

FCC 47 CFR PART 27

Product Type : Wireless Module
Applicant : Sierra Wireless Inc.,
Address : 13811 Wireless Way Richmond, British Columbia, Canada, V6V 3A4.
Trade Name : AirPrime
Model Number : AirPrime AR7550
Test Specification : FCC 47 CFR PART 27: Oct. 2012
CANADA RSS-139 Issue 2
CANADA RSS-199 Issue 1
ANSI C63.4: 2009
ANSI/TIA-603-C-2004
Application Purpose : Original
Receive Date : Feb. 20, 2013
Test Period : Mar. 08 ~ Apr. 27, 2013
Issue Date : May 09, 2013

Issue by

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
Tel : +886-3-2710188 / Fax : +886-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Mar. 21, 2013	Initial Issue	
01	May 02, 2013	Add LTE band 7 test results.	Joyce Liao
02	May 09, 2013	Revised report information.	Joyce Liao

Verification of Compliance

Issued Date: 05/09/2013

Product Type : Wireless Module
Applicant : Sierra Wireless Inc.,
Address : 13811 Wireless Way Richmond, British Columbia, Canada, V6V 3A4.
Trade Name : AirPrime
Model Number : AirPrime AR7550
FCC ID : N7NAR7550
IC : 2417C-AR7550
EUT Rated Voltage : DC 3.7V
Test Voltage : 120 Vac / 60 Hz
Applicable Standard : FCC 47 CFR PART 27: Oct. 2012
CANADA RSS-139 Issue 2
CANADA RSS-199 Issue 1
ANSI C63.4: 2009
ANSI/TIA-603-C-2004

Test Result : Complied

Application Purpose : Original

Performing Lab. : A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
Tel : +886-3-2710188 / Fax : +886-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330
<http://www.atl-lab.com.tw/e-index.htm>

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) (Murphy Wang) (Testing Engineer) (Fly Lu)

TABLE OF CONTENTS

1	General Information.....	6
	1.1. EUT Description	6
	1.2. Mode of Operation.....	8
	1.3. EUT Exercise Software	11
	1.4. Configuration of Test System Details	11
	1.5. Test Site Environment	11
	1.6. Summary of Test Result	12
2	Conducted Output Average Power Test.....	14
	2.1. Limit	14
	2.2. Test Instruments	14
	2.3. Test Setup.....	14
	2.4. Test Procedure	14
	2.5. Uncertainty	14
	2.6. Test Result.....	15
3	Effective Radiated Power / Equivalent Isotropic Radiated Power Test.....	26
	3.1. Limit	26
	3.2. Test Instruments	26
	3.3. Test Setup.....	26
	3.4. Test Procedure	28
	3.5. Uncertainty	28
	3.6. Test Result.....	29
4	Frequency Stability Test	32
	4.1. Limit	32
	4.2. Test Instruments	32
	4.3. Setup	32
	4.4. Test Procedure	33
	4.5. Uncertainty	33
	4.6. Test Result ()	34
5	26dB Bandwidth and Occupied Bandwidth Test.....	36
	5.1. Limit	36
	5.2. Test Instruments	36
	5.3. Setup	36
	5.4. Test Procedure	37
	5.5. Uncertainty	37
	5.6. Test Result.....	38
	5.7. Test Graphs	40

6	Peak to Average Ratio Test	63
6.1.	Limit	63
6.2.	Test Instruments	63
6.3.	Setup	63
6.4.	Test Procedure	64
6.5.	Uncertainty	64
6.6.	Test Result.....	65
6.7.	Test Graphs	66
7	Band Edge Test.....	78
7.1.	Limit	78
7.2.	Test Instruments	78
7.3.	Setup	79
7.4.	Test Procedure	79
7.5.	Uncertainty	79
7.6.	Test Result.....	80
8	Conducted Spurious Emission Test.....	92
8.1.	Limit	92
8.2.	Test Instruments	92
8.3.	Setup	92
8.4.	Test Procedure	93
8.5.	Uncertainty	93
8.6.	Test Graphs	94
9	Radiated Emission Test	128
9.1.	Limit	128
9.2.	Test Instruments	128
9.3.	Setup	128
9.4.	Test Procedure	129
9.5.	Uncertainty	129
9.6.	Test Result.....	130

1 General Information

1.1. EUT Description

Applicant		Sierra Wireless Inc.,			
Applicant Address		13811 Wireless Way Richmond, British Columbia, Canada, V6V 3A4.			
Manufacturer		Sierra Wireless Inc.,			
Manufacturer Address		13811 Wireless Way Richmond, British Columbia, Canada, V6V 3A4.			
Product Type		Wireless Module			
Trade Name		AirPrime			
Model Number		AirPrime AR7550			
FCC ID		N7NAR7550			
IC		2417C-AR7550			
IMEI No.		352766050007814			
Mode	LTE	Band	UL Frequency (MHz)	DL Frequency (MHz)	Modulation
		4	1710 ~ 1755	2110 ~ 2155	QPSK, 16QAM
		7	2502.5 ~ 2567.5	2622.5 ~ 2687.5	QPSK, 16QAM
		13	777 ~ 787	746 ~ 756	QPSK, 16QAM
Channel Bandwidth		LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 13: 5MHz, 10MHz			
Type of Antenna		Dipole Antenna			
Antenna Gain (dBi)		LTE Band 4: 1.75 dBi LTE Band 7 : 3.5 dBi LTE Band 13 : 1 dBi			

Max. Conducted Output Average Power	LTE Band 4 (Channel Bandwidth 1.4MHz):	0.222	W
	LTE Band 4 (Channel Bandwidth 3MHz):	0.215	W
	LTE Band 4 (Channel Bandwidth 5MHz):	0.214	W
	LTE Band 4 (Channel Bandwidth 10MHz):	0.214	W
	LTE Band 4 (Channel Bandwidth 15MHz):	0.211	W
	LTE Band 4 (Channel Bandwidth 20MHz):	0.211	W
	LTE Band 7 (Channel Bandwidth 5MHz):	0.194	W
	LTE Band 7 (Channel Bandwidth 10MHz):	0.191	W
	LTE Band 7 (Channel Bandwidth 15MHz):	0.186	W
	LTE Band 7 (Channel Bandwidth 20MHz):	0.177	W
	LTE Band 13 (Channel Bandwidth 5MHz):	0.210	W
	LTE Band 13 (Channel Bandwidth 10MHz):	0.212	W
Max. E.R.P. / E.I.R.P.	LTE Band 4 (Channel Bandwidth 1.4MHz):	0.189	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 3MHz):	0.200	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 5MHz):	0.206	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 10MHz):	0.242	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 15MHz):	0.216	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 20MHz):	0.183	W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 5MHz):	0.190	W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 10MHz):	0.200	W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 15MHz):	0.238	W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 20MHz):	0.214	W (E.I.R.P.)
	LTE Band 13 (Channel Bandwidth 5MHz):	1.026	W (E.R.P.)
	LTE Band 13 (Channel Bandwidth 10MHz):	0.773	W (E.R.P.)
Emission Designator	LTE Band 4 (Channel Bandwidth 1.4MHz):	1M08F9W	
	LTE Band 4 (Channel Bandwidth 3MHz):	2M70F9W	
	LTE Band 4 (Channel Bandwidth 5MHz):	4M48F9W	
	LTE Band 4 (Channel Bandwidth 10MHz):	8M95F9W	
	LTE Band 4 (Channel Bandwidth 15MHz):	13M4F9W	
	LTE Band 4 (Channel Bandwidth 20MHz):	17M8F9W	
	LTE Band 7 (Channel Bandwidth 5MHz):	4M48F9W	
	LTE Band 7 (Channel Bandwidth 10MHz):	8M94F9W	
	LTE Band 7 (Channel Bandwidth 15MHz):	13M4F9W	
	LTE Band 7 (Channel Bandwidth 20MHz):	17M9F9W	
	LTE Band 13 (Channel Bandwidth 5MHz):	4M48F9W	
	LTE Band 13 (Channel Bandwidth 10MHz):	8M97F9W	

1.2. Mode of Operation

Three channels had been tested for each channel bandwidth.

LTE Band 4				
Channel Bandwidth	1.4MHz		3MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	19957	1710.7	19965	1711.5
Middle CH	20175	1732.5	20175	732.5
High CH	20393	1754.3	20385	1753.5
Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	19975	1712.5	20000	1715.0
Middle CH	20175	1732.5	20175	1732.5
High CH	20375	1752.5	20350	1750.0
Channel Bandwidth	15MHz		20MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	20025	1717.5	20050	1720.0
Middle CH	20175	1732.5	20175	1732.5
High CH	20325	1747.5	20300	1745.0

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

LTE Band 13				
Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	23205	779.5	---	---
Middle CH	23230	782.0	23230	782.0
High CH	23255	784.5	---	---

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

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

Frequency range investigated for radiated emission: 30MHz to 13000 MHz.

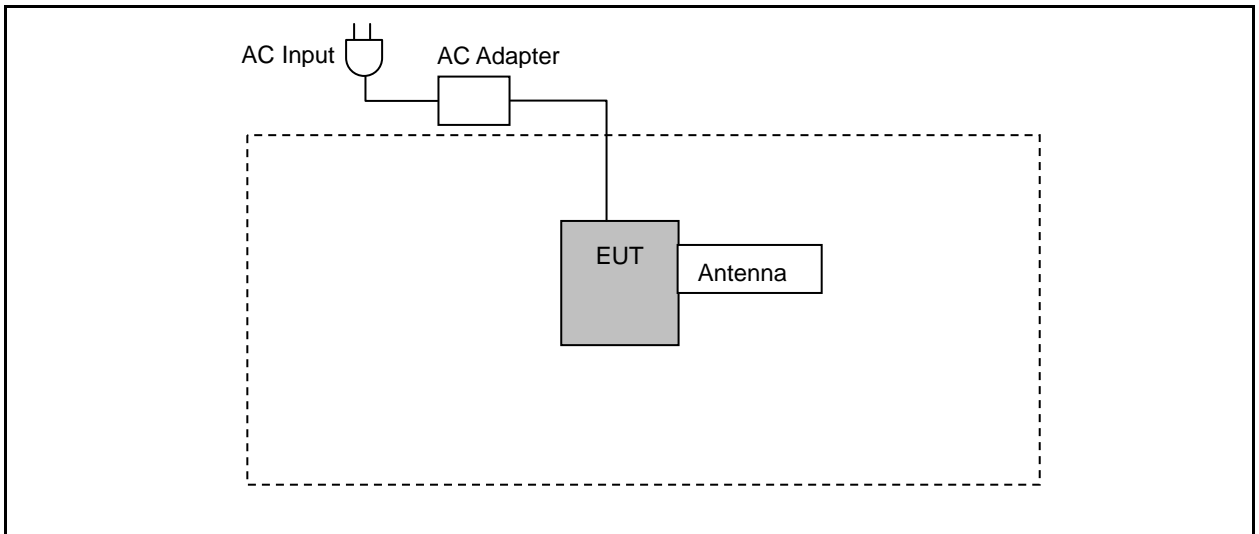
Band	Channel Bandwidth	Test Modes	
LTE Band 4	1.4 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 3) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 5) Link <input type="checkbox"/> LTE(RB Size 3, RB Offset 1) Link <input type="checkbox"/> LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 7) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 14) Link <input type="checkbox"/> LTE(RB Size 8, RB Offset 4) Link <input type="checkbox"/> LTE(RB Size 15, RB Offset 0) Link	QPSK
	5 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 12) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 24) Link <input type="checkbox"/> LTE(RB Size 12, RB Offset 6) Link <input type="checkbox"/> LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 24) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 49) Link <input type="checkbox"/> LTE(RB Size 25, RB Offset 12) Link <input type="checkbox"/> LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 37) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 74) Link <input type="checkbox"/> LTE(RB Size 36, RB Offset 18) Link <input type="checkbox"/> LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 49) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 99) Link <input type="checkbox"/> LTE(RB Size 50, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 50, RB Offset 25) Link <input type="checkbox"/> LTE(RB Size 50, RB Offset 50) Link <input type="checkbox"/> LTE(RB Size 100, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
LTE Band 7	5 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 12) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 24) Link <input type="checkbox"/> LTE(RB Size 12, RB Offset 6) Link <input type="checkbox"/> LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 24) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 49) Link <input type="checkbox"/> LTE(RB Size 25, RB Offset 12) Link <input type="checkbox"/> LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 37) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 74) Link <input type="checkbox"/> LTE(RB Size 36, RB Offset 18) Link <input type="checkbox"/> LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 49) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 99) Link <input type="checkbox"/> LTE(RB Size 50, RB Offset 25) Link <input type="checkbox"/> LTE(RB Size 100, RB Offset 0) Link	QPSK
LTE Band 13	5 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 12) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 24) Link <input type="checkbox"/> LTE(RB Size 12, RB Offset 6) Link <input type="checkbox"/> LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	<input checked="" type="checkbox"/> LTE(RB Size 1, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 24) Link <input type="checkbox"/> LTE(RB Size 1, RB Offset 49) Link <input type="checkbox"/> LTE(RB Size 25, RB Offset 0) Link <input type="checkbox"/> LTE(RB Size 25, RB Offset 12) Link <input type="checkbox"/> 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

LTE Band 4				
Standard		Description	Limit	Result
FCC Part 27	IC RSS-139			
§2.1046	6.4	Conducted Output Average Power	N/A	Pass
§27.50(d)(4)	6.4	Equivalent Isotropic Radiated Power	< 1 W (E.I.R.P.)	Pass
§2.1055 §27.54	6.3	Frequency Stability	< ± 2.5 ppm	Pass
§2.1049 §27.53(h)	6.2	Occupied Bandwidth	N/A	Pass
§27.50(d)(5)	6.2	Peak to average ratio	< 13 dB	Pass
§2.1051 §27.53(h)	6.2	Band Edge	< 43+10log ₁₀ (P) dB	Pass
§2.1051 §27.53(h)	6.2	Conducted Spurious Emissions	< 43+10log ₁₀ (P) dB Under 13.0 dB	Pass
§2.1053 §27.53(h)	6.5, 6.6	Radiated Spurious Emissions	< 43+10log ₁₀ (P) dB Under 13.0 dB	Pass

LTE Band 13				
Standard		Description	Limit	Result
FCC Part 27				
§2.1046		Conducted Output Average Power	N/A	Pass
§27.50(C)(10)		Equivalent Radiated Power	< 3 W (E.R.P.)	Pass
§2.1055 §27.54		Frequency Stability	< ± 2.5 ppm	Pass
§2.1049 §27.53(f)		Occupied Bandwidth	N/A	Pass
§27.50(d)(5)		Peak to average ratio	< 13 dB	Pass
§2.1051 §27.53(f)		Band Edge	< 43+10log(P) dB	Pass
§2.1051 §27.53(f)		Conducted Spurious Emissions	< 43+10log(P) dB Under 13.0 dB	Pass
§2.1053 §27.53(f)		Radiated Spurious Emissions	< 43+10log(P) dB Under 13.0 dB	Pass

LTE Band 7				
Standard		Description	Limit	Result
FCC Part 27	IC RSS-199			
§2.1046	4.4	Conducted Output Average Power	N/A	Pass
§27.50(h)	4.4	Equivalent Radiated Power	< 3 W (E.R.P.)	Pass
§2.1055 §27.54	4.3	Frequency Stability	< ± 2.5 ppm	Pass
§2.1049 §27.53(m)	4.2	Occupied Bandwidth	N/A	Pass
§27.50(h)	4.2	Peak to average ratio	< 13 dB	Pass
§2.1051 §27.53(m)	4.2	Band Edge	< 43+10log(P) dB	Pass
§2.1051 §27.53(m)	4.2	Conducted Spurious Emissions	< 43+10log(P) dB Under 13.0 dB	Pass
§2.1053 §27.53(m)	4.5, 4.5	Radiated Spurious Emissions	< 43+10log(P) dB Under 13.0 dB	Pass

2 Conducted Output Average Power Test

2.1. Limit

N/A

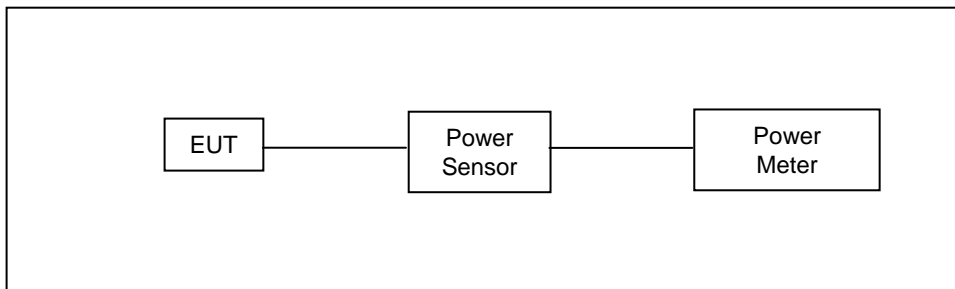
2.2. Test Instruments

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

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

2.5. Uncertainty

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

2.6. Test Result

Model Number	AirPrime AR7550		
Test Item	Conducted Output Average Power		
Date of Test	03/08/2013, 04/26/2013	Test Site	TE05

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	1.4 MHz	QPSK	19957	1710.7	1	0	23.41	0.219
					1	3	23.37	0.217
					1	5	23.35	0.216
					3	1	23.33	0.215
					6	0	22.10	0.162
			1	0	23.46	0.222		
			1	3	23.40	0.219		
			1	5	23.39	0.218		
			3	1	23.36	0.217		
			6	0	22.20	0.166		
			1	0	23.21	0.209		
			1	3	23.13	0.206		
		1	5	23.11	0.205			
		3	1	23.09	0.204			
		6	0	21.99	0.158			
		1	0	22.28	0.169			
		1	3	22.20	0.166			
		1	5	22.18	0.165			
		3	1	21.94	0.156			
		6	0	20.99	0.126			
		1	0	22.41	0.174			
		1	3	22.39	0.173			
		1	5	22.28	0.169			
		3	1	22.03	0.160			
6	0	21.11	0.129					
1	0	22.17	0.165					
1	3	22.12	0.163					
1	5	21.95	0.157					
3	1	21.63	0.146					
6	0	20.98	0.125					

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	3 MHz	QPSK	19965	1711.5	1	0	23.17	0.207
					1	7	23.15	0.207
					1	14	23.12	0.205
					8	4	22.25	0.168
					15	0	22.21	0.166
			1	0	23.32	0.215		
			1	7	23.24	0.211		
			1	14	23.01	0.200		
			8	4	22.26	0.168		
			15	0	22.19	0.166		
			1	0	23.04	0.201		
			1	7	22.93	0.196		
			1	14	22.86	0.193		
			8	4	22.19	0.166		
			15	0	22.11	0.163		
		1	0	22.38	0.173			
		1	7	22.24	0.167			
		1	14	22.12	0.163			
		8	4	21.14	0.130			
		15	0	21.05	0.127			
		16QAM	19965	1711.5	1	0	22.43	0.175
					1	7	22.39	0.173
					1	14	22.20	0.166
			8	4	21.19	0.132		
15	0		21.08	0.128				
20175	1732.5		1	0	22.17	0.165		
			1	7	22.12	0.163		
			1	14	22.09	0.162		
8	4		20.90	0.123				
15	0	20.85	0.122					
20385	1753.5	1	0	22.17	0.165			
		1	7	22.12	0.163			
		1	14	22.09	0.162			
8	4	20.90	0.123					
15	0	20.85	0.122					

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	5 MHz	QPSK	19975	1712.5	1	0	23.21	0.209
					1	12	23.18	0.208
					1	24	23.10	0.204
					12	6	22.12	0.163
					25	0	22.05	0.160
			1	0	23.30	0.214		
			1	12	23.23	0.210		
			1	24	23.11	0.205		
			12	6	22.16	0.164		
			25	0	22.08	0.161		
			1	0	23.02	0.200		
			1	12	22.93	0.196		
		1	24	22.88	0.194			
		12	6	22.02	0.159			
		25	0	21.87	0.154			
		1	0	22.32	0.171			
		1	12	22.26	0.168			
		1	24	22.14	0.164			
		12	6	21.16	0.131			
		25	0	21.09	0.129			
		1	0	22.45	0.176			
		1	12	22.37	0.173			
		1	24	22.26	0.168			
		12	6	21.23	0.133			
25	0	21.17	0.131					
1	0	22.23	0.167					
1	12	22.13	0.163					
1	24	22.04	0.160					
12	6	21.05	0.127					
25	0	20.90	0.123					

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	10 MHz	QPSK	20000	1715.0	1	0	23.20	0.209
					1	24	23.16	0.207
					1	49	23.06	0.202
					25	12	21.97	0.157
					50	0	21.93	0.156
			1	0	23.30	0.214		
			1	24	23.23	0.210		
			1	49	23.04	0.201		
			25	12	22.18	0.165		
			50	0	22.04	0.160		
			1	0	22.98	0.199		
			1	24	22.86	0.193		
		1	49	22.83	0.192			
		25	12	21.94	0.156			
		50	0	21.78	0.151			
		1	0	22.18	0.165			
		1	24	22.13	0.163			
		1	49	21.86	0.153			
		25	12	21.13	0.130			
		50	0	21.07	0.128			
		1	0	22.43	0.175			
		1	24	22.21	0.166			
		1	49	22.19	0.166			
		25	12	21.18	0.131			
50	0	21.11	0.129					
1	0	22.15	0.164					
1	24	22.09	0.162					
1	49	22.06	0.161					
25	12	20.97	0.125					
50	0	20.86	0.122					

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	15 MHz	QPSK	20025	1717.5	1	0	23.15	0.207
					1	37	23.13	0.206
					1	74	23.08	0.203
					36	18	21.95	0.157
					75	0	21.88	0.154
			1	0	23.25	0.211		
			1	37	23.17	0.207		
			1	74	23.12	0.205		
			36	18	22.14	0.164		
			75	0	22.04	0.160		
			1	0	23.07	0.203		
			1	37	22.92	0.196		
		1	74	22.76	0.189			
		36	18	21.86	0.153			
		75	0	21.79	0.151			
		1	0	22.22	0.167			
		1	37	22.18	0.165			
		1	74	22.13	0.163			
		36	18	21.05	0.127			
		75	0	20.94	0.124			
		1	0	22.30	0.170			
		1	37	22.25	0.168			
		1	74	22.19	0.166			
		36	18	21.15	0.130			
75	0	21.01	0.126					
1	0	22.19	0.166					
1	37	22.11	0.163					
1	74	21.97	0.157					
36	18	20.92	0.124					
75	0	20.84	0.121					
16QAM	20025	1717.5	1	0	22.22	0.167		
			1	37	22.18	0.165		
			1	74	22.13	0.163		
			36	18	21.05	0.127		
	75	0	20.94	0.124				
	1	0	22.30	0.170				
	1	37	22.25	0.168				
	1	74	22.19	0.166				
	36	18	21.15	0.130				
	75	0	21.01	0.126				
	1	0	22.19	0.166				
	1	37	22.11	0.163				
1	74	21.97	0.157					
36	18	20.92	0.124					
75	0	20.84	0.121					

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	20 MHz	QPSK	20050	1720.0	1	0	23.18	0.208
					1	49	23.06	0.202
					1	99	22.91	0.195
					50	0	21.95	0.157
					50	25	21.91	0.155
					50	50	21.86	0.153
			100	0	21.89	0.155		
			1	0	23.24	0.211		
			1	49	23.11	0.205		
			1	99	23.08	0.203		
			50	0	22.21	0.166		
			50	25	22.13	0.163		
			50	50	22.03	0.160		
			100	0	21.97	0.157		
			1	0	23.14	0.206		
			1	49	23.05	0.202		
			1	99	22.92	0.196		
			50	0	22.06	0.161		
		50	25	22.01	0.159			
		50	50	21.99	0.158			
		100	0	21.89	0.155			
		1	0	22.25	0.168			
		1	49	22.21	0.166			
		1	99	22.04	0.160			
		50	0	21.01	0.126			
		50	25	20.96	0.125			
		50	50	22.33	0.171			
		100	0	22.29	0.169			
		1	0	22.17	0.165			
		1	49	21.05	0.127			
		1	99	21.02	0.126			
		50	0	22.16	0.164			
		50	25	22.05	0.160			
		50	50	21.94	0.156			
		100	0	21.02	0.126			
		1	0	20.83	0.121			
1	49	23.18	0.208					
1	99	23.06	0.202					
50	0	22.91	0.195					
50	25	21.95	0.157					
50	50	21.91	0.155					
100	0	21.86	0.153					

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 13	5 MHz	QPSK	23205	779.5	1	0	23.23	0.210
					1	12	23.10	0.204
					1	24	22.75	0.188
					12	6	21.99	0.158
					25	0	21.90	0.155
			23230	782.0	1	0	23.04	0.201
					1	12	22.84	0.192
					1	24	22.74	0.188
					12	6	21.76	0.150
					25	0	21.64	0.146
			23255	784.5	1	0	23.00	0.200
					1	12	22.82	0.191
		1			24	22.74	0.188	
		12			6	21.82	0.152	
		25			0	21.68	0.147	
		16QAM	23205	779.5	1	0	22.41	0.174
					1	12	22.29	0.169
					1	24	21.96	0.157
					12	6	21.05	0.127
			23230	782.0	25	0	20.85	0.122
					1	0	22.32	0.171
					1	12	22.14	0.164
					1	24	22.08	0.161
					12	6	20.87	0.122
23255	784.5		25	0	20.66	0.116		
			1	0	21.91	0.155		
			1	12	21.85	0.153		
		1	24	21.68	0.147			
		12	6	20.71	0.118			
25	0	20.59	0.115					

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 13	10 MHz	QPSK	23230	782.0	1	0	23.26	0.212
					1	24	23.18	0.208
					1	49	22.88	0.194
					25	0	21.87	0.154
					25	12	21.77	0.150
					50	0	21.71	0.148
		16QAM	23230	782.0	1	0	22.27	0.169
					1	24	22.12	0.163
					1	49	21.95	0.157
					25	12	20.59	0.115
					50	0	20.45	0.111

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power		
					Size	Offset	(dBm)	(W)	
LTE Band 7	5 MHz	QPSK	20775	2502.5	1	0	22.88	0.194	
					1	12	22.65	0.184	
					1	24	22.45	0.176	
					12	6	21.38	0.137	
					25	0	21.32	0.136	
			21100	2535.0	1	0	22.23	0.167	
					1	12	22.06	0.161	
					1	24	21.91	0.155	
					12	6	20.98	0.125	
					25	0	20.81	0.121	
			21425	2567.5	1	0	22.48	0.177	
					1	12	22.26	0.168	
		1			24	21.89	0.155		
		12			6	21.22	0.132		
		16QAM	20775	2502.5	25	0	21.16	0.131	
					1	0	22.23	0.167	
					1	12	21.34	0.136	
					1	24	21.11	0.129	
					12	6	20.35	0.108	
			21100	2535.0	25	0	20.23	0.105	
					1	0	20.44	0.111	
					1	12	20.23	0.105	
					1	24	20.11	0.103	
					12	6	19.96	0.099	
21425	2567.5		25	0	19.87	0.097			
			1	0	21.32	0.136			
		1	12	21.3	0.135				
		1	24	21.17	0.131				
						12	6	20.25	0.106
						25	0	20.04	0.101

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power		
					Size	Offset	(dBm)	(W)	
LTE Band 7	10 MHz	QPSK	20800	2505.0	1	0	22.81	0.191	
					1	24	22.59	0.182	
					1	49	22.43	0.175	
					25	12	21.54	0.143	
					50	0	21.34	0.136	
			21100	2535.0	1	0	21.93	0.156	
					1	24	21.48	0.141	
					1	49	21.37	0.137	
					25	12	20.3	0.107	
					50	0	20.28	0.107	
			21400	2565.0	1	0	22.45	0.176	
					1	24	22.41	0.174	
		1			49	21.85	0.153		
		25			12	21.22	0.132		
		16QAM	20800	2505.0	50	0	21.06	0.128	
					1	0	21.89	0.155	
					1	24	21.34	0.136	
					1	49	21.22	0.132	
					25	12	20.55	0.114	
			21100	2535.0	50	0	20.36	0.109	
					1	0	21.28	0.134	
					1	24	20.89	0.123	
					1	49	20.56	0.114	
					25	12	19.49	0.089	
21400	2565.0		50	0	19.36	0.086			
			1	0	21.23	0.133			
		1	24	21.19	0.132				
		1	49	20.84	0.121				
						25	12	20.56	0.114
						50	0	20.33	0.108

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power			
					Size	Offset	(dBm)	(W)		
LTE Band 7	15 MHz	QPSK	20825	2507.5	1	0	22.69	0.186		
					1	37	22.43	0.175		
					1	74	22.09	0.162		
					36	18	21.64	0.146		
					75	0	21.45	0.140		
			21100	2535.0	1	0	22.01	0.159		
					1	37	21.65	0.146		
					1	74	21.34	0.136		
					36	18	20.37	0.109		
					75	0	20.23	0.105		
			21375	2562.5	1	0	22.37	0.173		
					1	37	22.22	0.167		
		1			74	21.79	0.151			
		36			18	21.11	0.129			
		16QAM	20825	2507.5	2507.5	75	0	20.93	0.124	
						1	0	22.03	0.160	
						1	37	21.71	0.148	
						1	74	21.55	0.143	
						36	18	20.55	0.114	
			21100	2535.0	2535.0	2535.0	75	0	20.42	0.110
							1	0	21.05	0.127
							1	37	20.88	0.122
							1	74	20.69	0.117
							36	18	19.79	0.095
21375	2562.5		2562.5	2562.5	75	0	19.56	0.090		
					1	0	21.39	0.138		
		1			37	21.33	0.136			
		1			74	20.83	0.121			
						36	18	20.22	0.105	
						75	0	20.04	0.101	

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 7	20 MHz	QPSK	20850	2510.0	1	0	22.49	0.177
					1	49	22.28	0.169
					1	99	21.97	0.157
					50	25	20.99	0.126
					100	0	20.5	0.112
			21100	2535.0	1	0	22.03	0.160
					1	49	21.97	0.157
					1	99	21.66	0.147
					50	25	20.77	0.119
					100	0	20.55	0.114
			21350	2560.0	1	0	22.37	0.173
					1	49	22.19	0.166
		1			99	21.74	0.149	
		50			25	20.96	0.125	
		100			0	20.88	0.122	
		16QAM	20850	2510.0	1	0	21.68	0.147
					1	49	21.47	0.140
					1	99	21.09	0.129
					50	25	20.53	0.113
					100	0	20.44	0.111
			21100	2535.0	1	0	21.33	0.136
					1	49	21.16	0.131
					1	99	20.97	0.125
					50	25	19.88	0.097
100	0				19.63	0.092		
21350	2560.0		1	0	21.52	0.142		
			1	49	21.37	0.137		
		1	99	21.07	0.128			
		50	25	19.91	0.098			
		100	0	19.85	0.097			

3 Effective Radiated Power / Equivalent Isotropic Radiated Power Test

3.1. Limit

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt E.I.R.P..
 Portable stations (hand-held devices) operating in the 698–746 MHz band are limited to 3 watts E.R.P..

3.2. Test Instruments

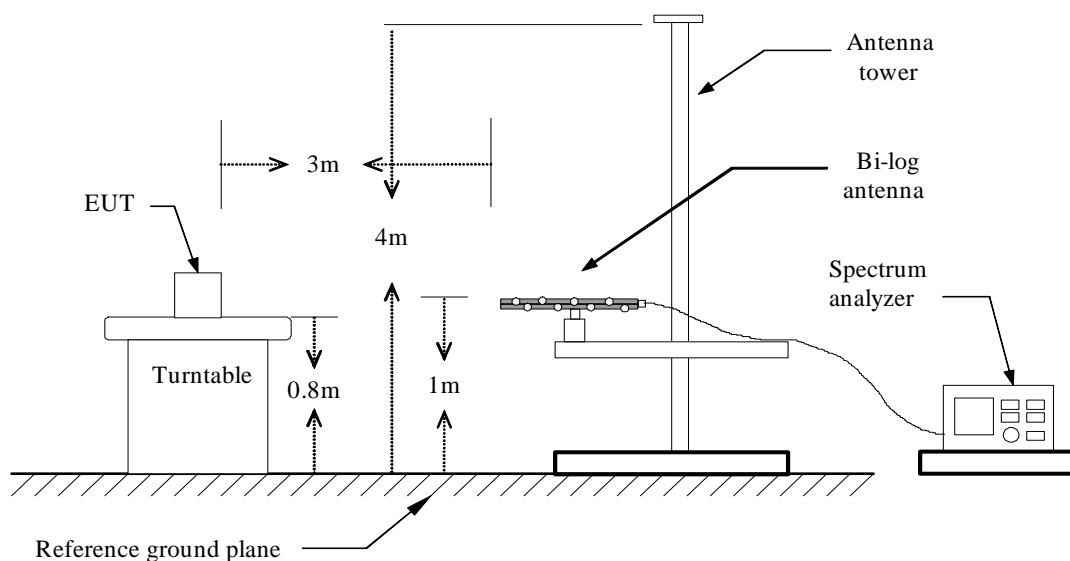
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/21/2013	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/21/2013	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2013	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2013	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	06/29/2012	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/15/2012	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/21/2012	(1)
Test Site	ATL	TE01	888001	08/28/2012	(1)

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

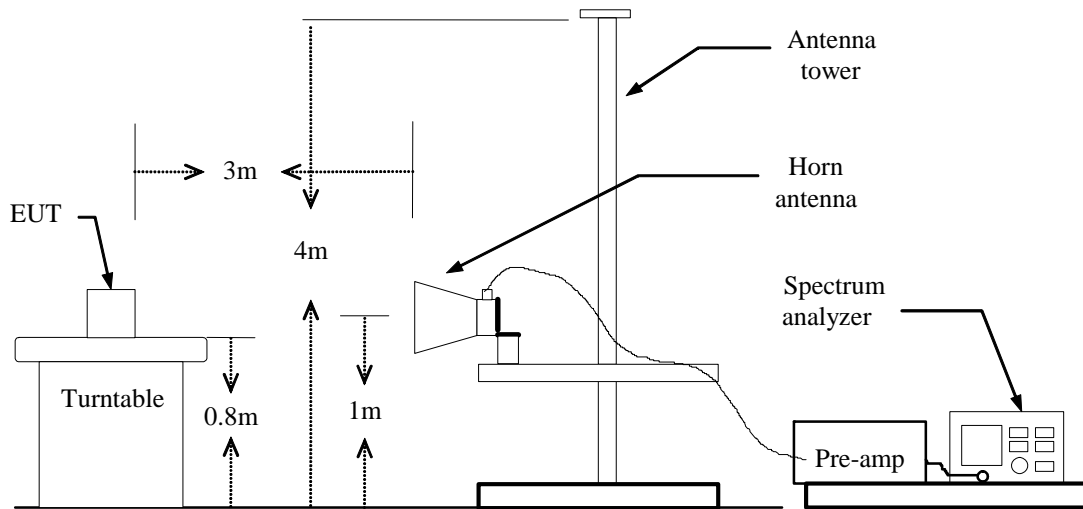
Note: N.C.R. = No Calibration Request.

3.3. Test Setup

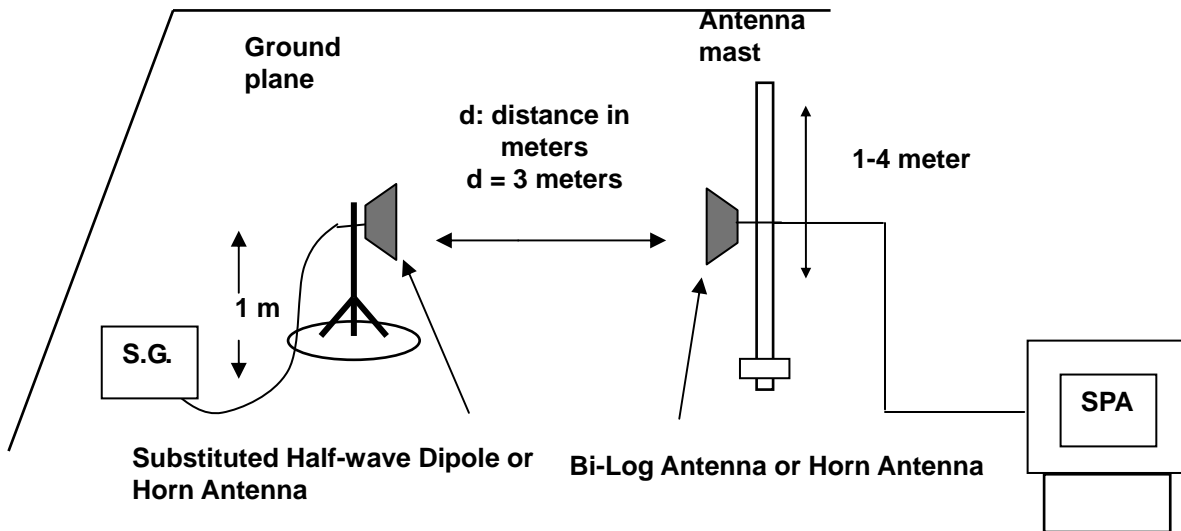
Below 1 GHz



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. E.I.R.P power measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- d. $E.I.R.P. = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$
- e. $E.R.P. = E.I.R.P. - 2.15 \text{ dB}$

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	AirPrime AR7550		
Test Item	E.I.R.P. / E.R.P.		
Date of Test	03/16/2013, 04/26/2013	Test Site	TC03

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 MHz	QPSK	1710.7	H	7.41	13.41	20.82	0.121	< 1
			V	10.15	10.19	20.34	0.108	< 1
		1732.5	H	9.61	10.38	19.99	0.100	< 1
			V	11.82	10.38	22.20	0.166	< 1
		1754.3	H	9.44	10.56	20.00	0.100	< 1
			V	11.60	10.56	22.16	0.164	< 1
	16QAM	1732.5	H	10.21	10.39	20.60	0.115	< 1
	V	12.37	10.39	22.76	0.189	< 1		
3 MHz	QPSK	1711.5	H	10.35	10.19	20.54	0.113	< 1
			V	12.82	10.19	23.01	0.200	< 1
		1732.5	H	9.90	10.38	20.28	0.107	< 1
			V	12.11	10.38	22.49	0.177	< 1
		1753.5	H	9.50	10.55	20.05	0.101	< 1
			V	11.86	10.55	22.41	0.174	< 1
	16QAM	1732.5	H	10.37	10.38	20.75	0.119	< 1
	V	12.02	10.38	22.40	0.174	< 1		
5 MHz	QPSK	1712.5	H	10.79	10.19	20.98	0.125	< 1
			V	12.94	10.19	23.13	0.206	< 1
		1732.5	H	9.35	10.36	19.71	0.094	< 1
			V	11.92	10.36	22.28	0.169	< 1
		1752.5	H	10.15	10.54	20.69	0.117	< 1
			V	12.35	10.54	22.89	0.195	< 1
	16QAM	1732.5	H	11.18	10.37	21.55	0.143	< 1
	V	12.27	10.36	22.63	0.183	< 1		
10 MHz	QPSK	1715.0	H	10.78	10.20	20.98	0.125	< 1
			V	12.85	10.21	23.06	0.202	< 1
		1732.5	H	10.22	10.35	20.57	0.114	< 1
			V	12.40	10.35	22.75	0.188	< 1
		1750.0	H	10.19	10.50	20.69	0.117	< 1
			V	13.34	10.50	23.84	0.242	< 1
	16QAM	1732.5	H	11.49	10.35	21.84	0.153	< 1
	V	12.27	10.35	22.62	0.183	< 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)		
15 MHz	QPSK	1717.5	H	10.29	10.21	20.50	0.112	< 1	
			V	13.14	10.21	23.35	0.216	< 1	
		1732.5	H	10.80	10.33	21.13	0.130	< 1	
			V	12.59	10.33	22.92	0.196	< 1	
		1747.5	H	10.61	10.45	21.06	0.128	< 1	
			V	12.32	10.45	22.77	0.189	< 1	
16QAM	1732.5	H	10.92	10.33	21.25	0.133	< 1		
		V	12.82	10.33	23.15	0.207	< 1		
20 MHz	QPSK	1720.0	H	10.77	10.21	20.98	0.125	< 1	
			V	11.91	10.21	22.12	0.163	< 1	
		1732.5	H	11.22	10.31	21.53	0.142	< 1	
			V	12.32	10.31	22.63	0.183	< 1	
		1745.0	H	10.49	10.42	20.91	0.123	< 1	
			V	11.99	10.41	22.40	0.174	< 1	
		16QAM	1732.5	H	10.31	10.31	20.62	0.115	< 1
				V	12.03	10.31	22.34	0.171	< 1

LTE Band 13								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.R.P.		Limit (W)
						(dBm)	(W)	
5MHz	QPSK	779.5	H	18.78	7.89	28.82	0.762	< 3
			V	13.18	9.09	24.42	0.277	< 3
		782.0	H	18.40	8.04	28.59	0.723	< 3
			V	11.93	9.13	23.21	0.209	< 3
		784.5	H	19.80	8.16	30.11	1.026	< 3
			V	13.23	9.19	24.57	0.286	< 3
16QAM	782.0	H	18.98	7.89	29.02	0.798	< 3	
		V	13.02	9.09	24.26	0.267	< 3	
10MHz	QPSK	782.0	H	18.49	7.92	28.56	0.718	< 3
			V	14.87	7.89	24.91	0.310	< 3
	16QAM	782.0	H	18.82	7.91	28.88	0.773	< 3
			V	15.80	7.91	25.86	0.385	< 3

LTE Band 7								
Channel Bandwidth	Modulation	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	E.I.R.P.		Limit (W)
						(dBm)	(W)	
5 MHz	QPSK	2502.5	H	4.53	16.48	21.01	0.126	< 1
			V	5.86	16.62	22.48	0.177	< 1
		2535.0	H	5.88	16.57	22.45	0.176	< 1
			V	3.35	16.86	20.21	0.105	< 1
		2567.5	H	5.78	16.64	22.42	0.175	< 1
			V	5.20	17.09	22.29	0.169	< 1
	16QAM	2535.0	H	6.22	16.57	22.79	0.190	< 1
			V	4.67	16.86	21.53	0.142	< 1
10 MHz	QPSK	2505.0	H	6.52	16.48	23.00	0.200	< 1
			V	3.51	16.63	20.14	0.103	< 1
		2535.0	H	5.56	16.56	22.12	0.163	< 1
			V	2.88	16.84	19.72	0.094	< 1
		2565.0	H	4.84	16.64	21.48	0.141	< 1
			V	4.30	17.06	21.36	0.137	< 1
	16QAM	2535.0	H	5.85	16.56	22.41	0.174	< 1
			V	2.98	16.84	19.82	0.096	< 1
15 MHz	QPSK	2507.5	H	6.86	16.48	23.34	0.216	< 1
			V	3.30	16.63	19.93	0.098	< 1
		2535.0	H	5.33	16.55	21.88	0.154	< 1
			V	2.06	16.83	18.89	0.077	< 1
		2562.5	H	5.89	16.62	22.51	0.178	< 1
			V	6.75	17.02	23.77	0.238	< 1
	16QAM	2535.0	H	5.79	16.55	22.34	0.171	< 1
			V	2.14	16.83	18.97	0.079	< 1
20 MHz	QPSK	2510.0	H	6.83	16.48	23.31	0.214	< 1
			V	2.97	16.63	19.60	0.091	< 1
		2535.0	H	5.40	16.55	21.95	0.157	< 1
			V	1.94	16.81	18.75	0.075	< 1
		2560.0	H	4.20	16.61	20.81	0.121	< 1
			V	5.56	16.99	22.55	0.180	< 1
	16QAM	2535.0	H	5.83	16.55	22.38	0.173	< 1
			V	2.13	16.81	18.94	0.078	< 1

4 Frequency Stability Test

4.1. Limit

According to the FCC part 27.54 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.

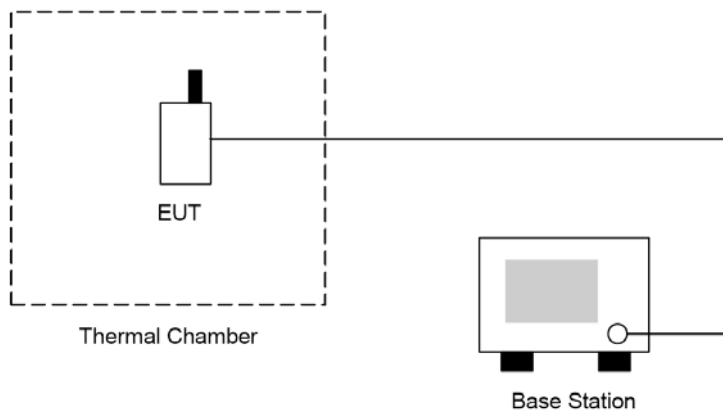
4.2. Test Instruments

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	08/07/2012	(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.

4.3. Setup



4.4. Test Procedure

The measurement is made according to FCC rules part 27:

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	AirPrime AR7550		
Test Item	Frequency Stability		
Date of Test	03/16/2013, 04/26/2013	Test Site	TE05

LTE Band 4 _ QPSK					
Voltage					
Channel Bandwidth	Frequency (MHz)	Voltage (Vac)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
1.4 MHz	1732.5	4.20	-6	-0.003	± 2.5
		3.70	9	0.005	± 2.5
		3.40	1	0.001	± 2.5
Temperature					
Channel Bandwidth	Frequency (MHz)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
1.4 MHz	1732.5	-30	-4	-0.002	± 2.5
		-20	-2	-0.001	± 2.5
		-10	1	0.001	± 2.5
		0	3	0.002	± 2.5
		10	1	0.001	± 2.5
		20	2	0.001	± 2.5
		30	5	0.003	± 2.5
		40	7	0.004	± 2.5
		50	6	0.003	± 2.5

LTE Band 13 _ QPSK					
Voltage					
Channel Bandwidth	Frequency (MHz)	Voltage (Vdc)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	782.0	4.20	-3	-0.004	± 2.5
		3.70	-9	-0.012	± 2.5
		3.40	5	0.006	± 2.5
Temperature					
Channel Bandwidth	Frequency (MHz)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	782.0	-30	-9	-0.012	± 2.5
		-20	1	0.001	± 2.5
		-10	3	0.004	± 2.5
		0	6	0.008	± 2.5
		10	5	0.006	± 2.5
		20	-7	-0.009	± 2.5
		30	-8	-0.010	± 2.5
		40	3	0.004	± 2.5
		50	1	0.001	± 2.5

LTE Band 7 _ QPSK					
Voltage					
Channel Bandwidth	Frequency (MHz)	Voltage (Vdc)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
5 MHz	2535.0	4.20	-1	0.000	± 2.5
		3.70	3	0.001	± 2.5
		3.40	7	0.003	± 2.5
Temperature					
Channel Bandwidth	Frequency (MHz)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
5 MHz	2535.0	-30	6	0.002	± 2.5
		-20	-9	-0.004	± 2.5
		-10	-7	-0.003	± 2.5
		0	1	0.000	± 2.5
		10	-5	-0.002	± 2.5
		20	-2	-0.001	± 2.5
		30	-4	-0.002	± 2.5
		40	5	0.002	± 2.5
		50	9	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.

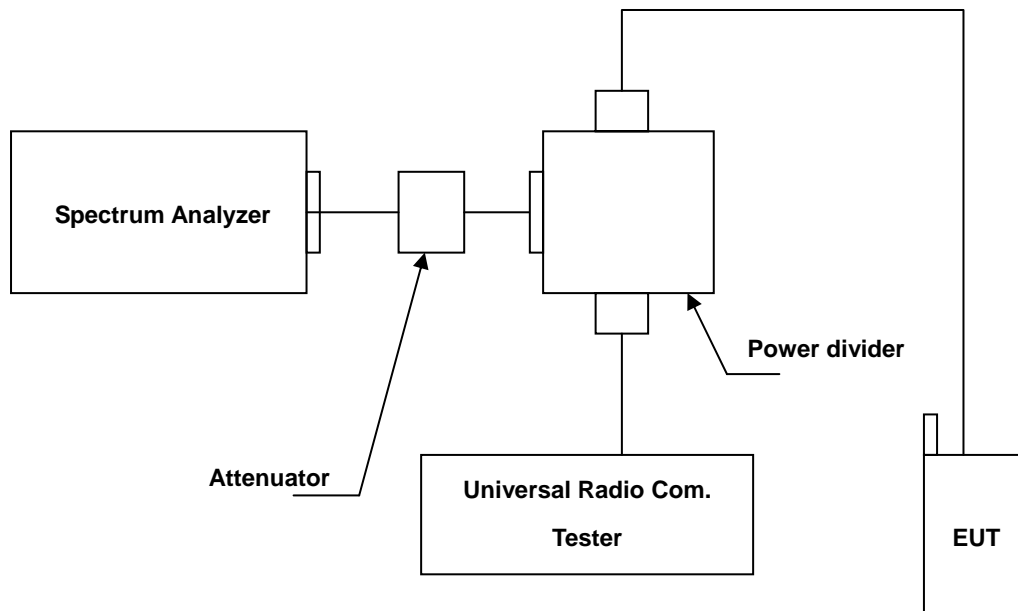
5.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2012	(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 part 27:

- 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

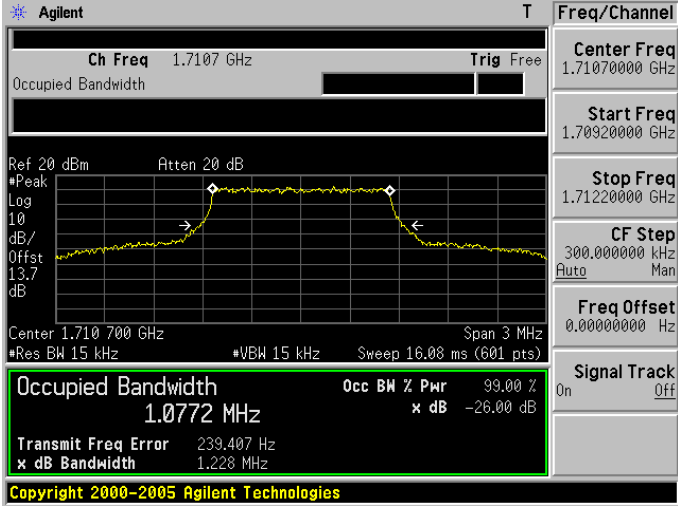
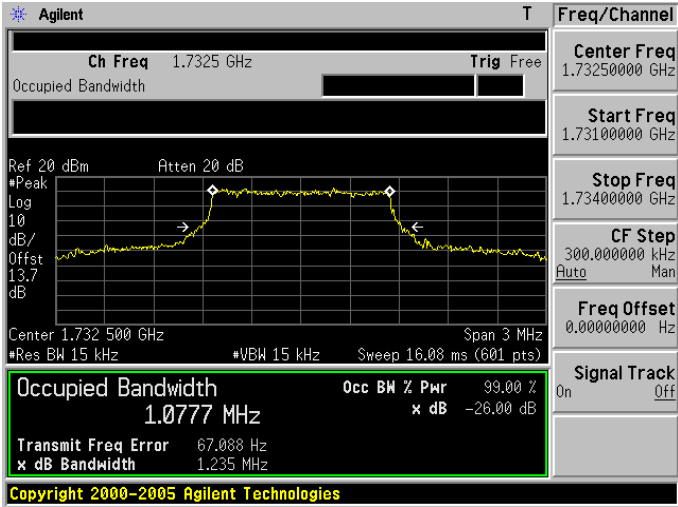
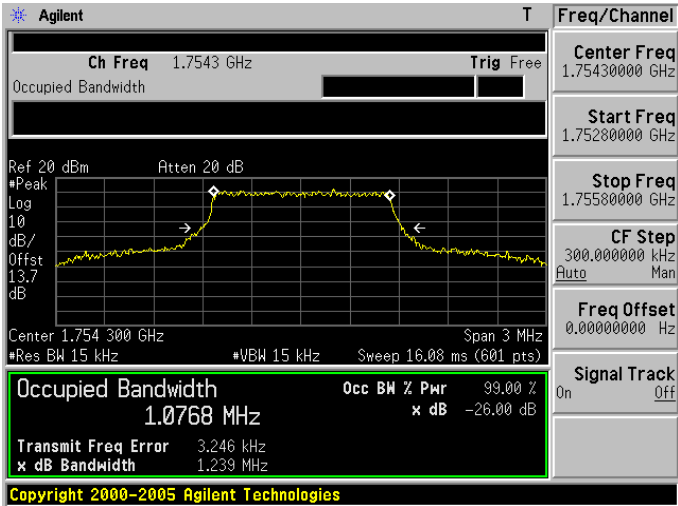
Model Number	AirPrime AR7550		
Test Item	26dB Bandwidth and Occupied Bandwidth		
Date of Test	03/16/2013, 04/26/2013	Test Site	TE05

LTE Band 4				
Channel Bandwidth	Modulation	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
1.4 MHz	QPSK	1710.7	1.228	1.0772
		1732.5	1.235	1.0777
		1754.3	1.239	1.0768
	16QAM	1710.7	1.249	1.0772
		1732.5	1.241	1.0816
		1754.3	1.232	1.0807
3 MHz	QPSK	1711.5	2.978	2.6872
		1732.5	2.977	2.6988
		1753.5	2.981	2.6893
	16QAM	1711.5	2.988	2.6808
		1732.5	2.976	2.6805
		1753.5	2.902	2.6782
5 MHz	QPSK	1712.5	4.932	4.4701
		1732.5	4.853	4.4621
		1752.5	4.915	4.4672
	16QAM	1712.5	4.936	4.4789
		1732.5	4.935	4.4610
		1752.5	4.892	4.4706
10 MHz	QPSK	1715.0	9.547	8.9014
		1732.5	9.551	8.9285
		1750.0	9.517	8.8991
	16QAM	1715.0	9.645	8.9271
		1732.5	9.570	8.9488
		1750.0	9.584	8.9272
15 MHz	QPSK	1717.5	14.352	13.3483
		1732.5	14.333	13.4032
		1747.5	14.362	13.3869
	16QAM	1717.5	14.325	13.3996
		1732.5	14.506	13.4139
		1747.5	14.559	13.3859
20 MHz	QPSK	1720.0	19.232	17.7953
		1732.5	19.260	17.8823
		1745.0	19.042	17.8715
	16QAM	1720.0	18.951	17.8180
		1732.5	18.999	17.8525
		1745.0	19.002	17.8432

LTE Band 13				
Channel Bandwidth	Modulation	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
5MHz	QPSK	779.5	4.940	4.4833
		782.0	4.892	4.4772
		784.5	4.893	4.4602
	16QAM	779.5	4.918	4.4737
		782.0	4.855	4.4751
		784.5	4.925	4.4762
10MHz	QPSK	782.0	9.666	8.9714
	16QAM	782.0	9.593	8.9260

LTE Band 7				
Channel Bandwidth	Modulation	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
5 MHz	QPSK	2502.5	4.950	4.4783
		2535.0	4.908	4.4769
		2567.5	4.947	4.4643
	16QAM	2502.5	4.626	4.4785
		2535.0	4.898	4.4654
		2567.5	4.878	4.4707
10 MHz	QPSK	2505.0	9.666	8.9368
		2535.0	9.422	8.9357
		2565.0	9.666	8.9232
	16QAM	2505.0	9.600	8.9080
		2535.0	9.607	8.9069
		2565.0	9.595	8.9433
15 MHz	QPSK	2507.5	14.402	13.3846
		2535.0	14.201	13.4171
		2562.5	14.417	13.4079
	16QAM	2507.5	14.389	13.3953
		2535.0	14.359	13.3793
		2562.5	14.561	13.3971
20 MHz	QPSK	2510.0	19.216	17.8276
		2535.0	18.946	17.7923
		2560.0	18.838	17.8545
	16QAM	2510.0	18.848	17.7975
		2535.0	19.131	17.8453
		2560.0	19.033	17.8514

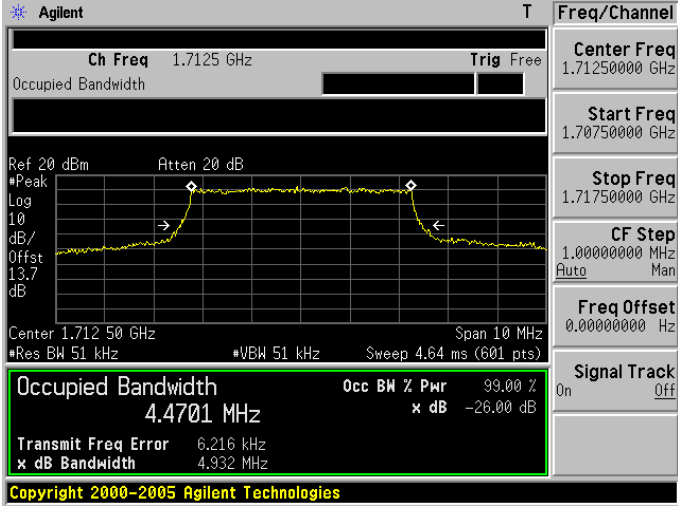
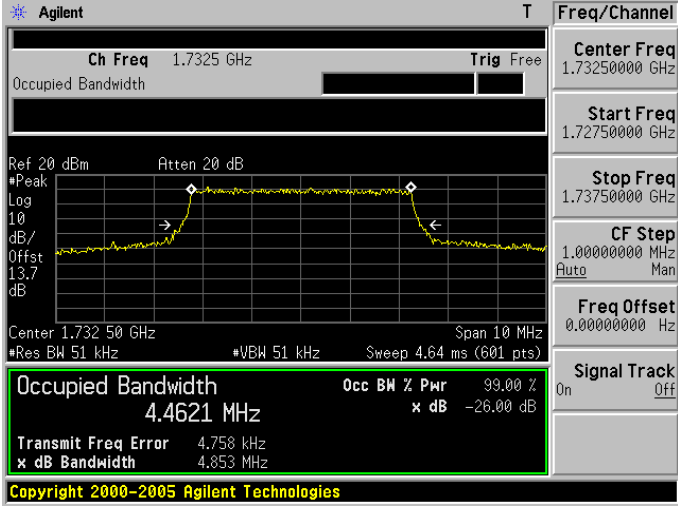
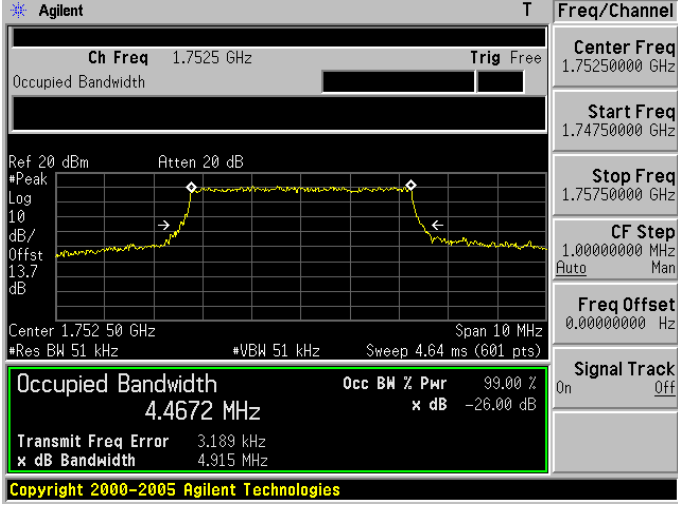
5.7. Test Graphs

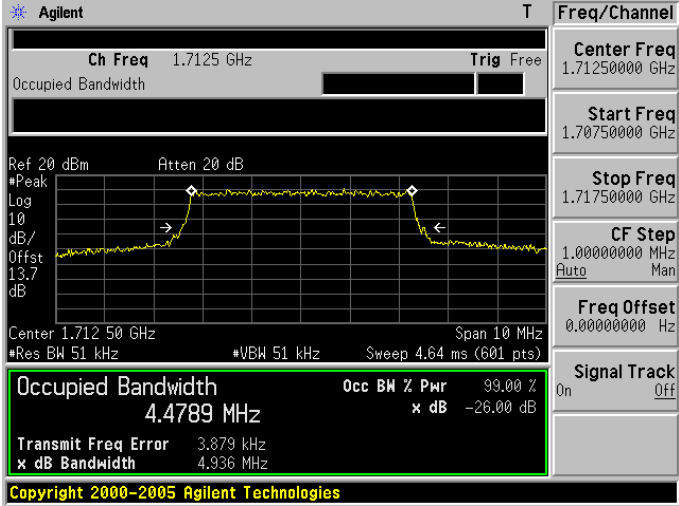
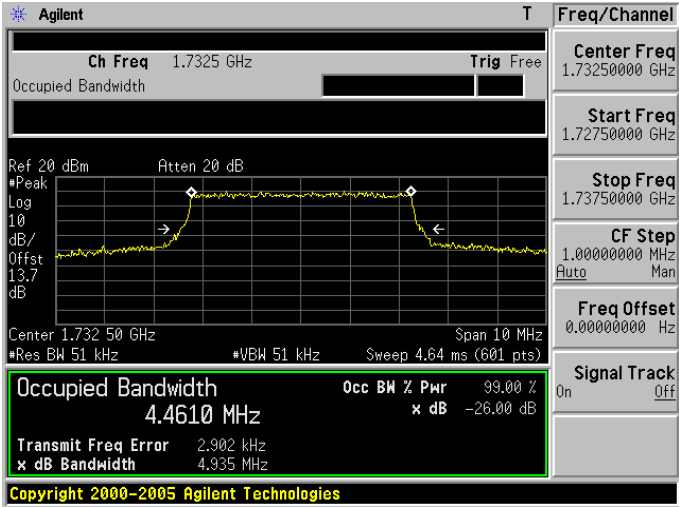
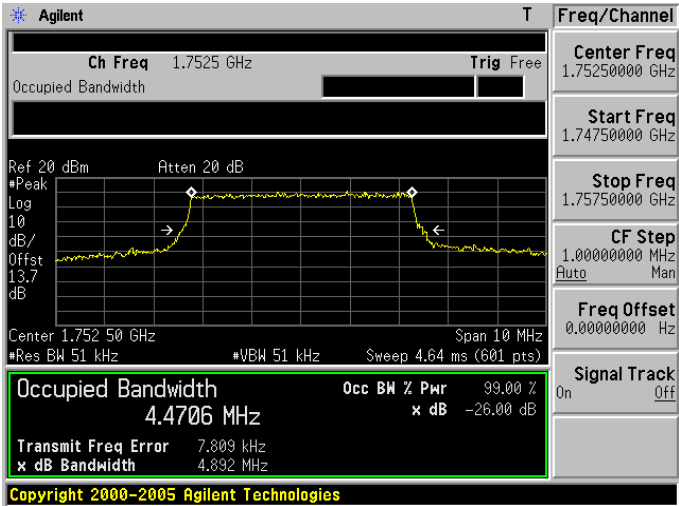
LTE Band 4 (Channel Bandwidth: 1.4 MHz) _ QPSK	
1710.7 MHz	 <p>Agilent T</p> <p>Ch Freq 1.7107 GHz Trig Free</p> <p>Center 1.710 700 GHz Span 3 MHz</p> <p>Res BW 15 kHz *VBW 15 kHz Sweep 16.08 ms (601 pts)</p> <p>Occupied Bandwidth 1.0772 MHz</p> <p>Transmit Freq Error 239.407 Hz</p> <p>x dB Bandwidth 1.228 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	 <p>Agilent T</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center 1.732 500 GHz Span 3 MHz</p> <p>Res BW 15 kHz *VBW 15 kHz Sweep 16.08 ms (601 pts)</p> <p>Occupied Bandwidth 1.0777 MHz</p> <p>Transmit Freq Error 67.088 Hz</p> <p>x dB Bandwidth 1.235 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1754.3 MHz	 <p>Agilent T</p> <p>Ch Freq 1.7543 GHz Trig Free</p> <p>Center 1.754 300 GHz Span 3 MHz</p> <p>Res BW 15 kHz *VBW 15 kHz Sweep 16.08 ms (601 pts)</p> <p>Occupied Bandwidth 1.0768 MHz</p> <p>Transmit Freq Error 3.246 kHz</p> <p>x dB Bandwidth 1.239 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 1.4 MHz) _ 16QAM	
1710.7 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7107 GHz Trig Free</p> <p>Center Freq 1.71070000 GHz</p> <p>Start Freq 1.70920000 GHz</p> <p>Stop Freq 1.71220000 GHz</p> <p>CF Step 300.000000 kHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.710 700 GHz Span 3 MHz</p> <p>Res BW 15 kHz *VBW 15 kHz Sweep 16.08 ms (601 pts)</p> <p>Occupied Bandwidth 1.0772 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 616.950 Hz</p> <p>x dB Bandwidth 1.249 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.73100000 GHz</p> <p>Stop Freq 1.73400000 GHz</p> <p>CF Step 300.000000 kHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.732 500 GHz Span 3 MHz</p> <p>Res BW 15 kHz *VBW 15 kHz Sweep 16.08 ms (601 pts)</p> <p>Occupied Bandwidth 1.0816 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 2.244 kHz</p> <p>x dB Bandwidth 1.241 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1754.3 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7543 GHz Trig Free</p> <p>Center Freq 1.75430000 GHz</p> <p>Start Freq 1.75280000 GHz</p> <p>Stop Freq 1.75580000 GHz</p> <p>CF Step 300.000000 kHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.754 300 GHz Span 3 MHz</p> <p>Res BW 15 kHz *VBW 15 kHz Sweep 16.08 ms (601 pts)</p> <p>Occupied Bandwidth 1.0807 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 2.307 kHz</p> <p>x dB Bandwidth 1.232 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 3 MHz) _ QPSK	
1711.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7115 GHz Trig Free</p> <p>Center Freq 1.71150000 GHz</p> <p>Start Freq 1.70850000 GHz</p> <p>Stop Freq 1.71450000 GHz</p> <p>CF Step 600.000000 kHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.711 500 GHz Span 6 MHz</p> <p>#Res BW 33 kHz #VBW 33 kHz Sweep 6.68 ms (601 pts)</p> <p>Occupied Bandwidth 2.6872 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 5.351 kHz</p> <p>x dB Bandwidth 2.978 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.72950000 GHz</p> <p>Stop Freq 1.73550000 GHz</p> <p>CF Step 600.000000 kHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.732 500 GHz Span 6 MHz</p> <p>#Res BW 33 kHz #VBW 33 kHz Sweep 6.68 ms (601 pts)</p> <p>Occupied Bandwidth 2.6988 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 4.917 kHz</p> <p>x dB Bandwidth 2.977 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1753.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7535 GHz Trig Free</p> <p>Center Freq 1.75350000 GHz</p> <p>Start Freq 1.75050000 GHz</p> <p>Stop Freq 1.75650000 GHz</p> <p>CF Step 600.000000 kHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.753 500 GHz Span 6 MHz</p> <p>#Res BW 33 kHz #VBW 33 kHz Sweep 6.68 ms (601 pts)</p> <p>Occupied Bandwidth 2.6893 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 3.056 kHz</p> <p>x dB Bandwidth 2.981 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

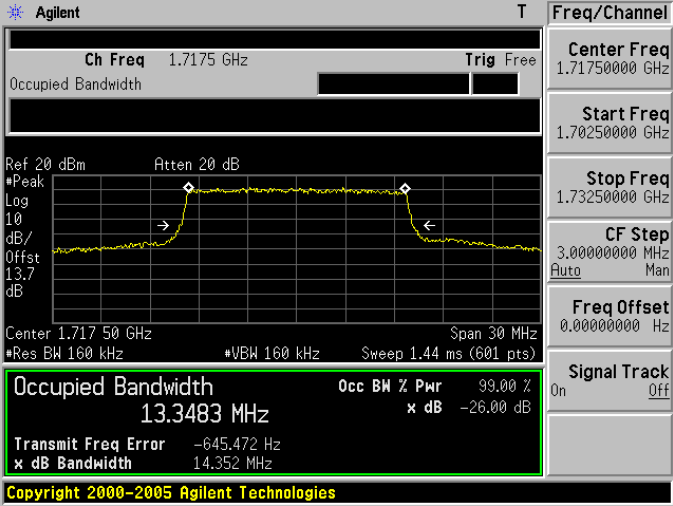
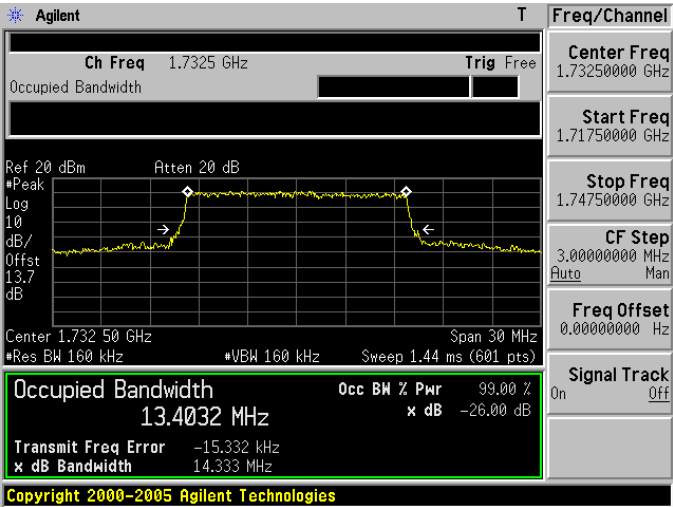
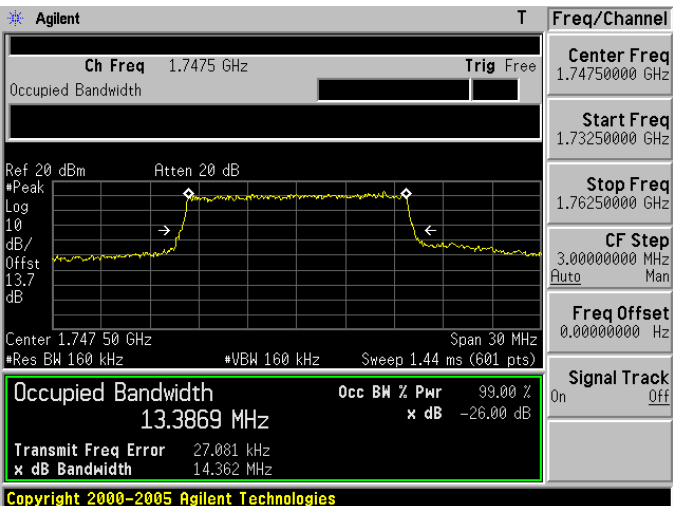
LTE Band 4 (Channel Bandwidth: 3 MHz) _ 16QAM	
1711.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7115 GHz Trig Free</p> <p>Center Freq 1.71150000 GHz</p> <p>Start Freq 1.70850000 GHz</p> <p>Stop Freq 1.71450000 GHz</p> <p>CF Step 600.000000 kHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 1.711 500 GHz Span 6 MHz</p> <p>Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts)</p> <p>Occupied Bandwidth 2.6808 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 2.988 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 1.819 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.72950000 GHz</p> <p>Stop Freq 1.73550000 GHz</p> <p>CF Step 600.000000 kHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 1.732 500 GHz Span 6 MHz</p> <p>Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts)</p> <p>Occupied Bandwidth 2.6805 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 2.976 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 1.233 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1753.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7535 GHz Trig Free</p> <p>Center Freq 1.75350000 GHz</p> <p>Start Freq 1.75050000 GHz</p> <p>Stop Freq 1.75650000 GHz</p> <p>CF Step 600.000000 kHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 1.753 500 GHz Span 6 MHz</p> <p>Res BW 33 kHz VBW 33 kHz Sweep 6.68 ms (601 pts)</p> <p>Occupied Bandwidth 2.6782 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 2.902 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 2.112 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 5MHz) _ QPSK	
1712.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7125 GHz Trig Free</p> <p>Center Freq 1.7125000 GHz</p> <p>Start Freq 1.7075000 GHz</p> <p>Stop Freq 1.7175000 GHz</p> <p>CF Step 1.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.712 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4701 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 6.216 kHz</p> <p>x dB Bandwidth 4.932 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.7325000 GHz</p> <p>Start Freq 1.7275000 GHz</p> <p>Stop Freq 1.7375000 GHz</p> <p>CF Step 1.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.732 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4621 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 4.758 kHz</p> <p>x dB Bandwidth 4.853 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1752.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7525 GHz Trig Free</p> <p>Center Freq 1.7525000 GHz</p> <p>Start Freq 1.7475000 GHz</p> <p>Stop Freq 1.7575000 GHz</p> <p>CF Step 1.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.752 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4672 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 3.189 kHz</p> <p>x dB Bandwidth 4.915 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 5 MHz) _ 16QAM	
1712.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7125 GHz Trig Free</p> <p>Center Freq 1.71250000 GHz</p> <p>Start Freq 1.70750000 GHz</p> <p>Stop Freq 1.71750000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.712 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4789 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 3.879 kHz</p> <p>x dB Bandwidth 4.936 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.72750000 GHz</p> <p>Stop Freq 1.73750000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.732 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4610 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 2.902 kHz</p> <p>x dB Bandwidth 4.935 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1752.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7525 GHz Trig Free</p> <p>Center Freq 1.75250000 GHz</p> <p>Start Freq 1.74750000 GHz</p> <p>Stop Freq 1.75750000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.752 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4706 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 7.809 kHz</p> <p>x dB Bandwidth 4.892 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 10 MHz) _ QPSK	
1715.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.715 GHz Trig Free</p> <p>Center Freq 1.7150000 GHz</p> <p>Start Freq 1.7050000 GHz</p> <p>Stop Freq 1.7250000 GHz</p> <p>CF Step 2.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.715 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9014 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -2.563 kHz</p> <p>x dB Bandwidth 9.547 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.7325000 GHz</p> <p>Start Freq 1.7225000 GHz</p> <p>Stop Freq 1.7425000 GHz</p> <p>CF Step 2.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.732 50 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9285 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -3.076 kHz</p> <p>x dB Bandwidth 9.551 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1750.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.75 GHz Trig Free</p> <p>Center Freq 1.7500000 GHz</p> <p>Start Freq 1.7400000 GHz</p> <p>Stop Freq 1.7600000 GHz</p> <p>CF Step 2.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.750 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.8991 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 39.040 kHz</p> <p>x dB Bandwidth 9.517 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 10 MHz) _ 16QAM	
1715.0 MHz	<p>Agilent T</p> <p>Ch Freq 1.715 GHz Trig Free</p> <p>Center 1.715 00 GHz Span 20 MHz</p> <p>Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9271 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 9.645 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 10.008 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	<p>Agilent R T</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center 1.732 50 GHz Span 20 MHz</p> <p>Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9488 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 9.570 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 2.927 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1750.0 MHz	<p>Agilent T</p> <p>Ch Freq 1.75 GHz Trig Free</p> <p>Center 1.750 00 GHz Span 20 MHz</p> <p>Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9272 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 9.584 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 12.125 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 15 MHz) _ QPSK	
1717.5 MHz	 <p>Agilent T</p> <p>Ch Freq 1.7175 GHz Trig Free</p> <p>Center 1.717 50 GHz Span 30 MHz</p> <p>Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.3483 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -645.472 Hz</p> <p>x dB Bandwidth 14.352 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	 <p>Agilent T</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center 1.732 50 GHz Span 30 MHz</p> <p>Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.4032 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -15.332 kHz</p> <p>x dB Bandwidth 14.333 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1747.5 MHz	 <p>Agilent T</p> <p>Ch Freq 1.7475 GHz Trig Free</p> <p>Center 1.747 50 GHz Span 30 MHz</p> <p>Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.3869 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 27.081 kHz</p> <p>x dB Bandwidth 14.362 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

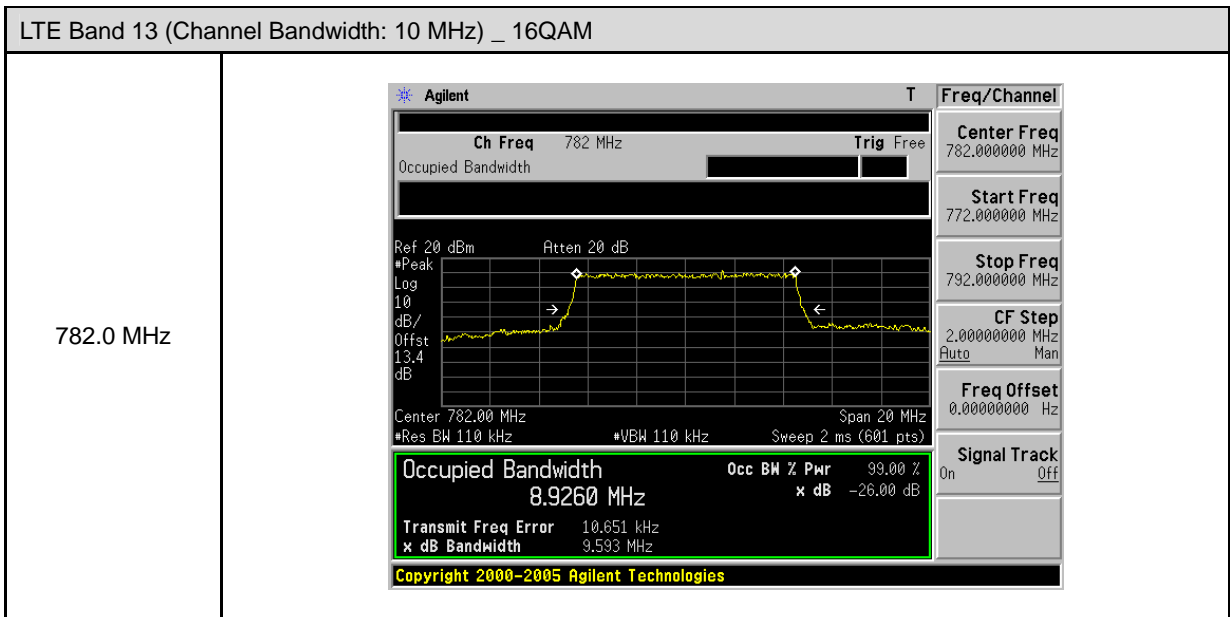
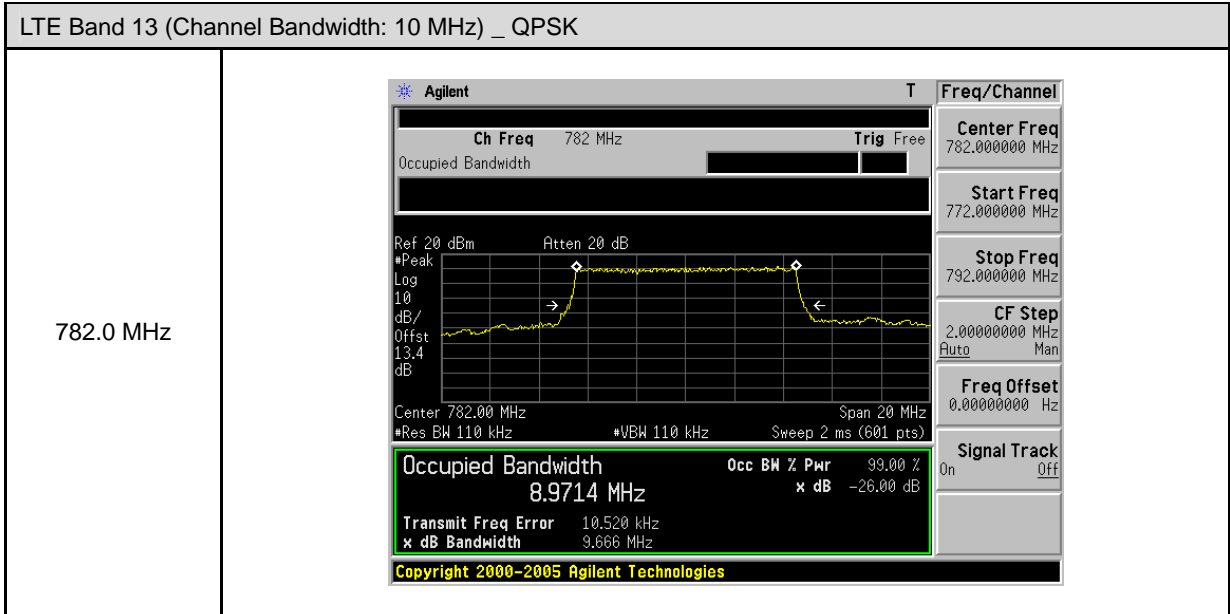
LTE Band 4 (Channel Bandwidth: 15 MHz) _ 16QAM	
1717.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7175 GHz Trig Free</p> <p>Center Freq 1.71750000 GHz</p> <p>Start Freq 1.70250000 GHz</p> <p>Stop Freq 1.73250000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.717 50 GHz Span 30 MHz</p> <p>*Res BW 160 kHz #VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>13.3996 MHz x dB -26.00 dB</p> <p>Transmit Freq Error -1.782 kHz</p> <p>x dB Bandwidth 14.325 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.71750000 GHz</p> <p>Stop Freq 1.74750000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.732 50 GHz Span 30 MHz</p> <p>*Res BW 160 kHz #VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>13.4139 MHz x dB -26.00 dB</p> <p>Transmit Freq Error -5.389 kHz</p> <p>x dB Bandwidth 14.506 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1747.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7475 GHz Trig Free</p> <p>Center Freq 1.74750000 GHz</p> <p>Start Freq 1.73250000 GHz</p> <p>Stop Freq 1.76250000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.747 50 GHz Span 30 MHz</p> <p>*Res BW 160 kHz #VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>13.3859 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 13.363 kHz</p> <p>x dB Bandwidth 14.559 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 20 MHz) _ QPSK	
1720.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.72 GHz Trig Free</p> <p>Center Freq 1.7200000 GHz</p> <p>Start Freq 1.7000000 GHz</p> <p>Stop Freq 1.7400000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.720 00 GHz Span 40 MHz</p> <p>*Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.7953 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -22.798 kHz</p> <p>x dB Bandwidth 19.232 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1732.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center Freq 1.7325000 GHz</p> <p>Start Freq 1.7125000 GHz</p> <p>Stop Freq 1.7525000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.732 50 GHz Span 40 MHz</p> <p>*Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8823 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -19.384 kHz</p> <p>x dB Bandwidth 19.260 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
1745.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 1.745 GHz Trig Free</p> <p>Center Freq 1.7450000 GHz</p> <p>Start Freq 1.7250000 GHz</p> <p>Stop Freq 1.7650000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 1.745 00 GHz Span 40 MHz</p> <p>*Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8715 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 29.003 kHz</p> <p>x dB Bandwidth 19.042 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 4 (Channel Bandwidth: 20 MHz) _ 16QAM	
1720.0 MHz	<p>Agilent T</p> <p>Ch Freq 1.72 GHz Trig Free</p> <p>Center 1.720 00 GHz Span 40 MHz</p> <p>Res BW 220 kHz VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8180 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -30.397 kHz</p> <p>x dB Bandwidth 18.951 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel</p> <p>Center Freq 1.72000000 GHz</p> <p>Start Freq 1.70000000 GHz</p> <p>Stop Freq 1.74000000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
1732.5 MHz	<p>Agilent T</p> <p>Ch Freq 1.7325 GHz Trig Free</p> <p>Center 1.732 50 GHz Span 40 MHz</p> <p>Res BW 220 kHz VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8525 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 461.464 Hz</p> <p>x dB Bandwidth 18.999 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.71250000 GHz</p> <p>Stop Freq 1.75250000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
1745.0 MHz	<p>Agilent T</p> <p>Ch Freq 1.745 GHz Trig Free</p> <p>Center 1.745 00 GHz Span 40 MHz</p> <p>Res BW 220 kHz VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8432 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 37.391 kHz</p> <p>x dB Bandwidth 19.002 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel</p> <p>Center Freq 1.74500000 GHz</p> <p>Start Freq 1.72500000 GHz</p> <p>Stop Freq 1.76500000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

LTE Band 13 (Channel Bandwidth: 5 MHz) _ QPSK	
779.5 MHz	<p>Agilent T</p> <p>Ch Freq 779.5 MHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.4 dB</p> <p>Center 779.50 MHz Span 10 MHz</p> <p>*Res BW 51 kHz *VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4833 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 4.940 MHz</p> <p>Transmit Freq Error 2.455 kHz</p> <p>x dB Bandwidth 4.940 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel</p> <p>Center Freq 779.500000 MHz</p> <p>Start Freq 774.500000 MHz</p> <p>Stop Freq 784.500000 MHz</p> <p>CF Step 1.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
782.0 MHz	<p>Agilent T</p> <p>Ch Freq 782 MHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.4 dB</p> <p>Center 782.00 MHz Span 10 MHz</p> <p>*Res BW 51 kHz *VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4772 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 4.892 MHz</p> <p>Transmit Freq Error 10.469 kHz</p> <p>x dB Bandwidth 4.892 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel</p> <p>Center Freq 782.000000 MHz</p> <p>Start Freq 777.000000 MHz</p> <p>Stop Freq 787.000000 MHz</p> <p>CF Step 1.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
784.5 MHz	<p>Agilent T</p> <p>Ch Freq 784.5 MHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.4 dB</p> <p>Center 784.50 MHz Span 10 MHz</p> <p>*Res BW 51 kHz *VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4602 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 4.893 MHz</p> <p>Transmit Freq Error 3.951 kHz</p> <p>x dB Bandwidth 4.893 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel</p> <p>Center Freq 784.500000 MHz</p> <p>Start Freq 779.500000 MHz</p> <p>Stop Freq 789.500000 MHz</p> <p>CF Step 1.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

LTE Band 13 (Channel Bandwidth: 5 MHz) _ 16QAM	
779.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 779.5 MHz Trig Free</p> <p>Center Freq 779.500000 MHz</p> <p>Start Freq 774.500000 MHz</p> <p>Stop Freq 784.500000 MHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.4 dB</p> <p>Center 779.50 MHz Span 10 MHz</p> <p>*Res BW 51 kHz *VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4737 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 6.412 kHz</p> <p>x dB Bandwidth 4.918 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
782.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 782 MHz Trig Free</p> <p>Center Freq 782.000000 MHz</p> <p>Start Freq 777.000000 MHz</p> <p>Stop Freq 787.000000 MHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.4 dB</p> <p>Center 782.00 MHz Span 10 MHz</p> <p>*Res BW 51 kHz *VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4751 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 8.084 kHz</p> <p>x dB Bandwidth 4.855 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
784.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 784.5 MHz Trig Free</p> <p>Center Freq 784.500000 MHz</p> <p>Start Freq 779.500000 MHz</p> <p>Stop Freq 789.500000 MHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>*Peak Log 10 dB/Offst 13.4 dB</p> <p>Center 784.50 MHz Span 10 MHz</p> <p>*Res BW 51 kHz *VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4762 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 2.555 kHz</p> <p>x dB Bandwidth 4.925 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>



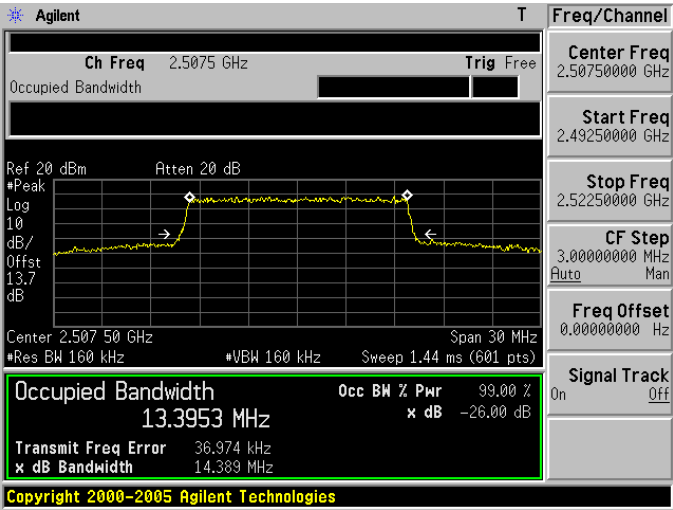
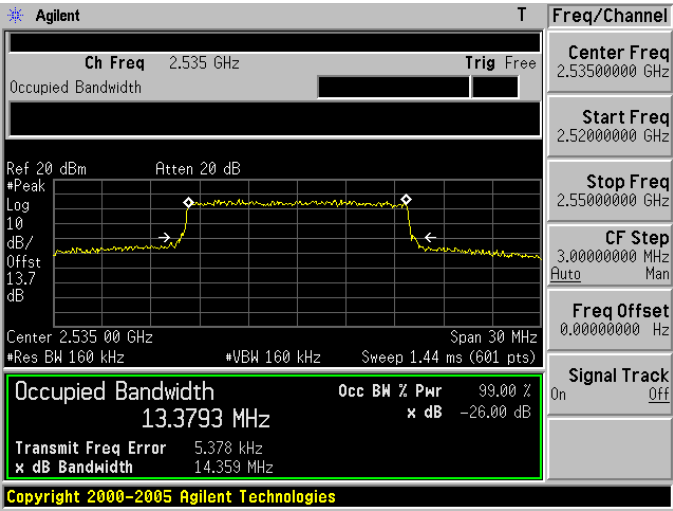
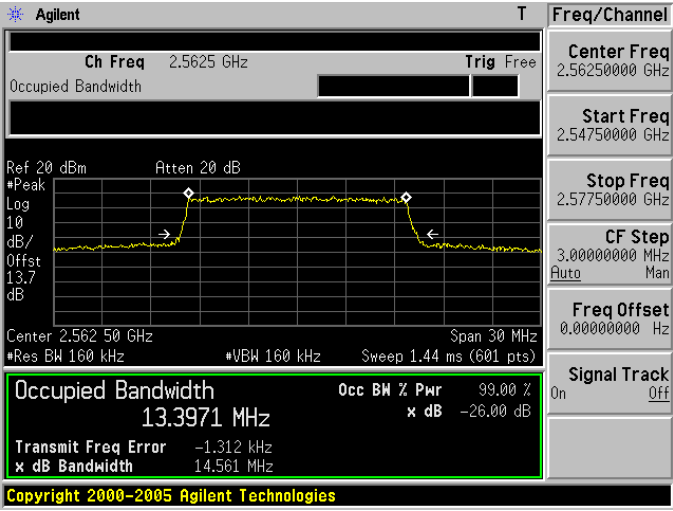
LTE Band 7 (Channel Bandwidth: 5MHz) _ QPSK	
2502.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.5025 GHz Trig Free</p> <p>Center Freq 2.50250000 GHz</p> <p>Start Freq 2.49750000 GHz</p> <p>Stop Freq 2.50750000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 2.502 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4783 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 3.699 kHz</p> <p>x dB Bandwidth 4.950 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center Freq 2.53500000 GHz</p> <p>Start Freq 2.53000000 GHz</p> <p>Stop Freq 2.54000000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 2.535 00 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4769 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 4.248 kHz</p> <p>x dB Bandwidth 4.908 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2567.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.5675 GHz Trig Free</p> <p>Center Freq 2.56750000 GHz</p> <p>Start Freq 2.56250000 GHz</p> <p>Stop Freq 2.57250000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 2.567 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4643 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 6.853 kHz</p> <p>x dB Bandwidth 4.947 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 7 (Channel Bandwidth: 5 MHz) _ 16QAM	
2502.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.5025 GHz Trig Free</p> <p>Center Freq 2.50250000 GHz</p> <p>Start Freq 2.49750000 GHz</p> <p>Stop Freq 2.50750000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 2.502 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4785 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 700.628 Hz</p> <p>x dB Bandwidth 4.926 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center Freq 2.53500000 GHz</p> <p>Start Freq 2.53000000 GHz</p> <p>Stop Freq 2.54000000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 2.535 00 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4654 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -621.876 Hz</p> <p>x dB Bandwidth 4.892 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2567.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.5675 GHz Trig Free</p> <p>Center Freq 2.56750000 GHz</p> <p>Start Freq 2.56250000 GHz</p> <p>Stop Freq 2.57250000 GHz</p> <p>CF Step 1.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>Peak 10 dB/Offst 13.7 dB</p> <p>Center 2.567 50 GHz Span 10 MHz</p> <p>Res BW 51 kHz VBW 51 kHz Sweep 4.64 ms (601 pts)</p> <p>Occupied Bandwidth 4.4707 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 3.206 kHz</p> <p>x dB Bandwidth 4.878 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 7 (Channel Bandwidth: 10 MHz) _ QPSK	
2505.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.505 GHz Trig Free</p> <p>Center Freq 2.50500000 GHz</p> <p>Start Freq 2.49500000 GHz</p> <p>Stop Freq 2.51500000 GHz</p> <p>CF Step 2.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.505 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9368 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth -26.00 dB</p> <p>Transmit Freq Error 24.601 kHz</p> <p>x dB Bandwidth 9.666 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center Freq 2.53500000 GHz</p> <p>Start Freq 2.52500000 GHz</p> <p>Stop Freq 2.54500000 GHz</p> <p>CF Step 2.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.535 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9357 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth -26.00 dB</p> <p>Transmit Freq Error 7.391 kHz</p> <p>x dB Bandwidth 9.422 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2565.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.565 GHz Trig Free</p> <p>Center Freq 2.56500000 GHz</p> <p>Start Freq 2.55500000 GHz</p> <p>Stop Freq 2.57500000 GHz</p> <p>CF Step 2.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.565 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9232 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth -26.00 dB</p> <p>Transmit Freq Error 4.902 kHz</p> <p>x dB Bandwidth 9.666 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 7 (Channel Bandwidth: 10 MHz) _ 16QAM	
2505.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.505 GHz Trig Free</p> <p>Center Freq 2.50500000 GHz</p> <p>Start Freq 2.49500000 GHz</p> <p>Stop Freq 2.51500000 GHz</p> <p>CF Step 2.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.505 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9080 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 4.468 kHz</p> <p>x dB Bandwidth 9.600 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center Freq 2.53500000 GHz</p> <p>Start Freq 2.52500000 GHz</p> <p>Stop Freq 2.54500000 GHz</p> <p>CF Step 2.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.535 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9069 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -7.128 kHz</p> <p>x dB Bandwidth 9.607 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2565.5 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.565 GHz Trig Free</p> <p>Center Freq 2.56500000 GHz</p> <p>Start Freq 2.55500000 GHz</p> <p>Stop Freq 2.57500000 GHz</p> <p>CF Step 2.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.565 00 GHz Span 20 MHz</p> <p>#Res BW 110 kHz #VBW 110 kHz Sweep 2 ms (601 pts)</p> <p>Occupied Bandwidth 8.9433 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 4.794 kHz</p> <p>x dB Bandwidth 9.595 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 7 (Channel Bandwidth: 15 MHz) _ QPSK	
2507.5 MHz	<p>Agilent T</p> <p>Ch Freq 2.5075 GHz Trig Free</p> <p>Center 2.507 50 GHz Span 30 MHz</p> <p>Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.3846 MHz</p> <p>Transmit Freq Error 31.157 kHz</p> <p>x dB Bandwidth 14.402 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	<p>Agilent T</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center 2.535 00 GHz Span 30 MHz</p> <p>Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.4171 MHz</p> <p>Transmit Freq Error -6.926 kHz</p> <p>x dB Bandwidth 14.201 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2562.5 MHz	<p>Agilent T</p> <p>Ch Freq 2.5625 GHz Trig Free</p> <p>Center 2.562 50 GHz Span 30 MHz</p> <p>Res BW 160 kHz VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.4079 MHz</p> <p>Transmit Freq Error 1.829 kHz</p> <p>x dB Bandwidth 14.417 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 7 (Channel Bandwidth: 15 MHz) _ 16QAM	
2507.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 2.5075 GHz Trig Free</p> <p>Center Freq 2.50750000 GHz</p> <p>Start Freq 2.49250000 GHz</p> <p>Stop Freq 2.52250000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak 10</p> <p>dB/Offst 13.7 dB</p> <p>Center 2.507 50 GHz Span 30 MHz</p> <p>#Res BW 160 kHz #VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.3953 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 36.974 kHz</p> <p>x dB Bandwidth 14.389 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center Freq 2.53500000 GHz</p> <p>Start Freq 2.52000000 GHz</p> <p>Stop Freq 2.55000000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak 10</p> <p>dB/Offst 13.7 dB</p> <p>Center 2.535 00 GHz Span 30 MHz</p> <p>#Res BW 160 kHz #VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.3793 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 5.378 kHz</p> <p>x dB Bandwidth 14.359 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2562.5 MHz	 <p>Agilent T Freq/Channel</p> <p>Ch Freq 2.5625 GHz Trig Free</p> <p>Center Freq 2.56250000 GHz</p> <p>Start Freq 2.54750000 GHz</p> <p>Stop Freq 2.57750000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak 10</p> <p>dB/Offst 13.7 dB</p> <p>Center 2.562 50 GHz Span 30 MHz</p> <p>#Res BW 160 kHz #VBW 160 kHz Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.3971 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -1.312 kHz</p> <p>x dB Bandwidth 14.561 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 7 (Channel Bandwidth: 20 MHz) _ QPSK	
2510.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.51 GHz Trig Free</p> <p>Center Freq 2.51000000 GHz</p> <p>Start Freq 2.49000000 GHz</p> <p>Stop Freq 2.53000000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak 10</p> <p>dB/Offst 13.7 dB</p> <p>Center 2.510 00 GHz Span 40 MHz</p> <p>#Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8276 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 20.277 kHz</p> <p>x dB Bandwidth 19.216 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center Freq 2.53500000 GHz</p> <p>Start Freq 2.51500000 GHz</p> <p>Stop Freq 2.55500000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak 10</p> <p>dB/Offst 13.7 dB</p> <p>Center 2.535 00 GHz Span 40 MHz</p> <p>#Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.7923 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -18.903 kHz</p> <p>x dB Bandwidth 18.946 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2560.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.56 GHz Trig Free</p> <p>Center Freq 2.56000000 GHz</p> <p>Start Freq 2.54000000 GHz</p> <p>Stop Freq 2.58000000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak 10</p> <p>dB/Offst 13.7 dB</p> <p>Center 2.560 00 GHz Span 40 MHz</p> <p>#Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8545 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -28.950 kHz</p> <p>x dB Bandwidth 18.838 MHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

LTE Band 7 (Channel Bandwidth: 20 MHz) _ 16QAM	
2510.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.51 GHz Trig Free</p> <p>Center Freq 2.51000000 GHz</p> <p>Start Freq 2.49000000 GHz</p> <p>Stop Freq 2.53000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.510 00 GHz Span 40 MHz</p> <p>#Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.7975 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 18.848 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 17.289 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2535.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.535 GHz Trig Free</p> <p>Center Freq 2.53500000 GHz</p> <p>Start Freq 2.51500000 GHz</p> <p>Stop Freq 2.55500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.535 00 GHz Span 40 MHz</p> <p>#Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8453 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 19.131 MHz x dB -26.00 dB</p> <p>Transmit Freq Error -14.092 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>
2560.0 MHz	<p>Agilent T Freq/Channel</p> <p>Ch Freq 2.56 GHz Trig Free</p> <p>Center Freq 2.56000000 GHz</p> <p>Start Freq 2.54000000 GHz</p> <p>Stop Freq 2.58000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 20 dBm Atten 20 dB</p> <p>#Peak Log 10 dB/Offst 13.7 dB</p> <p>Center 2.560 00 GHz Span 40 MHz</p> <p>#Res BW 220 kHz #VBW 220 kHz Sweep 1 ms (601 pts)</p> <p>Occupied Bandwidth 17.8514 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB Bandwidth 19.033 MHz x dB -26.00 dB</p> <p>Transmit Freq Error -15.915 kHz</p> <p>Copyright 2000-2005 Agilent Technologies</p>

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.

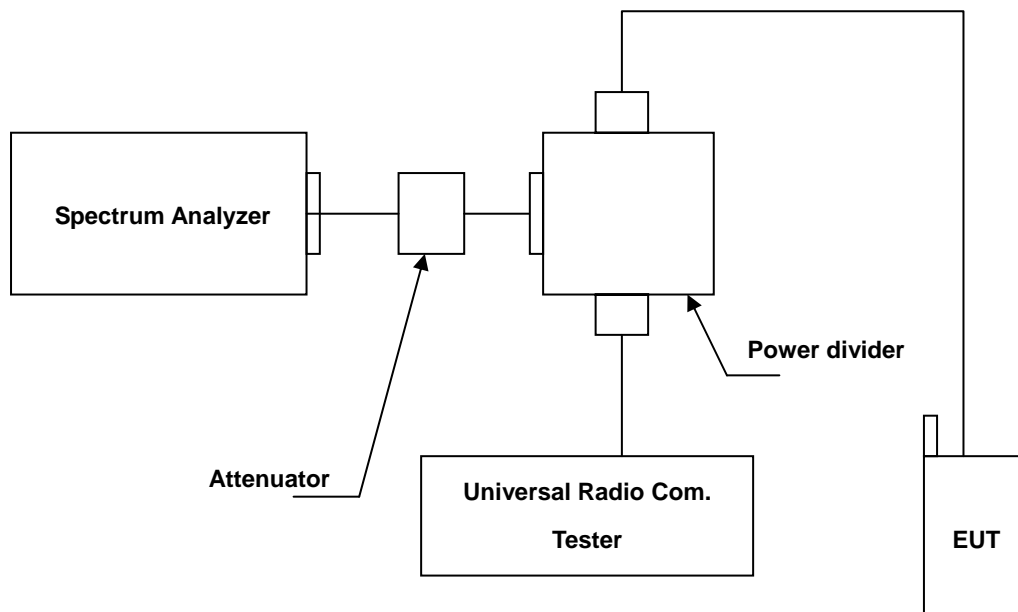
6.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2012	(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 part 27:

- 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

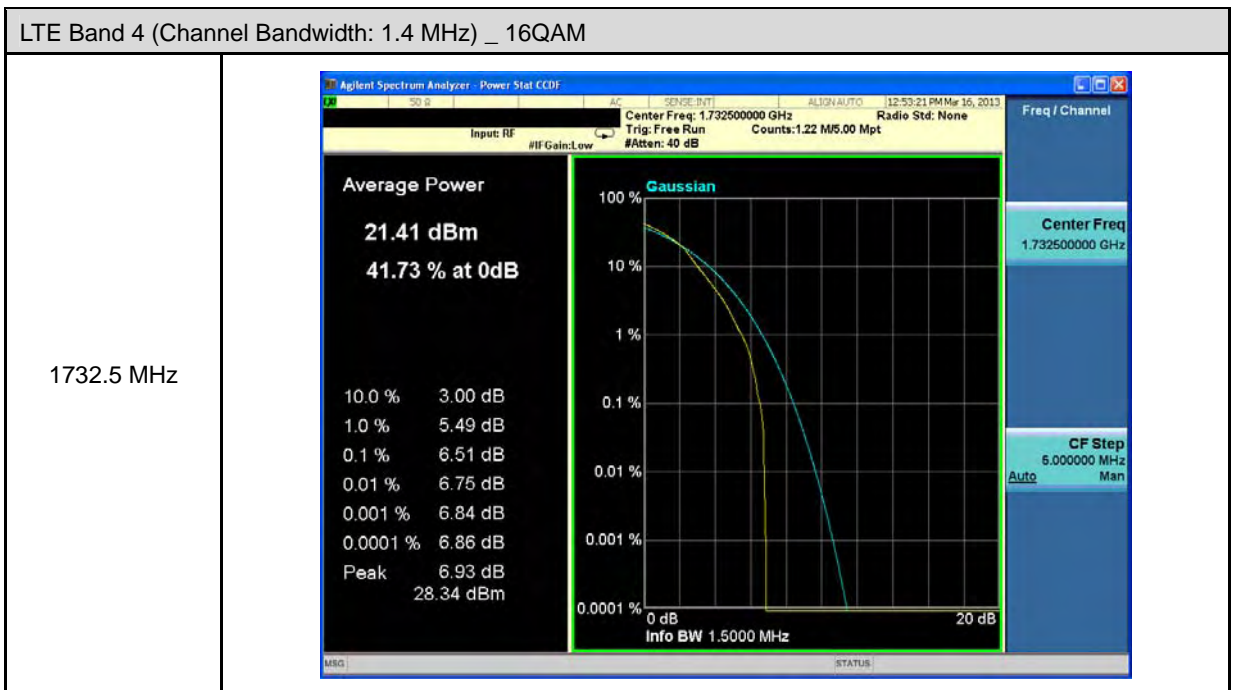
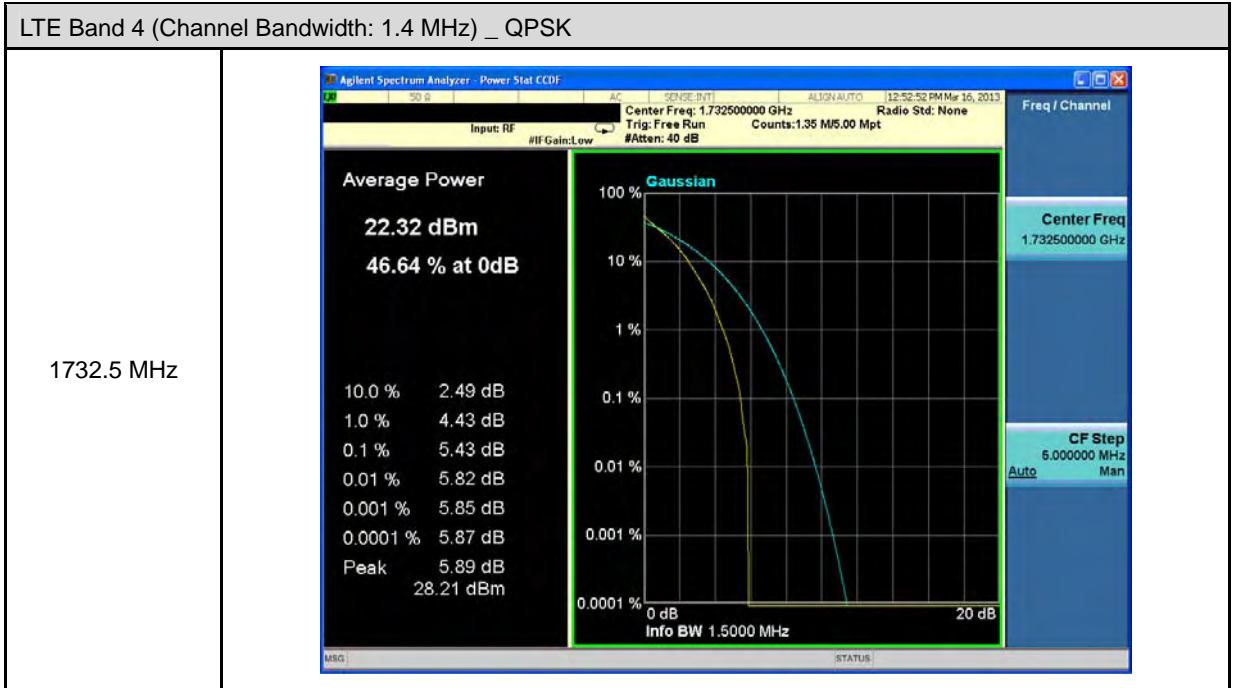
The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

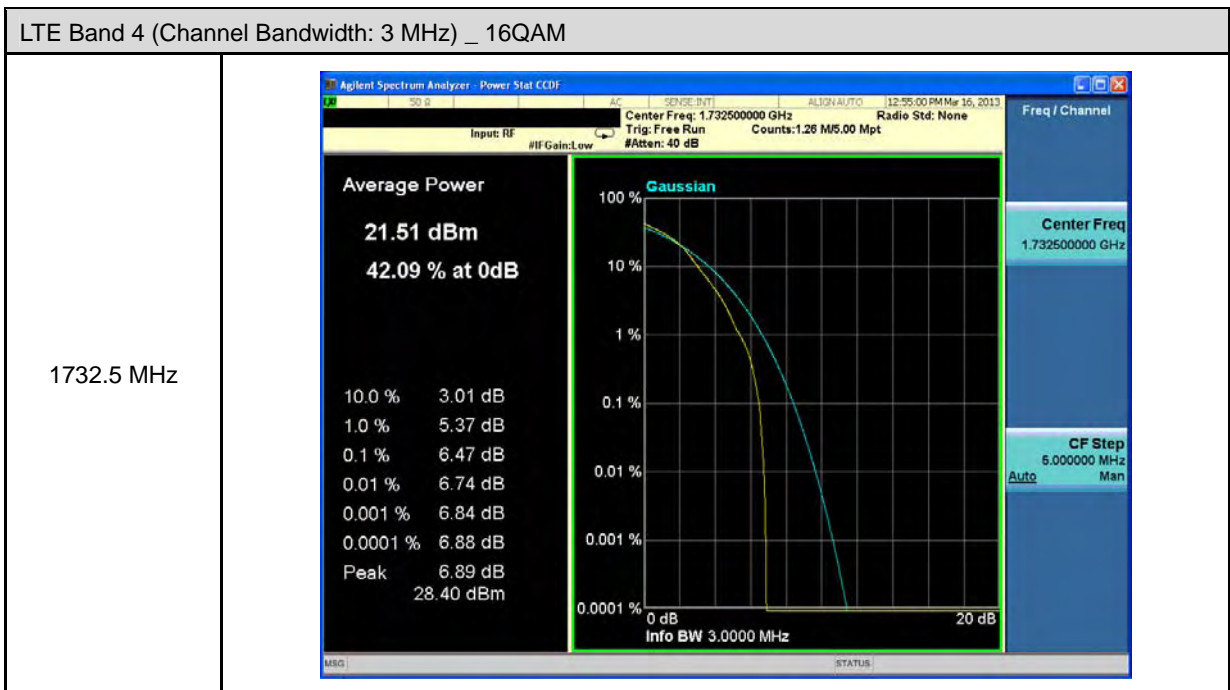
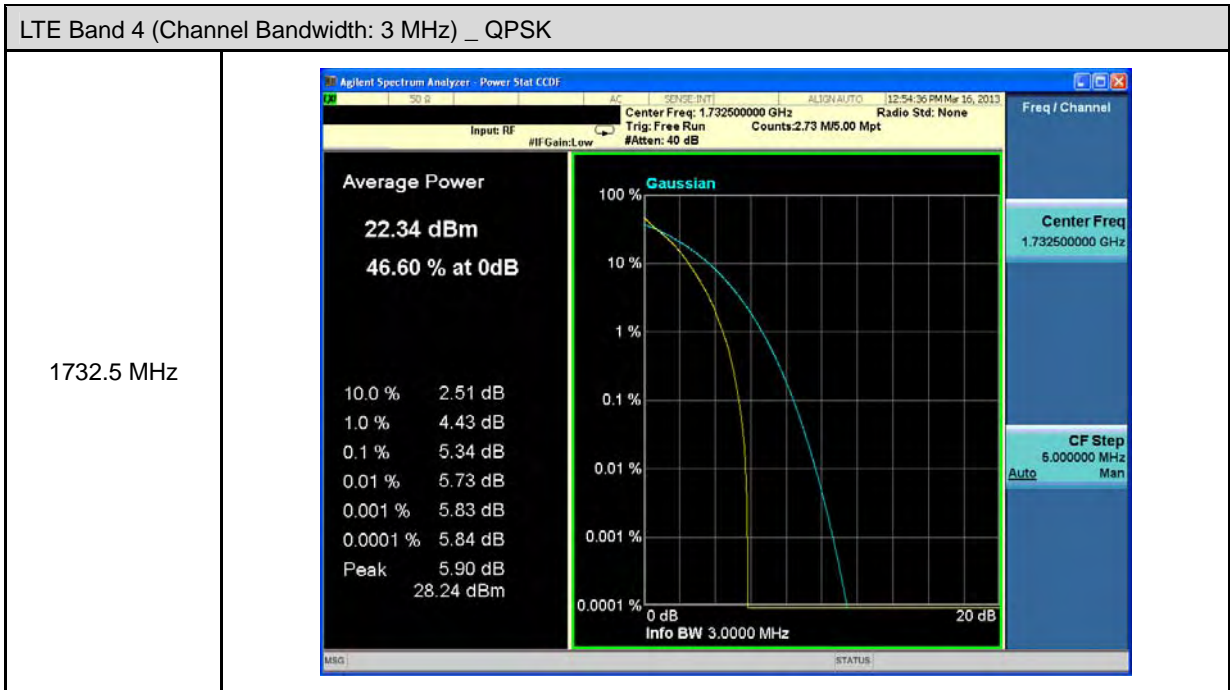
5.6. Test Result

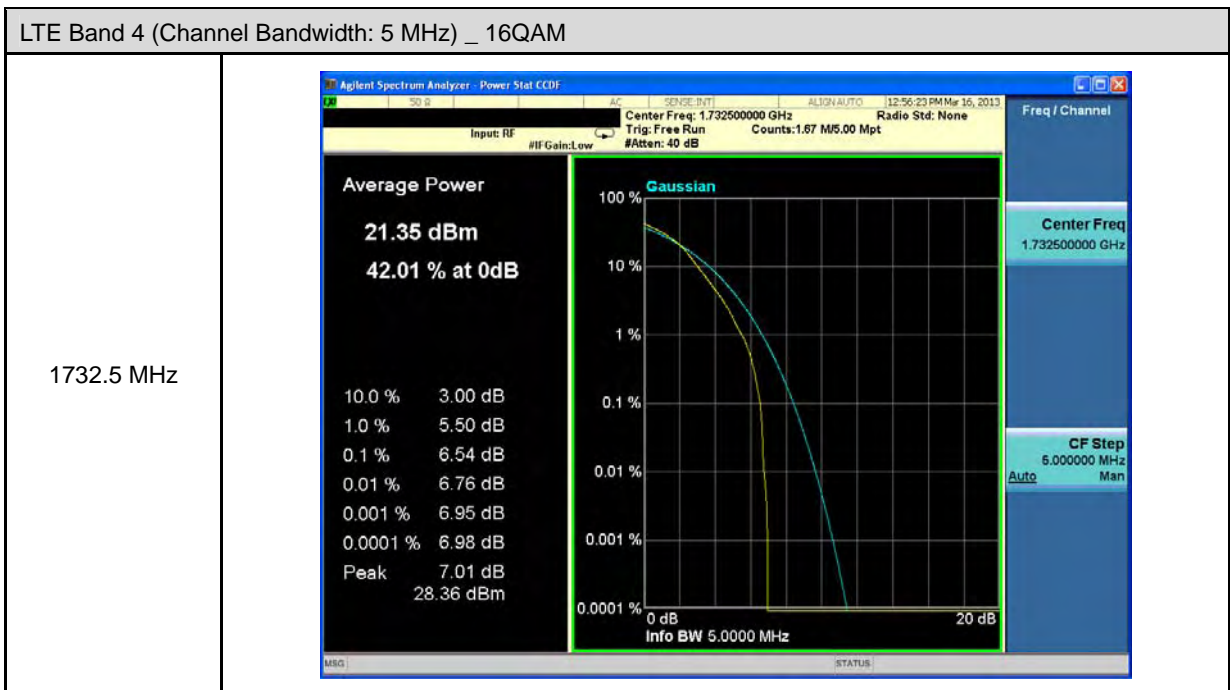
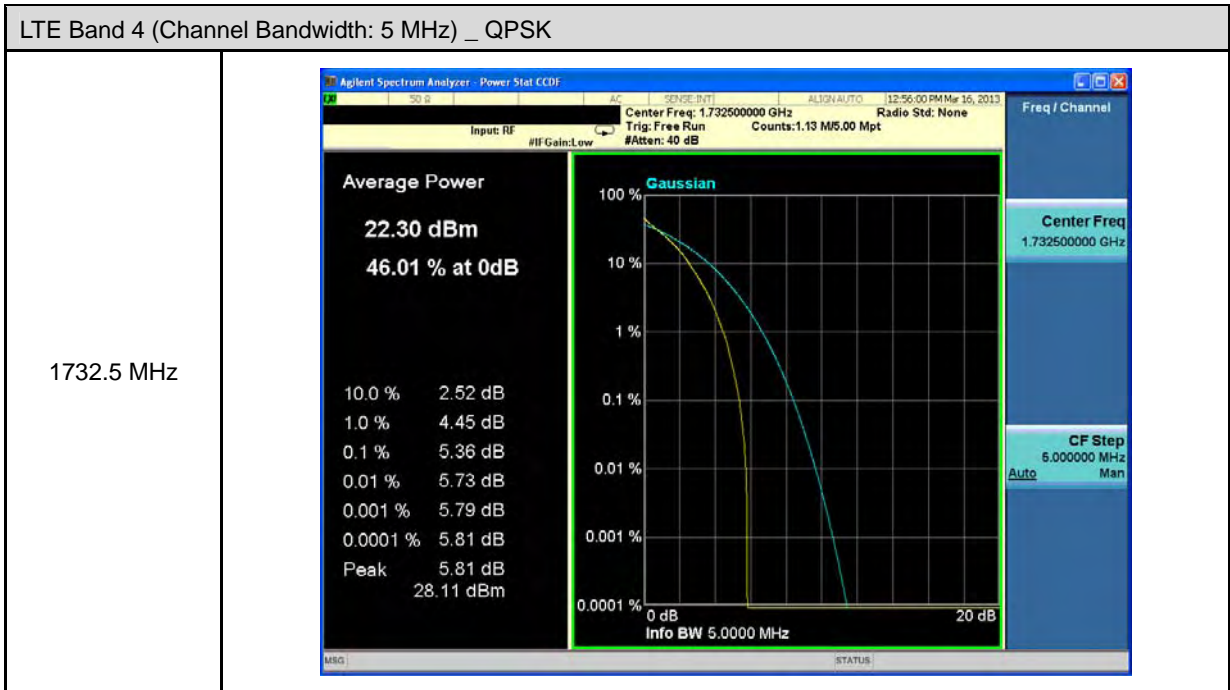
Model Number	AirPrime AR7550		
Test Item	26dB Bandwidth and Occupied Bandwidth		
Date of Test	03/16/2013, 04/26/2013	Test Site	TE05

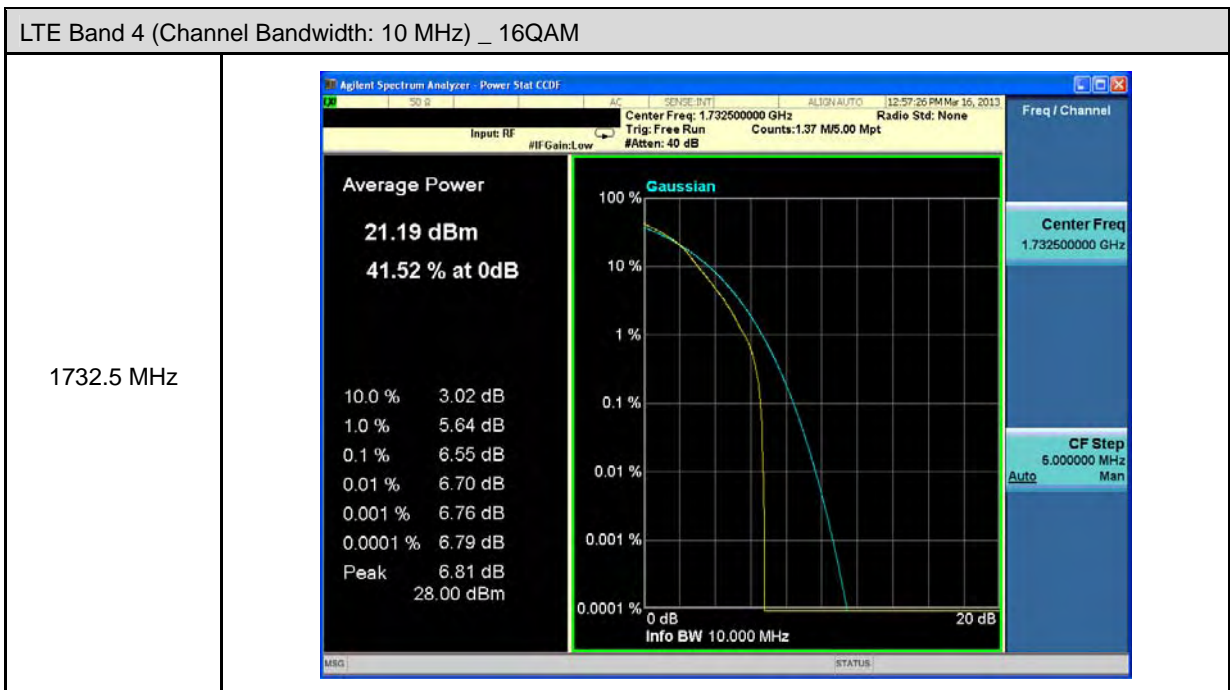
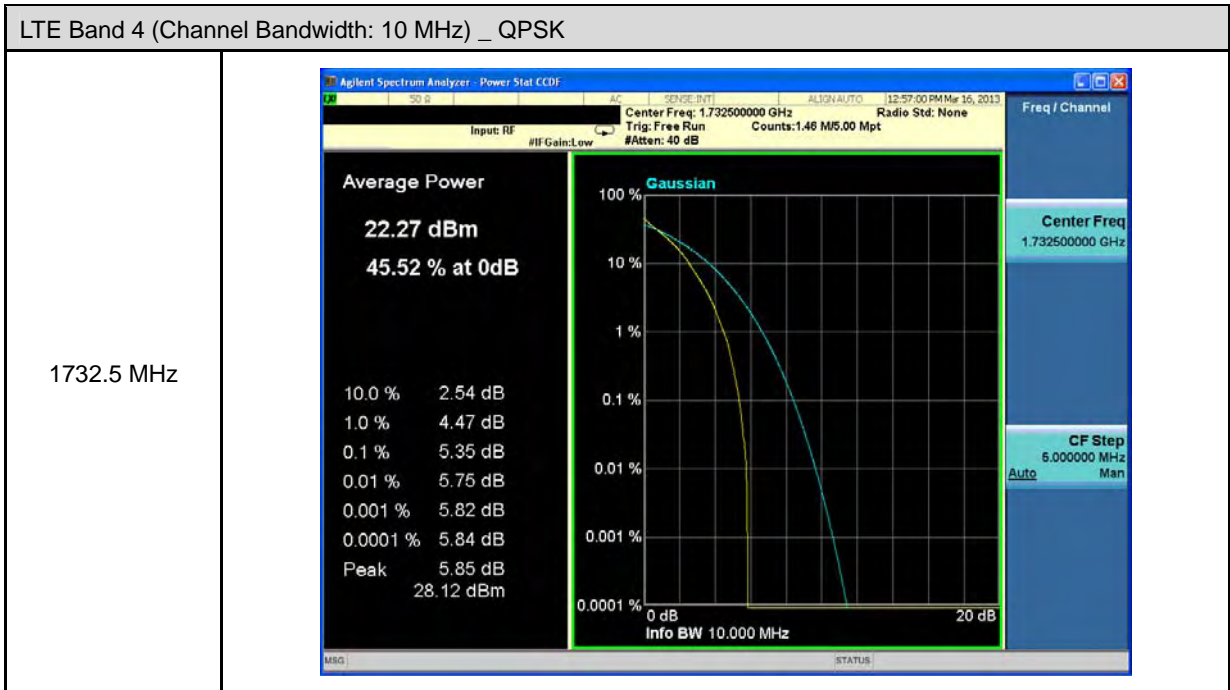
LTE Band 4				
Channel Bandwidth	Modulation	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
1.4 MHz	QPSK	1710.7	1.228	1.0772
		1732.5	1.235	1.0777
		1754.3	1.239	1.0768
	16QAM	1710.7	1.249	1.0772
		1732.5	1.241	1.0816
		1754.3	1.232	1.0807
3 MHz	QPSK	1711.5	2.978	2.6872
		1732.5	2.977	2.6988
		1753.5	2.981	2.6893
	16QAM	1711.5	2.988	2.6808
		1732.5	2.976	2.6805
		1753.5	2.902	2.6782
5 MHz	QPSK	1712.5	4.932	4.4701
		1732.5	4.853	4.4621
		1752.5	4.915	4.4672
	16QAM	1712.5	4.936	4.4789
		1732.5	4.935	4.4610
		1752.5	4.892	4.4706
10 MHz	QPSK	1715.0	9.547	8.9014
		1732.5	9.551	8.9285
		1750.0	9.517	8.8991
	16QAM	1715.0	9.645	8.9271
		1732.5	9.570	8.9488
		1750.0	9.584	8.9272
15 MHz	QPSK	1717.5	14.352	13.3483
		1732.5	14.333	13.4032
		1747.5	14.362	13.3869
	16QAM	1717.5	14.325	13.3996
		1732.5	14.506	13.4139
		1747.5	14.559	13.3859
20 MHz	QPSK	1720.0	19.232	17.7953
		1732.5	19.260	17.8823
		1745.0	19.042	17.8715
	16QAM	1720.0	18.951	17.8180
		1732.5	18.999	17.8525
		1745.0	19.002	17.8432

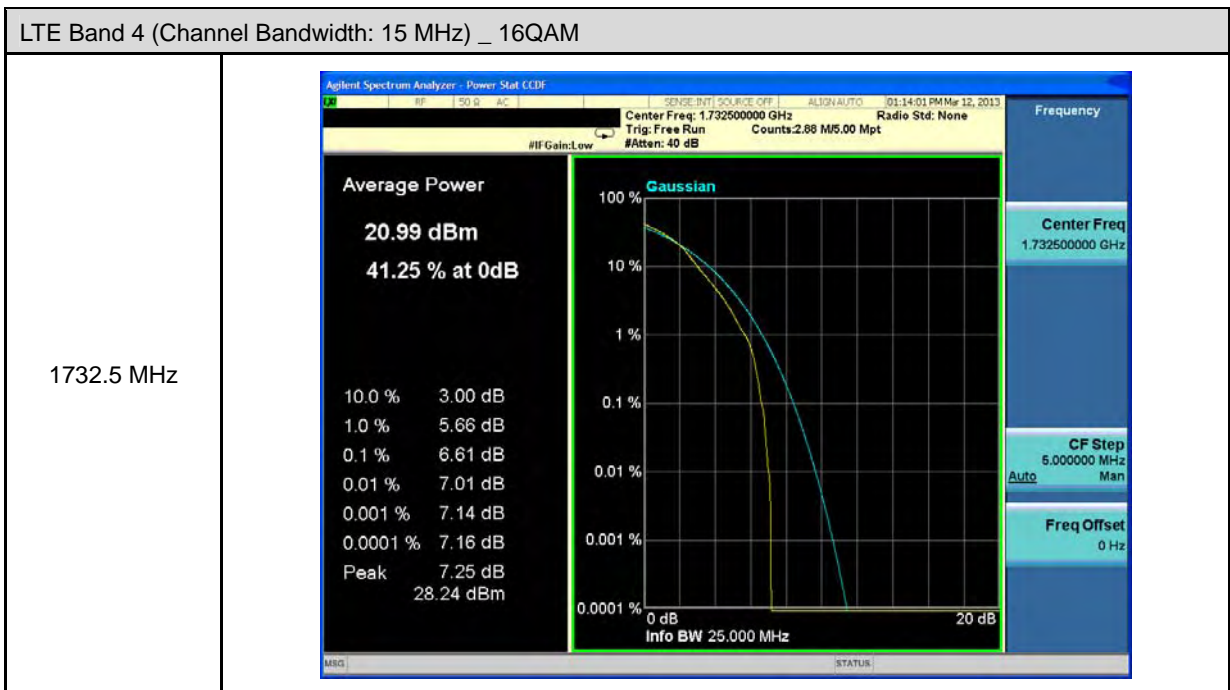
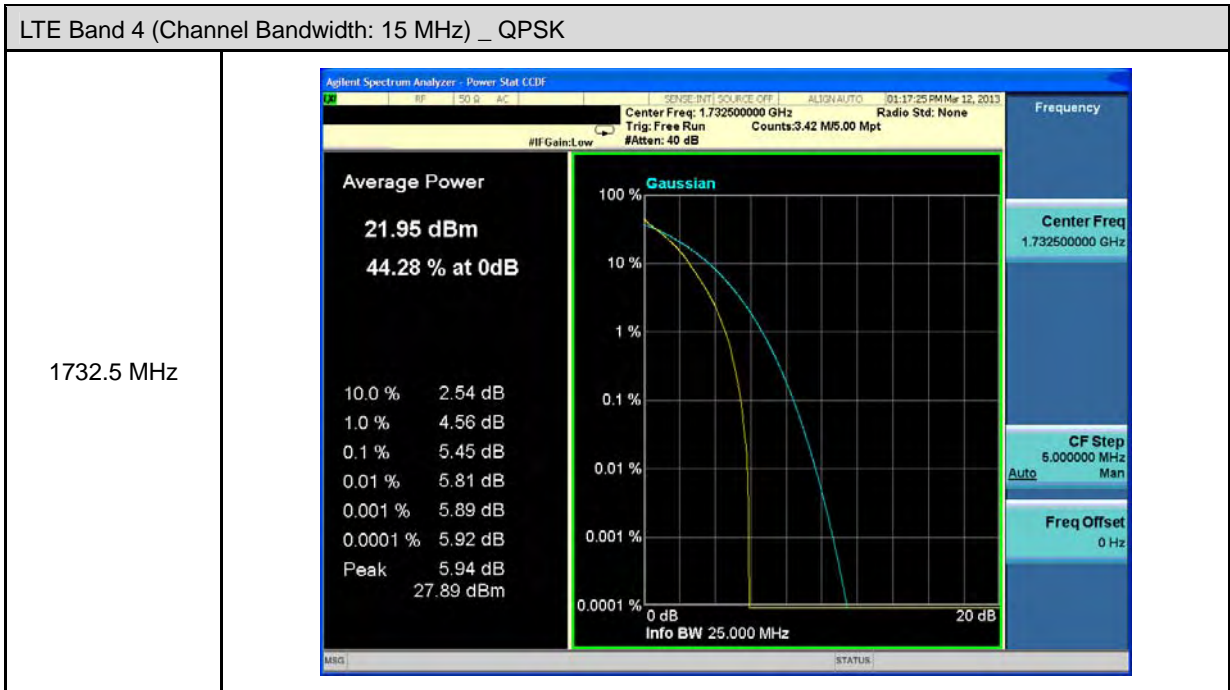
6.7. Test Graphs

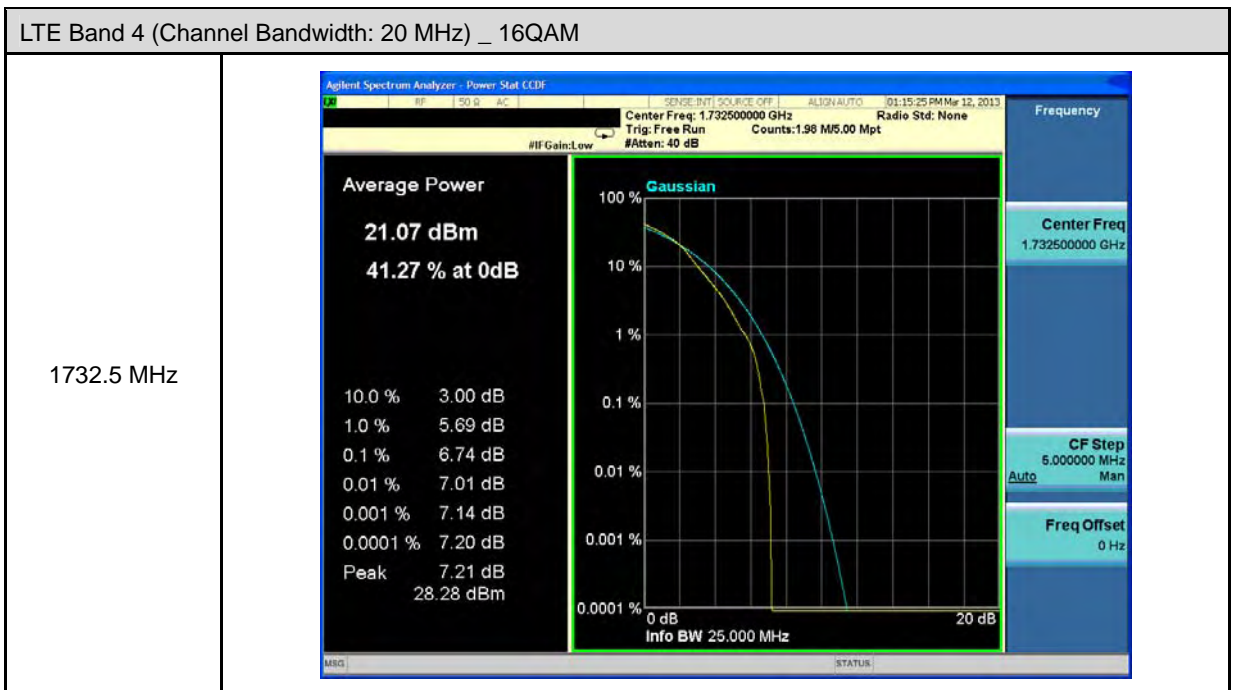
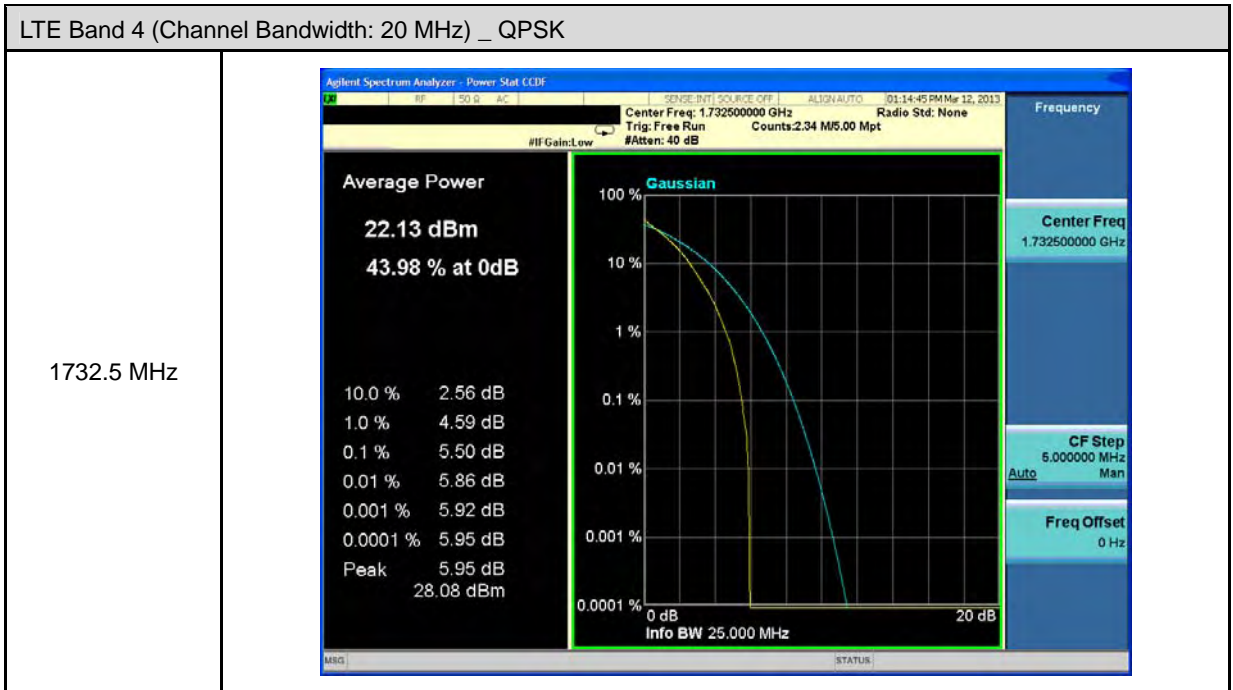


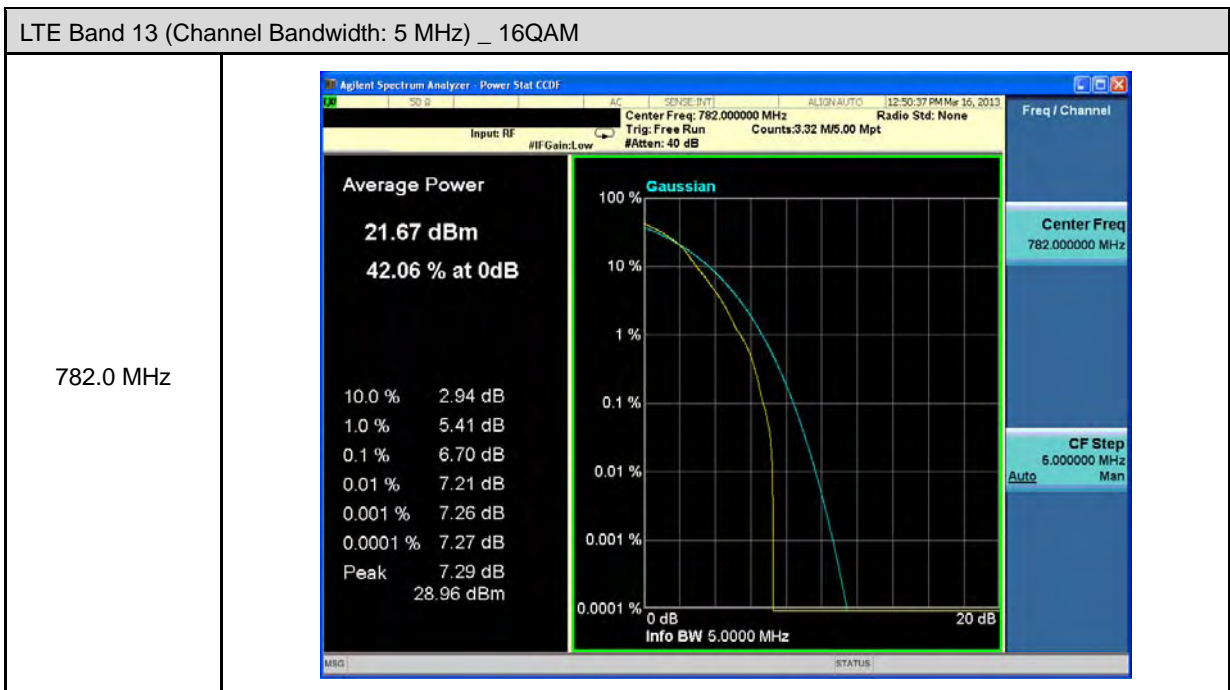
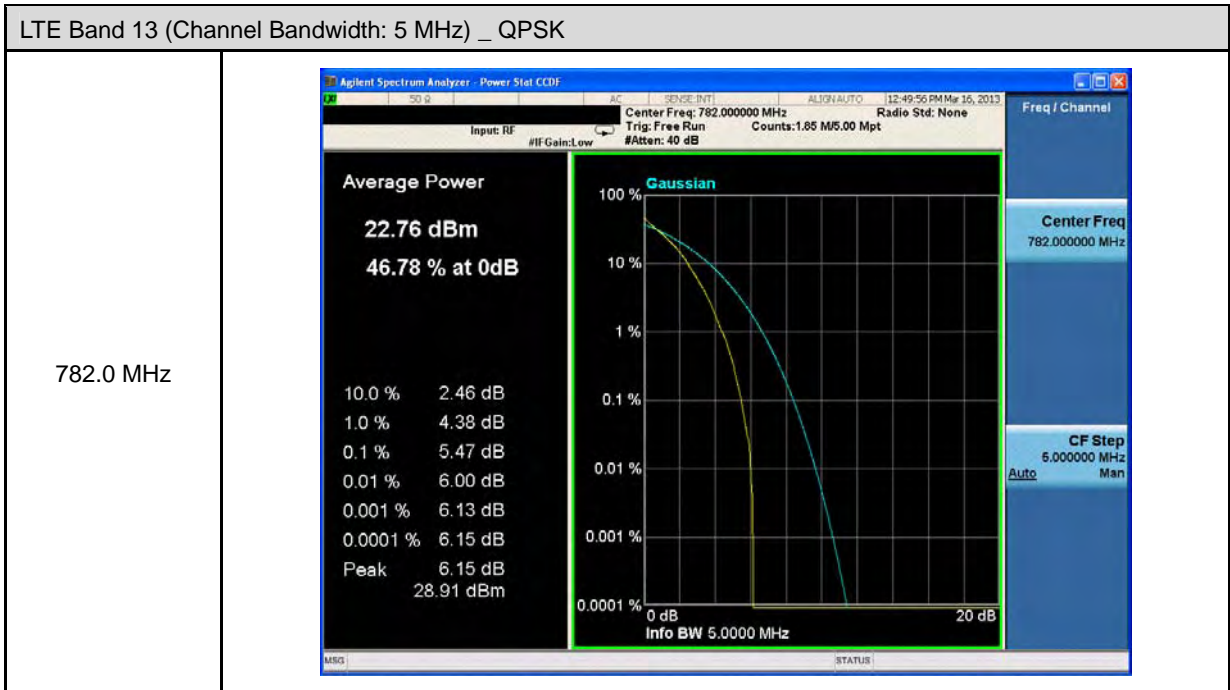


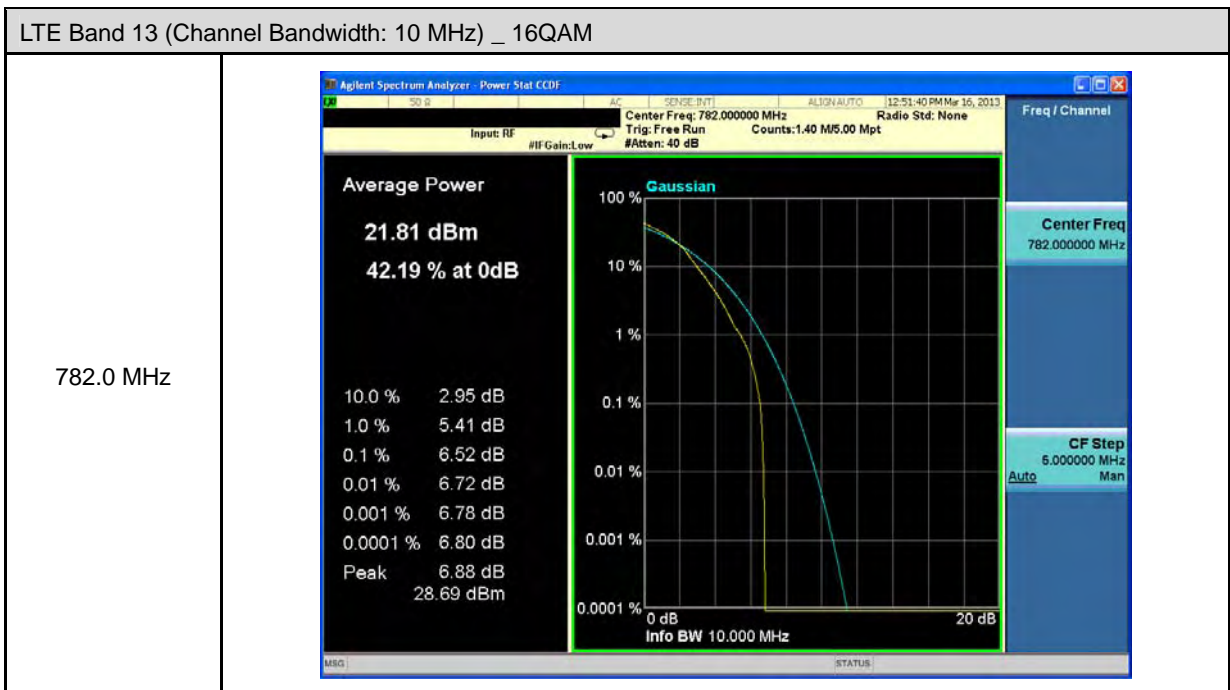
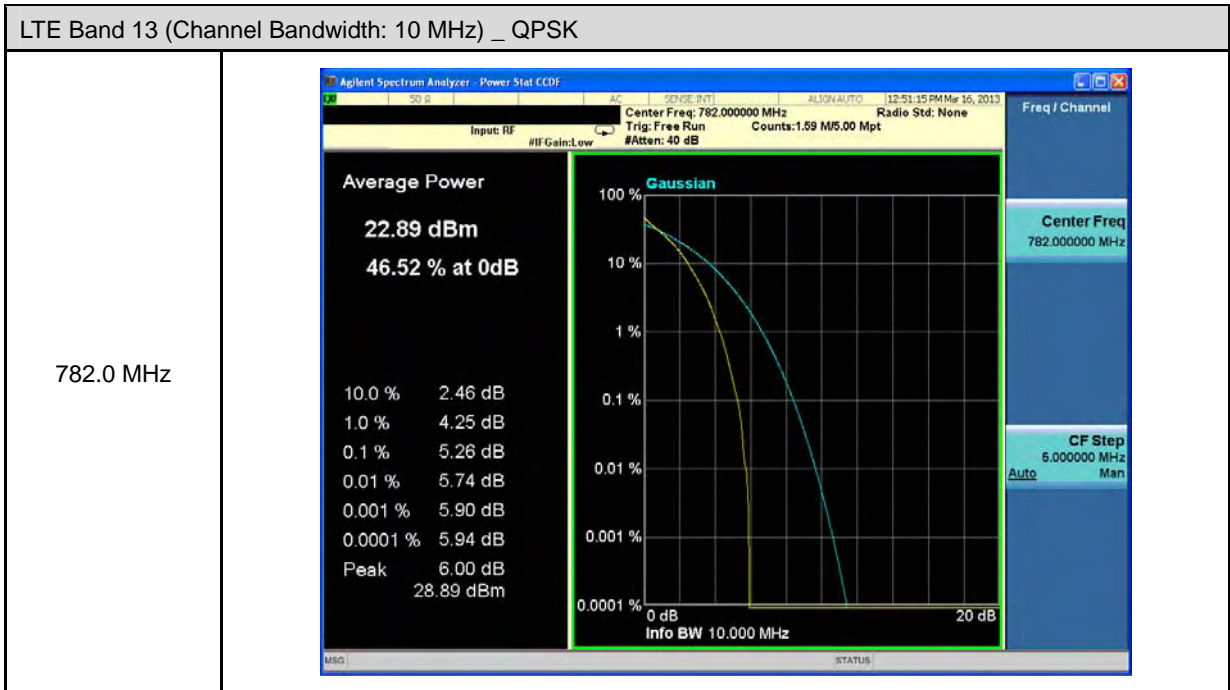


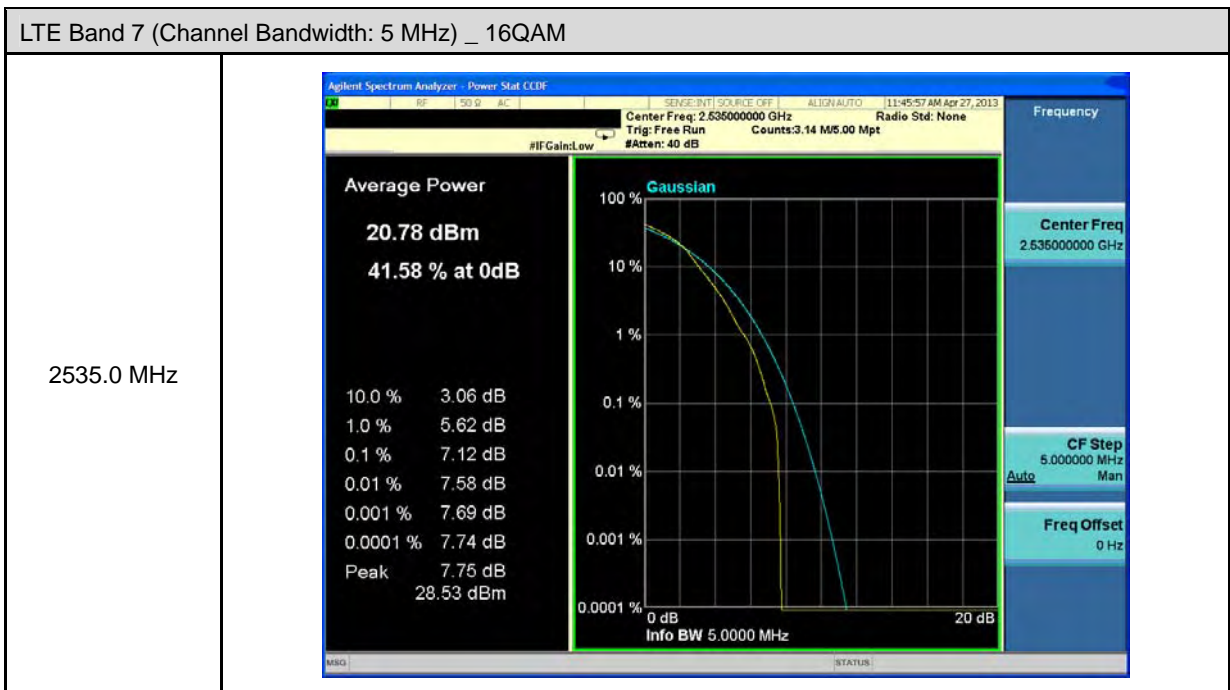
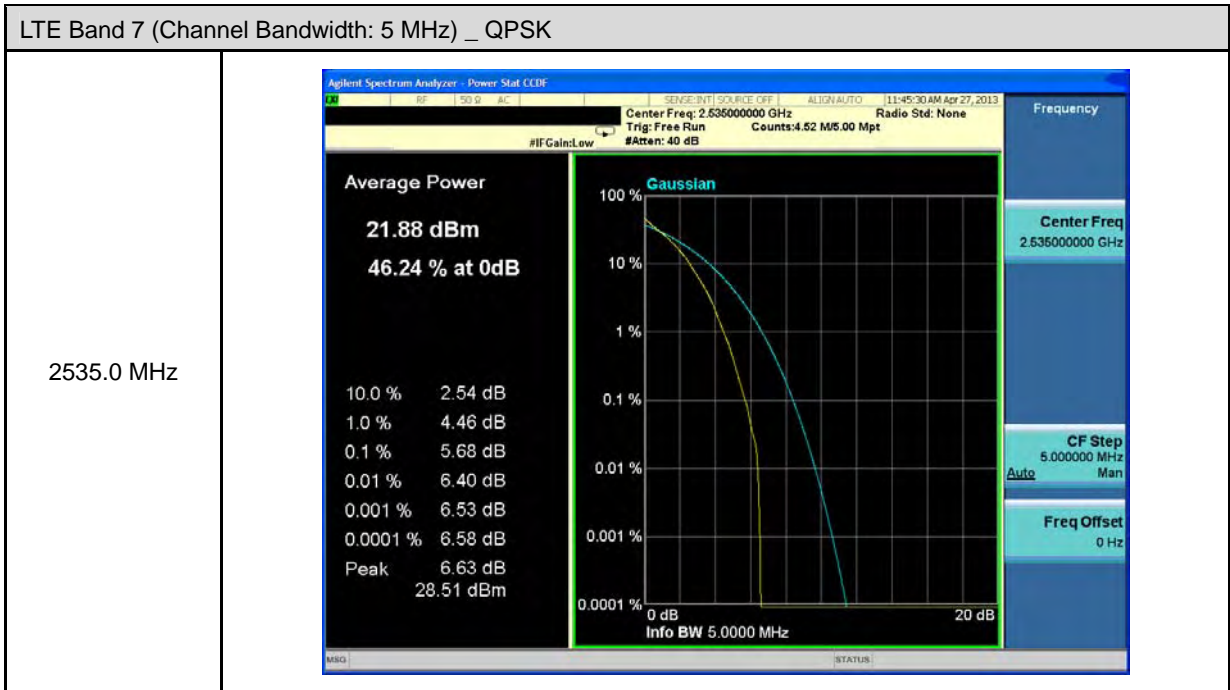


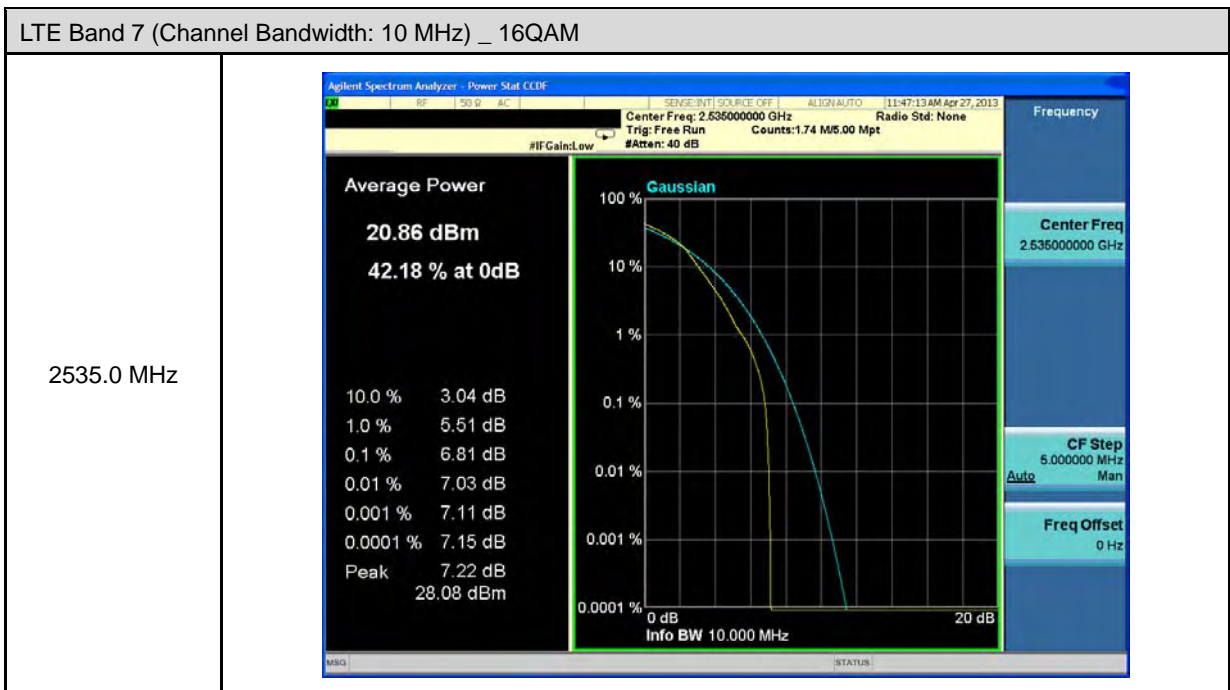
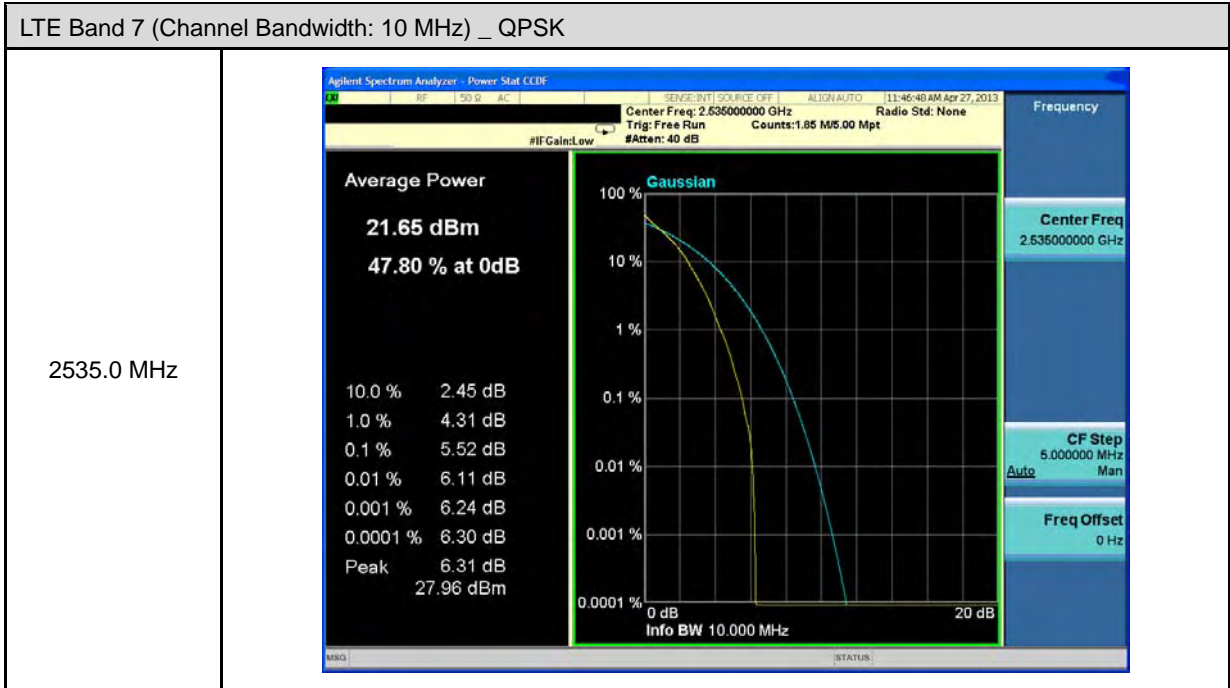


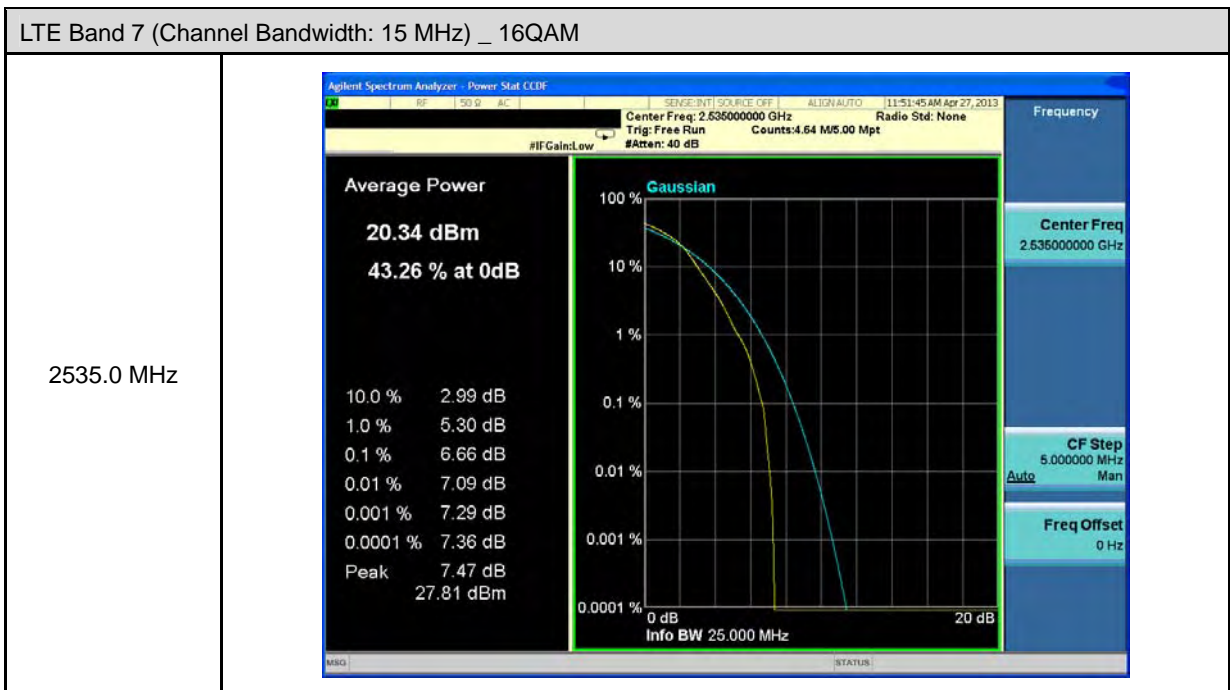
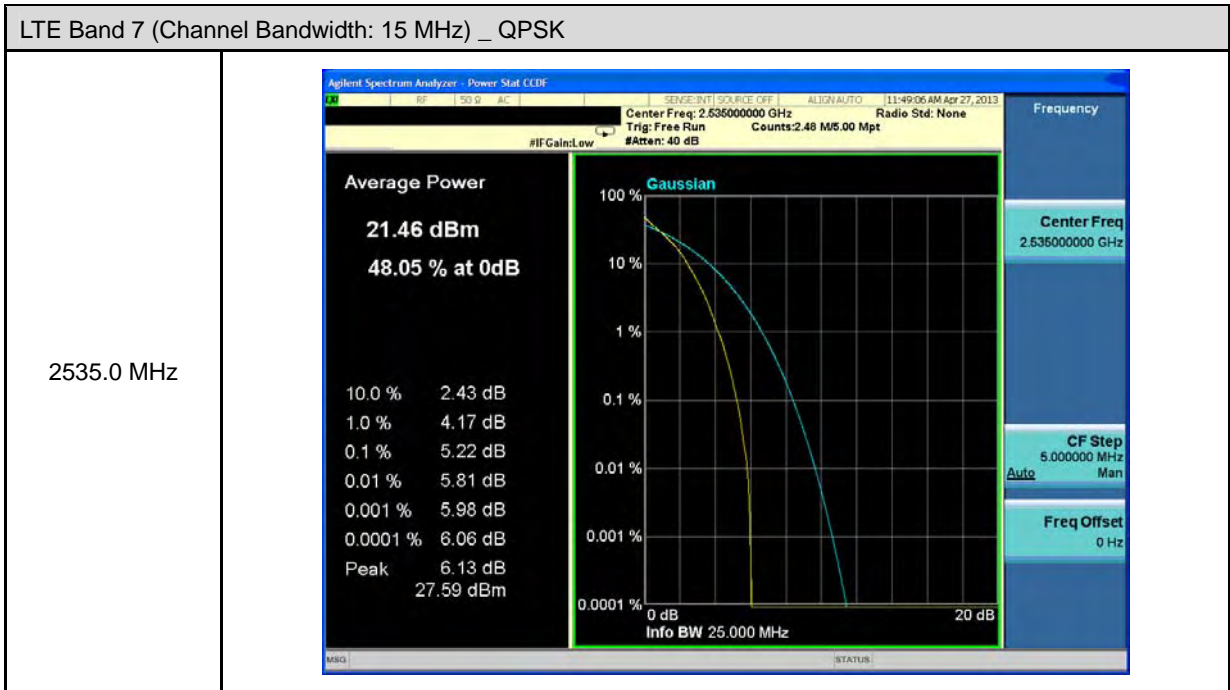


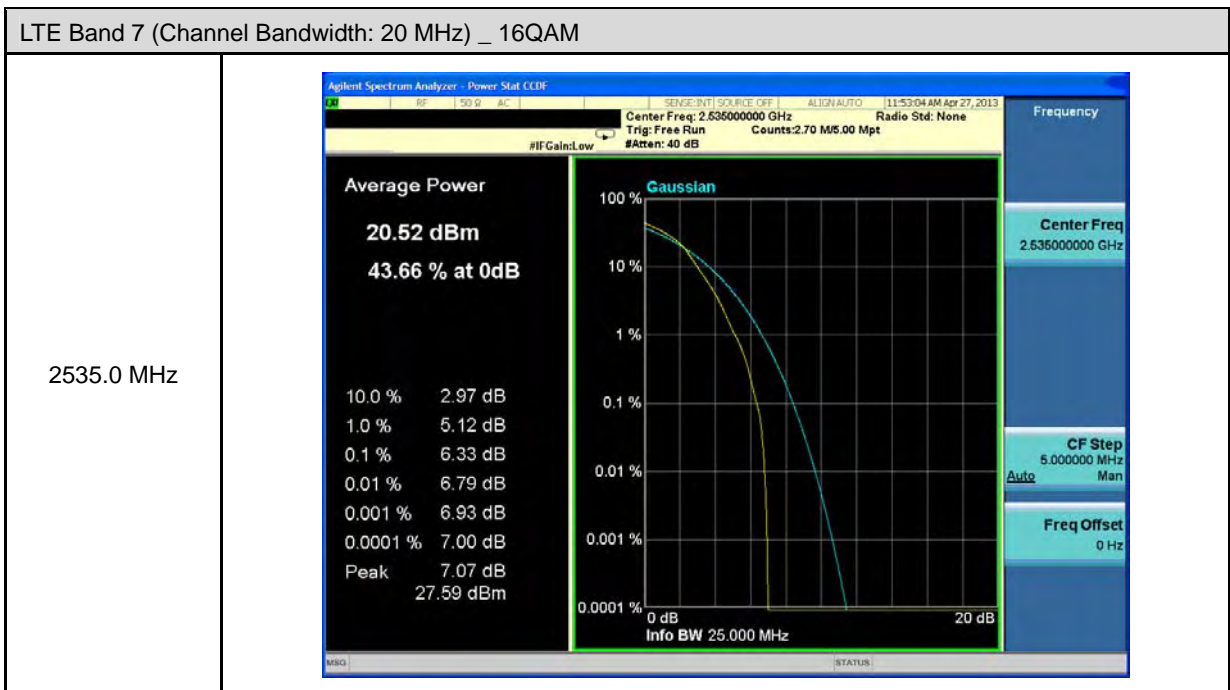
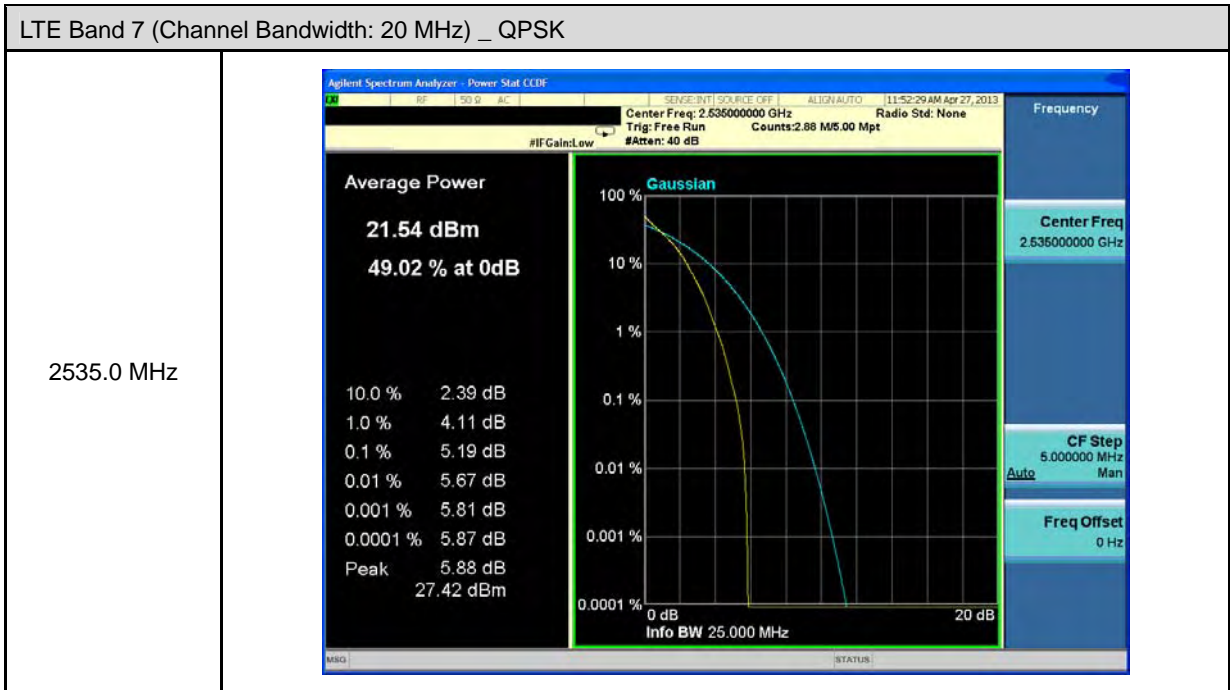












7 Band Edge Test

7.1. Limit

For operations in the 698 ~ 746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 1710 ~ 1755 MHz and 2110 ~ 2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm. 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.

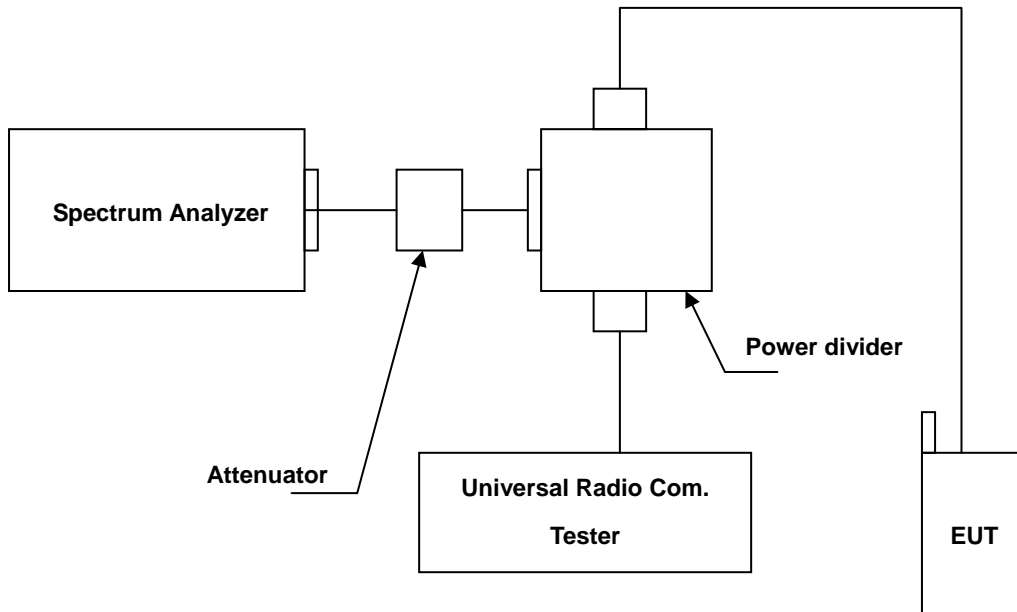
7.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2012	(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 part 27:

- a. 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.)
- b. 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.
- c. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 50kHz and VB of the spectrum is 200kHz.
- d. 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

