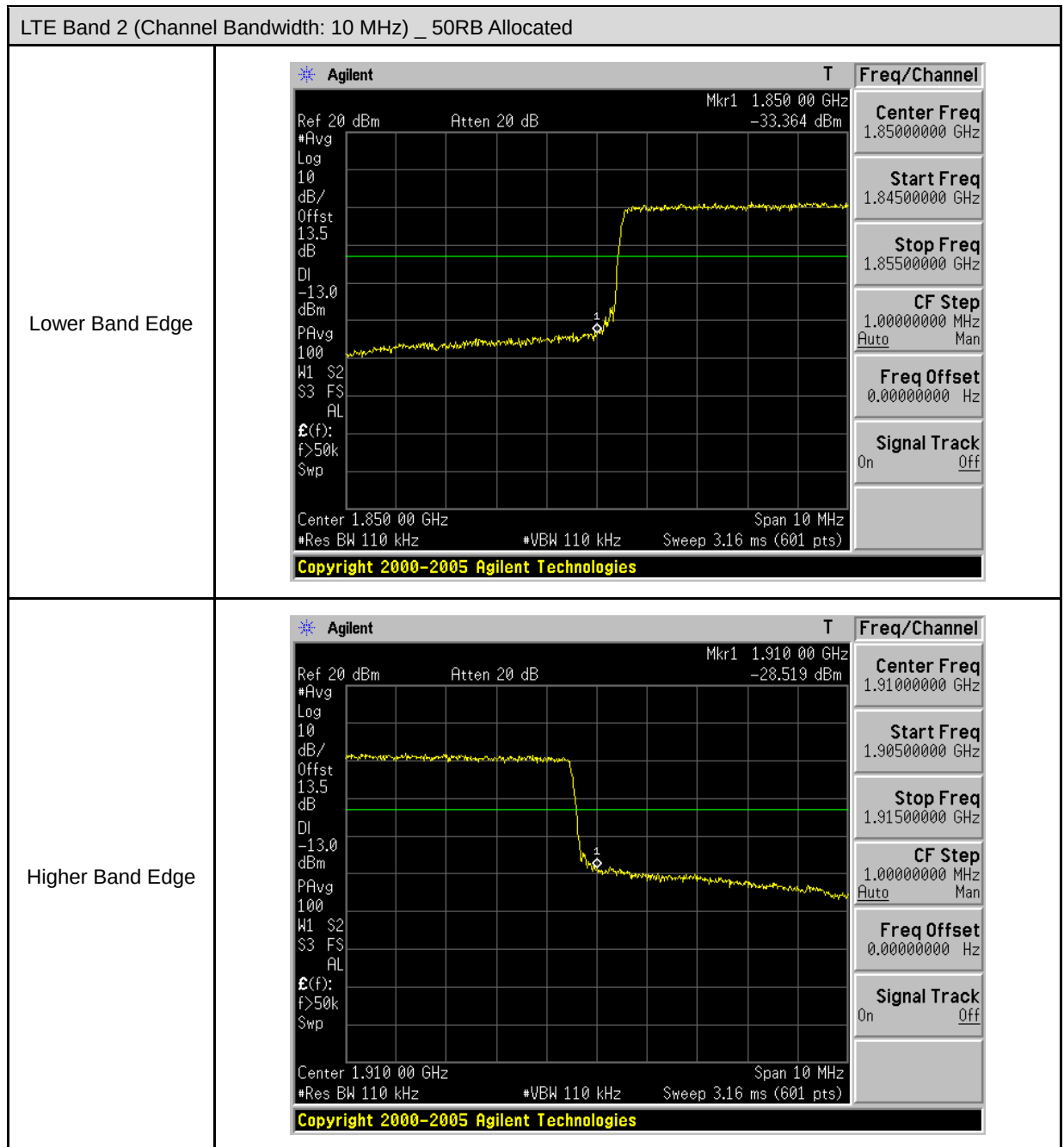
The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

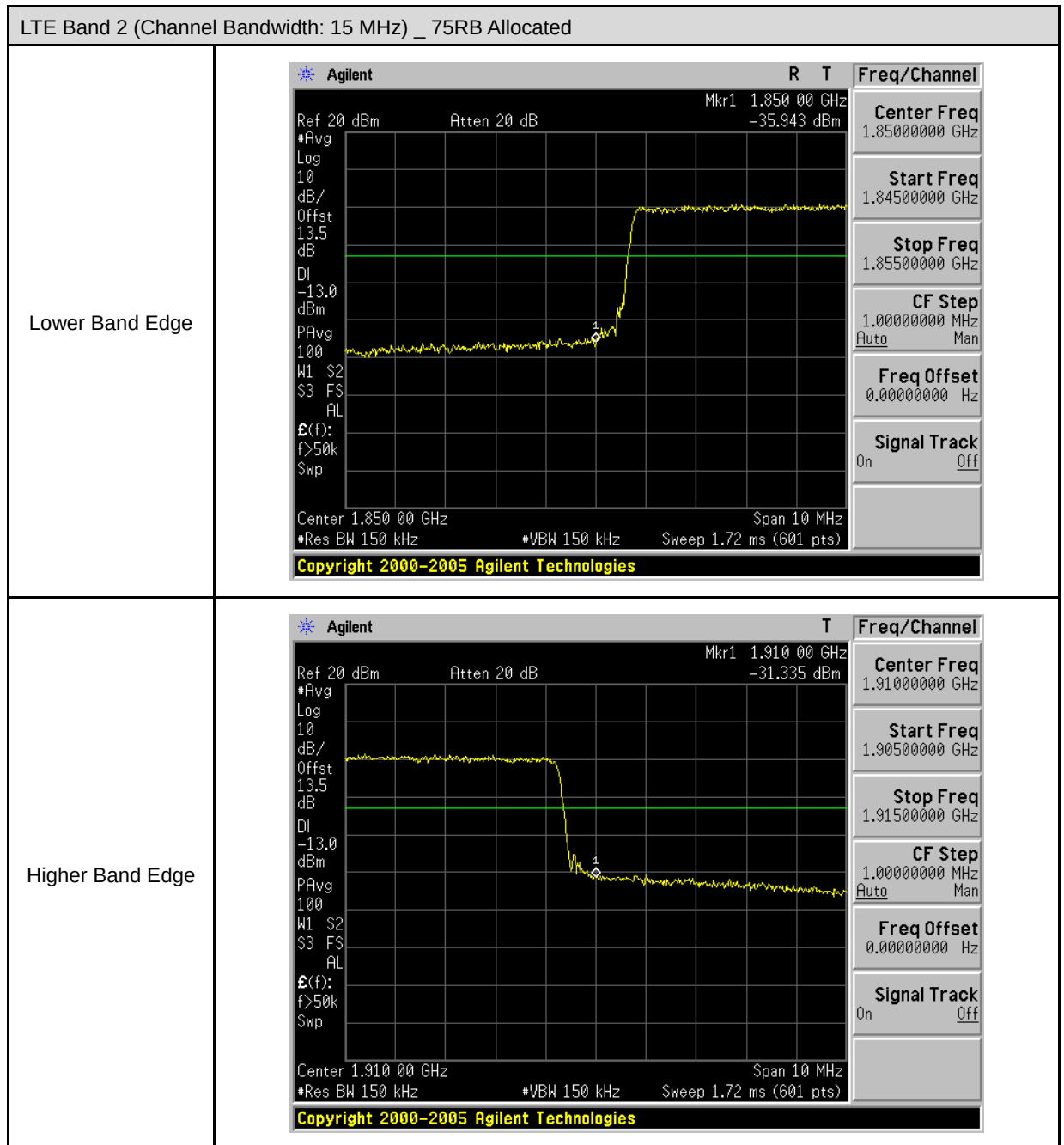
7.6. Test Result

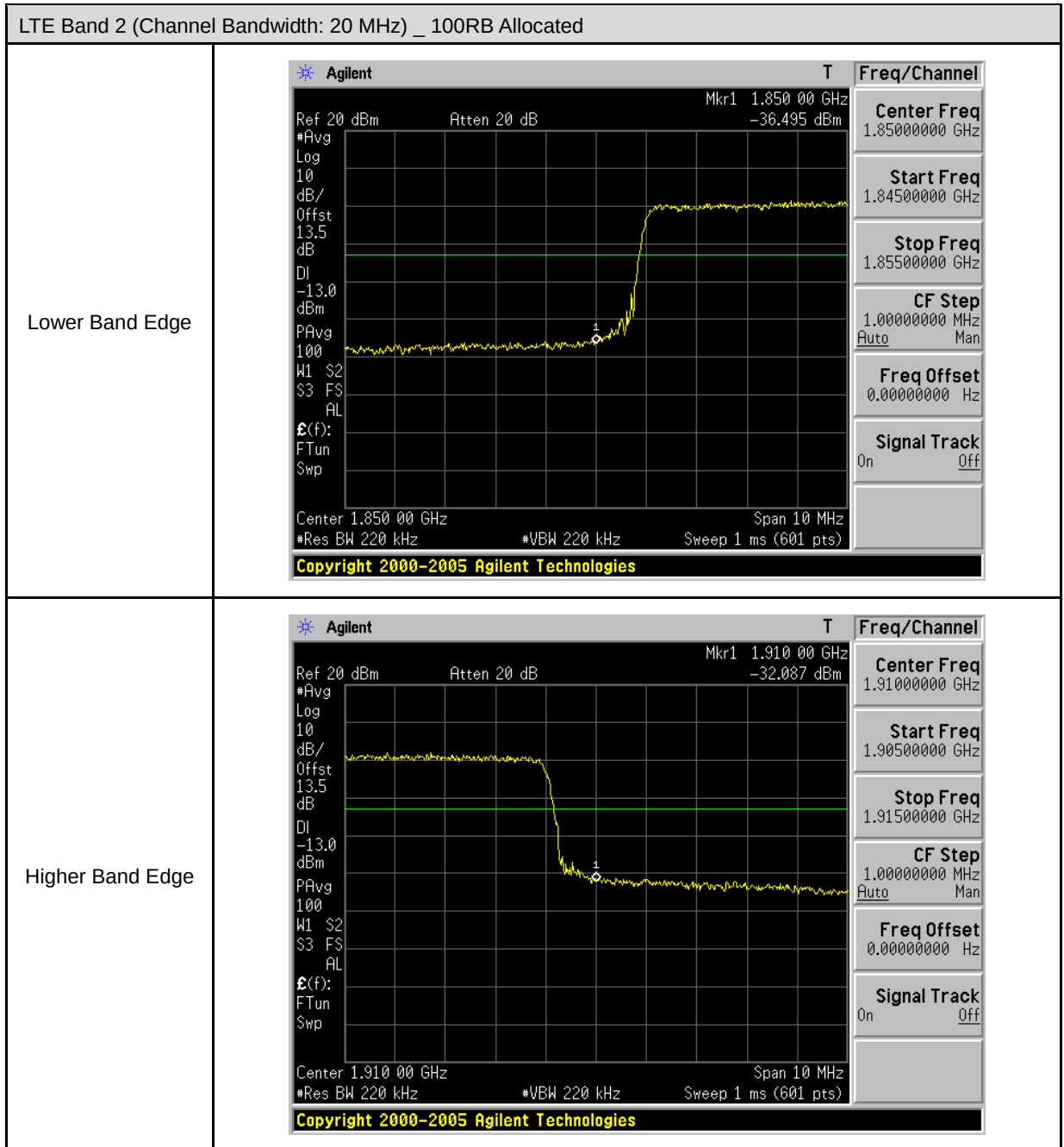


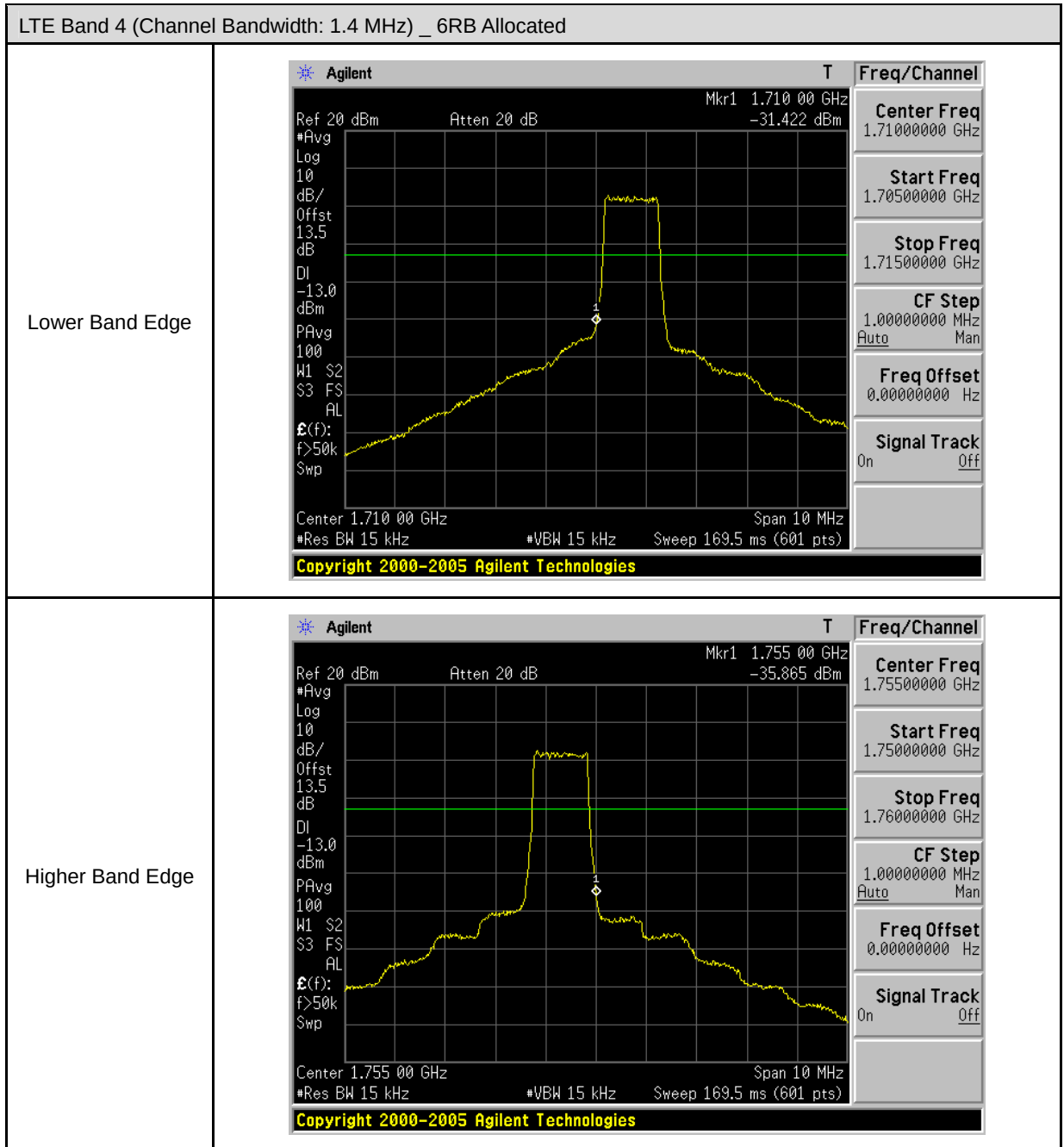


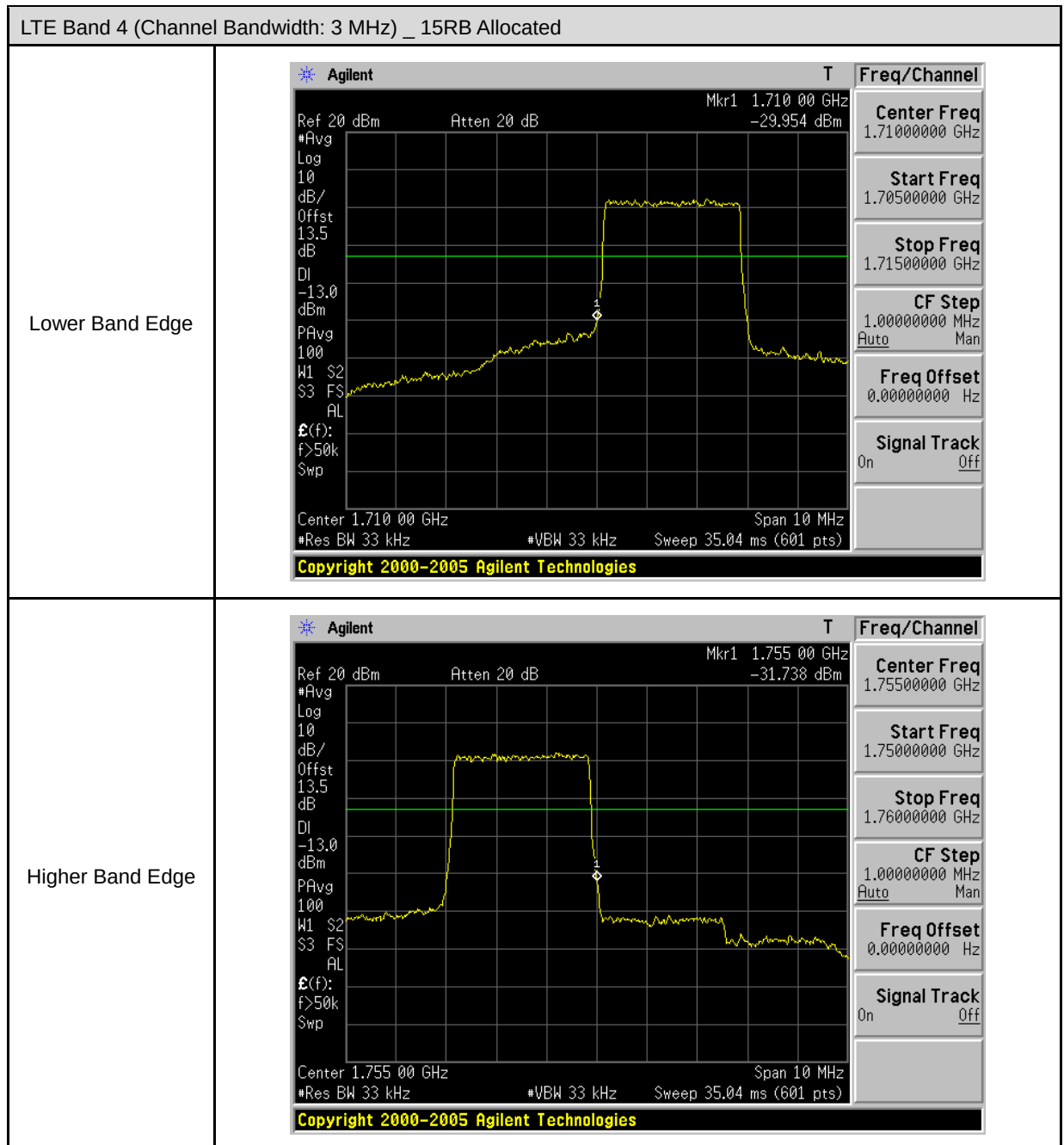












LTE Band 4 (Channel Bandwidth: 5 MHz) _ 25RB Allocated	
Lower Band Edge	Agilent T Ref 20 dBm Atten 20 dB Mkr1 1.710 00 GHz -28.419 dBm #Avg Log 10 dB/ Offst 13.5 dB DI -13.0 dBm PAvg 100 W1 S2 S3 FS AL $\mathcal{E}(f)$: f>50k Swp Center 1.710 00 GHz Span 10 MHz #Res BW 51 kHz #VBW 51 kHz Sweep 14.68 ms (601 pts) Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.7100000 GHz Start Freq 1.7050000 GHz Stop Freq 1.7150000 GHz CF Step 1.0000000 MHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off
Higher Band Edge	Agilent T Ref 20 dBm Atten 20 dB Mkr1 1.755 00 GHz -33.512 dBm #Avg Log 10 dB/ Offst 13.5 dB DI -13.0 dBm PAvg 100 W1 S2 S3 FS AL $\mathcal{E}(f)$: f>50k Swp Center 1.755 00 GHz Span 10 MHz #Res BW 51 kHz #VBW 51 kHz Sweep 14.68 ms (601 pts) Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.7550000 GHz Start Freq 1.7500000 GHz Stop Freq 1.7600000 GHz CF Step 1.0000000 MHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off

