FCC

RF Test Report

Product Type	:	Module
Applicant	:	Sierra Wireless Inc.
Address	:	13811 Wireless Way Richmond, British Columbia V6V 3A4
Model Number	:	AR7552
Test Specification	:	FCC 47 CFR PART 22H: Oct, 2014 FCC 47 CFR PART 24E: Oct, 2014 FCC 47 CFR PART 27: Oct. 2014 Canada RSS-130 ISSUE 1: Oct. 2013 CANADA RSS-132 ISSUE 3: Jan. 2013 CANADA RSS-133 ISSUE 6: Jan. 2013 Canada RSS-139 ISSUE 2: Feb. 2009 Canada RSS-199 ISSUE 2: Oct. 2014 Canada RSS-Gen ISSUE 4: Nov., 2014 ANSI/TIA/EIA-603-C
Application Purpose	:	Original
Receive Date	:	Apr. 29, 2015
Test Period	:	Apr. 29 ~ May 05, 2015
Issue Date	:	May 27, 2015

Issue by

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Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	May 08, 2015	Initial Issue	
01	May 14, 2015	Revised report information.	Peggy Chang
02	May 18, 2015	Revised report information.	Snow Wang
03	May 25, 2015	Revised report information.	Peggy Chang
04	May 27, 2015	Revised report information.	Peggy Chang

Verification of Compliance

Issued Date: 05/27/2015

Product Type	:	Module
Applicant	:	Sierra Wireless Inc.
Address	:	13811 Wireless Way Richmond, British Columbia V6V 3A4
Model Number	:	AR7552
EUT Rated Voltage	:	DC 3.4V / 3.7V / 4.2V
Test Voltage	:	DC 3.7V
Applicable Standard	:	FCC 47 CFR PART 22H: Oct, 2014 FCC 47 CFR PART 24E: Oct, 2014 FCC 47 CFR PART 27: Oct. 2014 Canada RSS-130 ISSUE 1: Oct. 2013 CANADA RSS-132 ISSUE 3: Jan. 2013 CANADA RSS-133 ISSUE 6: Jan. 2013 Canada RSS-139 ISSUE 2: Feb. 2009 Canada RSS-199 ISSUE 2: Oct. 2014 Canada RSS-Gen ISSUE 4: Nov., 2014 ANSI/TIA/EIA-603-C
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/TIA/EIA-603-C 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	: Fly Lu	Reviewed By	: Eric Ou Yang
(Manager)	(Fly Lu)	(Testing Engineer)	(Eric Ou Yang)

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1 General Information

1.1. EUT Description

Applicant		Sierra Wireless Inc.			
Applicant Address		13811 Wireless Way Richmond, British Columbia V6V 3A4			
Manufacturer		Sierra Wireless Inc.			
Manufacturer Address		13811 Wireless Way Richmond, British Columbia V6V 3A4			
Product Type		Module			
Model Number		AR7552			
IMEI No.		IMEI 1:352767050012507, IMEI 2:352767050012515			
FCC ID		N7NAR7552			
IC		2417C-AR7552			
Mode	LTE	Band	UL Frequency (MHz)	DL Frequency (MHz)	Modulation
		2	1850.7 ~ 1909.3	1930.7 ~ 1989.3	QPSK, 16QAM
		4	1710.7 ~ 1754.3	2110.7 ~ 2154.3	QPSK, 16QAM
		5	824.7 ~ 848.3	869.7 ~ 893.3	QPSK, 16QAM
		7	2500 ~ 2570	2620 ~ 2690	QPSK, 16QAM
		17	704.0 ~ 715.9	734.0 ~ 745.9	QPSK, 16QAM
Channel Bandwidth		LTE Band 2	1.4M, 3M, 5MHz, 10MHz, 15MHz, 20MHz		
		LTE Band 4	1.4M, 3M, 5MHz, 10MHz, 15MHz, 20MHz		
		LTE Band 5	1.4M, 3M, 5MHz, 10MHz		
		LTE Band 7	5MHz, 10MHz, 15MHz, 20MHz		
		LTE Band 17	5MHz, 10MHz		
Antenna Gain		LTE Band 2	5 dBi		
		LTE Band 4	5 dBi		
		LTE Band 5	5 dBi		
		LTE Band 7	7 dBi		
		LTE Band 17	5 dBi		

Max. Conducted Output Average Power	LTE Band 2 (Channel Bandwidth 1.4MHz)	0.218	W
	LTE Band 2 (Channel Bandwidth 3MHz)	0.218	W
	LTE Band 2 (Channel Bandwidth 5MHz)	0.219	W
	LTE Band 2 (Channel Bandwidth 10MHz)	0.214	W
	LTE Band 2 (Channel Bandwidth 15MHz)	0.220	W
	LTE Band 2 (Channel Bandwidth 20MHz)	0.219	W
	LTE Band 4 (Channel Bandwidth 1.4MHz)	0.205	W
	LTE Band 4 (Channel Bandwidth 3MHz)	0.199	W
	LTE Band 4 (Channel Bandwidth 5MHz)	0.200	W
	LTE Band 4 (Channel Bandwidth 10MHz)	0.203	W
	LTE Band 4 (Channel Bandwidth 15MHz)	0.205	W
	LTE Band 4 (Channel Bandwidth 20MHz)	0.203	W
	LTE Band 5 (Channel Bandwidth 1.4MHz)	0.191	W
	LTE Band 5 (Channel Bandwidth 3MHz)	0.195	W
	LTE Band 5 (Channel Bandwidth 5MHz)	0.189	W
	LTE Band 5 (Channel Bandwidth 10MHz)	0.190	W
	LTE Band 7 (Channel Bandwidth 5MHz)	0.184	W
	LTE Band 7 (Channel Bandwidth 10MHz)	0.179	W
	LTE Band 7 (Channel Bandwidth 15MHz)	0.179	W
	LTE Band 7 (Channel Bandwidth 20MHz)	0.180	W
	LTE Band 17 (Channel Bandwidth 5MHz)	0.195	W
	LTE Band 17 (Channel Bandwidth 10MHz)	0.197	W

Max. E.R.P. / E.I.R.P.	LTE Band 2 (Channel Bandwidth 1.4MHz)	0.689	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 3MHz)	0.690	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 5MHz)	0.692	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 10MHz)	0.676	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 15MHz)	0.697	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 20MHz)	0.693	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 1.4MHz)	0.649	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 3MHz)	0.630	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 5MHz)	0.632	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 10MHz)	0.641	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 15MHz)	0.647	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 20MHz)	0.643	W (E.I.R.P.)
	LTE Band 5 (Channel Bandwidth 1.4MHz)	0.368	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 3MHz)	0.376	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 5MHz)	0.365	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 10MHz)	0.366	W (E.R.P.)
	LTE Band 7 (Channel Bandwidth 5MHz)	0.923	W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 10MHz)	0.899	W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 15MHz)	0.899	W (E.I.R.P.)
	LTE Band 7 (Channel Bandwidth 20MHz)	0.902	W (E.I.R.P.)
	LTE Band 17 (Channel Bandwidth 5MHz)	0.376	W (E.R.P.)
	LTE Band 17 (Channel Bandwidth 10MHz)	0.380	W (E.R.P.)

1.2. Mode of Operation

Three channels had been tested for each channel bandwidth.

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

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

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

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

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

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

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

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

Band	Channel Bandwidth	Test Modes	
LTE Band 2	1.4 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 2) Link ☐ LTE(RB Size 1, RB Offset 5) Link ☐ LTE(RB Size 3, RB Offset 0) Link ☐ LTE(RB Size 3, RB Offset 1) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 8) Link ☐ LTE(RB Size 1, RB Offset 14) Link ☐ LTE(RB Size 8, RB Offset 0) Link ☐ LTE(RB Size 8, RB Offset 4) Link ☐ LTE(RB Size 8, RB Offset 7) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
	5 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 12) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 38) Link ☐ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 38, RB Offset 0) Link ☐ LTE(RB Size 38, RB Offset 18) Link ☐ LTE(RB Size 38, RB Offset 37) Link ☐ LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 1, RB Offset 99) Link ☐ LTE(RB Size 50, RB Offset 0) Link ☐ LTE(RB Size 50, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
LTE Band 4	1.4 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 2) Link ☐ LTE(RB Size 1, RB Offset 5) Link ☐ LTE(RB Size 3, RB Offset 0) Link ☐ LTE(RB Size 3, RB Offset 1) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 8) Link ☐ LTE(RB Size 1, RB Offset 14) Link ☐ LTE(RB Size 8, RB Offset 0) Link ☐ LTE(RB Size 8, RB Offset 4) Link ☐ LTE(RB Size 8, RB Offset 7) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
	5 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 12) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 38) Link ☐ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 38, RB Offset 0) Link ☐ LTE(RB Size 38, RB Offset 18) Link ☐ LTE(RB Size 38, RB Offset 37) Link ☐ LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 1, RB Offset 99) Link ☐ LTE(RB Size 50, RB Offset 0) Link ☐ LTE(RB Size 50, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

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

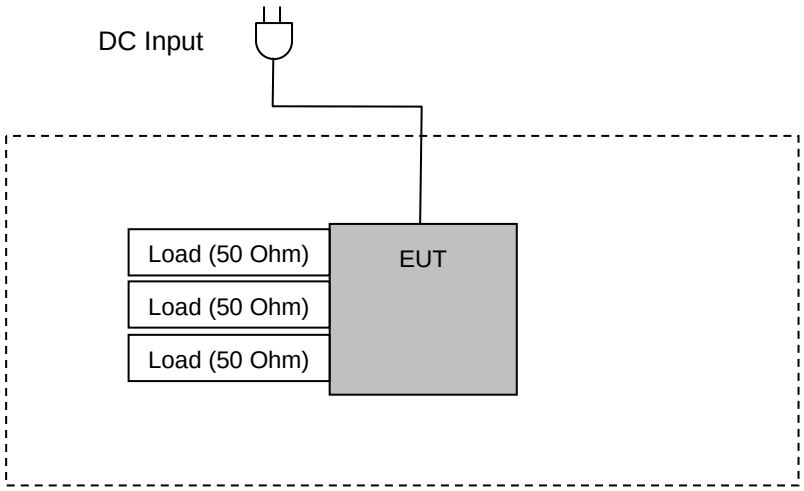
Band	Channel Bandwidth	Test Modes	
LTE Band 7	5 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 12) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
	15 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 38) Link ☐ LTE(RB Size 1, RB Offset 74) Link ☐ LTE(RB Size 36, RB Offset 0) Link ☐ LTE(RB Size 36, RB Offset 18) Link ☐ LTE(RB Size 36, RB Offset 39) Link ☐ LTE(RB Size 75, RB Offset 0) Link	QPSK
	20 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 1, RB Offset 99) Link ☐ LTE(RB Size 50, RB Offset 0) Link ☐ LTE(RB Size 50, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
LTE Band 17	5 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 12) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	☑ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 25) Link ☐ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK

1.3. EUT Exercise Software

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

1.4. Configuration of Test System Details



1.5. Test Site Environment

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

1.6. Summary of Test Result

FCC Rule	IC Standards	Description	Result
§2.1046	---	Conducted Output Average Power	Pass
§22.913 §24.232 §27. 50	RSS-130, 4.4 RSS-132, 5.4 RSS-133, 6.4 RSS-139, 6.4 RSS-199, 4.4	Equivalent Isotropic Radiated Power / Equivalent Radiated Power	Pass
§2.1055 §22.355 §24.235 §27. 54	RSS-130, 4.3 RSS-132, 4.3 RSS-133, 6.3 RSS-139, 6.3 RSS-199, 4.3	Frequency Stability	Pass
§2.1049	RSS-Gen, 6.6	Emission Bandwidth & Occupied Bandwidth	Pass
§24.232 §27.50	RSS-130, 4.4 RSS-132, 5.4 RSS-133, 6.4 RSS-139, 6.4	Peak to average ratio	Pass
§22.917 §24.238 §27.53	RSS-130, 4.6 RSS-132, 5.5 RSS-133, 6.5 RSS-139, 6.5 RSS-199, 4.6	Band Edge	Pass
§2.1051 §22.917 §24.238 §27.53	RSS-130, 4.6 RSS-132, 5.5 RSS-133, 6.5 RSS-139, 6.5 RSS-199, 4.6	Conducted Spurious Emissions	Pass
§2.1053 §22.917 §24.238 §27.53	RSS-130, 4.6 RSS-132, 5.5 RSS-133, 6.5 RSS-139, 6.5 RSS-199, 4.6	Radiated Spurious Emissions	Pass

2 Conducted Output Average Power Test

2.1. Limit

N/A

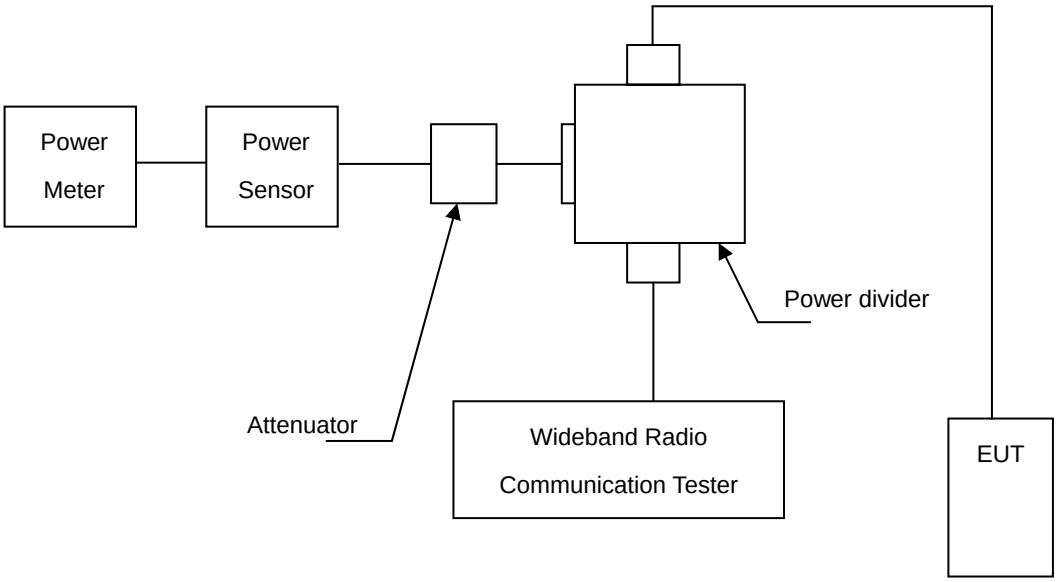
2.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Wideband Radio Communication Tester	R & S	CMW500	103168	11/05/2014	(1)
Wideband Power Sensor	Agilent	N1921A	MY45241957	12/15/2014	(1)
Single Channel PK Power Meter	Agilent	N1911A	MY45101619	12/15/2014	(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	AR7552		
Test Item	Conducted Output Average Power		
Date of Test	04/29/2015	Test Site	TE05

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	1.4 MHz	QPSK	18607	1850.7	1	0	23.25	0.211
					1	2	23.21	0.209
					1	5	23.17	0.207
					3	0	23.14	0.206
					3	1	23.09	0.204
					3	3	23.07	0.203
					6	0	22.39	0.173
			18900	1880.0	1	0	**23.38**	**0.218**
					1	2	23.37	0.217
					1	5	23.35	0.216
					3	0	23.31	0.214
					3	1	23.29	0.213
					3	3	23.25	0.211
					6	0	22.42	0.175
			19193	1909.3	1	0	23.09	0.204
					1	2	23.08	0.203
					1	5	23.05	0.202
					3	0	23.04	0.201
					3	1	23.01	0.200
					3	3	22.99	0.199
					6	0	22.22	0.167
		16QAM	18607	1850.7	1	0	22.61	0.182
					1	2	22.35	0.172
					1	5	22.33	0.171
					3	0	22.21	0.166
					3	1	22.20	0.166
					3	3	22.18	0.165
					6	0	21.43	0.139
			18900	1880.0	1	0	22.66	0.185
					1	2	22.64	0.184
					1	5	22.50	0.178
					3	0	22.49	0.177
					3	1	22.48	0.177
					3	3	22.17	0.165
					6	0	21.50	0.141
			19193	1909.3	1	0	22.26	0.168
					1	2	22.12	0.163
					1	5	22.10	0.162
					3	0	22.09	0.162
					3	1	22.06	0.161
					3	3	22.05	0.160
					6	0	21.47	0.140

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	3 MHz	QPSK	18615	1851.5	1	0	23.23	0.210
					1	8	23.21	0.209
					1	14	23.15	0.207
					8	0	22.34	0.171
					8	4	22.32	0.171
					8	7	22.22	0.167
					15	0	22.19	0.166
			18900	1880.0	1	0	**23.39**	**0.218**
					1	8	23.30	0.214
					1	14	23.26	0.212
					8	0	22.41	0.174
					8	4	22.40	0.174
					8	7	22.39	0.173
					15	0	22.37	0.173
			19185	1908.5	1	0	23.21	0.209
					1	8	23.10	0.204
					1	14	22.96	0.198
					8	0	22.35	0.172
					8	4	22.32	0.171
					8	7	22.27	0.169
					15	0	22.22	0.167
		16QAM	18615	1851.5	1	0	22.47	0.177
					1	8	22.26	0.168
					1	14	22.09	0.162
					8	0	21.40	0.138
					8	4	21.39	0.138
					8	7	21.37	0.137
					15	0	21.29	0.135
			18900	1880.0	1	0	22.56	0.180
					1	8	22.22	0.167
					1	14	22.12	0.163
					8	0	21.46	0.140
					8	4	21.43	0.139
					8	7	21.42	0.139
					15	0	21.41	0.138
			19185	1908.5	1	0	22.37	0.173
					1	8	22.34	0.171
					1	14	21.79	0.151
					8	0	21.38	0.137
					8	4	21.33	0.136
					8	7	21.32	0.136
					15	0	21.29	0.135

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	5 MHz	QPSK	18625	1852.5	1	0	23.22	0.210
					1	12	23.16	0.207
					1	24	22.95	0.197
					12	0	22.36	0.172
					12	6	22.26	0.168
					12	13	22.25	0.168
					25	0	22.18	0.165
			18900	1880.0	1	0	**23.40**	**0.219**
					1	12	23.36	0.217
					1	24	23.21	0.209
					12	0	22.46	0.176
					12	6	22.46	0.176
					12	13	22.44	0.175
					25	0	22.32	0.171
			19175	1907.5	1	0	23.24	0.211
					1	12	23.17	0.207
					1	24	22.98	0.199
					12	0	22.35	0.172
					12	6	22.34	0.171
					12	13	22.31	0.170
					25	0	22.29	0.169
		16QAM	18625	1852.5	1	0	22.46	0.176
					1	12	22.21	0.166
					1	24	22.02	0.159
					12	0	21.44	0.139
					12	6	21.43	0.139
					12	13	21.34	0.136
					25	0	21.24	0.133
			18900	1880.0	1	0	22.67	0.185
					1	12	22.28	0.169
					1	24	22.07	0.161
					12	0	21.44	0.139
					12	6	21.41	0.138
					12	13	21.38	0.137
					25	0	21.37	0.137
			19175	1907.5	1	0	22.49	0.177
					1	12	22.22	0.167
					1	24	21.76	0.150
					12	0	21.53	0.142
					12	6	21.50	0.141
					12	11	21.43	0.139
					25	0	21.34	0.136

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	10 MHz	QPSK	18650	1855.0	1	0	**23.30**	**0.214**
					1	24	23.20	0.209
					1	49	23.00	0.200
					25	0	22.33	0.171
					25	12	22.30	0.170
					25	25	22.25	0.168
					50	0	22.23	0.167
			18900	1880.0	1	0	23.29	0.213
					1	24	23.28	0.213
					1	49	23.24	0.211
					25	0	22.41	0.174
					25	12	22.41	0.174
					25	25	22.38	0.173
					50	0	22.36	0.172
			19150	1905.0	1	0	23.25	0.211
					1	24	23.17	0.207
					1	49	22.89	0.195
					25	0	22.43	0.175
					25	12	22.29	0.169
					25	25	22.29	0.169
					50	0	22.22	0.167
		16QAM	18650	1855.0	1	0	22.32	0.171
					1	24	22.19	0.166
					1	49	22.08	0.161
					25	0	21.51	0.142
					25	12	21.51	0.142
					25	25	21.31	0.135
					50	0	21.27	0.134
			18900	1880.0	1	0	22.54	0.179
					1	24	22.51	0.178
					1	49	22.15	0.164
					25	0	21.57	0.144
					25	12	21.48	0.141
					25	25	21.44	0.139
					50	0	21.42	0.139
			19150	1905.0	1	0	22.42	0.175
					1	24	22.23	0.167
					1	49	21.79	0.151
					25	0	21.43	0.139
					25	12	21.41	0.138
					25	25	21.39	0.138
					50	0	21.38	0.137

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	15 MHz	QPSK	18675	1857.5	1	0	23.33	0.215
					1	38	23.29	0.213
					1	74	23.22	0.210
					38	0	22.34	0.171
					38	18	22.32	0.171
					38	37	22.32	0.171
					75	0	22.30	0.170
			18900	1880.0	1	0	**23.43**	**0.220**
					1	38	23.32	0.215
					1	74	23.28	0.213
					38	0	22.48	0.177
					38	18	22.43	0.175
					38	37	22.40	0.174
					75	0	22.39	0.173
			19125	1902.5	1	0	23.38	0.218
					1	38	23.14	0.206
					1	74	23.02	0.200
					38	0	22.32	0.171
					38	18	22.31	0.170
					38	37	22.29	0.169
					75	0	22.27	0.169
		16QAM	18675	1857.5	1	0	22.25	0.168
					1	38	22.23	0.167
					1	74	22.00	0.158
					38	0	21.52	0.142
					38	18	21.51	0.142
					38	37	21.37	0.137
					75	0	21.29	0.135
			18900	1880.0	1	0	22.59	0.182
					1	38	22.49	0.177
					1	74	22.29	0.169
					38	0	21.53	0.142
					38	18	21.51	0.142
					38	37	21.48	0.141
					75	0	21.47	0.140
			19125	1902.5	1	0	22.20	0.166
					1	38	22.13	0.163
					1	74	22.09	0.162
					38	0	21.51	0.142
					38	18	21.48	0.141
					38	37	21.46	0.140
					75	0	21.45	0.140

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 2	20 MHz	QPSK	18700	1860.0	1	0	23.31	0.214
					1	49	23.27	0.212
					1	99	23.22	0.210
					50	0	22.32	0.171
					50	25	22.19	0.166
					50	50	22.19	0.166
					100	0	22.17	0.165
			18900	1880.0	1	0	**23.41**	**0.219**
					1	49	23.38	0.218
					1	99	23.24	0.211
					50	0	22.44	0.175
					50	25	22.39	0.173
					50	50	22.33	0.171
					100	0	22.32	0.171
			19100	1900.0	1	0	23.26	0.212
					1	49	23.15	0.207
					1	99	23.02	0.200
					50	0	22.34	0.171
					50	25	22.32	0.171
					50	50	22.28	0.169
					100	0	22.27	0.169
		16QAM	18700	1860.0	1	0	22.37	0.173
					1	49	22.22	0.167
					1	99	22.17	0.165
					50	0	21.41	0.138
					50	25	21.35	0.136
					50	50	21.34	0.136
					100	0	21.33	0.136
			18900	1880.0	1	0	22.38	0.173
					1	49	22.37	0.173
					1	99	22.28	0.169
					50	0	21.49	0.141
					50	25	21.46	0.140
					50	50	21.43	0.139
					100	0	21.35	0.136
			19100	1900.0	1	0	22.77	0.189
					1	49	22.17	0.165
					1	99	22.12	0.163
					50	0	21.44	0.139
					50	25	21.42	0.139
					50	50	21.37	0.137
					100	0	21.35	0.136

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	1.4 MHz	QPSK	19957	1710.7	1	0	**23.12**	**0.205**
					1	2	23.09	0.204
					1	5	23.07	0.203
					3	0	23.05	0.202
					3	1	23.01	0.200
					3	3	22.99	0.199
					6	0	22.13	0.163
			20175	1732.5	1	0	22.92	0.196
					1	2	22.89	0.195
					1	5	22.87	0.194
					3	0	22.84	0.192
					3	1	22.81	0.191
					3	3	22.82	0.191
					6	0	22.01	0.159
			20393	1754.3	1	0	22.99	0.199
					1	2	22.90	0.195
					1	5	22.89	0.195
					3	0	22.87	0.194
					3	1	22.86	0.193
					3	3	22.83	0.192
					6	0	21.94	0.156
		16QAM	19957	1710.7	1	0	22.42	0.175
					1	2	22.16	0.164
					1	5	22.11	0.163
					3	0	22.04	0.160
					3	1	21.99	0.158
					3	3	21.93	0.156
					6	0	21.06	0.128
			20175	1732.5	1	0	22.22	0.167
					1	2	22.14	0.164
					1	5	22.11	0.163
					3	0	22.08	0.161
					3	1	21.97	0.157
					3	3	21.75	0.150
					6	0	21.07	0.128
			20393	1754.3	1	0	21.94	0.156
					1	2	21.92	0.156
					1	5	21.92	0.156
					3	0	21.81	0.152
					3	1	21.77	0.150
					3	3	21.73	0.149
					6	0	20.96	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	**22.99**	**0.199**
					1	8	22.97	0.198
					1	14	22.92	0.196
					8	0	22.15	0.164
					8	4	22.14	0.164
					8	7	22.13	0.163
					15	0	22.01	0.159
			20175	1732.5	1	0	22.89	0.195
					1	8	22.86	0.193
					1	14	22.84	0.192
					8	0	22.04	0.160
					8	4	21.97	0.157
					8	7	21.93	0.156
					15	0	21.90	0.155
			20385	1753.5	1	0	22.87	0.194
					1	8	22.86	0.193
					1	14	22.84	0.192
					8	0	21.96	0.157
					8	4	21.91	0.155
					8	7	21.87	0.154
					15	0	21.84	0.153
		16QAM	19965	1711.5	1	0	22.41	0.174
					1	8	21.90	0.155
					1	14	21.73	0.149
					8	0	21.17	0.131
					8	4	21.10	0.129
					8	7	21.00	0.126
					15	0	20.94	0.124
			20175	1732.5	1	0	22.22	0.167
					1	8	22.05	0.160
					1	14	21.80	0.151
					8	0	21.00	0.126
					8	4	20.94	0.124
					8	7	20.90	0.123
					15	0	20.87	0.122
			20385	1753.5	1	0	21.96	0.157
					1	8	21.86	0.153
					1	14	21.61	0.145
					8	0	20.92	0.124
					8	4	20.88	0.122
					8	7	20.88	0.122
					15	0	20.83	0.121

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	**23.01**	**0.200**
					1	12	22.97	0.198
					1	24	22.95	0.197
					12	0	22.08	0.161
					12	6	22.04	0.160
					12	13	21.99	0.158
					25	0	21.98	0.158
			20175	1732.5	1	0	22.89	0.195
					1	12	22.86	0.193
					1	24	22.79	0.190
					12	0	22.03	0.160
					12	6	22.01	0.159
					12	13	22.00	0.158
					25	0	21.92	0.156
			20375	1752.5	1	0	22.88	0.194
					1	12	22.85	0.193
					1	24	22.82	0.191
					12	0	22.02	0.159
					12	6	21.96	0.157
					12	13	21.94	0.156
					25	0	21.89	0.155
		16QAM	19975	1712.5	1	0	22.30	0.170
					1	12	22.05	0.160
					1	24	21.85	0.153
					12	0	21.11	0.129
					12	6	21.09	0.129
					12	13	21.04	0.127
					25	0	20.97	0.125
			20175	1732.5	1	0	22.17	0.165
					1	12	22.06	0.161
					1	24	21.70	0.148
					12	0	21.07	0.128
					12	6	21.01	0.126
					12	13	20.99	0.126
					25	0	20.98	0.125
			20375	1752.5	1	0	21.86	0.153
					1	12	21.83	0.152
					1	24	21.57	0.144
					12	0	20.98	0.125
					12	6	20.95	0.124
					12	11	20.84	0.121
					25	0	20.77	0.119

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 4	10 MHz	QPSK	2000	1715.0	1	0	**23.07**	**0.203**
					1	24	22.93	0.196
					1	49	22.88	0.194
					25	0	22.15	0.164
					25	12	22.06	0.161
					25	25	22.05	0.160
					50	0	22.00	0.158
			20175	1732.5	1	0	22.88	0.194
					1	24	22.86	0.193
					1	49	22.84	0.192
					25	0	21.96	0.157
					25	12	21.96	0.157
					25	25	21.93	0.156
					50	0	21.92	0.156
			20350	1750.0	1	0	22.96	0.198
					1	24	22.86	0.193
					1	49	22.84	0.192
					25	0	21.94	0.156
					25	12	21.91	0.155
					25	25	21.89	0.155
					50	0	21.87	0.154
		16QAM	2000	1715.0	1	0	22.02	0.159
					1	24	21.88	0.154
					1	49	21.71	0.148
					25	0	21.09	0.129
					25	12	21.07	0.128
					25	25	21.06	0.128
					50	0	21.03	0.127
			20175	1732.5	1	0	22.21	0.166
					1	24	22.05	0.160
					1	49	21.80	0.151
					25	0	21.03	0.127
					25	12	21.02	0.126
					25	25	20.95	0.124
					50	0	20.91	0.123
			20350	1750.0	1	0	22.27	0.169
					1	24	22.19	0.166
					1	49	21.82	0.152
					25	0	20.96	0.125
					25	12	20.84	0.121
					25	25	20.83	0.121
					50	0	20.77	0.119

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	**23.11**	**0.205**
					1	38	23.03	0.201
					1	74	22.90	0.195
					38	0	22.06	0.161
					38	18	22.04	0.160
					38	37	21.99	0.158
					75	0	21.96	0.157
			20175	1732.5	1	0	23.01	0.200
					1	38	22.98	0.199
					1	74	22.86	0.193
					38	0	22.04	0.160
					38	18	22.03	0.160
					38	37	22.02	0.159
					75	0	21.95	0.157
			20325	1747.5	1	0	23.07	0.203
					1	38	23.00	0.200
					1	74	22.95	0.197
					38	0	22.03	0.160
					38	18	21.99	0.158
					38	37	21.94	0.156
					75	0	21.84	0.153
		16QAM	20025	1717.5	1	0	22.37	0.173
					1	38	22.27	0.169
					1	74	21.91	0.155
					38	0	21.08	0.128
					38	18	21.01	0.126
					38	37	21.01	0.126
					75	0	20.92	0.124
			20175	1732.5	1	0	21.91	0.155
					1	38	21.72	0.149
					1	74	21.70	0.148
					38	0	21.11	0.129
					38	18	21.06	0.128
					38	37	20.95	0.124
					75	0	20.92	0.124
			20325	1747.5	1	0	22.35	0.172
					1	38	22.17	0.165
					1	74	22.14	0.164
					38	0	21.02	0.126
					38	18	20.92	0.124
					38	37	20.90	0.123
					75	0	20.75	0.119

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	**23.08**	**0.203**
					1	49	22.95	0.197
					1	99	22.83	0.192
					50	0	22.08	0.161
					50	25	22.03	0.160
					50	50	22.03	0.160
					100	0	22.02	0.159
			20175	1732.5	1	0	23.02	0.200
					1	49	22.91	0.195
					1	99	22.73	0.187
					50	0	22.04	0.160
					50	25	21.92	0.156
					50	50	21.91	0.155
					100	0	21.91	0.155
			20300	1745.0	1	0	22.99	0.199
					1	49	22.90	0.195
					1	99	22.88	0.194
					50	0	21.96	0.157
					50	25	21.85	0.153
					50	50	21.83	0.152
					100	0	21.82	0.152
		16QAM	20050	1720.0	1	0	22.38	0.173
					1	49	22.31	0.170
					1	99	21.54	0.143
					50	0	21.02	0.126
					50	25	20.97	0.125
					50	50	20.95	0.124
					100	0	20.93	0.124
			20175	1732.5	1	0	22.26	0.168
					1	49	21.96	0.157
					1	99	21.62	0.145
					50	0	21.02	0.126
					50	25	20.99	0.126
					50	50	20.93	0.124
					100	0	20.84	0.121
			20300	1745.0	1	0	22.33	0.171
					1	49	22.23	0.167
					1	99	21.78	0.151
					50	0	20.88	0.122
					50	25	20.87	0.122
					50	50	20.86	0.122
					100	0	20.83	0.121

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	1.4 MHz	QPSK	20407	824.7	1	0	22.74	0.188
					1	2	22.72	0.187
					1	5	22.71	0.187
					3	0	22.70	0.186
					3	1	22.69	0.186
					3	3	22.68	0.185
					6	0	21.73	0.149
			20525	836.5	1	0	22.76	0.189
					1	2	22.72	0.187
					1	5	22.69	0.186
					3	0	22.67	0.185
					3	1	22.66	0.185
					3	3	22.60	0.182
					6	0	21.83	0.152
			20643	848.3	1	0	**22.81**	**0.191**
					1	2	22.80	0.191
					1	5	22.77	0.189
					3	0	22.76	0.189
					3	1	22.67	0.185
					3	3	22.64	0.184
					6	0	21.81	0.152
		16QAM	20407	824.7	1	0	21.77	0.150
					1	2	21.71	0.148
					1	5	21.65	0.146
					3	0	21.63	0.146
					3	1	21.55	0.143
					3	3	21.31	0.135
					6	0	20.71	0.118
			20525	836.5	1	0	21.86	0.153
					1	2	21.83	0.152
					1	5	21.80	0.151
					3	0	21.68	0.147
					3	1	21.50	0.141
					3	3	21.42	0.139
					6	0	20.64	0.116
			20643	848.3	1	0	21.94	0.156
					1	2	21.93	0.156
					1	5	21.85	0.153
					3	0	21.69	0.148
					3	1	21.63	0.146
					3	3	21.60	0.145
					6	0	20.69	0.117

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	3 MHz	QPSK	20415	825.5	1	0	22.71	0.187
					1	8	22.68	0.185
					1	14	22.64	0.184
					8	0	21.74	0.149
					8	4	21.70	0.148
					8	7	21.64	0.146
					15	0	21.62	0.145
			20525	836.5	1	0	22.71	0.187
					1	8	22.71	0.187
					1	14	22.63	0.183
					8	0	21.77	0.150
					8	4	21.76	0.150
					8	7	21.71	0.148
					15	0	21.68	0.147
			20635	847.5	1	0	**22.90**	**0.195**
					1	8	22.78	0.190
					1	14	22.71	0.187
					8	0	21.84	0.153
					8	4	21.82	0.152
					8	7	21.76	0.150
					15	0	21.71	0.148
		16QAM	20415	825.5	1	0	21.97	0.157
					1	8	21.52	0.142
					1	14	21.34	0.136
					8	0	20.71	0.118
					8	4	20.57	0.114
					8	7	20.55	0.114
					15	0	20.54	0.113
			20525	836.5	1	0	21.95	0.157
					1	8	21.70	0.148
					1	14	21.29	0.135
					8	0	20.74	0.119
					8	4	20.68	0.117
					8	7	20.59	0.115
					15	0	20.38	0.109
			20635	847.5	1	0	21.70	0.148
					1	8	21.61	0.145
					1	14	21.59	0.144
					8	0	20.80	0.120
					8	4	20.69	0.117
					8	7	20.67	0.117
					15	0	20.61	0.115

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	5 MHz	QPSK	20425	826.5	1	0	22.74	0.188
					1	12	22.74	0.188
					1	24	22.65	0.184
					12	0	21.80	0.151
					12	6	21.79	0.151
					12	13	21.69	0.148
					25	0	21.68	0.147
			20525	836.5	1	0	22.61	0.182
					1	12	22.61	0.182
					1	24	22.56	0.180
					12	0	21.78	0.151
					12	6	21.74	0.149
					12	13	21.71	0.148
					25	0	21.70	0.148
			20625	846.5	1	0	**22.77**	**0.189**
					1	12	22.63	0.183
					1	24	22.61	0.182
					12	0	21.84	0.153
					12	6	21.77	0.150
					12	13	21.70	0.148
					25	0	21.65	0.146
		16QAM	20425	826.5	1	0	21.93	0.156
					1	12	21.81	0.152
					1	24	21.59	0.144
					12	0	20.71	0.118
					12	6	20.64	0.116
					12	13	20.59	0.115
					25	0	20.58	0.114
			20525	836.5	1	0	21.90	0.155
					1	12	21.65	0.146
					1	24	21.48	0.141
					12	0	20.63	0.116
					12	6	20.61	0.115
					12	13	20.60	0.115
					25	0	20.53	0.113
			20625	846.5	1	0	21.95	0.157
					1	12	21.70	0.148
					1	24	21.58	0.144
					12	0	20.92	0.124
					12	6	20.86	0.122
					12	11	20.74	0.119
					25	0	20.61	0.115

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 5	10 MHz	QPSK	20450	829.0	1	0	22.77	0.189
					1	24	22.60	0.182
					1	49	22.57	0.181
					25	0	21.72	0.149
					25	12	21.70	0.148
					25	25	21.67	0.147
					50	0	21.62	0.145
			20525	836.5	1	0	22.76	0.189
					1	24	22.72	0.187
					1	49	22.59	0.182
					25	0	21.73	0.149
					25	12	21.70	0.148
					25	25	21.66	0.147
					50	0	21.61	0.145
			20600	844.0	1	0	**22.79**	**0.190**
					1	24	22.76	0.189
					1	49	22.64	0.184
					25	0	21.72	0.149
					25	12	21.71	0.148
					25	25	21.71	0.148
					50	0	21.68	0.147
		16QAM	20450	829.0	1	0	21.59	0.144
					1	24	21.54	0.143
					1	49	21.49	0.141
					25	0	20.63	0.116
					25	12	20.61	0.115
					25	25	20.58	0.114
					50	0	20.54	0.113
			20525	836.5	1	0	21.92	0.156
					1	24	21.81	0.152
					1	49	21.33	0.136
					25	0	20.64	0.116
					25	12	20.64	0.116
					25	25	20.61	0.115
					50	0	20.57	0.114
			20600	844.0	1	0	21.93	0.156
					1	24	21.80	0.151
					1	49	21.64	0.146
					25	0	20.68	0.117
					25	12	20.67	0.117
					25	25	20.64	0.116
					50	0	20.56	0.114

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	**22.65**	**0.184**
					1	12	22.58	0.181
					1	24	22.49	0.177
					12	0	21.62	0.145
					12	6	21.61	0.145
					12	13	21.58	0.144
					25	0	21.50	0.141
			21100	2535.0	1	0	22.28	0.169
					1	12	22.26	0.168
					1	24	22.20	0.166
					12	0	21.40	0.138
					12	6	21.38	0.137
					12	13	21.30	0.135
					25	0	21.30	0.135
			21425	2567.5	1	0	22.14	0.164
					1	12	22.12	0.163
					1	24	22.00	0.158
					12	0	21.30	0.135
					12	6	21.28	0.134
					12	13	21.28	0.134
					25	0	21.25	0.133
		16QAM	20775	2502.5	1	0	21.73	0.149
					1	12	21.58	0.144
					1	24	21.16	0.131
					12	0	20.59	0.115
					12	6	20.59	0.115
					12	13	20.58	0.114
					25	0	20.48	0.112
			21100	2535.0	1	0	21.58	0.144
					1	12	21.54	0.143
					1	24	21.22	0.132
					12	0	20.42	0.110
					12	6	20.40	0.110
					12	13	20.37	0.109
					25	0	20.20	0.105
			21425	2567.5	1	0	21.38	0.137
					1	12	21.27	0.134
					1	24	21.07	0.128
					12	0	20.45	0.111
					12	6	20.39	0.109
					12	13	20.35	0.108
					25	0	20.20	0.105

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	**22.54**	**0.179**
					1	24	22.43	0.175
					1	49	22.42	0.175
					25	0	21.54	0.143
					25	12	21.50	0.141
					25	25	21.50	0.141
					50	0	21.47	0.140
			21100	2535.0	1	0	22.45	0.176
					1	24	22.39	0.173
					1	49	22.22	0.167
					25	0	21.38	0.137
					25	12	21.31	0.135
					25	25	21.26	0.134
					50	0	21.24	0.133
			21400	2565.0	1	0	22.24	0.167
					1	24	22.12	0.163
					1	49	22.05	0.160
					25	0	21.30	0.135
					25	12	21.28	0.134
					25	25	21.28	0.134
					50	0	21.26	0.134
		16QAM	20800	2505.0	1	0	21.89	0.155
					1	24	21.83	0.152
					1	49	21.42	0.139
					25	0	20.47	0.111
					25	12	20.45	0.111
					25	25	20.44	0.111
					50	0	20.42	0.110
			21100	2535.0	1	0	21.62	0.145
					1	24	21.22	0.132
					1	49	21.05	0.127
					25	0	20.40	0.110
					25	12	20.27	0.106
					25	25	20.18	0.104
					50	0	20.17	0.104
			21400	2565.0	1	0	21.56	0.143
					1	24	21.17	0.131
					1	49	21.09	0.129
					25	0	20.38	0.109
					25	12	20.30	0.107
					25	25	20.20	0.105
					50	0	20.20	0.105

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	**22.54**	**0.179**
					1	38	22.52	0.179
					1	74	22.47	0.177
					36	0	21.48	0.141
					36	18	21.48	0.141
					36	39	21.44	0.139
					75	0	21.39	0.138
			21100	2535.0	1	0	22.40	0.174
					1	38	22.37	0.173
					1	74	22.20	0.166
					36	0	21.45	0.140
					36	18	21.38	0.137
					36	39	21.35	0.136
					75	0	21.32	0.136
			21375	2562.5	1	0	22.23	0.167
					1	38	22.19	0.166
					1	74	22.17	0.165
					36	0	21.31	0.135
					36	18	21.26	0.134
					36	39	21.20	0.132
					75	0	21.19	0.132
		16QAM	20825	2507.5	1	0	21.82	0.152
					1	38	21.69	0.148
					1	74	21.50	0.141
					36	0	20.56	0.114
					36	18	20.44	0.111
					36	39	20.43	0.110
					75	0	20.41	0.110
			21100	2535.0	1	0	21.55	0.143
					1	38	21.32	0.136
					1	74	21.30	0.135
					36	0	20.37	0.109
					36	18	20.33	0.108
					36	39	20.32	0.108
					75	0	20.27	0.106
			21375	2562.5	1	0	21.30	0.135
					1	38	21.27	0.134
					1	74	20.92	0.124
					36	0	20.30	0.107
					36	18	20.23	0.105
					36	39	20.21	0.105
					75	0	20.16	0.104

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	**22.55**	**0.180**
					1	49	22.37	0.173
					1	99	22.36	0.172
					50	0	21.47	0.140
					50	25	21.41	0.138
					50	50	21.37	0.137
					100	0	21.30	0.135
			21100	2535.0	1	0	22.34	0.171
					1	49	22.22	0.167
					1	99	22.17	0.165
					50	0	21.33	0.136
					50	25	21.30	0.135
					50	50	21.30	0.135
					100	0	21.25	0.133
			21350	2560.0	1	0	22.19	0.166
					1	49	22.17	0.165
					1	99	22.11	0.163
					50	0	21.30	0.135
					50	25	21.23	0.133
					50	50	21.21	0.132
					100	0	21.14	0.130
		16QAM	20850	2510.0	1	0	21.75	0.150
					1	49	21.32	0.136
					1	99	21.09	0.129
					50	0	20.45	0.111
					50	25	20.45	0.111
					50	50	20.38	0.109
					100	0	20.38	0.109
			21100	2535.0	1	0	21.30	0.135
					1	49	21.21	0.132
					1	99	20.89	0.123
					50	0	20.36	0.109
					50	25	20.35	0.108
					50	50	20.33	0.108
					100	0	20.29	0.107
			21350	2560.0	1	0	21.54	0.143
					1	49	21.22	0.132
					1	99	21.04	0.127
					50	0	20.32	0.108
					50	25	20.19	0.104
					50	50	20.15	0.104
					100	0	20.12	0.103

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 17	5 MHz	QPSK	23755	706.5	1	0	**22.90**	**0.195**
					1	12	22.84	0.192
					1	24	22.77	0.189
					12	0	21.86	0.153
					12	6	21.79	0.151
					12	13	21.76	0.150
					25	0	21.72	0.149
			23790	710.0	1	0	22.83	0.192
					1	12	22.82	0.191
					1	24	22.62	0.183
					12	0	21.88	0.154
					12	6	21.84	0.153
					12	13	21.83	0.152
					25	0	21.82	0.152
			23825	713.5	1	0	22.90	0.195
					1	12	22.72	0.187
					1	24	22.53	0.179
					12	0	21.85	0.153
					12	6	21.84	0.153
					12	13	21.80	0.151
					25	0	21.76	0.150
		16QAM	23755	706.5	1	0	22.08	0.161
					1	12	22.02	0.159
					1	24	21.69	0.148
					12	0	20.82	0.121
					12	6	20.78	0.120
					12	13	20.75	0.119
					25	0	20.74	0.119
			23790	710.0	1	0	21.78	0.151
					1	12	21.72	0.149
					1	24	21.44	0.139
					12	0	20.94	0.124
					12	6	20.83	0.121
					12	13	20.65	0.116
					25	0	20.61	0.115
			23825	713.5	1	0	21.97	0.157
					1	12	21.68	0.147
					1	24	21.48	0.141
					12	0	20.96	0.125
					12	6	20.96	0.125
					12	13	20.82	0.121
					25	0	20.78	0.120

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band 17	10 MHz	QPSK	23780	709.0	1	0	**22.95**	**0.197**
					1	24	22.76	0.189
					1	49	22.65	0.184
					25	0	21.88	0.154
					25	12	21.83	0.152
					25	25	21.82	0.152
					50	0	21.78	0.151
			23790	710.0	1	0	22.92	0.196
					1	24	22.82	0.191
					1	49	22.64	0.184
					25	0	21.82	0.152
					25	12	21.80	0.151
					25	25	21.80	0.151
					50	0	21.76	0.150
			23800	711.0	1	0	22.76	0.189
					1	24	22.65	0.184
					1	49	22.63	0.183
					25	0	21.79	0.151
					25	12	21.77	0.150
					25	25	21.76	0.150
					50	0	21.69	0.148
		16QAM	23780	709.0	1	0	21.83	0.152
					1	24	21.70	0.148
					1	49	21.45	0.140
					25	0	20.85	0.122
					25	12	20.77	0.119
					25	25	20.72	0.118
					50	0	20.72	0.118
			23790	710.0	1	0	22.14	0.164
					1	24	21.96	0.157
					1	49	21.66	0.147
					25	0	20.82	0.121
					25	12	20.81	0.121
					25	25	20.75	0.119
					50	0	20.72	0.118
			23800	711.0	1	0	21.97	0.157
					1	24	21.64	0.146
					1	49	21.52	0.142
					25	0	20.79	0.120
					25	12	20.78	0.120
					25	25	20.73	0.118
					50	0	20.67	0.117

3 Effective Radiated Power / Equivalent Isotropic Radiated Power Test

3.1. Limit

For FCC Part 27: The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 1 Watts.

For FCC Part 27.50(c)(10): Portable stations in the 698-746 MHz band are limited to 3 watts ERP.

For FCC Part 27.50(h)(2): Mobile stations are limited to 2.0 watts EIRP.

For FCC Part 22.913(a)(2): The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

For FCC Part 24.232(b): The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 2 Watts.

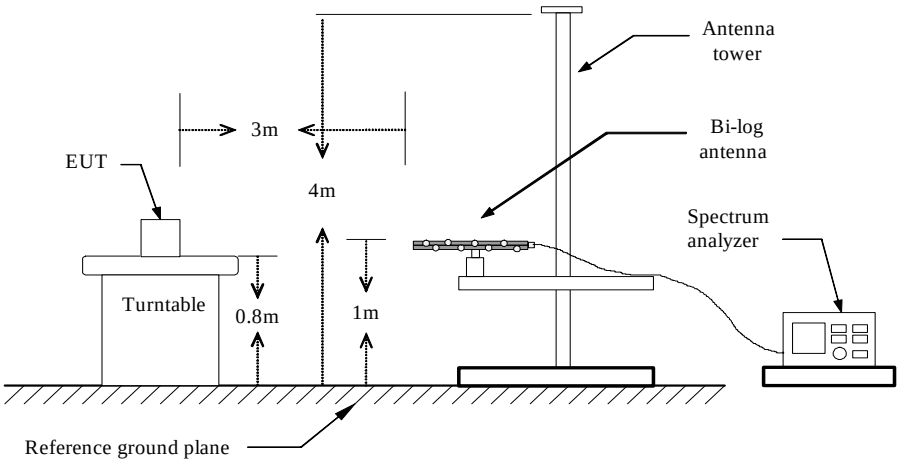
3.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/22/2014	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/11/2014	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/02/2014	(1)
Test Site	ATL	TE01	888001	08/28/2014	(1)

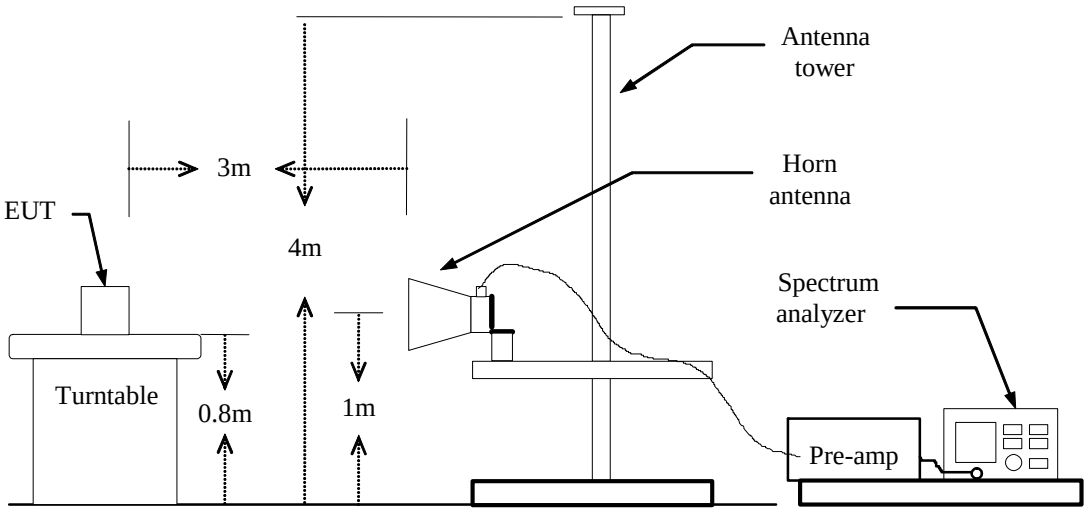
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
Note: N.C.R. = No Calibration Request.

3.3. Test Setup

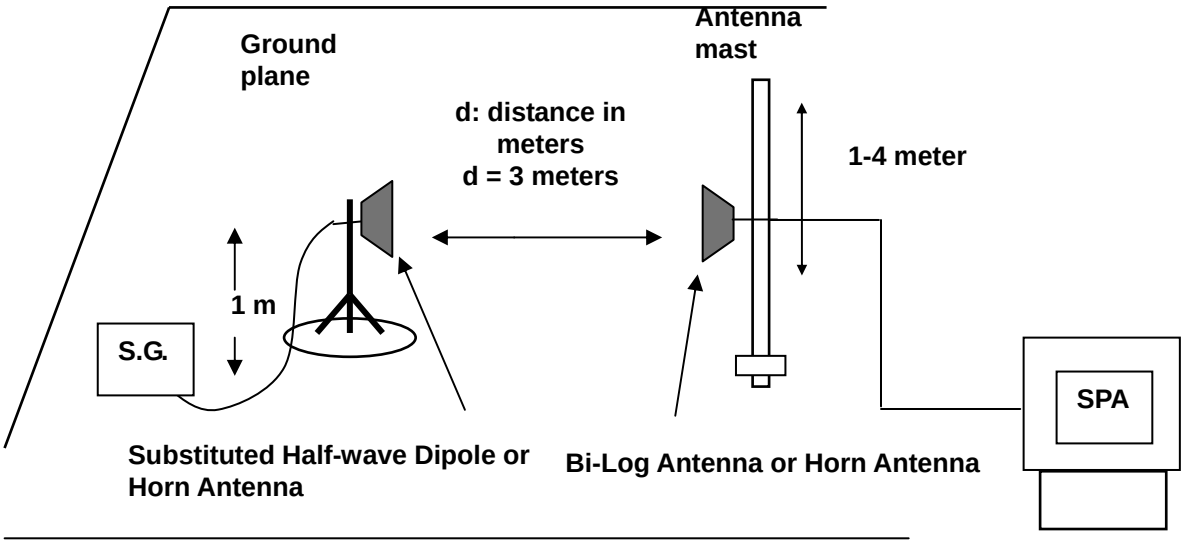
Below 1 GHz



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. = Output power level of S.G TX cable loss + Antenna gain of substitution horn

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

3.5. Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is ± 3.072 dB.

3.6. Test Result

Model Number	AR7552		
Test Item	E.I.R.P. / E.R.P.		
Date of Test	05/05/2015	Test Site	TC03

LTE Band 2										
Channel Bandwidth	Modulation	CH	Frequency (MHz)	RB Configuration		Average Power (dBm)	Antenna Gain (dBi)	E.I.R.P.		Limit (W)
				Size	Offset			(dBm)	(W)	
1.4 M	QPSK	18900	1880.0	1	0	23.38	5	28.38	0.689	< 2
3 MHz	QPSK	18900	1880.0	1	0	23.39	5	28.39	0.690	< 2
5 MHz	QPSK	18900	1880.0	1	0	23.40	5	28.40	0.692	< 2
10 MHz	QPSK	18650	1855.0	1	0	23.30	5	28.30	0.676	< 2
15 MHz	QPSK	18900	1880.0	1	0	23.43	5	28.43	0.697	< 2
20 MHz	QPSK	18900	1880.0	1	0	23.41	5	28.41	0.693	< 2

LTE Band 4										
Channel Bandwidth	Modulation	CH	Frequency (MHz)	RB Configuration		Average Power (dBm)	Antenna Gain (dBi)	E.I.R.P.		Limit (W)
				Size	Offset			(dBm)	(W)	
1.4 M	QPSK	19957	1710.7	1	0	23.12	5	28.12	0.649	< 1
3 MHz	QPSK	19965	1711.5	1	0	22.99	5	27.99	0.630	< 1
5 MHz	QPSK	19975	1712.5	1	0	23.01	5	28.01	0.632	< 1
10 MHz	QPSK	20000	1715.0	1	0	23.07	5	28.07	0.641	< 1
15 MHz	QPSK	20025	1717.5	1	0	23.11	5	28.11	0.647	< 1
20 MHz	QPSK	20050	1720.0	1	0	23.08	5	28.08	0.643	< 1

LTE Band 5										
Channel Bandwidth	Modulation	CH	Frequency (MHz)	RB Configuration		Average Power (dBm)	Antenna Gain (dBi)	E.R.P.		Limit (W)
				Size	Offset			(dBm)	(W)	
1.4 M	QPSK	20643	848.3	1	0	22.81	5	25.66	0.368	< 7
3 MHz	QPSK	20635	847.5	1	0	22.90	5	25.75	0.376	< 7
5 MHz	QPSK	20625	846.5	1	0	22.77	5	25.62	0.365	< 7
10 MHz	QPSK	20600	844.0	1	0	22.79	5	25.64	0.366	< 7

LTE Band 7										
Channel Bandwidth	Modulation	CH	Frequency (MHz)	RB Configuration		Average Power (dBm)	Antenna Gain (dBi)	E.I.R.P.		Limit (W)
				Size	Offset			(dBm)	(W)	
5 MHz	QPSK	20775	2502.5	1	0	22.65	7	29.65	0.923	< 2
10 MHz	QPSK	20800	2505.0	1	0	22.54	7	29.54	0.899	< 2
15 MHz	QPSK	20825	2507.5	1	0	22.54	7	29.54	0.899	< 2
20 MHz	QPSK	20850	2510.0	1	0	22.55	7	29.55	0.902	< 2

LTE Band 17										
Channel Bandwidth	Modulation	CH	Frequency (MHz)	RB Configuration		Average Power (dBm)	Antenna Gain (dBi)	E.R.P.		Limit (W)
				Size	Offset			(dBm)	(W)	
5 MHz	QPSK	23755	706.5	1	0	22.90	5	25.75	0.376	< 3
10 MHz	QPSK	23780	709.0	1	0	22.95	5	25.80	0.380	< 3

4 Frequency Stability Test

4.1. Limit

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

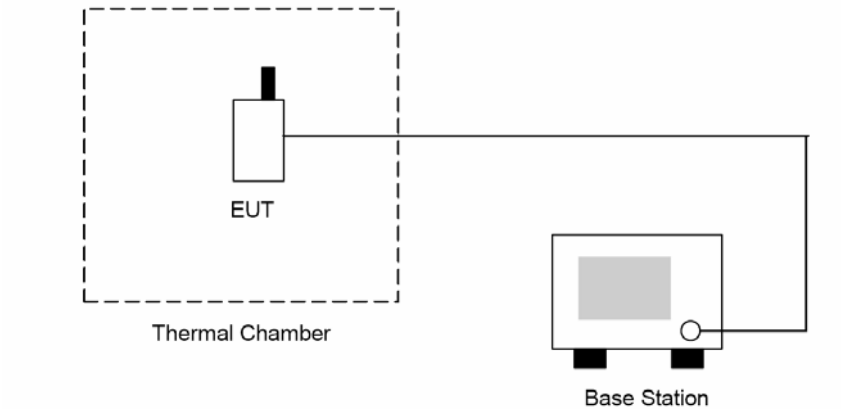
4.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Wideband Radio Communication Test	R & S	CMW500	103168	11/05/2014	(1)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	08/14/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

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

4.3. Setup



4.4. Test Procedure

The measurement is made according to FCC rules:

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

4.5. Uncertainty

The measurement uncertainty is defined as for Frequency Stability measurement is ± 10Hz.

4.6. Test Result

Model Number	AR7552		
Test Item	Frequency Stability		
Date of Test	05/05/2015	Test Site	TE05

LTE Band 2 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1880.0	4.20	20	-3.93	-0.002	± 2.5
		3.70	20	-9.90	-0.005	± 2.5
		3.40	20	-10.05	-0.005	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1880.0	3.70	-30	-9.66	-0.005	± 2.5
		3.70	-20	0.25	0.000	± 2.5
		3.70	-10	2.43	0.001	± 2.5
		3.70	0	1.95	0.001	± 2.5
		3.70	10	-5.11	-0.003	± 2.5
		3.70	20	0.89	0.000	± 2.5
		3.70	30	-3.56	-0.002	± 2.5
		3.70	40	0.13	0.000	± 2.5
		3.70	50	5.62	0.003	± 2.5
		3.70	60	-14.98	-0.008	± 2.5
		3.70	70	-12.61	-0.007	± 2.5

LTE Band 4 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1732.5	4.20	20	13.83	0.008	± 2.5
		3.70	20	-12.27	-0.007	± 2.5
		3.40	20	5.24	0.003	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	1732.5	3.70	-30	-13.92	-0.008	± 2.5
		3.70	-20	-5.35	-0.003	± 2.5
		3.70	-10	-2.10	-0.001	± 2.5
		3.70	0	-4.63	-0.003	± 2.5
		3.70	10	-16.32	-0.009	± 2.5
		3.70	20	-0.86	0.000	± 2.5
		3.70	30	0.45	0.000	± 2.5
		3.70	40	5.32	0.003	± 2.5
		3.70	50	2.04	0.001	± 2.5
		3.70	60	0.11	0.000	± 2.5
		3.70	70	-4.64	-0.003	± 2.5

LTE Band 5 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	836.5	4.20	20	6.27	0.007	± 2.5
		3.70	20	4.50	0.005	± 2.5
		3.40	20	6.46	0.008	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	836.5	3.70	-30	-11.46	-0.014	± 2.5
		3.70	-20	11.72	0.014	± 2.5
		3.70	-10	-12.81	-0.015	± 2.5
		3.70	0	-1.31	-0.002	± 2.5
		3.70	10	-5.56	-0.007	± 2.5
		3.70	20	-4.01	-0.005	± 2.5
		3.70	30	-2.07	-0.002	± 2.5
		3.70	40	1.15	0.001	± 2.5
		3.70	50	3.58	0.004	± 2.5
		3.70	60	-13.91	-0.017	± 2.5
		3.70	70	-13.76	-0.016	± 2.5

LTE Band 7 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	2535.0	4.20	20	6.14	0.002	± 2.5
		3.70	20	-4.57	-0.002	± 2.5
		3.40	20	-6.80	-0.003	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
20 MHz	2535.0	3.70	-30	-7.62	-0.003	± 2.5
		3.70	-20	18.76	0.007	± 2.5
		3.70	-10	-0.24	0.000	± 2.5
		3.70	0	-3.22	-0.001	± 2.5
		3.70	10	-3.10	-0.001	± 2.5
		3.70	20	-9.27	-0.004	± 2.5
		3.70	30	-3.92	-0.002	± 2.5
		3.70	40	-4.23	-0.002	± 2.5
		3.70	50	8.73	0.003	± 2.5
		3.70	60	-12.96	-0.005	± 2.5
		3.70	70	-11.72	-0.005	± 2.5

LTE Band 17 _ QPSK						
Voltage						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	710.0	4.20	20	1.06	0.001	± 2.5
		3.70	20	-2.59	-0.004	± 2.5
		3.40	20	7.92	0.011	± 2.5
Temperature						
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
10 MHz	710.0	3.70	-30	-15.68	-0.022	± 2.5
		3.70	-20	3.52	0.005	± 2.5
		3.70	-10	3.32	0.005	± 2.5
		3.70	0	-8.87	-0.012	± 2.5
		3.70	10	-9.71	-0.014	± 2.5
		3.70	20	-10.47	-0.015	± 2.5
		3.70	30	6.46	0.009	± 2.5
		3.70	40	-12.68	-0.018	± 2.5
		3.70	50	0.09	0.000	± 2.5
		3.70	60	-4.79	-0.007	± 2.5
		3.70	70	-5.53	-0.008	± 2.5

5 Emission Bandwidth & Occupied Bandwidth Test

5.1. Limit

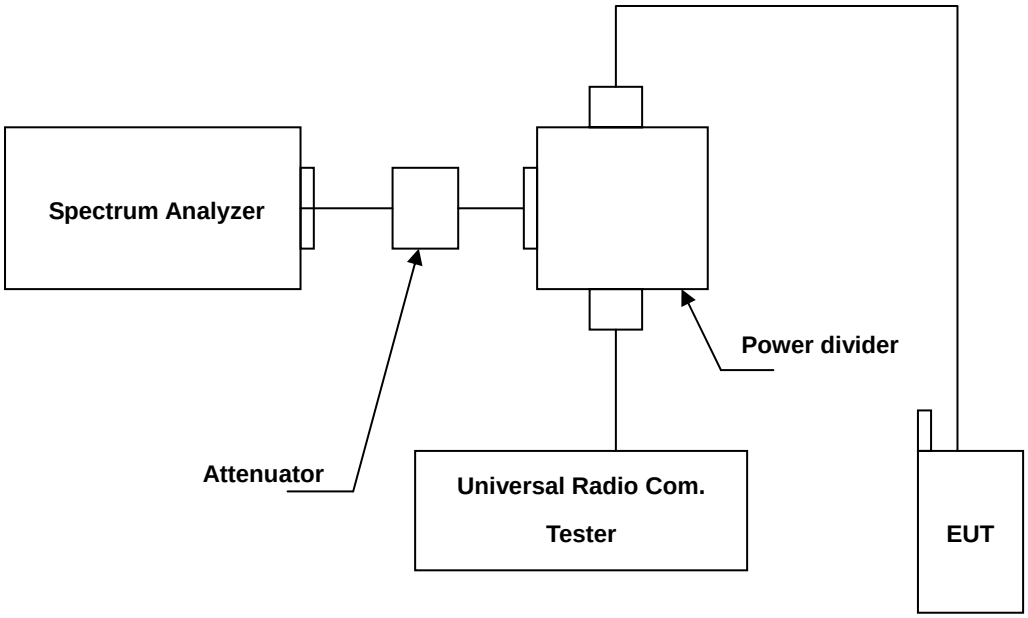
The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.
The emission bandwidth is defined as the width of the signal between two points, located at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

5.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2014	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/05/2014	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
Note: N.C.R. = No Calibration Request.

5.3. Setup



5.4. Test Procedure

The measurement is made according to FCC rules:

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

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

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

5.5. Uncertainty

The measurement uncertainty is defined as ± 10Hz

5.6. Test Result

Model Number	AR7552		
Test Item	Emission Bandwidth & Occupied Bandwidth		
Date of Test	04/29/2015	Test Site	TE05

LTE Band 2				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	1850.7	1.282	1.0817
		1880.0	1.323	1.0905
		1909.3	1.322	1.0830
	3 MHz	1851.5	2.987	2.6837
		1880.0	2.977	2.6904
		1908.5	3.023	2.6868
	5 MHz	1852.5	4.938	4.4694
		1880.0	4.925	4.4648
		1907.5	4.897	4.4651
	10 MHz	1855.0	9.764	8.9497
		1880.0	9.708	8.9558
		1905.0	9.736	8.9535
	15 MHz	1857.5	14.365	13.3763
		1880.0	14.384	13.4391
		1902.5	14.588	13.4164
	20 MHz	1860.0	19.173	17.8356
		1880.0	19.272	17.8655
		1900.0	19.381	17.8813
16QAM	1.4 MHz	1850.7	1.283	1.0819
		1880.0	1.287	1.0899
		1909.3	1.318	1.0840
	3 MHz	1851.5	2.987	2.6835
		1880.0	2.994	2.6886
		1908.5	3.078	2.6788
	5 MHz	1852.5	4.935	4.4642
		1880.0	4.994	4.4727
		1907.5	4.893	4.4603
	10 MHz	1855.0	9.770	8.9478
		1880.0	9.752	8.9572
		1905.0	9.592	8.9533
	15 MHz	1857.5	14.284	13.4040
		1880.0	14.438	13.4245
		1902.5	14.370	13.4076
	20 MHz	1860.0	19.166	17.8451
		1880.0	19.247	17.8493
		1900.0	19.531	17.8914

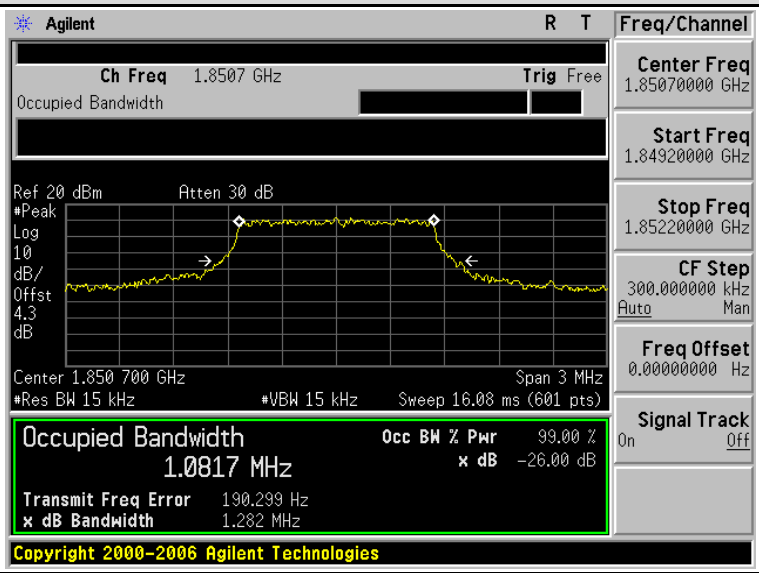
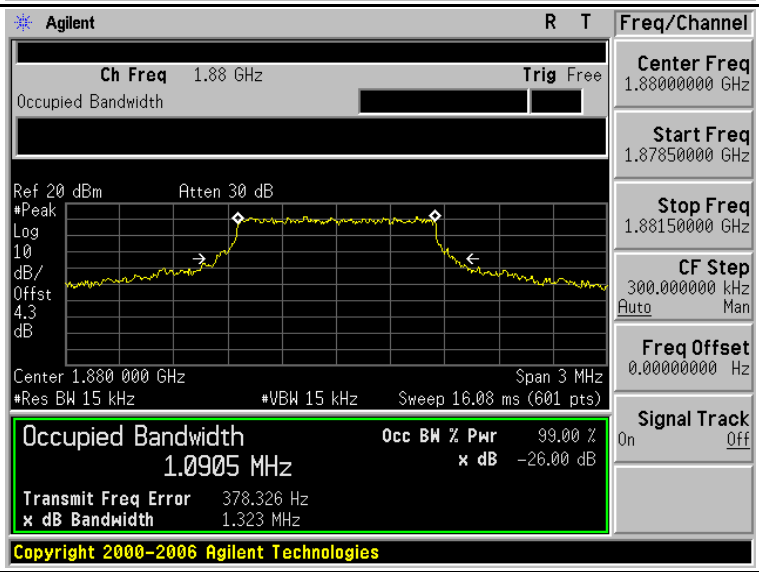
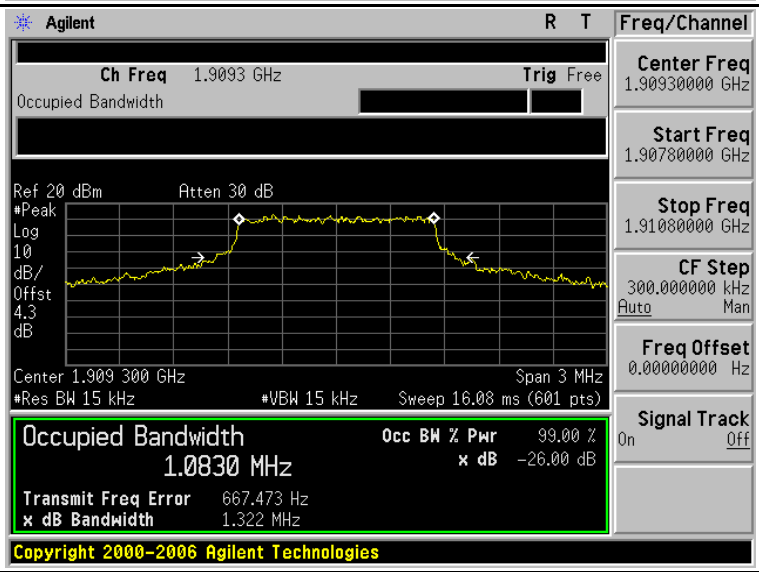
LTE Band 4				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	1710.7	1.253	1.0800
		1732.5	1.244	1.0818
		1754.3	1.228	1.0779
	3 MHz	1711.5	2.966	2.6913
		1732.5	2.959	2.6877
		1753.5	2.935	2.6808
	5 MHz	1712.5	4.912	4.4772
		1732.5	4.920	4.4773
		1752.5	4.933	4.4640
	10 MHz	1715.0	9.655	8.9296
		1732.5	9.630	8.9419
		1750.0	9.693	8.9405
	15 MHz	1717.5	14.556	13.3738
		1732.5	14.483	13.4362
		1747.5	14.555	13.4184
	20 MHz	1720.0	19.100	17.7683
		1732.5	19.358	17.9432
		1745.0	18.989	17.8662
16QAM	1.4 MHz	1710.7	1.252	1.0801
		1732.5	1.244	1.0831
		1754.3	1.211	1.0778
	3 MHz	1711.5	2.953	2.6869
		1732.5	2.972	2.6879
		1753.5	2.926	2.6797
	5 MHz	1712.5	4.870	4.4631
		1732.5	4.914	4.4844
		1752.5	4.895	4.4585
	10 MHz	1715.0	9.651	8.9271
		1732.5	9.695	8.9410
		1750.0	9.632	8.9131
	15 MHz	1717.5	14.600	13.3779
		1732.5	14.555	13.4286
		1747.5	14.554	13.3749
	20 MHz	1720.0	19.100	17.7555
		1732.5	19.533	17.9297
		1745.0	18.989	17.8441

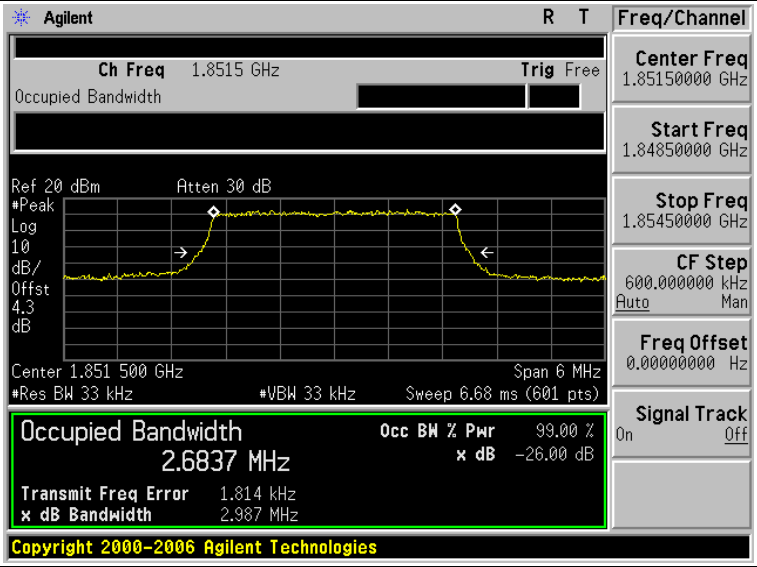
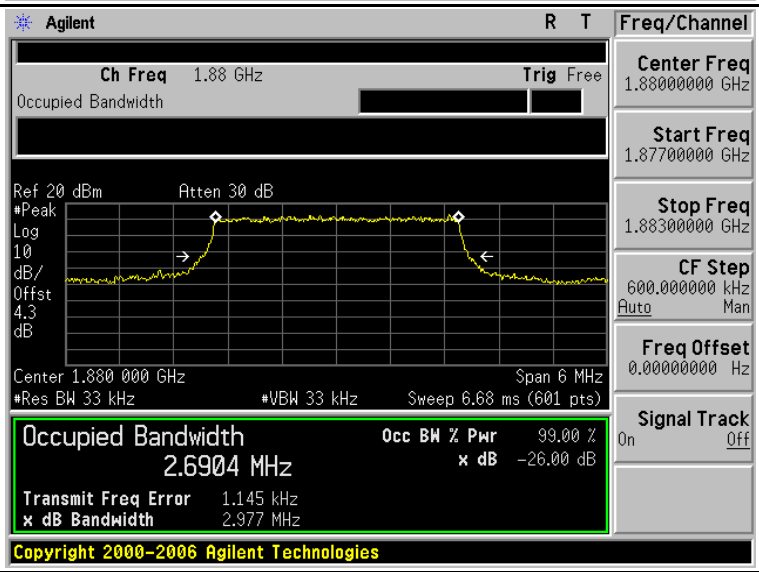
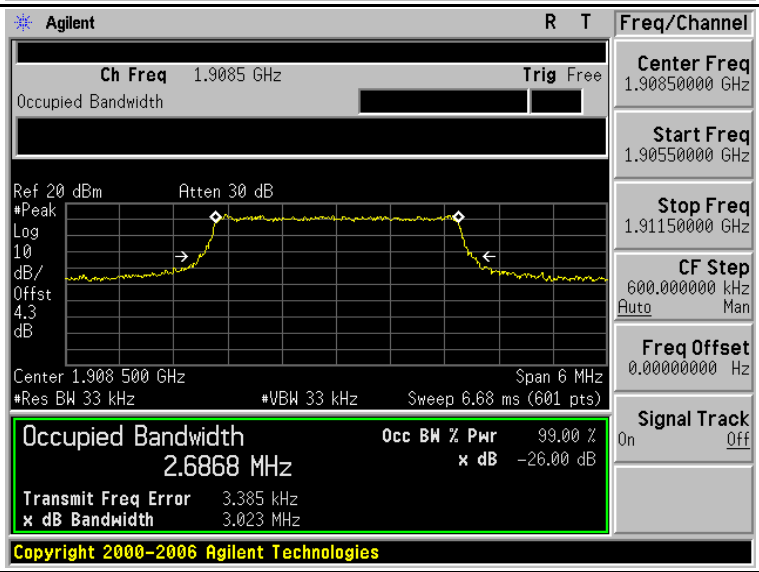
LTE Band 5				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	1.4 MHz	824.7	1.244	1.0796
		836.5	1.213	1.0777
		848.3	1.271	1.0790
	3 MHz	825.5	2.968	2.6887
		836.5	2.937	2.6779
		847.5	2.977	2.6881
	5 MHz	826.5	4.891	4.4721
		836.5	4.839	4.4731
		846.5	4.920	4.4661
	10 MHz	829.0	9.679	8.9533
		836.5	9.597	8.9377
		844.0	9.703	8.9370
16QAM	1.4 MHz	824.7	1.244	1.0795
		836.5	1.215	1.0772
		848.3	1.253	1.0787
	3 MHz	825.5	2.970	2.6904
		836.5	2.958	2.6786
		847.5	2.961	2.6872
	5 MHz	826.5	4.888	4.4735
		836.5	4.928	4.4737
		846.5	4.877	4.4621
	10 MHz	829.0	9.650	8.9647
		836.5	9.729	8.9403
		844.0	9.666	8.9395

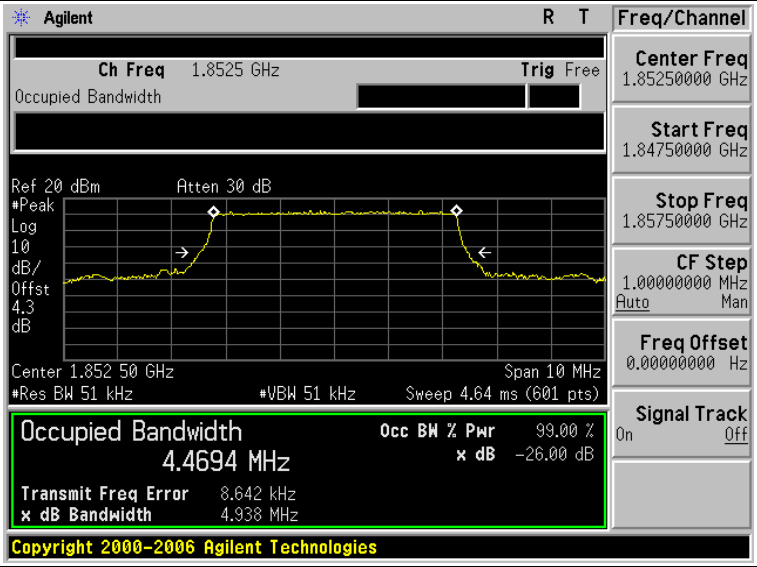
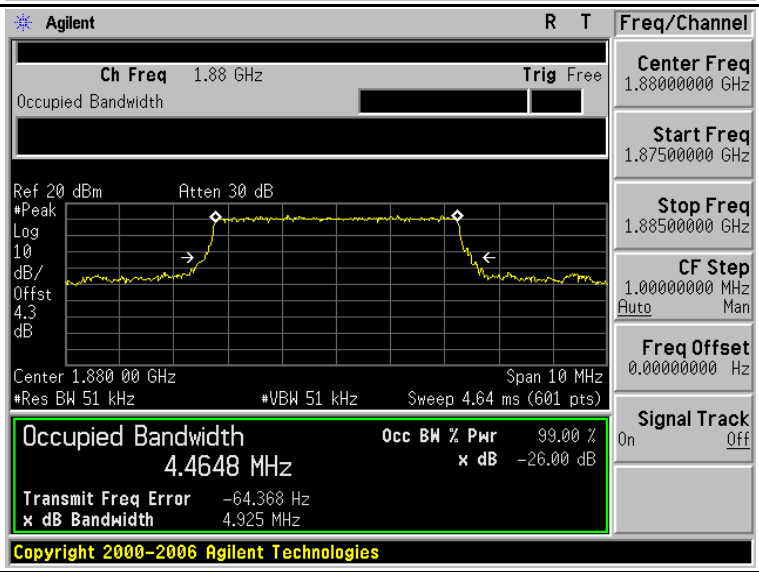
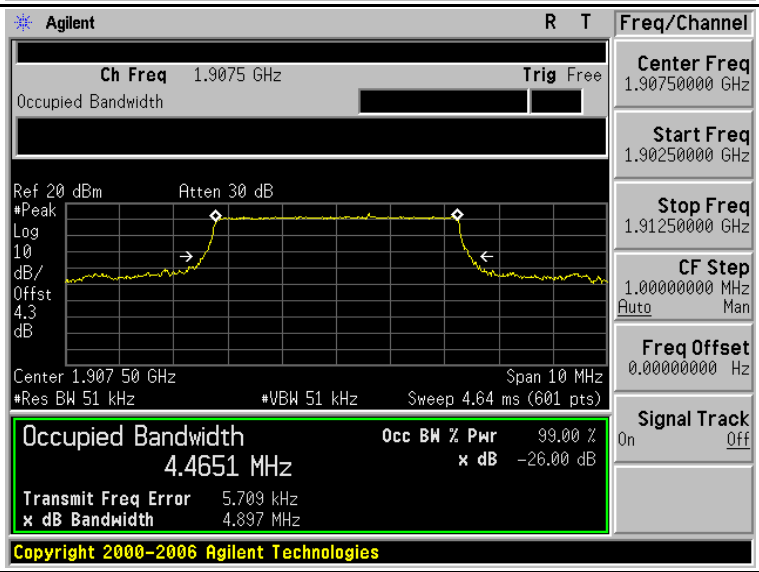
LTE Band 7				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	5 MHz	2502.5	4.967	4.4739
		2535.0	4.928	4.4739
		2567.5	4.888	4.4799
	10 MHz	2505.0	9.726	8.9530
		2535.0	9.620	8.9425
		2565.0	9.664	8.9588
	15 MHz	2507.5	14.574	13.4406
		2535.0	14.418	13.3814
		2562.5	14.397	13.3792
	20 MHz	2510.0	18.967	17.8502
		2535.0	19.215	17.8831
		2560.0	19.066	17.8134
16QAM	5 MHz	2502.5	4.967	4.4697
		2535.0	4.928	4.4728
		2567.5	4.864	4.4641
	10 MHz	2505.0	9.722	8.9421
		2535.0	9.631	8.9414
		2565.0	9.595	8.9494
	15 MHz	2507.5	14.464	13.4479
		2535.0	14.559	13.3704
		2562.5	14.312	13.3982
	20 MHz	2510.0	19.088	17.8452
		2535.0	19.417	17.8887
		2560.0	19.042	17.8208

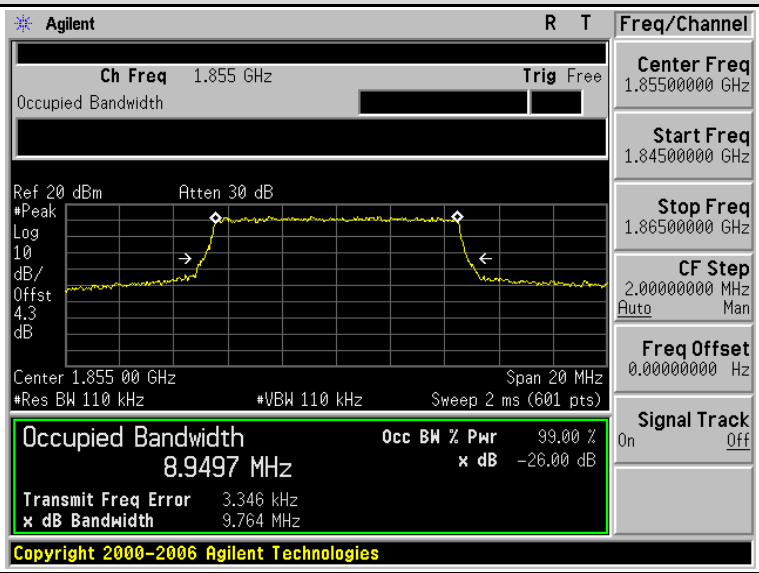
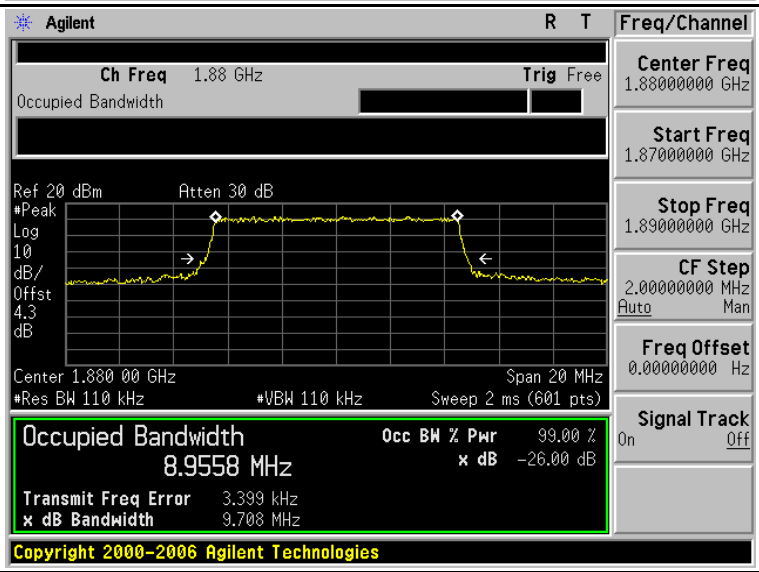
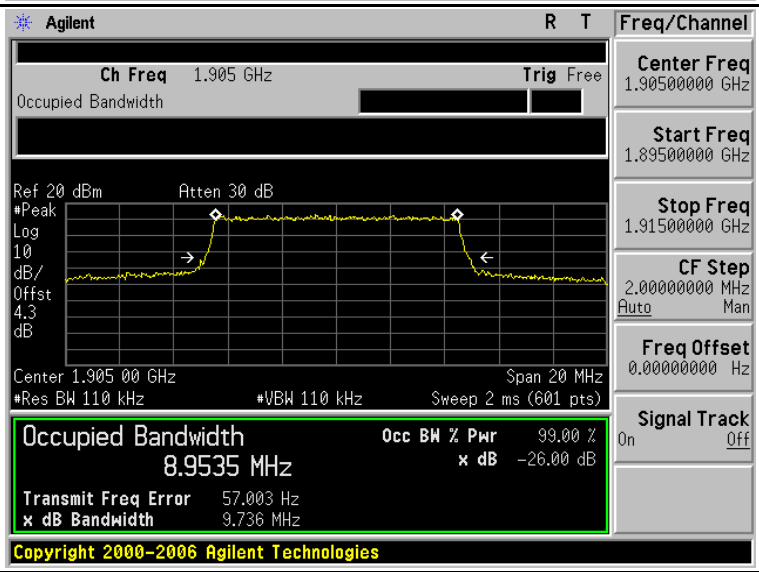
LTE Band 17				
Channel Bandwidth	Modulation	Frequency (MHz)	-26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
5 MHz	QPSK	706.5	5.012	4.4803
		710.0	4.904	4.4811
		713.5	5.018	4.4799
	16QAM	709.0	4.900	4.4795
		710.0	4.918	4.4847
		711.0	4.959	4.4764
10 MHz	QPSK	706.5	9.802	8.9567
		710.0	9.600	8.9502
		713.5	9.683	8.9539
	16QAM	709.0	9.730	8.9562
		710.0	9.608	8.9509
		711.0	9.627	8.9574

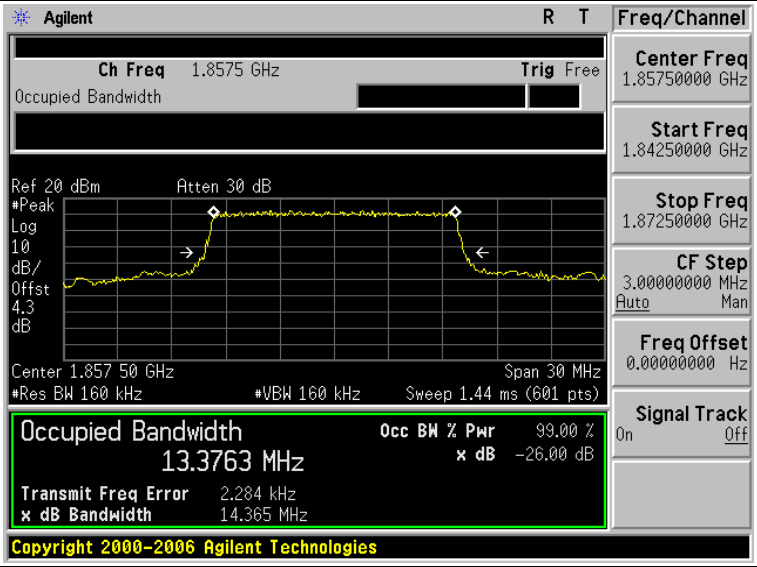
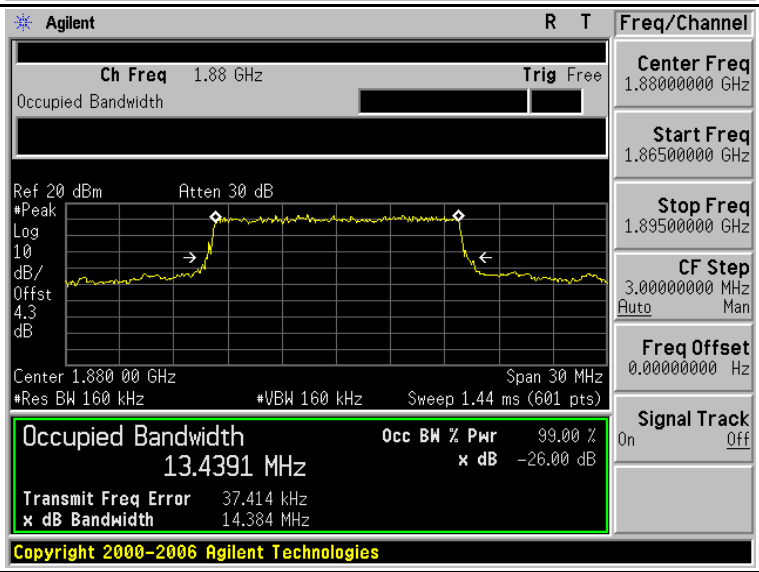
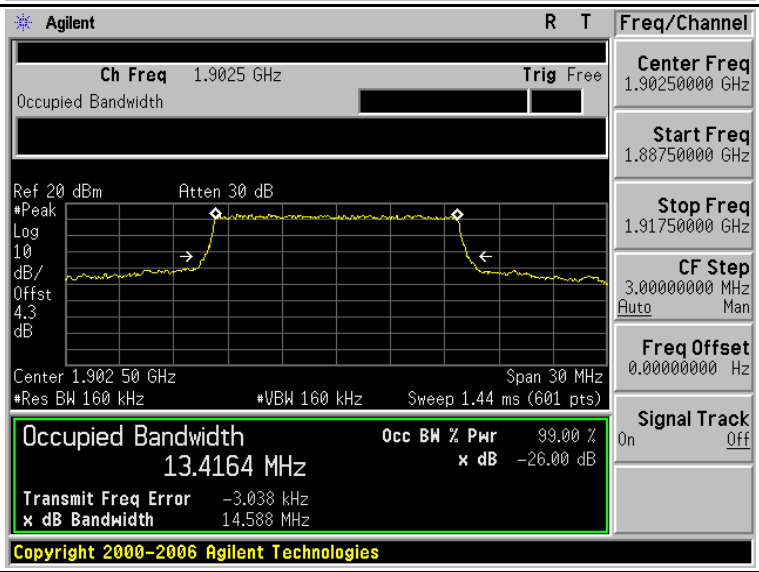
5.7. Test Graphs

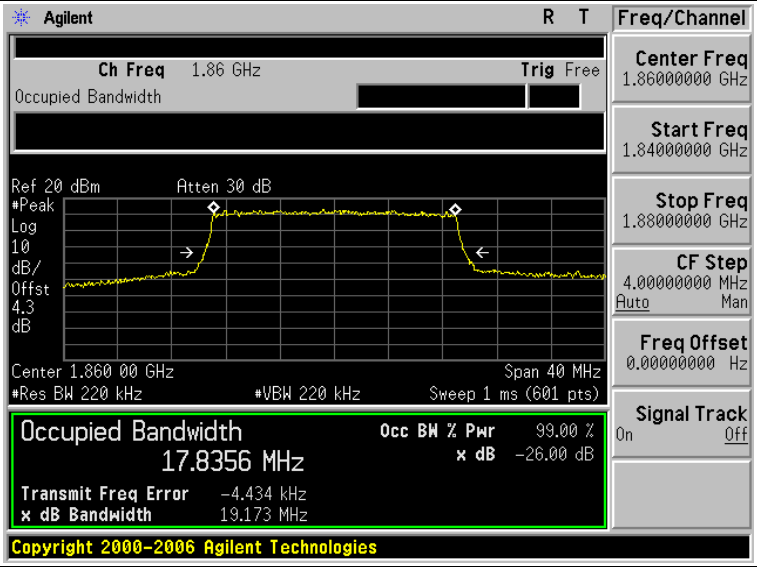
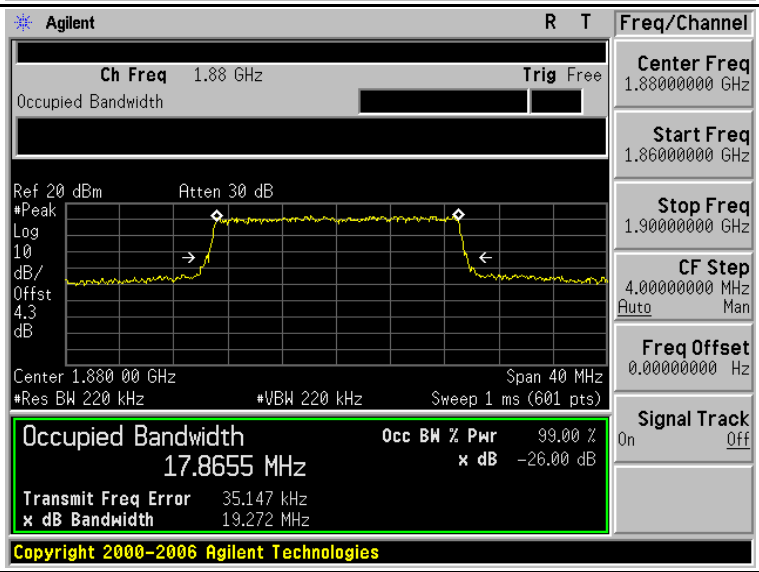
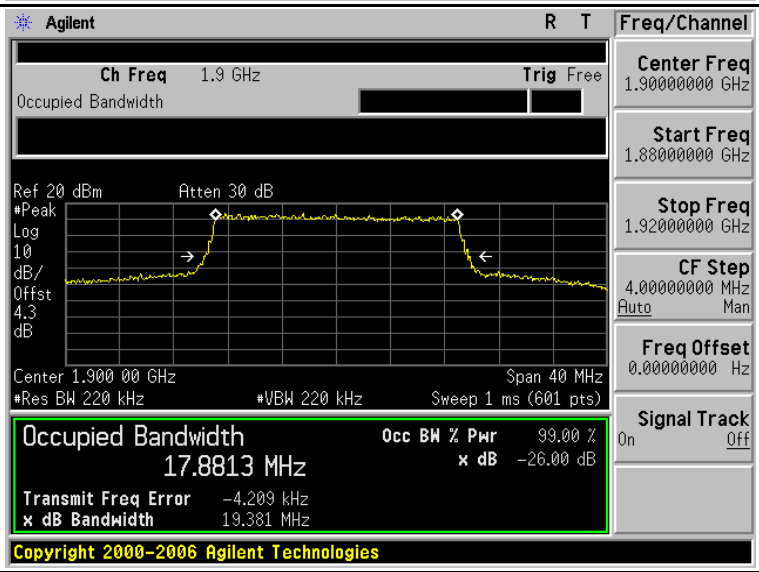
LTE Band 2 (Channel Bandwidth: 1.4 MHz) _ QPSK	
1850.7 MHz	
1880.0 MHz	
1909.3 MHz	

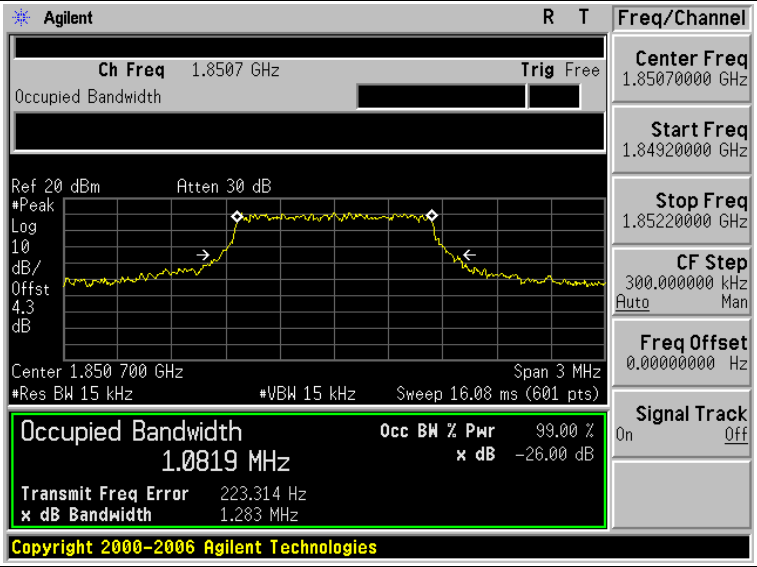
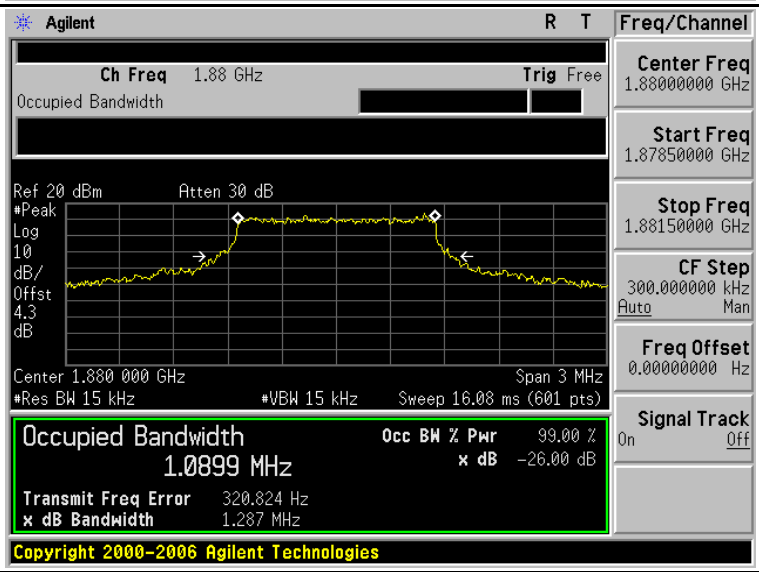
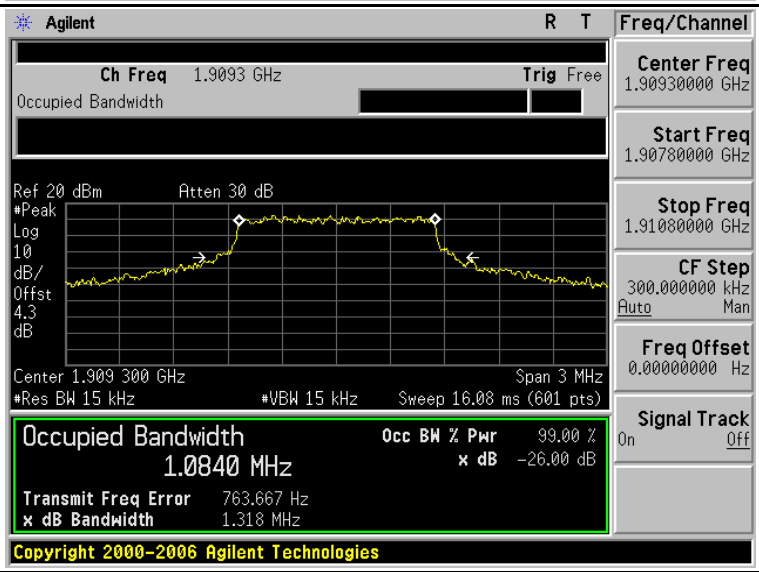
LTE Band 2 (Channel Bandwidth: 3 MHz) _ QPSK		
1851.5 MHz		
1880.0 MHz		
1908.5 MHz		

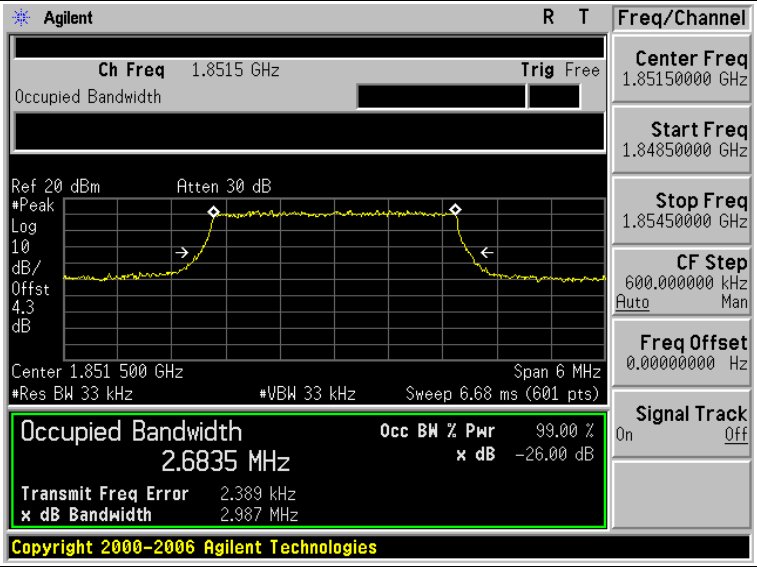
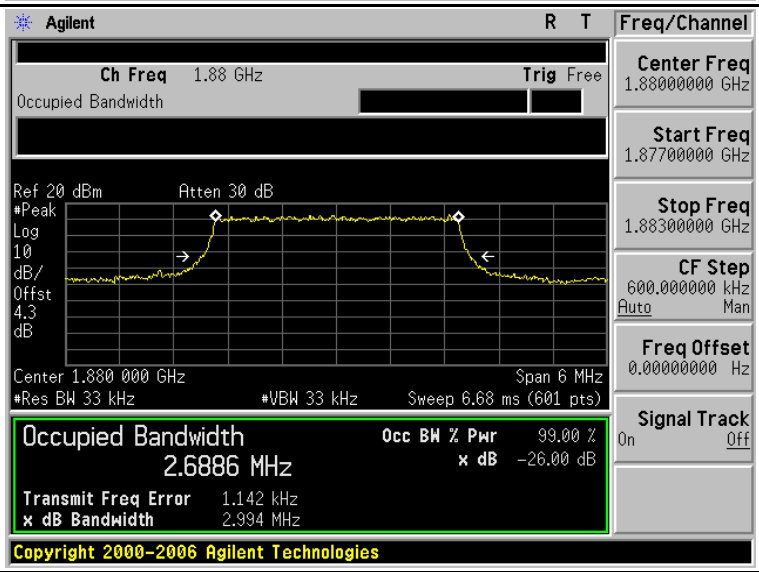
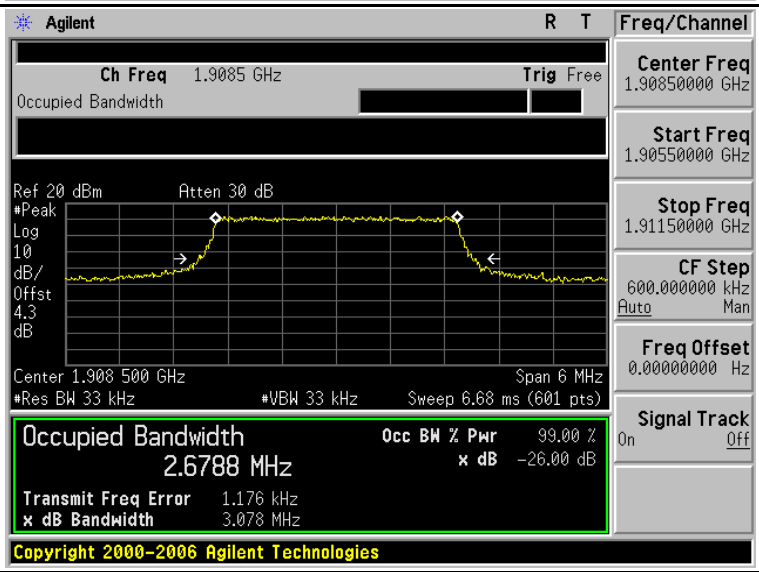
LTE Band 2 (Channel Bandwidth: 5 MHz) _ QPSK		
1852.5 MHz		
1880.0 MHz		
1907.5 MHz		

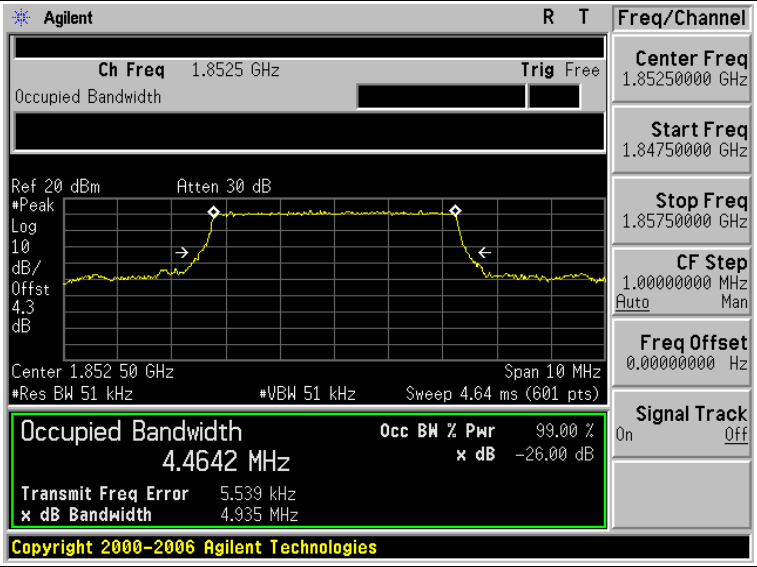
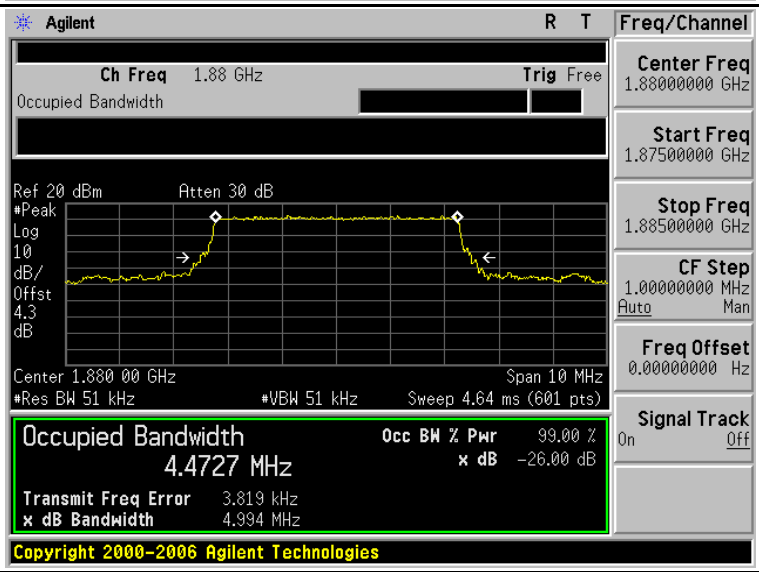
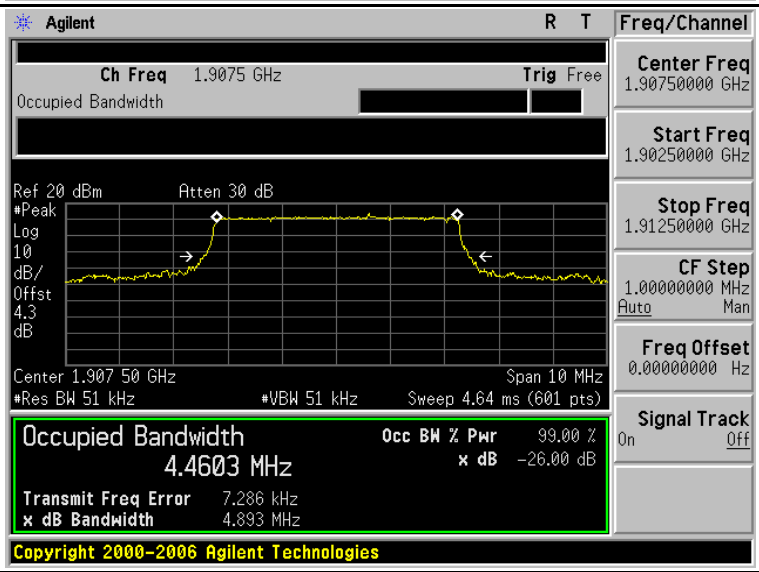
LTE Band 2 (Channel Bandwidth: 10 MHz) _ QPSK		
1855.0 MHz		
1880.0 MHz		
1905.0 MHz		

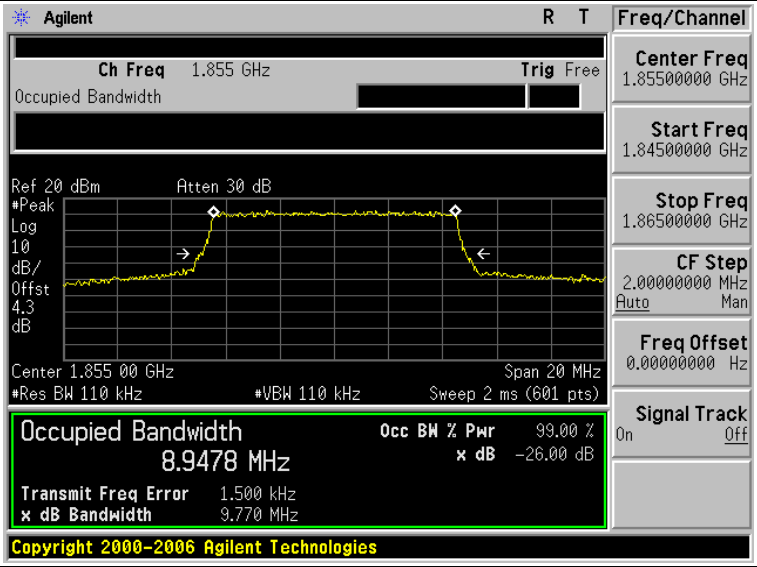
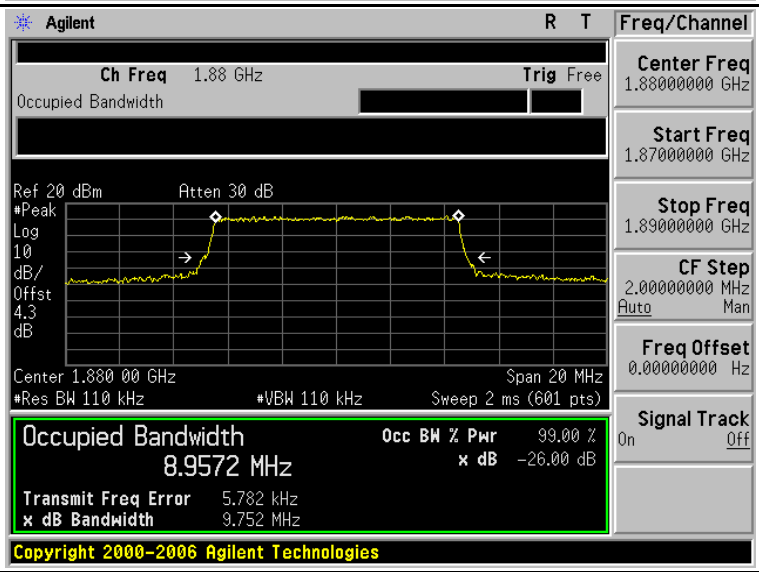
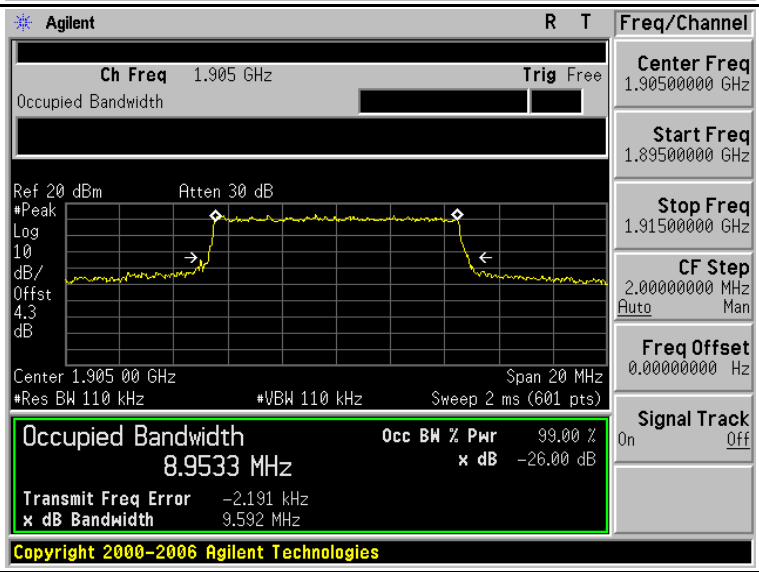
LTE Band 2 (Channel Bandwidth: 15 MHz) _ QPSK		
1857.5 MHz		
1880.0 MHz		
1902.5 MHz		

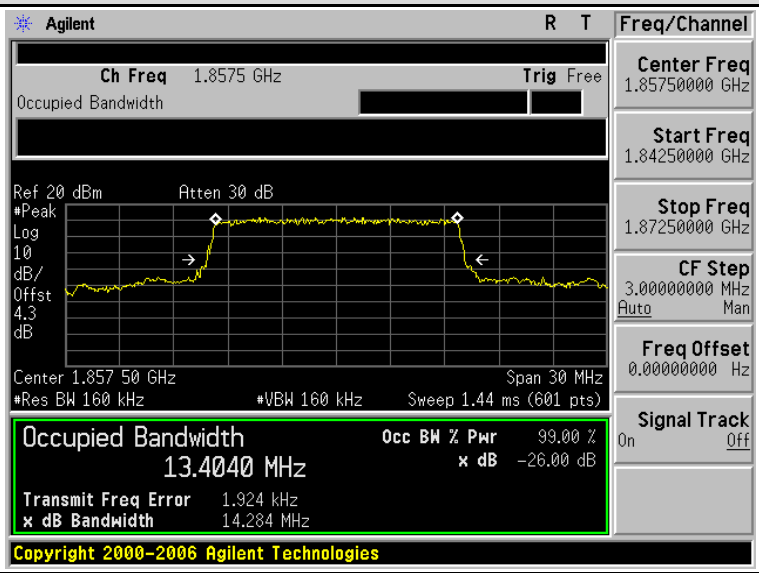
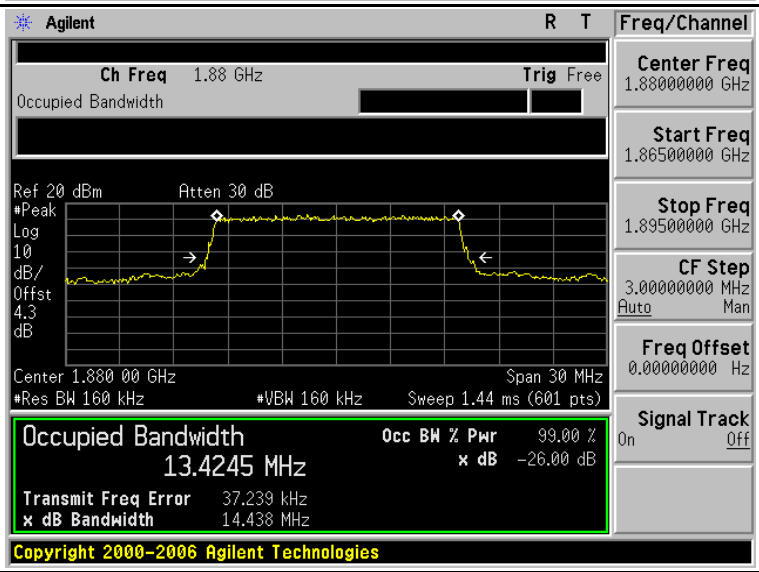
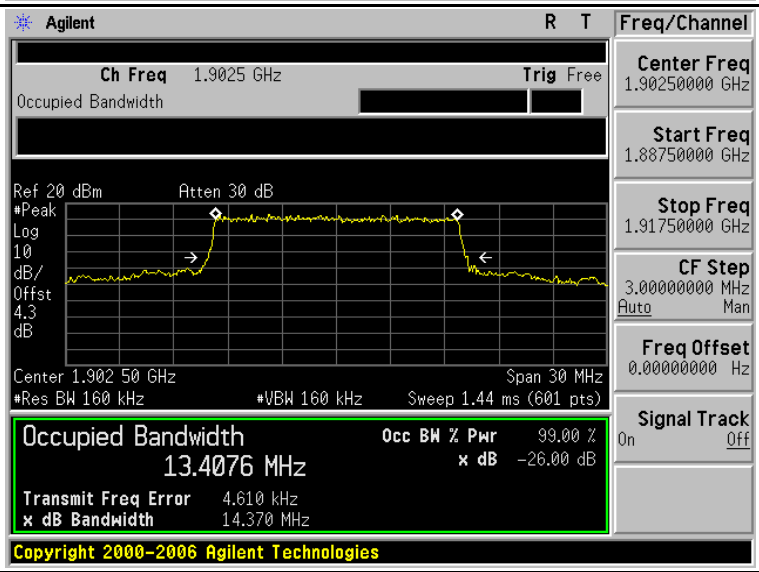
LTE Band 2 (Channel Bandwidth: 20 MHz) _ QPSK		
1860.0 MHz		
1880.0 MHz		
1900.0 MHz		

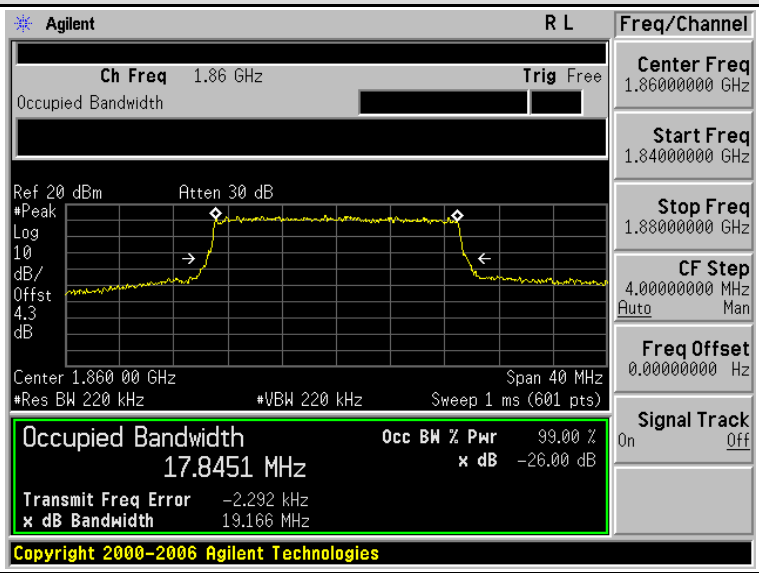
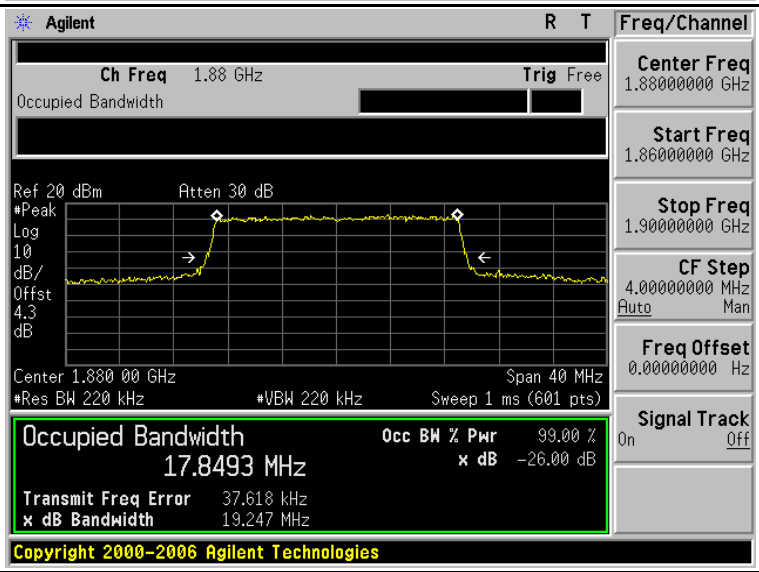
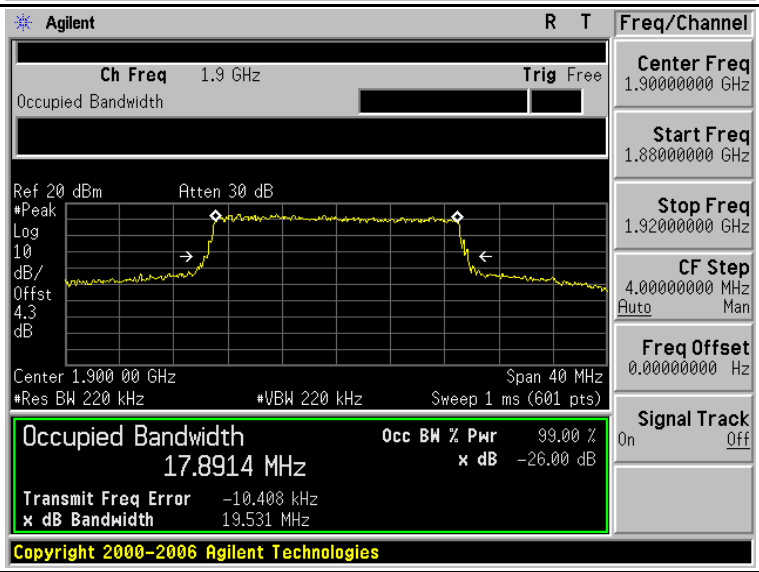
LTE Band 2 (Channel Bandwidth: 1.4 MHz) _ 16QAM		
1850.7 MHz		
1880.0 MHz		
1909.3 MHz		

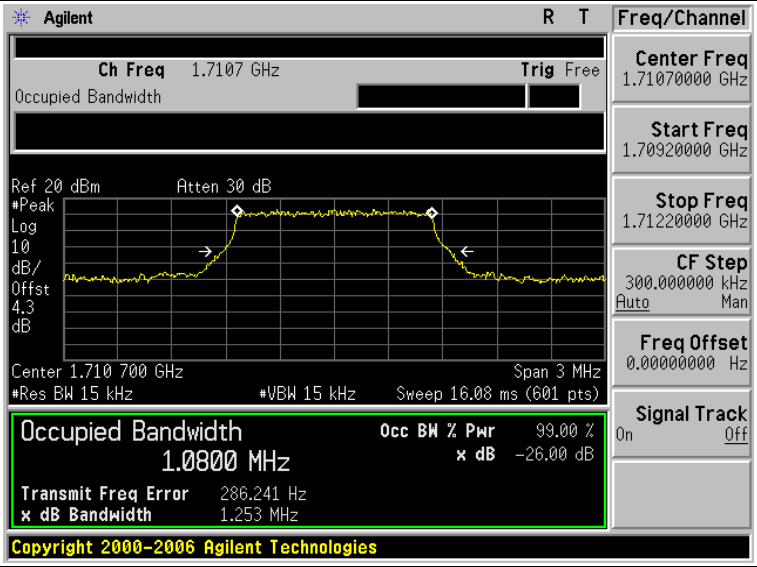
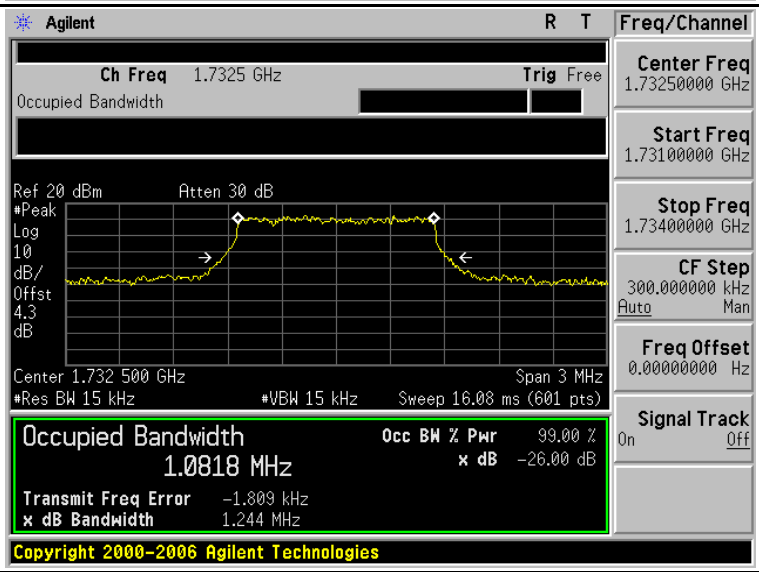
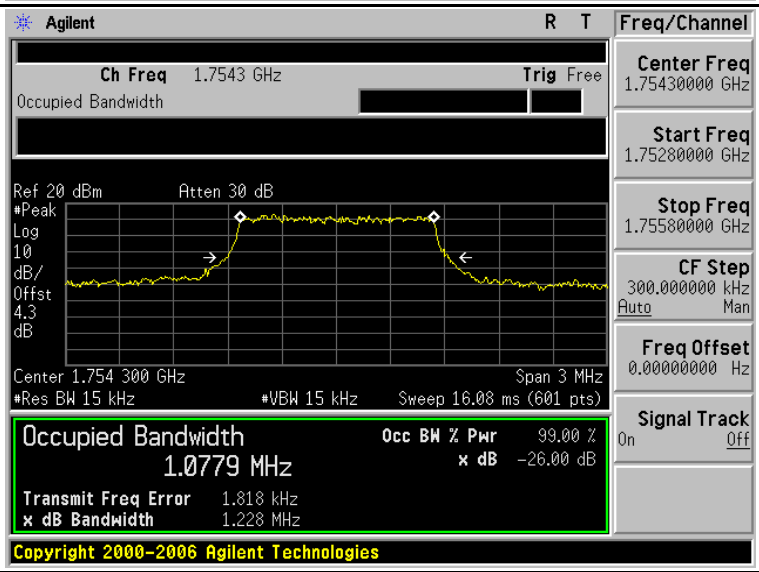
LTE Band 2 (Channel Bandwidth: 3 MHz) _ 16QAM		
1851.5 MHz		
1880.0 MHz		
1908.5 MHz		

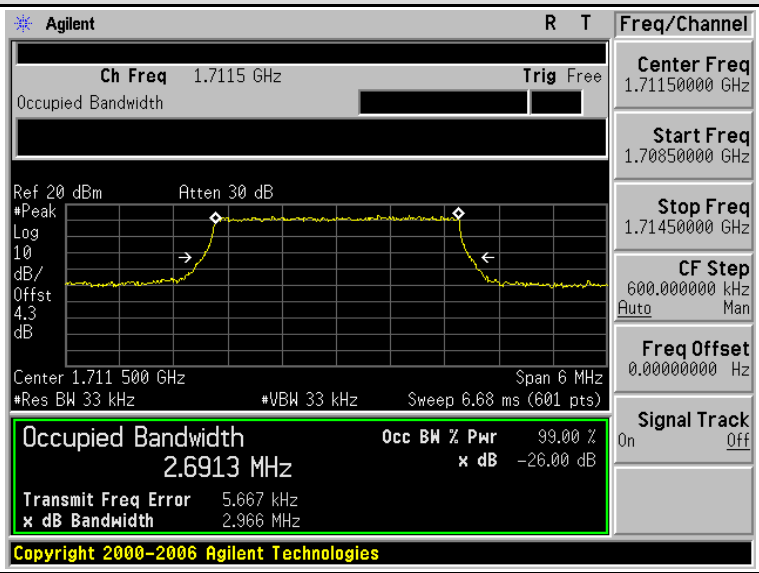
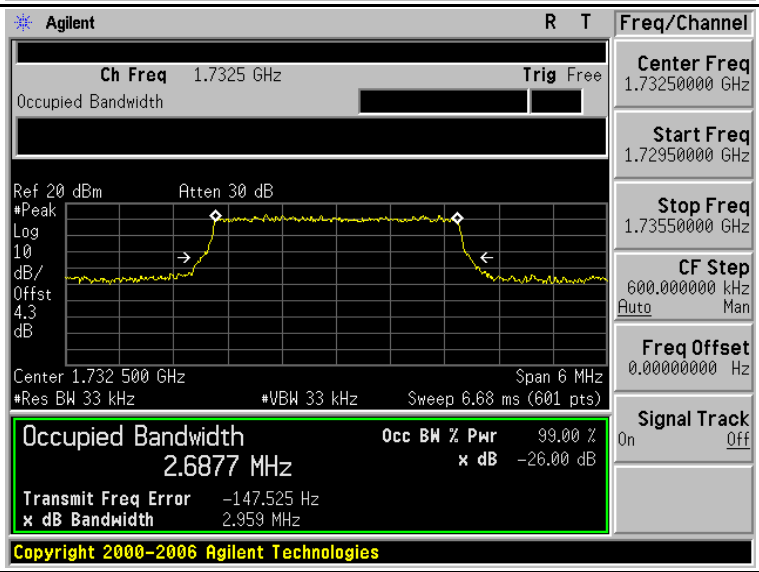
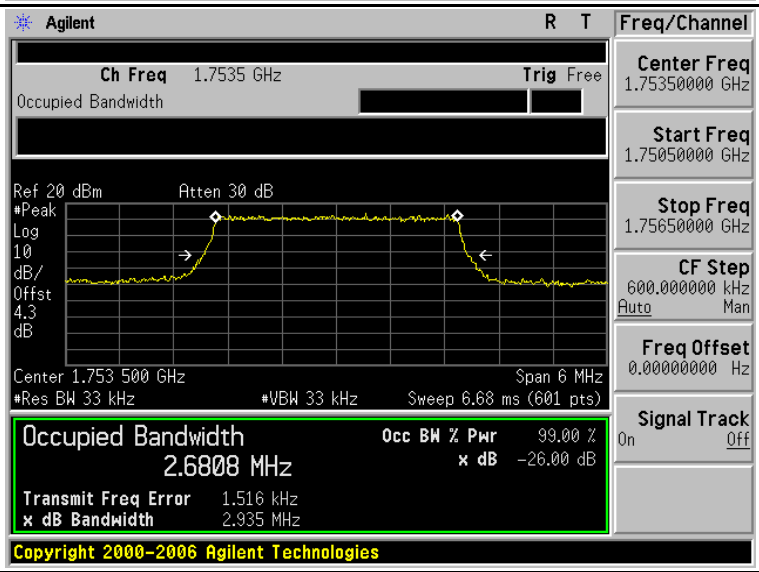
LTE Band 2 (Channel Bandwidth: 5 MHz) _ 16QAM		
1852.5 MHz		
1880.0 MHz		
1907.5 MHz		

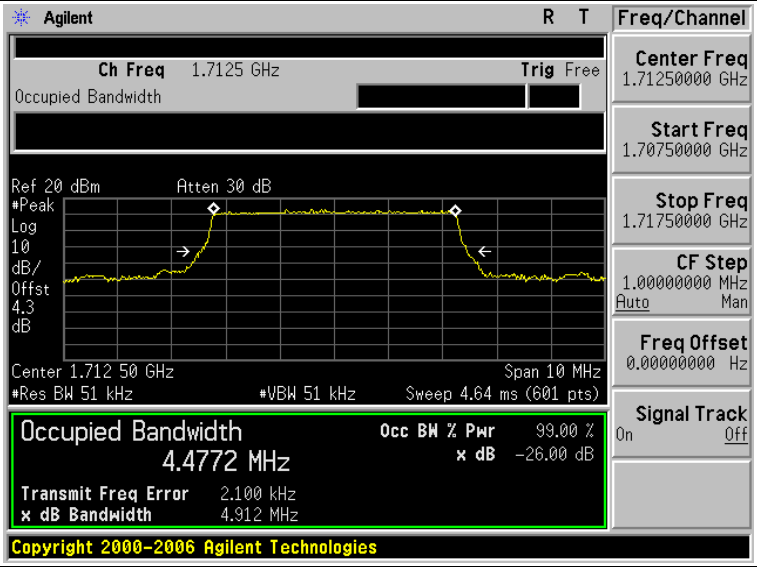
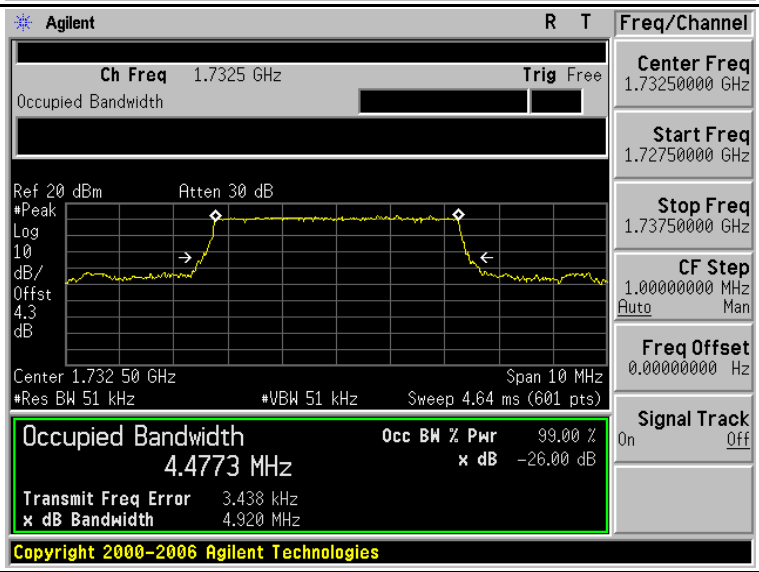
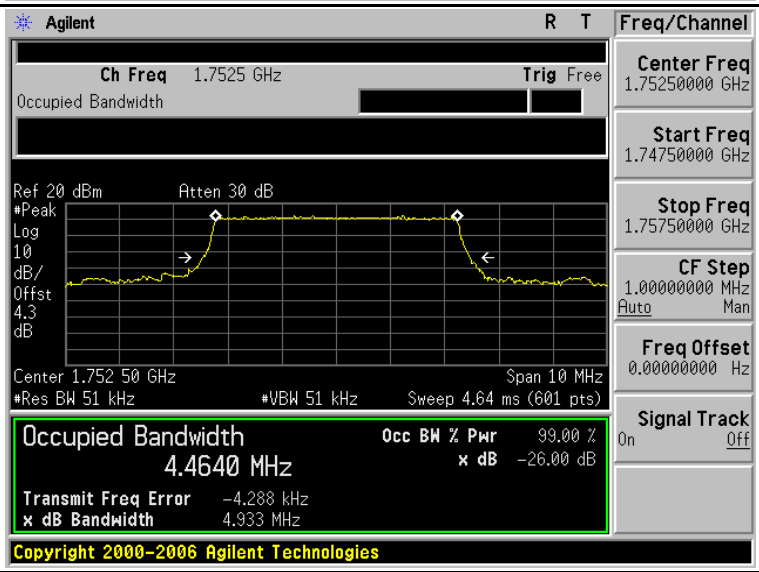
LTE Band 2 (Channel Bandwidth: 10 MHz) _ 16QAM		
1855.0 MHz		
1880.0 MHz		
1905.0 MHz		

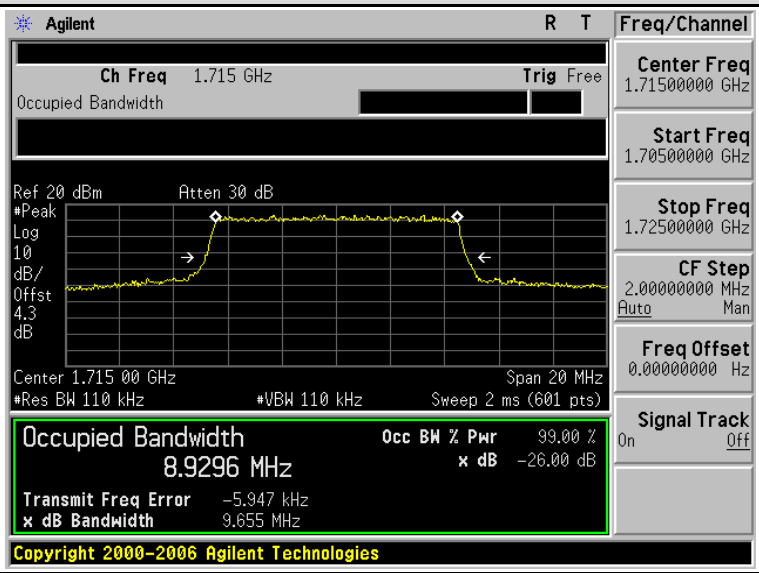
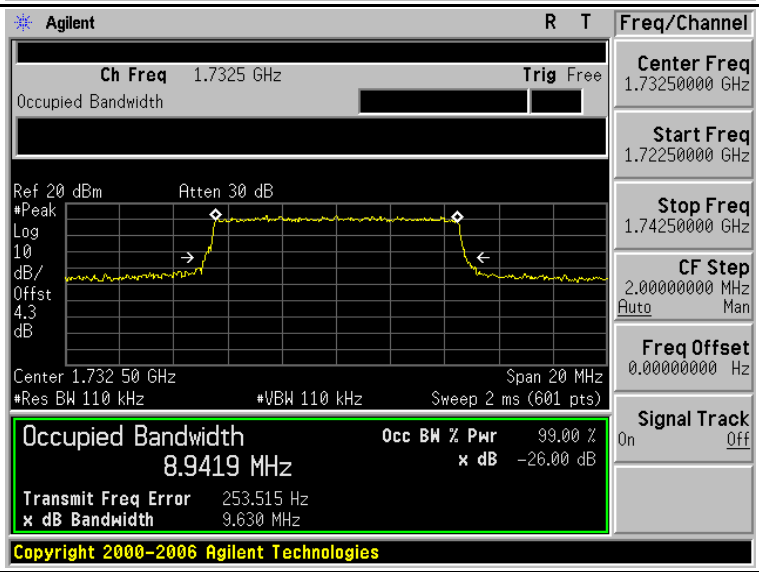
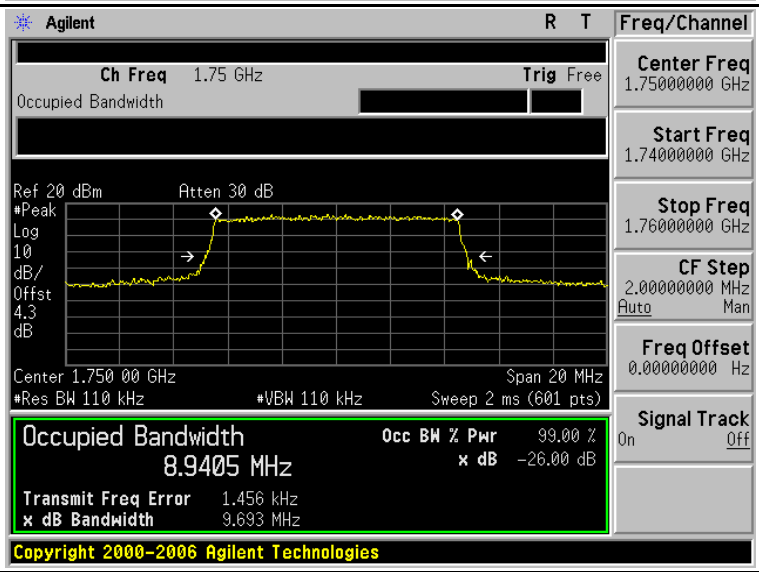
LTE Band 2 (Channel Bandwidth: 15 MHz) _ 16QAM		
1857.5 MHz		
1880.0 MHz		
1902.5 MHz		

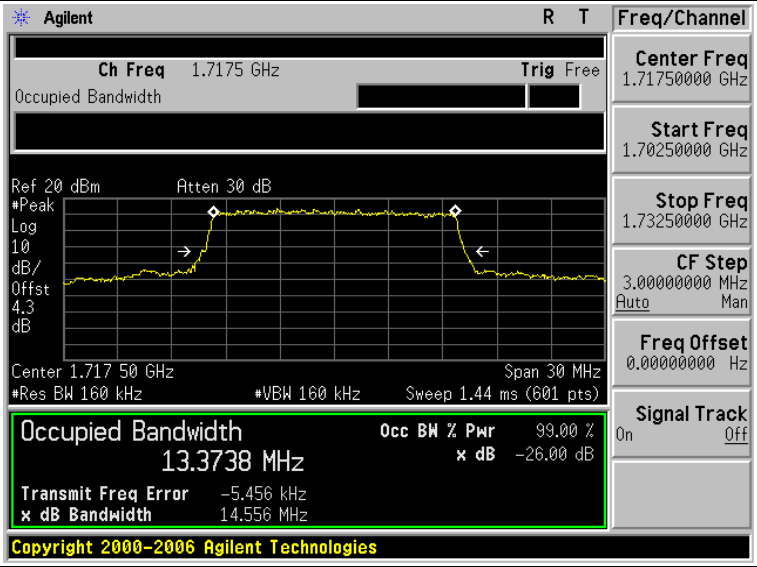
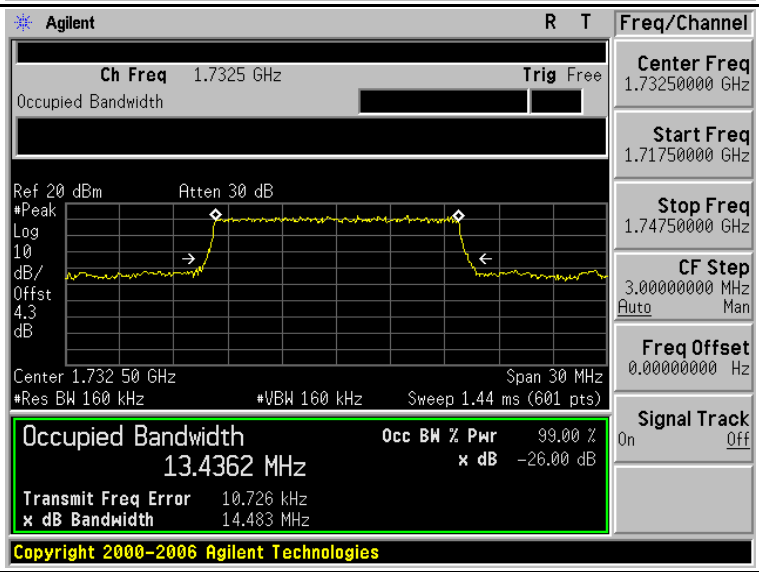
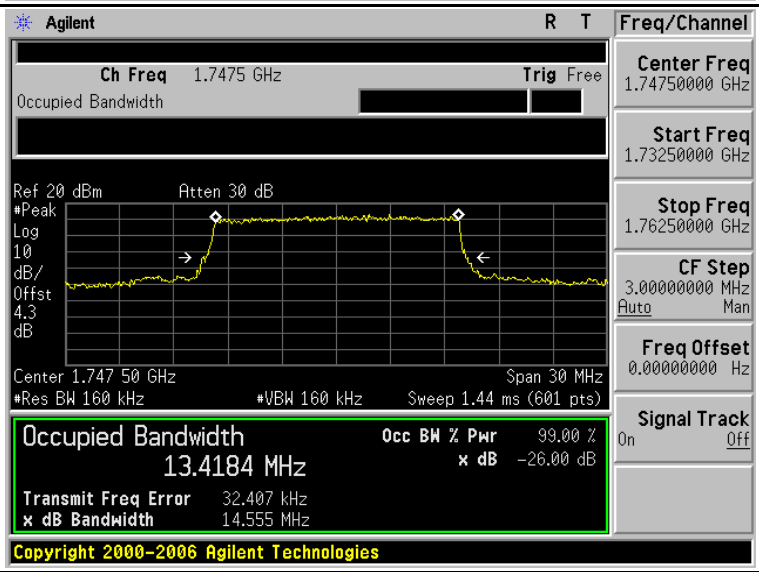
LTE Band 2 (Channel Bandwidth: 20 MHz) _ 16QAM		
1860.0 MHz		
1880.0 MHz		
1900.0 MHz		

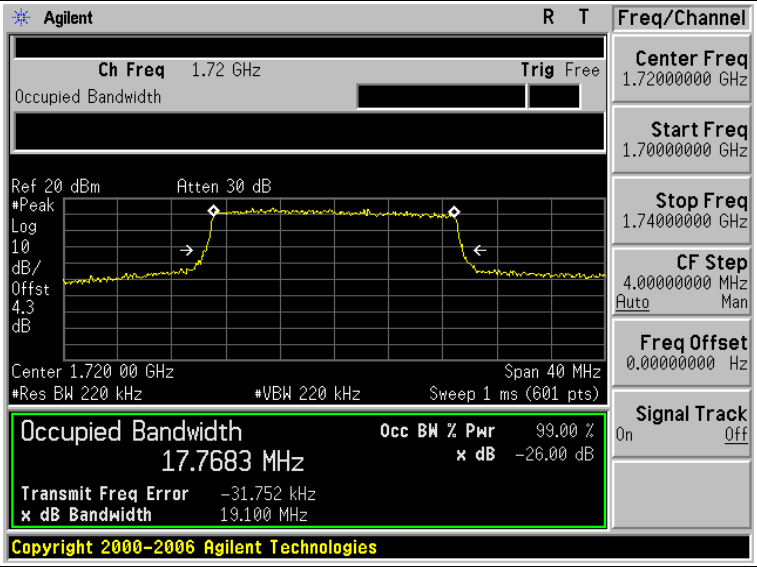
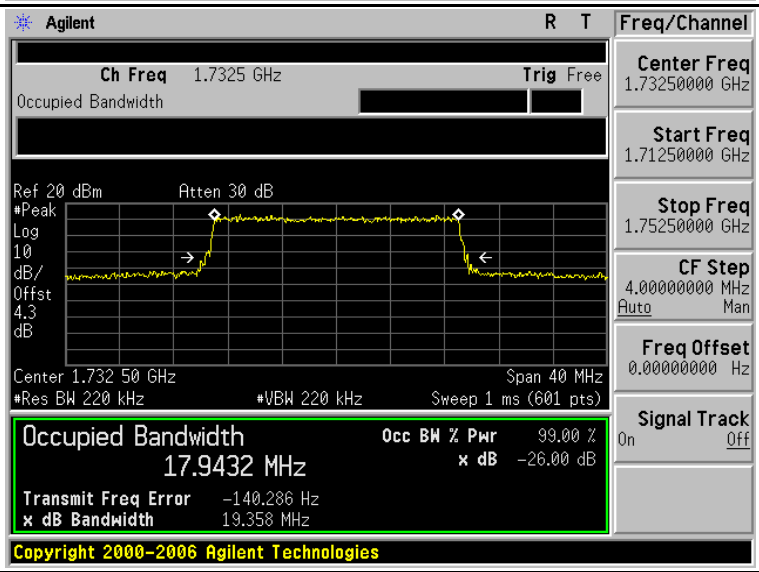
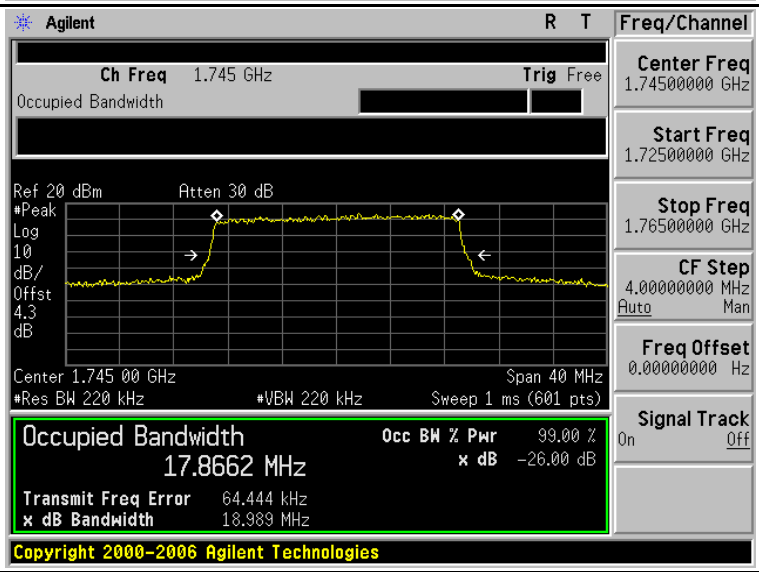
LTE Band 4 (Channel Bandwidth: 1.4 MHz) _ QPSK		
1710.7 MHz		
1732.5 MHz		
1754.3 MHz		

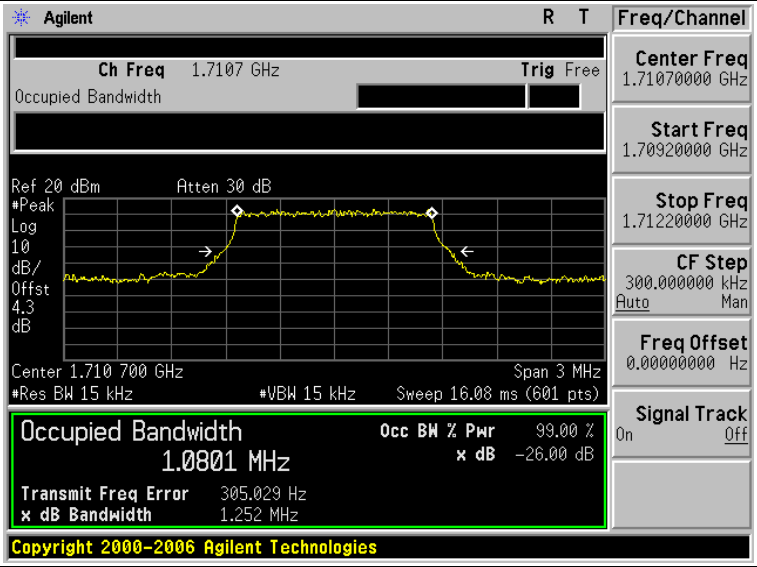
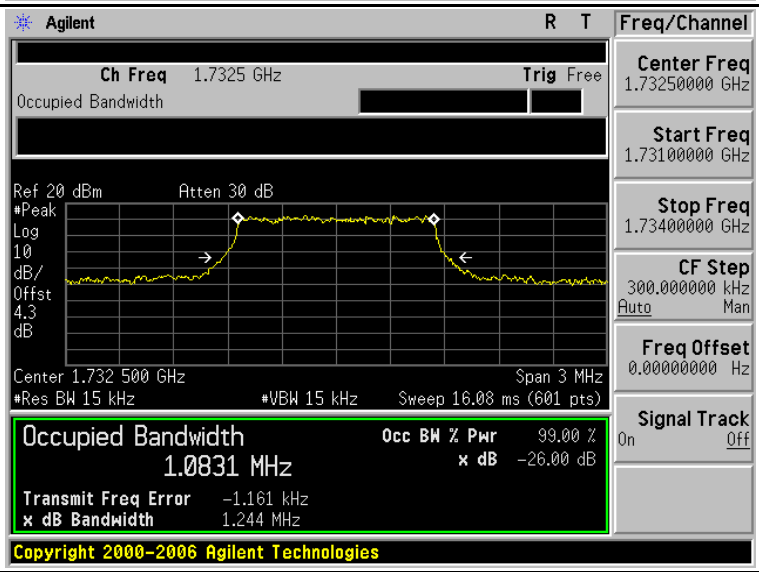
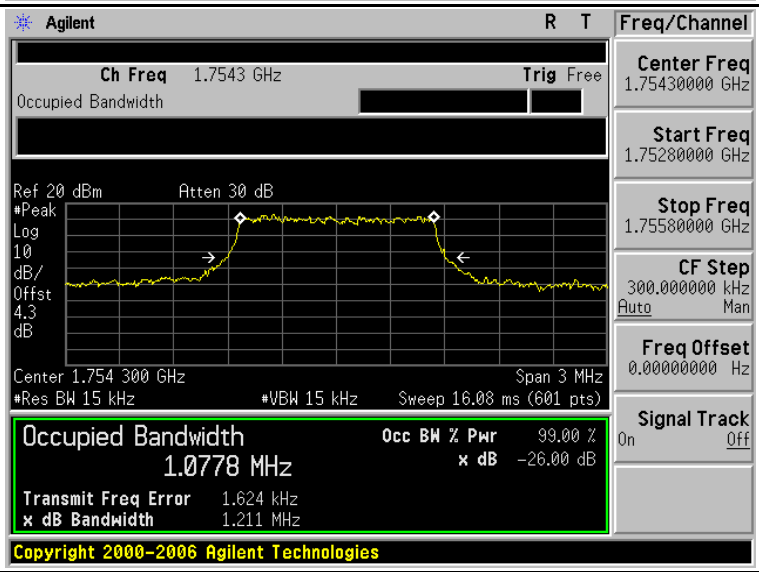
LTE Band 4 (Channel Bandwidth: 3 MHz) _ QPSK		
1711.5 MHz		
1732.5 MHz		
1753.5 MHz		

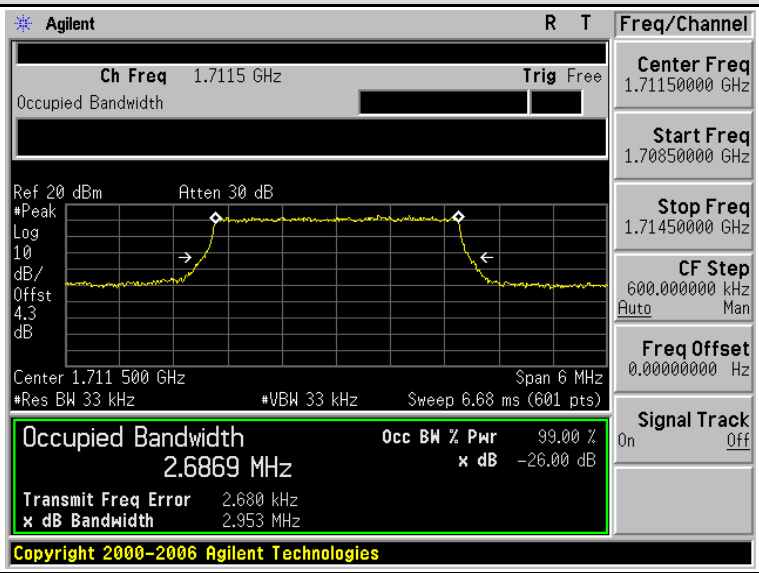
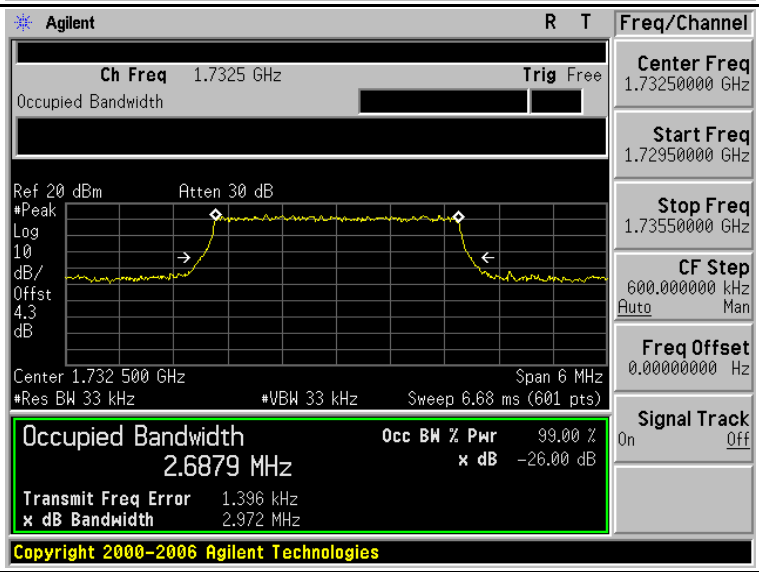
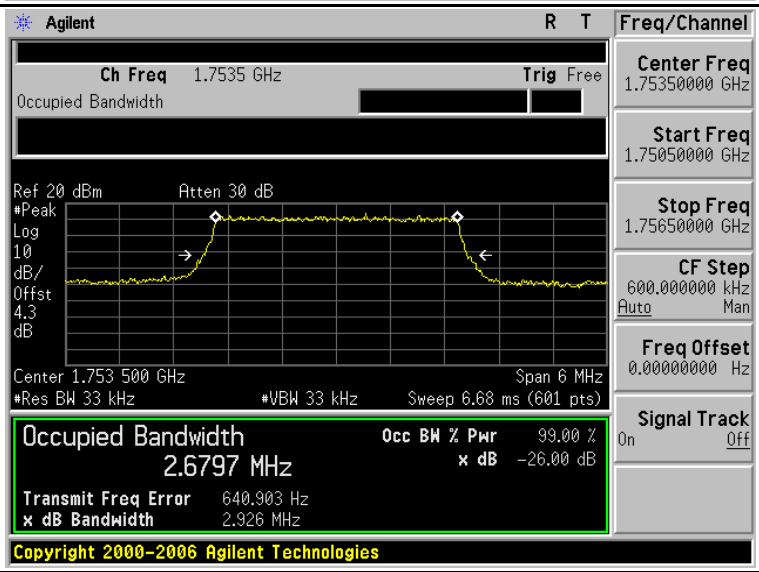
LTE Band 4 (Channel Bandwidth: 5 MHz) _ QPSK		
1712.5 MHz		
1732.5 MHz		
1752.5 MHz		

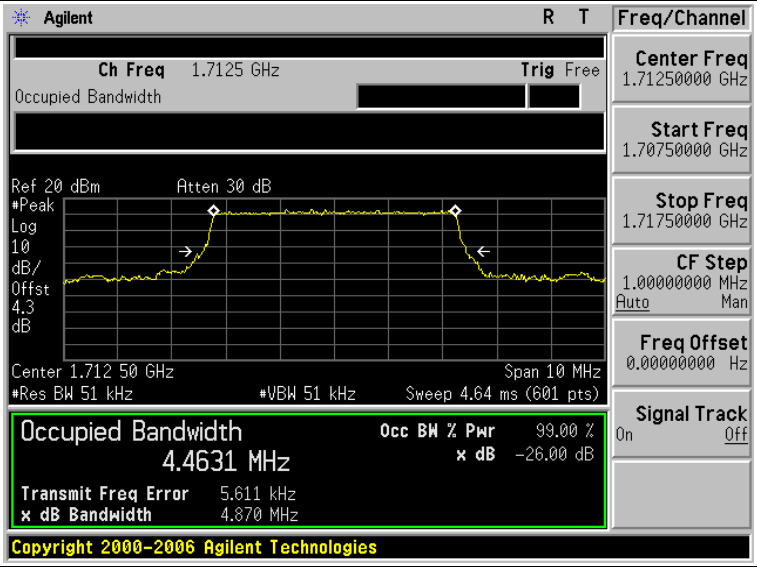
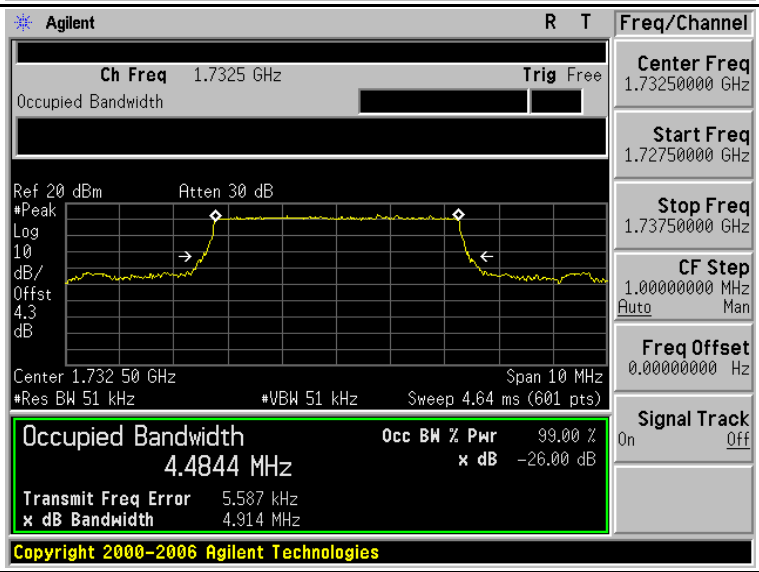
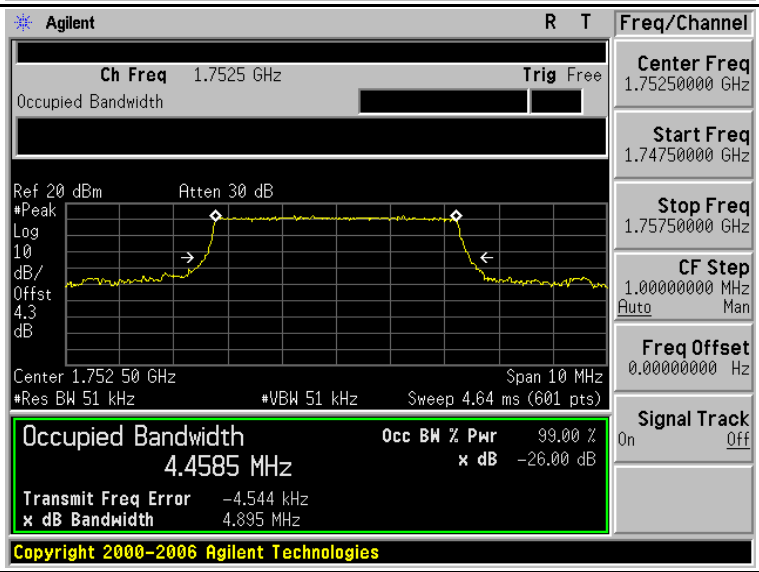
LTE Band 4 (Channel Bandwidth: 10 MHz) _ QPSK		
1715.0 MHz		
1732.5 MHz		
1750.0 MHz		

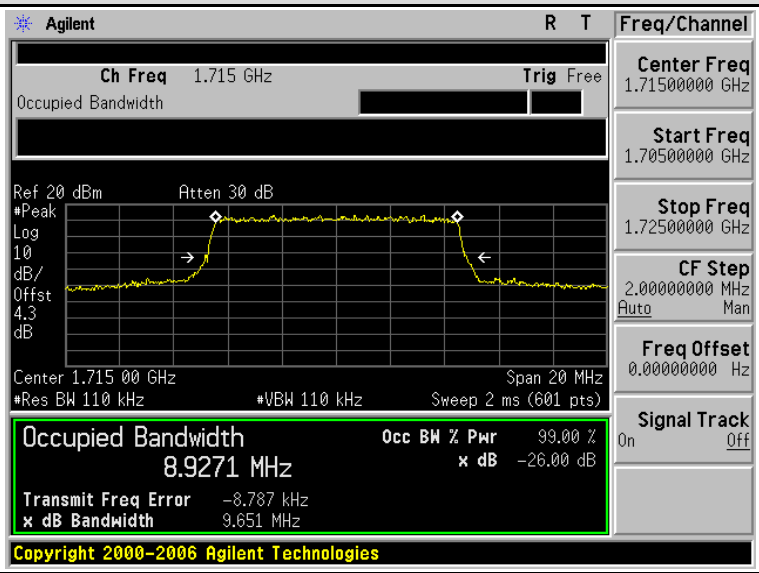
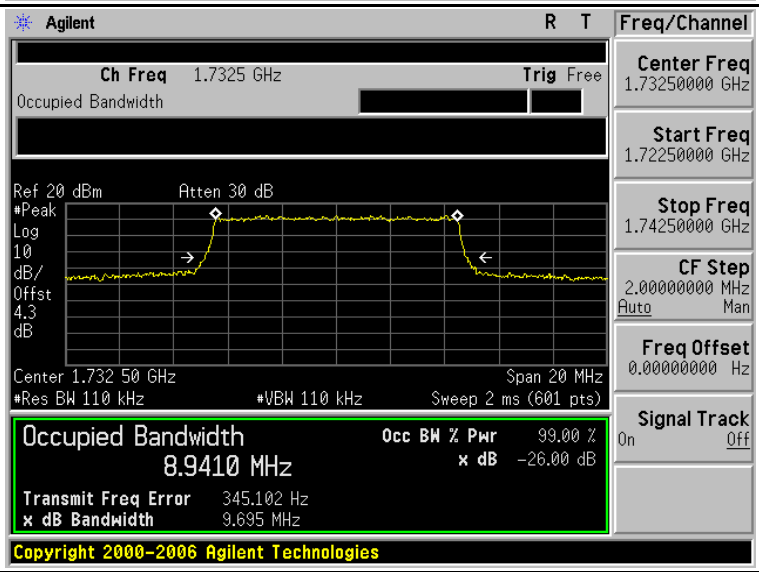
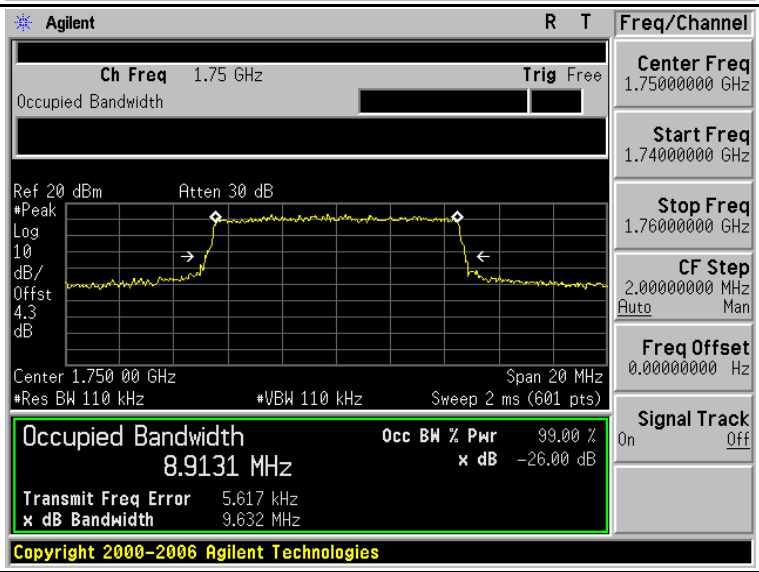
LTE Band 4 (Channel Bandwidth: 15 MHz) _ QPSK	
1717.5 MHz	
1732.5 MHz	
1747.5 MHz	

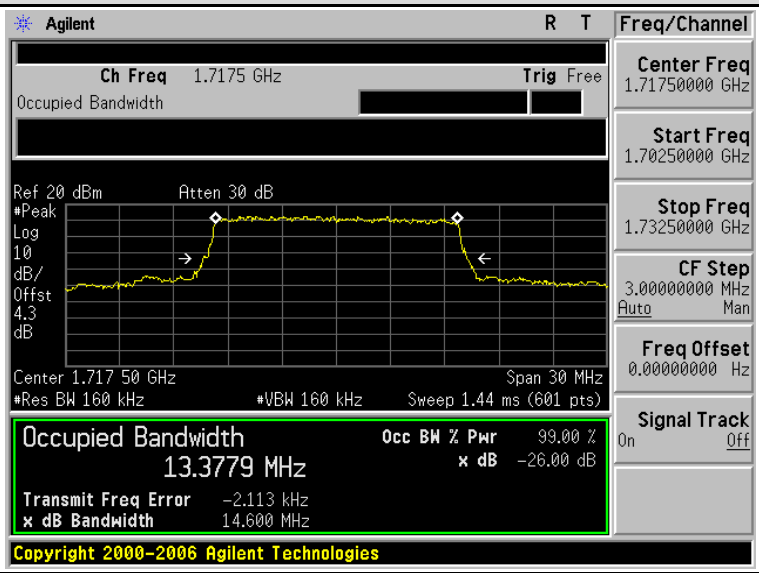
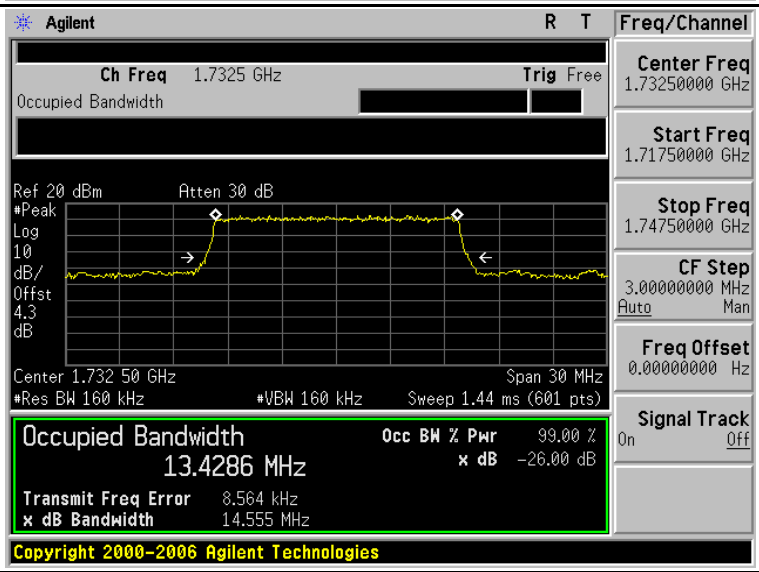
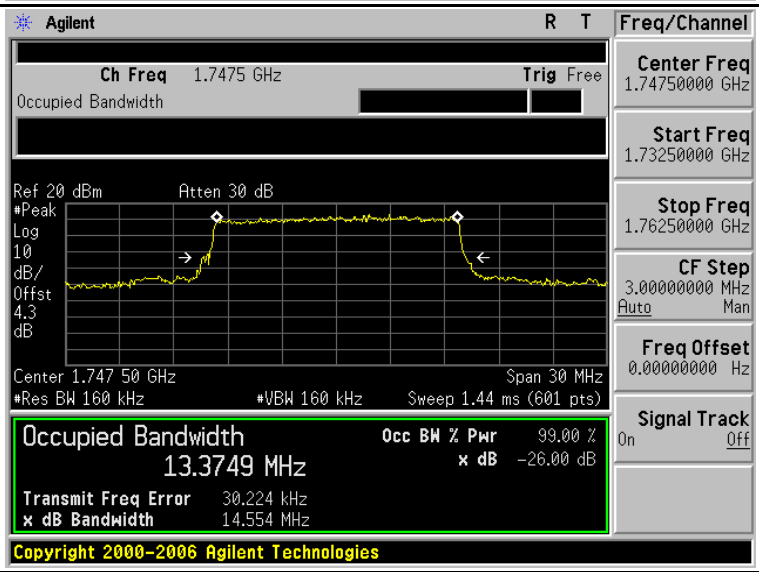
LTE Band 4 (Channel Bandwidth: 20 MHz) _ QPSK		
1720.0 MHz		
1732.5 MHz		
1745.0 MHz		

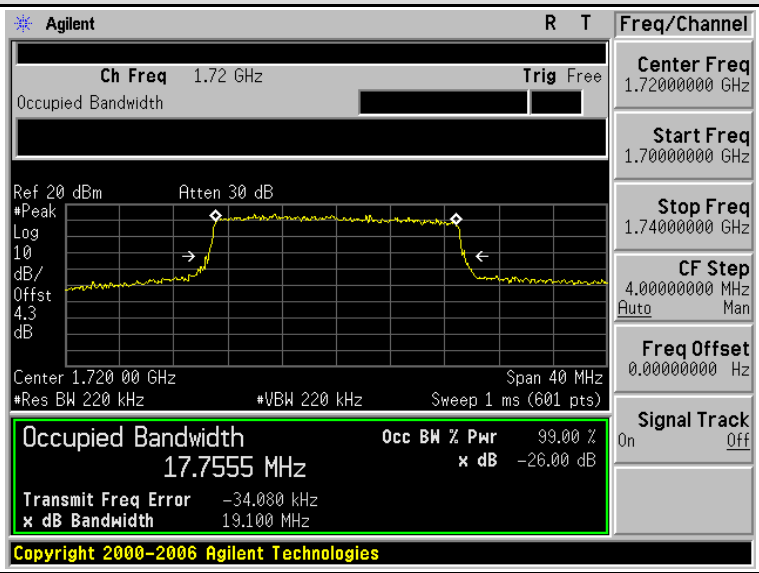
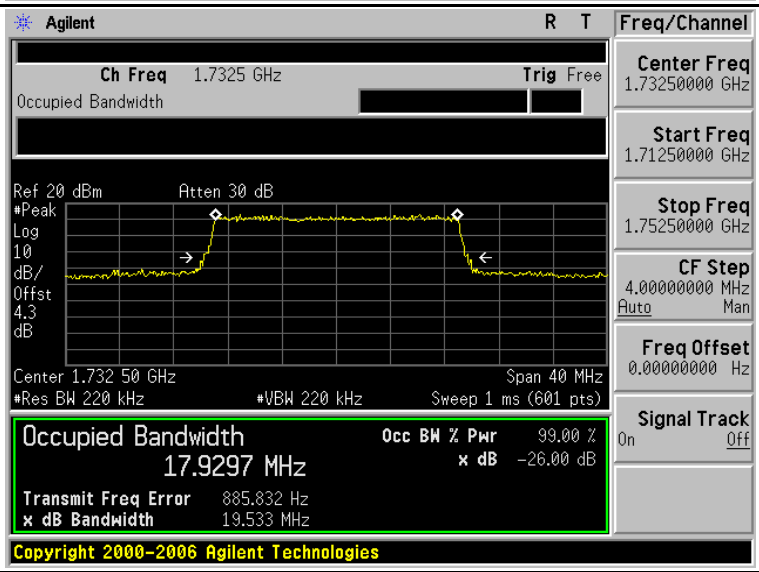
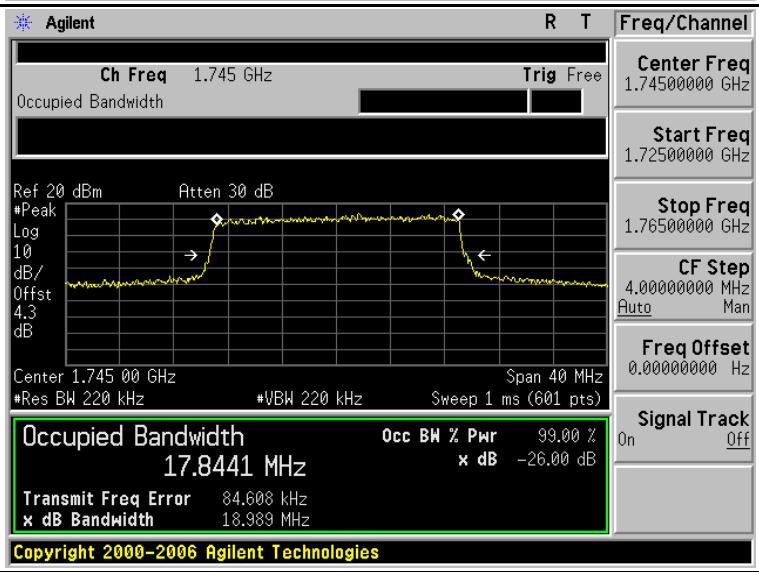
LTE Band 4 (Channel Bandwidth: 1.4 MHz) _ 16QAM		
1710.7 MHz		
1732.5 MHz		
1754.3 MHz		

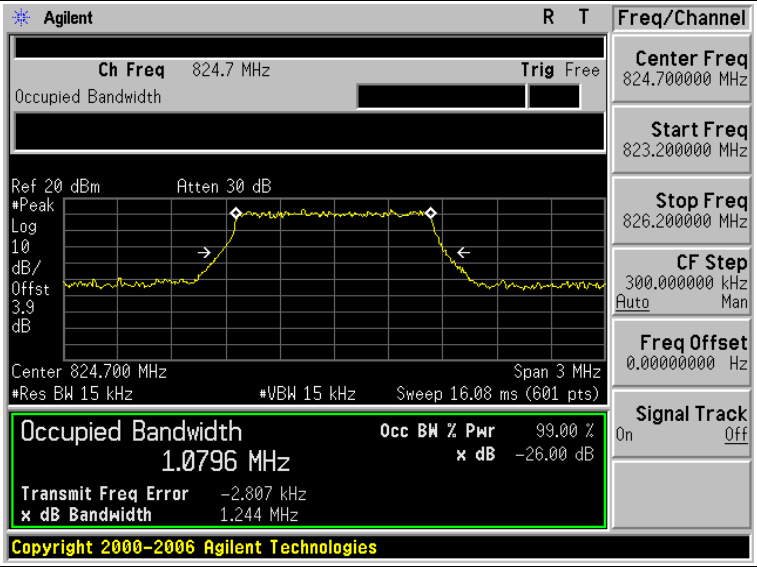
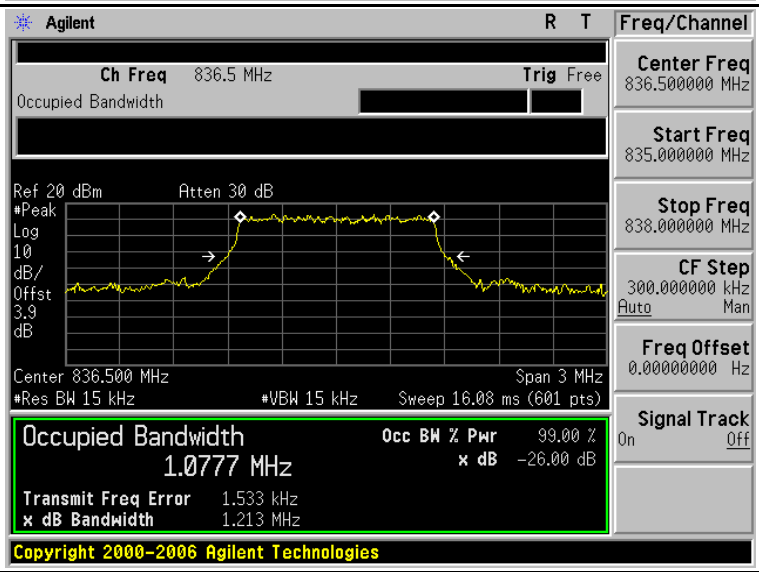
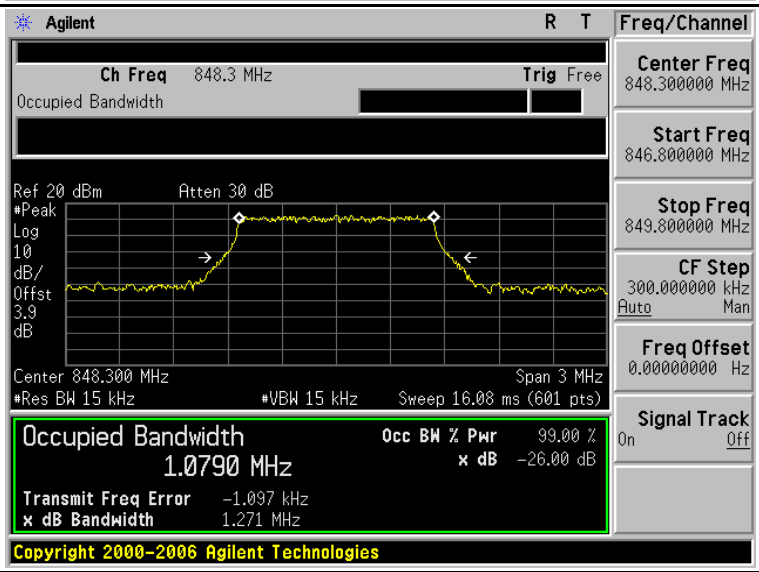
LTE Band 4 (Channel Bandwidth: 3 MHz) _ 16QAM		
1711.5 MHz		
1732.5 MHz		
1753.5 MHz		

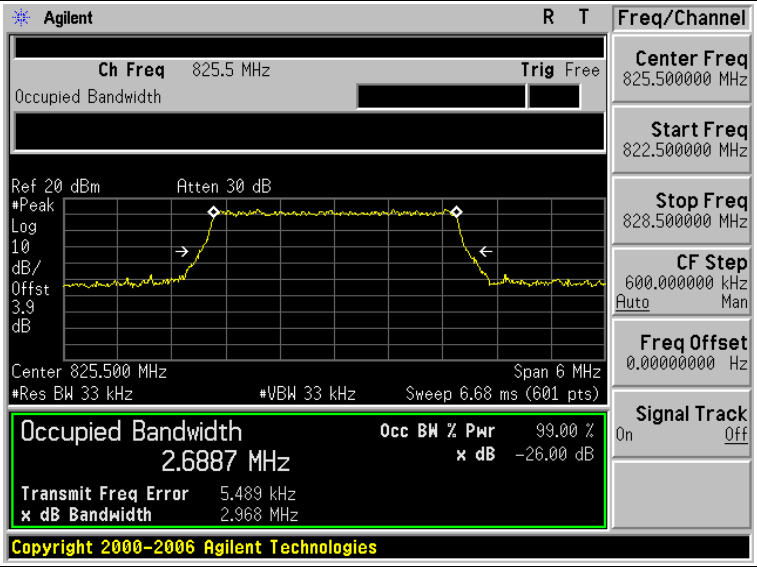
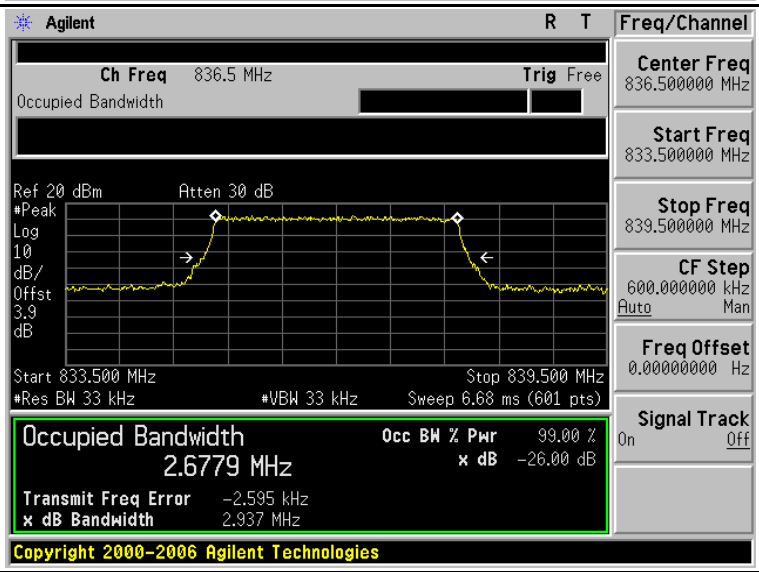
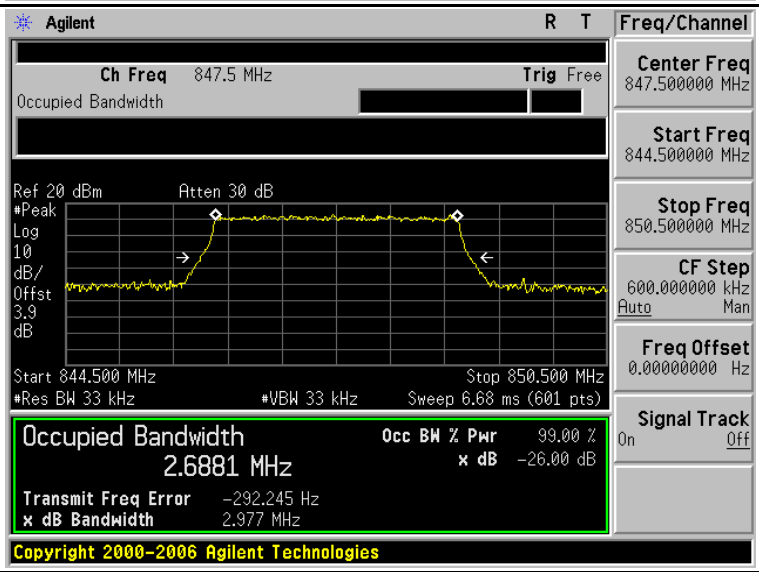
LTE Band 4 (Channel Bandwidth: 5 MHz) _ 16QAM		
1712.5 MHz		
1732.5 MHz		
1752.5 MHz		

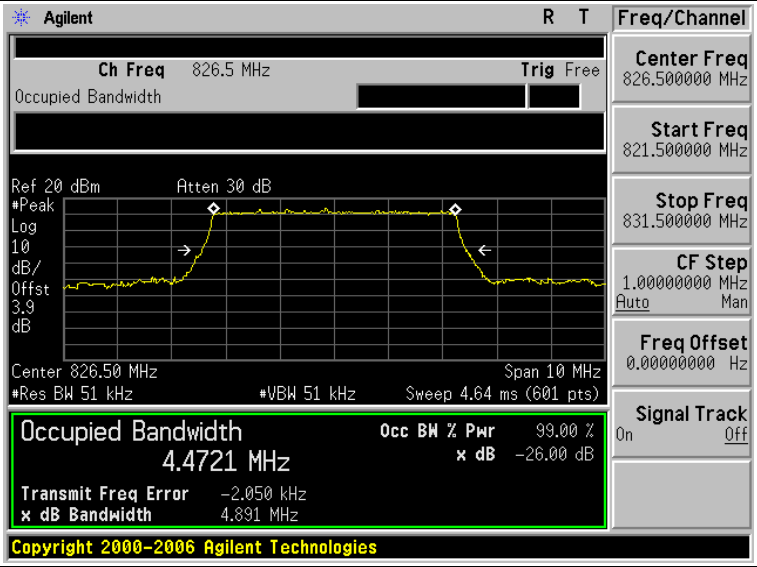
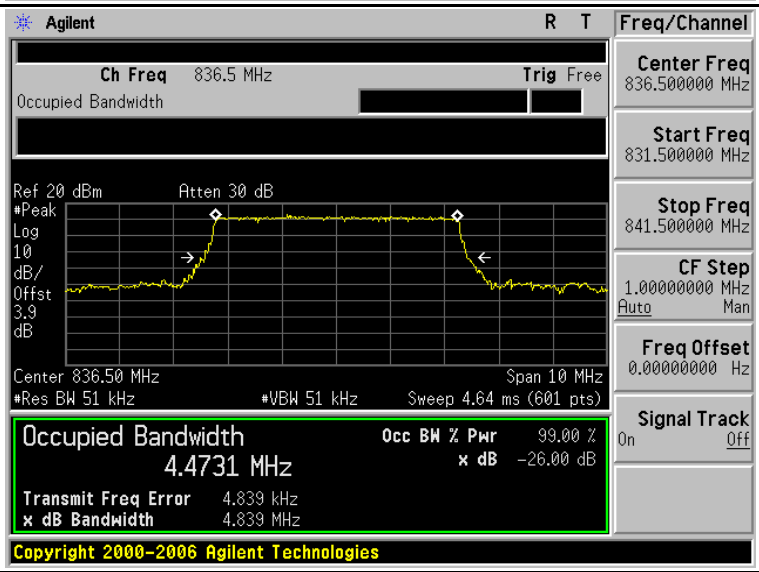
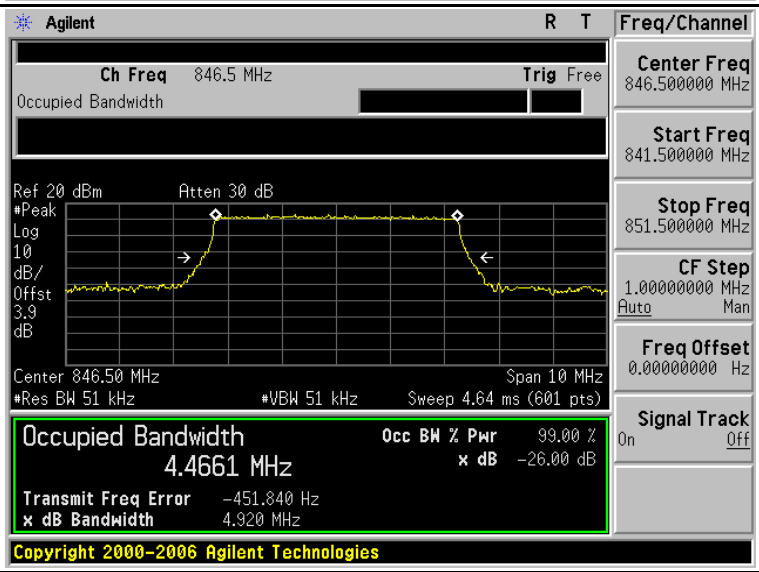
LTE Band 4 (Channel Bandwidth: 10 MHz) _ 16QAM		
1715.0 MHz		
1732.5 MHz		
1750.0 MHz		

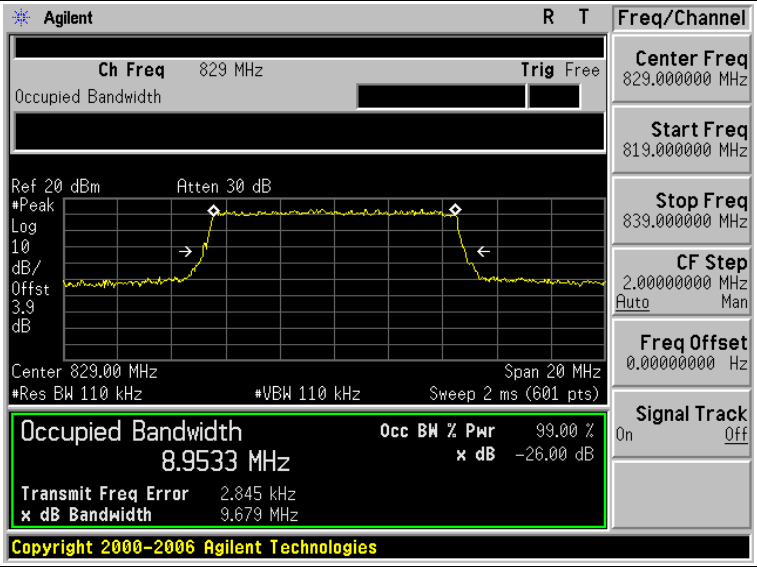
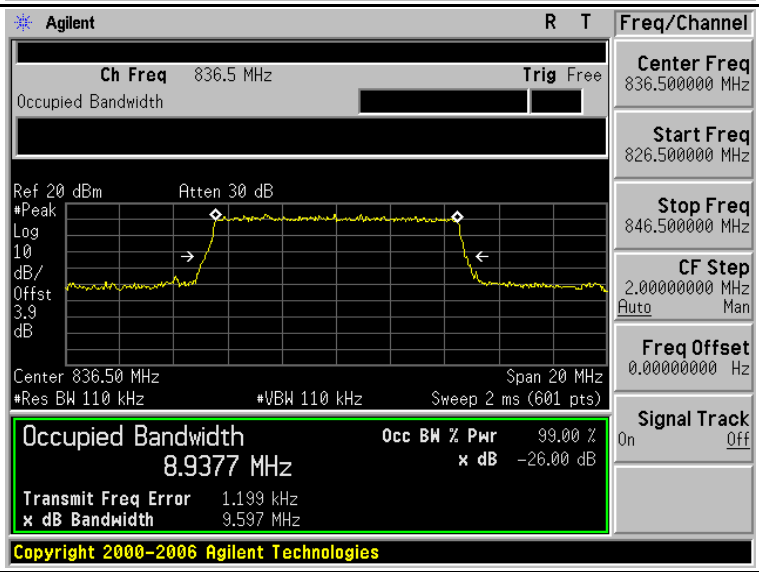
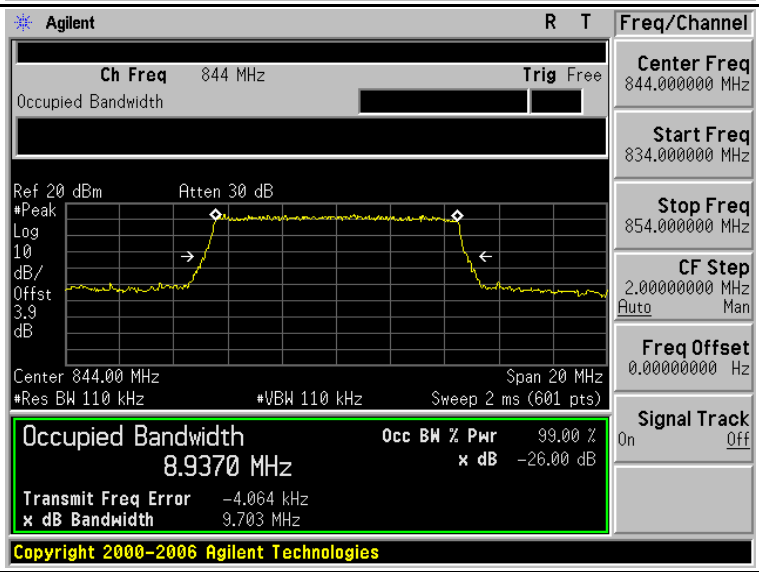
LTE Band 4 (Channel Bandwidth: 15 MHz) _ 16QAM		
1717.5 MHz		
1732.5 MHz		
1747.5 MHz		

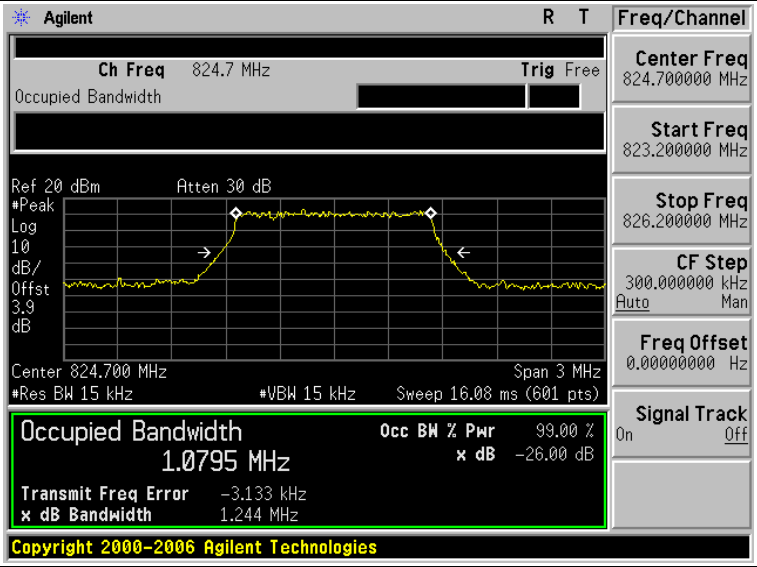
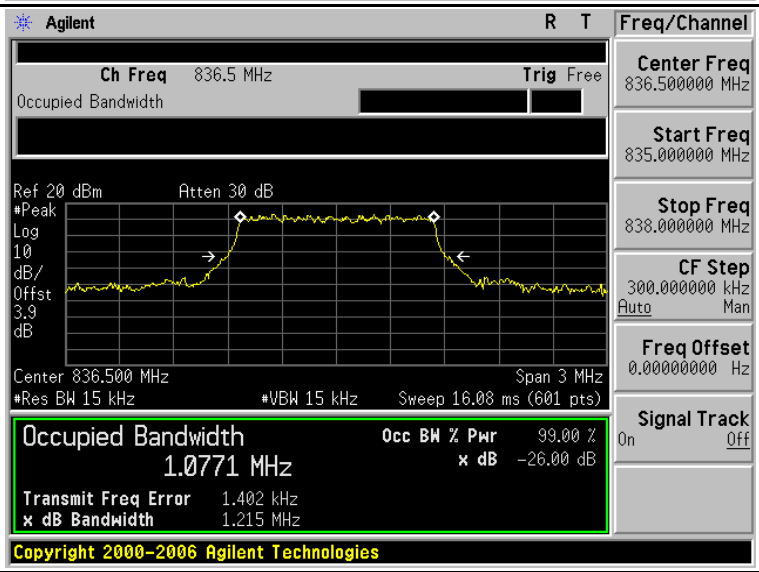
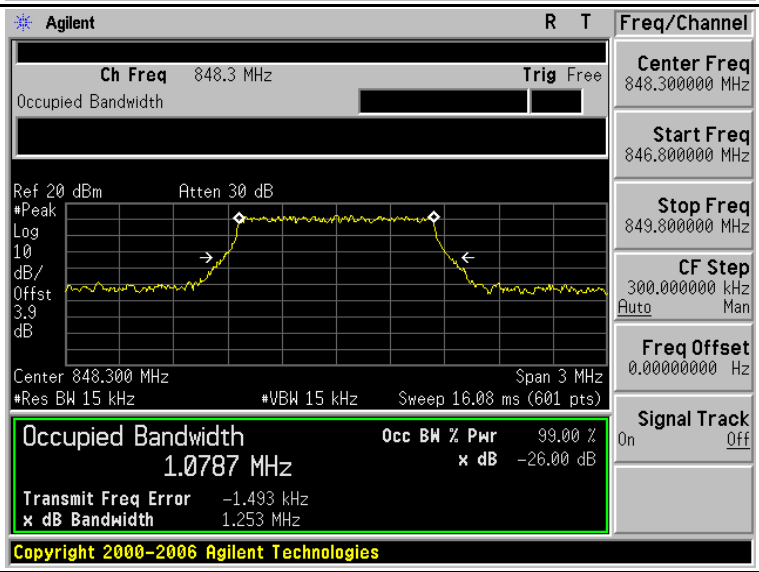
LTE Band 4 (Channel Bandwidth: 20 MHz) _ 16QAM		
1720.0 MHz		
1732.5 MHz		
1745.0 MHz		

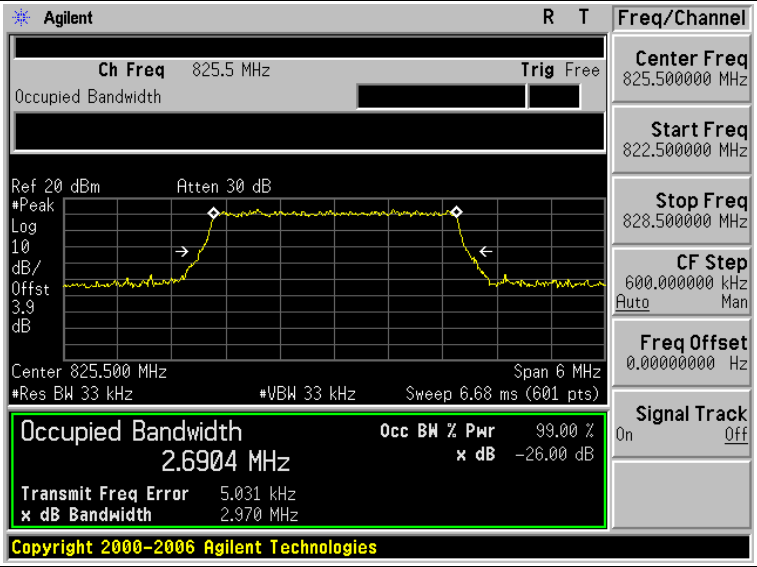
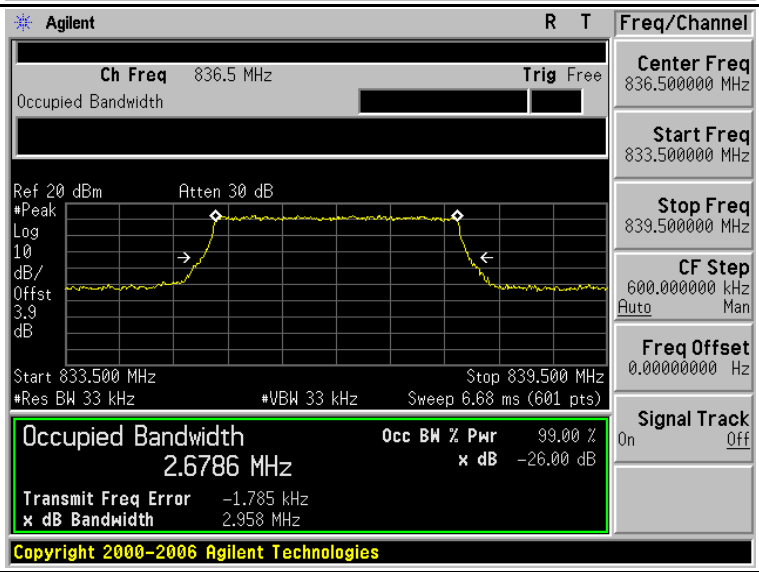
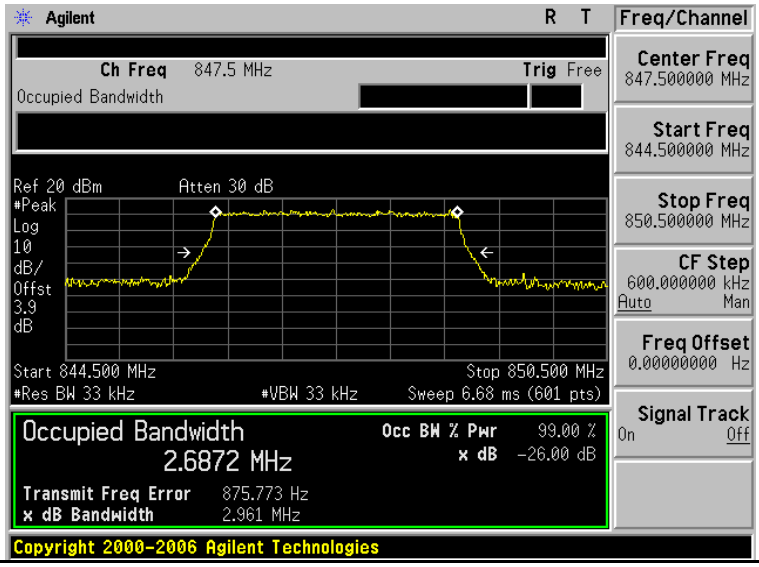
LTE Band 5 (Channel Bandwidth: 1.4 MHz) _ QPSK		
824.7 MHz		
836.5 MHz		
848.3 MHz		

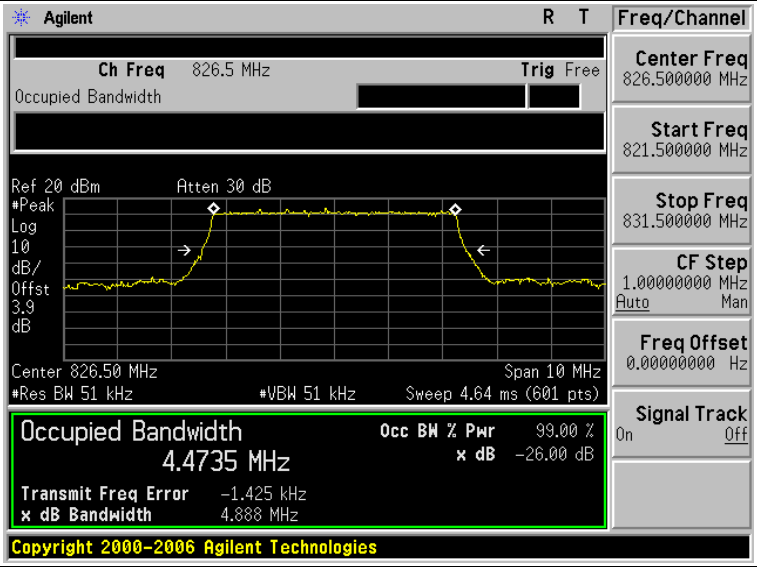
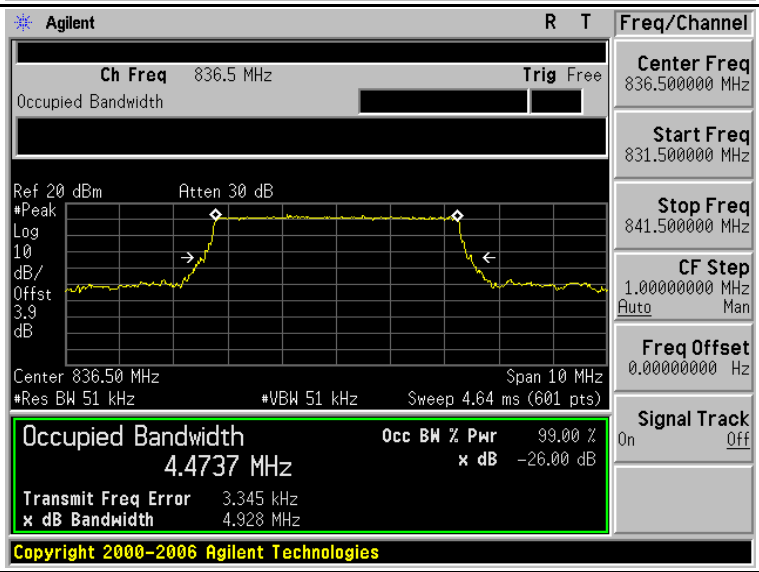
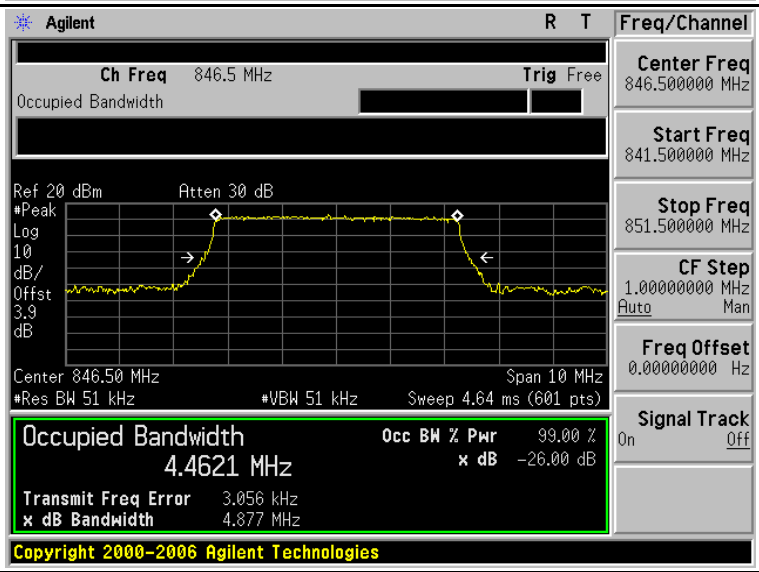
LTE Band 5 (Channel Bandwidth: 3 MHz) _ QPSK		
825.5 MHz		
836.5 MHz		
847.5 MHz		

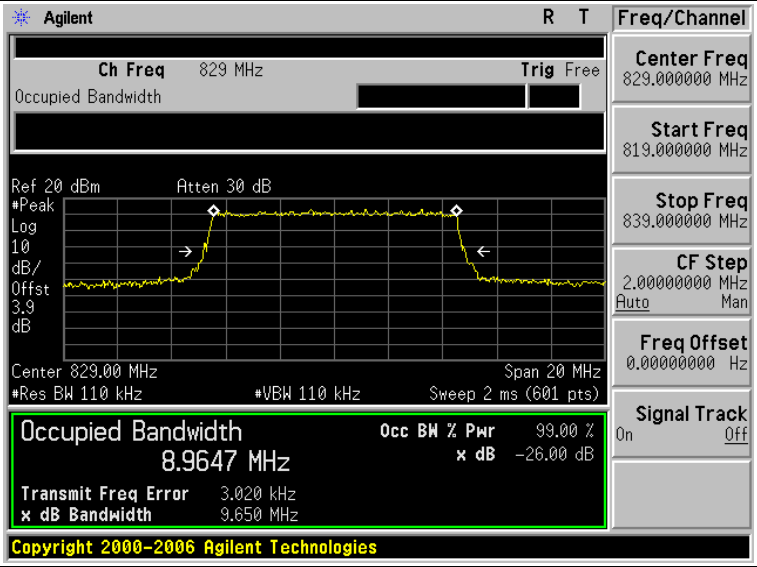
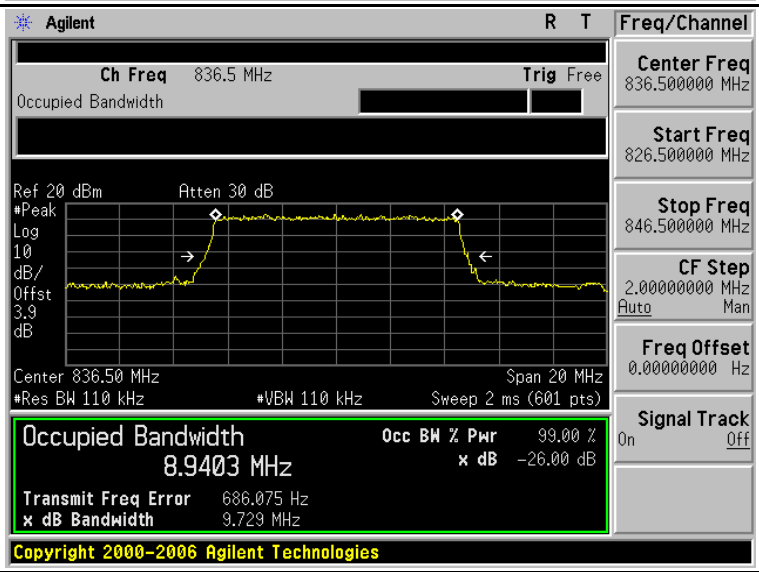
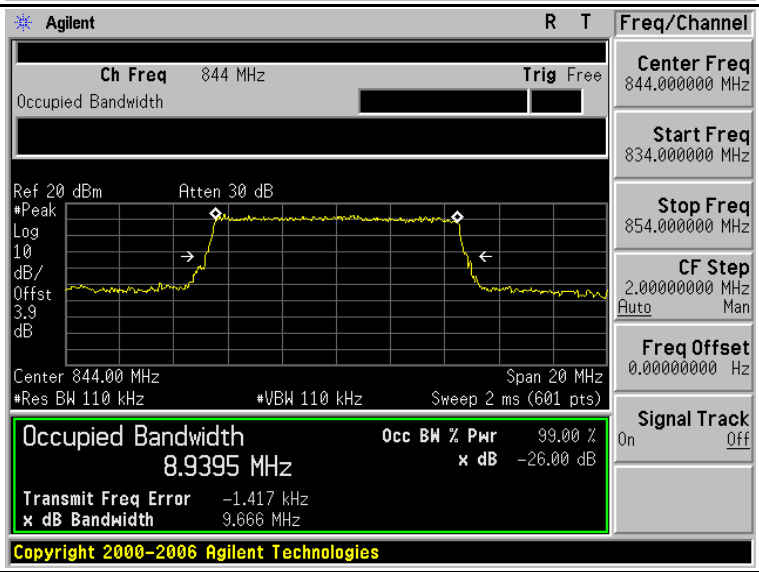
LTE Band 5 (Channel Bandwidth: 5 MHz) _ QPSK		
826.5 MHz		
836.5 MHz		
846.5 MHz		

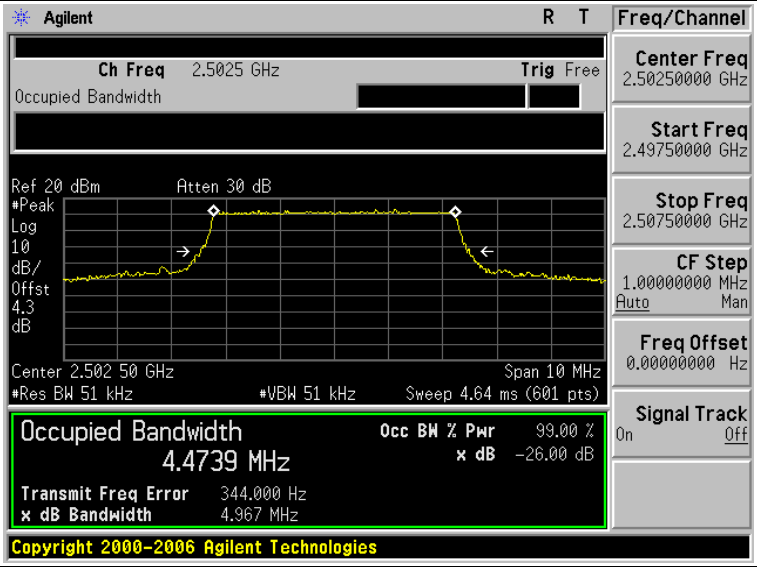
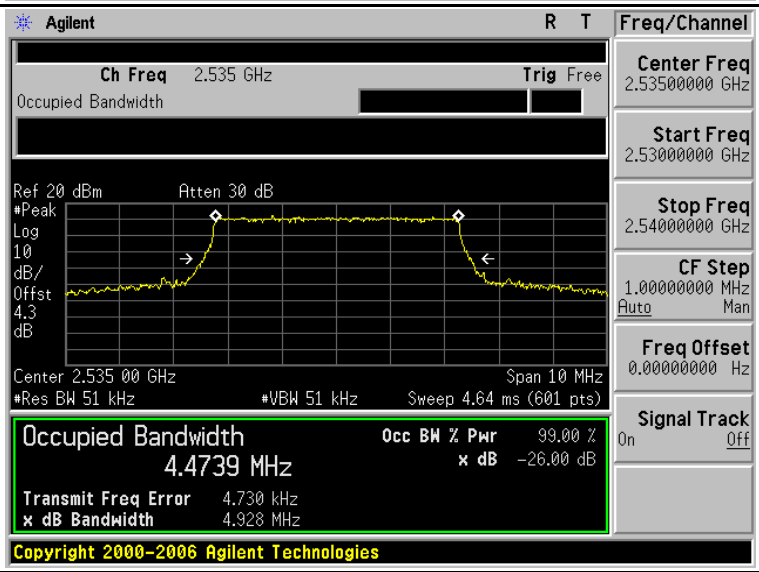
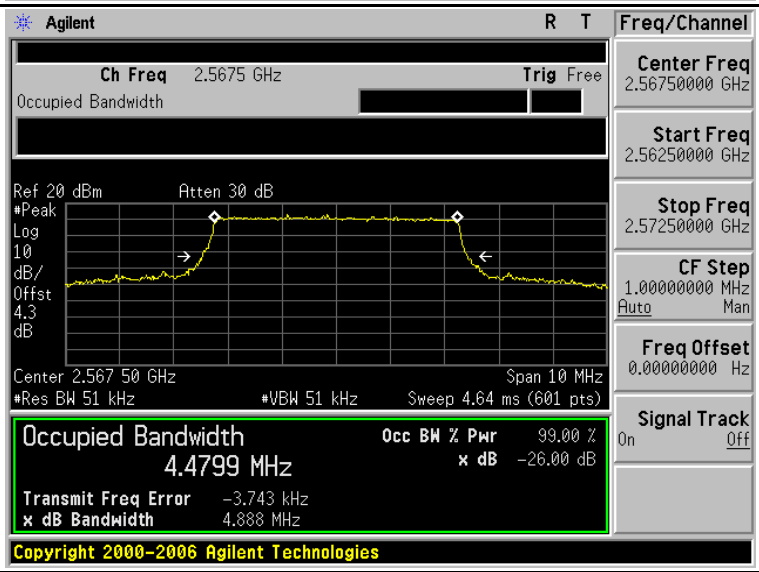
LTE Band 5 (Channel Bandwidth: 10 MHz) _ QPSK		
829.0 MHz		
836.5 MHz		
844.0 MHz		

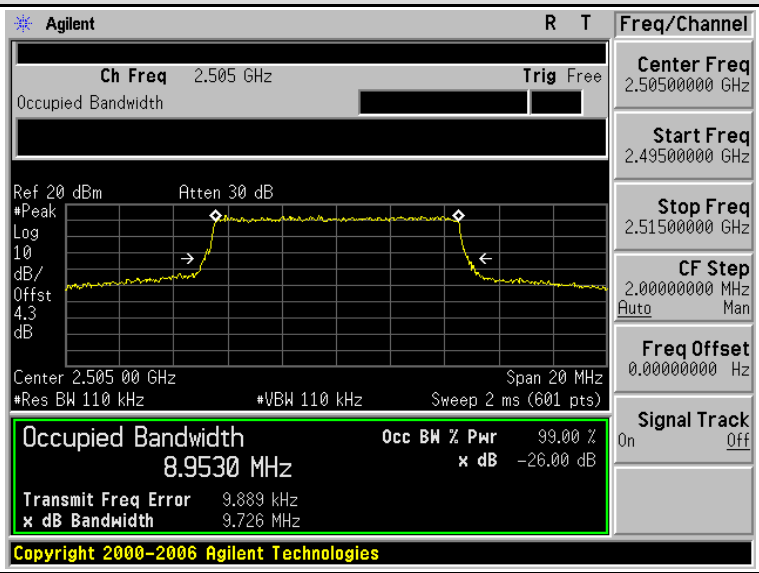
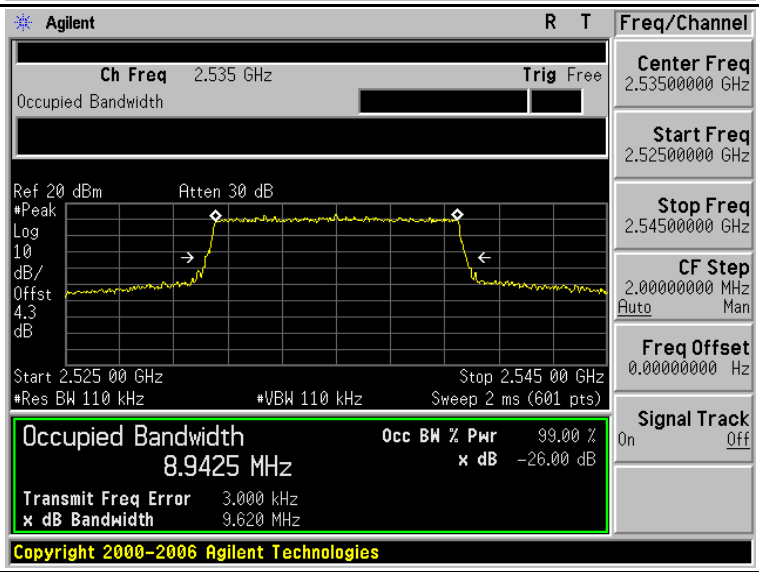
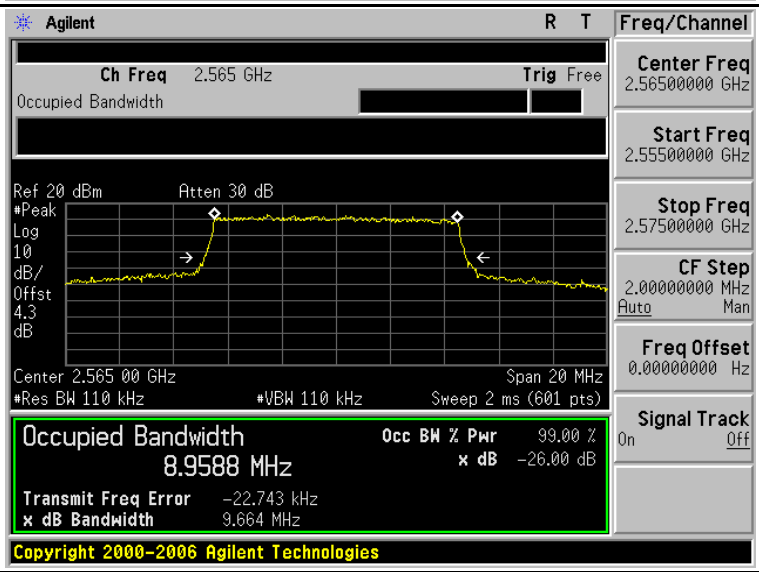
LTE Band 5 (Channel Bandwidth: 1.4 MHz) _ 16QAM		
824.7 MHz		
836.5 MHz		
848.3 MHz		

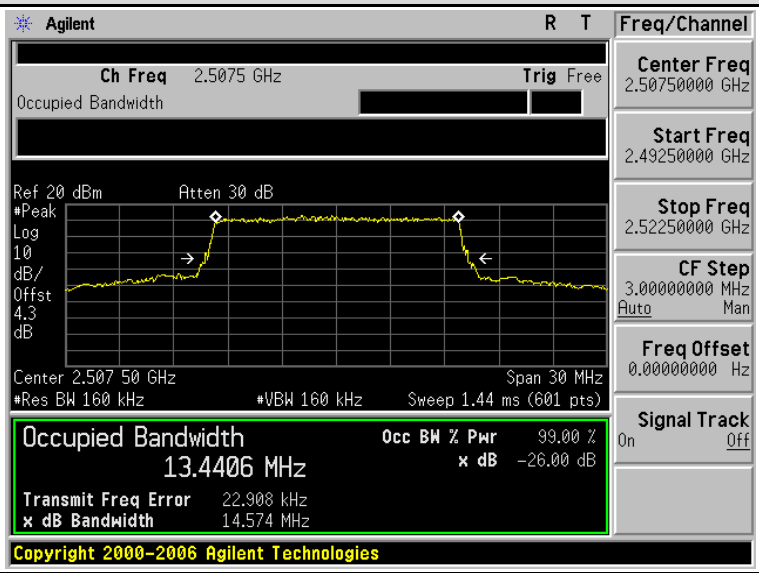
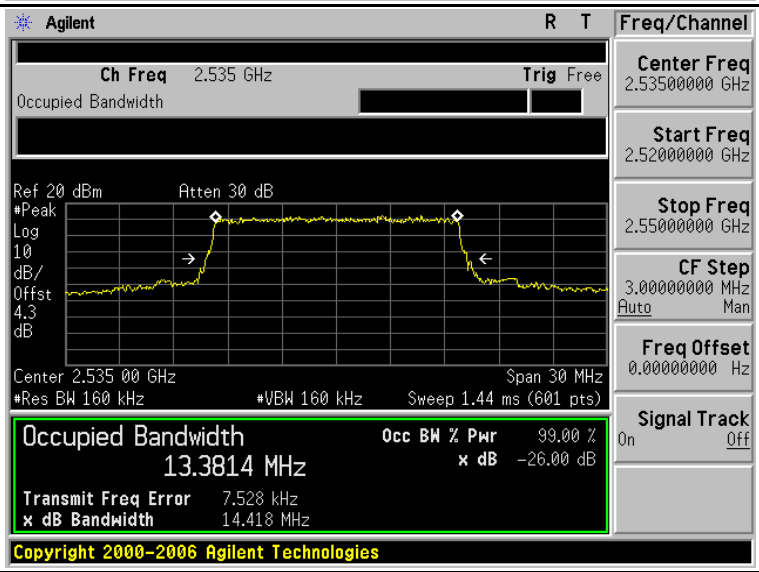
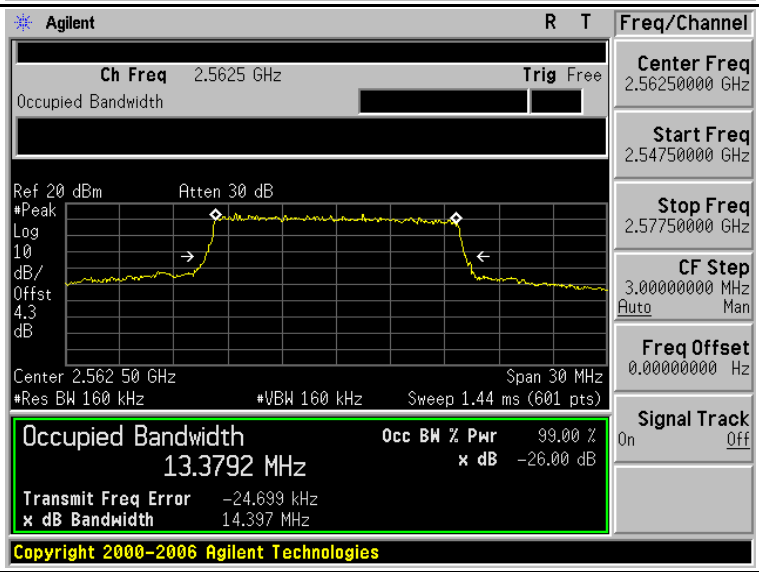
LTE Band 5 (Channel Bandwidth: 3 MHz) _ 16QAM		
825.5 MHz		
836.5 MHz		
847.5 MHz		

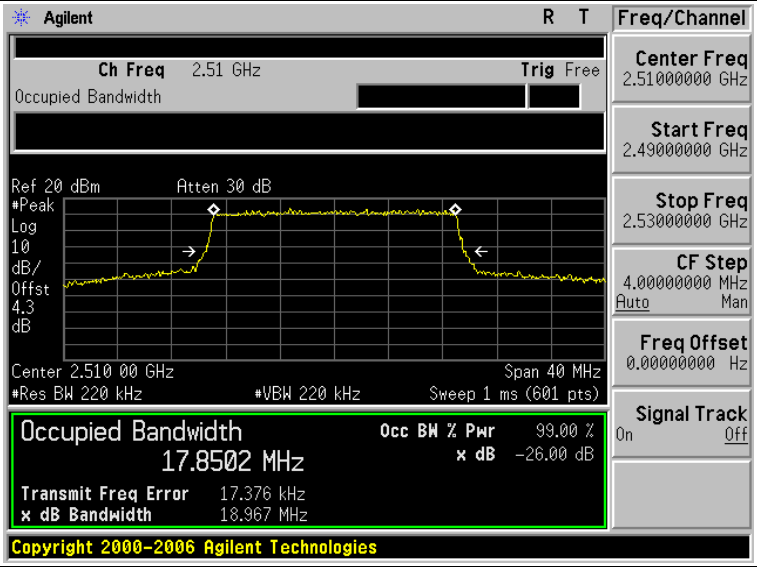
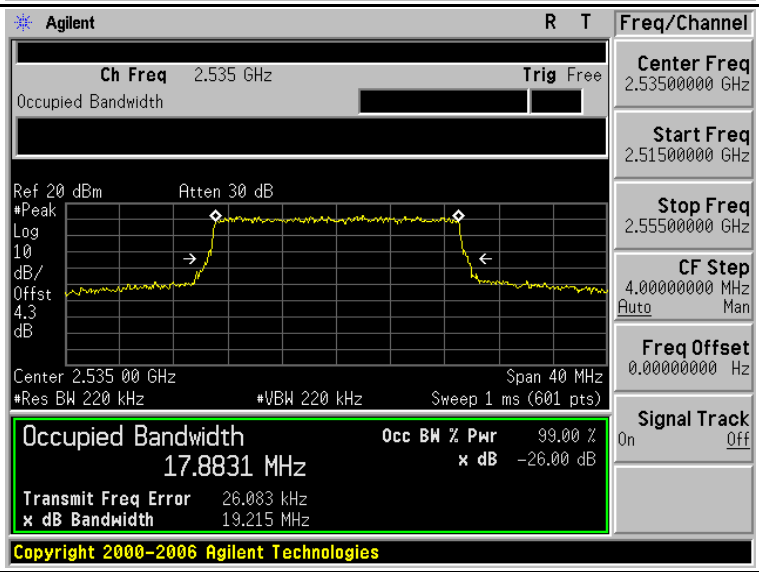
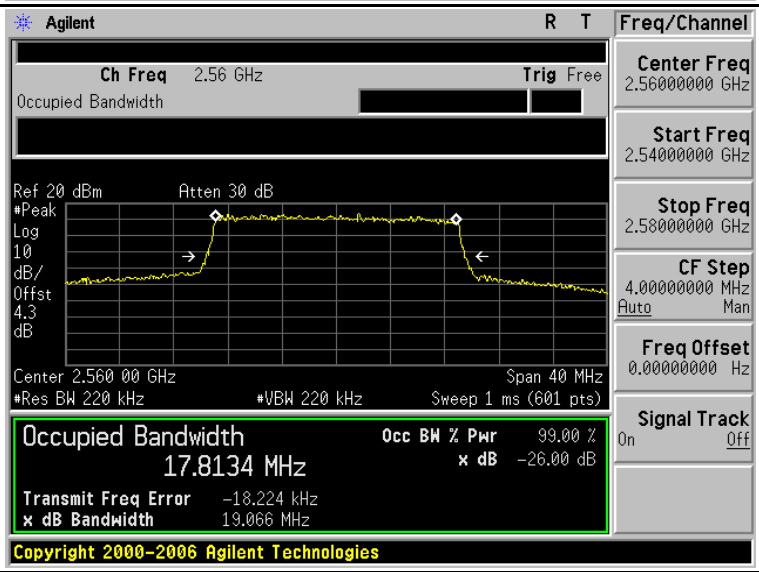
LTE Band 5 (Channel Bandwidth: 5 MHz) _ 16QAM		
826.5 MHz		
836.5 MHz		
846.5 MHz		

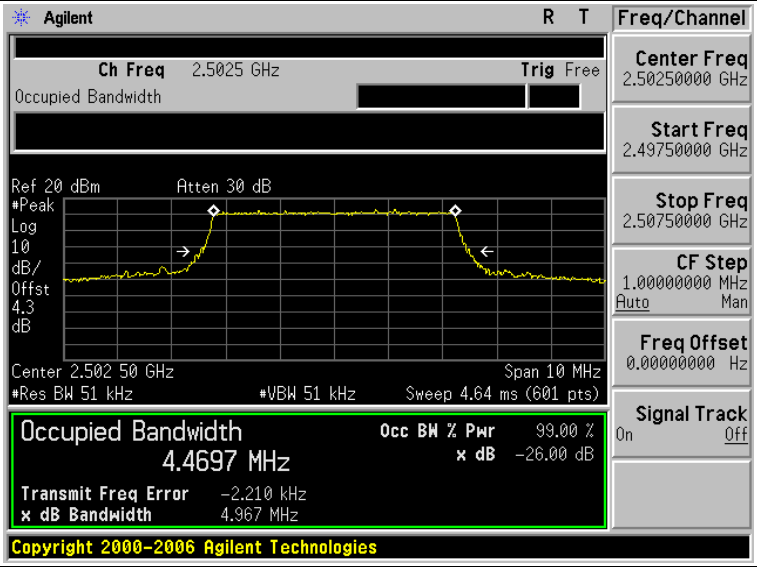
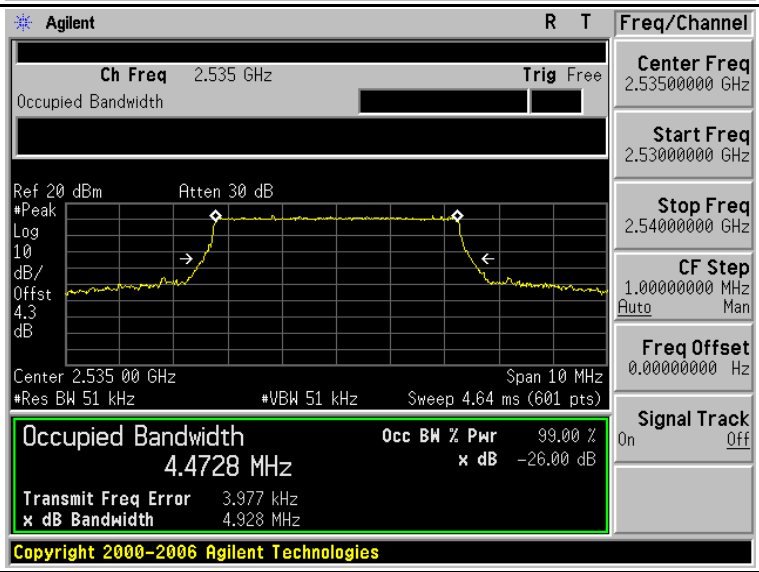
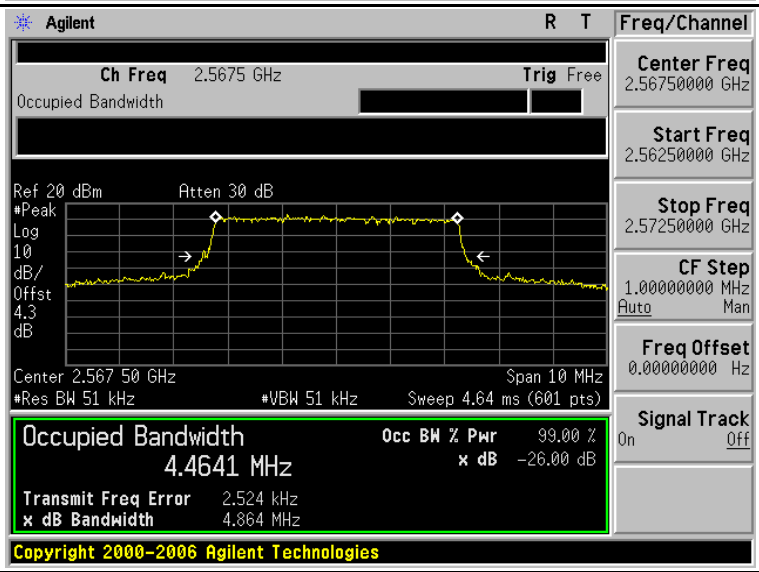
LTE Band 5 (Channel Bandwidth: 10 MHz) _ 16QAM		
829.0 MHz		
836.5 MHz		
844.0 MHz		

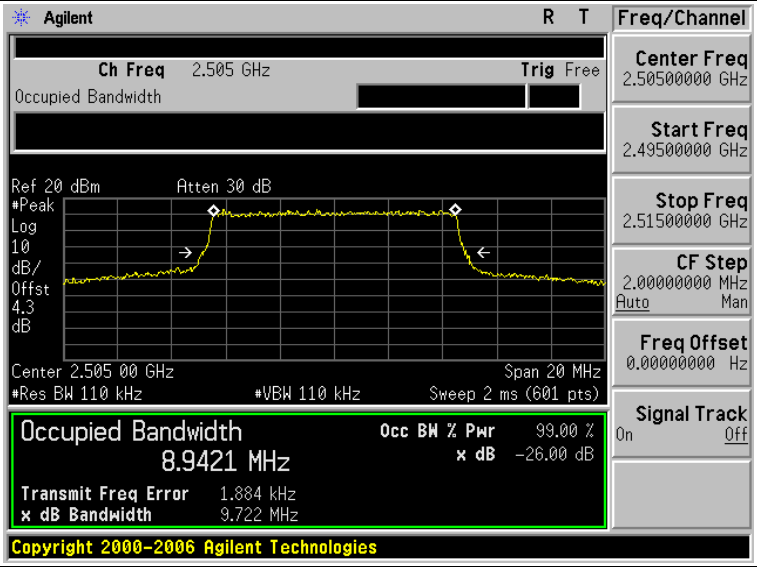
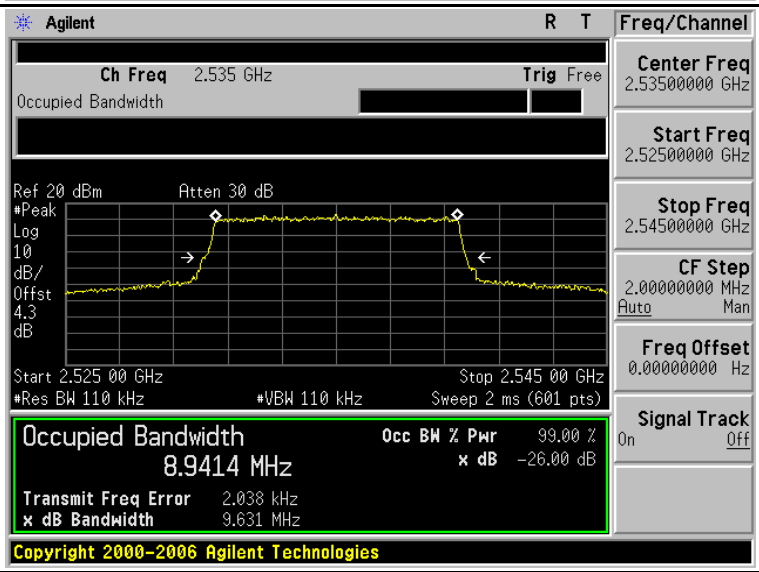
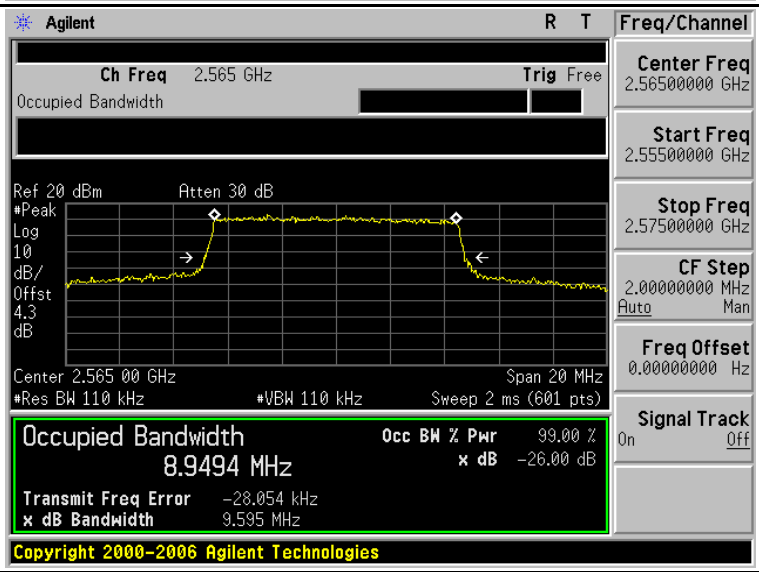
LTE Band 7 (Channel Bandwidth: 5 MHz) _ QPSK		
2502.5 MHz		
2535.0 MHz		
2567.5 MHz		

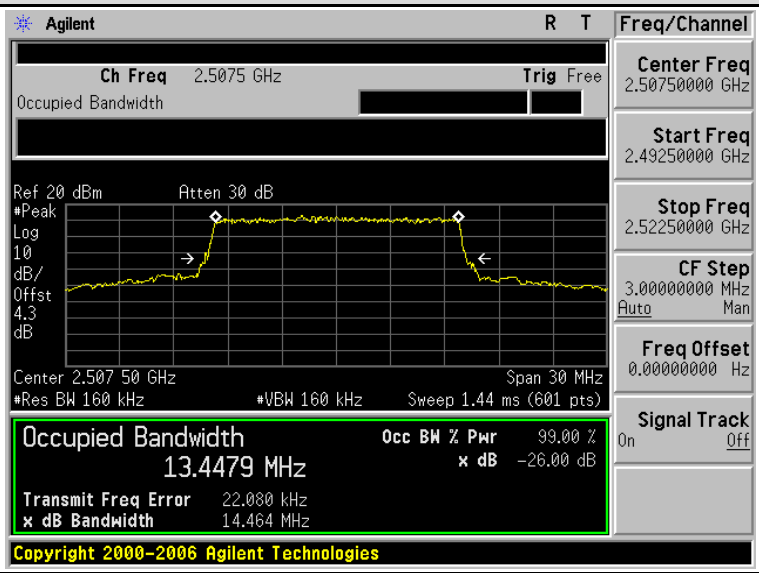
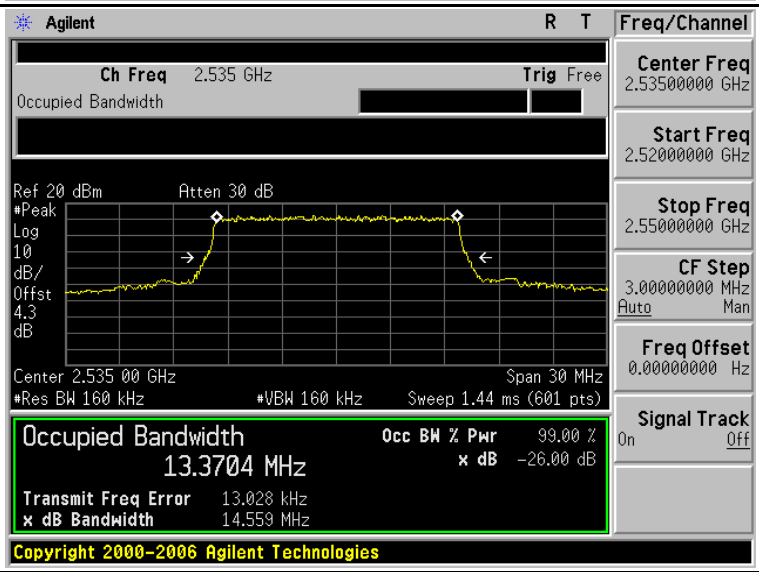
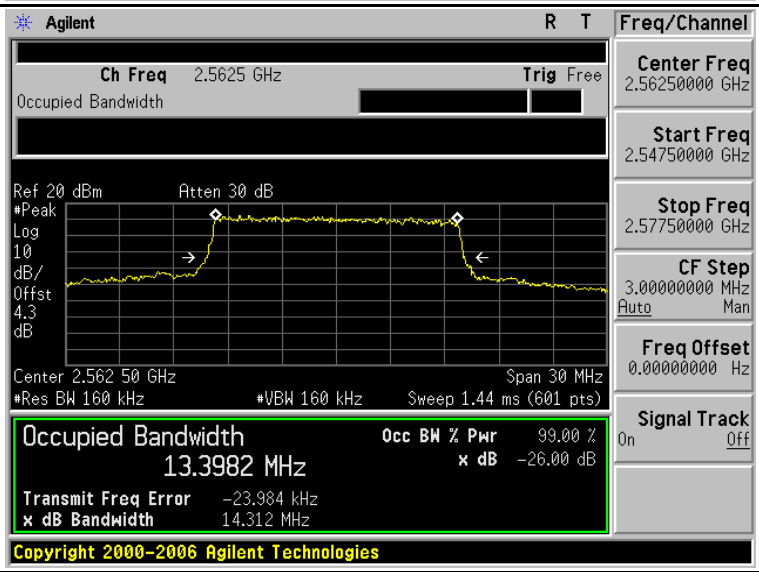
LTE Band 7 (Channel Bandwidth: 10 MHz) _ QPSK		
2505.0 MHz		
2535.0 MHz		
2565.0 MHz		

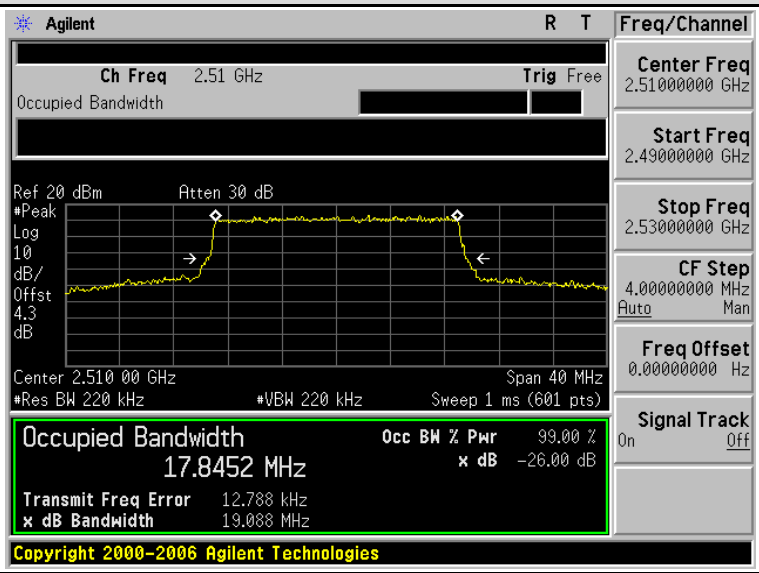
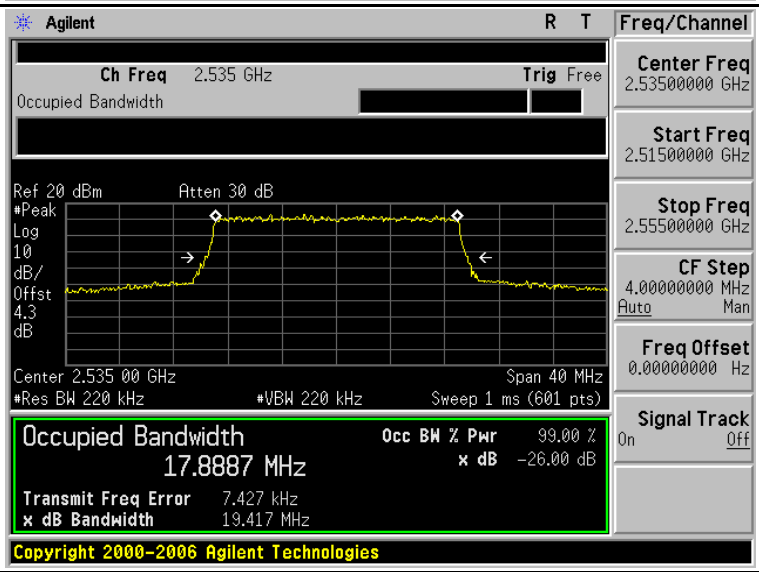
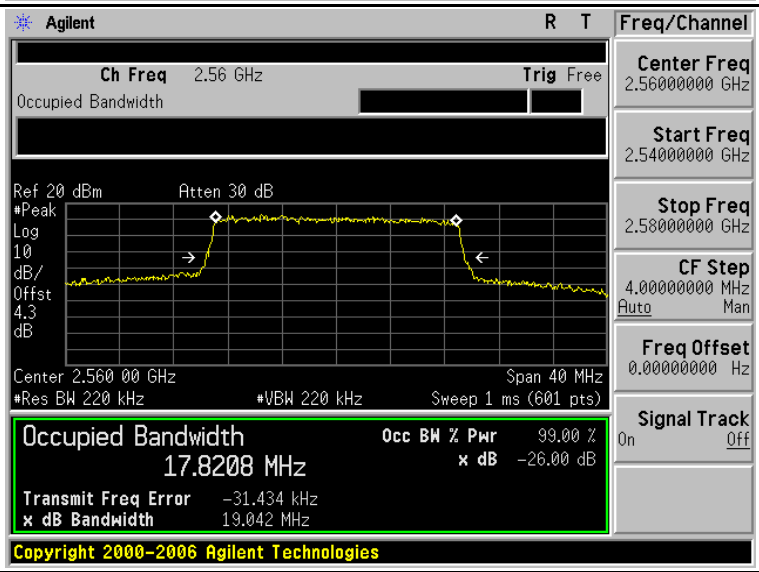
LTE Band 7 (Channel Bandwidth: 15 MHz) _ QPSK		
2507.5 MHz		
2535.0 MHz		
2562.5 MHz		

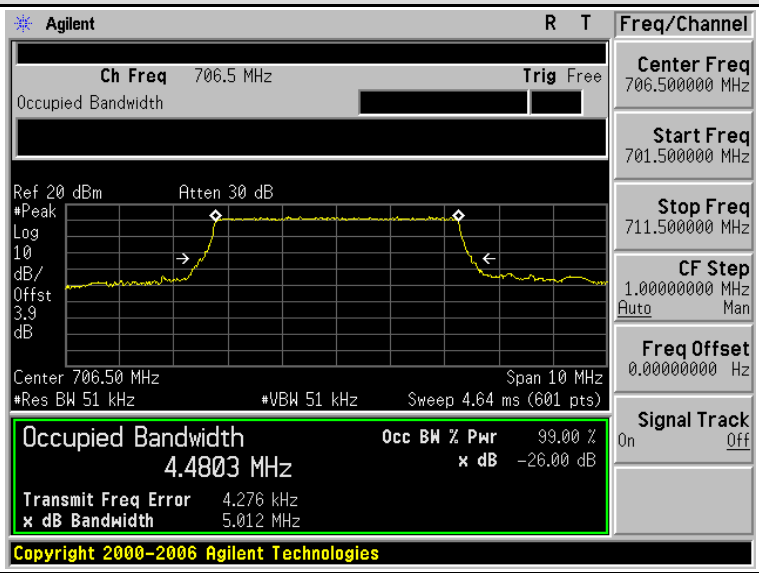
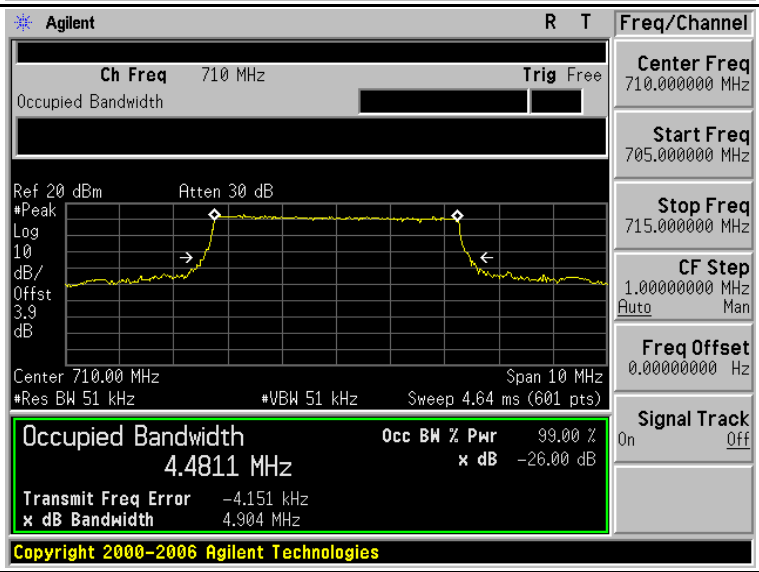
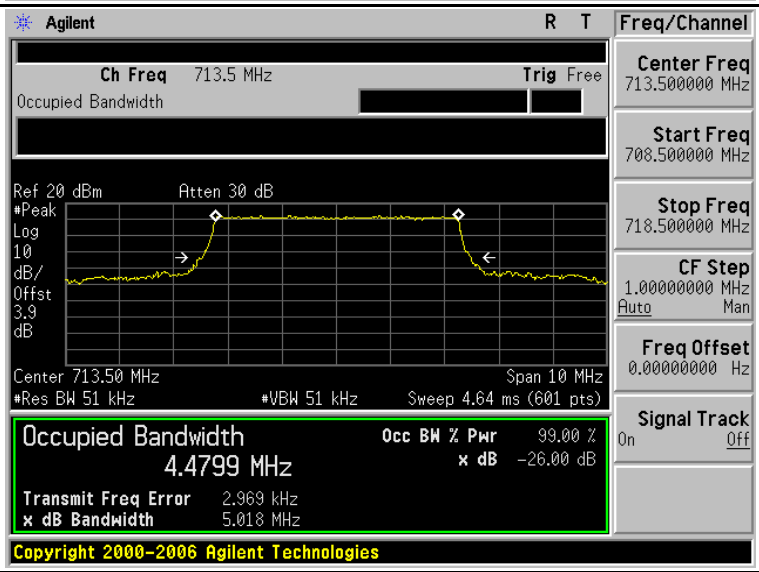
LTE Band 7 (Channel Bandwidth: 20 MHz) _ QPSK		
2510.0 MHz		
2535.0 MHz		
2560.0 MHz		

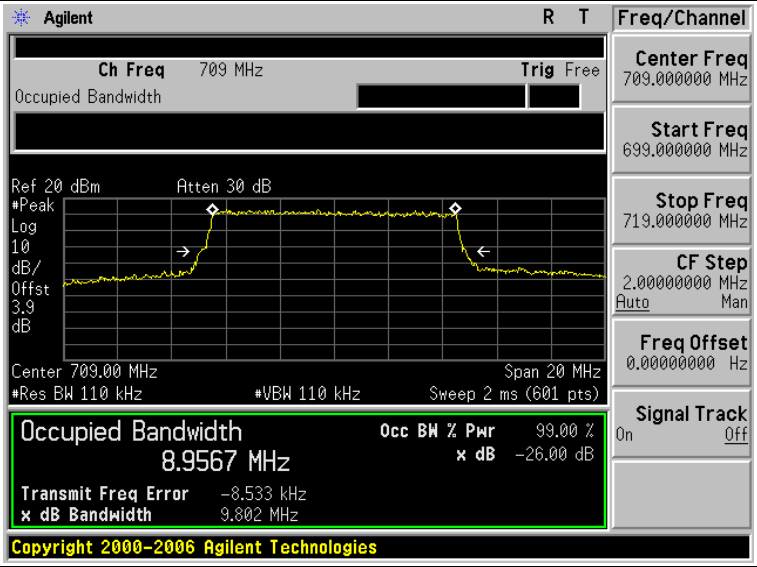
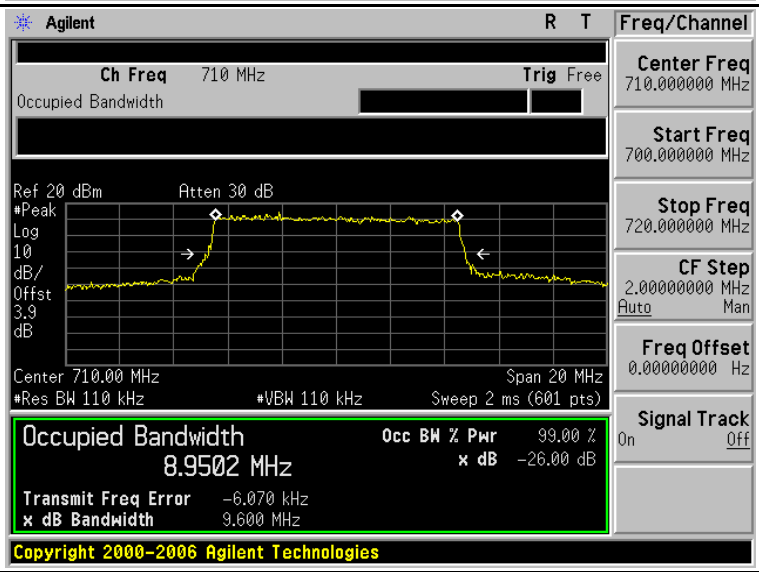
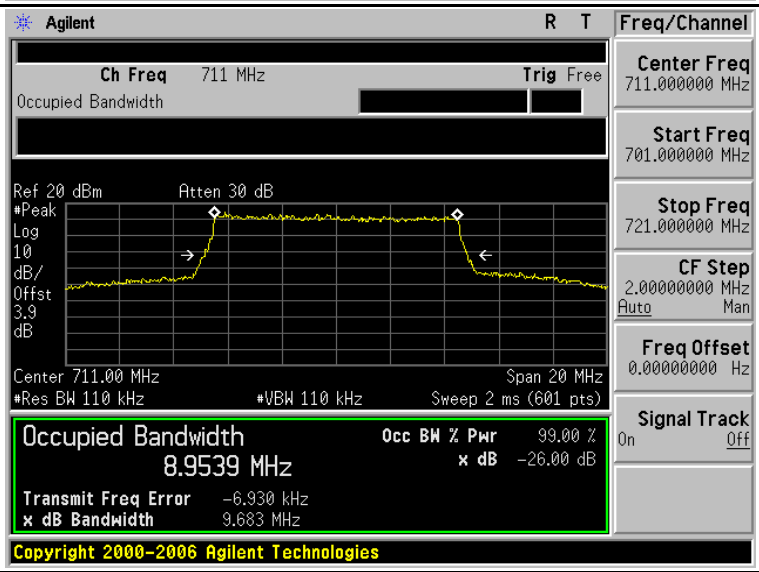
LTE Band 7 (Channel Bandwidth: 5 MHz) _ 16QAM		
2502.5 MHz		
2535.0 MHz		
2567.5 MHz		

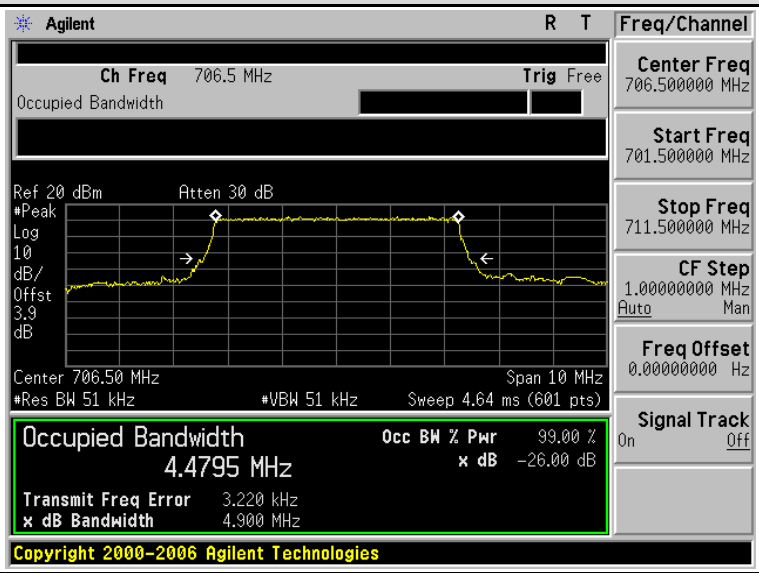
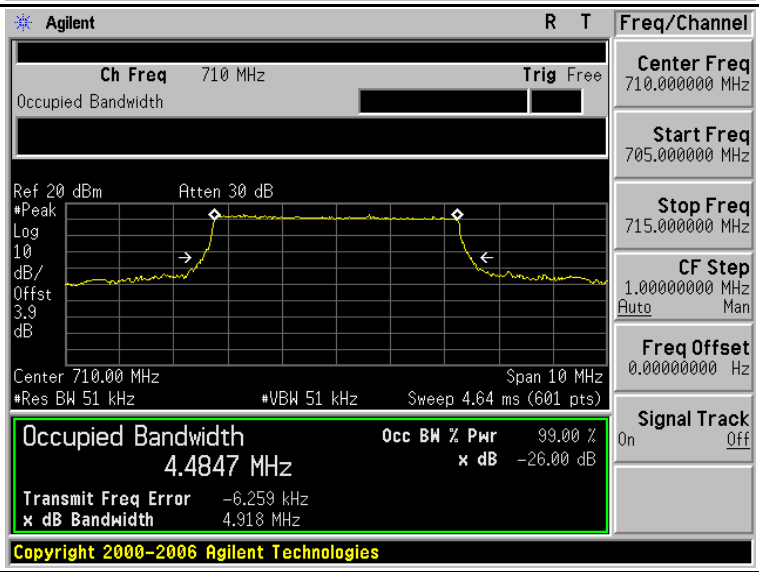
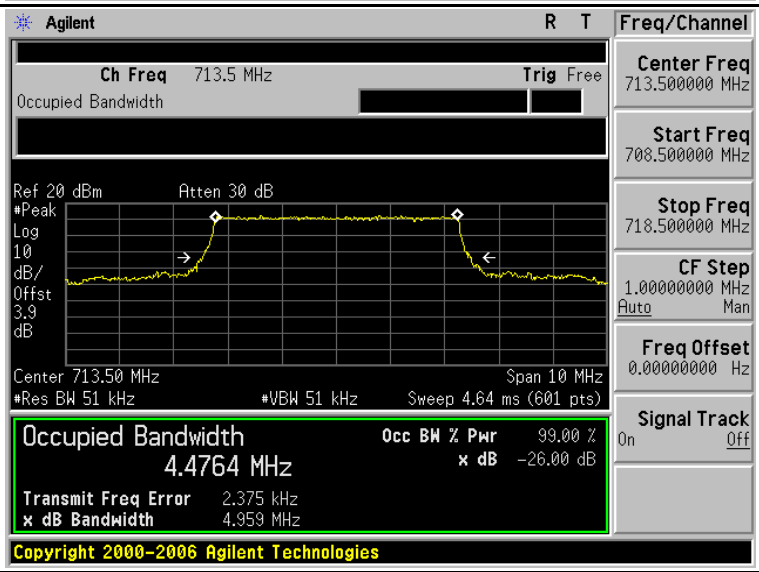
LTE Band 7 (Channel Bandwidth: 10 MHz) _16QAM		
2505.0 MHz		
2535.0 MHz		
2565.0 MHz		

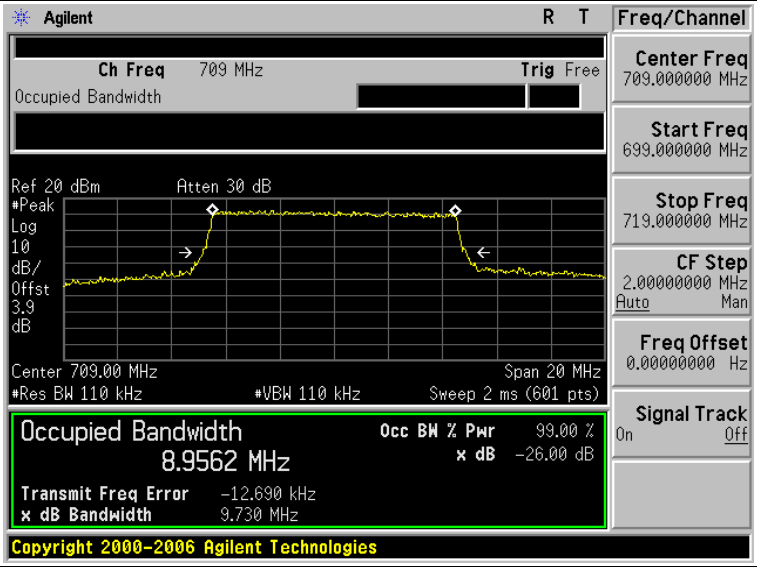
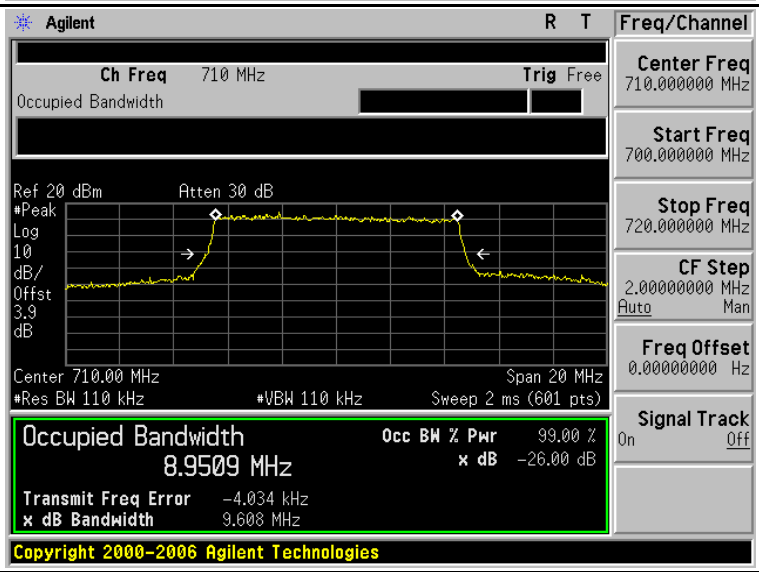
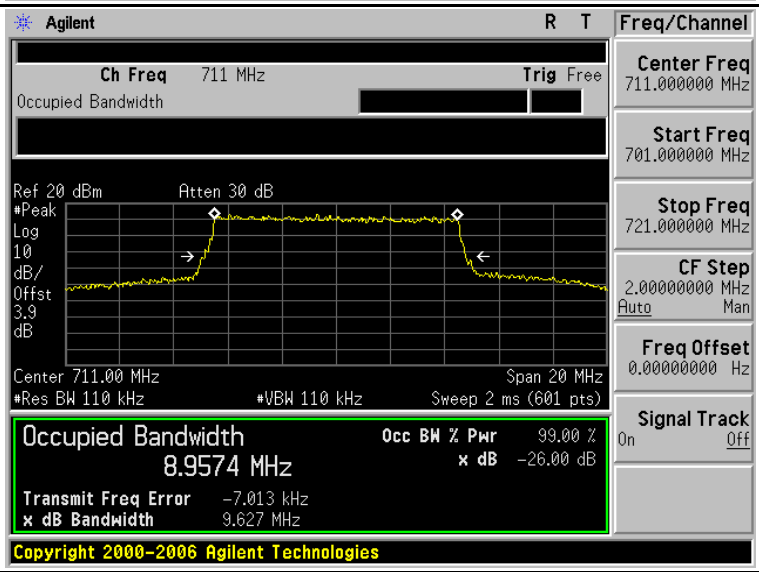
LTE Band 7 (Channel Bandwidth: 15 MHz) _ 16QAM		
2507.5 MHz		
2535.0 MHz		
2562.5 MHz		

LTE Band 7 (Channel Bandwidth: 20 MHz) _ 16QAM		
2510.0 MHz		
2535.0 MHz		
2560.0 MHz		

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

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

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

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

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.

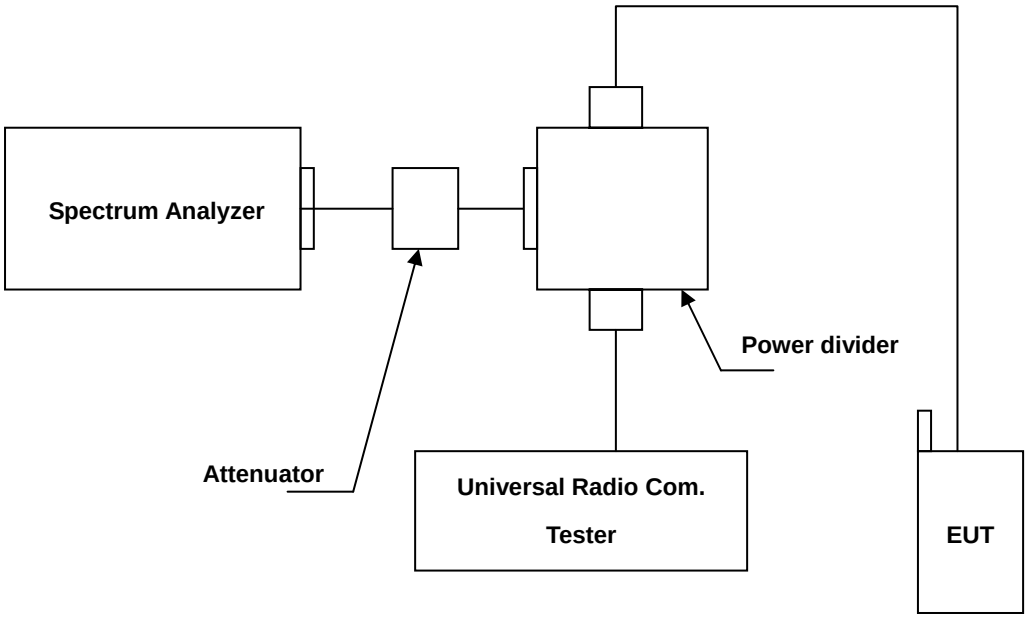
6.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2014	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/05/2014	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

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

6.3. Setup



6.4. Test Procedure

The measurement is made according to FCC rules:

a. Set resolution/measurement bandwidth signal's occupied bandwidth;

b. Set the number of counts to a value that stabilizes the measured CCDF curve;

c. Record the maximum PAPR level associated with a probability of 0.1%.

6.5. Uncertainty

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

6.6. Test Result

Model Number	AR7552		
Test Item	Peak to Average Ratio		
Date of Test	04/29/2015	Test Site	TE05

LTE Band 2				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	1.4 MHz	1880.0	5.70	< 13
	3 MHz	1880.0	5.64	< 13
	5 MHz	1880.0	5.36	< 13
	10 MHz	1880.0	5.69	< 13
	15 MHz	1880.0	5.58	< 13
	20 MHz	1880.0	5.44	< 13
16QAM	1.4 MHz	1880.0	6.56	< 13
	3 MHz	1880.0	6.51	< 13
	5 MHz	1880.0	6.07	< 13
	10 MHz	1880.0	6.55	< 13
	15 MHz	1880.0	6.56	< 13
	20 MHz	1880.0	5.98	< 13

LTE Band 4				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	1.4 MHz	1732.5	5.47	< 13
	3 MHz	1732.5	5.43	< 13
	5 MHz	1732.5	5.19	< 13
	10 MHz	1732.5	5.41	< 13
	15 MHz	1732.5	5.53	< 13
	20 MHz	1732.5	5.44	< 13
16QAM	1.4 MHz	1732.5	6.38	< 13
	3 MHz	1732.5	6.30	< 13
	5 MHz	1732.5	5.94	< 13
	10 MHz	1732.5	6.29	< 13
	15 MHz	1732.5	6.49	< 13
	20 MHz	1732.5	6.03	< 13

LTE Band 5				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	1.4 MHz	836.5	5.27	< 13
	3 MHz	836.5	5.12	< 13
	5 MHz	836.5	4.88	< 13
	10 MHz	836.5	4.95	< 13
16QAM	1.4 MHz	836.5	6.29	< 13
	3 MHz	836.5	6.00	< 13
	5 MHz	836.5	5.76	< 13
	10 MHz	836.5	5.80	< 13

LTE Band 7				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	5 MHz	2535.0	5.03	< 13
	10 MHz	2535.0	5.27	< 13
	15 MHz	2535.0	5.20	< 13
	20 MHz	2535.0	5.11	< 13
16QAM	5 MHz	2535.0	5.81	< 13
	10 MHz	2535.0	6.15	< 13
	15 MHz	2535.0	6.15	< 13
	20 MHz	2535.0	5.77	< 13

LTE Band 17				
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
QPSK	5 MHz	710.0	5.65	< 13
	10 MHz	710.0	5.86	< 13
16QAM	5 MHz	710.0	6.24	< 13
	10 MHz	710.0	6.72	< 13

6.7. Test Graphs

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

LTE Band 5 (Channel Bandwidth: 1.4 MHz) _ 16QAM	
836.5 MHz	

LTE Band 5 (Channel Bandwidth: 3 MHz) _ 16QAM	
836.5 MHz	

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

LTE Band 5 (Channel Bandwidth: 10 MHz) _ 16QAM	
836.5 MHz	

LTE Band 7 (Channel Bandwidth: 5 MHz) _ QPSK	
2535.0 MHz	

LTE Band 7 (Channel Bandwidth: 10 MHz) _ QPSK	
2535.0 MHz	

LTE Band 7 (Channel Bandwidth: 15 MHz) _ QPSK	
2535.0 MHz	

LTE Band 7 (Channel Bandwidth: 20 MHz) _ QPSK	
2535.0 MHz	

LTE Band 7 (Channel Bandwidth: 5 MHz) _ 16QAM	
2535.0 MHz	

LTE Band 7 (Channel Bandwidth: 10 MHz) _ 16QAM	
2535.0 MHz	

LTE Band 7 (Channel Bandwidth: 15 MHz) _ 16QAM	
2535.0 MHz	

LTE Band 7 (Channel Bandwidth: 20 MHz) _ 16QAM	
2535.0 MHz	

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

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

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

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

7 Band Edge Test

7.1. Limit

The Band Edge Limit:

§22.917(a), §24.238(a)

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

§27.53(m)

For mobile digital stations, the attenuation factor shall be not less than 43+10 log(p) dB at the channel edge and 55+10 log(P) dB at 5.5 megahertz fron the channel edges.

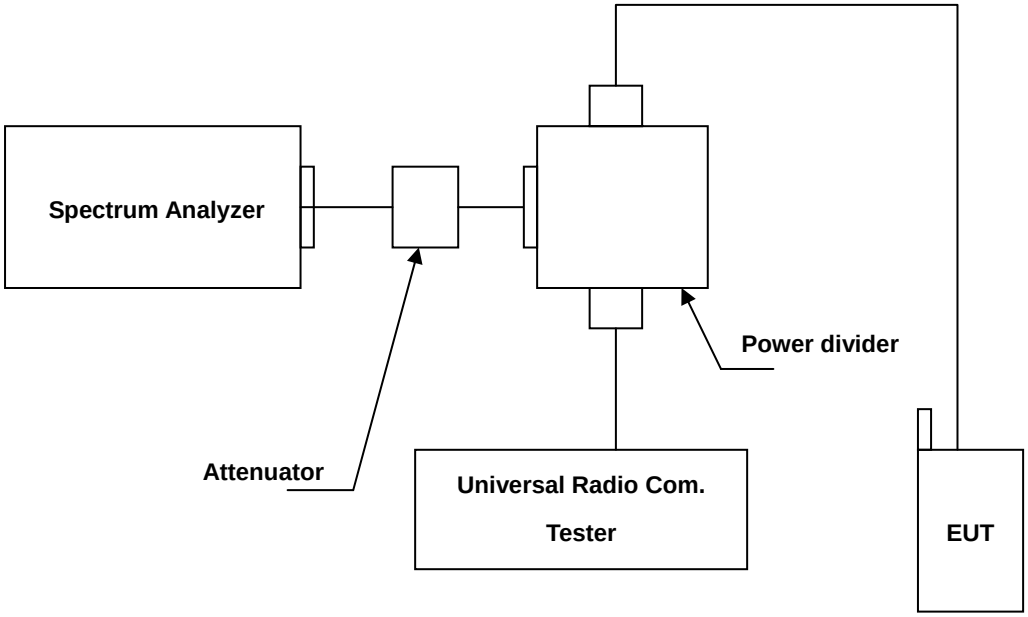
7.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2014	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/05/2014	(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:

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.

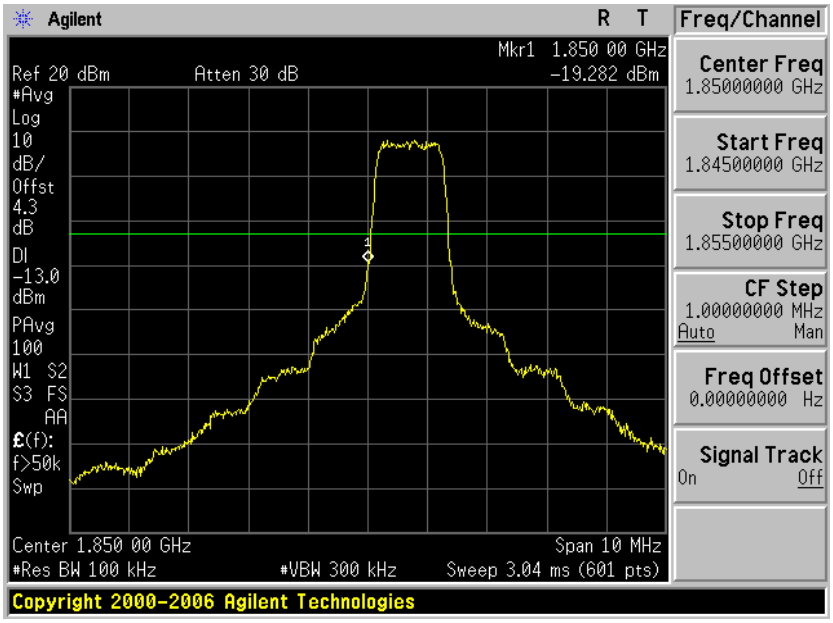
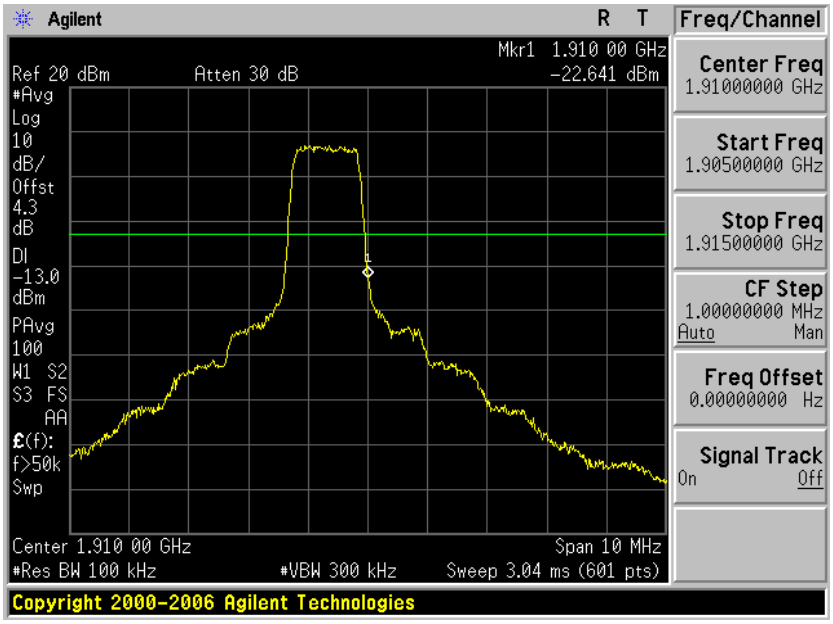
c. The center frequency of spectrum is the band edge frequency and span is 10 MHz. RB of the resolution bandwidth of at least one percent of the emission bandwidth.

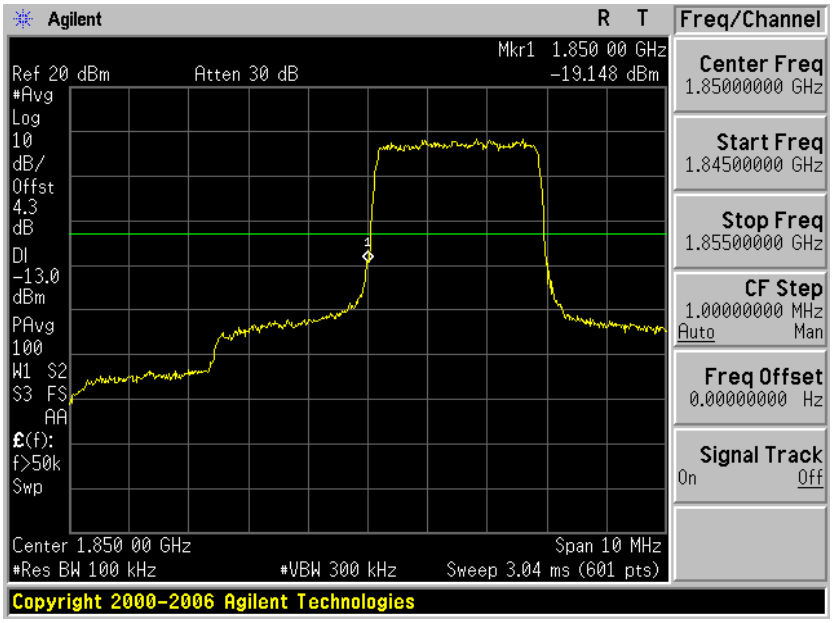
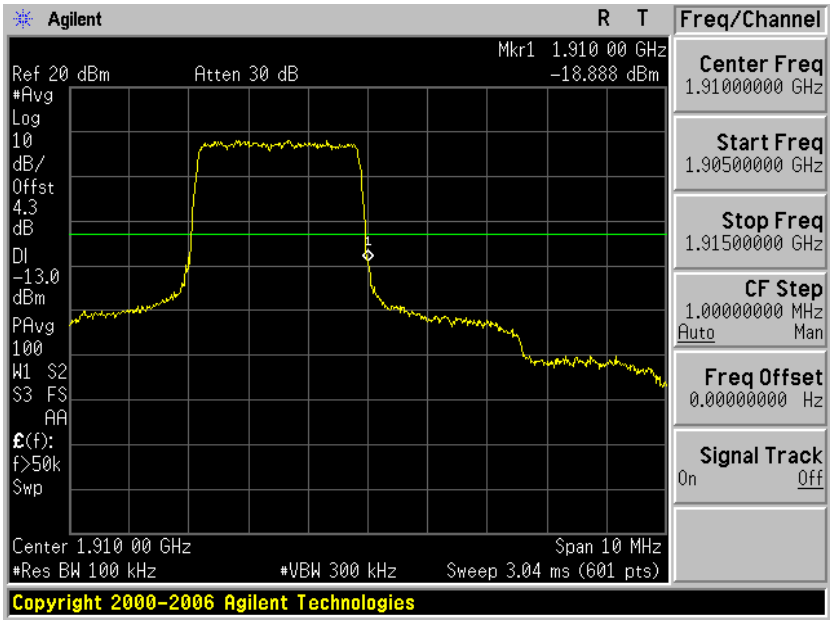
d. Record the max trace plot into the test report.

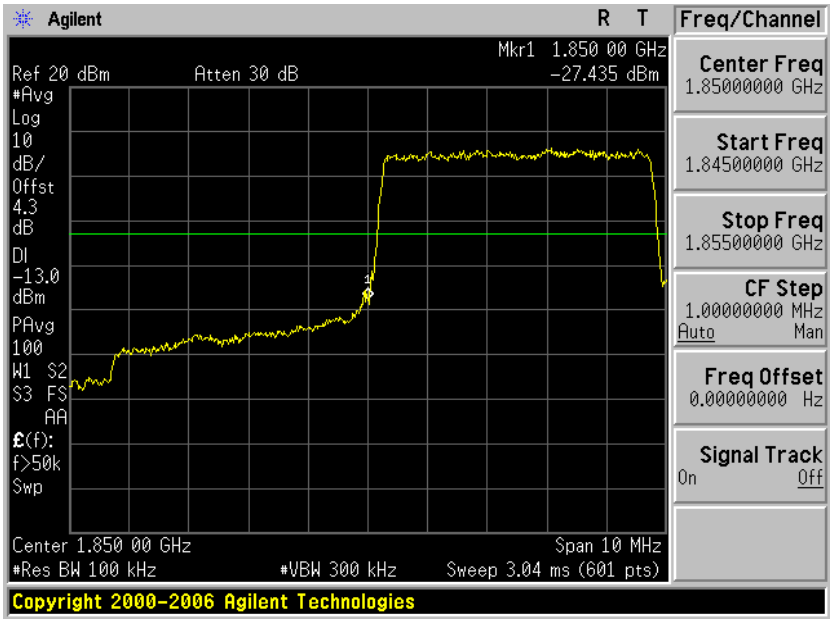
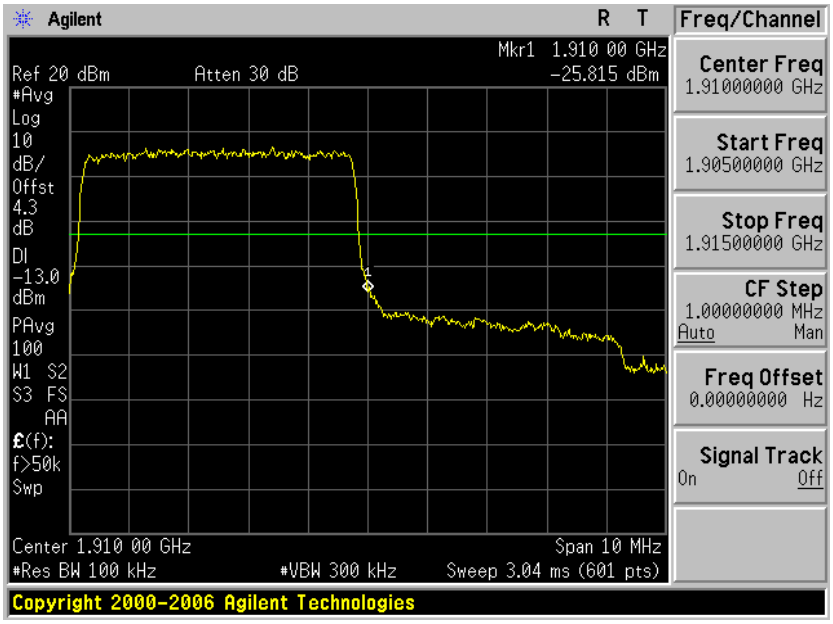
7.5. Uncertainty

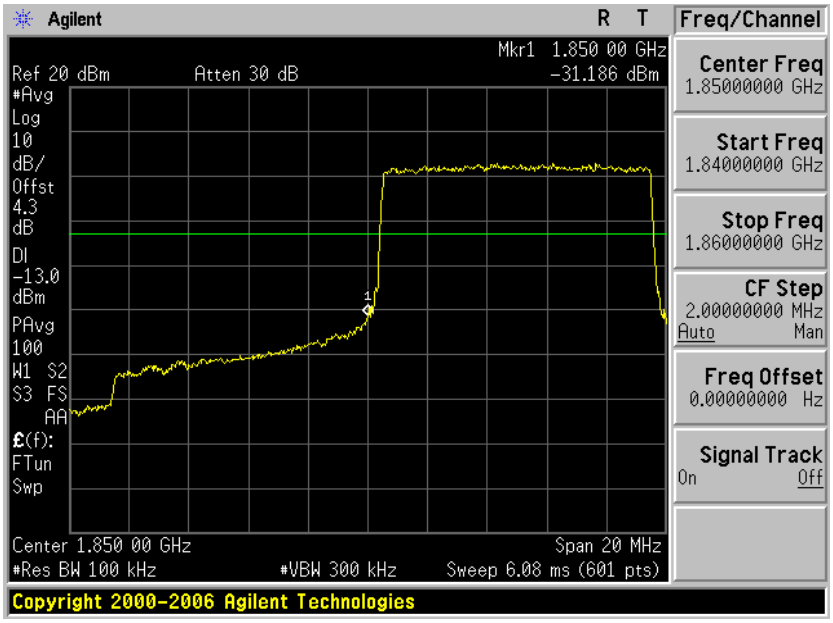
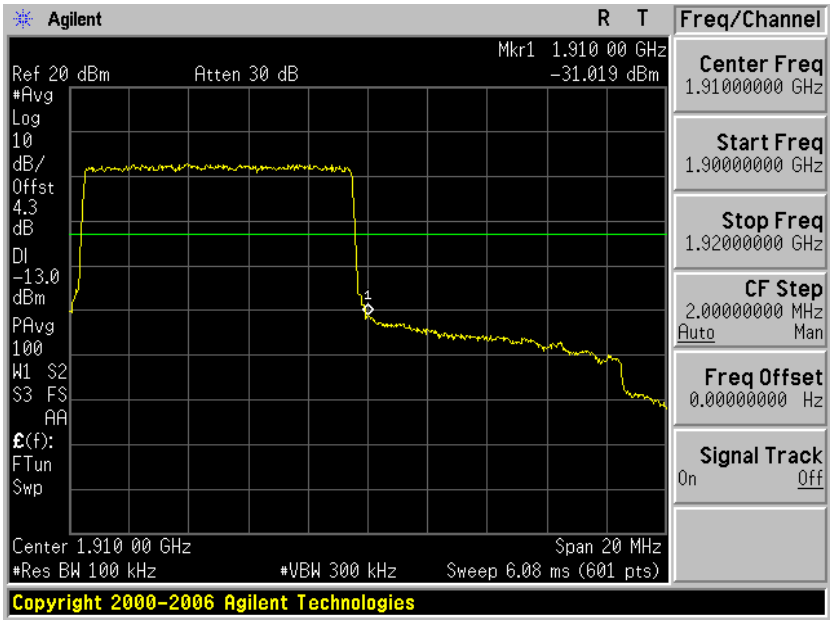
The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

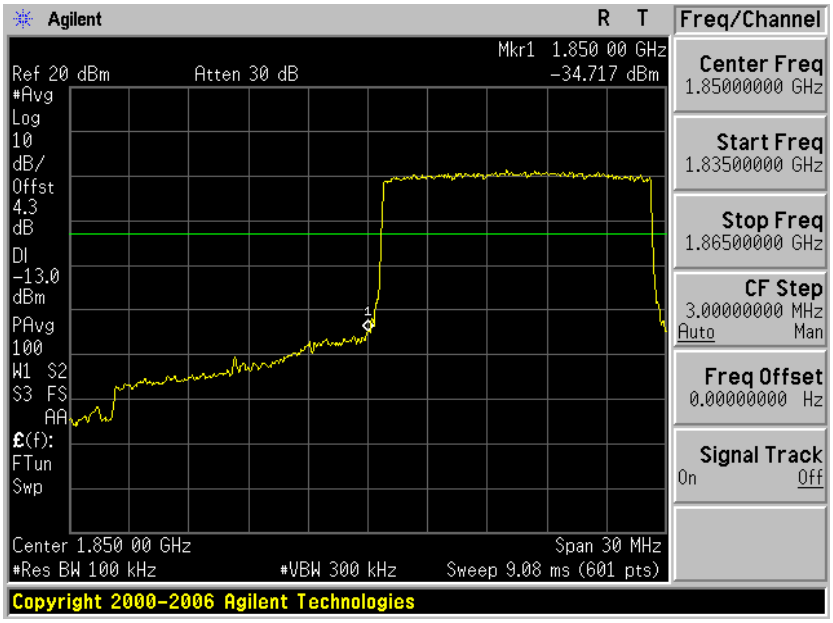
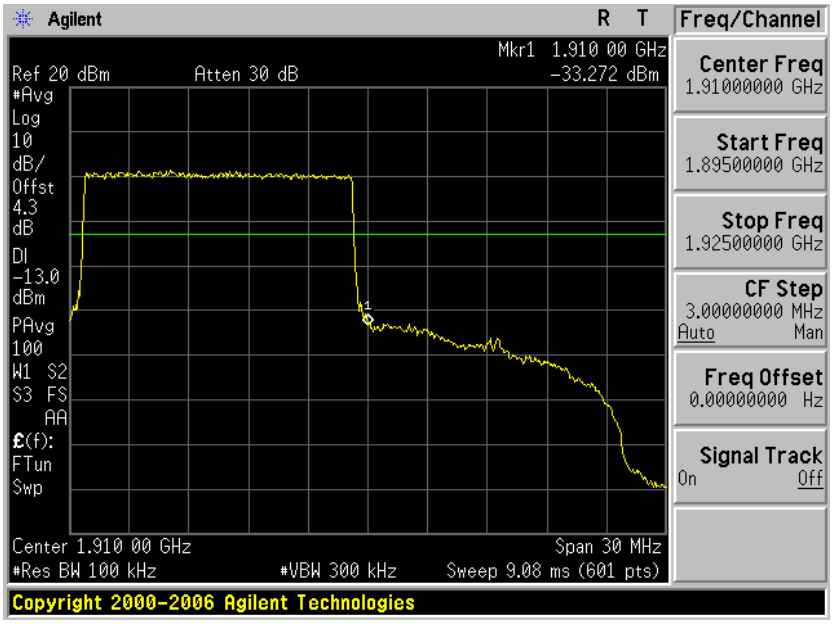
7.6. Test Result

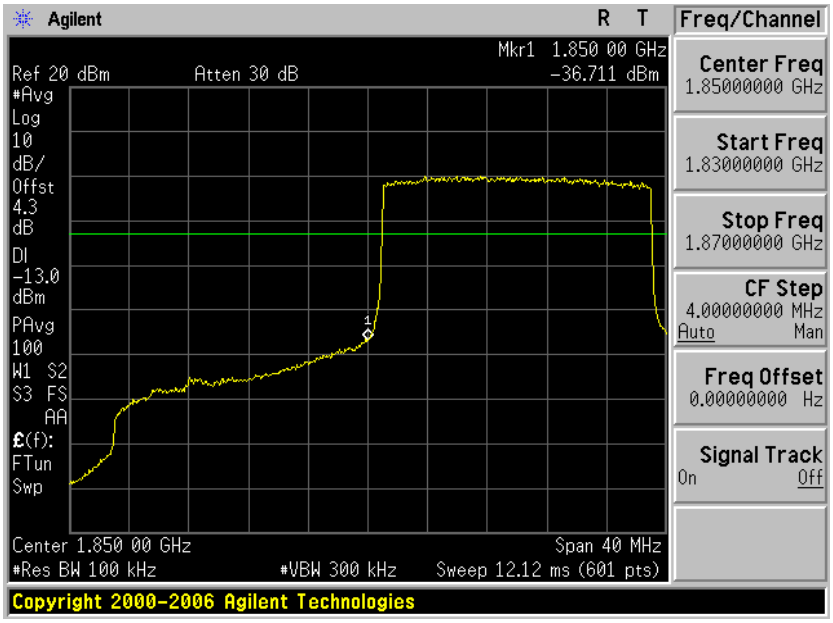
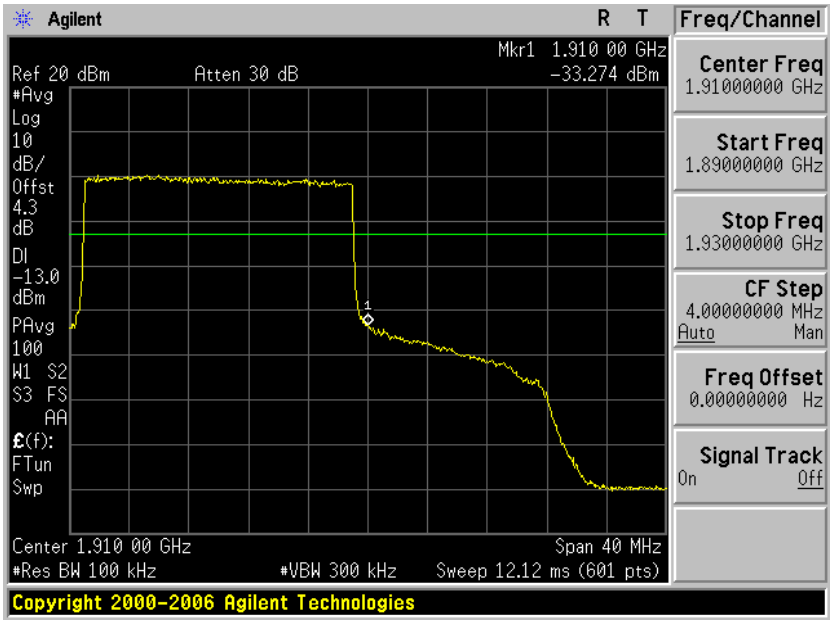
Frequency	LTE Band 2	Channel Bandwidth	1.4 MHz	RB Allocated	6
Lower Band Edge					
Higher Band Edge					

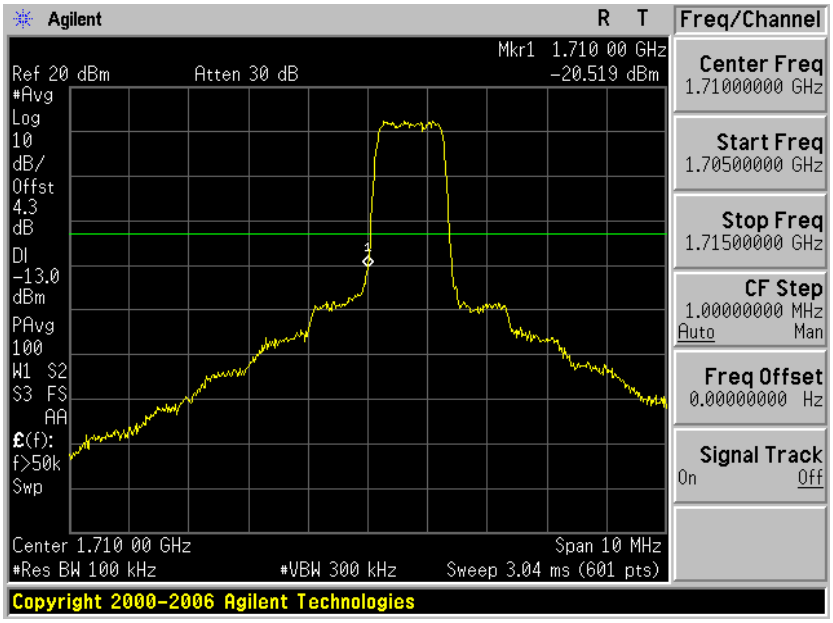
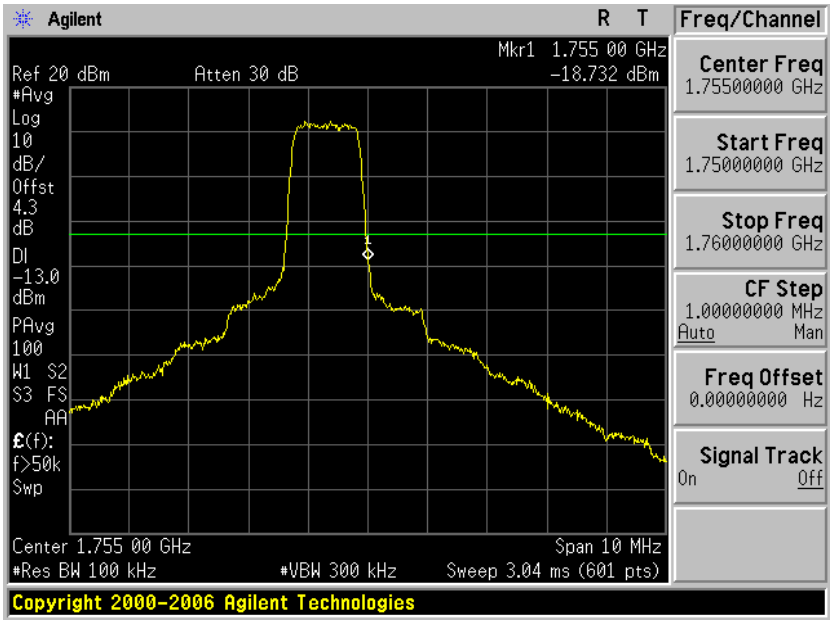
Frequency	LTE Band 2	Channel Bandwidth	3 MHz	RB Allocated	15
Lower Band Edge					
Higher Band Edge					

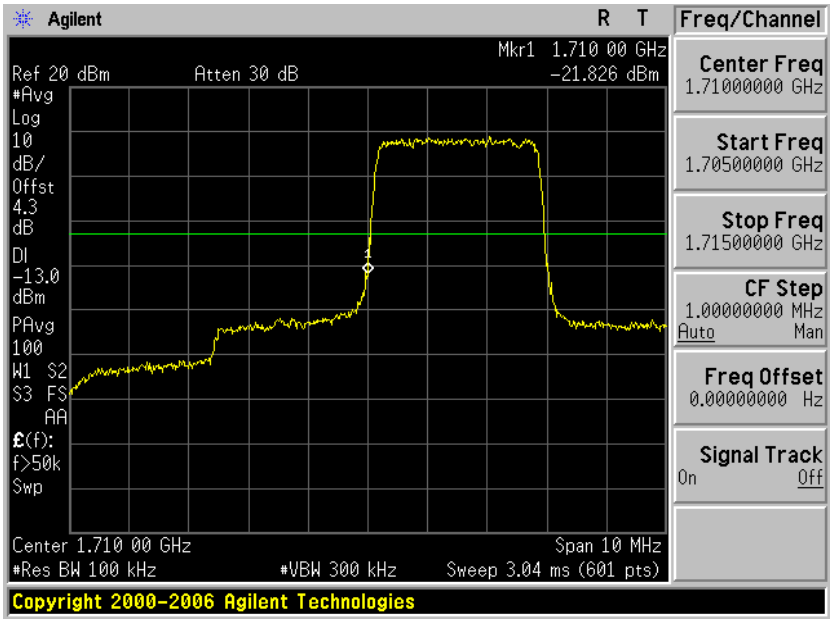
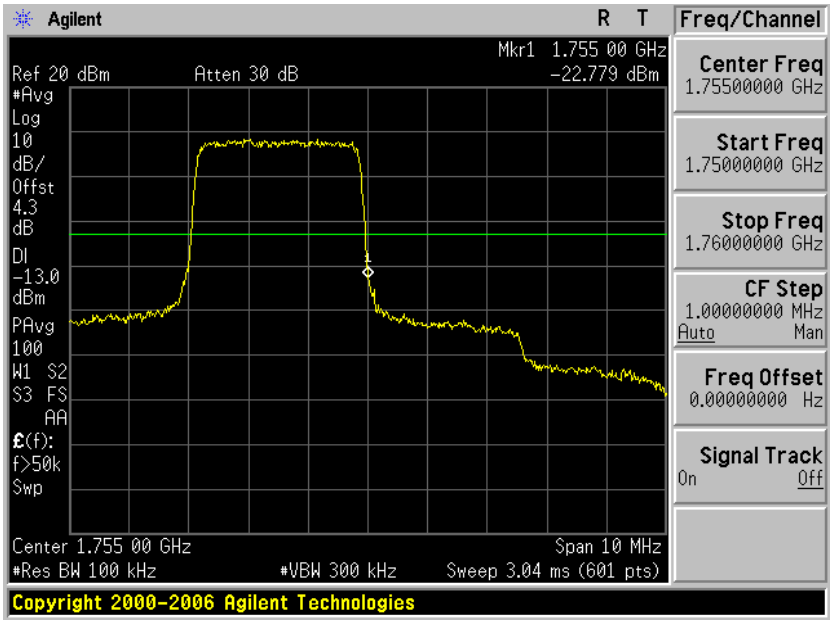
Frequency	LTE Band 2	Channel Bandwidth	5 MHz	RB Allocated	25
Lower Band Edge					
Higher Band Edge					

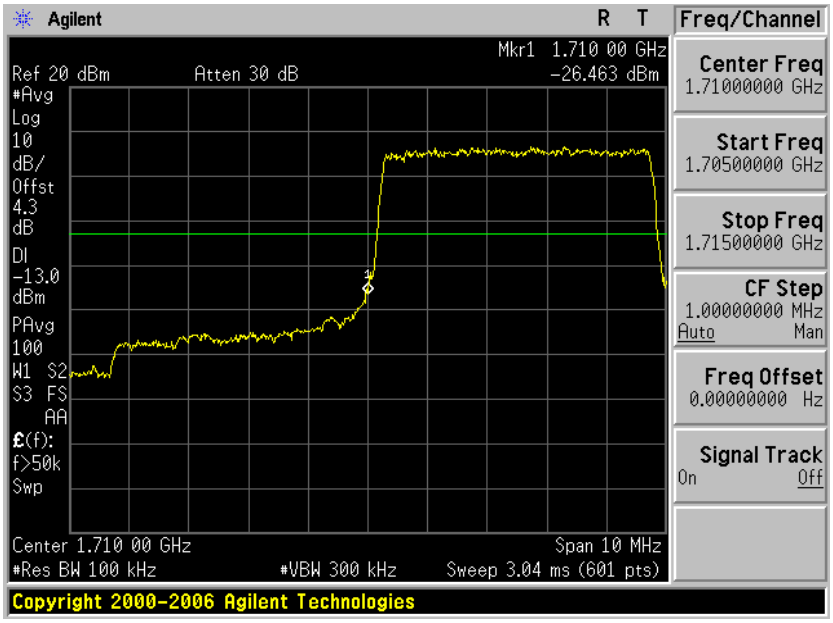
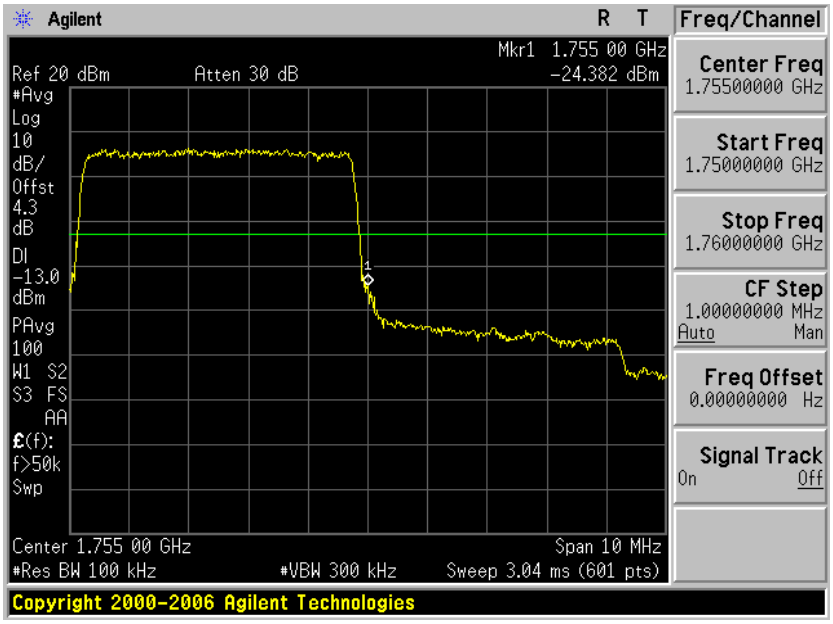
Frequency	LTE Band 2	Channel Bandwidth	10 MHz	RB Allocated	50
Lower Band Edge					
Higher Band Edge					

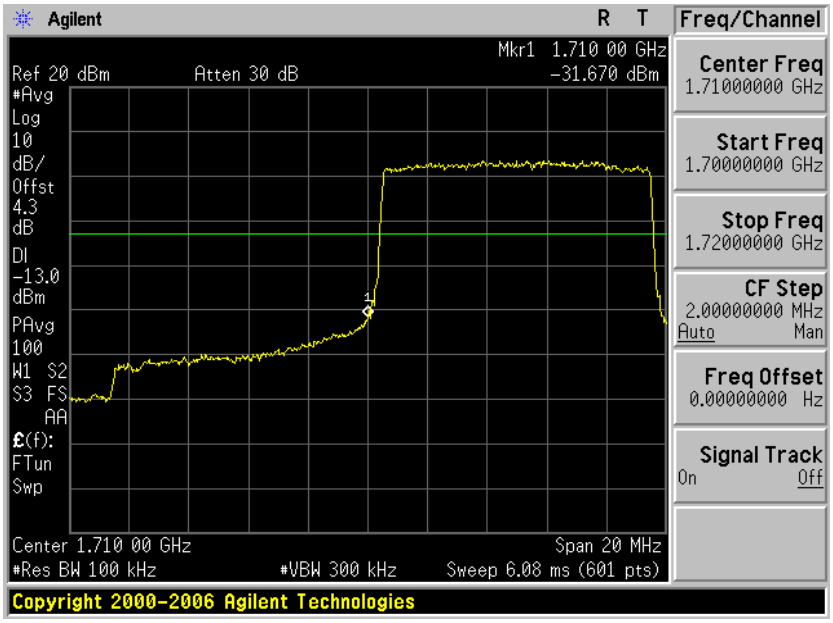
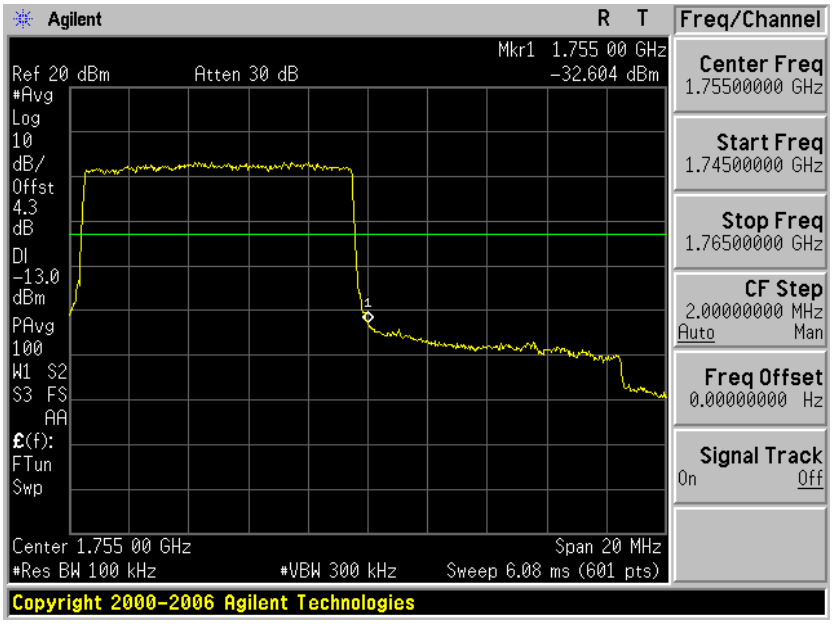
Frequency	LTE Band 2	Channel Bandwidth	15 MHz	RB Allocated	75
Lower Band Edge					
Higher Band Edge					

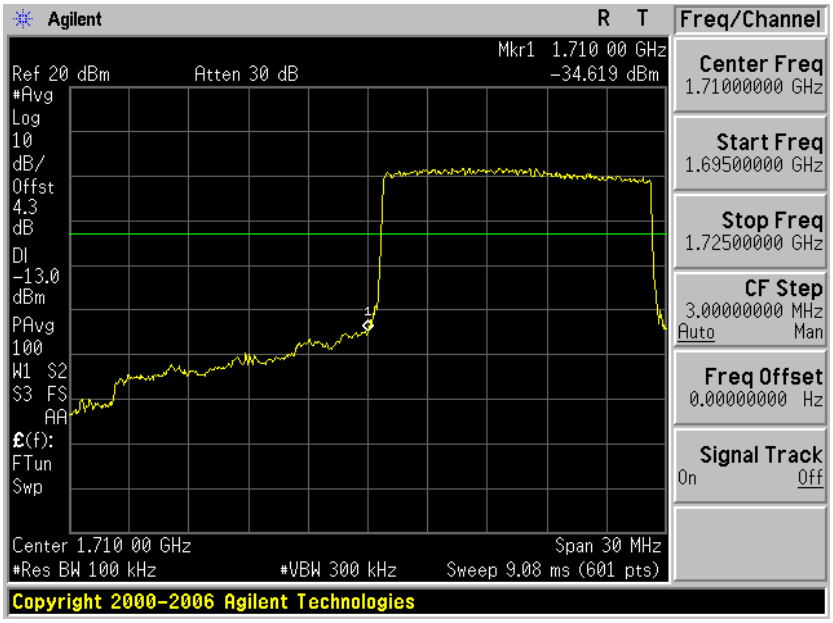
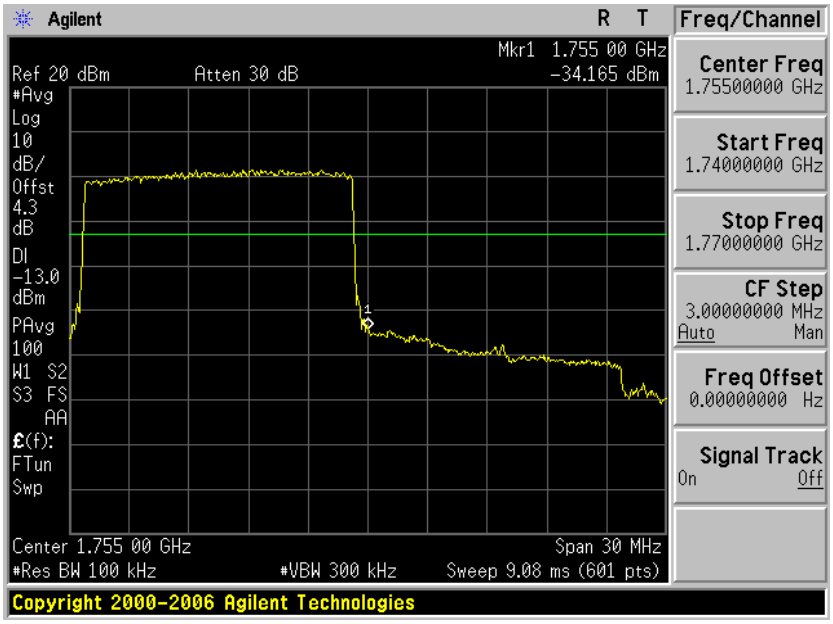
Frequency	LTE Band 2	Channel Bandwidth	20 MHz	RB Allocated	100
Lower Band Edge					
Higher Band Edge					

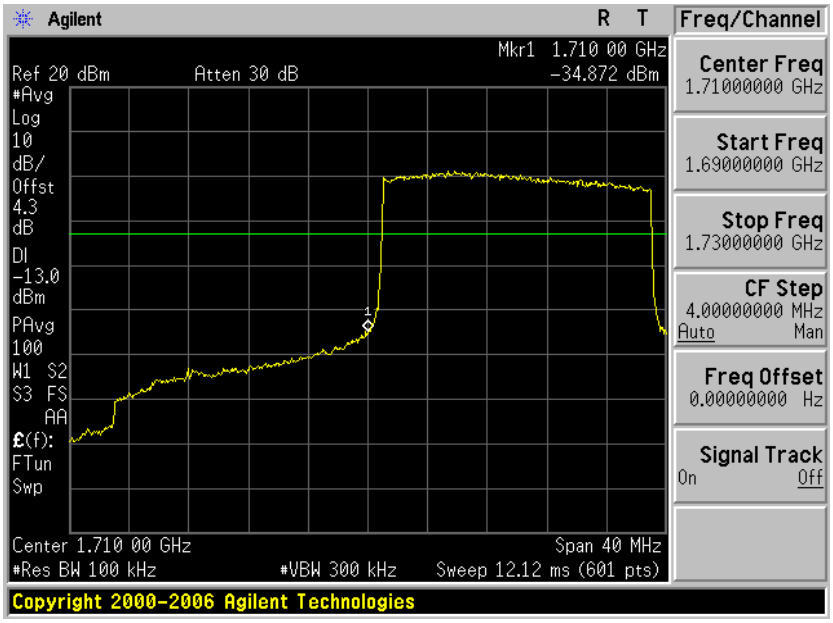
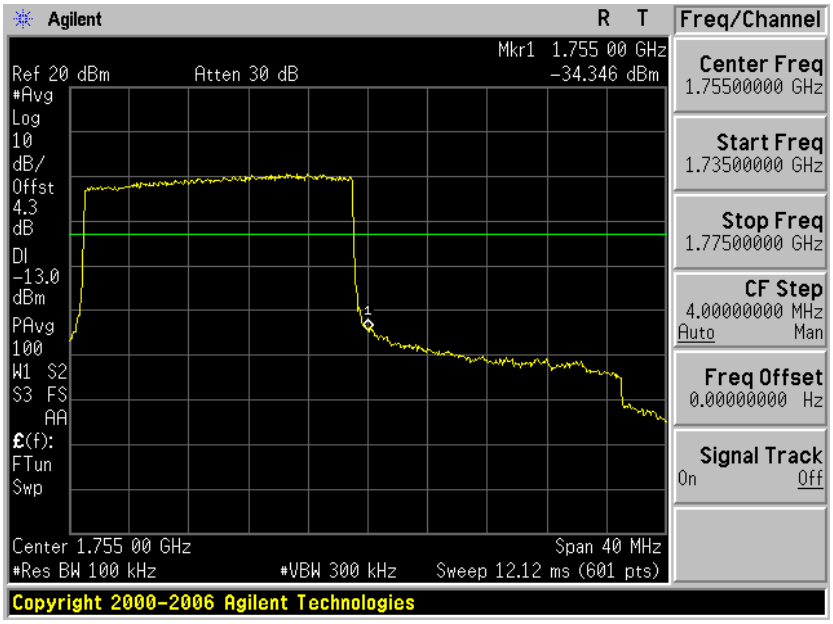
Frequency	LTE Band 4	Channel Bandwidth	1.4 MHz	RB Allocated	6
Lower Band Edge					
Higher Band Edge					

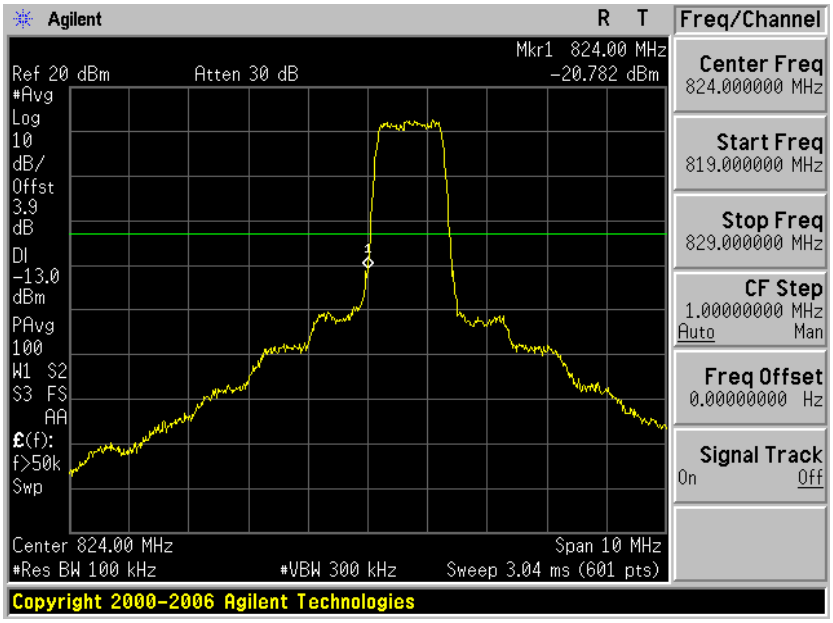
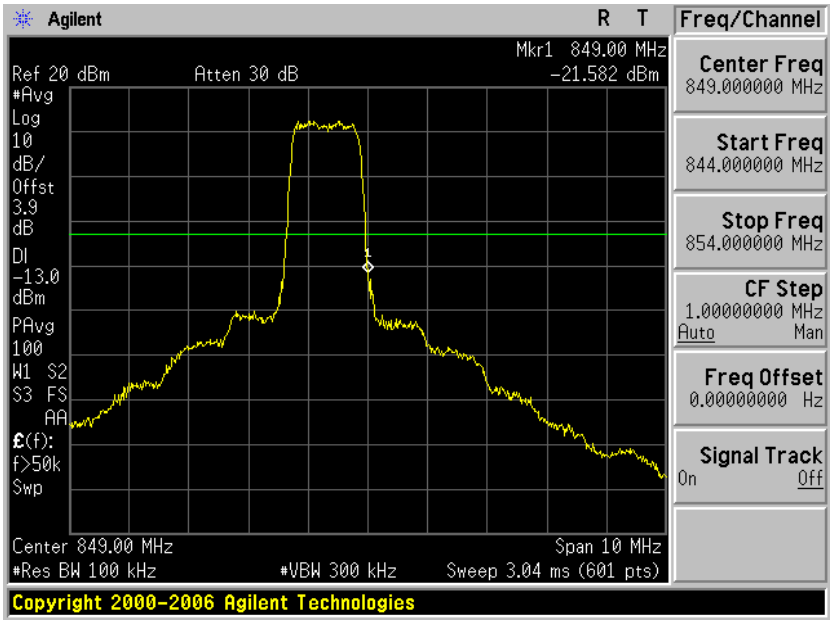
Frequency	LTE Band 4	Channel Bandwidth	3 MHz	RB Allocated	15
Lower Band Edge					
Higher Band Edge					

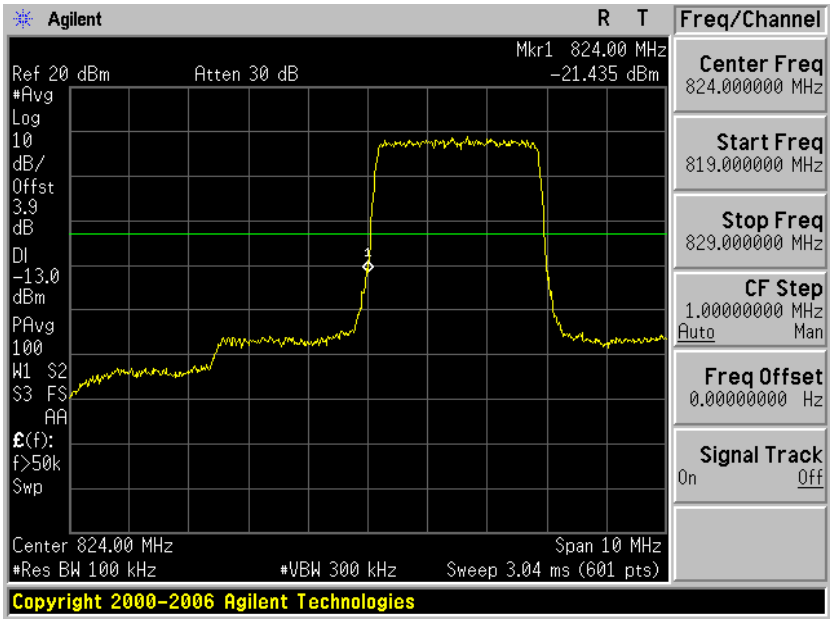
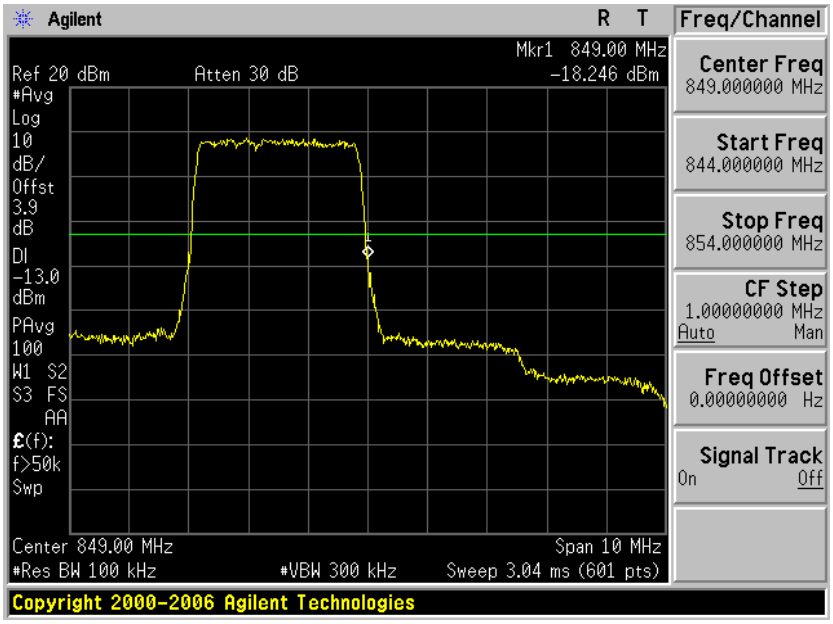
Frequency	LTE Band 4	Channel Bandwidth	5 MHz	RB Allocated	25
Lower Band Edge					
Higher Band Edge					

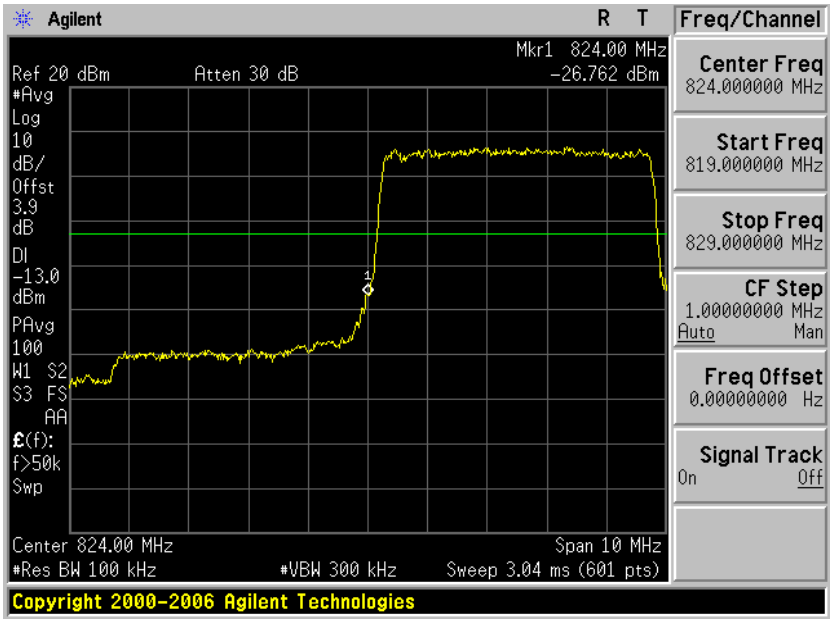
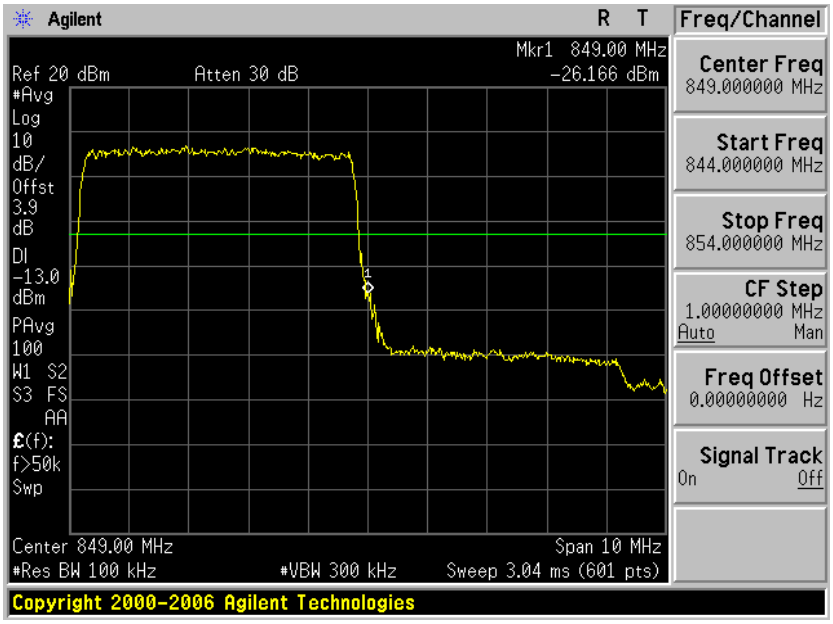
Frequency	LTE Band 4	Channel Bandwidth	10 MHz	RB Allocated	50
Lower Band Edge					
Higher Band Edge					

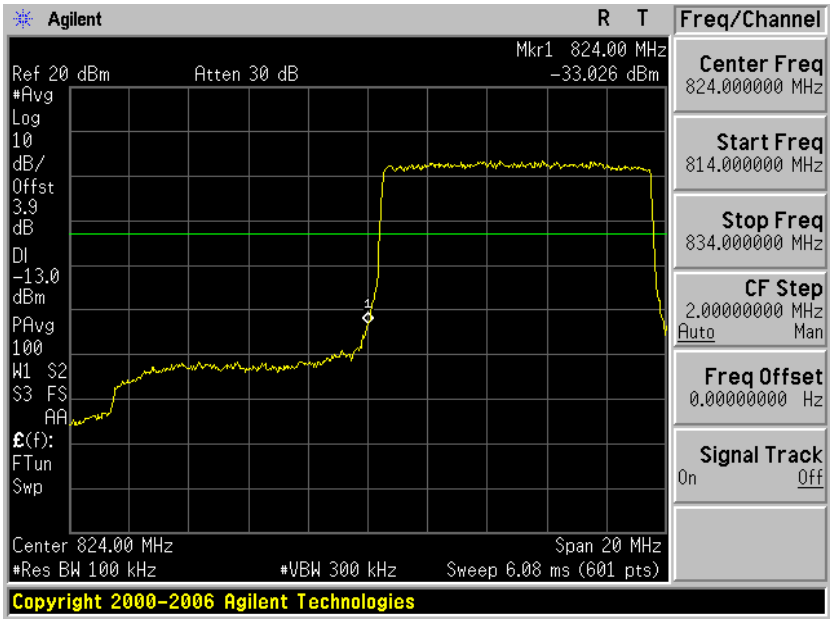
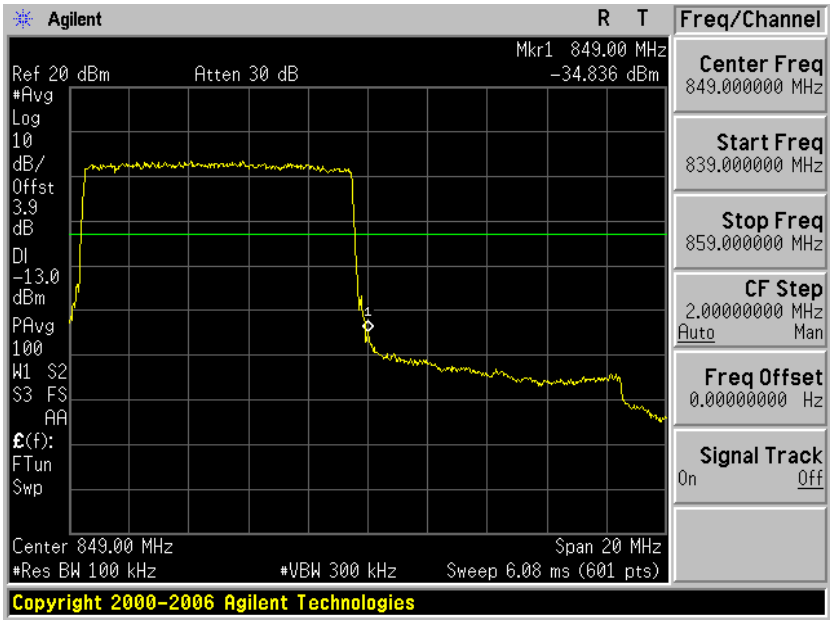
Frequency	LTE Band 5	Channel Bandwidth	15 MHz	RB Allocated	75
Lower Band Edge					
Higher Band Edge					

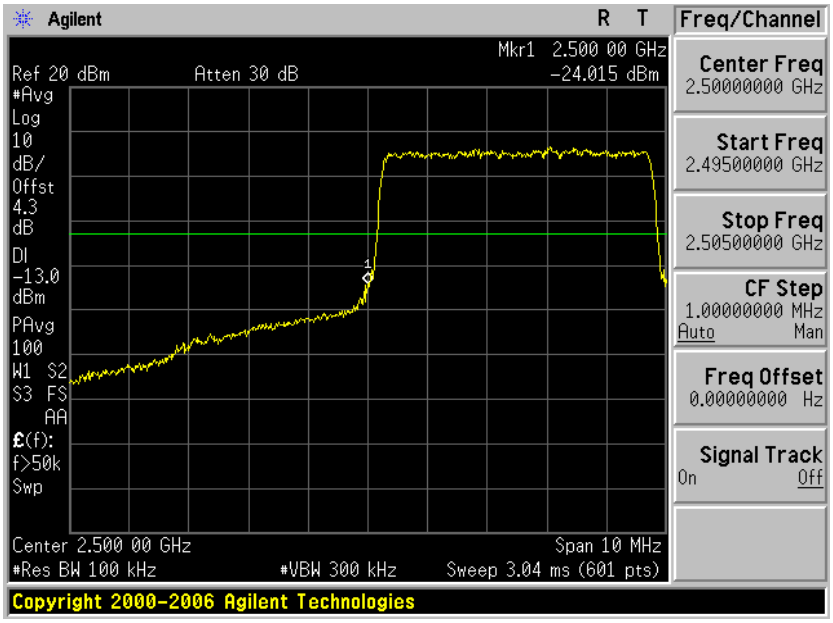
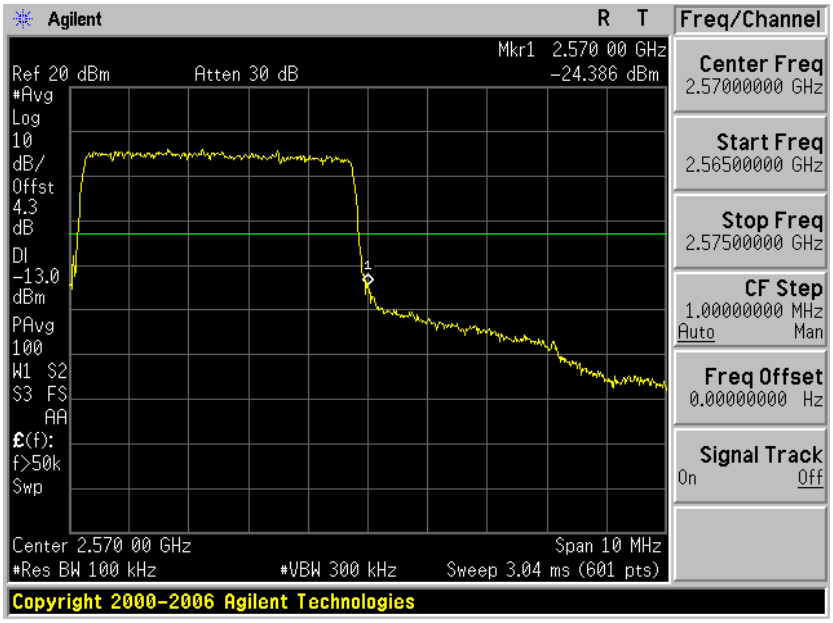
Frequency	LTE Band 4	Channel Bandwidth	20 MHz	RB Allocated	100
Lower Band Edge					
Higher Band Edge					

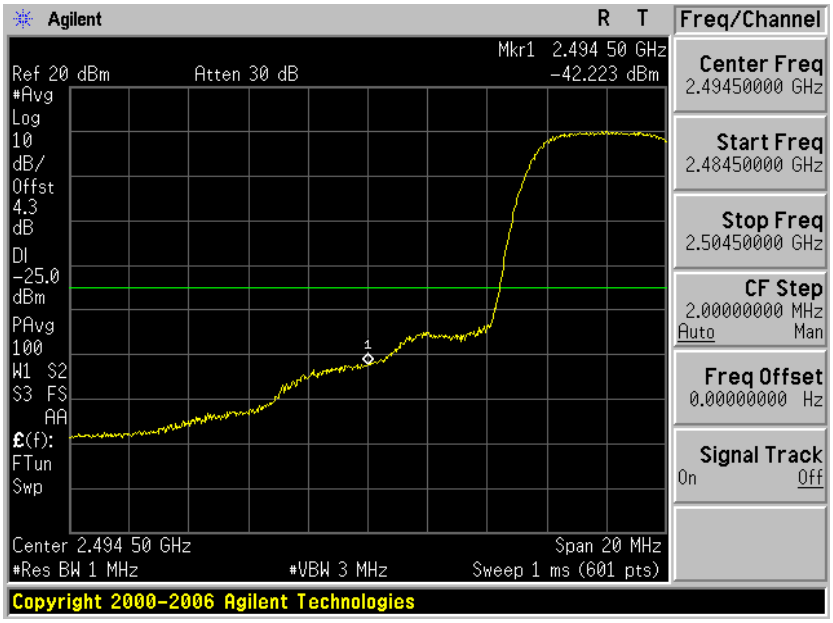
Frequency	LTE Band 5	Channel Bandwidth	1.4 MHz	RB Allocated	6
Lower Band Edge					
Higher Band Edge					

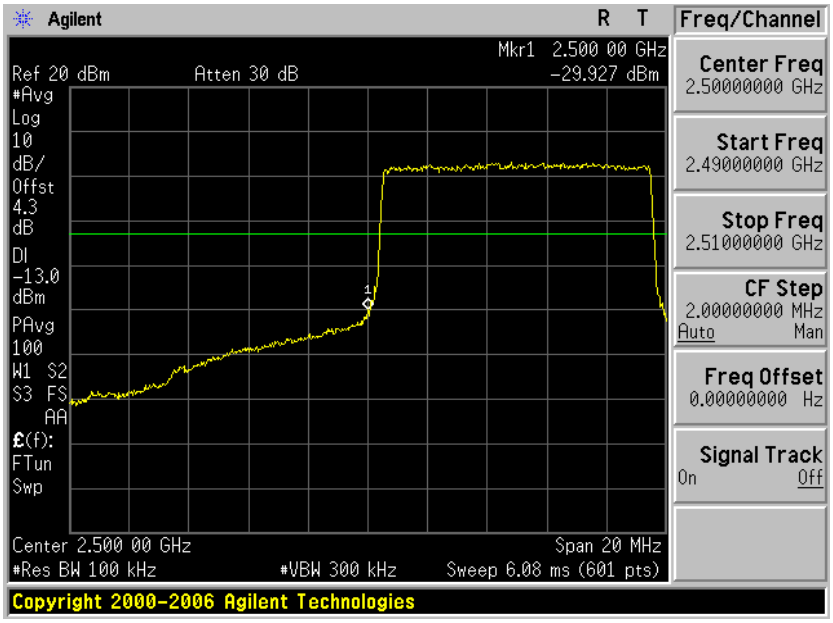
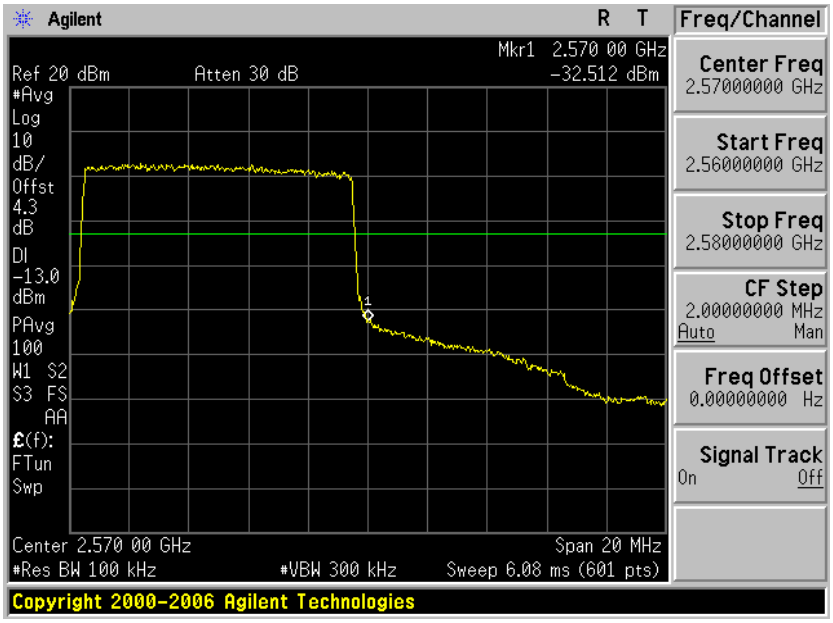
Frequency	LTE Band 5	Channel Bandwidth	3 MHz	RB Allocated	15
Lower Band Edge					
Higher Band Edge					

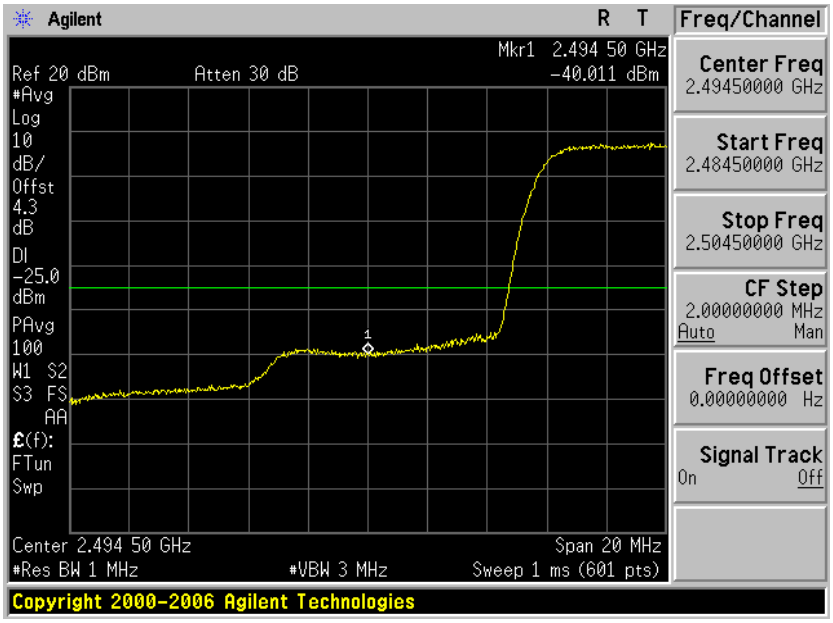
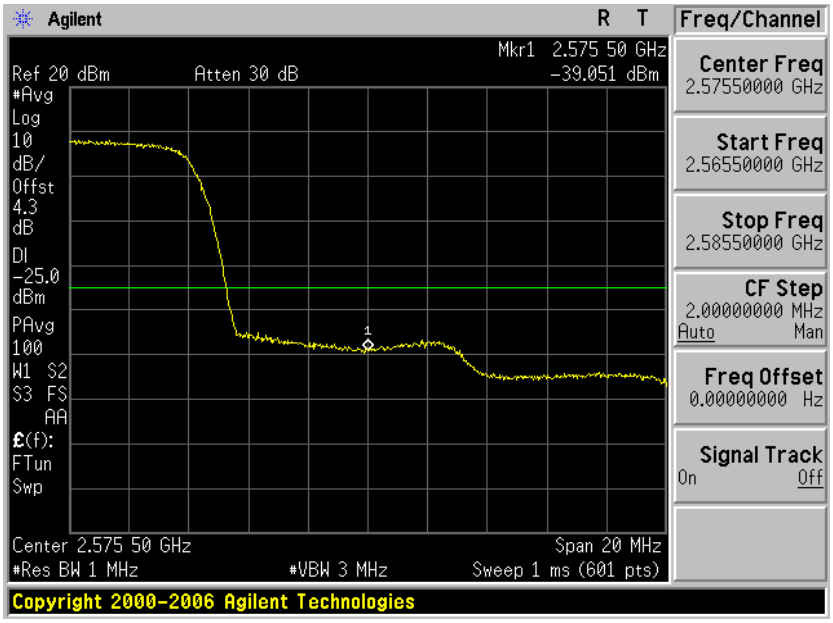
Frequency	LTE Band 5	Channel Bandwidth	5 MHz	RB Allocated	25
Lower Band Edge					
Higher Band Edge					

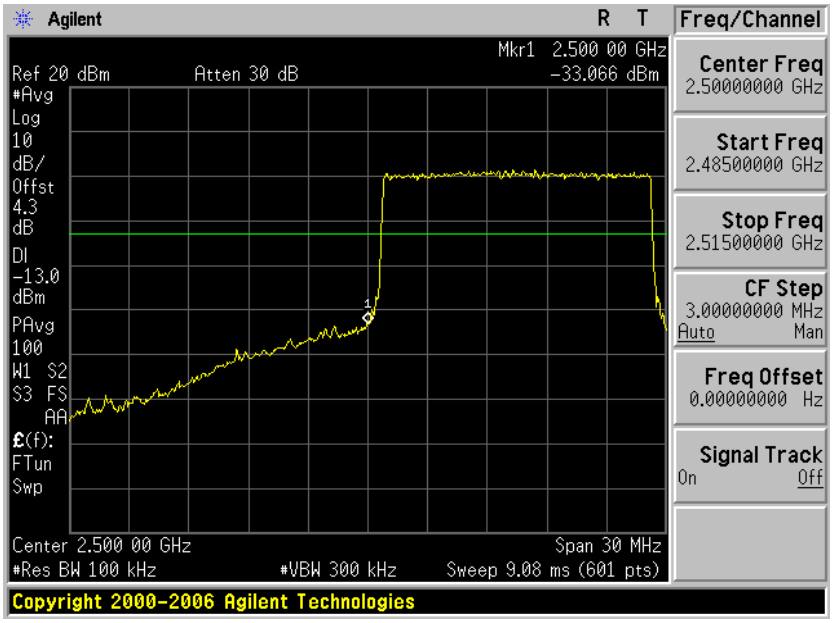
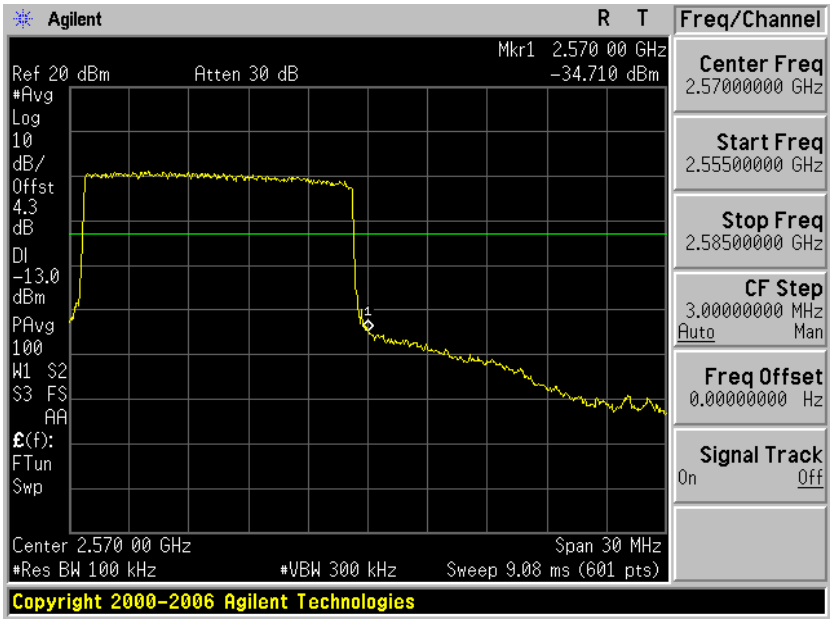
Frequency	LTE Band 5	Channel Bandwidth	10 MHz	RB Allocated	50
Lower Band Edge					
Higher Band Edge					

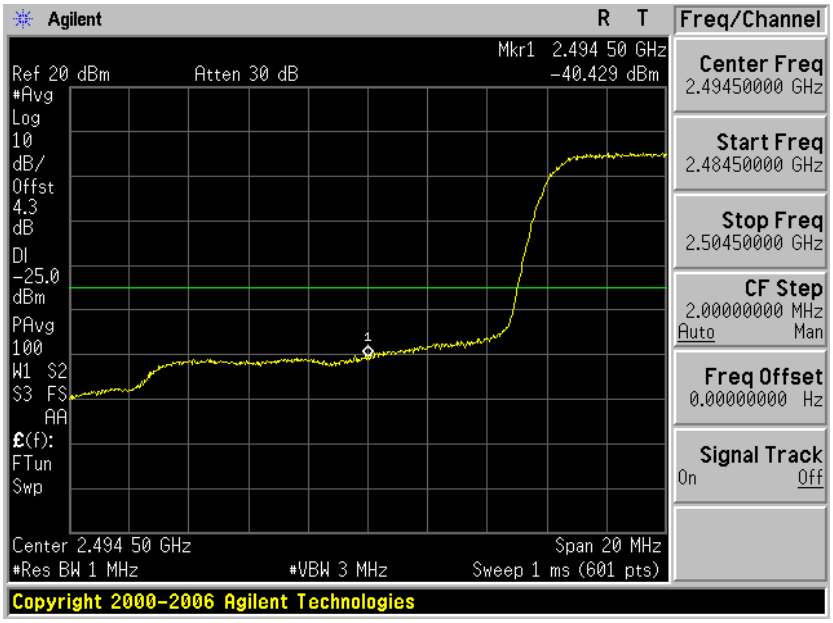
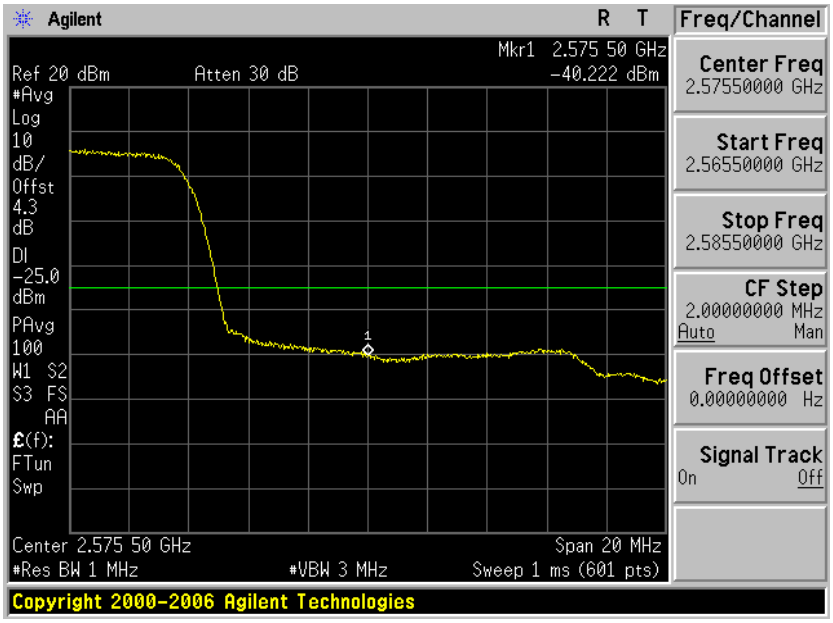
Frequency	LTE Band 7	Channel Bandwidth	5 MHz	RB Allocated	25
Res BW	100kHz				
Lower Band Edge					
Higher Band Edge					

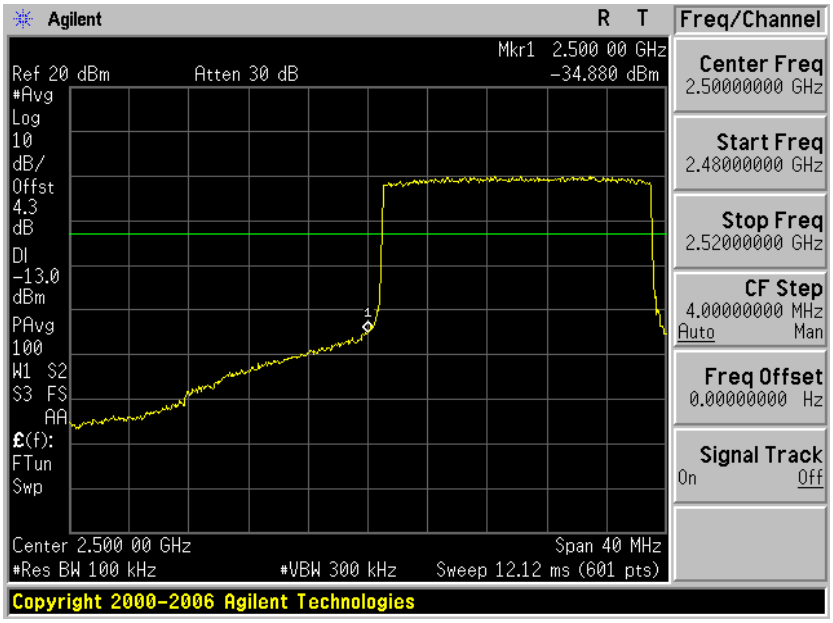
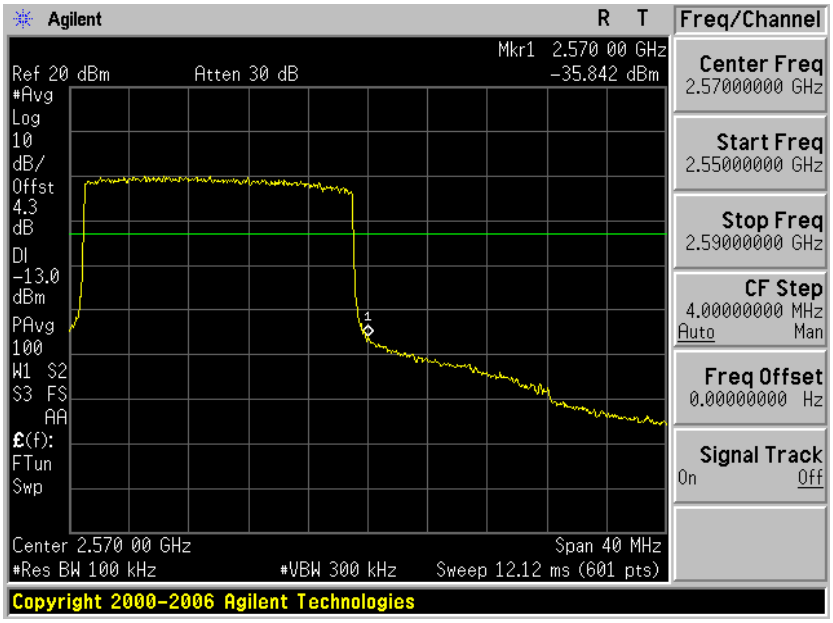
Frequency	LTE Band 7	Channel Bandwidth	5 MHz	RB Allocated	25
Res BW	1MHz				
Lower Band Edge					
Higher Band Edge					

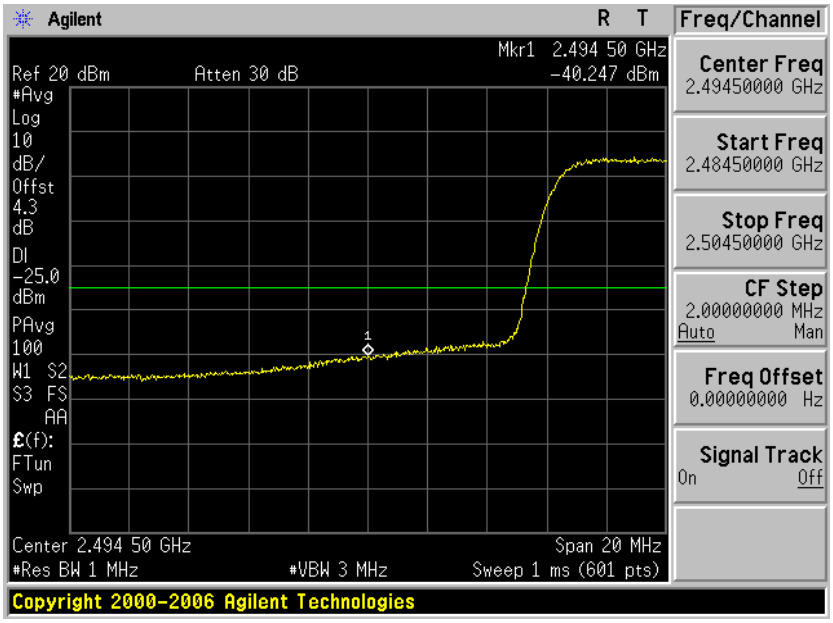
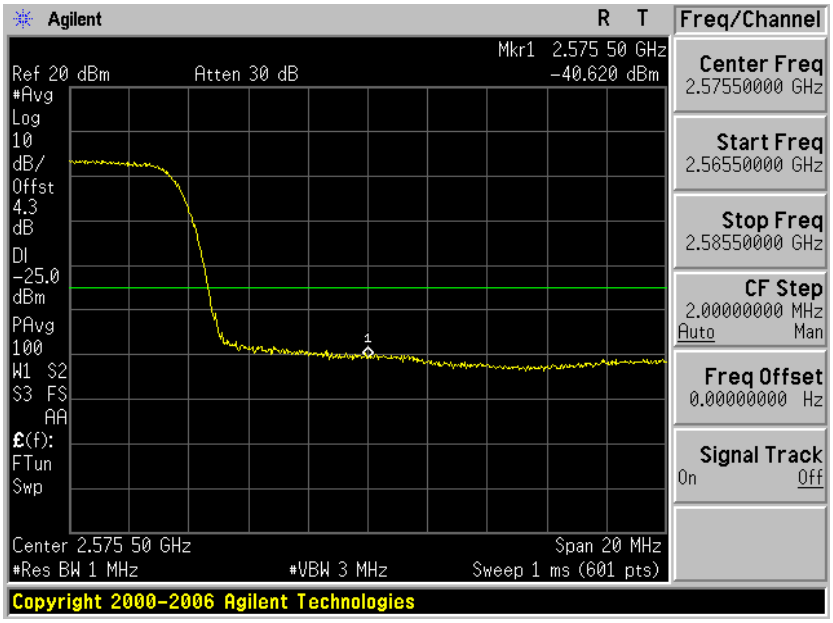
Frequency	LTE Band 7	Channel Bandwidth	10 MHz	RB Allocated	50
Res BW	100kHz				
Lower Band Edge					
Higher Band Edge					

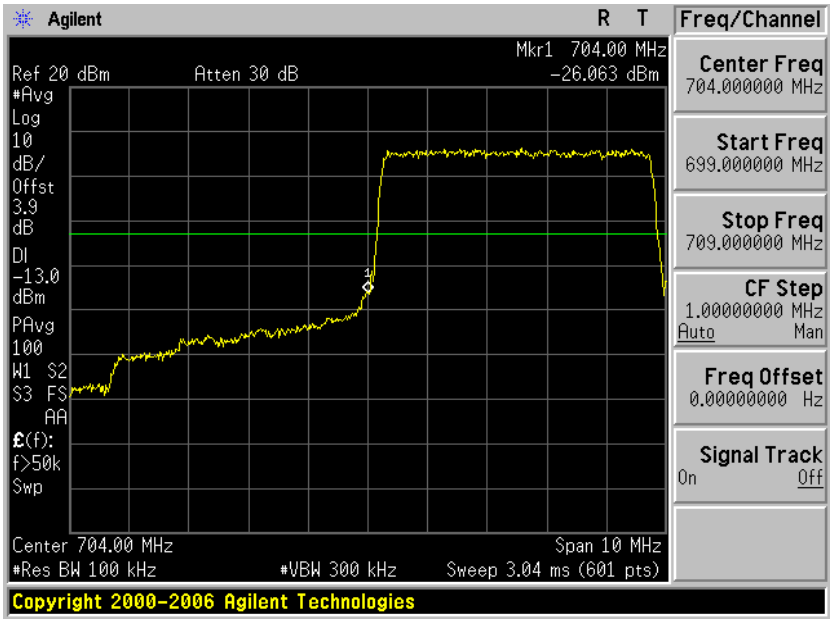
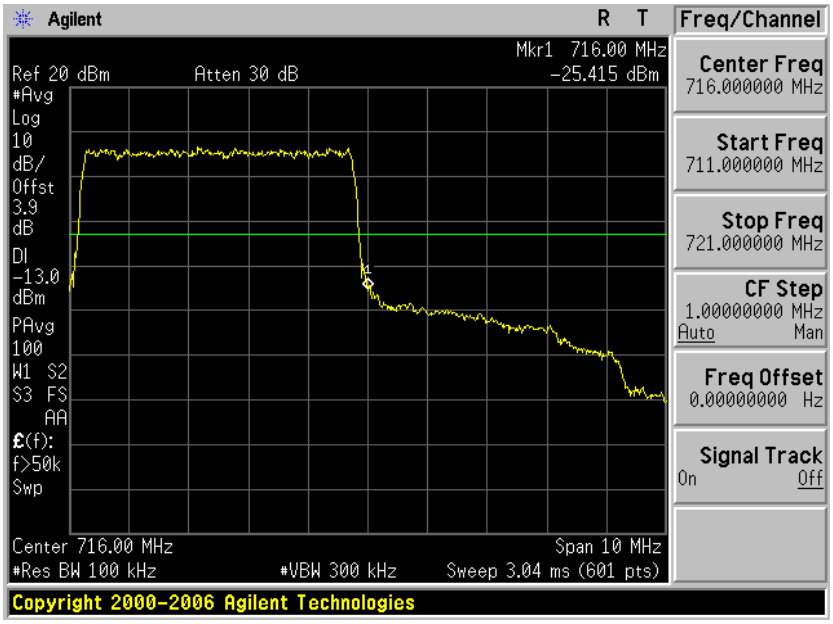
Frequency	LTE Band 7	Channel Bandwidth	10 MHz	RB Allocated	50
Res BW	1MHz				
Lower Band Edge					
Higher Band Edge					

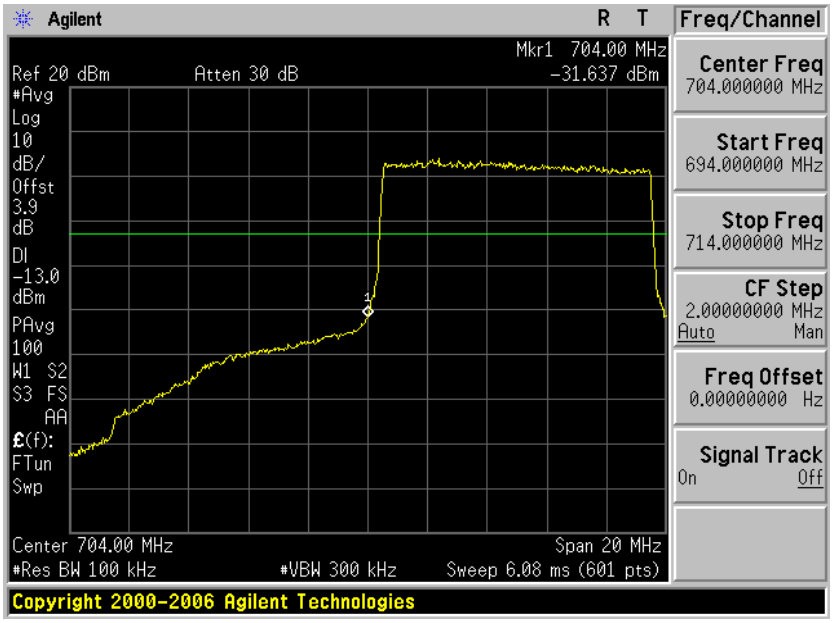
Frequency	LTE Band 7	Channel Bandwidth	15 MHz	RB Allocated	75
Res BW	100kHz				
Lower Band Edge					
Higher Band Edge					

Frequency	LTE Band 7	Channel Bandwidth	15 MHz	RB Allocated	75
Res BW	1MHz				
Lower Band Edge					
Higher Band Edge					

Frequency	LTE Band 7	Channel Bandwidth	20 MHz	RB Allocated	100
Res BW	100kHz				
Lower Band Edge					
Higher Band Edge					

Frequency	LTE Band 7	Channel Bandwidth	20MHz	RB Allocated	100
Res BW	1MHz				
Lower Band Edge					
Higher Band Edge					

Frequency	LTE Band 17	Channel Bandwidth	5 MHz	RB Allocated	25
Lower Band Edge					
Higher Band Edge					

Frequency	LTE Band 17	Channel Bandwidth	10 MHz	RB Allocated	50
Lower Band Edge					
Higher Band Edge					