



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

CERTIFICATION TEST REPORT

FOR

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

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SONY MOBILE COMMUNICATIONS, INC.
EUT DESCRIPTION: GSM/WCDMA/CDMA/LTE + BLUETOOTH, DTS/UNII a/b/g/n/ac, ANT+ & NFC
SERIAL NUMBER: CB5A24QH3R (Conducted), CB5A24QGNE and CB5A24QH1L (Radiated)
DATE TESTED: APRIL 1 – 10, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E, 27F, 27L, and 27M	PASS

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

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

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 22, FCC CFR Part 24, and FCC CFR 47 Part 27.

3. FACILITIES AND ACCREDITATION

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

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

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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:

$$\text{EIRP} = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (dB)}$$

between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

$$\text{ERP} = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (dB)}$$

between the SG and substitution antenna)

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

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE + BLUETOOTH, DTS/UNII a/b/g/n/ac and ANT+ and NFC.

5.2. MAXIMUM OUTPUT POWER

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

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
GSM850	824~849	GMSK	32.10	1621.81		
	824~849	GPRS	32.10	1621.81	28.87	770.90
	824~849	EGPRS	27.00	501.19	24.39	274.79
GSM1900	1850~1910	GMSK	29.20	831.76		
	1850~1910	GPRS	29.20	831.76	28.15	653.13
	1850~1910	EGPRS	26.00	398.11	24.85	305.49
Band 5	824~849	REL99	22.80	190.55	19.25	84.14
	824~849	HSDPA	22.70	186.21	18.75	74.99
	824~849	HSUPA	22.80	190.55		
Band 2	1850~1910	REL99	24.10	257.04	23.72	235.50
	1850~1910	HSDPA	22.90	194.98	22.63	183.23
	1850~1910	HSUPA	23.00	199.53		
BC0	824~849	1xRTT	23.70	234.42	19.97	99.31
	824~849	EVDO REL. 0	23.50	223.87	19.93	98.40
	824~849	EVDO REV. A	23.40	218.78		
BC1	1850~1910	1xRTT	22.90	194.98	23.17	207.49
	1850~1910	EVDO REL. 0	22.80	190.55	22.90	194.98
	1850~1910	EVDO REV. A	22.70	186.21		

5.3. MAXIMUM OUTPUT POWER (LTE)**LTE Band 2**

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	20MHz	QPSK	23.40	218.78	23.78	238.78
			16QAM	22.80	190.55	22.98	198.61
		15MHz	QPSK	23.50	223.87	23.71	234.96
			16QAM	23.00	199.53	22.91	195.43
		10MHz	QPSK	23.20	208.93	23.73	236.05
			16QAM	22.50	177.83	22.94	196.79
		5MHz	QPSK	23.00	199.53	23.72	235.50
			16QAM	22.70	186.21	22.89	194.54
		3MHz	QPSK	23.00	199.53	23.70	234.42
			16QAM	22.50	177.83	23.11	204.64
		1.4MHz	QPSK	23.30	213.80	23.66	232.27
			16QAM	22.70	186.21	22.91	195.43

LTE Band 4

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	20MHz	QPSK	23.02	200.45	23.40	218.78
			16QAM	22.57	180.72	22.50	177.83
		15MHz	QPSK	23.09	203.70	22.67	184.93
			16QAM	22.55	179.89	21.69	147.57
		10MHz	QPSK	22.94	196.79	22.31	170.22
			16QAM	22.38	172.98	21.42	138.68
		5MHz	QPSK	22.99	199.07	22.25	167.88
			16QAM	22.76	188.80	21.30	134.90
		3MHz	QPSK	23.06	202.30	22.37	172.58
			16QAM	22.31	170.22	21.17	130.92
		1.4MHz	QPSK	22.95	197.24	22.31	170.22
			16QAM	22.22	166.72	21.19	131.52

LTE Band 5

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	10MHz	QPSK	23.58	228.03	19.69	93.11
			16QAM	22.73	187.50	17.89	61.53
		5MHz	QPSK	23.52	224.91	20.00	100.00
			16QAM	22.64	183.65	19.11	81.47
		3MHz	QPSK	23.94	247.74	19.66	92.47
			16QAM	22.97	198.15	18.89	77.45
		1.4MHz	QPSK	23.63	230.67	19.79	95.28
			16QAM	23.00	199.53	18.91	77.80

LTE Band 7

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE7	2500~2570	20MHz	QPSK	22.95	197.24	19.44	87.90
			16QAM	22.55	179.89	18.60	72.44
		15MHz	QPSK	23.05	201.84	19.34	85.90
			16QAM	22.57	180.72	18.20	66.07
		10MHz	QPSK	22.95	197.24	19.45	88.10
			16QAM	22.03	159.59	18.49	70.63
		5MHz	QPSK	22.95	197.24	19.49	88.92
			16QAM	21.98	157.76	18.39	69.02

LTE Band 13

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE13	777~787	10MHz	QPSK	23.10	204.17	19.48	88.72
			16QAM	22.50	177.83	18.40	69.18
		5MHz	QPSK	23.40	218.78	20.02	100.46
			16QAM	22.20	165.96	18.80	75.86

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)
LTE13, 777~787MHz	-6.1
GSM850, 824~849MHz	-4.1
Band 5, 824~849MHz	-4.1
BC0, 824~849MHz	-4.1
LTE5, 824~849MHz	-4.1
LTE7, 2500~2570MHz	-2.2
GSM1900, 1850~1910MHz	-1.1
Band 2, 1850~1910MHz	-1.1
BC1, 1850~1910MHz	-1.1
LTE2, 1850~1910MHz	-1.1
LTE4, 1710~1755MHz	0.7

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	SONY	EP880	3514W 01 S08328	N/A
Earphone	SONY	MH410C	N/A	N/A

I/O CABLES (CONDUCTED SETUP)

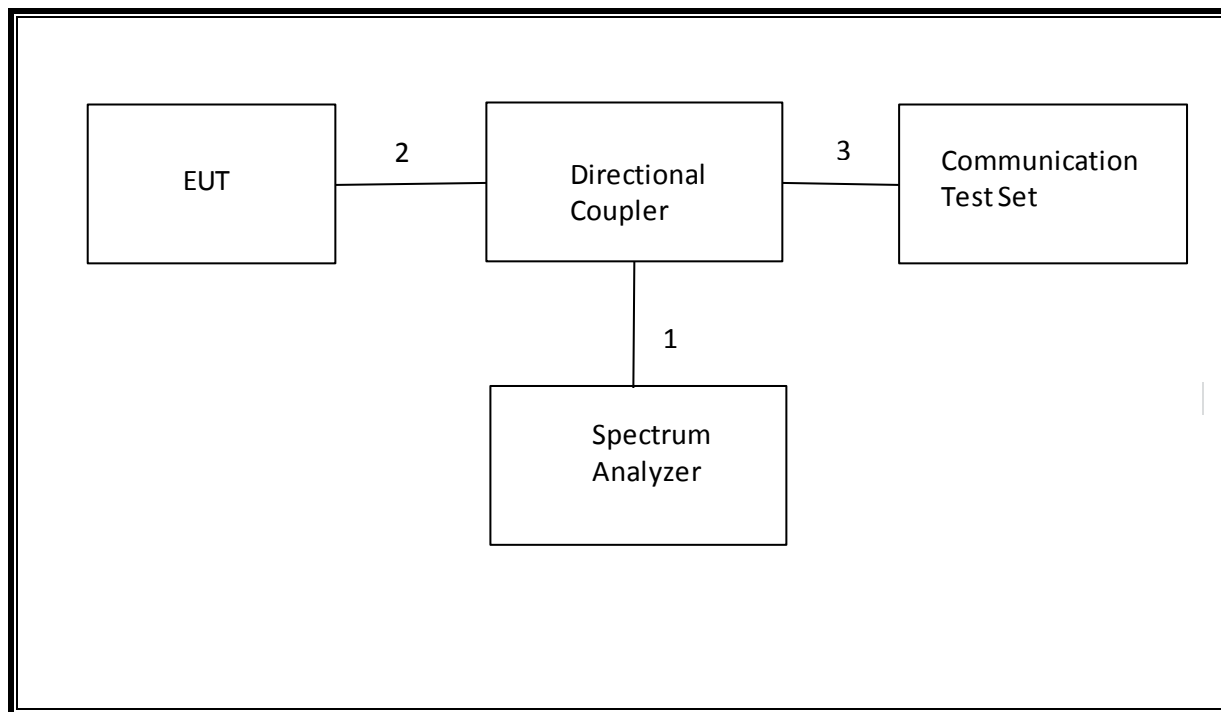
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

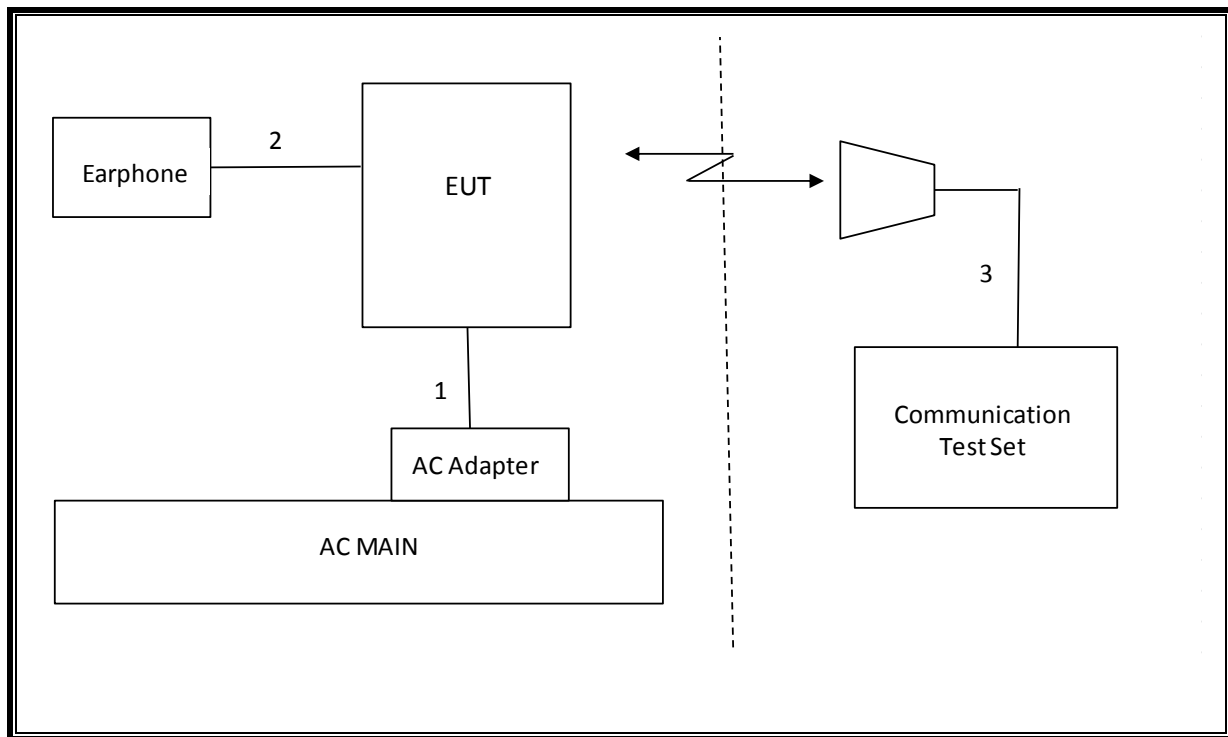
I/O CABLES (RADIATED SETUP)

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

TEST SETUP

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

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)

SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)

6. TEST AND MEASUREMENT EQUIPMENT

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

7. Summary Table

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Note
2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	17.96 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	-17.66 dBm
27.53(m)	RSS-199(4.5)		-25dBm		Pass	-33.2 dBm
2.1046	N/A	Conducted output power	N/A		Pass	32.1 dBm
27.53(m) 90.691	RSS-199(4.5)	Emission Mask			Pass	22.8 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	0.01 PPM
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass	28.87 dBm
27.50(c)(10)	N/A		34.77 dBm		Pass	20 dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	28.15 dBm
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass	23.4 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	-37.8 dBm
27.53(m)	RSS-199(4.5)		-25dBm		Pass	-46.7 dBm

8. RF POWER OUTPUT VERIFICATION

8.1. GSM/GPRS/EDGE

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

Press Connection control to choose the different menus

Press RESET > choose all to reset all settings

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

Network Support > GSM+GPRS or GSM+EGPRS

Main Service > Packet Data

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

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

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850/900

> 30 dBm for GPRS1800/1900

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

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

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

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

Channel Type > Off

P0> 4 dB

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

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3 (Default)

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

Bit Stream > 2E9-1PSR Bit Pattern

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

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

8.1.1. GSM OUTPUT POWER RESULT

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
GSM (Voice)	CS1	1	128	824.2	32.1
			190	836.6	32.1
			251	848.8	32.1
GPRS (GMSK)	CS1	1	128	824.2	32.1
			190	836.6	32.1
			251	848.8	32.1
		2	128	824.2	31.5
			190	836.6	31.4
			251	848.8	31.4
		3	128	824.2	29.5
			190	836.6	29.4
			251	848.8	29.4
		4	128	824.2	28.6
			190	836.6	28.4
			251	848.8	28.3
EGPRS (8PSK)	MCS5	1	128	824.2	27.0
			190	836.6	27.0
			251	848.8	26.9
		2	128	824.2	25.5
			190	836.6	25.3
			251	848.8	25.3
		3	128	824.2	23.5
			190	836.6	23.3
			251	848.8	23.2
		4	128	824.2	22.7
			190	836.6	22.5
			251	848.8	22.5

Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
CS1	1	512	1850.2	29.1
		661	1880.0	29.1
		810	1909.8	29.2
CS1	1	512	1850.2	29.1
		661	1880.0	29.1
		810	1909.8	29.2
	2	512	1850.2	28.2
		661	1880.0	28.2
		810	1909.8	27.8
	3	512	1850.2	26.5
		661	1880.0	26.5
		810	1909.8	26.5
	4	512	1850.2	25.1
		661	1880.0	25.2
		810	1909.8	25.4
MCS5	1	512	1850.2	26.0
		661	1880.0	26.0
		810	1909.8	26.0
	2	512	1850.2	24.5
		661	1880.0	24.5
		810	1909.8	24.5
	3	512	1850.2	22.5
		661	1880.0	22.5
		810	1909.8	22.6
	4	512	1850.2	21.9
		661	1880.0	21.9
		810	1909.8	21.9

8.2. UMTS REL 99

TEST PROCEDURE

The following summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	β_c	Not Applicable
	β_d	Not Applicable
	β_{ec}	Not Applicable
	β_c/β_d	8/15
	β_{hs}	Not Applicable
	β_{ed}	Not Applicable

8.2.1. UMTS REL 99 OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)
W-CDMA Band V	Rel 99 (RMC, 12.2 kbps)	4132	826.4	23.7
		4183	836.6	23.5
		4233	846.6	23.5
W-CDMA Band II	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	23.9
		9400	1880.0	24.1
		9538	1907.6	23.7

8.3. UMTS HSDPA

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

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

8.3.1. UMTS HSDPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V	Subtest 1	4132	826.4	0	22.7
		4183	836.6	0	22.5
		4233	846.6	0	22.5
	Subtest 2	4132	826.4	0	22.8
		4183	836.6	0	22.6
		4233	846.6	0	22.6
	Subtest 3	4132	826.4	0.5	22.1
		4183	836.6	0.5	22.1
		4233	846.6	0.5	22.2
	Subtest 4	4132	826.4	0.5	22.1
		4183	836.6	0.5	22.1
		4233	846.6	0.5	22.2

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band II	Subtest 1	9262	1852.4	0	22.9
		9400	1880.0	0	22.9
		9538	1907.6	0	22.9
	Subtest 2	9262	1852.4	0	22.9
		9400	1880.0	0	22.9
		9538	1907.6	0	22.9
	Subtest 3	9262	1852.4	0.5	20.2
		9400	1880.0	0.5	20.5
		9538	1907.6	0.5	20.3
	Subtest 4	9262	1852.4	0.5	21.8
		9400	1880.0	0.5	21.6
		9538	1907.6	0.5	21.7

8.4. UMTS HSUPA

TEST PROCEDURE

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

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

Note1: β_{ed} cannot be set directly, it is set by Absolute Grant Value.

8.4.1. UMTS HSUPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V	Subtest 1	4132	826.4	0	22.8
		4183	836.6	0	22.6
		4233	846.6	0	22.6
	Subtest 2	4132	826.4	2	21.1
		4183	836.6	2	21.0
		4233	846.6	2	21.0
	Subtest 3	4132	826.4	1	21.3
		4183	836.6	1	21.5
		4233	846.6	1	21.5
	Subtest 4	4132	826.4	2	21.5
		4183	836.6	2	21.7
		4233	846.6	2	21.4
	Subtest 5	4132	826.4	0	22.8
		4183	836.6	0	22.6
		4233	846.6	0	22.6

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band II	Subtest 1	9262	1852.4	0	22.9
		9400	1880.0	0	22.9
		9538	1907.6	0	23.0
	Subtest 2	9262	1852.4	2	21.4
		9400	1880.0	2	21.1
		9538	1907.6	2	21.1
	Subtest 3	9262	1852.4	1	21.5
		9400	1880.0	1	21.5
		9538	1907.6	1	22.5
	Subtest 4	9262	1852.4	2	21.8
		9400	1880.0	2	21.6
		9538	1907.6	2	21.8
	Subtest 5	9262	1852.4	0	22.9
		9400	1880.0	0	22.9
		9538	1907.6	0	23.0

8.5. CDMA2000

8.5.1. 1xRTT

TEST PROCEDURE

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

<u>Application</u>	<u>Rev, License</u>
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)

CDMA2000 OUTPUT POWER RESULT

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	23.6
		384	836.52	23.7
		777	848.31	23.6
	RC3, SO55 (Loopback)	1013	824.70	23.6
		384	836.52	23.6
		777	848.31	23.6
	RC3, SO32 (+F-SCH)	1013	824.70	23.6
		384	836.52	23.6
		777	848.31	23.6

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC1	RC1, SO55 (Loopback)	25	1851.25	22.8
		600	1880.00	22.6
		1175	1908.75	22.9
	RC3, SO55 (Loopback)	25	1851.25	22.8
		600	1880.00	22.6
		1175	1908.75	22.9
	RC3, SO32 (+F-SCH)	25	1851.25	22.8
		600	1880.00	22.6
		1175	1908.75	22.9

8.5.2. 1xEV-DO Release 0

TEST PROCEDURE

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

<u>Application</u>	<u>Rev, License</u>
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 Params:
 - 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 Params:
 - 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)

1XEVD0 REL 0 OUTPUT POWER RESULT

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2 kbps (2 slot, QPSK)	1013	824.70	23.5
		384	836.52	23.5
		777	848.31	23.5

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	25	1851.25	22.7
		600	1880.00	22.5
		1175	1908.75	22.8

8.5.3. 1xEV-DO Rev. A

TEST PROCEDURE

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

<u>Application</u>	<u>Rev, License</u>
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)

1xEVDO REV A OUTPUT RESULT

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2k, QPSK/ ACK channel is transmitted at all the slots	1013	824.70	23.3
		384	836.52	23.4
		777	848.31	23.4

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2k, QPSK/ ACK channel is transmitted at all the slots	25	1851.25	22.5
		600	1880.00	22.4
		1175	1908.75	22.7

8.6. LTE OUTPUT VERIFICATION**8.6.1. LTE OUTPUT RESULT****LTE Band 2**

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18700	18900	19100
						1860 MHz	1880 MHz	1900 MHz
LTE Band 2	20	QPSK	1	0	0	23.3	23.4	23.2
			1	49	0	22.8	23.0	22.8
			1	99	0	23.2	23.3	22.4
			50	0	1	22.4	22.5	22.2
			50	24	1	22.1	22.3	22.0
			50	50	1	22.2	22.4	21.9
			100	0	1	22.4	22.5	22.0
		16QAM	1	0	1	22.8	22.8	22.6
			1	49	1	22.5	22.6	22.2
			1	99	1	22.8	22.7	21.8
			50	0	2	21.5	21.7	21.3
			50	24	2	21.2	21.3	21.1
			50	50	2	21.2	21.4	21.0
			100	0	2	21.4	21.5	21.1
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18675	18900	19125
						1857.5 MHz	1880 MHz	1902.5 MHz
LTE Band 2	15	QPSK	1	0	0	23.3	23.5	23.5
			1	37	0	22.9	23.1	23.1
			1	74	0	23.2	23.4	23.4
			36	0	1	22.4	22.5	22.5
			36	20	1	22.3	22.3	22.3
			36	39	1	22.2	22.3	22.3
			75	0	1	22.2	22.4	22.4
		16QAM	1	0	1	22.3	23.0	23.0
			1	37	1	21.8	22.4	22.4
			1	74	1	22.2	22.7	22.7
			36	0	2	21.4	21.6	21.6
			36	20	2	21.2	21.4	21.4
			36	39	2	21.2	21.3	21.3
			75	0	2	21.3	21.4	21.4

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18650	18900	19150
						1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	23.0	23.2	23.0
			1	25	0	22.6	23.2	22.9
			1	49	0	22.7	22.9	22.4
			25	0	1	21.9	22.1	22.1
			25	12	1	21.7	22.0	22.1
			25	25	1	21.7	22.0	21.9
			50	0	1	21.9	22.1	22.0
		16QAM	1	0	1	22.1	22.5	22.0
			1	25	1	22.0	22.3	22.0
			1	49	1	21.8	22.2	21.5
			25	0	2	20.9	21.1	21.3
			25	12	2	20.7	21.0	21.2
			25	25	2	20.8	21.0	21.1
			50	0	2	20.8	21.1	21.1
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18625	18900	19175
						1852.5 MHz	1880 MHz	1907.5 MHz
LTE Band 2	5	QPSK	1	0	0	22.8	23.0	23.0
			1	12	0	23.0	22.9	22.7
			1	24	0	22.7	23.0	22.4
			12	0	1	21.8	22.0	22.0
			12	7	1	21.8	22.1	22.0
			12	13	1	21.7	22.0	21.9
			25	0	1	21.8	21.9	21.9
		16QAM	1	0	1	21.8	22.2	22.7
			1	12	1	21.7	22.2	22.5
			1	24	1	21.8	22.2	22.2
			12	0	2	20.8	21.1	21.1
			12	7	2	20.8	21.1	21.1
			12	13	2	20.7	21.0	21.0
			25	0	2	20.9	21.0	21.0

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18615	18900	19185
						1851.5 MHz	1880 MHz	1908.5 MHz
LTE Band 2	3	QPSK	1	0	0	22.7	22.9	22.8
			1	8	0	23.1	23.0	22.7
			1	14	0	22.7	22.9	22.4
			8	0	1	21.8	22.0	21.9
			8	4	1	21.8	22.0	21.8
			8	7	1	21.8	22.0	21.8
			15	0	1	21.7	22.0	21.8
		16QAM	1	0	1	21.7	22.5	21.9
			1	8	1	21.6	22.3	21.8
			1	14	1	21.7	22.4	21.6
			8	0	2	20.9	20.9	21.2
			8	4	2	20.8	20.9	21.2
			8	7	2	20.9	20.9	21.1
			15	0	2	20.8	21.0	20.9
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18607	18900	19193
						1850.7 MHz	1880 MHz	1909.3 MHz
LTE Band 2	1.4	QPSK	1	0	0	22.7	23.3	22.5
			1	3	0	22.7	22.7	22.3
			1	5	0	22.7	22.7	22.4
			3	0	0	22.6	22.7	22.5
			3	1	0	22.6	22.7	22.5
			3	3	0	22.6	22.7	22.4
			6	0	1	21.7	21.9	21.6
		16QAM	1	0	1	21.7	22.7	21.6
			1	3	1	21.8	22.5	21.6
			1	5	1	21.8	22.8	21.5
			3	0	1	21.7	22.7	21.7
			3	1	1	21.7	22.8	21.8
			3	3	1	21.6	22.8	21.8
			6	0	2	20.8	21.7	20.9

LTE Band 4

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20050	20175	20300
						1720 MHz	1732.5 MHz	1745 MHz
LTE Band 4	20	QPSK	1	0	0	23.02	22.99	22.56
			1	49	0	22.60	22.57	22.51
			1	99	0	22.47	22.46	22.88
			50	0	1	21.99	21.99	21.60
			50	24	1	21.79	21.79	21.68
			50	50	1	21.62	21.62	21.81
			100	0	1	21.76	21.76	21.69
		16QAM	1	0	1	22.56	22.57	21.98
			1	49	1	22.19	22.19	21.93
			1	99	1	22.08	22.08	22.33
			50	0	2	21.15	21.15	20.76
			50	24	2	20.96	20.97	20.84
			50	50	2	20.79	20.79	20.98
			100	0	2	20.96	20.97	20.85
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20025	20175	20325
						1717.5 MHz	1732.5 MHz	1747.5 MHz
LTE Band 4	15	QPSK	1	0	0	22.30	23.09	22.69
			1	37	0	22.77	22.63	22.72
			1	74	0	23.06	22.55	22.96
			36	0	1	21.54	22.01	21.68
			36	20	1	21.85	21.86	21.85
			36	39	1	22.04	21.73	21.95
			75	0	1	21.78	21.83	21.77
		16QAM	1	0	1	21.27	22.55	22.01
			1	37	1	21.75	22.10	22.05
			1	74	1	22.05	22.02	22.34
			36	0	2	20.68	21.23	20.82
			36	20	2	20.99	21.09	20.99
			36	39	2	21.19	20.95	21.08
			75	0	2	20.92	21.02	20.91

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20000	20175	20350
						1715 MHz	1732.5 MHz	1750 MHz
LTE Band 4	10	QPSK	1	0	0	22.17	22.94	22.70
			1	25	0	22.56	22.71	22.89
			1	49	0	22.93	22.53	22.91
			25	0	1	21.47	22.01	21.84
			25	12	1	21.71	21.93	22.01
			25	25	1	21.87	21.79	22.03
			50	0	1	21.66	21.88	21.93
		16QAM	1	0	1	21.15	22.38	21.75
			1	25	1	21.53	22.18	21.96
			1	49	1	21.91	21.97	22.00
			25	0	2	20.61	21.15	21.05
			25	12	2	20.85	21.09	21.23
			25	25	2	21.01	20.94	21.26
			50	0	2	20.76	21.03	21.10
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19975	20175	20375
						1712.5 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	22.19	22.94	22.98
			1	12	0	22.35	22.78	22.99
			1	24	0	22.58	22.71	23.00
			12	0	1	21.35	21.95	22.06
			12	7	1	21.44	21.92	22.13
			12	13	1	21.52	21.83	22.09
			25	0	1	21.43	21.88	22.07
		16QAM	1	0	1	21.23	22.18	22.71
			1	12	1	21.39	22.05	22.76
			1	24	1	21.64	21.96	22.77
			12	0	2	20.47	21.18	21.19
			12	7	2	20.58	21.16	21.28
			12	13	2	20.67	21.07	21.26
			25	0	2	20.64	21.05	21.13

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19965	20175	20385
						1711.5 MHz	1732.5 MHz	1753.5 MHz
LTE Band 4	3	QPSK	1	0	0	22.22	22.86	23.02
			1	8	0	22.34	22.79	23.06
			1	14	0	22.40	22.66	23.00
			8	0	1	21.26	21.93	22.05
			8	4	1	21.31	21.90	22.02
			8	7	1	21.34	21.89	22.05
			15	0	1	21.34	21.90	22.08
		16QAM	1	0	1	21.14	22.31	22.10
			1	8	1	21.31	22.26	22.16
			1	14	1	21.35	22.14	22.12
			8	0	2	20.47	21.00	21.37
			8	4	2	20.52	20.98	21.35
			8	7	2	20.56	20.97	21.38
			15	0	2	20.48	21.11	21.19
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19957	20175	20393
						1710.7 MHz	1732.5 MHz	1754.3 MHz
LTE Band 4	1.4	QPSK	1	0	0	22.11	22.75	22.95
			1	3	0	22.19	22.77	22.62
			1	5	0	22.20	22.68	22.93
			3	0	0	22.10	22.71	22.91
			3	1	0	22.18	22.75	22.94
			3	3	0	22.19	22.74	22.93
			6	0	1	21.19	21.83	21.94
		16QAM	1	0	1	21.28	22.21	22.01
			1	3	1	21.36	22.22	22.05
			1	5	1	21.37	22.14	22.04
			3	0	1	21.27	22.03	22.17
			3	1	1	21.32	22.07	22.22
			3	3	1	21.34	22.05	22.21
			6	0	2	20.45	20.88	21.27

LTE Band 5

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20450	20525	20600
						829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0	23.37	23.35	23.44
			1	25	0	23.29	23.58	23.42
			1	49	0	23.34	23.23	23.34
			25	0	1	22.19	22.24	22.21
			25	12	1	22.16	22.11	22.23
			25	25	1	22.20	22.09	22.20
			50	0	1	22.20	22.19	22.21
		16QAM	1	0	1	22.43	22.73	22.62
			1	25	1	22.30	22.54	22.68
			1	49	1	22.38	22.57	22.55
			25	0	2	21.28	21.32	21.29
			25	12	2	21.20	21.18	21.36
			25	25	2	21.24	21.13	21.23
			50	0	2	21.23	21.25	21.31
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20425	20525	20625
						826.5 MHz	836.5 MHz	846.5 MHz
LTE Band 5	5	QPSK	1	0	0	23.19	23.52	23.52
			1	12	0	23.45	23.33	23.35
			1	24	0	23.24	23.39	23.45
			12	0	1	22.09	22.25	22.35
			12	7	1	22.07	22.18	22.34
			12	13	1	22.09	22.19	22.32
			25	0	1	22.16	22.14	22.31
		16QAM	1	0	1	22.24	22.64	22.40
			1	12	1	22.41	22.49	22.50
			1	24	1	22.33	22.50	22.50
			12	0	2	21.16	21.39	21.29
			12	7	2	21.13	21.28	21.34
			12	13	2	21.13	21.27	21.33
			25	0	2	21.24	21.17	21.29

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20415	20525	20635
						825.5 MHz	836.5 MHz	847.5 MHz
LTE Band 5	3	QPSK	1	0	0	23.16	23.40	23.52
			1	8	0	23.47	23.42	23.94
			1	14	0	23.12	23.25	23.51
			8	0	1	22.03	22.29	22.24
			8	4	1	22.05	22.16	22.26
			8	7	1	22.06	22.20	22.33
			15	0	1	22.10	22.18	22.28
		16QAM	1	0	1	22.20	22.97	22.63
			1	8	1	21.99	22.81	22.61
			1	14	1	22.15	22.84	22.56
			8	0	2	21.19	21.19	21.39
			8	4	2	21.22	21.12	21.49
			8	7	2	21.27	21.12	21.56
			15	0	2	21.12	21.22	21.25
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20407	20525	20643
						824.7 MHz	836.5 MHz	848.3 MHz
LTE Band 5	1.4	QPSK	1	0	0	23.26	23.63	23.60
			1	3	0	23.25	23.08	22.16
			1	5	0	23.21	22.98	23.47
			3	0	0	23.03	23.00	23.55
			3	1	0	23.10	23.06	23.57
			3	3	0	23.09	23.00	23.56
			6	0	1	21.96	22.07	22.50
		16QAM	1	0	1	22.34	23.00	22.65
			1	3	1	22.38	23.00	22.62
			1	5	1	22.35	23.00	22.57
			3	0	1	22.09	22.90	22.76
			3	1	1	22.11	23.00	22.78
			3	3	1	22.15	22.90	22.77
			6	0	2	21.15	21.83	21.76

LTE Band 7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20850	21100	21350
						2510 MHz	2535 MHz	2560 MHz
LTE Band 7	20	QPSK	1	0	0	22.63	22.74	22.95
			1	49	0	22.47	22.58	22.66
			1	99	0	22.22	22.36	22.42
			50	0	1	21.19	21.37	21.57
			50	24	1	21.13	21.44	21.47
			50	50	1	21.02	21.24	21.35
			100	0	1	21.13	21.29	21.48
		16QAM	1	0	1	22.15	22.55	22.26
			1	49	1	22.15	22.41	22.04
			1	99	1	22.00	22.38	21.77
			50	0	2	20.29	20.43	20.58
			50	24	2	20.15	20.51	20.50
			50	50	2	20.03	20.25	20.33
			100	0	2	20.21	20.34	20.53
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20825	21100	21375
						2507.5 MHz	2535 MHz	2562.5 MHz
LTE Band 7	15	QPSK	1	0	0	22.66	22.85	23.05
			1	37	0	22.49	22.68	22.84
			1	74	0	22.43	22.61	22.72
			36	0	1	21.20	21.36	21.52
			36	20	1	21.23	21.30	21.43
			36	39	1	21.12	21.30	21.34
			75	0	1	21.13	21.30	21.40
		16QAM	1	0	1	21.80	22.10	22.57
			1	37	1	21.46	21.96	21.91
			1	74	1	21.66	21.91	22.15
			36	0	2	20.28	20.44	20.53
			36	20	2	20.27	20.36	20.43
			36	39	2	20.11	20.35	20.38
			75	0	2	20.21	20.36	20.42

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20800	21100	21400
						2505 MHz	2535 MHz	2565 MHz
LTE Band 7	10	QPSK	1	0	0	22.63	22.62	22.94
			1	25	0	22.50	22.95	22.84
			1	49	0	22.33	22.58	22.79
			25	0	1	21.43	21.62	21.92
			25	12	1	21.50	21.65	21.95
			25	25	1	21.31	21.59	21.83
			50	0	1	21.46	21.62	21.87
		16QAM	1	0	1	21.72	21.99	22.11
			1	25	1	21.84	22.03	22.14
			1	49	1	21.41	21.94	21.97
			25	0	2	20.53	20.71	21.06
			25	12	2	20.57	20.73	21.09
			25	25	2	20.38	20.64	20.94
			50	0	2	20.50	20.68	20.94
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20775	21100	21425
						2502.5 MHz	2535 MHz	2567.5 MHz
LTE Band 7	5	QPSK	1	0	0	22.48	22.74	22.95
			1	12	0	22.86	22.66	22.94
			1	24	0	22.44	22.67	22.84
			12	0	1	21.35	21.62	21.90
			12	7	1	21.42	21.64	21.91
			12	13	1	21.36	21.61	21.86
			25	0	1	21.33	21.58	21.87
		16QAM	1	0	1	21.57	21.98	22.76
			1	12	1	21.59	22.21	22.85
			1	24	1	21.51	21.98	22.77
			12	0	2	20.42	20.71	20.91
			12	7	2	20.50	20.75	20.93
			12	13	2	20.42	20.73	20.92
			25	0	2	20.47	20.65	20.84

LTE Band 13

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)
						23230
						782 MHz
LTE Band 13	10	QPSK	1	0	0	22.9
			1	25	0	23.0
			1	49	0	23.1
			25	0	1	22.0
			25	12	1	22.1
			25	25	1	22.0
			50	0	1	22.2
		16QAM	1	0	1	21.9
			1	25	1	22.5
			1	49	1	22.2
			25	0	2	21.1
			25	12	2	21.1
			25	25	2	21.1
			50	0	2	21.1
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)
						23230
						782 MHz
LTE Band 13	5	QPSK	1	0	0	22.9
			1	12	0	23.4
			1	24	0	23.1
			12	0	1	22.0
			12	7	1	22.1
			12	13	1	22.0
			25	0	1	22.1
		16QAM	1	0	1	21.9
			1	12	1	22.2
			1	24	1	22.2
			12	0	2	21.0
			12	7	2	21.1
			12	13	2	21.0
			25	0	2	21.2

9. PEAK TO AVERAGE RATIO

Test Procedure

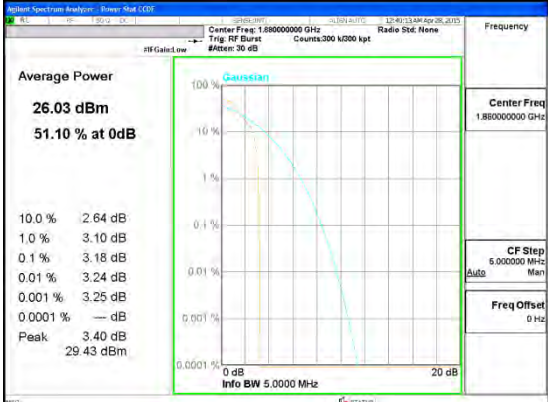
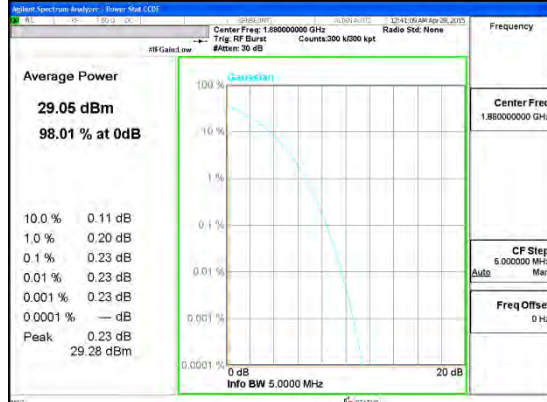
Per KDB 971168 D01 Power Meas License Digital Systems v02r02

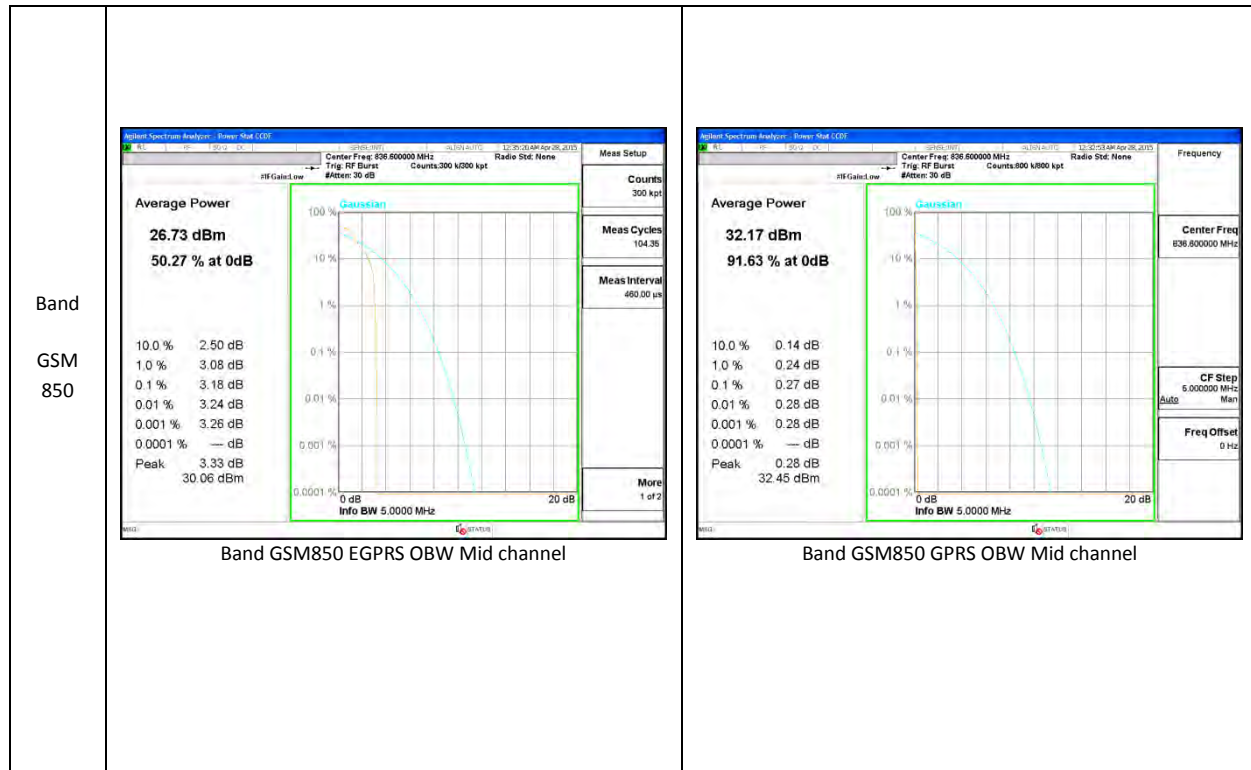
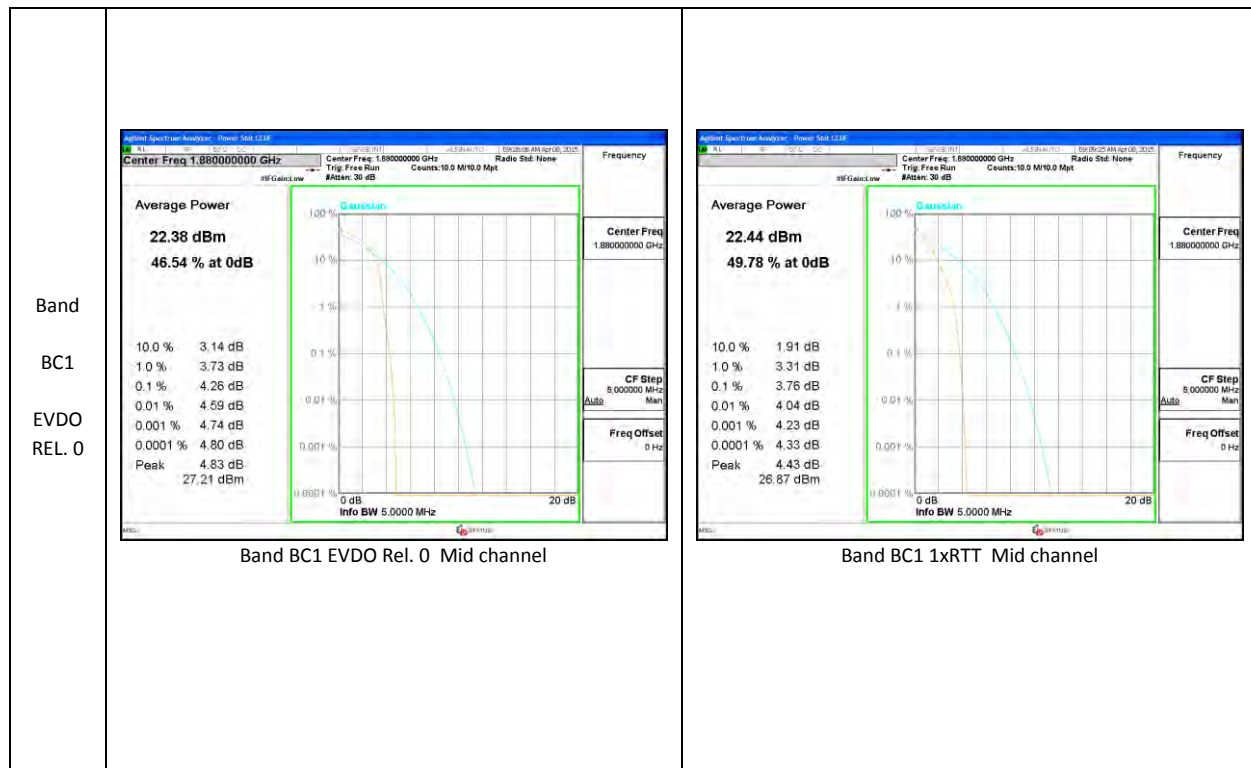
Test Spec

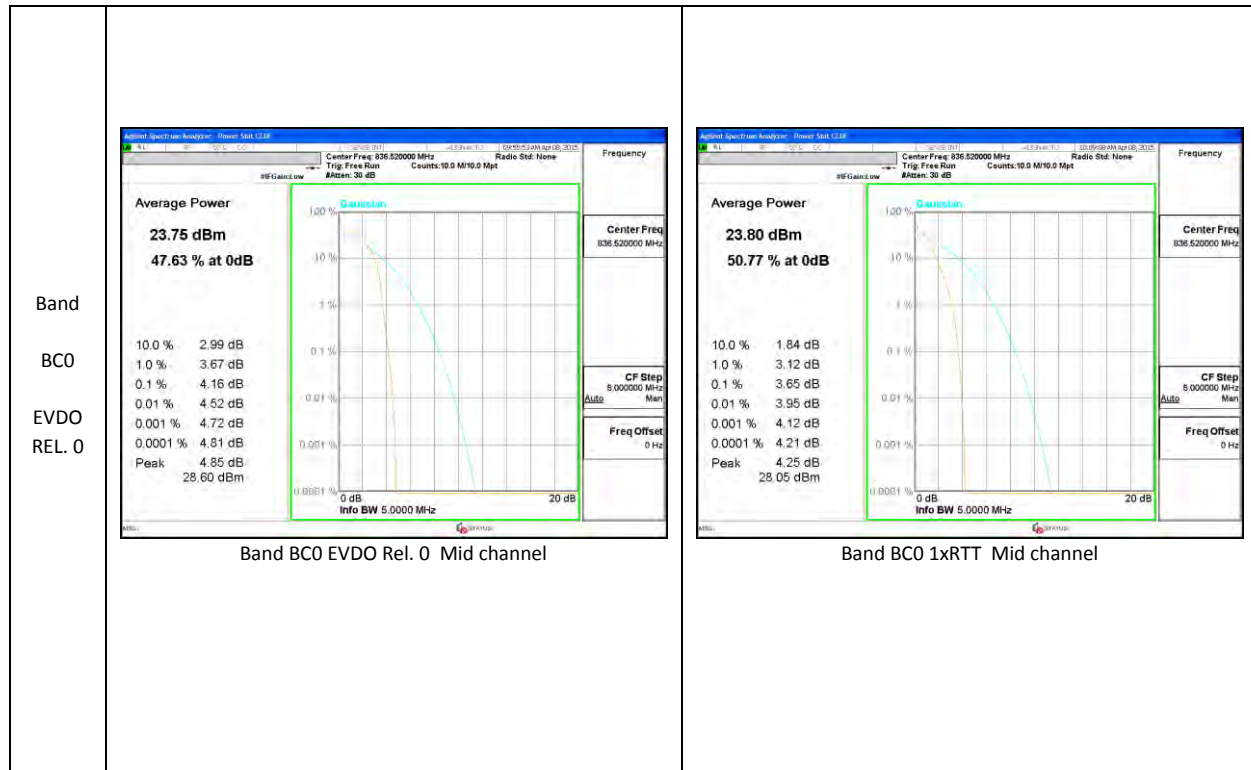
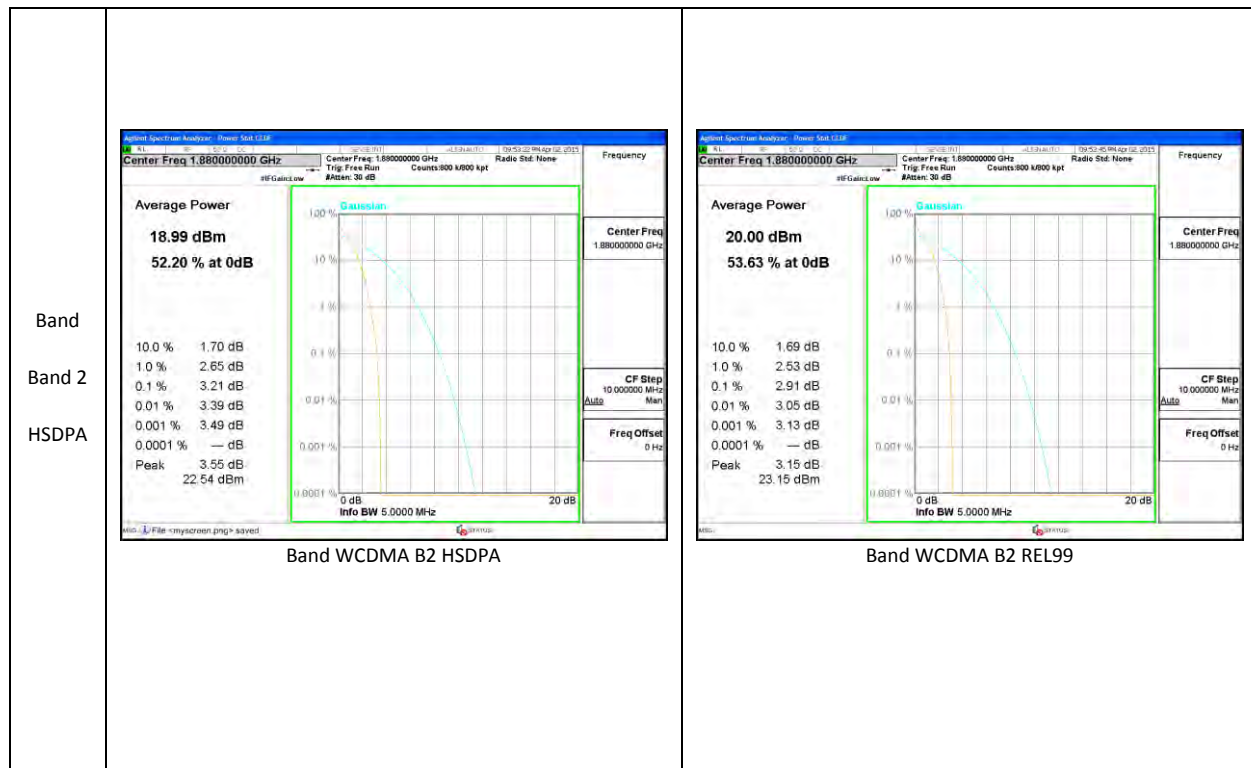
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

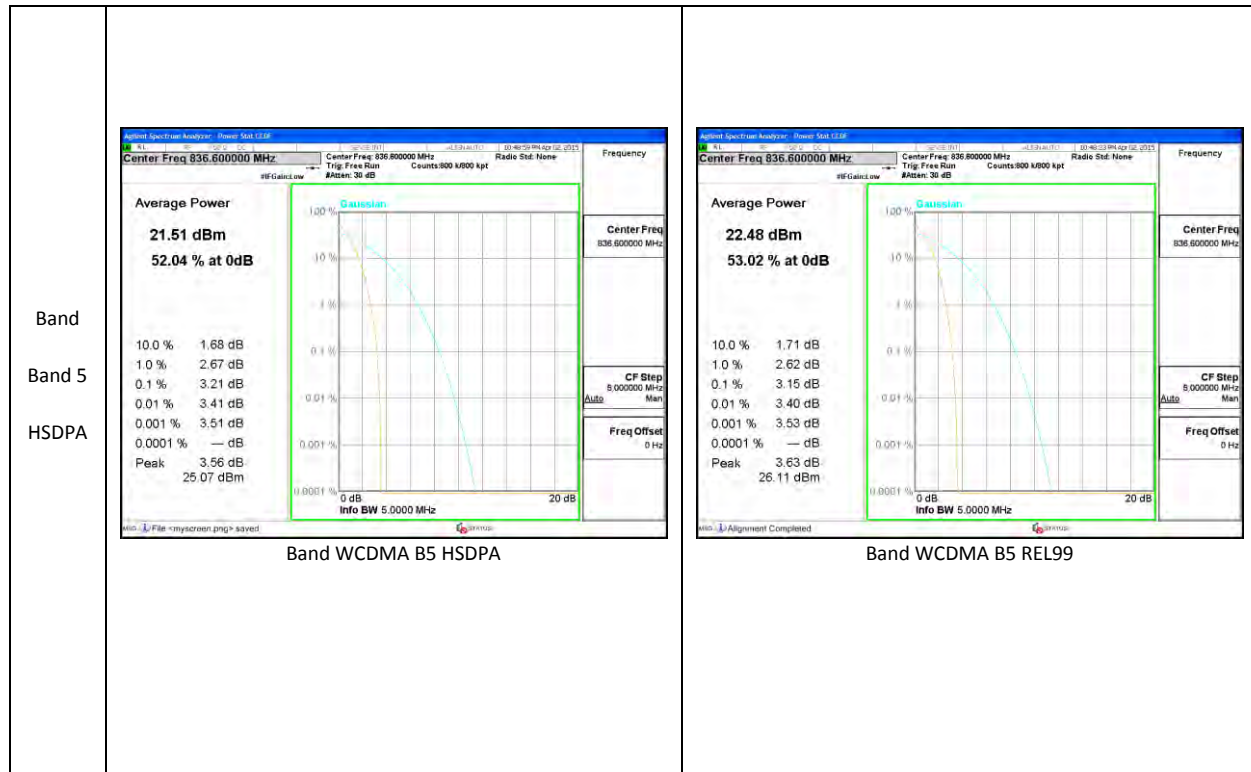
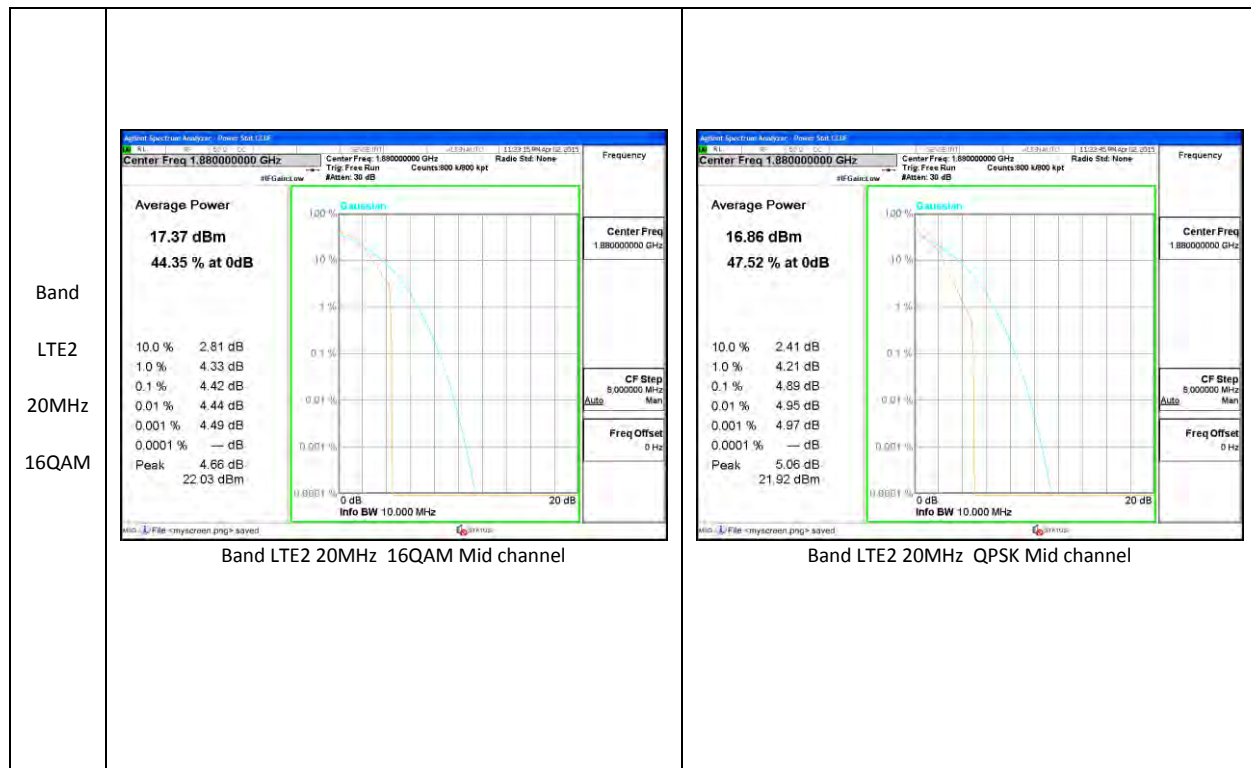
9.1. CONDUCTED PEAK TO AVERAGE RESULT

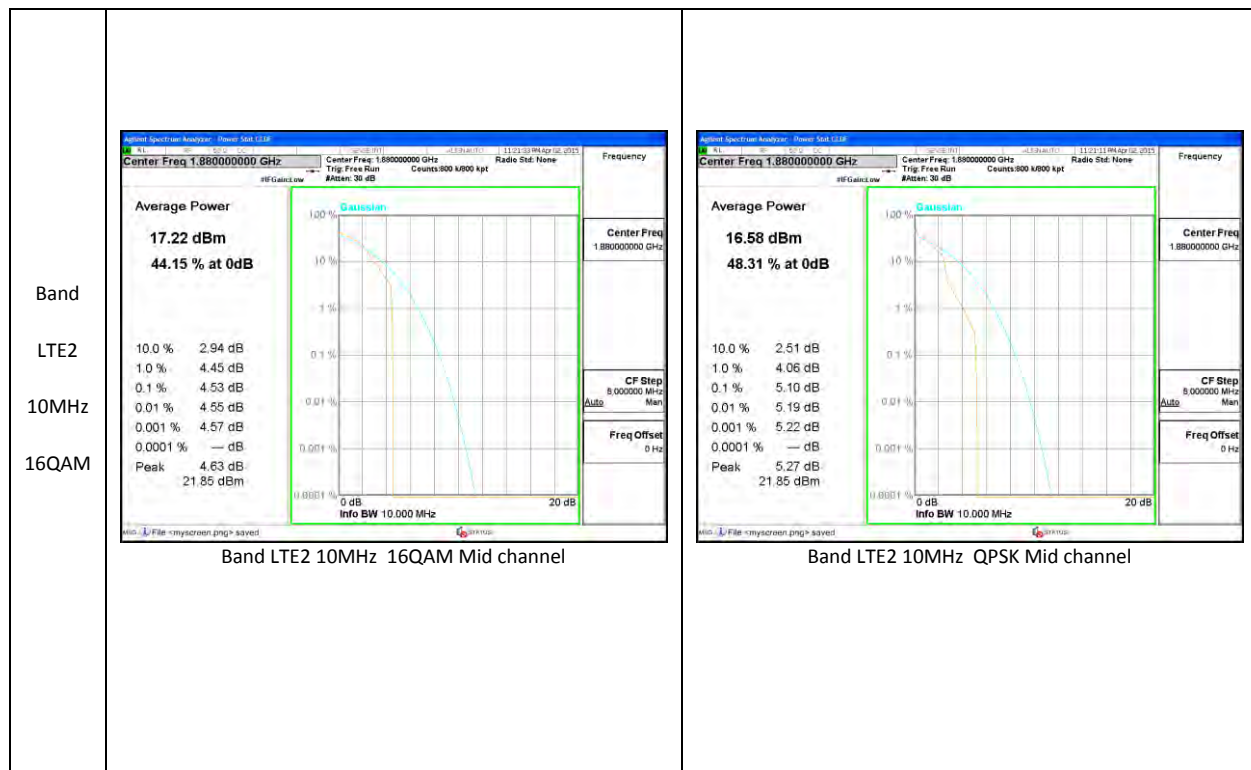
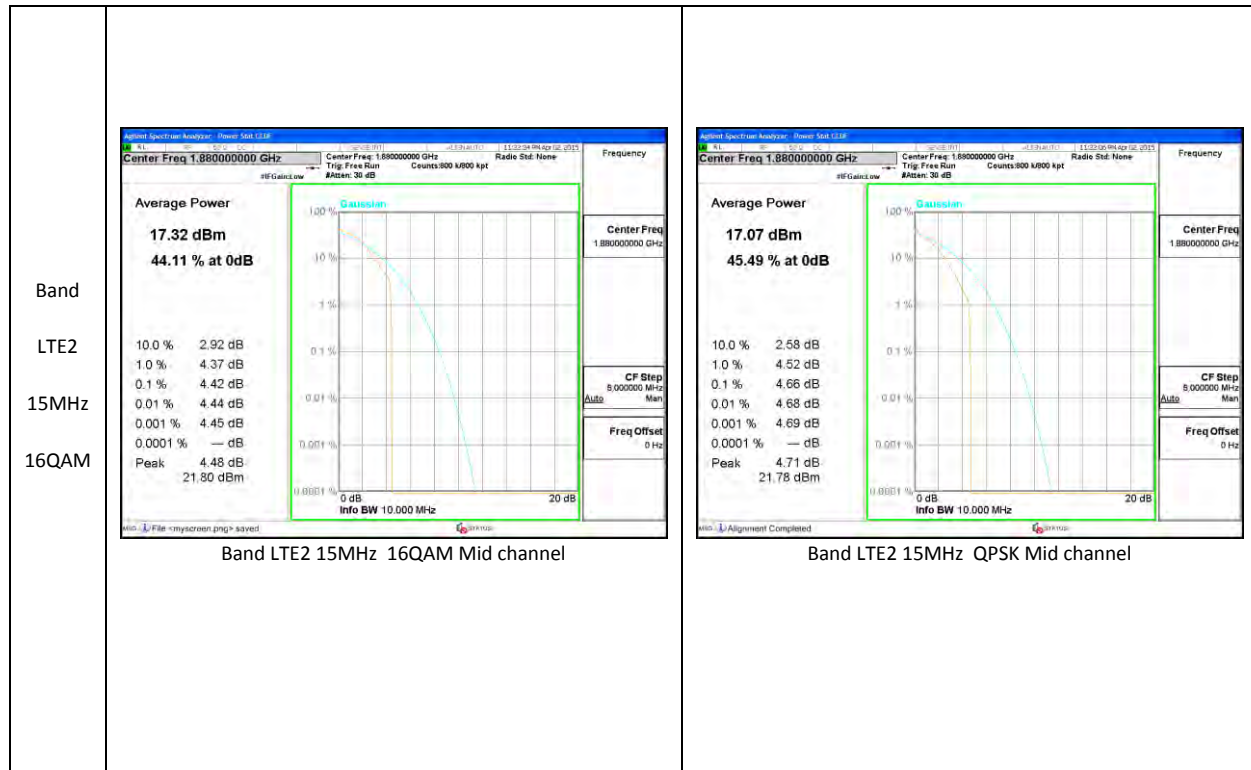
GSM

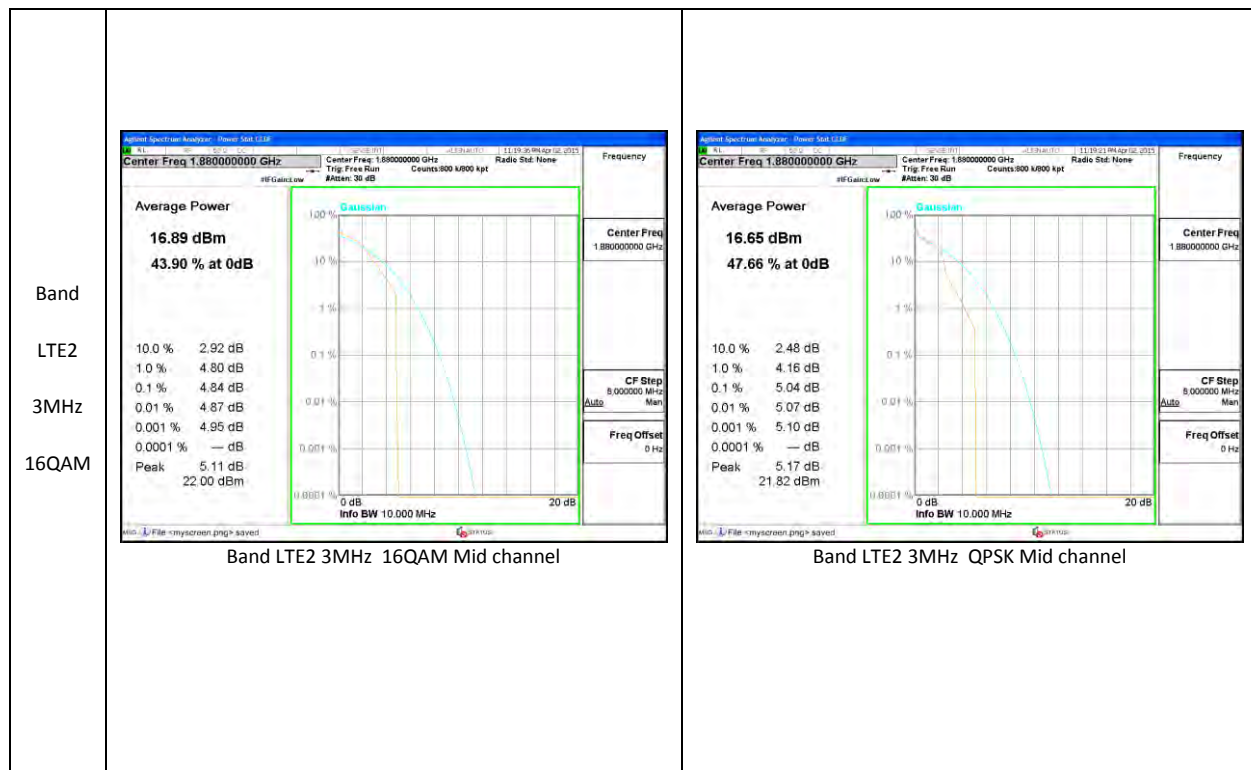
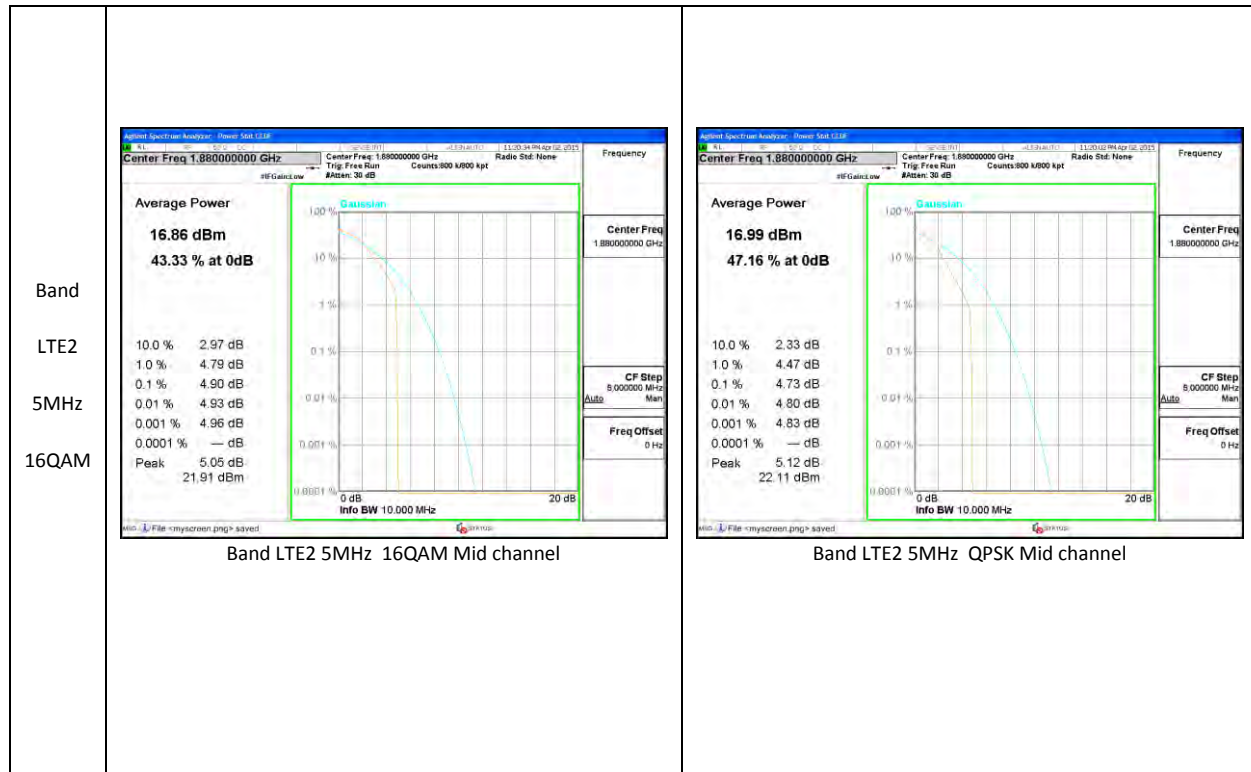
Band GSM 1900	 Average Power 26.03 dBm 51.10 % at 0dB 10.0 % 2.64 dB 1.0 % 3.10 dB 0.1 % 3.18 dB 0.01 % 3.24 dB 0.001 % 3.25 dB 0.0001 % — dB Peak 3.40 dB 29.43 dBm Center Freq 1.88000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz Band GSM1900 EGPRS OBW Mid channel	 Average Power 29.05 dBm 98.01 % at 0dB 10.0 % 0.11 dB 1.0 % 0.20 dB 0.1 % 0.23 dB 0.01 % 0.23 dB 0.001 % 0.23 dB 0.0001 % — dB Peak 0.23 dB 29.28 dBm Center Freq 1.88000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz Band GSM1900 GPRS OBW Mid channel
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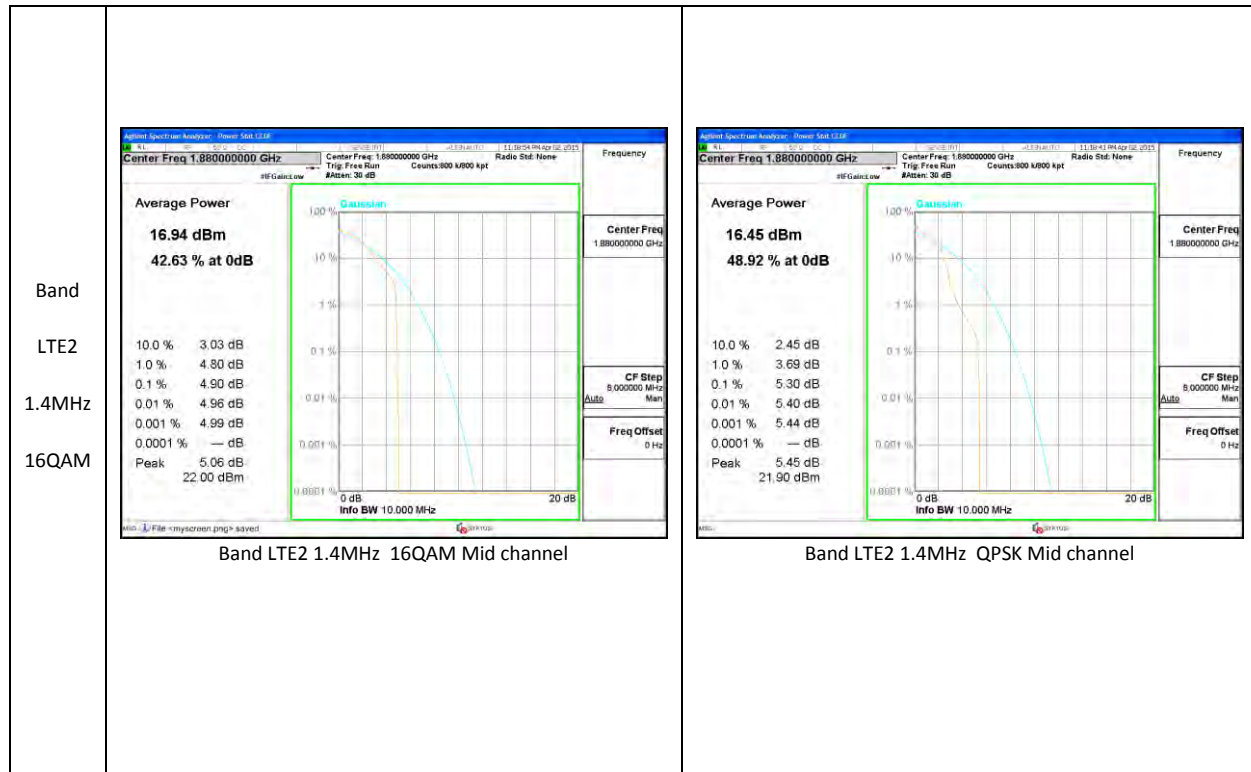
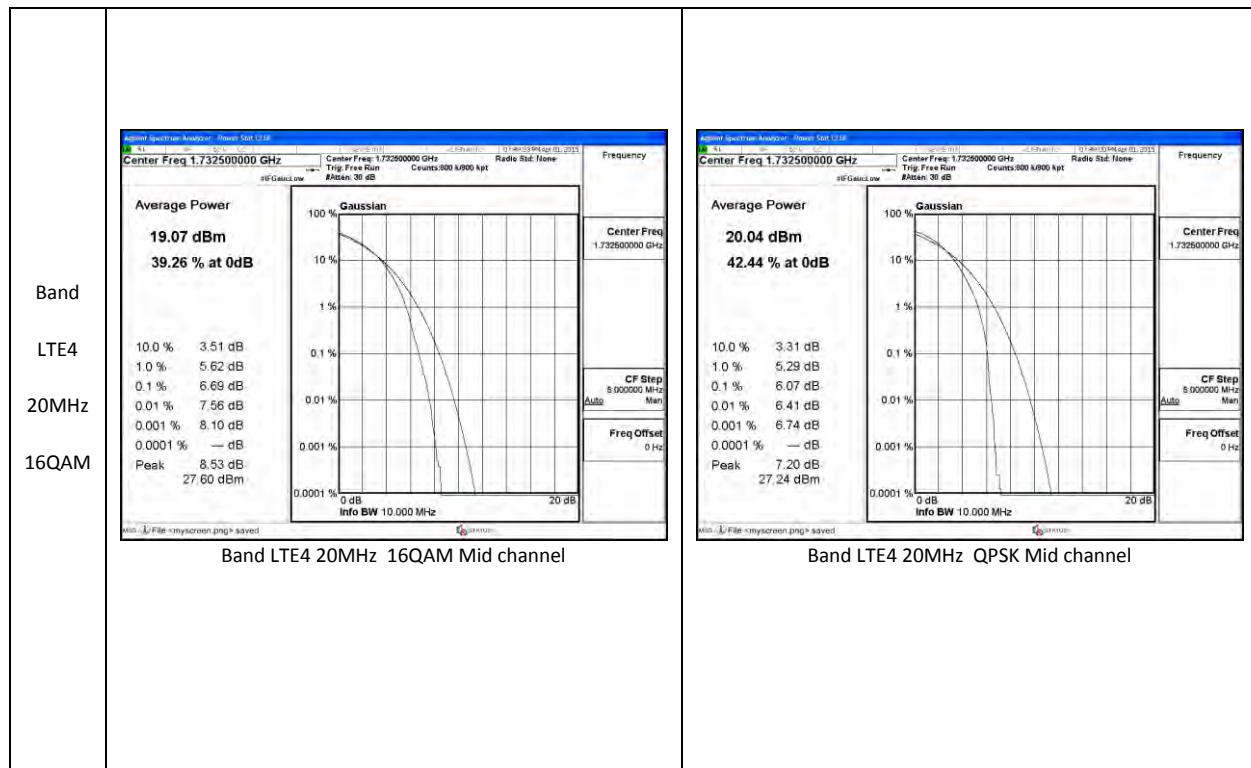
**CDMA**

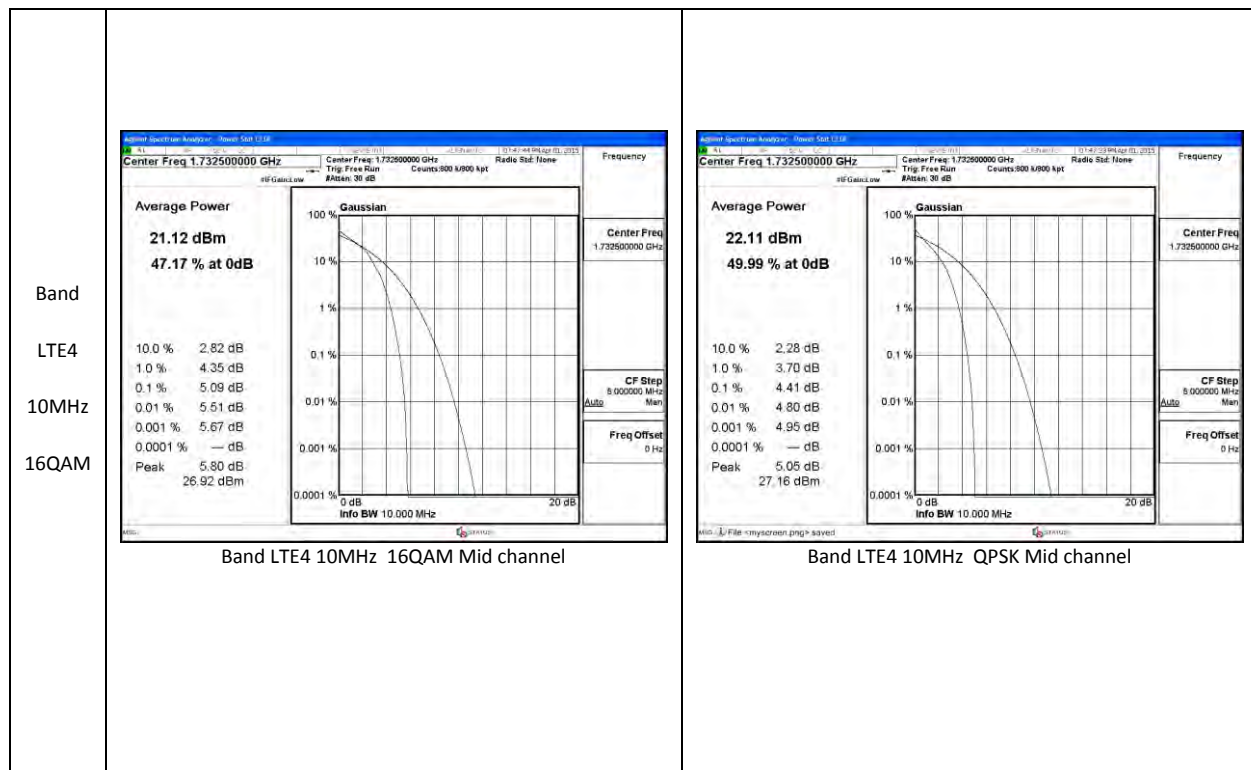
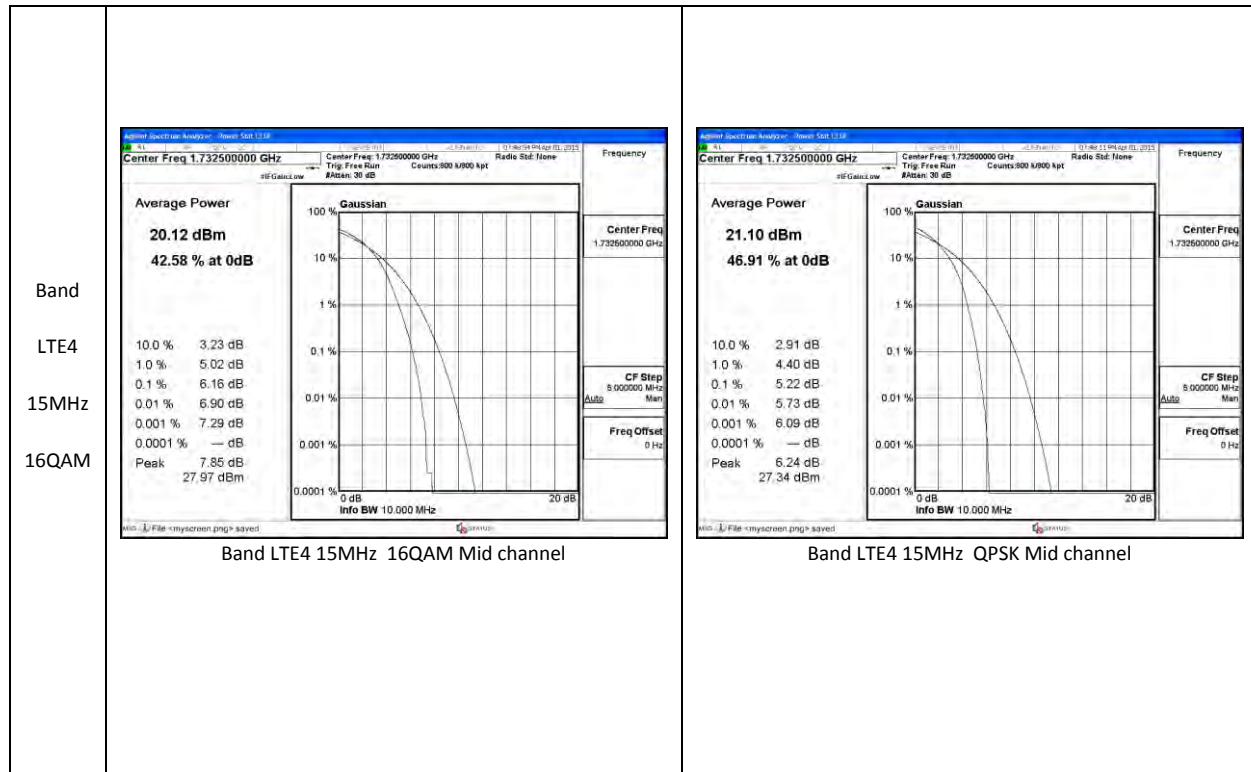
**WCDMA**

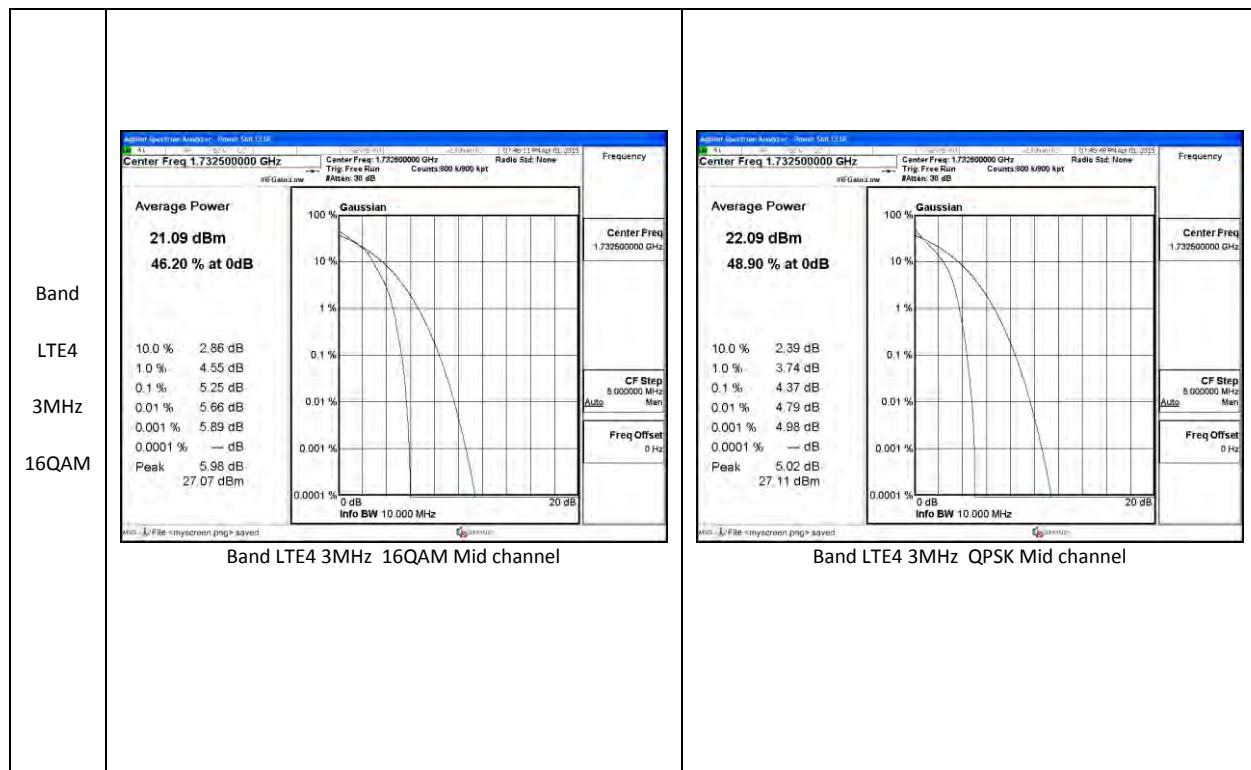
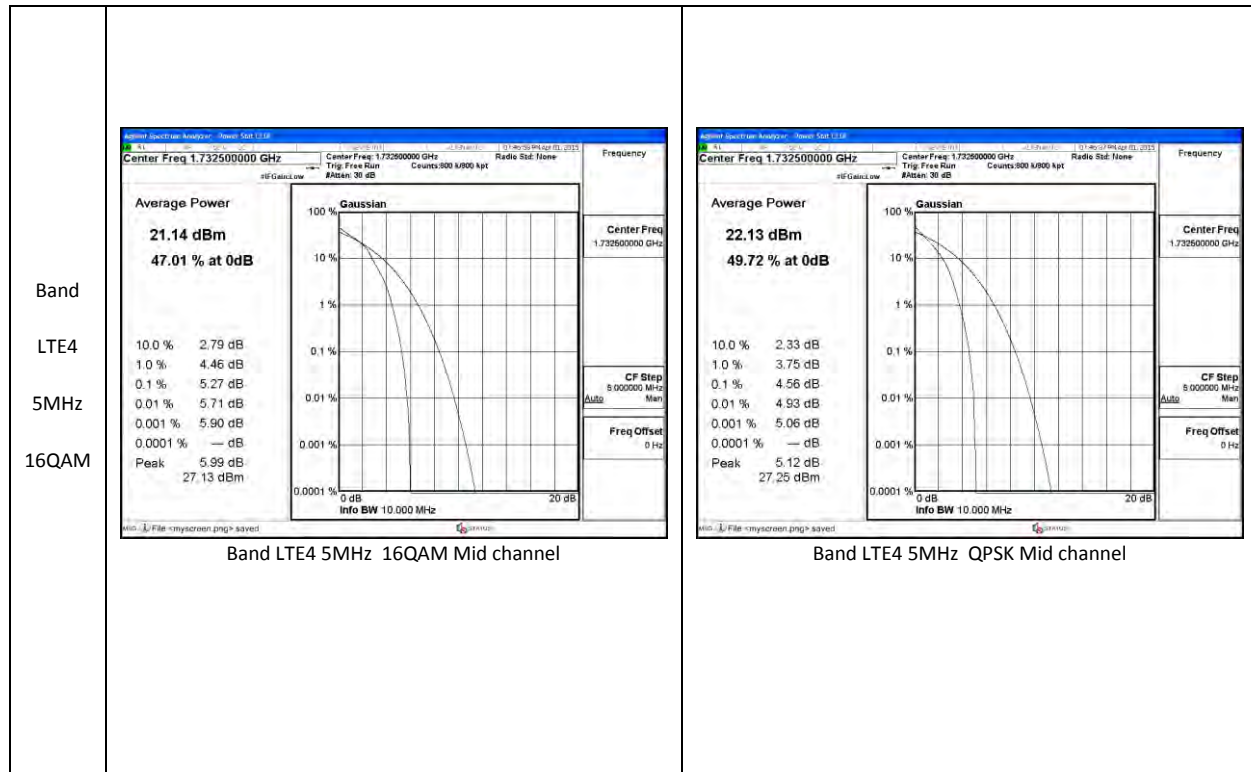
**LTE Band 2**

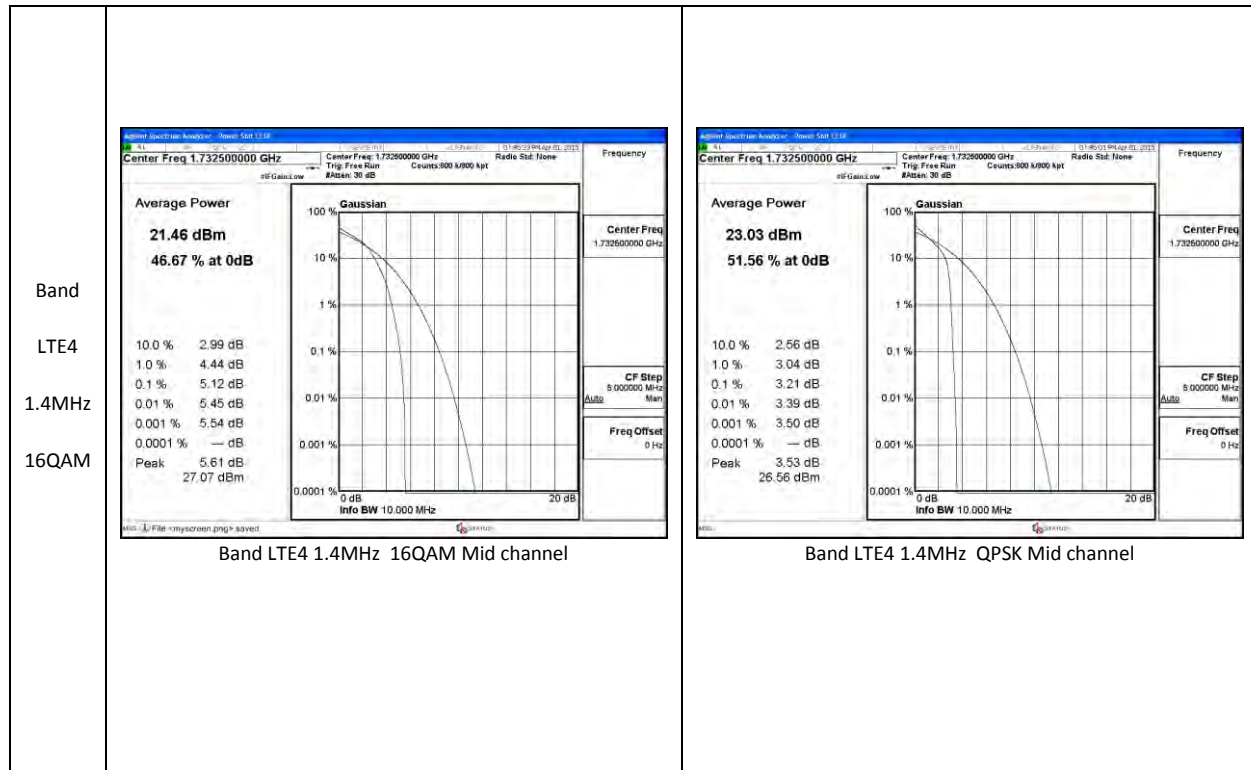
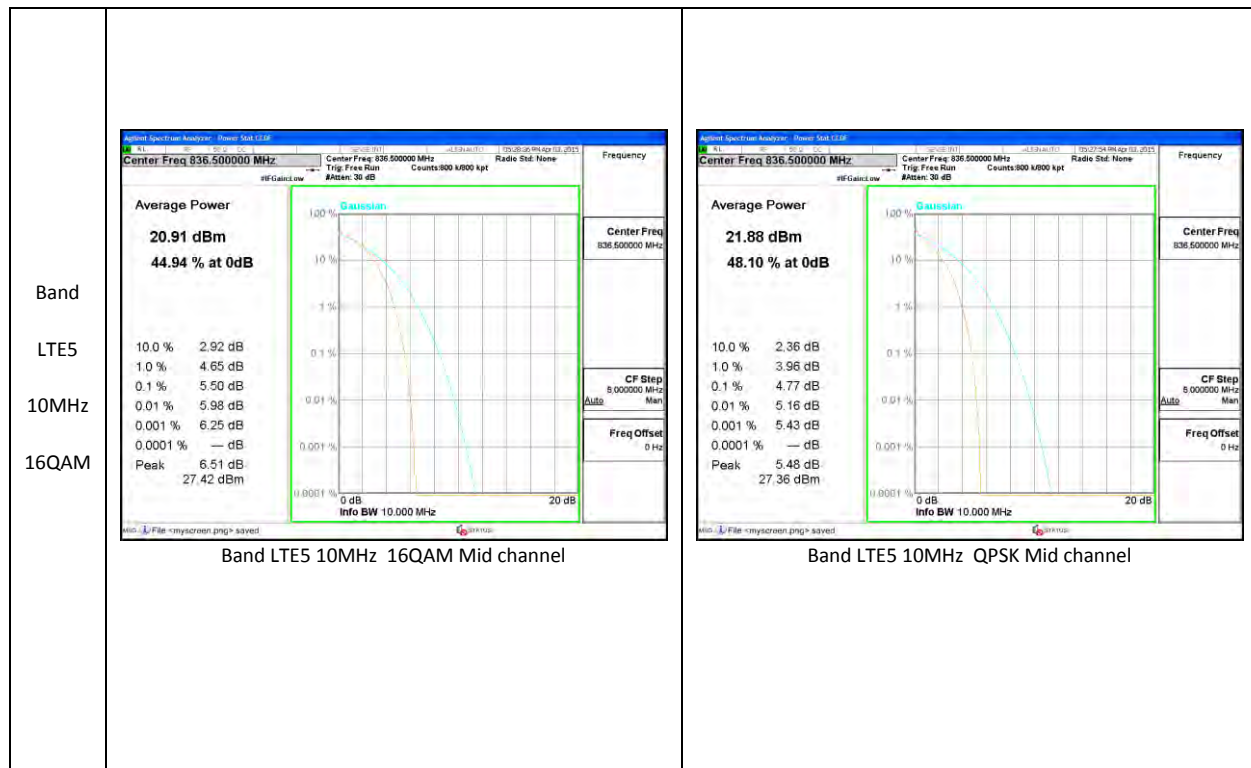


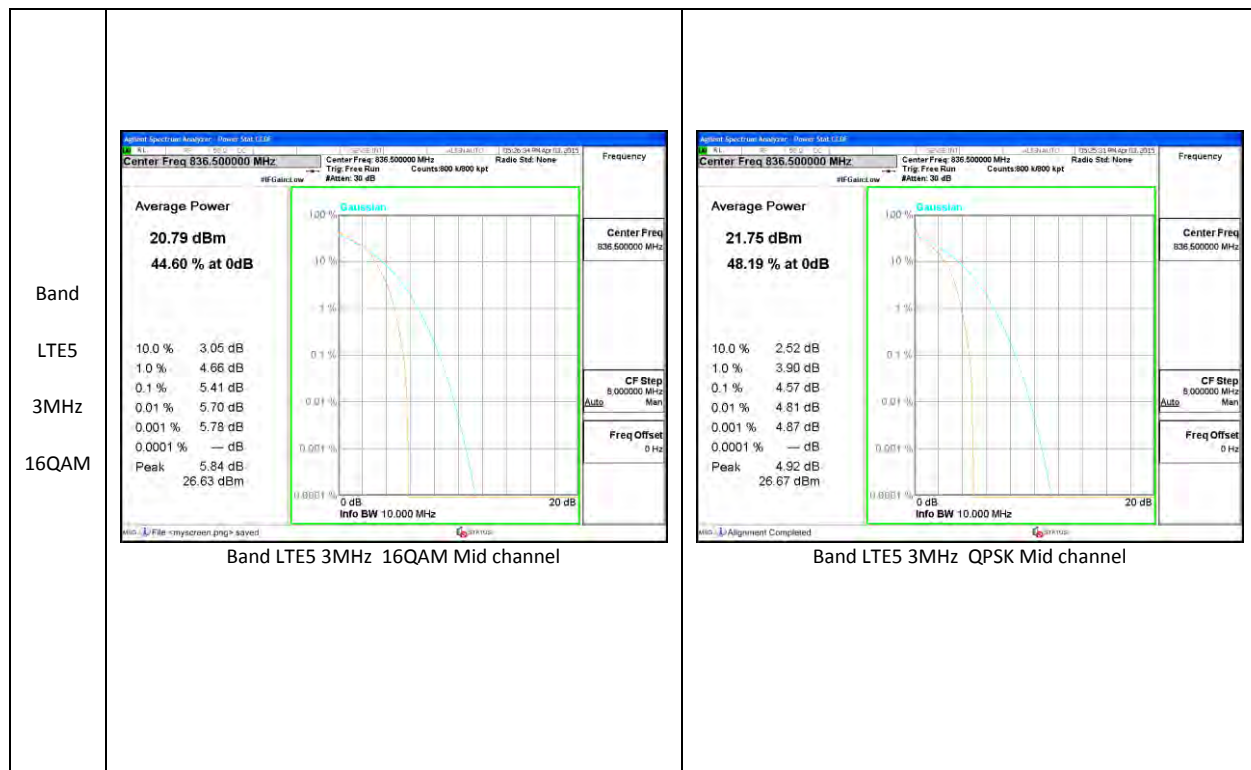
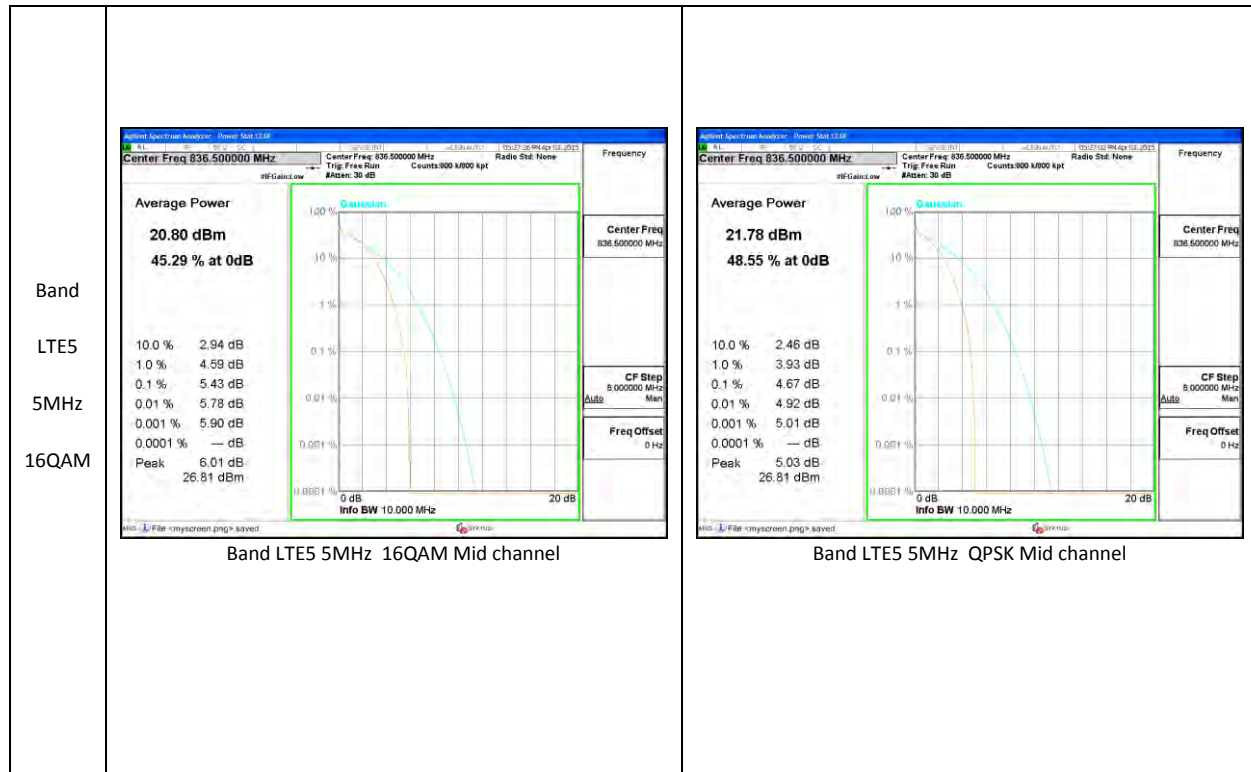


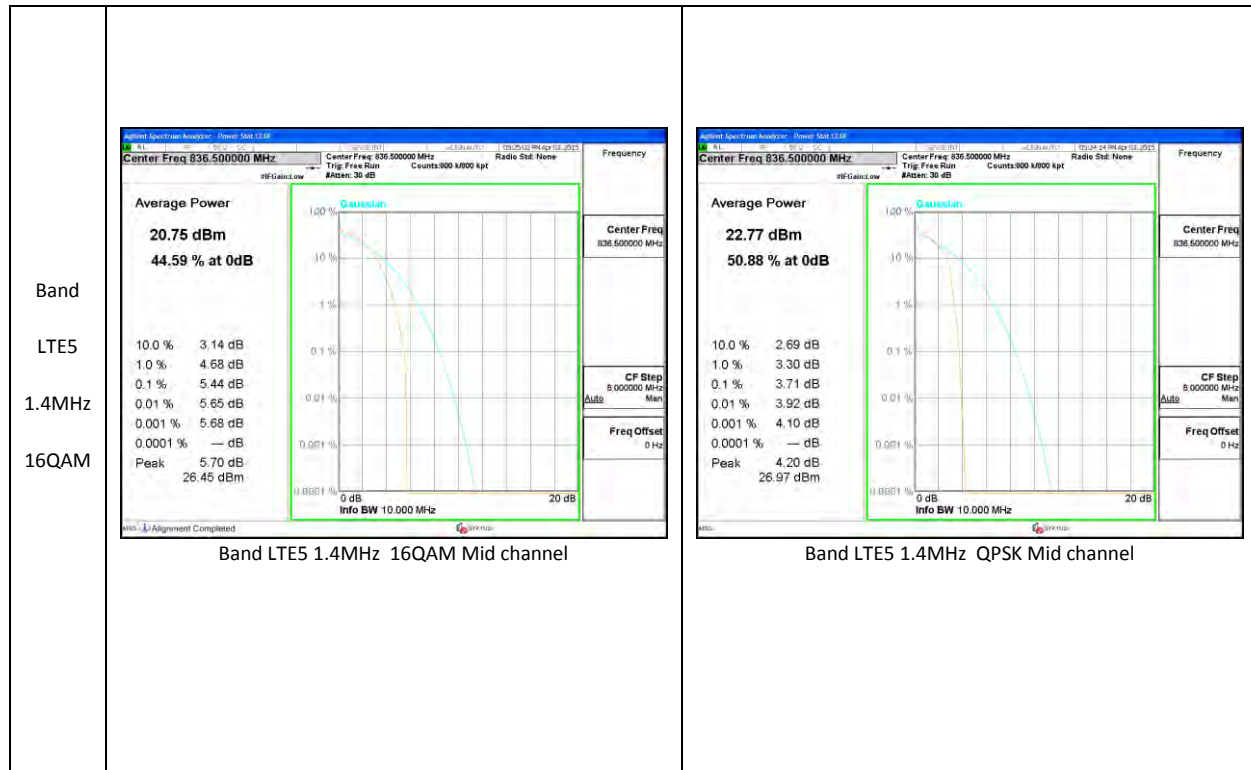
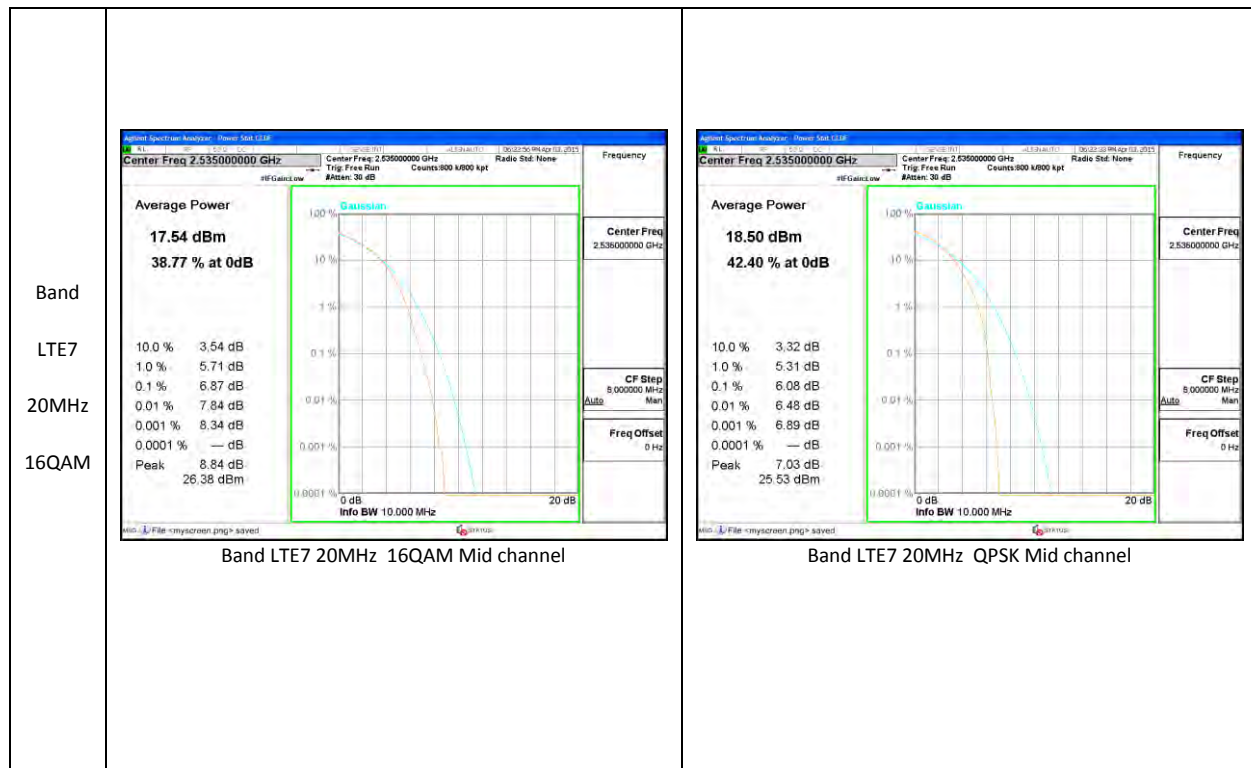
**LTE Band 4**

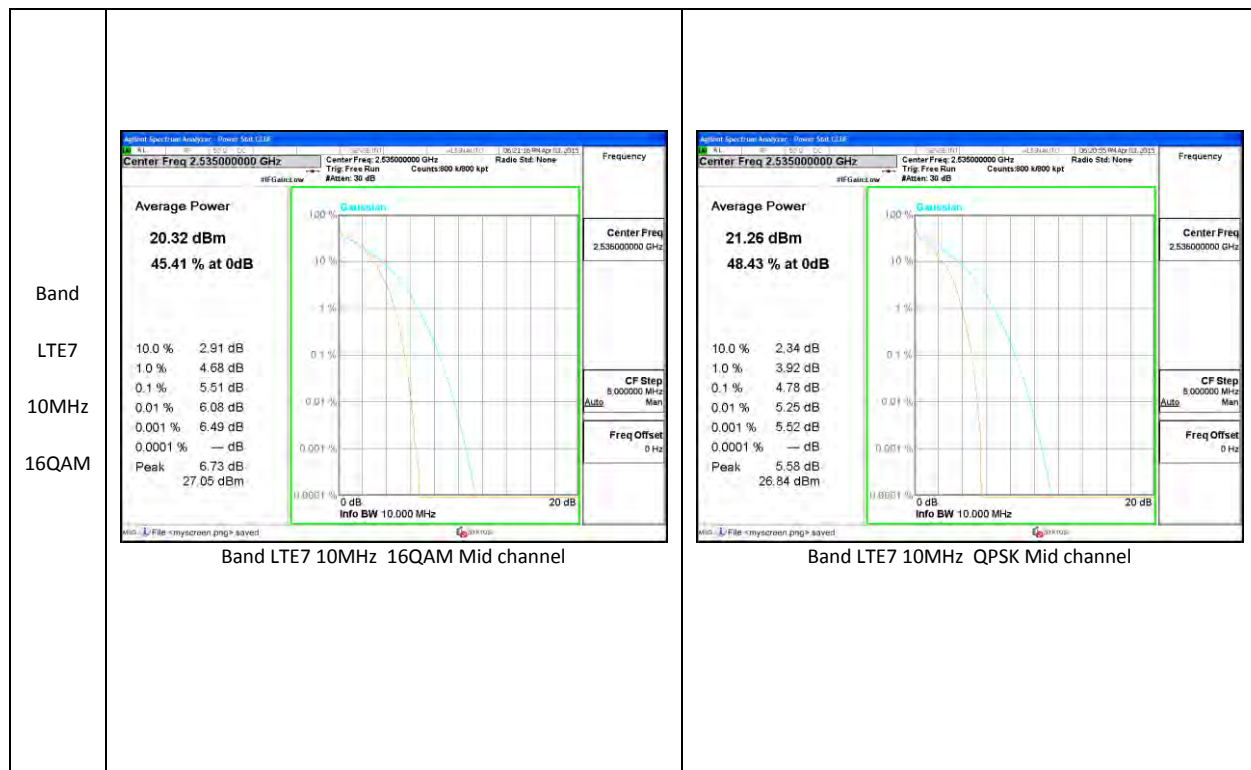
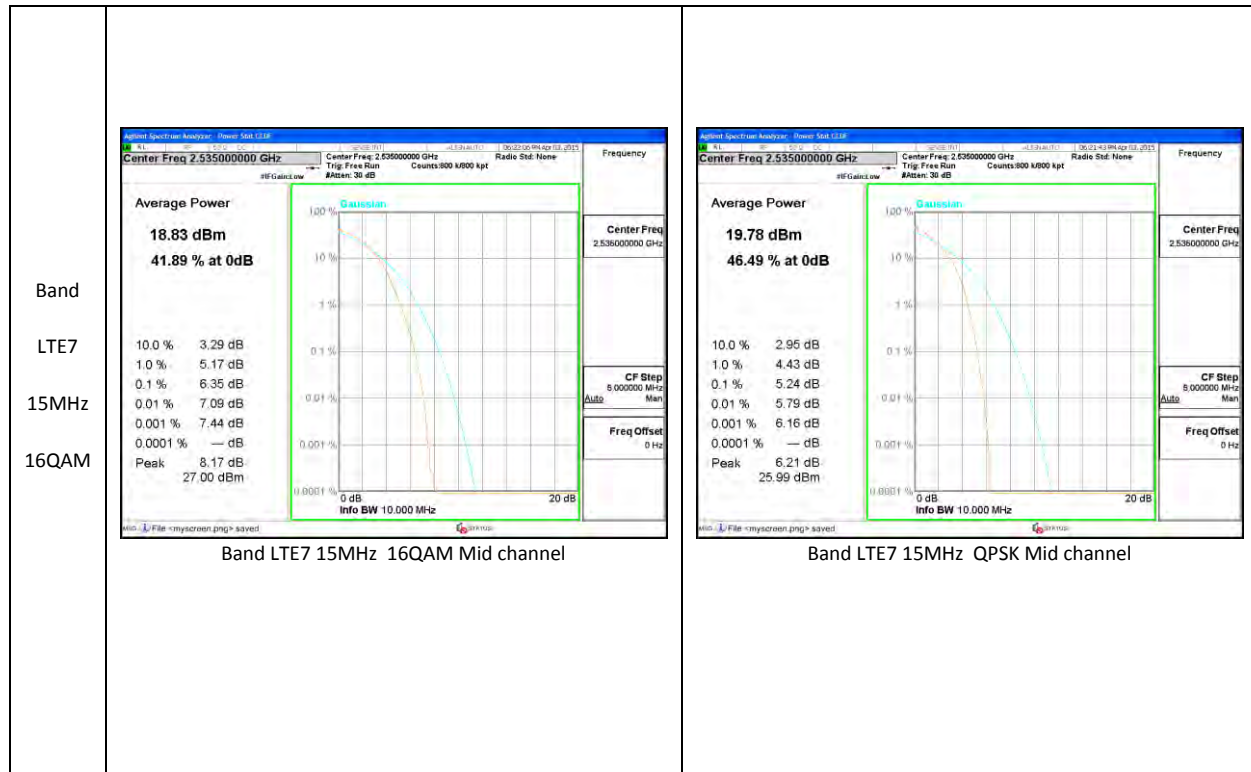


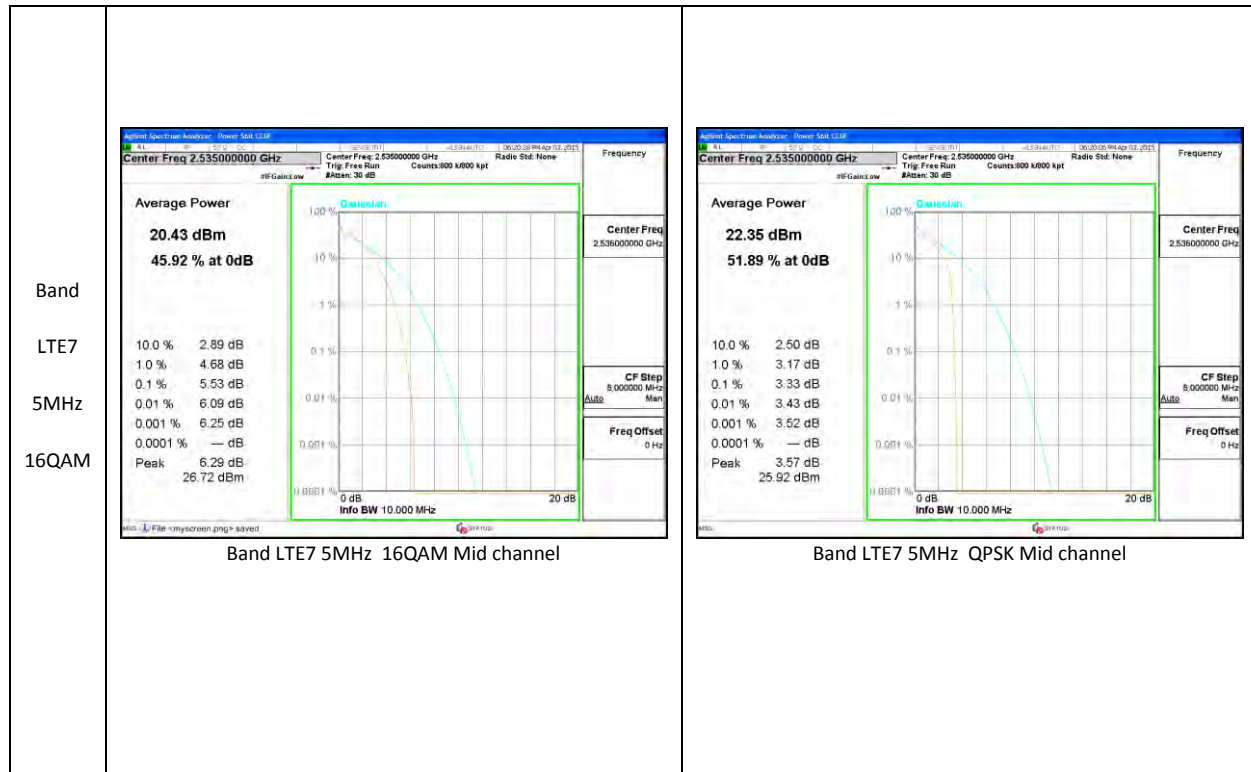
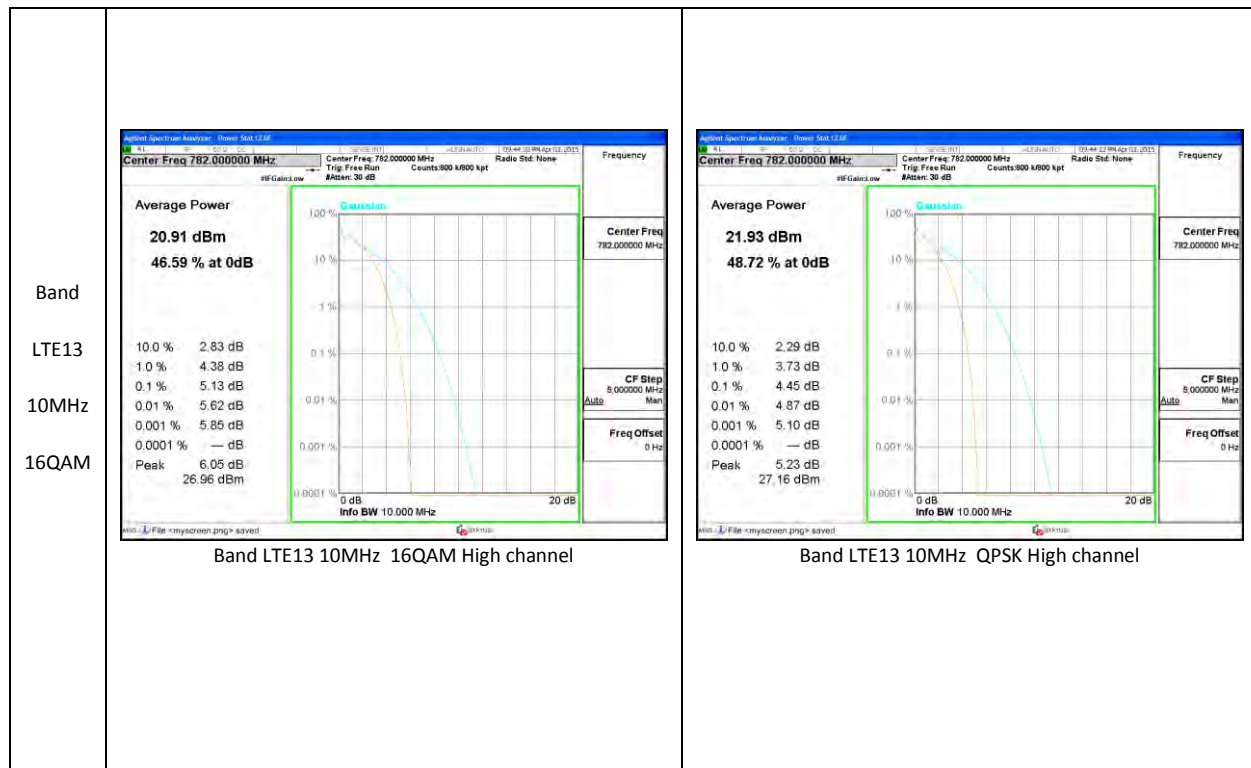


**LTE Band 5**



**LTE Band 7**



**LTE Band 13**

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

10. LIMITS AND CONDUCTED RESULTS

10.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

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

LIMITS

For reporting purposes only

TEST PROCEDURE

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

(KDB 971168 D01 Power Meas License Digital Systems v02r02)

MODES TESTED

GSM, WCDMA, CDMA, and LTE

10.1.1. OCCUPIED BANDWIDTH RESULTS**GSM**

Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
GSM850	GPRS	128	824.2	246.30	311.50
		190	836.6	245.70	313.90
		251	848.8	243.00	317.10
	EGPRS	128	824.2	244.00	309.20
		190	836.6	247.50	301.20
		251	848.8	242.30	316.00
GSM1900	GPRS	512	1850.2	243.90	316.80
		661	1880	241.40	318.30
		810	1909.8	245.60	317.40
	EGPRS	512	1850.2	246.50	315.40
		661	1880	243.80	311.10
		810	1909.8	244.00	315.60

WCDMA

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
Band 5	REL99	4132	826.4	4.134	4.701
		4183	836.6	4.144	4.686
		4233	846.6	4.141	4.703
	HSDPA	4132	826.4	4.132	4.678
		4183	836.6	4.142	4.689
		4233	846.6	4.135	4.671
Band 2	REL99	9262	1852.4	4.160	4.732
		9400	1880	4.155	4.694
		9538	1907.6	4.141	4.697
	HSDPA	9262	1852.4	4.154	4.709
		9400	1880	4.155	4.691
		9538	1907.6	4.153	4.697

CDMA

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
BC0	1xRTT	1013	824.7	1.2752	1.423
		384	836.52	1.2698	1.472
		777	848.31	1.2742	1.428
	EVDO REL. 0	1013	824.7	1.2710	1.424
		384	836.52	1.2714	1.419
		777	848.31	1.2733	1.427
BC1	1xRTT	25	1851.25	1.2661	1.408
		600	1880	1.2691	1.405
		1175	1908.75	1.2713	1.411
	EVDO REL. 0	25	1851.25	1.2675	1.410
		600	1880	1.2651	1.410
		1175	1908.75	1.2674	1.414

10.1.2. LTE OCCUPIED BANDWIDTH RESULTS**LTE Band 2**

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	20	QPSK	100/0	1860	17.916	19.308
			100/0	1880	17.933	19.211
			100/0	1900	17.957	19.578
		16QAM	100/0	1860	17.914	19.276
			100/0	1880	17.926	19.410
			100/0	1900	17.916	19.489
	15	QPSK	75/0	1857.5	13.434	14.521
			75/0	1880	13.452	14.593
			75/0	1902.5	13.454	14.594
		16QAM	75/0	1857.5	13.460	14.530
			75/0	1880	13.448	14.617
			75/0	1902.5	13.458	14.682
	10	QPSK	50/0	1855	8.982	9.775
			50/0	1880	8.974	9.745
			50/0	1905	8.970	9.754
		16QAM	50/0	1855	8.987	9.749
			50/0	1880	8.971	9.775
			50/0	1905	8.991	9.796
	5	QPSK	25/0	1852.5	4.497	4.920
			25/0	1880	4.493	4.946
			25/0	1907.5	4.489	4.923
		16QAM	25/0	1852.5	4.496	4.916
			25/0	1880	4.503	4.943
			25/0	1907.5	4.503	4.930

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	3	QPSK	15/0	1851.5	2.697	2.988
			15/0	1880	2.693	2.997
			15/0	1908.5	2.702	3.002
		16QAM	15/0	1851.5	2.702	3.005
			15/0	1880	2.696	2.992
			15/0	1908.5	2.695	3.004
	1.4	QPSK	6/0	1850.7	1.087	1.227
			6/0	1880	1.082	1.227
			6/0	1909.3	1.087	1.227
		16QAM	6/0	1850.7	1.086	1.234
			6/0	1880	1.086	1.234
			6/0	1909.3	1.093	1.243

LTE Band 4

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	20	QPSK	100/0	1720	17.932	19.440
			100/0	1732.5	17.928	19.428
			100/0	1745	17.948	19.647
		16QAM	100/0	1720	17.925	19.583
			100/0	1732.5	17.913	19.399
			100/0	1745	17.937	19.617
	15	QPSK	75/0	1717.5	13.450	14.778
			75/0	1732.5	13.441	14.613
			75/0	1747.5	13.446	14.637
		16QAM	75/0	1717.5	13.457	14.651
			75/0	1732.5	13.438	14.703
			75/0	1747.5	13.447	14.661
	10	QPSK	50/0	1715	8.967	9.762
			50/0	1732.5	8.960	9.758
			50/0	1750	8.980	9.764
		16QAM	50/0	1715	8.988	9.821
			50/0	1732.5	8.982	9.797
			50/0	1750	8.956	9.814
	5	QPSK	25/0	1712.5	4.490	4.911
			25/0	1732.5	4.495	4.934
			25/0	1752.5	4.490	4.933
		16QAM	25/0	1712.5	4.497	4.957
			25/0	1732.5	4.501	4.944
			25/0	1752.5	4.503	4.968

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	3	QPSK	15/0	1711.5	2.6983	3.003
			15/0	1732.5	2.6986	3.008
			15/0	1753.5	2.7023	3.003
		16QAM	15/0	1711.5	2.7004	3.032
			15/0	1732.5	2.6946	2.999
			15/0	1753.5	2.6942	3.004
	1.4	QPSK	6/0	1710.7	1.0807	1.239
			6/0	1732.5	1.0888	1.240
			6/0	1754.3	1.0800	1.240
		16QAM	6/0	1710.7	1.0881	1.240
			6/0	1732.5	1.0942	1.243
			6/0	1754.3	1.0864	1.237

LTE Band 5

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	10	QPSK	50/0	829	8.980	9.749
			50/0	836.5	8.970	9.736
			50/0	844	8.957	9.794
		16QAM	50/0	829	8.977	9.789
			50/0	836.5	8.959	9.721
			50/0	844	8.994	9.740
	5	QPSK	25/0	826.5	4.495	4.907
			25/0	836.5	4.495	4.966
			25/0	846.5	4.484	4.918
		16QAM	25/0	826.5	4.496	4.942
			25/0	836.5	4.497	4.938
			25/0	846.5	4.500	4.951
	3	QPSK	15/0	825.5	2.697	2.996
			15/0	836.5	2.697	3.018
			15/0	847.5	2.700	3.002
		16QAM	15/0	825.5	2.701	3.028
			15/0	836.5	2.693	2.992
			15/0	847.5	2.695	3.010
	1.4	QPSK	6/0	824.7	1.081	1.233
			6/0	836.5	1.089	1.242
			6/0	848.3	1.088	1.238
		16QAM	6/0	824.7	1.088	1.236
			6/0	836.5	1.092	1.240
			6/0	848.3	1.085	1.233

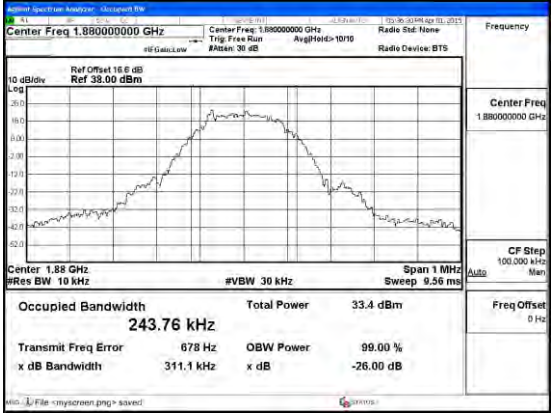
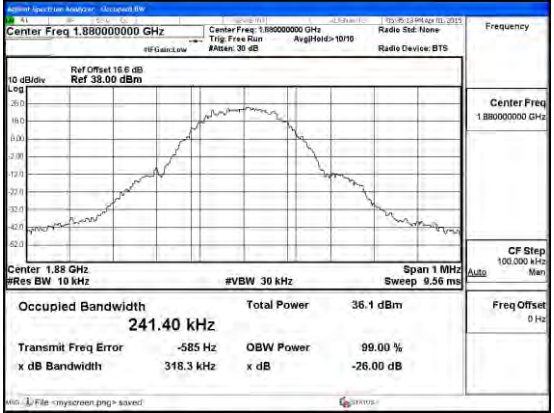
LTE Band 7

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE7	20	QPSK	100/0	2510	17.909	19.387
			100/0	2535	17.939	19.337
			100/0	2560	17.957	19.543
		16QAM	100/0	2510	17.919	19.349
			100/0	2535	17.934	19.383
			100/0	2560	17.920	19.376
	15	QPSK	75/0	2507.5	13.439	14.718
			75/0	2535	13.453	14.605
			75/0	2562.5	13.466	14.629
		16QAM	75/0	2507.5	13.456	14.648
			75/0	2535	13.443	14.598
			75/0	2562.5	13.459	14.627
	10	QPSK	50/0	2505	8.969	9.724
			50/0	2535	8.982	9.742
			50/0	2565	8.962	9.821
		16QAM	50/0	2505	8.977	9.782
			50/0	2535	8.960	9.770
			50/0	2565	9.000	9.810
	5	QPSK	25/0	2502.5	4.491	4.945
			25/0	2535	4.485	4.932
			25/0	2567.5	4.495	4.912
		16QAM	25/0	2502.5	4.503	4.954
			25/0	2535	4.498	4.962
			25/0	2567.5	4.497	4.943

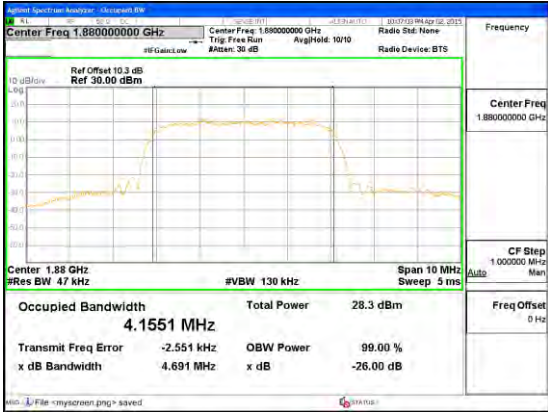
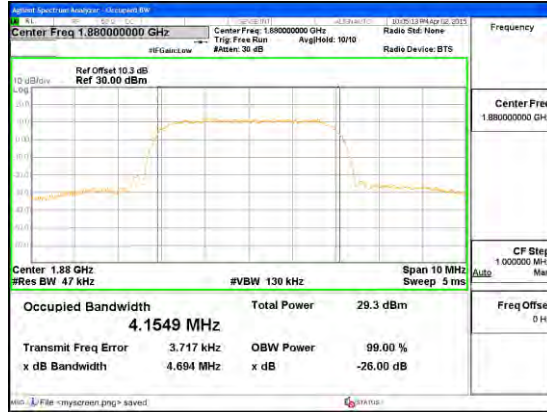
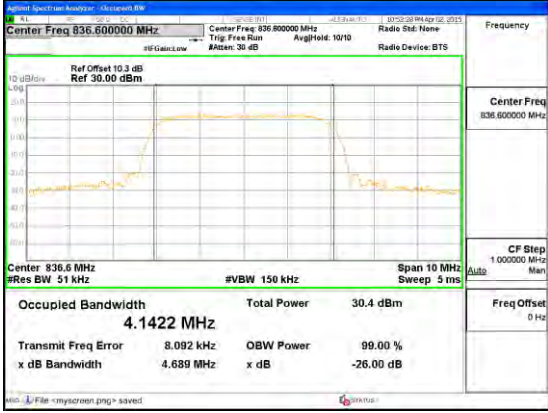
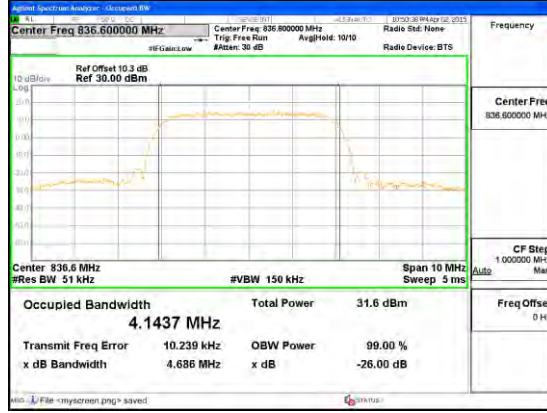
LTE Band 13

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE13	10	QPSK	50/0	782	8.924	9.664
			50/0	782	8.928	9.673
			50/0	782	8.926	9.660
		16QAM	50/0	782	8.946	9.719
			50/0	782	8.951	9.741
			50/0	782	8.928	9.746
LTE13	5	QPSK	25/0	779.5	4.481	4.905
			25/0	782	4.491	4.967
			25/0	784.5	4.490	4.913
		16QAM	25/0	779.5	4.481	4.923
			25/0	782	4.503	4.965
			25/0	784.5	4.494	4.949

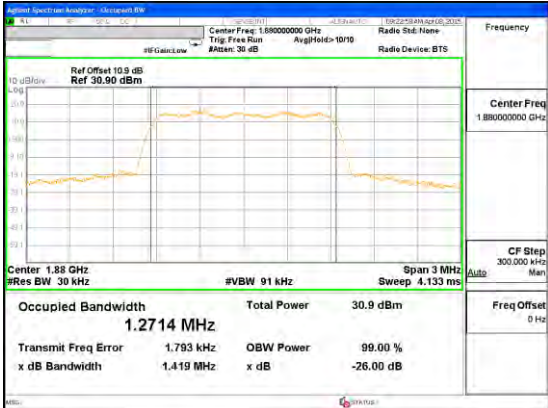
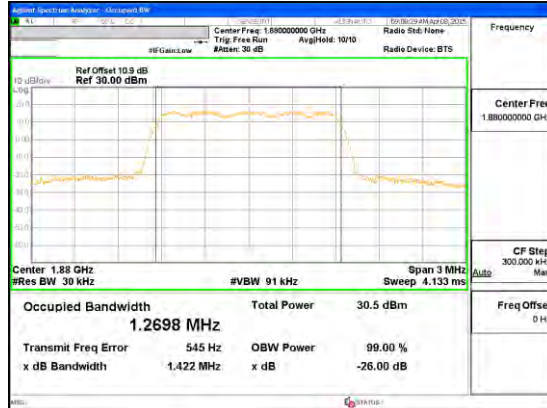
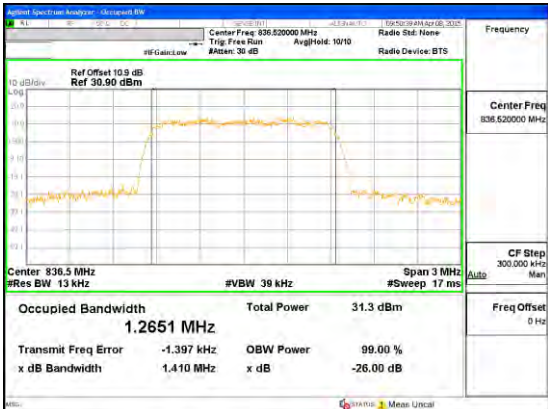
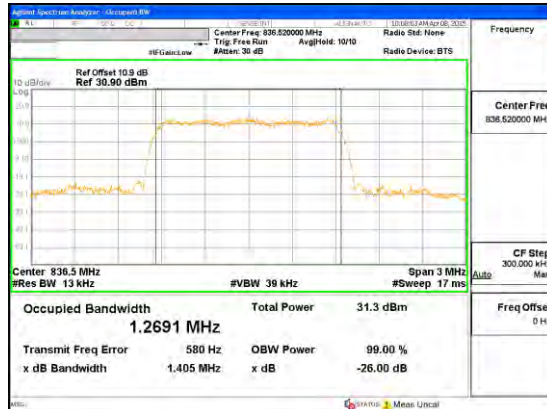
10.1.1. OCCUPIED BANDWIDTH PLOTS**GSM**

Band GSM 1900 EGPRS	 Center Freq 1.88000000 GHz Ref Offset 16.6 dB Ref 38.00 dBm Occupied Bandwidth 243.76 kHz Total Power 33.4 dBm Transmit Freq Error 678 Hz OBW Power 99.00 % x dB Bandwidth 311.1 kHz x dB -26.00 dB Band GSM1900 EGPRS OBW Mid channel	 Center Freq 1.88000000 GHz Ref Offset 16.6 dB Ref 38.00 dBm Occupied Bandwidth 241.40 kHz Total Power 36.1 dBm Transmit Freq Error -585 Hz OBW Power 99.00 % x dB Bandwidth 318.3 kHz x dB -26.00 dB Band GSM1900 GPRS OBW Mid channel
Band GSM 850 EGPRS	 Center Freq 836.600000 MHz Ref Offset 16.6 dB Ref 38.00 dBm Occupied Bandwidth 247.49 kHz Total Power 34.8 dBm Transmit Freq Error 3.741 kHz OBW Power 99.00 % x dB Bandwidth 301.2 kHz x dB -26.00 dB Band GSM850 EGPRS OBW Mid channel	 Center Freq 836.600000 MHz Ref Offset 16.6 dB Ref 38.00 dBm Occupied Bandwidth 245.75 kHz Total Power 39.3 dBm Transmit Freq Error 2.637 kHz OBW Power 99.00 % x dB Bandwidth 313.9 kHz x dB -26.00 dB Band GSM850 GPRS OBW Mid channel

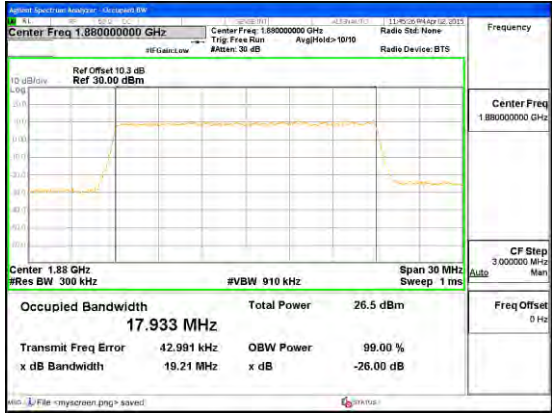
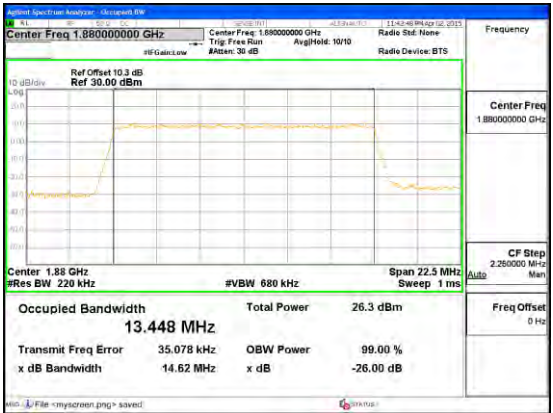
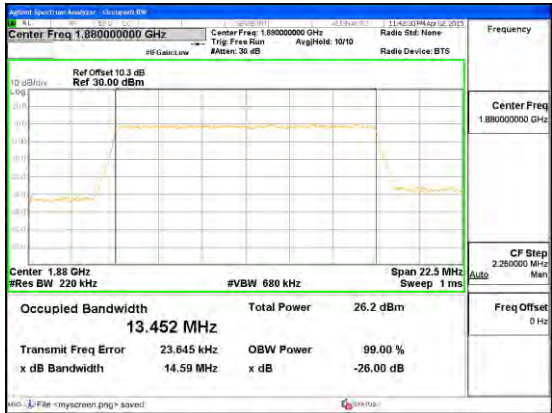
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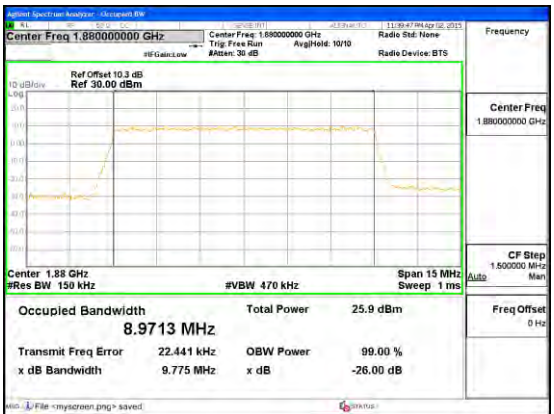
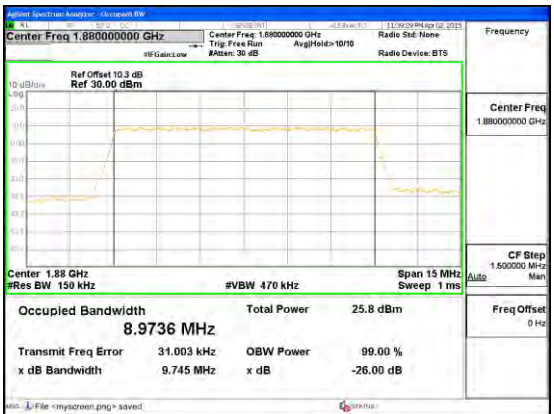
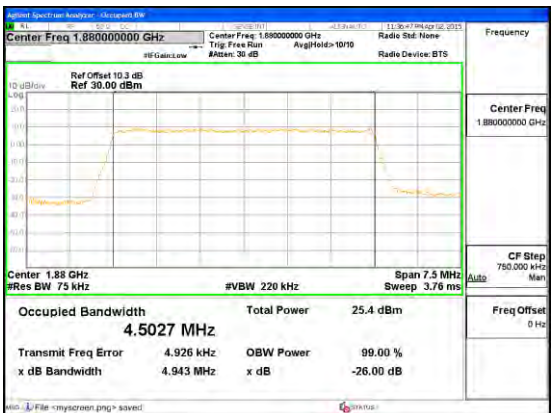
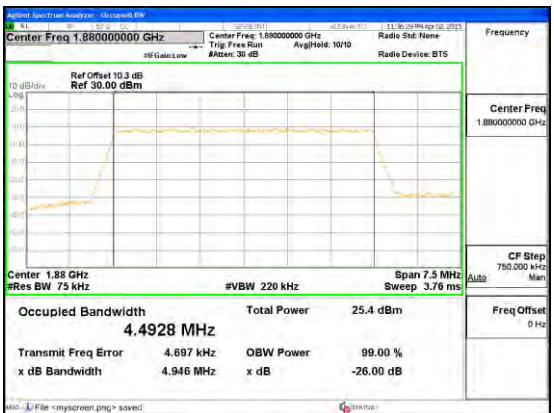
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Band Band 5 HSDPA	 Band WCDMA B5 HSDPA OBW	 Band WCDMA B5 REL99 OBW

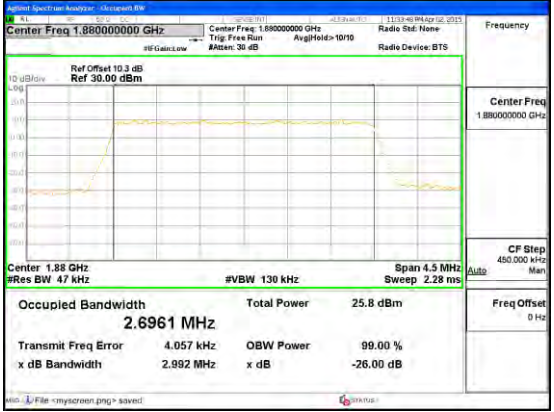
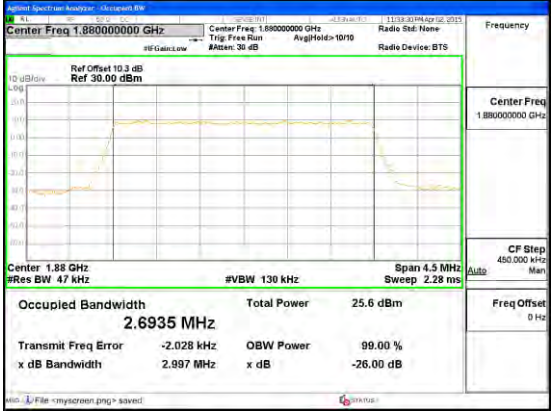
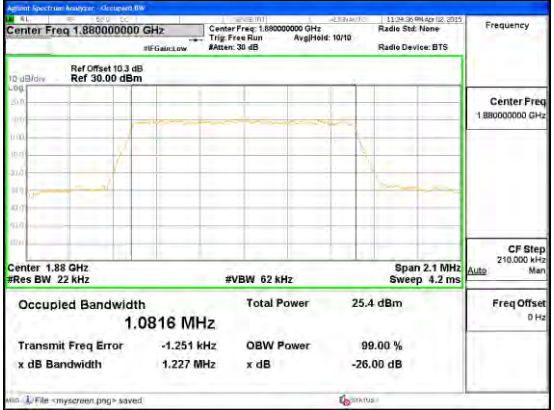
CDMA

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

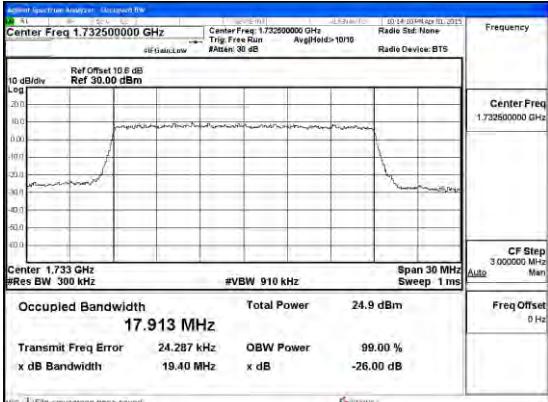
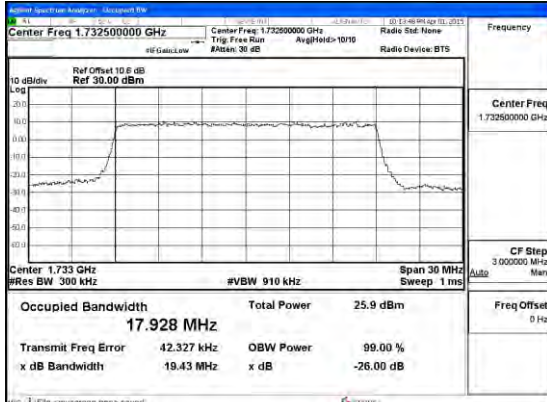
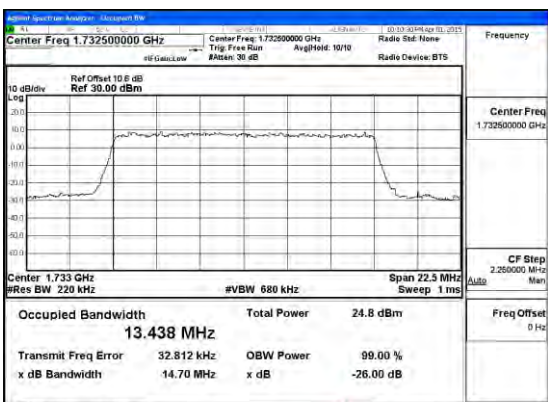
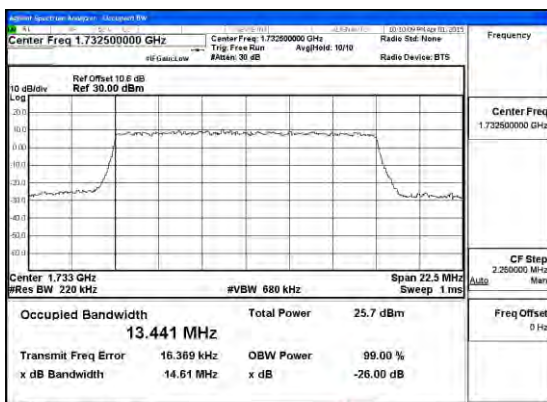
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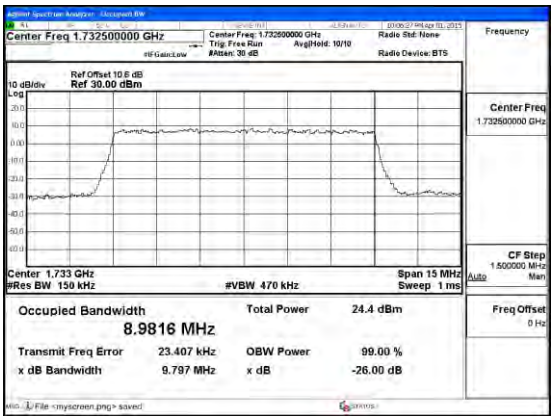
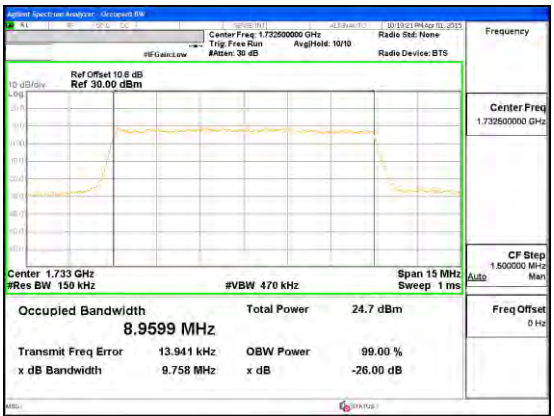
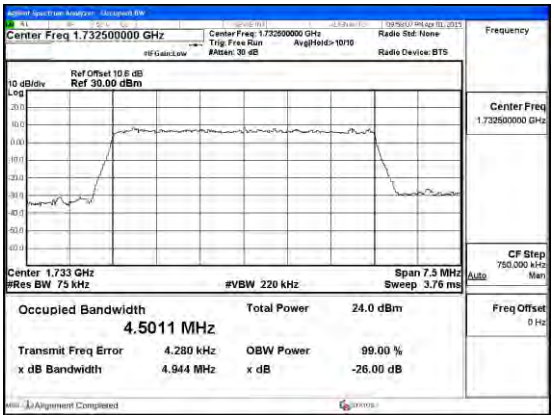
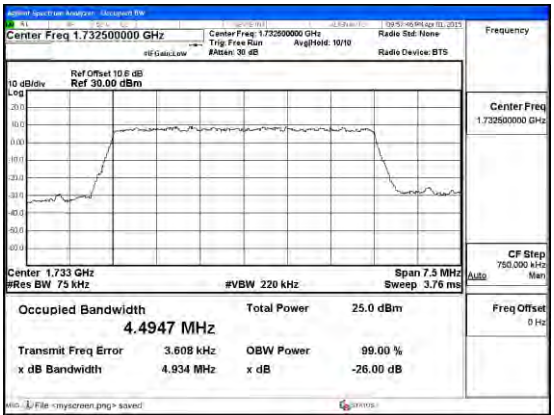
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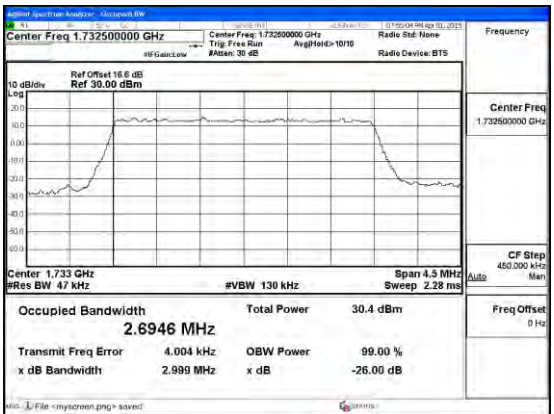
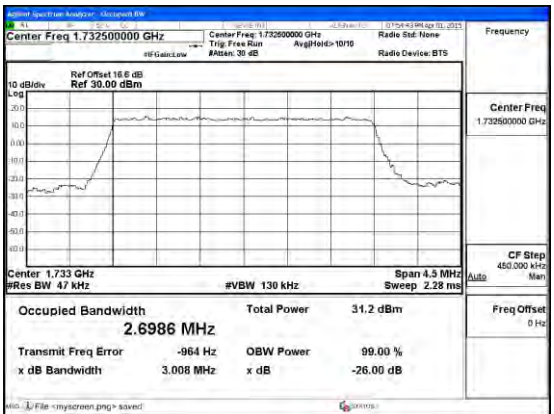
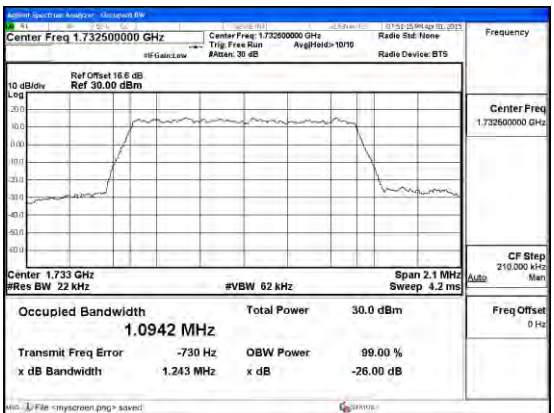
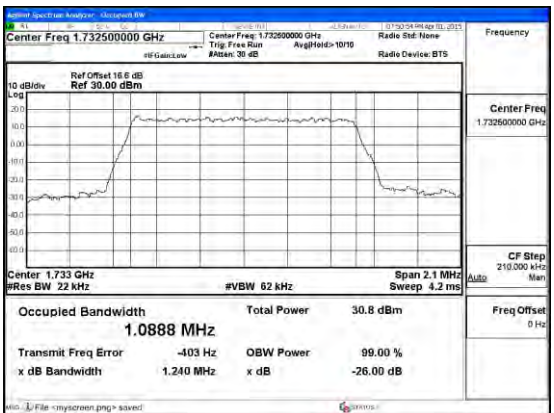
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Band LTE2 5MHz 16QAM	 Band LTE2 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 5MHz OBW QPSK Mid Channel FRB.gif

Band LTE2 3MHz 16QAM	 Band LTE2 3MHz 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

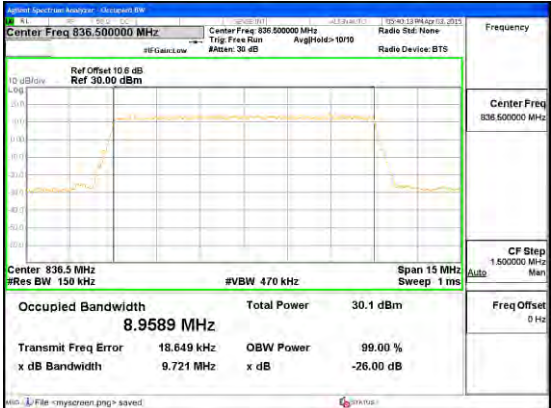
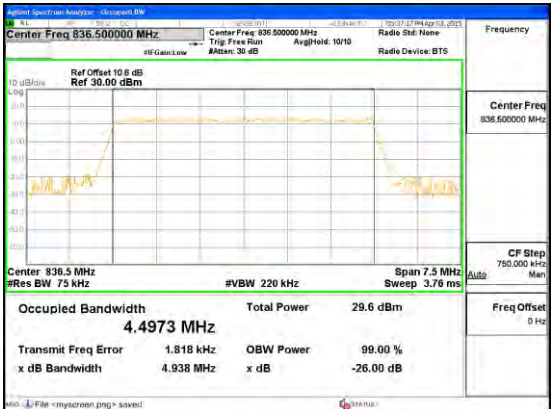
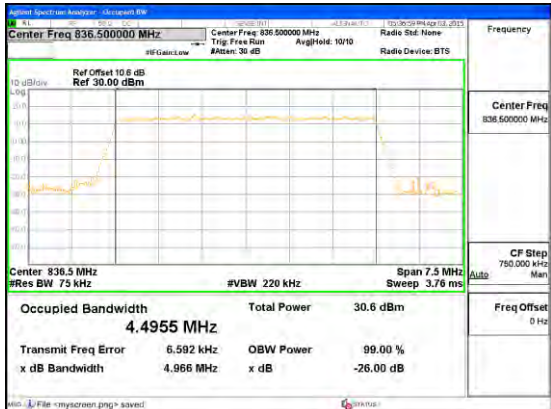
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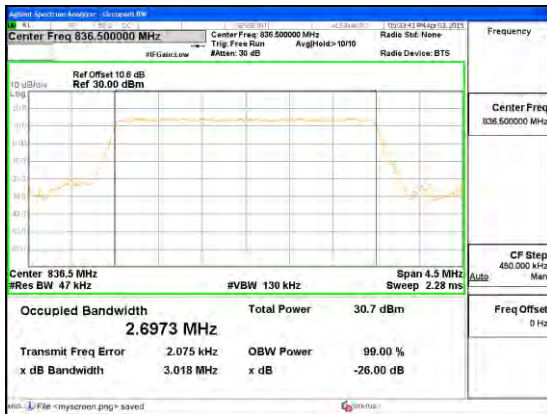
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Band LTE4 15MHz 16QAM	 Band LTE4 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 15MHz OBW QPSK Mid Channel FRB.gif

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

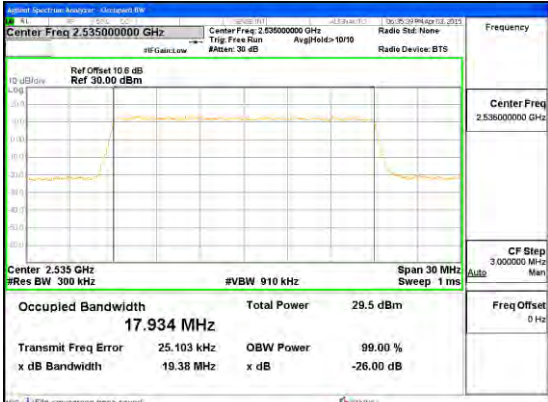
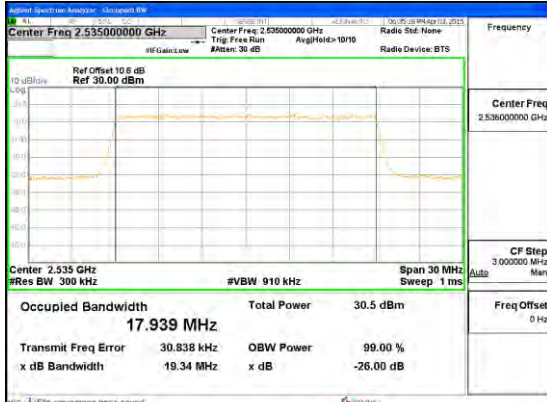
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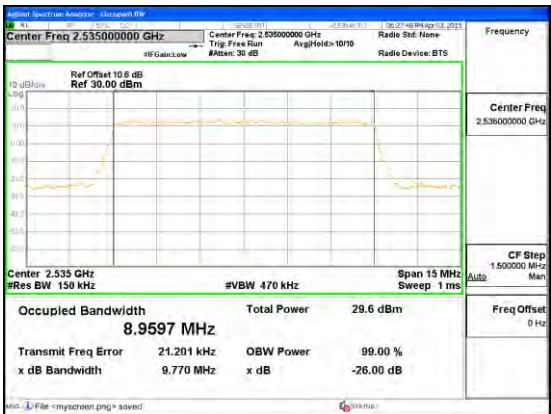
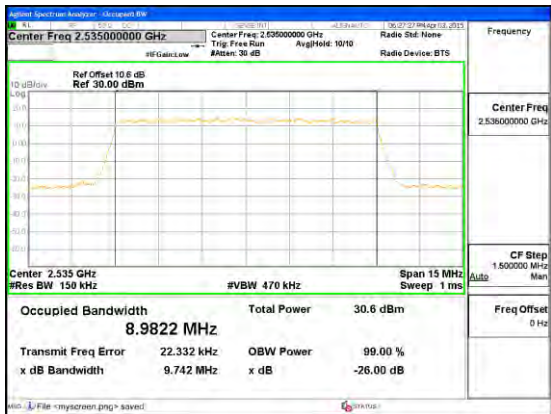
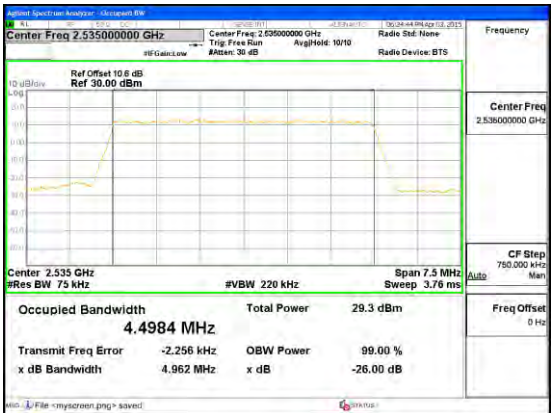
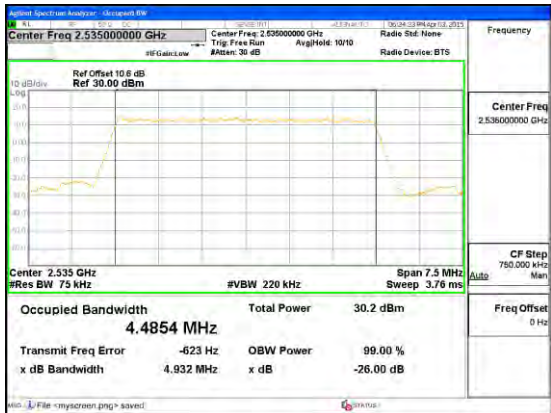
LTE Band 5

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

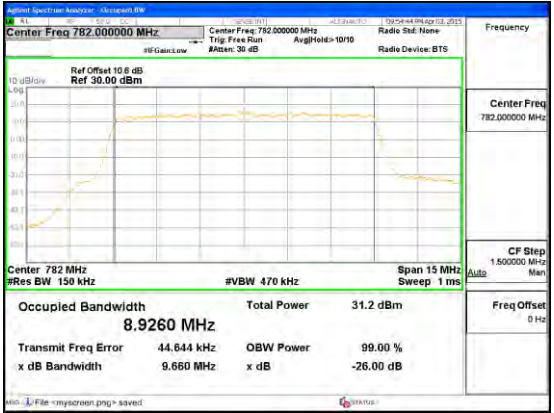
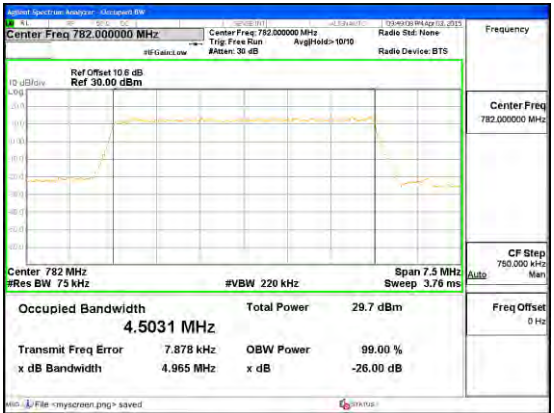
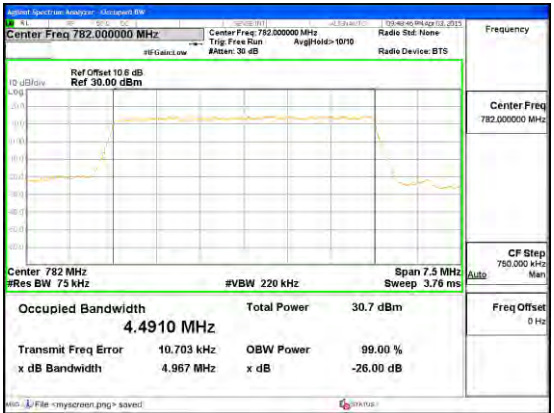
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LTE Band 7

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

Band LTE7 10MHz 16QAM	 Band LTE7 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 5MHz OBW QPSK Mid Channel FRB.gif

LTE Band 13

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

10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.917(a), §24.238 (a), §27.53 (g), §27.53(m)(4)

LIMITS

Part 22.917(a) & Part 24.238(a) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

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

Part 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

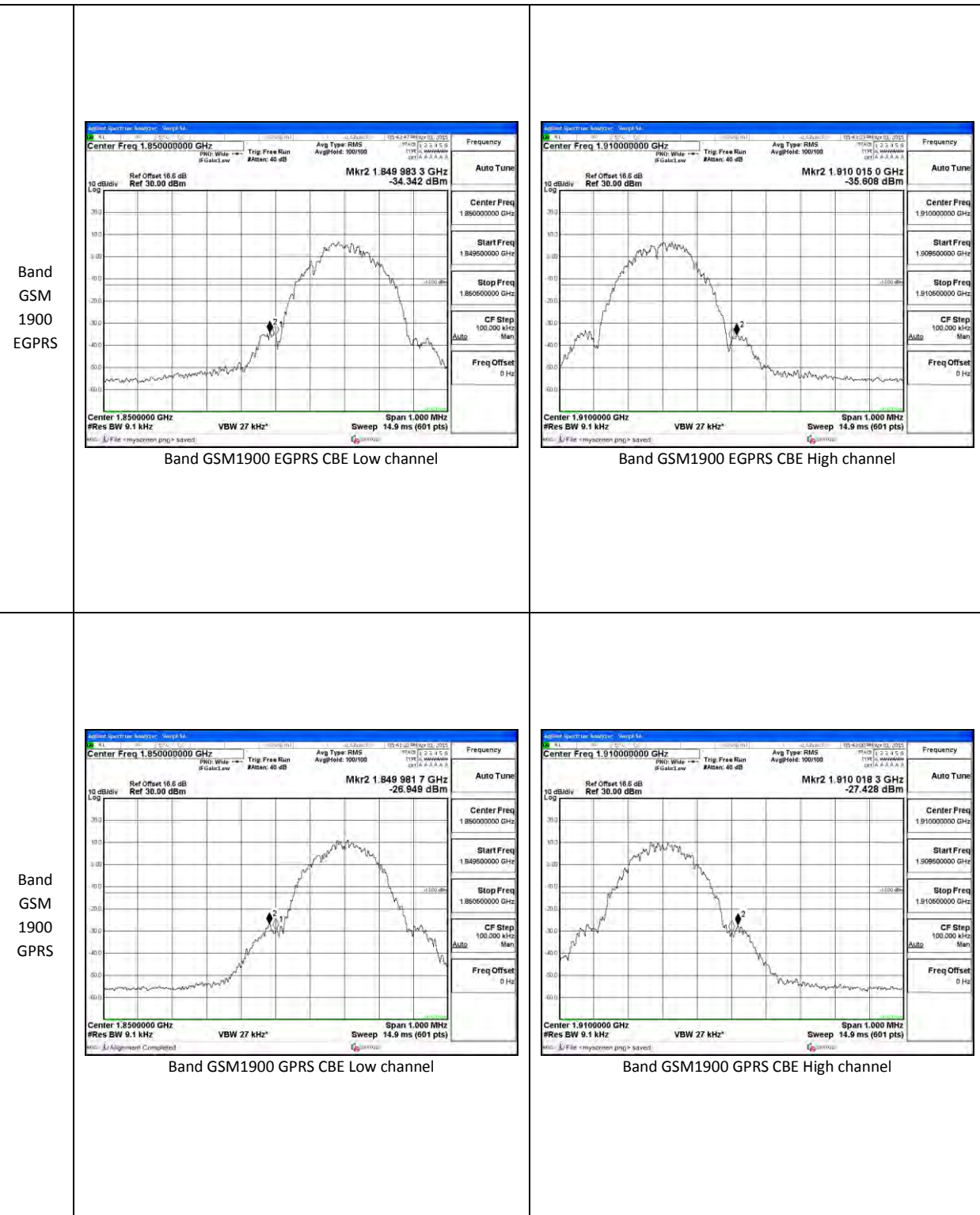
MODES TESTED

GSM, WCDMA, CDMA, and LTE

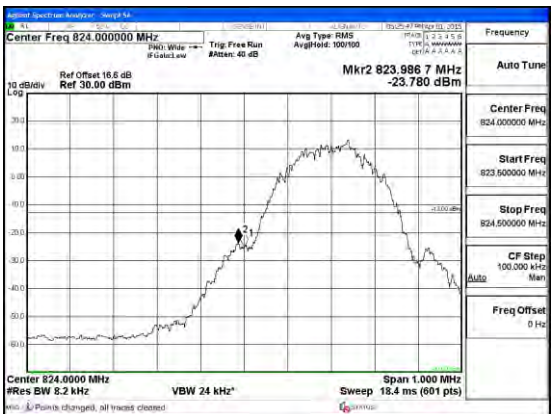
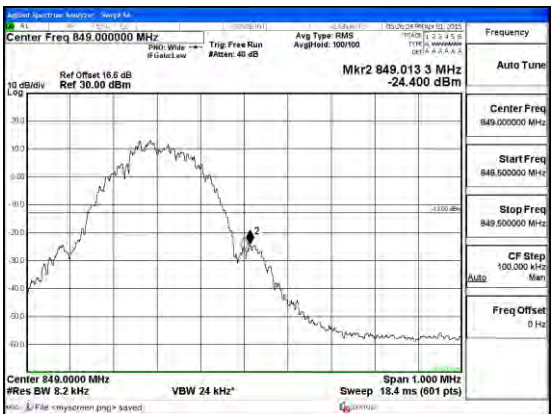
RESULTS

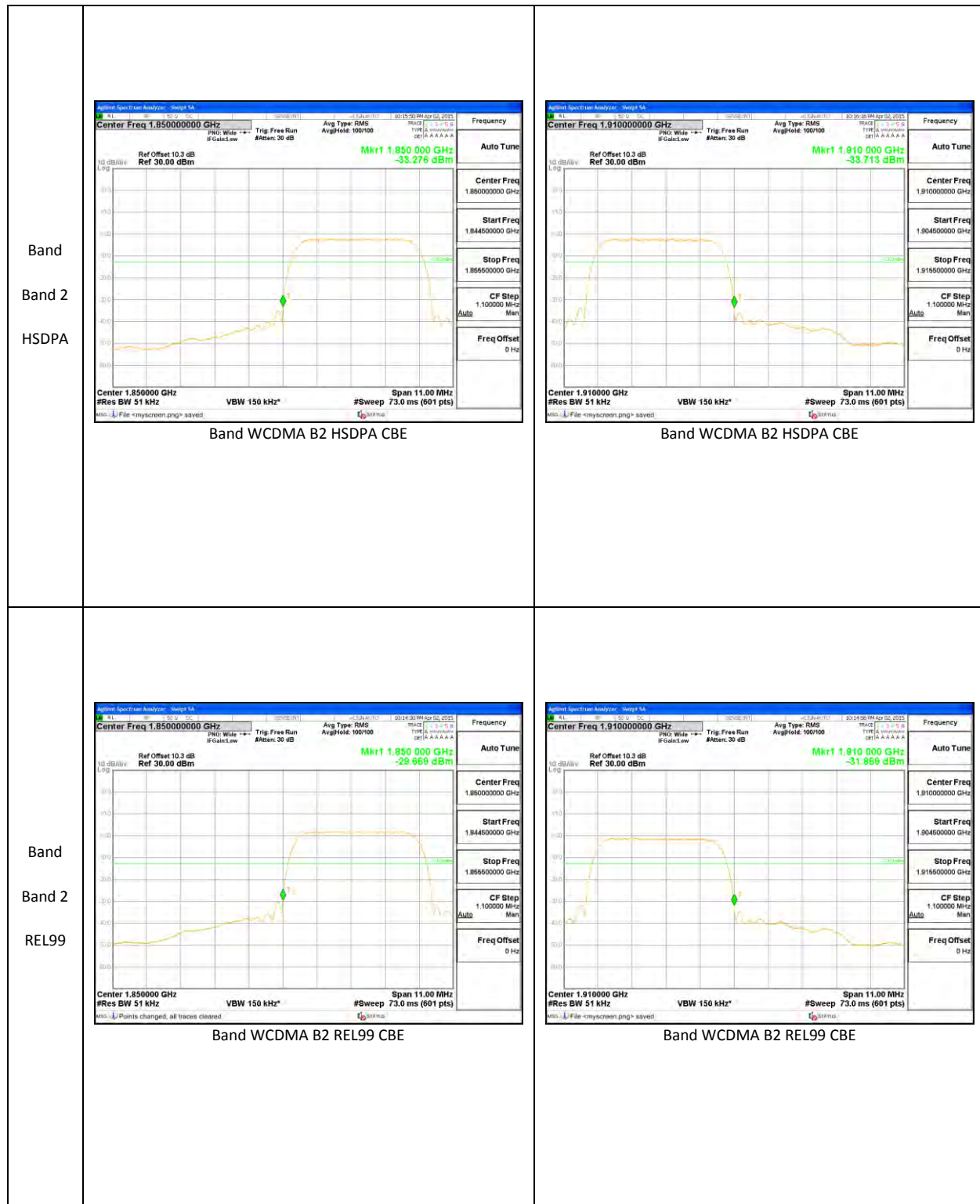
10.2.1. BAND EDGE PLOTS**GSM**

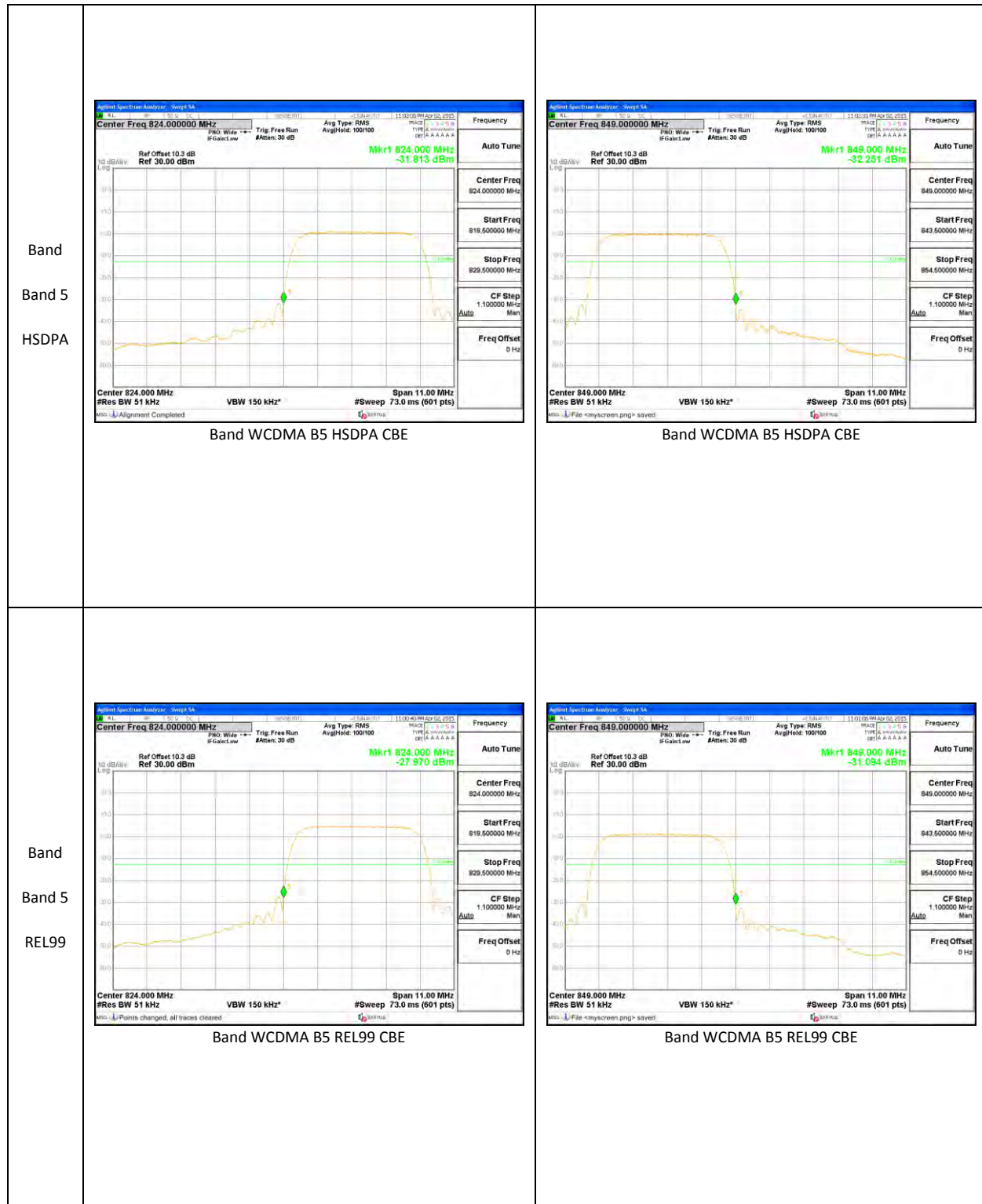
Note: GSM reading need add 9dB DCCF factor due to duty cycle is 12.5% during test.



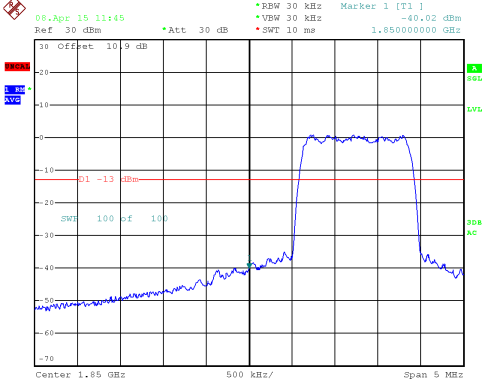
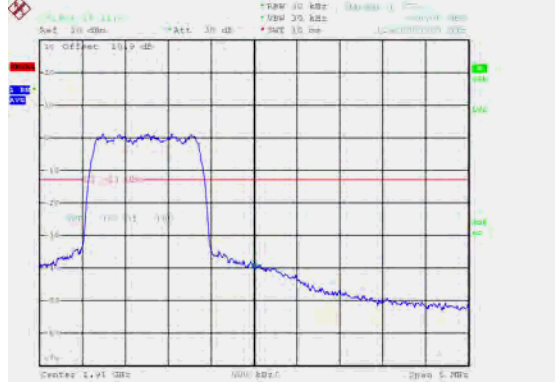
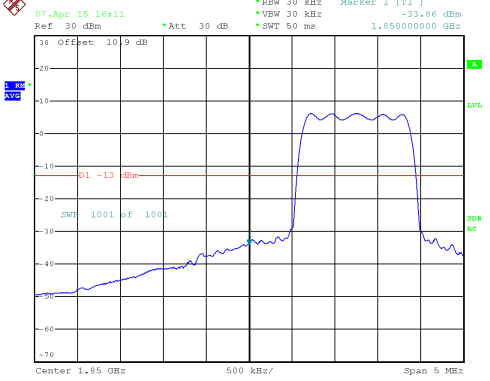
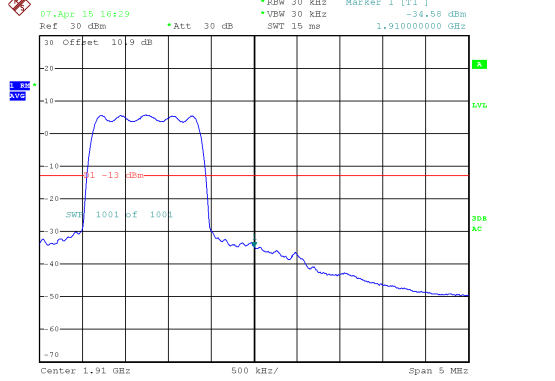
Note: GSM reading need add 9dB DCCF factor due to duty cycle is 12.5% during test.

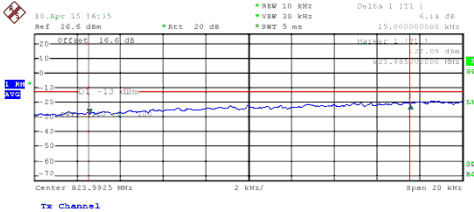
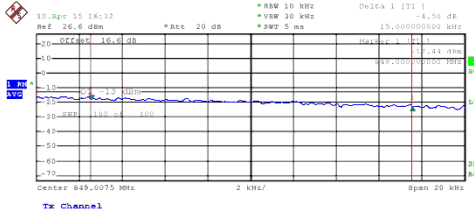
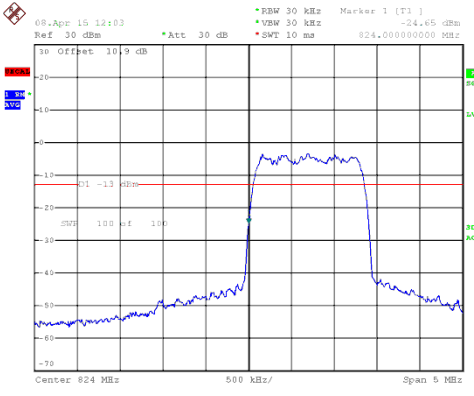
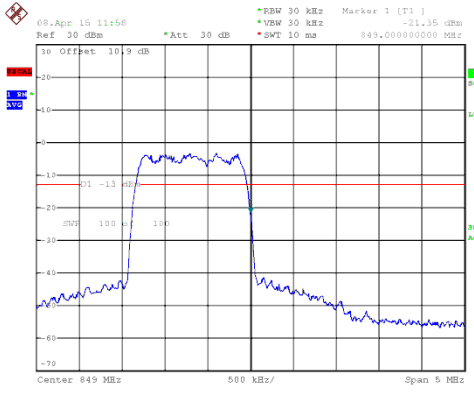
Band GSM 850 EGPRS	 Band GSM850 EGPRS CBE Low channel	 Band GSM850 EGPRS CBE High channel
Band GSM 850 GPRS	 Band GSM850 GPRS CBE Low channel	 Band GSM850 GPRS CBE High channel

WCDMA

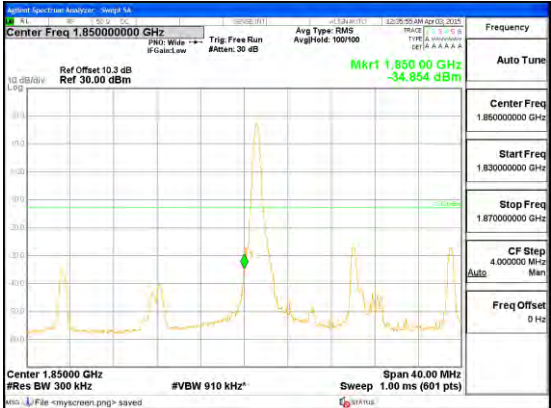
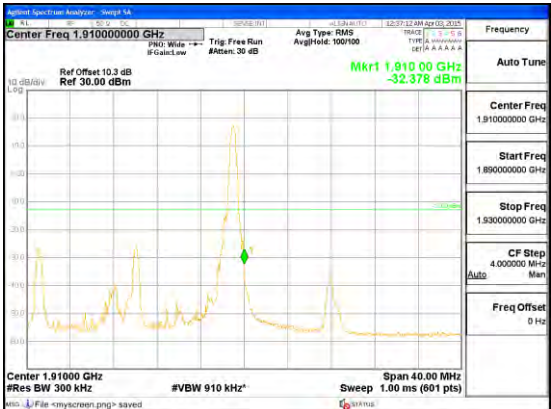
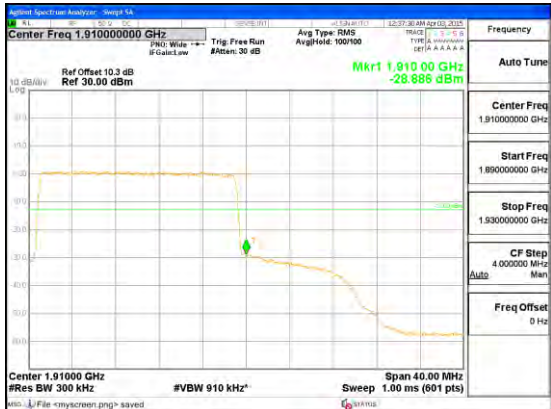


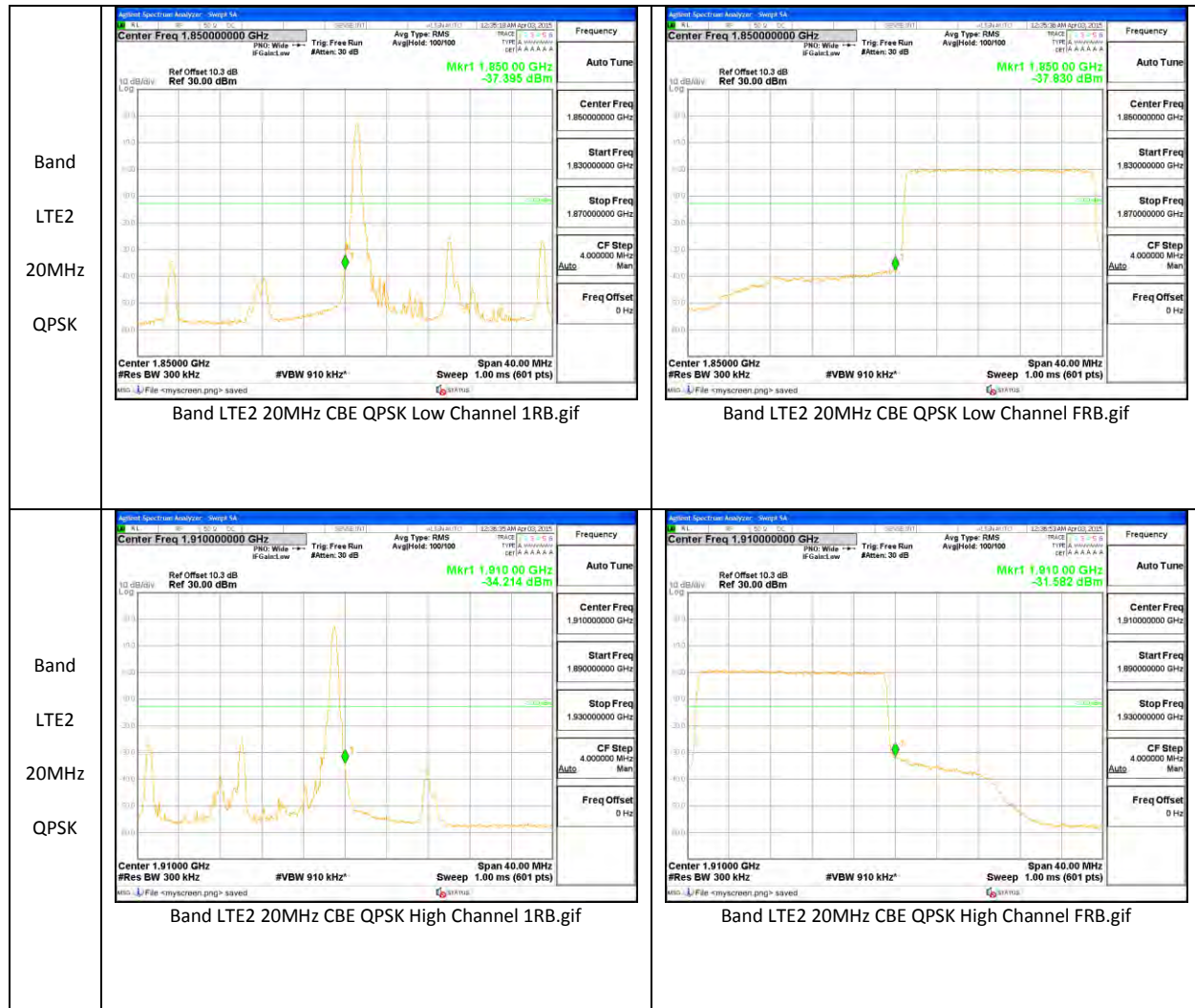
CDMA

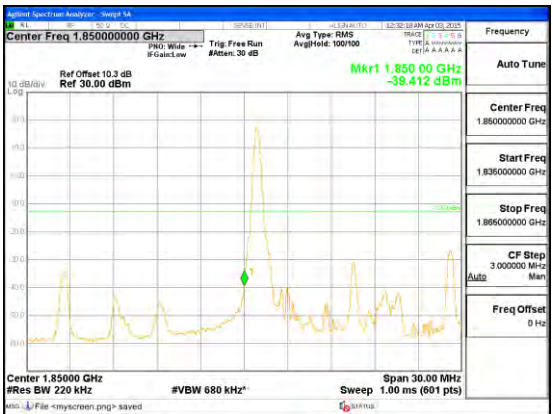
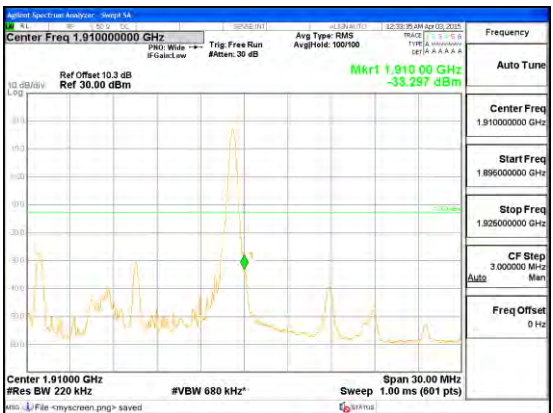
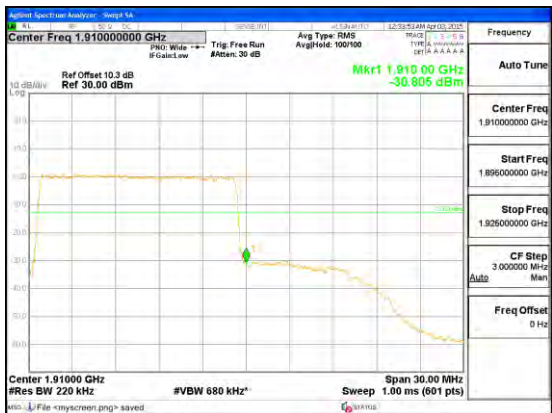
Band BC1 EVDO REL. 0	 Date: 8.APR.2015 11:45:50 Band BC1 EVDO Rel. 0 CBE Low channel	 Date: 8.APR.2015 11:45:50 Band BC1 EVDO Rel. 0 CBE High channel
Band BC1 1xRTT	 Date: 7.APR.2015 16:11:22 Band BC1 1xRTT CBE Low channel	 Date: 7.APR.2015 16:29:50 Band BC1 1xRTT CBE High channel

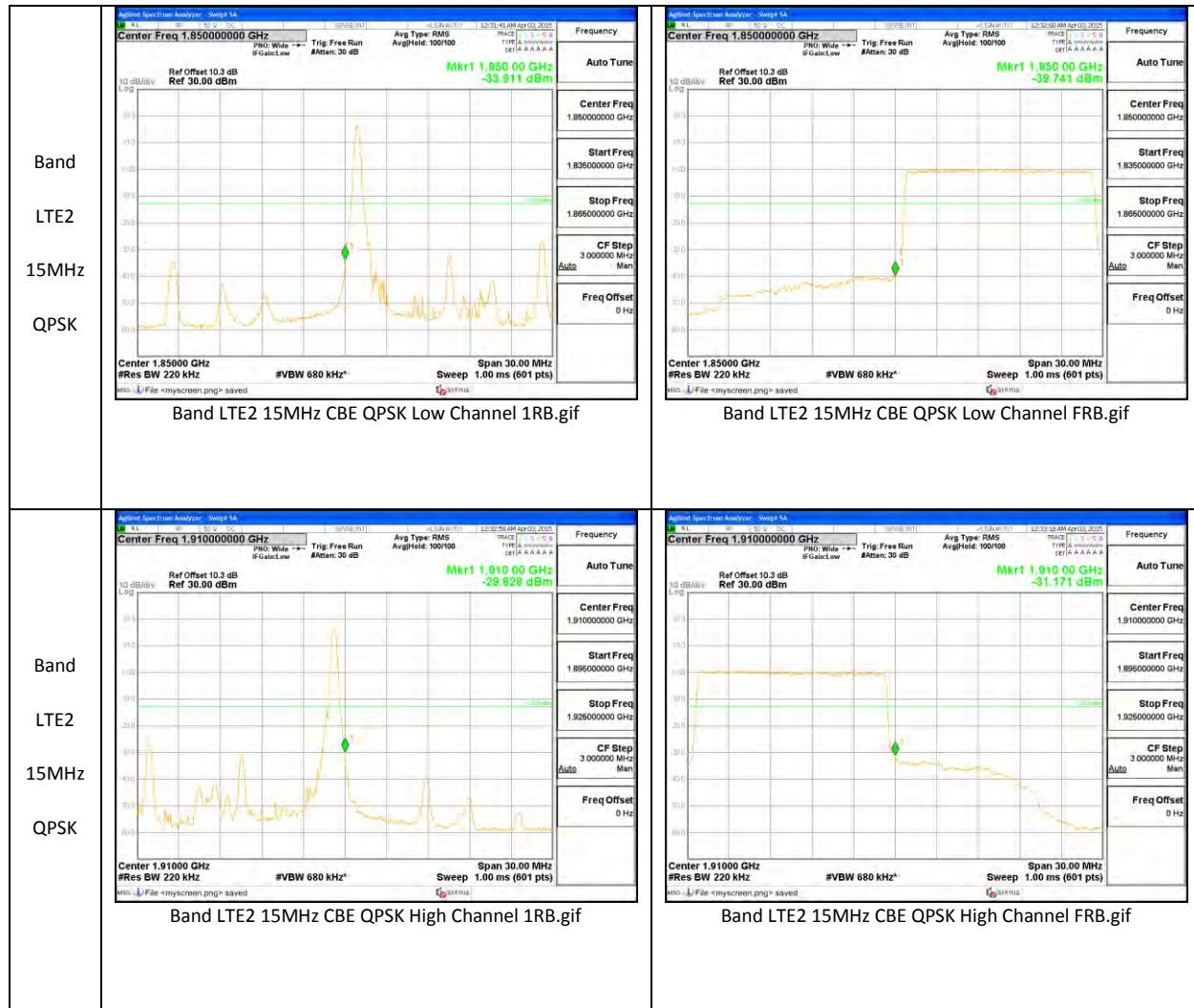
Band BC0 1xRTT	 Date: 10.APR.2015 16:35:51 Band BC0 1xRTT CBE Low channel	 Date: 10.APR.2015 16:32:16 Band BC0 1xRTT CBE High channel
Band BC0 EVDO	 Date: 8.APR.2015 12:03:27 Band BC0 EVDO CBE Low channel	 Date: 8.APR.2015 11:58:30 Band BC0 EVDO CBE High channel

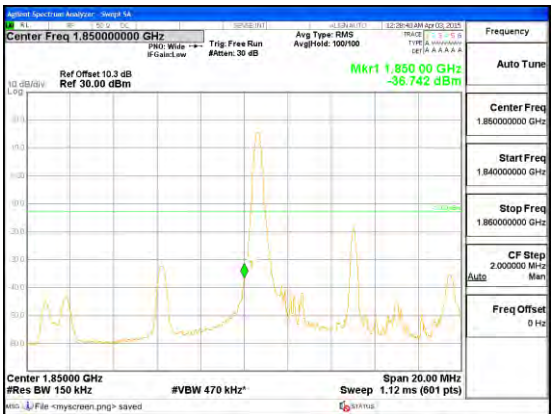
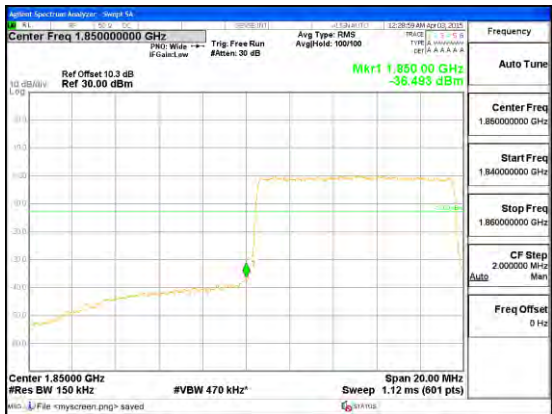
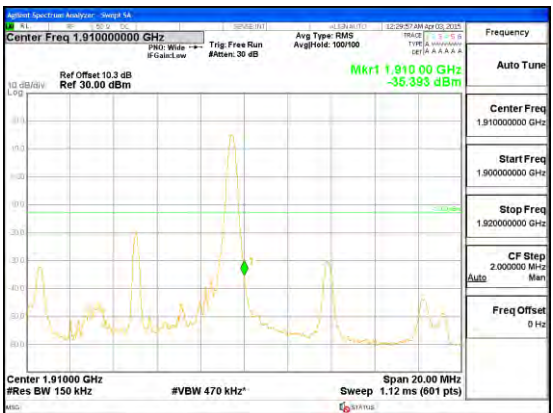
LTE Band 2

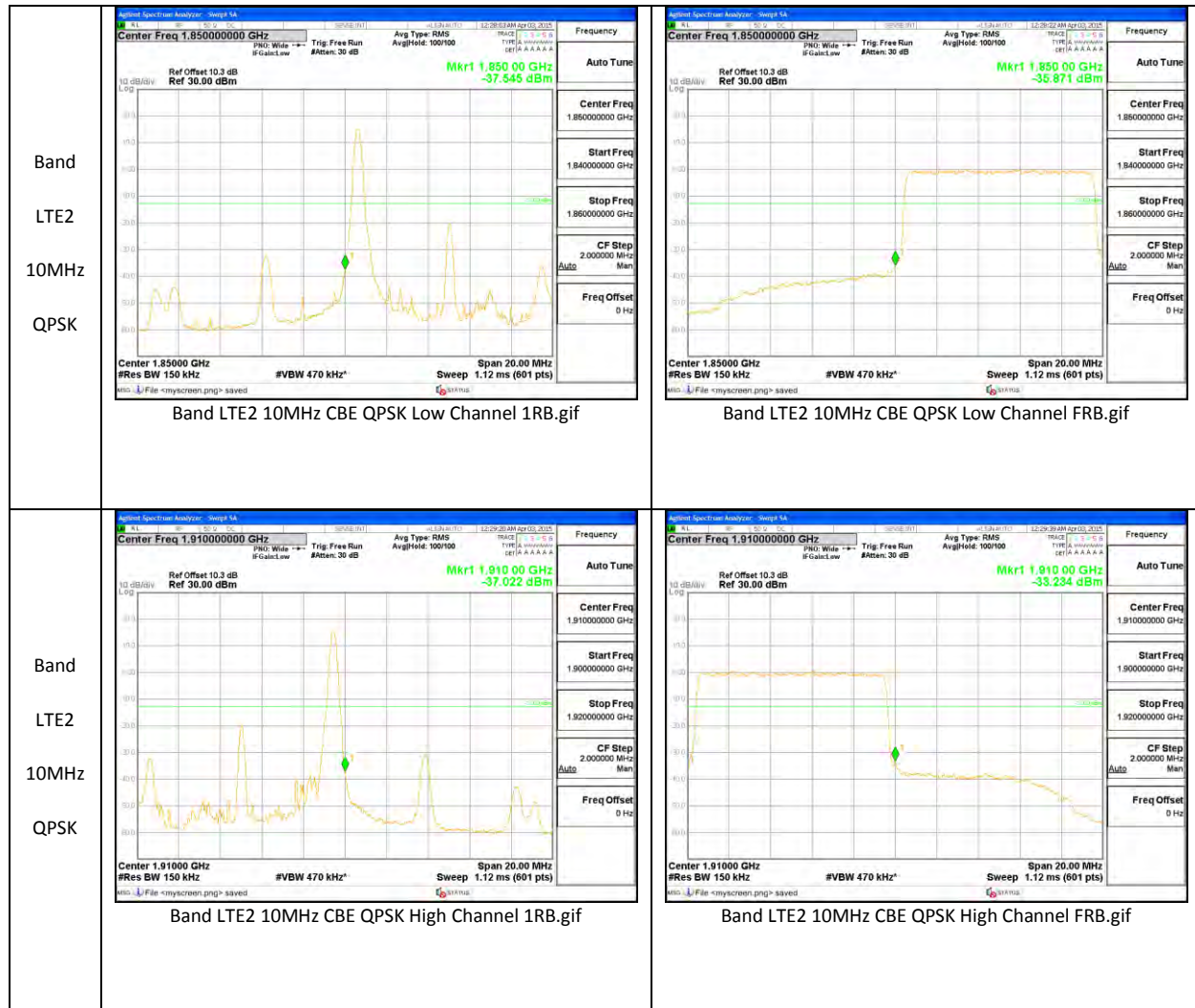
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 20MHz 16QAM	 Band LTE2 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 20MHz CBE 16QAM High Channel FRB.gif

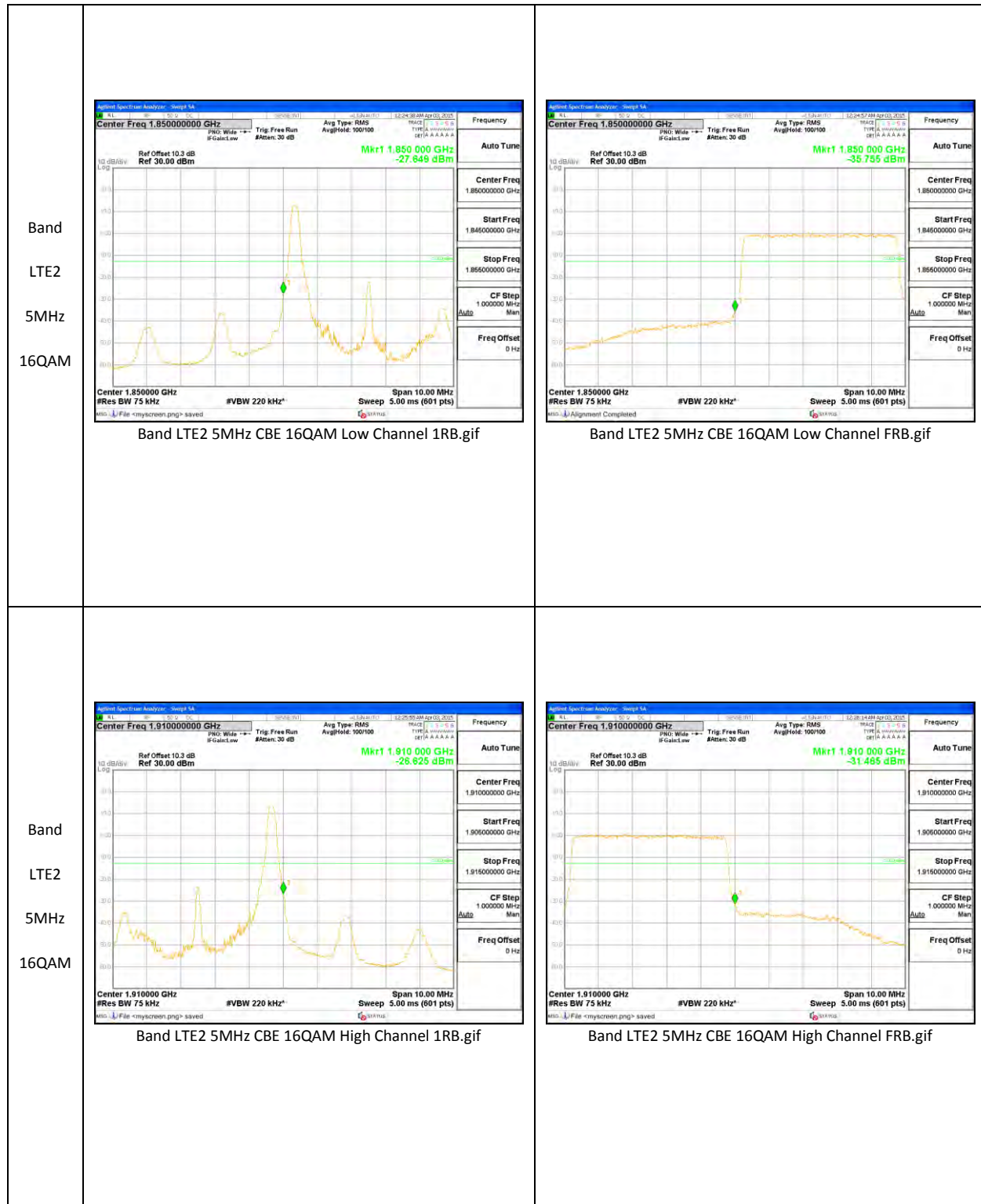


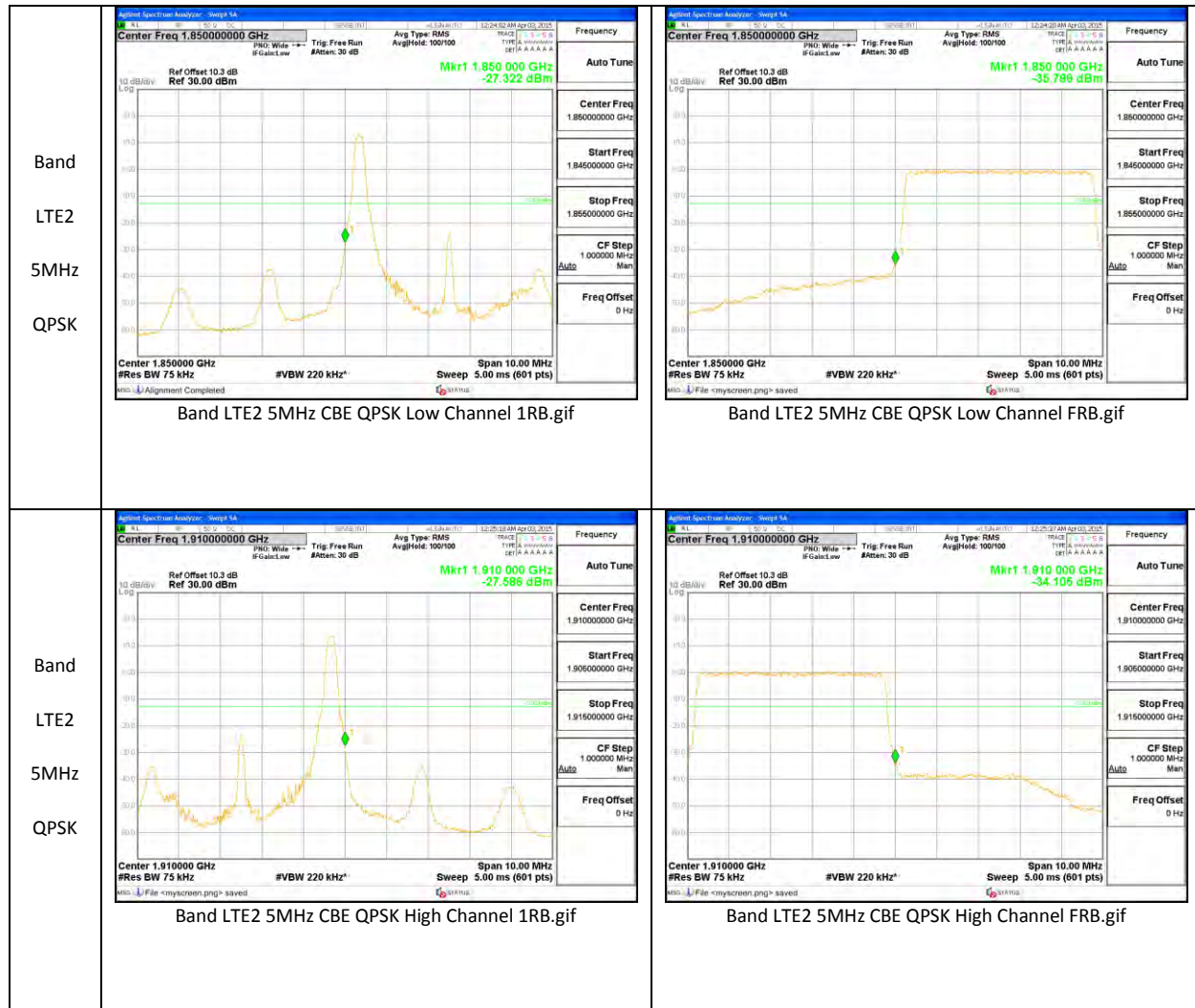
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 15MHz 16QAM	 Band LTE2 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 15MHz CBE 16QAM High Channel FRB.gif

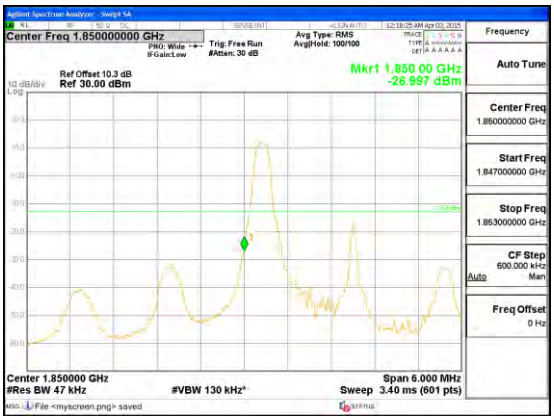
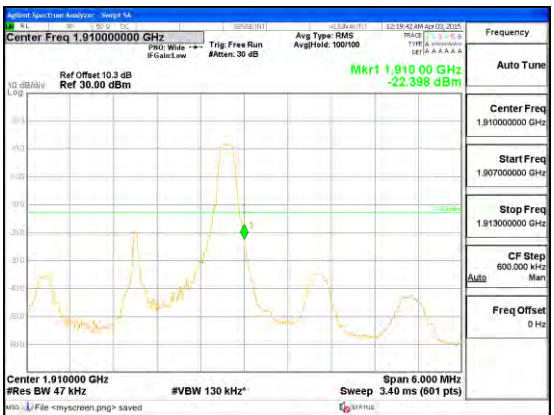


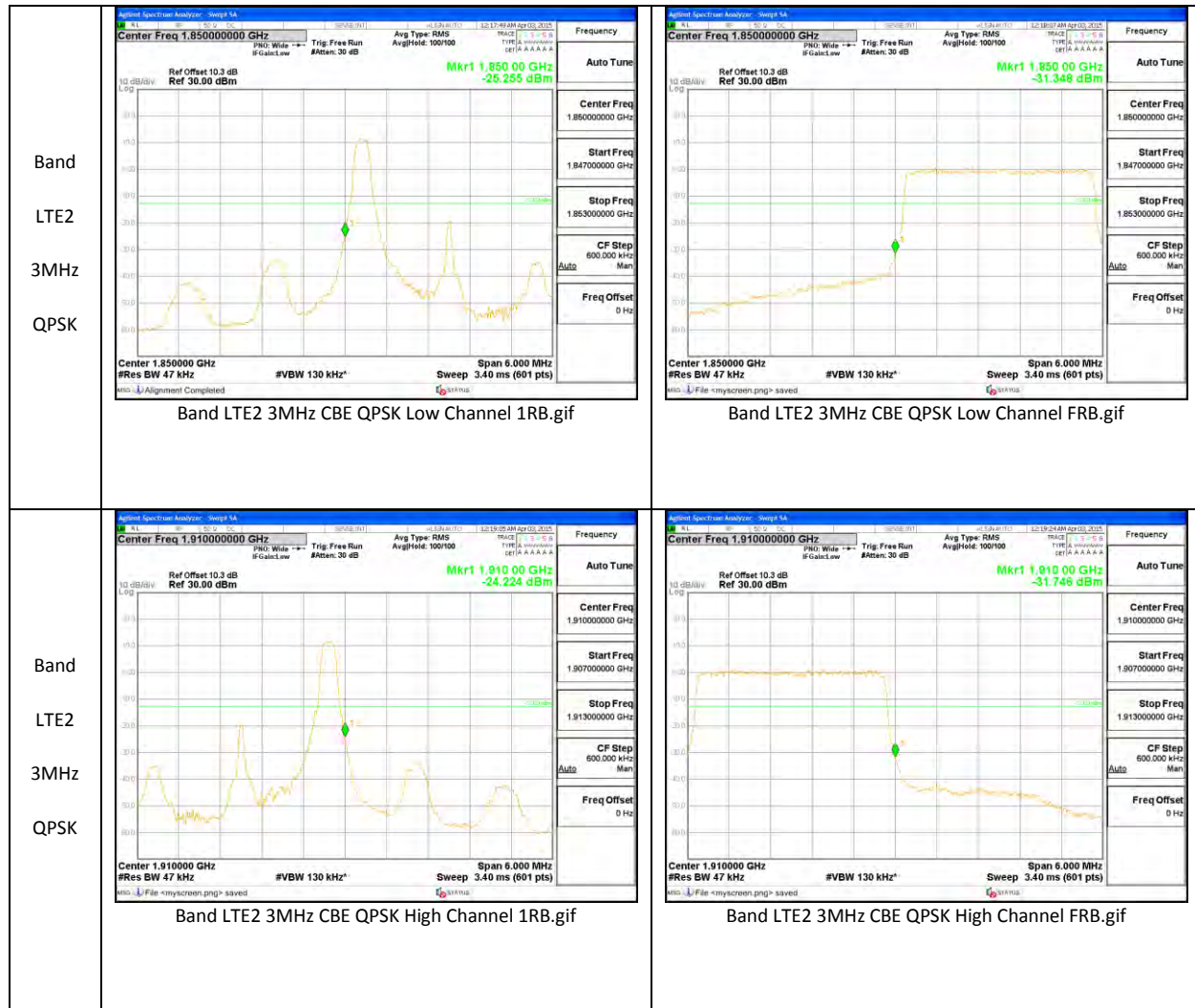
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM High Channel FRB.gif

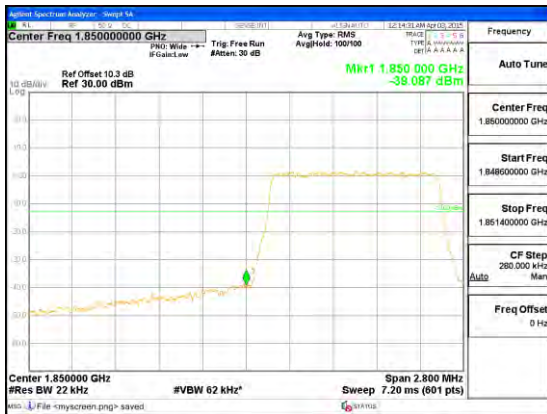
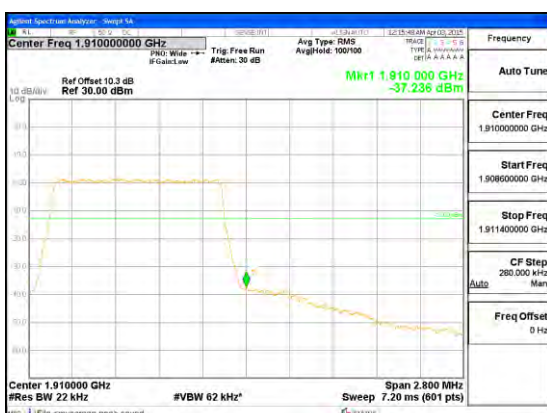


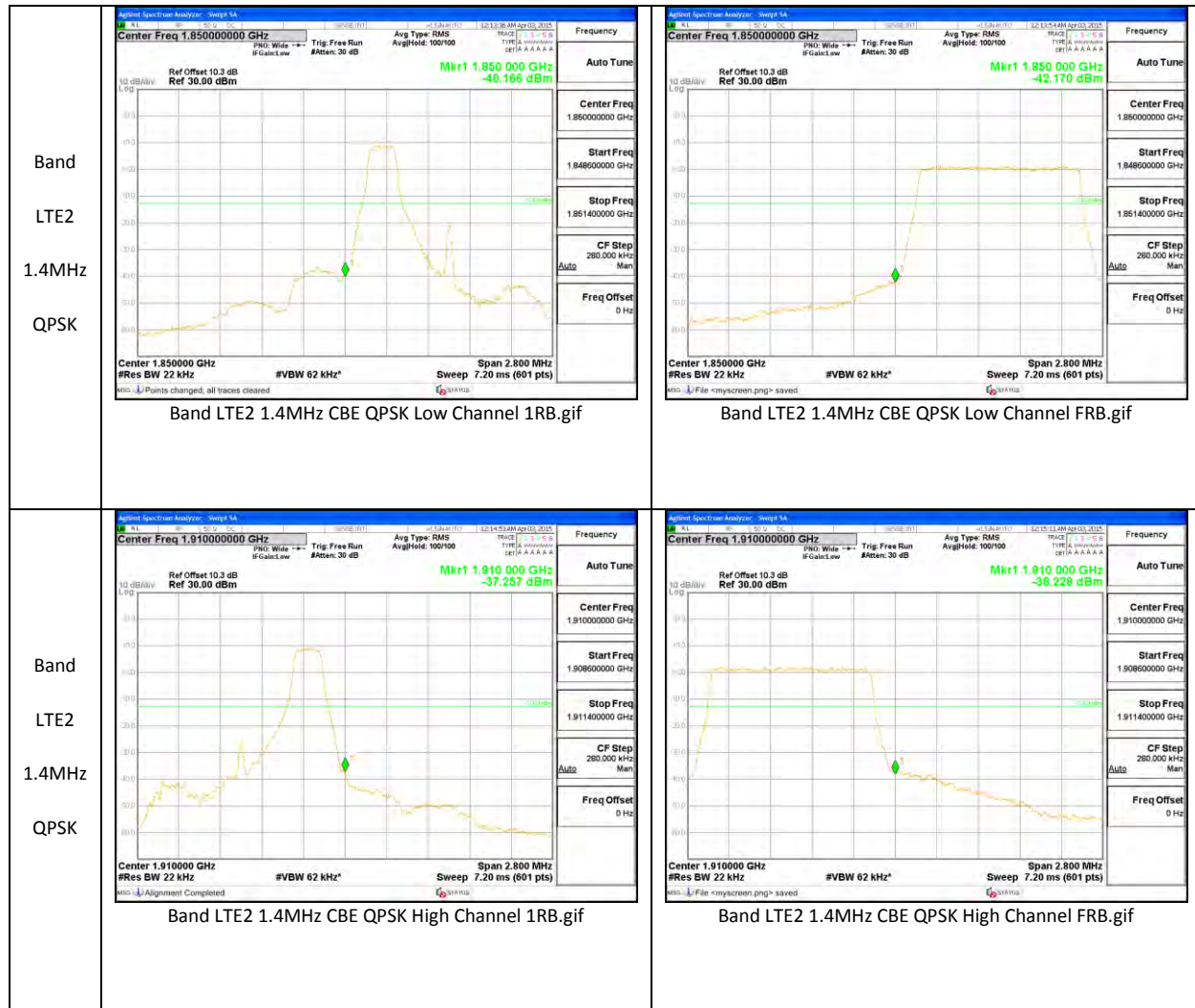


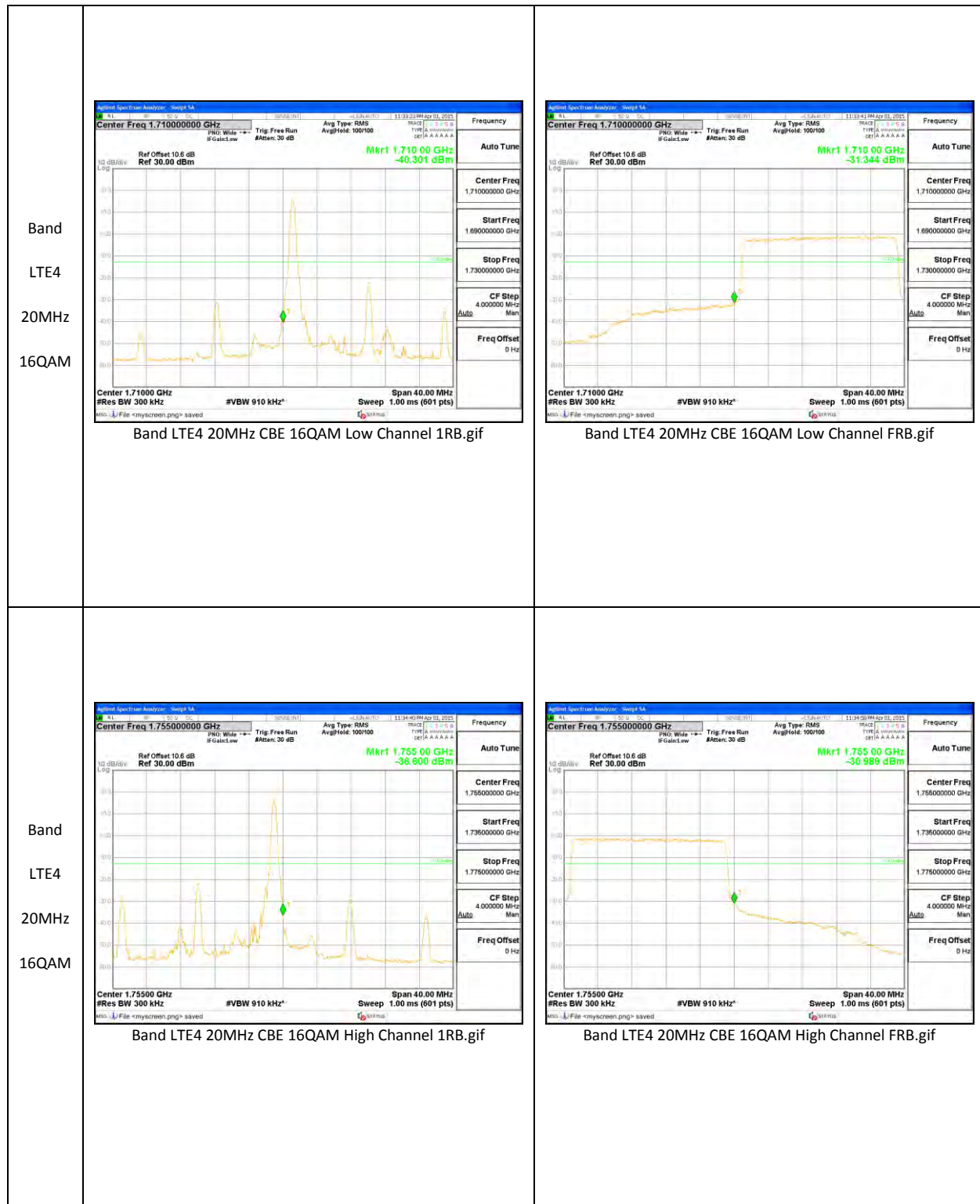


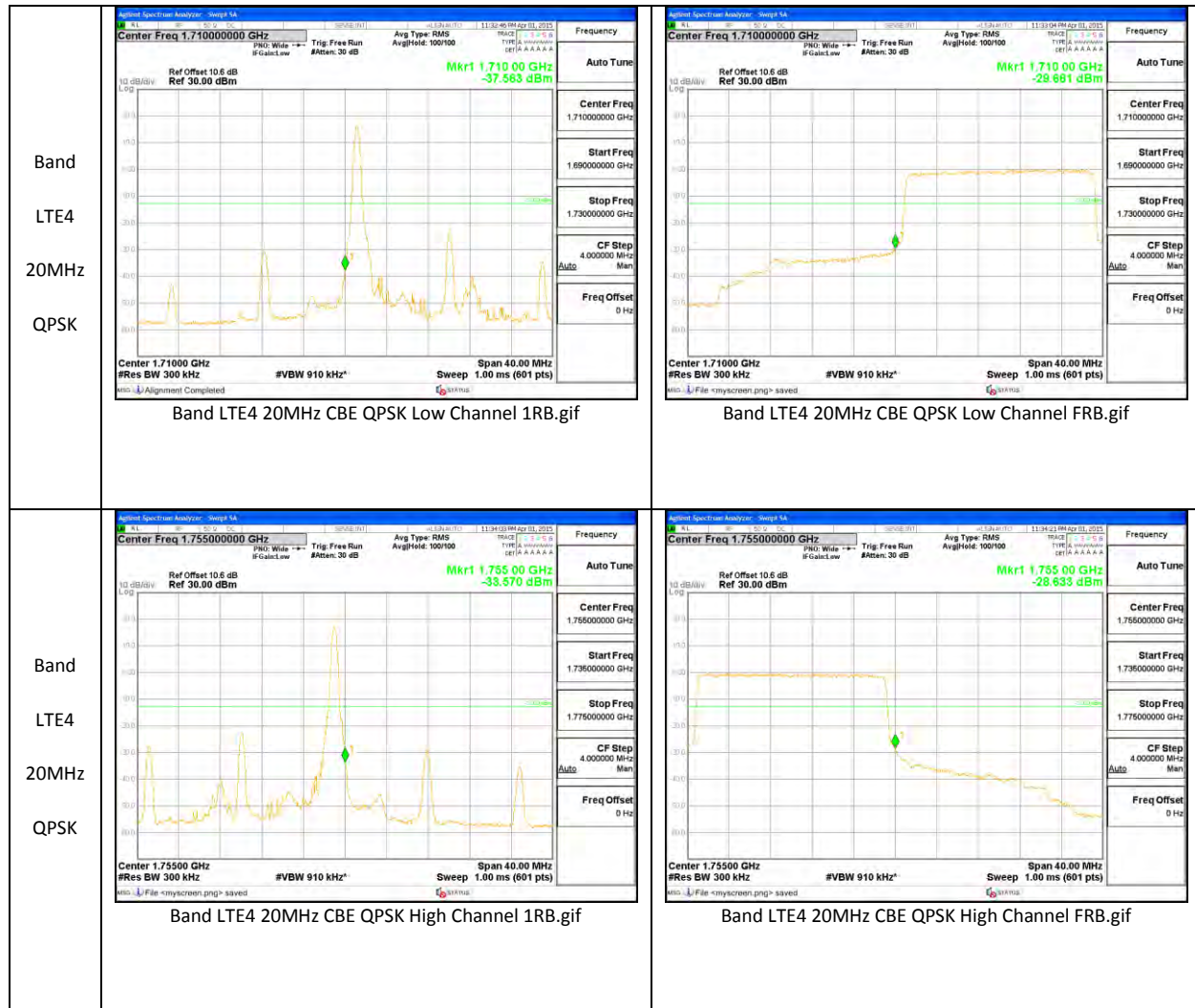
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 3MHz 16QAM	 Band LTE2 3MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 3MHz CBE 16QAM High Channel FRB.gif

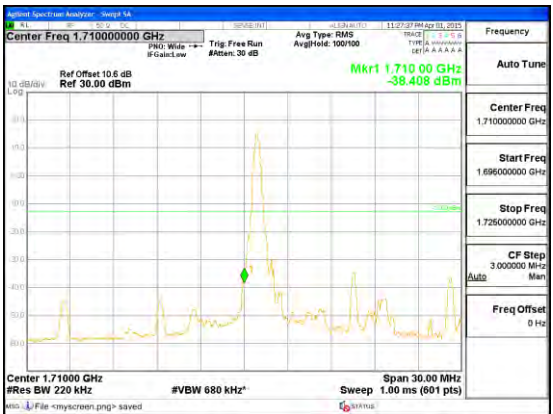
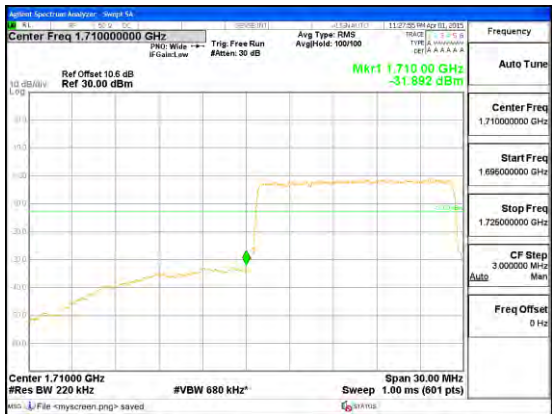
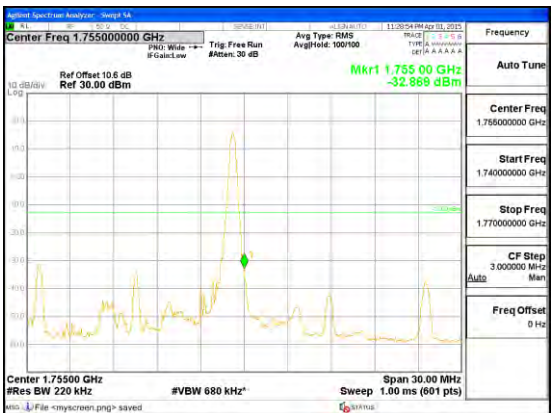


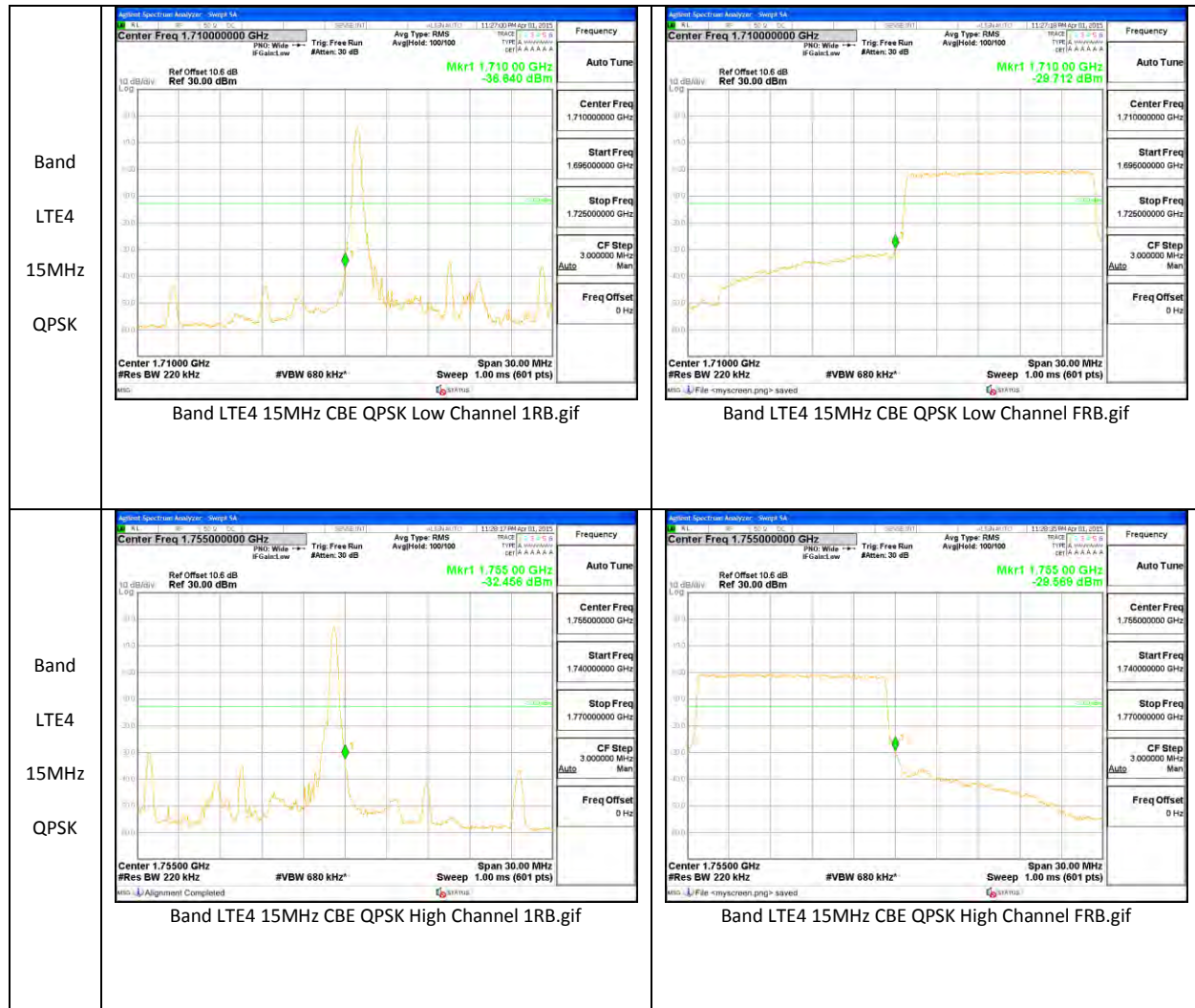
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 1.4MHz 16QAM	 Band LTE2 1.4MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 1.4MHz CBE 16QAM High Channel FRB.gif

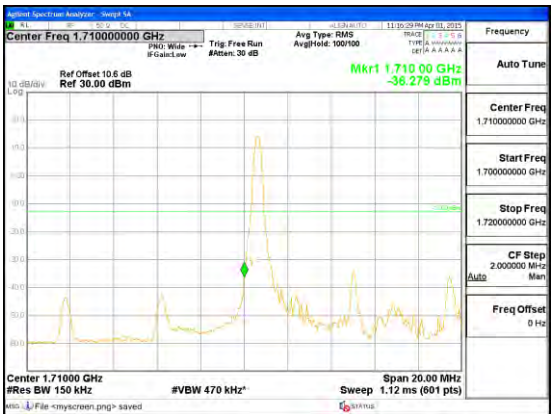
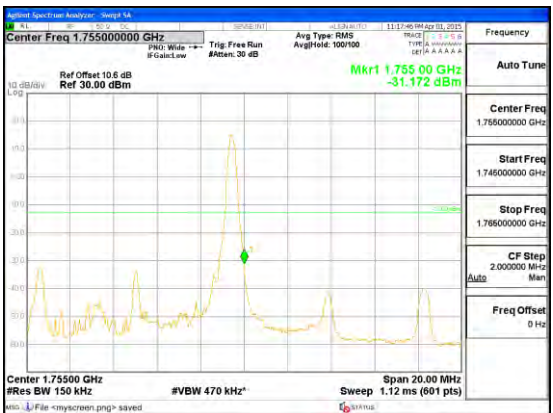


LTE Band 4



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



Band LTE4 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

