### **FCC**

# **RF Test Report**

Product Type : LE910-NA V2

Applicant : Telit Communications S.p.A.

Address : Viale Stazione di Prosecco 5/B, 34010 Sgonico- Trieste- Italy

Trade Name : Telit

Model Number : LE910-NA V2

Test Specification : FCC 47 CFR PART 22H: Oct, 2014

FCC 47 CFR PART 24E: Oct, 2014 FCC 47 CFR PART 27: Oct. 2014

ANSI/TIA/EIA-603-C

Application Purpose : Original

Receive Date : Jun. 04, 2015

Test Period : Jun. 11 ~ Aug. 03, 2015

Issue Date : Aug. 04, 2015

Issue by

A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade City,

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Taiwan Accreditation Foundation accreditation number: 1330

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# **Revision History**

Rev.	Issue Date	Revisions	Revised By
00	Jul. 28, 2015	Initial Issue	
01	Aug. 04, 2015	Revised report information.	Snow Wang

# Verification of Compliance

Issued Date: 08/04/2015

Product Type : LE910-NA V2

Applicant : Telit Communications S.p.A.

Address : Viale Stazione di Prosecco 5/B, 34010 Sgonico- Trieste- Italy

Trade Name : Telit

Model Number : LE910-NA V2

EUT Rated Voltage : DC 3.4V / 3.8V / 4.2V

Test Voltage : DC 3.8V

Applicable Standard : FCC 47 CFR PART 22H: Oct, 2014

FCC 47 CFR PART 24E: Oct, 2014 FCC 47 CFR PART 27: Oct. 2014

ANSI/TIA/EIA-603-C

Test Result : Complied

Application Purpose : Original

Performing Lab. : A Test Lab Techno Corp.

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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

X / \ \ \ Reviewed By

(Manager) (Fly Lu) (Testing Engineer)

(Eric Ou Yang)



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### 1 General Information

# 1.1. EUT Description

Applicant		Telit Communications S.p.A.					
Applica	nt Address	Viale Stazione di Prosecco 5/B, 34010 Sgonico- Trieste- Italy					
Manufa	cturer	Telit Communications S.p.A.					
Manufa	cturer Address	Viale Stazione	di Prosecc	o 5/B, 34010	Sgonico- Trieste- Italy		
Product	t Type	LE910-NA V2					
Trade N	Name	Telit					
Model N	Number	LE910-NA V2					
		Band	UL Frequ	ency (MHz)	DL Frequency (MHz)	Modulation	
		2	1850.7	7 ~ 1909.3	1930.7 ~ 1989.3	QPSK, 16QAM	
		4	1710.7	7 ~ 1754.3	2110.7 ~ 2154.3	QPSK, 16QAM	
Mode	LTE	5	824.7 ~ 848.3		869.7 ~ 893.3	QPSK, 16QAM	
		12	699 ~ 716		729 ~ 746	QPSK, 16QAM	
		13	777	7 ~ 787	746 ~ 756	QPSK, 16QAM	
		17	704.0	) ~ 715.9	734.0 ~ 745.9	QPSK, 16QAM	
Channe	el 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 12	1.4M, 3M	, 5MHz, 10MI	Hz		
		LTE Band 13	5MHz, 10	MHz			
		LTE Band 17	5MHz, 10	MHz			
Antenna	a Gain	LTE Band 2		2.14 dBi	2.14 dBi		
		LTE Band 4		2.14 dBi			
		LTE Band 5		2.14 dBi			
		LTE Band 12		2.14 dBi			
		LTE Band 13		2.14 dBi			
		LTE Band 17		2.14 dBi			

Max. Conducted Output	LTE Band 2 (Channel Bandwidth 1.4MHz)	0.218	W
Average Power	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 12 (Channel Bandwidth 1.4MHz)	0.191	W
	LTE Band 12 (Channel Bandwidth 3MHz)	0.193	W
	LTE Band 12 (Channel Bandwidth 5MHz)	0.189	W
	LTE Band 12 (Channel Bandwidth 10MHz)	0.190	W
	LTE Band 13 (Channel Bandwidth 5MHz)	0.194	W
	LTE Band 13 (Channel Bandwidth 10MHz)	0.188	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)	0.356	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 3MHz)	0.357	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 5MHz)	0.358	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 10MHz)	0.350	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 15MHz)	0.361	W (E.I.R.P.)
	LTE Band 2 (Channel Bandwidth 20MHz)	0.359	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 1.4MHz)	0.336	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 3MHz)	0.326	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 5MHz)	0.327	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 10MHz)	0.332	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 15MHz)	0.335	W (E.I.R.P.)
	LTE Band 4 (Channel Bandwidth 20MHz)	0.333	W (E.I.R.P.)
	LTE Band 5 (Channel Bandwidth 1.4MHz)	0.191	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 3MHz)	0.195	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 5MHz)	0.189	W (E.R.P.)
	LTE Band 5 (Channel Bandwidth 10MHz)	0.190	W (E.R.P.)
	LTE Band 12 (Channel Bandwidth 1.4MHz)	0.313	W (E.R.P.)
	LTE Band 12 (Channel Bandwidth 3MHz)	0.316	W (E.R.P.)
	LTE Band 12 (Channel Bandwidth 5MHz)	0.310	W (E.R.P.)
	LTE Band 12 (Channel Bandwidth 10MHz)	0.311	W (E.R.P.)
	LTE Band 13 (Channel Bandwidth 5MHz)	0.318	W (E.R.P.)
	LTE Band 13 (Channel Bandwidth 10MHz)	0.308	W (E.R.P.)
	LTE Band 17 (Channel Bandwidth 5MHz)	0.195	W (E.R.P.)
	LTE Band 17 (Channel Bandwidth 10MHz)	0.197	W (E.R.P.)

## 1.2. Mode of Operation

Three channels had been tested for each channel bandwidth.

LTE Band 2							
Channel	1.4	ИНz	3M	Hz	5M	lHz	
Bandwidth	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	10MHz		15MHz		20MHz		
Bandwidth	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	1.4	ИНz	3M	3MHz		Hz
Bandwidth	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	10MHz		15MHz		20MHz	
Bandwidth	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	1.4	ИНz	3M	Hz				
Bandwidth	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	5M	Hz	10MHz					
Bandwidth	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 12							
Channel	1.41	ИНz	3M	Hz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)				
Low CH	23017	699.7	23025	700.5				
Middle CH	23095	707.5	23095	707.5				
High CH	23173	715.3	23165	714.5				
Channel	5M	Hz	10MHz					
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)				
Low CH	23035	701.5	23060	704.0				
Middle CH	23095	707.5	23095	707.5				
High CH	23155	713.5	23130	711.0				

LTE Band 13							
Channel	5M	1Hz	10N	ИНz			
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)			
Low CH	23205	779.5					
Middle CH	23230	782.0	23230	782.0			
High CH	23255	784.5					

	LTE Band 17								
Channal	5M	lHz	101	ИНz					
Channel Bandwidth	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	
	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 ☐ 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 4) Link ☐ LTE(RB Size 8, RB Offset 7) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
LTE	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 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
Band 2	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 ☐ 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 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
	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 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 4) Link ☐ LTE(RB Size 8, RB Offset 7) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
LTE	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 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
Band 4	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 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 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 50, RB Offset 50) Link ☐ LTE(RB Size 100, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
	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
LTE	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 4) Link ☐ LTE(RB Size 8, RB Offset 7) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
Band 5	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 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK

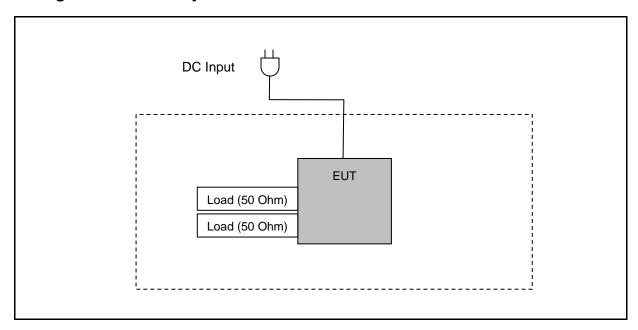
Band	Channel Bandwidth	Test Modes	
	1.4 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 2) Link ☐ LTE(RB Size 1, RB Offset 5) Link ☐ LTE(RB Size 3, RB Offset 0) Link ☐ LTE(RB Size 3, RB Offset 1) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
LTE	3 MHz	☐ 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 4) Link ☐ LTE(RB Size 8, RB Offset 7) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
Band 12	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 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK

Band	Channel Bandwidth	Test Modes	
LTE	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
Band 13	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 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
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 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 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	Description	Result
§2.1046	Conducted Output Average Power	Pass
§22.913 §24.232 §27. 50	Equivalent Isotropic Radiated Power / Equivalent Radiated Power	Pass
§2.1055 §22.355 §24.235 §27. 54	Frequency Stability	Pass
§2.1049	Emission Bandwidth & Occupied Bandwidth	Pass
§24.232 §27.50	Peak to average ratio	Pass
§22.917 §24.238 §27.53	Band Edge	Pass
§2.1051 §22.917 §24.238 §27.53	Conducted Spurious Emissions	Pass
§2.1053 §22.917 §24.238 §27.53	Radiated Spurious Emissions	Pass

### 2 Conducted Output Average Power Test

#### 2.1. **Limit**

N/A

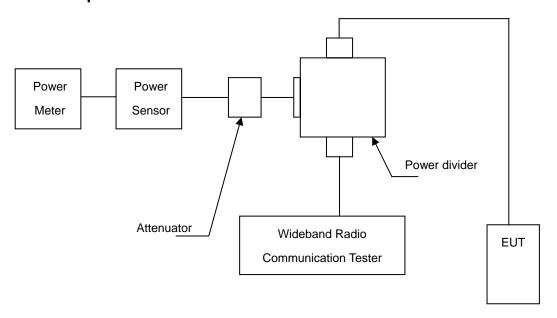
#### 2.2. Test Instruments

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	LE910-NA V2		
Test Item	Conducted Output Average Power		
Date of Test	06/18/2015	Test Site	TE05

Band	Channel	Modulation	Channel	Frequency	RB Conf	figuration	Average	e Power
Dariu	Bandwidth	Modulation	Charmer	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.25	0.211
					1	2	23.21	0.209
					1	5	23.17	0.207
			18607	1850.7	3	0	23.14	0.206
					3	1	23.09	0.204
					3	3	23.07	0.203
					6	0	22.39	0.173
					1	0	23.38	0.218
					1	2	23.37	0.217
					1	5	23.35	0.216
		QPSK	18900	1880.0	3	0	23.31	0.214
					3	1	23.29	0.213
					3	3	23.25	0.211
					6	0	22.42	0.175
				<u> </u>	1	0	23.09	0.204
					1	2	23.08	0.203
					1	5	23.05	0.202
			19193	1909.3	3	0	23.04	0.201
					3	1	23.01	0.200
					3	3	22.99	0.199
LTE	1.4 MHz				6	0	22.22	0.167
Band 2	1.1 1011 12		18607	<u> </u>	1	0	22.61	0.182
					1	2	22.35	0.172
					1	5	22.33	0.171
				1850.7	3	0	22.21	0.166
					3	1	22.20	0.166
					3	3	22.18	0.165
					6	0	21.43	0.139
					1	0	22.66	0.185
					1	2	22.64	0.184
					1	5	22.50	0.178
		16QAM	18900	1880.0	3	0	22.49	0.177
					3	1	22.48	0.177
					3	3	22.17	0.165
					6	0	21.50	0.141
					1	0	22.26	0.168
					1	2	22.12	0.163
					1	5	22.10	0.162
			19193	1909.3	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	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Danu	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.23	0.210
				1851.5	1	8	23.21	0.209
					1	14	23.15	0.207
			18615		8	0	22.34	0.171
					8	4	22.32	0.171
					8	7	22.22	0.167
					15	0	22.19	0.166
					1	0	23.39	0.218
					1	8	23.30	0.214
					1	14	23.26	0.212
		QPSK	18900	1880.0	8	0	22.41	0.174
					8	4	22.40	0.174
					8	7	22.39	0.173
					15	0	22.37	0.173
					1	0	23.21	0.209
				[	1	8	23.10	0.204
					1	14	22.96	0.198
			19185	1908.5	8	0	22.35	0.172
					8	4	22.32	0.171
					8	7	22.27	0.169
LTE	3 MHz				15	0	22.22	0.167
Band 2	0 1111 12				1	0	22.47	0.177
			18615		1	8	22.26	0.168
					1	14	22.09	0.162
				1851.5	8	0	21.40	0.138
					8	4	21.39	0.138
					8	7	21.37	0.137
					15	0	21.29	0.135
					11	0	22.56	0.180
				[	1	8	22.22	0.167
					1	14	22.12	0.163
		16QAM	18900	1880.0	8	0	21.46	0.140
					8	4	21.43	0.139
					8	7	21.42	0.139
					15	0	21.41	0.138
					1	0	22.37	0.173
					1	8	22.34	0.171
					1	14	21.79	0.151
			19185	1908.5	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	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Danu	Bandwidth	Modulation	Charine	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.22	0.210
					1	12	23.16	0.207
					1	24	22.95	0.197
			18625	1852.5	12	0	22.36	0.172
					12	6	22.26	0.168
					12	13	22.25	0.168
					25	0	22.18	0.165
					1	0	23.40	0.219
					1	12	23.36	0.217
				1880.0	1	24	23.21	0.209
		QPSK	18900		12	0	22.46	0.176
					12	6	22.46	0.176
					12	13	22.44	0.175
					25	0	22.32	0.171
				1907.5	1	0	23.24	0.211
					1	12	23.17	0.207
					1	24	22.98	0.199
			19175		12	0	22.35	0.172
LTE					12	6	22.34	0.171
					12	13	22.31	0.170
	5 MHz				25	0	22.29	0.169
Band 2	J IVII IZ			1852.5	1	0	22.46	0.176
					1	12	22.21	0.166
					1	24	22.02	0.159
			18625		12	0	21.44	0.139
					12	6	21.43	0.139
					12	13	21.34	0.136
					25	0	21.24	0.133
					1	0	22.67	0.185
					1	12	22.28	0.169
					1	24	22.07	0.161
		16QAM	18900	1880.0	12	0	21.44	0.139
					12	6	21.41	0.138
					12	13	21.38	0.137
					25	0	21.37	0.137
					1	0	22.49	0.177
					1	12	22.22	0.167
					1	24	21.76	0.150
			19175	1907.5	12	0	21.53	0.142
				1307.3	12	6	21.50	0.141
					12	11	21.43	0.139
					25	0	21.34	0.136

Band	Channel	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Danu	Bandwidth	Modulation	Charine	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.30	0.214
					1	24	23.20	0.209
					1	49	23.00	0.200
			18650	1855.0	25	0	22.33	0.171
					25	12	22.30	0.170
					25	25	22.25	0.168
					50	0	22.23	0.167
					1	0	23.29	0.213
					1	24	23.28	0.213
		QPSK	18900	1880.0	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
				1905.0	1	0	23.25	0.211
					1	24	23.17	0.207
			10150		1	49	22.89	0.195
			19150		25	0	22.43	0.175
LTE					25	12	22.29	0.169
					25	25	22.29	0.169
LTE	10 MHz				50	0	22.22	0.167
Band 2			18650	1855.0	1	0	22.32	0.171
					1	24	22.19	0.166
					1 25	49	22.08	0.161
						0	21.51	0.142
					25	12	21.51	0.142
					25 50	25 0	21.31 21.27	0.135 0.134
					1	0 24	22.54	0.179 0.178
					1	49	22.51 22.15	0.178
		16QAM	18900	1880.0	25	0	21.57	0.164
		IOQAIVI	10300	1000.0	25	12	21.48	0.144
					25	25	21.44	0.141
					50	0	21.44	0.139
					1	0	22.42	0.139
					1	24	22.42	0.173
					1	49	21.79	0.167
			19150	1905.0	25	0	21.43	0.131
			10100	1000.0	25	12	21.43	0.138
					25	25	21.39	0.138
					50	0	21.38	0.137
					30	U	21.00	0.137

Band	Channel	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Danu	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.33	0.215
					1	38	23.29	0.213
					1	74	23.22	0.210
			18675	1857.5	38	0	22.34	0.171
					38	18	22.32	0.171
					38	37	22.32	0.171
					75	0	22.30	0.170
					1	0	23.43	0.220
					1	38	23.32	0.215
		QPSK		1880.0	1	74	23.28	0.213
			18900		38	0	22.48	0.177
					38	18	22.43	0.175
					38	37	22.40	0.174
					75	0	22.39	0.173
				1902.5	1	0	23.38	0.218
					1	38	23.14	0.206
					1	74	23.02	0.200
			19125		38	0	22.32	0.171
					38	18	22.31	0.170
					38	37	22.29	0.169
LTE	15 MHz				75	0	22.27	0.169
Band 2				1857.5	1	0	22.25	0.168
					1	38	22.23	0.167
					1	74	22.00	0.158
			18675		38	0	21.52	0.142
					38	18	21.51	0.142
					38	37	21.37	0.137
					75	0	21.29	0.135
					1	0	22.59	0.182
					1	38	22.49	0.177
		400 414	40000	4000.0	1	74	22.29	0.169
		16QAM	18900	1880.0	38	0	21.53	0.142
					38	18	21.51	0.142
					38	37	21.48	0.141
					75	0	21.47	0.140
					1	0	22.20	0.166
					1	38	22.13	0.163
			10105	4000 5	1	74	22.09	0.162
			19125	1902.5	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	Modulation	Channel	Frequency	RB Conf	figuration	Average Power	
Dariu	Bandwidth	Modulation	Charine	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.31	0.214
					1	49	23.27	0.212
					1	99	23.22	0.210
			18700	1860.0	50	0	22.32	0.171
					50	25	22.19	0.166
					50	50	22.19	0.166
					100	0	22.17	0.165
					1	0	23.41	0.219
					1	49	23.38	0.218
		QPSK	18900	1880.0	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
					1	0	23.26	0.212
				1900.0	1	49	23.15	0.207
			19100		1	99	23.02	0.200
					50	0	22.34	0.171
LTE					50	25	22.32	0.171
					50	50	22.28	0.169
	20 MHz				100	0	22.27	0.169
Band 2			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
					1	0	22.38	0.173
					1	49	22.37	0.173
					1	99	22.28	0.169
		16QAM	18900	1880.0	50	0	21.49	0.141
					50	25	21.46	0.140
					50	50	21.43	0.139
					100	0	21.35	0.136
					1	0	22.77	0.189
					1	49	22.17	0.165
					1	99	22.12	0.163
			19100	1900.0	50	0	21.44	0.139
			13100	1300.0	50	25	21.42	0.139
					50	50	21.37	0.137
					100	0	21.35	0.136

Daniel	Channel	Madulatian	Ob see al	Frequency	RB Conf	iguration	Average Power	
Band	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.12	0.205
				ľ	1	2	23.09	0.204
				ľ	1	5	23.07	0.203
			19957	1710.7	3	0	23.05	0.202
					3	1	23.01	0.200
					3	3	22.99	0.199
					6	0	22.13	0.163
					1	0	22.92	0.196
					1	2	22.89	0.195
		QPSK		1732.5	1	5	22.87	0.194
			20175		3	0	22.84	0.192
					3	1	22.81	0.191
					3	3	22.82	0.191
					6	0	22.01	0.159
				1754.3	1	0	22.99	0.199
			20393		1	2	22.90	0.195
					1	5	22.89	0.195
					3	0	22.87	0.194
LTE					3	1	22.86	0.193
					3	3	22.83	0.192
	1.4 MHz				6	0	21.94	0.156
Band 4			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
					1	0	22.22	0.167
					1	2	22.14	0.164
					1	5	22.11	0.163
		16QAM	20175	1732.5	3	0	22.08	0.161
					3	1	21.97	0.157
					3	3	21.75	0.150
					6	0	21.07	0.128
					1	0	21.94	0.156
					1	2	21.92	0.156
					1	5	21.92	0.156
			20393	1754.3	3	0	21.81	0.152
			20393	1754.3	3	1	21.77	0.150
					3	3	21.73	0.149
				6	0	20.96	0.125	

Pandwidth   Control   Co	Band	Channel	Modulation	Channel	Frequency	RB Conf	figuration	Average Power	
PSK 20175 1732.5    19965 1711.5    19965 1711.5    100 22.92    11	Danu	Bandwidth	Modulation	Charmer	(MHz)	Size	Offset	(dBm)	(W)
PSK 20175 1732.5   1						1	0	22.99	0.199
UPSK 20175 1732.5 8 0 22.15 0 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 15 0 22.01 0 10 0 15 0 22.01 0 15 0 22						1	8	22.97	0.198
A MHz    Color						1	14	22.92	0.196
R 7 22.13 0 0 15 0 22.01 0 0 15 0 22.01 0 0 15 0 22.01 0 0 16 0 16 0 1 1 14 21.80 0 18 0 19 0 15 0 20.94 0 18 0 19 0 15 0 20.94 0 18 0 19 0 15 0 20.94 0 18 0 19 0 15 0 20.94 0 18 0 19 0 15 0 20.97 0 1				19965	1711.5	8	0	22.15	0.164
A MHz  LTE Band 4  A MHz  A MH						8	4	22.14	0.164
A MHz  LTE Band 4  A MHz  A MH						8	7	22.13	0.163
APSK 20175 1732.5 1732.5 1 8 22.86 0 0 1 1 14 22.84 0 0 22.04 0 0 8 4 21.97 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						15	0	22.01	0.159
UPSK 20175 1732.5						1	0	22.89	0.195
A MHz  Representation of the property of the p						1	8	22.86	0.193
B 4 21.97 0 21.93 0 15 0 21.90 0 1 1 8 22.86 0 1 1 14 22.84 0 1 1 14 21.80 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			QPSK		1732.5	1	14	22.84	0.192
Band 4  20385   1753.5   8   7   21.93   0   0   0   0   0   0   0   0   0				20175		8	0	22.04	0.160
LTE Band 4  20385 1753.5 1753.5 1753.5 20 21.90 00 1 1 0 22.87 00 1 1 0 22.87 00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						8	4	21.97	0.157
LTE Band 4  20385  1753.5  10  11  10  22.87  11  18  22.86  11  14  22.84  11  14  22.84  15  15  15  15  10  21.87  15  10  21.87  15  10  21.87  15  10  21.87  10  11  11  12  13  14  15  15  16  1711.5									0.156
LTE Band 4  3 MHz  1753.5  1753.5  1									0.155
LTE Band 4  3 MHz  19965  1753.5  1					1753.5	1	0		0.194
LTE Band 4  3 MHz  19965  1753.5  8 0 21.96 0 8 4 21.91 0 15 0 21.84 0 1 0 22.41 0 1 1 8 21.90 0 1 1 14 21.73 0 1 1 0 22.22 0 1 1 8 22.05 0 1 1 14 21.80 0 1 1 14 21.80 0 1 1 14 21.80 0 1 1 1 14 21.80 0 1 1 1 1 1 21.80 0 1 1 1 0 21.96 0 1 1 1 0 21.96 0 1 1 0 21.96 0 1 1 0 21.96 0 1 1 0 21.96 0 1 1 0 21.96 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				20385					0.193
LTE Band 4  3 MHz  19965  1711.5  8									0.192
LTE Band 4  3 MHz  19965  1711.5  8 7 21.87 0 21.84 0 15 0 21.84 0 16 15 0 22.41 0 16 15 0 16 15 0 16 16 16 16 16 16 16 16 16 16 16 16 16									0.157
LTE Band 4  19965  1711.5  10									0.155
Band 4    1		3 MHz							0.154
19965 1711.5									0.153
19965 1711.5	Band 4			19965	1711.5				0.174
19965 1711.5 8 0 21.17 0 8 4 21.10 0 1									0.155
16QAM   20175   1732.5   8   0   20.94   0   0   0   0   0   0   0   0   0									0.149
15									0.131
15 0 20.94 0 1 0 22.22 0 1 8 22.05 0 1 14 21.80 0 1 1 14 21.80 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									0.129
1 0 22.22 0 1 8 22.05 0 1 14 21.80 0 1 14 21.80 0 1 1 14 21.80 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									0.126
1 8 22.05 0 1 14 21.80 0 1 14 21.80 0 8 0 21.00 0 8 4 20.94 0 8 7 20.90 0 15 0 20.87 0 1 0 21.96 0 1 8 21.86 0 1 14 21.61 0 20385 1753.5 8 0 20.92 0									0.124
16QAM 20175 1732.5									0.167
16QAM 20175 1732.5 8 0 21.00 0 8 4 20.94 0 8 7 20.90 0 0 15 0 20.87 0 0 15 0 21.96 0 0 1 8 21.86 0 0 1 14 21.61 0 0 20.92 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									0.160
8     4     20.94     0       8     7     20.90     0       15     0     20.87     0       1     0     21.96     0       1     8     21.86     0       1     14     21.61     0       1     14     21.61     0       20385     1753.5     8     0     20.92     0			160 / 1/4	20175	1722 5				0.151
8     7     20.90     0       15     0     20.87     0       1     0     21.96     0       1     8     21.86     0       1     14     21.61     0       20385     1753.5     8     0     20.92     0			IOQAIVI	20175	1/32.5				0.126
15 0 20.87 0 1 0 21.96 0 1 8 21.86 0 1 14 21.61 0 20385 1753.5 8 0 20.92 0									0.124
1     0     21.96     0       1     8     21.86     0       1     14     21.61     0       20385     1753.5     8     0     20.92     0									0.123
20385     1753.5     8     21.86     0       20985     1753.5     8     0     20.92     0					-				0.122
20385 1753.5 8 0 20.92 C									0.157 0.153
20385 1753.5 8 0 20.92 0									
				20385	1753 5				0.145 0.124
				20385	1753.5	8	_	20.92	0.124
									0.122 0.121

Band	Channel	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Dariu	Bandwidth	Modulation	Charine	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.01	0.200
					1	12	22.97	0.198
					1	24	22.95	0.197
			19975	1712.5	12	0	22.08	0.161
					12	6	22.04	0.160
					12	13	21.99	0.158
					25	0	21.98	0.158
					1	0	22.89	0.195
					1	12	22.86	0.193
				1732.5	1	24	22.79	0.190
		QPSK	20175		12	0	22.03	0.160
					12	6	22.01	0.159
					12	13	22.00	0.158
					25	0	21.92	0.156
				1752.5	1	0	22.88	0.194
			20375		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
LTE	5 MHz				25	0	21.89	0.155
Band 4			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
					1	0	22.17	0.165
				[	1	12	22.06	0.161
				[	1	24	21.70	0.148
		16QAM	20175	1732.5	12	0	21.07	0.128
					12	6	21.01	0.126
					12	13	20.99	0.126
					25	0	20.98	0.125
				Ι Π	1	0	21.86	0.153
				[	1	12	21.83	0.152
				[	1	24	21.57	0.144
			20375	1752.5	12	0	20.98	0.125
			20070	1762.5	12	6	20.95	0.124
					12	11	20.84	0.121
					25	0	20.77	0.119

Band	Channel	Modulation	Channel	Frequency	RB Conf	iguration	Average	Power
Danu	Bandwidth	Modulation	Chambi	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.07	0.203
					1	24	22.93	0.196
					1	49	22.88	0.194
			2000	1715.0	25	0	22.15	0.164
					25	12	22.06	0.161
					25	25	22.05	0.160
					50	0	22.00	0.158
					1	0	22.88	0.194
					1	24	22.86	0.193
		QPSK		1732.5	1	49	22.84	0.192
			20175		25	0	21.96	0.157
					25	12	21.96	0.157
					25	25	21.93	0.156
					50	0	21.92	0.156
				1750.0	1	0	22.96	0.198
					1	24	22.86	0.193
					1	49	22.84	0.192
			20350		25	0	21.94	0.156
LTE					25	12	21.91	0.155
					25	25	21.89	0.155
	10 MHz				50	0	21.87	0.154
Band 4			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
					1	0	22.21	0.166
					1	24	22.05	0.160
					1	49	21.80	0.151
		16QAM	20175	1732.5	25	0	21.03	0.127
					25	12	21.02	0.126
					25	25	20.95	0.124
					50	0	20.91	0.123
					1	0	22.27	0.169
					1	24	22.19	0.166
					1	49	21.82	0.152
			20350	1750.0	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	Modulation	Channal	Frequency	RB Conf	iguration	Average Power	
Danu	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.11	0.205
					1	38	23.03	0.201
					1	74	22.90	0.195
			20025	1717.5	38	0	22.06	0.161
					38	18	22.04	0.160
					38	37	21.99	0.158
					75	0	21.96	0.157
					1	0	23.01	0.200
					1	38	22.98	0.199
		QPSK		1732.5	1	74	22.86	0.193
			20175		38	0	22.04	0.160
					38	18	22.03	0.160
					38	37	22.02	0.159
					75	0	21.95	0.157
					1	0	23.07	0.203
				1747.5	1	38	23.00	0.200
					1	74	22.95	0.197
			20325		38	0	22.03	0.160
					38	18	21.99	0.158
					38	37	21.94	0.156
LTE	15 MHz				75	0	21.84	0.153
Band 4			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
					1	0	21.91	0.155
					1	38	21.72	0.149
					1	74	21.70	0.148
		16QAM	20175	1732.5	38	0	21.11	0.129
					38	18	21.06	0.128
					38	37	20.95	0.124
					75	0	20.92	0.124
					1	0	22.35	0.172
					1	38	22.17	0.165
					1	74	22.14	0.164
			20325	1747.5	38	0	21.02	0.126
			20323	1747.5	38	18	20.92	0.124
					38	37	20.90	0.123
					75	0	20.75	0.119

Dond	Channel	Modulation	Channal	Frequency	RB Conf	iguration	Average	e Power
Band	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	23.08	0.203
					1	49	22.95	0.197
					1	99	22.83	0.192
			20050	1720.0	50	0	22.08	0.161
					50	25	22.03	0.160
					50	50	22.03	0.160
					100	0	22.02	0.159
					1	0	23.02	0.200
					1	49	22.91	0.195
		QPSK		1732.5	1	99	22.73	0.187
			20175		50	0	22.04	0.160
					50	25	21.92	0.156
					50	50	21.91	0.155
					100	0	21.91	0.155
					1	0	22.99	0.199
				1745.0	1	49	22.90	0.195
					1	99	22.88	0.194
			20300		50	0	21.96	0.157
					50	25	21.85	0.153
					50	50	21.83	0.152
LTE	20 MHz				100	0	21.82	0.152
Band 4			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
					1	0	22.26	0.168
					1	49	21.96	0.157
					1	99	21.62	0.145
		16QAM	20175	1732.5	50	0	21.02	0.126
					50	25	20.99	0.126
					50	50	20.93	0.124
					100	0	20.84	0.121
					1	0	22.33	0.171
					1	49	22.23	0.167
					1	99	21.78	0.151
			20300	1745.0	50	0	20.88	0.122
			20300	1745.0	50	25	20.87	0.122
					50	50	20.86	0.122
					100	0	20.83	0.121

Donal	Channel	Madulatian	Channal	Frequency	RB Conf	iguration	Average Power	
Band	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.74	0.188
					1	2	22.72	0.187
					1	5	22.71	0.187
			20407	824.7	3	0	22.70	0.186
					3	1	22.69	0.186
					3	3	22.68	0.185
					6	0	21.73	0.149
					1	0	22.76	0.189
					1	2	22.72	0.187
		QPSK		836.5	1	5	22.69	0.186
			20525		3	0	22.67	0.185
					3	1	22.66	0.185
					3	3	22.60	0.182
					6	0	21.83	0.152
				848.3	1	0	22.81	0.191
					1	2	22.80	0.191
					1	5	22.77	0.189
			20643		3	0	22.76	0.189
					3	1	22.67	0.185
	1.4 MHz				3	3	22.64	0.184
LTE					6	0	21.81	0.152
Band 5			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
					1	0	21.86	0.153
					1	2	21.83	0.152
		400414			1	5	21.80	0.151
		16QAM	20525	836.5	3	0	21.68	0.147
					3	1	21.50	0.141
					3	3	21.42	0.139
					6	0	20.64	0.116
					1	0	21.94	0.156
					1	2	21.93	0.156
					1	5	21.85	0.153
			20643	848.3	3	0	21.69	0.148
					3	1	21.63	0.146
					3	3	21.60	0.145
					6	0	20.69	0.117

Donal	Channel	Madulatian	Channal	Frequency	RB Conf	iguration	Average Power	
Band	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.71	0.187
					1	8	22.68	0.185
					1	14	22.64	0.184
			20415	825.5	8	0	21.74	0.149
					8	4	21.70	0.148
					8	7	21.64	0.146
					15	0	21.62	0.145
					1	0	22.71	0.187
					1	8	22.71	0.187
				836.5	1	14	22.63	0.183
		QPSK	20525		8	0	21.77	0.150
					8	4	21.76	0.150
					8	7	21.71	0.148
					15	0	21.68	0.147
					1	0	22.90	0.195
				847.5	1	8	22.78	0.190
					1	14	22.71	0.187
			20635		8	0	21.84	0.153
					8	4	21.82	0.152
	3 MHz				8	7	21.76	0.150
LTE					15	0	21.71	0.148
Band 5			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
					1	0	21.95	0.157
					1	8	21.70	0.148
		160 4 14	20525	920.5	1	14	21.29	0.135
		16QAM	20525	836.5	8	0	20.74	0.119
					8	4	20.68	0.117
					8	7	20.59	0.115
					15	0	20.38	0.109
					1	0	21.70	0.148
					1	8	21.61	0.145
			20625	047 5	1	14	21.59	0.144
			20635	847.5	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	Modulation	Channel	Frequency	RB Configuration		Average Power	
Bariu	Bandwidth	Modulation	Charine	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.74	0.188
					1	12	22.74	0.188
					1	24	22.65	0.184
			20425	826.5	12	0	21.80	0.151
					12	6	21.79	0.151
					12	13	21.69	0.148
					25	0	21.68	0.147
				836.5	1	0	22.61	0.182
					1	12	22.61	0.182
					1	24	22.56	0.180
		QPSK	20525		12	0	21.78	0.151
					12	6	21.74	0.149
					12	13	21.71	0.148
					25	0	21.70	0.148
				846.5	1	0	22.77	0.189
					1	12	22.63	0.183
					1	24	22.61	0.182
			20625		12	0	21.84	0.153
	5 MHz				12	6	21.77	0.150
					12	13	21.70	0.148
LTE					25	0	21.65	0.146
Band 5	0 1711 12	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		1	0	21.90	0.155
				836.5	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		1	0	21.95	0.157
				846.5	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	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Dariu	Bandwidth	Modulation	Chariner	(MHz)	Size	Offset	(dBm)	(W)
				829.0	1	0	22.77	0.189
					1	24	22.60	0.182
					1	49	22.57	0.181
			20450		25	0	21.72	0.149
					25	12	21.70	0.148
					25	25	21.67	0.147
					50	0	21.62	0.145
				836.5	1	0	22.76	0.189
					1	24	22.72	0.187
					1	49	22.59	0.182
		QPSK	20525		25	0	21.73	0.149
					25	12	21.70	0.148
					25	25	21.66	0.147
					50	0	21.61	0.145
				844.0	1	0	22.79	0.190
			20600		1	24	22.76	0.189
					1	49	22.64	0.184
					25	0	21.72	0.149
	10 MHz				25	12	21.71	0.148
					25	25	21.71	0.148
LTE					50	0	21.68	0.147
Band 5			20450	829.0	1	0	21.59	0.144
					1	24	21.54	0.143
		16QAM			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
					1	0	21.92	0.156
				836.5	1	24	21.81	0.152
					1	49	21.33	0.136
			20525		25	0	20.64	0.116
					25	12	20.64	0.116
					25	25	20.61	0.115
					50	0	20.57	0.114
					1	0	21.93	0.156
			20600		1	24	21.80	0.151
					1	49	21.64	0.146
				844.0	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	Modulation	Channel	Frequency	RB Configuration		Average Power	
Danu	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.74	0.188
					1	2	22.72	0.187
			23017	699.7	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
				707.5	1	0	22.76	0.189
					1	2	22.72	0.187
					1	5	22.69	0.186
		QPSK	23095		3	0	22.67	0.185
					3	1	22.66	0.185
					3	3	22.60	0.182
					6	0	21.83	0.152
					1	0	22.81	0.191
					1	2	22.80	0.191
					1	5	22.77	0.189
	1.4 MHz		23173	715.3	3	0	22.76	0.189
					3	1	22.67	0.185
					3	3	22.64	0.184
LTE					6	0	21.81	0.152
Band 12			23017	699.7	1	0	21.77	0.150
		16QAM			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
			23095		1	0	21.86	0.153
				707.5	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
			23173		1	0	21.94	0.156
				715.3	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	Modulation	Channel	Frequency	RB Configuration		Average Power	
Dariu	Bandwidth	Wodulation	Charine	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.71	0.187
					1	8	22.68	0.185
					1	14	22.64	0.184
			23025	700.5	8	0	21.74	0.149
					8	4	21.70	0.148
					8	7	21.64	0.146
					15	0	21.62	0.145
				707.5	1	0	22.73	0.187
					1	8	22.71	0.187
					1	14	22.63	0.183
		QPSK	23095		8	0	21.77	0.150
					8	4	21.76	0.150
					8	7	21.71	0.148
					15	0	21.68	0.147
					1	0	22.86	0.193
					1	8	22.78	0.190
					1	14	22.71	0.187
	3 MHz		23165	714.5	8	0	21.84	0.153
					8	4	21.82	0.152
					8	7	21.76	0.150
LTE					15	0	21.71	0.148
Band 12	0 1711 12		23025	700.5	1	0	21.97	0.157
		16QAM			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
					1	0	21.95	0.157
				707.5	1	8	21.70	0.148
					1	14	21.29	0.135
			23095		8	0	20.74	0.119
					8	4	20.68	0.117
					8	7	20.59	0.115
					15	0	20.38	0.109
					1	0	21.70	0.148
			23165	714.5	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

Donal	Channel	Madulatian	Channel	Frequency	RB Conf	iguration	Average	e Power
Band	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.74	0.188
					1	12	22.74	0.188
					1	24	22.65	0.184
			23035	701.5	12	0	21.80	0.151
					12	6	21.79	0.151
					12	13	21.69	0.148
					25	0	21.68	0.147
					1	0	22.61	0.182
					1	12	22.61	0.182
					1	24	22.56	0.180
		QPSK	23095	707.5	12	0	21.78	0.151
					12	6	21.74	0.149
					12	13	21.71	0.148
					25	0	21.70	0.148
					1	0	22.77	0.189
					1	12	22.63	0.183
					1	24	22.61	0.182
			23155	713.5	12	0	21.84	0.153
					12	6	21.77	0.150
					12	13	21.70	0.148
LTE	5 MHz				25	0	21.65	0.146
Band 12	3 IVII IZ				1	0	21.93	0.156
					1	12	21.81	0.152
					1	24	21.59	0.144
			23035	701.5	12	0	20.71	0.118
					12	6	20.64	0.116
					12	13	20.59	0.115
				<u> </u>	25	0	20.58	0.114
					1	0	21.90	0.155
					1	12	21.65	0.146
					1	24	21.48	0.141
		16QAM	23095	707.5	12	0	20.63	0.116
					12	6	20.61	0.115
					12	13	20.60	0.115
				<u> </u>	25	0	20.53	0.113
					1	0	21.95	0.157
				[	1	12	21.70	0.148
				[	1	24	21.58	0.144
			23155	713.5	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	Modulation	Channal	Frequency	RB Conf	iguration	Average	e Power
Danu	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.77	0.189
					1	24	22.60	0.182
					1	49	22.57	0.181
			23060	704.0	25	0	21.72	0.149
					25	12	21.70	0.148
					25	25	21.67	0.147
					50	0	21.62	0.145
					1	0	22.76	0.189
					1	24	22.72	0.187
					1	49	22.59	0.182
		QPSK	23095	707.5	25	0	21.73	0.149
					25	12	21.70	0.148
					25	25	21.66	0.147
					50	0	21.61	0.145
					1	0	22.79	0.190
					1	24	22.76	0.189
					1	49	22.64	
			23130	711.0	25	0	21.72	0.149
					25	12	21.71	0.148
					25	25	21.71	0.148
LTE	10 MHz				50	0	21.68	0.147
Band 12	10.11.12				1	0	21.59	0.144
					1	24	21.54	0.143
					1	49	21.49	0.141
			23060	704.0	25	0	20.63	
					25	12	20.61	0.115
					25	25	20.58	0.114
					50	0	20.54	
					1	0	21.92	
					1	24	21.81	
					1	49	21.33	
		16QAM	23095	707.5	25	0	20.64	
					25	12	20.64	
					25	25	20.61	
					50	0	20.57	0.114
					1	0	21.93	(W) 0.189 0.182 0.181 0.149 0.148 0.147 0.145 0.189 0.187 0.182 0.149 0.148 0.147 0.145 0.190 0.189 0.184 0.149 0.148 0.149 0.148 0.149 0.148 0.141 0.116 0.115 0.116 0.115 0.116 0.115
					1	24	21.80	
					1	49	21.64	
			23130	711.0	25	0	20.68	
					25	12	20.67	0.117
					25	25	20.64	
					50	0	20.56	0.114

Band	Channel	Modulation	Channel	Frequency	RB Conf	figuration	Average	e Power
Danu	Bandwidth	Modulation	Charmer	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.82	0.191
					1	12	22.43	0.175
					1	24	22.32	0.171
			23205	779.5	12	0	21.93	0.156
					12	6	21.92	0.156
					12	13	21.59	0.144
					25	0	21.21	0.132
					1	0	22.86	0.193
					1	12	22.84	0.192
					1	24	22.35	0.172
		QPSK	23230	782.0	12	0	22.06	0.161
					12	6	21.90	0.155
				[	12	13	21.47	0.140
					25	0	21.45	0.140
					1	0	22.88	0.194
					1	12	22.78	0.190
					1	24	22.75	0.188
			23255	784.5	12	0	22.06	0.161
					12	6	21.76	0.150
					12	13	21.48	0.141
LTE	5 MHz				25	0	21.44	0.139
Band 13	J WII IZ				1	0	21.96	0.157
					1	12	21.88	0.154
					1	24	21.16	0.131
			23205	779.5	12	0	21.06	0.128
					12	6	20.87	0.122
					12	13	20.81	0.121
				<u> </u>	25	0	20.61	0.115
					1	0	21.94	0.156
				[	1	12	21.80	0.151
				[	1	24	21.66	0.147
		16QAM	23230	782.0	12	0	21.13	0.130
				[	12	6	20.95	0.124
				[	12	13	20.56	0.114
					25	0	20.33	0.108
					1	0	22.02	0.159
				[	1	12	21.72	0.149
				[	1	24	21.64	0.146
			23255	784.5	12	0	21.05	0.127
				704.5	12	6	21.01	0.126
					12	11	20.86	0.122
				<u>                                      </u>	25	0	20.49	0.112

Band	Channel	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Danu	Bandwidth	Modulation	Onamici	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.74	0.188
					1	24	22.65	0.184
					1	49	22.59	0.182
		QPSK	23230	782.0	25	0	22.21	0.166
					25	12	22.17	0.165
					25	25	22.12	0.163
LTE	I 1() N/IH2				50	0	21.72	0.149
Band 13					1	0	21.91	0.155
					1	24	21.75	0.150
					1	49	21.55	0.143
		16QAM	23230	782.0	25	0	21.46	0.140
					25	12	21.35	0.136
					25	25	21.01	0.126
					50	0	20.58	0.114

Band	Channel	Modulation	Channel	Frequency	RB Conf	iguration	Average	e Power
Dariu	Bandwidth	Modulation	Charine	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.90	0.195
					1	12	22.84	0.192
					1	24	22.77	0.189
			23755	706.5	12	0	21.86	0.153
					12	6	21.79	0.151
					12	13	21.76	0.150
					25	0	21.72	0.149
					1	0	22.83	0.192
					1	12	22.82	0.191
					1	24	22.62	0.183
		QPSK	23790	710.0	12	0	21.88	0.154
					12	6	21.84	0.153
					12	13	21.83	0.152
					25	0	21.82	0.152
					1	0	22.90	0.195
					1	12	22.72	0.187
					1	24	22.53	0.179
			23825	713.5	12	0	21.85	0.153
					12	6	21.84	0.153
					12	13	21.80	0.151
LTE	5 MHz				25	0	21.76	0.150
Band 17	J WII IZ				1	0	22.08	0.161
					1	12	22.02	0.159
					1	24	21.69	0.148
			23755	706.5	12	0	20.82	0.121
					12	6	20.78	0.120
					12	13	20.75	0.119
					25	0	20.74	0.119
					1	0	21.78	0.151
					1	12	21.72	0.149
					1	24	21.44	0.139
		16QAM	23790	710.0	12	0	20.94	0.124
					12	6	20.83	0.121
					12	13	20.65	0.116
					25	0	20.61	0.115
					1	0	21.97	0.157
					1	12	21.68	0.147
					1	24	21.48	0.150 0.149 0.192 0.191 0.183 0.154 0.153 0.152 0.152 0.195 0.187 0.179 0.153 0.153 0.151 0.150 0.161 0.159 0.148 0.121 0.120 0.119 0.119 0.119 0.119 0.119 0.124 0.121 0.126 0.116 0.157
			23825	713.5	12	0	20.96	0.125
			23023	713.5	12	6	20.96	0.125
					12	13	20.82	0.121
					25	0	20.78	0.120

Band	Channel	Modulation	Channal	Frequency	RB Conf	iguration	Average	e Power
Band	Bandwidth	Modulation	Channel	(MHz)	Size	Offset	(dBm)	(W)
					1	0	22.95	0.197
				•	1	24	22.76	0.189
					1	49	22.65	0.184
			23780	709.0	25	0	21.88	0.154
					25	12	21.83	0.152
					25	25	21.82	0.152
					50	0	21.78	0.151
					1	0	22.92	0.196
					1	24	22.82	0.191
					1	49	22.64	0.184
		QPSK	23790	710.0	25	0	21.82	0.152
					25	12	21.80	0.151
					25	25	21.80	0.151
					50	0	21.76	0.150
					1	0	22.76	0.189
					1	24	22.65	0.184
					1	49	22.63	0.183
			23800	711.0	25	0	21.79	0.151
					25	12	21.77	0.150
					25	25	21.76	0.150
LTE	10 MHz				50	0	21.69	0.148
Band 17	10 10112				1	0	21.83	0.152
					1	24	21.70	0.148
					1	49	21.45	0.140
			23780	709.0	25	0	20.85	0.122
					25	12	20.77	0.119
					25	25	20.72	0.118
					50	0	20.72	0.118
					1	0	22.14	0.164
				[	1	24	21.96	0.157
				[	1	49	21.66	0.147
		16QAM	23790	710.0	25	0	20.82	0.121
					25	12	20.81	0.121
				[	25	25	20.75	0.119
					50	0	20.72	0.118
					1	0	21.97	0.157
					1	24	21.64	0.146
				[	1	49	21.52	0.142
			23800	711.0	25	0	20.79	0.120
			25000		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(b)(9): Control stations and mobile stations transmitting in the 746-757 MHz, and 776-788 MHz bands are limited to 30 watts ERP.

For FCC Part 27.50(c)(9): Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.

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

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

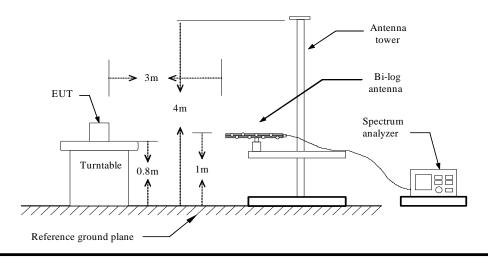
		3 Meter Chamber			
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(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	06/12/2015	(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.

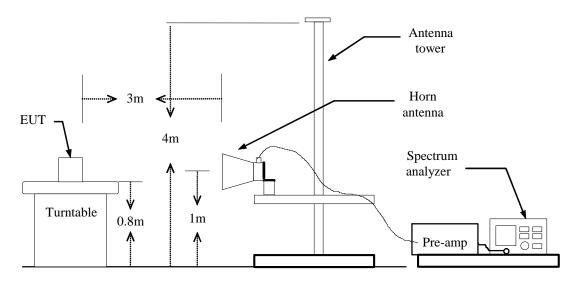
Note: N.C.R. = No Calibration Request.

### 3.3. Test Setup

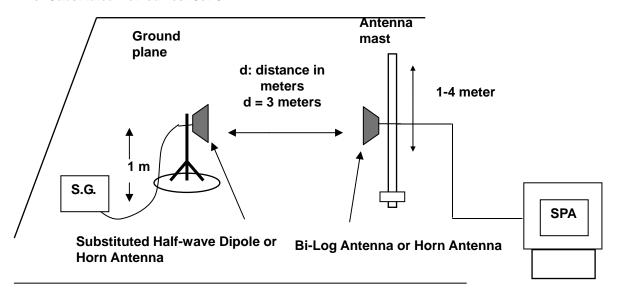
**Below 1 GHz** 



#### **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 Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RWB and VBW is 5MHz for LTE and 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	LE910-NA V2		
Test Item	E.I.R.P. / E.R.P.		
Date of Test	08/03/2015	Test Site	TC03

Report Number: 1506FR21-01

LTE Band	LTE Band 2											
Channel Bandwidth	Modulation	СН	Frequency (MHz)		B uration	Average Power		E.I.I	R.P.	Limit		
Dariuwiuiri			(IVITIZ)	Size	Offset	(dBm)	(dBi)	(dBm)	(W)	(W)		
1.4 M	QPSK	18900	1880.0	1	0	23.38	2.14	25.52	0.356	< 2		
3 MHz	QPSK	18900	1880.0	1	0	23.39	2.14	25.53	0.357	< 2		
5 MHz	QPSK	18900	1880.0	1	0	23.40	2.14	25.54	0.358	< 2		
10 MHz	QPSK	18650	1855.0	1	0	23.30	2.14	25.44	0.350	< 2		
15 MHz	QPSK	18900	1880.0	1	0	23.43	2.14	25.57	0.361	< 2		
20 MHz	QPSK	18900	1880.0	1	0	23.41	2.14	25.55	0.359	< 2		

LTE Band	LTE Band 4											
Channel Bandwidth	Modulation	СН	Frequency (MHz)		B uration	Average Power (dBm)		E.I.I	R.P.	Limit (W) < 1 < 1 < 1 < 1		
Danuwiuin			(IVITZ)	Size	Offset	(ubiii)	(dBi)	(dBm)	(W)	(۷۷)		
1.4 M	QPSK	19957	1710.7	1	0	23.12	2.14	25.26	0.336	< 1		
3 MHz	QPSK	19965	1711.5	1	0	22.99	2.14	25.13	0.326	< 1		
5 MHz	QPSK	19975	1712.5	1	0	23.01	2.14	25.15	0.327	< 1		
10 MHz	QPSK	20000	1715.0	1	0	23.07	2.14	25.21	0.332	< 1		
15 MHz	QPSK	20025	1717.5	1	0	23.11	2.14	25.25	0.335	< 1		
20 MHz	QPSK	20050	1720.0	1	0	23.08	2.14	25.22	0.333	< 1		

LTE Band	LTE Band 5											
Channel Bandwidth Modulation	СН	Frequency			Average Power		E.R.P.		Limit			
Bandwidth			(MHz)	Size	Offset	(dBm)	(dBi)	(dBm)	(W)	(W)		
1.4 M	QPSK	20643	848.3	1	0	22.81	2.14	22.80	0.191	< 7		
3 MHz	QPSK	20635	847.5	1	0	22.90	2.14	22.89	0.195	< 7		
5 MHz	QPSK	20625	846.5	1	0	22.77	2.14	22.76	0.189	< 7		
10 MHz	QPSK	20600	844.0	1	0	22.79	2.14	22.78	0.190	< 7		

LTE Band	LTE Band 12											
Channel Bandwidth	Modulation	СН	Frequency	R Config	B uration	Average Power		E.F	R.P.	Limit		
bandwidin			(MHz)	Size	Offset	(dBm)	(dBi)	(dBm)	(W)	(W)		
1.4 MHz	QPSK	23173	715.3	1	0	22.81	2.14	24.95	0.313	< 30		
3 MHz	QPSK	23165	714.5	1	0	22.86	2.14	25.00	0.316	< 30		
5 MHz	QPSK	23155	713.5	1	0	22.77	2.14	24.91	0.310	< 30		
10 MHz	QPSK	23130	711.0	1	0	22.79	2.14	24.93	0.311	< 30		

LTE Band 13										
Channel	Modulation	СН	Frequency	RB Configuration Average Power A			E.F	E.R.P.		
Bandwidth			(MHz)	Size	Offset	(dBm)	(dBi)	(dBm)	(W)	(W)
5 MHz	QPSK	23255	784.5	1	0	22.88	2.14	25.02	0.318	< 30
10 MHz	QPSK	23230	782.0	1	0	22.74	2.14	24.88	0.308	< 30

LTE Band 17										
Channel	HMODINATION		Frequency	RB Configuration		Average Power		E.R.P.		Limit
Bandwidth			(MHz)	Size	Offset	(dBm)	(dBi)	(dBm)	(W)	(W)
5 MHz	QPSK	23755	706.5	1	0	22.90	2.14	22.89	0.195	< 3
J IVII IZ	3	23825	713.5	1	0	22.90	2.14	22.89	0.195	< 3
10 MHz	QPSK	23780	709.0	1	0	22.95	2.14	22.94	0.197	< 3

# 4 Frequency Stability Test

### **4.1.** Limit

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

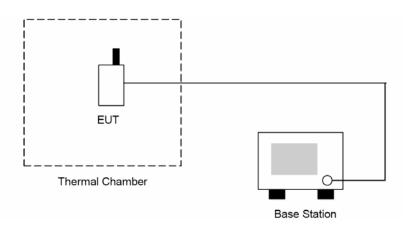
#### 4.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Wideband Radio Communication Test	R&S	CMW500	103168	11/05/2014	(1)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/27/2015	(1)
Test Site	ATL	TE05	TE05	N.C.R.	

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

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

### 4.3. Setup



#### 4.4. Test Procedure

The measurement is made according to FCC rules:

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

### 4.5. Uncertainty

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

### 4.6. Test Result

Model Number	LE910-NA V2				
Test Item	Frequency Stability				
Date of Test	06/18/2015	Test Site	TE05		

LTE Band 2 _ QP	LTE Band 2 _ QPSK							
			Voltage					
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		4.20	20	1.76	0.001	± 2.5		
20 MHz	1880.0	3.80	20	3.35	0.002	± 2.5		
		3.40	20	-3.87	-0.002	± 2.5		
Temperature								
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		3.80	-10	2.11	0.001	± 2.5		
		3.80	0	3.04	0.002	± 2.5		
		3.80	10	-3.85	-0.002	± 2.5		
20 MHz	1880.0	3.80	20	-0.56	0.000	± 2.5		
20 1011 12	1000.0	3.80	30	-4.11	-0.002	± 2.5		
		3.80	40	1.28	0.001	± 2.5		
		3.80	50	6.90	0.004	± 2.5		
		3.80	55	-14.24	-0.008	± 2.5		

LTE Band 4 _ QPS	LTE Band 4 _ QPSK							
	Voltage							
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		4.20	20	2.28	0.001	± 2.5		
20 MHz	1732.5	3.80	20	0.56	0.000	± 2.5		
		3.40	20	-6.58	-0.004	± 2.5		
Temperature								
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		3.80	-10	0.78	0.000	± 2.5		
		3.80	0	2.75	0.002	± 2.5		
		3.80	10	-3.35	-0.002	± 2.5		
20 MHz	1732.5	3.80	20	2.57	0.001	± 2.5		
20 1011 12	1732.5	3.80	30	-2.75	-0.002	± 2.5		
		3.80	40	-0.98	-0.001	± 2.5		
		3.80	50	6.29	0.004	± 2.5		
		3.80	55	-11.71	-0.007	± 2.5		

Note: The device temperature only support -10 $^{\circ}$ C to +55 $^{\circ}$ C.

LTE Band 5 _ QP	LTE Band 5 _ QPSK							
	Voltage							
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		4.20	20	1.11	0.001	± 2.5		
10 MHz	836.5	3.80	20	0.73	0.001	± 2.5		
		3.40	20	-3.74	-0.004	± 2.5		
Temperature								
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		3.80	-10	1.84	0.002	± 2.5		
		3.80	0	1.49	0.002	± 2.5		
		3.80	10	-4.86	-0.006	± 2.5		
10 MHz	836.5	3.80	20	-0.28	0.000	± 2.5		
10 1011 12	030.3	3.80	30	-5.47	-0.007	± 2.5		
		3.80	40	1.35	0.002	± 2.5		
		3.80	50	4.49	0.005	± 2.5		
		3.80	55	-13.63	-0.016	± 2.5		

LTE Band 12 _ QF	LTE Band 12 _ QPSK							
	Voltage							
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		4.20	20	2.34	0.003	± 2.5		
10 MHz	705.5	3.80	20	2.37	0.003	± 2.5		
		3.40	20	-6.77	-0.010	± 2.5		
Temperature								
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		3.80	-10	3.41	0.005	± 2.5		
		3.80	0	3.39	0.005	± 2.5		
		3.80	10	-5.57	-0.008	± 2.5		
10 MHz	707.5	3.80	20	0.88	0.001	± 2.5		
TO IVIT 12	707.5	3.80	30	-1.58	-0.002	± 2.5		
		3.80	40	1.35	0.002	± 2.5		
		3.80	50	3.93	0.006	± 2.5		
		3.80	55	-12.54	-0.018	± 2.5		

Note: The device temperature only support -10°C to +55°C.

LTE Band 13 _ QF	LTE Band 13 _ QPSK						
			Voltage				
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	
		4.20	20	1.88	0.002	± 2.5	
10 MHz	782.0	3.80	20	1.79	0.002	± 2.5	
		3.40	20	-7.01	-0.009	± 2.5	
Temperature							
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	
		3.80	-10	4.05	0.005	± 2.5	
		3.80	0	3.80	0.005	± 2.5	
		3.80	10	-3.85	-0.005	± 2.5	
10 MHz	782.0	3.80	20	1.17	0.001	± 2.5	
TO IVII IZ	702.0	3.80	30	-3.84	-0.005	± 2.5	
		3.80	40	-0.65	-0.001	± 2.5	
		3.80	50	4.50	0.006	± 2.5	
		3.80	55	-11.65	-0.015	± 2.5	

LTE Band 17 _ QF	LTE Band 17 _ QPSK							
	Voltage							
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		4.20	20	4.27	0.006	± 2.5		
10 MHz	710.0	3.80	20	3.20	0.005	± 2.5		
		3.40	20	-3.24	-0.005	± 2.5		
Temperature								
Channel Bandwidth	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)		
		3.80	-10	1.11	0.002	± 2.5		
		3.80	0	1.05	0.001	± 2.5		
		3.80	10	-4.62	-0.007	± 2.5		
10 MHz	710.0	3.80	20	1.40	0.002	± 2.5		
TO IVIT 12	710.0	3.80	30	-4.92	-0.007	(ppm) ± 2.5 ± 2.5 ± 2.5 Limit (ppm) ± 2.5 ± 2.5 ± 2.5		
		3.80	40	-1.28	-0.002	± 2.5		
		3.80	50	7.54	0.011	± 2.5		
		3.80	55	-12.05	-0.017	± 2.5		

Note: The device temperature only support -10°C to +55°C.

# 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.

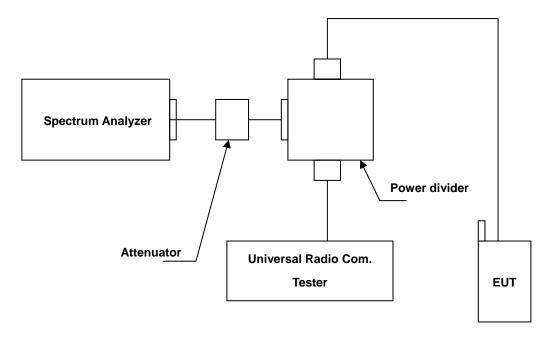
### 5.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(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  $\pm 10$ Hz



# 5.6. Test Result

Model Number	LE910-NA V2					
Test Item	Emission Bandwidth & Occupied Bandwidth					
Date of Test	06/11/2015	06/11/2015 Test Site TE05				

LTE Band 2		_		T
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
		1850.7	1.248	1.0854
	1.4 MHz	1880.0	1.248	1.0761
		1909.3	1.247	1.0837
		1851.5	2.965	2.6905
	3 MHz	1880.0	2.937	2.6827
		1908.5	2.971	2.6849
		1852.5	4.991	4.4720
	5 MHz	1880.0	4.849	4.4571
QPSK		1907.5	4.949	4.4698
QFSK		1855.0	9.863	8.9686
	10 MHz	1880.0	9.815	8.9667
		1905.0	9.778	8.9397
		1857.5	15.371	13.4528
	15 MHz	1880.0	14.617	13.4608
		1902.5	14.589	13.3895
		1860.0	19.361	17.8655
	20 MHz	1880.0	19.324	17.9052
		1900.0	19.538	17.8316
		1850.7	1.248	1.0847
	1.4 MHz	1880.0	1.248	1.0762
		1909.3	1.245	1.0826
		1851.5	2.973	2.6924
	3 MHz	1880.0	2.938	2.6821
		1908.5	2.932	2.6833
	5 MHz	1852.5	4.950	4.4686
		1880.0	4.871	4.4643
16QAM		1907.5	4.975	4.4683
IOQAW		1855.0	9.821	8.9631
	10 MHz	1880.0	9.831	8.9604
		1905.0	9.742	8.9522
		1857.5	15.265	13.4425
	15 MHz	1880.0	14.837	13.4464
		1902.5	14.730	13.4010
	20 MHz	1860.0	19.203	17.8778
		1880.0	19.383	17.9027
		1900.0	19.538	17.7768

LTE Band 4				
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
		1710.7	1.302	1.0800
	1.4 MHz	1732.5	1.230	1.0834
		1754.3	1.295	1.0806
		1711.5	2.979	2.6882
	3 MHz	1732.5	2.973	2.6841
		1753.5	2.938	2.6788
		1712.5	4.878	4.4739
	5 MHz	1732.5	4.909	4.4611
QPSK		1752.5	4.898	4.4506
QPSK		1715.0	9.959	8.9670
	10 MHz	1732.5	9.854	8.9554
		1750.0	9.835	8.9723
		1717.5	15.297	13.4593
	15 MHz	1732.5	14.665	13.4221
		1747.5	15.039	13.4448
		1720.0	19.573	17.8902
	20 MHz	1732.5	19.484	17.8358
		1745.0	19.752	17.9703
		1710.7	1.307	1.0808
	1.4 MHz	1732.5	1.246	1.0832
		1754.3	1.277	1.0808
	3 MHz	1711.5	2.983	2.6873
		1732.5	2.981	2.6940
		1753.5	2.929	2.6803
	5 MHz	1712.5	4.861	4.4657
		1732.5	4.941	4.4657
16QAM		1752.5	4.866	4.4478
IOQAW		1715.0	9.936	8.9679
	10 MHz	1732.5	9.923	8.9525
		1750.0	9.804	8.9652
	15 MHz	1717.5	14.921	13.4265
		1732.5	14.876	13.4029
		1747.5	15.039	13.4260
	20 MHz	1720.0	19.565	17.8961
		1732.5	19.504	17.8465
		1745.0	19.659	17.9862

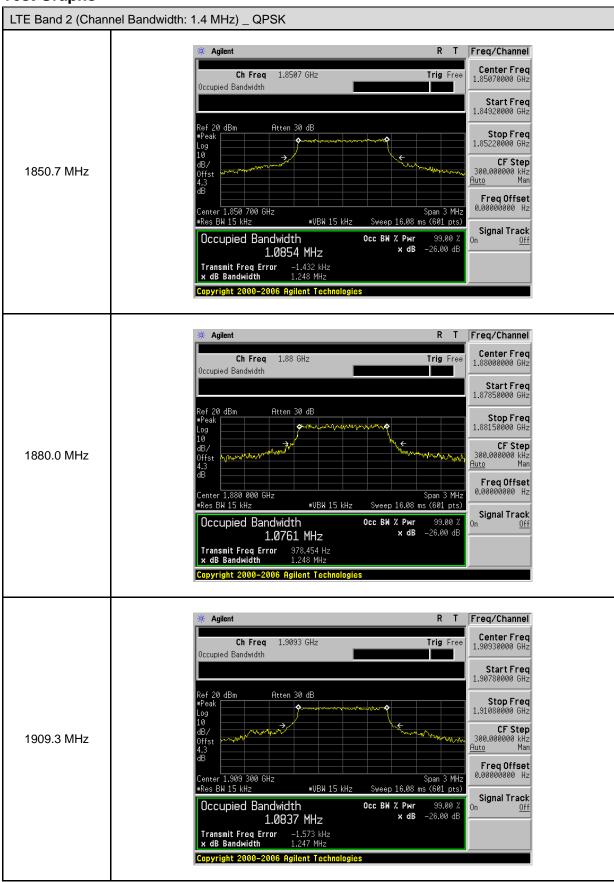
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Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
	1.4 MHz	824.7	1.283	1.0815
		836.5	1.222	1.0820
		848.3	1.246	1.0858
		825.5	2.965	2.6901
	3 MHz	836.5	2.953	2.6876
QPSK		847.5	2.948	2.6904
QFSK		826.5	4.923	4.4747
	5 MHz	836.5	4.891	4.4618
		846.5	4.848	4.4555
	10 MHz	829.0	9.888	8.9697
		836.5	9.813	8.9613
		844.0	9.787	8.9640
	1.4 MHz	824.7	1.282	1.0814
		836.5	1.232	1.0817
		848.3	1.239	1.0857
	3 MHz	825.5	2.954	2.6906
16QAM		836.5	2.966	2.6914
		847.5	2.928	2.6924
IOQAM	5 MHz	826.5	4.903	4.4558
		836.5	4.915	4.4661
		846.5	4.802	4.4482
	10 MHz	829.0	9.841	8.9701
		836.5	9.768	8.9534
		844.0	9.792	8.9318

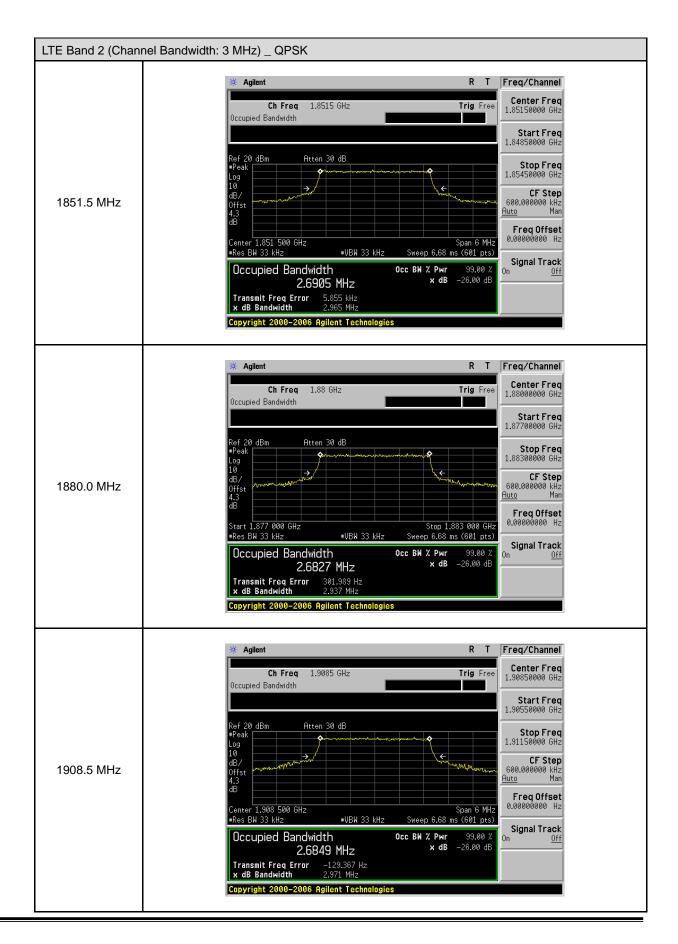
LTE Band 12					
Modulation	Channel Bandwidth	Frequency (MHz)	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	
		699.7	1.246	1.0891	
	1.4 MHz	707.5	1.294	1.0796	
		715.3	1.232	1.0823	
		700.5	2.958	2.6928	
	3 MHz	707.5	2.963	2.6947	
QPSK		714.5	2.933	2.6874	
QPSK		701.5	4.916	4.4600	
	5 MHz	707.5	4.907	4.4589	
		713.5	4.871	4.4548	
	10 MHz	704.0	10.108	8.9831	
		707.5	9.675	8.9567	
		711.0	9.893	8.9505	
		699.7	1.242	1.0870	
	1.4 MHz	707.5	1.296	1.0814	
		715.3	1.232	1.0817	
	3 MHz	700.5	2.954	2.6919	
		707.5	2.965	2.6946	
16QAM		714.5	2.917	2.6868	
IOQAIVI	5 MHz	701.5	4.910	4.4605	
		707.5	4.966	4.4658	
		713.5	4.818	4.4490	
	10 MHz	704.0	10.103	8.9834	
		707.5	9.911	8.9548	
		711.0	9.702	8.9481	

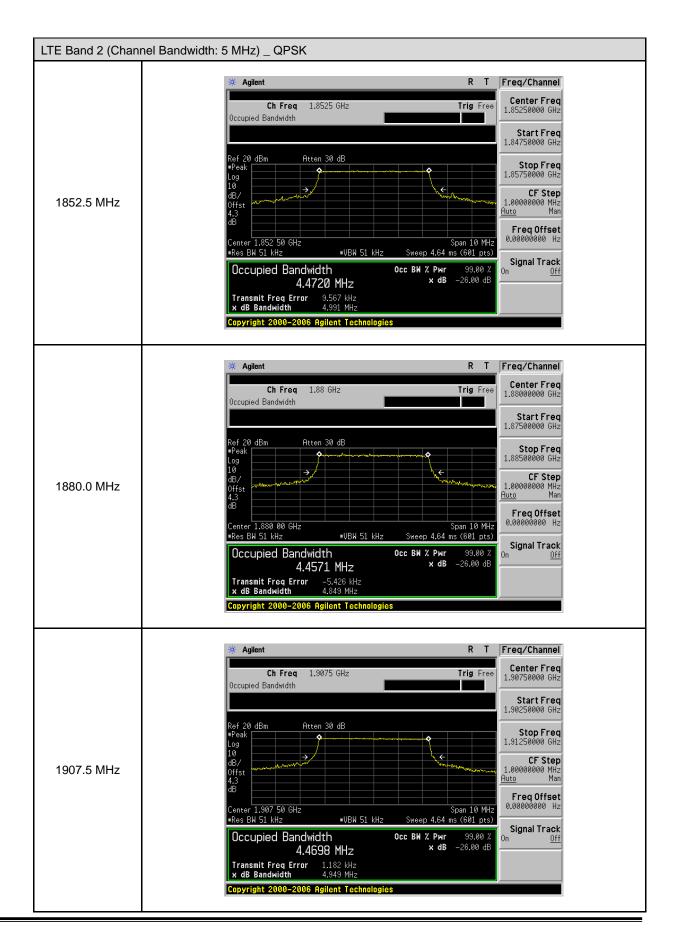
LTE Band 13					
Modulation	Channel Bandwidth	Frequency (MHz)	-26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	
	- 5 MHz	779.5	4.840	4.4606	
QPSK		782.0	4.947	4.4669	
		784.5	4.884	4.4500	
16QAM		779.5	4.829	4.4560	
		782.0	4.964	4.4717	
		784.5	4.903	4.4482	
QPSK	10 MHz	782.0	9.812	8.9809	
16QAM		782.0	9.812	8.9625	

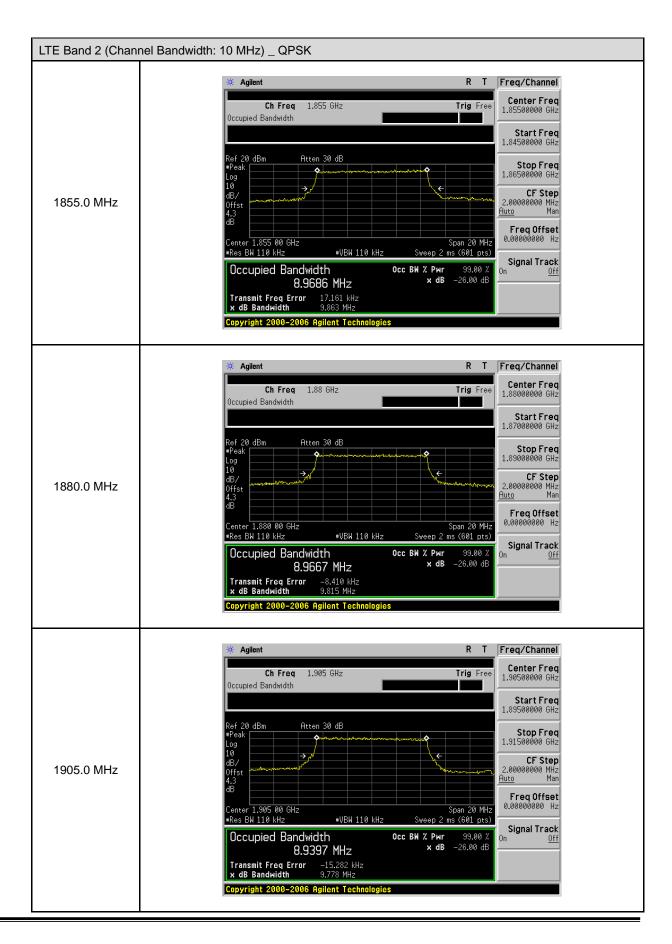
LTE Band 17				
Channel Bandwidth	Modulation	Frequency (MHz)	-26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
	5 MHz	706.5	4.990	4.4758
		710.0	4.888	4.4559
QPSK		713.5	4.920	4.4752
QFSK	10 MHz	706.5	9.775	8.9568
		710.0	9.719	8.9352
		713.5	9.896	8.9558
	5 MHz	709.0	4.969	4.4770
		710.0	4.888	4.4634
16QAM		711.0	4.912	4.4647
IOQAIVI	10 MHz	709.0	9.754	8.9507
		710.0	9.864	8.9502
		711.0	9.795	8.9435

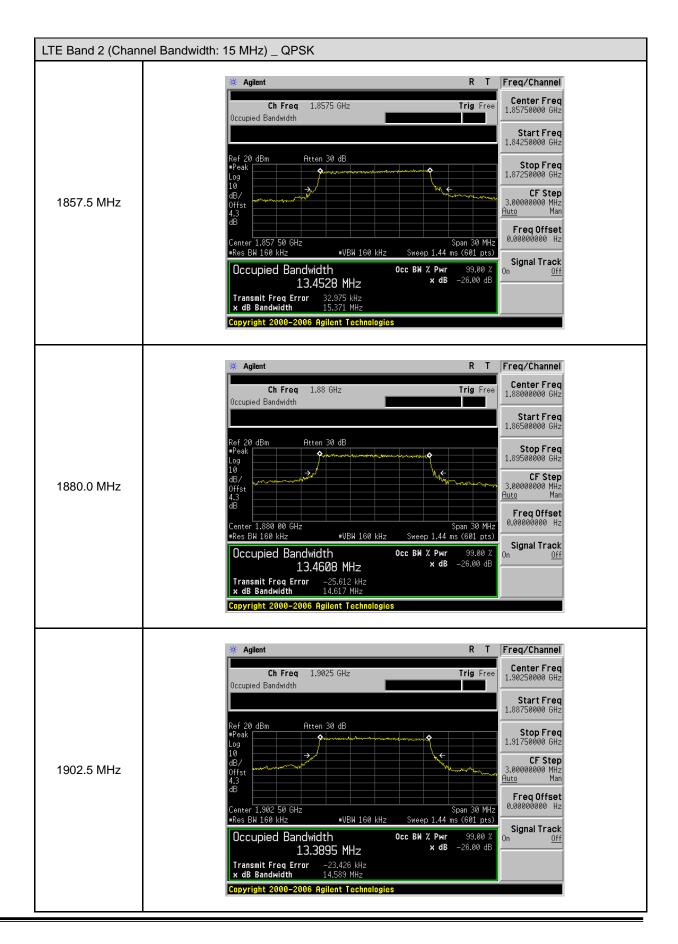
# 5.7. Test Graphs

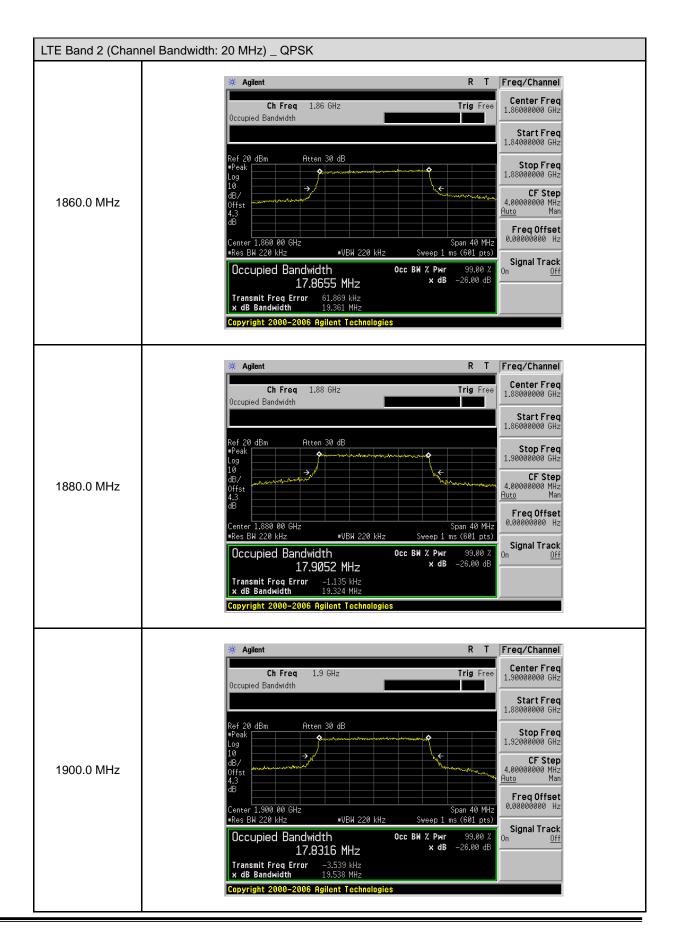


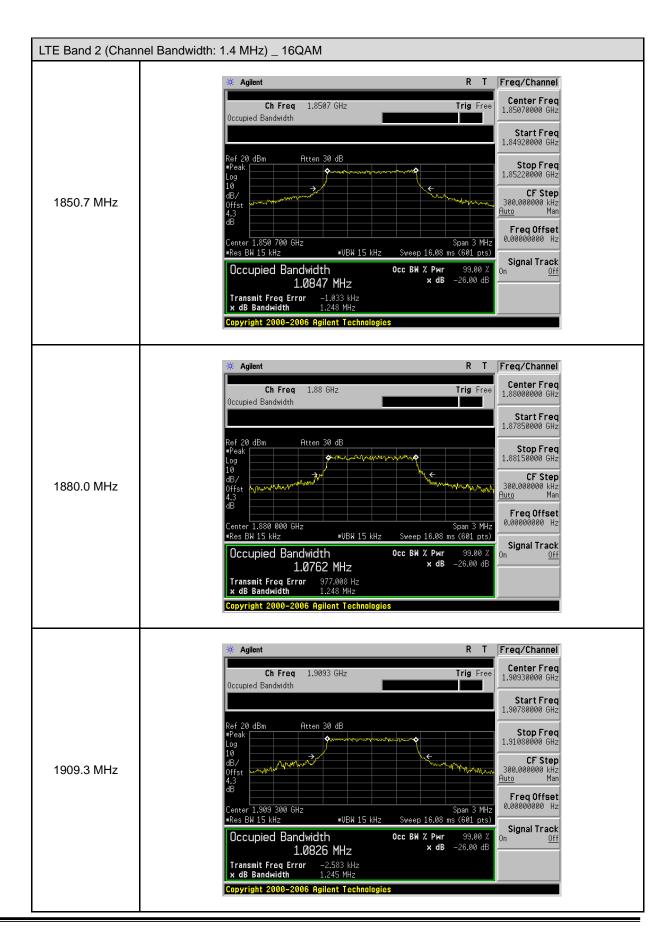


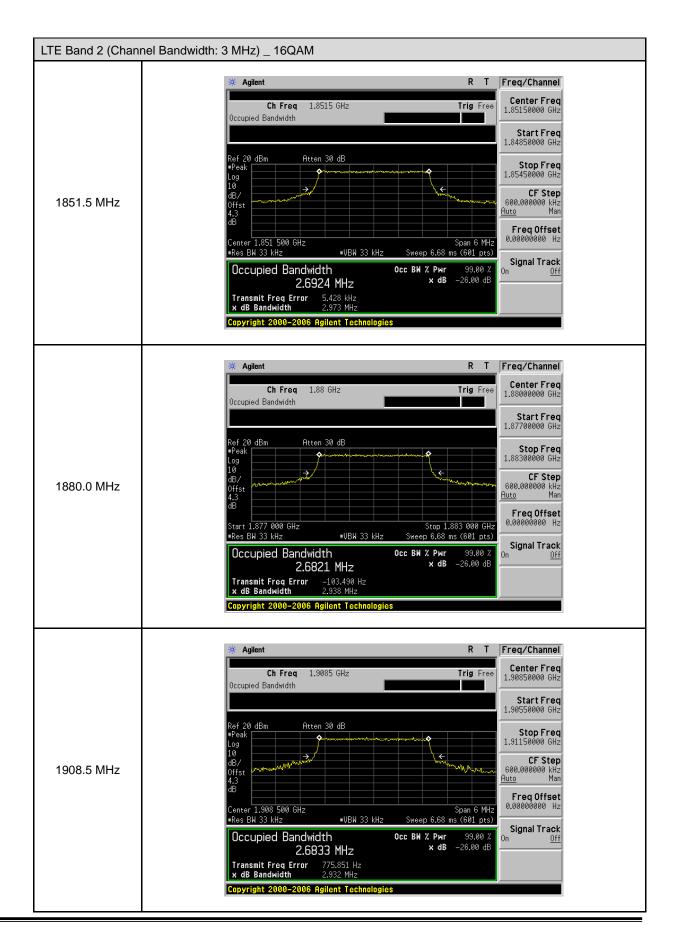


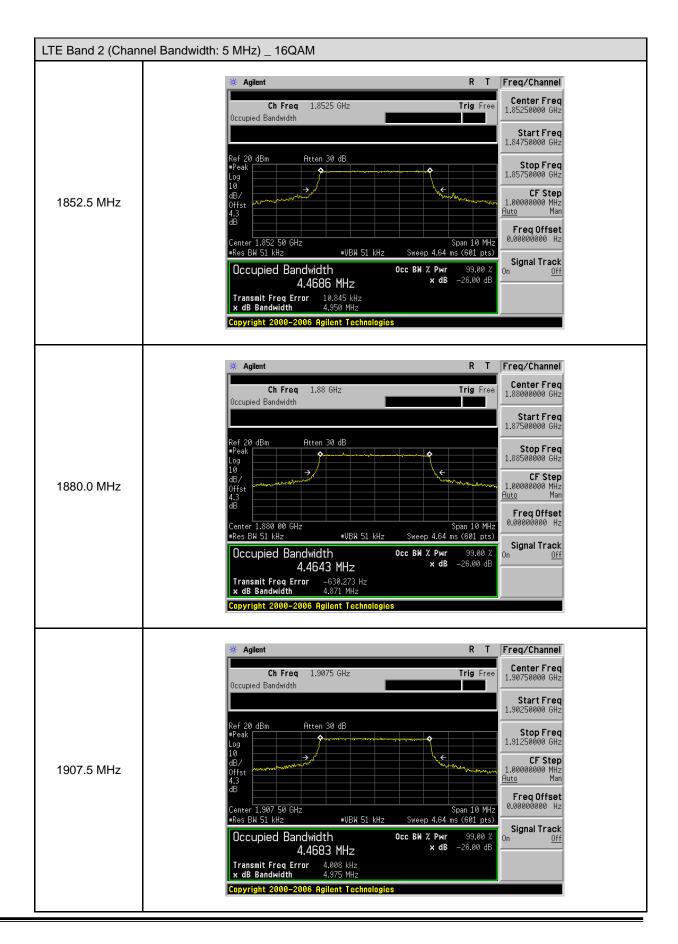


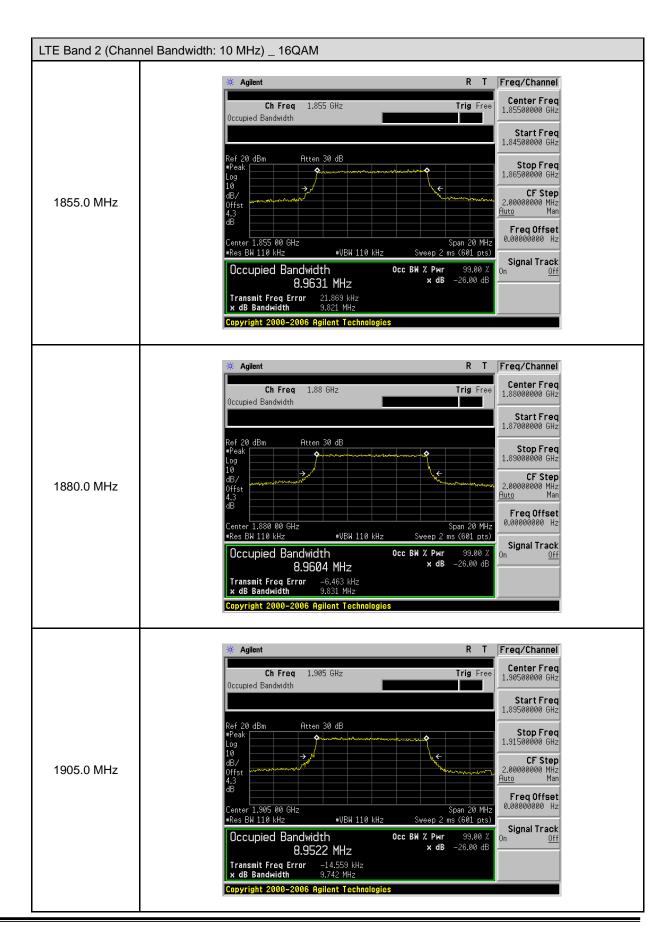


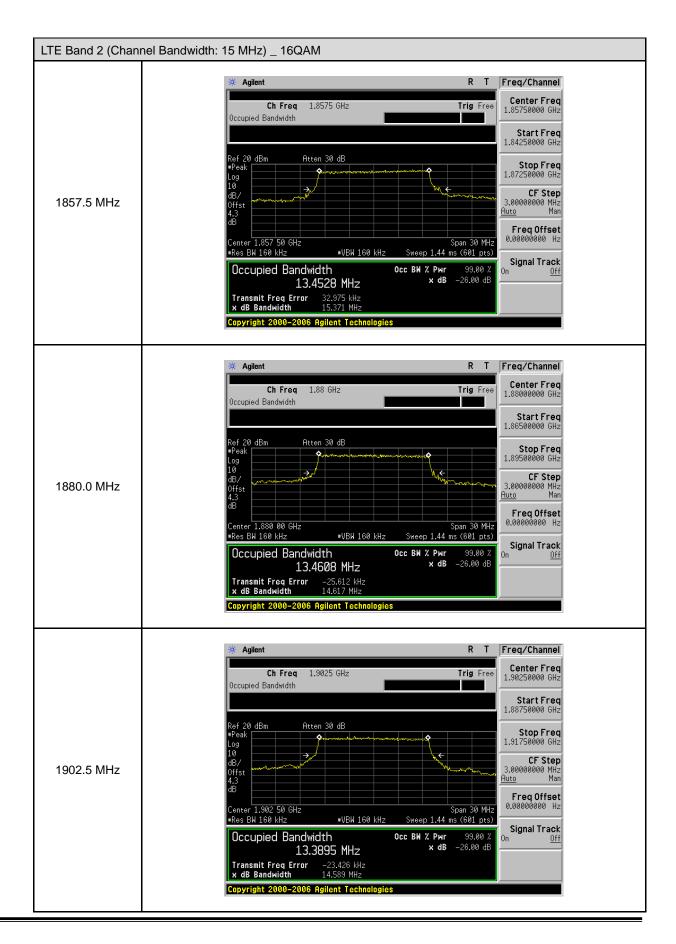


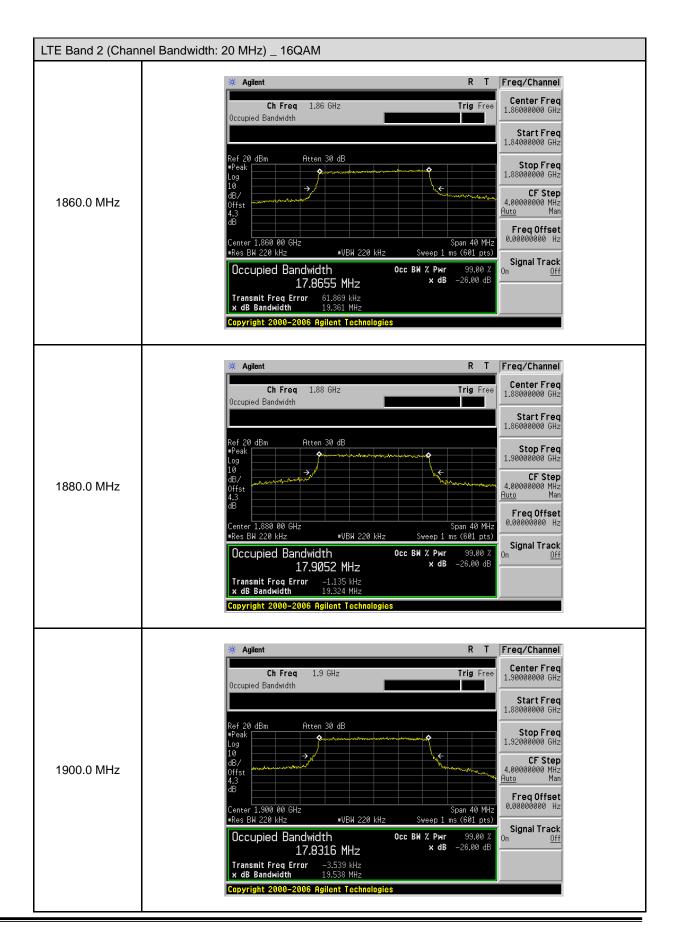


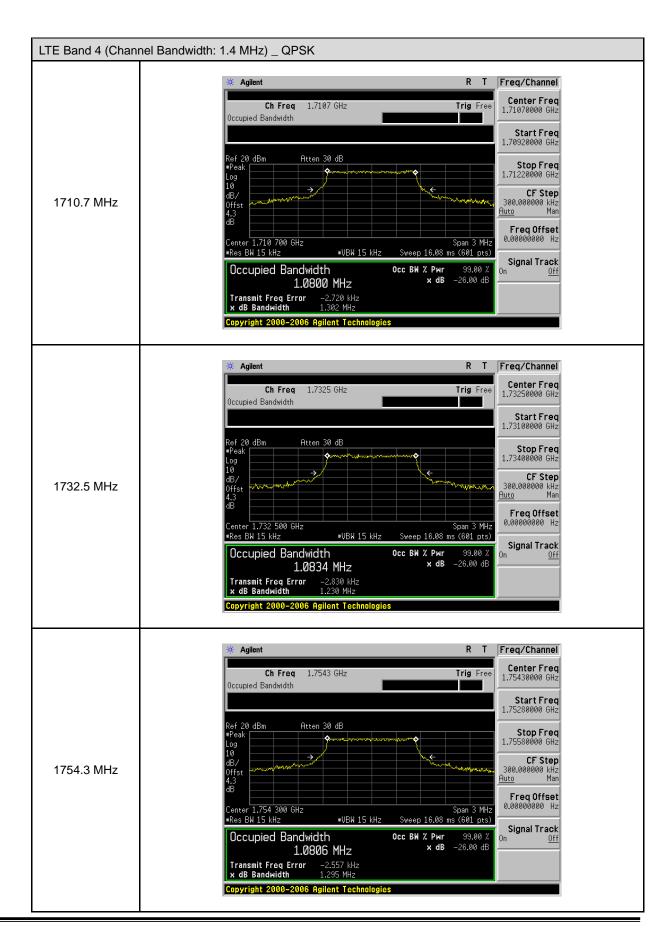


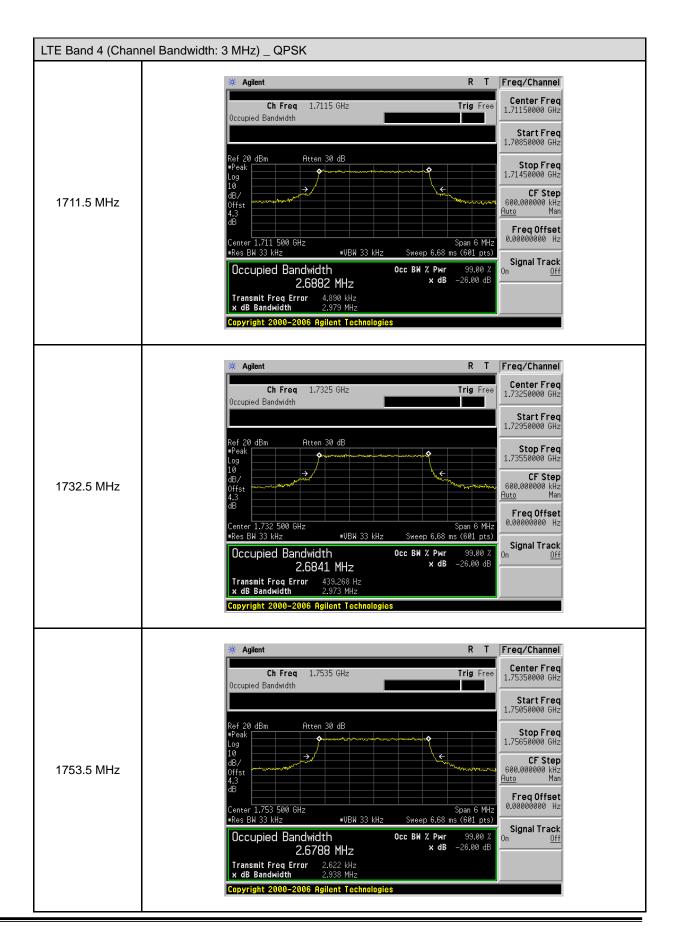


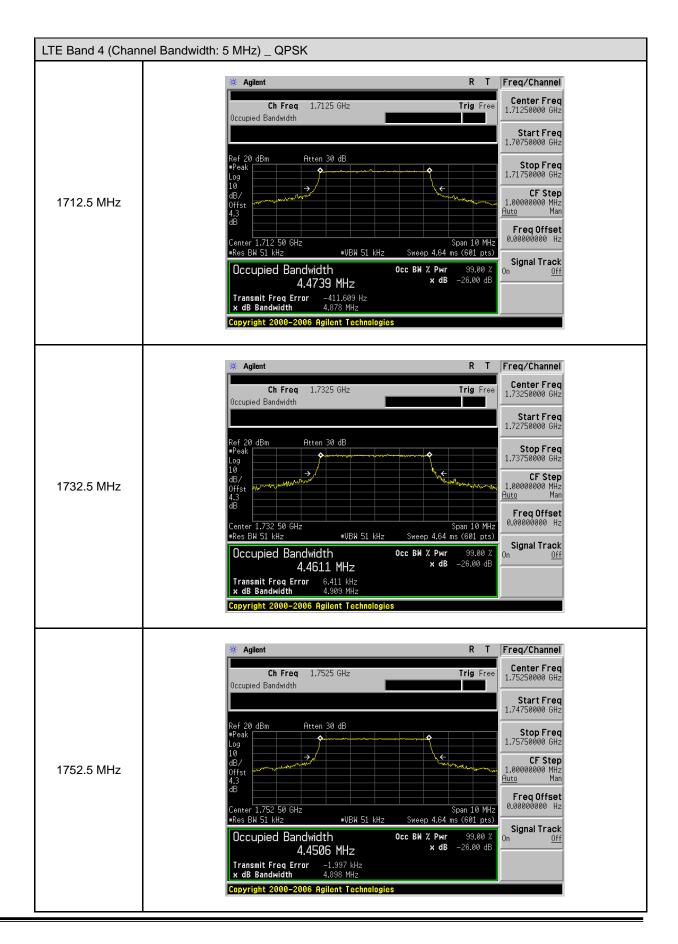


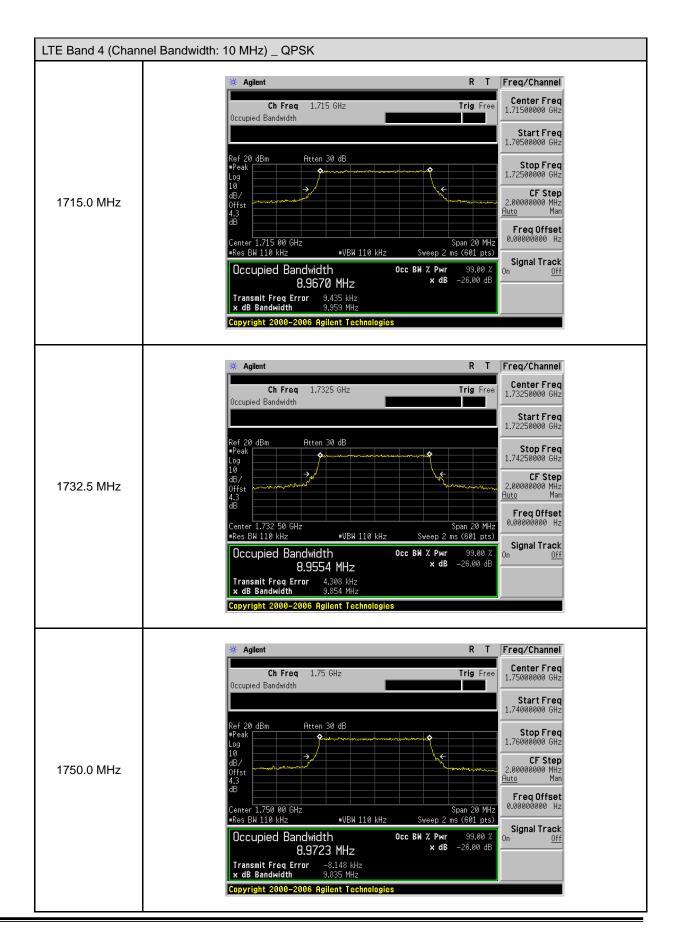


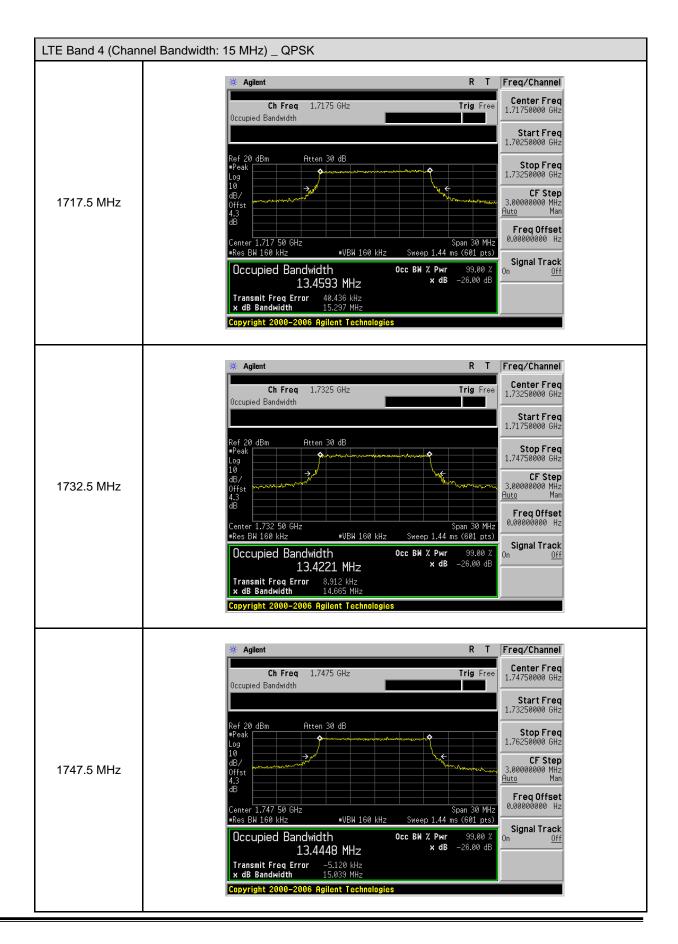


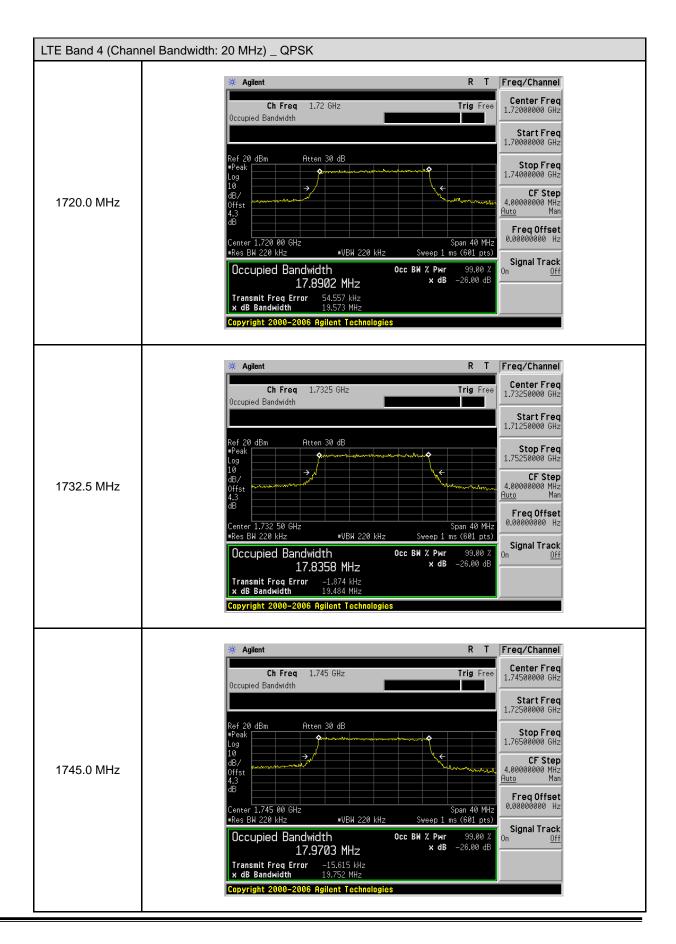


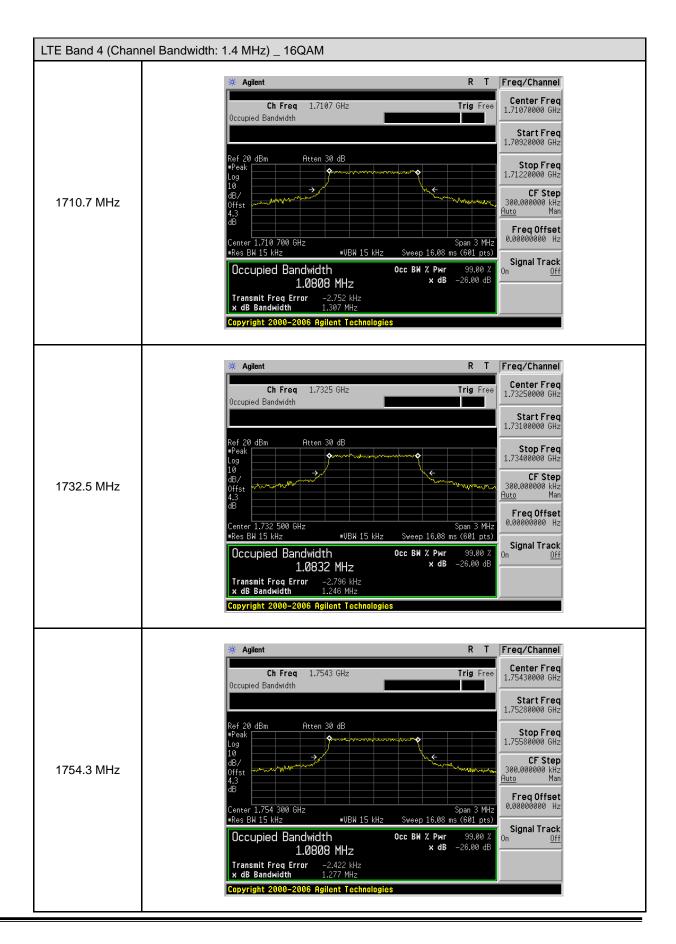


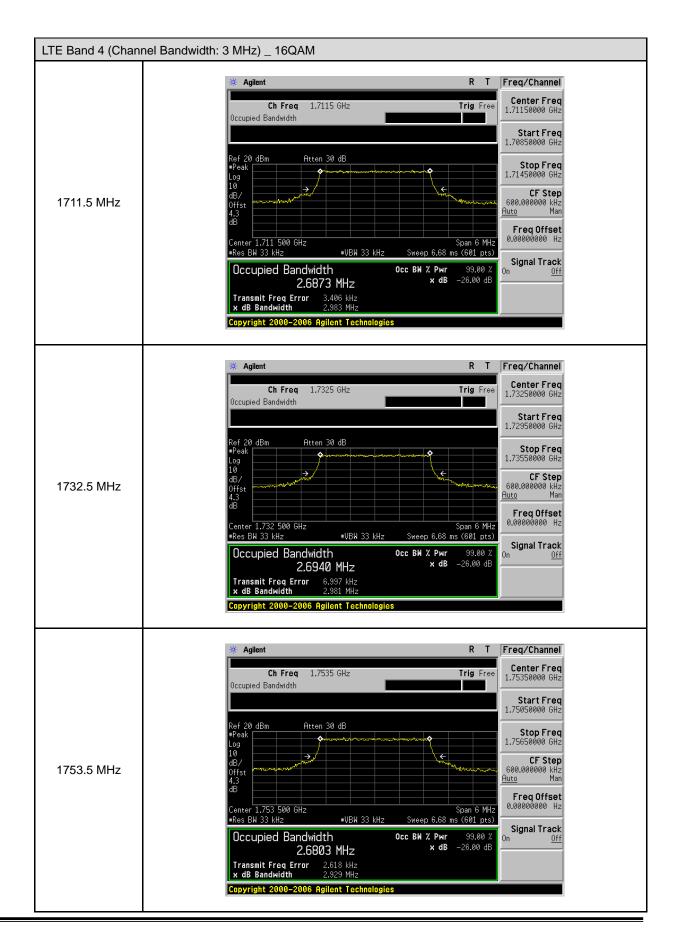


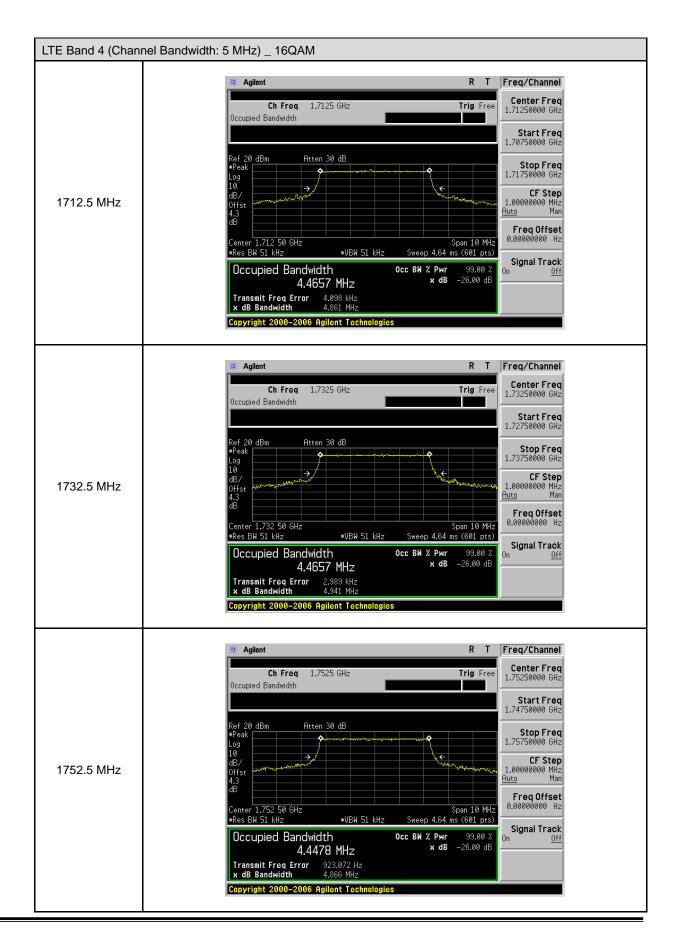


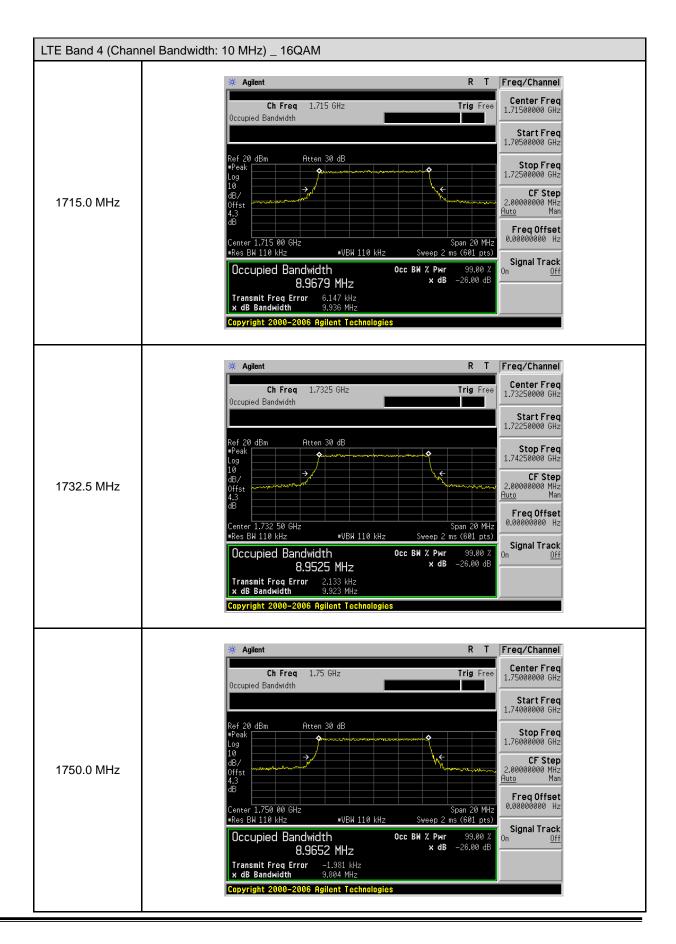


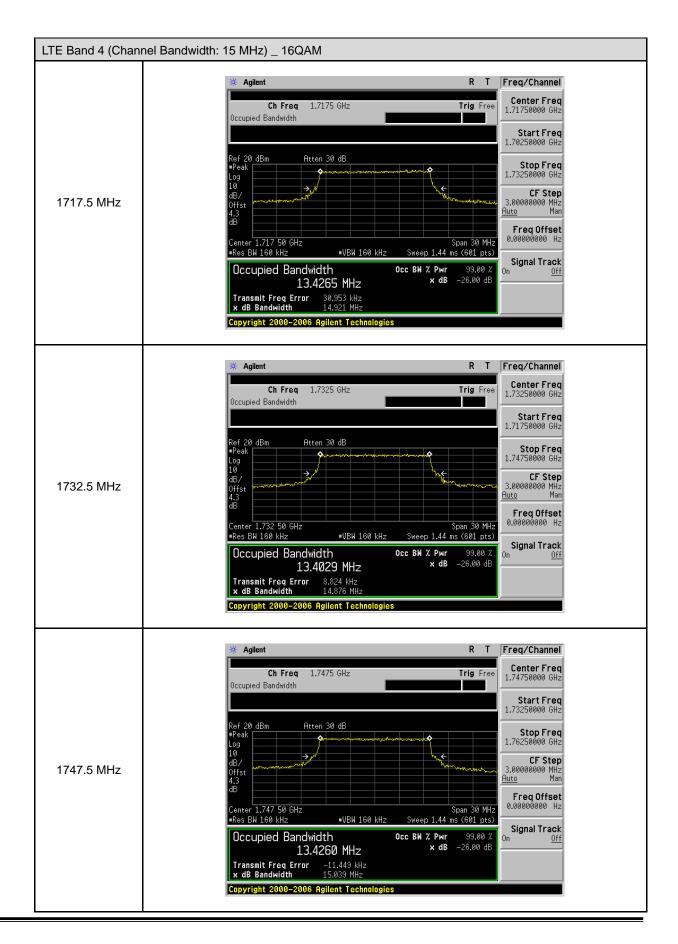


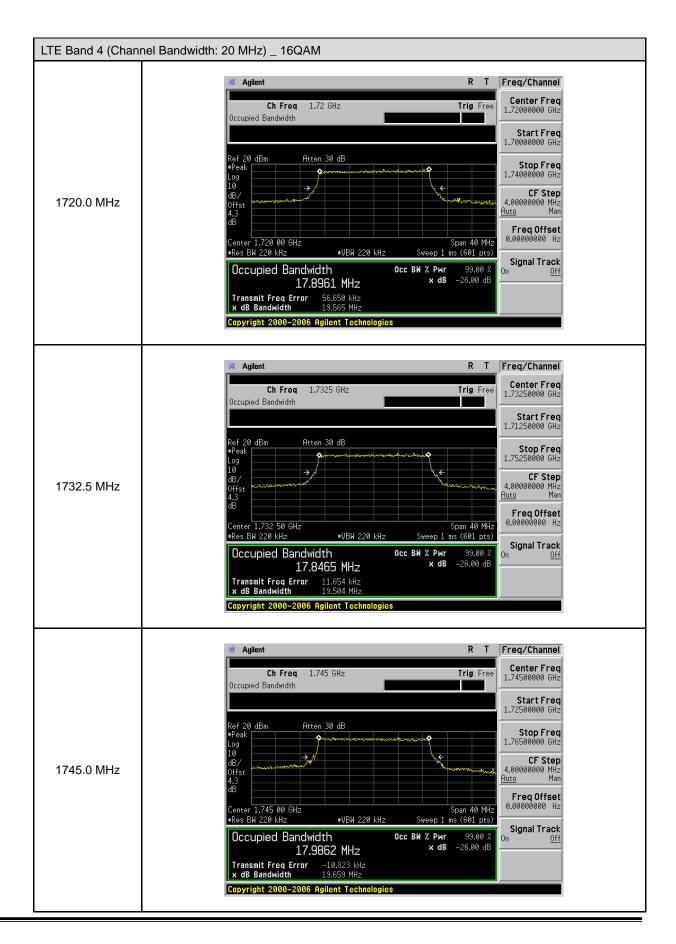


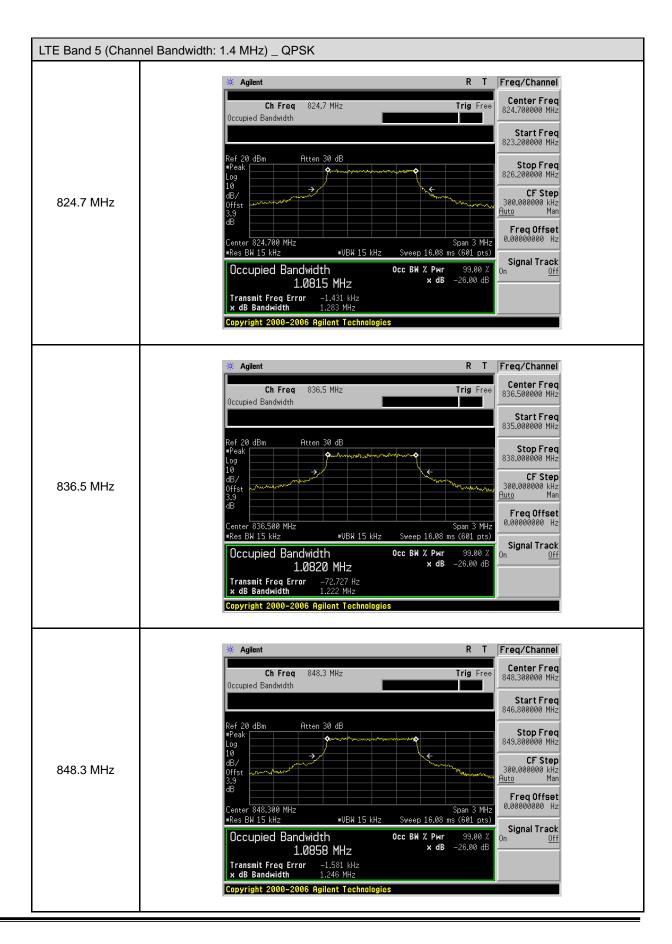


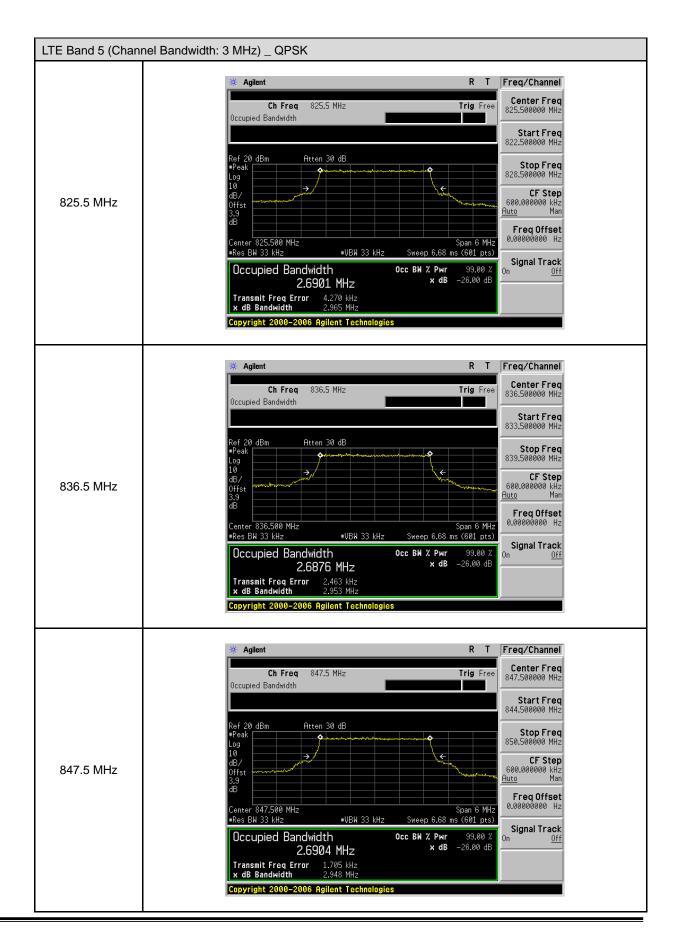


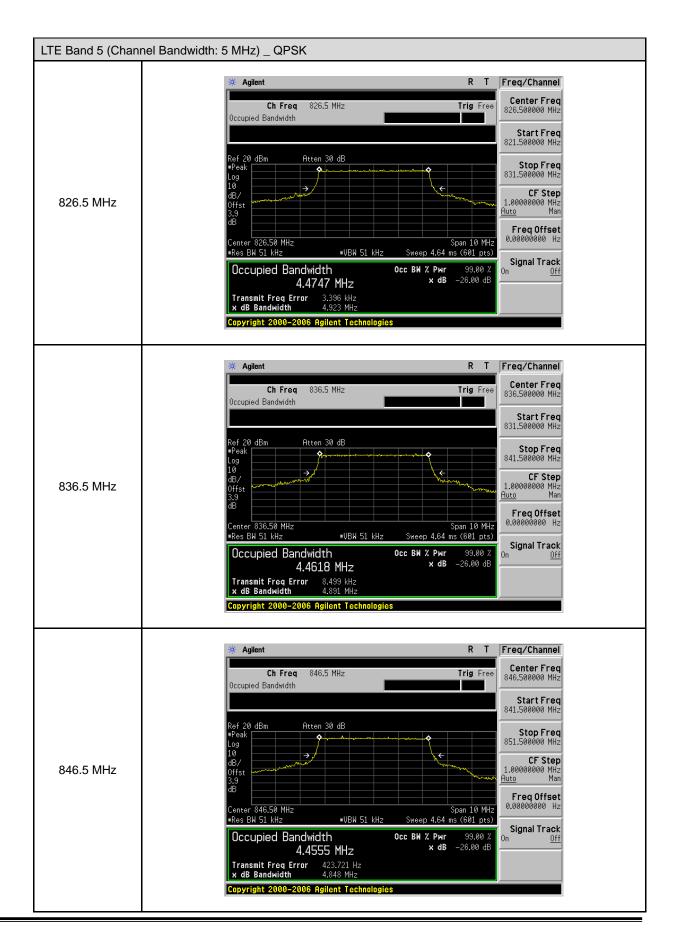


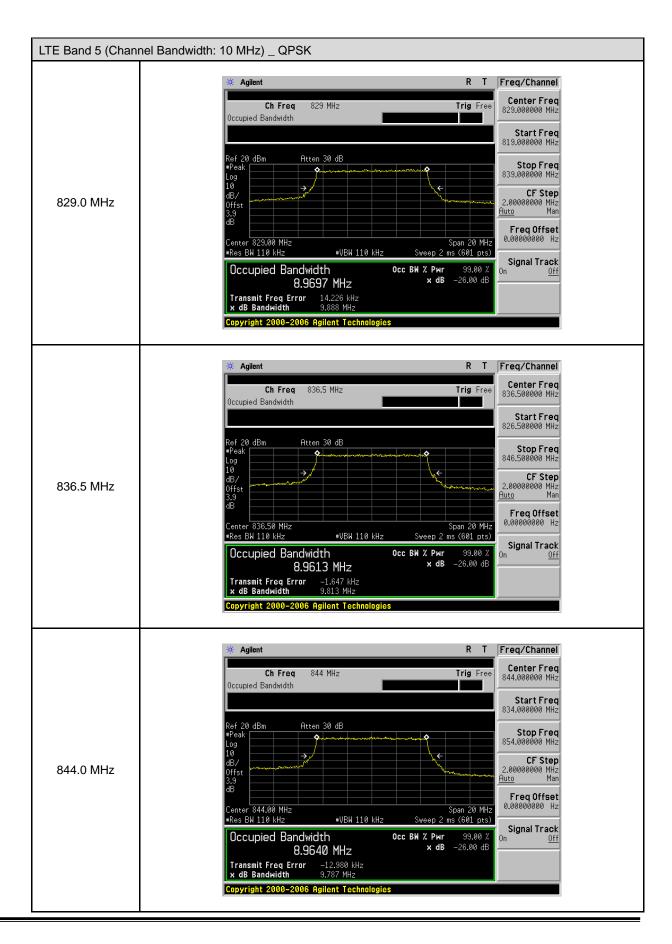


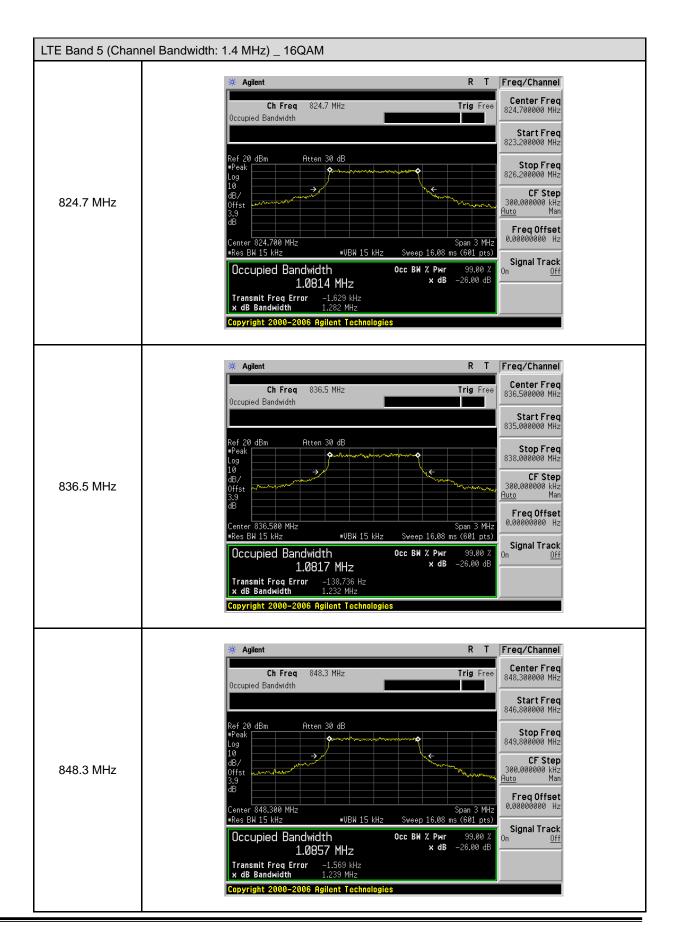


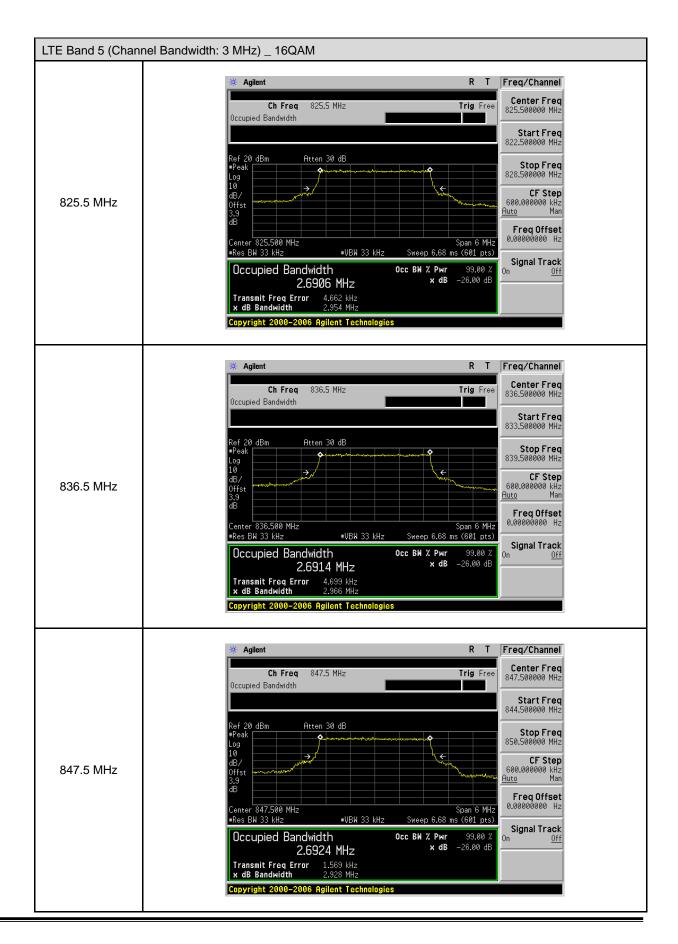


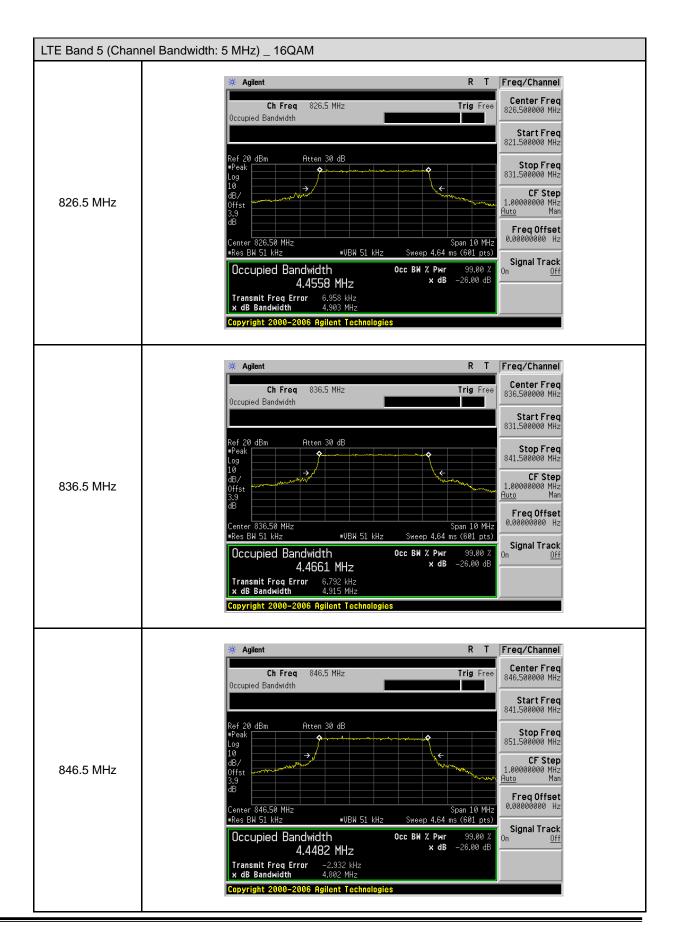


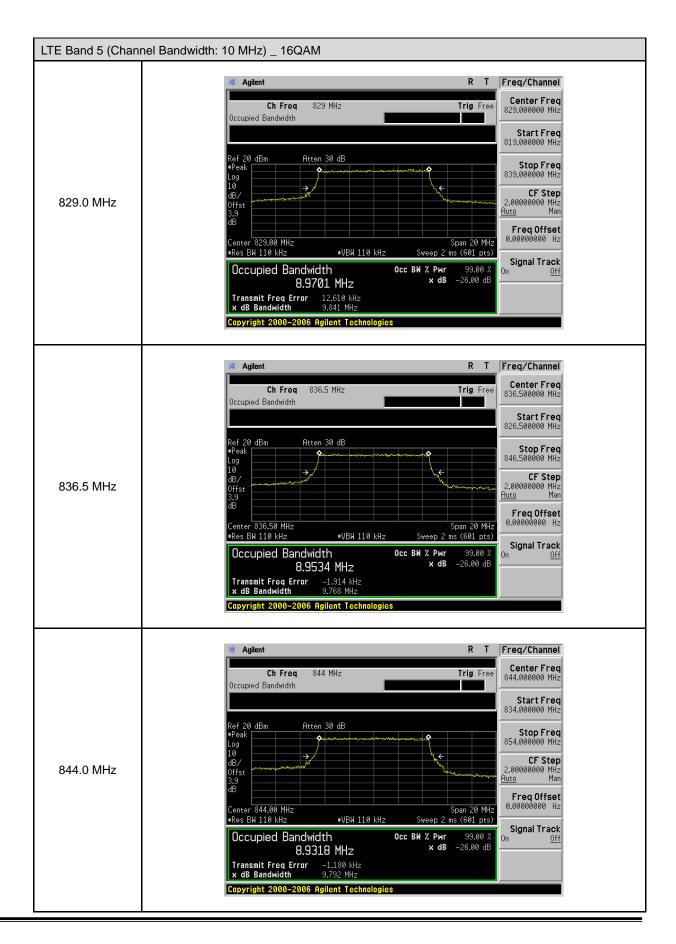


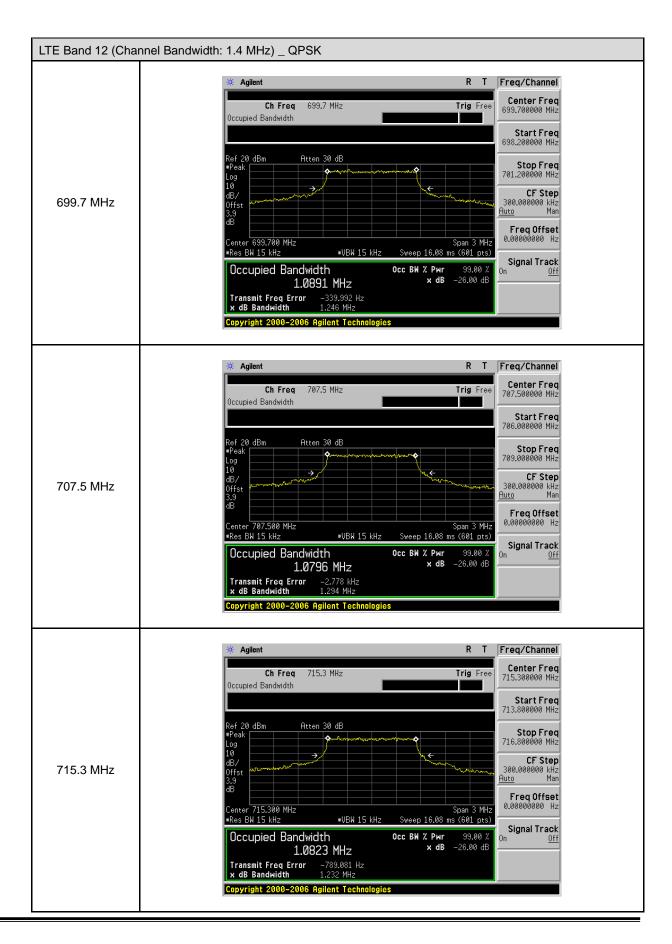


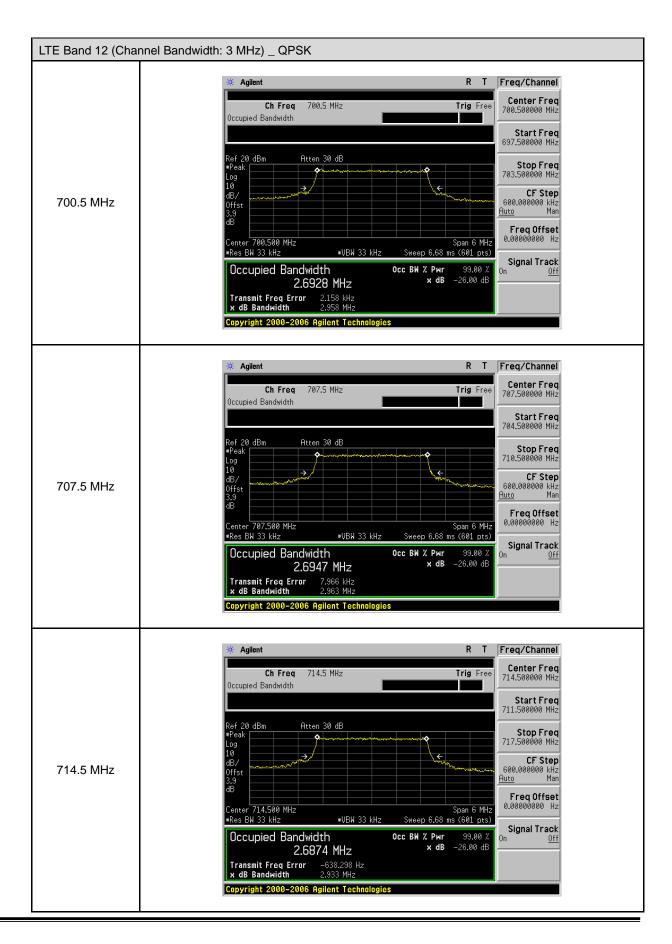


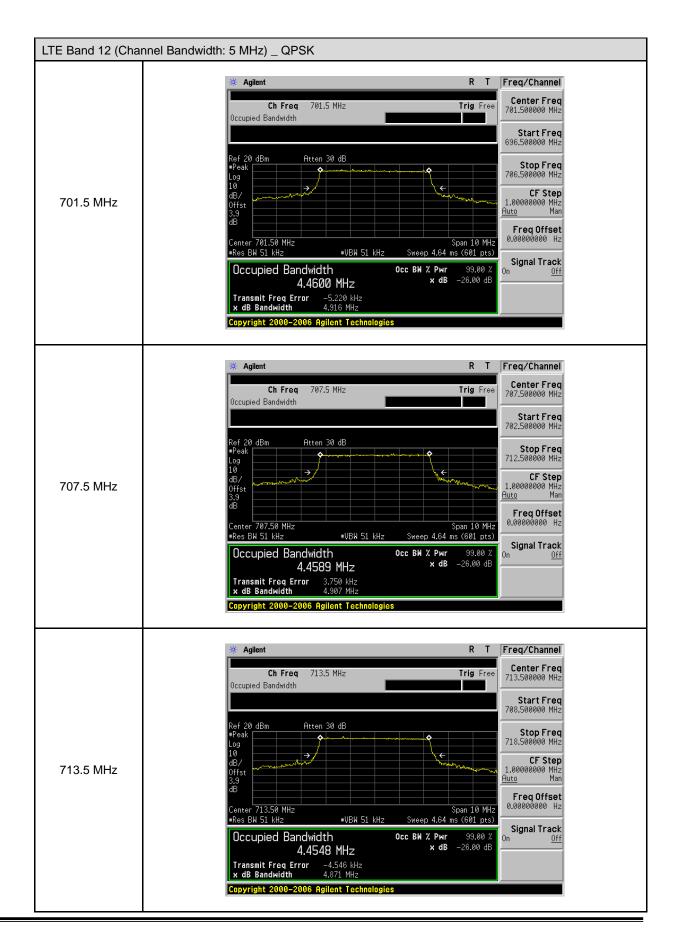


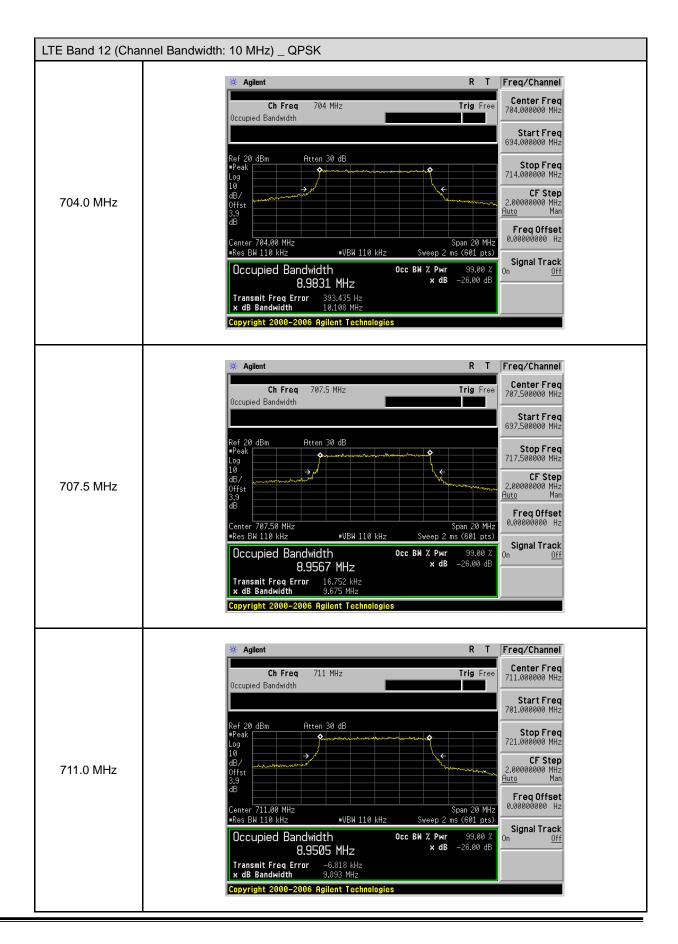


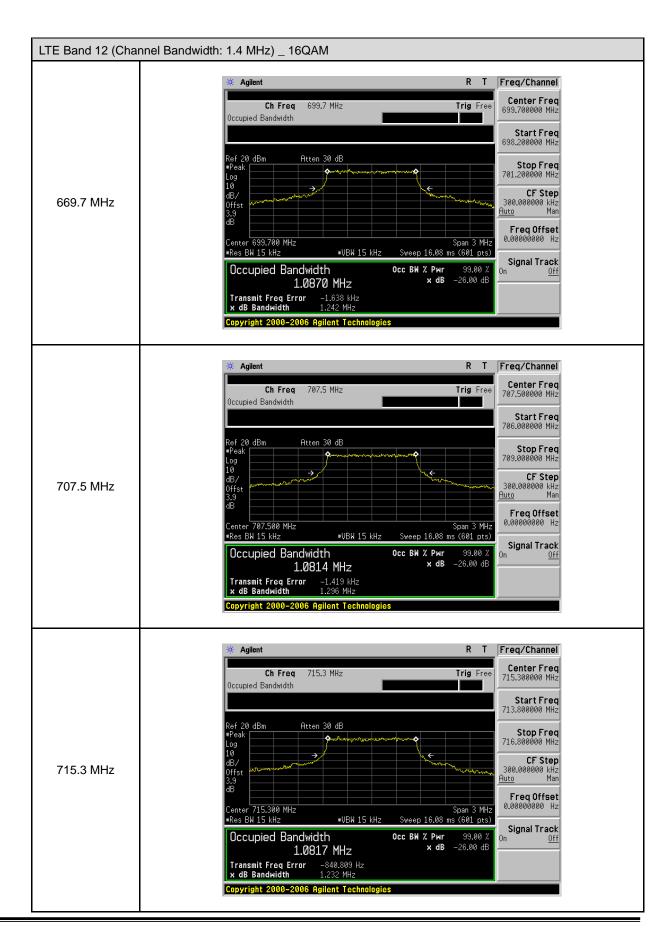


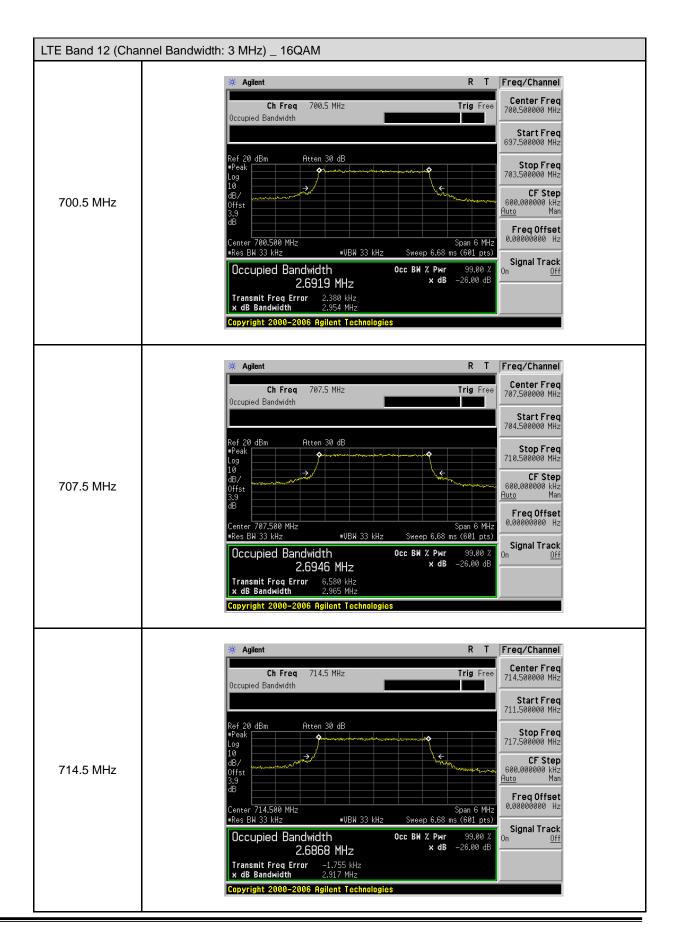


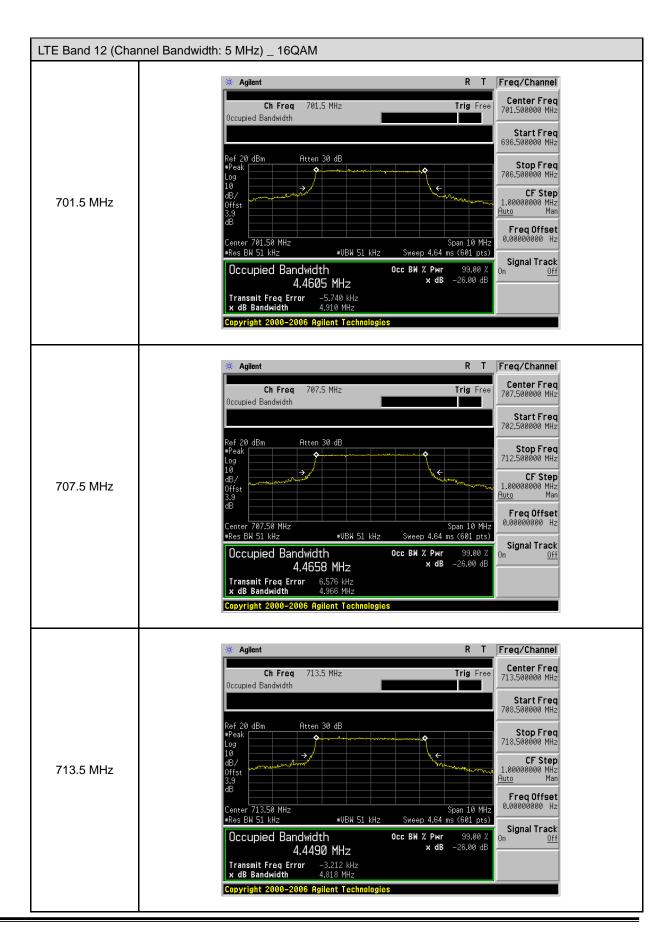


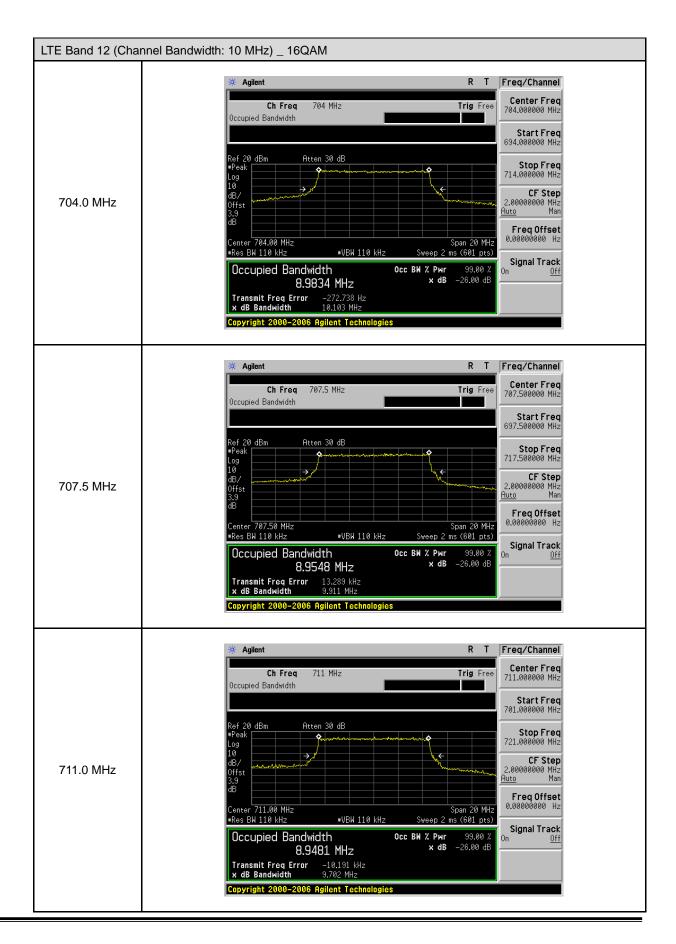


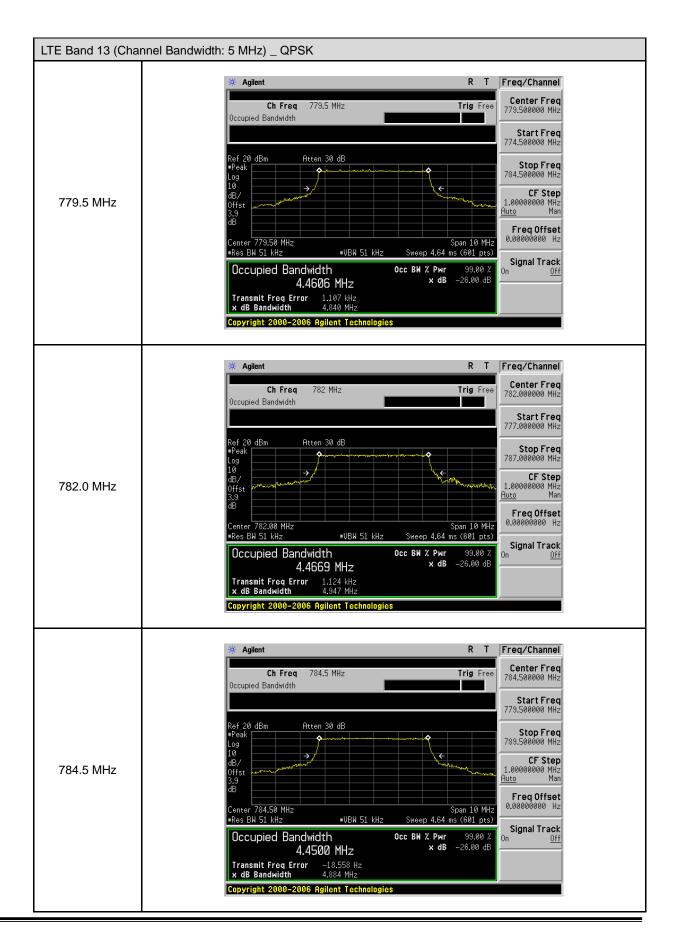


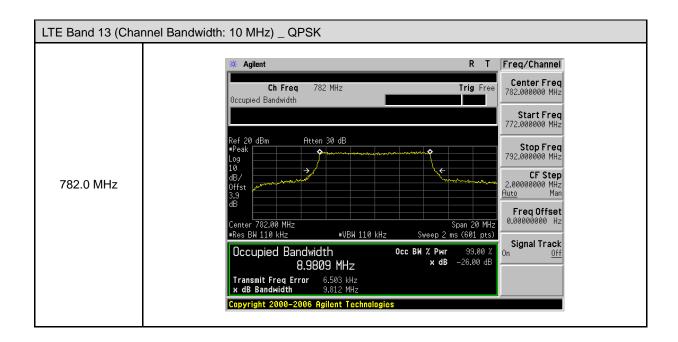


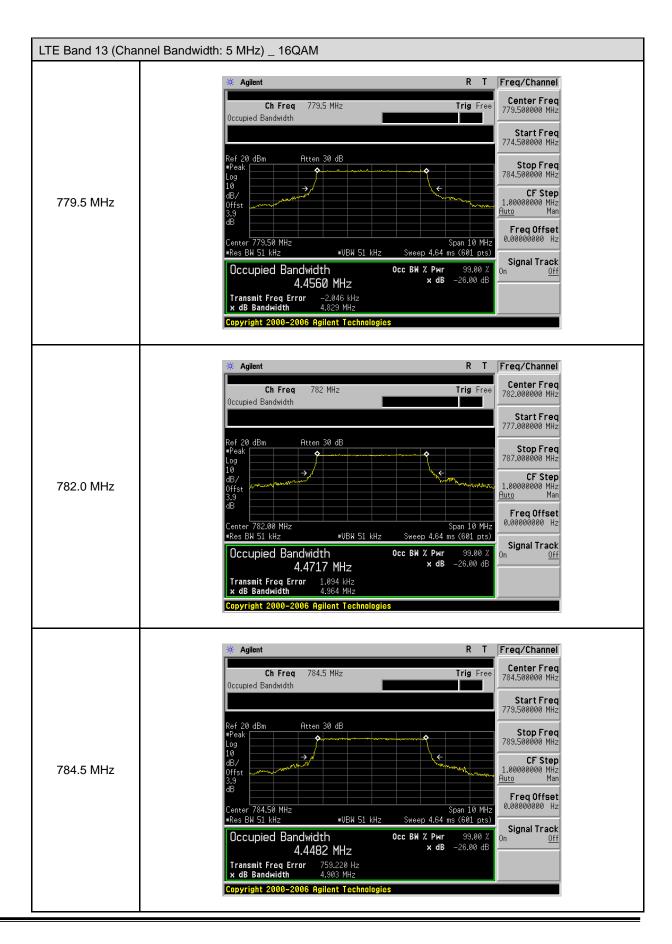


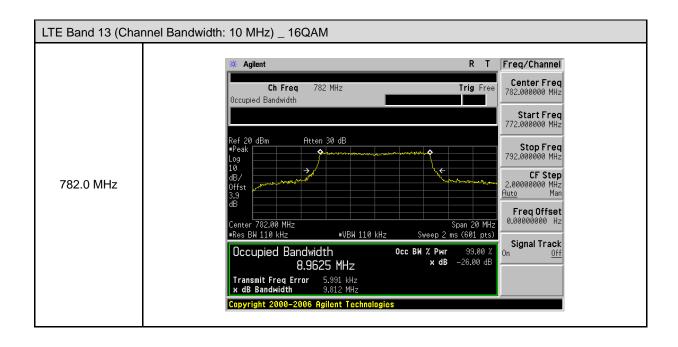


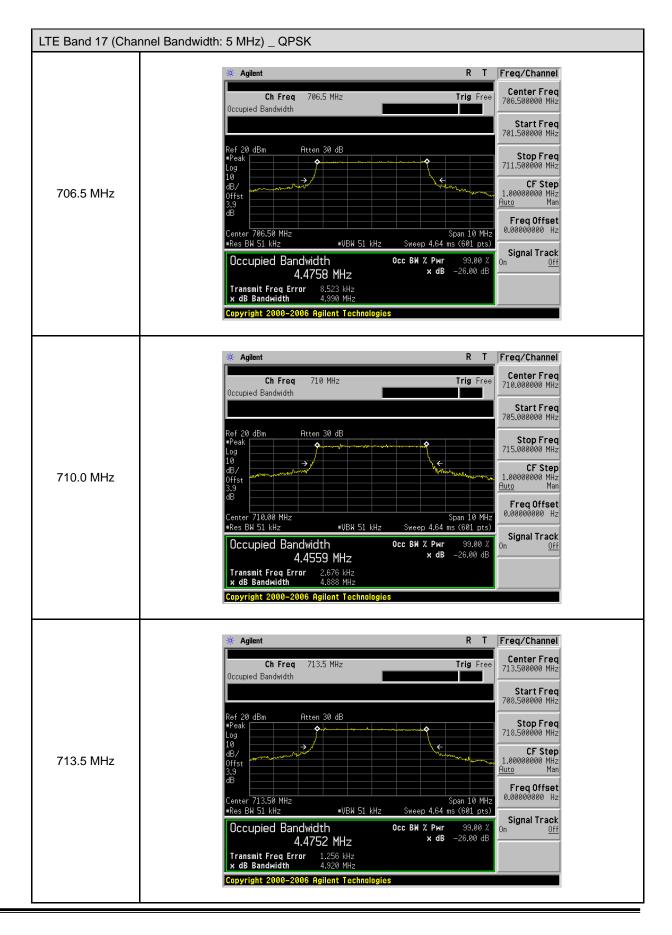


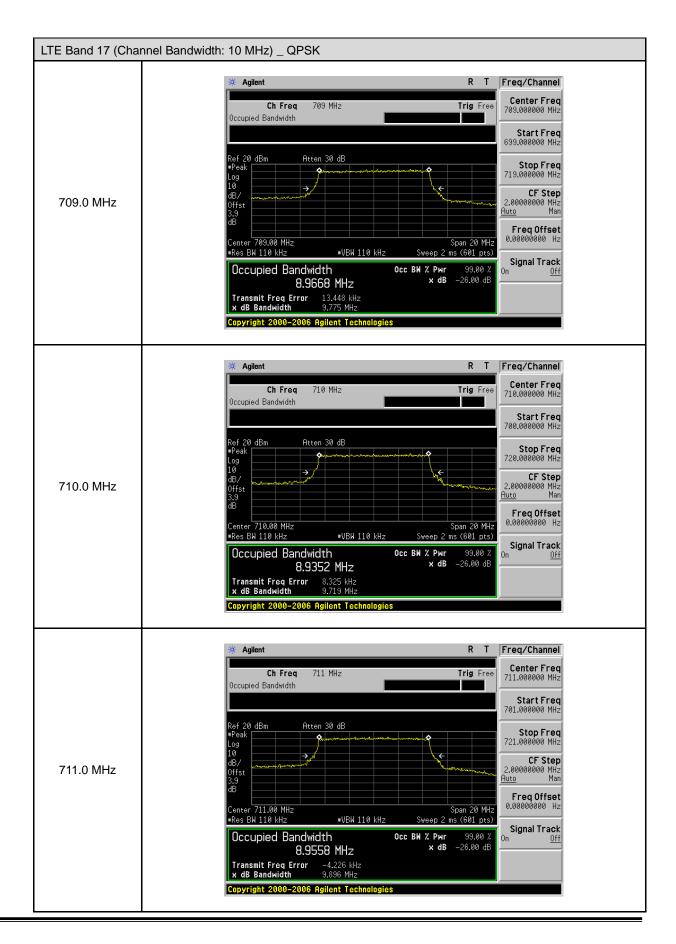


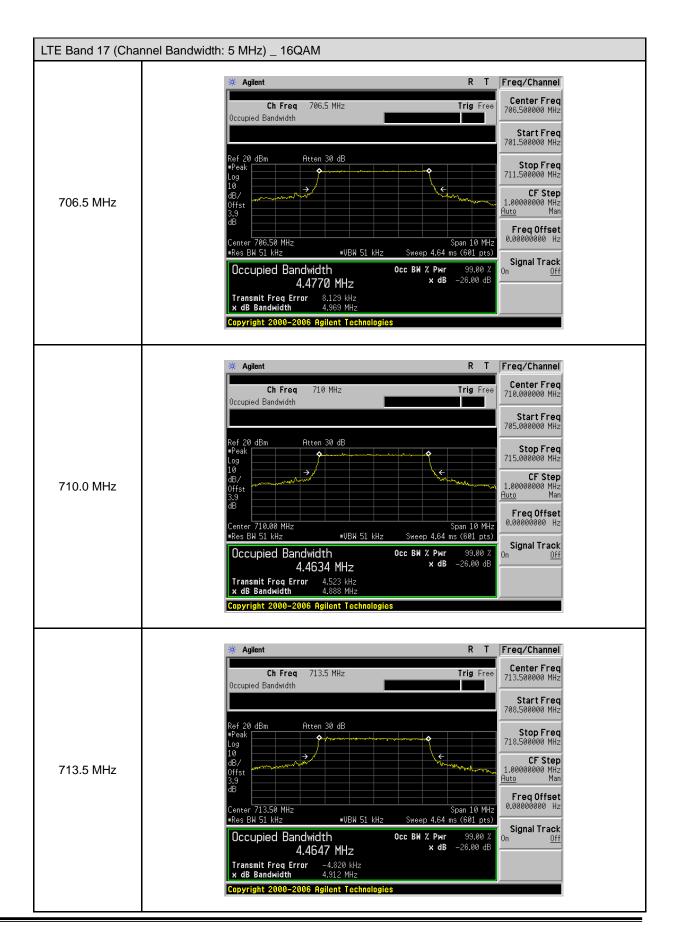


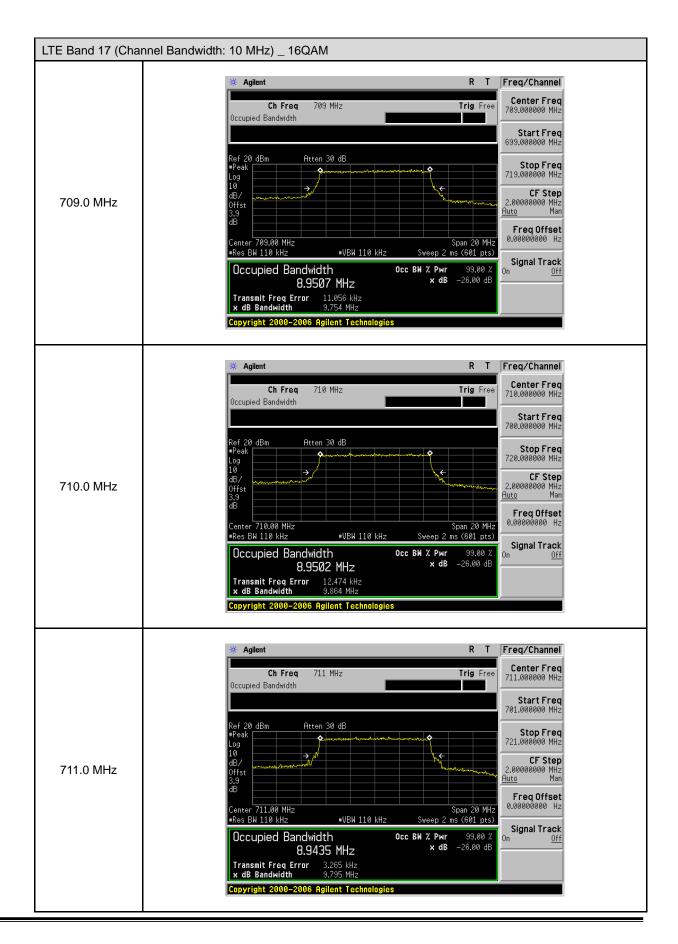












Report Number: 1506FR21-01

## 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.

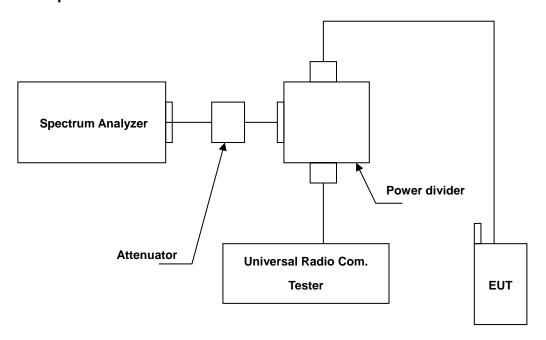
## 6.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(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	LE910-NA V2		
Test Item	Peak to Average Ratio		
Date of Test	06/12/2015	Test Site	TE05

LTE Band 2	LTE Band 2						
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)			
	1.4 MHz	1880.0	4.70	< 13			
	3 MHz	1880.0	4.46	< 13			
QPSK	5 MHz	1880.0	3.93	< 13			
QF3N	10 MHz	1880.0	3.70	< 13			
	15 MHz	1880.0	3.47	< 13			
	20 MHz	1880.0	3.53	< 13			
	1.4 MHz	1880.0	5.52	< 13			
	3 MHz	1880.0	5.21	< 13			
16QAM	5 MHz	1880.0	4.60	< 13			
IOQAW	10 MHz	1880.0	4.56	< 13			
	15 MHz	1880.0	4.29	< 13			
	20 MHz	1880.0	4.14	< 13			

LTE Band 4						
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)		
	1.4 MHz	1732.5	5.40	< 13		
	3 MHz	1732.5	5.22	< 13		
QPSK	5 MHz	1732.5	5.18	< 13		
QI SIX	10 MHz	1732.5	5.25	< 13		
	15 MHz	1732.5	5.24	< 13		
	20 MHz	1732.5	5.22	< 13		
	1.4 MHz	1732.5	6.18	< 13		
	3 MHz	1732.5	5.95	< 13		
16QAM	5 MHz	1732.5	5.80	< 13		
TOQAW	10 MHz	1732.5	6.05	< 13		
	15 MHz	1732.5	6.14	< 13		
	20 MHz	1732.5	5.77	< 13		

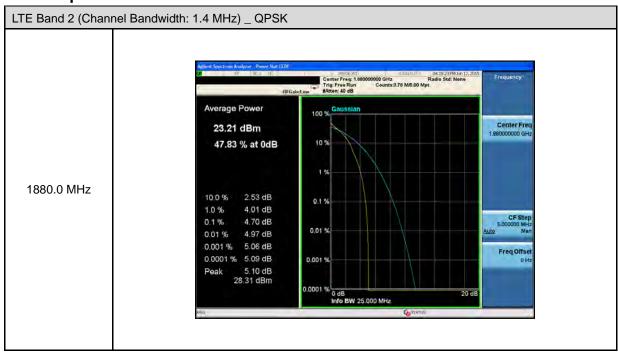
LTE Band 5	LTE Band 5						
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)			
	1.4 MHz	836.5	6.12	< 13			
QPSK	3 MHz	836.5	5.67	< 13			
	5 MHz	836.5	5.56	< 13			
	10 MHz	836.5	5.84	< 13			
	1.4 MHz	836.5	6.71	< 13			
16QAM	3 MHz	836.5	6.29	< 13			
	5 MHz	836.5	6.18	< 13			
	10 MHz	836.5	6.53	< 13			

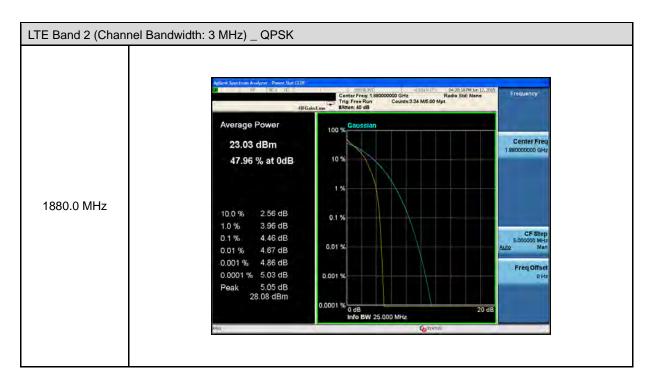
LTE Band 12						
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)		
	1.4 MHz	707.5	5.83	< 13		
QPSK	3 MHz	707.5	5.52	< 13		
QI SIX	5 MHz	707.5	5.57	< 13		
	10 MHz	707.5	5.80	< 13		
	1.4 MHz	707.5	6.67	< 13		
16QAM	3 MHz	707.5	6.25	< 13		
	5 MHz	707.5	6.11	< 13		
	10 MHz	707.5	6.61	< 13		

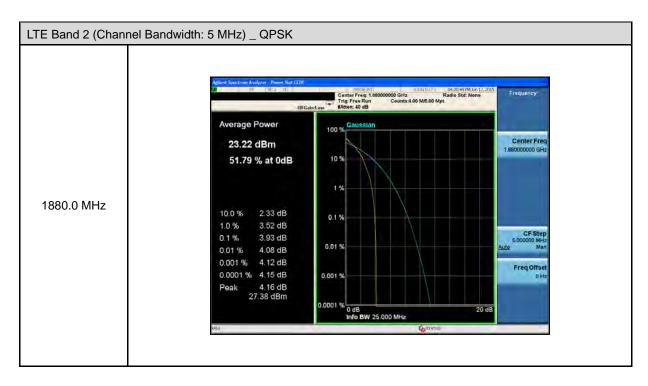
LTE Band 13						
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)		
QPSK	5 MHz	782.0	5.40	< 13		
	10 MHz	782.0	5.46	< 13		
16QAM	5 MHz	782.0	5.94	< 13		
	10 MHz	782.0	6.29	< 13		

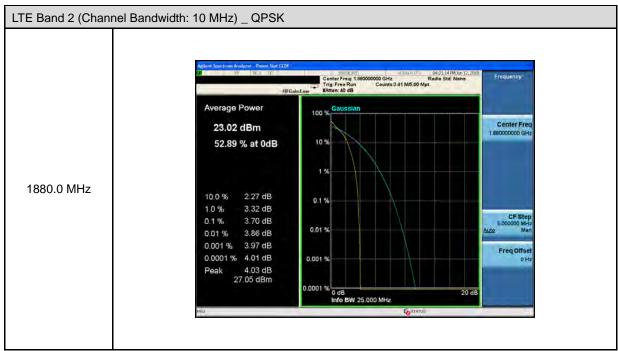
LTE Band 17					
Modulation	Channel Bandwidth	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)	
QPSK	5 MHz	710.0	5.43	< 13	
	10 MHz	710.0	5.71	< 13	
16QAM	5 MHz	710.0	6.03	< 13	
TOQAIVI	10 MHz	710.0	6.41	< 13	

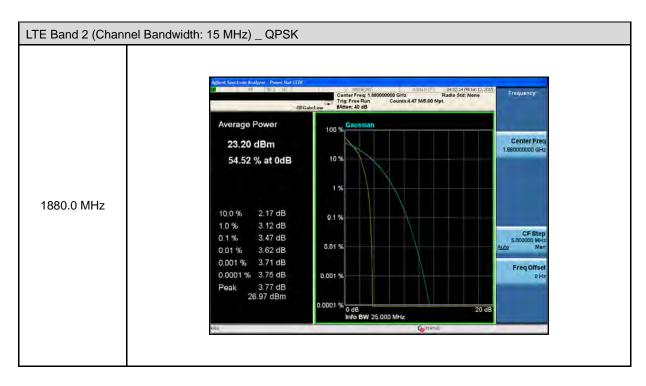
# 6.7. Test Graphs

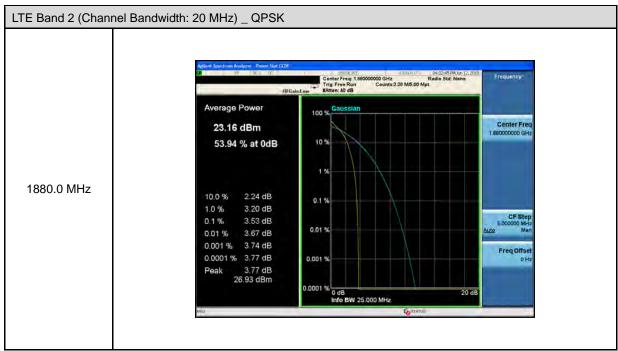


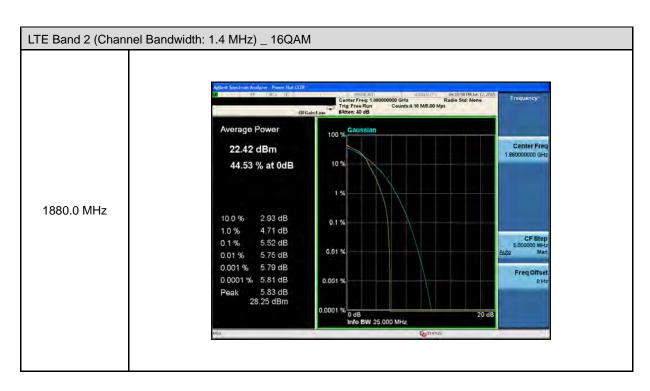


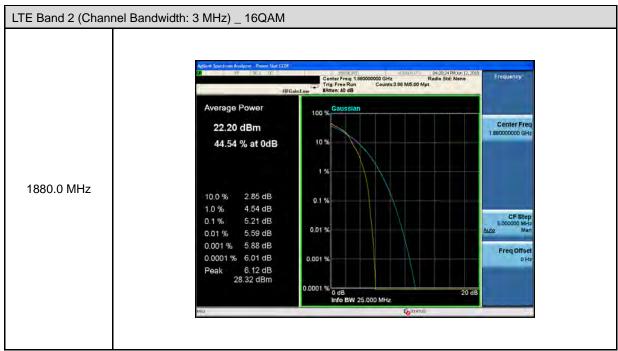


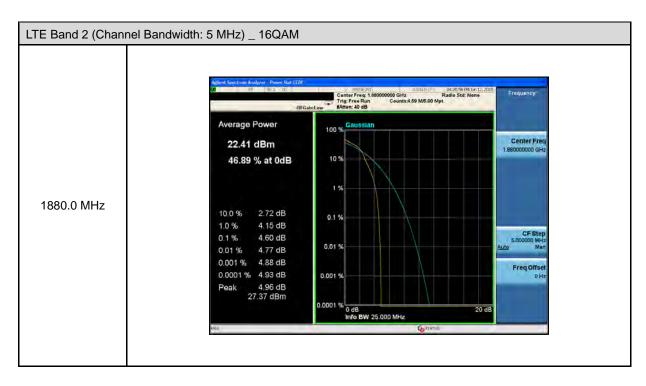


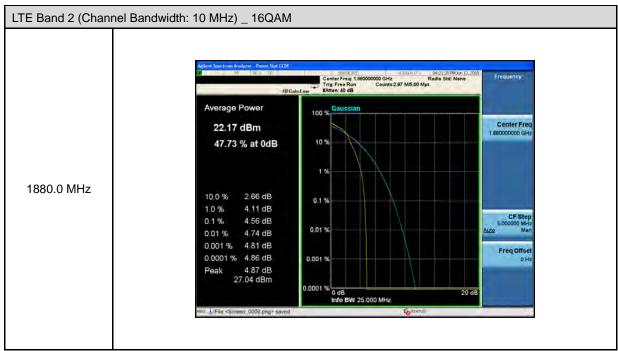


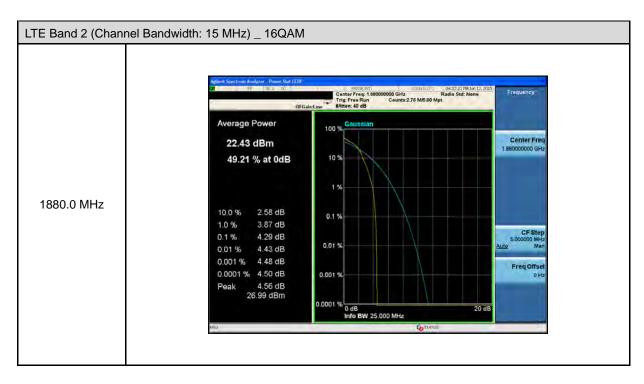


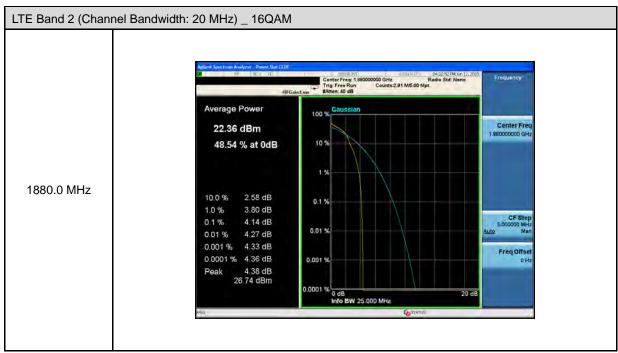


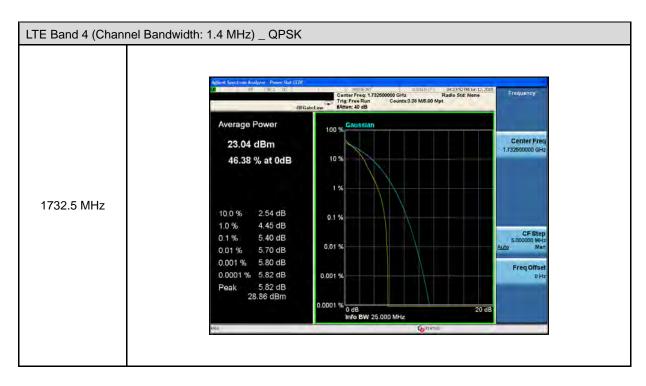


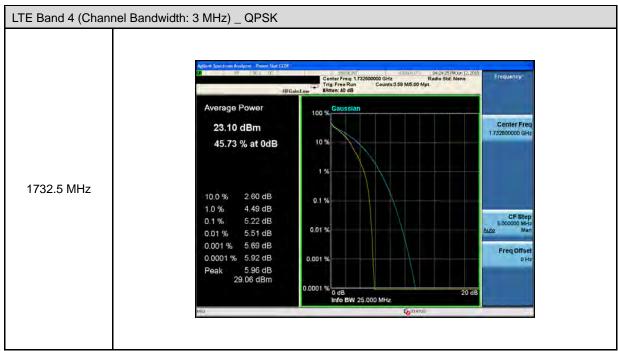


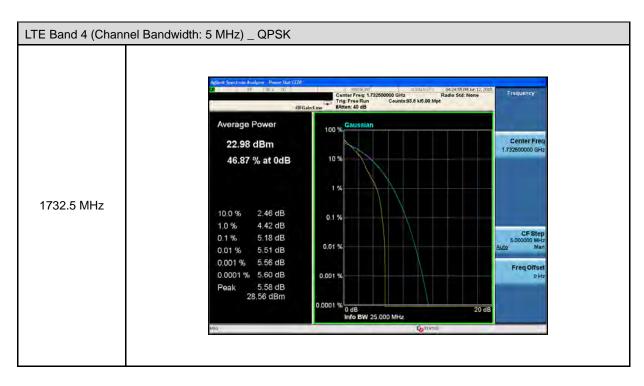


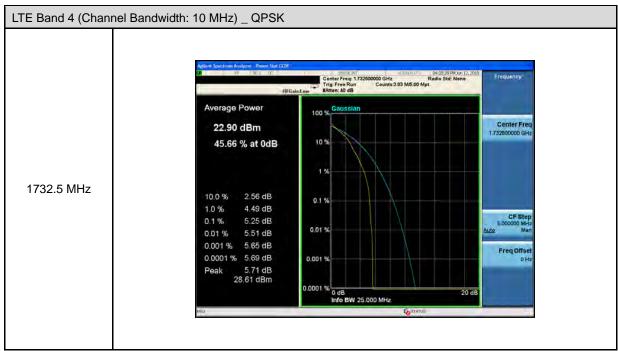


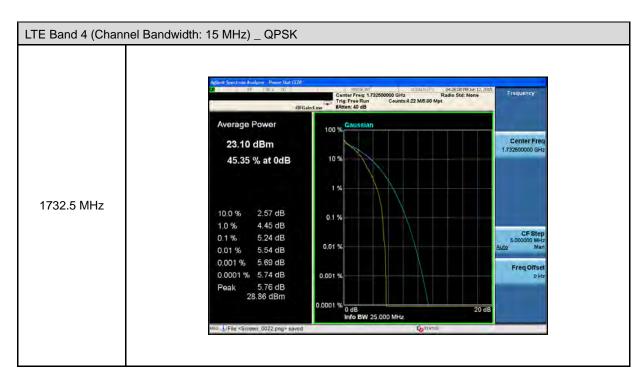


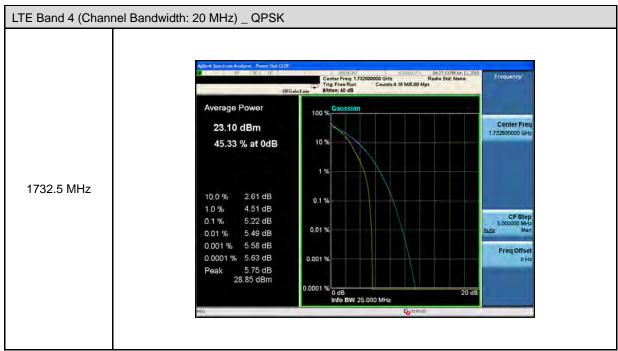


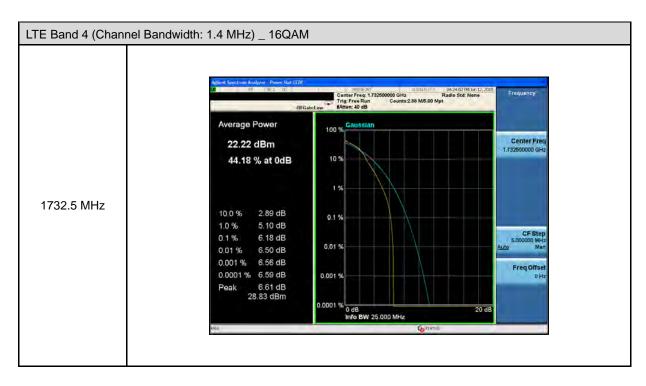


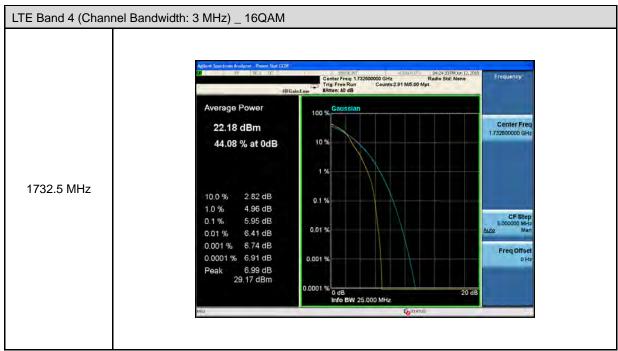


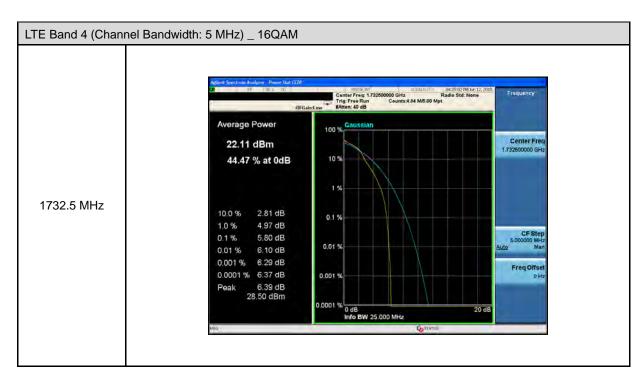


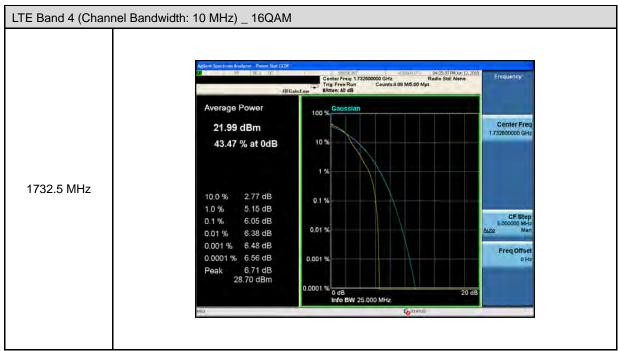


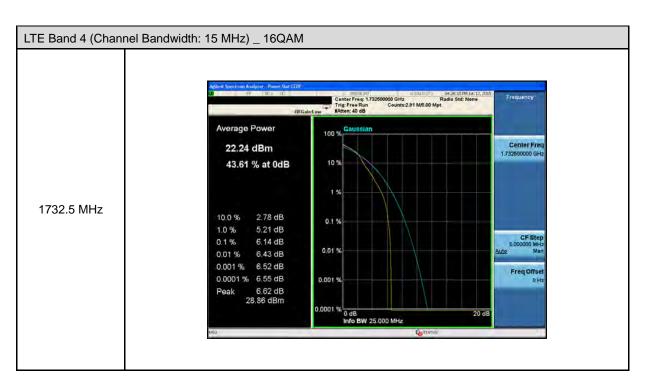


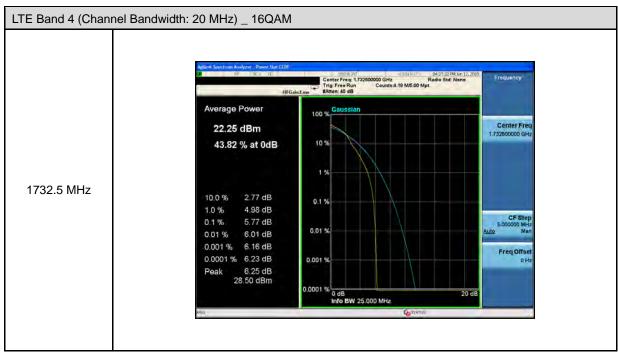


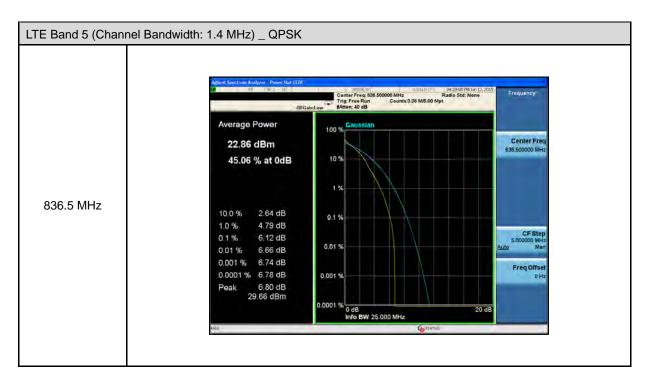


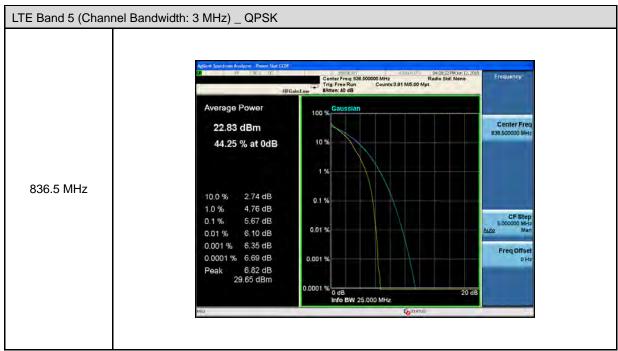


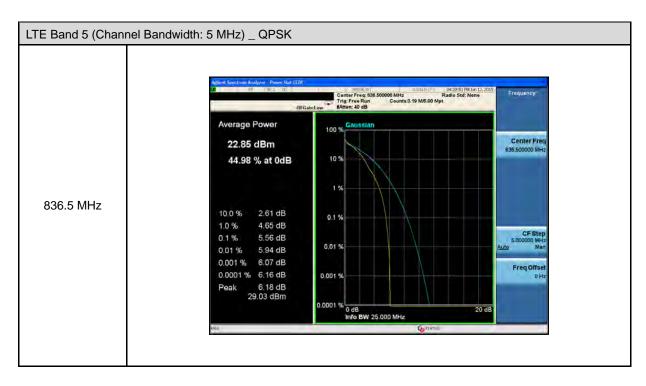


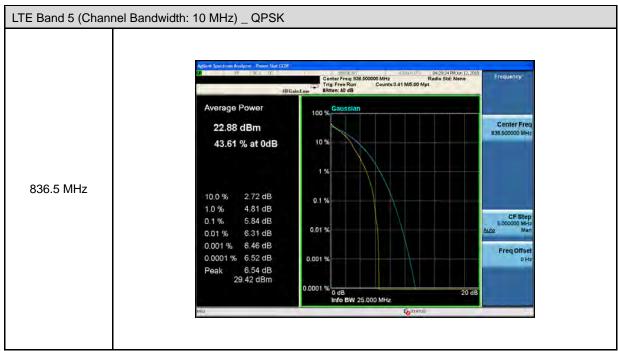


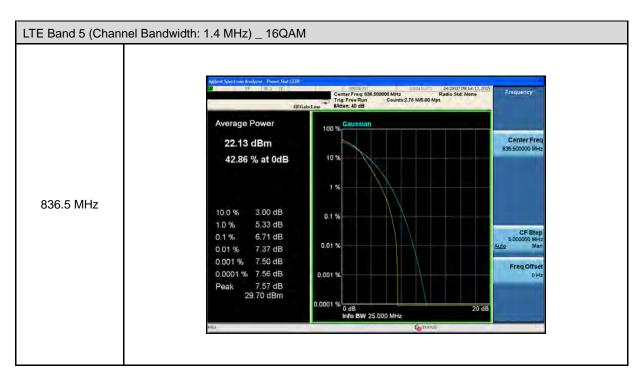


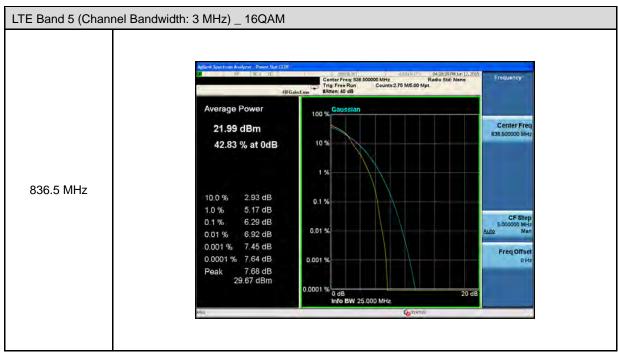


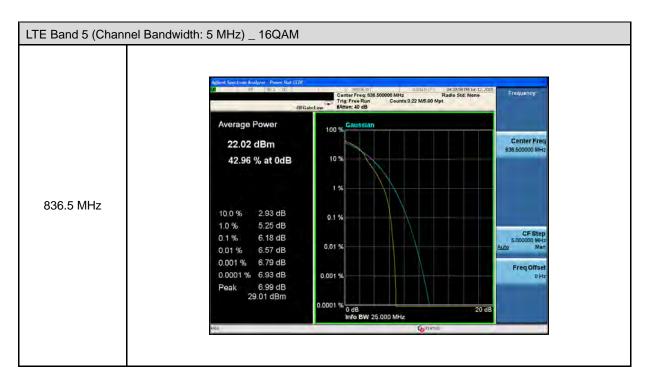


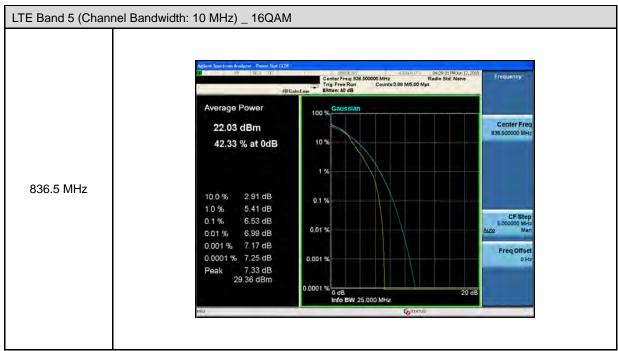


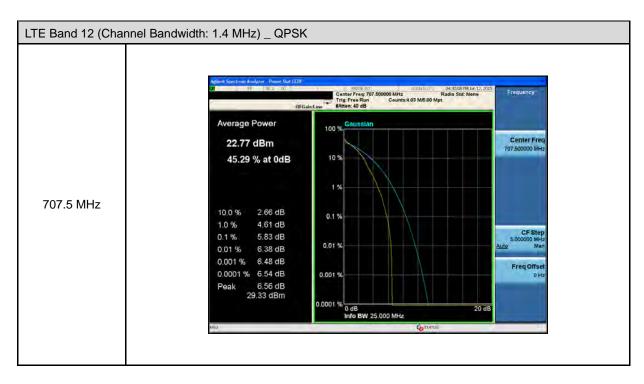


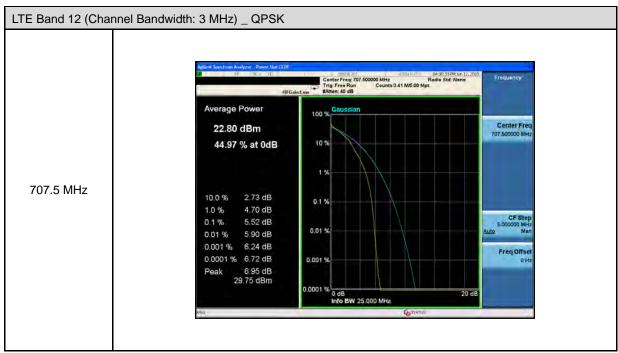


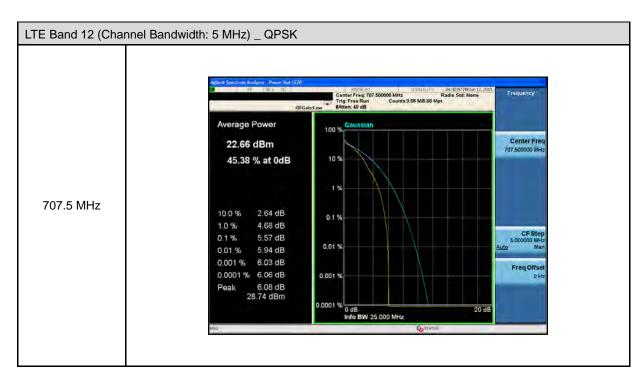


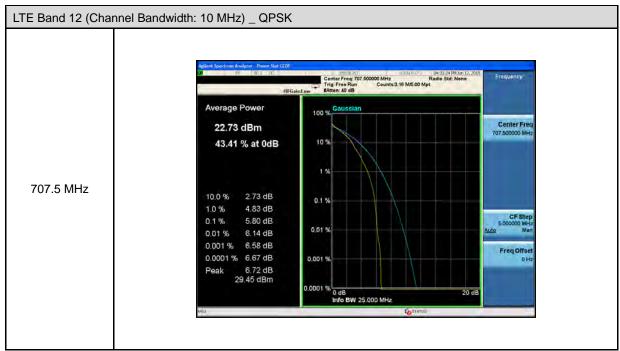


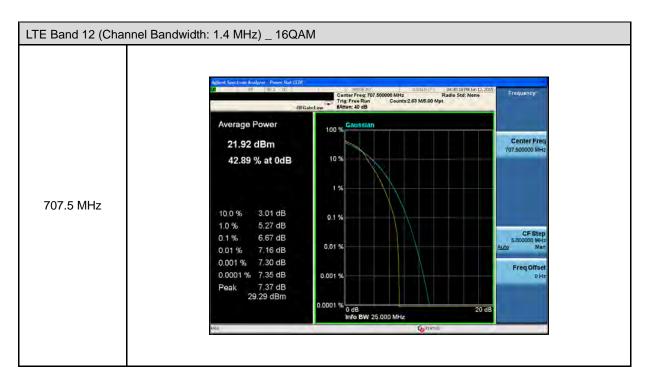


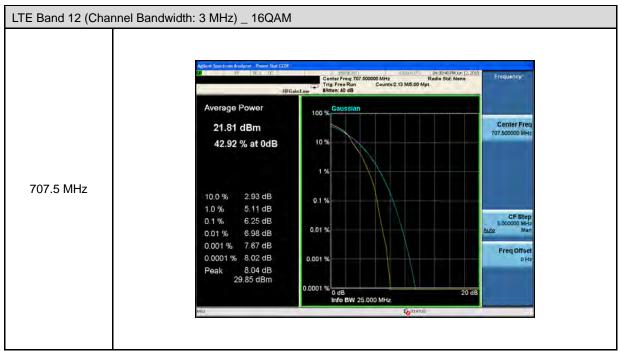


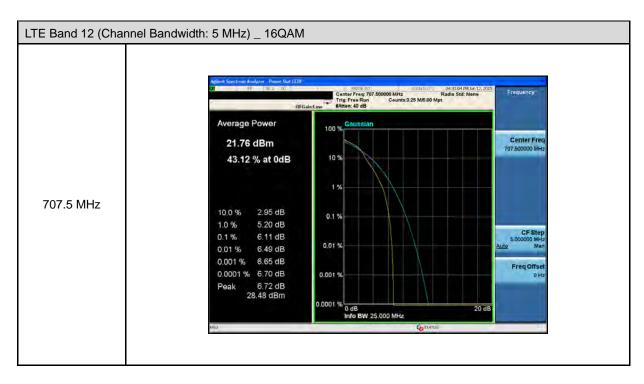


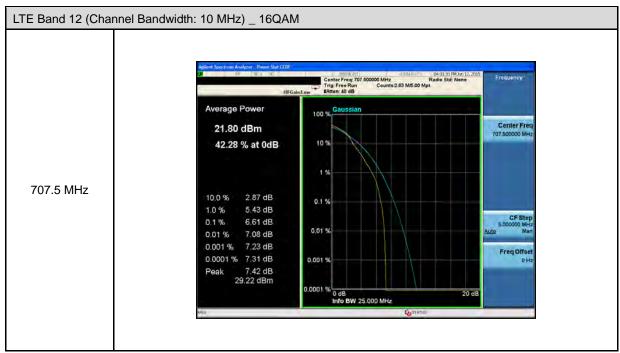


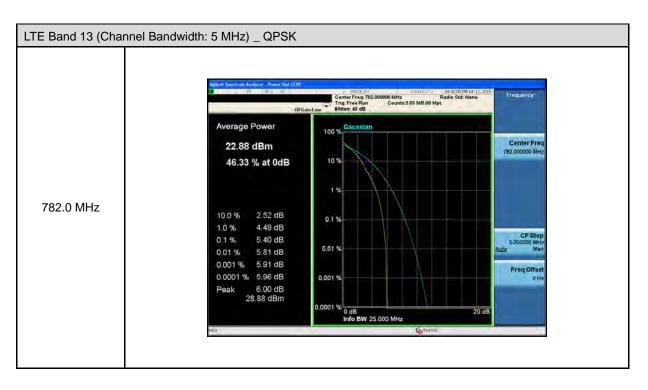


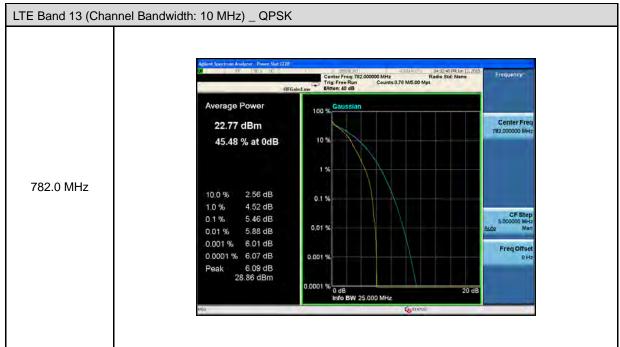


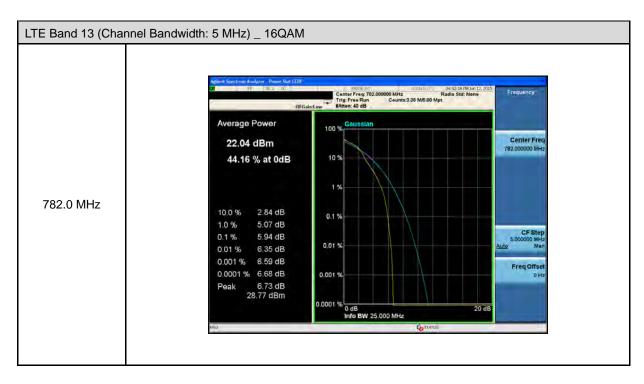


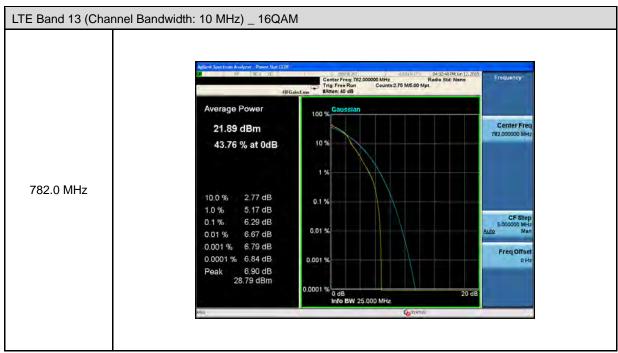


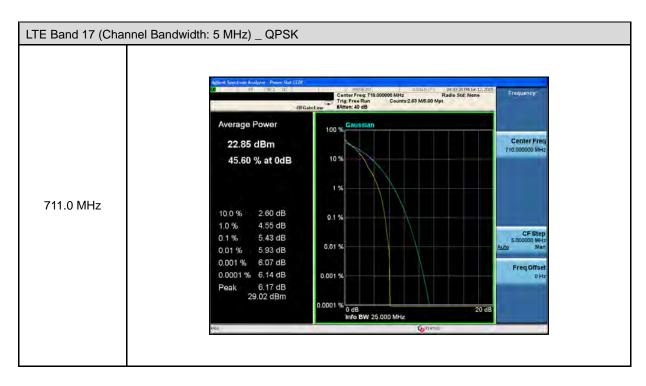


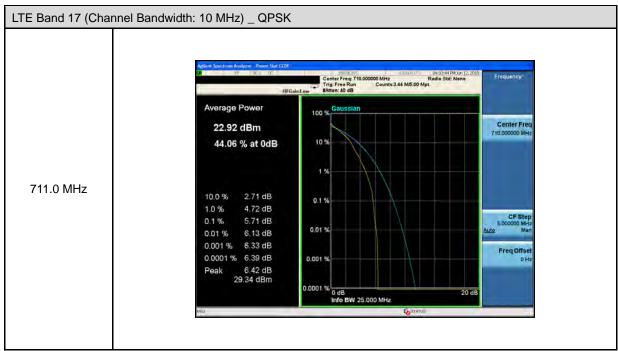


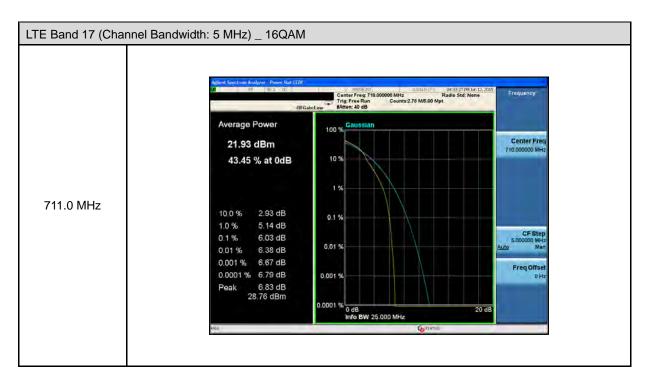


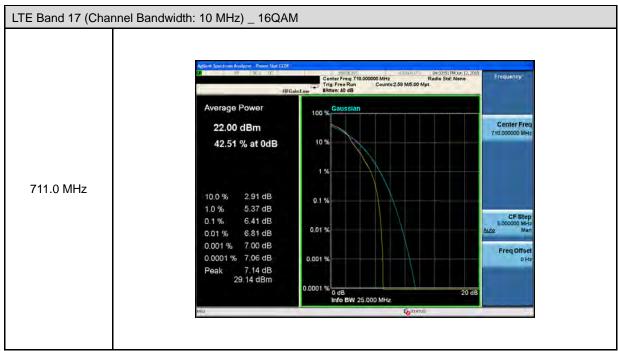












# 7 Band Edge Test

### 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(c)(2)

On any frequency outside the 777-787 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

§27.53(c)(4)

On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

§27.53(g)

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}$  (P) dB.

LTE Band 13_BW=5M					
Frequency (MHz)	RBW=10kHz Measurement (dBm)	RBW=6.25kHz Measurement (dBm)	Limit -35dBm/6.25kHz	Result	
763 ~ 775	-51.728	-53.769	-35	PASS	
793 ~ 805	-62.278	-64.319	-35	PASS	

LTE Band 13_BW=10M					
Frequency (MHz)	RBW=10kHz Measurement (dBm)	RBW=6.25kHz Measurement (dBm)	Limit -35dBm/6.25kHz	Result	
763 ~775	-48.597	-50.638	-35	PASS	
793 ~805	-51.799	-53.840	-35	PASS	

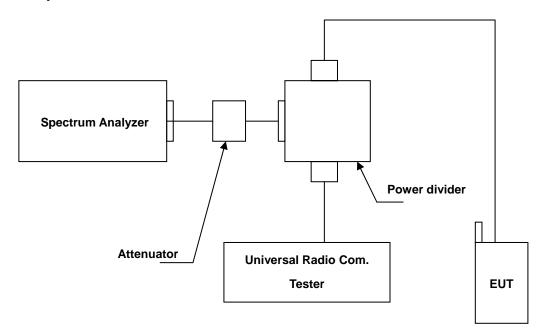
## 7.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(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 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 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

