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

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: LG-US550, LGUS550, US550

FCC ID: ZNFUS550

REPORT NUMBER: 14I19592-E1 REVISION A

ISSUE DATE: JANUARY 13, 2015

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	12/26/14	Initial Issue	D. Coronia
A	01/13/15	Update table and plot page 51 and 59	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-US550, LGUS550, US550
SERIAL NUMBER:	411KPCA000043, 411KPYR000042, 411KPHG000041
DATE TESTED:	DECEMBER 8-16, 2014

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E and 27F	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, 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)

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4.3. MEASUREMENT UNCERTAINTY

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

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

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

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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

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

FCC Part 22/24/27						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			dBm	mW	dBm	mW
BC0	824~849	1xRTT	24.6	288.40	21.67	146.93
	824~849	EVDO REL. 0	24.0	251.19	21.59	144.21
	824~849	EVDO REV. A	24.0	251.19		
BC1	1850~1910	1xRTT	24.7	295.12	25.23	333.43
	1850~1910	EVDO REL. 0	24.2	263.03	23.9	245.47
	1850~1910	EVDO REV. A	24.2	263.03		

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5.3. MAXIMUM OUTPUT POWER (LTE)

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE25	1850~1915	5MHz	QPSK	23.40	218.78	25.39	345.94
	1850~1915	5MHz	16QAM	22.30	169.82	24.62	289.73

FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE17	704~716	10MHz	QPSK	23.60	229.09	15.56	35.97
	704~716	10MHz	16QAM	22.40	173.78	14.86	30.62

FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE17	704~716	5MHz	QPSK	23.40	218.78	15.6	36.31
	704~716	5MHz	16QAM	22.60	181.97	14.66	29.24

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE12	699~716	10MHz	QPSK	23.60	229.09	15.74	37.5
	699~716	10MHz	16QAM	22.50	177.83	14.97	31.41

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE12	699~716	5MHz	QPSK	23.40	218.78	15.77	37.76
	699~716	5MHz	16QAM	22.70	186.21	14.95	31.26

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FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			mW	AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	10MHz	QPSK	23.60	229.09	20.381	109.17
	824~849	10MHz	16QAM	22.50	177.83	19.411	87.32

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			mW	AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	5MHz	QPSK	23.40	218.78	20.051	101.18
	824~849	5MHz	16QAM	22.70	186.21	19.641	92.07

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			mW	AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	3MHz	QPSK	23.50	223.87	20.411	109.93
	824~849	3MHz	16QAM	22.70	186.21	19.791	95.3

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			mW	AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	1.4MHz	QPSK	23.50	223.87	20.081	101.88
	824~849	1.4MHz	16QAM	22.60	181.97	19.501	89.15

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FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	20MHz	QPSK	23.3	213.80	26.29	425.60
	1710~1755	20MHz	16QAM	22.1	162.18	25.22	332.66

FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	15MHz	QPSK	23.4	218.78	25.27	336.51
	1710~1755	15MHz	16QAM	22.8	190.55	24.3	269.15

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	10MHz	QPSK	23.30	213.80	25	316.23
	1710~1755	10MHz	16QAM	22.70	186.21	23.97	249.46

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	5MHz	QPSK	23.50	223.87	24.96	313.33
	1710~1755	5MHz	16QAM	22.40	173.78	24.03	252.93

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FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	20MHz	QPSK	23.50	223.87	25.02	317.69
	1850~1910	20MHz	16QAM	22.00	158.49	24.25	266.07

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	15MHz	QPSK	23.30	213.80	24.8	302
	1850~1910	15MHz	16QAM	22.30	169.82	23.912	246.15

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	10MHz	QPSK	23.40	218.78	24.74	297.85
	1850~1910	10MHz	16QAM	22.70	186.21	23.782	238.89

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	25.d d	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	5MHz	QPSK	23.70	234.42	24.452	278.74
	1850~1910	5MHz	16QAM	22.60	181.97	23.472	222.43

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	3MHz	QPSK	23.60	229.09	24.97	314.05
	1850~1910	3MHz	16QAM	22.70	186.21	23.91	246.04

FCC Part 22/24/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation mW	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	1.4MHz	QPSK	23.30	213.80	24.7	295.12
	1850~1910	1.4MHz	16QAM	22.70	186.21	23.922	246.72

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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 BC1 / LTE 2, 1850~1910MHz	-0.42
LTE 4, 1710~1755MHz	-5.19
CDMA BC0 / LTE 5, 824~849MHz	-5.25
LTE 12 699~716MHz	-4.69
LTE 17 699~716MHz	-4.69
LTE 25, 1850~1915MHz	-1.68

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	LG	MCS-01WR	RD4X0891946	N/A
Earphone	LG	LG-US550	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.

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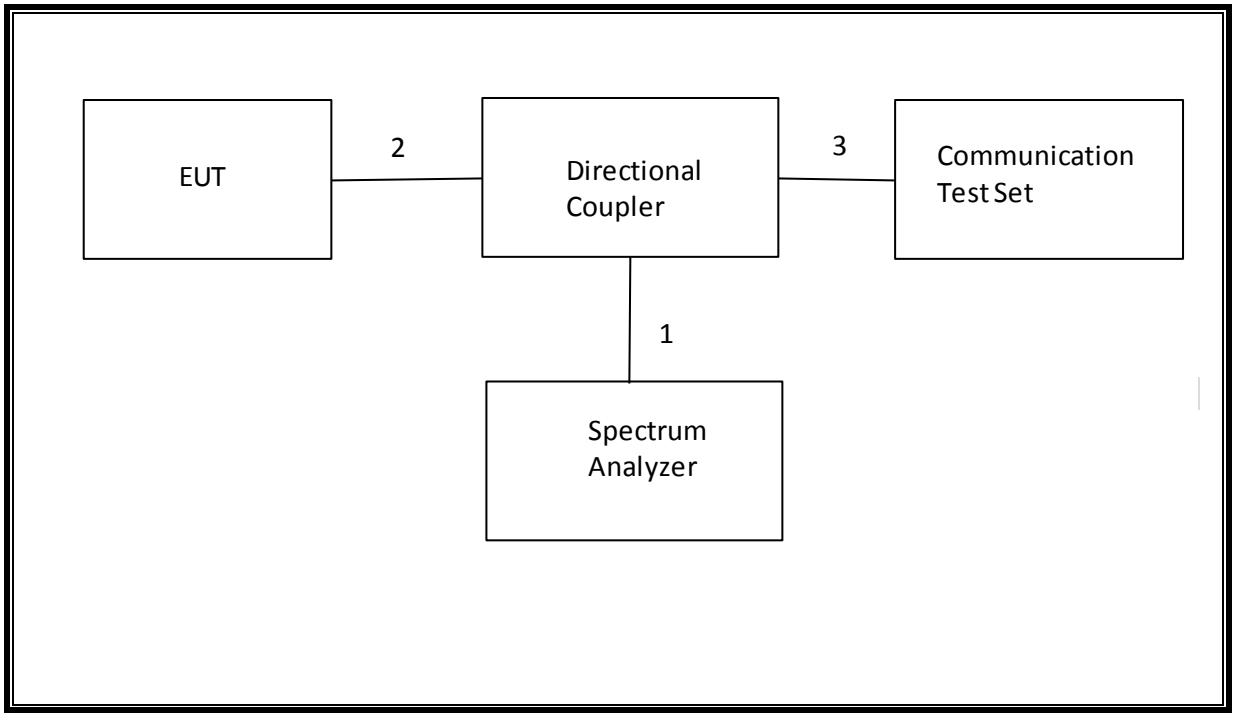
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



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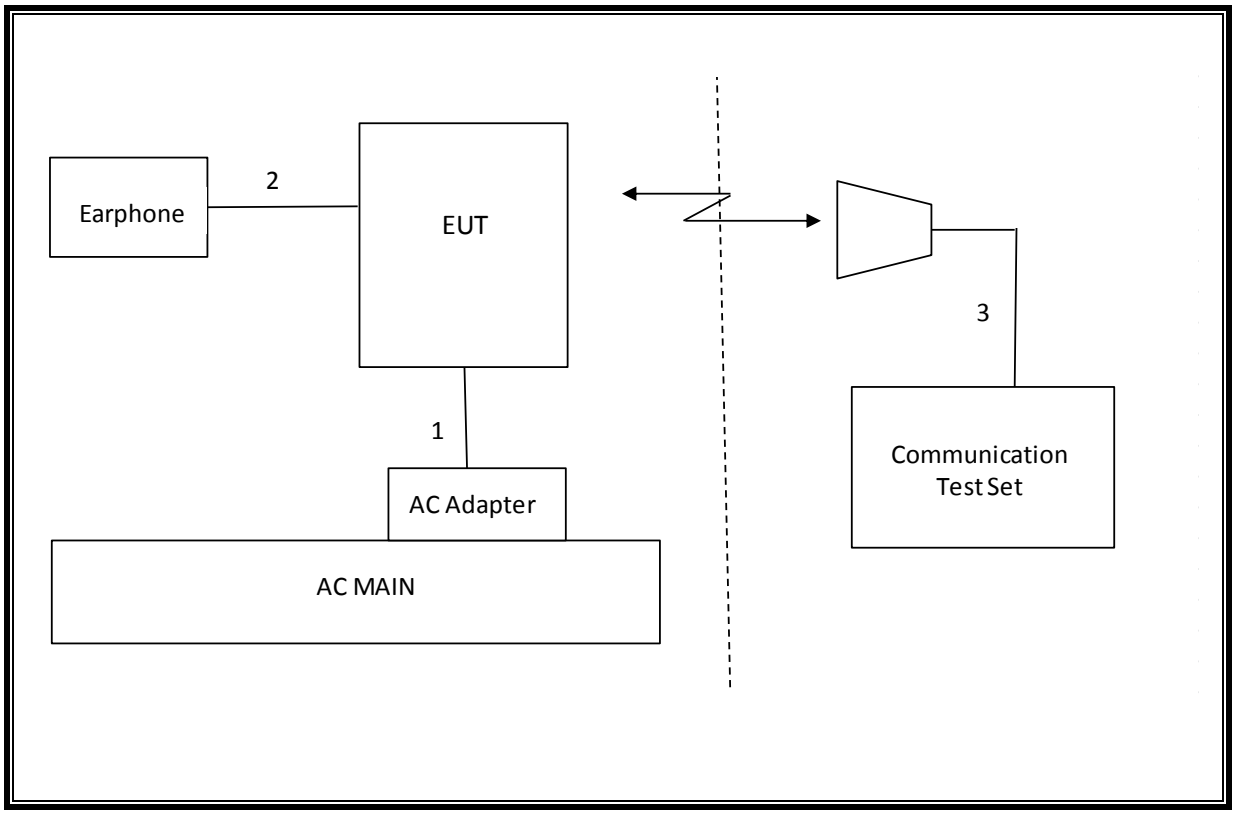
SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	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

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7. Summary Table

2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	17.94 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	-13.025 dBm
2.1046	N/A	Conducted output power	N/A		Pass	25.5 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	0.223 PPM
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass	21.7 dBm
27.50(b)(10)	N/A		34.77 dBm		Pass	15.8 dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	25.4 dBm
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass	26.3 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	-38.1 dBm

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8. Power Verification

8.1. CDMA2000

8.1.1. 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)

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CDMA2000 OUTPUT POWER RESULT

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	24.6
		384	836.52	24.5
		777	848.31	24.5
	RC3, SO55 (Loopback)	1013	824.70	24.6
		384	836.52	24.4
		777	848.31	24.5
	RC3, SO32 (+F-SCH)	1013	824.70	24.5
		384	836.52	24.4
		777	848.31	24.5

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

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8.1.2 1xEV-DO Release 0

TEST PROCEDURE

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

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

EVDO Release 0 - RTAP

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

EVDO Release 0 - FTAP

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

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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	23.9
		777	848.31	24.0

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	25	1851.25	24.0
		600	1880.00	24.2
		1175	1908.75	24.2

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8.1.3 1xEV-DO Rev. A

TEST PROCEDURE

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

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

EVDO Release A – RETAP

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

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

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

EVDO Release A - FETAP

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

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

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

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8.1.6 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	24.0
		384	836.52	23.8
		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	24.0
		600	1880.00	24.2
		1175	1908.75	24.2

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8.1.4. 1xEV-DO Rev. B

TEST PROCEDURE

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

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

EVDO Release A – RETAP

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

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

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

EVDO Release A - FETAP

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

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

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

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1xEVDO REV B OUTPUT RESULT

NOT APPLICABLE

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8.2. LTE OUTPUT VERIFICATION

9.1.1. LTE OUTPUT RESULT

LTE Band 2 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1860 MHz	1880 MHz	1900 MHz
LTE Band 2	20	QPSK	1	0	0	0	23.5	23.3	23.3
			1	50	0	0	23.3	23.0	23.3
			1	99	0	0	23.3	23.2	23.3
			50	0	1	1	22.3	22.4	22.1
			50	25	1	1	22.2	22.3	22.1
			50	50	1	1	22.2	22.3	22.1
			100	0	1	1	22.3	22.4	22.1
		16QAM	1	0	1	1	21.9	22.0	22.2
			1	50	1	1	22.0	21.9	21.9
			1	99	1	1	21.8	22.0	21.9
			50	0	2	2	21.2	21.2	21.2
			50	25	2	2	21.1	21.4	21.2
			50	50	2	2	21.2	21.3	21.2
			100	0	2	2	21.3	21.2	21.2
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1857.5 MHz	1880 MHz	1902.5 MHz
LTE Band 2	15	QPSK	1	0	0	0	23.3	23.3	23.2
			1	36	0	0	23.3	23.4	23.3
			1	74	0	0	23.3	23.2	23.2
			36	0	1	1	22.2	22.2	22.2
			36	18	1	1	22.2	22.3	22.1
			36	37	1	1	22.1	22.4	22.2
			75	0	1	1	22.2	22.3	22.2
		16QAM	1	0	1	1	22.2	22.2	22.1
			1	36	1	1	22.0	22.3	22.1
			1	74	1	1	22.2	22.3	22.1
			36	0	2	2	21.2	21.5	21.2
			36	18	2	2	21.2	21.2	21.2
			36	37	2	2	21.2	21.2	21.2
			75	0	2	2	21.2	21.4	21.2

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LTE Band 2 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	0	23.3	23.2	23.3
			1	25	0	0	23.2	23.3	23.4
			1	49	0	0	23.2	23.3	23.2
			25	0	1	1	22.3	22.4	22.2
			25	12	1	1	22.2	22.4	22.2
			25	25	1	1	22.2	22.4	22.2
			50	0	1	1	22.2	22.4	22.2
		16QAM	1	0	1	1	22.2	22.1	22.3
			1	25	1	1	22.2	22.7	22.2
			1	49	1	1	22.4	22.4	22.3
			25	0	2	2	21.3	21.4	21.2
			25	12	2	2	21.4	21.4	21.2
			25	25	2	2	21.3	21.3	21.2
			50	0	2	2	21.2	21.2	21.2
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1852.5 MHz	1880 MHz	1907.5 MHz
LTE Band 2	5	QPSK	1	0	0	1	23.2	23.1	23.1
			1	12	0	0	23.2	23.7	23.2
			1	24	0	1	23.1	22.9	23.0
			12	0	1	1	22.2	22.3	22.1
			12	6	1	1	22.2	22.3	22.1
			12	11	1	1	22.3	22.3	22.2
			25	0	1	1	22.2	22.4	22.2
		16QAM	1	0	1	1	21.7	22.5	22.6
			1	12	1	1	21.7	22.1	22.3
			1	24	1	1	21.7	22.6	21.8
			12	0	2	2	21.1	21.4	21.4
			12	6	2	2	21.2	21.4	21.0
			12	11	2	2	21.2	21.4	21.3
			25	0	2	2	21.4	21.4	21.4

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LTE Band 2 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1851.5 MHz	1880 MHz	1908.5 MHz
LTE Band 2	3	QPSK	1	0	0	0	23.1	23.2	23.1
			1	7	0	0	23.6	23.4	23.2
			1	14	0	0	23.2	23.2	23.2
			8	0	1	1	22.2	22.3	22.2
			8	4	1	1	22.3	22.4	22.1
			8	7	1	1	22.3	22.4	22.2
			15	0	1	1	22.3	22.3	22.2
		16QAM	1	0	1	1	22.1	22.1	22.7
			1	7	1	1	22.2	22.4	22.5
			1	14	1	1	22.2	22.5	22.3
			8	0	2	2	21.1	21.5	21.5
			8	4	2	2	21.4	21.3	21.2
			8	7	2	2	21.2	21.1	21.2
			15	0	2	2	21.1	21.7	21.2
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1850.7 MHz	1880 MHz	1909.3 MHz
LTE Band 2	1.4	QPSK	1	0	0	0	23.0	23.1	23.0
			1	2	0	0	23.1	23.3	23.3
			1	5	0	0	23.1	23.0	23.0
			3	0	0	0	23.1	23.3	23.3
			3	1	0	0	23.1	23.3	23.2
			3	2	0	0	23.1	23.2	23.3
			6	0	1	1	22.1	22.3	22.2
		16QAM	1	0	1	1	22.6	22.6	22.4
			1	2	1	1	22.7	22.7	22.7
			1	5	1	1	22.4	22.1	22.3
			3	0	1	1	22.0	21.7	21.7
			3	1	1	1	22.2	21.7	21.7
			3	2	1	2	21.7	21.7	21.7
			6	0	2	2	21.3	21.7	21.3

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LTE Band 4 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1720.00	1732.5 MHz	1745.00
LTE Band 4	20	QPSK	1	0	0	0	23.3	22.8	23.3
			1	49	0	0	23.3	22.8	23.4
			1	99	0	0	23.0	22.6	23.3
			50	0	1	1	22.2	22.2	22.2
			50	25	1	1	22.0	22.1	22.1
			50	49	1	1	22.0	22.0	22.1
			100	0	1	1	22.0	22.1	22.1
		16QAM	1	0	1	1	22.1	22.1	22.1
			1	49	1	1	22.1	22.1	22.1
			1	99	1	1	22.1	22.1	22.1
			50	0	2	2	21.3	21.2	21.2
			50	25	2	2	21.1	21.1	21.1
			50	49	2	2	21.0	21.0	21.0
			100	0	2	2	21.1	21.0	21.3
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1717.5 MHz	1732.5 MHz	1747.50
LTE Band 4	15	QPSK	1	0	0	0	23.4	23.1	23.0
			1	37	0	0	23.3	23.1	23.2
			1	74	0	0	23.1	22.9	23.0
			36	0	1	1	22.2	22.0	22.0
			36	18	1	1	22.1	22.0	22.0
			36	35	1	1	22.1	21.9	22.1
			75	0	1	1	22.2	21.9	22.0
		16QAM	1	0	1	1	22.8	22.4	21.9
			1	37	1	1	22.6	22.4	21.9
			1	74	1	1	22.5	22.4	21.9
			36	0	2	2	21.2	20.9	21.0
			36	18	2	2	21.1	20.9	21.0
			36	35	2	2	21.1	20.8	21.0
			75	0	2	2	21.1	20.8	21.1

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Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1715 MHz	1732.5 MHz	1750 MHz
LTE Band 4	10	QPSK	1	0	0	0	23.2	23.3	23.2
			1	25	0	0	23.1	23.1	23.1
			1	49	0	0	23.0	23.0	23.2
			25	0	1	1	22.2	22.2	22.5
			25	12	1	1	22.2	22.1	22.5
			25	25	1	1	22.2	22.1	22.5
			50	0	1	1	22.2	22.2	22.2
		16QAM	1	0	1	1	22.5	22.6	22.7
			1	25	1	1	22.4	22.0	22.0
			1	49	1	1	22.0	22.2	22.4
			25	0	2	2	21.1	21.1	21.2
			25	12	2	2	21.0	21.2	21.3
			25	25	2	2	21.2	21.1	21.2
			50	0	2	2	21.1	21.1	21.2
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1712.5 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	0	23.2	23.5	23.0
			1	12	0	0	23.2	23.4	23.0
			1	24	0	0	23.0	23.2	23.0
			12	0	1	1	22.1	22.2	22.2
			12	6	1	1	22.2	22.2	22.1
			12	11	1	1	22.2	22.1	22.2
			25	0	1	1	22.2	22.2	22.2
		16QAM	1	0	1	1	22.4	22.5	22.1
			1	12	1	1	22.5	21.7	21.8
			1	24	1	1	22.4	22.3	22.1
			12	0	2	2	21.2	21.2	21.0
			12	6	2	2	21.2	21.2	21.2
			12	11	2	2	21.1	21.4	21.2
			25	0	2	2	21.2	21.1	21.3

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LTE Band 5 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0	0	23.0	23.4	23.0
			1	25	0	0	23.0	23.6	23.0
			1	49	0	0	22.9	23.4	23.2
			25	0	1	2	22.0	21.9	21.9
			25	12	1	2	22.0	21.9	21.9
			25	25	1	2	22.0	21.9	21.9
			50	0	1	2	22.0	22.0	21.8
		16QAM	1	0	1	1	22.1	22.2	22.3
			1	25	1	1	22.4	22.5	22.0
			1	49	1	1	22.0	22.2	21.8
			25	0	2	2	21.0	21.2	20.8
			25	12	2	2	21.0	21.0	21.2
			25	25	2	2	21.0	21.2	21.2
			50	0	2	3	21.0	21.0	21.0
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							826.5 MHz	836.5 MHz	846.5 MHz
LTE Band 5	5	QPSK	1	0	0	0	22.9	23.2	22.9
			1	12	0	0	23.0	23.4	23.2
			1	24	0	0	22.8	23.2	22.8
			12	0	1	1	22.0	22.0	22.0
			12	6	1	1	22.0	22.1	22.0
			12	11	1	1	22.0	22.0	22.1
			25	0	1	1	21.9	22.0	21.9
		16QAM	1	0	1	1	22.2	21.8	22.1
			1	12	1	1	22.7	22.2	22.2
			1	24	1	1	22.4	22.2	22.0
			12	0	2	2	21.1	20.8	21.0
			12	6	2	2	20.9	21.0	20.9
			12	11	2	2	21.1	21.0	21.0
			25	0	2	2	21.1	21.1	21.1

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LTE Band 5 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							825.5 MHz	836.5 MHz	847.5 MHz
LTE Band 5	3	QPSK	1	0	0	0	22.8	23.5	23.1
			1	7	0	0	22.9	23.5	23.3
			1	14	0	0	22.7	23.5	22.8
			8	0	1	1	22.0	22.0	22.0
			8	4	1	1	21.9	21.9	22.0
			8	7	1	2	21.9	21.9	21.9
			15	0	1	1	21.9	22.0	22.0
		16QAM	1	0	1	1	22.3	22.4	22.1
			1	7	1	1	22.1	22.7	22.2
			1	14	1	1	22.1	22.7	22.1
			8	0	2	2	21.2	21.1	21.2
			8	4	2	2	21.1	21.3	20.9
			8	7	2	2	21.1	21.3	21.0
			15	0	2	3	21.0	21.0	20.9

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							824.7 MHz	836.5 MHz	848.3 MHz
LTE Band 5	1.4	QPSK	1	0	0	0	23.2	23.3	23.2
			1	2	0	0	23.3	23.5	23.3
			1	5	0	0	23.3	23.3	23.2
			3	0	0	0	23.0	23.1	23.0
			3	1	0	0	23.1	23.0	23.1
			3	2	0	0	23.0	23.0	23.0
			6	0	1	2	21.9	22.0	21.9
		16QAM	1	0	1	1	22.6	22.4	22.6
			1	2	1	1	22.7	22.5	22.6
			1	5	1	1	22.6	22.4	22.5
			3	0	1	2	21.8	21.8	22.0
			3	1	1	2	21.8	21.7	21.9
			3	2	1	2	21.8	21.8	21.9
			6	0	2	3	20.7	20.7	20.7

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LTE Band 12 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							704 MHz	707.5 MHz	711 MHz
LTE Band 12	10	QPSK	1	0	0	0	23.0	23.4	23.0
			1	25	0	0	22.9	23.6	22.9
			1	49	0	0	22.9	23.3	23.0
			25	0	1	1	22.1	22.1	22.3
			25	12	1	1	22.1	22.1	22.2
			25	25	1	1	22.1	22.1	22.2
			50	0	1	1	22.1	22.0	22.3
		16QAM	1	0	1	1	22.3	21.9	22.5
			1	25	1	1	22.5	22.4	22.5
			1	49	1	1	22.3	22.2	22.6
			25	0	2	2	21.0	21.1	21.1
			25	12	2	3	20.9	20.9	21.0
			25	25	2	2	21.2	21.0	21.0
			50	0	2	2	21.1	21.0	21.1
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							701.5 MHz	707.5 MHz	713.5 MHz
LTE Band 12	5	QPSK	1	0	0	0	22.8	23.3	22.7
			1	12	0	0	23.4	23.3	23.0
			1	24	0	0	23.0	23.0	22.9
			12	0	1	1	22.1	22.2	22.1
			12	6	1	1	22.0	22.1	22.2
			12	11	1	1	22.0	22.0	22.3
			25	0	1	1	22.0	22.0	22.1
		16QAM	1	0	1	1	22.4	22.2	22.7
			1	12	1	1	22.1	22.4	22.6
			1	24	1	1	22.2	22.4	22.5
			12	0	2	2	21.0	21.1	21.2
			12	6	2	2	20.9	21.0	21.1
			12	11	2	2	20.9	21.3	21.3
			25	0	2	2	21.1	21.3	21.3

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LTE Band 17 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23790 710 MHz
LTE Band 17	10	QPSK	1	0	0	23.6
			1	24	0	23.5
			1	49	0	23.6
			25	0	1	22.2
			25	12	1	22.0
			25	24	1	22.1
			50	0	1	22.1
		16QAM	1	0	1	22.4
			1	24	1	22.0
			1	49	1	22.0
			25	0	2	21.4
			25	12	2	21.1
			25	24	2	21.2
			50	0	2	21.2

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm) 23790 710 MHz
LTE Band 17	5	QPSK	1	0	0	23.3
			1	12	0	23.4
			1	24	0	23.3
			12	0	1	22.2
			12	6	1	22.1
			12	11	1	22.2
			25	0	1	22.1
		16QAM	1	0	1	22.6
			1	12	1	22.3
			1	24	1	22.1
			12	0	2	21.2
			12	6	2	21.1
			12	11	2	21.0
			25	0	2	21.1

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LTE Band 25 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1852.5 MHz	1882.5 MHz	1912.5 MHz
LTE Band 25	5	QPSK	1	0	0	0	23.2	23.3	22.8
			1	12	0	0	23.4	23.4	23.7
			1	24	0	0	23.2	23.2	23.1
			12	0	1	1	22.1	22.2	22.1
			12	6	1	1	22.0	22.2	22.0
			12	11	1	1	22.1	22.1	22.1
			25	0	1	1	22.2	22.2	22.1
		16QAM	1	0	1	1	21.8	22.6	21.9
			1	12	1	1	22.0	22.0	22.3
			1	24	1	1	22.0	21.8	22.3
			12	0	2	2	21.2	21.1	21.3
			12	6	2	2	21.1	21.3	21.0
			12	11	2	2	21.0	21.2	21.0
			25	0	2	2	21.1	21.1	21.2

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10. PEAK TO AVERAGE RATIO

Test Procedure

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

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

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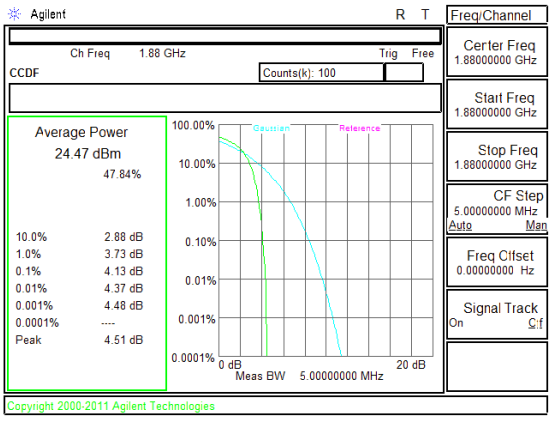
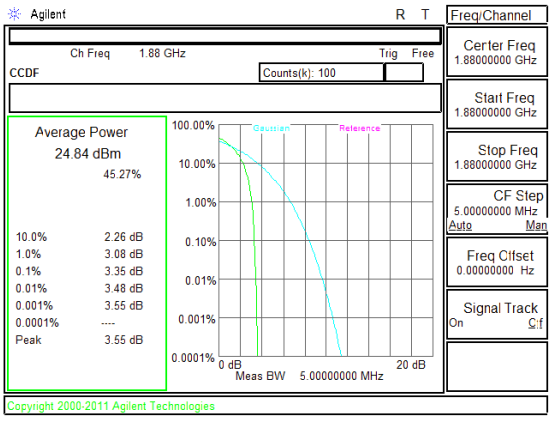
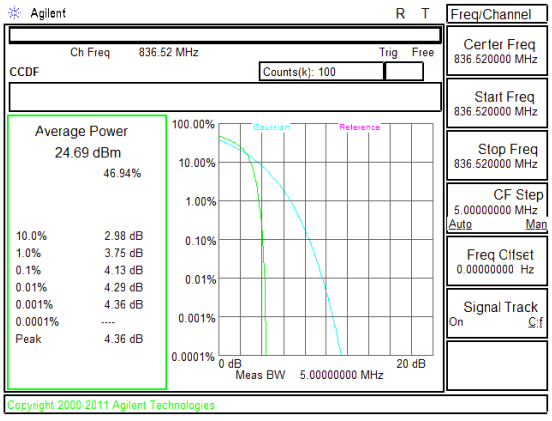
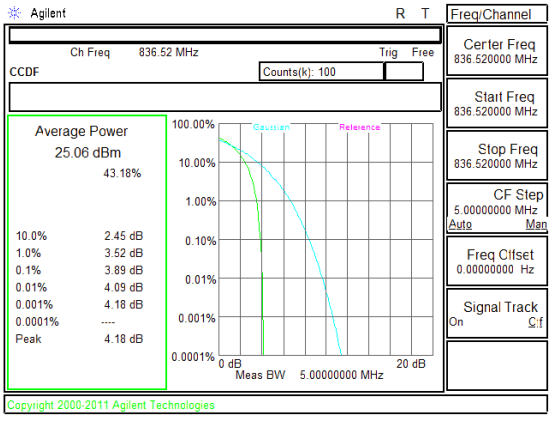
CDMA

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

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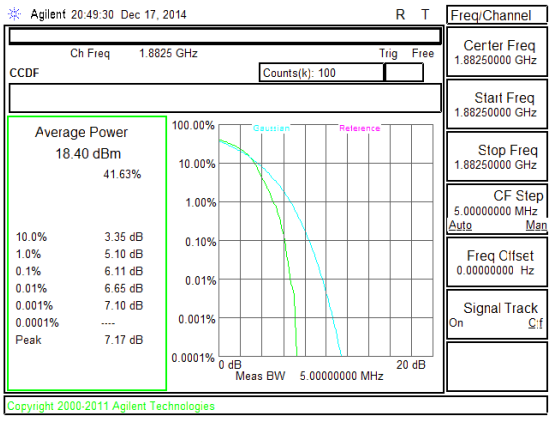
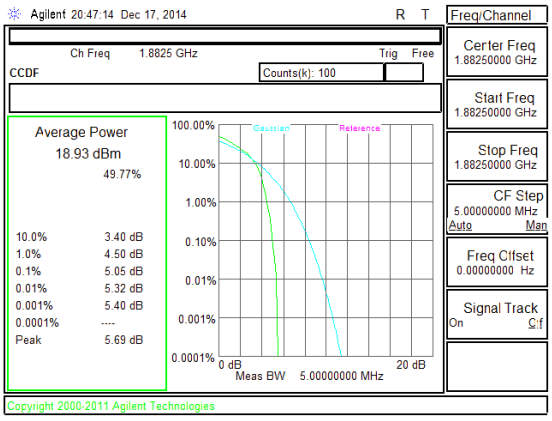
LTE Band 25

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

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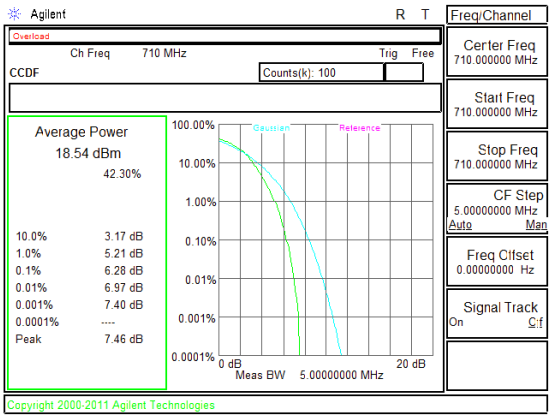
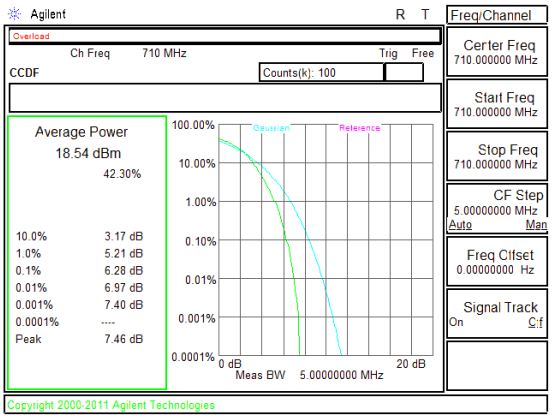
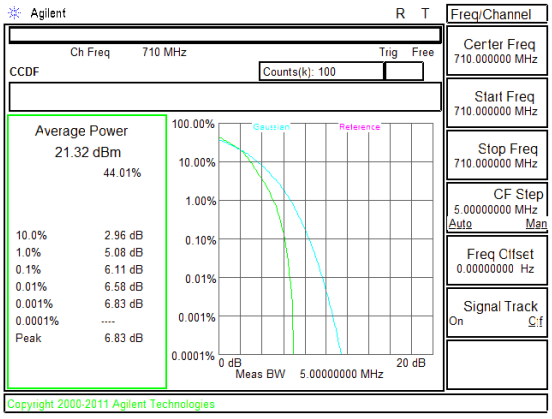
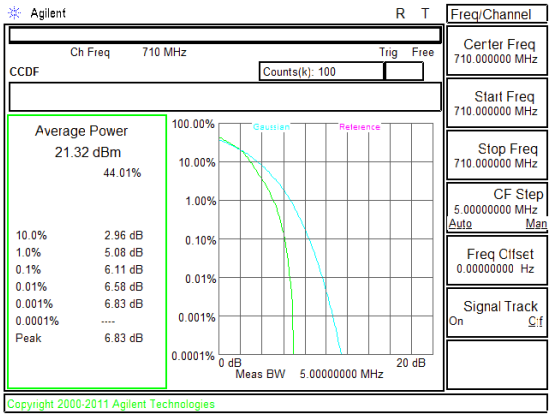
LTE Band 17

Band LTE17 10MHz 16QAM	 Band LTE17 10MHz 16QAM Mid channel	 Band LTE17 10MHz QPSK Mid channel
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz 16QAM Mid channel	 Band LTE17 5MHz QPSK Mid channel

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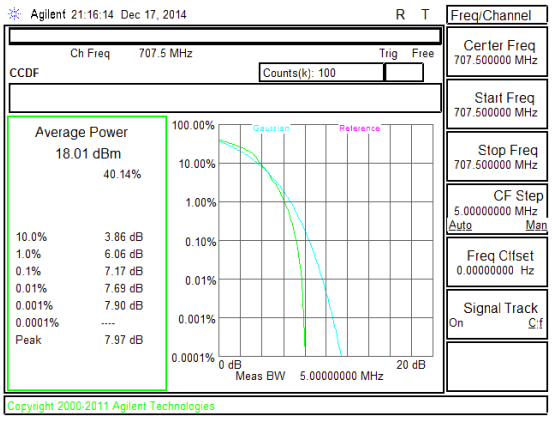
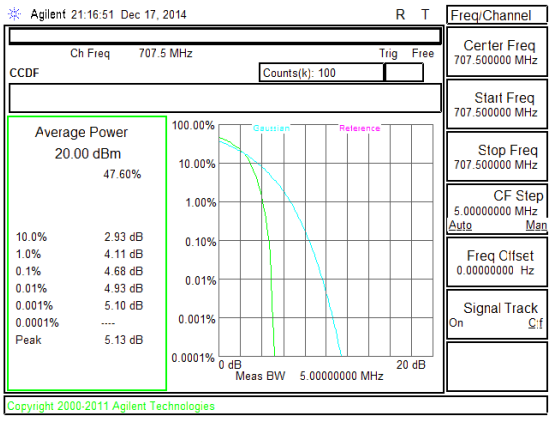
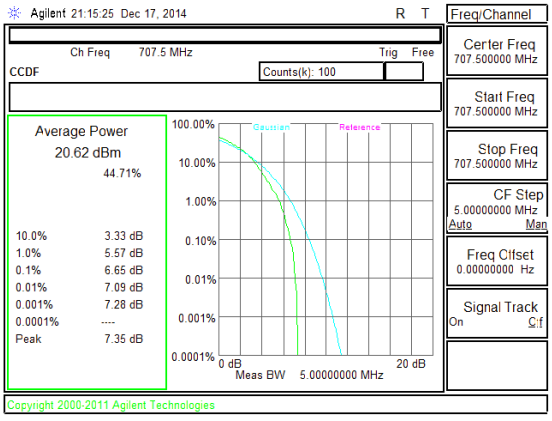
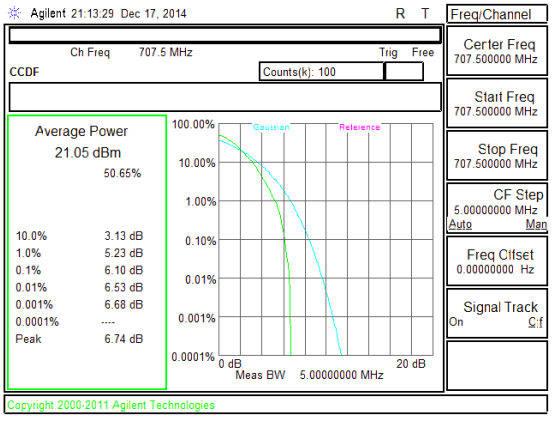
LTE Band 12

Band LTE12 10MHz 16QAM	 Band LTE12 10MHz 16QAM Mid channel	 Band LTE12 10MHz QPSK Mid channel
Band LTE12 5MHz 16QAM	 Band LTE12 5MHz 16QAM Mid channel	 Band LTE12 5MHz QPSK Mid channel

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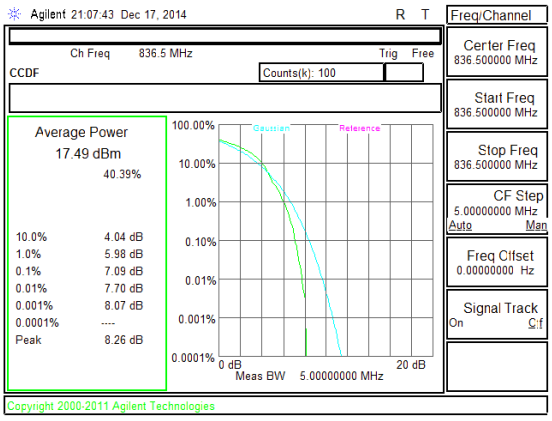
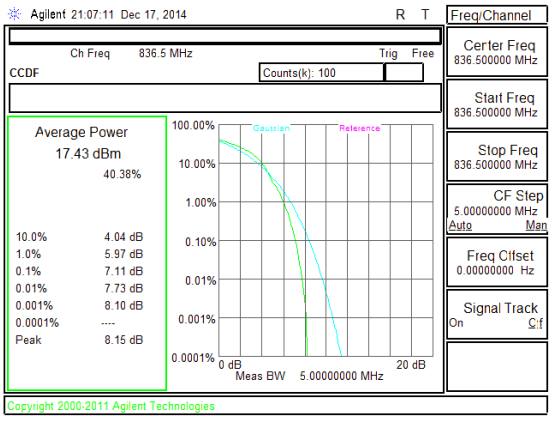
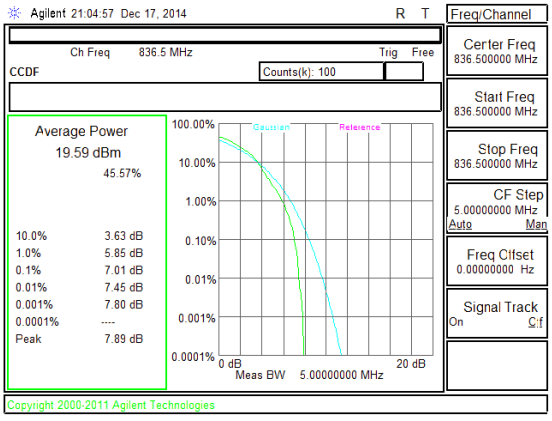
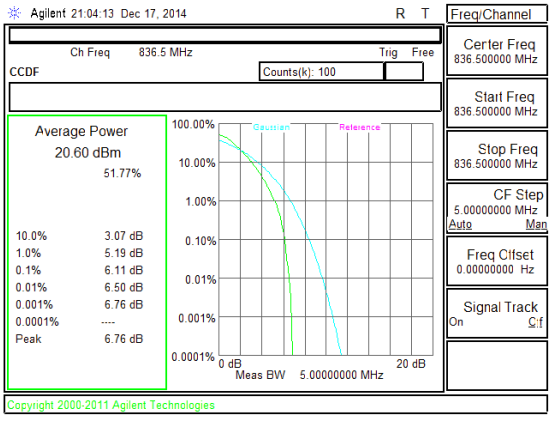
LTE Band 5

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

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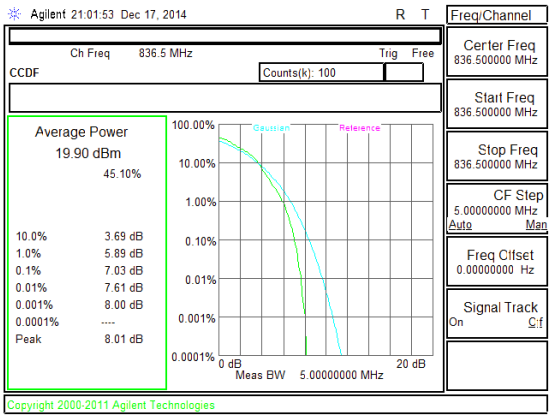
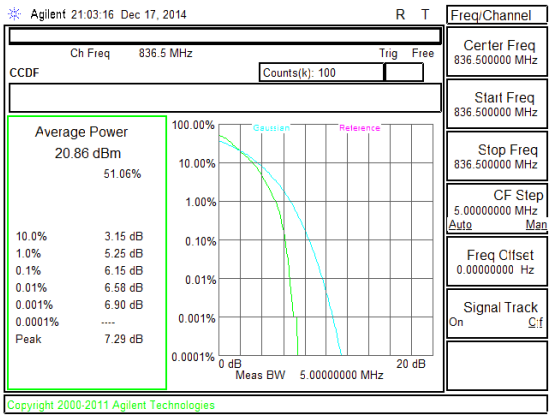
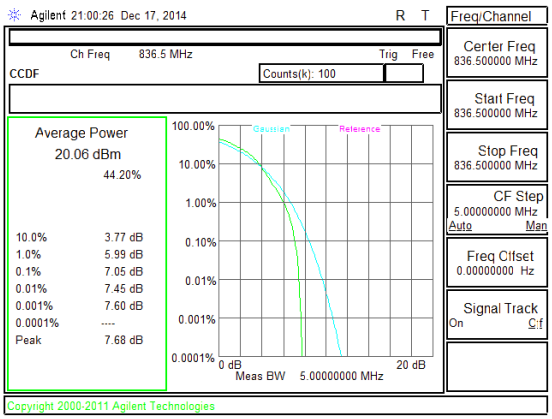
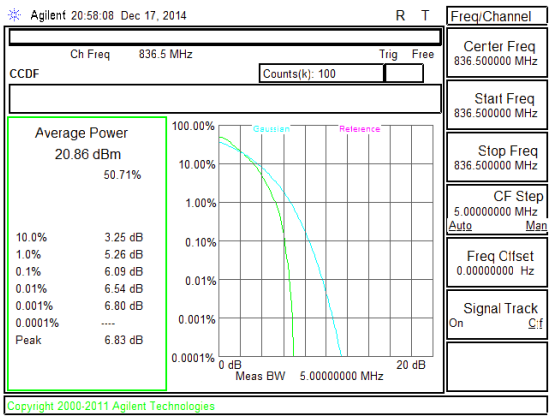
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz 16QAM Mid channel	 Band LTE5 3MHz QPSK Mid channel
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz 16QAM Mid channel	 Band LTE5 1.4MHz QPSK Mid channel

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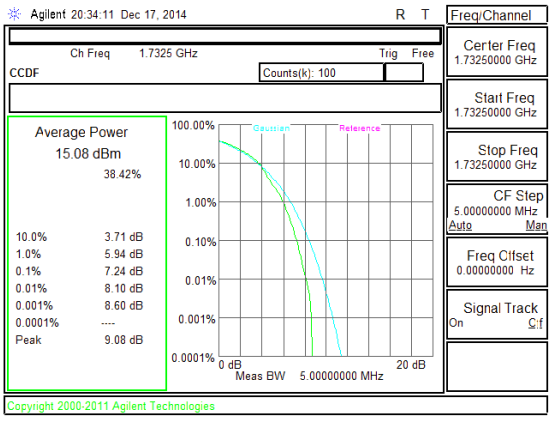
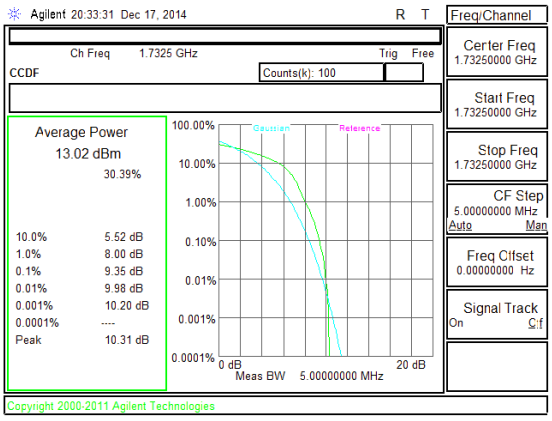
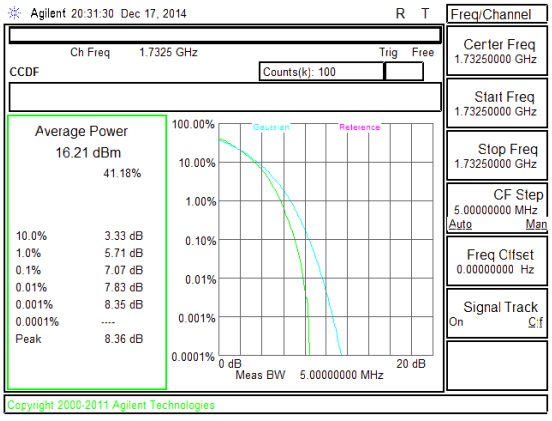
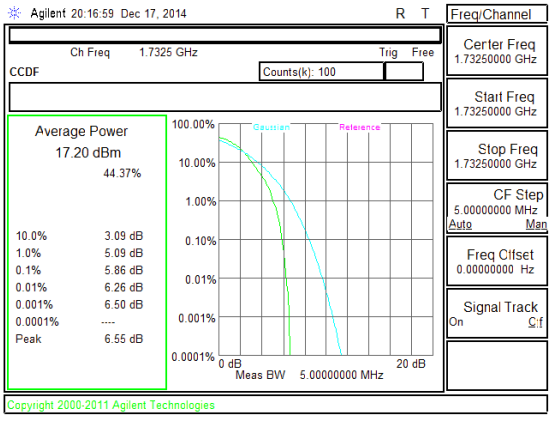
LTE Band 4

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

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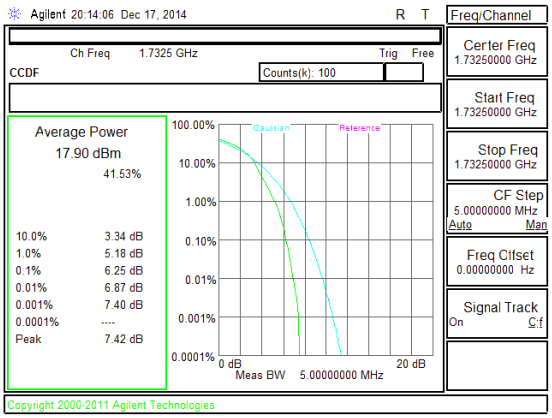
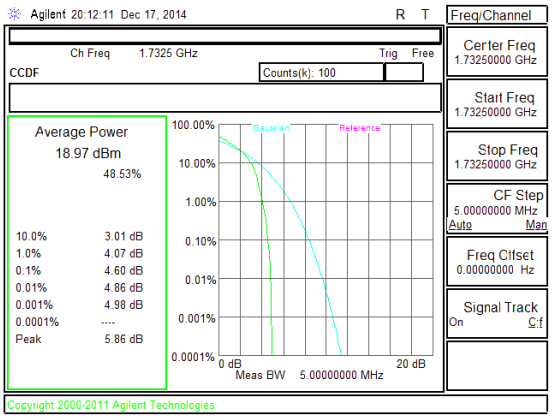
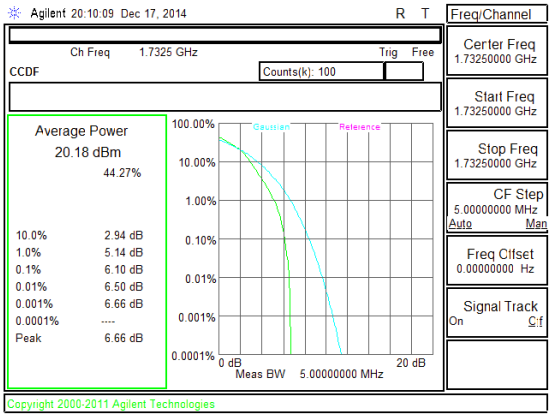
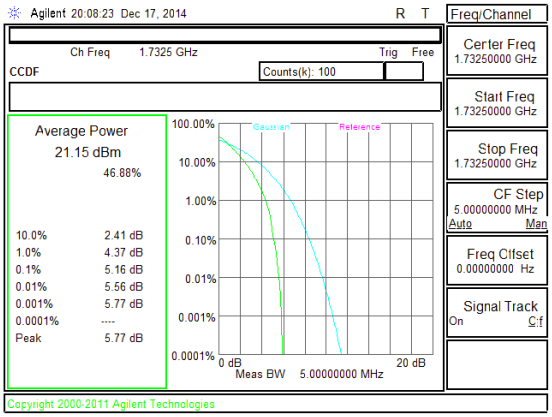
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz 16QAM Mid channel	 Band LTE4 10MHz QPSK Mid channel
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz 16QAM Mid channel	 Band LTE4 5MHz QPSK Mid channel

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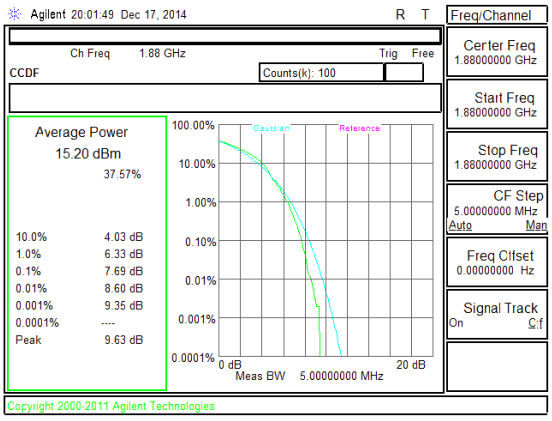
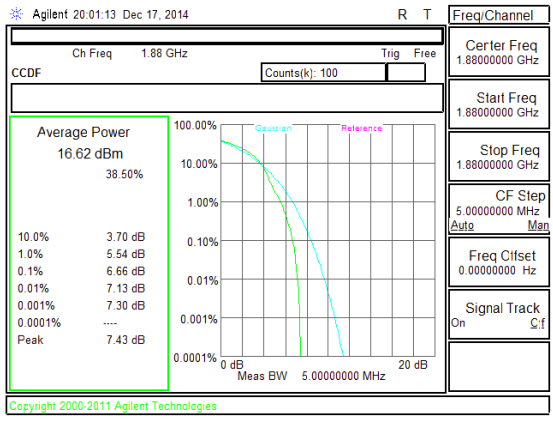
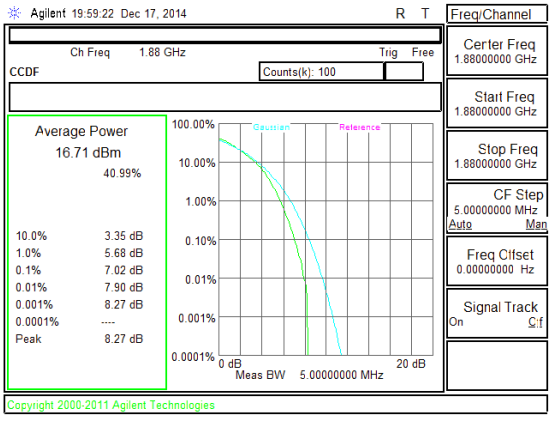
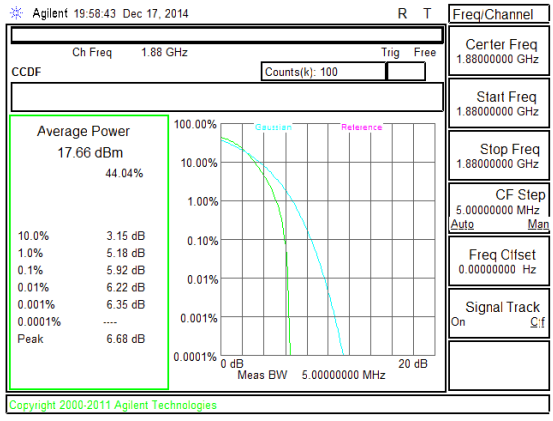
LTE Band 2

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

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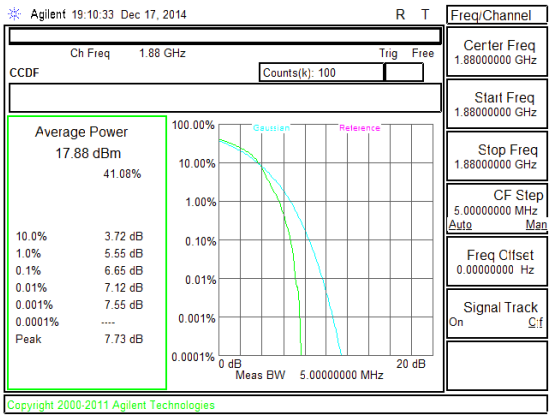
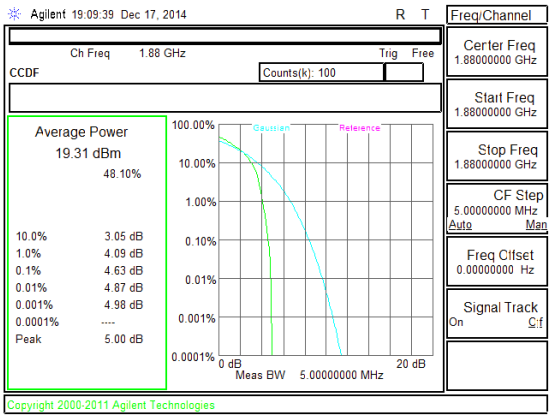
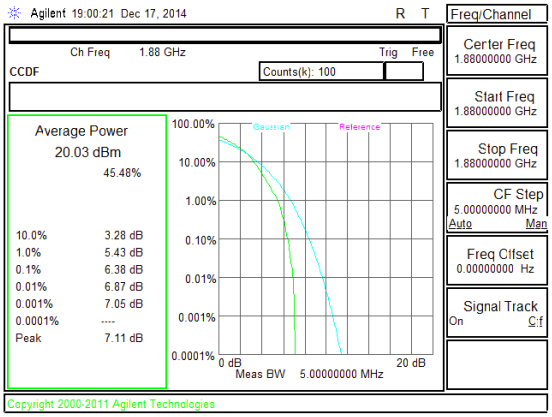
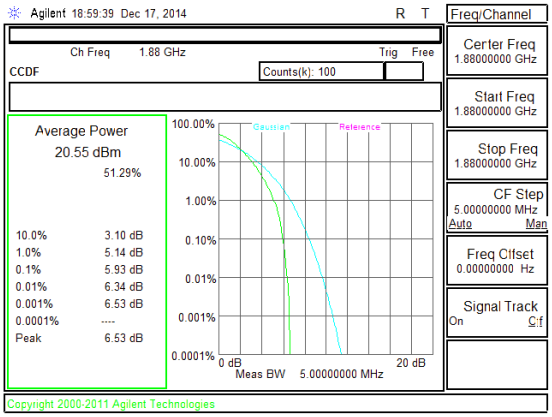
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz 16QAM Mid channel	 Band LTE2 10MHz QPSK Mid channel
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz 16QAM Mid channel	 Band LTE2 5MHz QPSK Mid channel

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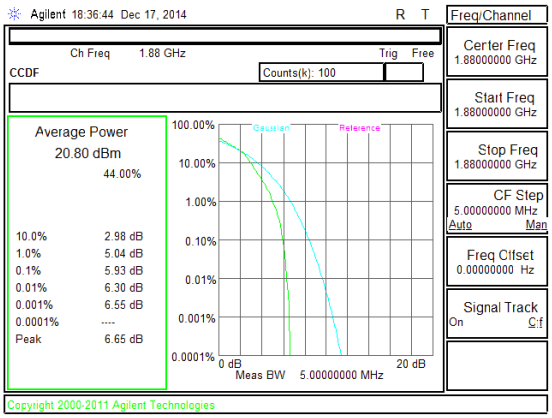
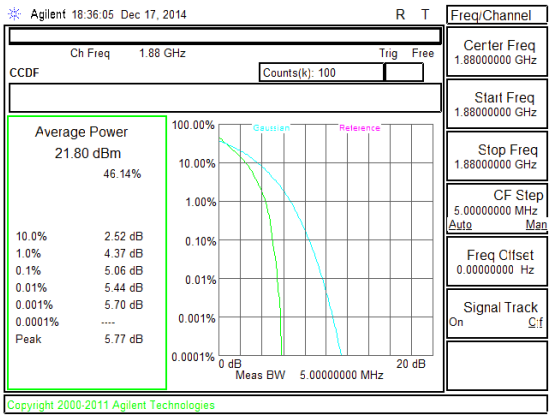
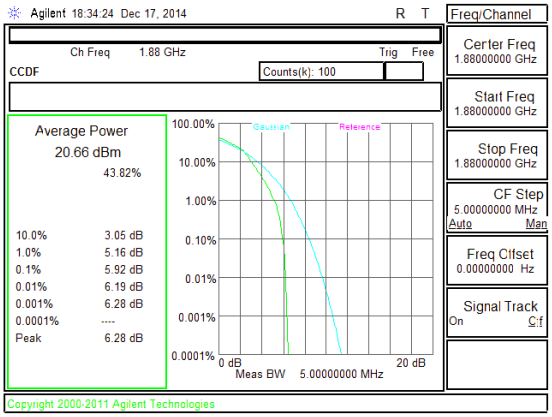
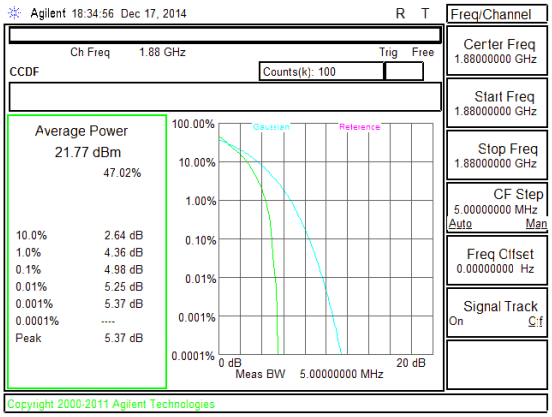
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz 16QAM Mid channel	 Band LTE2 3MHz QPSK Mid channel
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz 16QAM Mid channel	 Band LTE2 1.4MHz QPSK Mid channel

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1. LIMITS AND CONDUCTED RESULTS

1.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

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 v02r01 - 06/07/2013)

MODES TESTED

CDMA and LTE

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1.1.1. OCCUPIED BANDWIDTH RESULTS

CDMA

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
BC0	1xRTT	1013	824.7	1.2731	1.439
		384	836.52	1.2692	1.419
		777	848.31	1.2726	1.431
	EVDO REL. 0	1013	824.7	1.2788	1.432
		384	836.52	1.2746	1.420
		777	848.31	1.2708	1.426
BC1	1xRTT	25	1851.25	1.2924	1.497
		600	1880	1.2765	1.441
		1175	1908.75	1.2881	1.447
	EVDO REL. 0	25	1851.25	1.2819	1.441
		600	1880	1.2747	1.435
		1175	1908.75	1.2794	1.443

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1.1.2. LTE OCCUPIED BANDWIDTH RESULTS

LTE Band 25

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE25	5	QPSK	25/0	1852.5	4507	4795
			25/0	1882.5	4479	4717
			25/0	1912.5	4521	4835
		16QAM	25/0	1852.5	4514	4887
			25/0	1882.5	4529	4813
			25/0	1912.5	4519	4821

LTE Band 17

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE17	10	QPSK	50/0	709	8993	9692
			50/0	710	9003	9886
			50/0	711	9010	9794
		16QAM	50/0	709	9015	9781
			50/0	710	8995	9760
			50/0	711	9049	9837
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE17	5	QPSK	25/0	706.5	4506	4980
			25/0	710	4521	5015
			25/0	713.5	4502	4951
		16QAM	25/0	706.5	4502	4968
			25/0	710	4526	4963
			25/0	713.5	4512	4946

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LTE Band 12

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE12	10	QPSK	50/0	704	8952	9432
			50/0	707.5	8939	9440
			50/0	711	9022	9412
		16QAM	50/0	704	8953	9494
			50/0	707.5	8949	9454
			50/0	711	9048	9553
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE12	5	QPSK	25/0	701.5	4518	4825
			25/0	707.5	4507	4796
			25/0	713.5	4507	4813
		16QAM	25/0	701.5	4512	4792
			25/0	707.5	4495	4775
			25/0	713.5	4502	4768

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LTE Band 5

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE5	10	QPSK	50/0	829	8950	9367
			50/0	836.5	8995	9462
			50/0	844	8977	9347
		16QAM	50/0	829	8986	9432
			50/0	836.5	8948	9422
			50/0	844	8968	9578
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE5	5	QPSK	25/0	826.5	4502	4807
			25/0	836.5	4504	4835
			25/0	846.5	4497	4748
		16QAM	25/0	826.5	4517	4757
			25/0	836.5	4516	4806
			25/0	846.5	4508	4831
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE5	3	QPSK	15/0	825.5	2688	2876
			15/0	836.5	2681	2861
			15/0	847.5	2696	2878
		16QAM	15/0	825.5	2695	2877
			15/0	836.5	2686	2878
			15/0	847.5	2687	2864
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE5	1.4	QPSK	6/0	824.7	1086	1205
			6/0	836.5	1086	1192
			6/0	848.3	1085	1192
		16QAM	6/0	824.7	1088	1204
			6/0	836.5	1084	1199
			6/0	848.3	1093	1204

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LTE Band 4

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	20	QPSK	100/0	1720	17.94	18.94
			100/0	1732.5	17.86	18.8
			100/0	1745	17.92	18.87
		16QAM	100/0	1720	17.84	18.78
			100/0	1732.5	17.88	18.73
			100/0	1745	17.86	18.71
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	15	QPSK	75/0	1717.5	13.44	14.11
			75/0	1732.5	13.46	14.11
			75/0	1747.5	13.42	14.2
		16QAM	75/0	1717.5	13.43	14.13
			75/0	1732.5	13.41	14.21
			75/0	1747.5	13.41	14.15
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	10	QPSK	50/0	1715	8.961	9.443
			50/0	1732.5	8.958	9.458
			50/0	1750	8.954	9.478
		16QAM	50/0	1715	8.995	9.485
			50/0	1732.5	8.967	9.566
			50/0	1750	8.97	9.496
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	5	QPSK	25/0	1712.5	4.505	4.780
			25/0	1732.5	4.500	4.799
			25/0	1752.5	4.500	4.821
		16QAM	25/0	1712.5	4.504	4.773
			25/0	1732.5	4.512	4.805
			25/0	1752.5	4.508	4.811

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LTE Band 2

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	20	QPSK	100/0	1860	17.81	18.62
			100/0	1880	17.92	18.72
			100/0	1900	17.87	18.79
		16QAM	100/0	1860	17.83	18.59
			100/0	1880	17.85	18.71
			100/0	1900	17.88	18.83
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	15	QPSK	75/0	1857.5	13.42	14.26
			75/0	1880	13.47	14.23
			75/0	1902.5	13.43	14.13
		16QAM	75/0	1857.5	13.4	14.2
			75/0	1880	13.41	14.06
			75/0	1902.5	13.42	14.15
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	10	QPSK	50/0	1855	8.972	9.599
			50/0	1880	8.965	9.478
			50/0	1905	8.997	9.38
		16QAM	50/0	1855	8.957	9.502
			50/0	1880	9.013	9.511
			50/0	1905	8.949	9.389
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	5	QPSK	25/0	1852.5	4.516	4.788
			25/0	1880	4.505	4.764
			25/0	1907.5	4.521	4.853
		16QAM	25/0	1852.5	4.505	4.839
			25/0	1880	4.517	4.793
			25/0	1907.5	4.494	4.84

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Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	3	QPSK	15/0	1851.5	2.683	2.874
			15/0	1880	2.69	2.868
			15/0	1908.5	2.68	2.861
		16QAM	15/0	1851.5	2.69	2.874
			15/0	1880	2.695	2.862
			15/0	1908.5	2.683	2.852
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	1.4	QPSK	6/0	1850.7	1.086	1.19
			6/0	1880	1.082	1.168
			6/0	1909.3	1.085	1.187
		16QAM	6/0	1850.7	1.094	1.207
			6/0	1880	1.086	1.18
			6/0	1909.3	1.094	1.21

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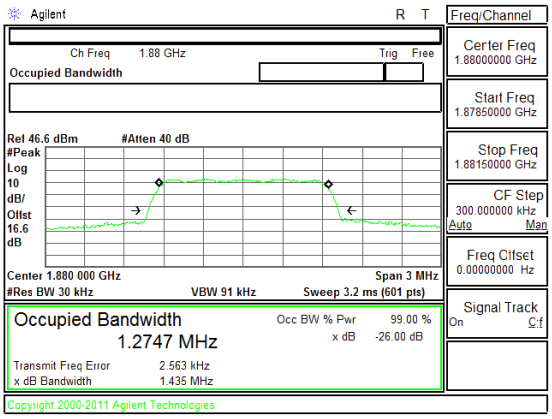
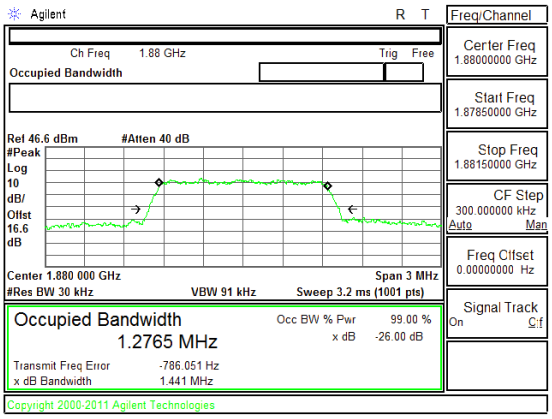
10.1.1. OCCUPIED BANDWIDTH PLOTS

CDMA

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

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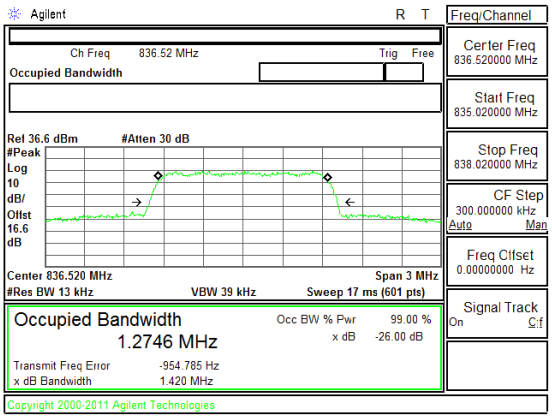
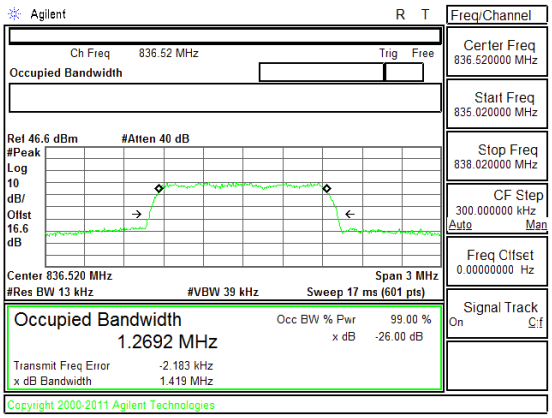
Band BC0 EVDO REL. 0	 Band BC0 EVDO Rel. 0 OBW Mid channel	 Band BC0 1xRTT OBW Mid channel

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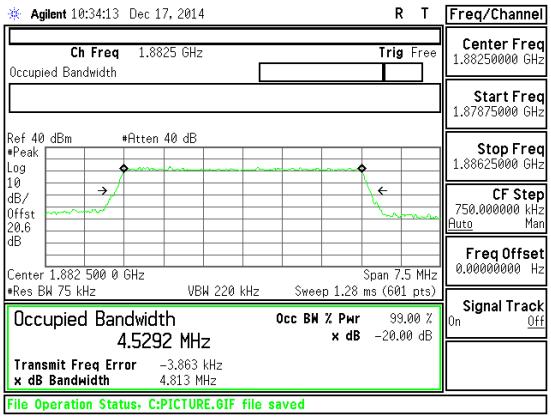
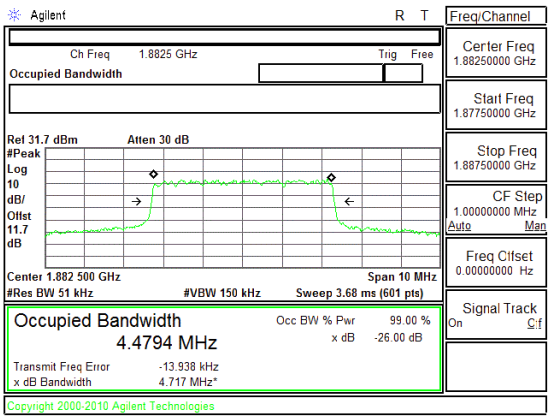
LTE Band 25

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

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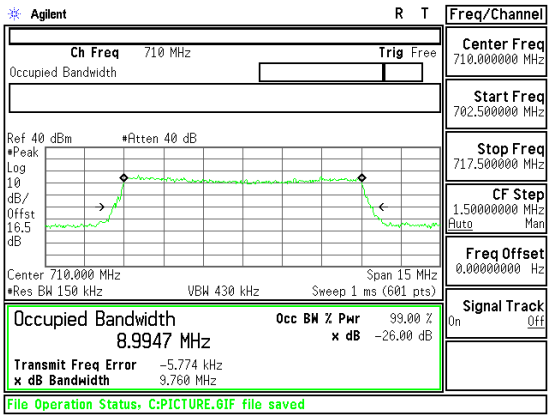
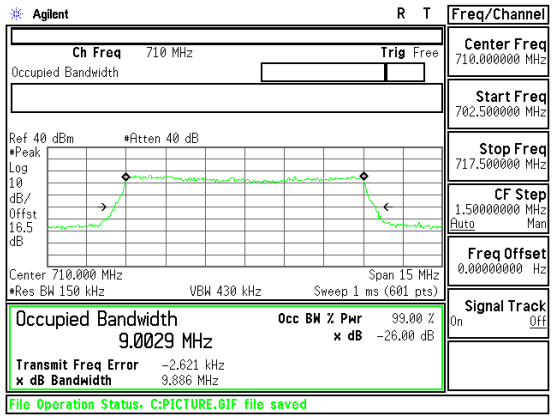
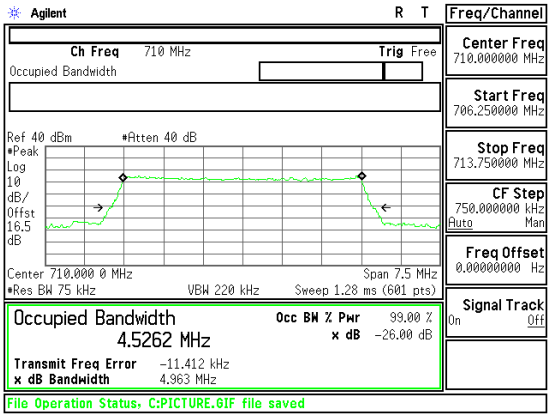
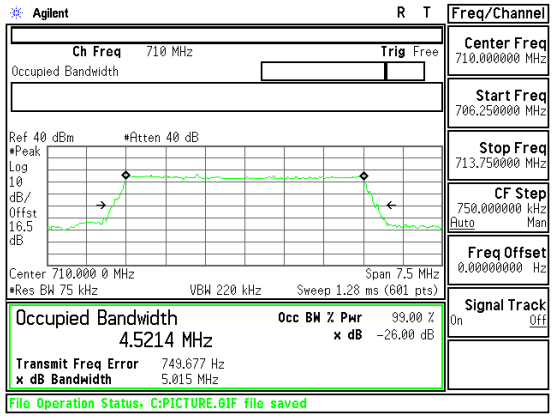
LTE Band 17

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

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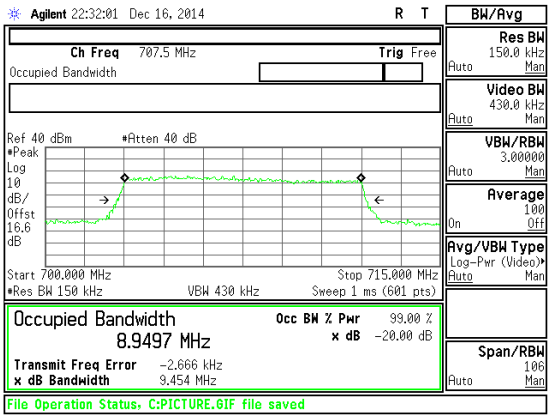
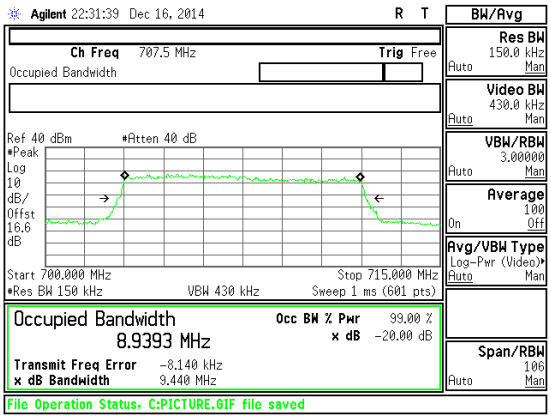
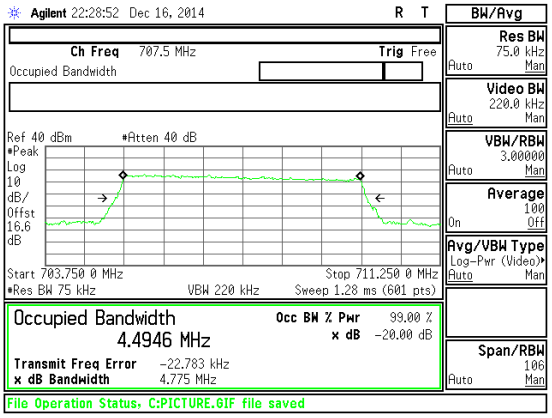
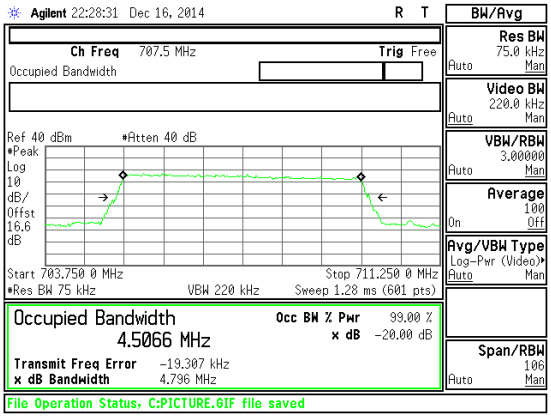
LTE Band 12

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

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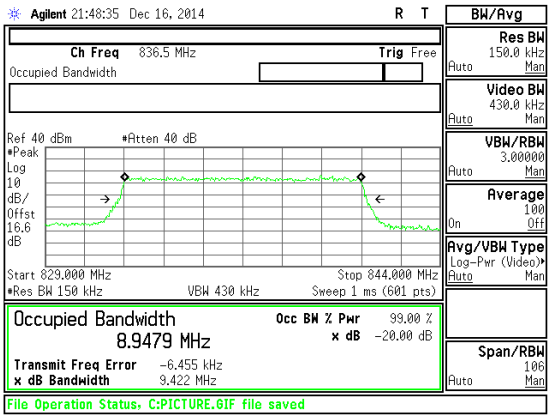
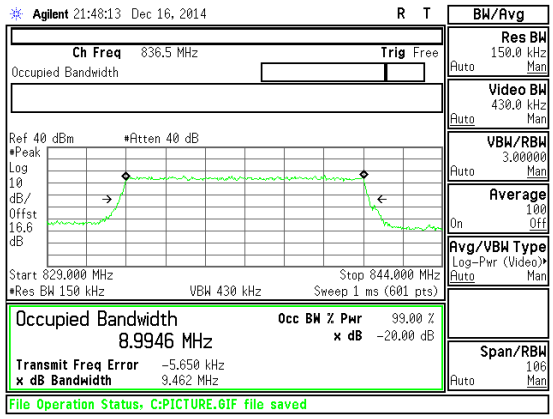
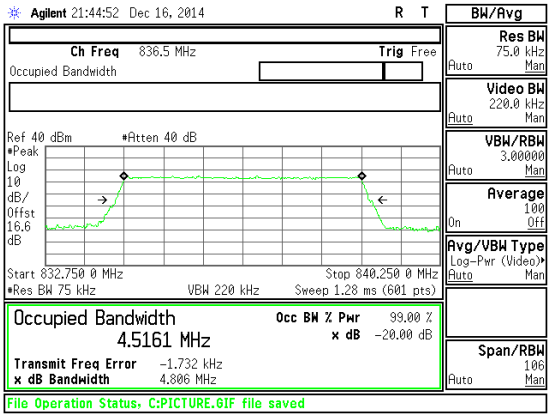
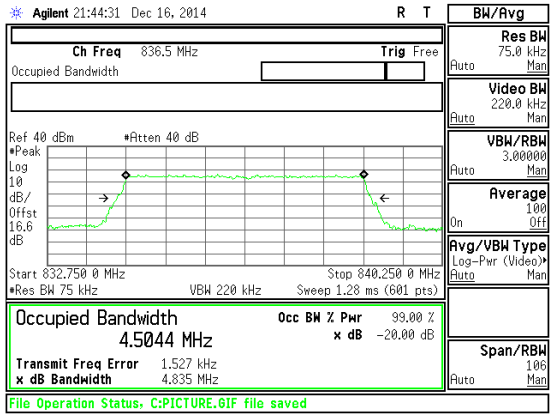
LTE Band 5

Band LTE5 10MHz 16QAM		
Band LTE5 5MHz 16QAM		

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

Band LTE5 10MHz OBW QPSK Mid Channel FRB.gif

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

Band LTE5 5MHz OBW QPSK Mid Channel FRB.gif

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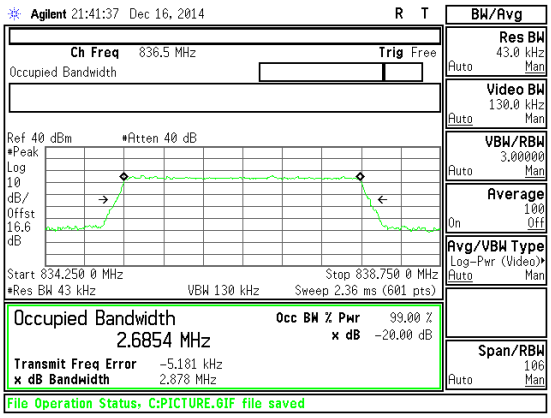
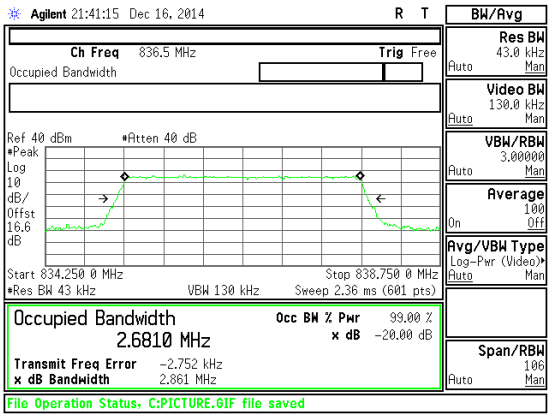
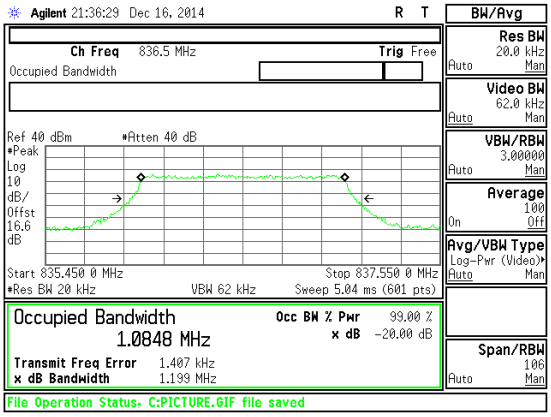
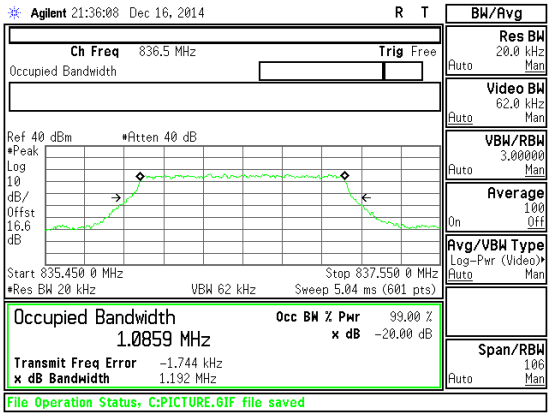
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 3MHz OBW QPSK Mid Channel FRB.gif
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 1.4MHz OBW QPSK Mid Channel FRB.gif

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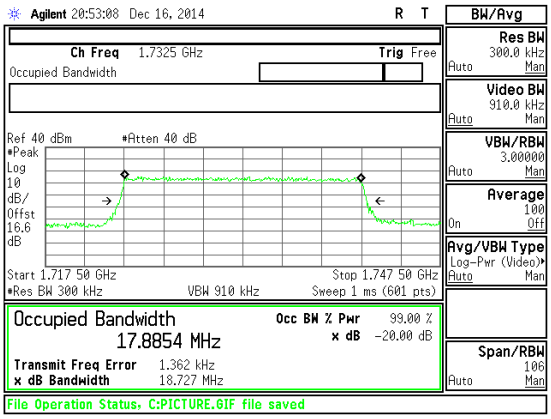
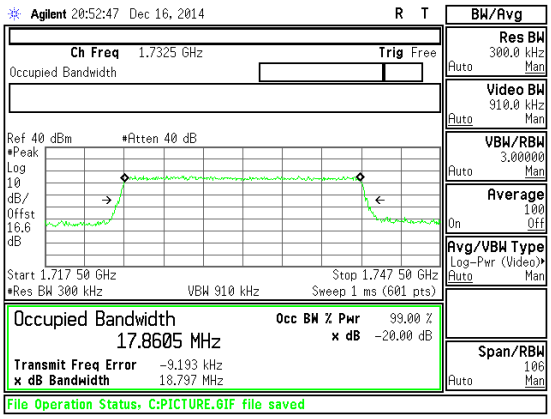
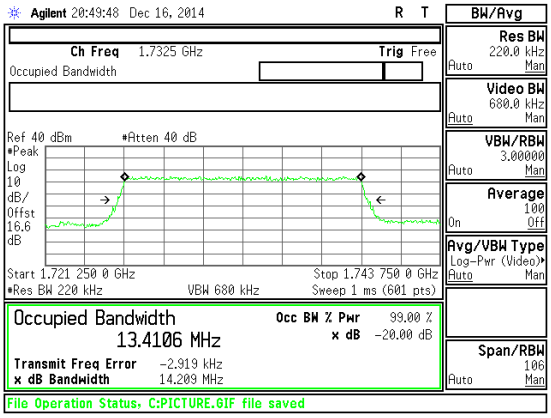
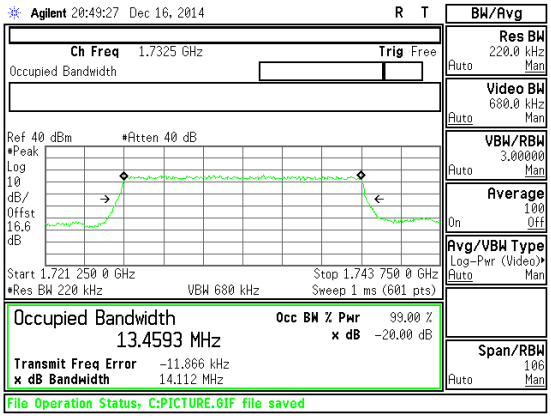
LTE Band 4

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

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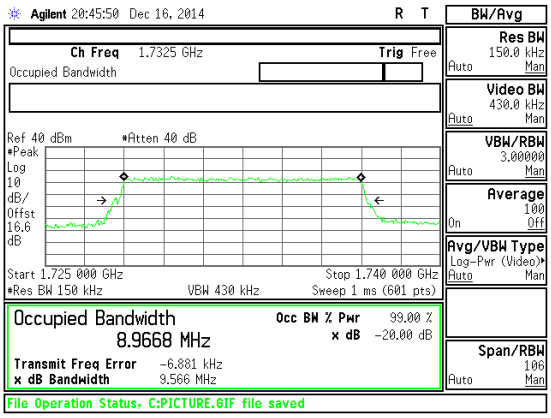
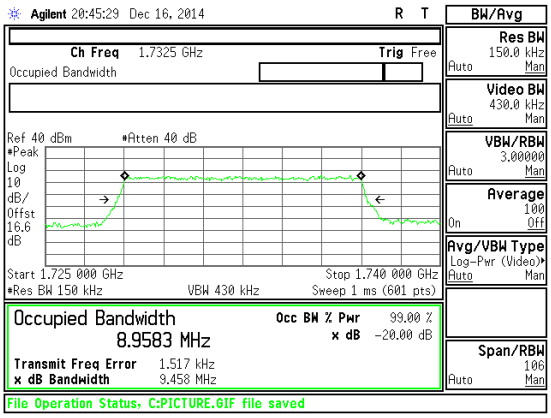
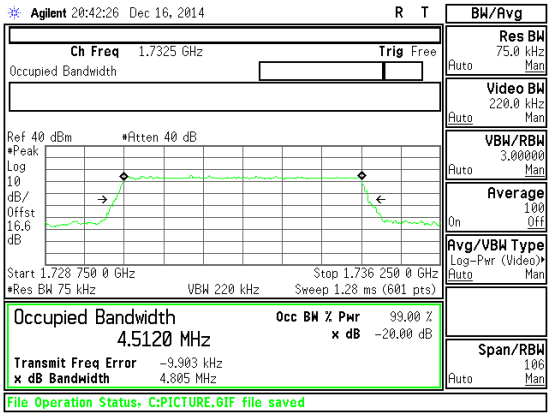
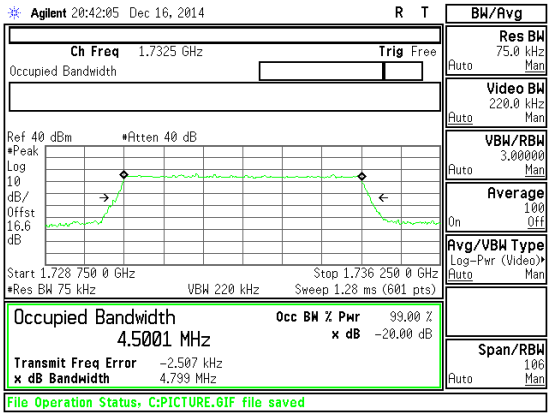
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 5MHz OBW QPSK Mid Channel FRB.gif

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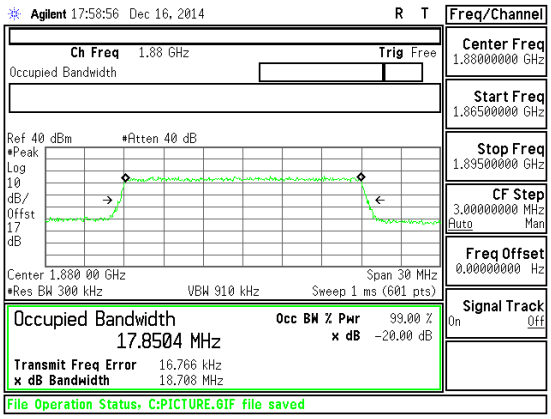
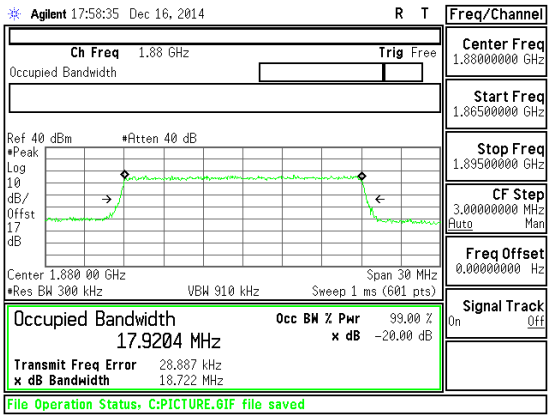
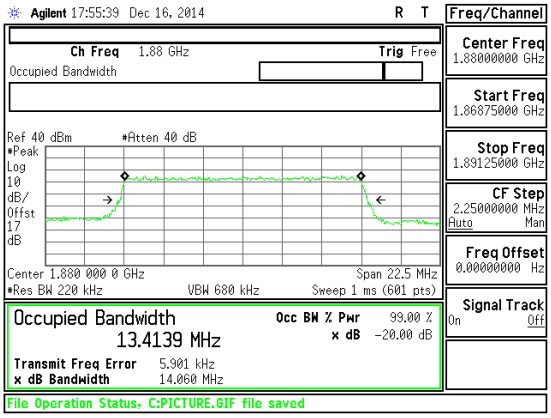
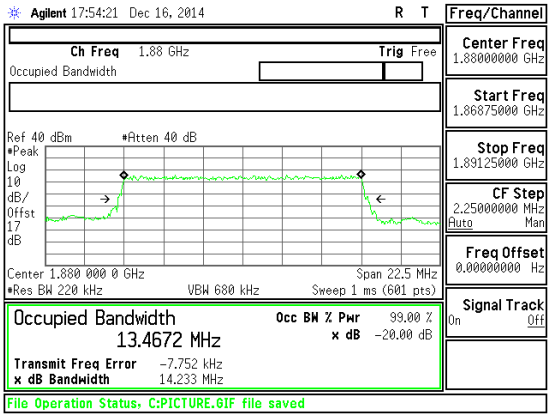
LTE Band 2

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

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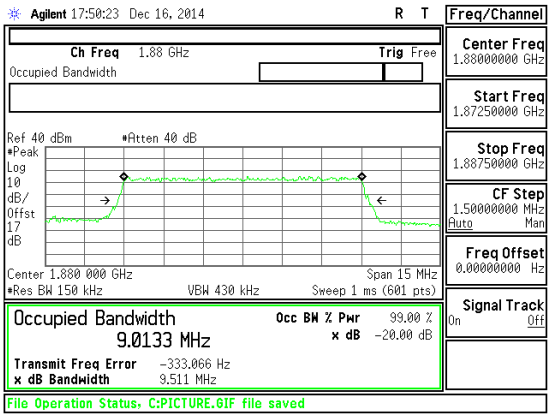
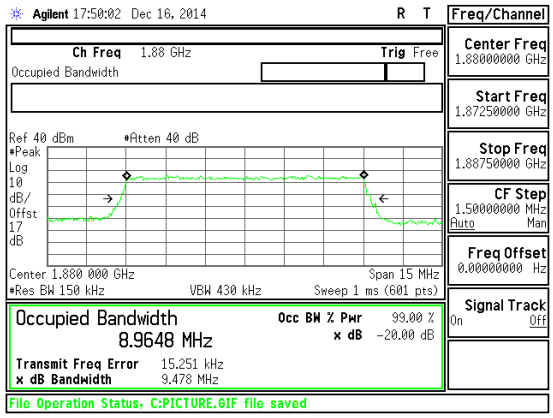
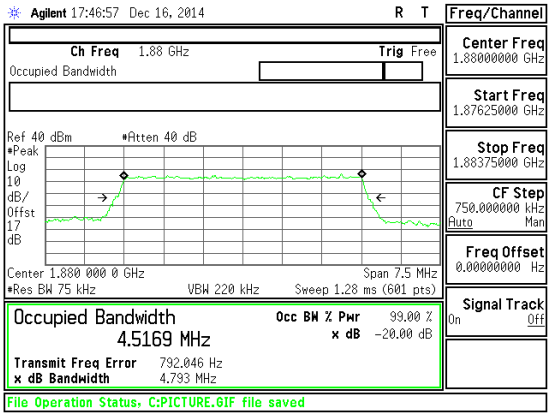
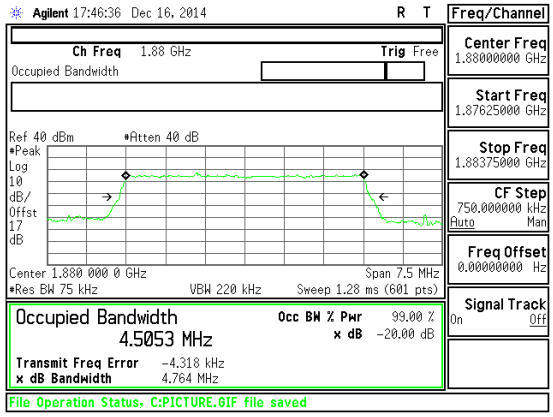
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 5MHz OBW QPSK Mid Channel FRB.gif

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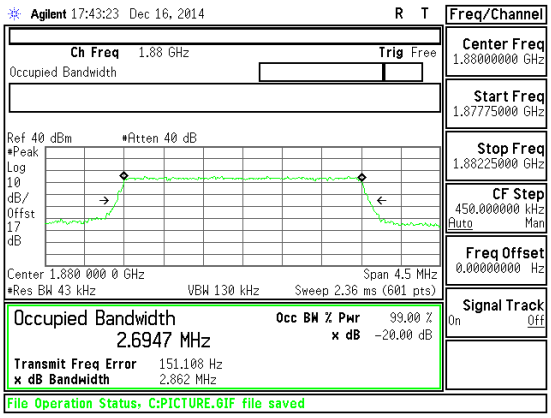
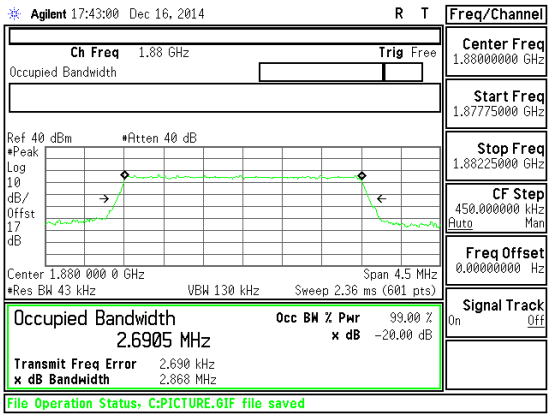
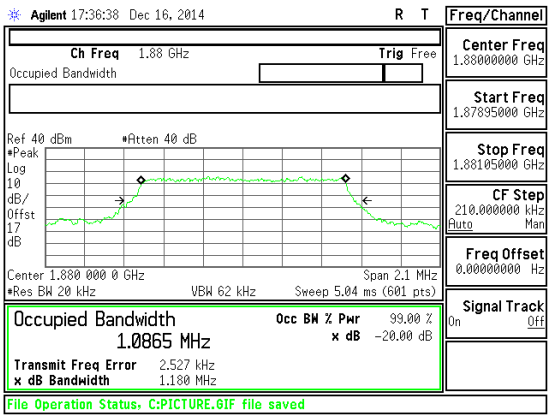
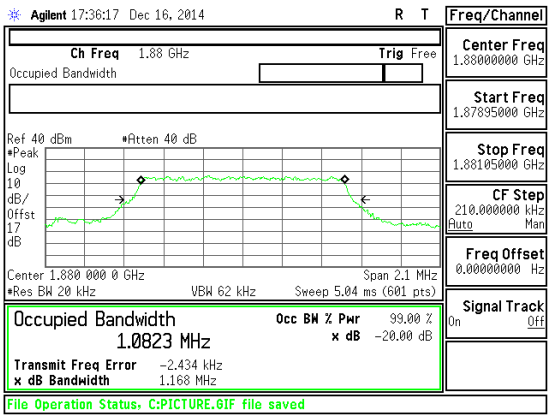
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 3MHz OBW QPSK Mid Channel FRB.gif
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 1.4MHz OBW QPSK Mid Channel FRB.gif

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1.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238, and §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 v02r01
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 Band 25, 17, 12, 5,4, and 2

RESULTS

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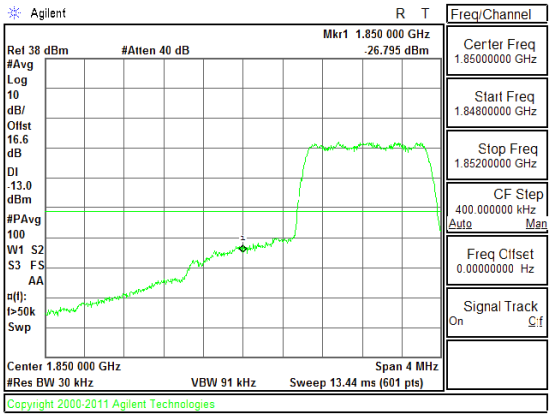
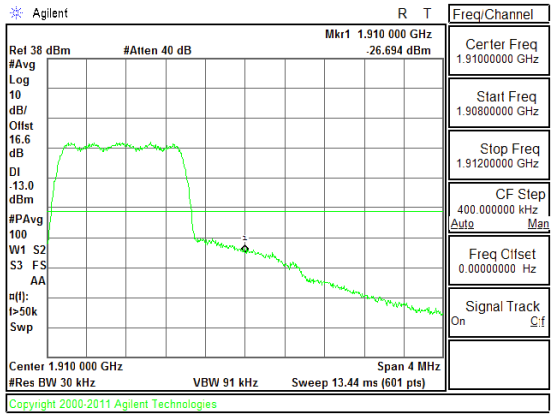
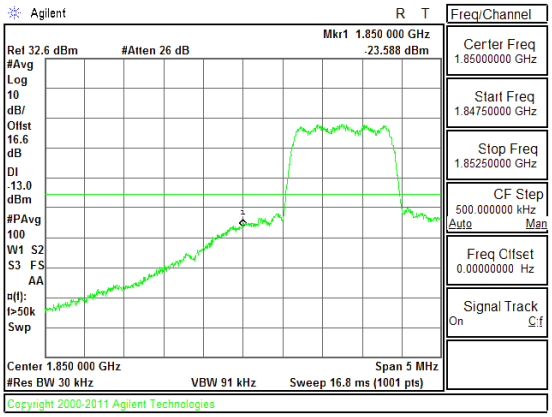
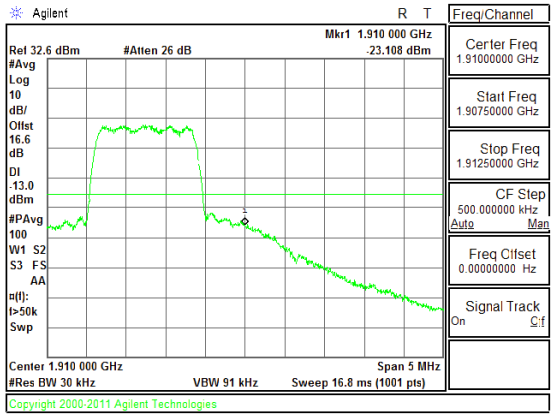
1.2.1. BAND EDGE PLOTS

CDMA

Band BC1 EVDO REL. 0	 Band BC1 EVDO Rel. 0 CBE Low channel	 Band BC1 EVDO Rel. 0 CBE High channel
Band BC1 1xRTT	 Band BC1 1xRTT CBE Low channel	 Band BC1 1xRTT CBE High channel

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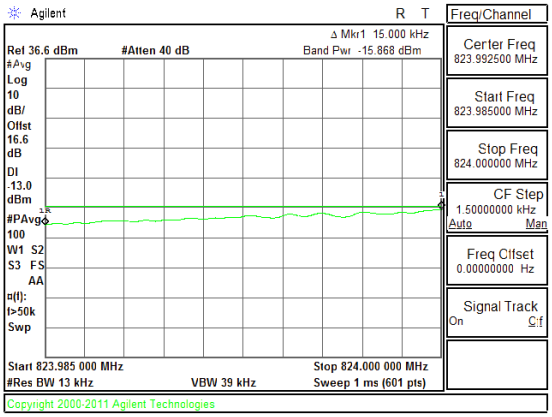
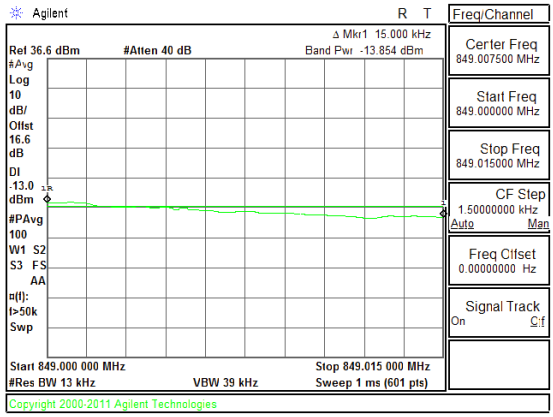
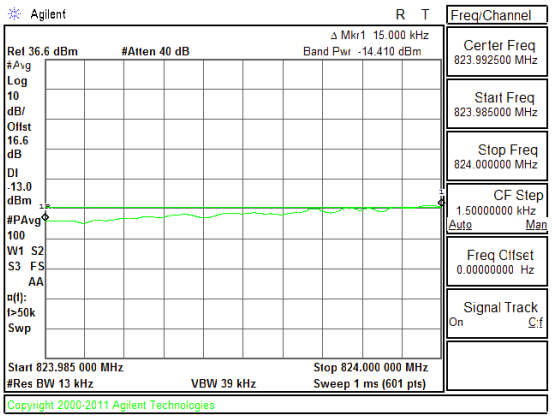
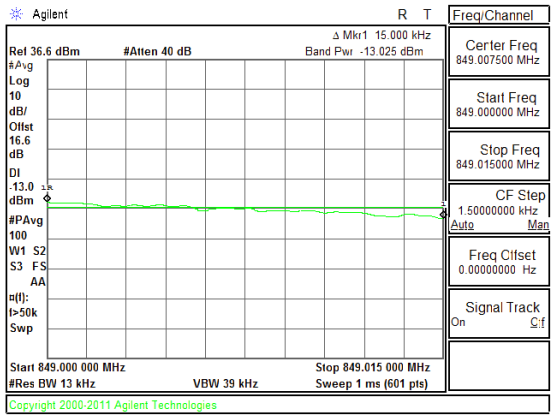
Band BC0 EVDO REL. 0	 Band BC0 EVDO Rel. 0 CBE Low channel	 Band BC0 EVDO Rel. 0 CBE High channel
Band BC0 1xRTT	 Band BC0 1xRTT CBE Low channel	 Band BC0 1xRTT CBE High channel

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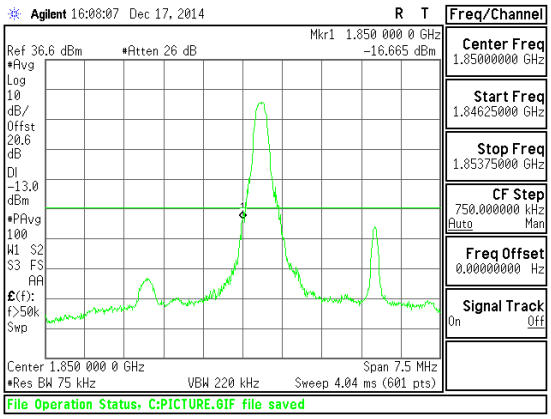
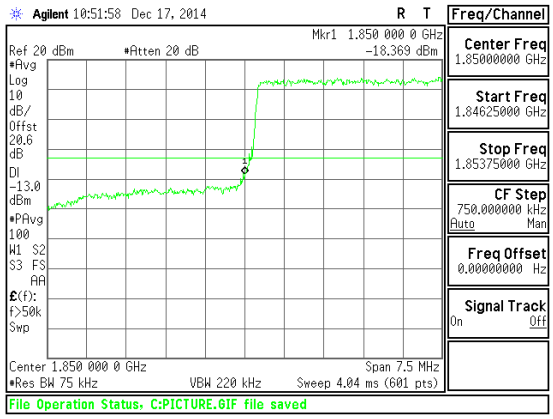
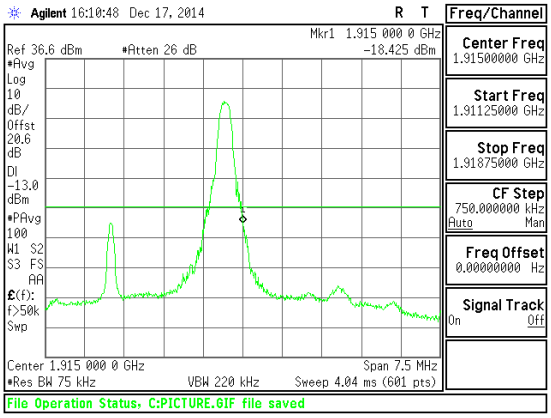
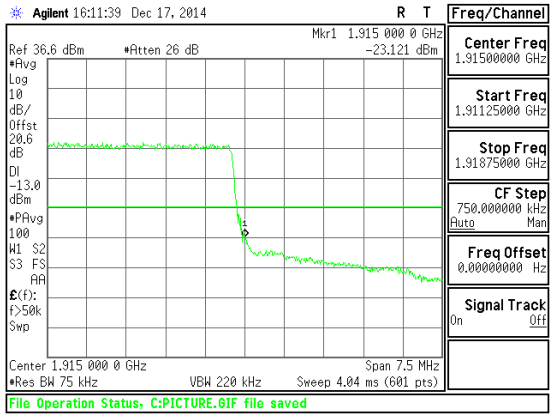
LTE Band 25

Band LTE25 5MHz 16QAM	 Band LTE25 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE25 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE25 5MHz 16QAM	 Band LTE25 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE25 5MHz CBE 16QAM High Channel FRB.gif

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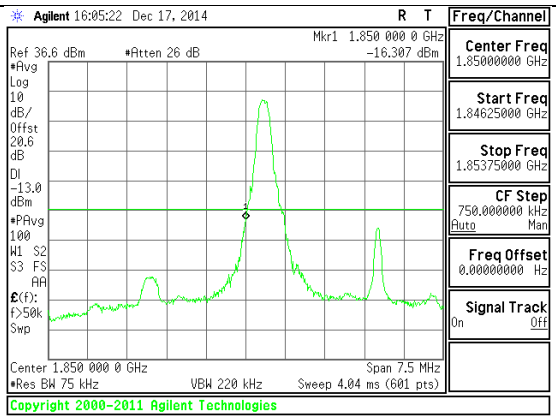
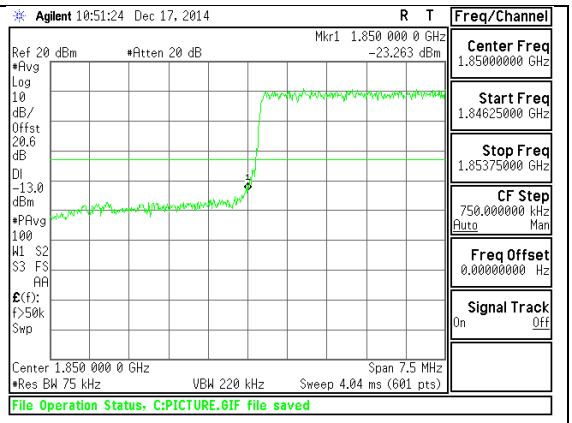
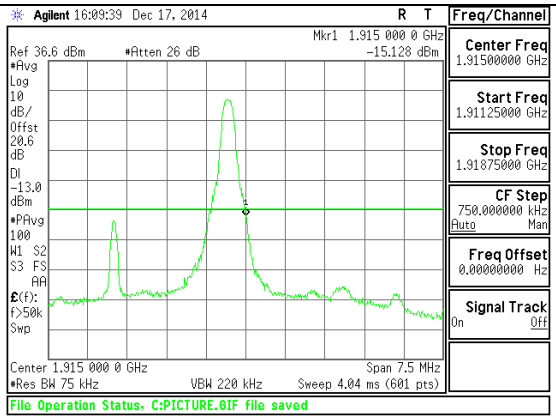
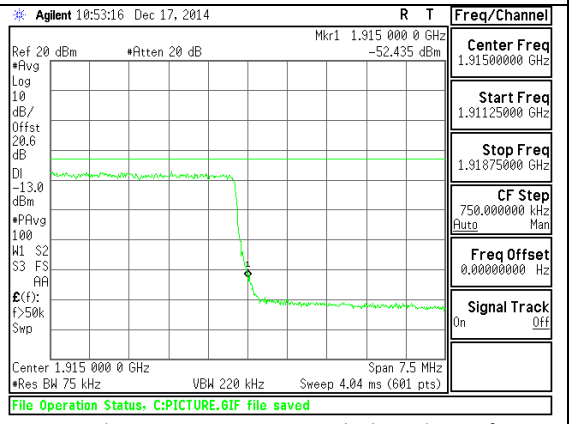
Band LTE25 5MHz QPSK	 Band LTE25 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE25 5MHz CBE QPSK Low Channel FRB.gif
Band LTE25 5MHz QPSK	 Band LTE25 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE25 5MHz CBE QPSK High Channel FRB.gif

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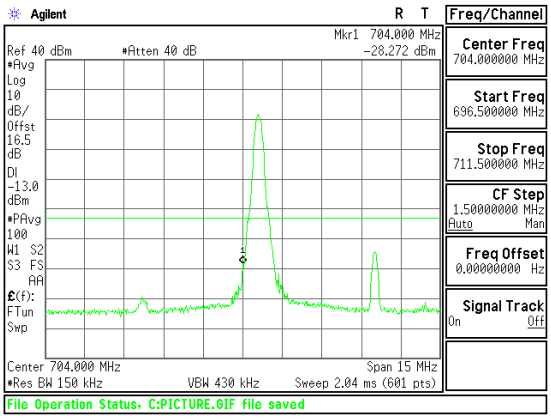
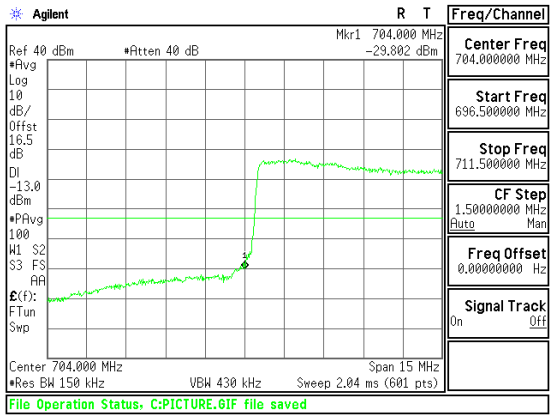
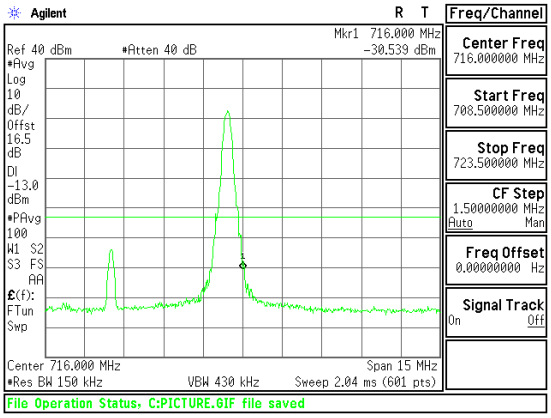
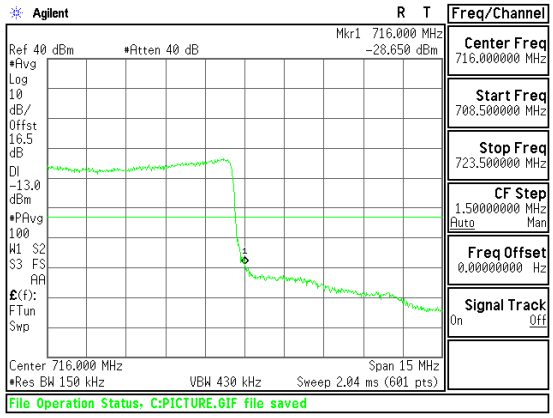
LTE Band 17

Band LTE17 10MHz 16QAM	 Band LTE17 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE17 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE17 10MHz 16QAM	 Band LTE17 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE17 10MHz CBE 16QAM High Channel FRB.gif

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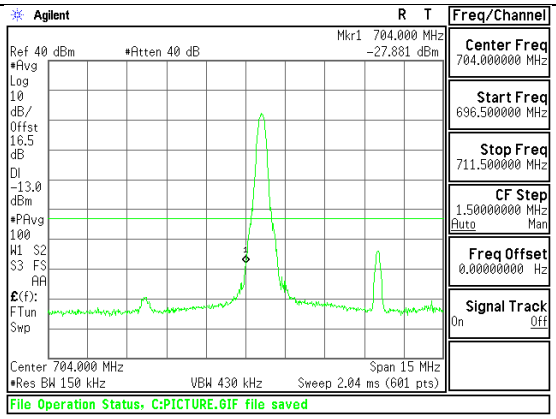
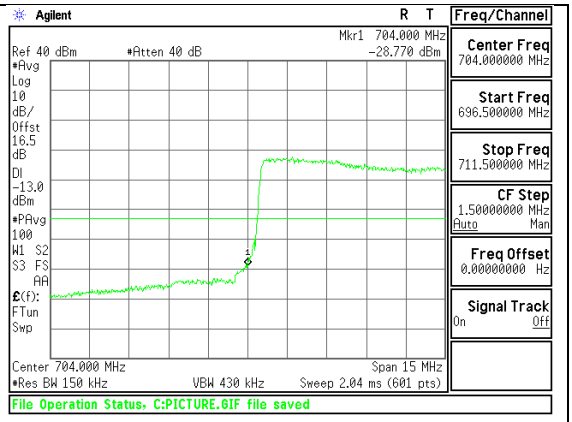
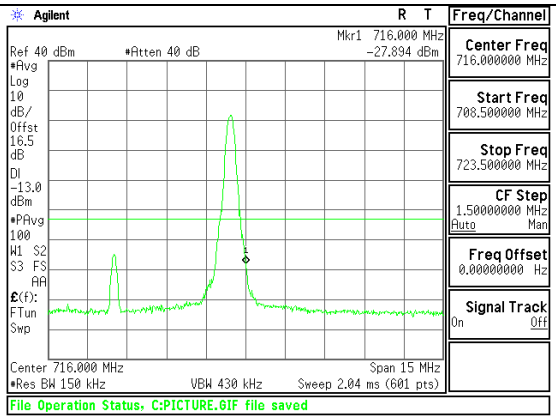
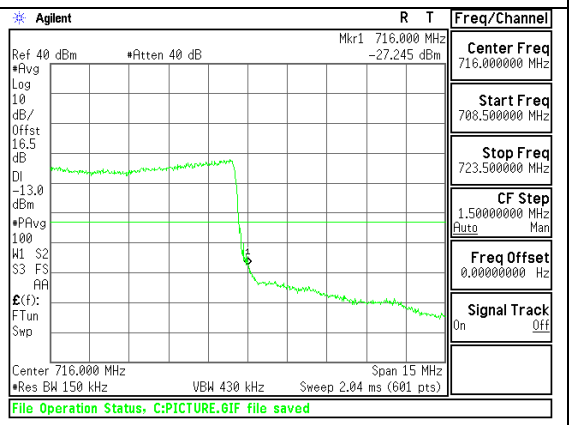
Band LTE17 10MHz QPSK	 Band LTE17 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE17 10MHz CBE QPSK Low Channel FRB.gif
Band LTE17 10MHz QPSK	 Band LTE17 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE17 10MHz CBE QPSK High Channel FRB.gif

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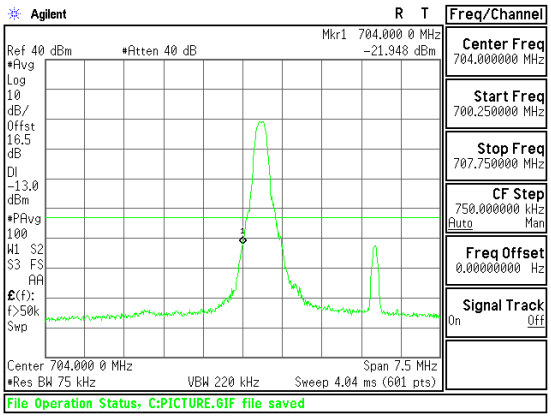
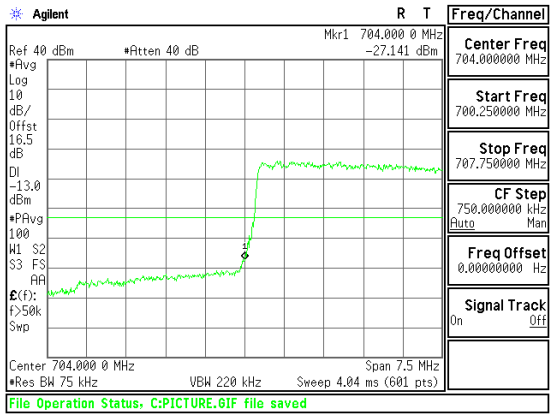
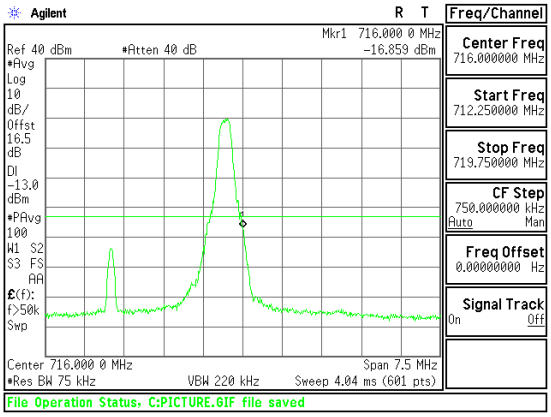
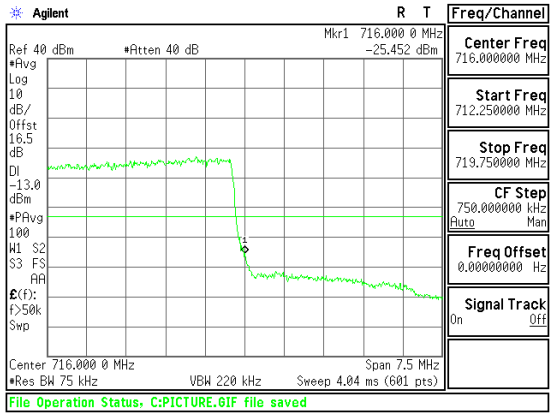
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE17 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE17 5MHz CBE 16QAM High Channel FRB.gif

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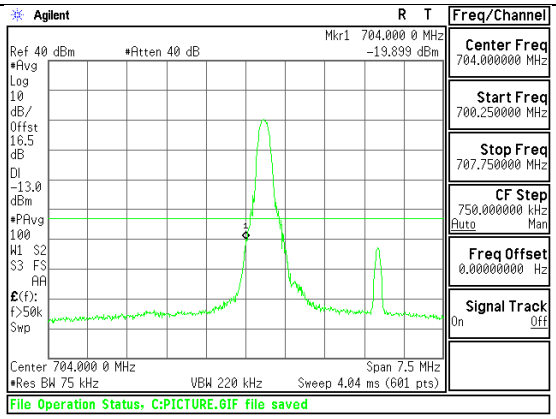
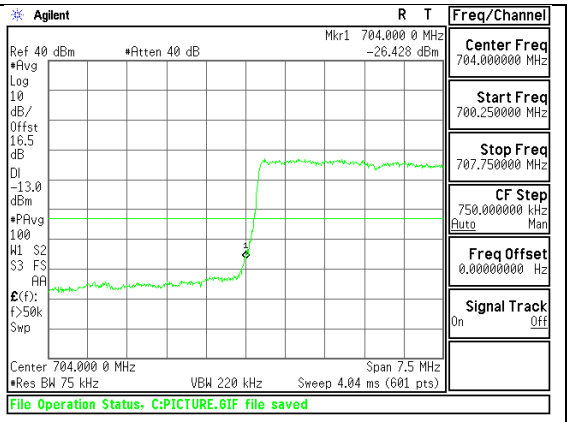
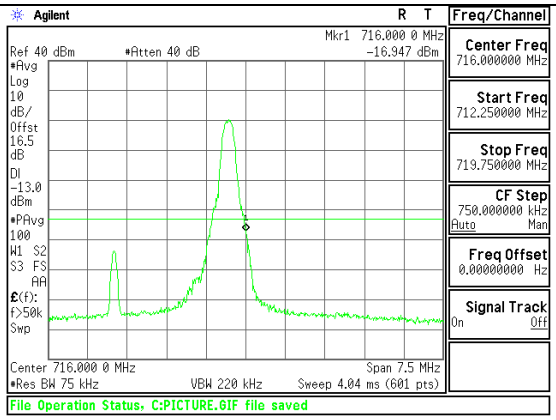
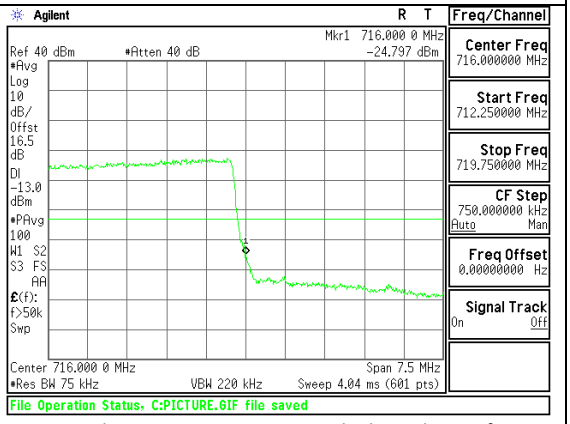
Band LTE17 5MHz QPSK	 Band LTE17 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE17 5MHz CBE QPSK Low Channel FRB.gif
Band LTE17 5MHz QPSK	 Band LTE17 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE17 5MHz CBE QPSK High Channel FRB.gif

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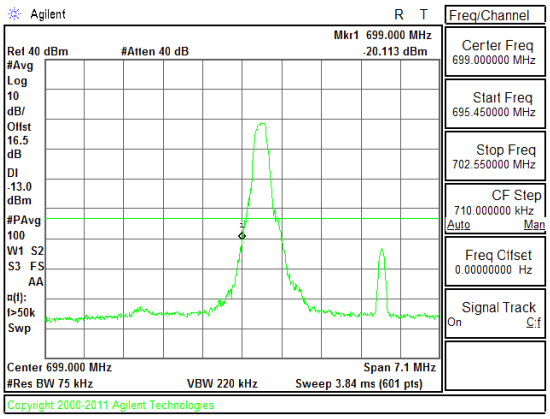
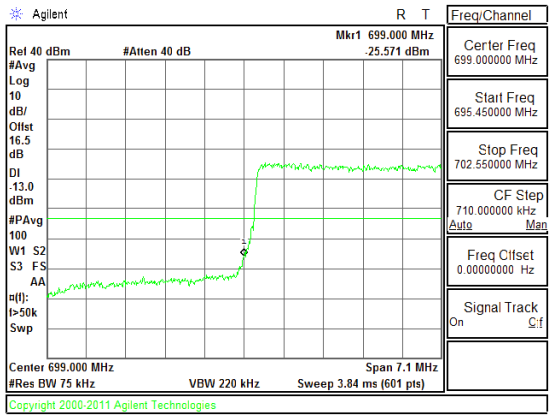
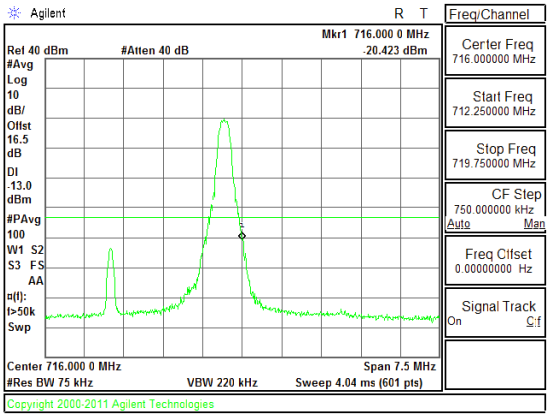
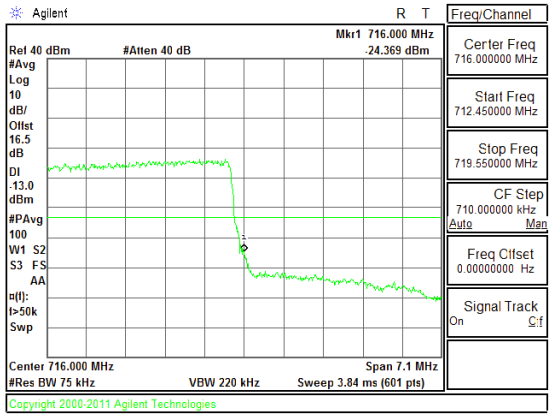
LTE Band 12

Band LTE12 10MHz 16QAM	 Band LTE12 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE12 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE12 10MHz 16QAM	 Band LTE12 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE12 10MHz CBE 16QAM High Channel FRB.gif

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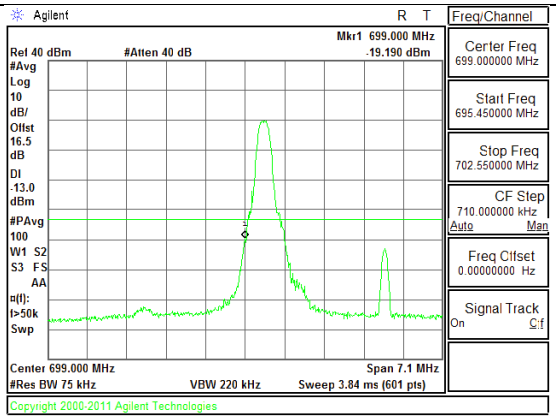
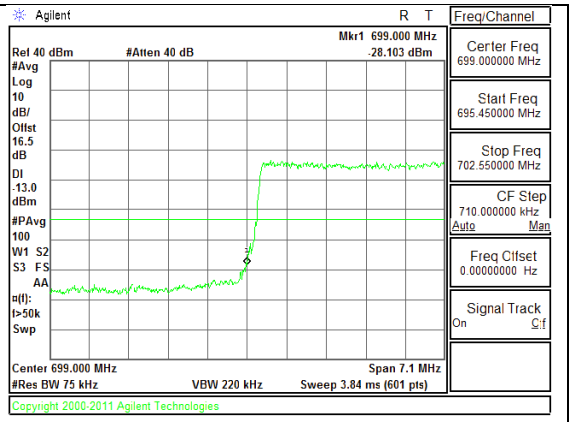
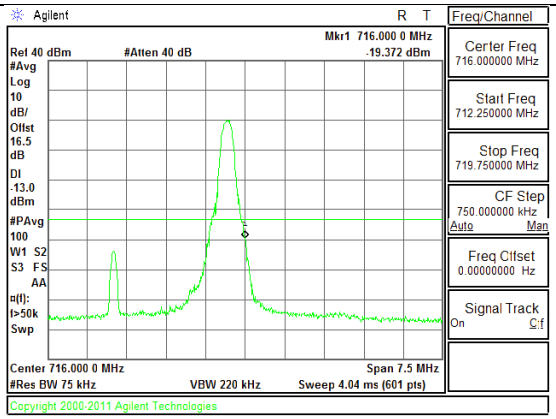
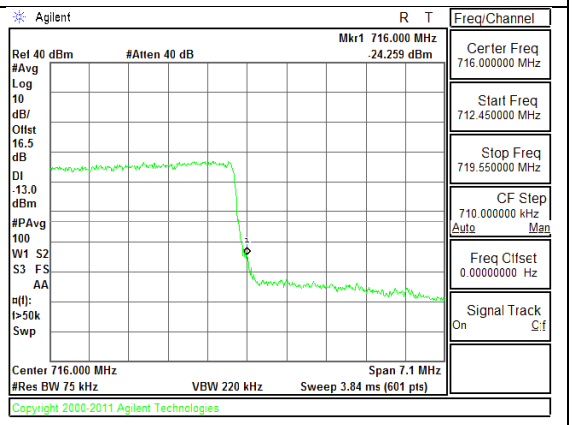
Band LTE12 10MHz QPSK		
	Band LTE12 10MHz CBE QPSK Low Channel 1RB.gif	Band LTE12 10MHz CBE QPSK Low Channel FRB.gif
Band LTE12 10MHz QPSK		
	Band LTE12 10MHz CBE QPSK High Channel 1RB.gif	Band LTE12 10MHz CBE QPSK High Channel FRB.gif

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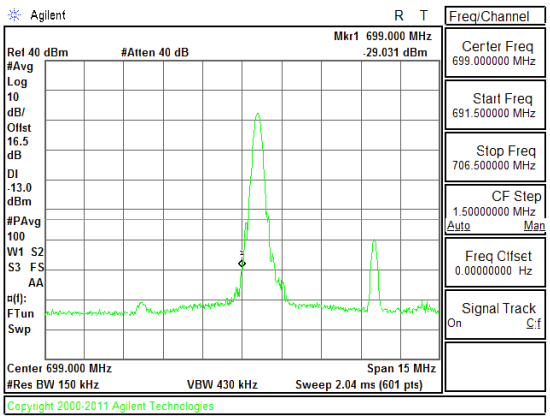
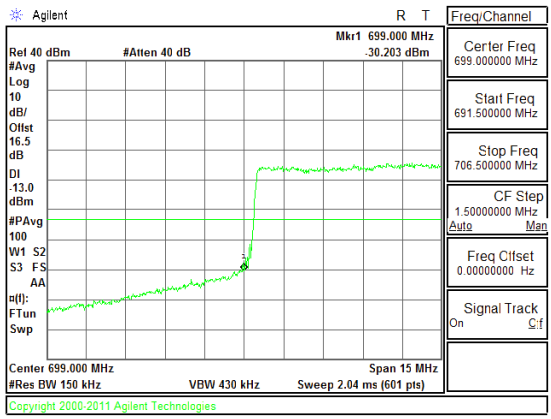
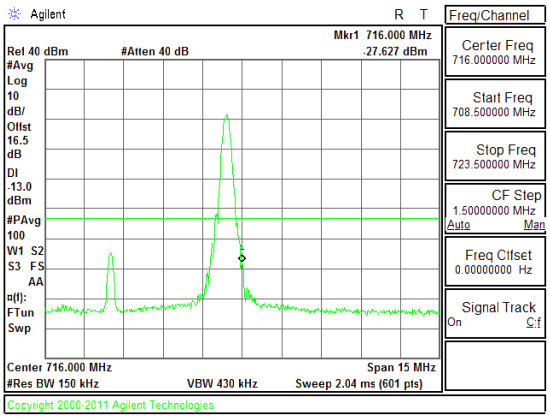
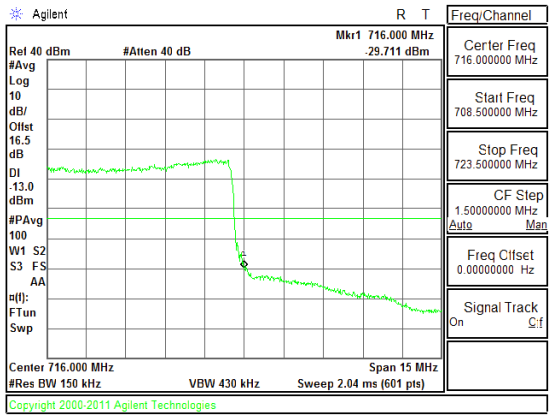
Band LTE12 5MHz 16QAM	 Band LTE12 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE12 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE12 5MHz 16QAM	 Band LTE12 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE12 5MHz CBE 16QAM High Channel FRB.gif

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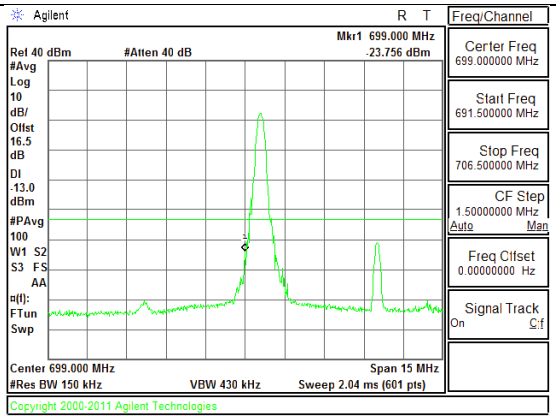
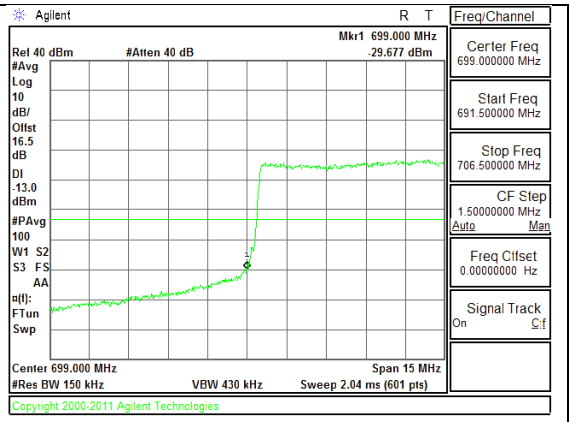
Band LTE12 5MHz QPSK		
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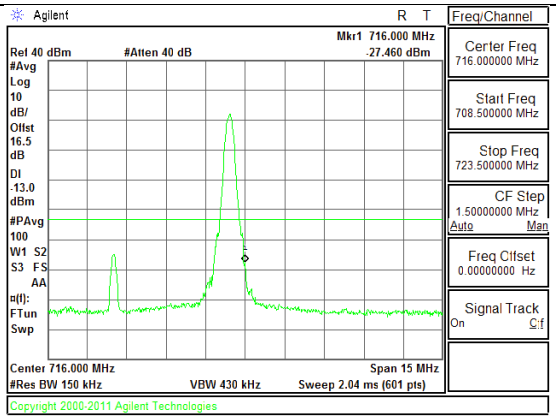
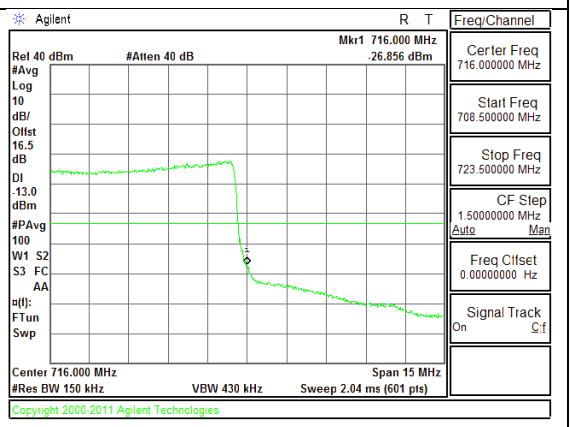
Band LTE12 5MHz QPSK		
	Band LTE12 5MHz CBE QPSK High Channel 1RB.gif	Band LTE12 5MHz CBE QPSK High Channel FRB.gif

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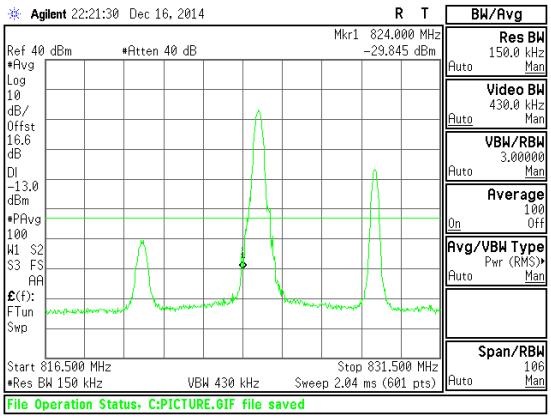
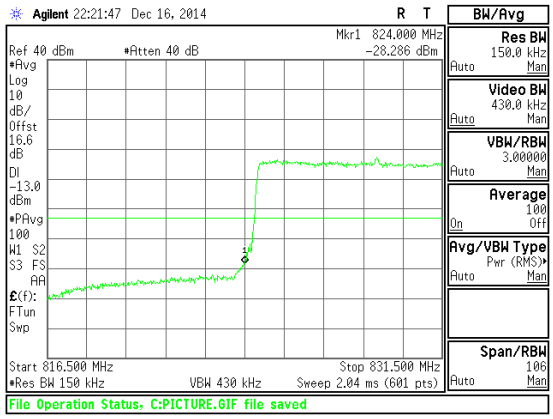
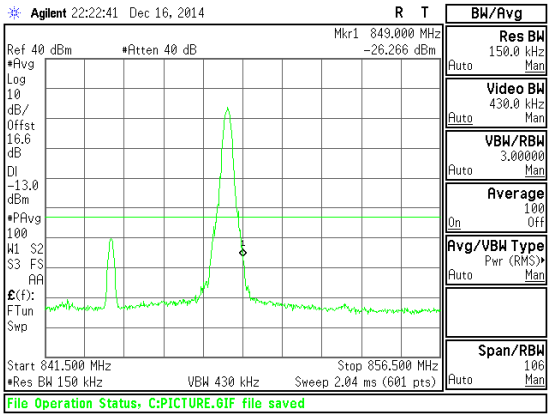
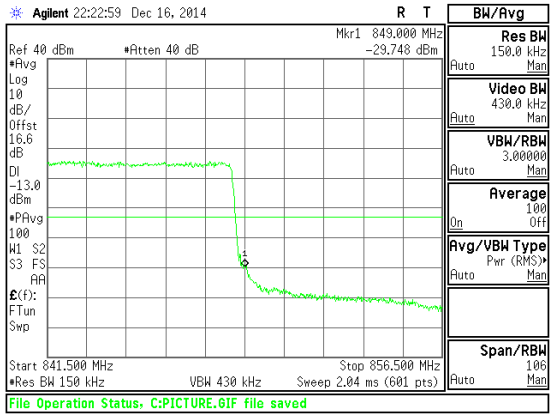
LTE Band 5

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

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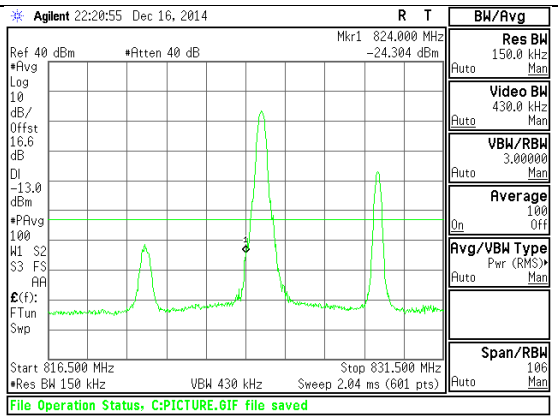
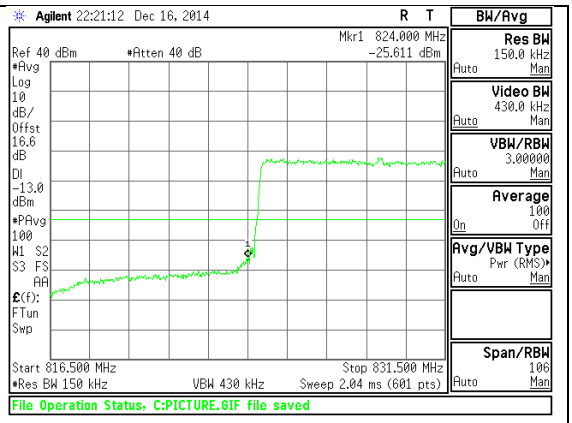
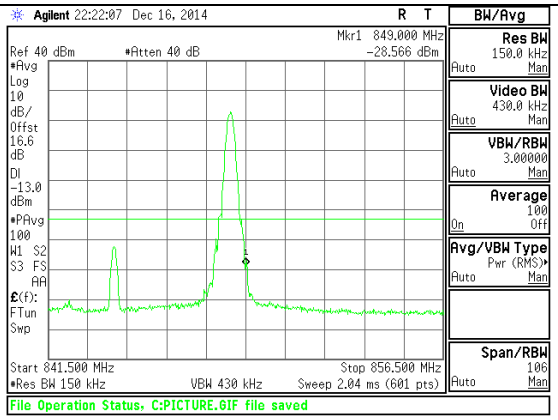
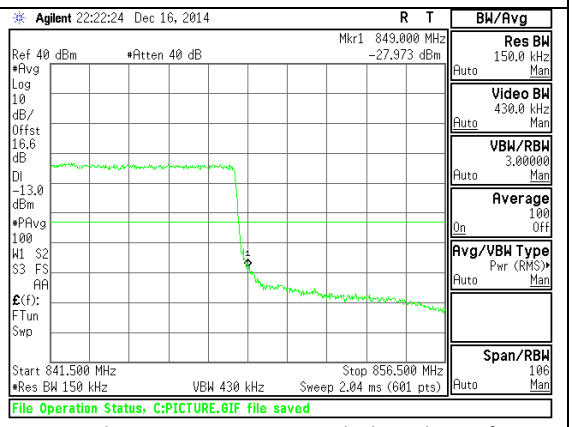
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK Low Channel FRB.gif
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK High Channel FRB.gif

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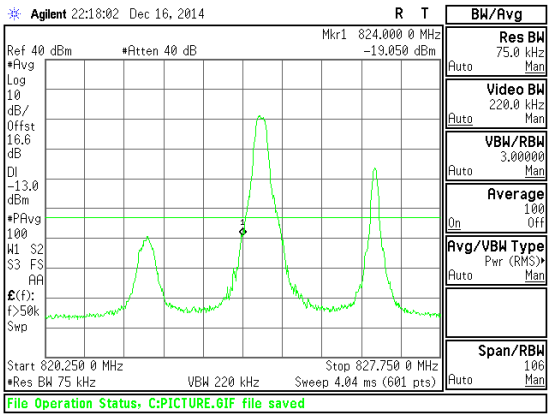
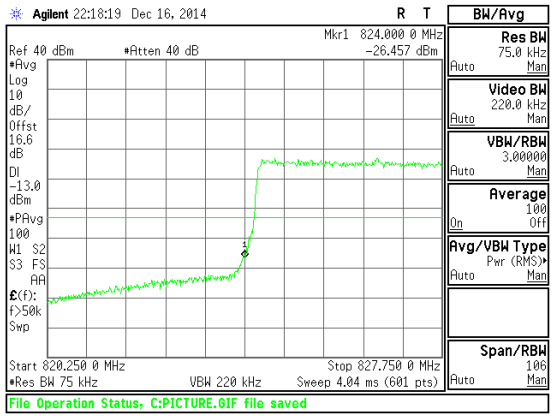
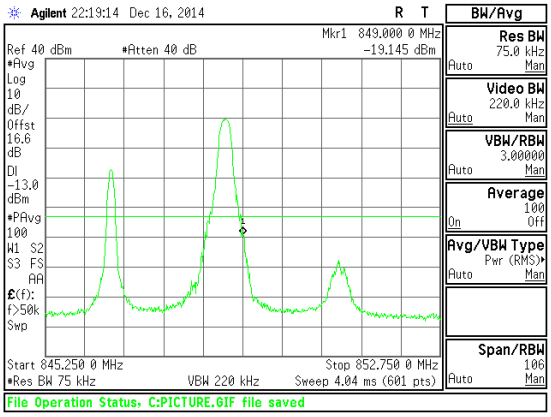
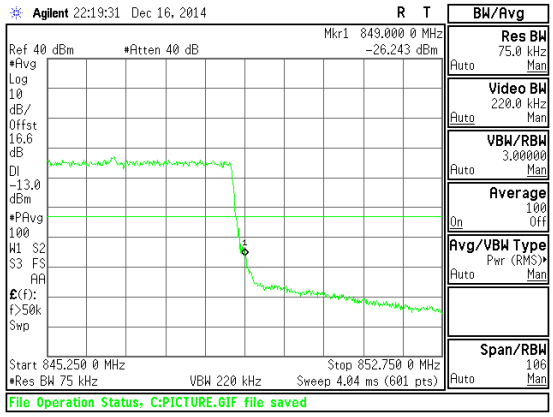
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM High Channel FRB.gif

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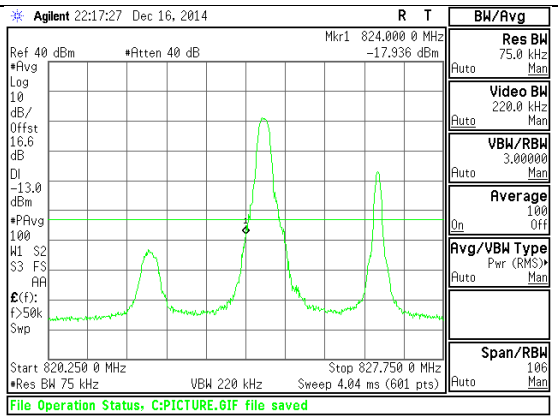
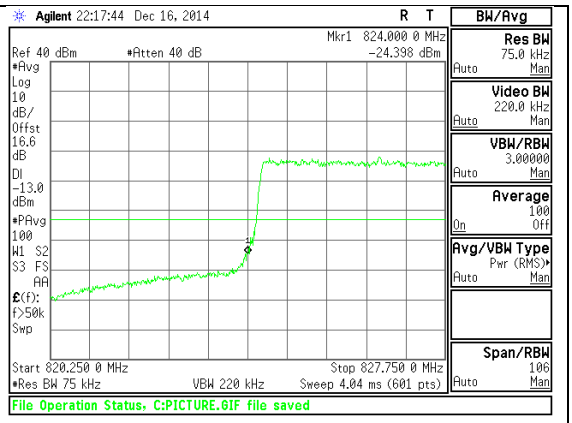
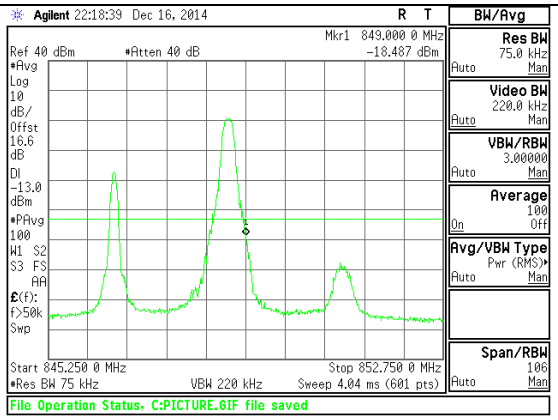
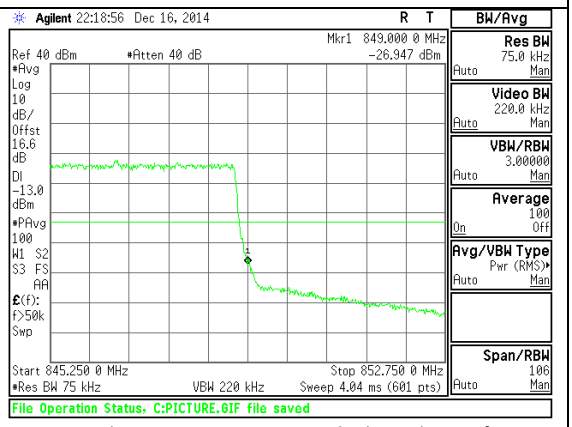
Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK Low Channel FRB.gif
Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK High Channel FRB.gif

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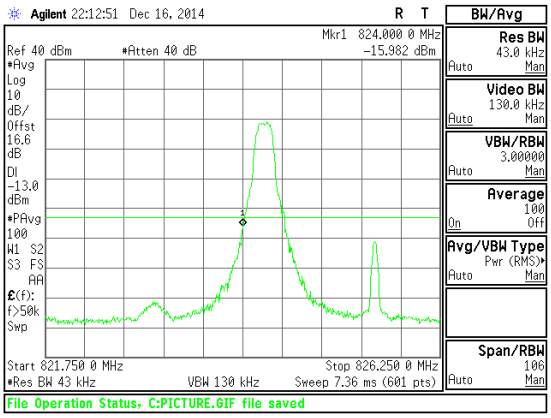
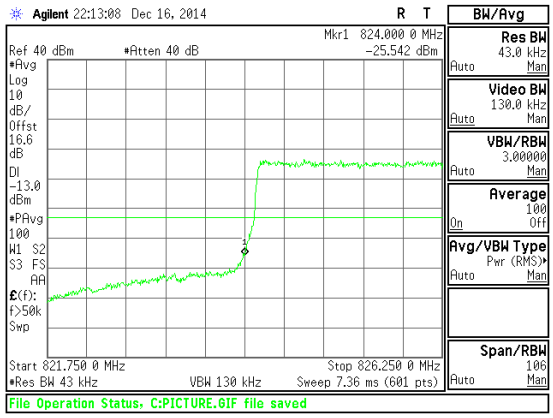
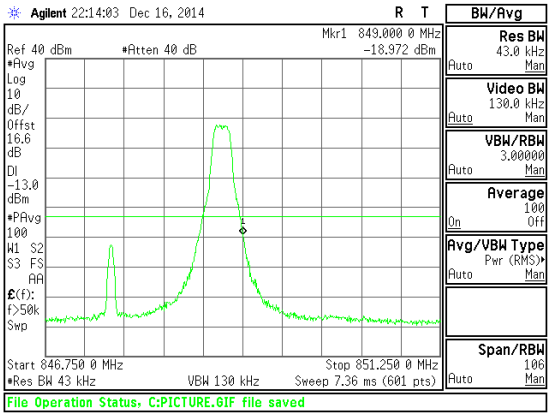
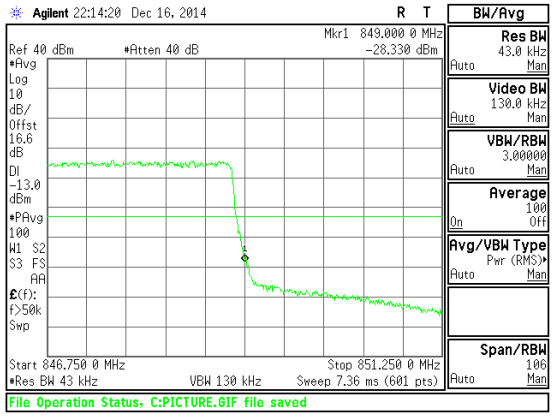
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 3MHz CBE 16QAM High Channel FRB.gif

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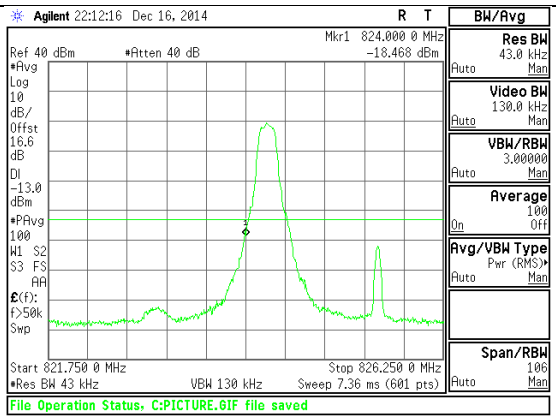
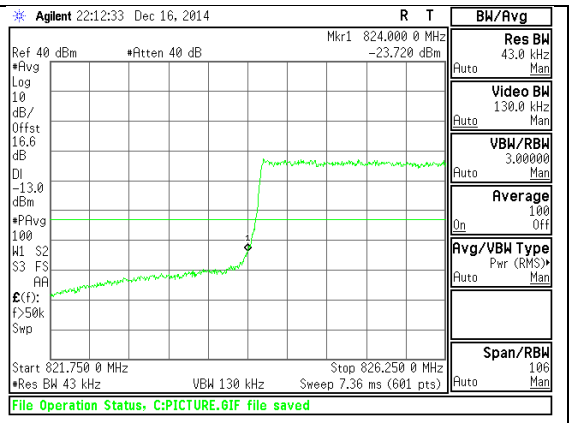
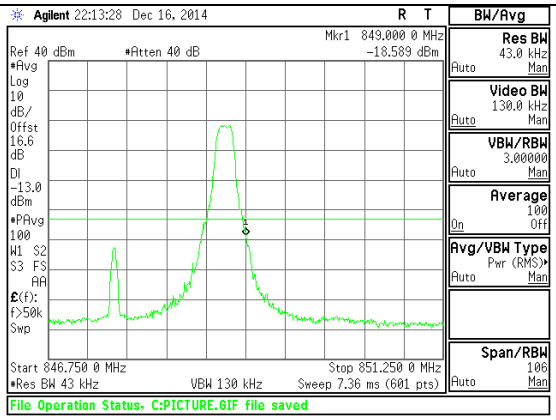
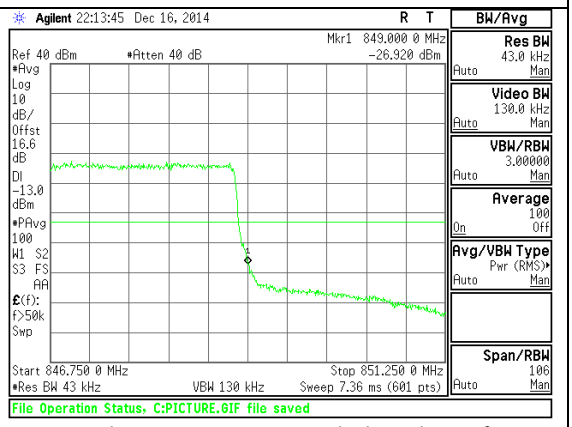
Band LTE5 3MHz QPSK	 Band LTE5 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 3MHz CBE QPSK Low Channel FRB.gif
Band LTE5 3MHz QPSK	 Band LTE5 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 3MHz CBE QPSK High Channel FRB.gif

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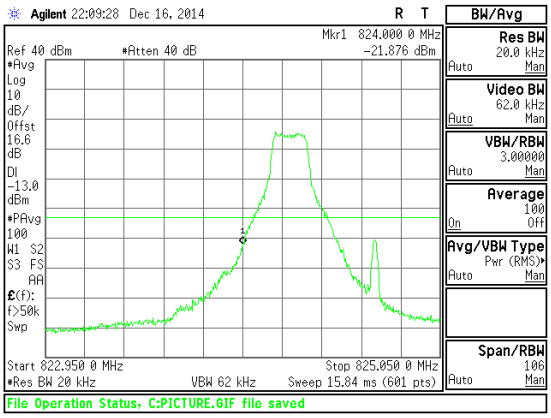
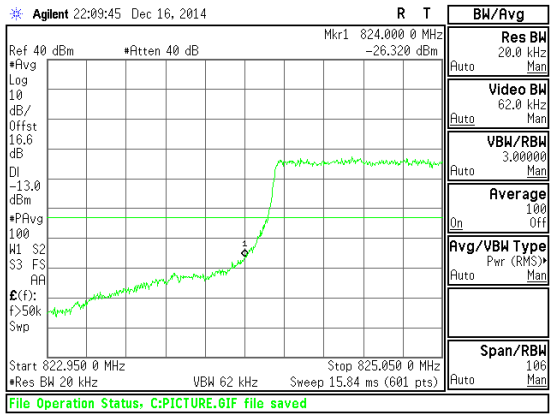
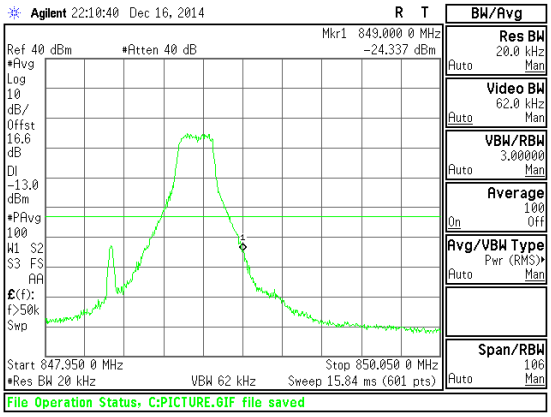
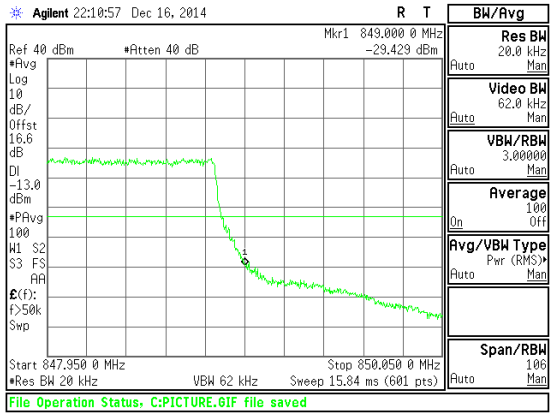
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 1.4MHz CBE 16QAM High Channel FRB.gif

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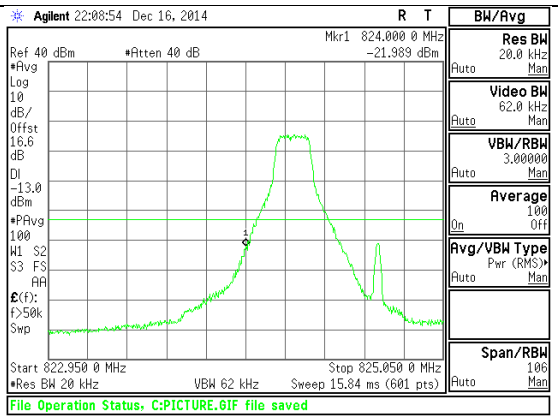
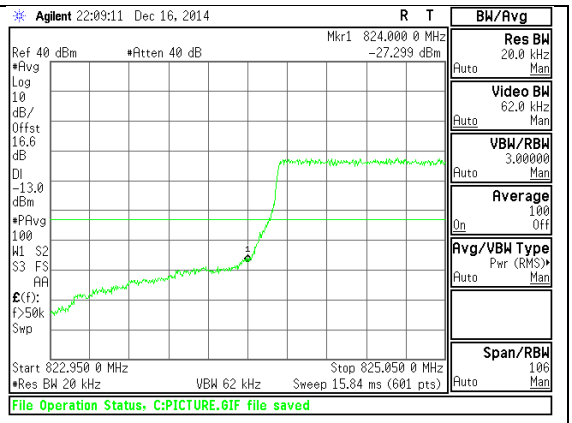
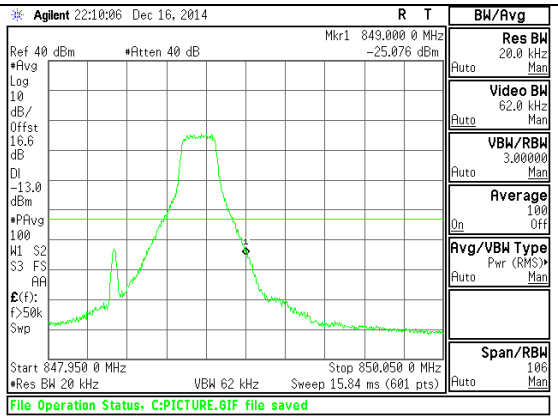
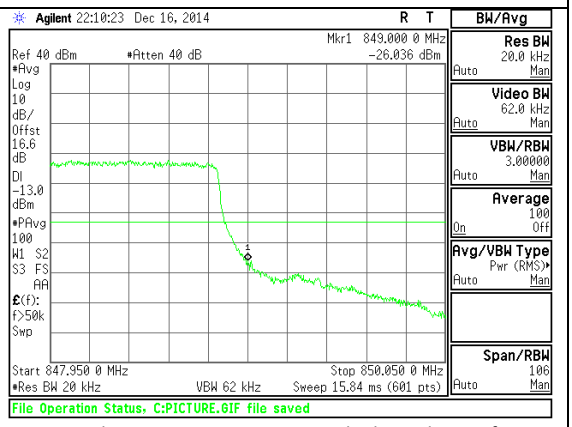
Band LTE5 1.4MHz QPSK	 Band LTE5 1.4MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 1.4MHz CBE QPSK Low Channel FRB.gif
Band LTE5 1.4MHz QPSK	 Band LTE5 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 1.4MHz CBE QPSK High Channel FRB.gif

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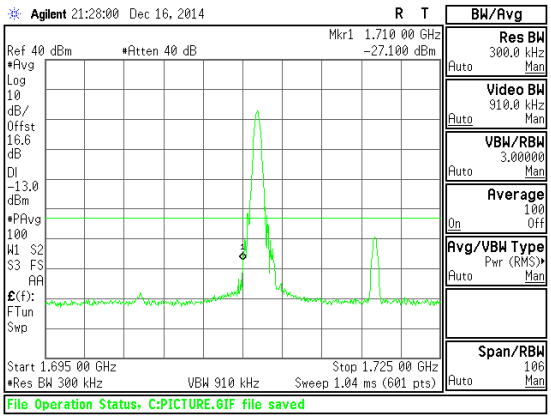
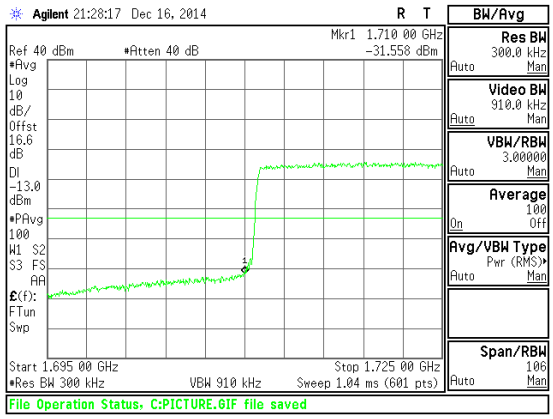
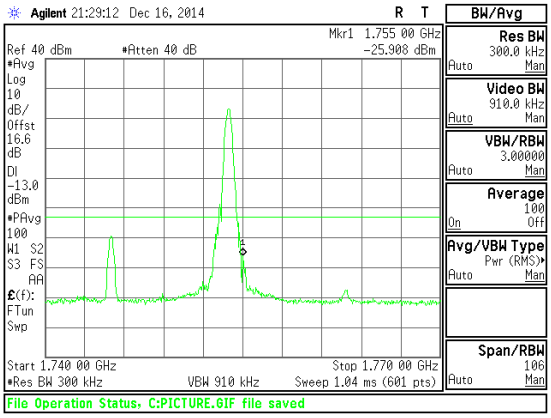
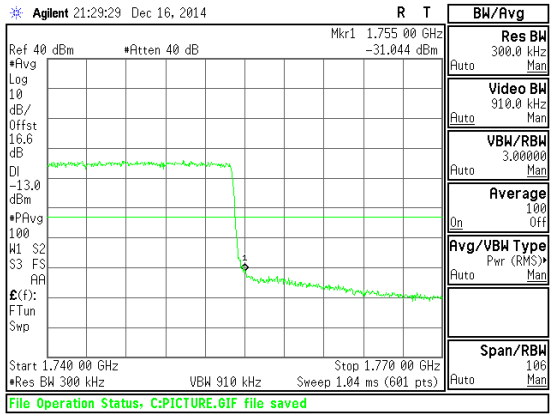
LTE Band 4

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

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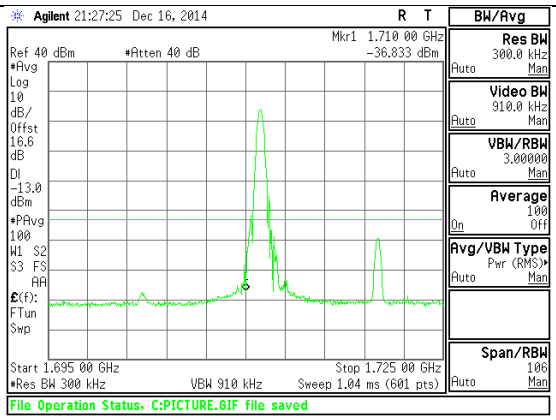
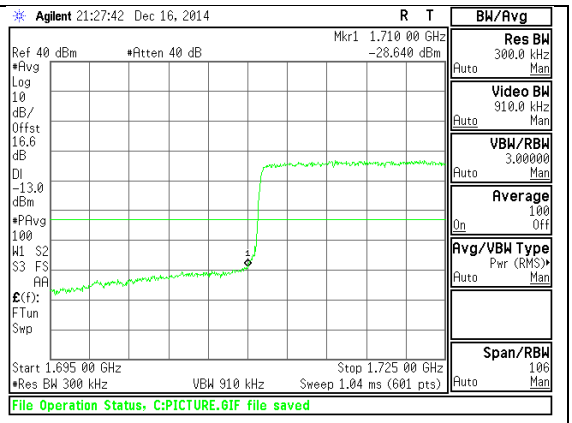
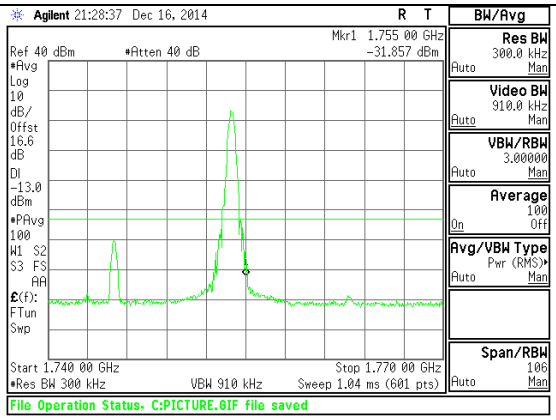
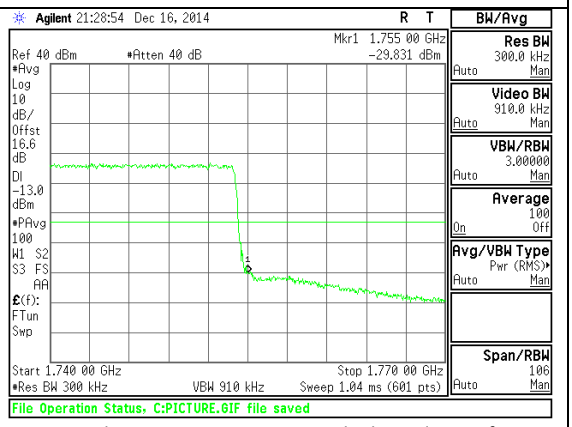
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK Low Channel FRB.gif
Band LTE4 20MHz QPSK	 Band LTE4 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 20MHz CBE QPSK High Channel FRB.gif

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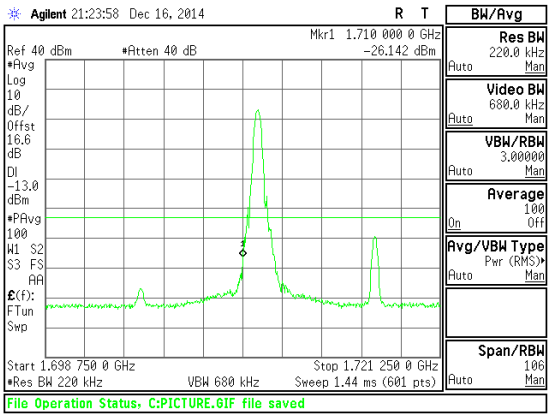
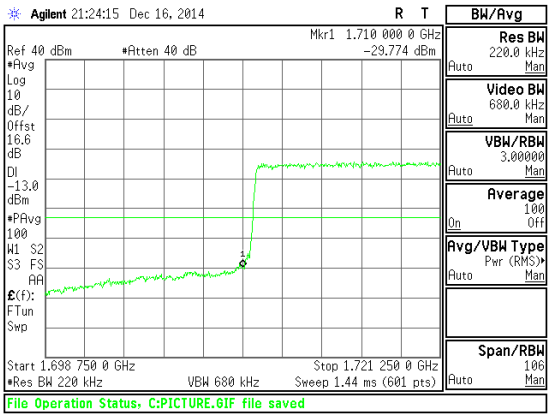
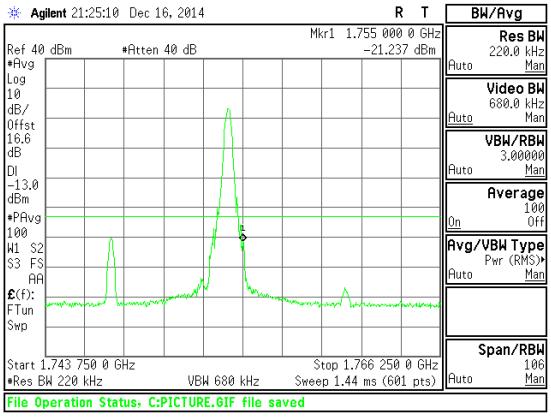
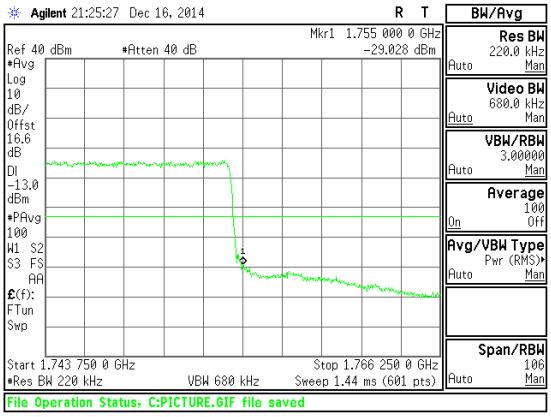
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 15MHz 16QAM	 Band LTE4 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 15MHz CBE 16QAM High Channel FRB.gif

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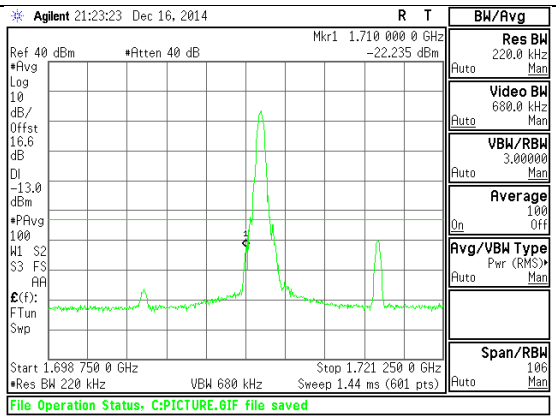
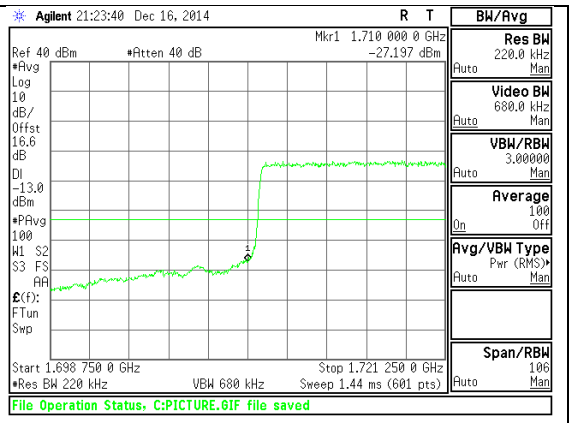
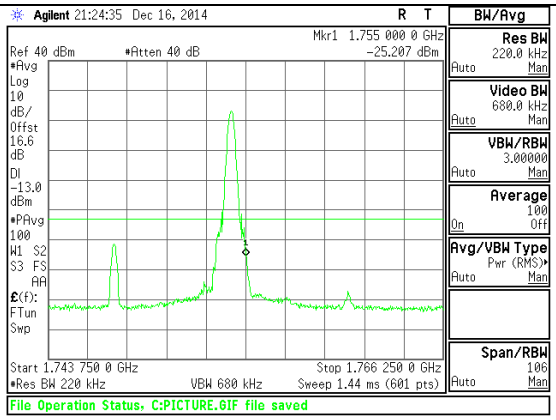
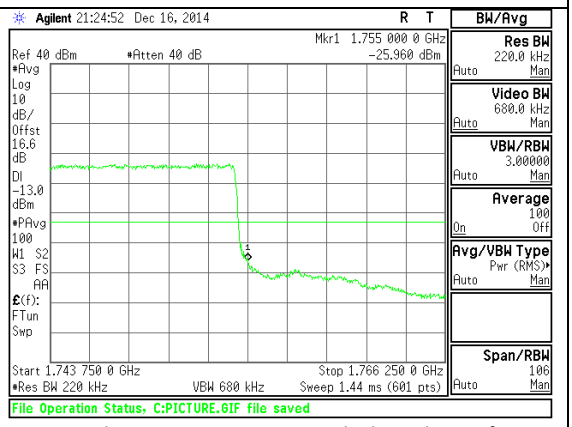
Band LTE4 15MHz QPSK	 Band LTE4 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 15MHz CBE QPSK Low Channel FRB.gif
Band LTE4 15MHz QPSK	 Band LTE4 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 15MHz CBE QPSK High Channel FRB.gif

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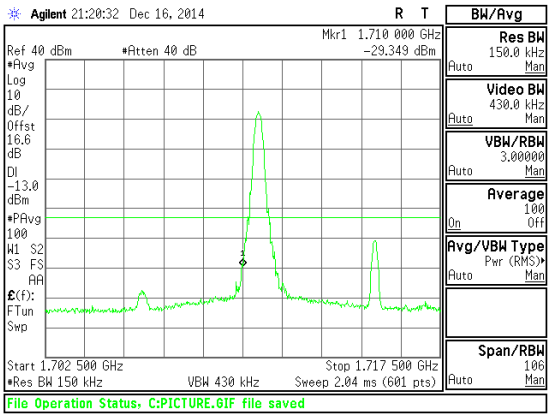
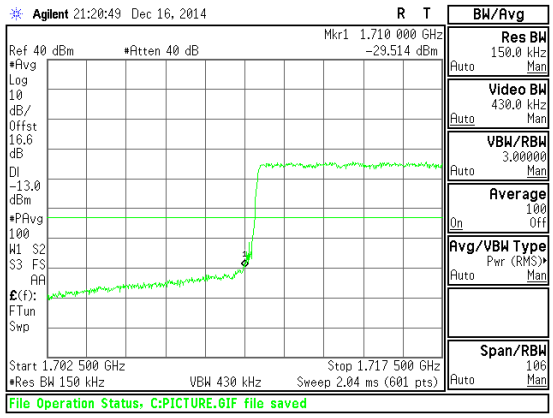
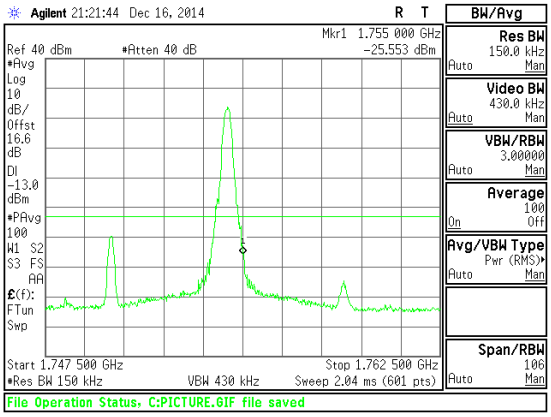
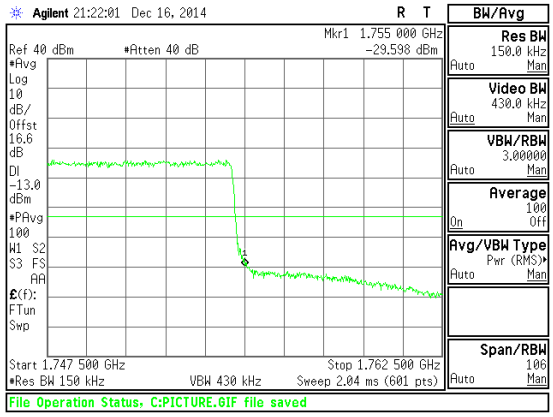
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM High Channel FRB.gif

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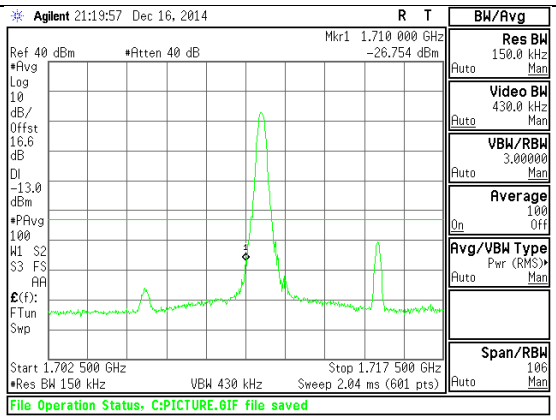
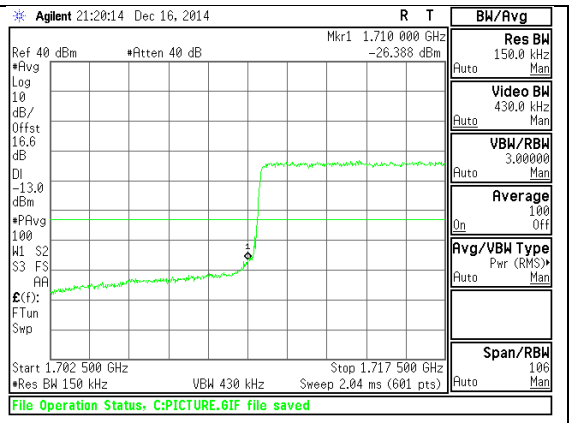
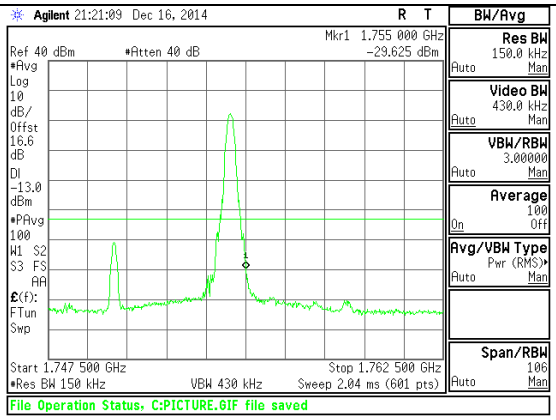
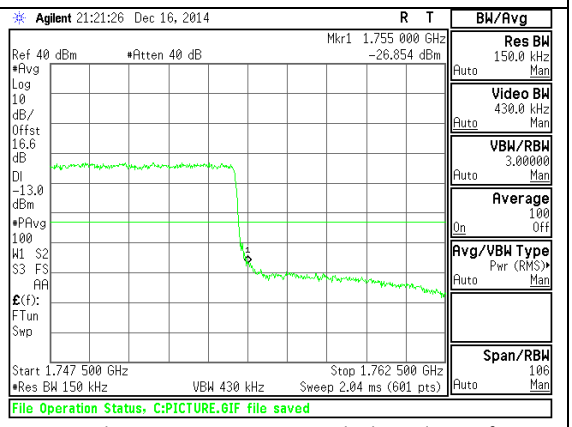
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK Low Channel FRB.gif
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK High Channel FRB.gif

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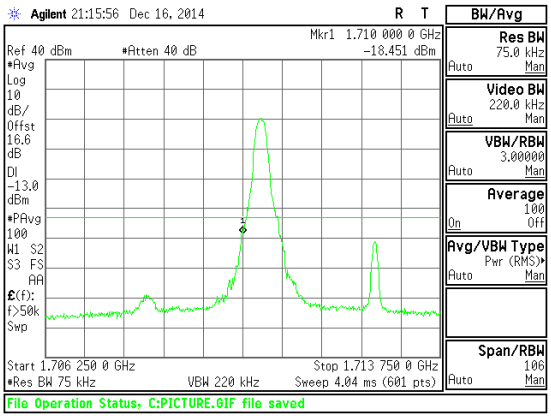
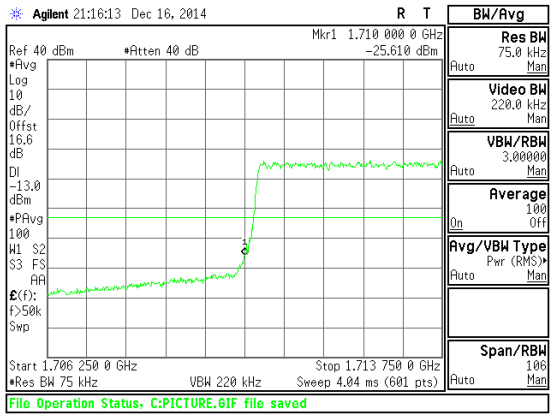
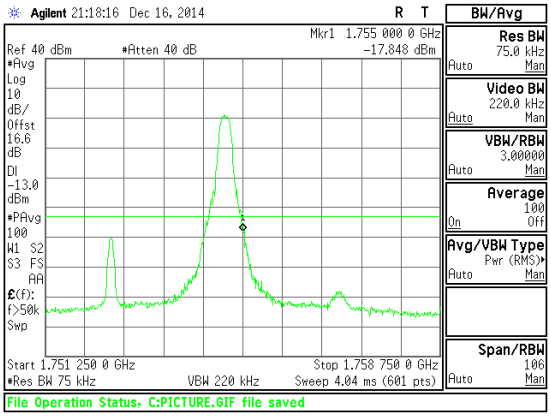
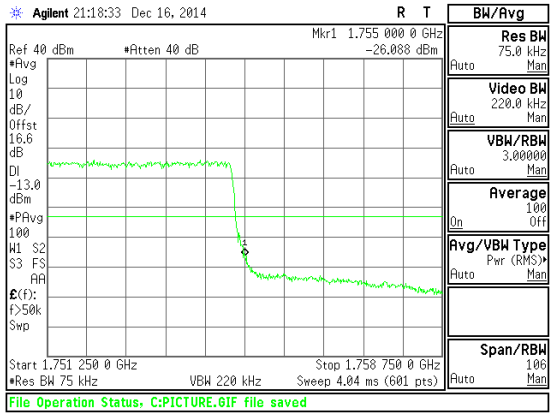
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM High Channel FRB.gif

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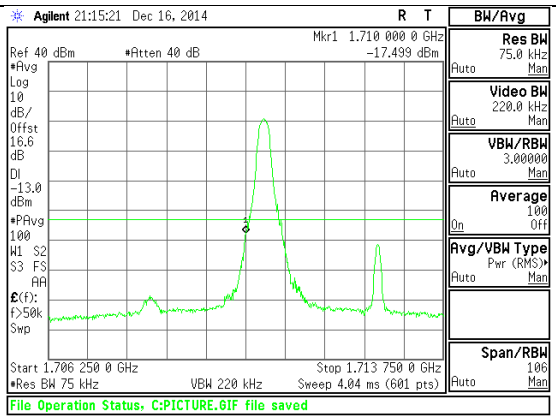
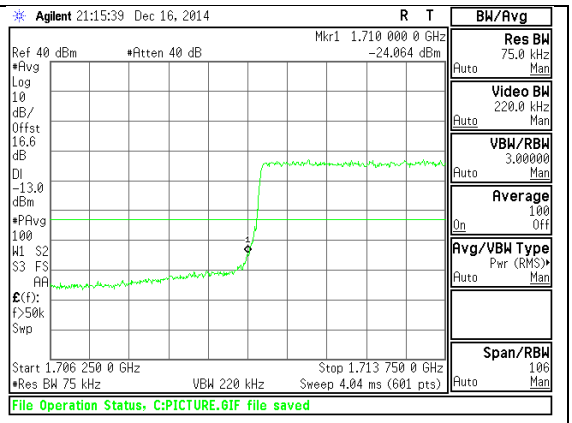
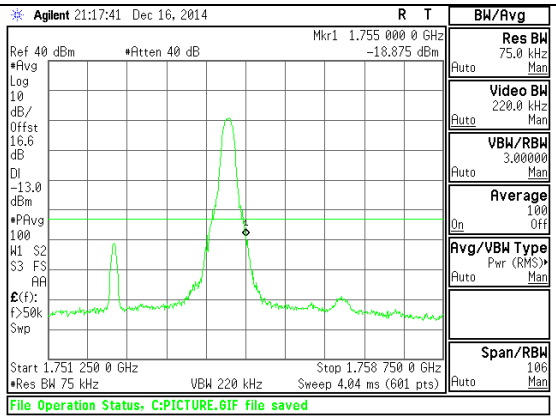
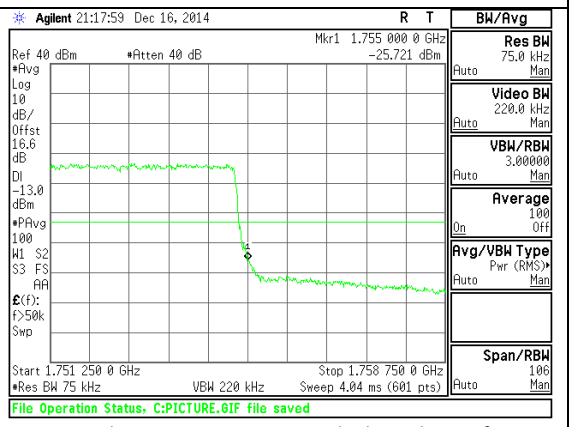
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK Low Channel FRB.gif
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK High Channel FRB.gif

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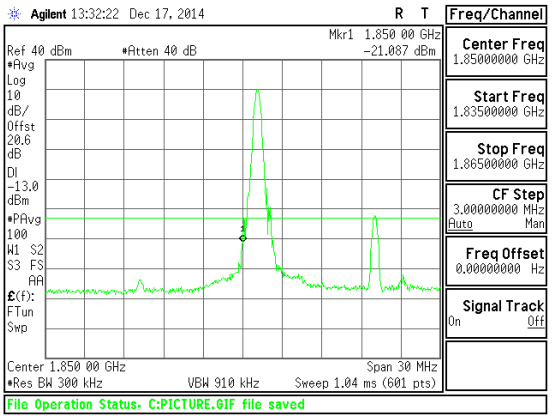
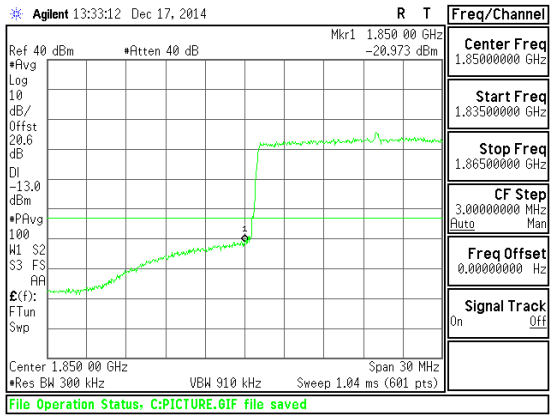
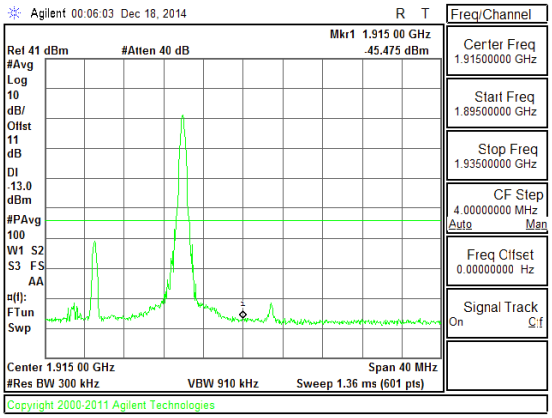
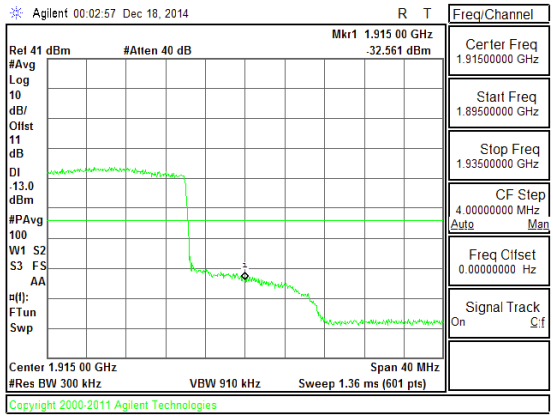
LTE Band 2

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

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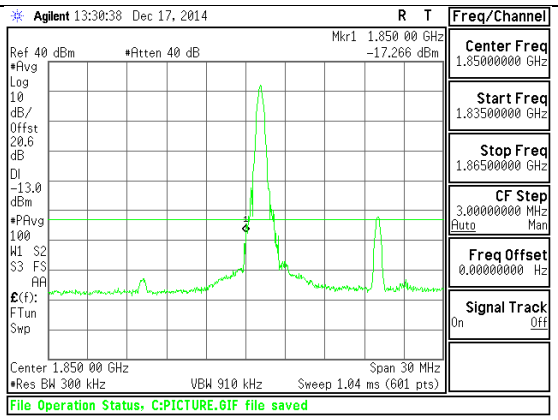
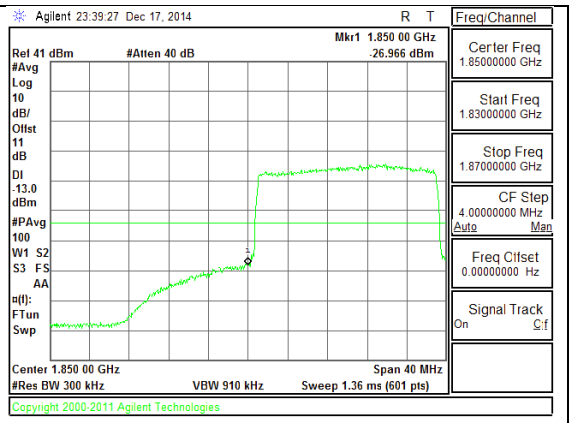
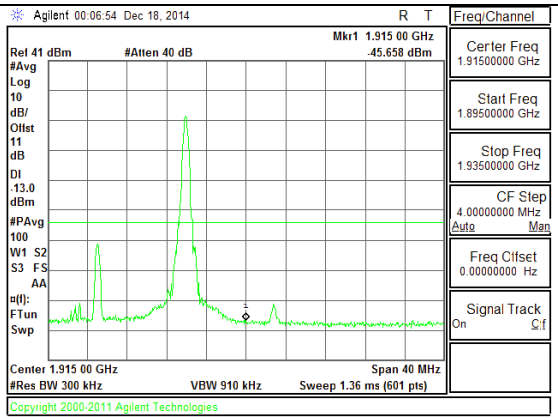
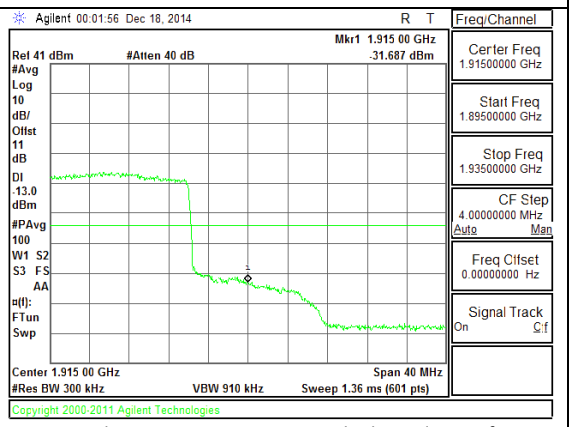
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK Low Channel FRB.gif
Band LTE2 20MHz QPSK	 Band LTE2 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 20MHz CBE QPSK High Channel FRB.gif

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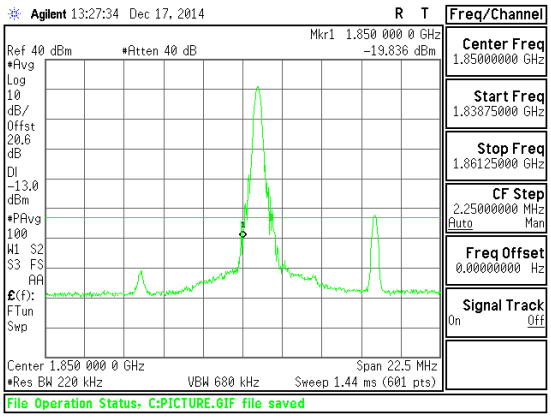
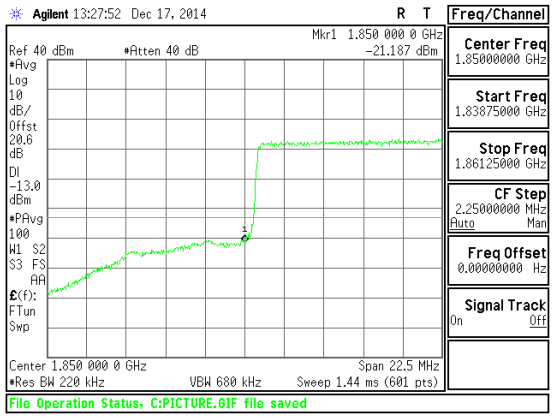
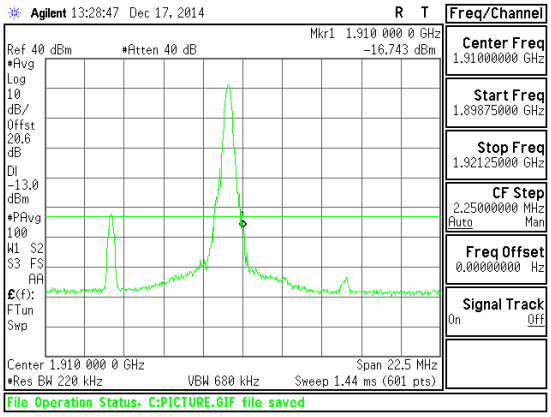
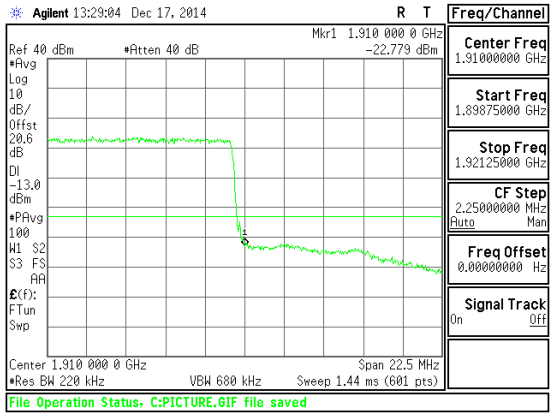
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM High Channel FRB.gif

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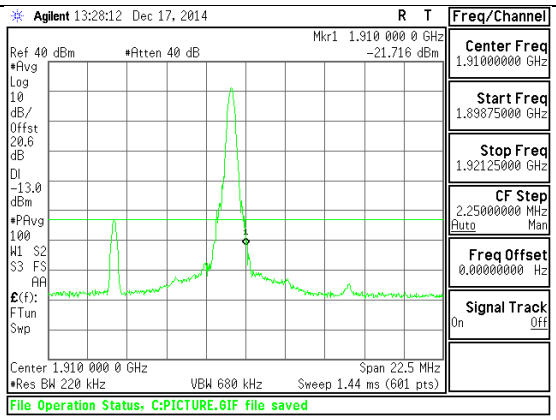
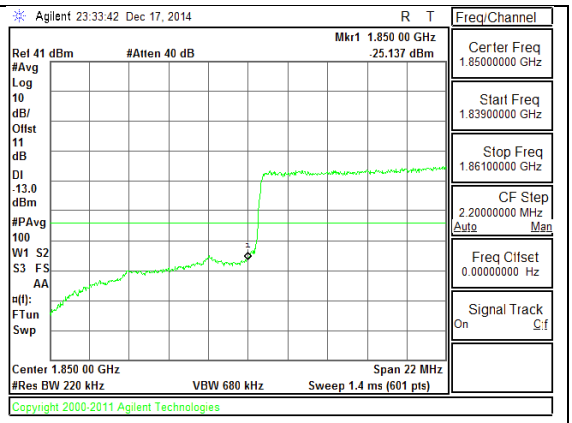
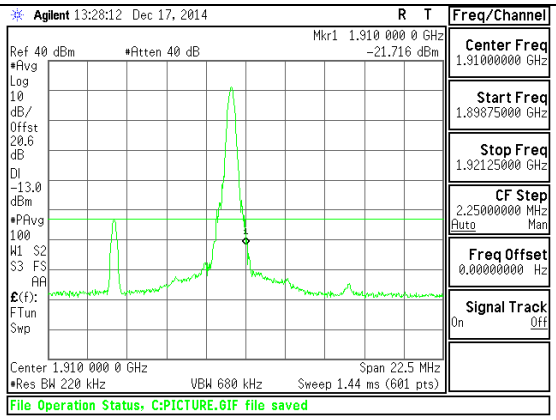
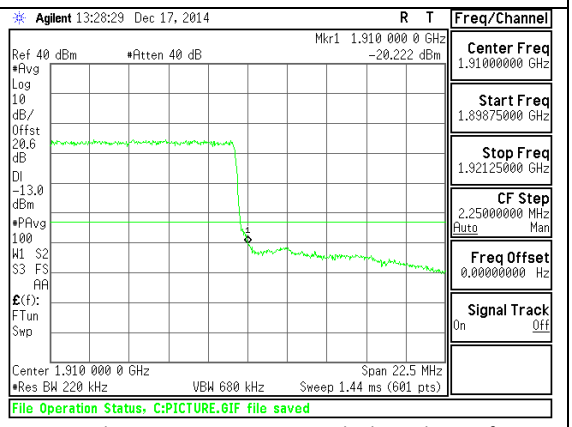
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK Low Channel FRB.gif	 Band LTE2 15MHz CBE QPSK High Channel 1RB.gif
Band LTE2 15MHz QPSK	 Band LTE2 15MHz CBE QPSK High Channel FRB.gif	 Band LTE2 15MHz CBE QPSK High Channel 1RB.gif

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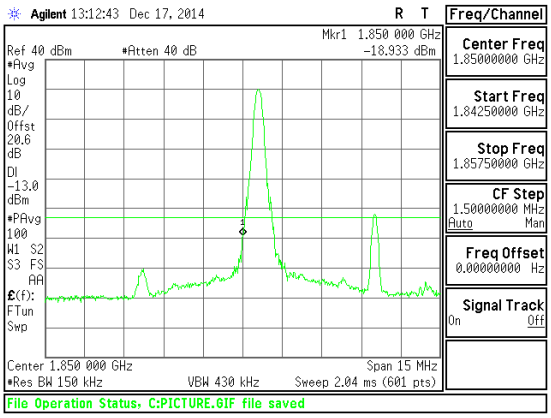
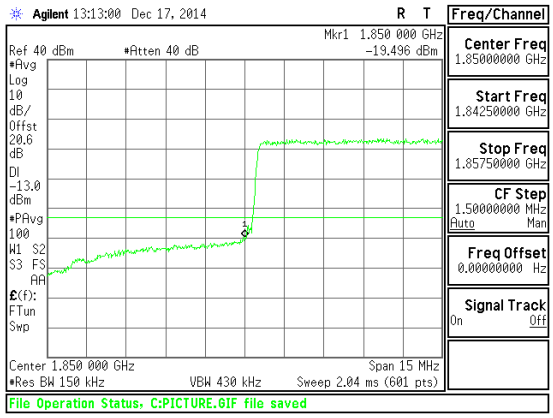
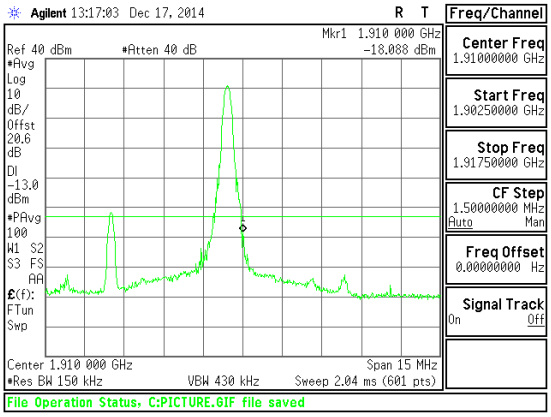
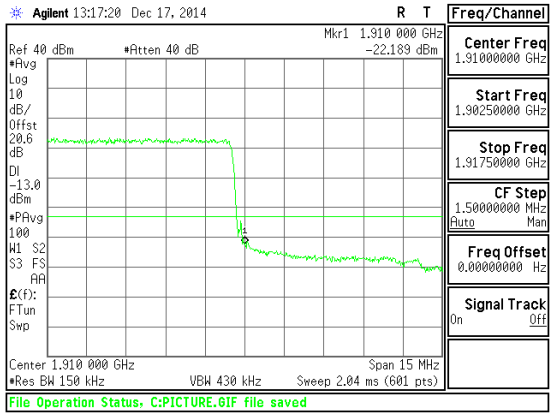
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM High Channel FRB.gif

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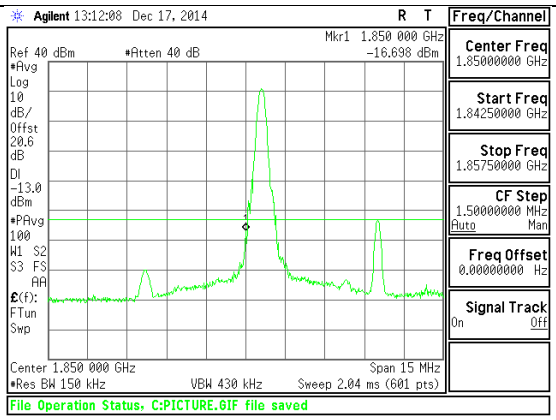
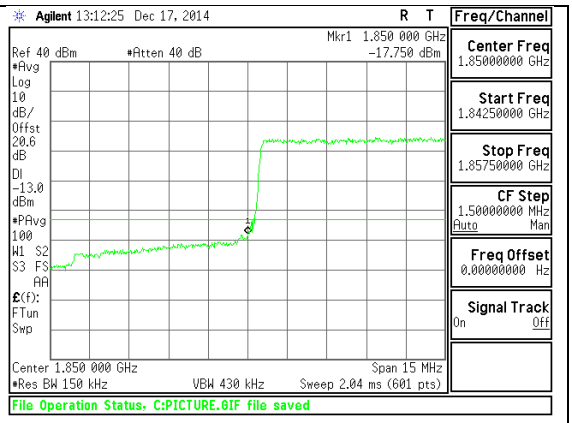
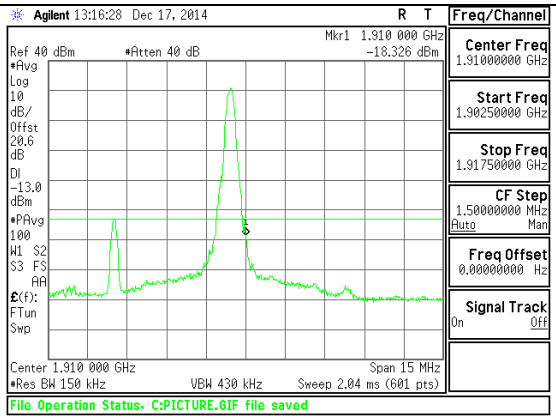
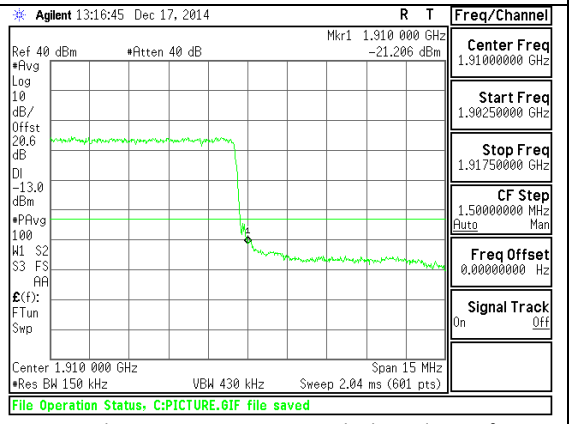
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK Low Channel FRB.gif
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK High Channel FRB.gif

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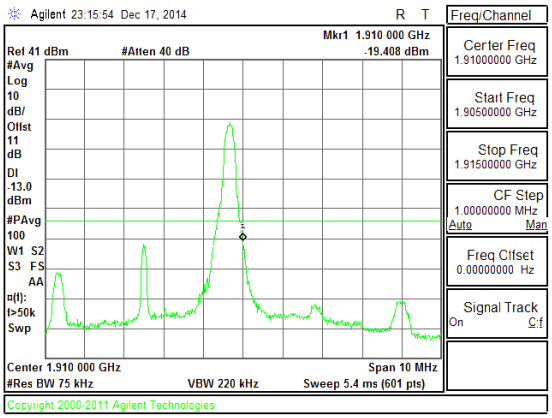
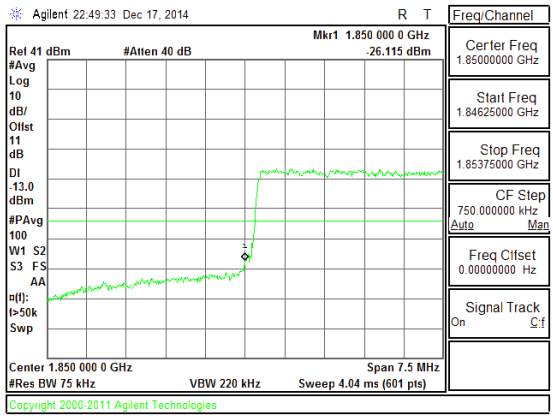
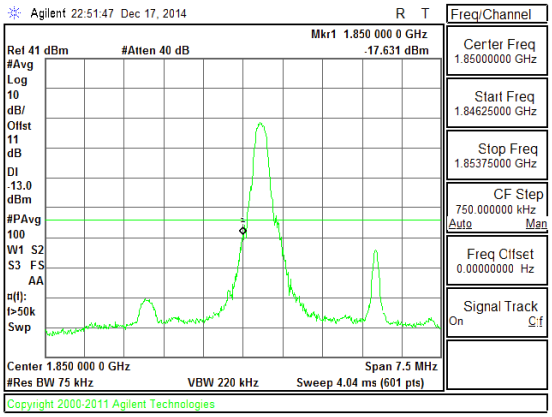
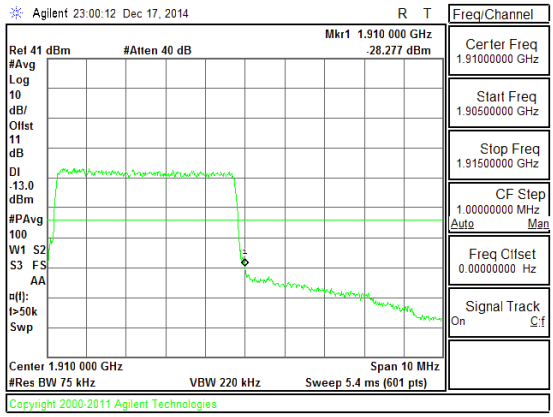
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM Low Channel FRB.gif	 Band LTE2 5MHz CBE 16QAM High Channel 1RB.gif
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM High Channel FRB.gif	 Band LTE2 5MHz CBE QPSK Low Channel 1RB.gif

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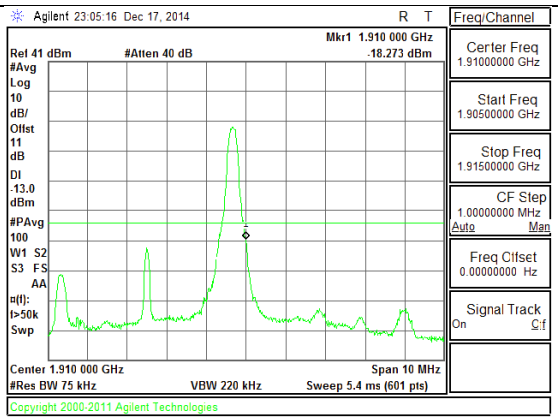
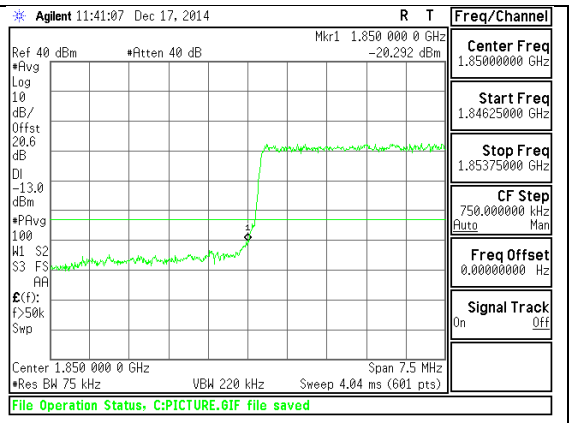
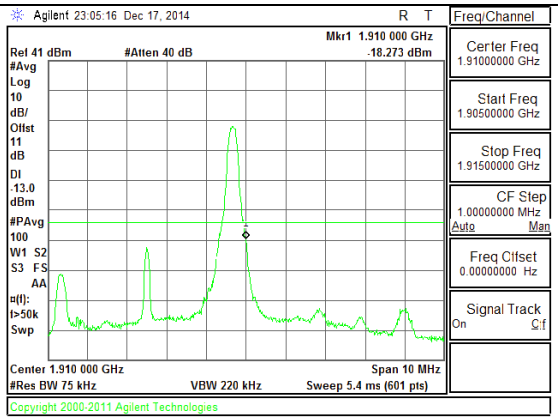
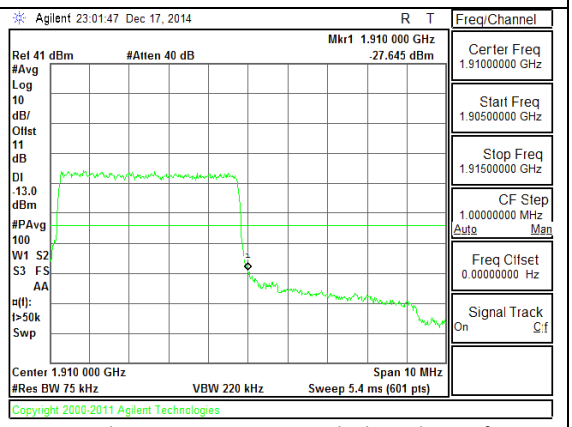
Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK Low Channel FRB.gif	 Band LTE2 5MHz CBE QPSK High Channel 1RB.gif
Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK High Channel FRB.gif	 Band LTE2 5MHz CBE QPSK High Channel 1RB.gif

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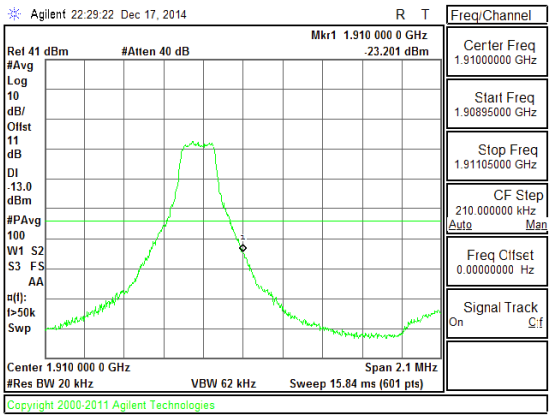
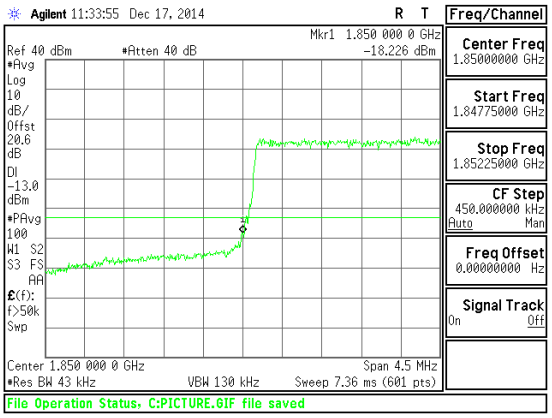
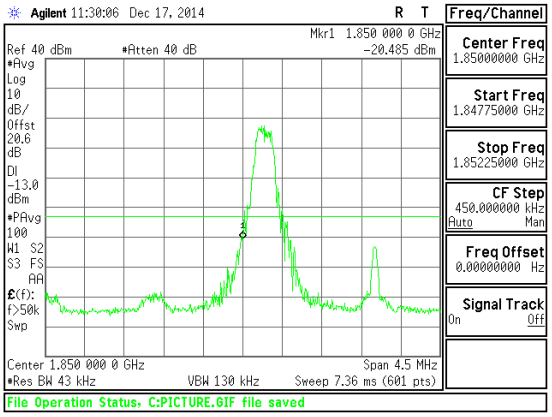
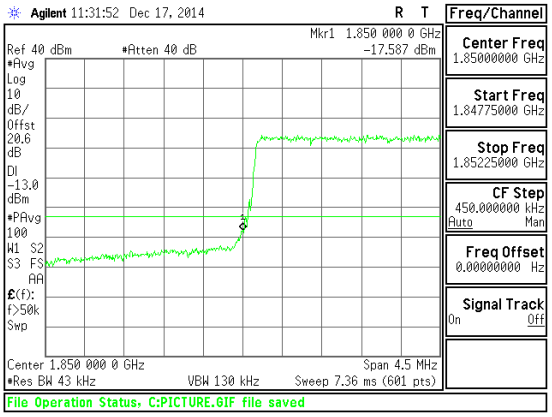
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM Low Channel FRB.gif	 Band LTE2 3MHz CBE 16QAM High Channel 1RB.gif
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK Low Channel FRB.gif

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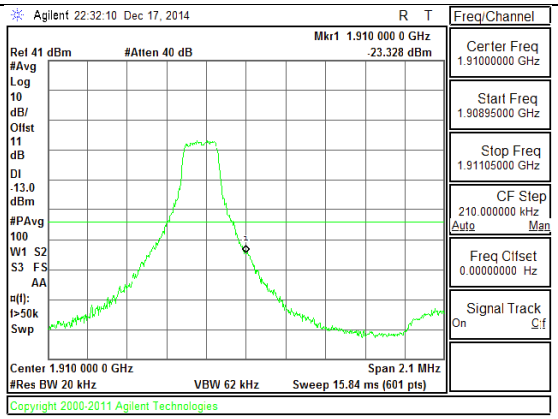
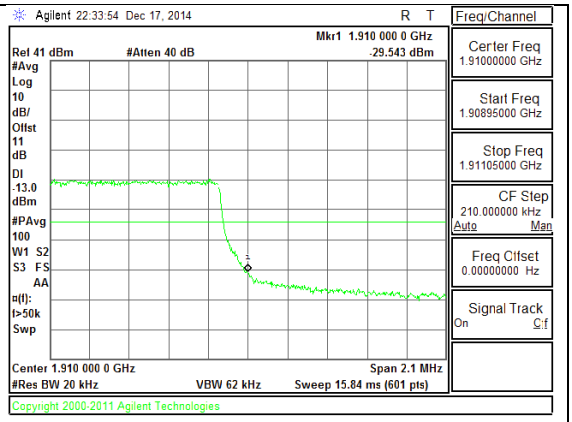
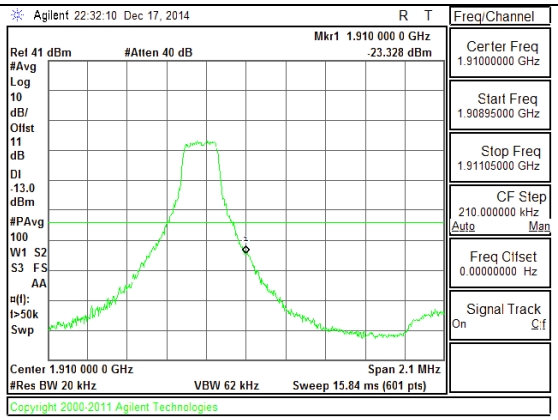
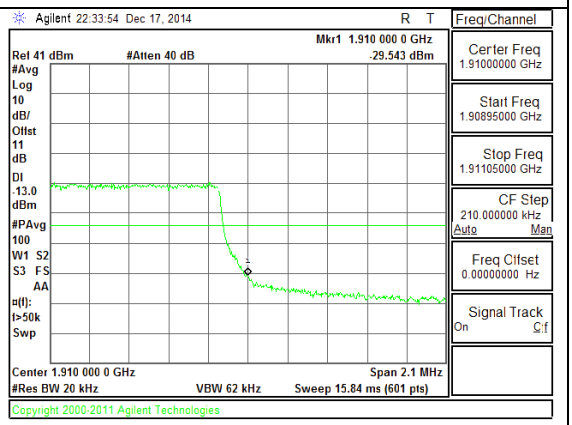
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK High Channel FRB.gif
Band LTE2 3MHz QPSK	 Band LTE2 3MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 3MHz CBE QPSK High Channel FRB.gif

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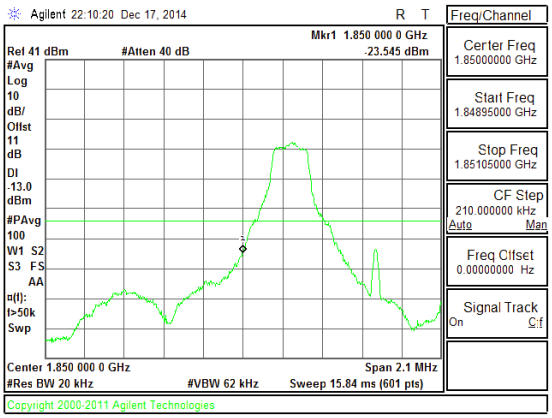
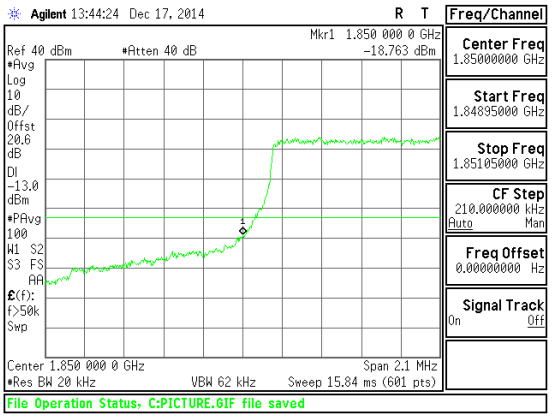
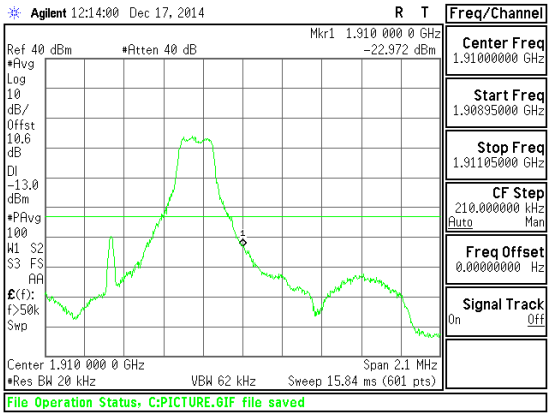
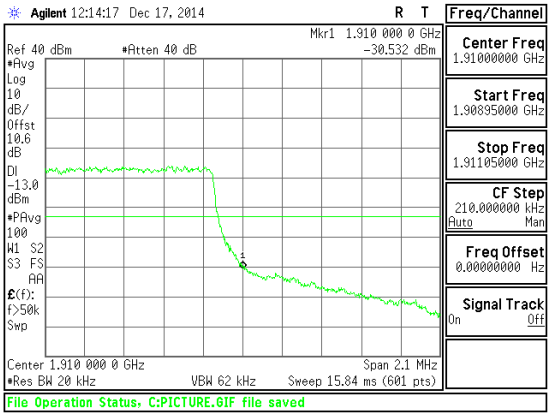
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM High Channel FRB.gif

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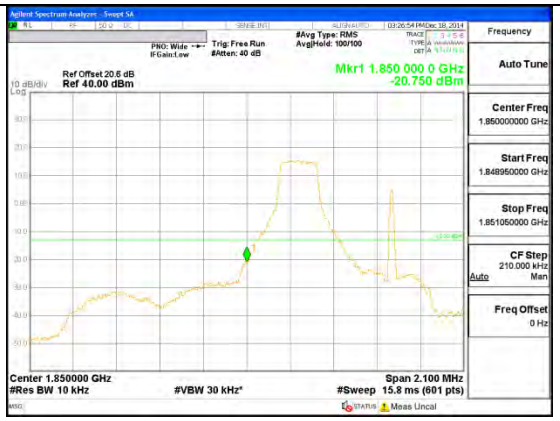
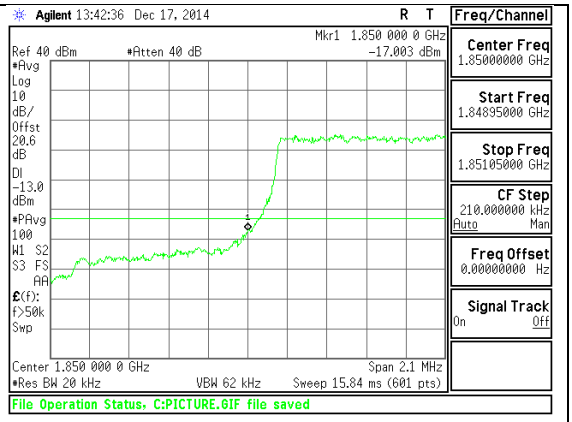
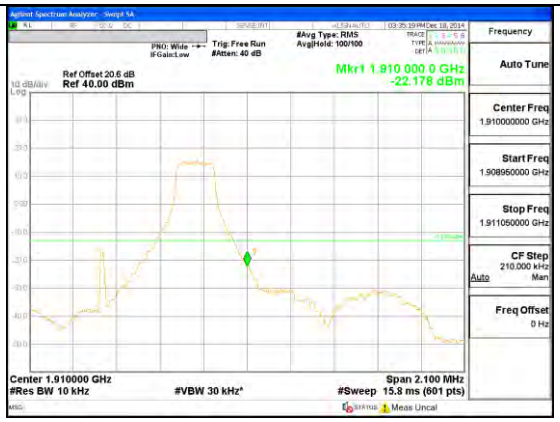
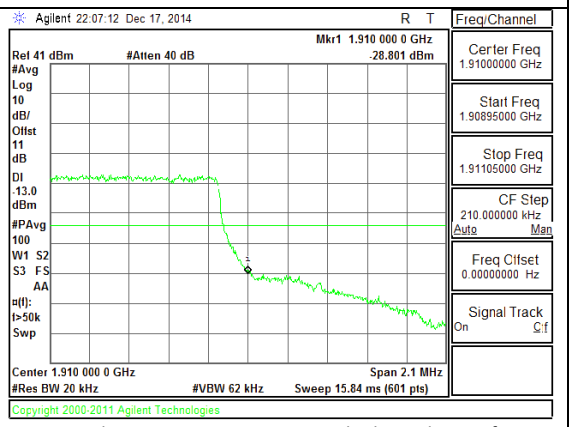
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK Low Channel FRB.gif	 Band LTE2 1.4MHz CBE QPSK High Channel FRB.gif
Band LTE2 1.4MHz QPSK	 Band LTE2 1.4MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 1.4MHz CBE QPSK High Channel FRB.gif

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1.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, and §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 v02r01

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 Band 25, 17, 12, 5,4, and 2

RESULTS

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1.3.1. OUT OF BAND EMISSIONS RESULT

CDMA

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
BC0	1xRTT	824.7	-17.85	-13	-4.85
		836.52	-19.28	-13	-6.28
		848.31	-18.87	-13	-5.87
BC1	1xRTT	1851.25	-18.1	-13	-5.1
		1880	-19.27	-13	-6.27
		1908.75	-17.39	-13	-4.39

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
BC0	EVDO	824.7	-27.06	-13	-14.06
		836.52	-27.37	-13	-14.37
		848.31	-27.65	-13	-14.65
BC1	EVDO	1851.25	-17.58	-13	-4.58
		1880	-18.81	-13	-5.81
		1908.75	-18.9	-13	-5.9

LTE Band 25

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	5	QPSK	1852.5	-26.251	-13	-13.251
			1882.5	-26.479	-13	-13.479
			1912.5	-20.027	-13	-7.027
		16QAM	1852.5	-26.23	-13	-13.23
			1882.5	-26.104	-13	-13.104
			1912.5	-30.608	-13	-17.608

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LTE Band 17

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE17	10	QPSK	709	-24.795	-13	-11.795
			710	-24.964	-13	-11.964
			711	-24.281	-13	-11.281
		16QAM	709	-24.506	-13	-11.506
			710	-24.25	-13	-11.25
			711	-24.17	-13	-11.17
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE17	5	QPSK	706.5	-24.56	-13	-11.56
			710	-23.95	-13	-10.95
			713.5	-24.97	-13	-11.97
		16QAM	706.5	-24.684	-13	-11.684
			710	-24.595	-13	-11.595
			713.5	-24.105	-13	-11.105

LTE Band 12

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	10	QPSK	704	-19.929	-13	-6.929
			707.5	-20.003	-13	-7.003
			711	-24.226	-13	-11.226
		16QAM	704	-18.822	-13	-5.822
			707.5	-19.412	-13	-6.412
			711	-24.699	-13	-11.699
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE12	5	QPSK	701.5	-24.47	-13	-11.47
			707.5	-24.325	-13	-11.325
			713.5	-24.568	-13	-11.568
		16QAM	701.5	-25.04	-13	-12.04
			707.5	-23.806	-13	-10.806
			713.5	-22.45	-13	-9.45

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LTE Band 5

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	QPSK	829	-24.978	-13	-11.978
			836.5	-24.104	-13	-11.104
			844	-24.219	-13	-11.219
		16QAM	829	-23.839	-13	-10.839
			836.5	-24.592	-13	-11.592
			844	-23.613	-13	-10.613
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	5	QPSK	826.5	-24.254	-13	-11.254
			836.5	-23.808	-13	-10.808
			846.5	-24.758	-13	-11.758
		16QAM	826.5	-24.137	-13	-11.137
			836.5	-24.467	-13	-11.467
			846.5	-23.742	-13	-10.742
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	3	QPSK	825.5	-23.384	-13	-10.384
			836.5	-22.92	-13	-9.92
			847.5	-24.908	-13	-11.908
		16QAM	825.5	-24.542	-13	-11.542
			836.5	-24.468	-13	-11.468
			847.5	-23.962	-13	-10.962
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	1.4	QPSK	824.7	-24.104	-13	-11.104
			836.5	-23.739	-13	-10.739
			848.3	-23.998	-13	-10.998
		16QAM	824.7	-23.549	-13	-10.549
			836.5	-25.203	-13	-12.203
			848.3	-23.872	-13	-10.872

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LTE Band 4

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	20	QPSK	1720	-24.48	-13	-11.48
			1732.5	-24.02	-13	-11.02
			1745	-24.63	-13	-11.63
		16QAM	1720	-23.57	-13	-10.57
			1732.5	-23.84	-13	-10.84
			1745	-24.13	-13	-11.13
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	15	QPSK	1717.5	-23.21	-13	-10.21
			1732.5	-24.28	-13	-11.28
			1747.5	-25.03	-13	-12.03
		16QAM	1717.5	-25.24	-13	-12.24
			1732.5	-24.43	-13	-11.43
			1747.5	-24.47	-13	-11.47
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	10	QPSK	1715	-24.81	-13	-11.81
			1732.5	-23.62	-13	-10.62
			1750	-23.18	-13	-10.18
		16QAM	1715	-25.53	-13	-12.53
			1732.5	-24.52	-13	-11.52
			1750	-24.73	-13	-11.73
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	5	QPSK	1712.5	-24.19	-13	-11.19
			1732.5	-24.5	-13	-11.5
			1752.5	-24.51	-13	-11.51
		16QAM	1712.5	-28.01	-13	-15.01
			1732.5	-24.62	-13	-11.62
			1752.5	-23.29	-13	-10.29

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LTE Band 2

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	20	QPSK	1860	-19.592	-13	-6.592
			1880	-20.47	-13	-7.47
			1900	-19.908	-13	-6.908
		16QAM	1860	-20.412	-13	-7.412
			1880	-20.691	-13	-7.691
			1900	-20.267	-13	-7.267
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	15	QPSK	1857.5	-20.139	-13	-7.139
			1880	-19.858	-13	-6.858
			1902.5	-20.411	-13	-7.411
		16QAM	1857.5	-20.821	-13	-7.821
			1880	-19.611	-13	-6.611
			1902.5	-19.662	-13	-6.662
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	10	QPSK	1855	-20.161	-13	-7.161
			1880	-20.013	-13	-7.013
			1905	-20.557	-13	-7.557
		16QAM	1855	-20.763	-13	-7.763
			1880	-20.237	-13	-7.237
			1905	-20.441	-13	-7.441
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	5	QPSK	1852.5	-20.694	-13	-7.694
			1880	-20.004	-13	-7.004
			1907.5	-21.016	-13	-8.016
		16QAM	1852.5	-20.264	-13	-7.264
			1880	-19.706	-13	-6.706
			1907.5	-19.77	-13	-6.77

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Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	3	QPSK	1851.5	-20.749	-13	-7.749
			1880	-20.012	-13	-7.012
			1908.5	-20.19	-13	-7.19
		16QAM	1851.5	-19.744	-13	-6.744
			1880	-20.64	-13	-7.64
			1908.5	-20.295	-13	-7.295
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	1.4	QPSK	1850.7	-19.715	-13	-6.715
			1880	-19.441	-13	-6.441
			1909.3	-20.407	-13	-7.407
		16QAM	1850.7	-20.452	-13	-7.452
			1880	-20.361	-13	-7.361
			1909.3	-20.108	-13	-7.108

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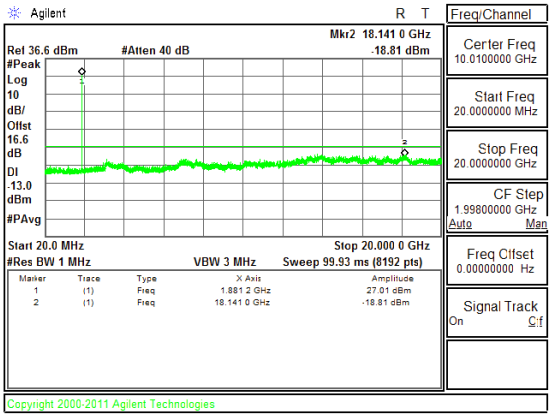
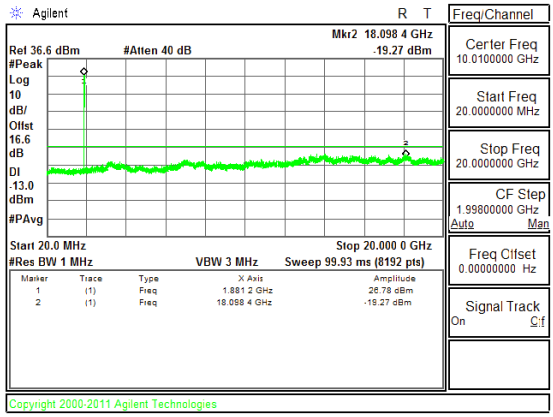
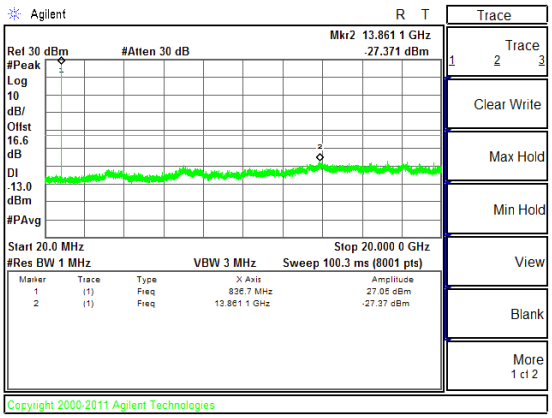
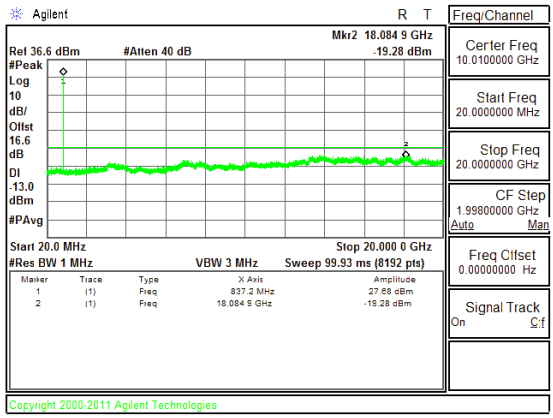
1.3.2. OUT OF BAND EMISSIONS PLOTS

CDMA

Band BC1 EVDO REL. 0	 Band BC1 EVDO Rel. 0 CSE Mid channel	 Band BC1 1xRTT CSE Mid channel
Band BC0 EVDO REL. 0	 Band BC0 EVDO Rel. 0 CSE Mid channel	 Band BC0 1xRTT CSE Mid channel

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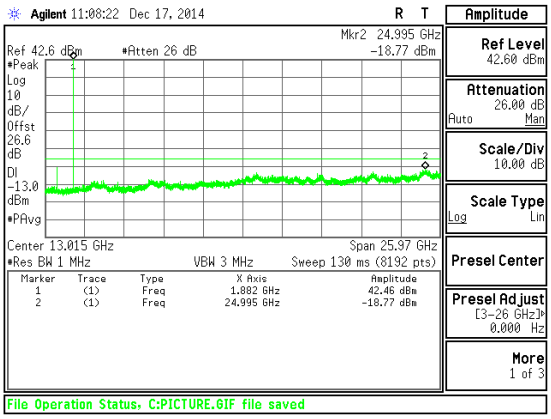
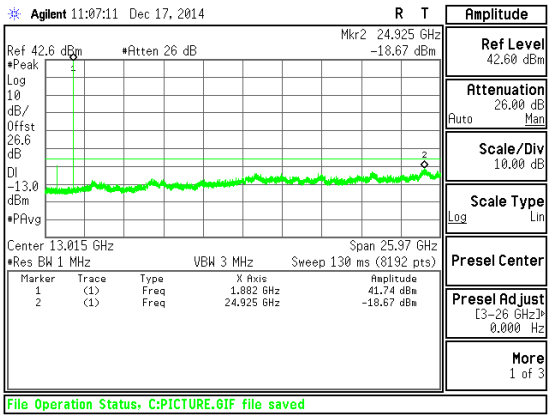
LTE Band 25

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

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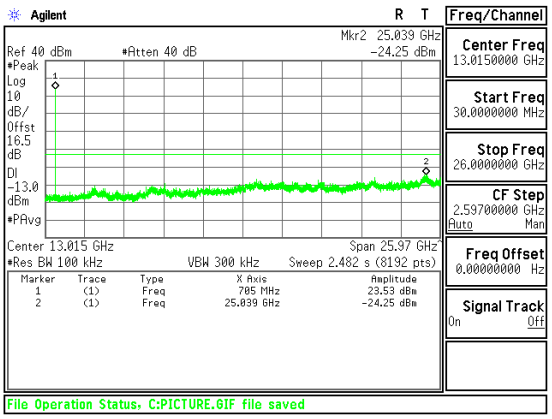
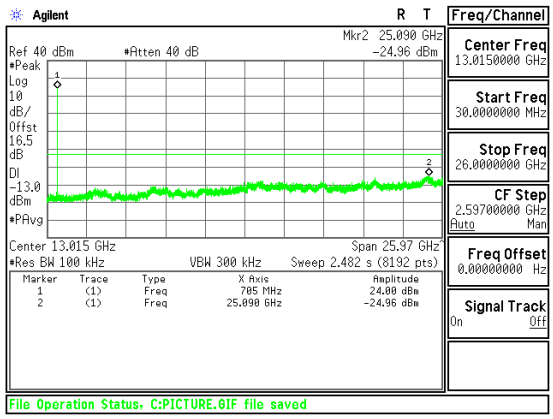
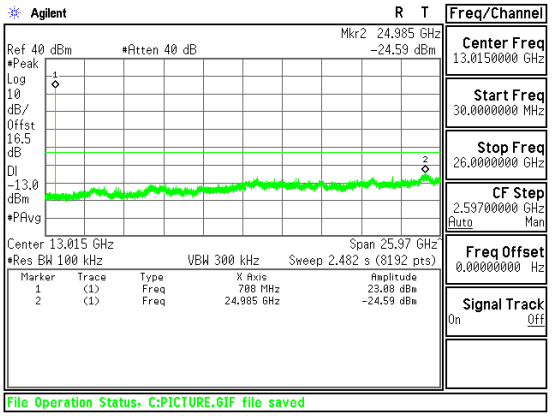
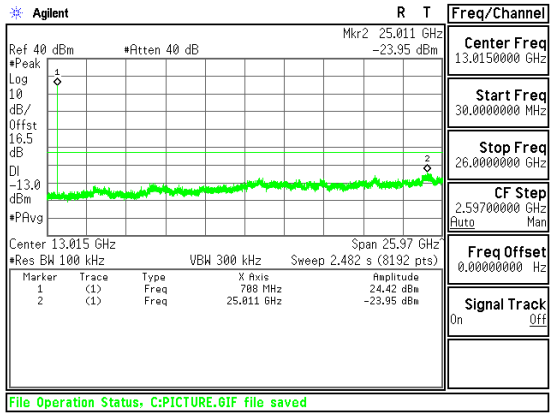
LTE Band 17

Band LTE17 10MHz 16QAM	 Band LTE17 10MHz CSE 16QAM Mid channel	 Band LTE17 10MHz CSE QPSK Mid channel
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz CSE 16QAM Mid channel	 Band LTE17 5MHz CSE QPSK Mid channel

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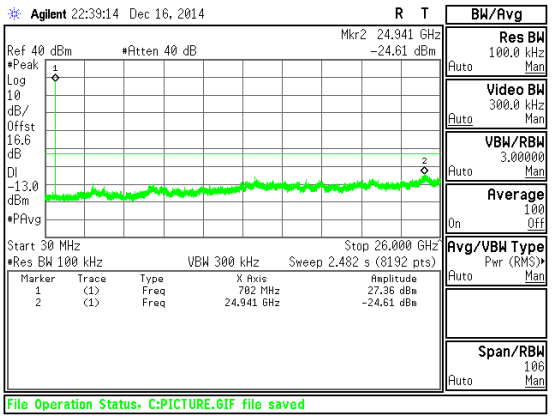
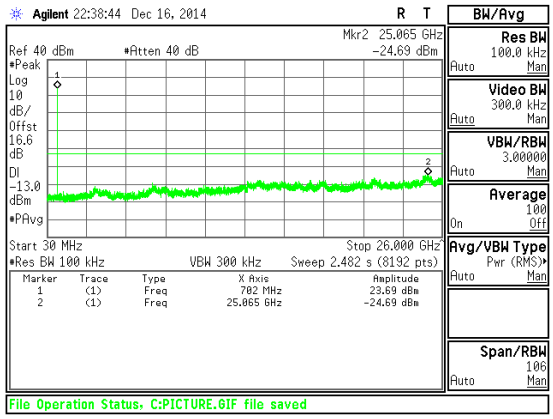
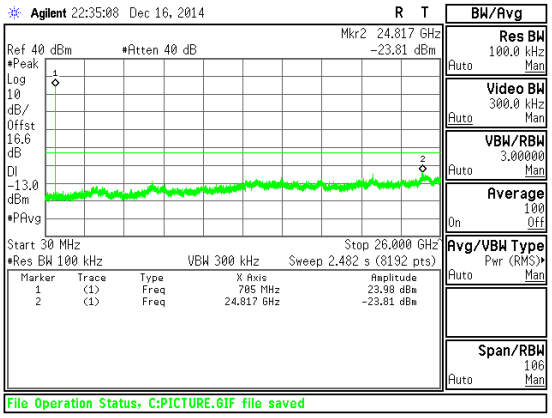
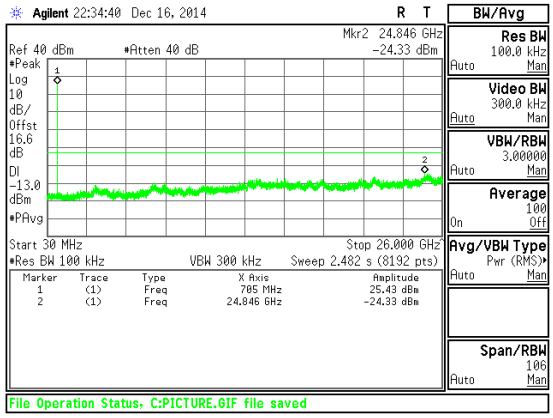
LTE Band 12

Band LTE12 10MHz 16QAM	 Band LTE12 10MHz CSE 16QAM Mid channel	 Band LTE12 10MHz CSE QPSK Mid channel
Band LTE12 5MHz 16QAM	 Band LTE12 5MHz CSE 16QAM Mid channel	 Band LTE12 5MHz CSE QPSK Mid channel

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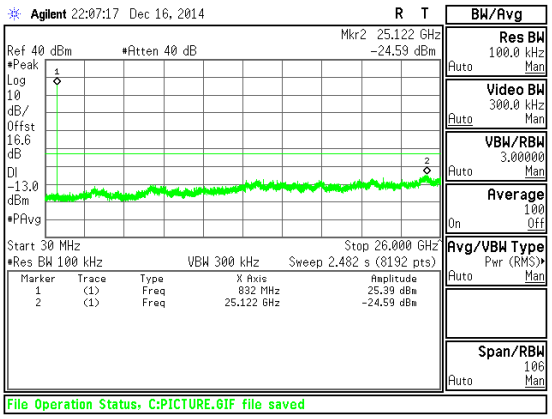
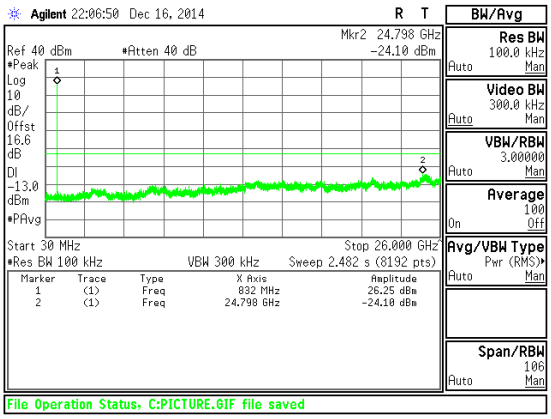
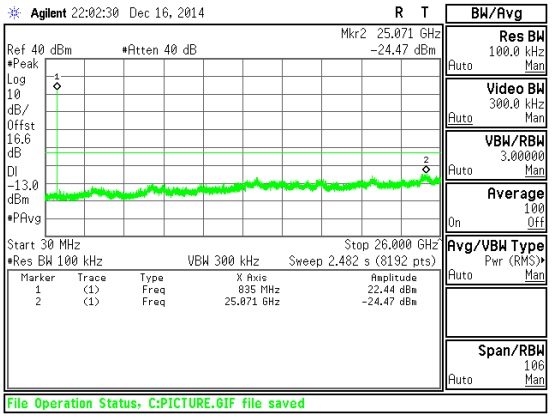
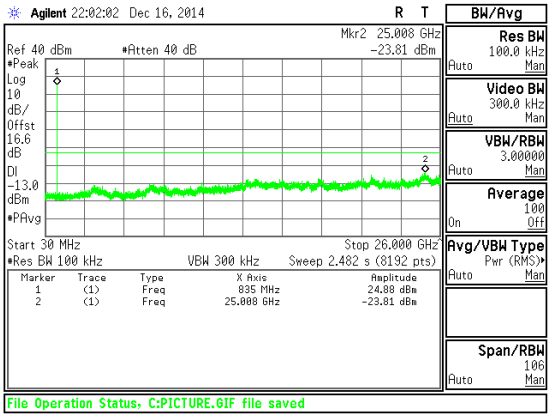
LTE Band 5

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

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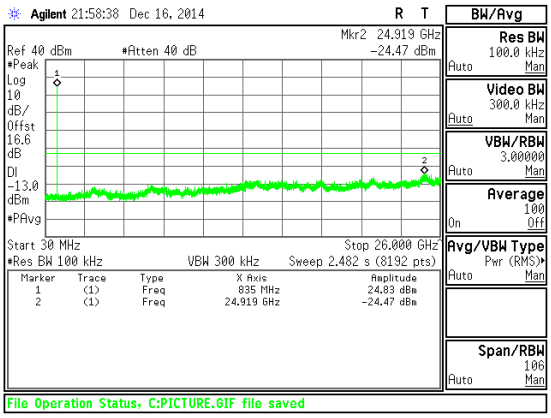
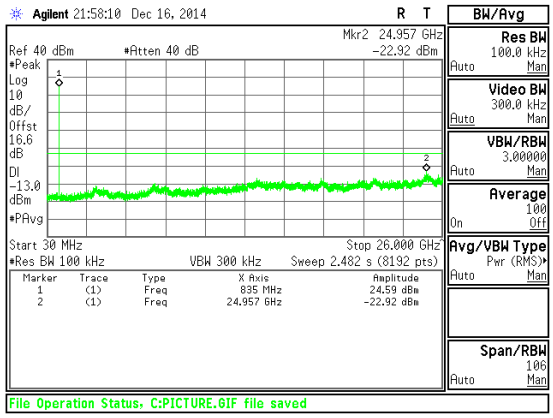
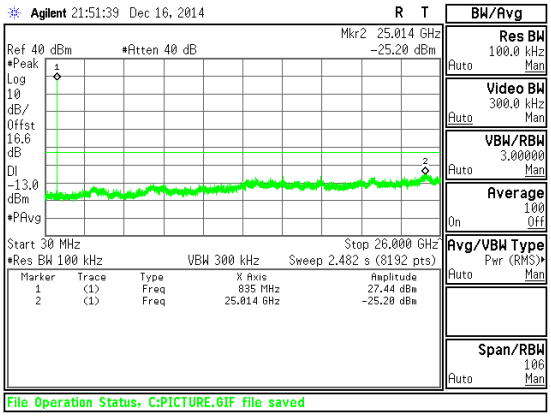
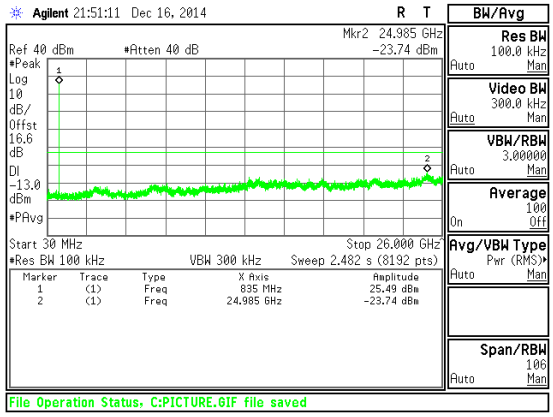
Band LTE5 3MHz 16QAM	 Band LTE5 3MHz CSE 16QAM Mid channel	 Band LTE5 3MHz CSE QPSK Mid channel
Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz CSE 16QAM Mid channel	 Band LTE5 1.4MHz CSE QPSK Mid channel

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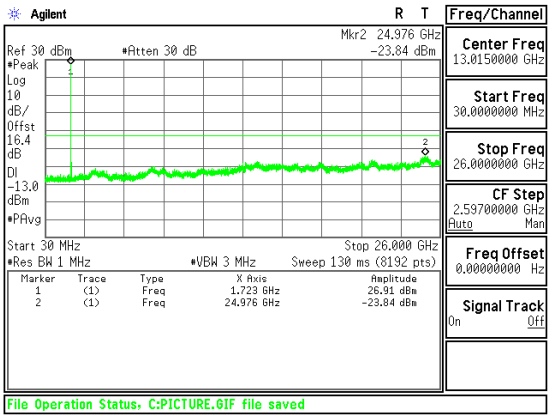
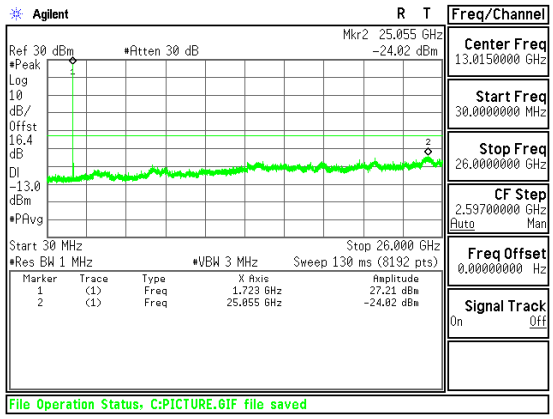
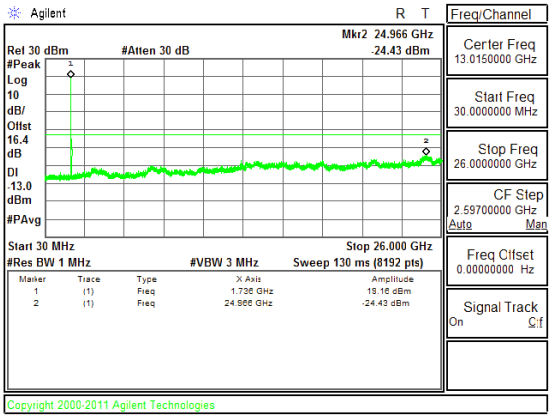
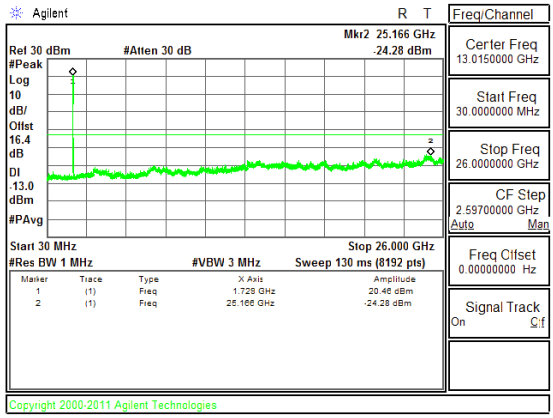
LTE Band 4

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

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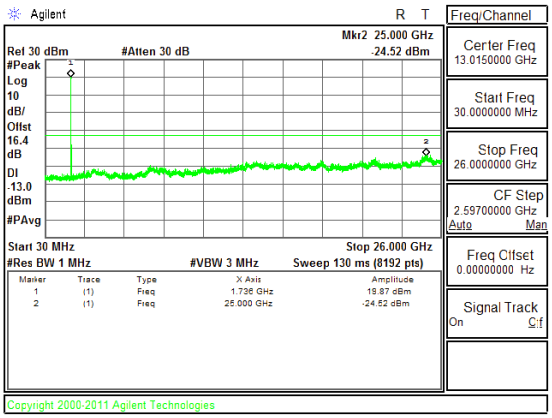
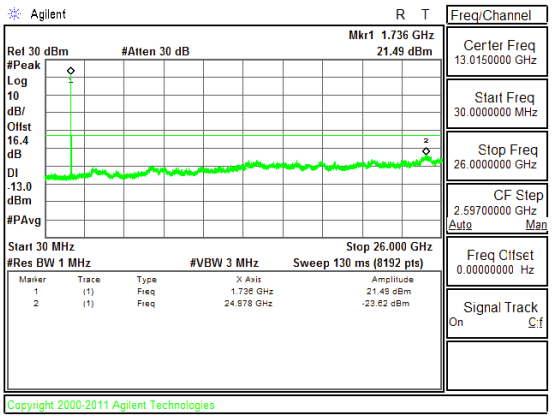
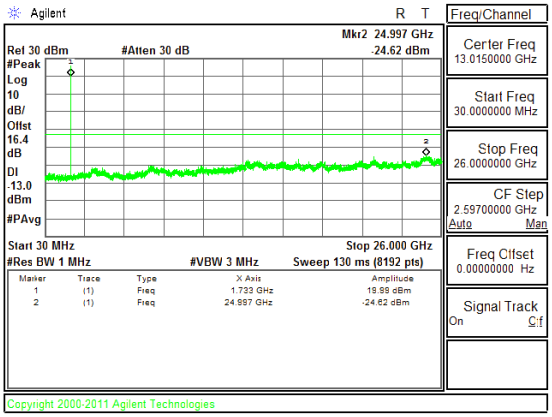
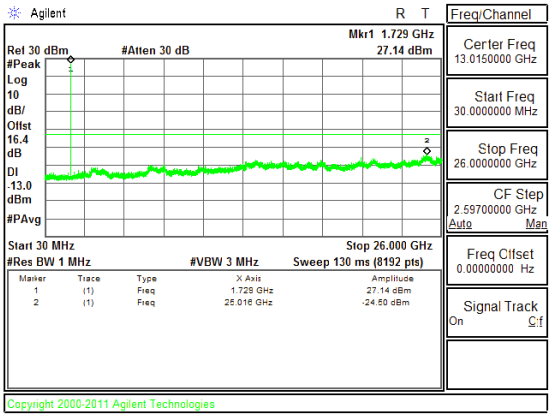
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CSE 16QAM Mid channel	 Band LTE4 10MHz CSE QPSK Mid channel
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CSE 16QAM Mid channel	 Band LTE4 5MHz CSE QPSK Mid channel

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