FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART L

CERTIFICATION TEST REPORT

FOR

CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n

MODEL NUMBER: LG-VW820, VW820, LGVW820

FCC ID: ZNFVW820

REPORT NUMBER: 15I19783-E1

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Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	01/28/15	Initial Issue	D. Coronia

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION:	CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n
MODEL:	LG-VW820, VW820, LGVW820
SERIAL NUMBER:	1MFWY (Radiated), 1MFWZ (Conducted)
DATE TESTED:	JANUARY 12-26, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E and 27L	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.

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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, and FCC CFR 47 Part 27.

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)

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n

5.2. MAXIMUM OUTPUT POWER (CDMA)

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

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
BC0	824~849	1xRTT	24.0	251.2	20.76	119.12
	824~849	EVDO REL. 0	24.0	251.2	20.70	117.49
	824~849	EVDO REV. A	23.9	245.5		
BC1	1850~1910	1xRTT	24.1	257.0	25.71	372.39
	1850~1910	EVDO REL. 0	24.1	257.0	25.33	341.19
	1850~1910	EVDO REV. A	24.0	251.2		

5.3. MAXIMUM OUTPUT POWER (LTE)

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

LTE Band 2

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	22.7	186.2	24.976	314.49
	1850~1910	20MHz	16QAM	21.7	147.9	24.09	256.45

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	15MHz	QPSK	22.7	186.2	25.16	328.10
	1850~1910	15MHz	16QAM	21.7	147.9	24.08	255.86

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	10MHz	QPSK	22.7	186.2	25.136	326.29
	1850~1910	10MHz	16QAM	21.6	144.5	24.146	259.78

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	5MHz	QPSK	22.6	182.0	24.99	315.50
	1850~1910	5MHz	16QAM	21.2	131.8	24.04	253.51

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	3MHz	QPSK	22.7	186.2	25.35	342.77
	1850~1910	3MHz	16QAM	21.7	147.9	24.22	264.24

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	1.4MHz	QPSK	22.6	182.0	25.4	346.74
	1850~1910	1.4MHz	16QAM	21.7	147.9	24.33	271.02

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	23.48	222.84	25.19	330.37
	1710~1755	20MHz	16QAM	22.70	186.21	24.16	260.62

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	15MHz	QPSK	23.70	234.42	25.54	358.1
	1710~1755	15MHz	16QAM	22.70	186.21	24.2	263.03

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	10MHz	QPSK	23.45	221.31	25.10	323.59
	1710~1755	10MHz	16QAM	22.70	186.21	24.38	274.16

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	5MHz	QPSK	23.70	234.42	25.11	324.34
	1710~1755	5MHz	16QAM	22.70	186.21	24.13	258.82

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	3MHz	QPSK	23.70	234.42	25.79	379.31
	1710~1755	3MHz	16QAM	22.69	185.78	24.57	286.42

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	1.4MHz	QPSK	23.53	225.42	26.03	400.87
	1710~1755	1.4MHz	16QAM	22.70	186.21	24.84	304.79

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	23.37	217.27	20.911	123.34
	824~849	10MHz	16QAM	22.70	186.21	19.971	99.33

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	5MHz	QPSK	23.70	234.42	20.871	122.21
	824~849	5MHz	16QAM	22.70	186.21	19.871	97.07

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	3MHz	QPSK	23.39	218.27	21.46	139.96
	824~849	3MHz	16QAM	22.70	186.21	20.23	105.44

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	1.4MHz	QPSK	23.34	215.77	21.38	137.40
	824~849	1.4MHz	16QAM	22.70	186.21	20.24	105.68

LTE Band 13

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE13	777~787	10MHz	QPSK	23.36	216.77	21.49	140.93
	777~787	10MHz	16QAM	22.37	172.58	20.62	115.34

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE13	777~787	5MHz	QPSK	23.70	234.42	20.51	112.46
	777~787	5MHz	16QAM	22.32	170.61	19.56	90.36

5.4. 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)
CDMA BC0 / LTE 5, 824~849MHz	-1.8
CDMA BC1 / LTE 2, 1850~1910MHz	2.8
LTE 4, 1710~1755MHz	2.5
LTE 13, 777~787	-2.6

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-02WR	RA4Y1031433	N/A
Earphone	LG	N/A	N/A	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

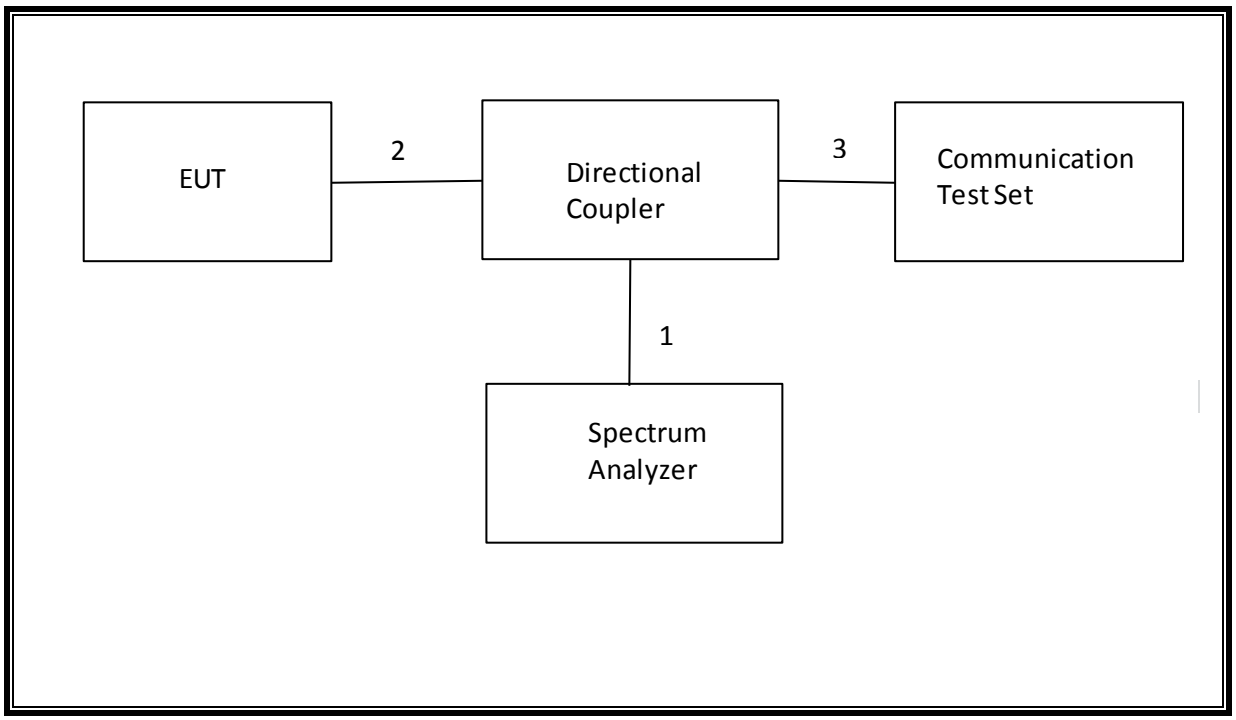
I/O CABLES (RADIATED SETUP)

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	No
2	Jack	1	Headset	Shielded	1m	No
3	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

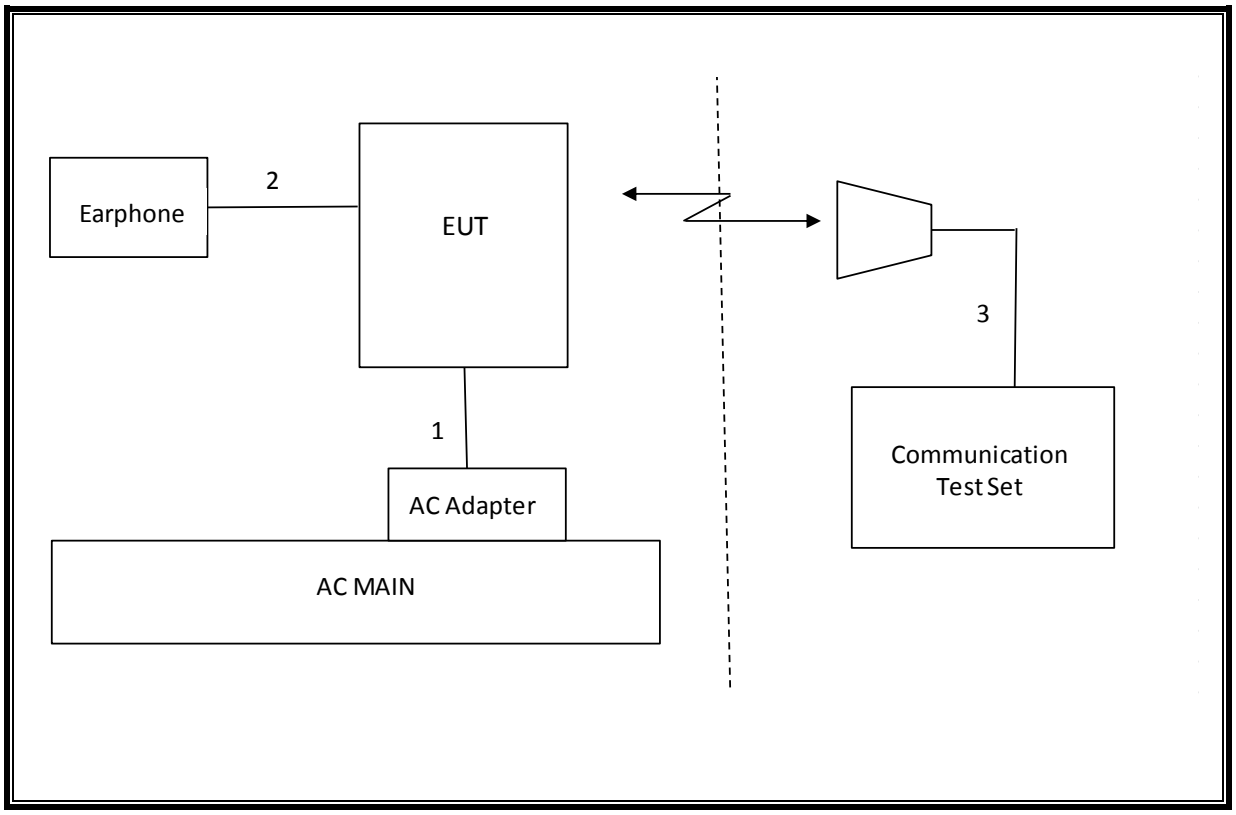
TEST SETUP

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

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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	C01179	02/26/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	04/22/15
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	C00930	01/09/15
Communications Test Set	R&S	CMW500	T159	07/02/15
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	06/18/15
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	C00993	02/14/15
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

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	17.91 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	-15.03 dBm
2.1046	N/A	Conducted output power	N/A		Pass	24.1 dBm
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	0.011 PPM
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass	21.46 dBm
27.50(c)(10)	N/A		34.77 dBm		Pass	21.49 dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	25.71 dBm
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass	26.03 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	-34.3 dBm

9. CONDUCTED POWER VERIFICATION

9.1. CDMA2000

9.1.1. 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)

9.1.2. CDMA2000 OUTPUT POWER RESULT

Band	Mode	Channel	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	24.0
		384	836.52	24.0
		777	848.31	23.9
	RC3, SO55 (Loopback)	1013	824.70	24.0
		384	836.52	24.0
		777	848.31	23.9
	RC3, SO32 (+F-SCH)	1013	824.70	24.0
		384	836.52	24.0
		777	848.31	23.9

Band	Mode	Channel	Freq. (MHz)	Avg Pwr (dBm)
BC1	RC1, SO55 (Loopback)	25	1851.25	23.8
		600	1880.00	23.9
		1175	1908.75	24.1
	RC3, SO55 (Loopback)	25	1851.25	23.8
		600	1880.00	23.8
		1175	1908.75	24.1
	RC3, SO32 (+F-SCH)	25	1851.25	23.8
		600	1880.00	23.9
		1175	1908.75	24.1

9.1.3. 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)

9.1.4. 1XEVDO REL 0 OUTPUT POWER RESULT

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2 kbps (2 slot, QPSK)	1013	824.70	24.0
		384	836.52	24.0
		777	848.31	23.9

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	25	1851.25	23.8
		600	1880.00	23.9
		1175	1908.75	24.1

9.1.5. 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)

9.1.6. 1xEVDO REV A OUTPUT RESULT

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	23.9
		384	836.52	23.9
		777	848.31	23.9

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	23.9
		600	1880.00	23.9
		1175	1908.75	24.0

9.2. LTE OUTPUT VERIFICATION

9.2.1. LTE OUTPUT RESULT

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	22.5	22.7	22.7
			1	49	0	22.6	22.7	22.5
			1	99	0	22.4	22.7	22.5
			50	0	1	21.6	21.5	21.6
			50	24	1	21.4	21.5	21.5
			50	50	1	21.5	21.4	21.3
			100	0	1	21.4	21.5	21.5
		16QAM	1	0	1	21.1	21.3	21.7
			1	49	1	21.1	21.4	21.5
			1	99	1	21.1	21.5	21.5
			50	0	2	20.6	20.6	20.6
			50	24	2	20.5	20.6	20.4
			50	50	2	20.5	20.5	20.4
			100	0	2	20.5	20.5	20.6
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	22.3	22.3	22.6
			1	37	0	22.7	22.7	22.4
			1	74	0	22.4	22.4	22.6
			36	0	1	21.4	21.5	21.5
			36	20	1	21.4	21.4	21.4
			36	39	1	21.4	21.4	21.4
			75	0	1	21.4	21.4	21.4
		16QAM	1	0	1	21.4	21.6	21.5
			1	37	1	21.4	21.6	21.1
			1	74	1	21.2	21.7	21.3
			36	0	2	20.4	20.5	20.5
			36	20	2	20.3	20.4	20.4
			36	39	2	20.4	20.4	20.4
			75	0	2	20.4	20.4	20.4

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	22.4	22.6	22.7
			1	25	0	22.3	22.6	22.4
			1	49	0	22.3	22.5	22.6
			25	0	1	21.4	21.5	21.4
			25	12	1	21.4	21.4	21.5
			25	25	1	21.4	21.5	21.5
			50	0	1	21.5	21.5	21.5
		16QAM	1	0	1	21.4	21.6	21.6
			1	25	1	21.5	21.6	21.6
			1	49	1	21.4	21.3	21.4
			25	0	2	20.4	20.6	20.5
			25	12	2	20.4	20.5	20.5
			25	25	2	20.4	20.6	20.5
			50	0	2	20.4	20.5	20.4

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	22.1	22.6	22.1
			1	12	0	22.6	22.6	22.4
			1	24	0	22.2	22.5	22.4
			12	0	1	21.3	21.5	21.4
			12	7	1	21.4	21.5	21.5
			12	13	1	21.4	21.5	21.5
			25	0	1	21.3	21.5	21.5
		16QAM	1	0	1	20.7	21.1	21.2
			1	12	1	20.8	21.0	21.1
			1	24	1	20.8	21.2	21.0
			12	0	2	20.4	20.5	20.6
			12	7	2	20.4	20.5	20.6
			12	13	2	20.4	20.6	20.6
			25	0	2	20.6	20.5	20.6

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	22.18	22.40	22.31
			1	7	0	22.17	22.70	22.46
			1	14	0	22.19	22.25	22.48
			6	0	1	21.16	21.35	21.36
			6	3	1	21.27	21.39	21.40
			6	5	1	21.18	21.29	21.37
			15	0	1	21.21	21.38	21.38
		16QAM	1	0	1	21.32	21.35	21.39
			1	7	1	21.35	21.35	21.67
			1	14	1	21.42	21.70	21.60
			6	0	2	20.39	20.17	20.42
			6	3	2	20.29	19.98	20.59
			6	5	2	20.34	20.28	20.48
			15	0	2	20.23	20.35	20.42

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	22.12	22.25	22.43
			1	2	0	22.24	22.33	22.44
			1	5	0	22.25	22.19	22.63
			3	0	0	22.06	22.38	22.40
			3	1	0	22.23	22.41	22.51
			3	2	0	22.24	22.41	22.52
			6	0	1	21.19	21.34	21.43
		16QAM	1	0	1	21.70	20.70	21.70
			1	2	1	21.70	21.70	21.70
			1	5	1	21.70	21.29	21.70
			3	0	1	20.87	21.02	20.89
			3	1	1	20.78	21.51	21.24
			3	2	1	20.70	21.17	21.27
			6	0	2	20.11	20.38	20.45

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	23.46	23.30	23.39
			1	49	0	23.46	23.44	23.17
			1	99	0	23.26	23.48	23.23
			50	0	1	22.38	22.61	22.41
			50	24	1	22.38	22.44	22.25
			50	50	1	22.35	22.38	22.22
			100	0	1	22.38	22.47	22.38
		16QAM	1	0	1	22.63	22.56	22.63
			1	49	1	22.58	22.70	22.70
			1	99	1	22.41	22.58	22.40
			50	0	2	21.44	21.62	21.39
			50	24	2	21.41	21.40	21.23
			50	50	2	21.37	21.45	21.16
			100	0	2	21.39	21.55	21.34
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	23.43	23.36	23.49
			1	37	0	23.30	23.70	23.17
			1	74	0	23.15	23.43	23.08
			36	0	1	22.29	22.53	22.35
			36	20	1	22.26	22.38	22.19
			36	39	1	22.32	22.22	22.22
			75	0	1	22.29	22.32	22.25
		16QAM	1	0	1	22.69	22.70	22.56
			1	37	1	22.70	22.55	22.59
			1	74	1	22.70	22.19	22.16
			36	0	2	21.24	21.58	21.25
			36	20	2	21.28	21.46	21.10
			36	39	2	21.27	21.23	21.17
			75	0	2	21.33	21.35	21.28

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	23.44	23.45	23.21
			1	25	0	23.15	23.37	23.28
			1	49	0	23.30	23.13	23.20
			25	0	1	22.38	22.52	22.16
			25	12	1	22.31	22.44	22.21
			25	25	1	22.31	22.32	22.30
			50	0	1	22.29	22.40	22.26
		16QAM	1	0	1	22.65	22.11	22.25
			1	25	1	22.70	22.07	22.70
			1	49	1	22.47	22.42	22.70
			25	0	2	21.34	21.39	21.15
			25	12	2	21.33	21.35	21.18
			25	25	2	21.25	21.26	21.15
			50	0	2	21.25	21.33	21.14
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	23.10	23.21	23.00
			1	12	0	23.28	23.70	23.50
			1	24	0	23.04	23.11	22.94
			12	0	1	22.29	22.44	22.39
			12	7	1	22.26	22.49	22.33
			12	13	1	22.28	22.33	22.23
			25	0	1	22.27	22.45	22.33
		16QAM	1	0	1	22.01	22.50	22.68
			1	12	1	22.63	22.36	22.70
			1	24	1	21.79	22.65	22.70
			12	0	2	21.41	21.49	21.37
			12	7	2	21.37	21.29	21.37
			12	13	2	21.20	21.19	21.42
			25	0	2	21.49	21.53	21.36

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	23.13	23.40	23.44
			1	7	0	23.24	23.70	23.30
			1	14	0	23.11	23.28	23.14
			6	0	1	22.31	22.40	22.49
			6	3	1	22.33	22.41	22.38
			6	5	1	22.32	22.39	22.28
			15	0	1	22.35	22.40	22.30
		16QAM	1	0	1	22.70	22.69	22.62
			1	7	1	22.09	22.53	22.54
			1	14	1	22.33	22.56	22.70
			6	0	2	21.31	20.91	21.58
			6	3	2	21.03	21.23	21.35
			6	5	2	21.10	21.31	21.45
			15	0	2	21.18	21.31	21.42
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	23.24	23.10	23.03
			1	2	0	23.31	23.25	23.25
			1	5	0	23.19	23.16	23.42
			3	0	0	23.29	23.28	23.25
			3	1	0	23.37	23.53	23.33
			3	2	0	23.30	23.40	23.34
			6	0	1	22.28	22.35	22.32
		16QAM	1	0	1	22.70	22.66	22.70
			1	2	1	22.69	22.04	22.47
			1	5	1	22.70	22.06	22.60
			3	0	1	22.25	22.35	22.05
			3	1	1	22.16	22.49	22.21
			3	2	1	22.17	22.14	22.00
			6	0	2	21.50	21.59	21.70

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	23.29	23.24	23.19
			1	25	0	23.35	22.85	23.37
			1	49	0	23.29	23.36	23.28
			25	0	1	22.33	22.35	22.38
			25	12	1	22.33	22.23	22.40
			25	25	1	22.37	22.25	22.44
			50	0	1	22.34	22.25	22.40
		16QAM	1	0	1	22.70	22.70	22.70
			1	25	1	21.93	21.94	22.29
			1	49	1	22.42	22.50	22.53
			25	0	2	21.16	21.29	21.28
			25	12	2	21.18	21.11	21.26
			25	25	2	21.12	21.09	21.25
			50	0	2	21.20	21.15	21.20
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	23.05	23.63	23.27
			1	12	0	23.61	23.70	23.22
			1	24	0	23.01	23.29	23.01
			12	0	1	22.27	22.27	22.36
			12	7	1	22.32	21.98	22.25
			12	13	1	22.48	21.97	22.29
			25	0	1	22.27	22.19	22.28
		16QAM	1	0	1	22.03	22.70	22.54
			1	12	1	21.97	22.70	22.29
			1	24	1	22.70	22.70	22.70
			12	0	2	21.24	21.16	21.22
			12	7	2	21.25	21.21	21.14
			12	13	2	20.98	21.06	21.20
			25	0	2	21.22	21.20	21.33

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	23.20	23.29	23.23
			1	7	0	23.39	23.26	23.25
			1	14	0	23.20	23.23	23.07
			6	0	1	22.32	22.19	22.48
			6	3	1	22.38	22.31	22.28
			6	5	1	22.36	22.29	22.21
			15	0	1	22.34	22.29	22.27
		16QAM	1	0	1	22.34	22.35	22.44
			1	7	1	22.58	22.70	22.23
			1	14	1	22.54	22.56	22.27
			6	0	2	21.45	21.01	21.59
			6	3	2	21.56	21.12	21.49
			6	5	2	21.43	21.01	21.44
			15	0	2	21.45	21.27	21.32
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	23.11	23.13	23.15
			1	2	0	23.15	23.24	23.18
			1	5	0	23.15	23.20	23.19
			3	0	0	23.18	23.34	23.12
			3	1	0	23.24	23.31	23.18
			3	2	0	23.18	23.33	23.20
			6	0	1	22.22	22.20	22.18
		16QAM	1	0	1	22.70	22.67	22.12
			1	2	1	22.70	22.70	22.38
			1	5	1	22.67	21.99	22.70
			3	0	1	21.76	22.09	22.10
			3	1	1	21.80	22.15	22.18
			3	2	1	22.08	21.88	22.18
			6	0	2	20.99	21.43	21.11

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	23.33
			1	25	0	23.36
			1	49	0	23.18
			25	0	1	22.37
			25	12	1	22.38
			25	25	1	22.38
			50	0	1	22.34
		16QAM	1	0	1	22.37
			1	25	1	22.37
			1	49	1	22.35
			25	0	2	21.40
			25	12	2	21.21
			25	25	2	21.33
			50	0	2	21.30

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)
						23230
						782 MHz
LTE Band 13	5	QPSK	1	0	0	23.55
			1	12	0	23.70
			1	24	0	23.49
			12	0	1	22.43
			12	6	1	22.47
			12	11	1	22.50
			25	0	1	22.42
		16QAM	1	0	1	22.32
			1	12	1	22.24
			1	24	1	22.25
			12	0	2	21.50
			12	6	2	21.29
			12	11	2	21.53
			25	0	2	21.35

10. PEAK TO AVERAGE RATIO

Test Procedure

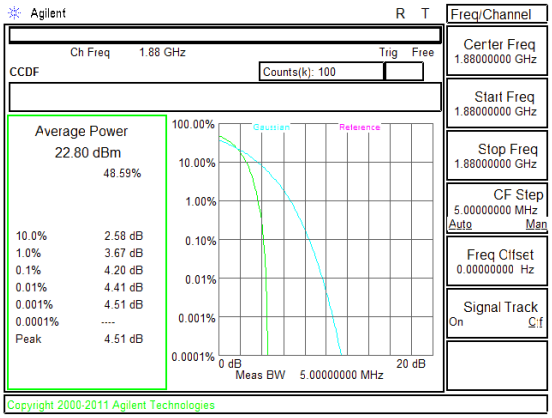
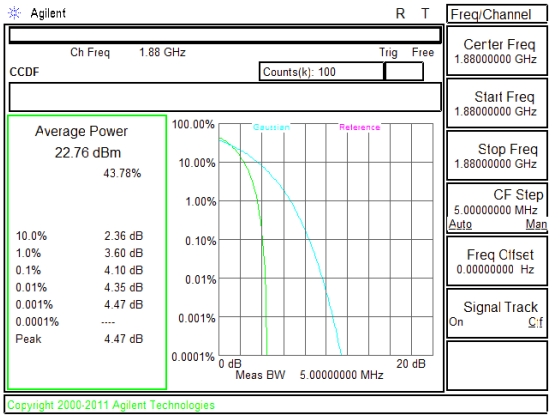
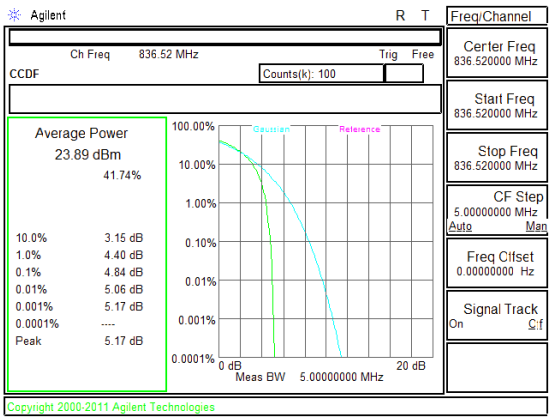
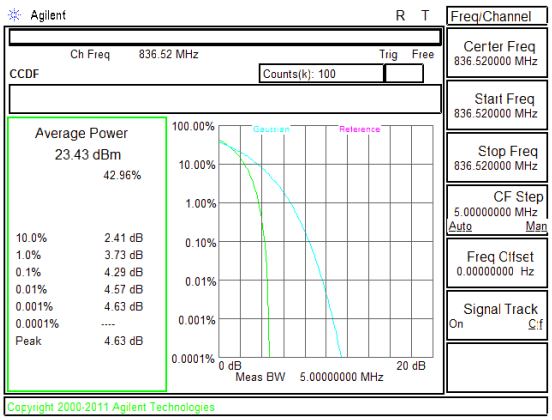
Per KDB 971168 D01 Power Meas License Digital Systems v02r02

Test Spec

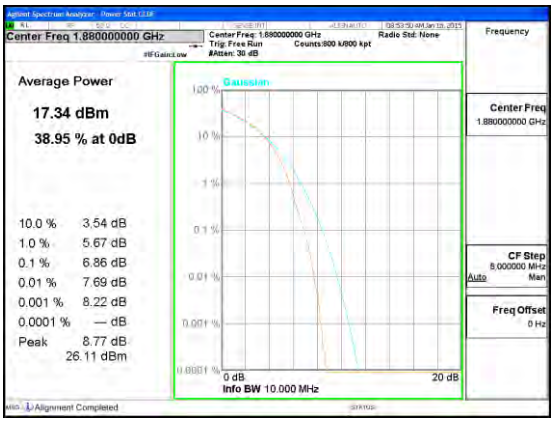
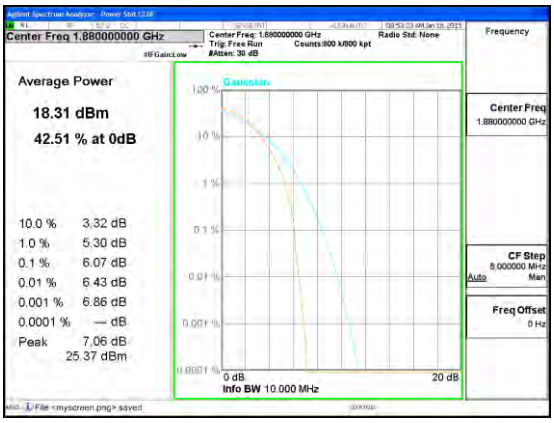
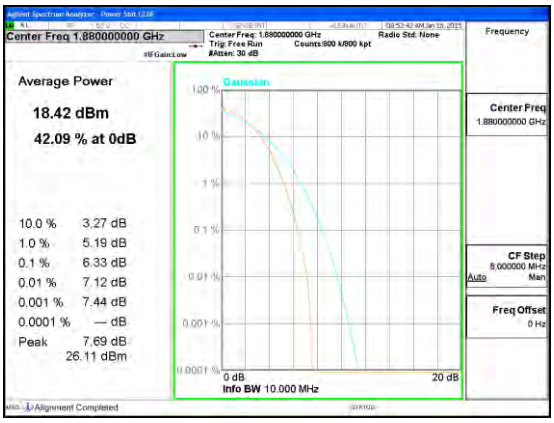
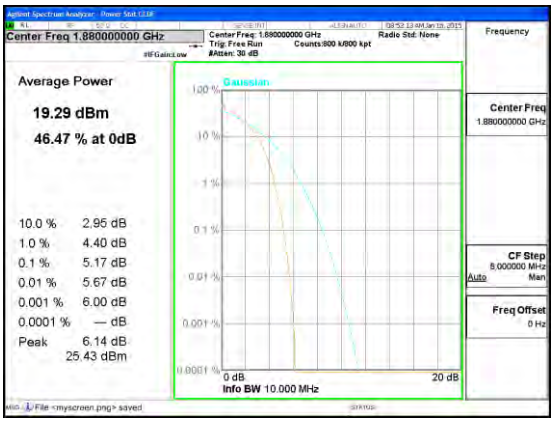
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

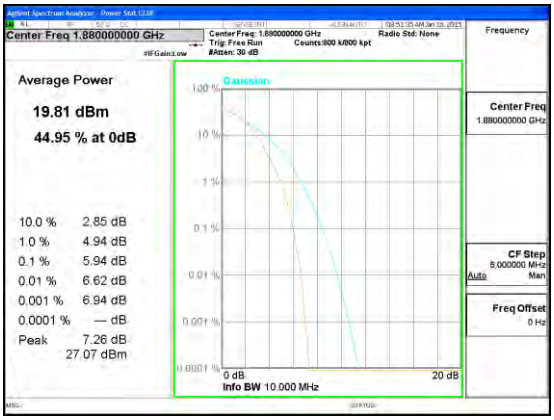
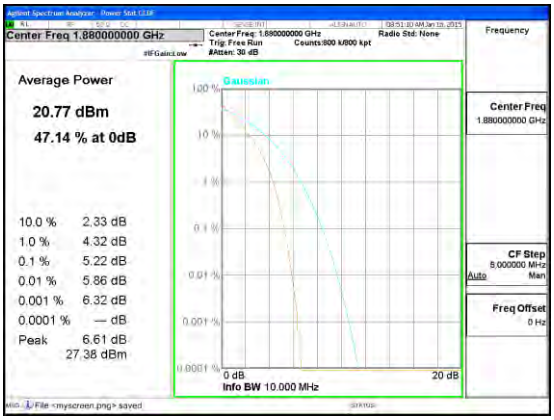
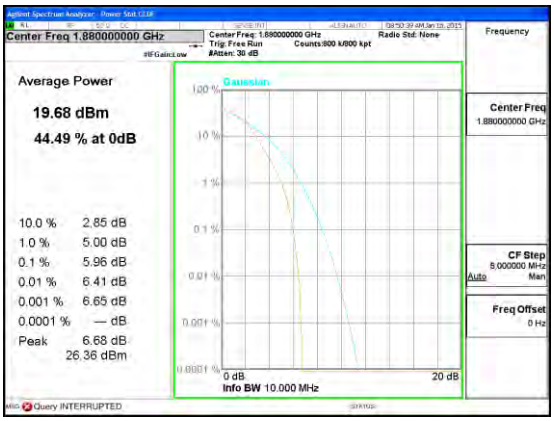
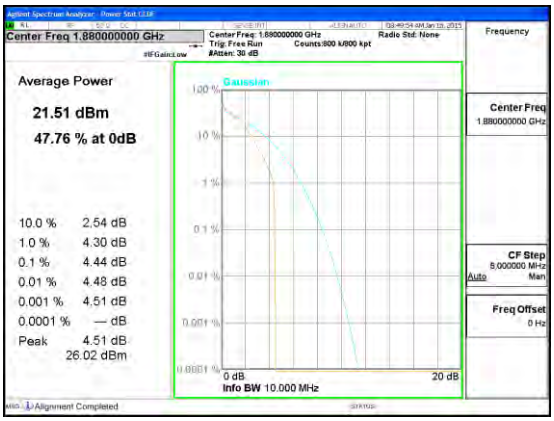
10.1. CONDUCTED PEAK TO AVERAGE RESULT

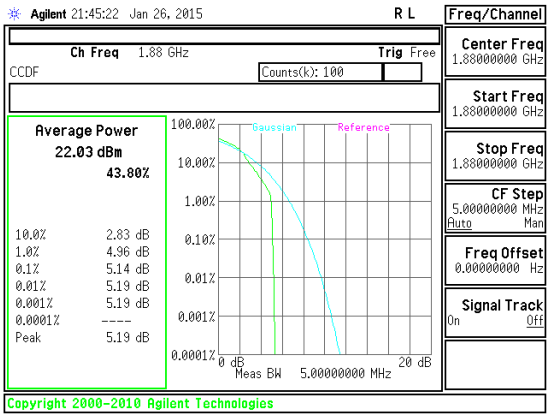
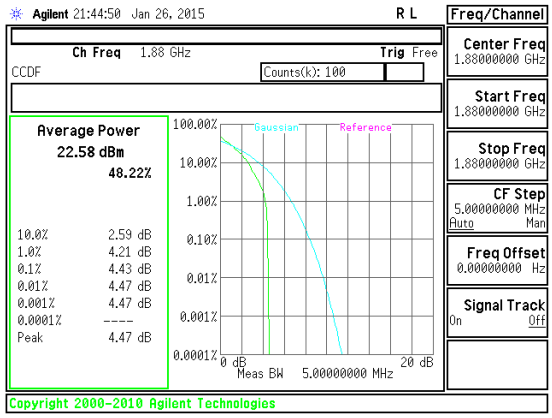
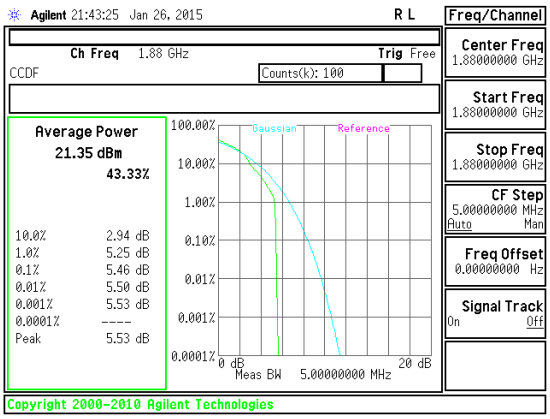
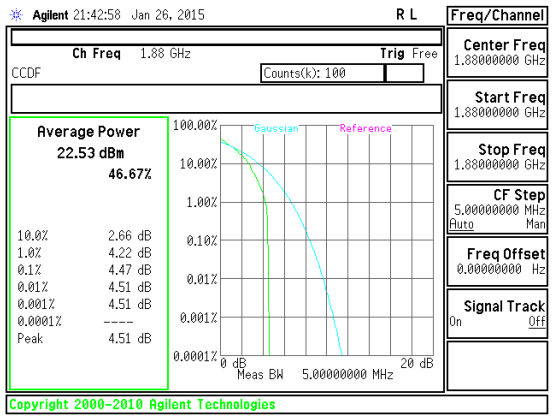
CDMA

Band BC1	 Band BC1 Mid channel	 Band BC1 1xRTT Mid channel
Band BC0	 Band BC0 Mid channel	 Band BC0 1xRTT Mid channel

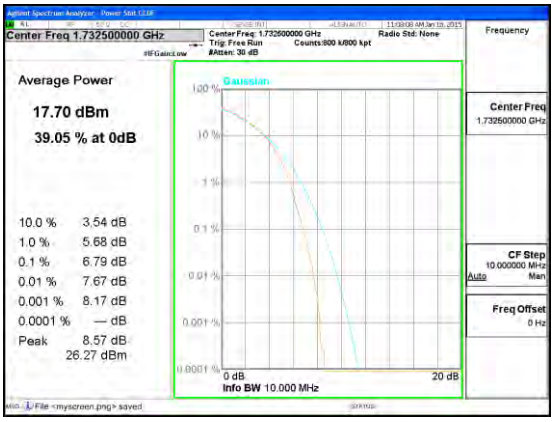
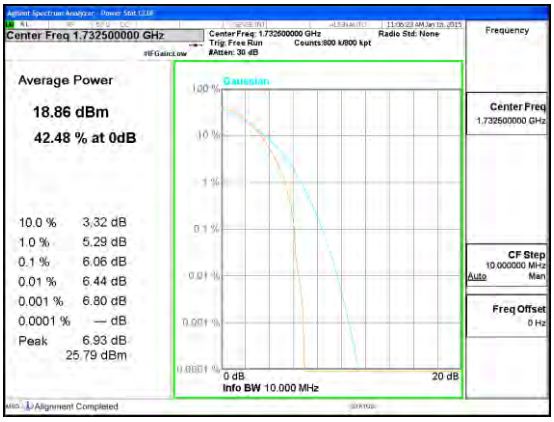
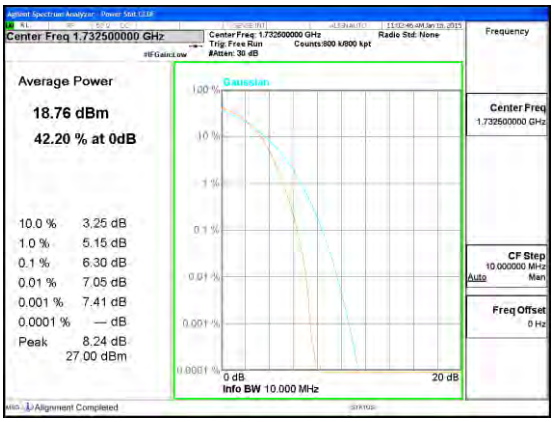
LTE Band 2

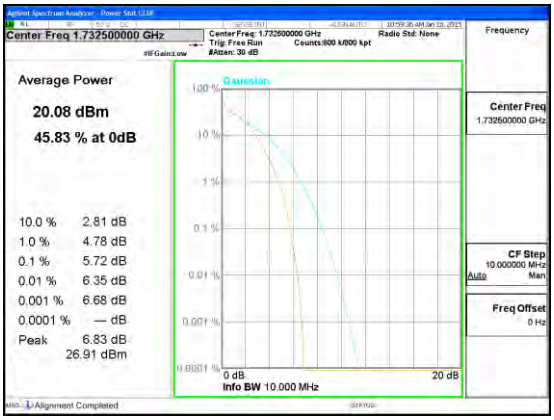
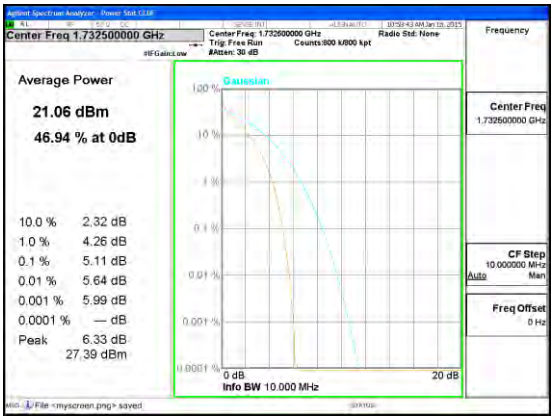
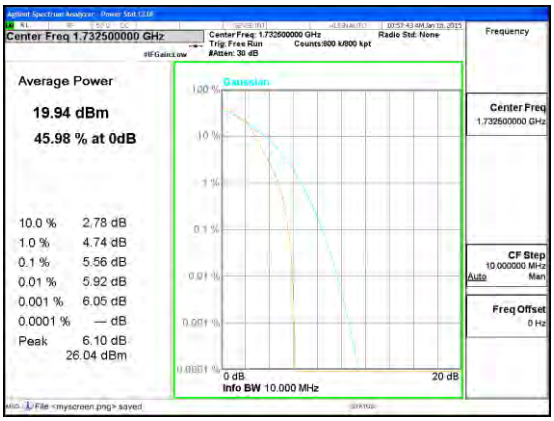
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz 16QAM Mid channel	 Band LTE2 20MHz QPSK Mid channel
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz 16QAM Mid channel	 Band LTE2 15MHz QPSK Mid channel

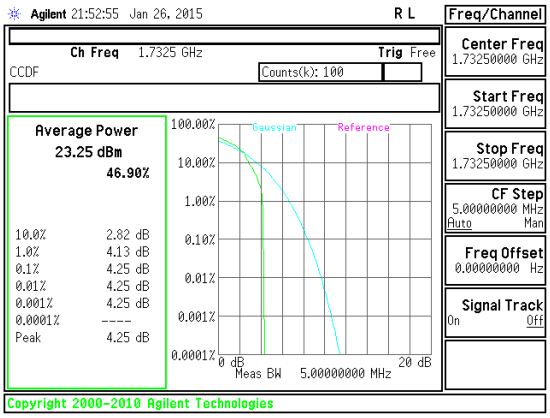
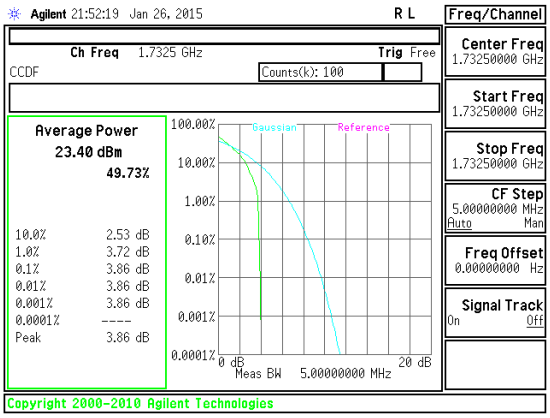
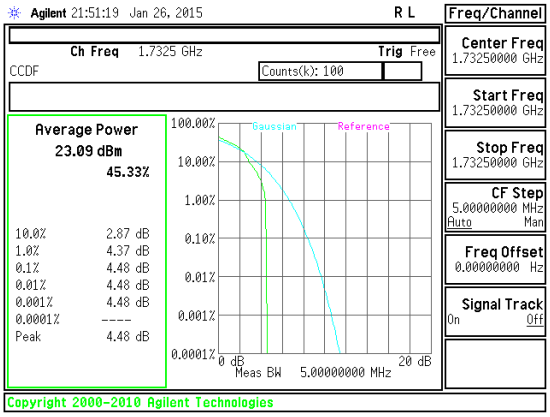
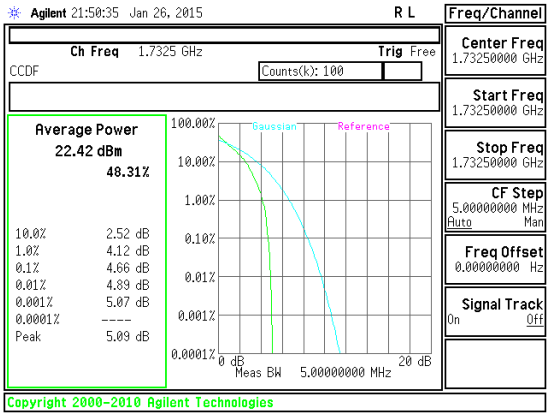
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz 16QAM Mid channel	 Band LTE2 10MHz QPSK Mid channel
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz 16QAM Mid channel	 Band LTE2 5MHz QPSK Mid channel

Band LTE2 3MHz 16QAM	 Band LTE2 3MHz 16QAM Mid channel	 Band LTE2 3MHz QPSK Mid channel
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz 16QAM Mid channel	 Band LTE2 1.4MHz QPSK Mid channel

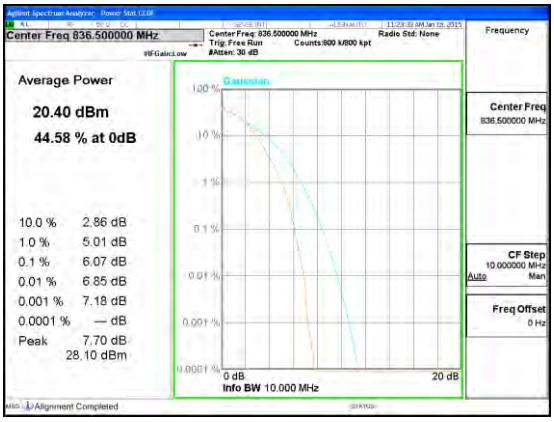
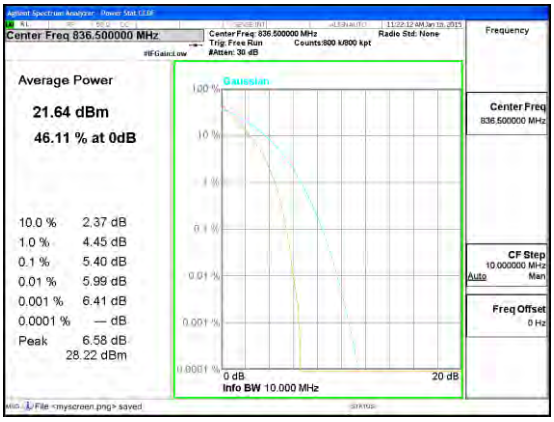
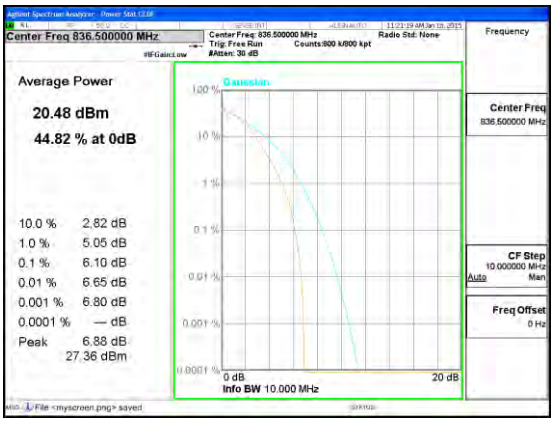
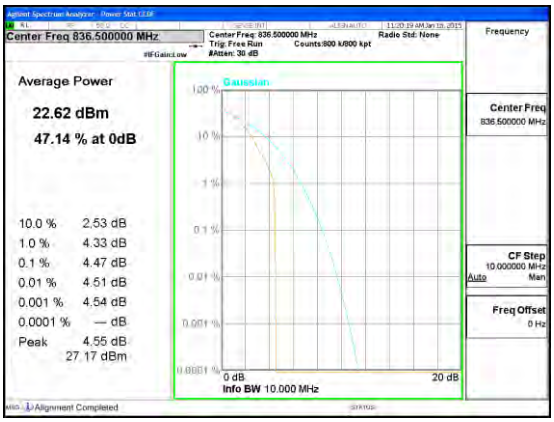
LTE Band 4

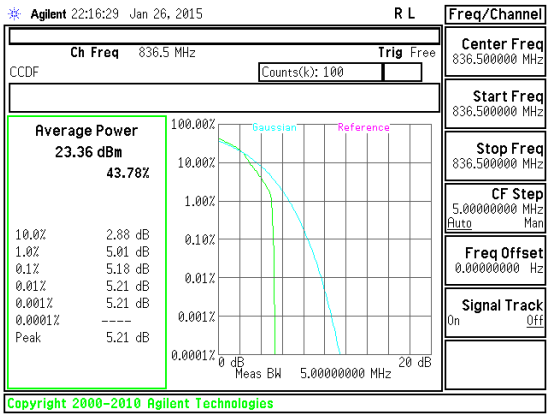
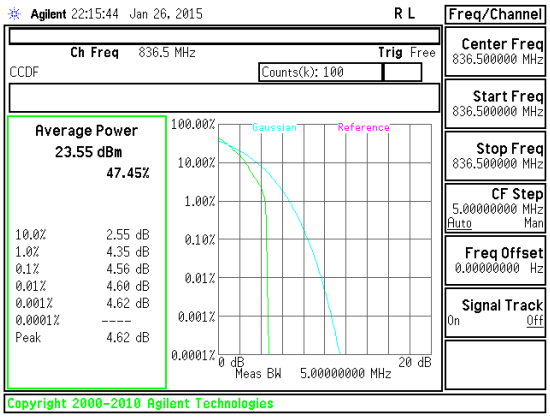
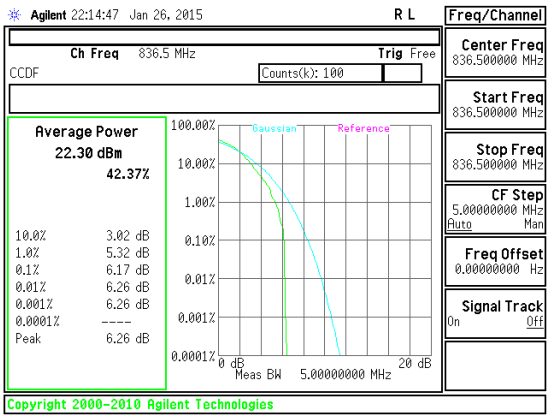
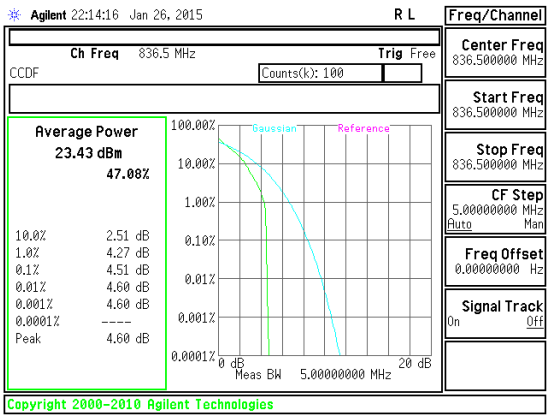
Band LTE4 20MHz 16QAM	 Band LTE4 20MHz 16QAM Mid channel	 Band LTE4 20MHz QPSK Mid channel
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz 16QAM Mid channel	 Band LTE4 15MHz QPSK Mid channel

Band LTE4 10MHz 16QAM	 Band LTE4 10MHz 16QAM Mid channel	 Band LTE4 10MHz QPSK Mid channel
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz 16QAM Mid channel	 Band LTE4 5MHz QPSK Mid channel

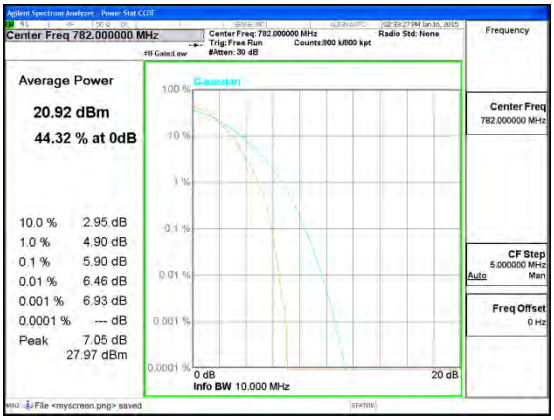
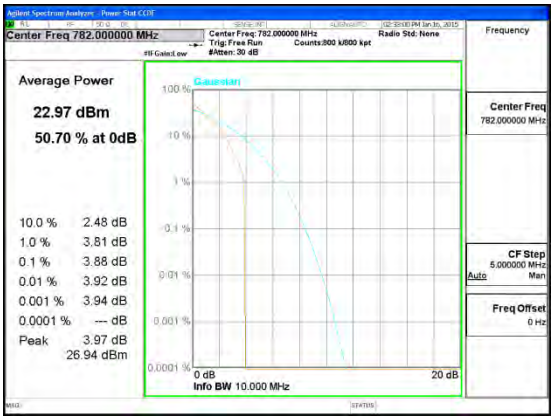
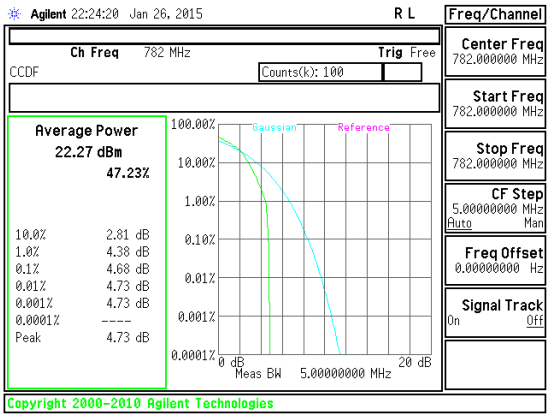
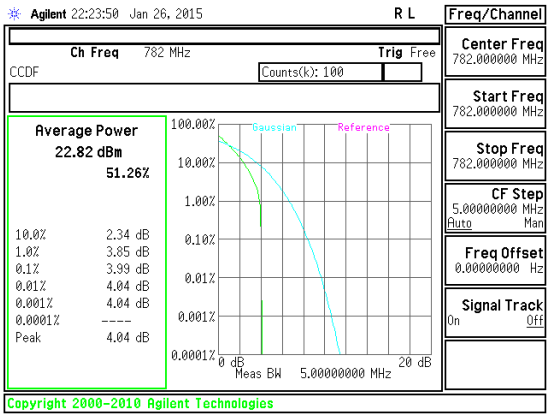
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz 16QAM Mid channel	 Band LTE4 3MHz QPSK Mid channel
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz 16QAM Mid channel	 Band LTE4 1.4MHz QPSK Mid channel

LTE Band 5

Band LTE5 10MHz 16QAM	 Band LTE5 10MHz 16QAM Mid channel	 Band LTE5 10MHz QPSK Mid channel
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz 16QAM Mid channel	 Band LTE5 5MHz QPSK Mid channel

Band LTE5 3MHz 16QAM	 Band LTE5 3MHz 16QAM Mid channel	 Band LTE5 3MHz QPSK Mid channel
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz 16QAM Mid channel	 Band LTE5 1.4MHz QPSK Mid channel

LTE Band 13

Band LTE13 10MHz	 Band LTE13 10MHz 16QAM Mid channel	 Band LTE13 10MHz QPSK Mid channel
Band LTE13 5MHz	 Band LTE13 5MHz 16QAM Mid channel	 Band LTE13 5MHz QPSK Mid channel

11. LIMITS AND CONDUCTED RESULTS

11.1. 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

CDMA and LTE

11.1.1. OCCUPIED BANDWIDTH RESULTS

CDMA

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
BC0	1xRTT	1013	824.7	1.2686	1.417
		384	836.52	1.2699	1.412
		777	848.31	1.2671	1.421
	EVDO REL. 0	1013	824.7	1.27	1.42
		384	836.52	1.27	1.41
		777	848.31	1.27	1.42
BC1	1xRTT	25	1851.25	1.277	1.443
		600	1880	1.2704	1.431
		1175	1908.75	1.2885	1.451
	EVDO REL. 0	25	1851.25	1.2754	1.435
		600	1880	1.2771	1.423
		1175	1908.75	1.2769	1.437

LTE Band 2

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	20	QPSK	100/0	1860	17.914	19.29
			100/0	1880	17.911	19.26
			100/0	1900	17.89	19.50
		16QAM	100/0	1860	17.871	19.30
			100/0	1880	17.861	19.33
			100/0	1900	17.910	19.36
	15	QPSK	75/0	1857.5	13.436	14.67
			75/0	1880	13.440	14.69
			75/0	1902.5	13.457	14.66
		16QAM	75/0	1857.5	13.456	14.66
			75/0	1880	13.444	14.59
			75/0	1902.5	13.458	14.59
	10	QPSK	50/0	1855	8.9969	9.902
			50/0	1880	8.9948	9.829
			50/0	1905	8.9654	9.877
		16QAM	50/0	1855	8.9974	9.900
			50/0	1880	8.9626	9.875
			50/0	1905	8.9991	9.837
	5	QPSK	25/0	1852.5	4.499	4.973
			25/0	1880	4.5037	5.003
			25/0	1907.5	4.4921	4.966
		16QAM	25/0	1852.5	4.5041	4.971
			25/0	1880	4.5045	4.978
			25/0	1907.5	4.507	4.993

LTE2	3	QPSK	15/0	1851.5	2.69	2.976
			15/0	1880	2.674	2.962
			15/0	1908.5	2.693	2.963
		16QAM	15/0	1851.5	2.686	2.965
			15/0	1880	2.685	2.973
			15/0	1908.5	2.69	2.976
	1.4	QPSK	6/0	1850.7	1.084	1.282
			6/0	1880	1.079	1.263
			6/0	1909.3	1.085	1.274
		16QAM	6/0	1850.7	1.084	1.270
			6/0	1880	1.085	1.292
			6/0	1909.3	1.086	1.274

LTE Band 4

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	20	QPSK	100/0	1720	17.895	19.275
			100/0	1732.5	17.904	19.310
			100/0	1745	17.913	19.537
		16QAM	100/0	1720	17.903	19.299
			100/0	1732.5	17.885	19.302
			100/0	1745	17.928	19.478
	15	QPSK	75/0	1717.5	13.435	14.749
			75/0	1732.5	13.447	14.567
			75/0	1747.5	13.479	14.617
		16QAM	75/0	1717.5	13.453	14.596
			75/0	1732.5	13.441	14.604
			75/0	1747.5	13.445	14.626
	10	QPSK	50/0	1715	8.981	9.934
			50/0	1732.5	8.987	9.851
			50/0	1750	8.974	9.869
		16QAM	50/0	1715	9.006	9.900
			50/0	1732.5	8.958	9.875
			50/0	1750	9.006	9.868
	5	QPSK	25/0	1712.5	4.5	4.971
			25/0	1732.5	4.51	4.998
			25/0	1752.5	4.495	4.967
		16QAM	25/0	1712.5	4.504	4.983
			25/0	1732.5	4.505	4.994
			25/0	1752.5	4.51	5.019

LTE4	3	QPSK	15/0	1711.5	2.685	2.972
			15/0	1732.5	2.689	2.972
			15/0	1753.5	2.682	2.983
		16QAM	15/0	1711.5	2.684	2.958
			15/0	1732.5	2.684	2.967
			15/0	1753.5	2.694	2.978
	1.4	QPSK	6/0	1710.7	1.086	1.264
			6/0	1732.5	1.083	1.268
			6/0	1754.3	1.087	1.266
		16QAM	6/0	1710.7	1.088	1.291
			6/0	1732.5	1.083	1.289
			6/0	1754.3	1.088	1.283

LTE Band 5

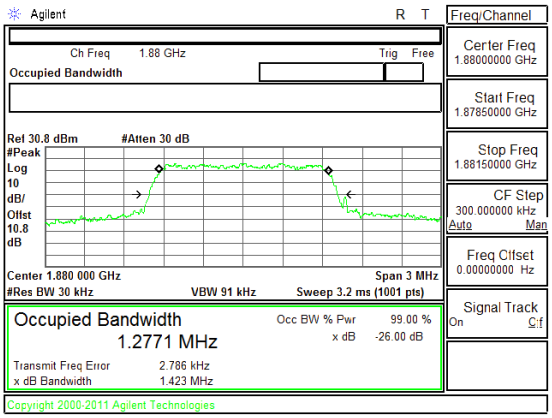
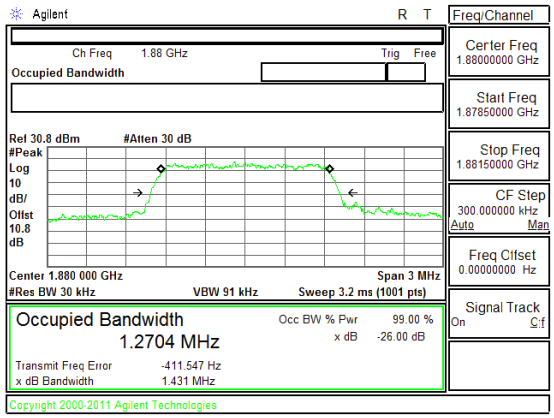
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	10	QPSK	50/0	829	9.003	9.862
			50/0	836.5	8.995	9.789
			50/0	844	8.977	9.852
		16QAM	50/0	829	8.96	9.886
			50/0	836.5	8.977	9.818
			50/0	844	9.007	9.859
	5	QPSK	25/0	826.5	4.506	4.979
			25/0	836.5	4.509	5.009
			25/0	846.5	4.502	4.955
		16QAM	25/0	826.5	4.509	5.003
			25/0	836.5	4.509	4.982
			25/0	846.5	4.512	5.011
	3	QPSK	15/0	825.5	2.69	2.968
			15/0	836.5	2.68	2.970
			15/0	847.5	2.684	2.970
		16QAM	15/0	825.5	2.694	2.951
			15/0	836.5	2.681	2.973
			15/0	847.5	2.69	2.975
	1.4	QPSK	6/0	824.7	1.083	1.259
			6/0	836.5	1.086	1.279
			6/0	848.3	1.085	1.264
		16QAM	6/0	824.7	1.09	1.273
			6/0	836.5	1.087	1.282
			6/0	848.3	1.083	1.274

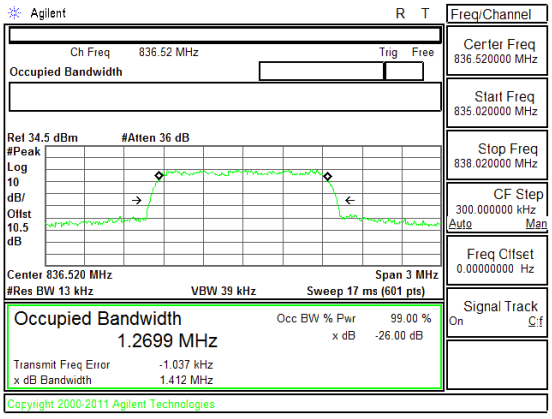
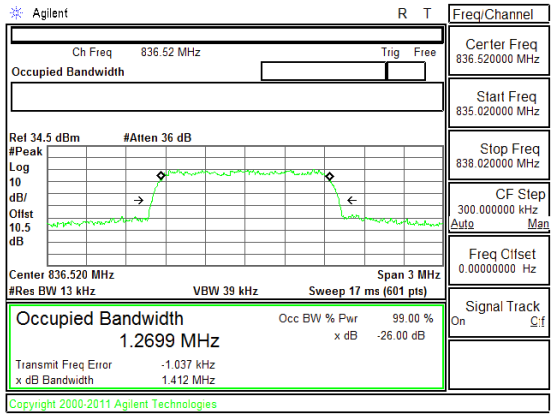
LTE Band 13

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE13	10	QPSK	50/0	782	8.984	9.849
		16QAM	50/0	782	8.989	9.881
LTE13	5	QPSK	25/0	779.5	4.504	4.974
			25/0	782	4.510	4.972
			25/0	784.5	4.512	4.977
		16QAM	25/0	779.5	4.510	4.993
			25/0	782	4.497	4.984
			25/0	784.5	4.502	4.973

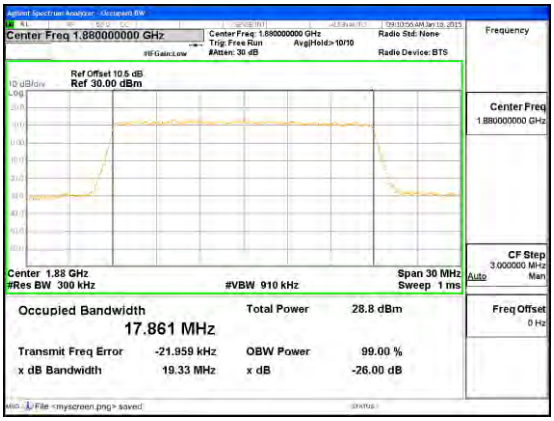
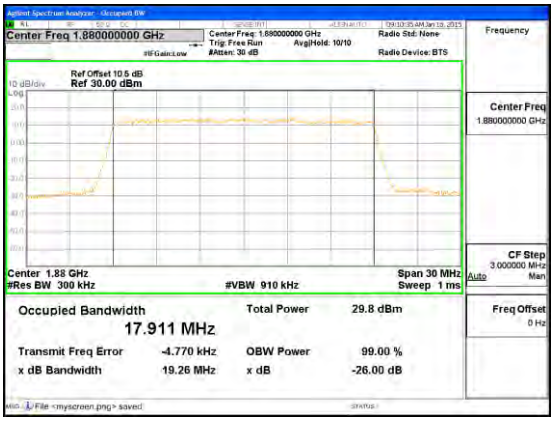
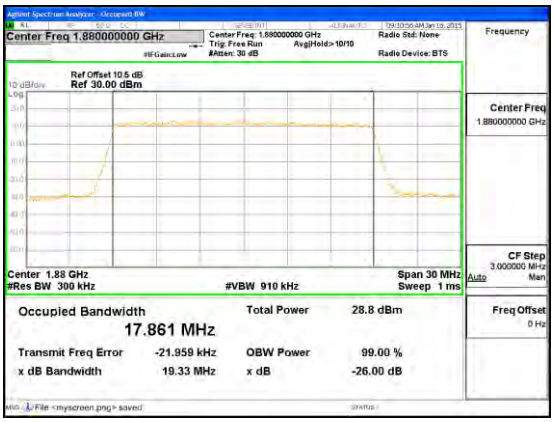
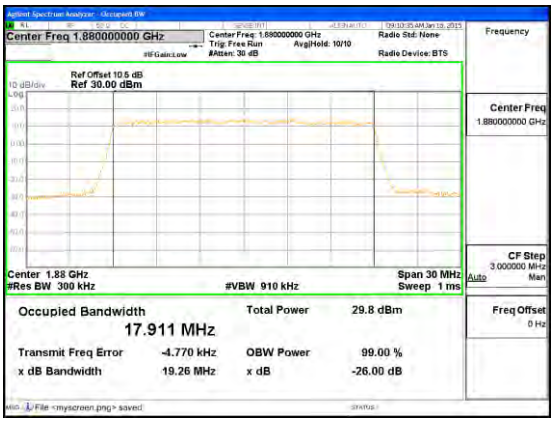
11.1.1. OCCUPIED BANDWIDTH PLOTS

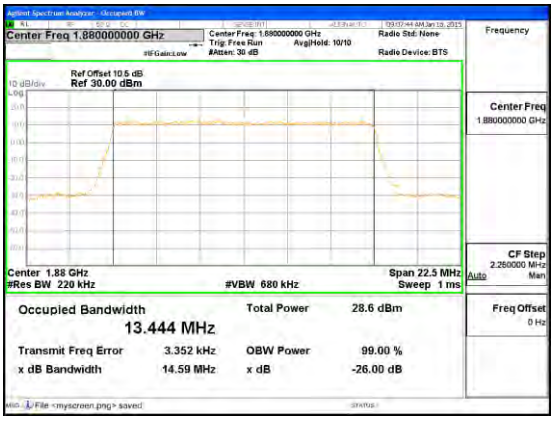
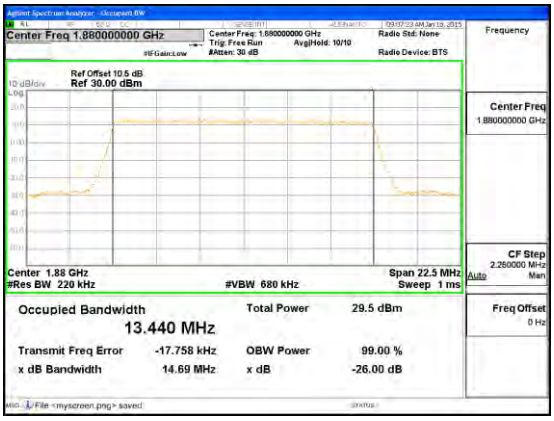
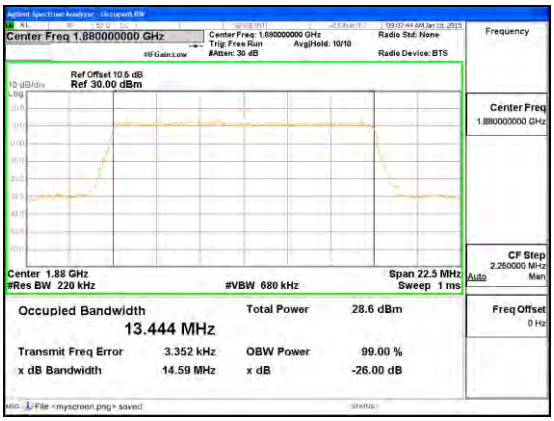
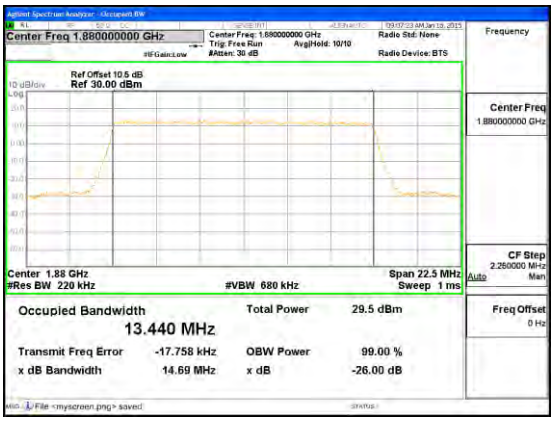
CDMA

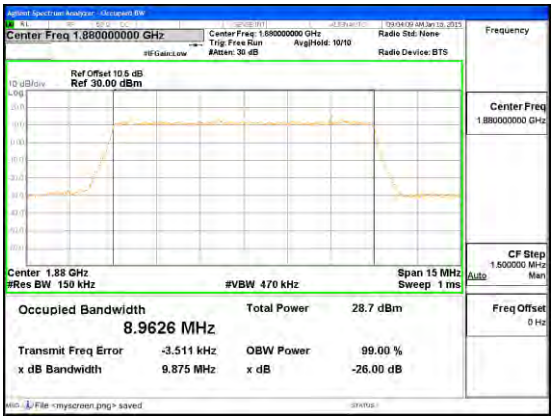
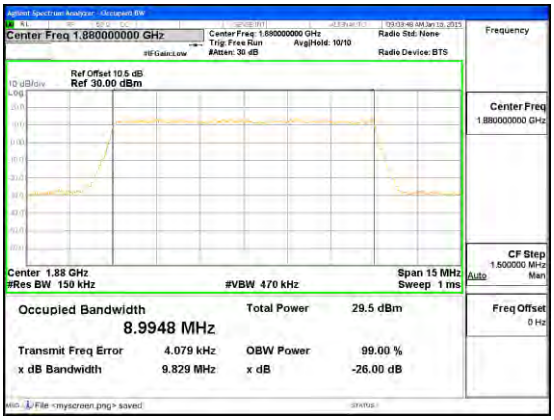
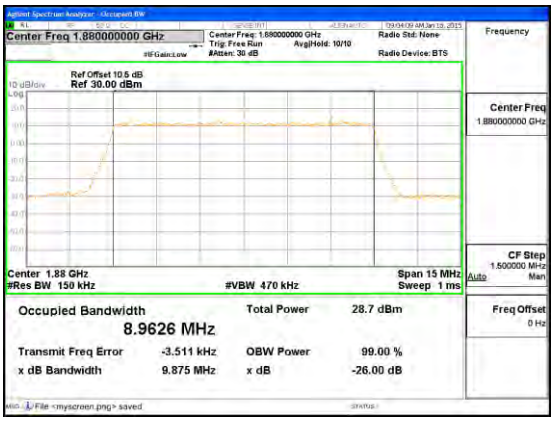
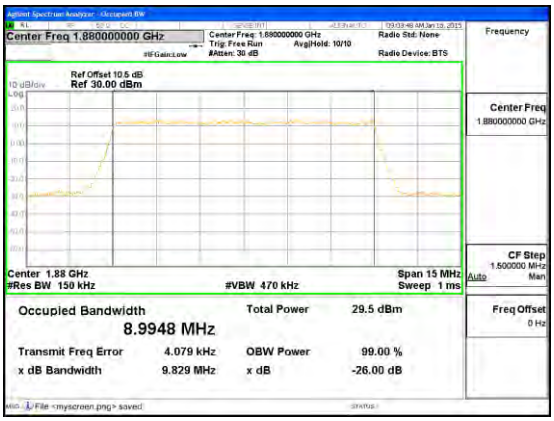
Band BC1	 Band BC1 OBW Mid channel	 Band BC1 1xRTT OBW Mid channel

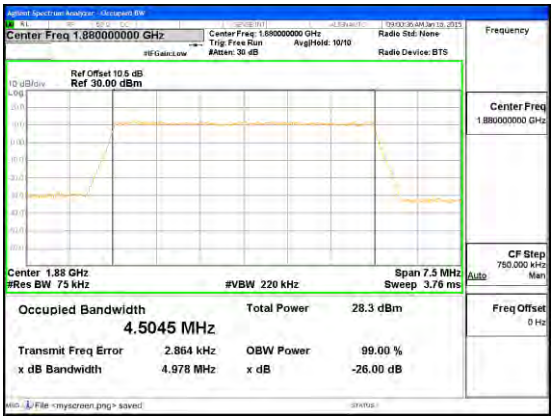
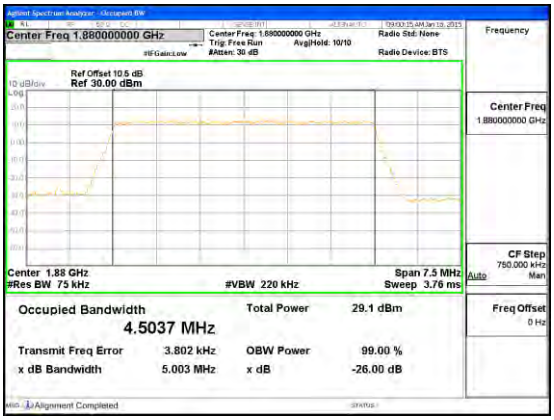
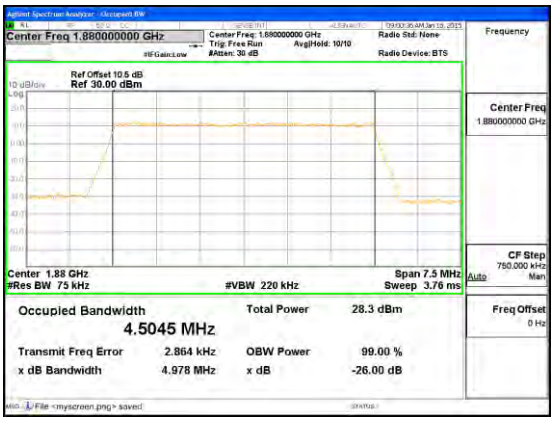
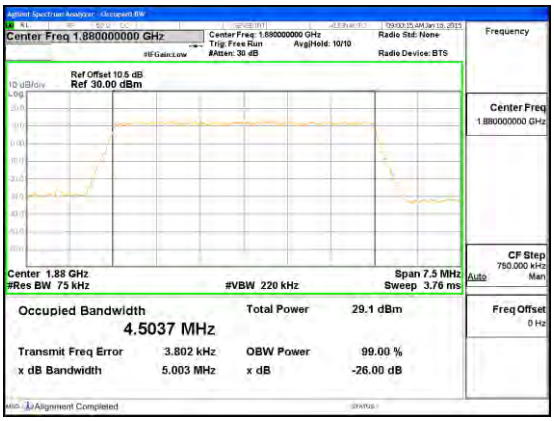
Band BC0	 Band BC0 OBW Mid channel	 Band BC0 1xRTT OBW Mid channel

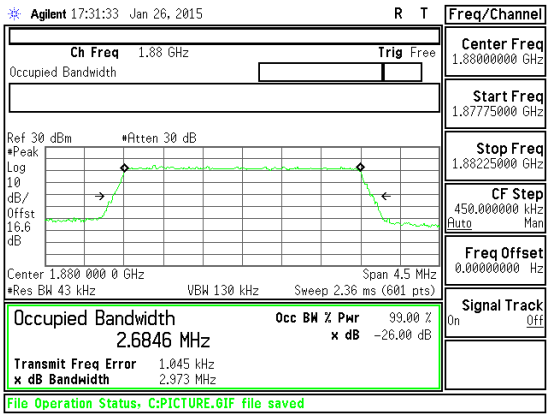
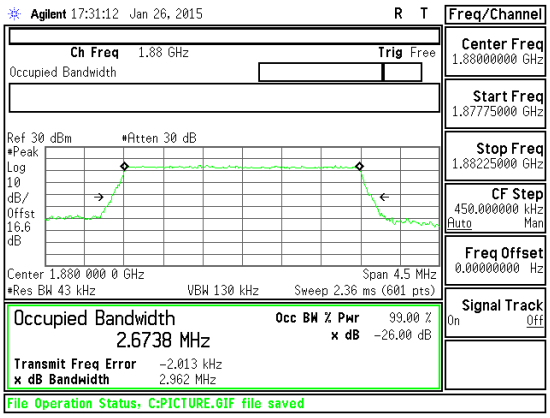
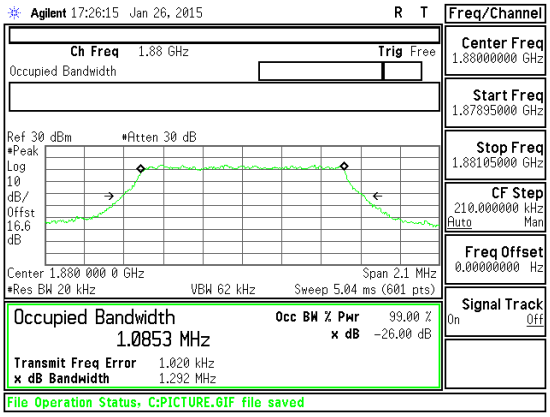
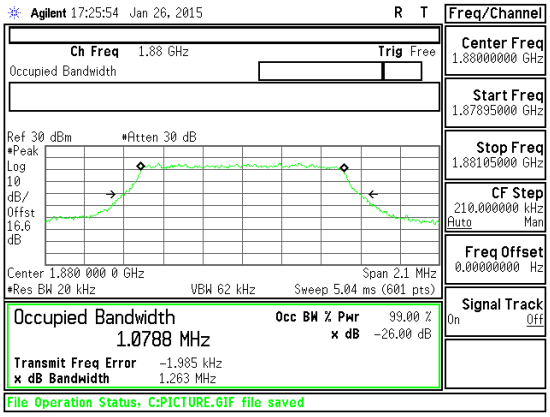
LTE Band 2

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

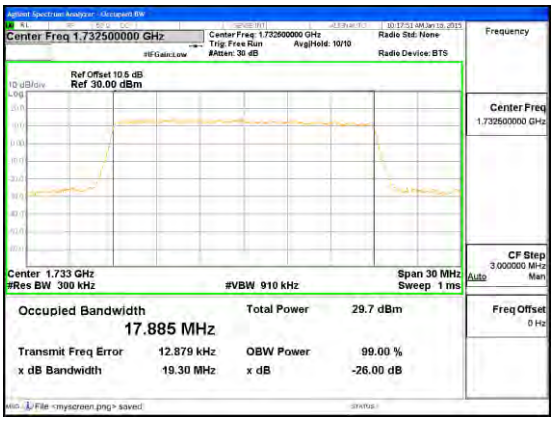
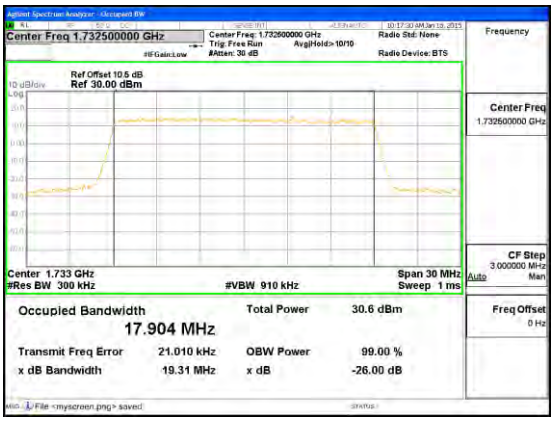
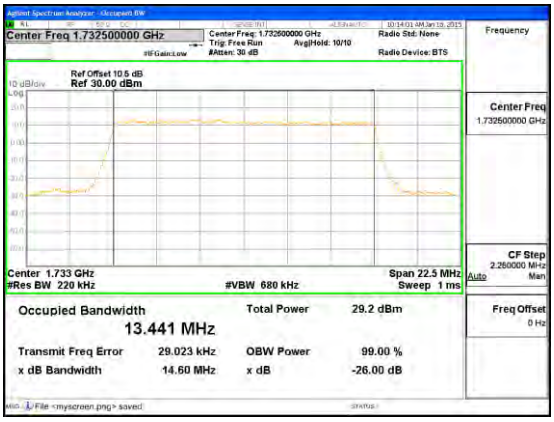
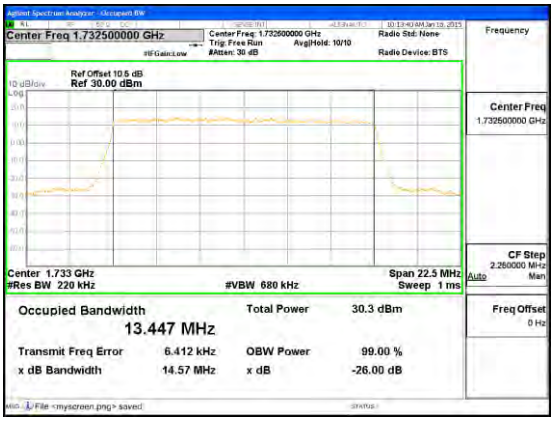
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 15MHz OBW QPSK Mid Channel FRB.gif
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 15MHz OBW QPSK Mid Channel FRB.gif

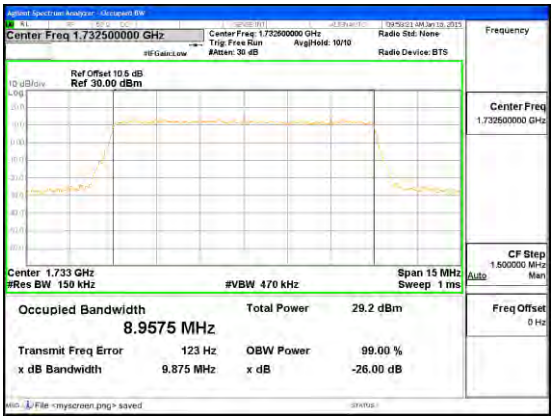
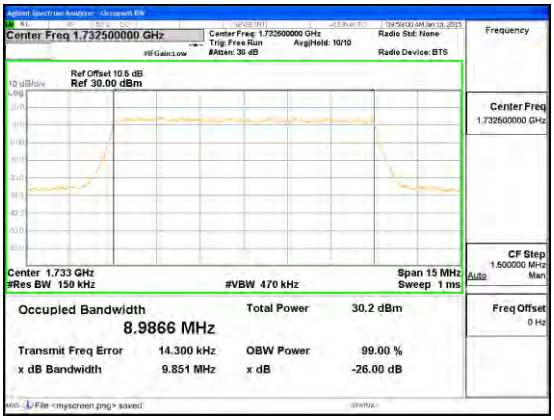
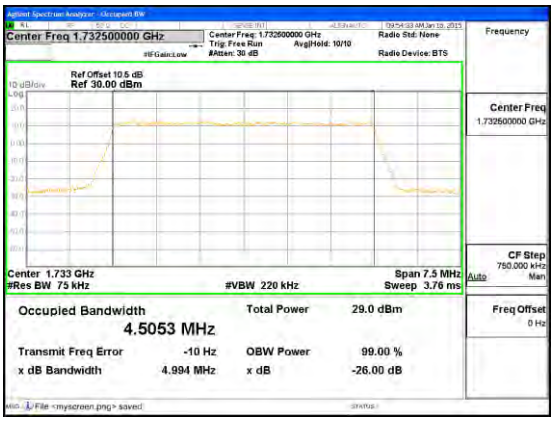
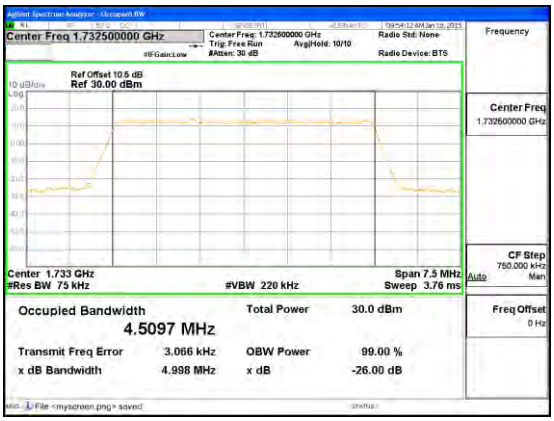
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 10MHz OBW QPSK Mid Channel FRB.gif

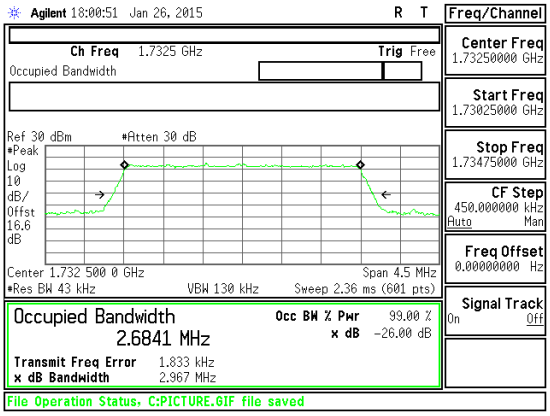
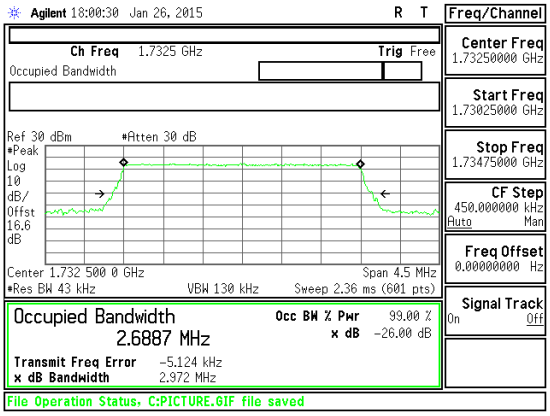
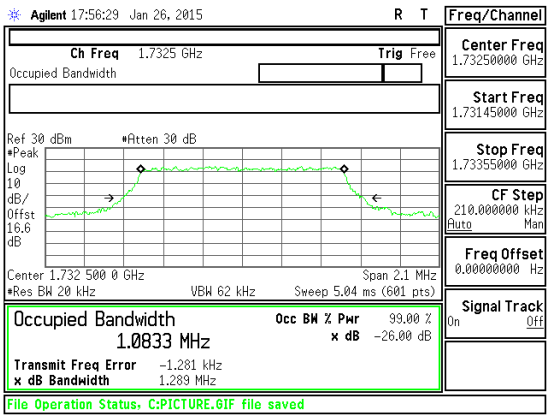
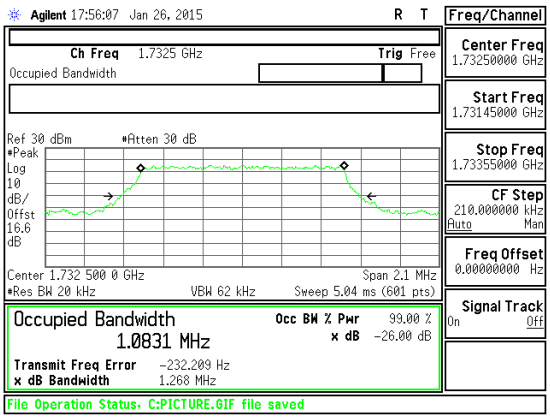
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 5MHz OBW QPSK Mid Channel FRB.gif
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 5MHz OBW QPSK Mid Channel FRB.gif

Band LTE2 3MHz 16QAM	 Band LTE2 3MHz 16QAM Mid channel	 Band LTE2 3MHz QPSK Mid channel
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz 16QAM Mid channel	 Band LTE2 1.4MHz QPSK Mid channel

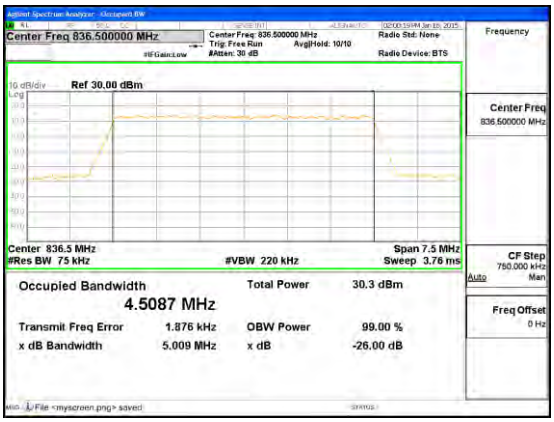
LTE Band 4

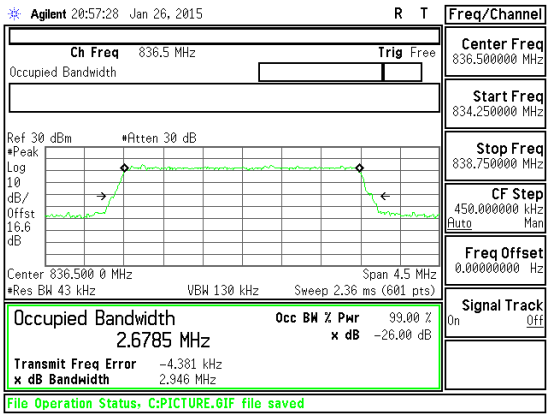
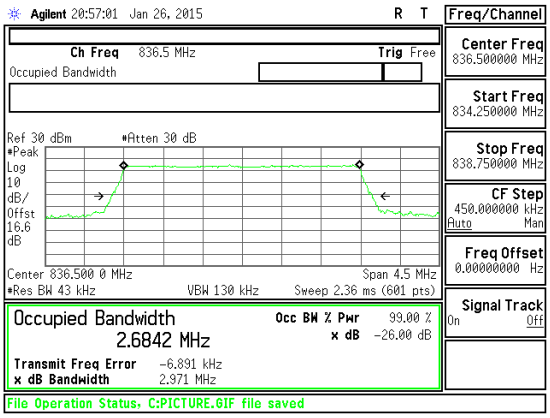
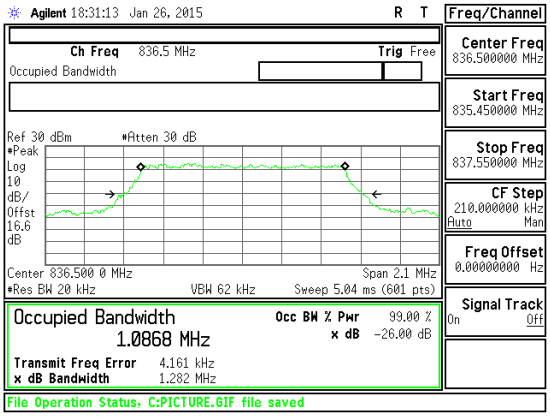
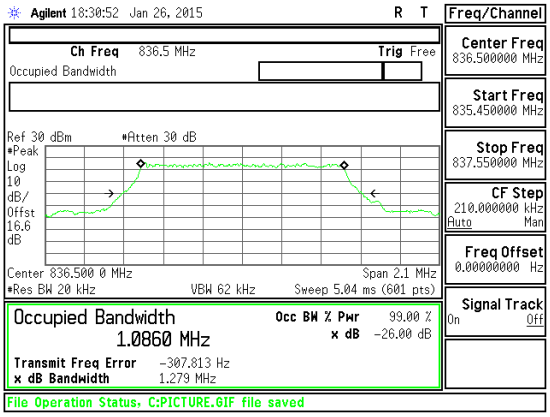
Band LTE4 20MHz 16QAM	 Band LTE4 20MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 20MHz OBW QPSK Mid Channel FRB.gif
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 15MHz OBW QPSK Mid Channel FRB.gif

Band LTE4 10MHz 16QAM	 Band LTE4 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 5MHz OBW QPSK Mid Channel FRB.gif

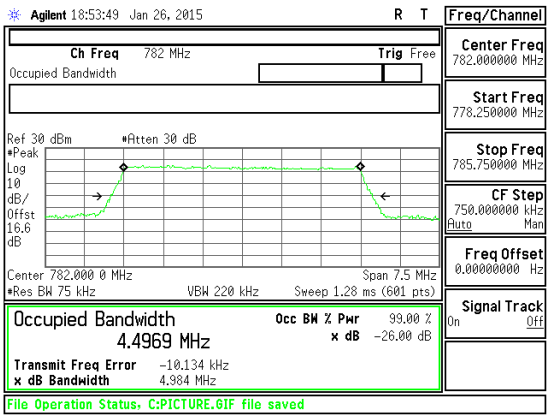
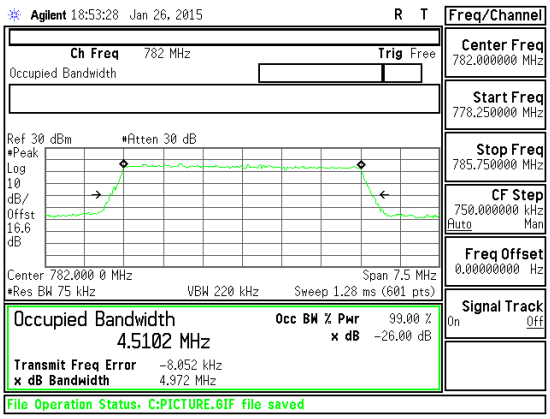
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz 16QAM Mid channel	 Band LTE4 3MHz QPSK Mid channel
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz 16QAM Mid channel	 Band LTE4 1.4MHz QPSK Mid channel

LTE Band 5

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

Band LTE5 3MHz 16QAM		
	Band LTE5 3MHz CSE 16QAM Mid channel	Band LTE5 3MHz CSE QPSK Mid channel
Band LTE5 1.4MHz 16QAM		
	Band LTE5 1.4MHz CSE 16QAM Mid channel	Band LTE5 1.4MHz CSE QPSK Mid channel

LTE Band 13

Band LTE13 10MHz	 Band LTE13 10MHz 16QAM Mid channel	 Band LTE13 10MHz QPSK Mid channel
Band LTE13 5MHz 16QAM	 Band LTE13 5MHz CSE 16QAM Mid channel	 Band LTE13 5MHz CSE QPSK Mid channel

11.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238, §27. 53

LIMITS

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

Part 27: (m)(4) For mobile station, the attenuation factor shall be not less than 43+10Log(P)dB at the channel edge and (55+10Log(P)dB) at 5.5MHz from the channel edges.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02
The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

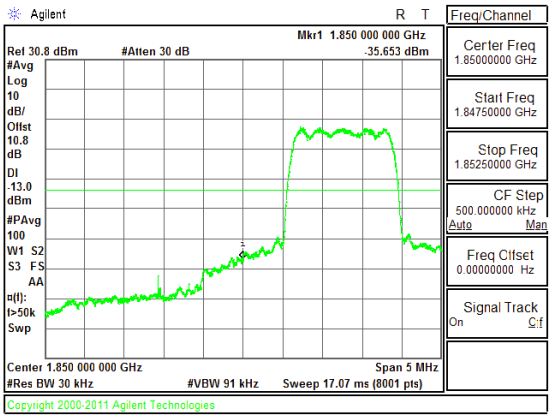
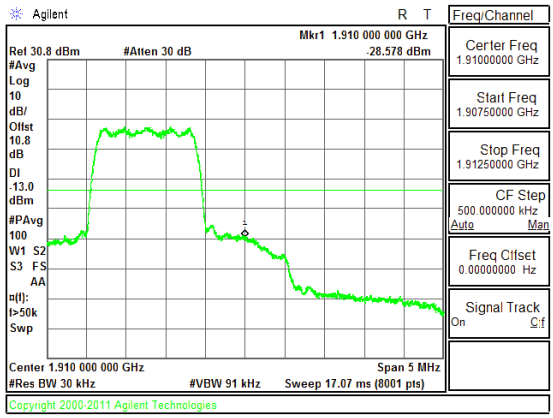
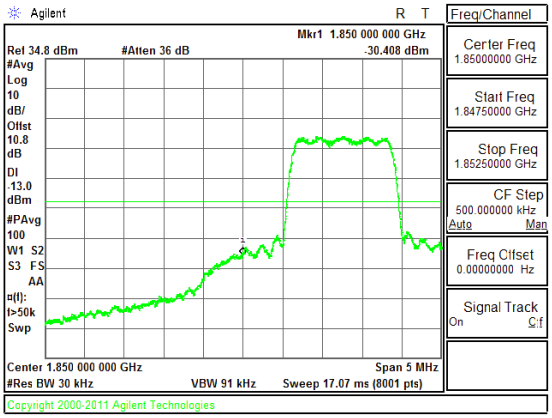
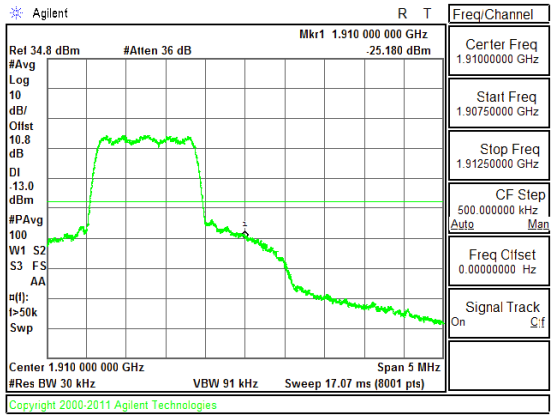
MODES TESTED

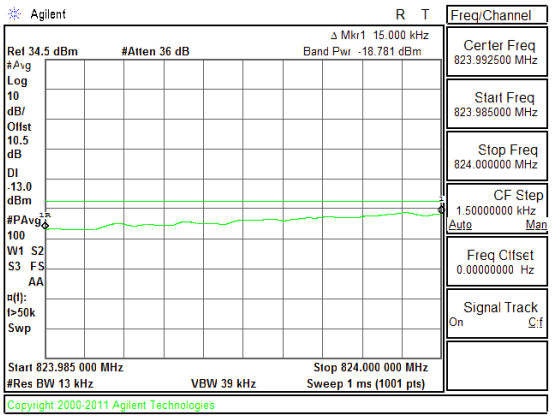
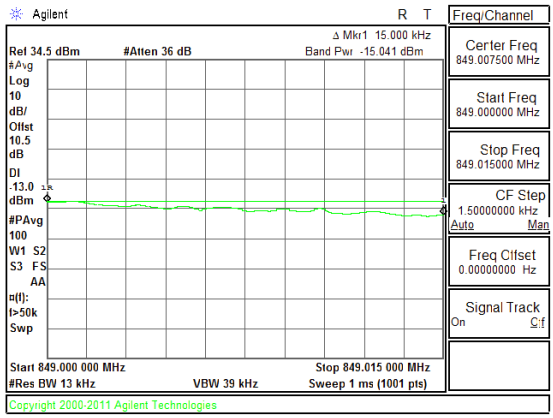
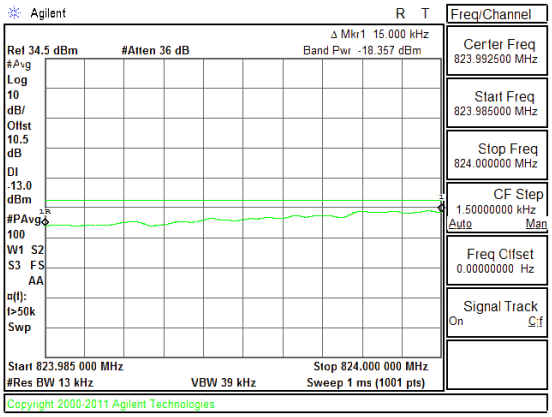
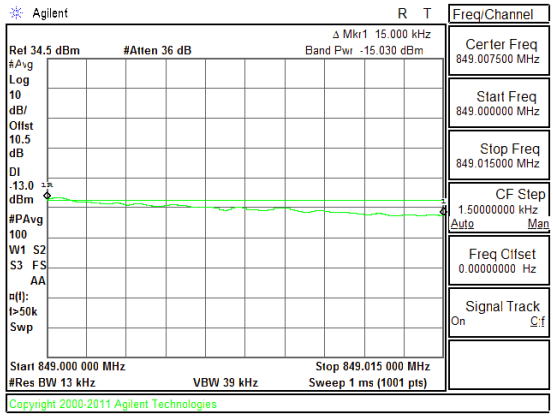
CDMA, LTE

RESULTS

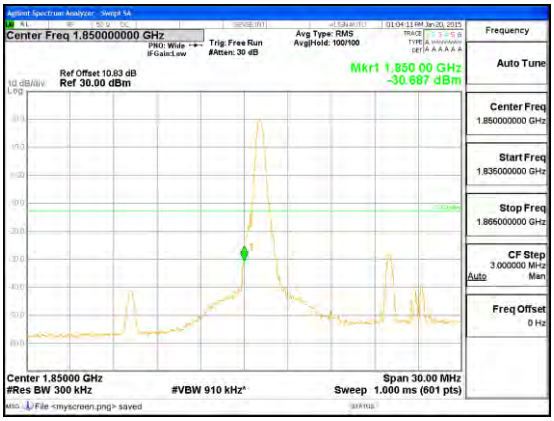
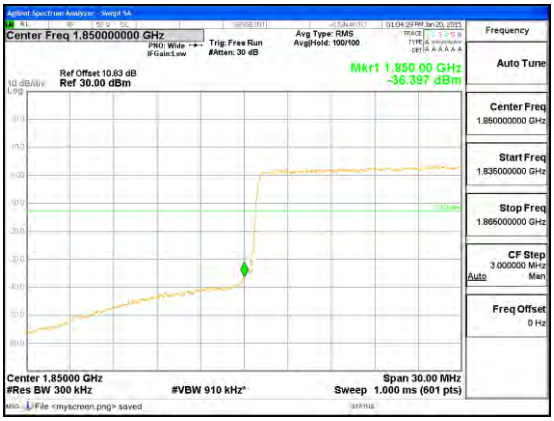
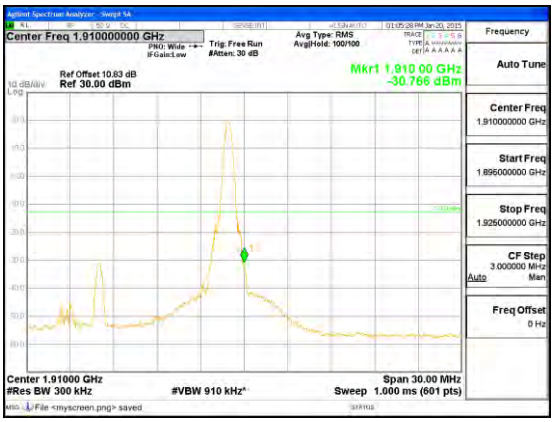
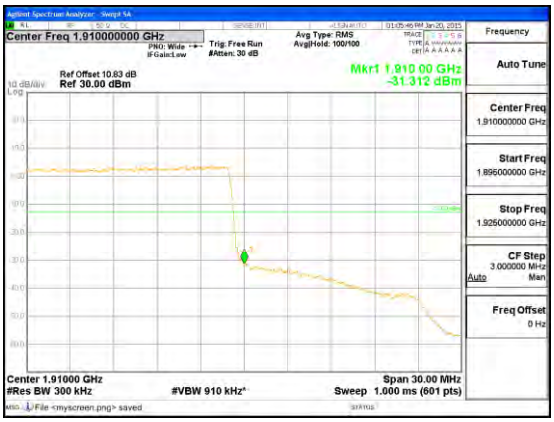
11.2.1. BAND EDGE PLOTS

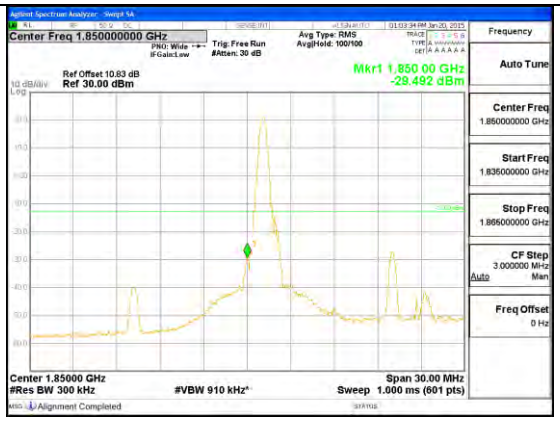
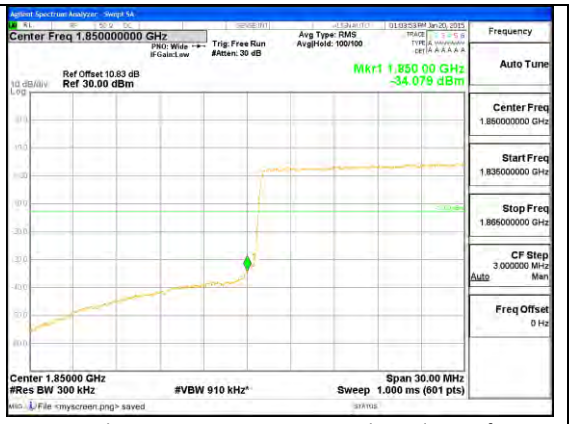
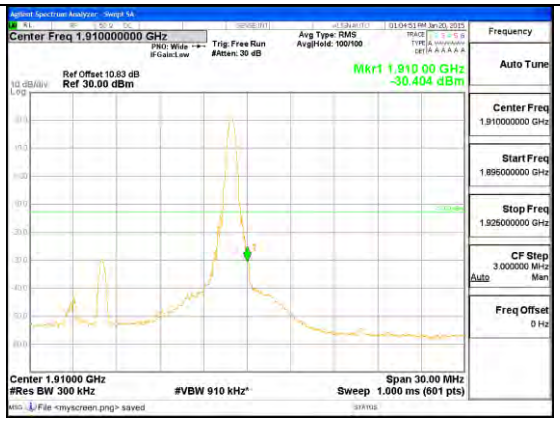
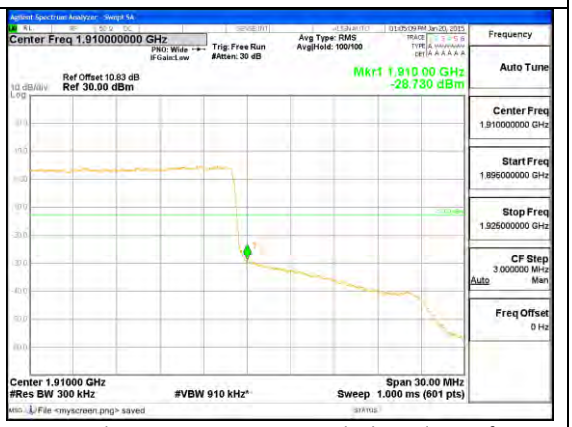
CDMA

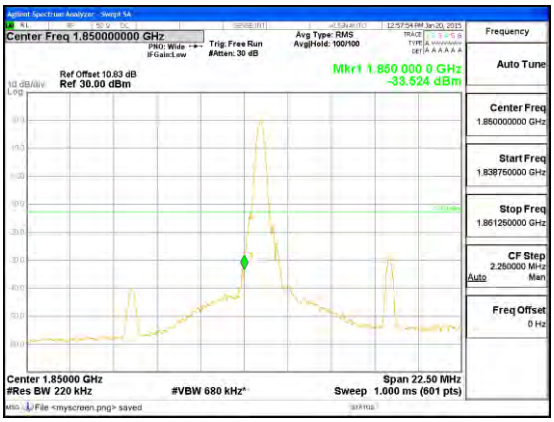
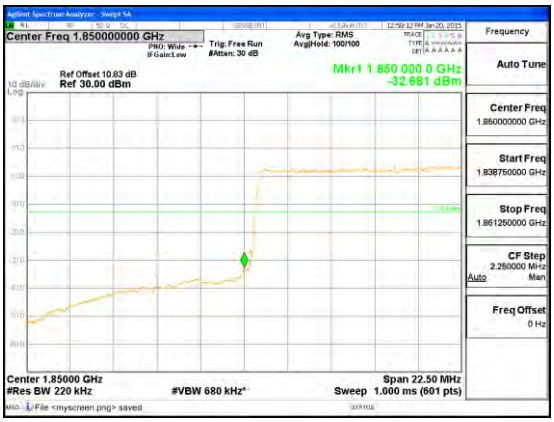
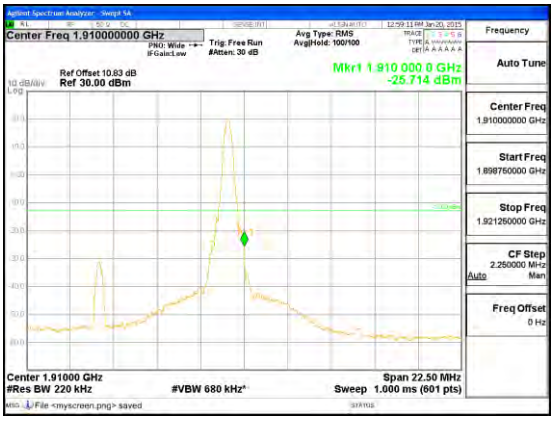
Band BC1	 Band BC1 CBE Low channel	 Band BC1 CBE High channel
Band BC1 1xRTT	 Band BC1 1xRTT CBE Low channel	 Band BC1 1xRTT CBE High channel

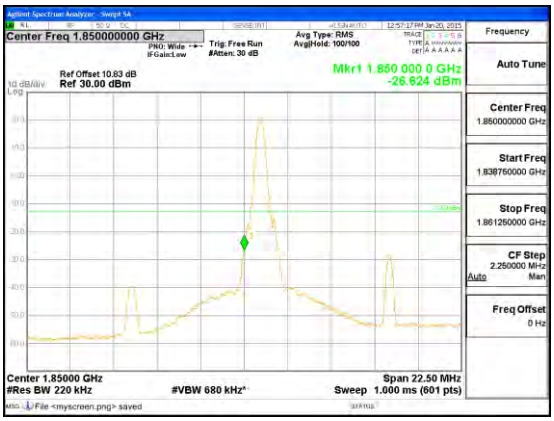
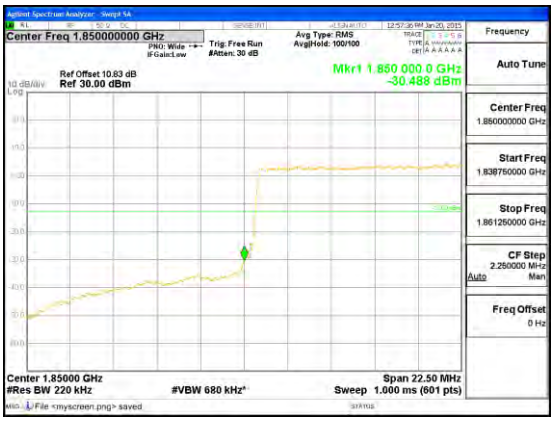
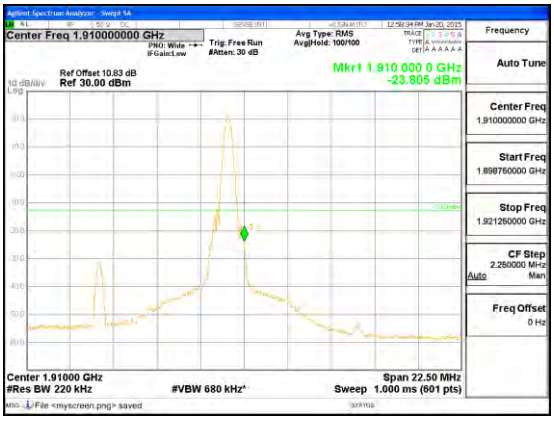
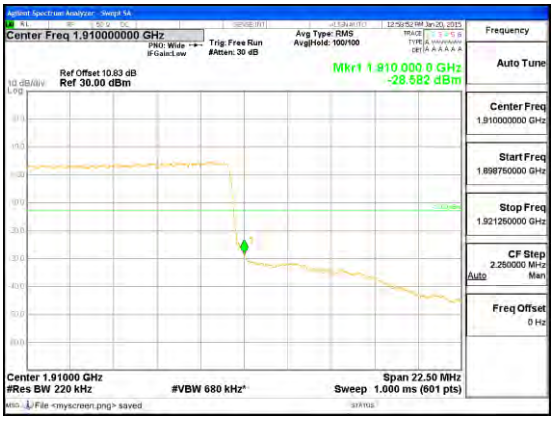
Band BC0	 Band BC0 CBE Low channel	 Band BC0 CBE High channel
Band BC0 1xRTT	 Band BC0 1xRTT CBE Low channel	 Band BC0 1xRTT CBE High channel

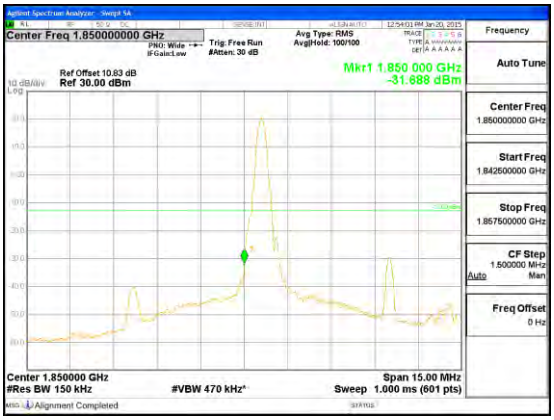
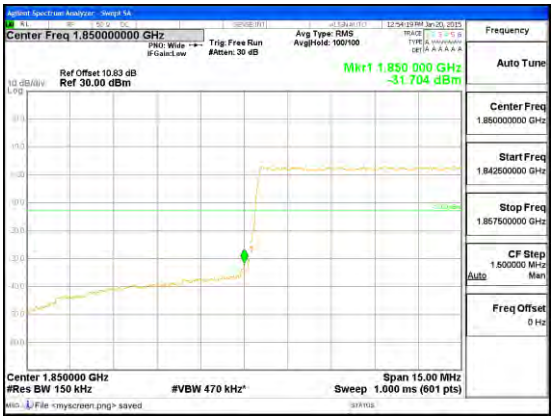
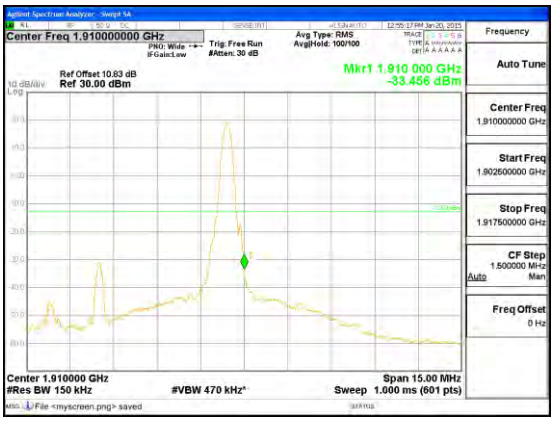
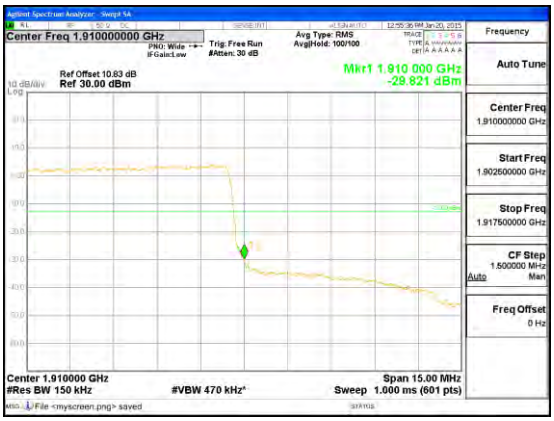
LTE Band 2

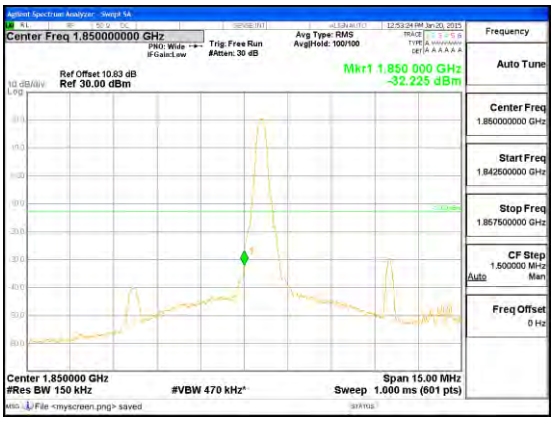
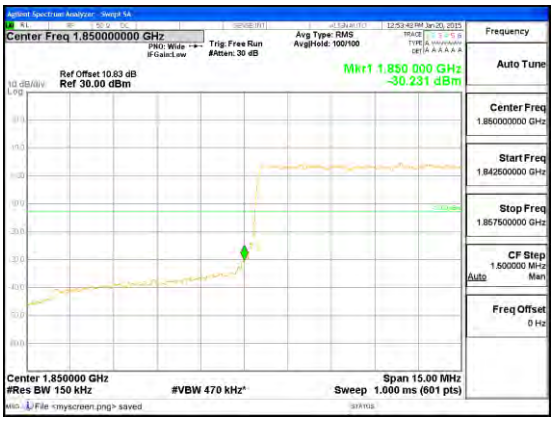
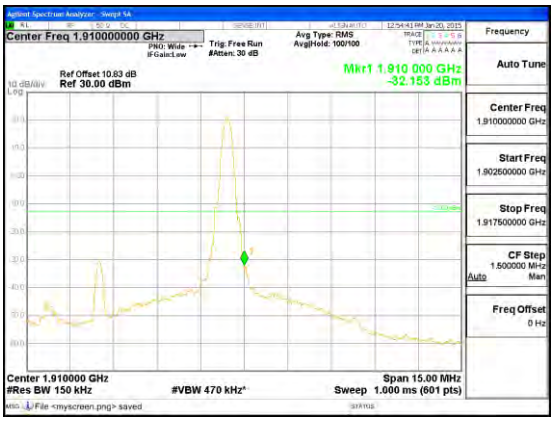
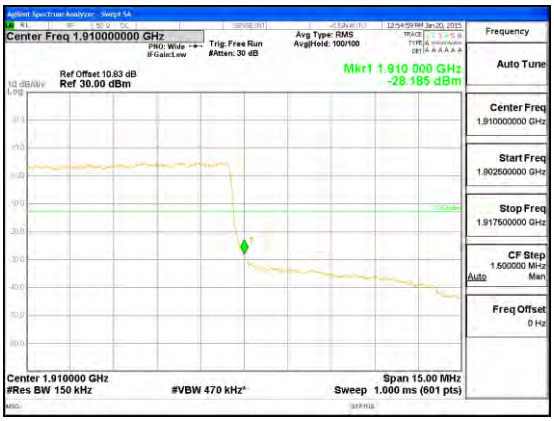
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM High Channel FRB.gif

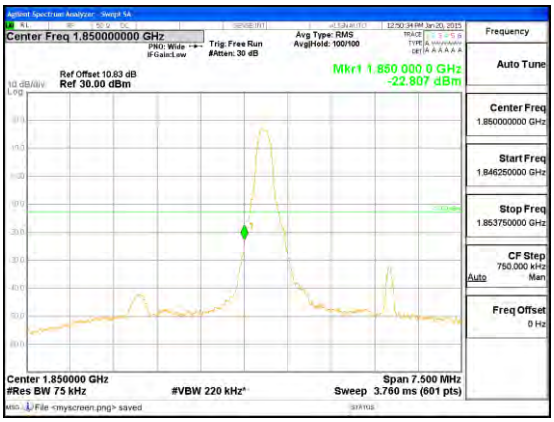
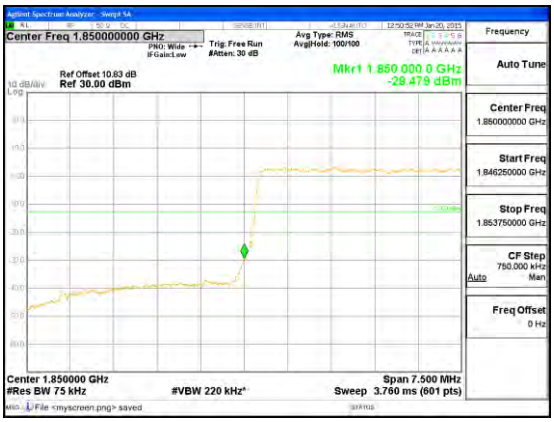
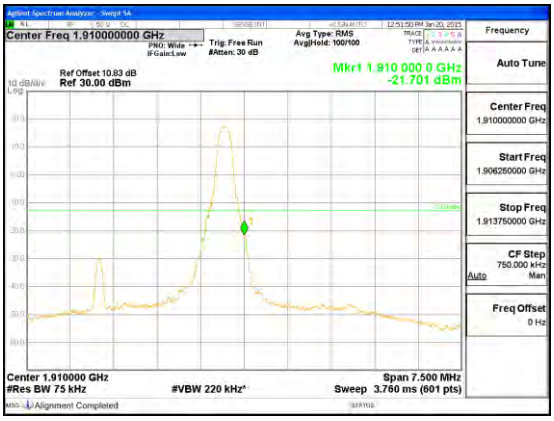
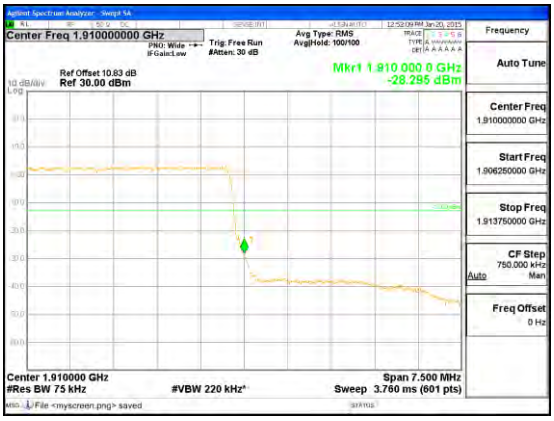
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK Low Channel FRB.gif
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK High Channel FRB.gif

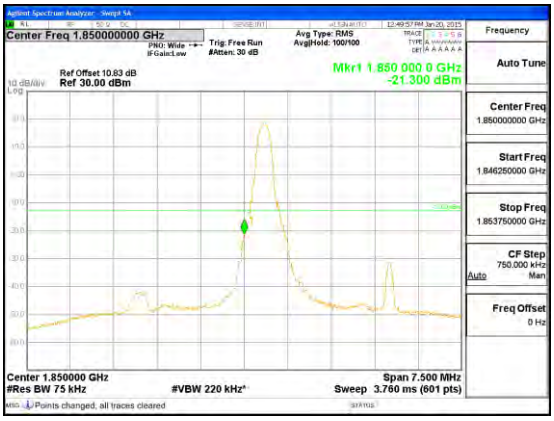
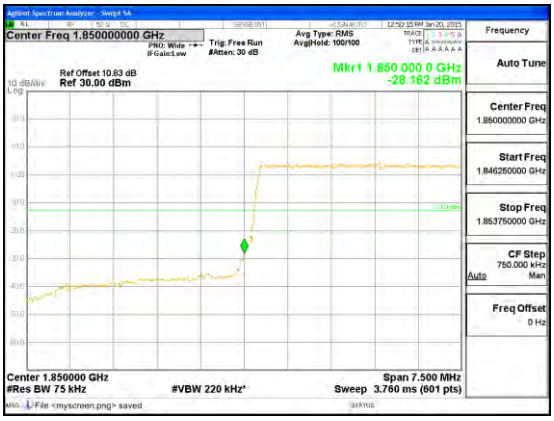
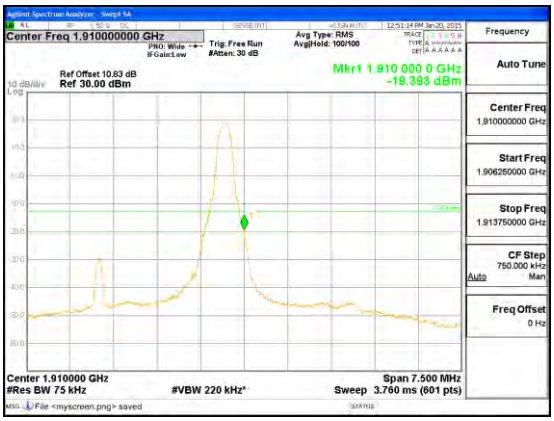
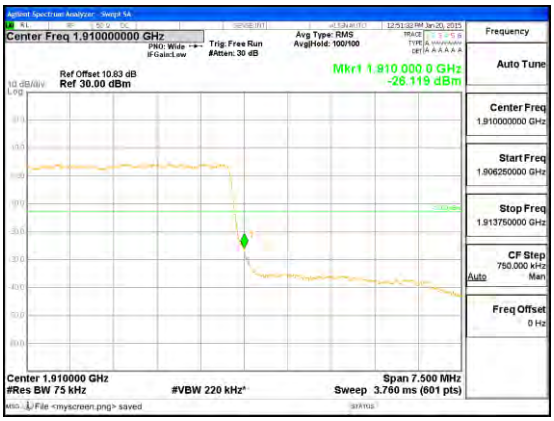
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM High Channel FRB.gif

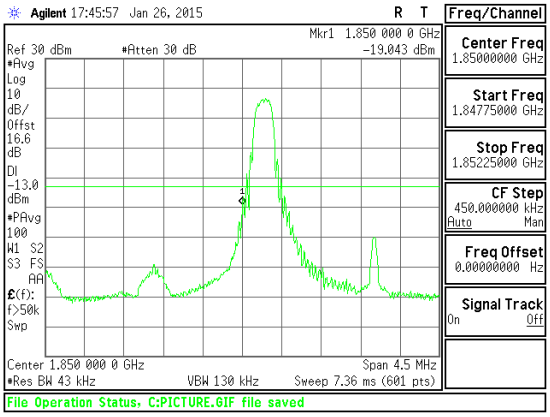
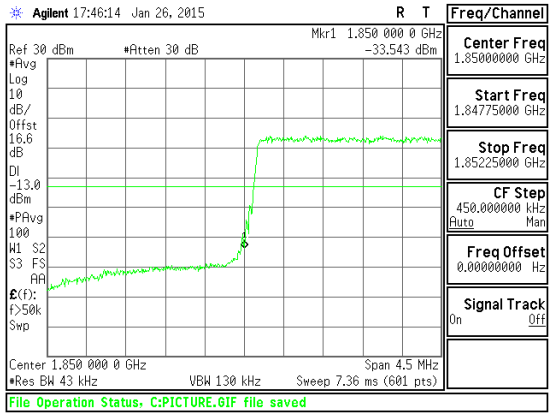
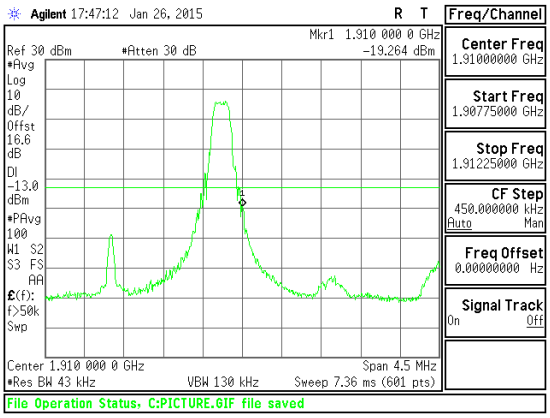
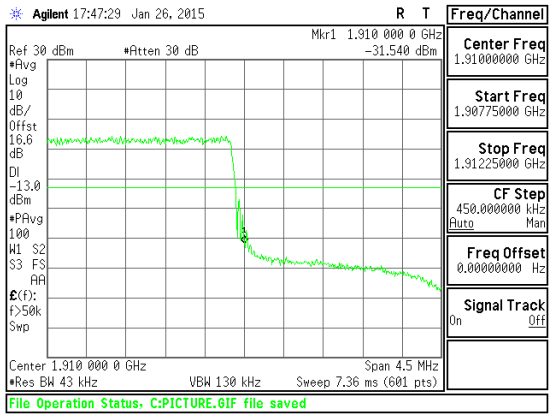
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 15MHz CBE QPSK Low Channel FRB.gif
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 15MHz CBE QPSK High Channel FRB.gif

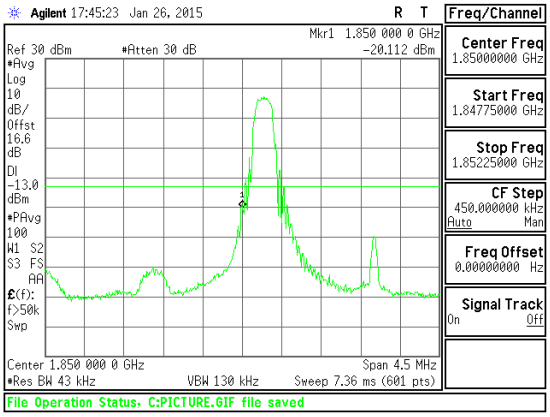
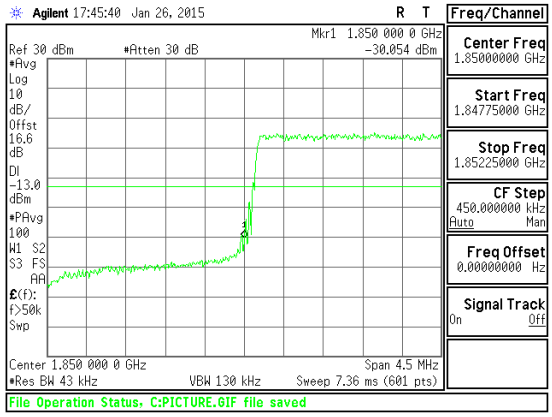
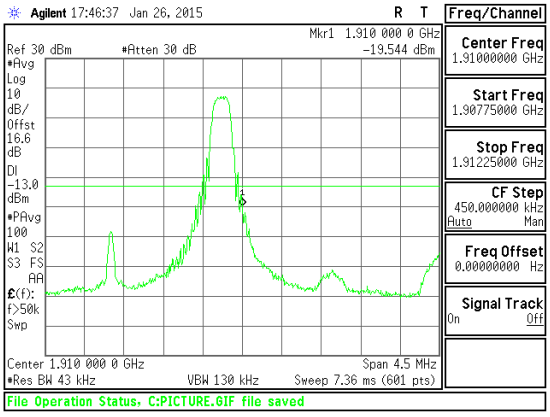
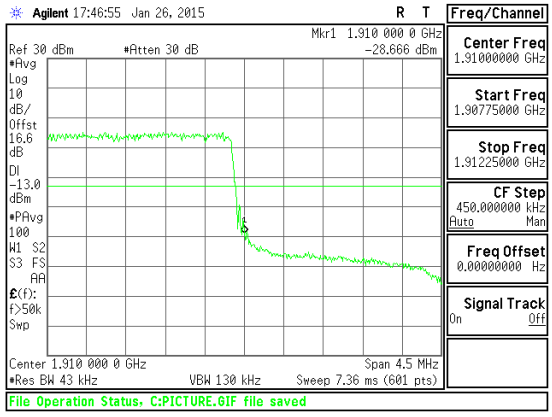
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM High Channel FRB.gif

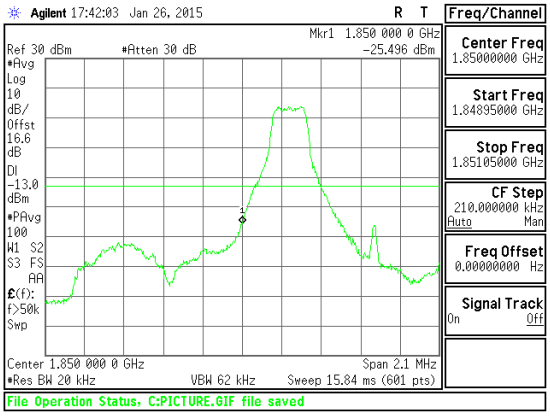
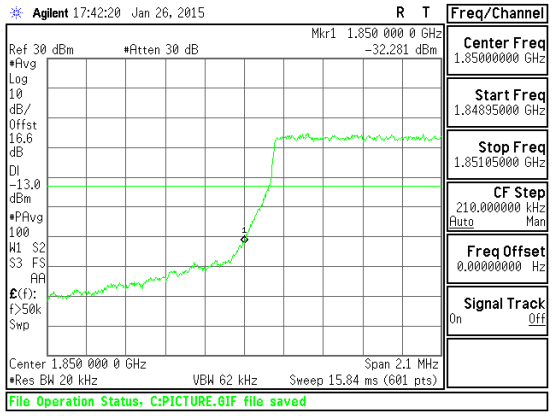
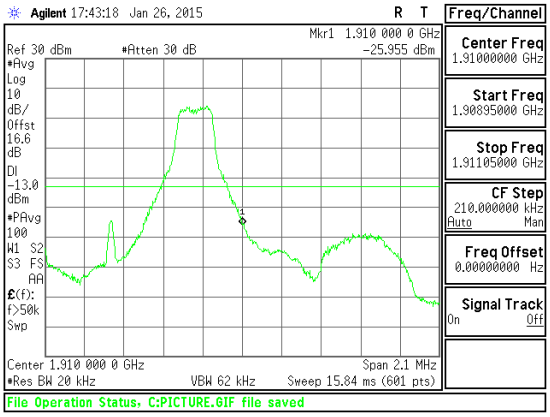
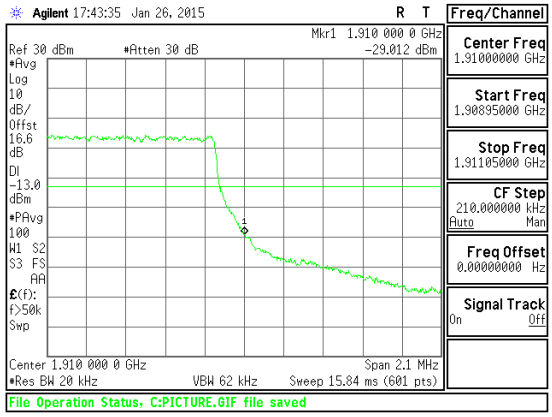
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK Low Channel FRB.gif
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK High Channel FRB.gif

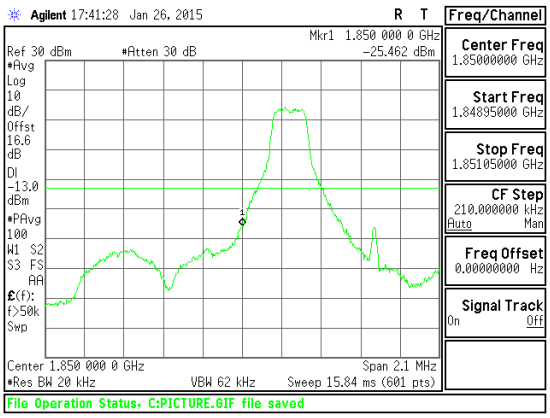
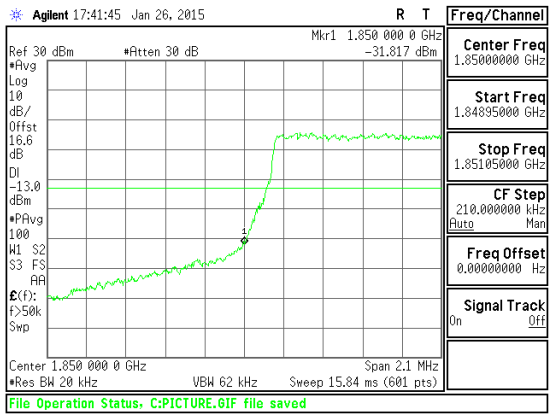
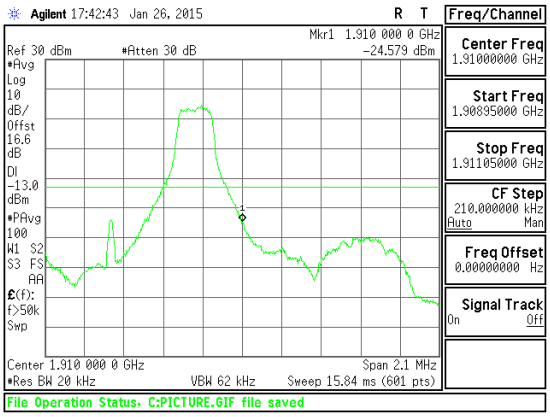
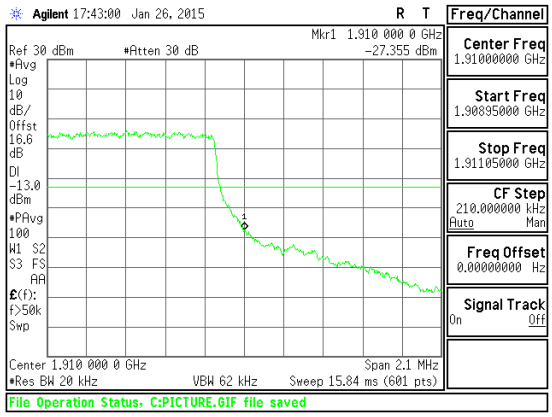
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 5MHz CBE 16QAM High Channel FRB.gif

Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 5MHz CBE QPSK Low Channel FRB.gif
Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 5MHz CBE QPSK High Channel FRB.gif

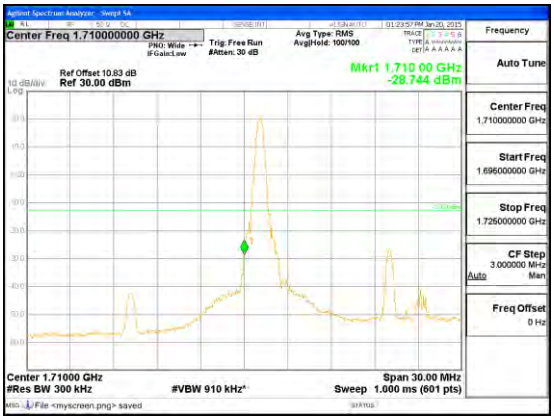
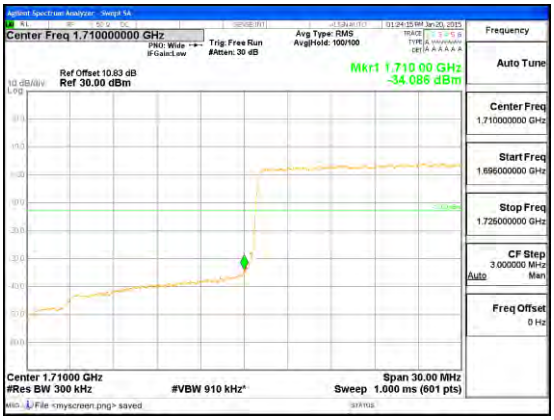
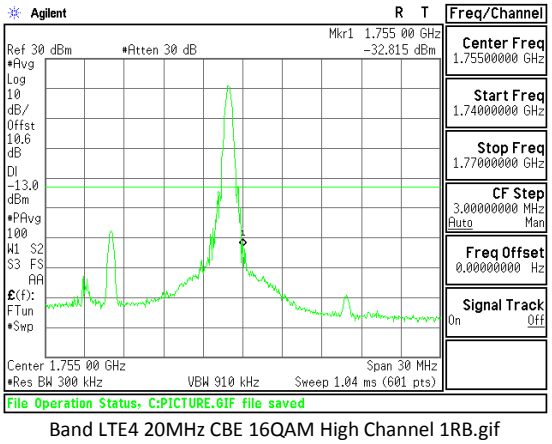
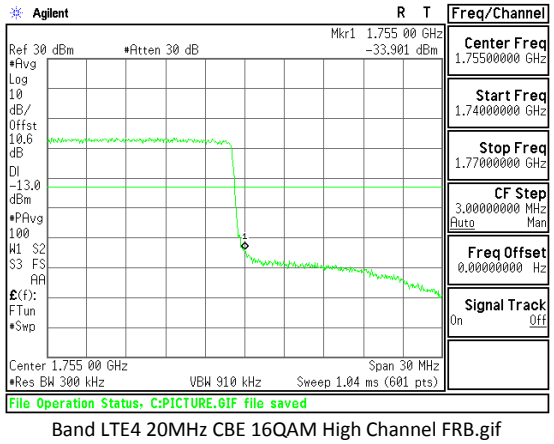
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM High Channel FRB.gif

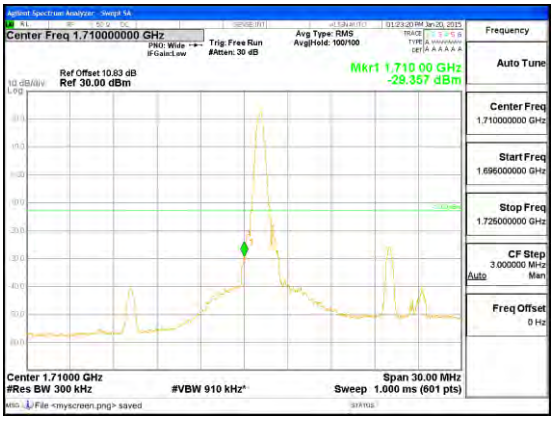
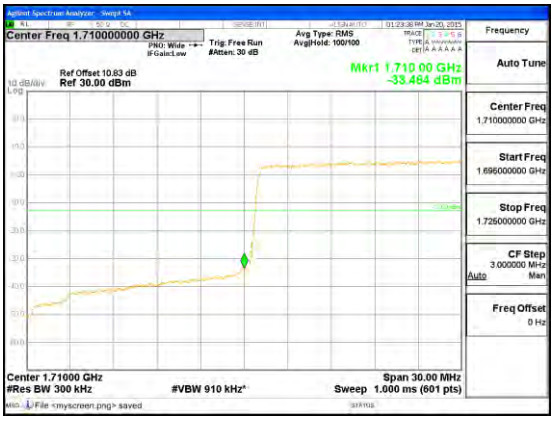
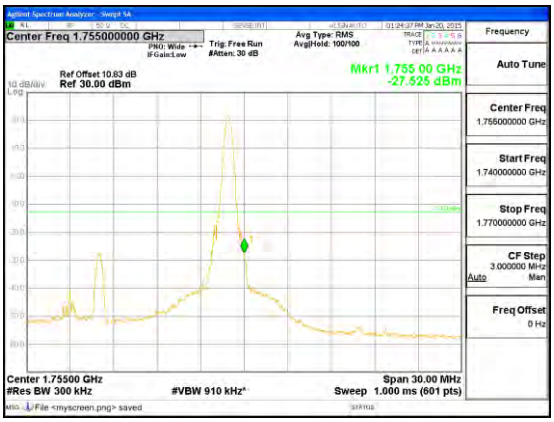
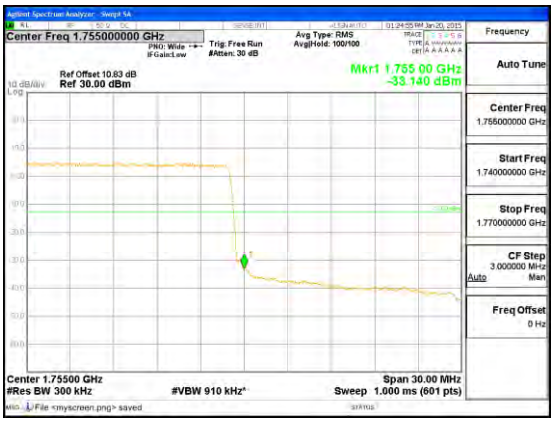
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK Low Channel FRB.gif
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK High Channel FRB.gif

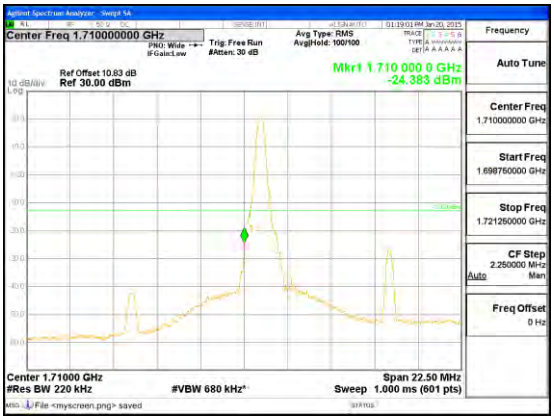
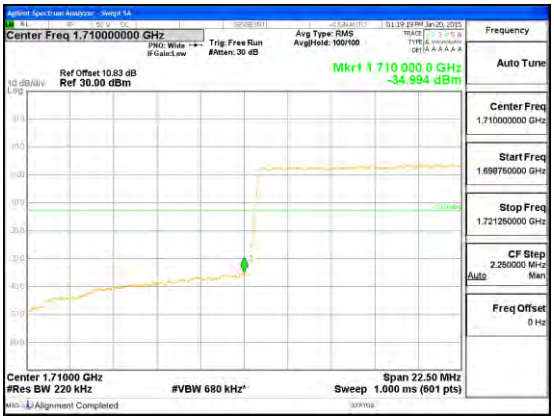
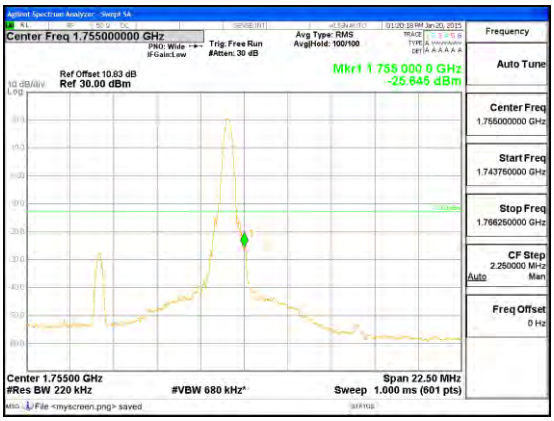
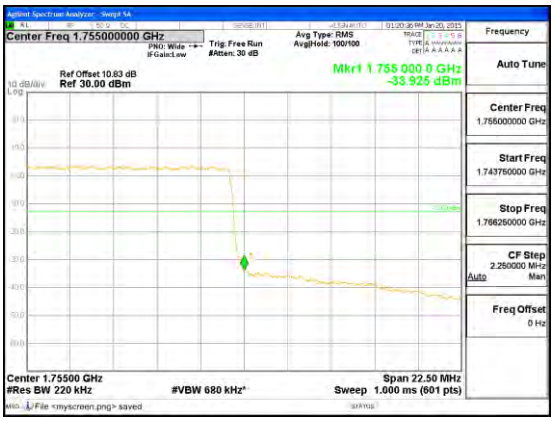
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM High Channel FRB.gif

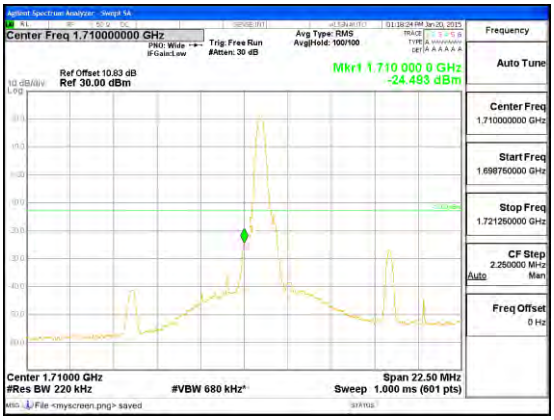
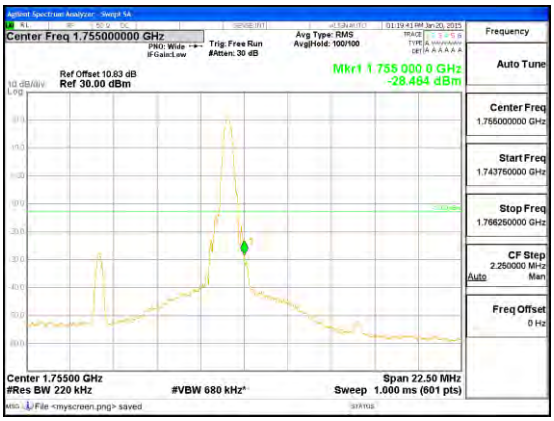
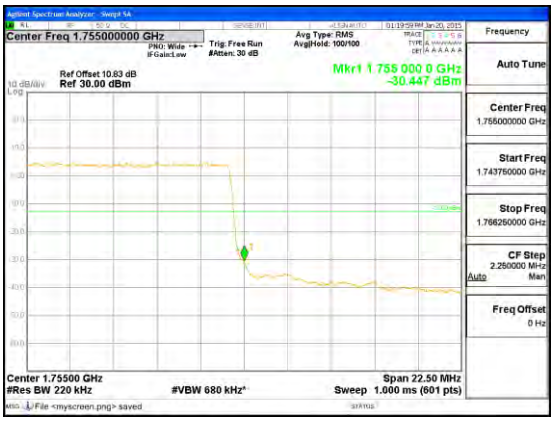
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 1.4MHz CBE QPSK High Channel FRB.gif

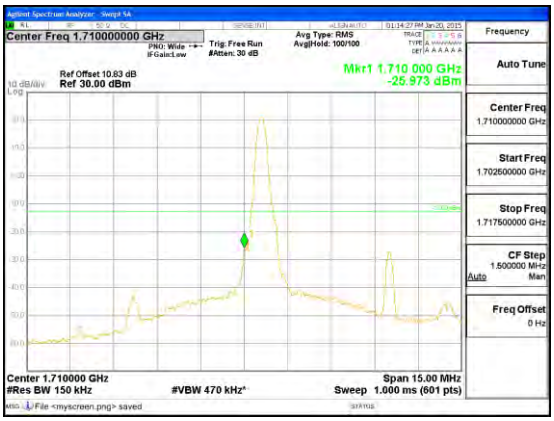
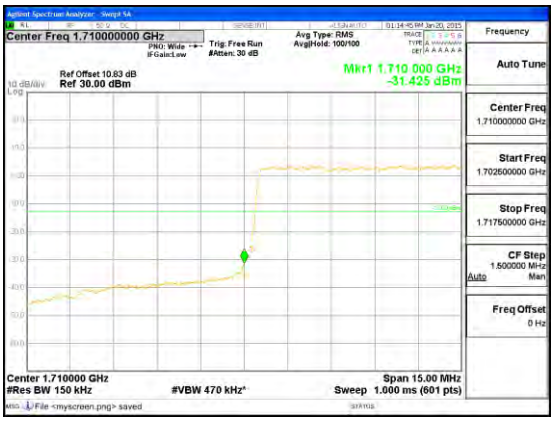
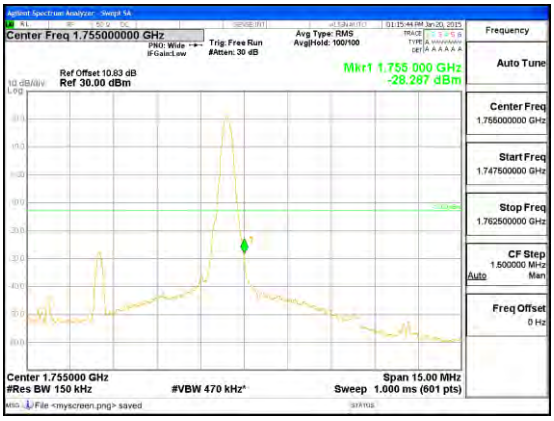
LTE Band 4

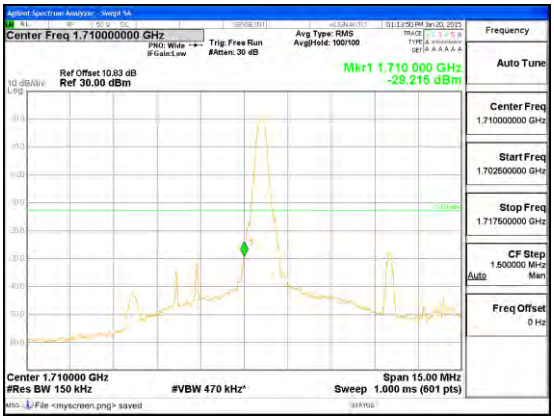
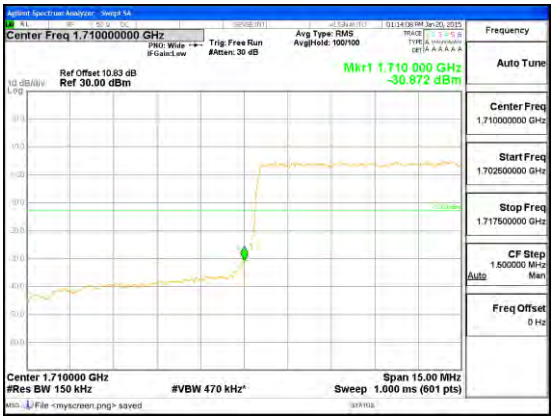
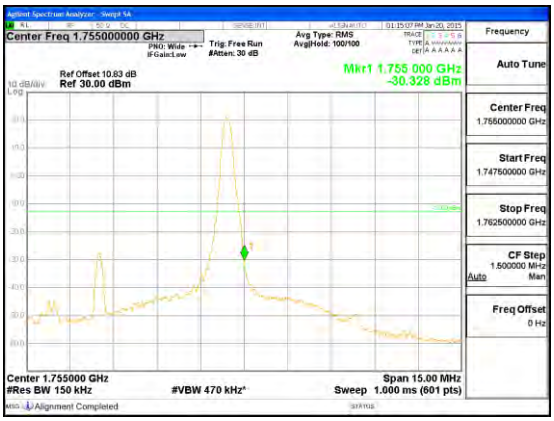
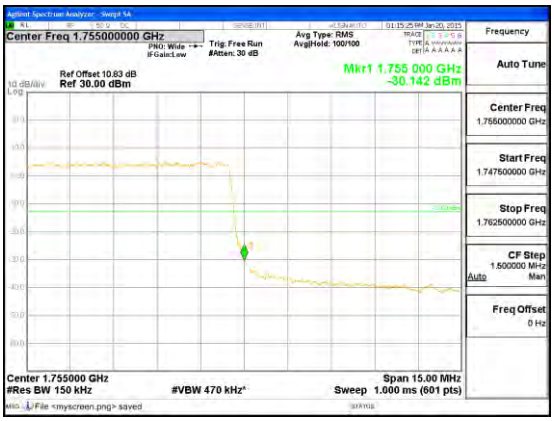
Band LTE4 20MHz 16QAM	 Band LTE4 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 20MHz 16QAM	 Band LTE4 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 20MHz CBE 16QAM High Channel FRB.gif

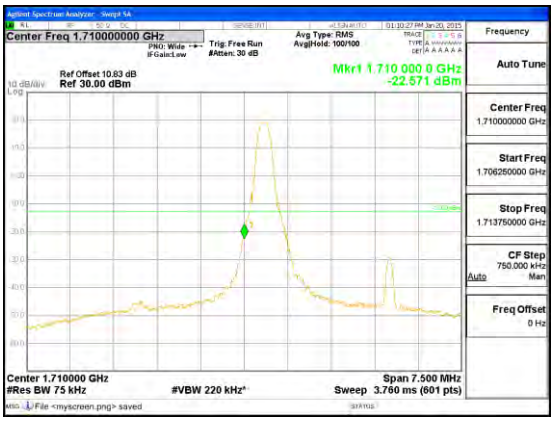
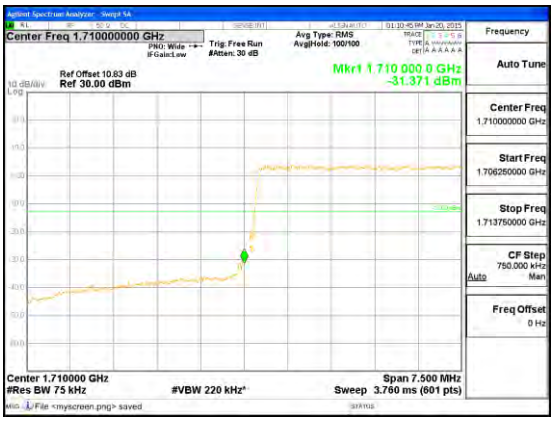
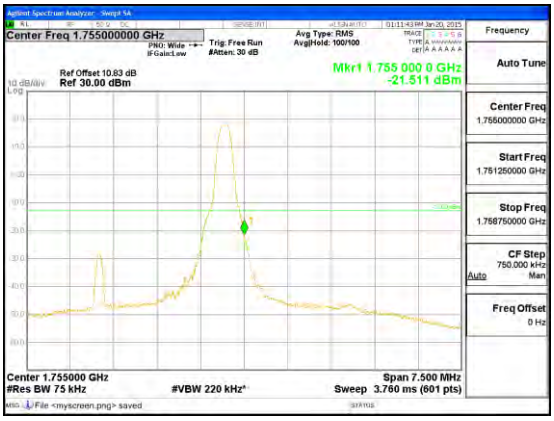
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK Low Channel FRB.gif
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK High Channel FRB.gif

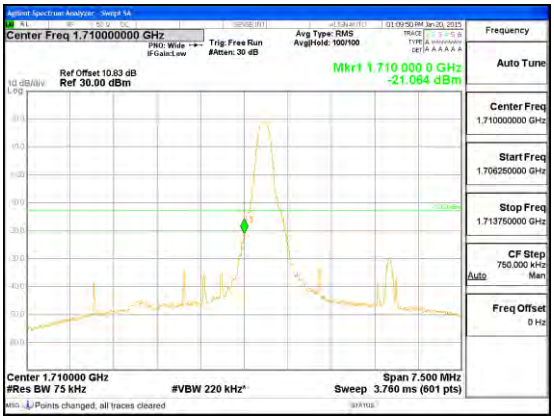
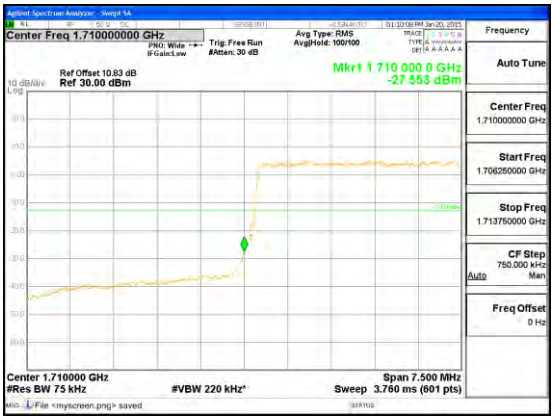
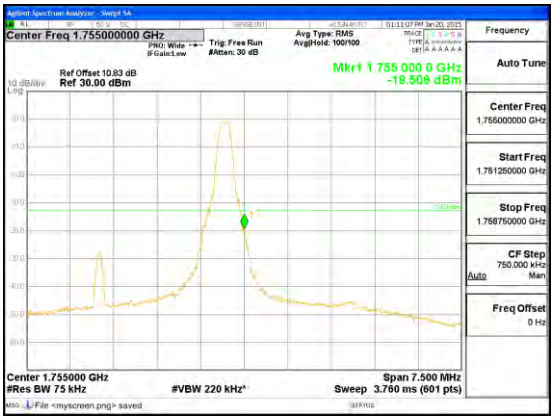
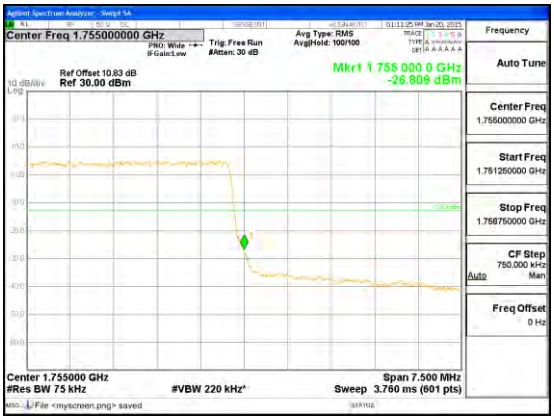
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 15MHz CBE 16QAM High Channel FRB.gif

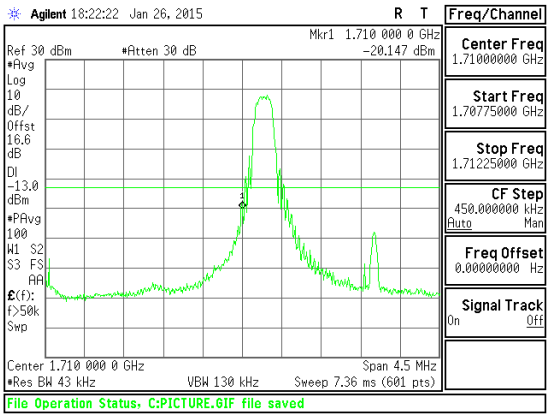
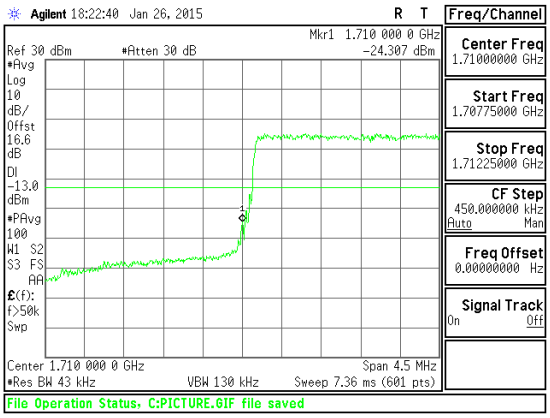
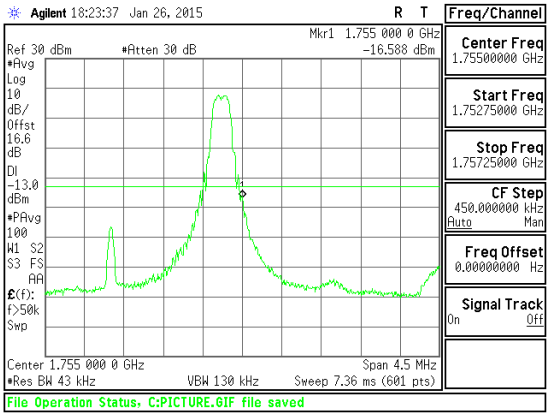
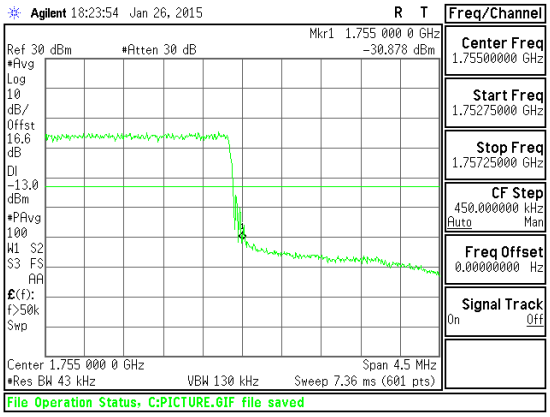
Band LTE4 15MHz QPSK	 Band LTE4 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 15MHz CBE QPSK Low Channel FRB.gif
Band LTE4 15MHz QPSK	 Band LTE4 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 15MHz CBE QPSK High Channel FRB.gif

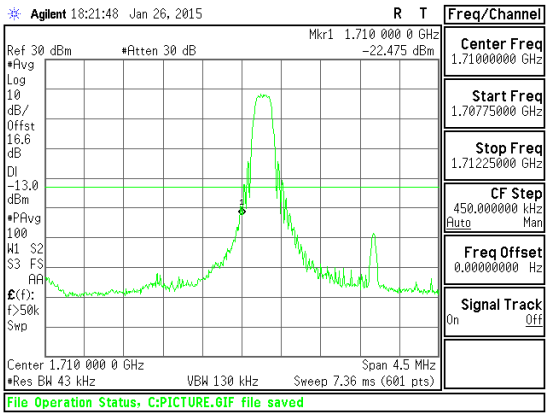
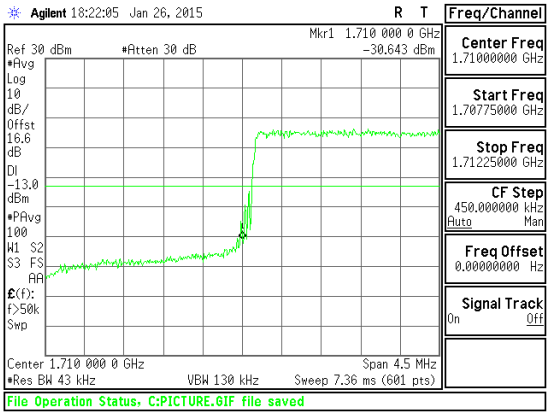
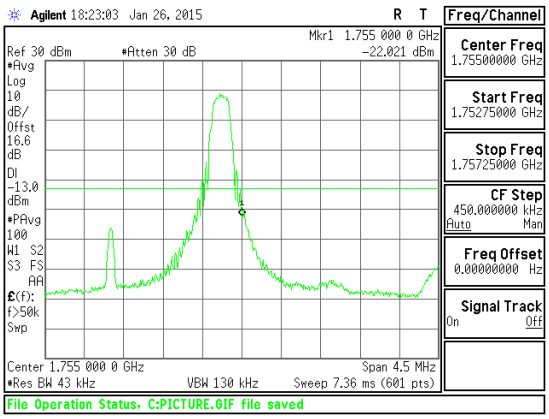
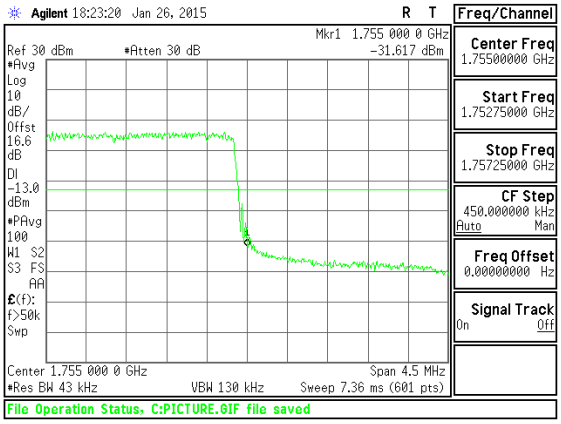
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM High Channel FRB.gif

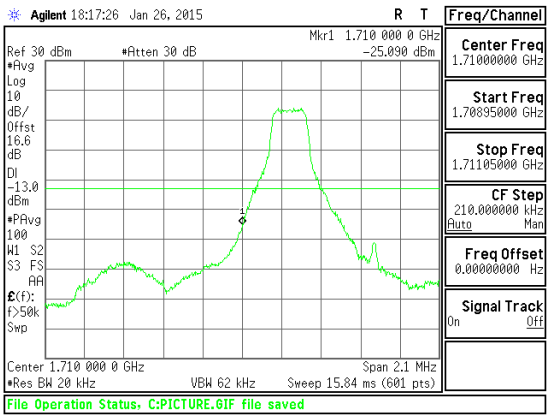
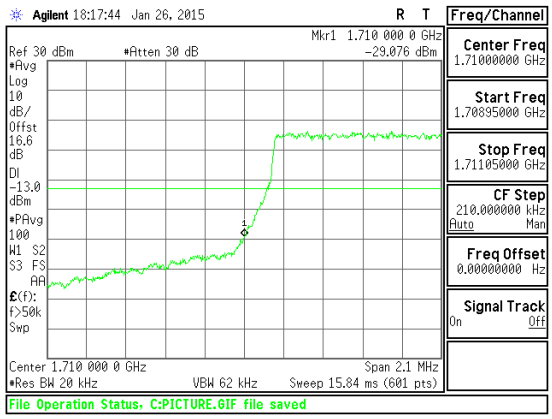
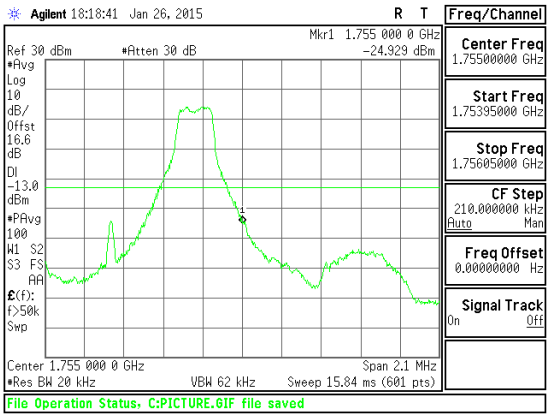
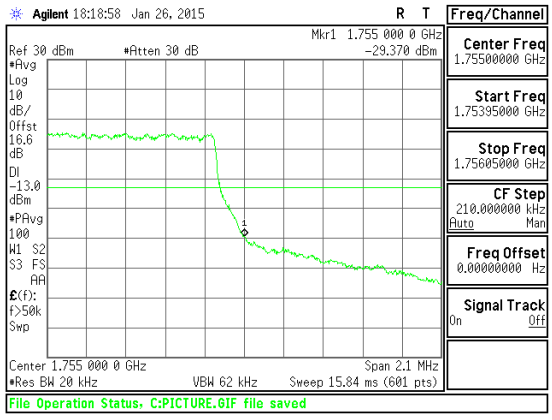
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK Low Channel FRB.gif
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK High Channel FRB.gif

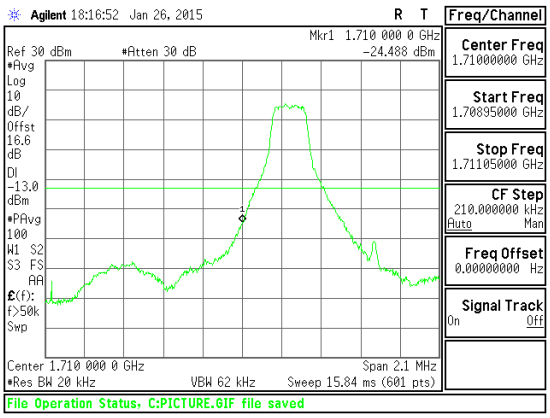
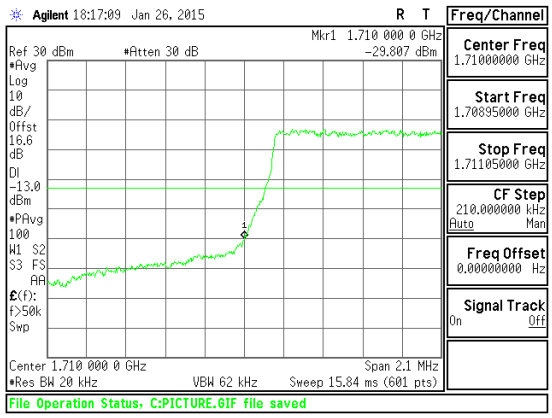
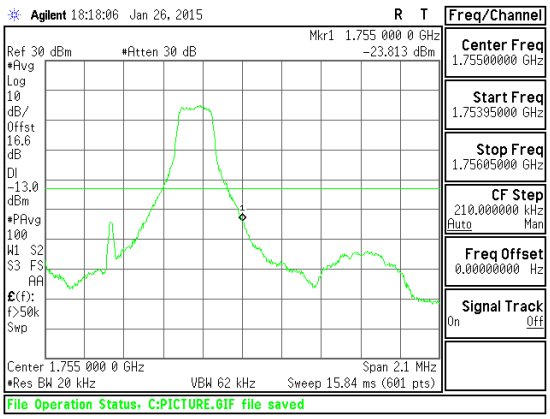
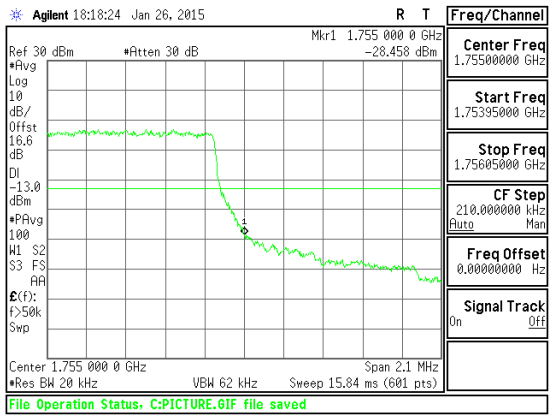
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM High Channel FRB.gif

Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK Low Channel FRB.gif
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK High Channel FRB.gif

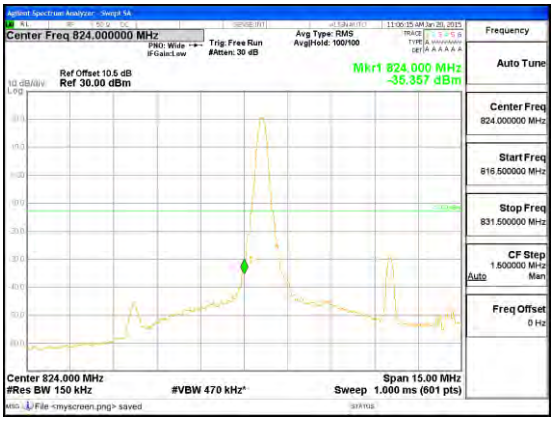
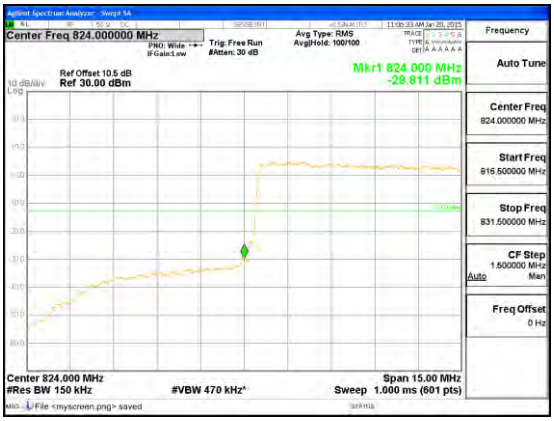
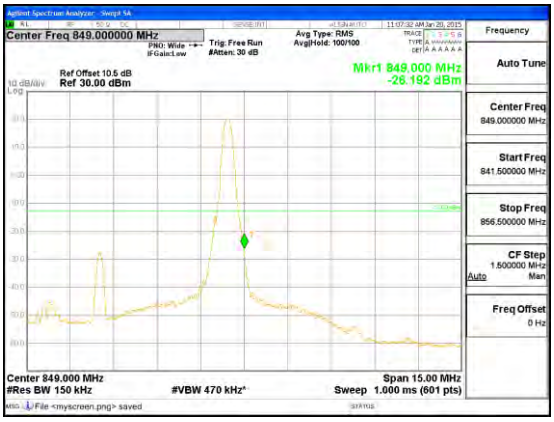
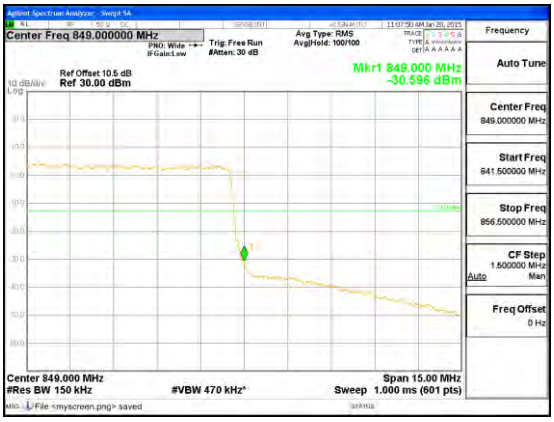
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 3MHz 16QAM	 Band LTE4 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 3MHz CBE 16QAM High Channel FRB.gif

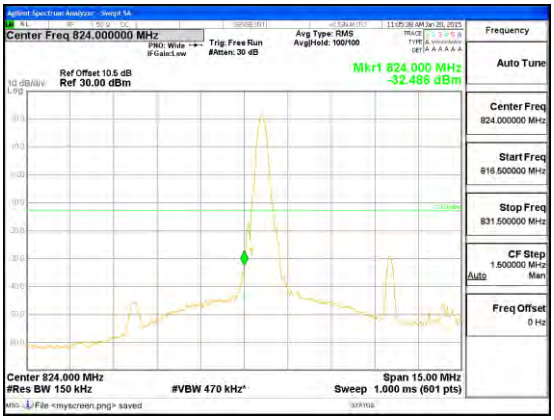
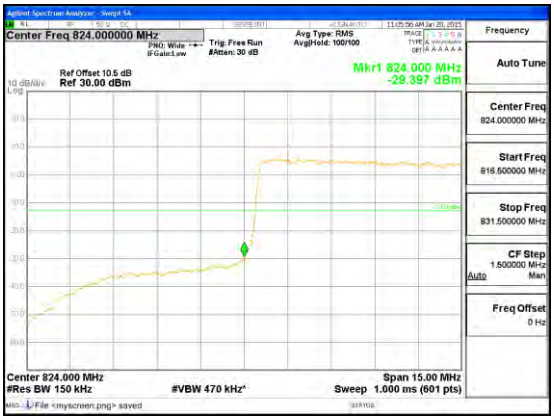
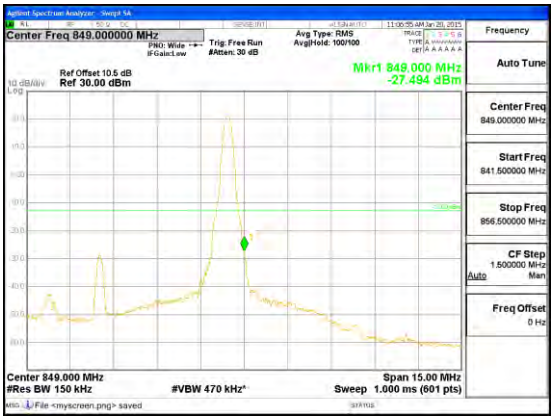
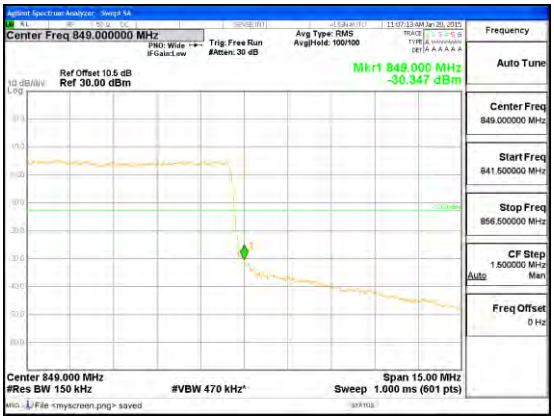
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK Low Channel FRB.gif
Band LTE4 3MHz QPSK	 Band LTE4 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 3MHz CBE QPSK High Channel FRB.gif

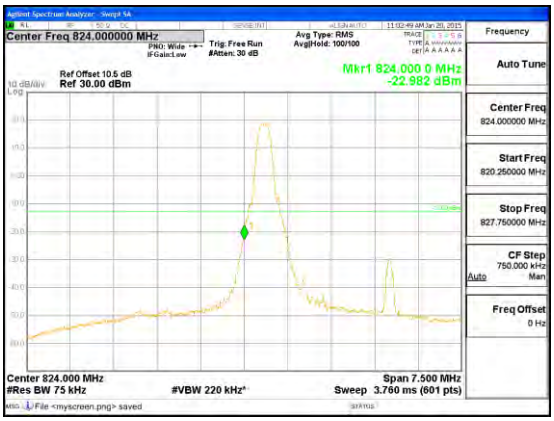
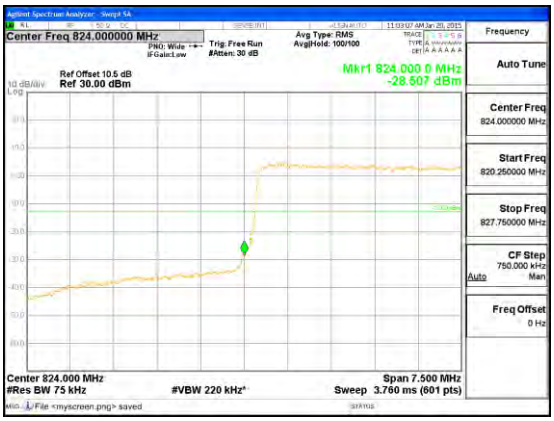
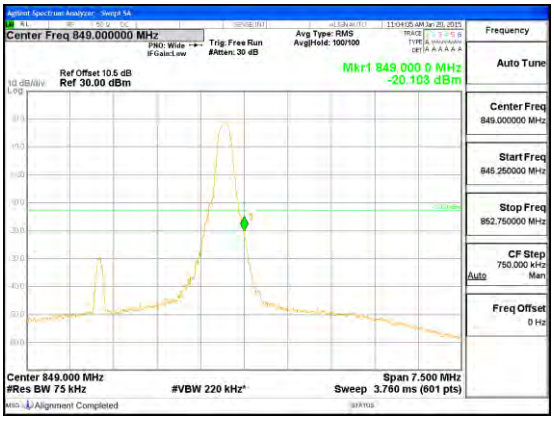
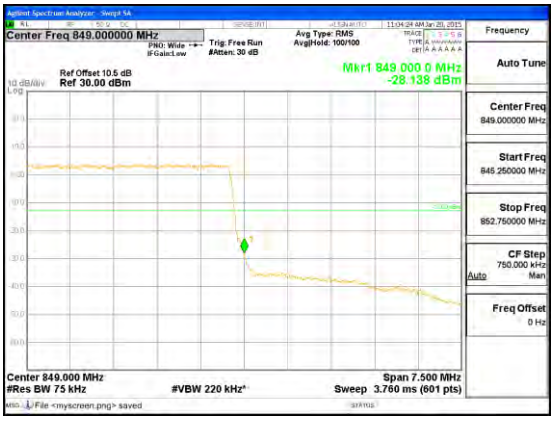
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 1.4MHz 16QAM	 Band LTE4 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 1.4MHz CBE 16QAM High Channel FRB.gif

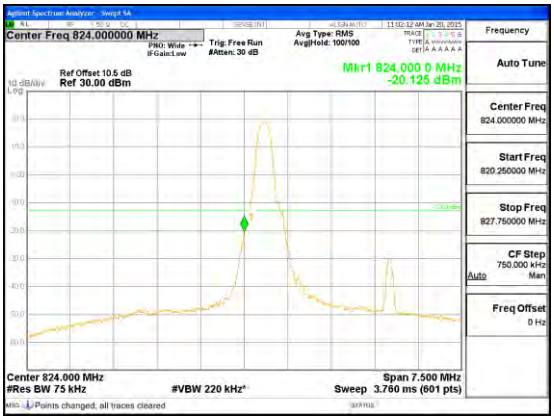
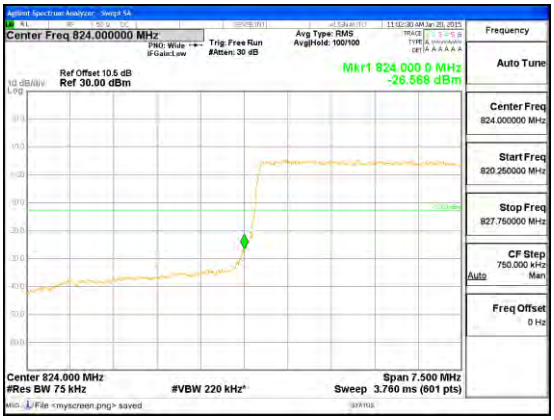
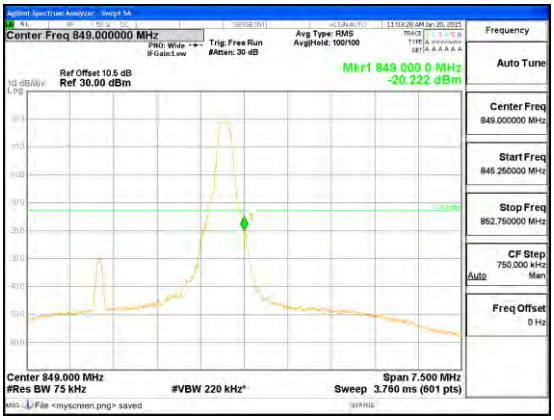
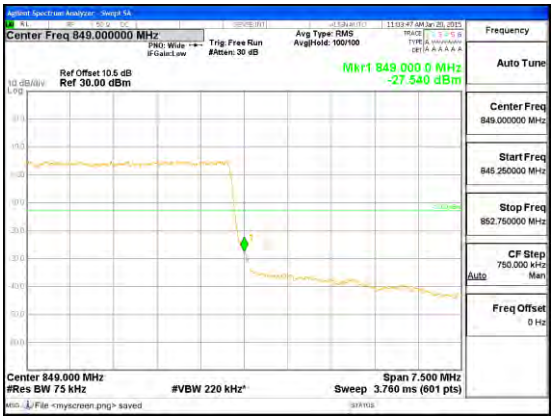
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE4 1.4MHz QPSK	 Band LTE4 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 1.4MHz CBE QPSK High Channel FRB.gif

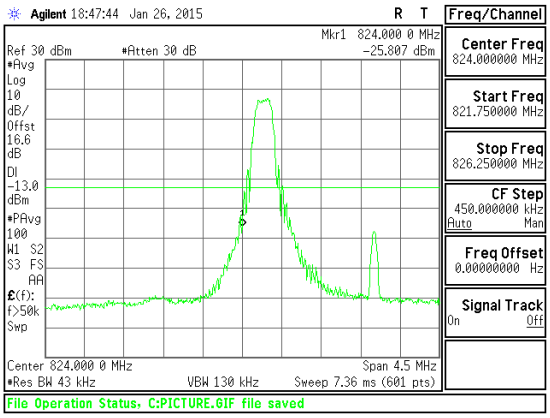
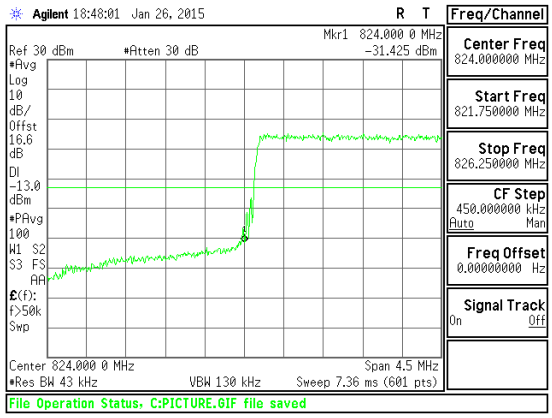
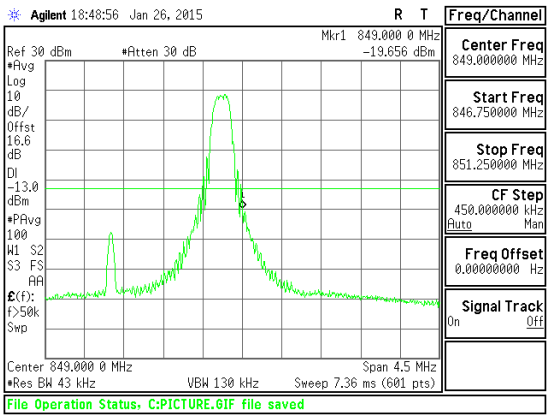
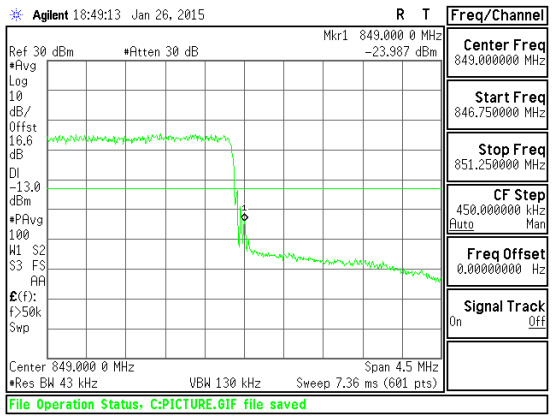
LTE Band 5

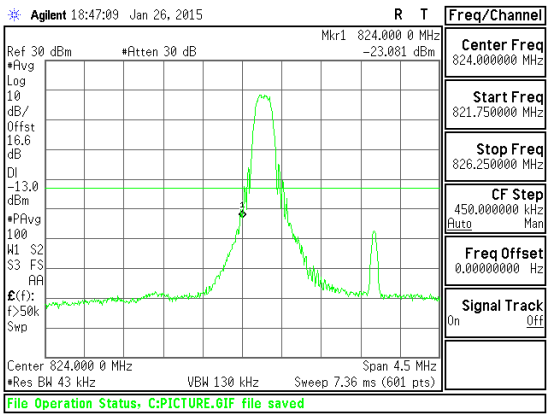
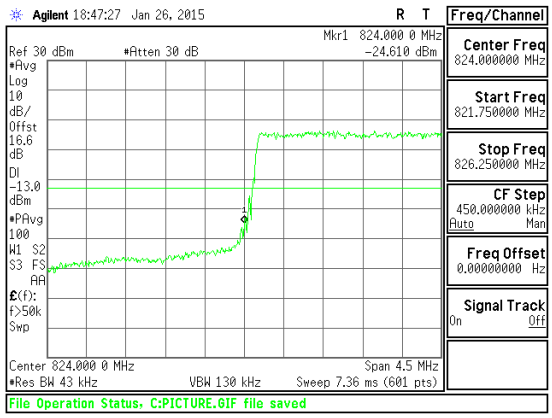
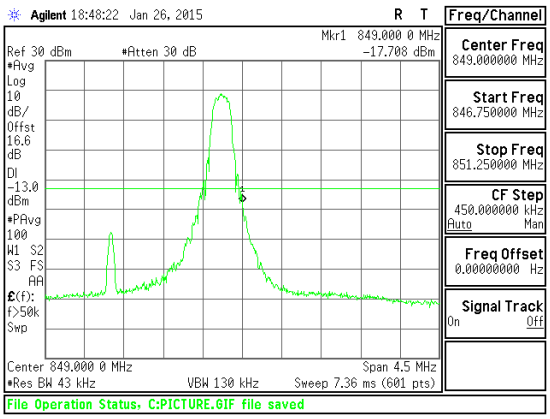
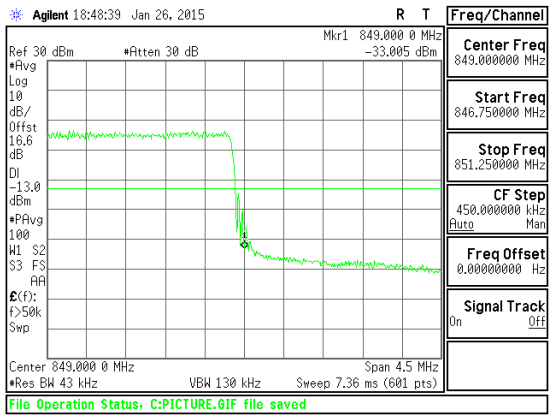
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 10MHz CBE 16QAM High Channel FRB.gif

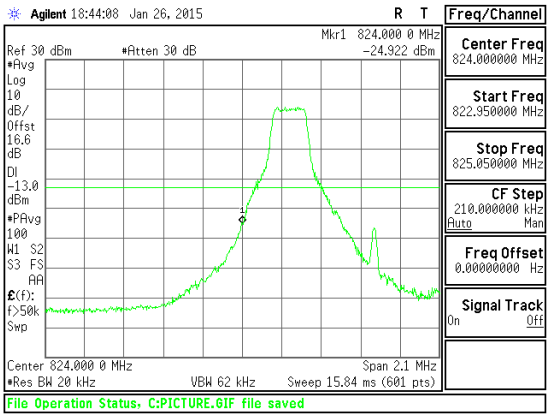
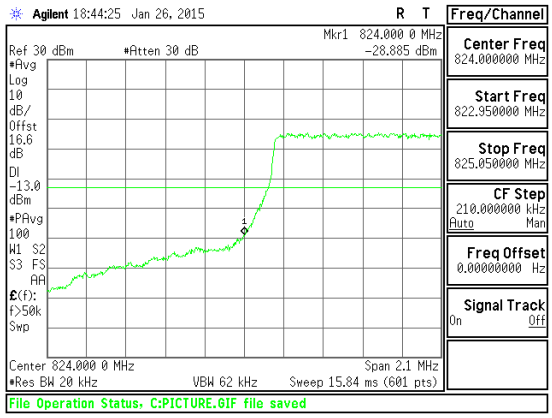
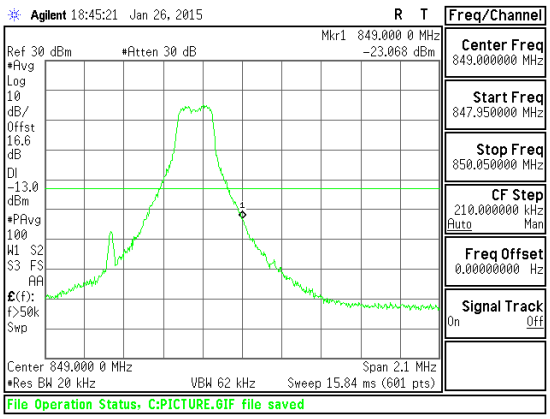
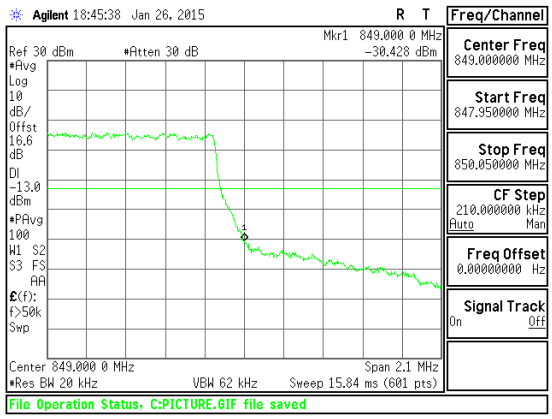
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK Low Channel FRB.gif
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK High Channel FRB.gif

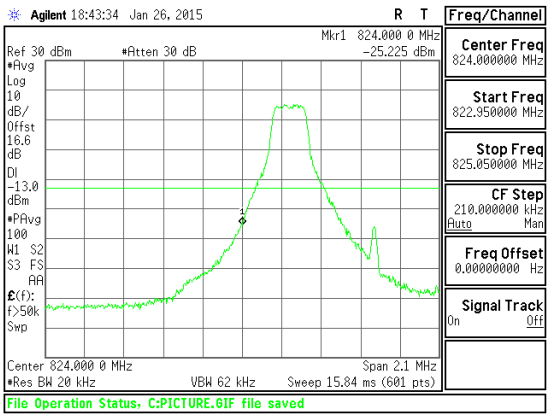
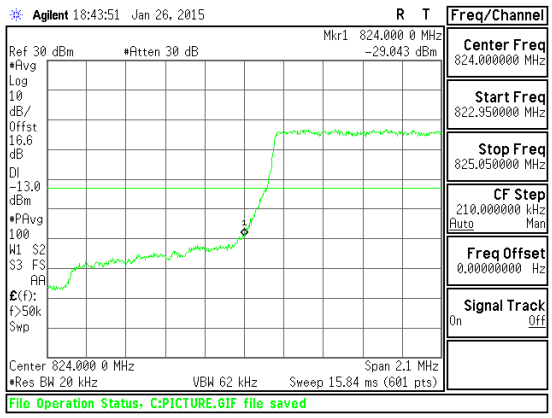
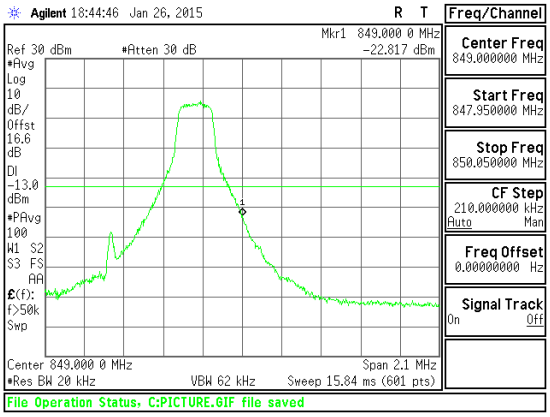
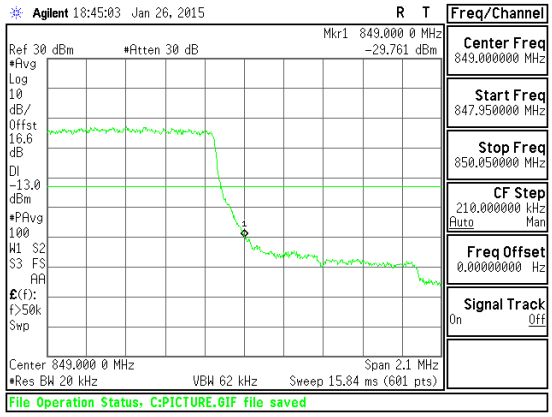
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM High Channel FRB.gif

Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK Low Channel FRB.gif
Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK High Channel FRB.gif

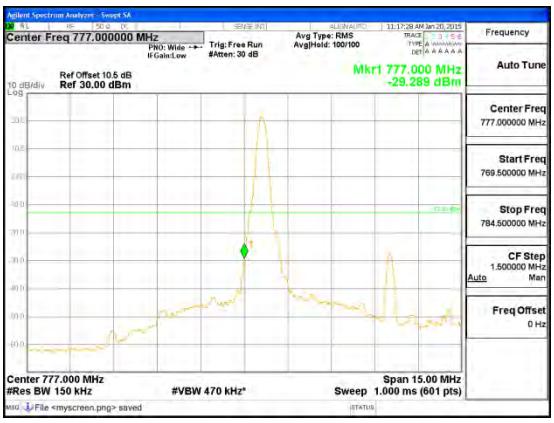
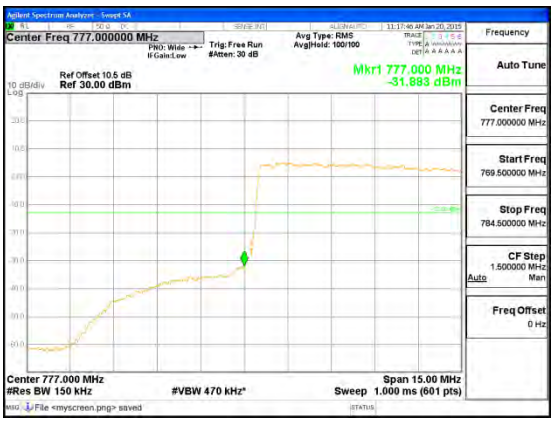
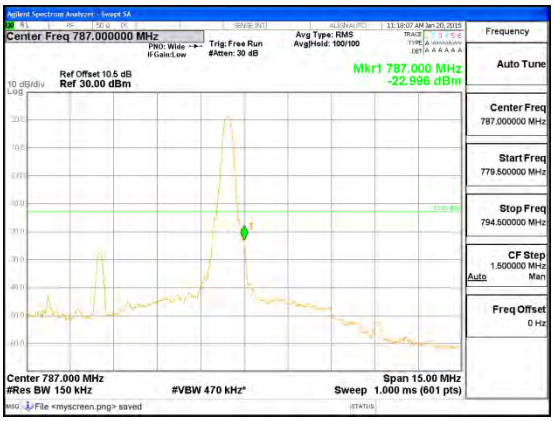
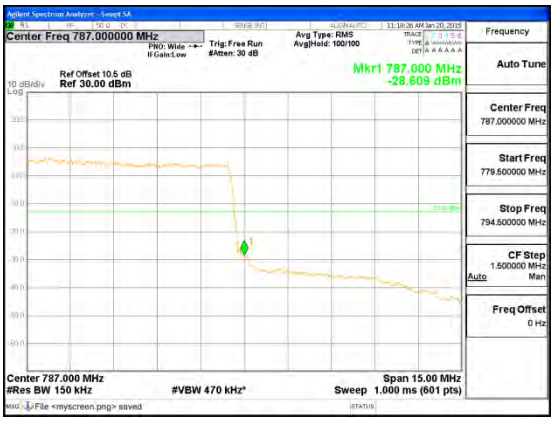
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM High Channel FRB.gif

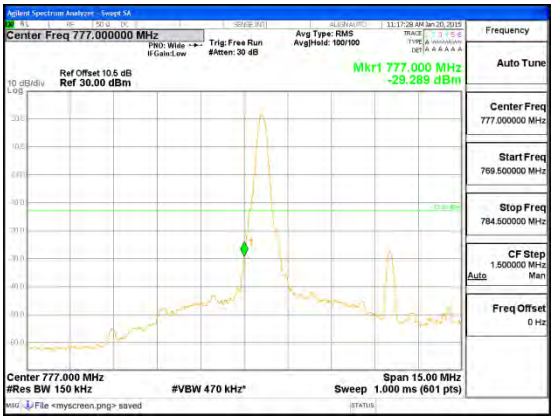
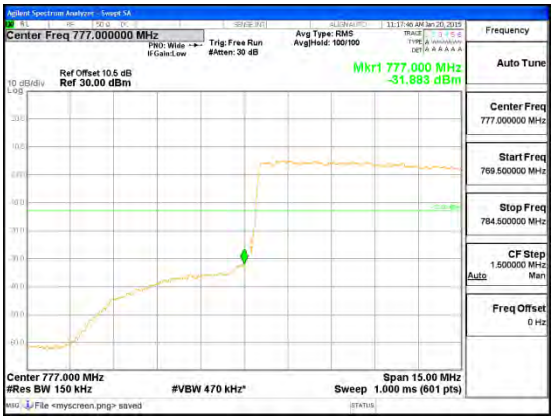
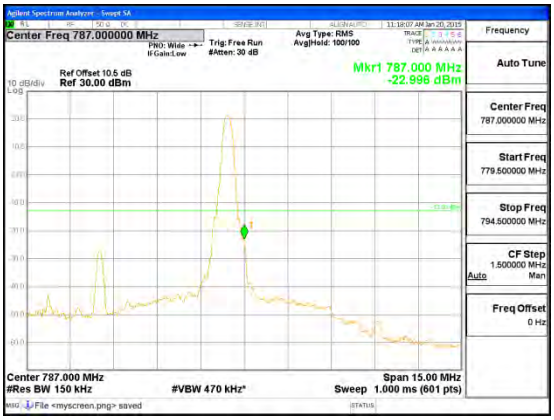
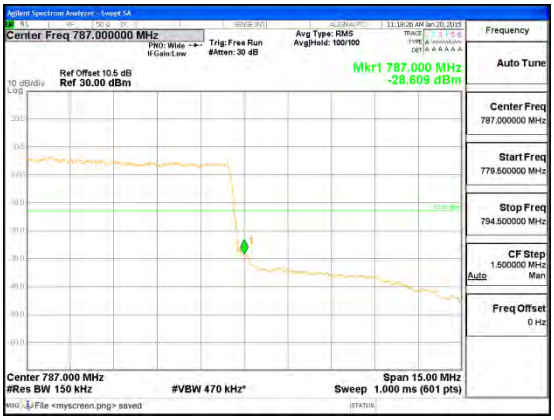
Band LTE5 3MHz QPSK	 Band LTE5 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 3MHz CBE QPSK Low Channel FRB.gif
Band LTE5 3MHz QPSK	 Band LTE5 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 3MHz CBE QPSK High Channel FRB.gif

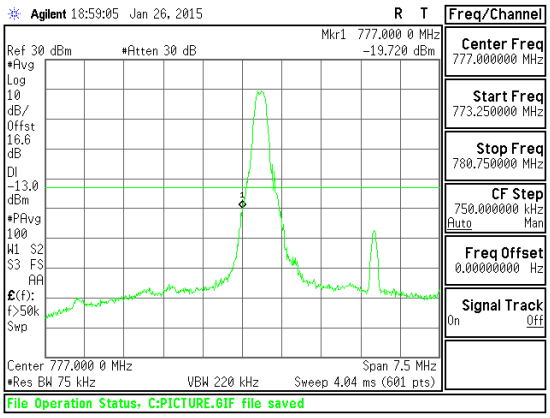
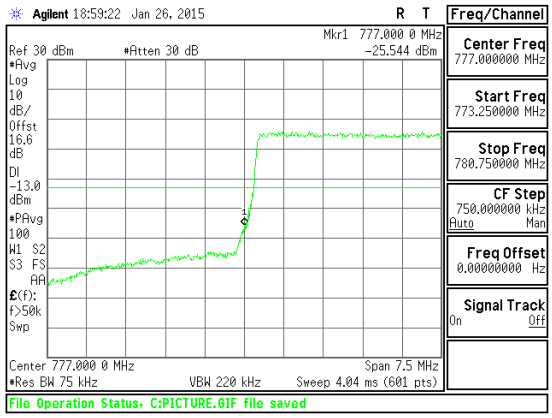
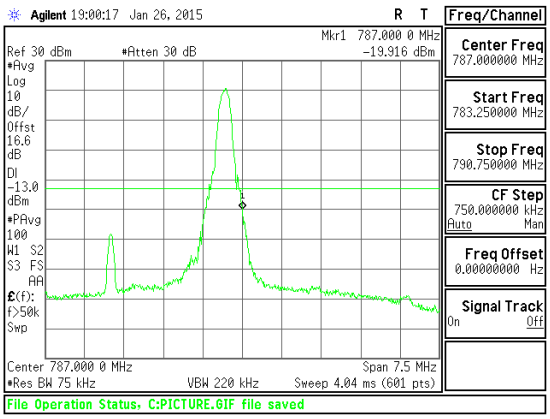
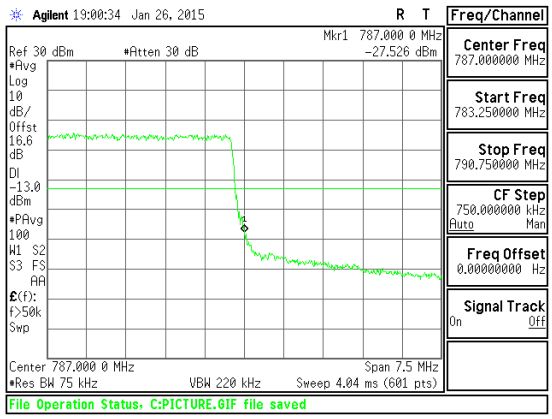
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 1.4MHz CBE 16QAM High Channel FRB.gif

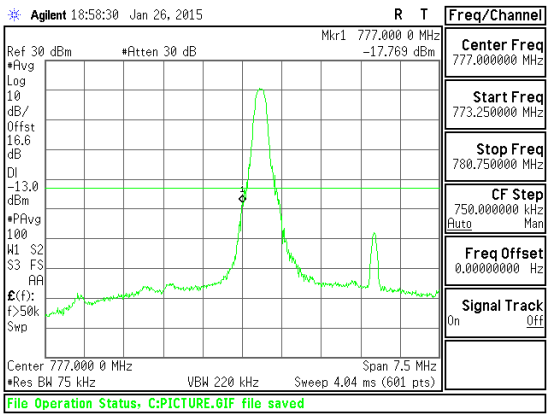
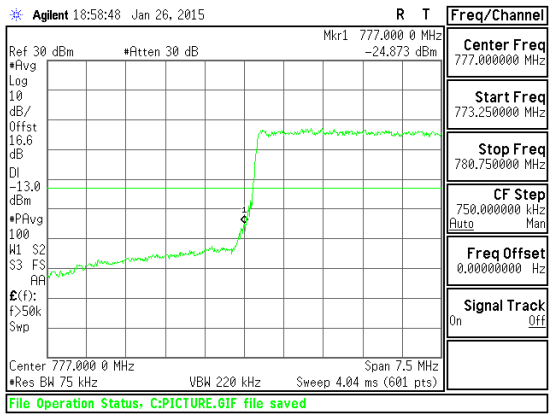
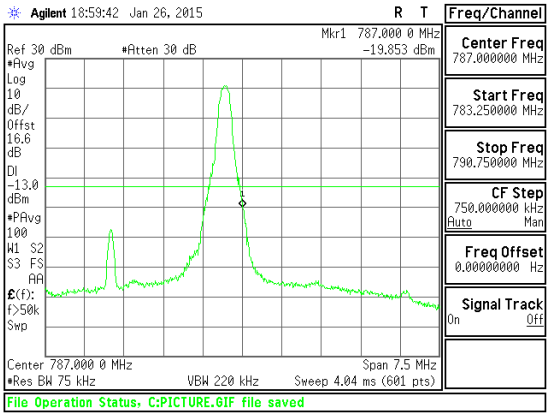
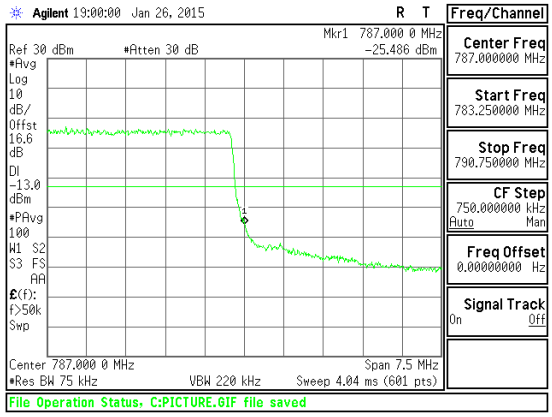
Band LTE5 1.4MHz QPSK	 Band LTE5 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE5 1.4MHz QPSK	 Band LTE5 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 1.4MHz CBE QPSK High Channel FRB.gif

LTE Band 13

Band LTE13 10MHz 16QAM	 Band LTE13 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE13 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE13 10MHz 16QAM	 Band LTE13 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE13 10MHz CBE 16QAM High Channel FRB.gif

Band LTE13 10MHz QPSK	 Band LTE13 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE13 10MHz CBE QPSK Low Channel FRB.gif
Band LTE13 10MHz QPSK	 Band LTE13 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE13 10MHz CBE QPSK High Channel FRB.gif

Band LTE13 5MHz 16QAM	 Band LTE13 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE13 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE13 5MHz 16QAM	 Band LTE13 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE13 5MHz CBE 16QAM High Channel FRB.gif

Band LTE13 5MHz QPSK	 Band LTE13 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE13 5MHz CBE QPSK Low Channel FRB.gif
Band LTE13 5MHz QPSK	 Band LTE13 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE13 5MHz CBE QPSK High Channel FRB.gif

11.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53

LIMITS

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

Part 27: (m)(4) For mobile station, the attenuation factor shall be not less than 43+10Log(P)dB at the channel edge and (55+10Log(P)dB) at 5.5MHz from the channel edges.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

MODES TESTED

CDMA, LTE

RESULTS

11.3.1. OUT OF BAND EMISSIONS RESULT

CDMA

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
BC0	1xRTT	824.7	-28.22	-13	-15.22
		836.52	-28.78	-13	-15.78
		848.31	-27.81	-13	-14.81
BC1		1851.25	-28.31	-13	-15.31
		1880	-27.03	-13	-14.03
		1908.75	-27.22	-13	-14.22

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
BC0	EVDO	824.7	-28.41	-13	-15.41
		836.52	-27.86	-13	-14.86
		848.31	-29.85	-13	-16.85
BC1		1851.25	-32.40	-13	-19.40
		1880	-33.00	-13	-20.00
		1908.75	-33.27	-13	-20.27

LTE Band 2

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	20	QPSK	1860	-18.179	-13	-5.179
			1880	-19.641	-13	-6.641
			1900	-17.909	-13	-4.909
		16QAM	1860	-18.421	-13	-5.421
			1880	-20.752	-13	-7.752
			1900	-17.242	-13	-4.242
	15	QPSK	1857.5	-19.392	-13	-6.392
			1880	-25.374	-13	-12.374
			1902.5	-24.296	-13	-11.296
		16QAM	1857.5	-19.922	-13	-6.922
			1880	-24.452	-13	-11.452
			1902.5	-18.816	-13	-5.816
	10	QPSK	1855	-21.151	-13	-8.151
			1880	-18.246	-13	-5.246
			1905	-18.209	-13	-5.209
		16QAM	1855	-21.284	-13	-8.284
			1880	-17.798	-13	-4.798
			1905	-20.396	-13	-7.396
	5	QPSK	1852.5	-24.242	-13	-11.242
			1880	-24.495	-13	-11.495
			1907.5	-17.109	-13	-4.109
		16QAM	1852.5	-25.439	-13	-12.439
			1880	-21.455	-13	-8.455
			1907.5	-21.554	-13	-8.554

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	3	QPSK	1851.5	-33.737	-13	-20.74
			1880	-33.355	-13	-20.36
			1908.5	-33.300	-13	-20.30
		16QAM	1851.5	-33.641	-13	-20.64
			1880	-33.049	-13	-20.05
			1908.5	-33.306	-13	-20.31
	1.4	QPSK	1850.7	-33.438	-13	-20.44
			1880	-33.110	-13	-20.11
			1909.3	-33.480	-13	-20.48
		16QAM	1850.7	-33.442	-13	-20.44
			1880	-33.660	-13	-20.66
			1909.3	-32.547	-13	-19.55

LTE Band 4

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	20	QPSK	1720	-19.846	-13	-6.846
			1732.5	-25.445	-13	-12.445
			1745	-24.874	-13	-11.874
		16QAM	1720	-19.190	-13	-6.19
			1732.5	-24.258	-13	-11.258
			1745	-24.038	-13	-11.038
	15	QPSK	1717.5	-19.926	-13	-6.926
			1732.5	-24.823	-13	-11.823
			1747.5	-21.868	-13	-8.868
		16QAM	1717.5	-17.992	-13	-4.992
			1732.5	-25.262	-13	-12.262
			1747.5	-22.497	-13	-9.497
	10	QPSK	1715	-21.913	-13	-8.913
			1732.5	-24.032	-13	-11.032
			1750	-21.786	-13	-8.786
		16QAM	1715	-21.713	-13	-8.713
			1732.5	-23.737	-13	-10.737
			1750	-22.024	-13	-9.024
	5	QPSK	1712.5	-24.203	-13	-11.203
			1732.5	-25.093	-13	-12.093
			1752.5	-21.236	-13	-8.236
		16QAM	1712.5	-24.488	-13	-11.488
			1732.5	-24.689	-13	-11.689
			1752.5	-18.777	-13	-5.777