FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART C, F, H, L, and M
FCC CFR47 PART 90 SUBPART S
INDUSTRY CANADA RSS-130 ISSUE 1
INDUSTRY CANADA RSS-132 ISSUE 3
INDUSTRY CANADA RSS-133 ISSUE 6
INDUSTRY CANADA RSS-139 ISSUE 3
INDUSTRY CANADA RSS-199 ISSUE 2

CERTIFICATION TEST REPORT

CDMA/GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC

MODEL NUMBER: LG-H790, LGH790, H790

FCC ID: ZNFH790
IC ID: 2703C-H790

REPORT NUMBER: 15I21235-E1V2

ISSUE DATE: SEPTEMBER 10, 2015

Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS,
NEW JERSEY, 07632, U.S.A

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	8/31/15	Initial Issue	
V2	9/10/15	Updated LTE B26 and LTE 5	D. Coronia

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION: CDMA/GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC
MODEL: LG-H790, LGH790, H790
SERIAL NUMBER: 1ZC4N, 1AC4P (Radiated), 1ZC4M, 1ZC4L, 1ZC4K (Conducted)
DATE TESTED: JULY 7-27, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E, 27H, 27F, 27L, 27M, 90S	PASS
INDUSTRY CANADA RSS-130,132,133,139,199	PASS

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

DAN CORONIA
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WiSE PROJECT LEAD
UL VERIFICATION SERVICES INC

Tested By:

STEVEN TRAN
CONSUMER TECHNOLOGY DIVISION
WiSE LAB ENGINEER
UL VERIFICATION SERVICES INC

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 22, FCC CFR Part 24, FCC CFR 47 Part 27, and FCC CFR 47 Part 90, RSS-130, 32, 133, 139, 139 and RSS-GEN Issue 4.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☒ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☒ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☐ Chamber G(IC: 2324B-7)
	☐ Chamber H(IC: 2324B-8)

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

EIRP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna)

(Path loss = Signal generator output – PSA reading with substitution antenna)

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4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB
Radiated Disturbance, 1GHz to 40GHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

This EUT is a CDMA/GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC.

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5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted and radiated ERP / EIRP output powers as follows:

FCC Part 22/24/27						
Band	Frequency Range(MHz)	Modulation	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
GSM850	824~849	GMSK	33.20	2089.30		
	824~849	GPRS	33.20	2089.30	31.01	1261.83
	824~849	EGPRS	27.20	524.81	26.80	478.63
GSM1900	1850~1910	GMSK	24.60	288.40		
	1850~1910	GPRS	24.30	269.15	29.68	928.97
	1850~1910	EGPRS	24.40	275.42	25.12	325.09
Band 5	824~849	REL99	23.80	239.88	23.61	229.61
	824~849	HSDPA	23.90	245.47	22.57	180.72
	824~849	HSUPA	23.90	245.47		
Band 4	1710~1755	REL99	23.80	239.88	26.11	408.32
	1710~1755	HSDPA	23.80	239.88	24.32	270.40
	1710~1755	HSUPA	23.90	245.47		
Band 2	1850~1910	REL99	33.20	2089.30	24.24	265.46
	1850~1910	HSDPA	33.20	2089.30	22.78	189.67
	1850~1910	HSUPA	27.20	524.81		

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FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
BC10	816~824	1xRTT	24.6	288.40	21.99	158.12
	816~824	EVDO REL. 0	24.5	281.84	21.51	141.58
	816~824	EVDO REV. A	24.5	281.84		
BC0	824~849	1xRTT	24.7	295.12	21.57	143.55
	824~849	EVDO REL. 0	24.5	281.84	21.38	137.40
	824~849	EVDO REV. A	24.5	281.84		
BC1	1850~1910	1xRTT	24.7	295.12	27.69	587.49
	1850~1910	EVDO REL. 0	23.7	234.42	27.57	571.48
	1850~1910	EVDO REV. A	23.7	234.42		

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5.1. MAXIMUM OUTPUT POWER (LTE)

LTE Band 2

The transmitter has a maximum peak conducted and radiated ERP/EIRP output powers as follows:

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	20MHz	QPSK	23.40	218.78	26.12	409.26
			16QAM	22.40	173.78	25.37	344.35
		15MHz	QPSK	23.40	218.78	26.10	407.38
			16QAM	22.40	173.78	25.30	338.84
		10MHz	QPSK	23.40	218.78	26.14	411.15
			16QAM	22.35	171.79	25.38	345.14
		5MHz	QPSK	23.39	218.27	26.13	410.20
			16QAM	22.40	173.78	25.18	329.61
		3MHz	QPSK	23.40	218.78	26.11	408.32
			16QAM	22.40	173.78	25.30	338.84
		1.4MHz	QPSK	23.40	218.78	26.16	413.05
			16QAM	22.38	172.98	25.12	325.09

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LTE Band 4

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	20MHz	QPSK	23.40	218.78	26.03	400.87
			16QAM	22.16	164.44	25.02	317.69
		15MHz	QPSK	23.40	218.78	26.13	410.20
			16QAM	22.29	169.43	25.16	328.10
		10MHz	QPSK	23.40	218.78	26.23	419.76
			16QAM	22.34	171.40	25.25	334.97
		5MHz	QPSK	23.40	218.78	26.19	415.91
			16QAM	22.26	168.27	25.21	331.89
		3MHz	QPSK	23.40	218.78	26.18	414.95
			16QAM	22.40	173.78	25.19	330.37
		1.4MHz	QPSK	23.40	218.78	26.20	416.87
			16QAM	22.40	173.78	25.21	331.89

LTE Band 5

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	10MHz	QPSK	24.10	257.04	22.25	167.88
			16QAM	22.90	194.98	22.13	163.31
		5MHz	QPSK	24.00	251.19	22.47	176.60
			16QAM	23.10	204.17	22.23	167.11
		3MHz	QPSK	24.10	257.04	22.44	175.39
			16QAM	23.00	199.53	22.20	165.96
		1.4MHz	QPSK	24.10	257.04	22.52	178.65
			16QAM	23.00	199.53	21.69	147.57

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LTE Band 7

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	PEAK(dBm)	PEAK(mW)
LTE7	2500~2570	20MHz	QPSK	23.50	223.87	22.07	161.06
			16QAM	22.40	173.78	21.23	132.74
		15MHz	QPSK	23.40	218.78	21.73	148.94
			16QAM	22.40	173.78	20.87	122.18
		10MHz	QPSK	23.50	223.87	22.19	165.58
			16QAM	22.40	173.78	21.73	148.94
		5MHz	QPSK	23.50	223.87	22.03	159.59
			16QAM	22.50	177.83	21.67	146.89

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LTE Band 12

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE12	699~716	10MHz	QPSK	24.20	263.03	19.96	99.08
			16QAM	22.50	177.83	19.00	79.43
		5MHz	QPSK	23.90	245.47	19.46	88.31
			16QAM	22.90	194.98	18.60	72.44
		3MHz	QPSK	24.10	257.04	19.30	85.11
			16QAM	22.80	190.55	19.70	93.33
		1.4MHz	QPSK	24.00	251.19	19.10	81.28
			16QAM	22.70	186.21	19.10	81.28

LTE Band 13

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE13	777~787	10MHz	QPSK	24.20	263.03	20.00	100.00
			16QAM	22.70	186.21	18.90	77.62
		5MHz	QPSK	24.00	251.19	19.55	90.16
			16QAM	23.00	199.53	18.50	70.79

LTE Band 17

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE17	704~716	10MHz	QPSK	24.00	251.19	19.96	99.08
			16QAM	22.50	177.83	19.00	79.43
		5MHz	QPSK	24.10	257.04	19.46	88.31
			16QAM	22.90	194.98	18.60	72.44

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LTE Band 25

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE25	1850~1915	20MHz	QPSK	23.40	218.78	26.12	409.26
			16QAM	22.40	173.78	25.37	344.35
		15MHz	QPSK	23.40	218.78	26.10	407.38
			16QAM	22.40	173.78	25.30	338.84
		10MHz	QPSK	23.40	218.78	26.14	411.15
			16QAM	22.35	171.79	25.38	345.14
		5MHz	QPSK	23.39	218.27	26.13	410.20
			16QAM	22.40	173.78	25.18	329.61
		3MHz	QPSK	23.40	218.78	26.11	408.32
			16QAM	22.40	173.78	25.30	338.84
		1.4MHz	QPSK	23.40	218.78	26.16	413.05
			16QAM	22.38	172.98	25.12	325.09

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LTE Band 26 PART 90

FCC Part 90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE26	814~824	10MHz	QPSK	23.90	245.47	23.30	213.80
			16QAM	22.70	186.21	22.95	197.24
		5MHz	QPSK	23.80	239.88	23.66	232.27
			16QAM	22.70	186.21	23.57	227.51
		3MHz	QPSK	23.90	245.47	23.47	222.33
			16QAM	23.00	199.53	23.34	215.77
		1.4MHz	QPSK	24.00	251.19	23.71	234.96
			16QAM	23.00	199.53	23.38	217.77

LTE Band 26 PART 22

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE26	824~849	15MHz	QPSK	23.90	245.47	23.07	202.77
			16QAM	22.90	194.98	22.65	184.08
		10MHz	QPSK	23.90	245.47	22.25	167.88
			16QAM	22.80	190.55	22.13	163.31
		5MHz	QPSK	23.80	239.88	22.47	176.60
			16QAM	22.80	190.55	22.23	167.11
		3MHz	QPSK	24.00	251.19	22.44	175.39
			16QAM	23.00	199.53	22.20	165.96
		1.4MHz	QPSK	24.00	251.19	22.52	178.65
			16QAM	23.00	199.53	21.69	147.57

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LTE Band 41

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	Peak(dBm)	Peak(mW)
LTE41	2496~2690	20MHz	QPSK	22.90	194.98	19.70	93.33
			16QAM	22.10	162.18	18.84	76.56
		15MHz	QPSK	22.90	194.98	18.23	66.53
			16QAM	22.00	158.49	17.73	59.29
		10MHz	QPSK	23.10	204.17	18.87	77.09
			16QAM	21.70	147.91	18.77	75.34
		5MHz	QPSK	23.00	199.53	19.25	84.14
			16QAM	21.60	144.54	18.53	71.29

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5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the [List the bands supported] with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
GSM850, 824~849MHz	-4.8
GSM1900, 1850~1910MHz	-0.9
Band 2, 1850~1910MHz	-0.9
Band 4, 1710~1755MHz	-1.4
Band 5, 824~849MHz	-4.8
Band 7, 2500~2570MHz	-2.6
Band 12, 699~716MHz	-4.1
Band 13, 777~787MHz	-3.7
Band 17, 704~716MHz	-4.1
Band 25, 1850~1915MHz	-0.9
Band 26, 824~849MHz	-4.8
Band 41, 2496~2690MHz	-2.6
BC10, 816~824MHz	-4.8
BC0, 824~849MHz	-4.8
BC1, 1850~1910MHz	-0.9

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5.3. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-N04WS	SA560000030	N/A
Earphone	LG	-	-	N/A

I/O CABLES (CONDUCTED SETUP)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

I/O CABLES (RADIATED SETUP)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	USB	1	AC Adapter	Un-shielded	1.2m	NA
2	Jack	1	Headset	Shielded	1m	NA
3	RF In/out	1	Communication Test Set	Un-shielded	2m	NA

TEST SETUP

The EUT is continuously communicated to the call box during the tests.

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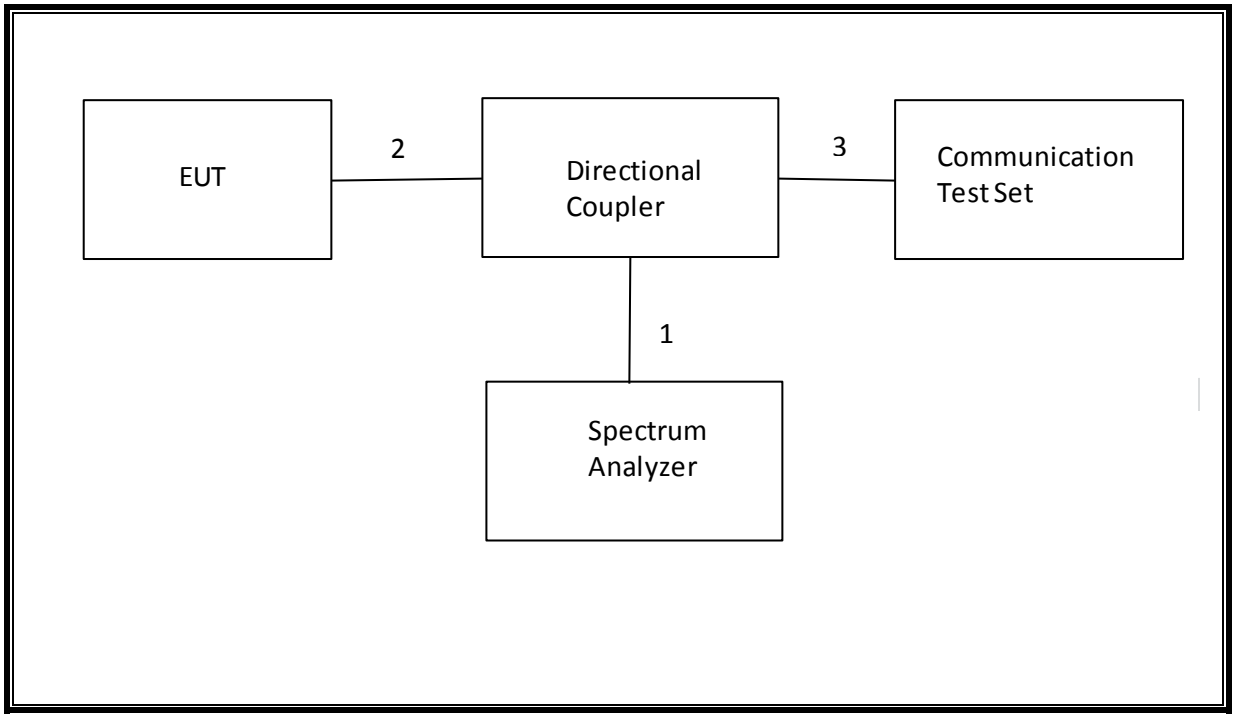
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



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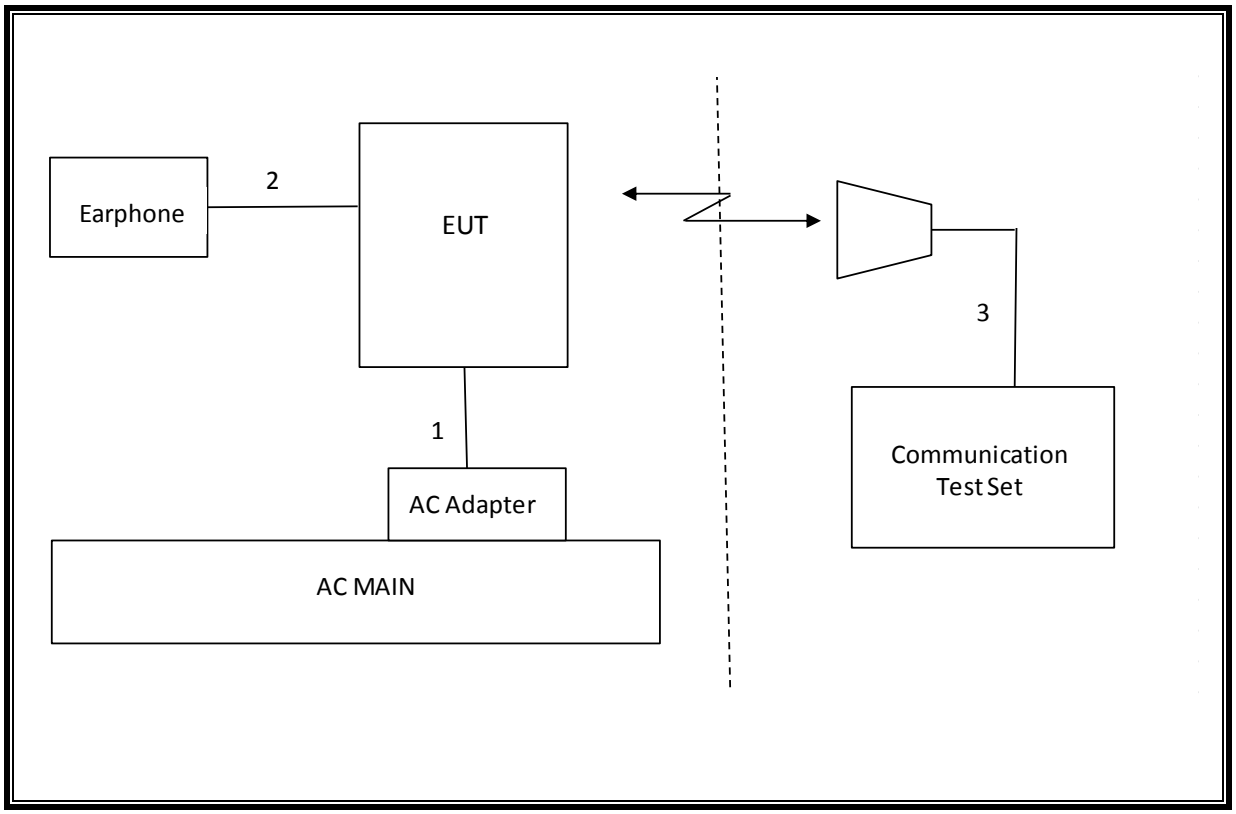
SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	123	10/28/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	T243	12/08/15
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/15
Antenna, Horn, 18 GHz	EMCO	3115	C00784	10/25/15
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02688	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	T80	11/01/15
Communications Test Set	R&S	CMW500	T232	01/14/16
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	T201	06/16/16
Antenna, Tuned Dipole 400~1000	ETS	6502	158071	10/14/15
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	12/17/15

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

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7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Note
2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	17.98 MHz
22.917(a) 24.238(a) 27.53(g) 90.691	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass	-18.18 dBm
27.53(m)	RSS-199(4.5)		-25dBm		Pass	-32.55 dBm
2.1046	N/A	Conducted output power	N/A		Pass	33.2 dBm
27.53(m) 90.691	RSS-199(4.5)	Emission Mask			Pass	
22.355 24.235 27.54 90.213	RSS-132(4.3) RSS-133(6.3) RSS-139(6.3) RSS-199(4.3)	Frequency Stability	2.5PPM		Pass	0.009 PPM
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass	31.01 dBm
27.50(c)(10)	N/A		34.77 dBm		Pass	20 dBm
90.635	N/A		50dBm		Pass	23.71 dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	29.68 dBm
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass	26.23 dBm
22.917(a) 24.238(a) 27.53(g)	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Radiated Spurious Emission	-13dBm		Pass	-42.1 dBm
27.53(m)	RSS-199(4.5)		-25dBm		Pass	-44.2 dBm

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8. RF POWER OUTPUT VERIFICATION

8.1. GSM/GPRS/EDGE

Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press Connection control to choose the different menus

Press RESET > choose all to reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM+GPRS or GSM+EGPRS

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850/900

> 30 dBm for GPRS1800/1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0> 4 dB

Slot Config > Unchanged (if already set under MS Signal)

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3 (Default)

Network Coding Scheme > CS4 (GPRS) and MCS5 ~ MCS9 (EGPRS)

Bit Stream > 2E9-1PSR Bit Pattern

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection Press Signal On to turn on the signal and change settings

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8.1.1. GSM OUTPUT POWER RESULT

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
GSM (Voice)	CS1	1	128	824.2	33.2
			190	836.6	33.1
			251	848.8	33.1
GPRS (GMSK)	CS1	1	128	824.2	33.2
			190	836.6	33.1
			251	848.8	33.2
		2	128	824.2	31.1
			190	836.6	31.0
			251	848.8	31.1
		3	128	824.2	28.9
			190	836.6	28.9
			251	848.8	28.9
		4	128	824.2	27.8
			190	836.6	27.6
			251	848.8	28.1
EGPRS (8PSK)	MCS5	1	128	824.2	27.2
			190	836.6	27.0
			251	848.8	27.0
		2	128	824.2	26.1
			190	836.6	26.0
			251	848.8	26.0
		3	128	824.2	25.0
			190	836.6	24.9
			251	848.8	25.0
		4	128	824.2	24.1
			190	836.6	24.1
			251	848.8	24.2

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Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
GSM (Voice)	CS1	1	512	1850.2	29.6
			661	1880.0	29.3
			810	1909.8	29.4
GPRS (GMSK)	CS1	1	512	1850.2	29.7
			661	1880.0	29.4
			810	1909.8	29.4
		2	512	1850.2	27.6
			661	1880.0	27.5
			810	1909.8	27.6
		3	512	1850.2	25.3
			661	1880.0	25.3
			810	1909.8	25.4
		4	512	1850.2	24.6
			661	1880.0	24.5
			810	1909.8	24.7
EGPRS (8PSK)	MCS5	1	512	1850.2	25.6
			661	1880.0	25.5
			810	1909.8	25.7
		2	512	1850.2	24.5
			661	1880.0	24.3
			810	1909.8	24.5
		3	512	1850.2	23.3
			661	1880.0	23.2
			810	1909.8	23.4
		4	512	1850.2	22.5
			661	1880.0	22.4
			810	1909.8	22.6

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8.2. UMTS REL 99

TEST PROCEDURE

The following summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	βc	Not Applicable
	βd	Not Applicable
	βec	Not Applicable
	βc/βd	8/15
	βhs	Not Applicable
	βed	Not Applicable

8.2.1. UMTS REL 99 OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V	Rel 99 (RMC, 12.2 kbps)	4132	826.4	0.00	24.6
		4183	836.6	0.00	24.5
		4233	846.6	0.00	24.5

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band IV	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	0	23.8
		1413	1732.6	0	23.8
		1513	1752.6	0	23.8

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band II	Rel 99 (RMC, 12.2 kbps)	9262 9662	1852.4	0	23.8
		9400 9800	1880.0	0	23.8
		9538 9937	1907.6	0	23.8

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8.3. UMTS HSDPA

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	Rel5 HSDPA			
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

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8.3.1. UMTS HSDPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V	Subtest 1	4132	826.4	0.00	24.3
		4183	836.6	0.00	24.2
		4233	846.6	0.00	24.2
	Subtest 2	4132	826.4	0.00	24.4
		4183	836.6	0.00	24.2
		4233	846.6	0.00	24.3
	Subtest 3	4132	826.4	0.50	23.8
		4183	836.6	0.50	23.8
		4233	846.6	0.50	23.8
	Subtest 4	4132	826.4	0.50	23.9
		4183	836.6	0.50	23.7
		4233	846.6	0.50	23.8

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band IV	Subtest 1	1312	1712.4	0	23.8
		1413	1732.6	0	23.8
		1513	1752.6	0	23.9
	Subtest 2	1312	1712.4	0	23.5
		1413	1732.6	0	23.4
		1513	1752.6	0	23.4
	Subtest 3	1312	1712.4	0.5	23.2
		1413	1732.6	0.5	23.1
		1513	1752.6	0.5	23.2
	Subtest 4	1312	1712.4	0.5	23.2
		1413	1732.6	0.5	23.1
		1513	1752.6	0.5	23.2

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Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band II	Subtest 1	9262	1852.4	0	23.8
		9400	1880.0	0	23.7
		9538	1907.6	0	23.8
	Subtest 2	9262	1852.4	0	23.7
		9400	1880.0	0	23.8
		9538	1907.6	0	23.8
	Subtest 3	9262	1852.4	0.5	23.3
		9400	1880.0	0.5	23.4
		9538	1907.6	0.5	23.4
	Subtest 4	9262	1852.4	0.5	23.2
		9400	1880.0	0.5	23.3
		9538	1907.6	0.5	23.2

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8.4. UMTS HSUPA

TEST PROCEDURE

The following summary of these settings are illustrated below: (ETSI TS 134.121-1 Table C.11.1)

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	P-CPICH (dB)	-10				
	P-CCPCH (dB)	-12				
	SCH (dB)	-12				
	PICH(dB)	-15				
	DPCH (dB)	-9				
	HS-SCCH_1 (dB)	-8				
	HS-PDSCH (dB)	-3				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	Bc	11/15	6/15	15/15	2/15	15/15
	Bd	15/15	15/15	9/15	15/15	15/15
	Bec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	Bhs	22/15	12/15	30/15	4/15	30/15
	βed (note1)	1309/225	94/75	47/15 47/15	56/75	134/15
	MPR	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	Reference E-TFCIs	5	5	2	5	5
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

Note1: βed cannot be set directly, it is set by Absolute Grant Value.

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8.4.1. UMTS HSUPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V	Subtest 1	4132	826.4	0.00	23.2
		4183	836.6	0.00	23.1
		4233	846.6	0.00	23.3
	Subtest 2	4132	826.4	2.00	22.2
		4183	836.6	2.00	22.2
		4233	846.6	2.00	21.8
	Subtest 3	4132	826.4	1.00	22.2
		4183	836.6	1.00	22.1
		4233	846.6	1.00	22.1
	Subtest 4	4132	826.4	2.00	22.7
		4183	836.6	2.00	22.7
		4233	846.6	2.00	22.6
	Subtest 5	4132	826.4	0.00	24.4
		4183	836.6	0.00	24.2
		4233	846.6	0.00	24.3

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band IV	Subtest 1	1312	1712.4	0	22.9
		1413	1732.6	0	22.9
		1513	1752.6	0	22.9
	Subtest 2	1312	1712.4	2	21.8
		1413	1732.6	2	21.8
		1513	1752.6	2	21.8
	Subtest 3	1312	1712.4	1	22.1
		1413	1732.6	1	22.1
		1513	1752.6	1	22.0
	Subtest 4	1312	1712.4	2	21.9
		1413	1732.6	2	21.9
		1513	1752.6	2	21.9
	Subtest 5	1312	1712.4	0	23.9
		1413	1732.6	0	23.8
		1513	1752.6	0	23.9

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Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band II	Subtest 1	9262	1852.4	0	22.2
		9400	1880.0	0	23.0
		9538	1907.6	0	22.2
	Subtest 2	9262	1852.4	2	21.5
		9400	1880.0	2	21.9
		9538	1907.6	2	21.6
	Subtest 3	9262	1852.4	1	22.6
		9400	1880.0	1	22.5
		9538	1907.6	1	21.8
	Subtest 4	9262	1852.4	2	21.8
		9400	1880.0	2	21.9
		9538	1907.6	2	21.8
	Subtest 5	9262	1852.4	0	23.9
		9400	1880.0	0	23.8
		9538	1907.6	0	23.8

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8.5. DC-HSDPA

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table. Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

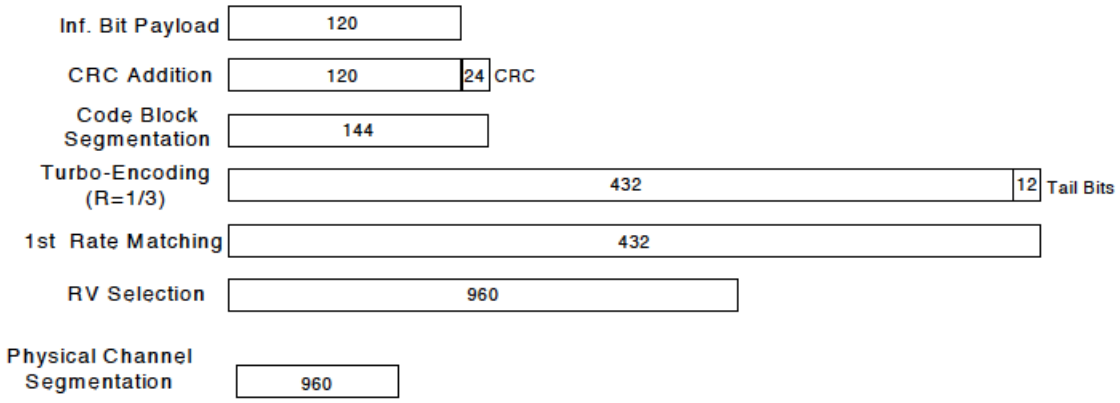

Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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The following 4 Sub-tests for HSDPA were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = βhs/ βc	30/15			

Up commands are set continuously to set the UE to Max power.

8.5.1. UMTS DC-HSDPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V	Subtest 1	4132	826.4	0.00	24.4
		4183	836.6	0.00	24.5
		4233	846.6	0.00	24.4
	Subtest 2	4132	826.4	0.00	24.4
		4183	836.6	0.00	24.4
		4233	846.6	0.00	24.4
	Subtest 3	4132	826.4	0.50	23.9
		4183	836.6	0.50	23.8
		4233	846.6	0.50	23.8
	Subtest 4	4132	826.4	0.50	23.9
		4183	836.6	0.50	23.8
		4233	846.6	0.50	23.8

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Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band IV	Subtest 1	1312	1712.4	0	23.9
		1413	1732.6	0	23.8
		1513	1752.6	0	23.8
	Subtest 2	1312	1712.4	0	23.9
		1413	1732.6	0	23.9
		1513	1752.6	0	23.9
	Subtest 3	1312	1712.4	0.5	23.2
		1413	1732.6	0.5	23.1
		1513	1752.6	0.5	23.1
	Subtest 4	1312	1712.4	0.5	23.2
		1413	1732.6	0.5	23.2
		1513	1752.6	0.5	23.2

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band IV	Subtest 1	1312	1712.4	0	23.9
		1413	1732.6	0	23.8
		1513	1752.6	0	23.8
	Subtest 2	1312	1712.4	0	23.9
		1413	1732.6	0	23.9
		1513	1752.6	0	23.9
	Subtest 3	1312	1712.4	0.5	23.2
		1413	1732.6	0.5	23.1
		1513	1752.6	0.5	23.1
	Subtest 4	1312	1712.4	0.5	23.2
		1413	1732.6	0.5	23.2
		1513	1752.6	0.5	23.2

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8.6. CDMA2000

8.6.1. 1xRTT

TEST PROCEDURE

This procedure assumes the Agilest 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 7
  > Network ID (NID) > 1
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)

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8.6.2. CDMA2000 OUTPUT POWER RESULT

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC10	RC1, SO55 (Loopback)	476	817.90	24.6
		580	820.50	24.6
		684	823.10	24.6
	RC3, SO55 (Loopback)	476	817.90	24.6
		580	820.50	24.6
		684	823.10	24.5
	RC3, SO32 (+F-SCH)	476	817.90	24.6
		580	820.50	24.6
		684	823.10	24.6

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	24.7
		384	836.52	24.6
		777	848.31	24.7
	RC3, SO55 (Loopback)	1013	824.70	24.6
		384	836.52	24.6
		777	848.31	24.6
	RC3, SO32 (+F-SCH)	1013	824.70	24.6
		384	836.52	24.6
		777	848.31	24.6

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC1	RC1, SO55 (Loopback)	25	1851.25	24.7
		600	1880.00	24.7
		1175	1908.75	24.7
	RC3, SO55 (Loopback)	25	1851.25	24.6
		600	1880.00	24.6
		1175	1908.75	24.6
	RC3, SO32 (+F-SCH)	25	1851.25	24.7
		600	1880.00	24.6
		1175	1908.75	24.5

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8.6.3. 1xEV-DO Release 0

TEST PROCEDURE

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

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8.6.4. 1XEVDO REL 0 OUTPUT POWER RESULT

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC10	307.2 kbps (2 slot, QPSK)	476	817.90	24.5
		580	820.50	24.5
		684	823.10	24.5

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC10	307.2 kbps (2 slot, QPSK)	476	817.90	24.5
		580	820.50	24.5
		684	823.10	24.5

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	25	1851.25	23.66
		600	1880.00	23.69
		1175	1908.75	23.68

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8.6.5. 1xEV-DO Rev. A

TEST PROCEDURE

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Release A – RETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2

> PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)

- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Release A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2

> PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)

- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

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8.6.6. 1xEVDO REV A OUTPUT RESULT

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC10	307.2k, QPSK/ ACK channel is transmitted at all the slots	476	817.90	24.5
		580	820.50	24.5
		684	823.10	24.4

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2k, QPSK/ ACK channel is transmitted at all the slots	1013	824.70	24.5
		384	836.52	24.4
		777	848.31	24.4

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2k, QPSK/ ACK channel is transmitted at all the slots	25	1851.25	23.60
		600	1880.00	23.65
		1175	1908.75	23.65

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8.7. LTE POWER VERIFCATION

LTE Band 2

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18700	18900	19100
						1860 MHz	1880 MHz	1900 MHz
LTE Band 2	20	QPSK	1	0	0	23.40	23.40	23.38
			1	49	0	23.24	23.37	23.38
			1	99	0	23.13	23.39	23.35
			50	0	1	22.35	22.19	22.32
			50	24	1	22.34	22.18	22.36
			50	50	1	22.29	22.26	22.35
			100	0	1	22.32	22.26	22.37
		16QAM	1	0	1	22.38	22.35	22.40
			1	49	1	22.40	22.16	22.40
			1	99	1	22.13	22.17	22.35
			50	0	2	21.23	21.03	21.18
			50	24	2	21.16	21.02	21.29
			50	50	2	21.17	21.15	21.21
			100	0	2	21.17	21.16	21.3
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18675	18900	19125
						1857.5 MHz	1880 MHz	1902.5 MHz
LTE Band 2	15	QPSK	1	0	0	23.40	23.40	23.39
			1	37	0	23.19	23.4	23.38
			1	74	0	23.22	23.34	23.26
			36	0	1	22.11	22.12	22.31
			36	20	1	22.12	22.28	22.32
			36	39	1	22.15	22.20	22.22
			75	0	1	22.16	22.16	22.35
		16QAM	1	0	1	22.35	22.35	22.38
			1	37	1	22.12	22.40	22.34
			1	74	1	22.07	22.33	22.26
			36	0	2	20.98	21.01	21.16
			36	20	2	21.01	21.11	21.19
			36	39	2	21.00	21.06	21.13
			75	0	2	21.01	21.01	21.22

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18650	18900	19150
						1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	23.32	23.28	23.40
			1	25	0	23.36	23.07	23.25
			1	49	0	23.31	23.09	23.09
			25	0	1	22.02	22.02	21.9
			25	12	1	22.16	22.15	21.94
			25	25	1	22.03	21.97	21.94
			50	0	1	22.07	21.99	22.00
		16QAM	1	0	1	22.35	22.28	22.30
			1	25	1	22.19	22.15	22.15
			1	49	1	22.27	22.16	22.28
			25	0	2	20.76	20.86	20.65
			25	12	2	20.98	20.93	20.83
			25	25	2	20.84	20.81	20.89
			50	0	2	20.86	20.83	20.88

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18625	18900	19175
						1852.5 MHz	1880 MHz	1907.5 MHz
LTE Band 2	5	QPSK	1	0	0	23.35	23.39	23.18
			1	12	0	23.19	23.06	23.20
			1	24	0	23.36	23.27	23.03
			12	0	1	22.04	22.00	21.95
			12	7	1	22.00	21.99	22.00
			12	13	1	22.04	22.05	22.03
			25	0	1	21.98	22.02	22.08
		16QAM	1	0	1	22.35	22.13	21.86
			1	12	1	22.40	22.09	21.97
			1	24	1	22.40	22.03	21.89
			12	0	2	20.99	20.86	20.79
			12	7	2	21.01	20.96	20.84
			12	13	2	21.00	20.96	20.88
			25	0	2	20.92	20.94	20.94

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18615	18900	19185
						1851.5 MHz	1880 MHz	1908.5 MHz
LTE Band 2	3	QPSK	1	0	0	23.29	23.2	23.23
			1	8	0	23.3	23.33	23.4
			1	14	0	23.18	23.24	23.07
			8	0	1	22.04	22.07	21.98
			8	4	1	22.18	22.03	21.98
			8	7	1	22.05	21.98	21.88
			15	0	1	22.14	21.97	22.01
		16QAM	1	0	1	22.26	22.24	22.3
			1	8	1	22.35	22.2	22.38
			1	14	1	22.36	22.4	22.16
			8	0	2	20.92	20.85	20.71
			8	4	2	20.97	20.87	20.74
			8	7	2	20.88	20.8	20.69
			15	0	2	20.85	20.9	20.73

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18607	18900	19193
						1850.7 MHz	1880 MHz	1909.3 MHz
LTE Band 2	1.4	QPSK	1	0	0	23.4	23.33	23.03
			1	3	0	23.4	23.3	23.17
			1	5	0	23.4	23.22	22.97
			3	0	0	23.17	23.24	22.93
			3	1	0	23.2	23.25	22.97
			3	3	0	23.19	23.19	22.98
			6	0	1	22.04	22.01	21.96
		16QAM	1	0	1	22.3	22.25	21.92
			1	3	1	22.24	22.38	22.11
			1	5	1	22.26	22.28	21.81
			3	0	1	21.82	22.01	21.81
			3	1	1	21.89	21.97	21.8
			3	3	1	21.89	21.94	21.86
			6	0	2	20.78	20.8	20.77

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LTE Band 4

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20050	20175	20300
						1720 MHz	1732.5 MHz	1745 MHz
LTE Band 4	20	QPSK	1	0	0		23.4	
			1	49	0		23.15	
			1	99	0		23.14	
			50	0	1		22.21	
			50	24	1		22.09	
			50	50	1		22.04	
			100	0	1		22.12	
		16QAM	1	0	1		22.16	
			1	49	1		21.95	
			1	99	1		21.85	
			50	0	2		21.07	
			50	24	2		20.95	
			50	50	2		20.93	
			100	0	2		20.96	

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20025	20175	20325
						1717.5 MHz	1732.5 MHz	1747.5 MHz
LTE Band 4	15	QPSK	1	0	0	23.4	23.4	23.33
			1	37	0	23.23	23.35	23.35
			1	74	0	23.07	23.33	23.39
			36	0	1	22.07	22.13	22.28
			36	20	1	22.08	22.11	22.26
			36	39	1	22.04	22.02	22.28
			75	0	1	22.01	22.02	22.25
		16QAM	1	0	1	22.04	22.14	22.29
			1	37	1	21.97	22.06	22.25
			1	74	1	21.71	21.99	22.31
			36	0	2	20.93	21.03	21.13
			36	20	2	20.95	21.12	21.05
			36	39	2	20.91	21.02	21.1
			75	0	2	20.86	20.98	21.1

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20000	20175	20350
						1715 MHz	1732.5 MHz	1750 MHz
LTE Band 4	10	QPSK	1	0	0	23.4	23.32	23.24
			1	25	0	23.4	22.95	23.33
			1	49	0	23.12	23.11	23.14
			25	0	1	22.08	22.01	21.96
			25	12	1	22.01	22.03	22.01
			25	25	1	22.05	21.88	21.98
			50	0	1	22.16	21.94	22
		16QAM	1	0	1	22.32	22.34	22.06
			1	25	1	22.2	21.7	22.01
			1	49	1	22.14	21.98	22.09
			25	0	2	21.06	20.84	20.85
			25	12	2	21.03	20.88	21.03
			25	25	2	21.03	20.73	20.96
			50	0	2	20.96	20.77	20.93

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19975	20175	20375
						1712.5 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	23.4	23.4	23.37
			1	12	0	23.15	23.32	22.95
			1	24	0	23.31	23.4	23.4
			12	0	1	22.03	21.92	22.08
			12	7	1	22.11	21.87	22.13
			12	13	1	22.05	21.98	22.06
			25	0	1	22.1	21.98	22.11
		16QAM	1	0	1	22.18	22.26	22.12
			1	12	1	21.84	21.58	22.1
			1	24	1	22.1	22.28	22.25
			12	0	2	20.93	20.95	21.01
			12	7	2	21	20.87	21.09
			12	13	2	20.97	20.9	20.98
			25	0	2	21.03	20.89	20.99

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19965	20175	20385
						1711.5 MHz	1732.5 MHz	1753.5 MHz
LTE Band 4	3	QPSK	1	0	0	23.2	23.22	23.35
			1	8	0	23.4	23.15	23.34
			1	14	0	23.14	22.99	23.4
			8	0	1	22.08	21.95	22.03
			8	4	1	22.06	21.89	22.15
			8	7	1	22.04	21.92	22.11
			15	0	1	22.07	21.87	22.12
		16QAM	1	0	1	22.39	21.68	22.4
			1	8	1	22.4	21.95	22.2
			1	14	1	22.19	21.66	22.4
			8	0	2	21	20.81	20.86
			8	4	2	20.88	20.88	20.97
			8	7	2	20.94	20.86	20.91
			15	0	2	21.01	20.7	21.08

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19957	20175	20393
						1710.7 MHz	1732.5 MHz	1754.3 MHz
LTE Band 4	1.4	QPSK	1	0	0	23.4	23.17	23.24
			1	3	0	23.31	23.05	23.29
			1	5	0	23.32	23.02	23.4
			3	0	0	23.17	23.07	23.08
			3	1	0	23.27	23.02	23.25
			3	3	0	23.26	22.97	23.14
			6	0	1	22.03	21.8	22.06
		16QAM	1	0	1	22.4	21.71	22.13
			1	3	1	22.21	21.82	22.27
			1	5	1	22.2	21.68	22.05
			3	0	1	21.89	21.78	21.89
			3	1	1	21.9	21.68	21.95
			3	3	1	21.85	21.74	21.87
			6	0	2	20.96	20.71	20.97

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LTE Band 5

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20450	20525	20600
						829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0		24.1	
			1	25	0		23.9	
			1	49	0		24.0	
			25	0	1		22.9	
			25	12	1		22.7	
			25	25	1		22.7	
			50	0	1		22.8	
		16QAM	1	0	1		22.9	
			1	25	1		22.5	
			1	49	1		22.8	
			25	0	2		21.8	
			25	12	2		21.7	
			25	25	2		21.6	
			50	0	2		21.7	

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20425	20525	20625
						826.5 MHz	836.5 MHz	846.5 MHz
LTE Band 5	5	QPSK	1	0	0	23.9	24.0	23.9
			1	12	0	23.9	23.9	23.8
			1	24	0	24.0	23.9	23.8
			12	0	1	22.8	22.8	22.7
			12	7	1	22.8	22.8	22.7
			12	13	1	22.7	22.7	22.7
			25	0	1	22.8	22.7	22.8
		16QAM	1	0	1	22.8	22.6	23.1
			1	12	1	23.0	22.6	22.6
			1	24	1	22.9	22.7	23.0
			12	0	2	21.7	21.7	21.7
			12	7	2	21.7	21.7	21.6
			12	13	2	21.7	21.6	21.6
			25	0	2	21.6	21.7	21.6

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20415	20525	20635
						825.5 MHz	836.5 MHz	847.5 MHz
LTE Band 5	3	QPSK	1	0	0	24.1	24.0	23.9
			1	8	0	24.1	24.0	24.1
			1	14	0	24.1	24.0	23.9
			8	0	1	22.8	22.9	22.7
			8	4	1	22.9	22.8	22.7
			8	7	1	22.9	22.8	22.7
			15	0	1	22.9	22.8	22.7
		16QAM	1	0	1	23.0	22.6	23.0
			1	8	1	23.1	22.5	22.7
			1	14	1	22.9	22.5	23.0
			8	0	2	21.8	21.8	21.5
			8	4	2	21.8	21.8	21.5
			8	7	2	21.7	21.7	21.5
			15	0	2	21.8	21.6	21.6

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20407	20525	20643
						824.7 MHz	836.5 MHz	848.3 MHz
LTE Band 5	1.4	QPSK	1	0	0	24.1	24.1	23.9
			1	3	0	24.1	23.9	23.9
			1	5	0	24.1	23.9	23.8
			3	0	0	24.0	24.0	23.7
			3	1	0	24.0	24.0	23.8
			3	3	0	24.1	24.0	23.7
			6	0	1	22.8	22.8	22.7
		16QAM	1	0	1	23.0	22.5	22.7
			1	3	1	22.9	22.9	22.9
			1	5	1	23.1	22.6	22.6
			3	0	1	22.5	22.6	22.4
			3	1	1	22.5	22.5	22.4
			3	3	1	22.5	22.5	22.4
			6	0	2	21.7	21.7	21.6

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LTE Band 7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20850	21100	21350
						2510 MHz	2535 MHz	2560 MHz
LTE Band 7	20	QPSK	1	0	0	23.5	23.5	22.8
			1	49	0	23.5	23.4	23.0
			1	99	0	23.2	23.3	22.8
			50	0	1	22.5	22.3	22.1
			50	24	1	22.4	22.3	22.1
			50	50	1	22.3	22.2	22.0
			100	0	1	22.5	22.3	22.0
		16QAM	1	0	1	22.4	22.0	21.9
			1	49	1	22.3	22.0	22.2
			1	99	1	22.1	21.8	21.9
			50	0	2	21.6	21.3	21.1
			50	24	2	21.4	21.3	21.1
			50	50	2	21.6	21.2	20.8
			100	0	2	21.4	21.2	21.1

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20825	21100	21375
						2507.5 MHz	2535 MHz	2562.5 MHz
LTE Band 7	15	QPSK	1	0	0	23.2	23.4	23.2
			1	37	0	23.4	23.4	23.3
			1	74	0	23.3	23.1	23.1
			36	0	1	22.5	22.4	22.1
			36	20	1	22.6	22.4	22.2
			36	39	1	22.4	22.3	22.0
			75	0	1	22.5	22.3	22.2
		16QAM	1	0	1	22.4	21.9	21.7
			1	37	1	22.3	22.0	21.9
			1	74	1	22.4	21.7	21.7
			36	0	2	21.5	21.3	21.1
			36	20	2	21.5	21.3	21.3
			36	39	2	21.4	21.2	21.1
			75	0	2	21.4	21.3	21.1

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20800	21100	21400
						2505 MHz	2535 MHz	2565 MHz
LTE Band 7	10	QPSK	1	0	0	23.4	23.3	23.4
			1	25	0	23.5	23.4	23.7
			1	49	0	23.0	23.1	23.3
			25	0	1	22.4	22.3	22.2
			25	12	1	22.4	22.3	22.2
			25	25	1	22.4	22.3	22.2
			50	0	1	22.4	22.3	22.2
		16QAM	1	0	1	22.3	22.4	22.0
			1	25	1	22.2	21.9	22.0
			1	49	1	22.3	22.0	21.9
			25	0	2	21.3	21.2	21.3
			25	12	2	21.4	21.3	21.3
			25	25	2	21.4	21.3	21.2
			50	0	2	21.3	21.2	21.2

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20775	21100	21425
						2502.5 MHz	2535 MHz	2567.5 MHz
LTE Band 7	5	QPSK	1	0	0	23.5	23.3	23.4
			1	12	0	23.4	23.1	23.1
			1	24	0	23.3	23.1	23.1
			12	0	1	22.4	22.2	22.3
			12	7	1	22.3	22.3	22.3
			12	13	1	22.3	22.2	22.2
			25	0	1	22.3	22.2	22.2
		16QAM	1	0	1	22.4	21.9	22.4
			1	12	1	22.5	22.0	22.0
			1	24	1	22.4	21.9	22.3
			12	0	2	21.3	21.1	21.3
			12	7	2	21.2	21.2	21.3
			12	13	2	21.3	21.1	21.2
			25	0	2	21.2	21.3	21.2

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LTE Band 12

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23060	23095	23130
						704 MHz	707.5 MHz	711 MHz
LTE Band 12	10	QPSK	1	0	0		24.0	
			1	25	0		24.2	
			1	49	0		23.8	
			25	0	1		22.8	
			25	12	1		22.8	
			25	25	1		22.8	
			50	0	1		22.8	
		16QAM	1	0	1		22.4	
			1	25	1		22.5	
			1	49	1		22.3	
			25	0	2		21.9	
			25	12	2		21.9	
			25	25	2		21.8	
			50	0	2		21.8	

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23035	23095	23155
						701.5 MHz	707.5 MHz	713.5 MHz
LTE Band 12	5	QPSK	1	0	0	23.7	23.7	23.9
			1	12	0	23.9	23.8	23.6
			1	24	0	23.7	23.7	23.7
			12	0	1	22.6	22.7	22.8
			12	7	1	22.7	22.8	22.8
			12	13	1	22.7	22.7	22.7
			25	0	1	22.6	22.7	22.7
		16QAM	1	0	1	22.4	22.2	22.9
			1	12	1	22.7	22.5	22.3
			1	24	1	22.6	22.2	22.7
			12	0	2	21.6	21.7	21.8
			12	7	2	21.7	21.8	21.7
			12	13	2	21.7	21.7	21.7
			25	0	2	21.6	21.8	21.7

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23025	23095	23165
						700.5 MHz	707.5 MHz	714.5 MHz
LTE Band 12	3	QPSK	1	0	0	23.7	23.8	23.7
			1	8	0	24.0	24.1	23.8
			1	14	0	23.8	23.8	23.8
			8	0	1	22.7	22.9	22.6
			8	4	1	22.8	22.9	22.7
			8	7	1	22.8	22.8	22.6
			15	0	1	22.7	22.8	22.6
		16QAM	1	0	1	22.5	22.3	22.7
			1	8	1	22.8	22.4	22.2
			1	14	1	22.5	22.2	22.8
			8	0	2	21.7	21.9	21.5
			8	4	2	21.7	21.9	21.6
			8	7	2	21.8	21.8	21.5
			15	0	2	21.7	21.7	21.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23017	23095	23173
						699.7 MHz	707.5 MHz	715.3 MHz
LTE Band 12	1.4	QPSK	1	0	0	24.0	23.9	23.7
			1	3	0	23.9	23.7	23.8
			1	5	0	24.0	23.9	23.7
			3	0	0	23.9	23.8	23.6
			3	1	0	23.8	23.9	23.7
			3	3	0	23.7	23.8	23.5
			6	0	1	22.8	22.7	22.5
		16QAM	1	0	1	22.7	22.2	22.3
			1	3	1	22.5	22.3	22.6
			1	5	1	22.5	22.2	22.4
			3	0	1	22.3	22.3	22.2
			3	1	1	22.2	22.3	22.2
			3	3	1	22.2	22.3	22.3
			6	0	2	21.8	21.8	21.7

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LTE Band 13

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23230 782 MHz
LTE Band 13	10	QPSK	1	0	0	24.2
			1	25	0	24.2
			1	49	0	24.0
			25	0	1	22.8
			25	12	1	22.8
			25	25	1	22.9
			50	0	1	22.9
		16QAM	1	0	1	22.7
			1	25	1	22.6
			1	49	1	22.6
			25	0	2	21.7
			25	12	2	21.7
			25	25	2	21.7
			50	0	2	21.6
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23230 782 MHz
LTE Band 13	5	QPSK	1	0	0	24.0
			1	12	0	24.0
			1	24	0	24.0
			12	0	1	22.7
			12	7	1	22.8
			12	13	1	22.8
			25	0	1	22.7
		16QAM	1	0	1	22.7
			1	12	1	23.0
			1	24	1	22.9
			12	0	2	21.5
			12	7	2	21.6
			12	13	2	21.6
			25	0	2	21.4

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LTE Band 17

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23790 710 MHz
LTE Band 17	10	QPSK	1	0	0	23.9
			1	25	0	24.0
			1	49	0	23.9
			25	0	1	22.8
			25	12	1	22.8
			25	25	1	22.7
			50	0	1	22.8
		16QAM	1	0	1	22.5
			1	25	1	22.5
			1	49	1	22.4
			25	0	2	21.8
			25	12	2	21.8
			25	25	2	21.8
			50	0	2	21.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23790 710 MHz
LTE Band 17	5	QPSK	1	0	0	23.9
			1	12	0	24.1
			1	24	0	23.8
			12	0	1	22.8
			12	7	1	22.8
			12	13	1	22.6
			25	0	1	22.7
		16QAM	1	0	1	22.6
			1	12	1	22.9
			1	24	1	22.5
			12	0	2	21.8
			12	7	2	21.8
			12	13	2	21.7
			25	0	2	21.7

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LTE Band 25

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26140	26365	26590
						1860 MHz	1882.5 MHz	1905 MHz
LTE Band 25	20	QPSK	1	0	0	23.4	23.4	23.38
			1	49	0	23.24	23.37	23.38
			1	99	0	23.13	23.39	23.35
			50	0	1	22.35	22.19	22.32
			50	24	1	22.34	22.18	22.36
			50	50	1	22.29	22.26	22.35
			100	0	1	22.32	22.26	22.37
		16QAM	1	0	1	22.38	22.35	22.4
			1	49	1	22.4	22.16	22.4
			1	99	1	22.13	22.17	22.35
			50	0	2	21.23	21.03	21.18
			50	24	2	21.16	21.02	21.29
			50	50	2	21.17	21.15	21.21
			100	0	2	21.17	21.16	21.3

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26115	26365	26615
						1857.5 MHz	1882.5 MHz	1907.5 MHz
LTE Band 25	15	QPSK	1	0	0	23.4	23.4	23.39
			1	37	0	23.19	23.4	23.38
			1	74	0	23.22	23.34	23.26
			36	0	1	22.11	22.12	22.31
			36	20	1	22.12	22.28	22.32
			36	39	1	22.15	22.2	22.22
			75	0	1	22.16	22.16	22.35
		16QAM	1	0	1	22.35	22.35	22.38
			1	37	1	22.12	22.4	22.34
			1	74	1	22.07	22.33	22.26
			36	0	2	20.98	21.01	21.16
			36	20	2	21.01	21.11	21.19
			36	39	2	21	21.06	21.13
			75	0	2	21.01	21.01	21.22

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26090	26365	26640
						1855 MHz	1882.5 MHz	1910 MHz
LTE Band 25	10	QPSK	1	0	0	23.32	23.28	23.4
			1	25	0	23.36	23.07	23.25
			1	49	0	23.31	23.09	23.09
			25	0	1	22.02	22.02	21.9
			25	12	1	22.16	22.15	21.94
			25	25	1	22.03	21.97	21.94
			50	0	1	22.07	21.99	22
		16QAM	1	0	1	22.35	22.28	22.3
			1	25	1	22.19	22.15	22.15
			1	49	1	22.27	22.16	22.28
			25	0	2	20.76	20.86	20.65
			25	12	2	20.98	20.93	20.83
			25	25	2	20.84	20.81	20.89
			50	0	2	20.86	20.83	20.88

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26065	26365	26665
						1852.5 MHz	1882.5 MHz	1912.5 MHz
LTE Band 25	5	QPSK	1	0	0	23.35	23.39	23.18
			1	12	0	23.19	23.06	23.2
			1	24	0	23.36	23.27	23.03
			12	0	1	22.04	22	21.95
			12	7	1	22	21.99	22
			12	13	1	22.04	22.05	22.03
			25	0	1	21.98	22.02	22.08
		16QAM	1	0	1	22.35	22.13	21.86
			1	12	1	22.4	22.09	21.97
			1	24	1	22.4	22.03	21.89
			12	0	2	20.99	20.86	20.79
			12	7	2	21.01	20.96	20.84
			12	13	2	21	20.96	20.88
			25	0	2	20.92	20.94	20.94

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26055	26365	26675
						1851.5 MHz	1882.5 MHz	1913.5 MHz
LTE Band 25	3	QPSK	1	0	0	23.29	23.2	23.23
			1	8	0	23.3	23.33	23.4
			1	14	0	23.18	23.24	23.07
			8	0	1	22.04	22.07	21.98
			8	4	1	22.18	22.03	21.98
			8	7	1	22.05	21.98	21.88
			15	0	1	22.14	21.97	22.01
		16QAM	1	0	1	22.26	22.24	22.3
			1	8	1	22.35	22.2	22.38
			1	14	1	22.36	22.4	22.16
			8	0	2	20.92	20.85	20.71
			8	4	2	20.97	20.87	20.74
			8	7	2	20.88	20.8	20.69
			15	0	2	20.85	20.9	20.73

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26047	26365	26683
						1850.7 MHz	1882.5 MHz	1914.3 MHz
LTE Band 25	1.4	QPSK	1	0	0	23.4	23.33	23.03
			1	3	0	23.4	23.3	23.17
			1	5	0	23.4	23.22	22.97
			3	0	0	23.17	23.24	22.93
			3	1	0	23.2	23.25	22.97
			3	3	0	23.19	23.19	22.98
			6	0	1	22.04	22.01	21.96
		16QAM	1	0	1	22.3	22.25	21.92
			1	3	1	22.24	22.38	22.11
			1	5	1	22.26	22.28	21.81
			3	0	1	21.82	22.01	21.81
			3	1	1	21.89	21.97	21.8
			3	3	1	21.89	21.94	21.86
			6	0	2	20.78	20.8	20.77

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LTE Band 26

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26765	26865	26965
						831.5 MHz	836.5 MHz	841.5 MHz
LTE Band 26	15	QPSK	1	0	0	23.8	23.9	23.9
			1	37	0	24.1	23.9	23.8
			1	74	0	23.6	23.7	23.7
			36	0	1	22.8	22.7	22.6
			36	20	1	22.8	22.7	22.8
			36	39	1	22.8	22.7	22.6
			75	0	1	22.7	22.7	22.7
		16QAM	1	0	1	22.6	22.9	22.7
			1	37	1	22.6	22.8	22.5
			1	74	1	22.4	22.6	22.2
			36	0	2	21.7	21.8	21.6
			36	20	2	21.7	21.7	21.8
			36	39	2	21.7	21.7	21.5
			75	0	2	21.7	21.8	21.6

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26740	26865	26990
						819 MHz	831.5 MHz	844 MHz
LTE Band 26	10	QPSK	1	0	0	23.8	23.8	23.6
			1	25	0	23.9	23.6	23.7
			1	49	0	23.7	23.6	23.4
			25	0	1	22.6	22.6	22.3
			25	12	1	22.6	22.6	22.3
			25	25	1	22.5	22.5	22.2
			50	0	1	22.5	22.6	22.4
		16QAM	1	0	1	22.7	22.8	22.3
			1	25	1	22.6	22.2	22.7
			1	49	1	22.6	22.4	22.7
			25	0	2	21.5	21.5	21.4
			25	12	2	21.6	21.5	21.4
			25	25	2	21.4	21.4	21.4
			50	0	2	21.4	21.4	21.4

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26715	26865	27015
						816.5 MHz	831.5 MHz	846.5 MHz
LTE Band 26	5	QPSK	1	0	0	23.8	23.7	23.8
			1	12	0	23.7	23.7	23.7
			1	24	0	23.6	23.5	23.7
			12	0	1	22.7	22.5	22.8
			12	7	1	22.7	22.5	22.8
			12	13	1	22.5	22.6	22.7
			25	0	1	22.5	22.6	22.7
		16QAM	1	0	1	22.7	22.3	22.8
			1	12	1	23.2	22.4	23.1
			1	24	1	22.6	22.3	22.7
			12	0	2	21.6	21.4	21.7
			12	7	2	21.6	21.4	21.7
			12	13	2	21.3	21.4	21.7
			25	0	2	21.4	21.5	21.6

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26705	26865	27025
						815.5 MHz	831.5 MHz	847.5 MHz
LTE Band 26	3	QPSK	1	0	0	23.9	23.8	23.4
			1	8	0	23.9	24.0	23.7
			1	14	0	23.6	23.7	23.3
			8	0	1	22.8	22.8	22.4
			8	4	1	22.9	22.8	22.4
			8	7	1	22.7	22.8	22.4
			15	0	1	22.8	22.7	22.4
		16QAM	1	0	1	23.0	22.7	22.8
			1	8	1	23.0	22.7	22.3
			1	14	1	22.8	22.5	22.6
			8	0	2	21.8	21.8	21.3
			8	4	2	21.8	21.8	21.3
			8	7	2	21.8	21.8	21.3
			15	0	2	21.9	21.7	21.4

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						26697	26865	27033
						814.7 MHz	831.5 MHz	848.3 MHz
LTE Band 26	1.4	QPSK	1	0	0	24.0	23.7	23.6
			1	3	0	24.0	23.7	23.5
			1	5	0	23.9	23.7	23.5
			3	0	0	23.8	23.7	23.3
			3	1	0	23.8	23.7	23.3
			3	3	0	23.7	23.7	23.3
			6	0	1	22.8	22.7	22.4
		16QAM	1	0	1	23.0	22.4	22.7
			1	3	1	22.9	22.7	22.5
			1	5	1	23.0	22.4	22.5
			3	0	1	22.6	22.5	22.3
			3	1	1	22.5	22.6	22.2
			3	3	1	22.4	22.5	22.2
			6	0	2	21.9	21.8	21.4

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LTE Band 41

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						39750	40620	41490
						2506 MHz	2593 MHz	2680 MHz
LTE Band 41	20	QPSK	1	0	0	22.8	23.2	23.1
			1	49	0	22.9	23.0	23.0
			1	99	0	22.8	23.1	22.8
			50	0	1	21.8	21.7	21.7
			50	24	1	21.8	21.7	21.7
			50	50	1	21.7	21.7	21.7
			100	0	1	21.8	21.6	21.7
		16QAM	1	0	1	22.1	21.7	21.7
			1	49	1	22.0	21.6	21.6
			1	99	1	21.8	21.5	21.4
			50	0	2	20.7	20.7	20.8
			50	24	2	20.7	20.7	20.7
			50	50	2	20.7	20.7	20.6
			100	0	2	20.8	20.8	20.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						39725	40620	41515
						2503.5 MHz	2593 MHz	2682.5 MHz
LTE Band 41	15	QPSK	1	0	0	22.9	22.6	23.0
			1	37	0	22.8	22.7	22.8
			1	74	0	22.9	22.6	22.7
			36	0	1	21.7	21.7	21.7
			36	20	1	21.8	21.7	21.7
			36	39	1	21.7	21.6	21.5
			75	0	1	21.7	21.6	21.6
		16QAM	1	0	1	22.0	21.6	21.6
			1	37	1	21.8	21.4	21.5
			1	74	1	21.7	21.4	21.3
			36	0	2	20.7	20.8	20.7
			36	20	2	20.8	20.7	20.6
			36	39	2	20.7	20.6	20.5
			75	0	2	20.6	20.6	20.6

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						39700	40620	41540
						2501 MHz	2593 MHz	2685 MHz
LTE Band 41	10	QPSK	1	0	0	23.1	22.8	22.8
			1	25	0	22.9	22.7	22.6
			1	49	0	23.1	22.6	22.6
			25	0	1	21.7	21.4	21.4
			25	12	1	21.7	21.5	21.5
			25	25	1	21.7	21.6	21.3
			50	0	1	21.7	21.5	21.4
		16QAM	1	0	1	21.5	21.6	21.6
			1	25	1	21.4	21.8	21.8
			1	49	1	21.7	21.7	21.6
			25	0	2	20.5	20.5	20.5
			25	12	2	20.7	20.7	20.5
			25	25	2	20.8	20.6	20.3
			50	0	2	20.7	20.5	20.4

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						39675	40620	41565
						2498.5 MHz	2593 MHz	2687.5 MHz
LTE Band 41	5	QPSK	1	0	0	23.0	22.6	23.2
			1	12	0	22.6	22.7	22.7
			1	24	0	23.0	22.9	22.9
			12	0	1	21.5	21.5	21.5
			12	7	1	21.6	21.5	21.4
			12	13	1	21.6	21.5	21.4
			25	0	1	21.5	21.5	21.3
		16QAM	1	0	1	21.6	21.6	21.7
			1	12	1	21.4	21.7	21.5
			1	24	1	21.6	21.6	21.7
			12	0	2	20.7	20.5	20.5
			12	7	2	20.6	20.4	20.5
			12	13	2	20.5	20.5	20.4
			25	0	2	20.7	20.4	20.3

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9. PEAK TO AVERAGE RATIO

TEST PROCEDURE

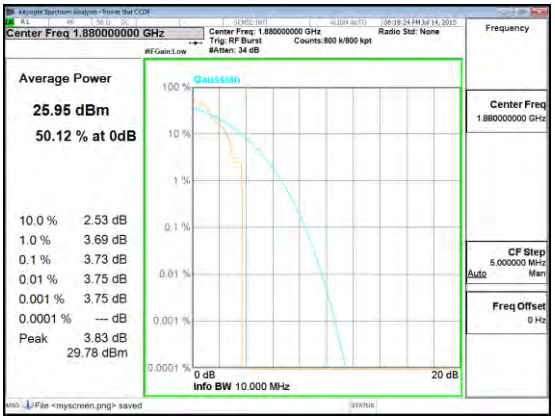
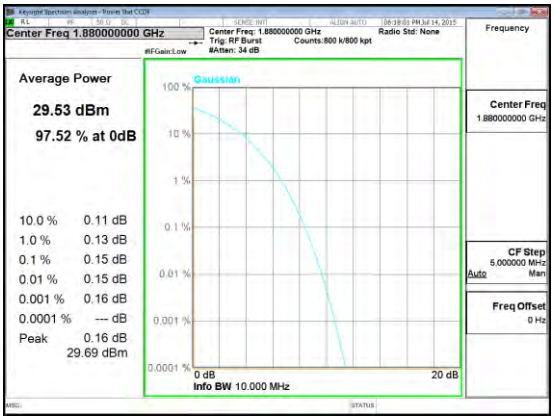
Per KDB 971168 D01 Power Meas License Digital Systems v02r02

TEST SPEC

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

9.1. CONDUCTED PEAK TO AVERAGE RESULT

GSM

Band GSM1900	 Band GSM1900 EGPRS Mid channel	 Band GSM1900 GPRS Mid channel

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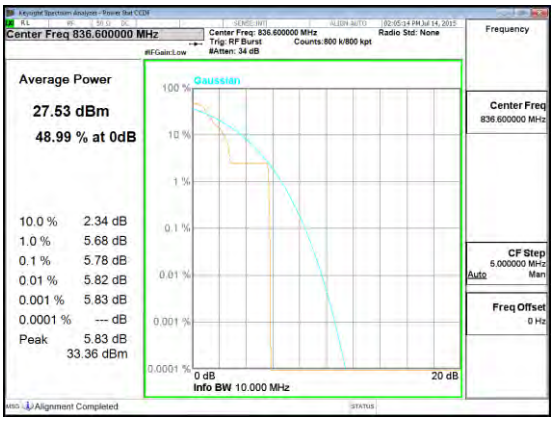
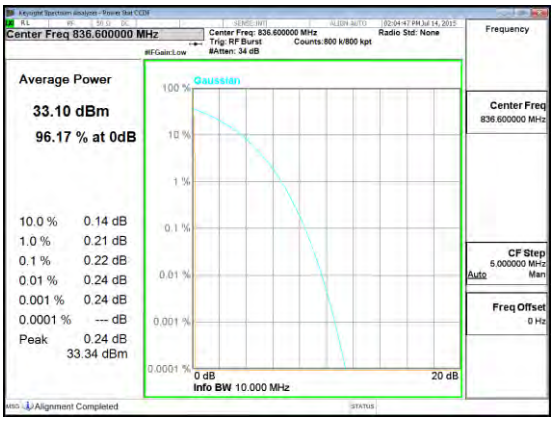
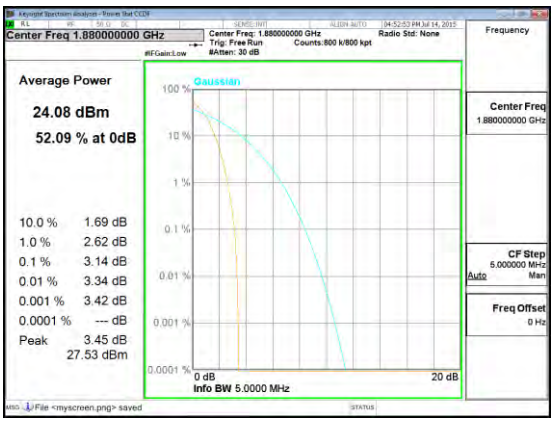
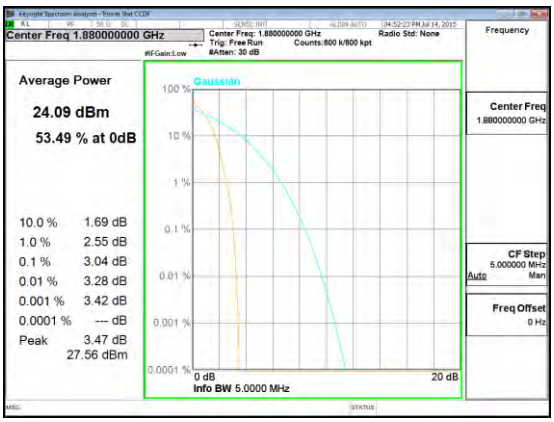
Band GSM850	 Band GSM850 EGPRS Mid channel	 Band GSM850 GPRS Mid channel

WCDMA

Band Band 2	 Band WCDMA B2 HSDPA	 Band WCDMA B2 REL99

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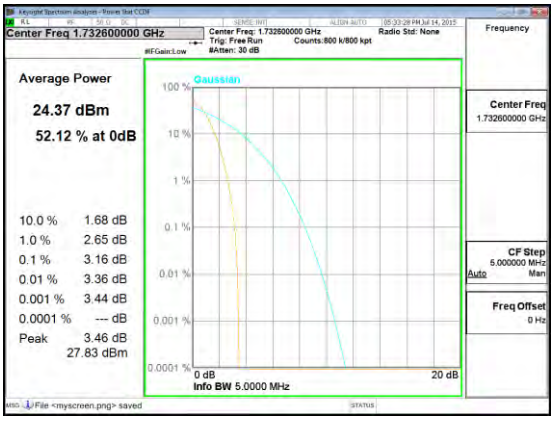
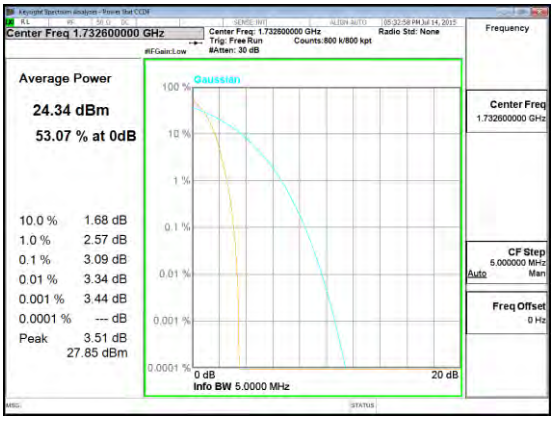
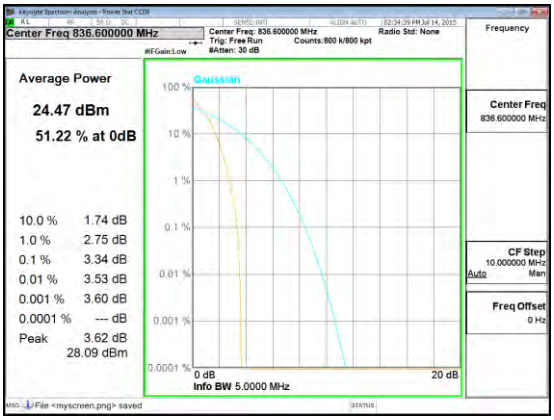
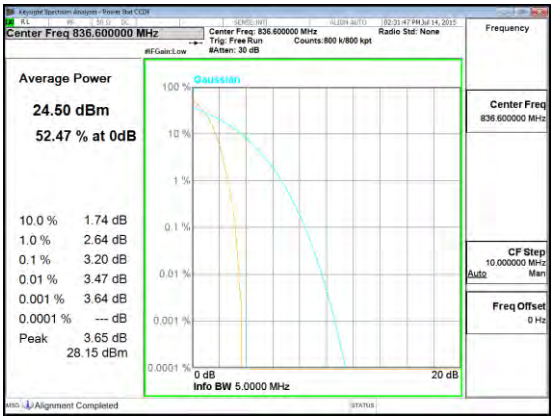
Band Band 4	 Band WCDMA B4 HSDPA	 Band WCDMA B4 REL99
Band Band 5	 Band WCDMA B5 HSDPA	 Band WCDMA B5 REL99

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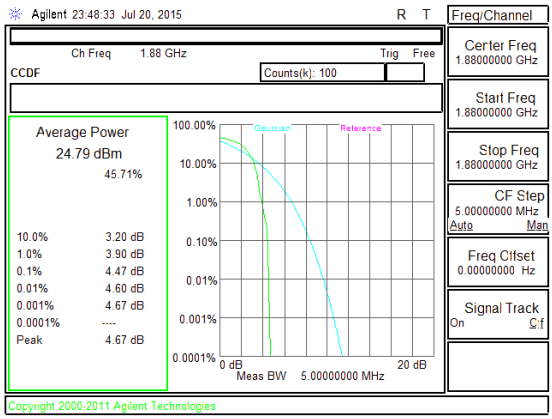
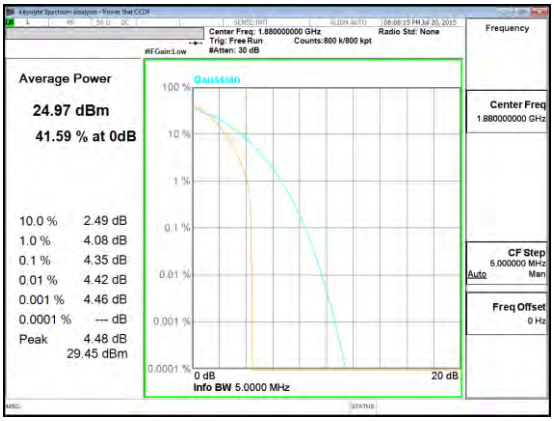
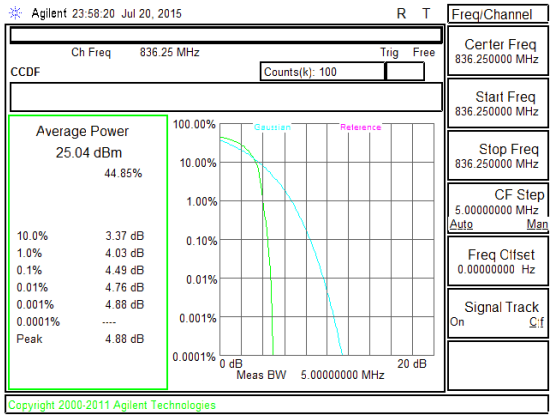
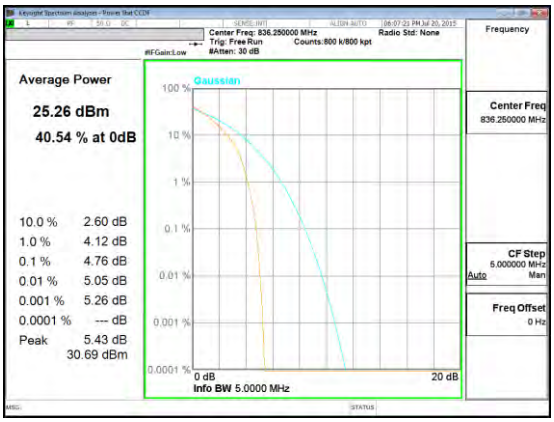
CDMA

Band BC1	 Band BC1 EVDO Rel. 0 Mid channel	 Band BC1 1xRTT Mid channel

Band BC0	 Band BC0 EVDO Rel. 0 Mid channel	 Band BC0 1xRTT Mid channel

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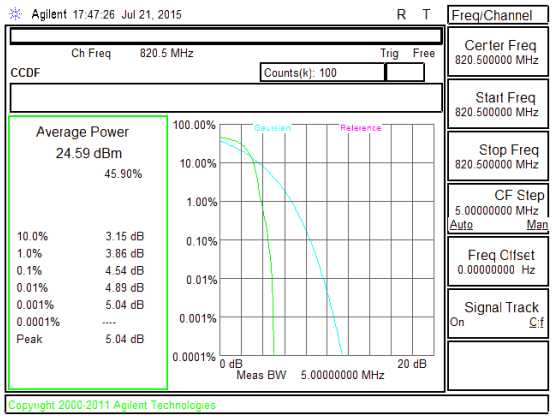
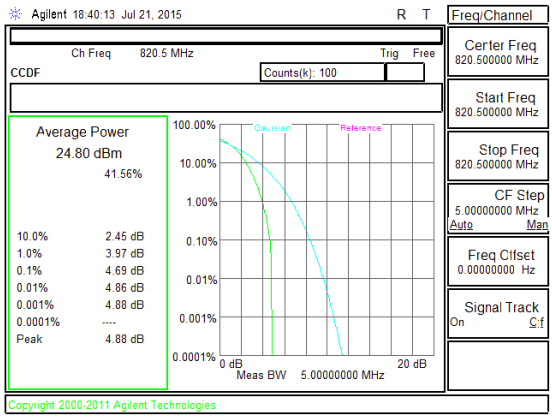
Band BC10	 Band BC10 EVDO Rel. 0 Mid channel	 Band BC10 1xRTT Mid channel

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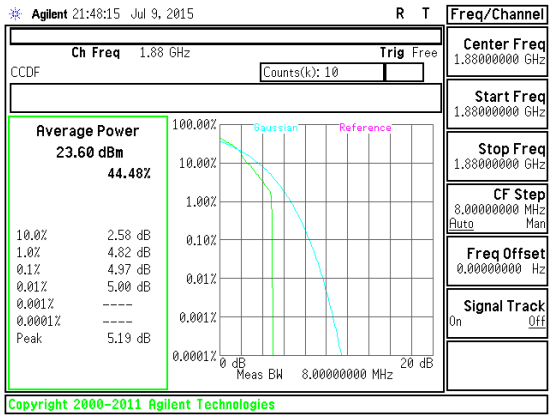
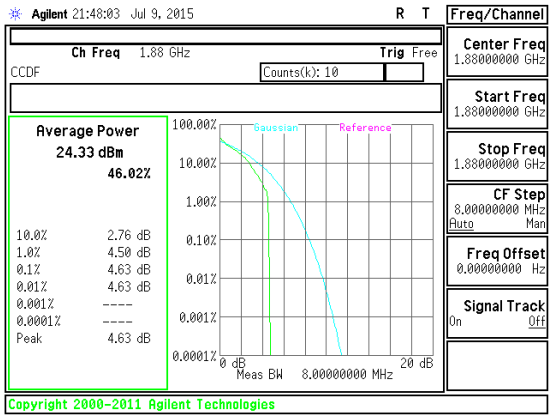
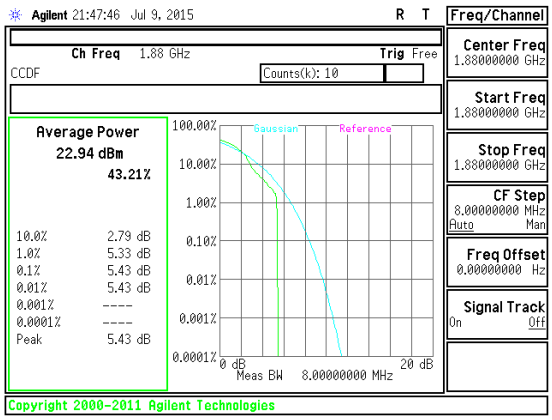
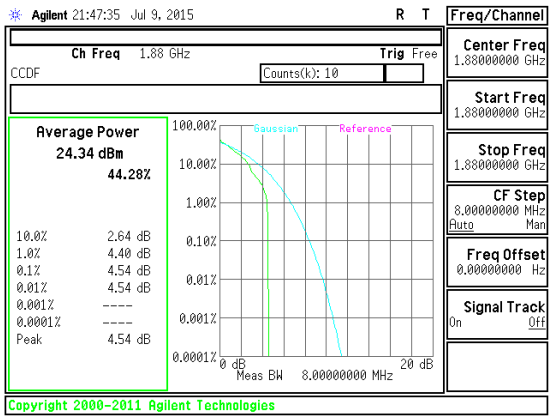
LTE Band 2

Band LTE2 20MHz	 Band LTE2 20MHz 16QAM Mid channel	 Band LTE2 20MHz QPSK Mid channel

Band LTE2 15MHz	 Band LTE2 15MHz 16QAM Mid channel	 Band LTE2 15MHz QPSK Mid channel

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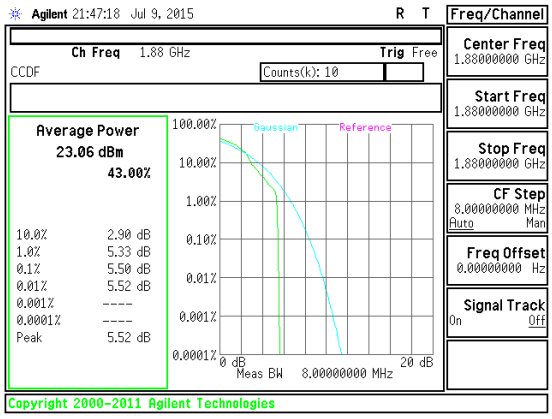
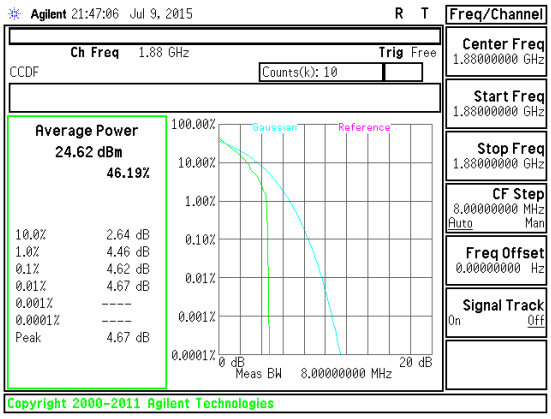
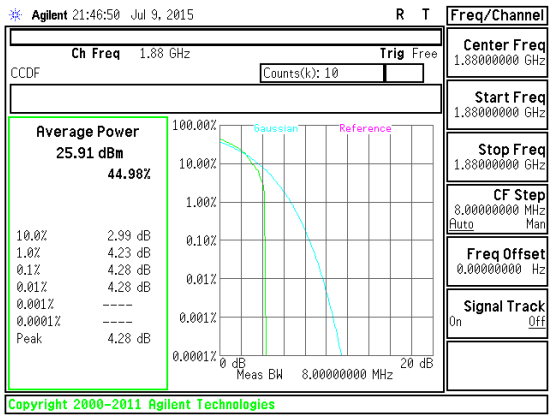
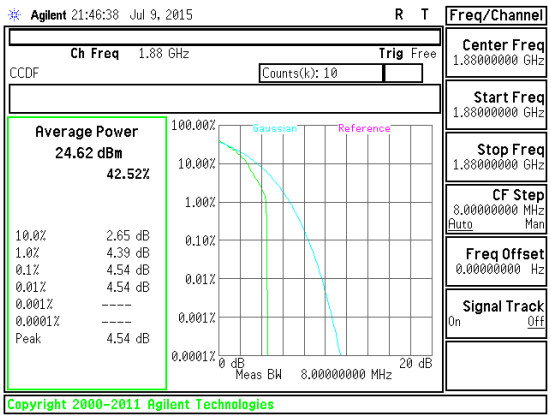
Band LTE2 10MHz	 Band LTE2 10MHz 16QAM Mid channel	 Band LTE2 10MHz QPSK Mid channel

Band LTE2 5MHz	 Band LTE2 5MHz 16QAM Mid channel	 Band LTE2 5MHz QPSK Mid channel

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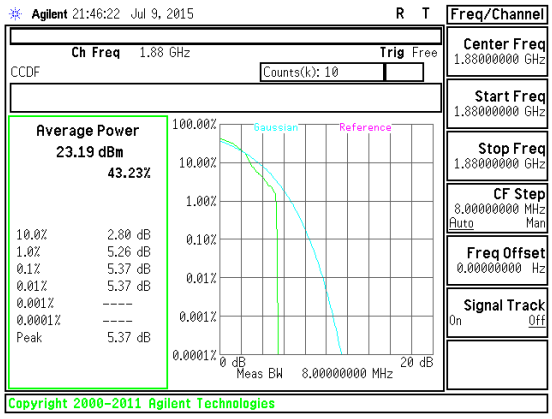
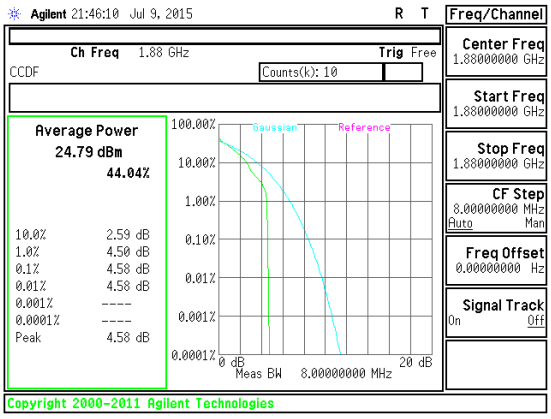
Band LTE2 3MHz

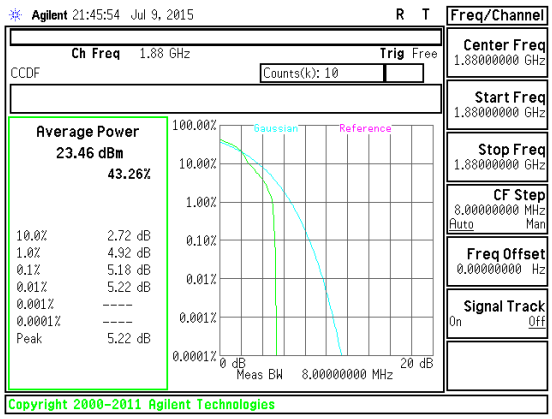


Band LTE2 3MHz 16QAM Mid channel

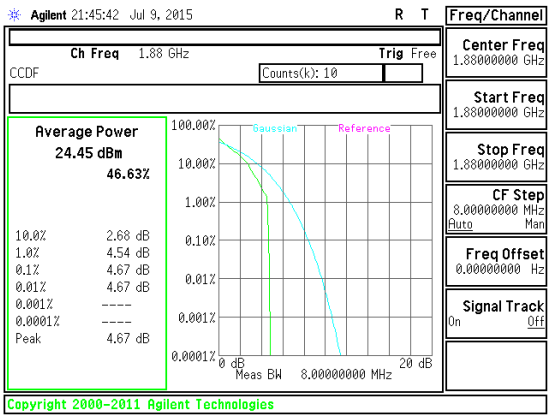


Band LTE2 3MHz QPSK Mid channel

Band LTE2 1.4MHz



Band LTE2 1.4MHz 16QAM Mid channel



Band LTE2 1.4MHz QPSK Mid channel

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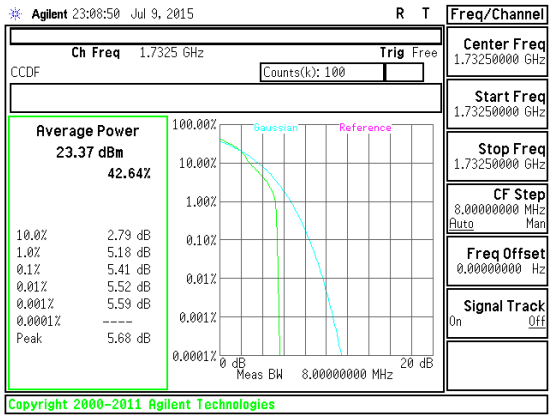
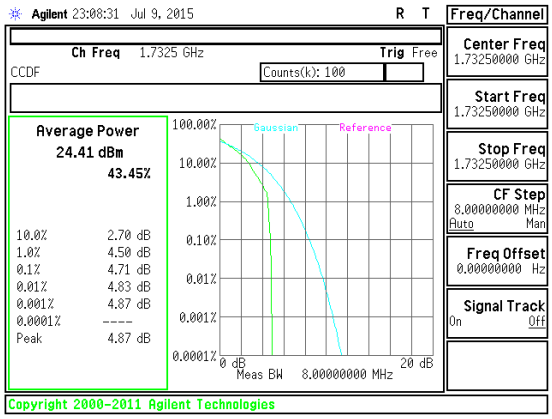
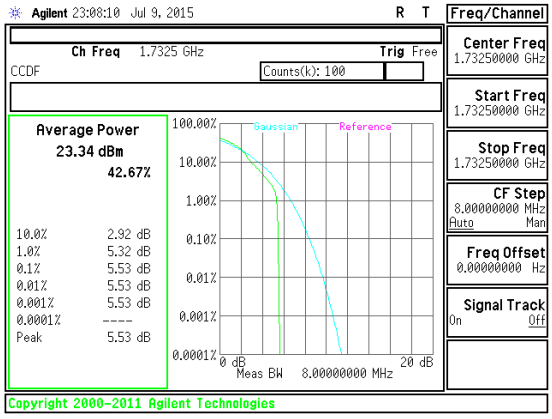
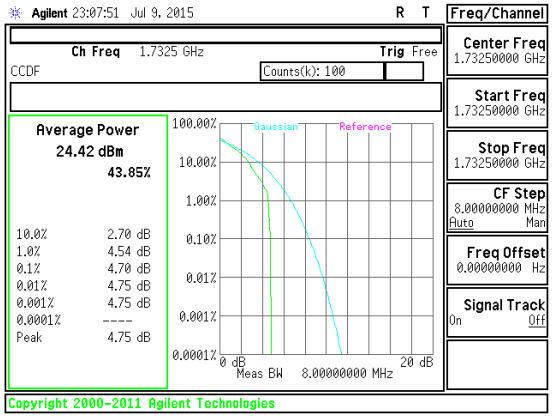
LTE Band 4

Band LTE4 20MHz	 Band LTE4 20MHz 16QAM Mid channel	 Band LTE4 20MHz QPSK Mid channel

Band LTE4 15MHz	 Band LTE4 15MHz 16QAM Mid channel	 Band LTE4 15MHz QPSK Mid channel

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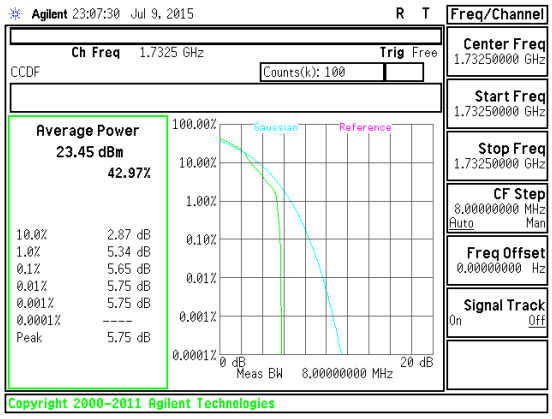
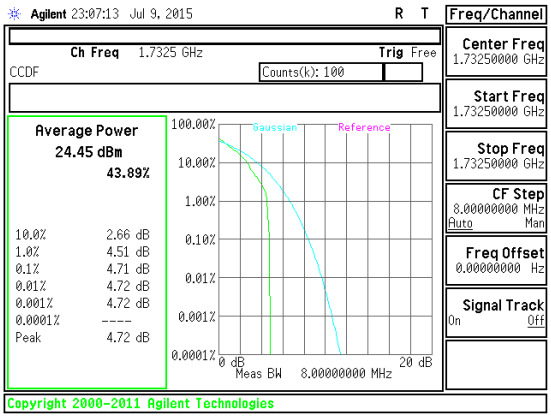
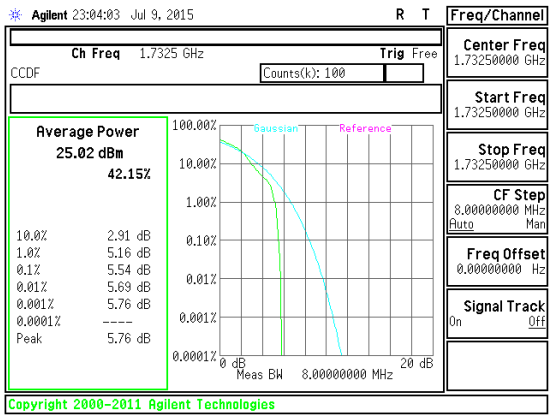
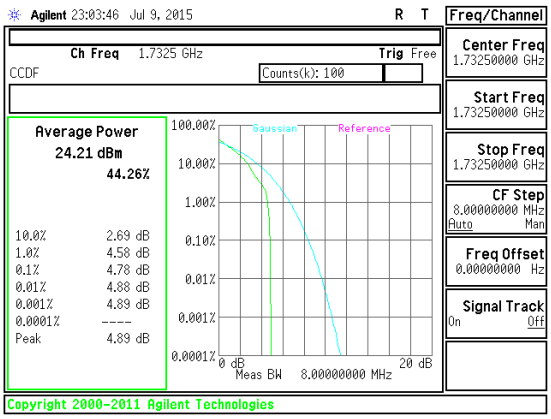
Band LTE4 10MHz	 Band LTE4 10MHz 16QAM Mid channel	 Band LTE4 10MHz QPSK Mid channel

Band LTE4 5MHz	 Band LTE4 5MHz 16QAM Mid channel	 Band LTE4 5MHz QPSK Mid channel

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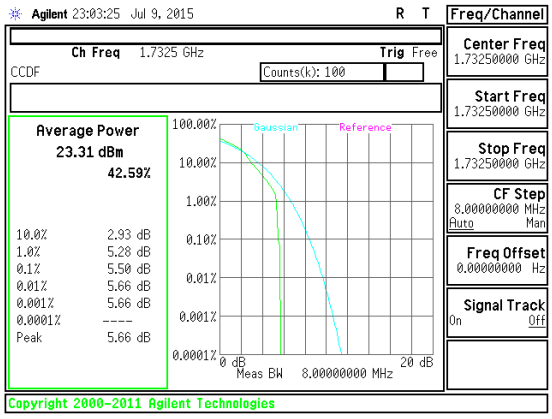
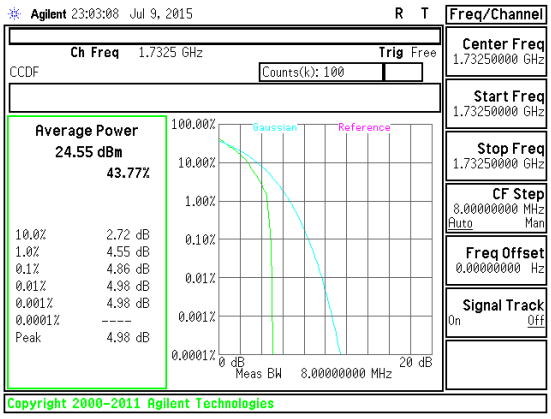
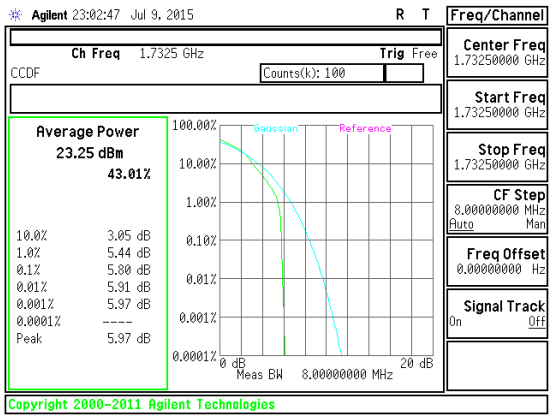
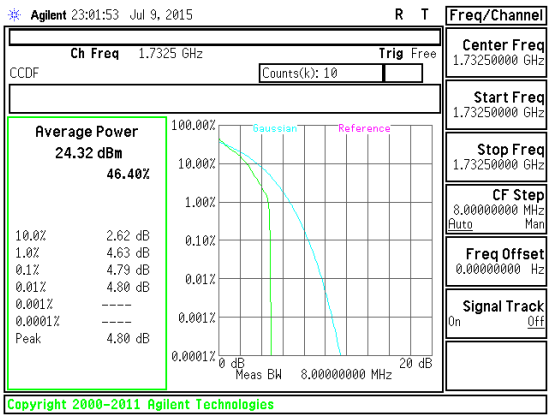
Band LTE4 3MHz	 Band LTE4 3MHz 16QAM Mid channel	 Band LTE4 3MHz QPSK Mid channel

Band LTE4 1.4MHz	 Band LTE4 1.4MHz 16QAM Mid channel	 Band LTE4 1.4MHz QPSK Mid channel

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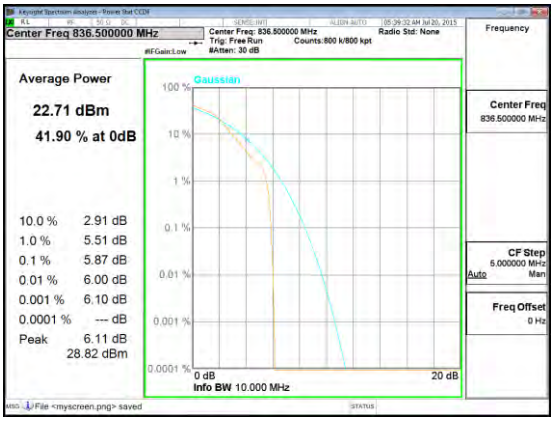
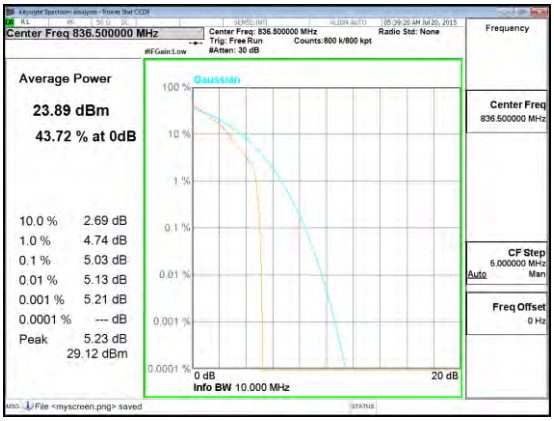
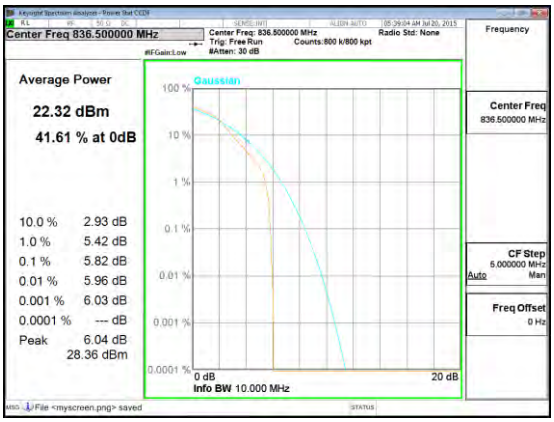
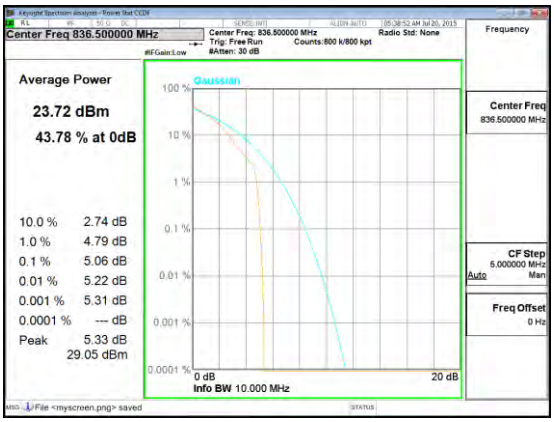
LTE Band 5

Band LTE5 10MHz	 Band LTE5 10MHz 16QAM Mid channel	 Band LTE5 10MHz QPSK Mid channel

Band LTE5 5MHz	 Band LTE5 5MHz 16QAM Mid channel	 Band LTE5 5MHz QPSK Mid channel

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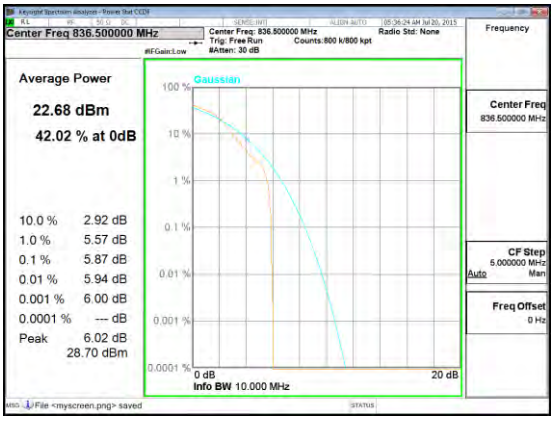
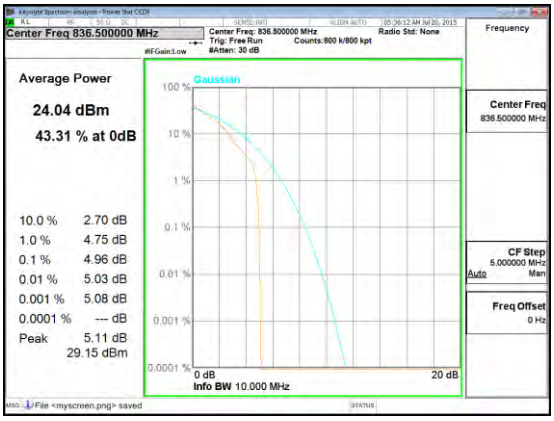
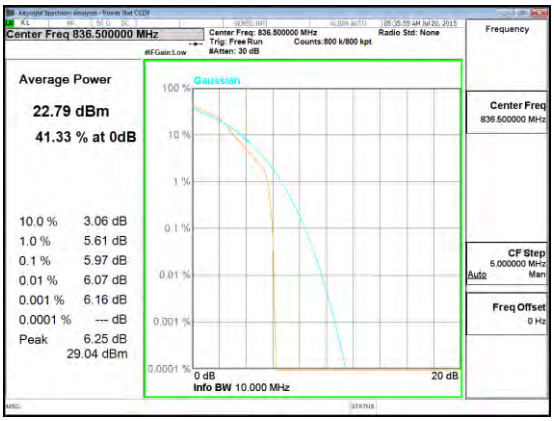
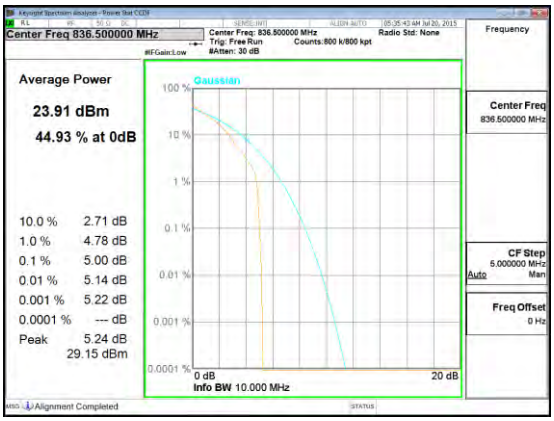
Band LTE5 3MHz	 Band LTE5 3MHz 16QAM Mid channel	 Band LTE5 3MHz QPSK Mid channel

Band LTE5 1.4MHz	 Band LTE5 1.4MHz 16QAM Mid channel	 Band LTE5 1.4MHz QPSK Mid channel

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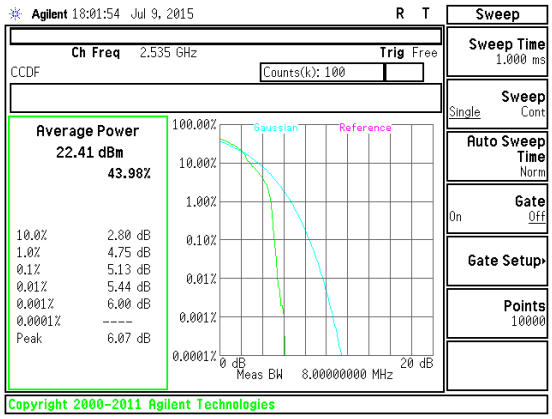
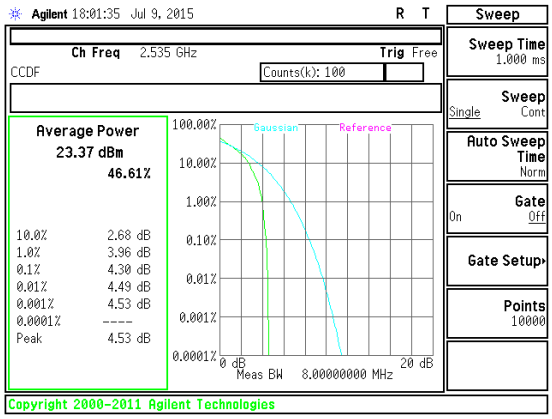
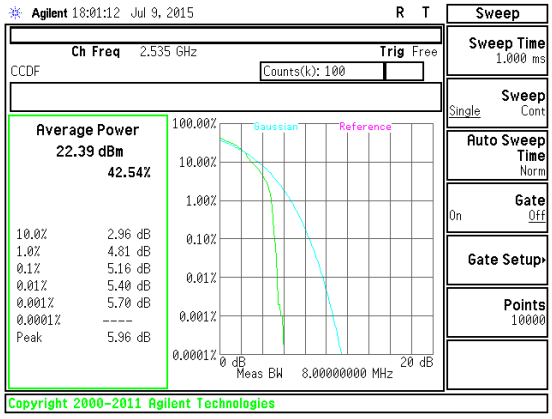
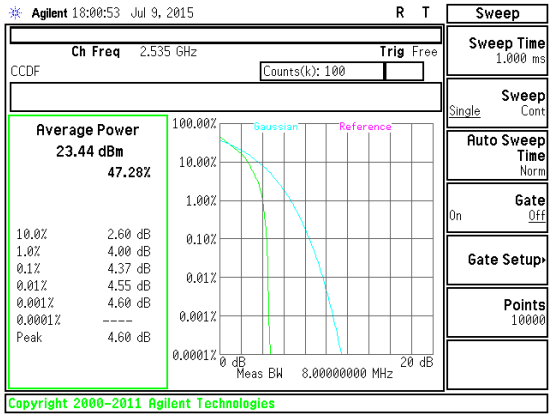
LTE Band 7

Band LTE7 20MHz	 Band LTE7 20MHz 16QAM Mid channel	 Band LTE7 20MHz QPSK Mid channel

Band LTE7 15MHz	 Band LTE7 15MHz 16QAM Mid channel	 Band LTE7 15MHz QPSK Mid channel

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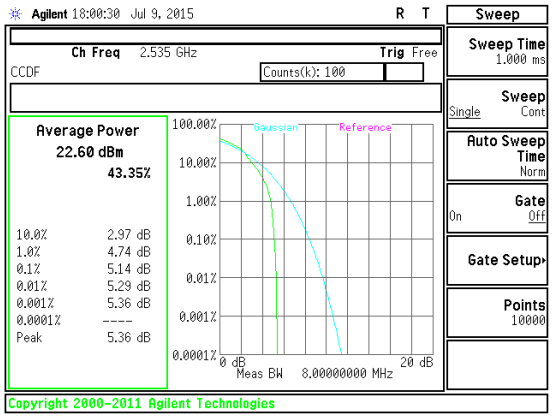
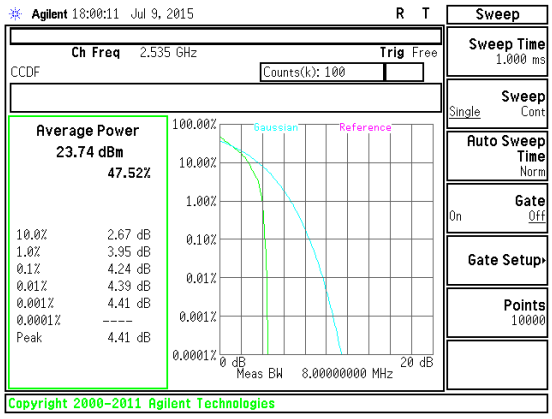
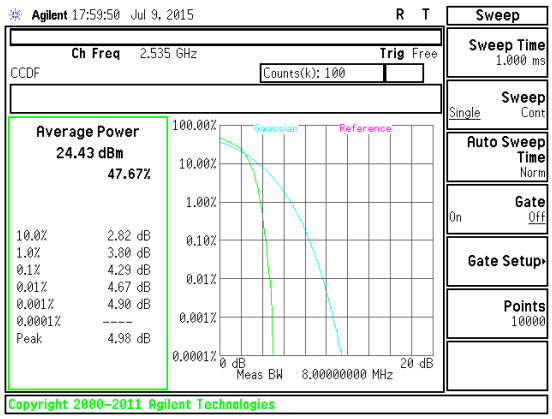
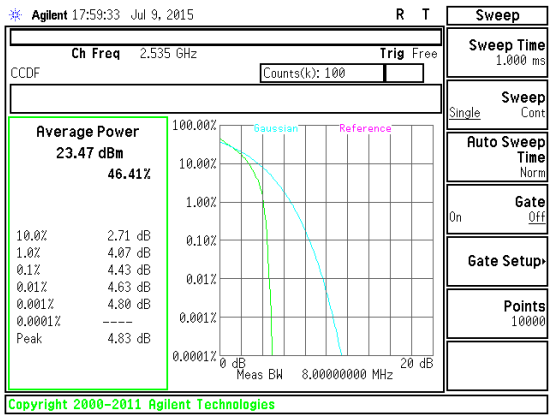
Band LTE7 10MHz	 Band LTE7 10MHz 16QAM Mid channel	 Band LTE7 10MHz QPSK Mid channel

Band LTE7 5MHz	 Band LTE7 5MHz 16QAM Mid channel	 Band LTE7 5MHz QPSK Mid channel

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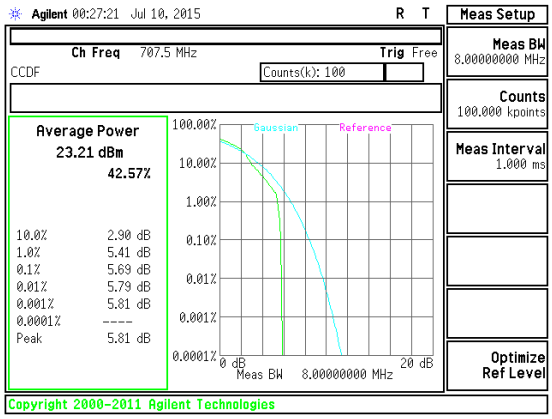
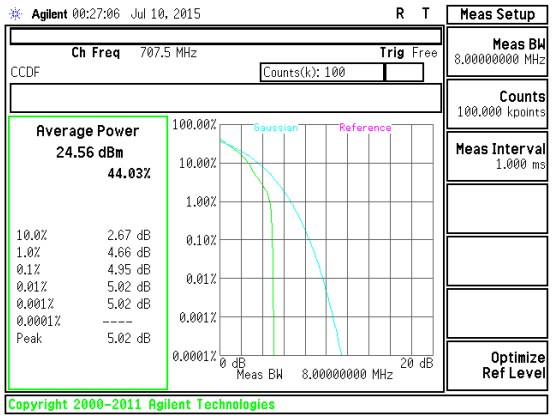
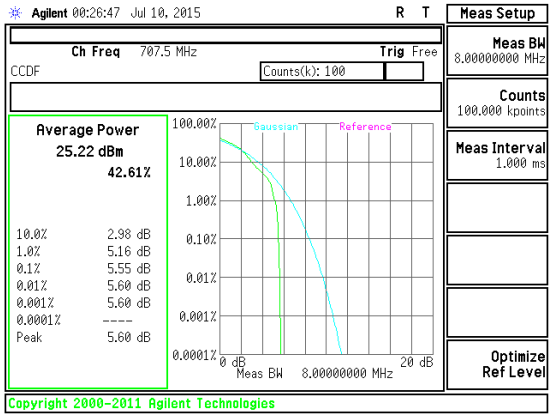
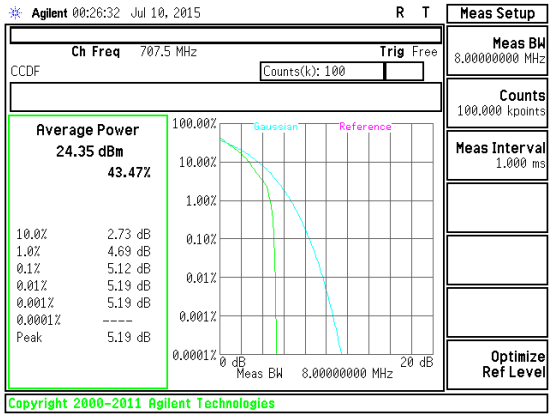
LTE Band 12

Band LTE12 10MHz	 Band LTE12 10MHz 16QAM Mid channel	 Band LTE12 10MHz QPSK Mid channel

Band LTE12 5MHz	 Band LTE12 5MHz 16QAM Mid channel	 Band LTE12 5MHz QPSK Mid channel

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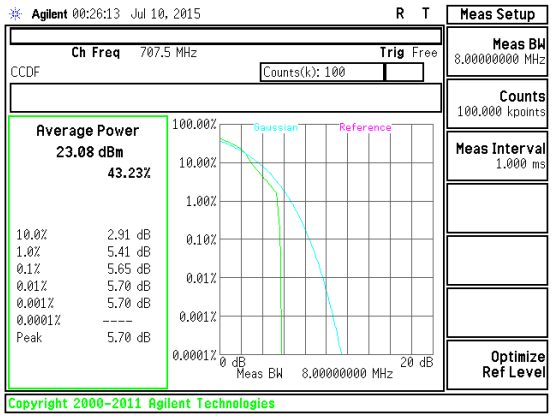
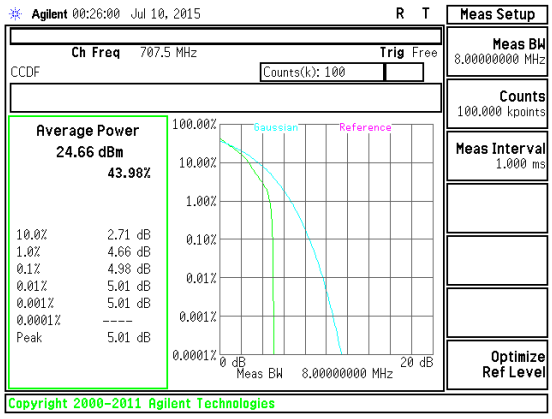
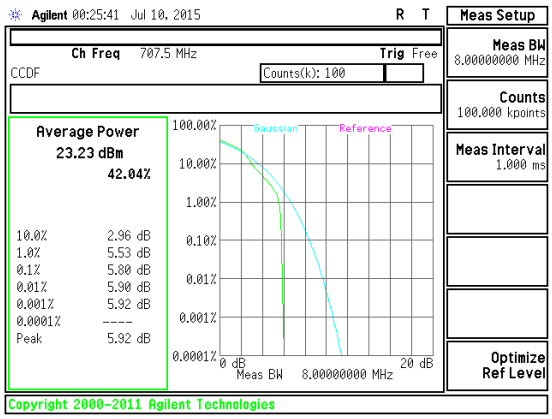
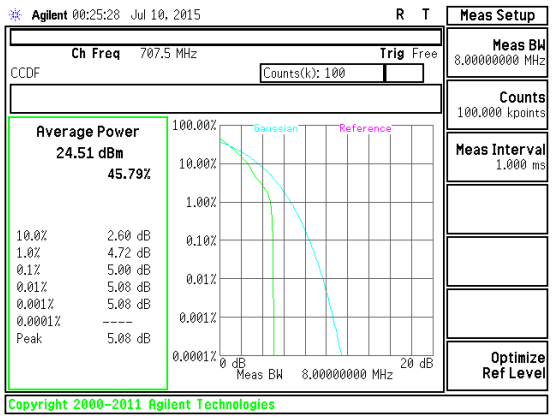
Band LTE12 3MHz	 Band LTE12 3MHz 16QAM Mid channel	 Band LTE12 3MHz QPSK Mid channel

Band LTE12 1.4MHz	 Band LTE12 1.4MHz 16QAM Mid channel	 Band LTE12 1.4MHz QPSK Mid channel

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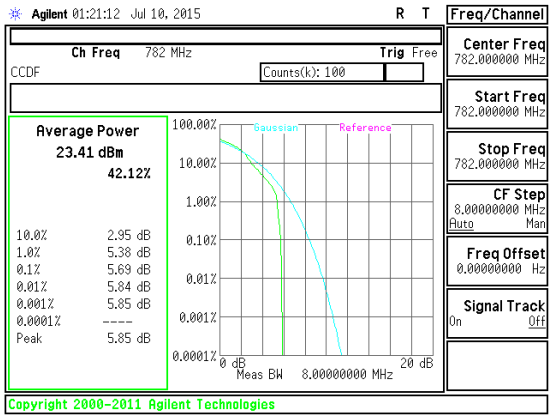
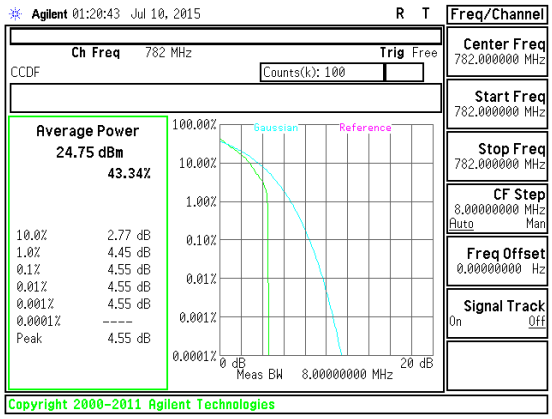
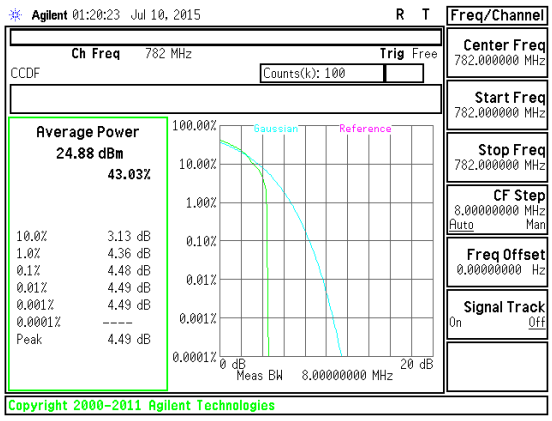
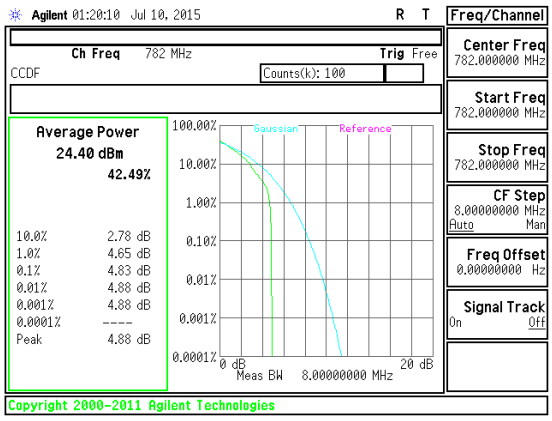
LTE Band 13

Band LTE13 10MHz	 Band LTE13 10MHz 16QAM High channel	 Band LTE13 10MHz QPSK High channel

Band LTE13 5MHz	 Band LTE13 5MHz 16QAM Mid channel	 Band LTE13 5MHz QPSK Mid channel

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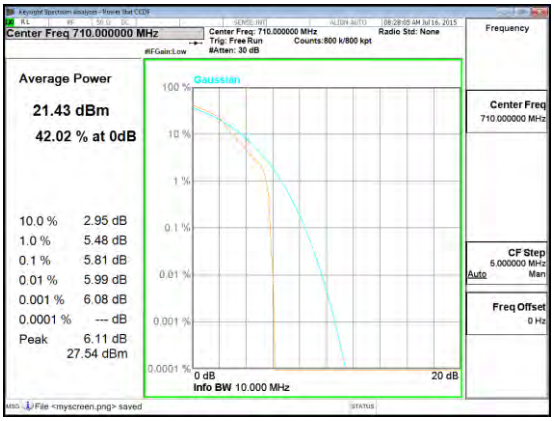
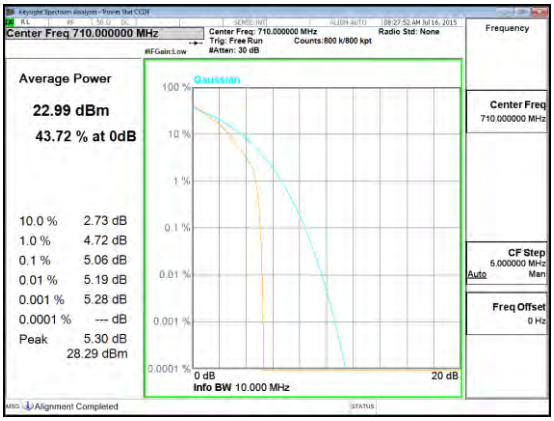
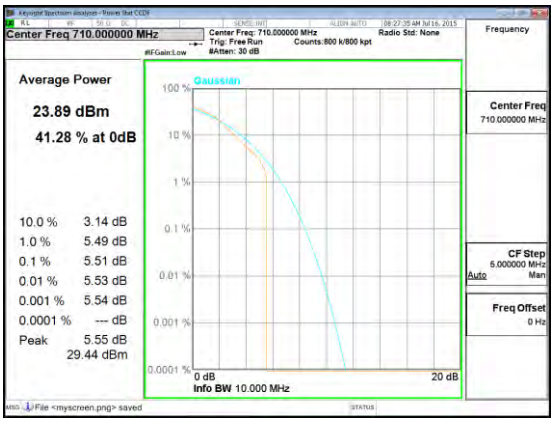
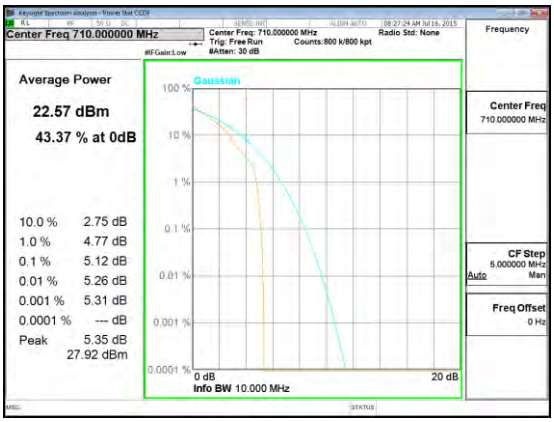
LTE Band 17

Band LTE17 10MHz	 Band LTE17 10MHz 16QAM Mid channel	 Band LTE17 10MHz QPSK Mid channel

Band LTE17 5MHz	 Band LTE17 5MHz 16QAM Mid channel	 Band LTE17 5MHz QPSK Mid channel

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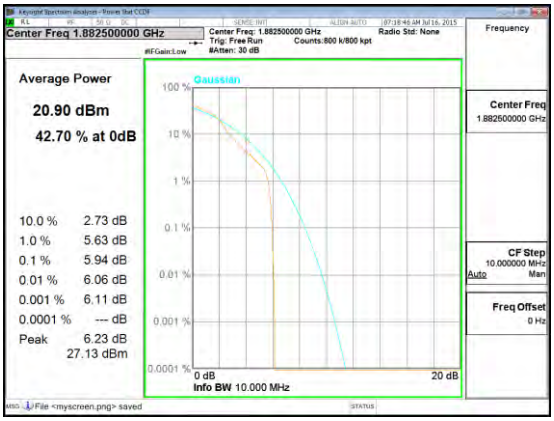
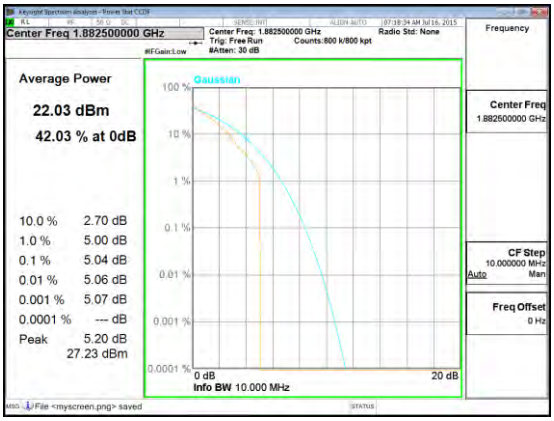
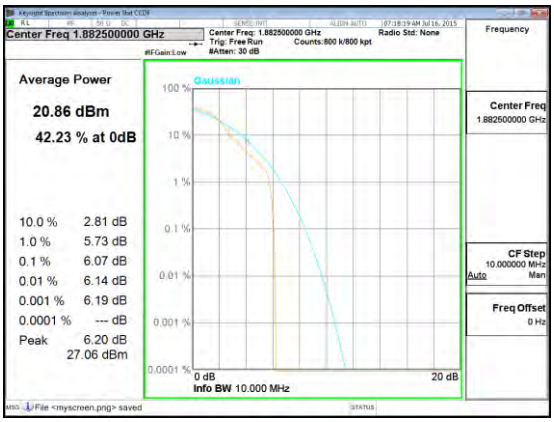
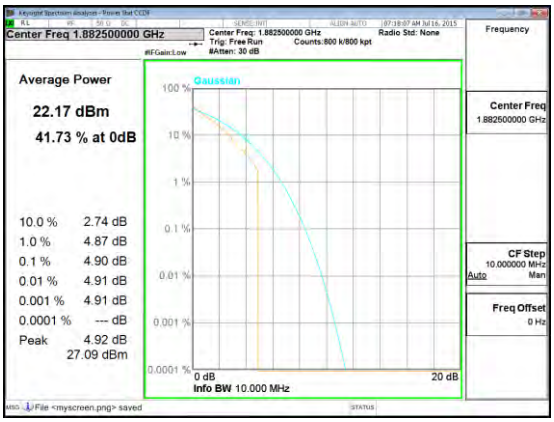
LTE Band 25

Band LTE25 20MHz	 Band LTE25 20MHz 16QAM Mid channel	 Band LTE25 20MHz QPSK Mid channel

Band LTE25 15MHz	 Band LTE25 15MHz 16QAM Mid channel	 Band LTE25 15MHz QPSK Mid channel

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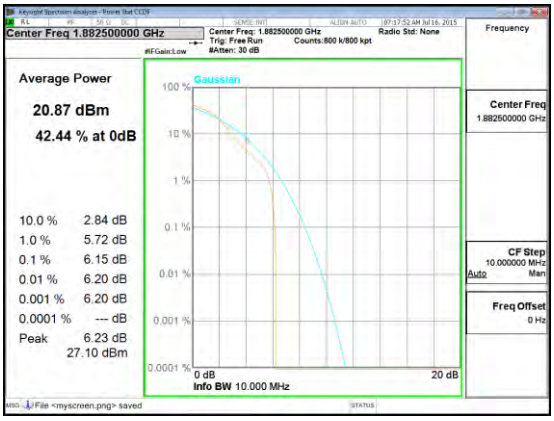
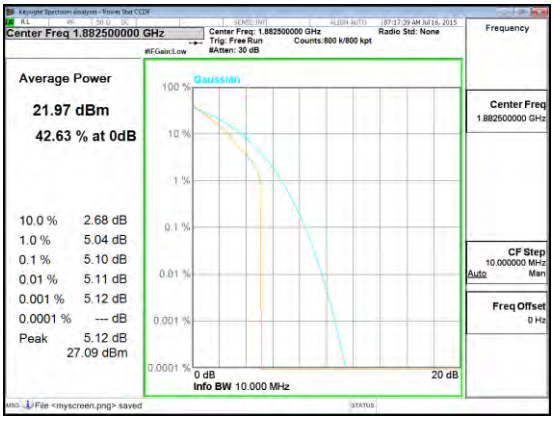
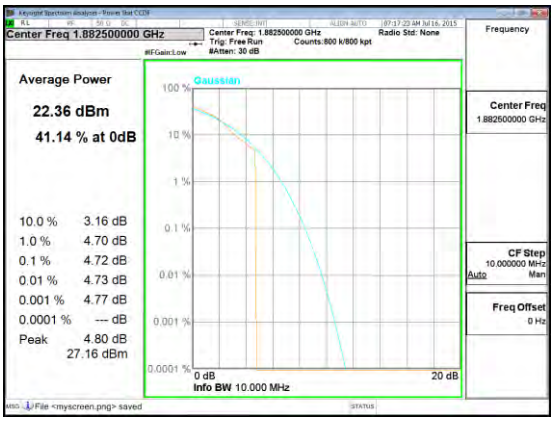
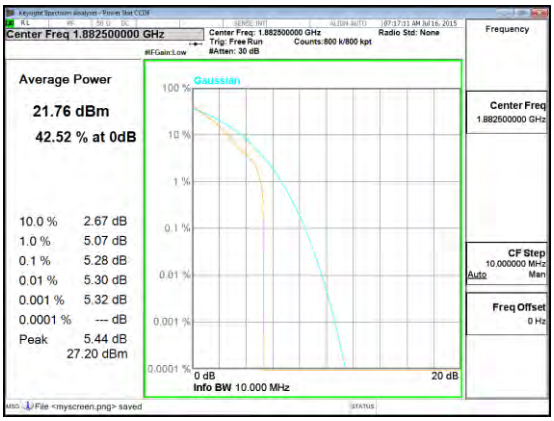
Band LTE25 10MHz	 Band LTE25 10MHz 16QAM Mid channel	 Band LTE25 10MHz QPSK Mid channel

Band LTE25 5MHz	 Band LTE25 5MHz 16QAM Mid channel	 Band LTE25 5MHz QPSK Mid channel

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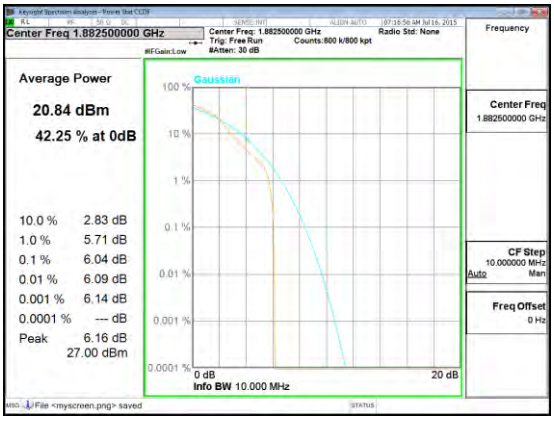
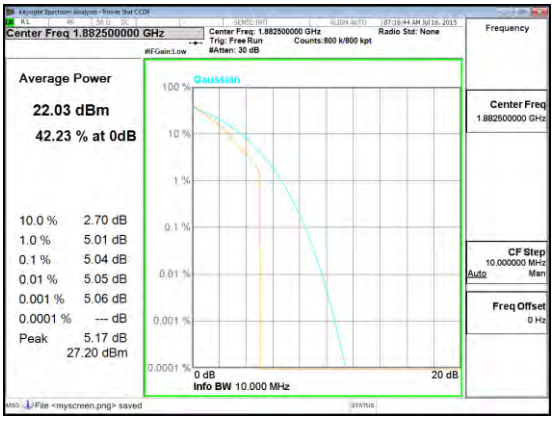
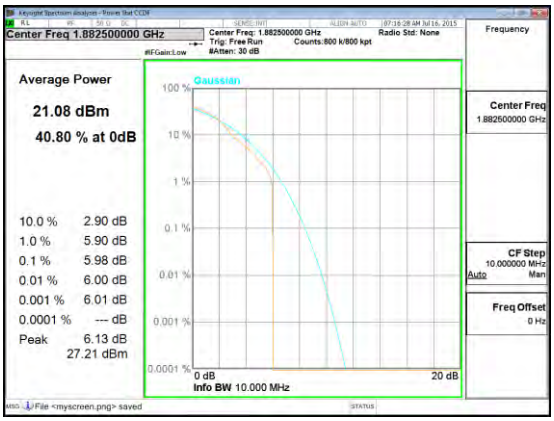
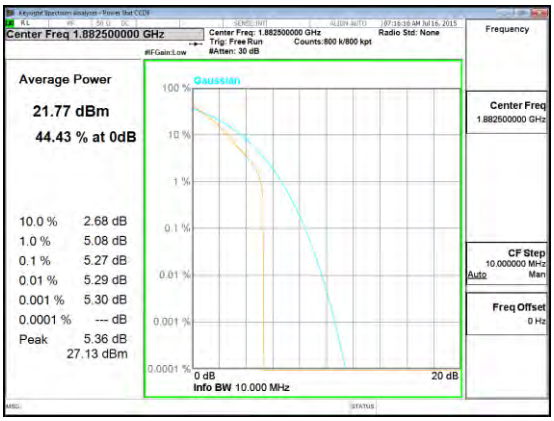
Band LTE25 3MHz	 Band LTE25 3MHz 16QAM Mid channel	 Band LTE25 3MHz QPSK Mid channel

Band LTE25 1.4MHz	 Band LTE25 1.4MHz 16QAM Mid channel	 Band LTE25 1.4MHz QPSK Mid channel

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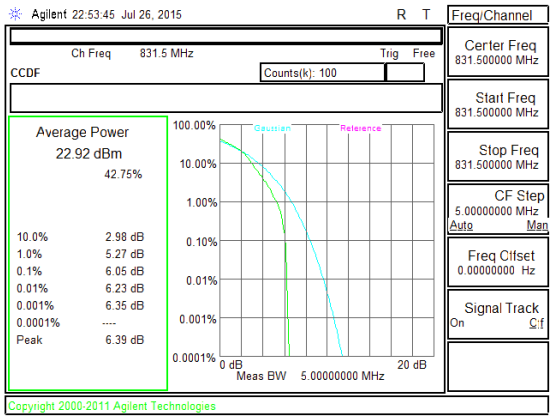
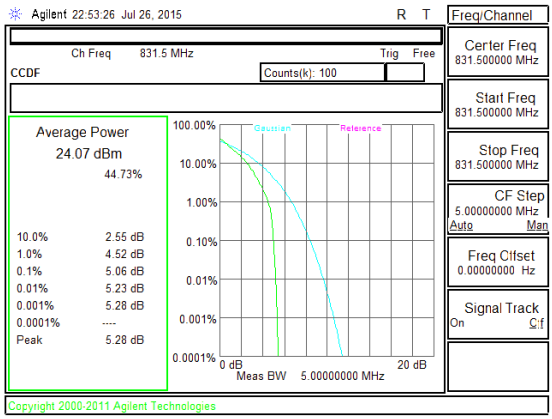
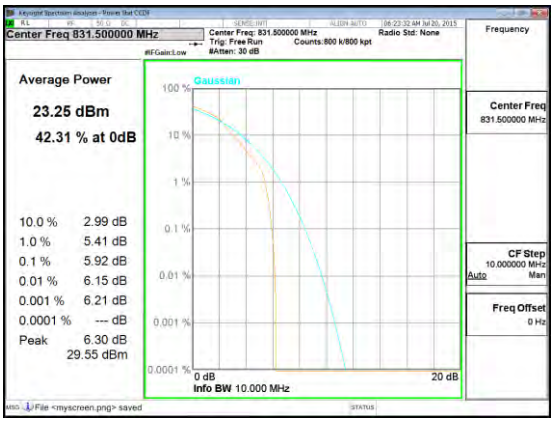
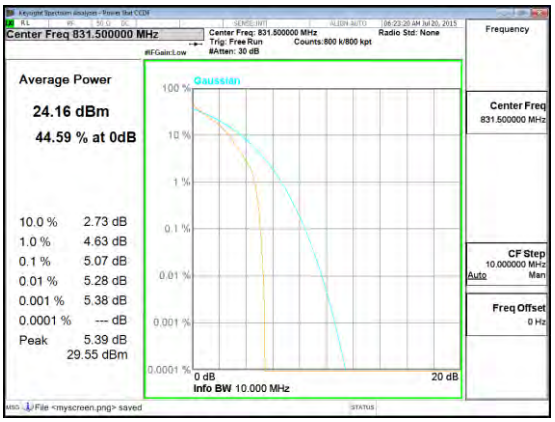
LTE band 26

Band LTE26 15MHz	 Band LTE26 15MHz 16QAM Mid channel	 Band LTE26 15MHz QPSK Mid channel

Band LTE26 10MHz	 Band LTE26 10MHz 16QAM Mid channel	 Band LTE26 10MHz QPSK Mid channel

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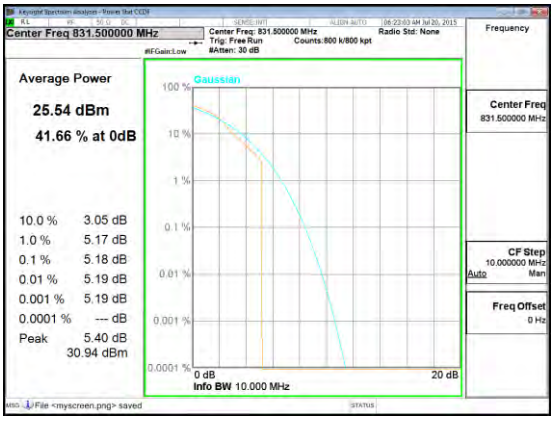
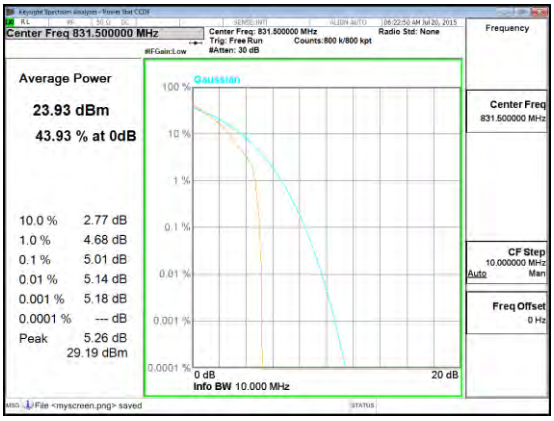
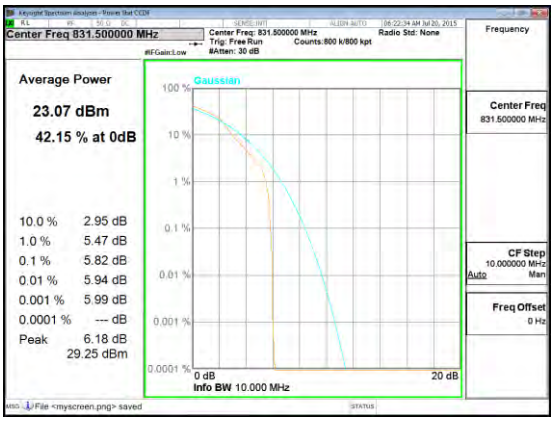
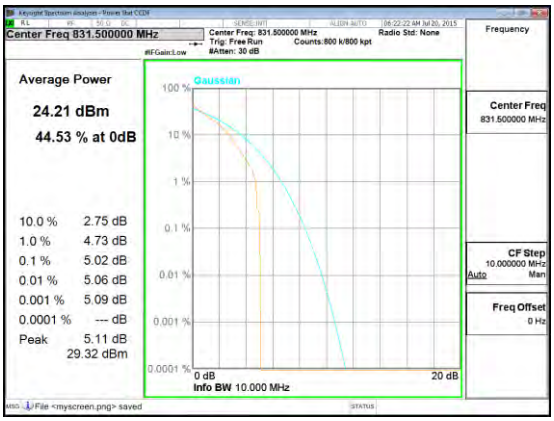
Band LTE26 5MHz	 Band LTE26 5MHz 16QAM Mid channel	 Band LTE26 5MHz QPSK Mid channel

Band LTE26 3MHz	 Band LTE26 3MHz 16QAM Mid channel	 Band LTE26 3MHz QPSK Mid channel

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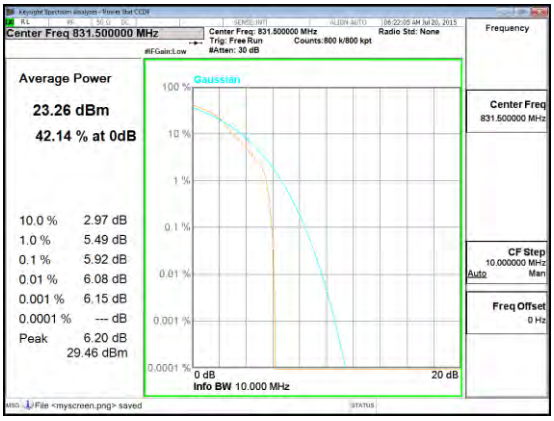
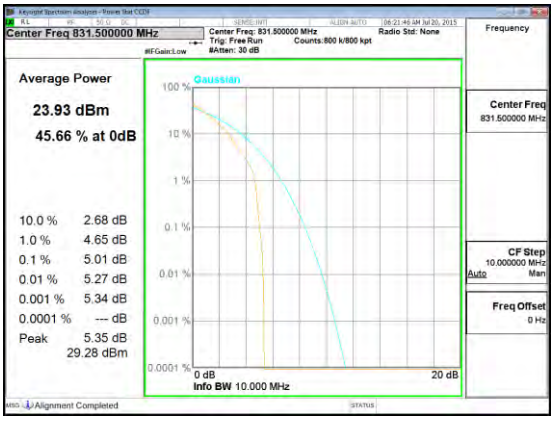
Band LTE26 1.4MHz	 Band LTE26 1.4MHz 16QAM Mid channel	 Band LTE26 1.4MHz QPSK Mid channel

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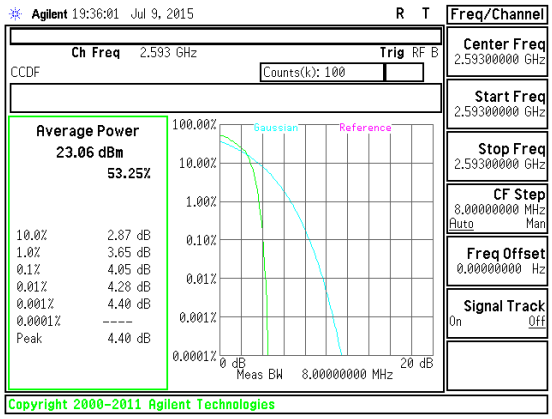
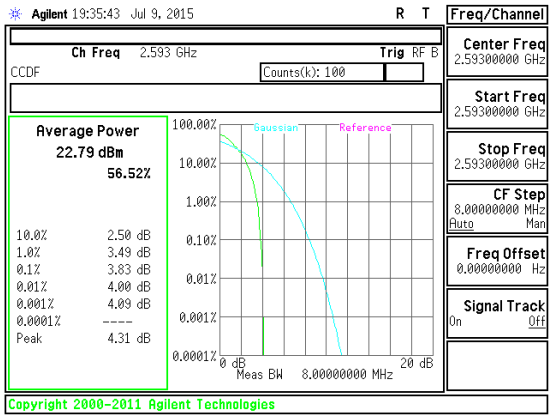
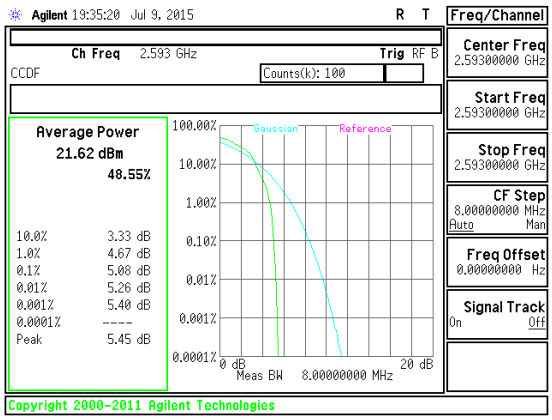
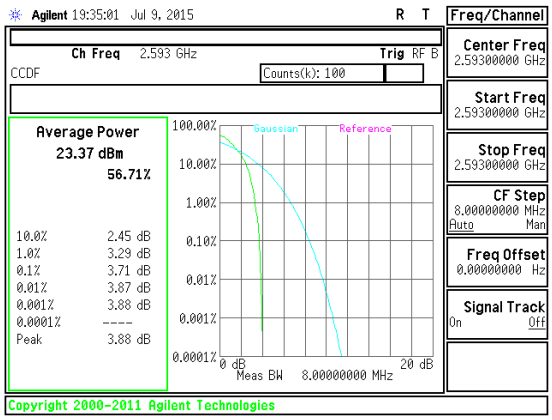
LTE Band 41

Band LTE41 20MHz	 Band LTE41 20MHz 16QAM Mid channel	 Band LTE41 20MHz QPSK Mid channel

Band LTE41 15MHz	 Band LTE41 15MHz 16QAM Mid channel	 Band LTE41 15MHz QPSK Mid channel

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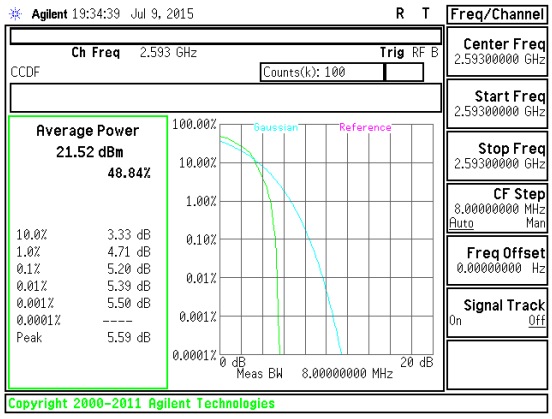
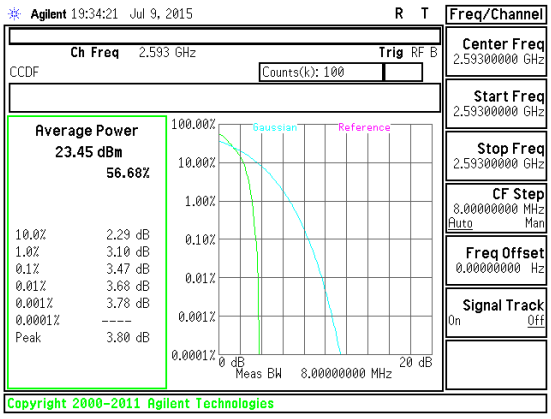
Band

LTE41

10MHz



Band LTE41 10MHz 16QAM Mid channel

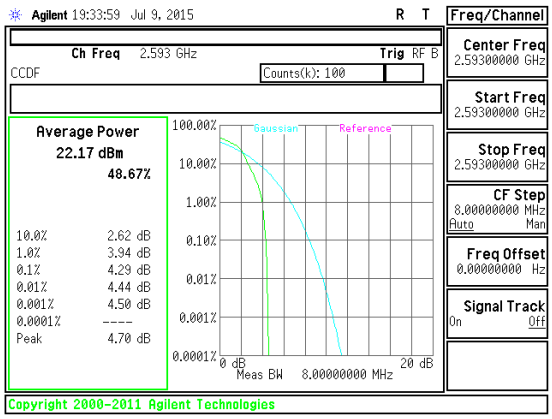


Band LTE41 10MHz QPSK Mid channel

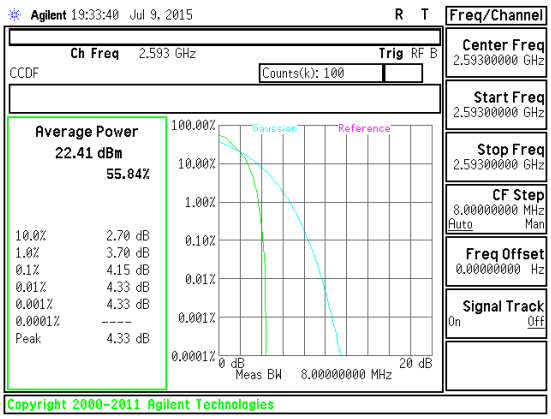
Band

LTE41

5MHz



Band LTE41 5MHz 16QAM Mid channel



Band LTE41 5MHz QPSK Mid channel

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10. LIMITS AND CONDUCTED RESULTS

10.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

IC: RSS-132, 4.5; RSS-133, 6.5

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v02r02)

MODES TESTED

GSM, WCDMA CDMA and LTE

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10.1.1. OCCUPIED BANDWIDTH RESULTS

GSM

Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB (kHz)
GSM 850	GPRS	128	824.2	245.5	322.8
		190	836.6	244.6	322.3
		251	848.8	246.4	322.2
	EGPRS	128	824.2	244.7	304.5
		190	836.6	236.6	293.6
		251	848.8	238.5	303.5
GSM 1900	GPRS	512	1850.2	244.7	318.5
		661	1880	246.4	317.1
		810	1909.8	242.7	315.9
	EGPRS	512	1850.2	246.5	320.7
		661	1880	244.8	313.3
		810	1909.8	243.5	300.7

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WCDMA

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB (MHz)
Band 5	REL99	4132	826.4	4.139	4.687
		4183	836.6	4.132	4.691
		4233	846.6	4.131	4.692
	HSDPA	4132	826.4	4.155	4.674
		4183	836.6	4.14	4.69
		4233	846.6	4.133	4.693
Band 4	REL99	9262	1712.4	4.137	4.696
		9400	1732.6	4.135	4.668
		9538	1752.6	4.141	4.692
	HSDPA	9262	1712.4	4.146	4.685
		9400	1732.6	4.146	4.691
		9538	1752.6	4.144	4.676
Band 2	REL99	9262	1852.4	4.152	4.702
		9400	1880	4.144	4.702
		9538	1907.6	4.153	4.711
	HSDPA	9262	1852.4	4.165	4.700
		9400	1880	4.154	4.708
		9538	1907.6	4.154	4.696

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CDMA

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB (MHz)
BC10	1xRTT	476	817.9	1.255	1.391
		580	820.5	1.277	1.383
		684	823.1	1.275	1.385
	EVDO REL. 0	476	817.9	1.265	1.375
		580	820.5	1.266	1.377
		684	823.1	1.269	1.387
BC0	1xRTT	1013	824.7	1.270	1.415
		384	836.52	1.273	1.405
		777	848.31	1.277	1.406
	EVDO REL. 0	1013	824.7	1.268	1.412
		384	836.52	1.267	1.407
		777	848.31	1.269	1.432
BC1	1xRTT	25	1851.25	1.280	1.428
		600	1880	1.275	1.430
		1175	1908.75	1.281	1.428
	EVDO REL. 0	25	1851.25	1.271	1.421
		600	1880	1.275	1.420
		1175	1908.75	1.271	1.421

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LTE Band 2

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	20	16QAM	100/0	1860	17.89	19.07
			100/0	1880	17.91	19.33
			100/0	1900	17.89	19.29
		QPSK	100/0	1860	17.86	19.07
			100/0	1880	17.87	19.32
			100/0	1900	17.9	19.27
	15	16QAM	75/0	1857.5	13.39	14.53
			75/0	1880	13.46	14.35
			75/0	1902.5	13.43	14.4
		QPSK	75/0	1857.5	13.39	14.51
			75/0	1880	13.39	14.48
			75/0	1902.5	13.39	14.51
	10	16QAM	50/0	1855	8.958	9.719
			50/0	1880	8.96	9.647
			50/0	1905	8.93	9.665
		QPSK	50/0	1855	8.955	9.634
			50/0	1880	8.945	9.663
			50/0	1905	8.952	9.744
	5	16QAM	25/0	1852.5	4.499	4.892
			25/0	1880	4.484	4.947
			25/0	1907.5	4.498	4.914
		QPSK	25/0	1852.5	4.488	4.92
			25/0	1880	4.487	4.953
			25/0	1907.5	4.489	4.914

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Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	3	16QAM	15/0	1851.5	2.689	2.999
			15/0	1880	2.686	2.960
			15/0	1908.5	2.680	2.964
		QPSK	15/0	1851.5	2.683	2.931
			15/0	1880	2.686	2.979
			15/0	1908.5	2.672	2.939
	1.4	16QAM	6/0	1850.7	1.079	1.219
			6/0	1880	1.082	1.228
			6/0	1909.3	1.087	1.229
		QPSK	6/0	1850.7	1.080	1.213
			6/0	1880	1.080	1.217
			6/0	1909.3	1.082	1.214

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LTE Band 4

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	20	16QAM	100/0	1720	17.91	19.12
			100/0	1732.5	17.88	19.31
			100/0	1745	17.82	19.37
		QPSK	100/0	1720	17.88	19.32
			100/0	1732.5	17.9	19.27
			100/0	1745	17.88	19.34
	15	16QAM	75/0	1717.5	13.41	14.48
			75/0	1732.5	13.4	14.5
			75/0	1747.5	13.42	14.54
		QPSK	75/0	1717.5	13.44	14.49
			75/0	1732.5	13.42	14.53
			75/0	1747.5	13.41	14.36
	10	16QAM	50/0	1715	8.95	9.692
			50/0	1732.5	8.948	9.759
			50/0	1750	8.945	9.657
		QPSK	50/0	1715	8.97	9.802
			50/0	1732.5	8.957	9.682
			50/0	1750	8.971	9.629
	5	16QAM	25/0	1712.5	4.484	4.9
			25/0	1732.5	4.499	4.954
			25/0	1752.5	4.488	4.922
		QPSK	25/0	1712.5	4.505	4.907
			25/0	1732.5	4.492	4.903
			25/0	1752.5	4.487	4.929

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Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	3	16QAM	15/0	1711.5	2.686	3.004
			15/0	1732.5	2.681	2.961
			15/0	1753.5	2.689	2.999
		QPSK	15/0	1711.5	2.681	2.944
			15/0	1732.5	2.683	2.957
			15/0	1753.5	2.674	2.979
	1.4	16QAM	6/0	1710.7	1.079	1.216
			6/0	1732.5	1.085	1.215
			6/0	1754.3	1.088	1.225
		QPSK	6/0	1710.7	1.082	1.209
			6/0	1732.5	1.08	1.219
			6/0	1754.3	1.082	1.219

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LTE Band 5

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	10	16QAM	50/0	829	8.983	9.763
			50/0	836.5	8.975	9.834
			50/0	844	8.946	9.802
		QPSK	50/0	829	8.958	9.733
			50/0	836.5	8.983	9.748
			50/0	844	8.976	9.787
	5	16QAM	25/0	826.5	4.484	4.904
			25/0	836.5	4.500	4.963
			25/0	846.5	4.489	4.924
		QPSK	25/0	826.5	4.486	4.917
			25/0	836.5	4.506	4.947
			25/0	846.5	4.493	4.908
	3	16QAM	15/0	825.5	2.693	2.997
			15/0	836.5	2.700	2.999
			15/0	847.5	2.696	2.980
		QPSK	15/0	825.5	2.704	2.991
			15/0	836.5	2.697	2.984
			15/0	847.5	2.700	2.993
	1.4	16QAM	6/0	824.7	1.084	1.239
			6/0	836.5	1.085	1.238
			6/0	848.3	1.096	1.244
		QPSK	6/0	824.7	1.087	1.233
			6/0	836.5	1.081	1.227
			6/0	848.3	1.085	1.228

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LTE Band 7

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE7	20	16QAM	100/0	2510	17.89	19.2
			100/0	2535	17.85	19.3
			100/0	2560	17.86	19.2
		QPSK	100/0	2510	17.86	19.22
			100/0	2535	17.85	19.13
			100/0	2560	17.92	19.21
	15	16QAM	75/0	2507.5	13.43	14.45
			75/0	2535	13.45	14.38
			75/0	2562.5	13.39	14.48
		QPSK	75/0	2507.5	13.44	14.5
			75/0	2535	13.44	14.52
			75/0	2562.5	13.44	14.07
	10	16QAM	50/0	2505	8.97	9.742
			50/0	2535	8.96	9.671
			50/0	2565	8.958	9.732
		QPSK	50/0	2505	8.967	9.684
			50/0	2535	8.963	9.674
			50/0	2565	8.958	9.703
	5	16QAM	25/0	2502.5	4.49	4.928
			25/0	2535	4.494	4.868
			25/0	2567.5	4.494	4.918
		QPSK	25/0	2502.5	4.5	4.916
			25/0	2535	4.497	4.943
			25/0	2567.5	4.489	4.916

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LTE Band 12

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE12	10	16QAM	50/0	704	8.958	9.711
			50/0	707.5	8.948	9.754
			50/0	711	8.940	9.771
		QPSK	50/0	704	8.952	9.636
			50/0	707.5	8.949	9.699
			50/0	711	8.956	9.707
	5	16QAM	25/0	701.5	4.491	4.927
			25/0	707.5	4.479	4.914
			25/0	713.5	4.484	4.875
		QPSK	25/0	701.5	4.501	4.913
			25/0	707.5	4.495	4.906
			25/0	713.5	4.492	4.893
	3	16QAM	15/0	700.5	2.685	2.961
			15/0	707.5	2.683	2.926
			15/0	714.5	2.682	2.982
		QPSK	15/0	700.5	2.690	2.961
			15/0	707.5	2.682	2.950
			15/0	714.5	2.693	2.995
	1.4	16QAM	6/0	699.7	1.081	1.227
			6/0	707.5	1.085	1.226
			6/0	715.3	1.082	1.238
		QPSK	6/0	699.7	1.083	1.214
			6/0	707.5	1.081	1.220
			6/0	715.3	1.084	1.229

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LTE Band 13

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW(MKHz)	-26dB BW (MHz)
LTE13	10	16QAM	50/0	782	8.9574	9.571
		QPSK	50/0	782	8.9288	9.536
	5	16QAM	25/0	779.5	4.491	4.946
			25/0	782	4.502	4.915
			25/0	784.5	4.502	4.896
		QPSK	25/0	779.5	4.5	4.914
			25/0	782	4.5	4.896
			25/0	784.5	4.493	4.893

LTE Band 17

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE17	10	16QAM	50/0	709	8.959	9.767
			50/0	710	8.948	9.775
			50/0	711	8.978	9.764
		QPSK	50/0	709	8.967	9.746
			50/0	710	8.971	9.747
			50/0	711	8.946	9.686
	5	16QAM	25/0	706.5	4.491	4.924
			25/0	710	4.482	4.916
			25/0	713.5	4.497	4.943
		QPSK	25/0	706.5	4.499	4.943
			25/0	710	4.485	4.931
			25/0	713.5	4.503	4.952

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LTE Band 25

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE25	20	16QAM	100/0	1860	17.951	19.461
			100/0	1882.5	17.936	19.473
			100/0	1905	17.981	29.281
		QPSK	100/0	1860	17.937	19.375
			100/0	1882.5	17.965	19.492
			100/0	1905	18.036	24.788
	15	16QAM	75/0	1857.5	13.460	14.621
			75/0	1882.5	13.479	14.649
			75/0	1907.5	13.500	22.026
		QPSK	75/0	1857.5	13.478	14.714
			75/0	1882.5	13.472	14.580
			75/0	1907.5	13.527	22.397
	10	16QAM	50/0	1855	8.985	9.836
			50/0	1882.5	8.964	9.739
			50/0	1910	8.993	9.820
		QPSK	50/0	1855	8.972	9.808
			50/0	1882.5	8.969	9.737
			50/0	1910	8.966	9.791
	5	16QAM	25/0	1852.5	4.503	4.968
			25/0	1882.5	4.487	4.931
			25/0	1912.5	4.480	4.956
		QPSK	25/0	1852.5	4.506	4.947
			25/0	1882.5	4.495	4.934
			25/0	1912.5	4.485	4.925

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Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE25	3	16QAM	15/0	1851.5	2.707	3.024
			15/0	1882.5	2.696	3.002
			15/0	1913.5	2.698	3.003
		QPSK	15/0	1851.5	2.699	2.986
			15/0	1882.5	2.700	2.992
			15/0	1913.5	2.706	2.997
	1.4	16QAM	6/0	1850.7	1.085	1.238
			6/0	1882.5	1.086	1.230
			6/0	1914.3	1.097	1.246
		QPSK	6/0	1850.7	1.088	1.232
			6/0	1882.5	1.082	1.231
			6/0	1914.3	1.086	1.234

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LTE Band 26

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE26	15	16QAM	75/0	831.5	13.439	14.545
			75/0	836.5	13.413	14.578
			75/0	841.5	13.436	14.608
		QPSK	75/0	831.5	13.443	14.614
			75/0	836.5	13.422	14.609
			75/0	841.5	13.429	14.569
	10	16QAM	50/0	819	8.979	9.811
			50/0	831.5	8.957	9.778
			50/0	844	8.982	9.746
		QPSK	50/0	819	8.965	9.801
			50/0	831.5	8.987	9.722
			50/0	844	8.952	9.756
	5	16QAM	25/0	816.5	4.502	4.963
			25/0	831.5	4.495	4.946
			25/0	846.5	4.478	4.895
		QPSK	25/0	816.5	4.506	4.959
			25/0	831.5	4.495	4.925
			25/0	846.5	4.482	4.927
	3	16QAM	15/0	815.5	2.701	3.002
			15/0	831.5	2.698	2.995
			15/0	847.5	2.695	2.999
		QPSK	15/0	815.5	2.699	2.962
			15/0	831.5	2.698	2.994
			15/0	847.5	2.701	2.992
	1.4	16QAM	6/0	814.7	1.082	1.234
			6/0	831.5	1.085	1.234
			6/0	848.3	1.096	1.244
		QPSK	6/0	814.7	1.086	1.230
			6/0	831.5	1.082	1.224
			6/0	848.3	1.084	1.229

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LTE Band 41

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE41	20	16QAM	100/0	2506	17.82	19.16
			100/0	2593	17.86	20.04
			100/0	2680	17.87	18.95
		QPSK	100/0	2506	17.91	19.63
			100/0	2593	17.85	18.95
			100/0	2680	17.89	19.52
	15	16QAM	75/0	2503.5	13.4	14.47
			75/0	2593	13.43	14.48
			75/0	2682.5	13.46	14.75
		QPSK	75/0	2503.5	13.43	14.56
			75/0	2593	13.4	14.48
			75/0	2682.5	13.41	14.68
	10	16QAM	50/0	2501	8.951	9.587
			50/0	2593	8.951	1.003
			50/0	2685	8.948	9.550
		QPSK	50/0	2501	8.896	9.348
			50/0	2593	8.951	9.612
			50/0	2685	8.967	9.656
	5	16QAM	25/0	2498.5	4.463	4.908
			25/0	2593	4.470	4.838
			25/0	2687.5	4.483	4.886
		QPSK	25/0	2498.5	4.503	4.865
			25/0	2593	4.496	4.833
			25/0	2687.5	4.494	4.899

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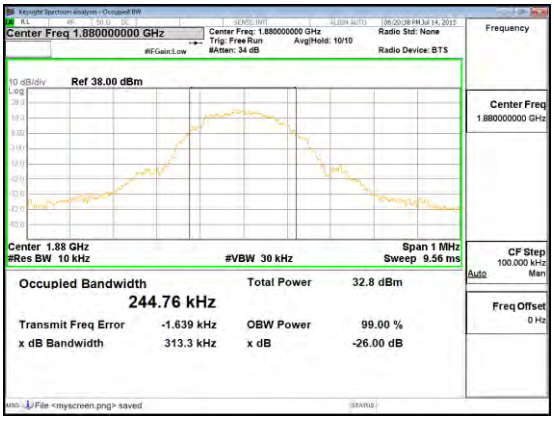
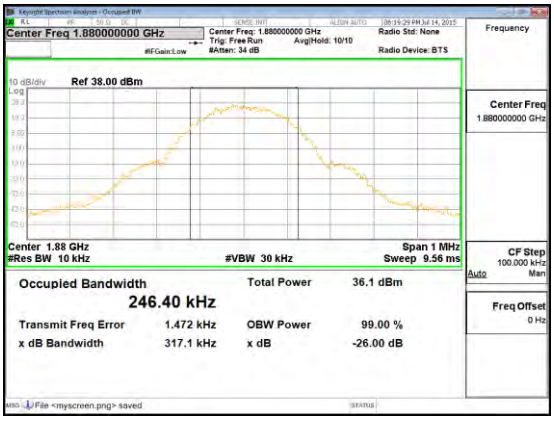
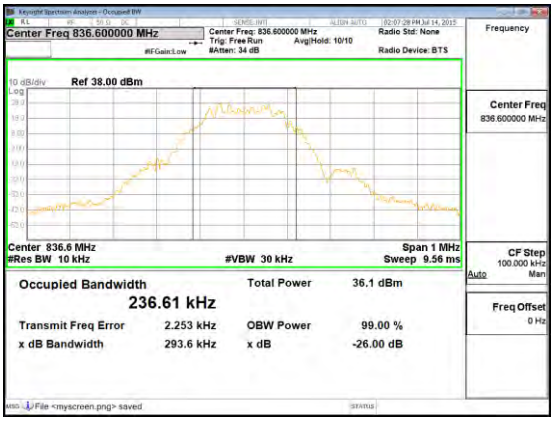
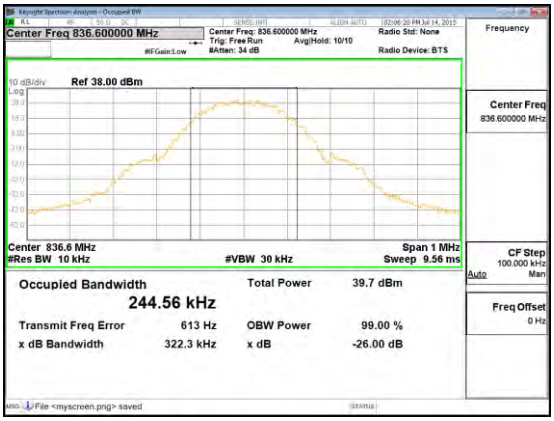
10.1.2. OCCUPIED BANDWIDTH PLOTS

GSM

Band GSM 1900	 Band GSM1900 EGPRS OBW Mid channel	 Band GSM1900 GPRS OBW Mid channel
Band GSM 850	 Band GSM850 EGPRS OBW Mid channel	 Band GSM850 GPRS OBW Mid channel

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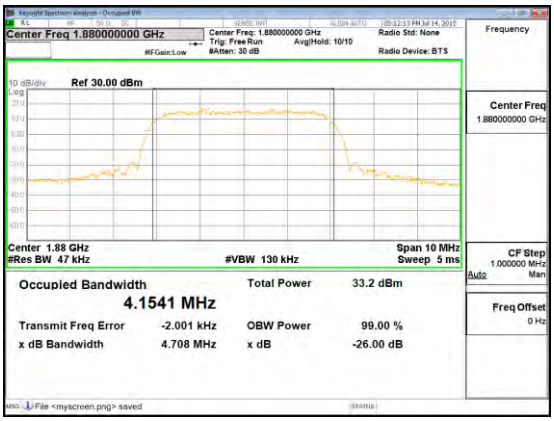
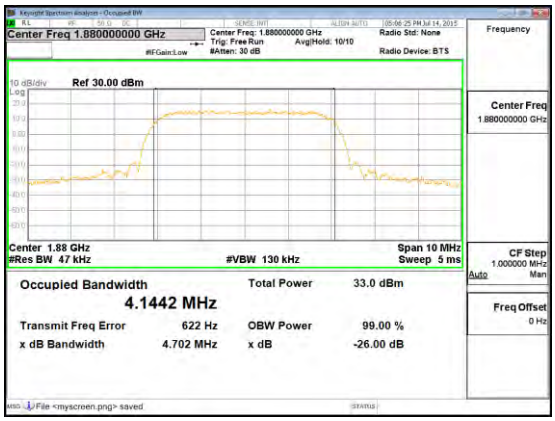
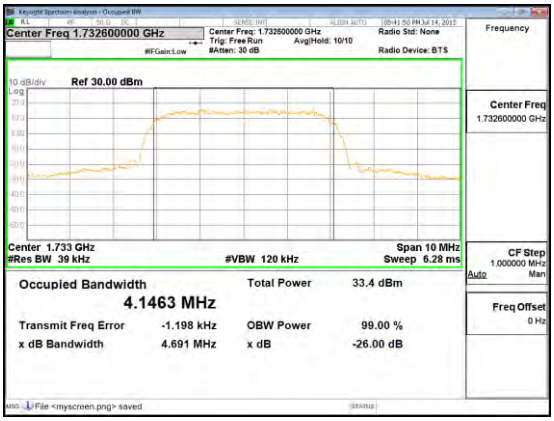
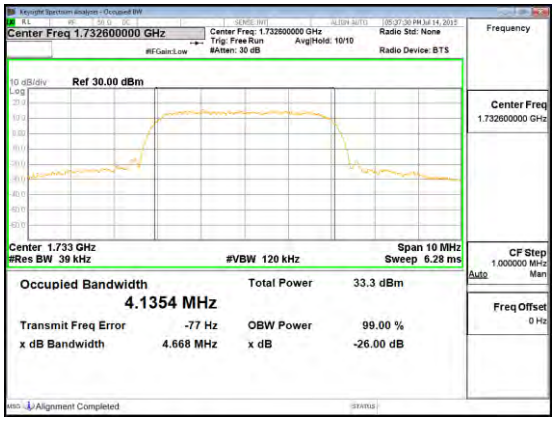
WCDMA

Band Band 2	 Band WCDMA B2 HSDPA OBW	 Band WCDMA B2 REL99 OBW
Band Band 4	 Band WCDMA B4 HSDPA OBW	 Band WCDMA B4 REL99 OBW

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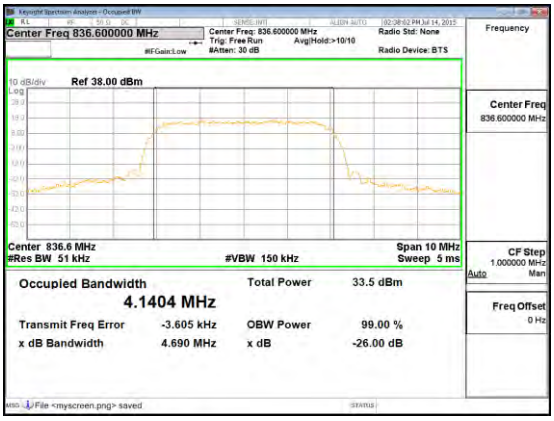
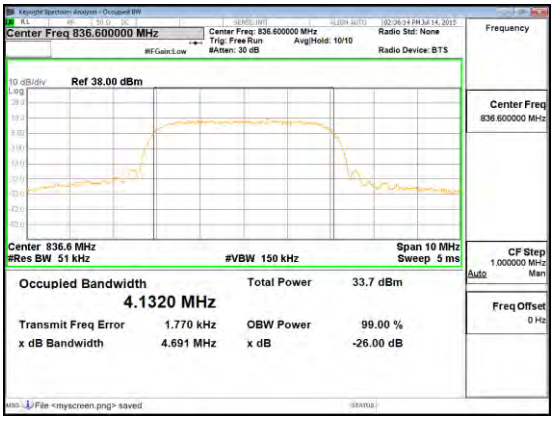
Band Band 5	 Band WCDMA B5 HSDPA OBW	 Band WCDMA B5 REL99 OBW

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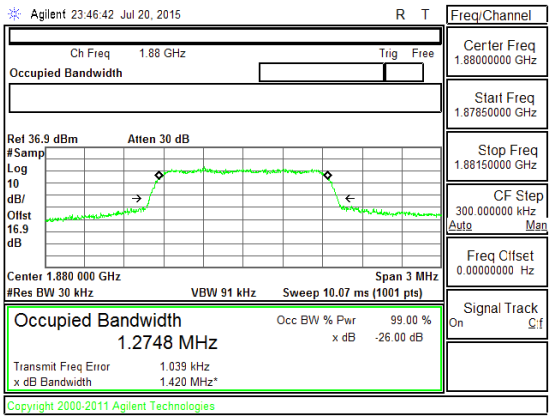
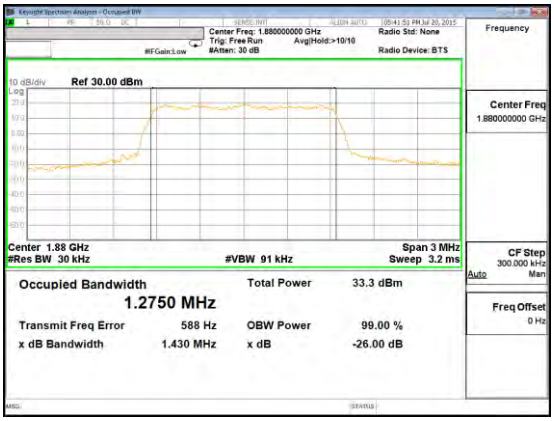
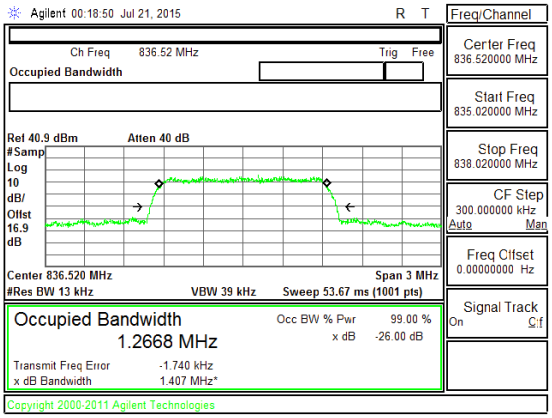
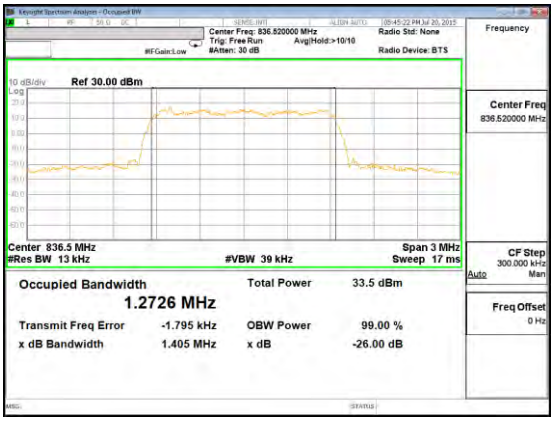
CDMA

Band BC1	 Band BC1 EVDO Rel. 0 OBW Mid channel	 Band BC1 1xRTT OBW Mid channel
Band BC0	 Band BC0 EVDO Rel. 0 OBW Mid channel	 Band BC0 1xRTT OBW Mid channel

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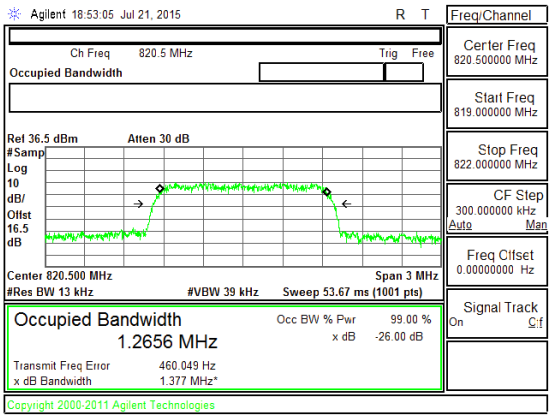
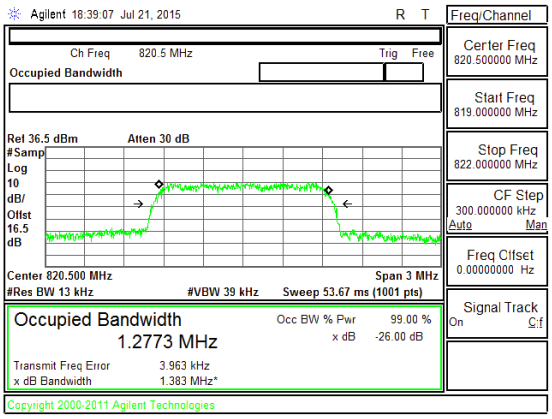
Band BC10	 Band BC10 EVDO Rel. 0 OBW Mid channel	 Band BC10 1xRTT OBW Mid channel

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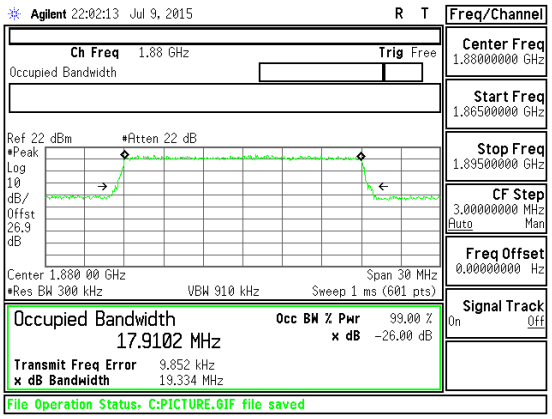
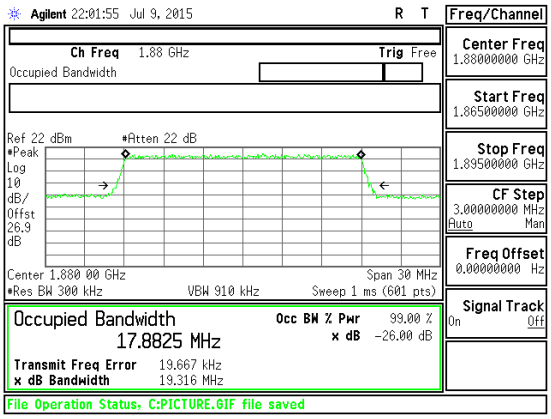
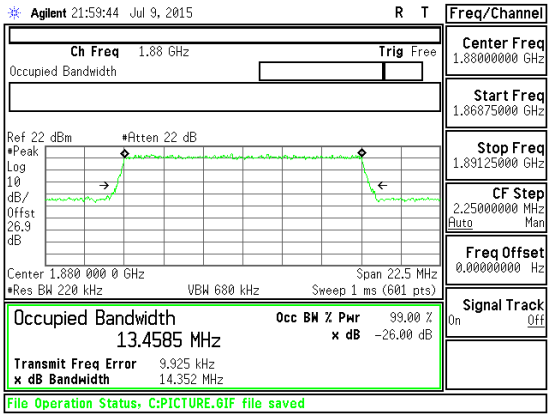
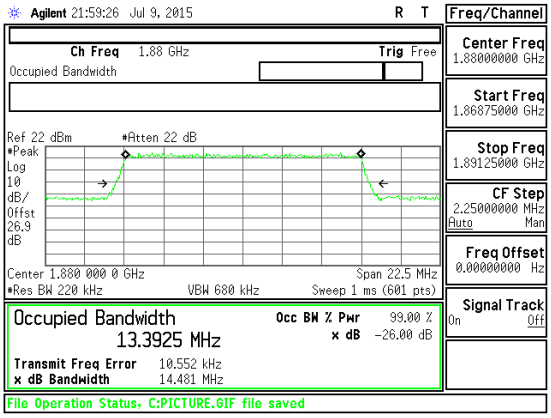
LTE Band 2

Band LTE2 20MHz	 Band LTE2 20MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 20MHz OBW QPSK Mid Channel FRB.gif
Band LTE2 15MHz	 Band LTE2 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 15MHz OBW QPSK Mid Channel FRB.gif

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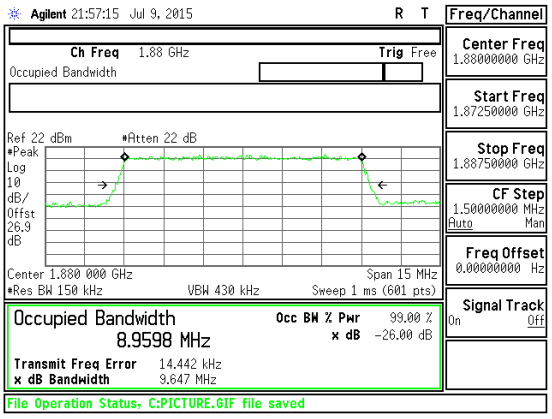
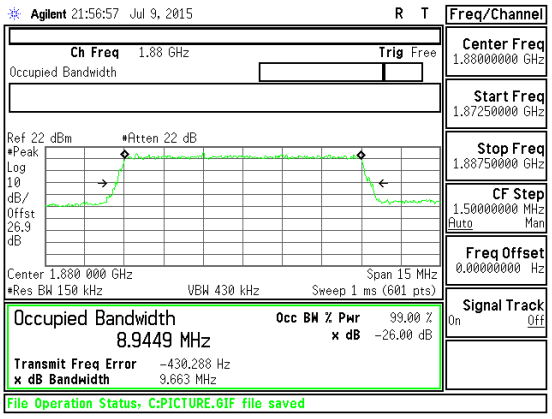
Band LTE2 10MHz

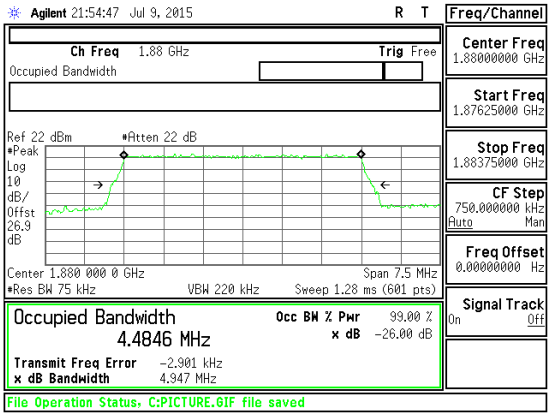


Band LTE2 10MHz OBW 16QAM Mid Channel FRB.gif

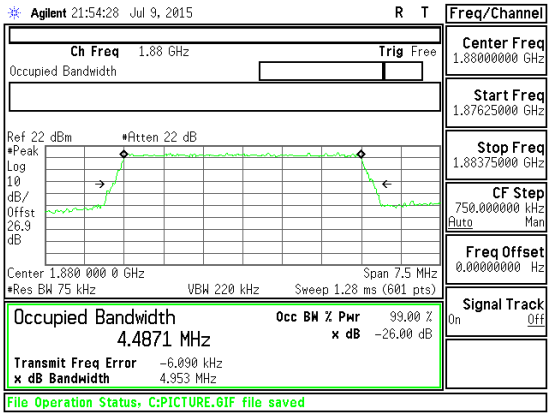


Band LTE2 10MHz OBW QPSK Mid Channel FRB.gif

Band LTE2 5MHz



Band LTE2 5MHz OBW 16QAM Mid Channel FRB.gif



Band LTE2 5MHz OBW QPSK Mid Channel FRB.gif

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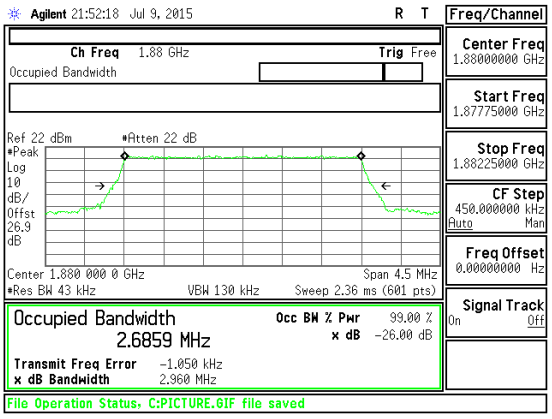
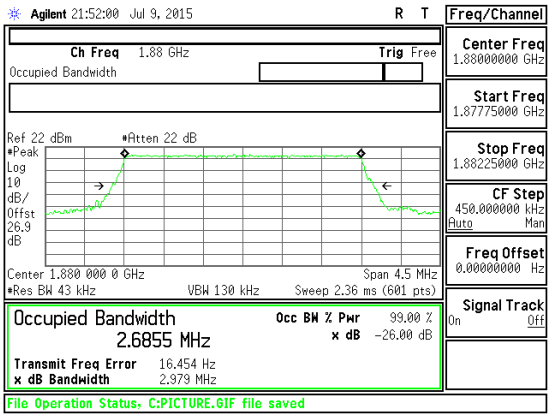
Band LTE2 3MHz

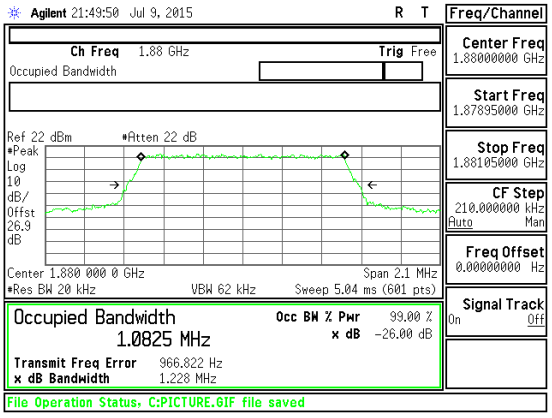


Band LTE2 3MHz OBW 16QAM Mid Channel FRB.gif

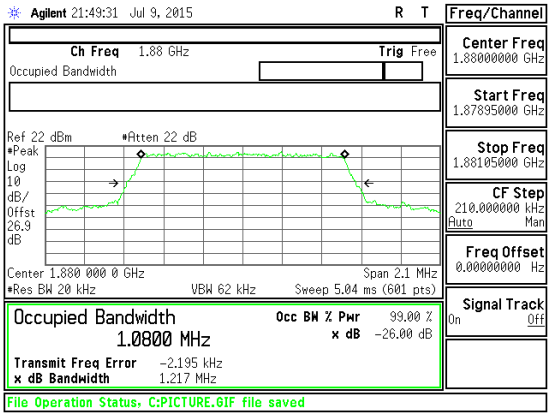


Band LTE2 3MHz OBW QPSK Mid Channel FRB.gif

Band LTE2 1.4MHz



Band LTE2 1.4MHz OBW 16QAM Mid Channel FRB.gif



Band LTE2 1.4MHz OBW QPSK Mid Channel FRB.gif

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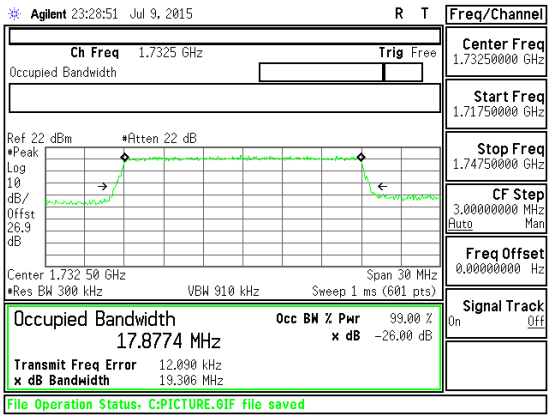
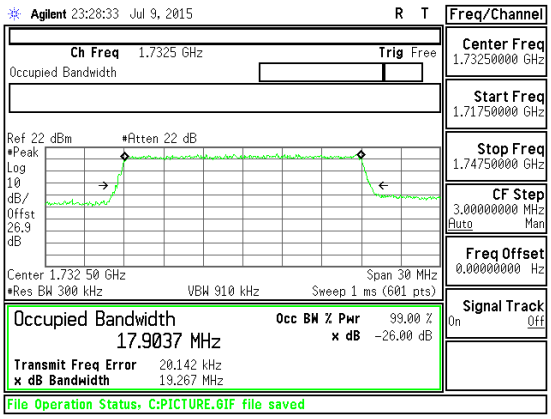
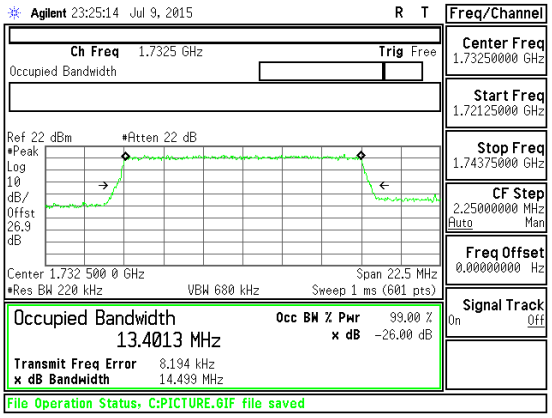
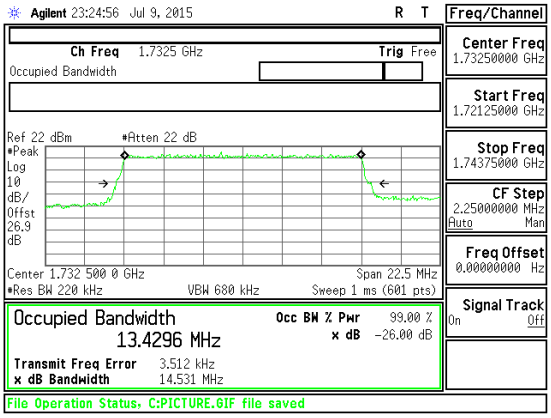
LTE Band 4

Band LTE4 20MHz	 Band LTE4 20MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 20MHz OBW QPSK Mid Channel FRB.gif
Band LTE4 15MHz	 Band LTE4 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 15MHz OBW QPSK Mid Channel FRB.gif

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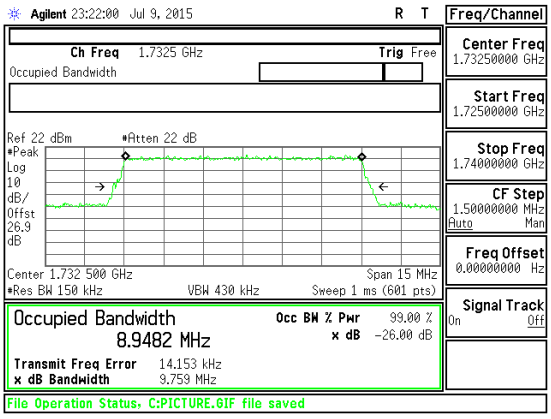
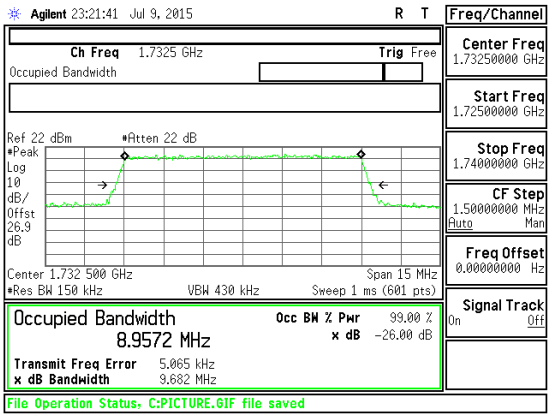
Band LTE4 10MHz

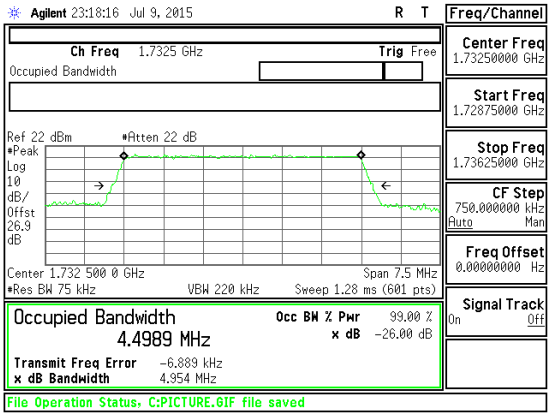


Band LTE4 10MHz OBW 16QAM Mid Channel FRB.gif

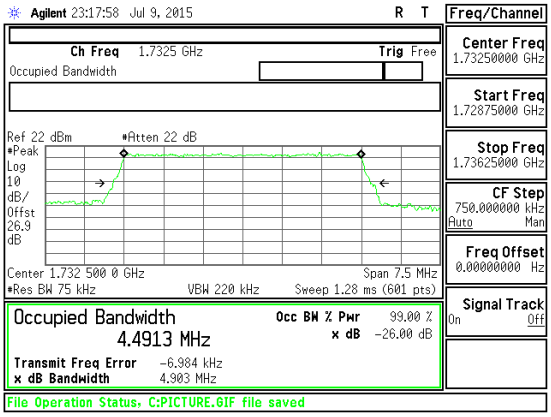


Band LTE4 10MHz OBW QPSK Mid Channel FRB.gif

Band LTE4 5MHz



Band LTE4 5MHz OBW 16QAM Mid Channel FRB.gif



Band LTE4 5MHz OBW QPSK Mid Channel FRB.gif

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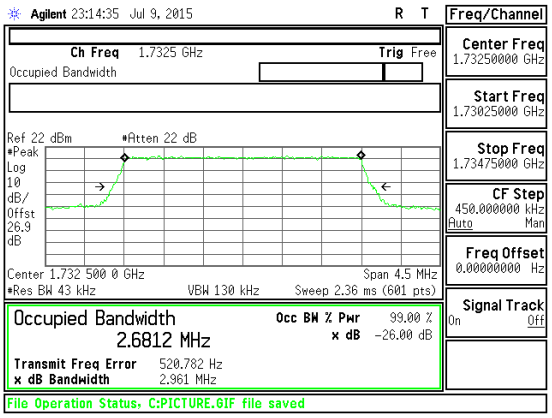
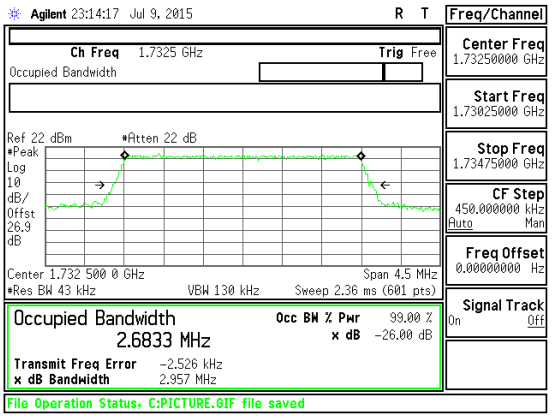
Band LTE4 3MHz

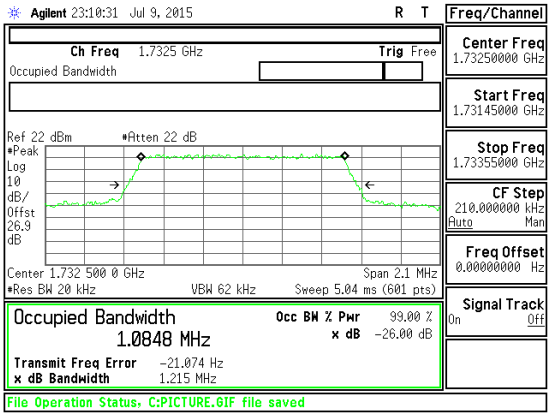


Band LTE4 3MHz OBW 16QAM Mid Channel FRB.gif

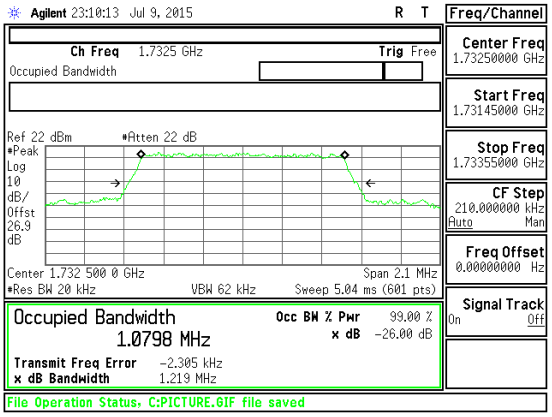


Band LTE4 3MHz OBW QPSK Mid Channel FRB.gif

Band LTE4 1.4MHz



Band LTE4 1.4MHz OBW 16QAM Mid Channel FRB.gif



Band LTE4 1.4MHz OBW QPSK Mid Channel FRB.gif

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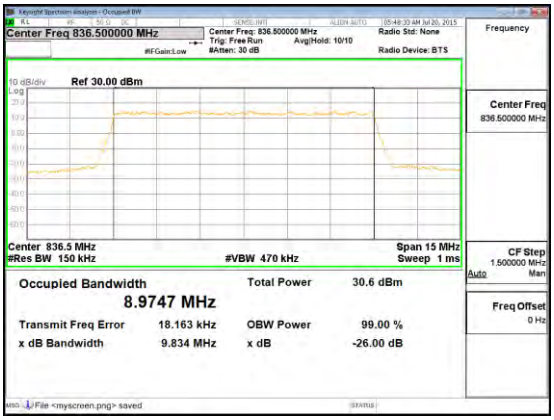
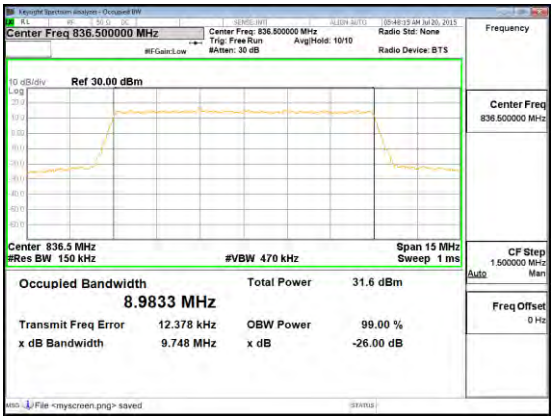
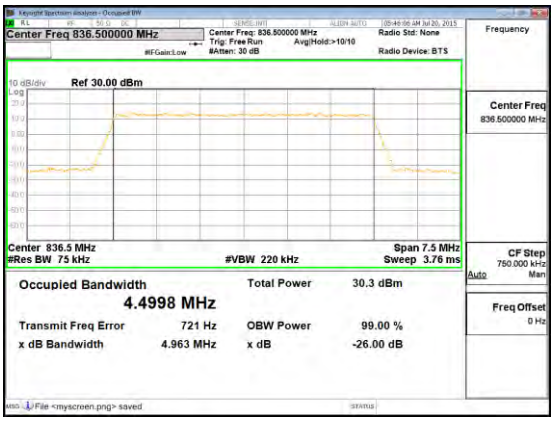
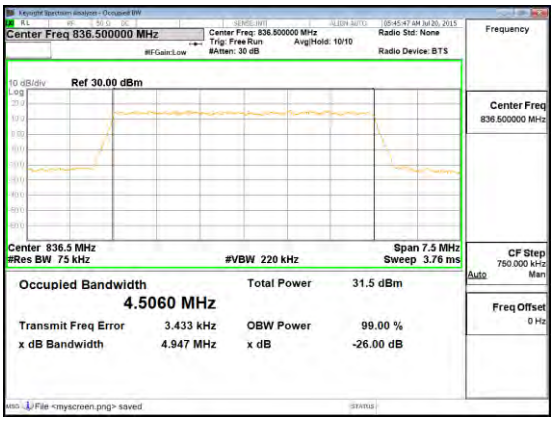
LTE Band 5

Band LTE5 10MHz	 Band LTE5 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE5 5MHz	 Band LTE5 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 5MHz OBW QPSK Mid Channel FRB.gif

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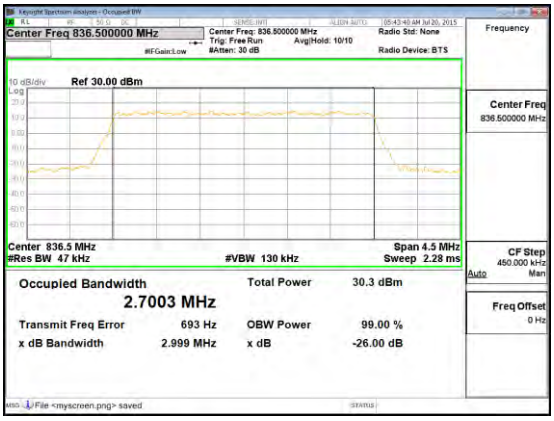
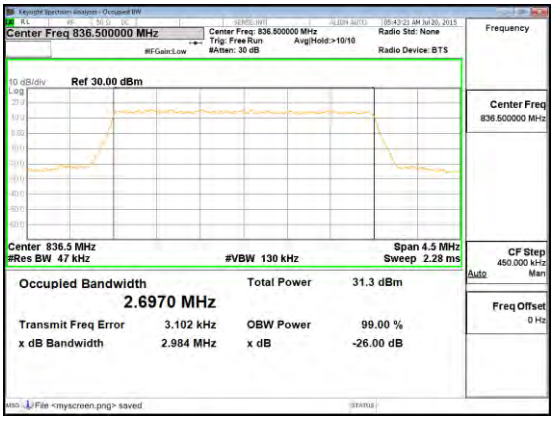
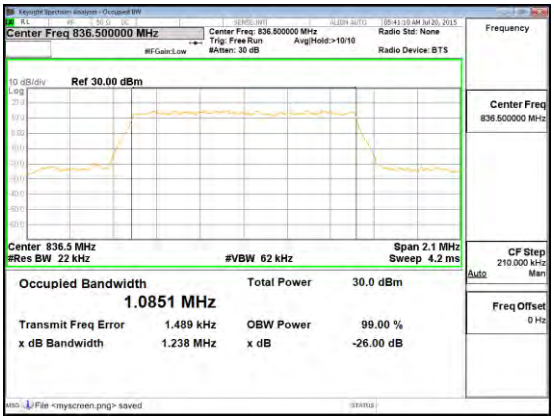
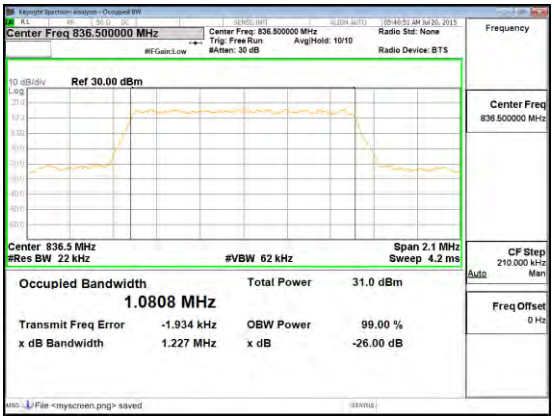
Band LTE5 3MHz	 Band LTE5 3MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 3MHz OBW QPSK Mid Channel FRB.gif
Band LTE5 1.4MHz	 Band LTE5 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 1.4MHz OBW QPSK Mid Channel FRB.gif

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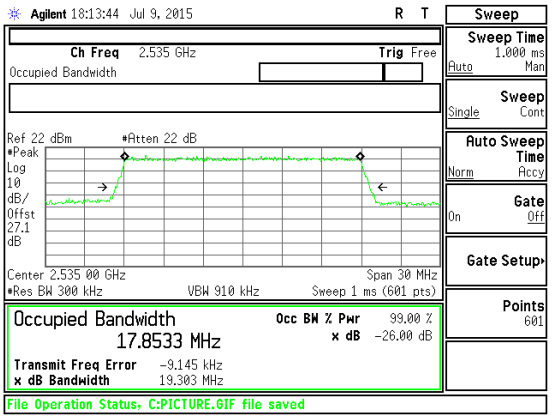
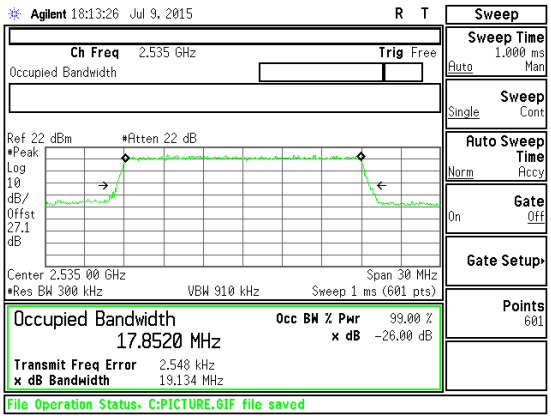
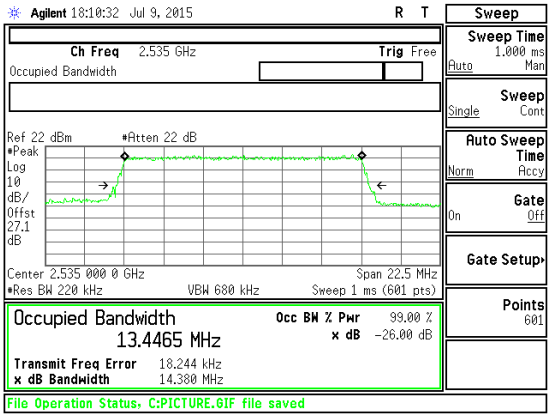
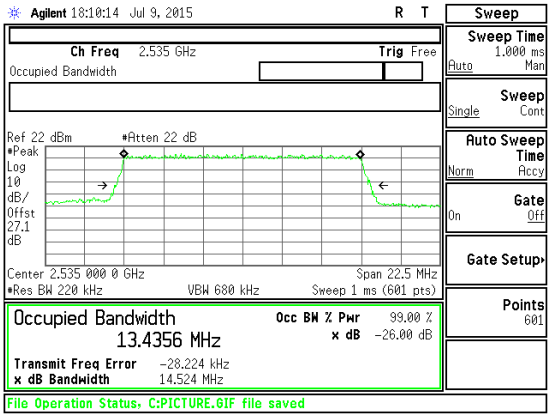
LTE Band 7

Band LTE7 20MHz	 Band LTE7 20MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 20MHz OBW QPSK Mid Channel FRB.gif
Band LTE7 15MHz	 Band LTE7 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 15MHz OBW QPSK Mid Channel FRB.gif

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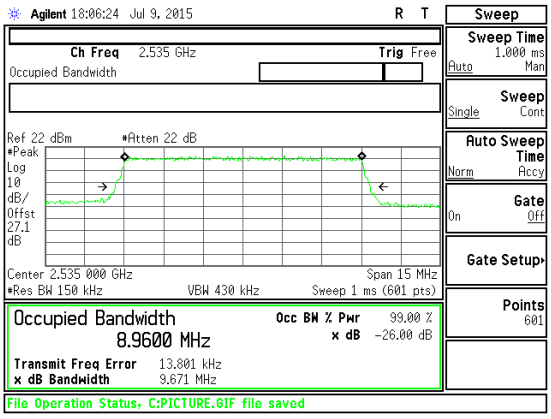
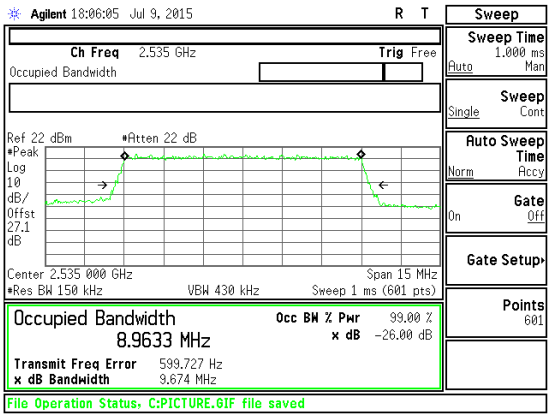
Band LTE7 10MHz

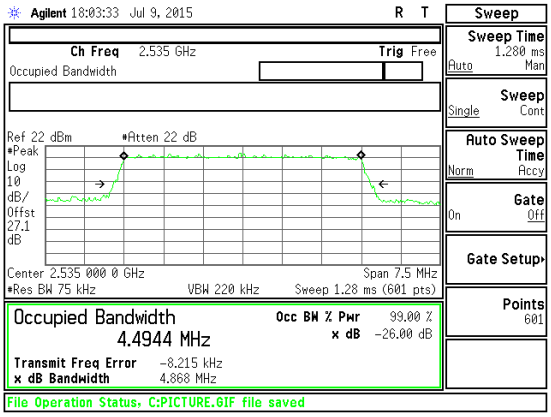


Band LTE7 10MHz OBW 16QAM Mid Channel FRB.gif

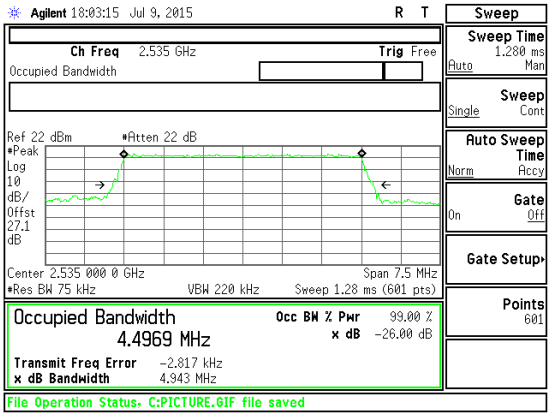


Band LTE7 10MHz OBW QPSK Mid Channel FRB.gif

Band LTE7 5MHz



Band LTE7 5MHz OBW 16QAM Mid Channel FRB.gif



Band LTE7 5MHz OBW QPSK Mid Channel FRB.gif

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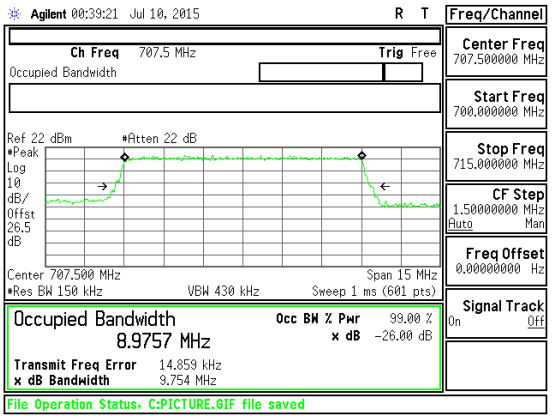
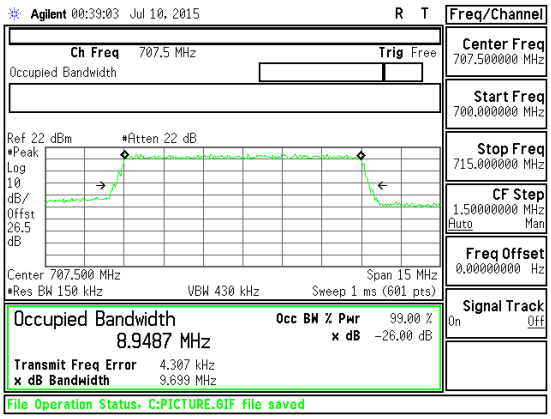
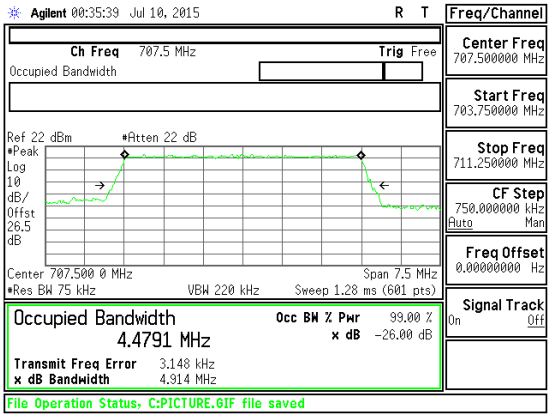
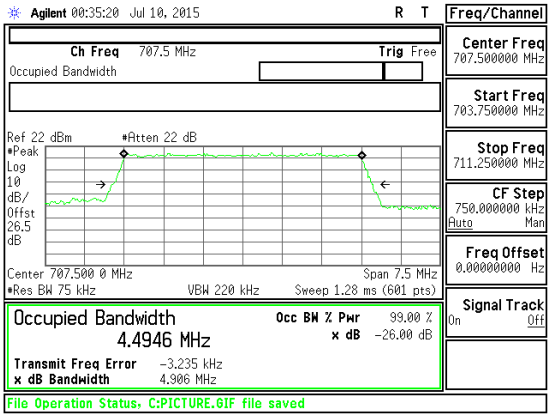
LTE Band 12

Band LTE12 10MHz	 Band LTE12 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE12 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE12 5MHz	 Band LTE12 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE12 5MHz OBW QPSK Mid Channel FRB.gif

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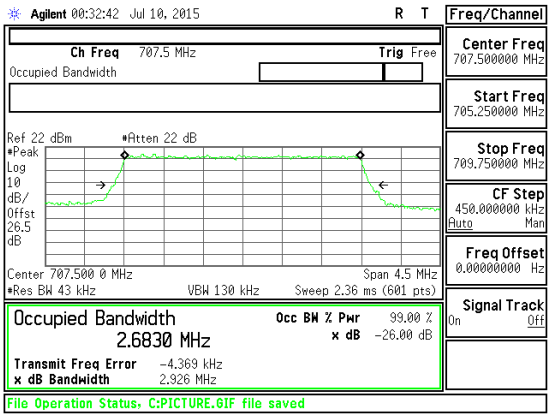
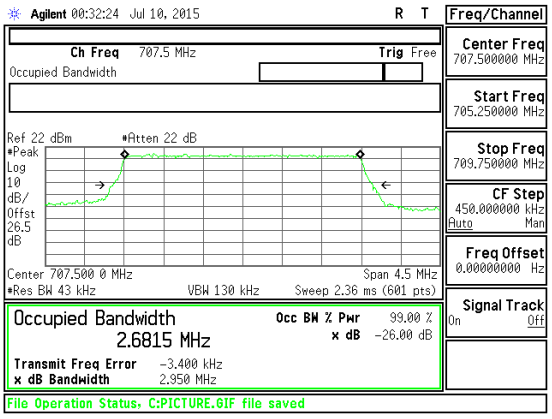
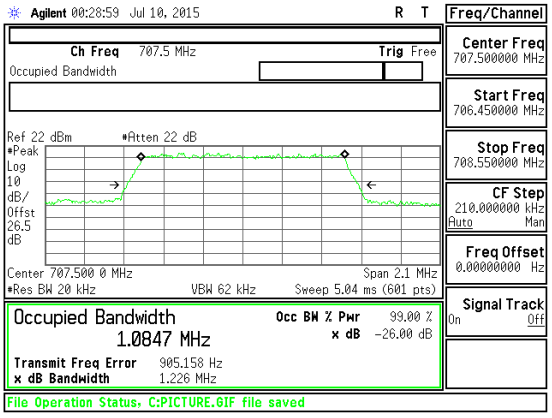
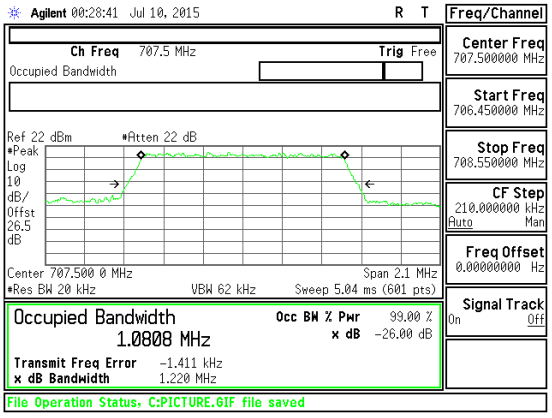
Band LTE12 3MHz	 Band LTE12 3MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE12 3MHz OBW QPSK Mid Channel FRB.gif
Band LTE12 1.4MHz	 Band LTE12 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE12 1.4MHz OBW QPSK Mid Channel FRB.gif

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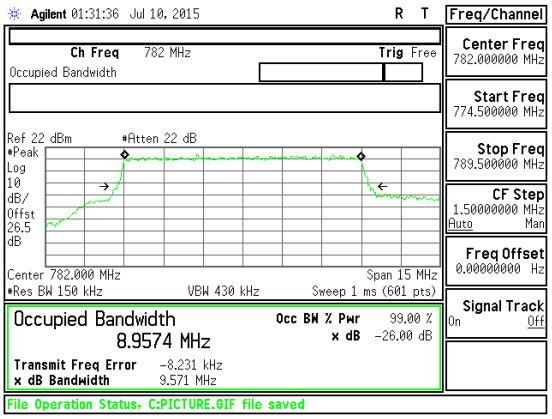
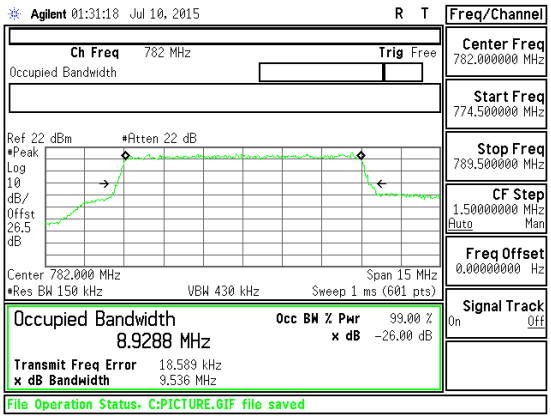
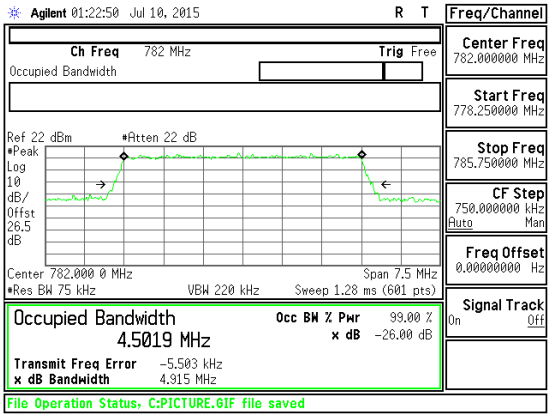
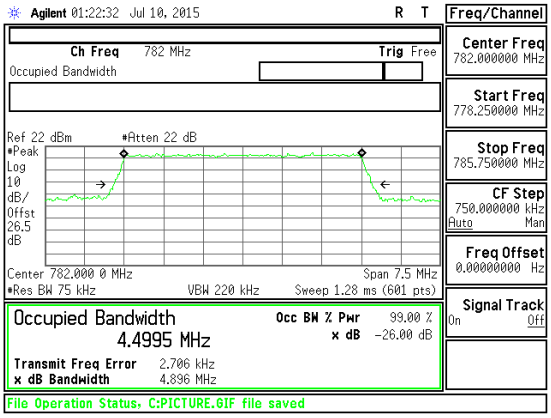
LTE Band 13

Band LTE13 10MHz	 Band LTE13 10MHz OBW 16QAM High Channel FRB.gif	 Band LTE13 10MHz OBW QPSK High Channel FRB.gif
Band LTE13 5MHz	 Band LTE13 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE13 5MHz OBW QPSK Mid Channel FRB.gif

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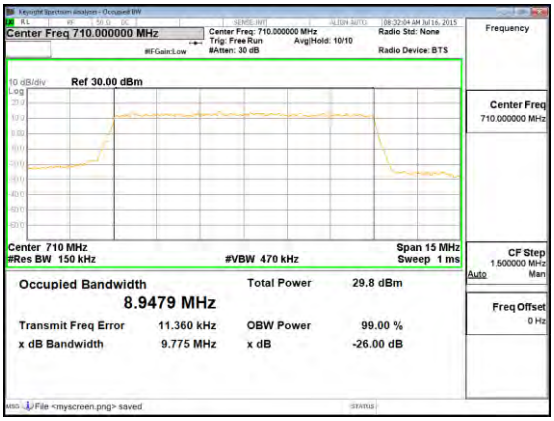
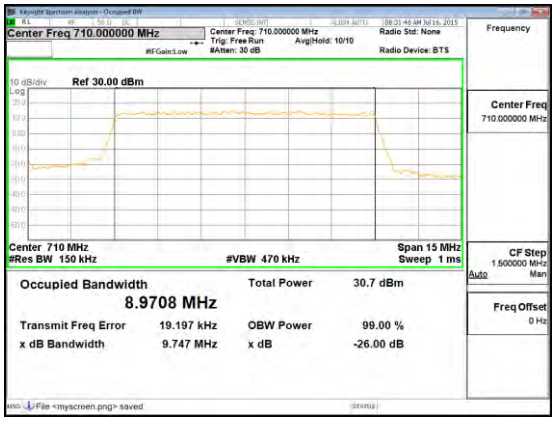
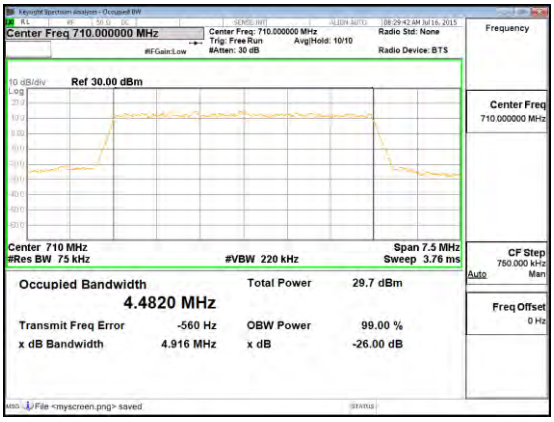
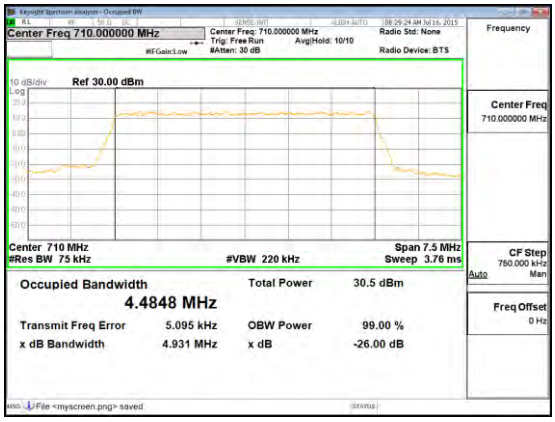
LTE Band 17

Band LTE17 10MHz	 Band LTE17 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE17 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE17 5MHz	 Band LTE17 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE17 5MHz OBW QPSK Mid Channel FRB.gif

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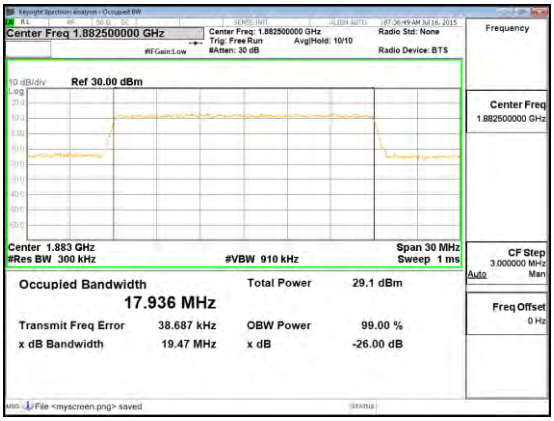
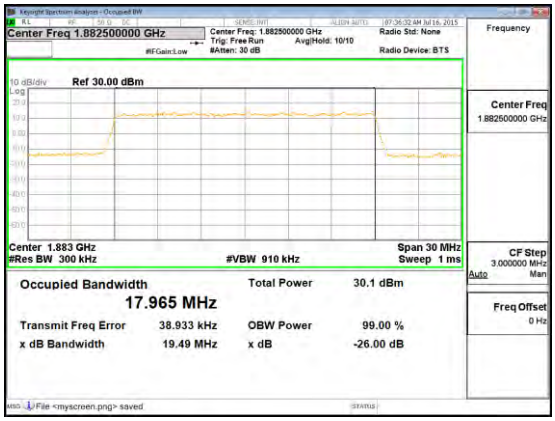
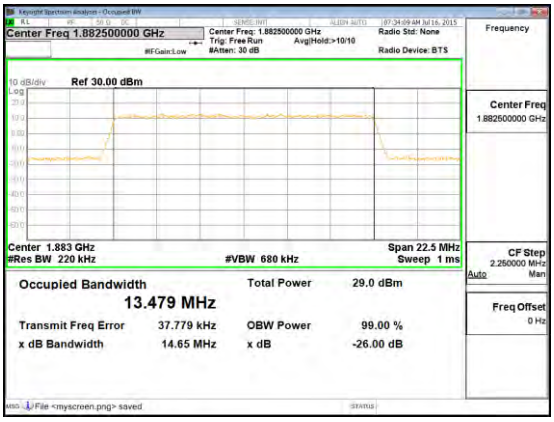
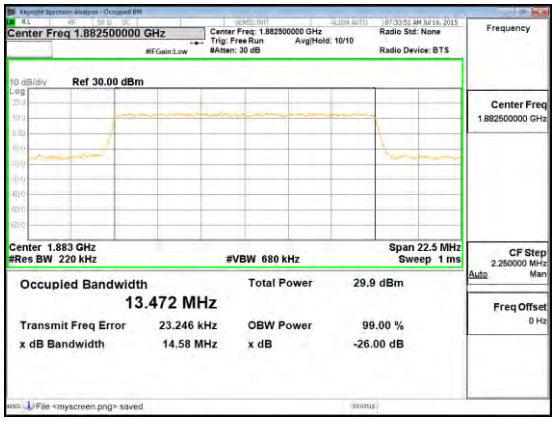
LTE Band 25

Band LTE25 20MHz	 Band LTE25 20MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE25 20MHz OBW QPSK Mid Channel FRB.gif
Band LTE25 15MHz	 Band LTE25 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE25 15MHz OBW QPSK Mid Channel FRB.gif

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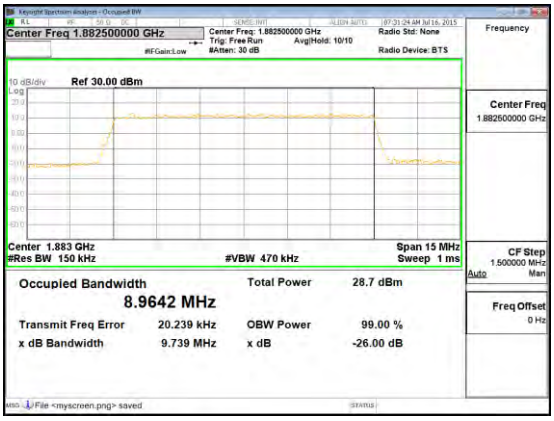
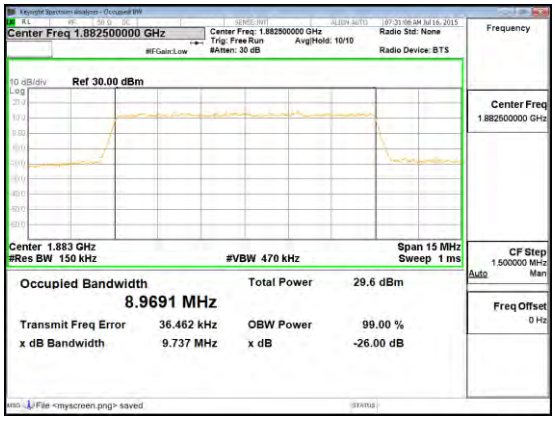
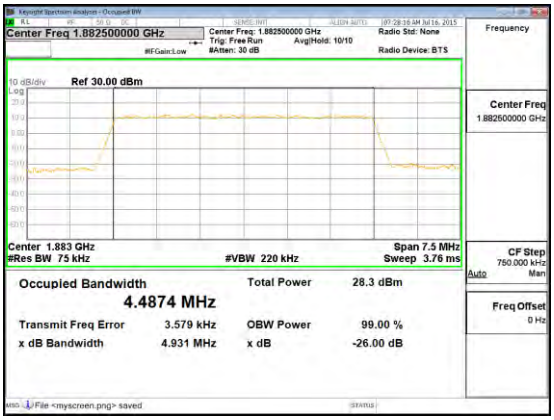
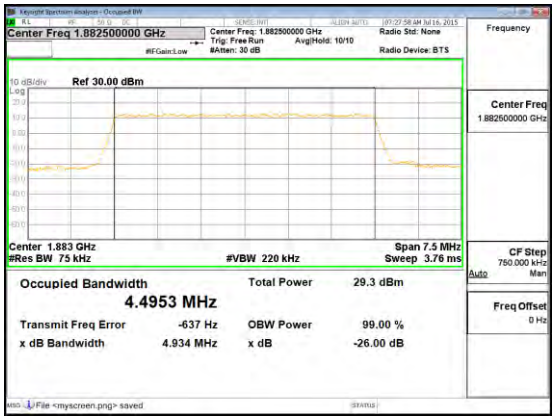
Band LTE25 10MHz	 Band LTE25 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE25 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE25 5MHz	 Band LTE25 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE25 5MHz OBW QPSK Mid Channel FRB.gif

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