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

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE PHONE WITH BT + DTS WLAN b/g/n

MODEL NUMBER: LG-K373, LGK373, K373, LG-K373PR, LGK373PR, K373PR

FCC ID: ZNFK373

REPORT NUMBER: 16I22596-E1V2

ISSUE DATE: 1/25/2016

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	1/22/2016	Initial issue	D. CORONIA
V2	1/25/2016	Updated Section 5, 7 & 10.1	D. CORONIA

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION:	GSM/WCDMA/LTE PHONE WITH BT + DTS WLAN b/g/n
MODEL:	LG-K373, LGK373, K373, LG-K373PR, LGK373PR, K373PR
SERIAL NUMBER:	511CYRN000598 (conducted), 511CYRY000600 (radiated)
DATE TESTED:	JANUARY 5-20, 2016

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E, 27H & 27L	PASS

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

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revision 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-D, 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	☐ Chamber D
☒ Chamber B	☐ Chamber E
☒ Chamber C	☐ Chamber F
	☐ Chamber G
	☐ Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 9KHz to 30 MHz	2.14 dB
Radiated Disturbance, 30 to 1000 MHz	4.98 dB
Radiated Disturbance,1000 to 6000 MHz	3.86 dB
Radiated Disturbance,6000 to 18000 MHz	4.23 dB
Radiated Disturbance,18000 to 26000 MHz	5.30 dB
Radiated Disturbance,26000 to 40000 MHz	5.23 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

This EUT is a GSM/WCDMA/LTE PHONE WITH BT + DTS WLAN b/g/n.

5.2. MAXIMUM OUTPUT POWER (GSM/EGPRS)

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	33.00	1995.26		
	824~849	GPRS	33.00	1995.26	30.55	1135.01
	824~849	EGPRS	26.8	478.63	24.98	314.77
GSM1900	1850~1910	GMSK	29.6	912.01		
	1850~1910	GPRS	29.6	912.01	31.65	1462.18
	1850~1910	EGPRS	25.4	346.74	27.22	527.23

5.3. MAXIMUM OUTPUT POWER (WCDMA)

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

FCC Part 22/24/27						
Band	Frequency Range(MHz)	Modulation	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
Band 2	1850~1910	REL99	22.6	181.97	24.97	314.05
	1850~1910	HSDPA	22.5	177.83	24.55	285.10
	1850~1910	HSUPA	22.5	177.83		
Band 4	1710~1755	REL99	22.5	177.83	21.98	157.76
	1710~1755	HSDPA	22.4	173.78	22.19	165.58
	1710~1755	HSUPA	22.4	173.78		
Band 5	824~849	REL99	23.5	223.87	22.16	164.44
	824~849	HSDPA	23.5	223.87	22.13	163.31
	824~849	HSUPA	23.5	223.87		

5.4. MAXIMUM OUTPUT POWER (LTE)

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

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE2	1850~1910	1.4MHz	QPSK	22.89	194.54	25.04	319.15
			16QAM	22.20	165.96	24.51	282.49
		3MHz	QPSK	23.05	201.84	25.17	328.85
			16QAM	22.20	165.96	24.71	295.80
		5MHz	QPSK	22.79	190.11	24.91	309.74
			16QAM	21.90	154.88	24.51	282.49
		10MHz	QPSK	22.99	199.07	25.01	316.96
			16QAM	22.20	165.96	24.51	282.49
		15MHz	QPSK	23.20	208.93	25.41	347.54
			16QAM	22.20	165.96	24.81	302.69
		20MHz	QPSK	23.10	204.17	26.19	415.91
			16QAM	22.20	165.96	25.71	372.39

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	1.4MHz	QPSK	24.22	264.24	24.86	306.20
			16QAM	23.48	222.84	24.06	254.68
		3MHz	QPSK	24.47	279.90	25.12	325.09
			16QAM	23.47	222.33	24.46	279.25
		5MHz	QPSK	24.41	276.06	24.67	293.09
			16QAM	23.59	228.56	24.47	279.90
		10MHz	QPSK	24.40	275.42	25.11	324.34
			16QAM	23.60	229.09	24.56	285.76
		15MHz	QPSK	24.58	287.08	24.34	271.64
			16QAM	23.60	229.09	23.76	237.68
		20MHz	QPSK	24.56	285.76	24.87	306.90
			16QAM	23.10	204.17	24.27	267.30

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE5	824~849	1.4MHz	QPSK	24.18	261.82	22.46	176.20
			16QAM	23.40	218.78	21.80	151.36
		3MHz	QPSK	24.01	251.77	22.53	179.06
			16QAM	23.38	217.77	21.94	156.31
		5MHz	QPSK	24.10	257.04	22.36	172.19
			16QAM	23.39	218.27	21.36	136.77
		10MHz	QPSK	24.20	263.03	23.02	200.45
			16QAM	23.20	208.93	22.36	172.19

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE12	699~716	1.4MHz	QPSK	24.31	269.77	19.68	92.90
			16QAM	23.40	218.78	19.02	79.80
		3MHz	QPSK	24.30	269.15	19.82	95.94
			16QAM	23.40	218.78	19.93	98.40
		5MHz	QPSK	24.40	275.42	19.72	93.76
			16QAM	23.40	218.78	19.10	81.28
		10MHz	QPSK	24.30	269.15	20.17	103.99
			16QAM	23.20	208.93	19.14	82.04

5.5. DESCRIPTION OF AVAILABLE ANTENNAS

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

Frequency (MHz)	Peak Gain (dBi)
GSM850, 824~849MHz	0.51
GSM1900, 1850~1910MHz	1.97
Band 2, 1850~1910MHz	1.97
Band 4, 1710~1755MHz	1.97
Band 5, 824~849MHz	0.51
Band 12, 699~716MHz	-3.12

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MMCS-02WRE	N/A	N/A
Earphone	LG	N/A	N/A	N/A

I/O CABLES (CONDUCTED SETUP)

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

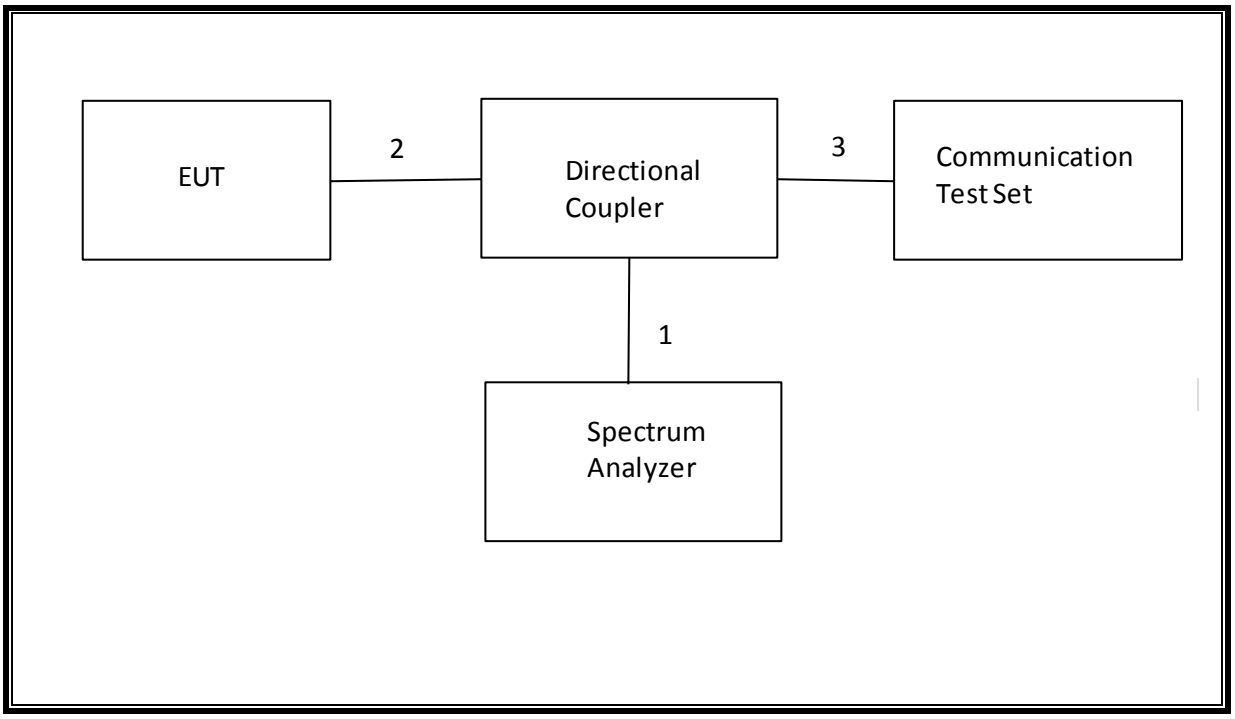
I/O CABLES (RADIATED SETUP)

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

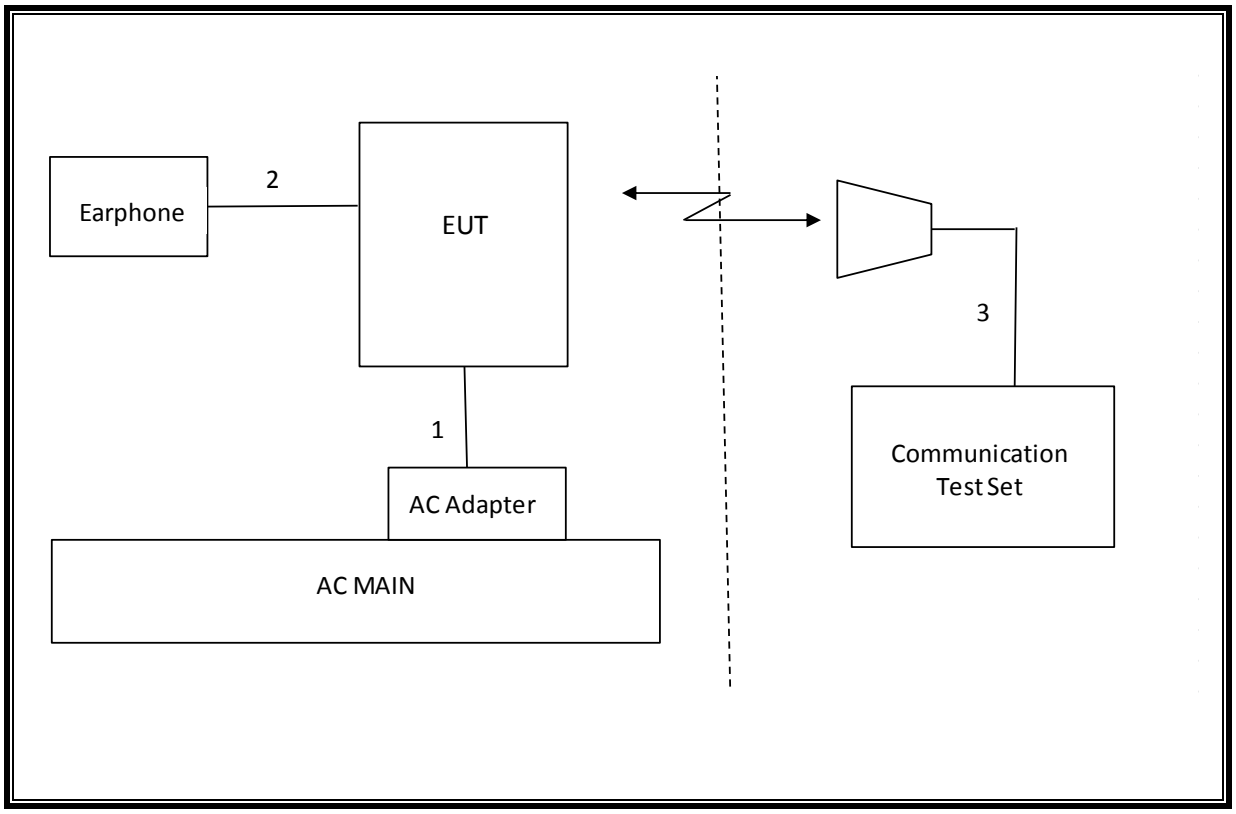
TEST SETUP

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

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	T Number	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	123	10/22/16
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	130	06/10/16
Antenna, Horn, 18 GHz	EMCO	3115	59	11/18/16
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	151	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	153	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	80	05/15/16
Communications Test Set	R&S	CMW500	159	07/10/16
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	06/16/16
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	273	05/05/16
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	447	05/18/16

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
CLT Software	UL	UL RF	Ver 1.0, Feb 2, 2015
Antenna Port Software	UL	UL RF	Ver 3.7, Nov 12, 2015

7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result
2.1049	N/A	Occupied Bandwidth (99%)	N/A	Conducted	Pass
22.917(a) 24.238(a) 27.53(g)	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass
2.1046	N/A	Conducted output power	N/A		Pass
22.355 24.235 27.54	RSS-132(4.3) RSS-133(6.3) RSS-139(6.3)	Frequency Stability	2.5PPM		Pass
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass
27.50(c)(10)	N/A		34.77 dBm		Pass
24.232(c) 27.50(h)(2)	RSS-133(6.4)	Equivalent Isotropic Radiated Power	33dBm		Pass
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass
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

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

8.2. GSM OUTPUT POWER RESULT

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
GSM (Voice)	CS1	1	128	824.4	33.0
			190	836.6	32.8
			251	848.8	32.8
GPRS (GMSK)	CS1	1	128	824.4	33.0
			190	836.6	32.8
			251	848.8	32.8
		2	128	824.4	31.6
			190	836.6	31.7
			251	848.8	31.6
EGPRS (8PSK)	MCS5	1	128	824.4	26.8
			190	836.6	26.7
			251	848.8	26.7
		2	128	824.4	26.2
			190	836.6	26.1
			251	848.8	26.2

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
GSM (Voice)	CS1	1	512	1850.2	29.6
			661	1880.0	29.5
			810	1909.8	29.6
GPRS (GMSK)	CS1	1	512	1850.2	29.6
			661	1880.0	29.5
			810	1909.8	29.6
		2	512	1850.2	28.0
			661	1880.0	27.9
			810	1909.8	28.1
EGPRS (8PSK)	MCS5	1	512	1850.2	25.2
			661	1880.0	25.2
			810	1909.8	25.4
		2	512	1850.2	24.4
			661	1880.0	24.4
			810	1909.8	24.5

8.3. UMTS REL 99

TEST PROCEDURE

The following summary of these settings are illustrated below:

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

8.4. UMTS REL 99 OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 2	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	0	22.6
		9400	1880.0	0	22.5
		9538	1907.6	0	22.2

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 4	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	0	22.3
		1413	1732.6	0	22.4
		1513	1752.6	0	22.5

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 5	Rel 99 (RMC, 12.2 kbps)	4132	826.4	0	23.4
		4183	836.6	0	23.4
		4233	846.6	0	23.5

8.5. UMTS HSDPA

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

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

8.6. UMTS HSDPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 2	Subtest 1	9262	1852.4	0	22.4
		9400	1880.0	0	22.5
		9538	1907.6	0	22.2
	Subtest 2	9262	1852.4	0	22.4
		9400	1880.0	0	22.4
		9538	1907.6	0	22.2
	Subtest 3	9262	1852.4	0.5	21.9
		9400	1880.0	0.5	21.9
		9538	1907.6	0.5	21.8
	Subtest 4	9262	1852.4	0.5	21.8
		9400	1880.0	0.5	21.9
		9538	1907.6	0.5	21.8

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 4	Subtest 1	1312	1712.4	0	22.4
		1413	1732.6	0	22.4
		1513	1752.6	0	22.4
	Subtest 2	1312	1712.4	0	22.4
		1413	1732.6	0	22.4
		1513	1752.6	0	22.4
	Subtest 3	1312	1712.4	0.5	21.9
		1413	1732.6	0.5	21.9
		1513	1752.6	0.5	22.0
	Subtest 4	1312	1712.4	0.5	21.8
		1413	1732.6	0.5	21.9
		1513	1752.6	0.5	21.9

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 5	Subtest 1	4132	826.4	0	23.4
		4183	836.6	0	23.4
		4233	846.6	0	23.5
	Subtest 2	4132	826.4	0	23.4
		4183	836.6	0	23.5
		4233	846.6	0	23.5
	Subtest 3	4132	826.4	0.5	23.0
		4183	836.6	0.5	23.0
		4233	846.6	0.5	23.0
	Subtest 4	4132	826.4	0.5	23.0
		4183	836.6	0.5	23.0
		4233	846.6	0.5	23.0

8.7. UMTS HSUPA

TEST PROCEDURE

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

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

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

8.8. UMTS HSUPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 2	Subtest 1	9262	1852.4	0	21.5
		9400	1880.0	0	21.5
		9538	1907.6	0	21.7
	Subtest 2	9262	1852.4	2	20.7
		9400	1880.0	2	20.7
		9538	1907.6	2	20.7
	Subtest 3	9262	1852.4	1	21.0
		9400	1880.0	1	21.4
		9538	1907.6	1	21.0
	Subtest 4	9262	1852.4	2	20.7
		9400	1880.0	2	20.7
		9538	1907.6	2	20.5
	Subtest 5	9262	1852.4	0	22.5
		9400	1880.0	0	22.5
		9538	1907.6	0	22.3

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 4	Subtest 1	1312	1712.4	0	22.1
		1413	1732.6	0	21.5
		1513	1752.6	0	21.5
	Subtest 2	1312	1712.4	2	20.3
		1413	1732.6	2	20.7
		1513	1752.6	2	20.7
	Subtest 3	1312	1712.4	1	21.3
		1413	1732.6	1	21.4
		1513	1752.6	1	21.3
	Subtest 4	1312	1712.4	2	20.7
		1413	1732.6	2	20.7
		1513	1752.6	2	20.7
	Subtest 5	1312	1712.4	0	22.4
		1413	1732.6	0	22.4
		1513	1752.6	0	22.4

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band 5	Subtest 1	4132	826.4	0	22.7
		4183	836.6	0	22.6
		4233	846.6	0	22.9
	Subtest 2	4132	826.4	2	21.7
		4183	836.6	2	21.7
		4233	846.6	2	21.5
	Subtest 3	4132	826.4	1	22.3
		4183	836.6	1	22.1
		4233	846.6	1	22.0
	Subtest 4	4132	826.4	2	21.7
		4183	836.6	2	21.7
		4233	846.6	2	21.7
	Subtest 5	4132	826.4	0	23.4
		4183	836.6	0	23.5
		4233	846.6	0	23.5

8.9. LTE OUTPUT POWER RESULT

LTE Band 2

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	22.73	22.68	22.54
			1	3	0	22.58	22.73	22.73
			1	5	0	22.67	22.70	22.66
			3	0	0	22.68	22.67	22.67
			3	1	0	22.65	22.72	22.70
			3	3	0	22.59	22.74	22.89
			6	0	1	21.63	21.70	21.67
		16QAM	1	0	1	22.20	22.20	21.95
			1	3	1	22.20	22.20	22.03
			1	5	1	22.20	22.17	21.88
			3	0	1	21.91	21.77	21.67
			3	1	1	21.98	21.70	21.73
			3	3	1	21.91	21.70	21.52
			6	0	2	20.82	20.42	20.65
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	22.77	22.67	22.54
			1	8	0	23.05	22.68	22.81
			1	14	0	22.76	22.49	22.79
			8	0	1	21.77	21.67	21.60
			8	4	1	21.75	21.70	21.78
			8	7	1	21.83	21.72	21.75
			15	0	1	21.82	21.77	21.66
		16QAM	1	0	1	22.20	22.01	21.59
			1	8	1	22.20	22.09	21.48
			1	14	1	22.20	21.81	22.02
			8	0	2	20.45	20.93	20.95
			8	4	2	20.57	20.91	21.04
			8	7	2	20.88	20.86	20.93
			15	0	2	20.88	20.63	20.86

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	22.55	22.50	22.62
			1	12	0	22.60	22.79	22.69
			1	24	0	22.53	22.48	22.76
			12	0	1	21.77	21.69	21.65
			12	7	1	21.83	21.84	21.67
			12	13	1	21.84	21.63	21.70
			25	0	1	21.70	21.72	21.72
		16QAM	1	0	1	21.71	21.68	21.63
			1	12	1	21.90	21.50	21.72
			1	24	1	21.67	21.60	21.58
			12	0	2	20.66	20.60	20.62
			12	7	2	20.76	20.50	20.98
			12	13	2	20.73	20.73	20.93
			25	0	2	20.75	20.80	20.96

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18650	18900	19150
						1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	22.81	22.78	22.90
			1	25	0	22.99	22.91	22.77
			1	49	0	22.68	22.61	22.80
			25	0	1	21.74	21.76	21.70
			25	12	1	21.78	21.78	21.71
			25	25	1	21.80	21.68	21.71
			50	0	1	21.81	21.66	21.69
		16QAM	1	0	1	22.20	22.00	21.83
			1	25	1	22.20	22.09	22.20
			1	49	1	22.01	21.95	21.96
			25	0	2	20.71	20.84	20.67
			25	12	2	20.66	20.90	20.78
			25	25	2	20.75	20.78	20.66
			50	0	2	20.87	20.69	20.66

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18675	18900	19125
						1857.5 MHz	1880 MHz	1902.5 MHz
LTE Band 2	15	QPSK	1	0	0	22.79	22.86	22.84
			1	37	0	22.90	23.20	22.73
			1	74	0	22.80	22.77	22.67
			36	0	1	21.83	21.78	21.75
			36	20	1	21.84	21.70	21.68
			36	39	1	21.76	21.63	21.63
			75	0	1	21.88	21.63	21.69
		16QAM	1	0	1	22.20	22.20	21.70
			1	37	1	22.20	22.20	21.83
			1	74	1	22.15	22.20	21.76
			36	0	2	20.83	20.68	20.73
			36	20	2	21.04	20.58	20.54
			36	39	2	20.88	20.62	20.60
			75	0	2	20.69	20.74	20.79

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18700	18900	19100
						1860 MHz	1880 MHz	1900 MHz
LTE Band 2	20	QPSK	1	0	0	22.80	23.00	22.90
			1	49	0	23.10	23.10	22.90
			1	99	0	22.80	22.80	22.80
			50	0	1	22.10	22.00	22.00
			50	24	1	22.10	22.00	22.00
			50	50	1	22.00	22.00	22.00
			100	0	1	22.00	22.00	22.00
		16QAM	1	0	1	22.20	21.90	22.10
			1	49	1	22.10	22.00	21.80
			1	99	1	22.00	22.00	21.80
			50	0	2	21.10	21.00	21.10
			50	24	2	21.10	21.10	21.10
			50	50	2	21.00	21.20	21.00
			100	0	2	21.10	21.00	21.00

LTE Band 4

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19957	20175	20393
						1710.7 MHz	1732.5 MHz	1754.3 MHz
LTE Band 4	1.4	QPSK	1	0	0	23.89	24.09	24.21
			1	3	0	24.07	24.12	24.22
			1	5	0	24.11	24.08	24.10
			3	0	0	24.07	24.15	24.16
			3	1	0	23.98	24.12	24.17
			3	3	0	23.96	24.12	24.14
			6	0	1	23.05	23.04	23.11
		16QAM	1	0	1	23.26	23.35	23.47
			1	3	1	23.28	23.20	23.48
			1	5	1	23.27	23.06	23.34
			3	0	1	23.37	22.91	23.19
			3	1	1	23.21	22.94	23.30
			3	3	1	23.21	23.36	23.12
			6	0	2	21.87	22.20	22.21
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	24.06	24.31	24.36
			1	8	0	23.78	24.08	24.47
			1	14	0	23.84	24.07	24.32
			8	0	1	23.01	23.20	23.23
			8	4	1	22.89	23.00	23.22
			8	7	1	22.89	23.14	23.14
			15	0	1	22.90	23.04	23.18
		16QAM	1	0	1	23.11	23.18	23.37
			1	8	1	23.32	23.14	23.38
			1	14	1	23.21	23.13	23.47
			8	0	2	21.97	22.36	21.90
			8	4	2	22.12	22.36	22.14
			8	7	2	22.14	22.28	21.99
			15	0	2	21.97	22.26	22.18

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19975	20175	20375
						1712.5 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	23.95	24.03	24.35
			1	12	0	24.41	24.15	24.18
			1	24	0	23.97	24.12	24.07
			12	0	1	22.92	23.05	23.17
			12	7	1	22.94	23.21	23.14
			12	13	1	22.93	23.15	23.18
			25	0	1	22.94	23.05	23.16
		16QAM	1	0	1	23.28	23.08	23.59
			1	12	1	23.05	22.87	23.15
			1	24	1	22.87	23.05	22.99
			12	0	2	22.02	22.04	22.25
			12	7	2	22.06	22.00	22.30
			12	13	2	22.09	22.15	22.46
			25	0	2	21.91	22.12	22.46

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	24.01	24.25	24.13
			1	25	0	23.99	24.40	24.18
			1	49	0	24.02	24.02	24.05
			25	0	1	23.06	23.19	23.19
			25	12	1	22.99	23.19	23.23
			25	25	1	23.05	23.09	23.15
			50	0	1	23.06	23.19	23.20
		16QAM	1	0	1	23.39	23.26	23.36
			1	25	1	23.53	23.21	23.60
			1	49	1	23.34	23.08	23.33
			25	0	2	22.20	22.30	22.25
			25	12	2	22.13	22.26	22.33
			25	25	2	22.02	21.89	22.12
			50	0	2	22.08	22.23	22.25

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	24.31	24.25	24.30
			1	37	0	24.14	24.58	24.40
			1	74	0	24.00	24.11	24.20
			36	0	1	23.05	23.20	23.20
			36	20	1	23.05	23.18	23.20
			36	39	1	23.12	23.13	23.20
			75	0	1	22.99	23.13	23.20
		16QAM	1	0	1	23.56	23.60	23.40
			1	37	1	23.43	23.60	23.50
			1	74	1	23.39	23.60	23.40
			36	0	2	22.17	22.32	22.50
			36	20	2	22.21	22.15	22.30
			36	39	2	22.27	21.95	22.30
			75	0	2	22.10	22.19	22.10

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		24.50	
			1	49	0		24.56	
			1	99	0		24.44	
			50	0	1		23.26	
			50	24	1		23.28	
			50	50	1		23.10	
			100	0	1		23.20	
		16QAM	1	0	1		23.00	
			1	49	1		23.10	
			1	99	1		22.90	
			50	0	2		22.33	
			50	24	2		22.15	
			50	50	2		22.06	
			100	0	2		22.25	

LTE Band 5

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	23.82	23.85	24.05
			1	3	0	24.18	23.91	24.00
			1	5	0	24.10	23.77	23.92
			3	0	0	24.00	23.96	23.96
			3	1	0	23.93	24.07	23.89
			3	3	0	24.09	24.06	23.88
			6	0	1	23.00	22.94	22.92
		16QAM	1	0	1	23.30	23.13	23.40
			1	3	1	23.40	23.24	23.40
			1	5	1	23.31	23.12	23.40
			3	0	1	22.98	22.92	23.21
			3	1	1	22.87	22.89	23.25
			3	3	1	22.99	22.78	23.23
			6	0	2	21.69	21.89	21.95
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	23.90	23.99	23.90
			1	8	0	23.93	24.01	23.96
			1	14	0	23.81	23.96	23.86
			8	0	1	22.96	22.86	23.00
			8	4	1	22.92	22.90	22.97
			8	7	1	22.92	22.87	23.06
			15	0	1	22.95	22.93	22.92
		16QAM	1	0	1	23.25	23.37	23.20
			1	8	1	23.33	23.34	23.13
			1	14	1	23.19	23.38	23.23
			8	0	2	22.15	22.17	21.74
			8	4	2	22.11	22.13	21.75
			8	7	2	22.12	21.82	22.00
			15	0	2	21.91	21.81	21.99

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	23.95	23.71	23.97
			1	12	0	24.10	23.98	23.91
			1	24	0	23.88	23.83	24.03
			12	0	1	22.94	22.96	22.79
			12	7	1	22.98	22.91	22.92
			12	13	1	22.93	22.84	22.92
			25	0	1	23.02	22.91	22.91
		16QAM	1	0	1	23.29	22.81	23.39
			1	12	1	23.07	22.58	22.93
			1	24	1	23.20	22.77	22.79
			12	0	2	22.10	21.97	21.96
			12	7	2	21.95	21.94	21.93
			12	13	2	21.91	21.98	22.01
			25	0	2	22.10	22.08	21.99

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20450	20525	20600
						829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0		24.00	
			1	25	0		24.20	
			1	49	0		23.90	
			25	0	1		23.00	
			25	12	1		22.90	
			25	25	1		23.00	
			50	0	1		22.90	
		16QAM	1	0	1		23.20	
			1	25	1		23.20	
			1	49	1		22.80	
			25	0	2		22.00	
			25	12	2		22.00	
			25	25	2		22.30	
			50	0	2		22.10	

LTE Band 12

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23017	23095	23173
						699.7 MHz	707.5 MHz	715.3 MHz
LTE Band 12	1.4	QPSK	1	0	0	24.10	24.13	24.19
			1	3	0	24.09	24.24	24.27
			1	5	0	24.09	24.07	24.09
			3	0	0	23.90	24.17	24.27
			3	1	0	23.95	24.31	24.23
			3	3	0	23.90	24.06	24.25
			6	0	1	22.95	23.04	23.31
		16QAM	1	0	1	23.40	23.40	23.40
			1	3	1	23.40	23.40	23.40
			1	5	1	23.40	23.40	23.24
			3	0	1	23.18	23.10	23.14
			3	1	1	23.18	23.14	23.20
			3	3	1	23.17	23.13	22.98
			6	0	2	22.13	21.81	22.07
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23025	23095	23165
						700.5 MHz	707.5 MHz	714.5 MHz
LTE Band 12	3	QPSK	1	0	0	24.18	24.30	24.10
			1	8	0	24.08	24.23	24.19
			1	14	0	24.14	24.14	24.05
			8	0	1	23.01	23.22	23.19
			8	4	1	23.00	23.03	23.11
			8	7	1	23.03	23.07	23.18
			15	0	1	23.06	23.17	23.19
		16QAM	1	0	1	22.83	23.14	23.40
			1	8	1	23.40	22.99	23.40
			1	14	1	23.24	23.39	23.17
			8	0	2	22.09	22.28	22.20
			8	4	2	22.11	22.19	22.15
			8	7	2	22.31	22.25	22.24
			15	0	2	22.01	22.09	22.31

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23035	23095	23155
						701.5 MHz	707.5 MHz	713.5 MHz
LTE Band 12	5	QPSK	1	0	0	24.08	24.10	24.18
			1	12	0	24.40	24.30	24.08
			1	24	0	24.18	24.10	24.14
			12	0	1	22.96	23.10	23.01
			12	7	1	23.10	23.00	23.00
			12	13	1	22.98	22.90	23.03
			25	0	1	23.01	23.10	23.06
		16QAM	1	0	1	23.06	23.00	22.83
			1	12	1	23.40	23.20	23.40
			1	24	1	23.40	23.00	23.24
			12	0	2	22.04	22.10	22.09
			12	7	2	22.18	22.00	22.11
			12	13	2	22.11	22.00	22.31
			25	0	2	22.08	22.10	22.01

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						23060	23095	23130
						704 MHz	707.5 MHz	711 MHz
LTE Band 12	10	QPSK	1	0	0		24.10	
			1	25	0		24.30	
			1	49	0		24.10	
			25	0	1		23.10	
			25	12	1		23.00	
			25	25	1		22.90	
			50	0	1		23.10	
		16QAM	1	0	1		23.00	
			1	25	1		23.20	
			1	49	1		23.00	
			25	0	2		22.10	
			25	12	2		22.00	
			25	25	2		22.00	
			50	0	2		22.10	

9. PEAK TO AVERAGE RATIO

TEST PROCEDURE

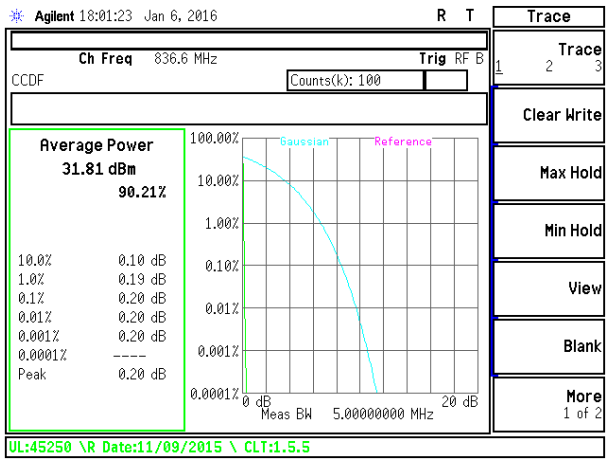
Per KDB 971168 D01 Power Meas License Digital Systems v02r02

TEST SPEC

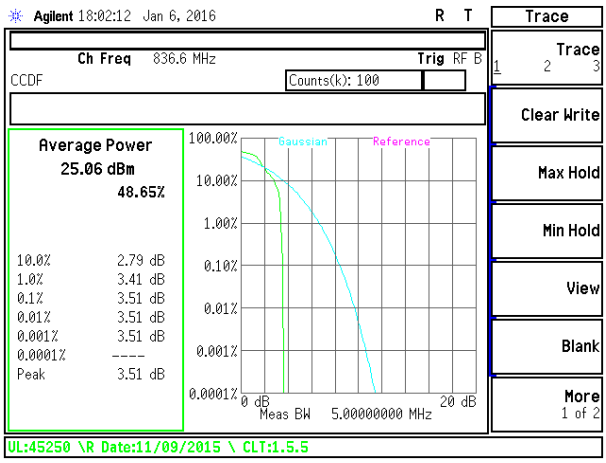
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

9.1. CONDUCTED PEAK TO AVERAGE RESULT

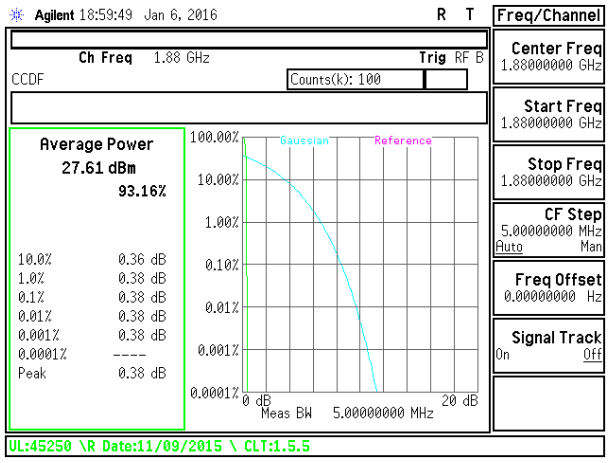
GSM



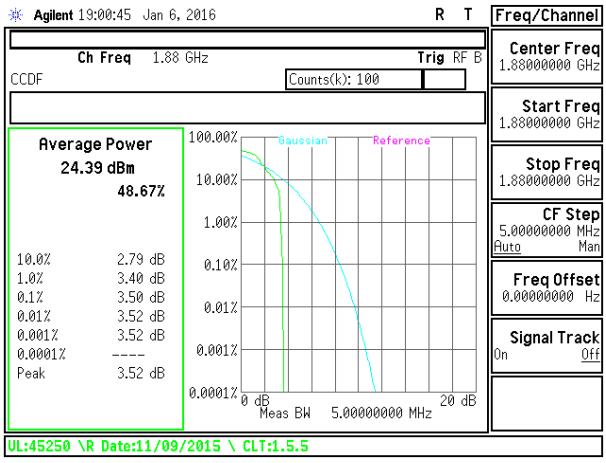
GSM850 GPRS Middle Channel



GSM850 EGPRS Middle Channel

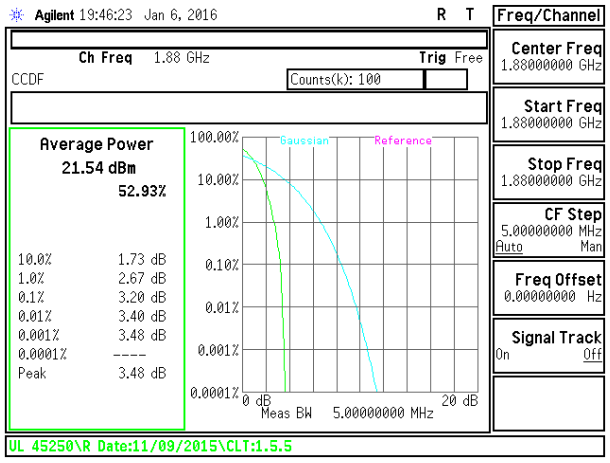


GSM1900 GPRS Middle Channel

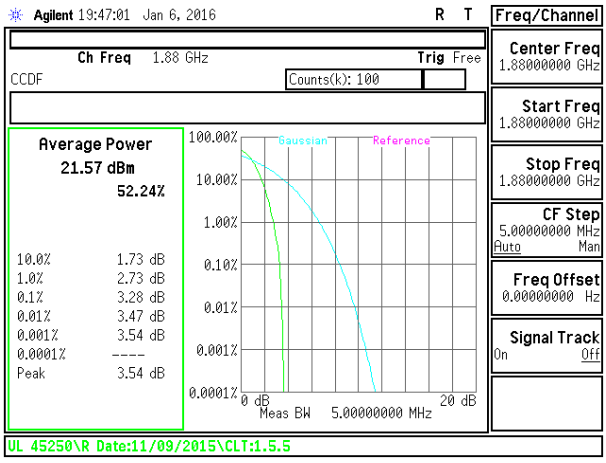


GSM1900 EGPRS Middle Channel

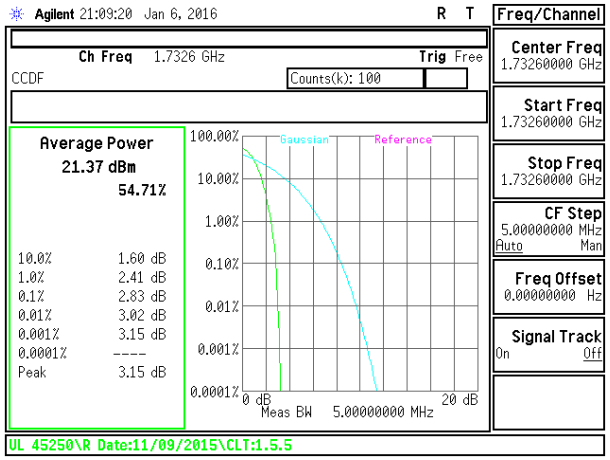
WCDMA



B2 REL99



B2 HSDPA



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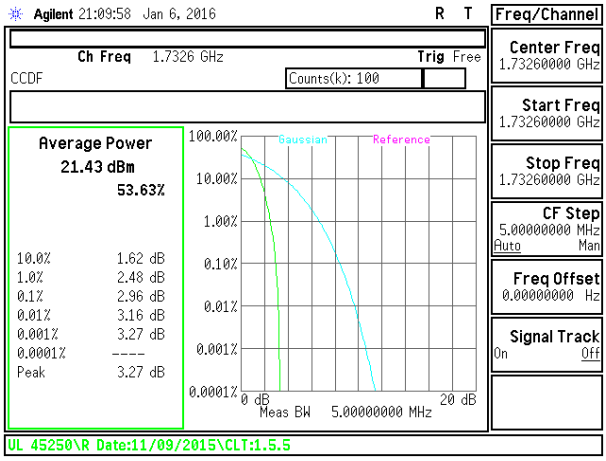

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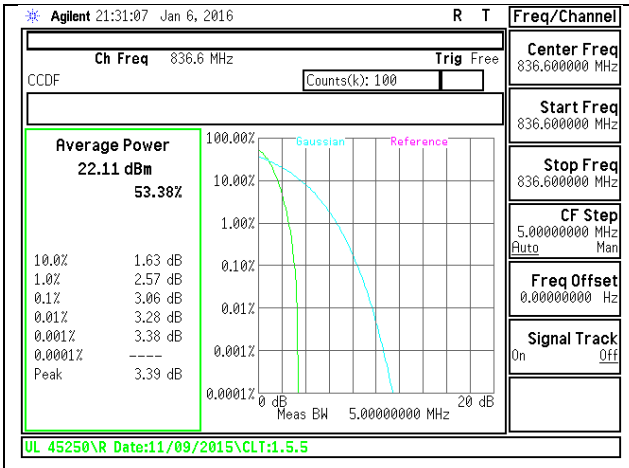
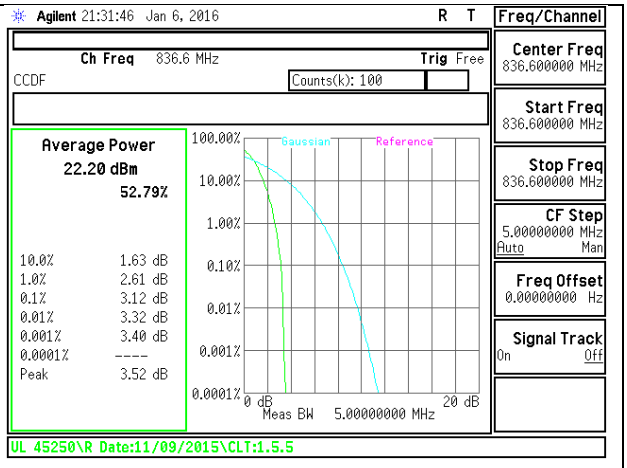
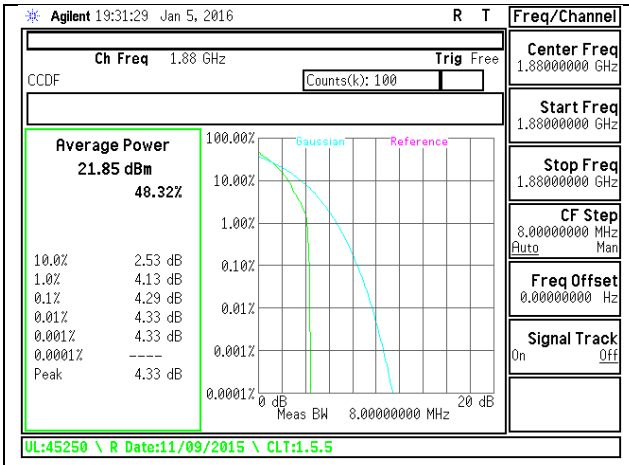


B5 REL99

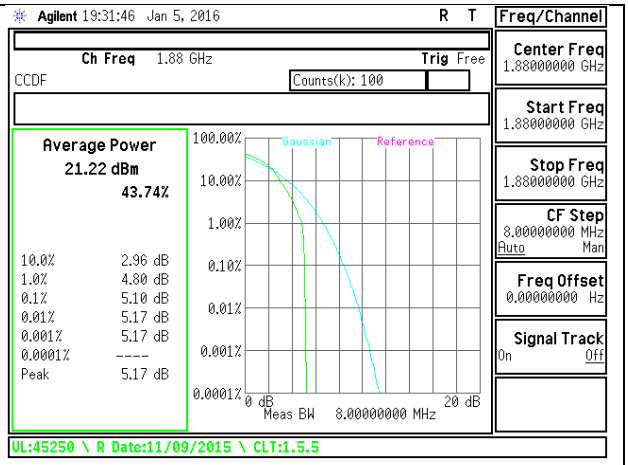


B5 HSDPA

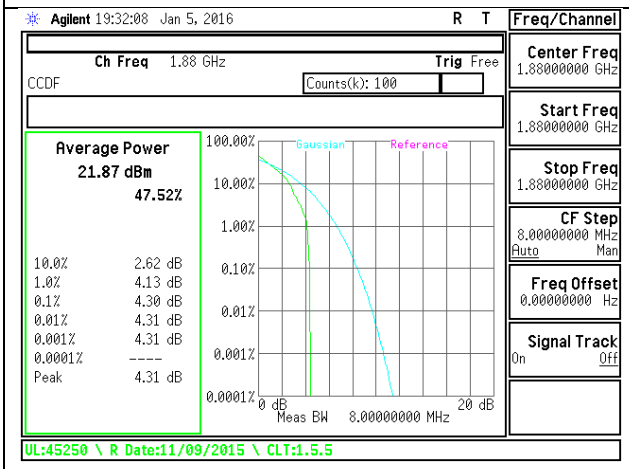
LTE Band 2



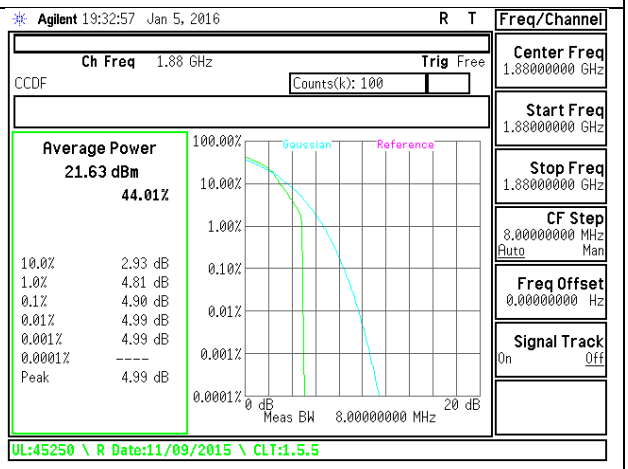
LTE B2 1.4MHz QPSK Middle Channel



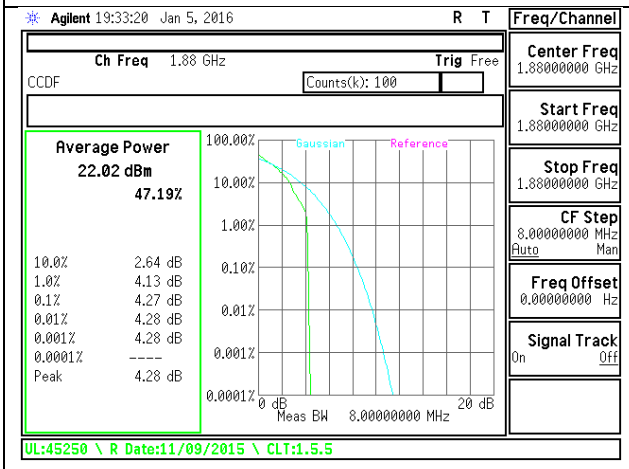
LTE B2 1.4MHz 16QAM Middle Channel



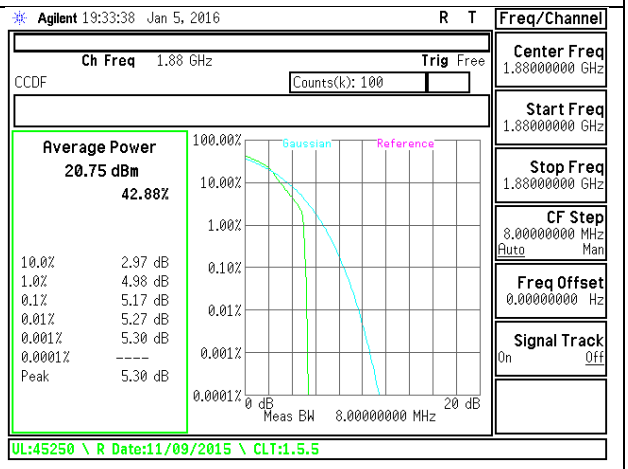
LTE B2 3MHz QPSK Middle Channel



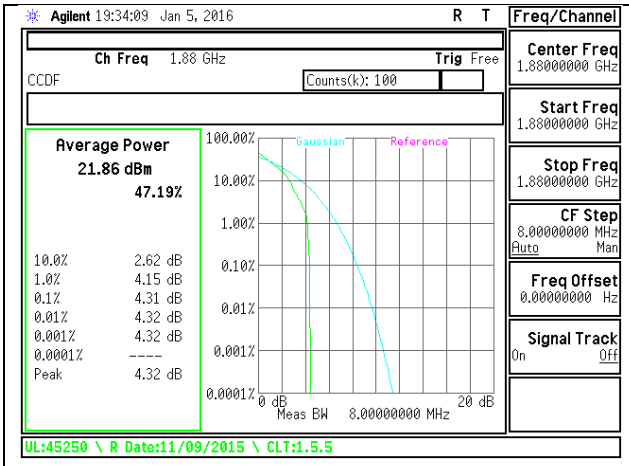
LTE B2 3MHz 16QAM Middle Channel



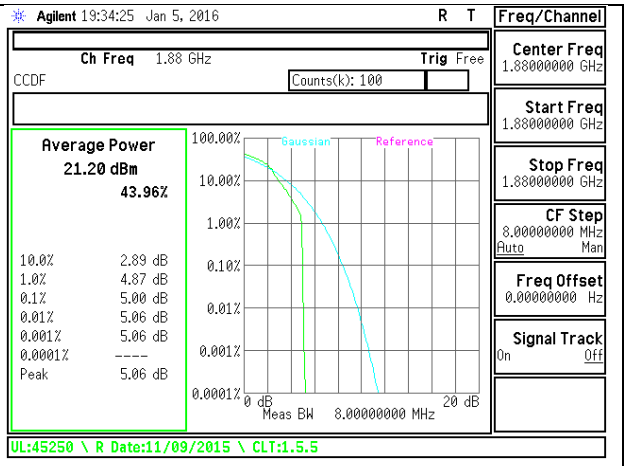
LTE B2 5MHz QPSK Middle Channel



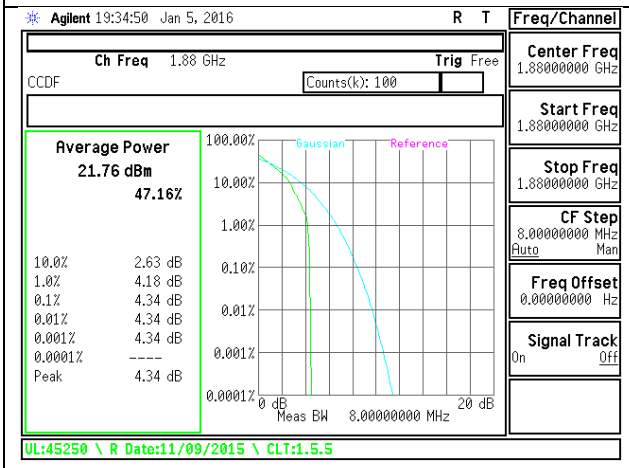
LTE B2 5MHz 16QAM Middle Channel



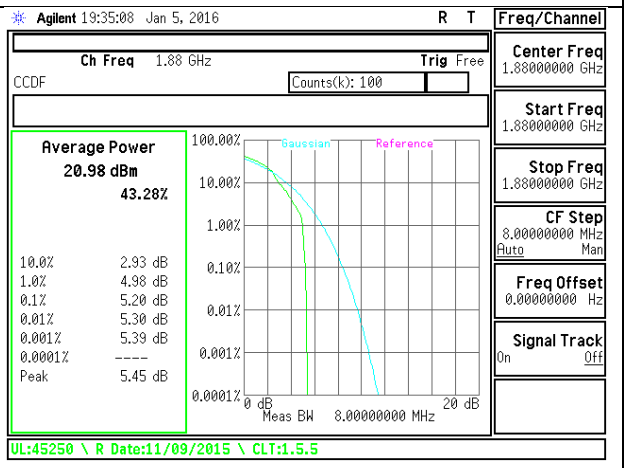
LTE B2 10MHz QPSK Middle Channel



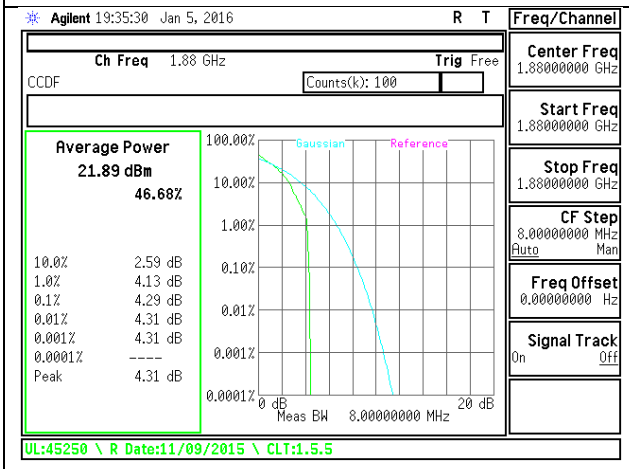
LTE B2 10MHz 16QAM Middle Channel



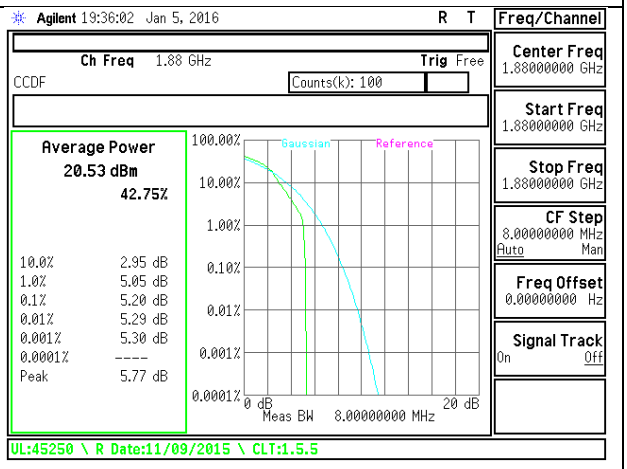
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel

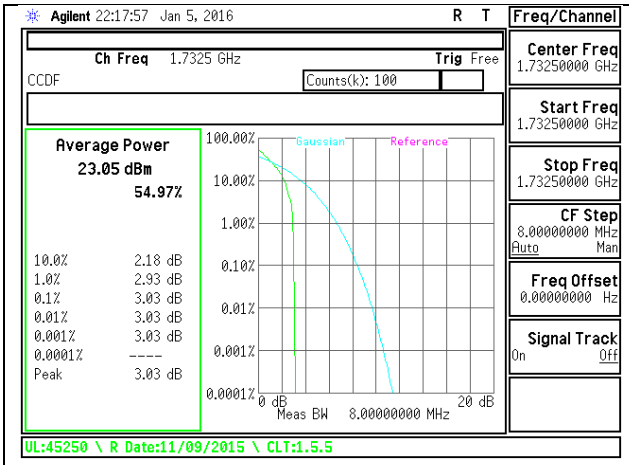


LTE B2 20MHz QPSK Middle Channel

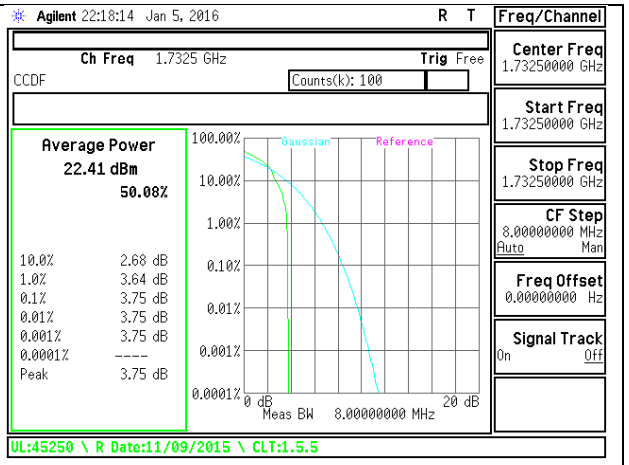


LTE B2 20MHz 16QAM Middle Channel

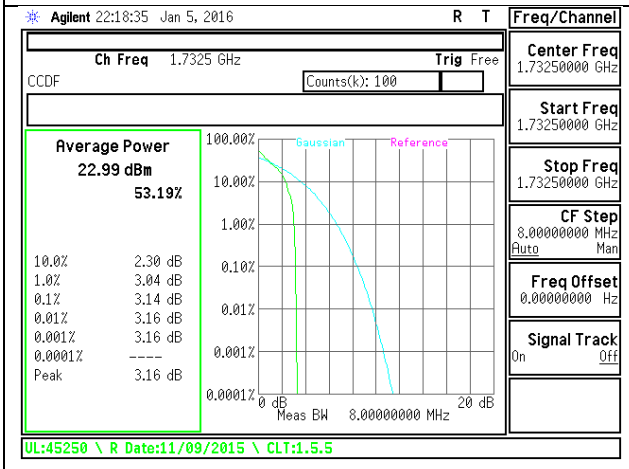
LTE Band 4



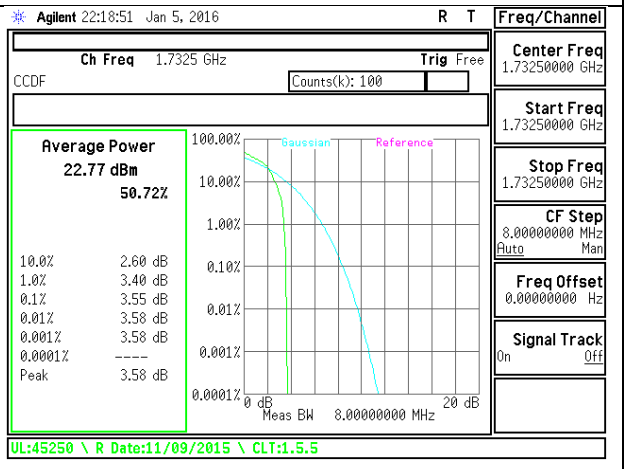
LTE B4 1.4MHz QPSK Middle Channel



LTE B4 1.4MHz 16QAM Middle Channel



LTE B4 3MHz QPSK Middle Channel



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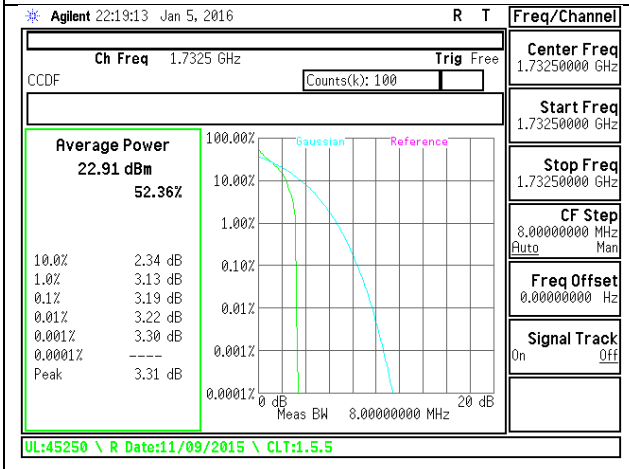
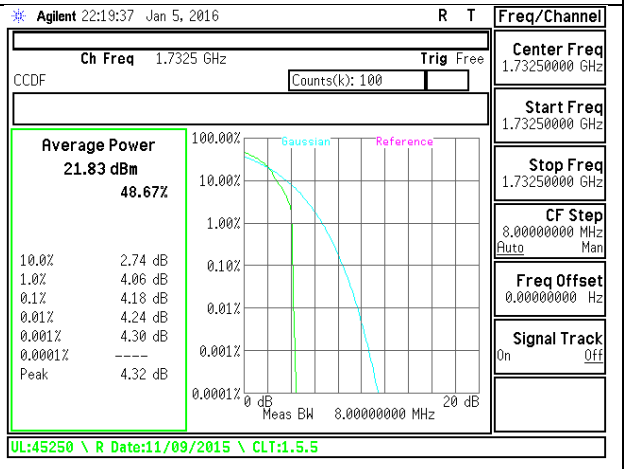
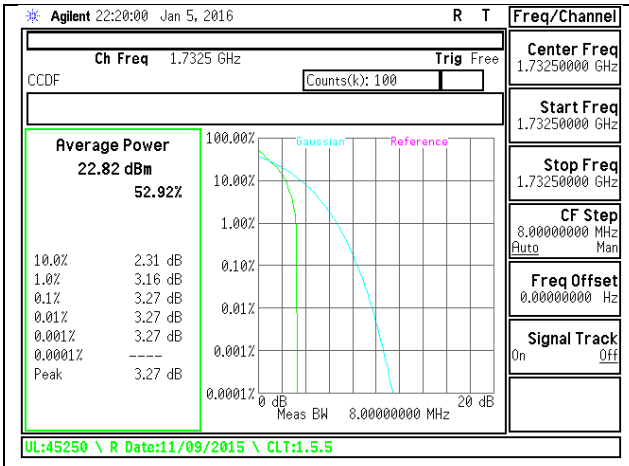


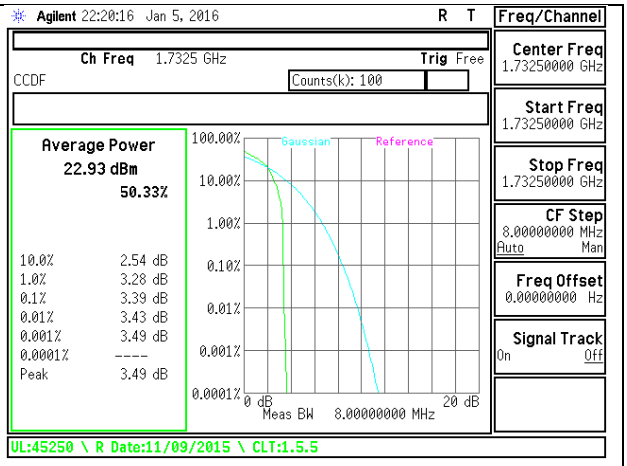
LTE B4 5MHz QPSK Middle Channel



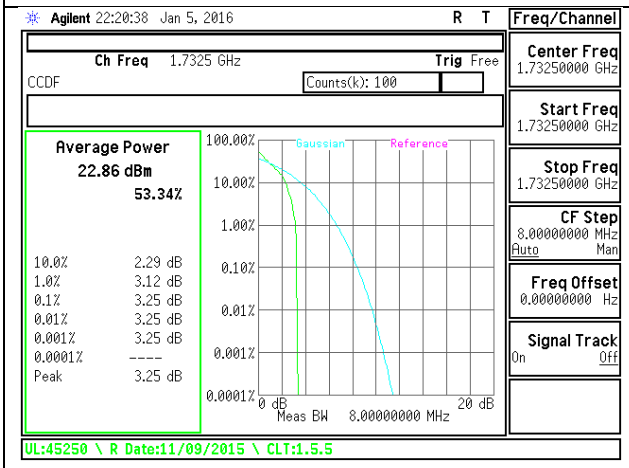
LTE B4 5MHz 16QAM Middle Channel



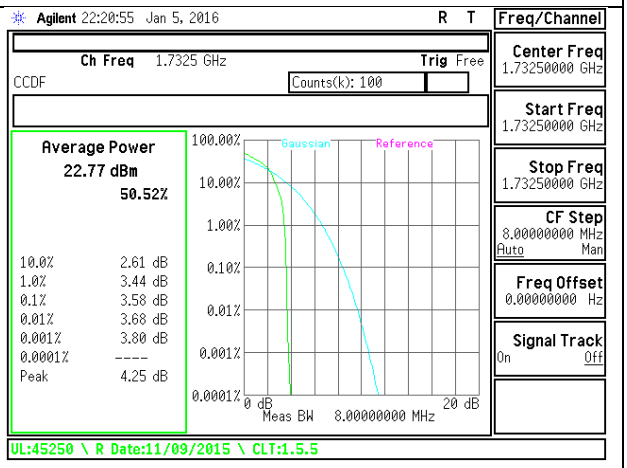
LTE B4 10MHz QPSK Middle Channel



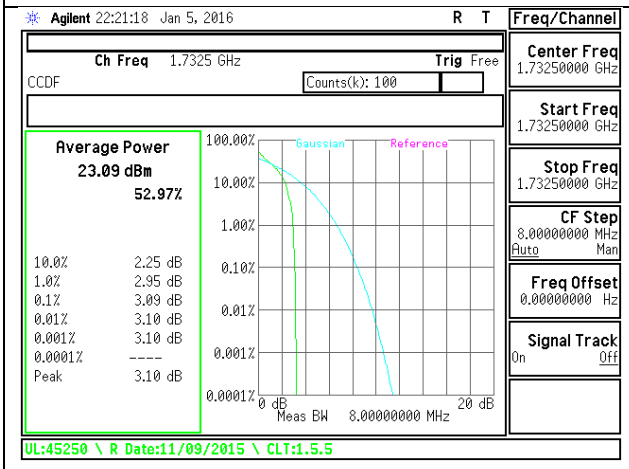
LTE B4 10MHz 16QAM Middle Channel



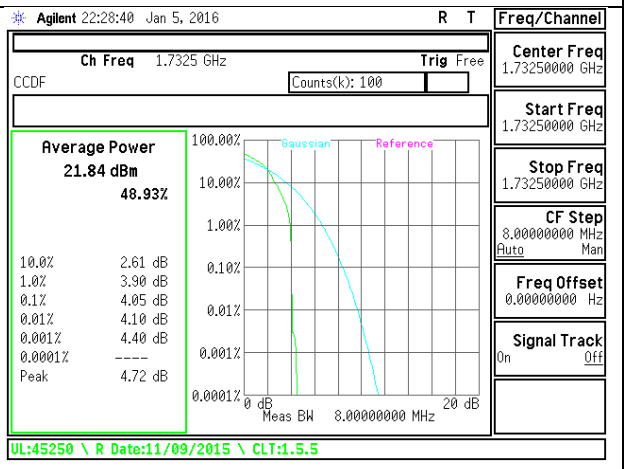
LTE B4 15MHz QPSK Middle Channel



LTE B4 15MHz 16QAM Middle Channel

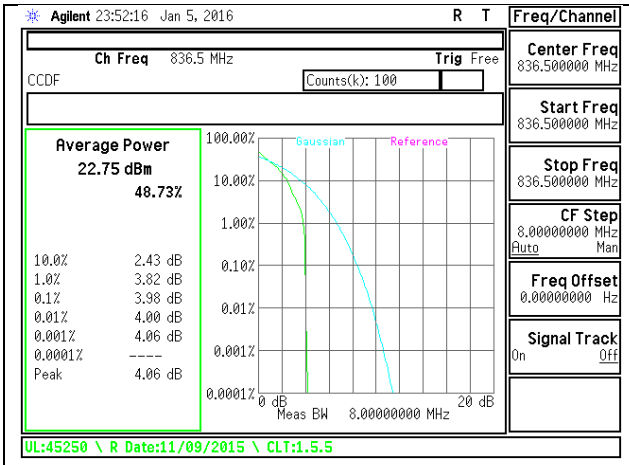


LTE B4 20MHz QPSK Middle Channel

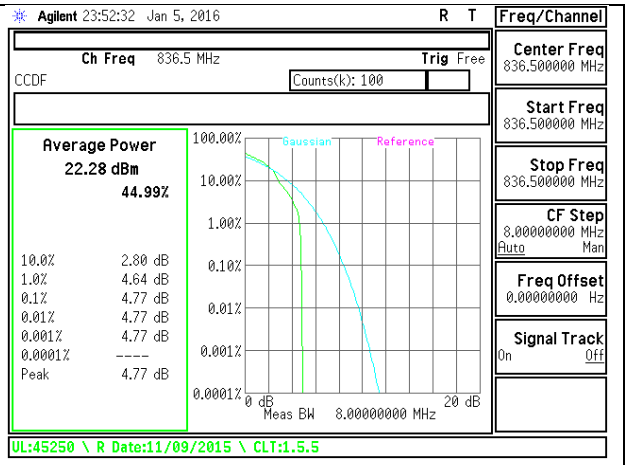


LTE B4 20MHz 16QAM Middle Channel

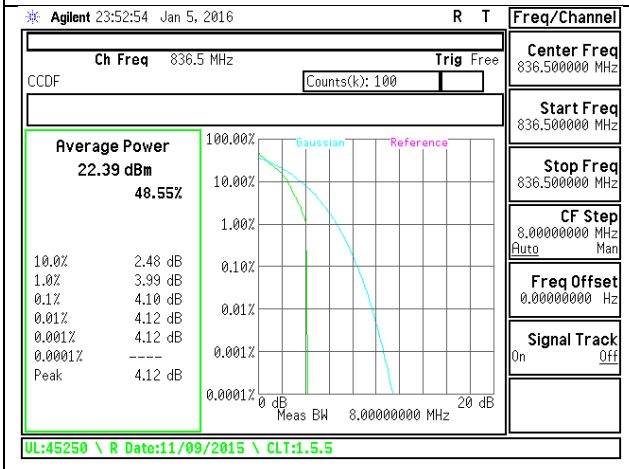
LTE Band 5



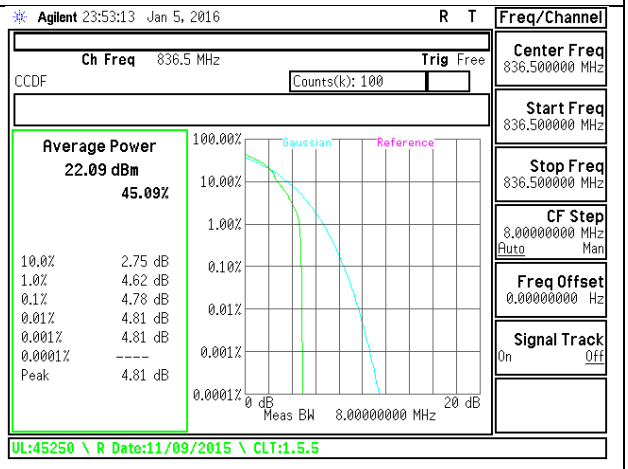
LTE B5 1.4MHz QPSK Middle Channel



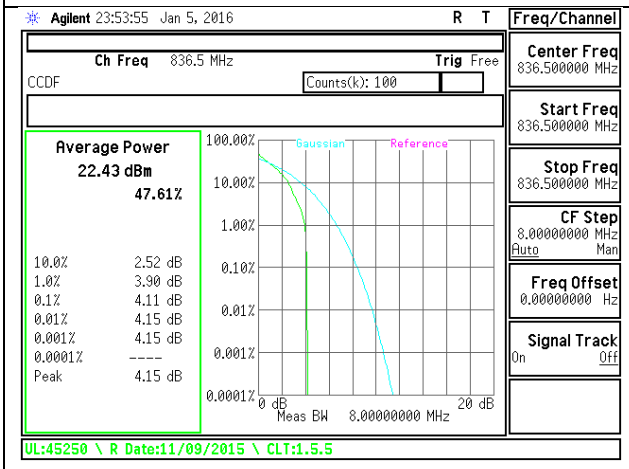
LTE B5 1.4MHz 16QAM Middle Channel



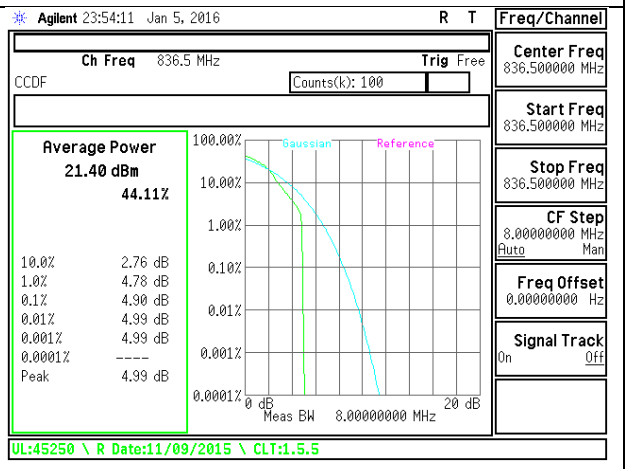
LTE B5 3MHz QPSK Middle Channel



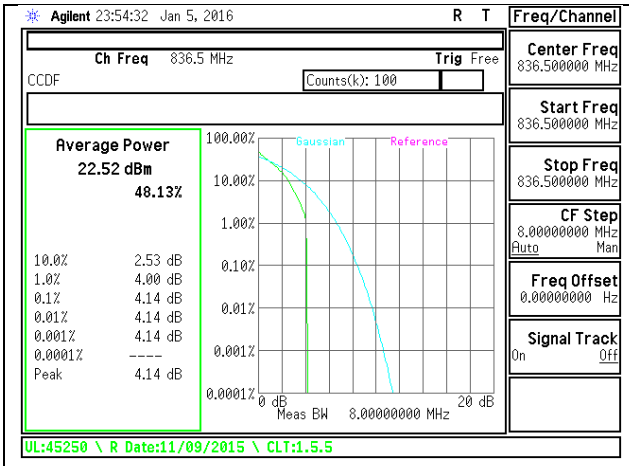
LTE B5 3MHz 16QAM Middle Channel



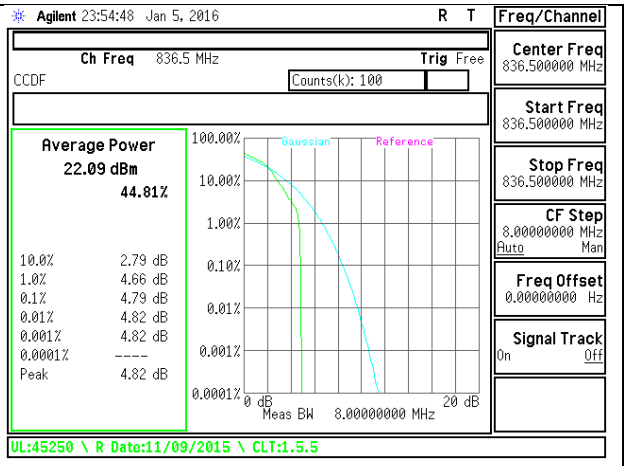
LTE B5 5MHz QPSK Middle Channel



LTE B5 5MHz 16QAM Middle Channel

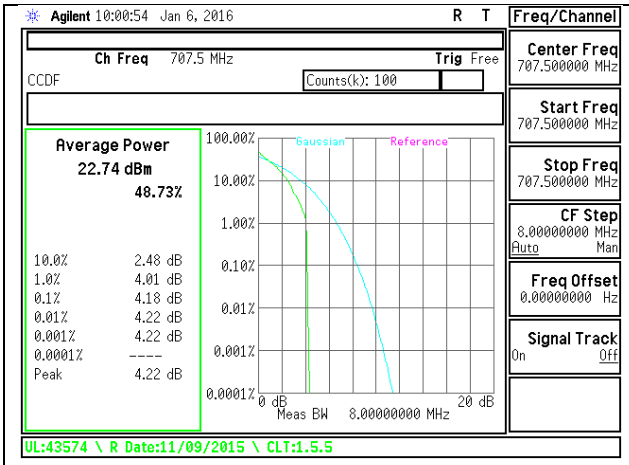


LTE B5 10MHz QPSK Middle Channel

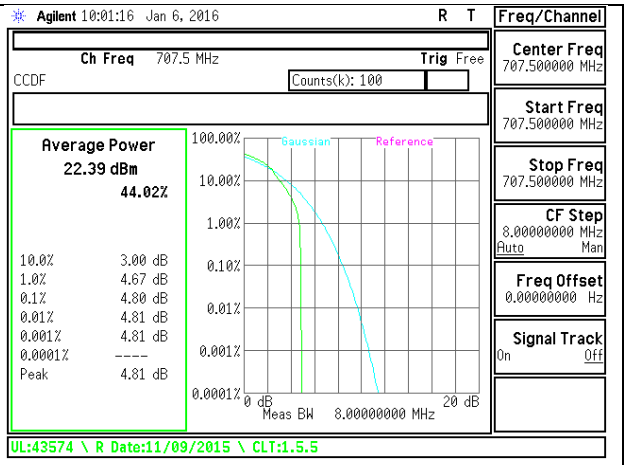


LTE B5 10MHz 16QAM Middle Channel

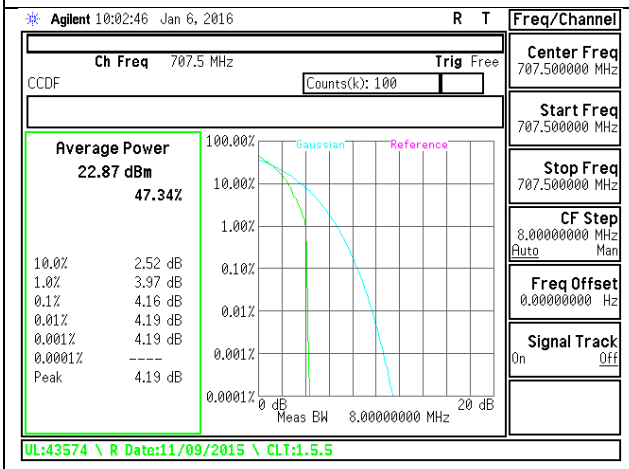
LTE Band 12



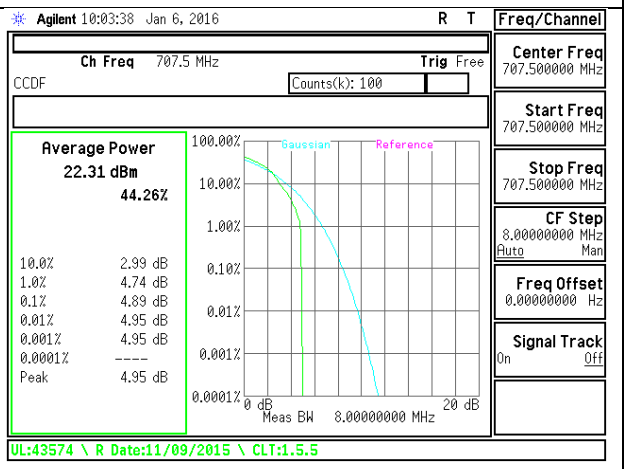
LTE B12 1.4MHz QPSK Middle Channel



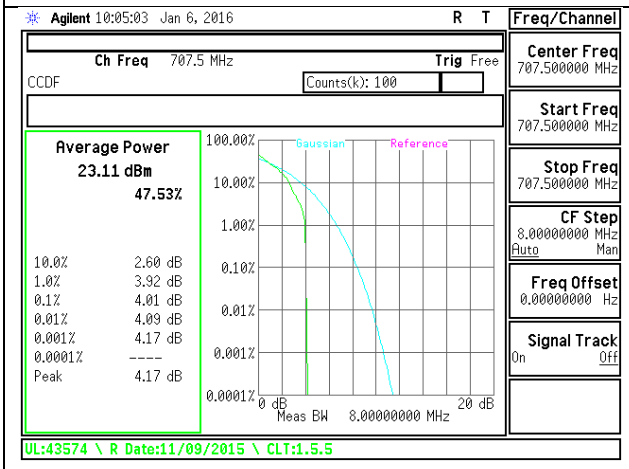
LTE B12 1.4MHz 16QAM Middle Channel



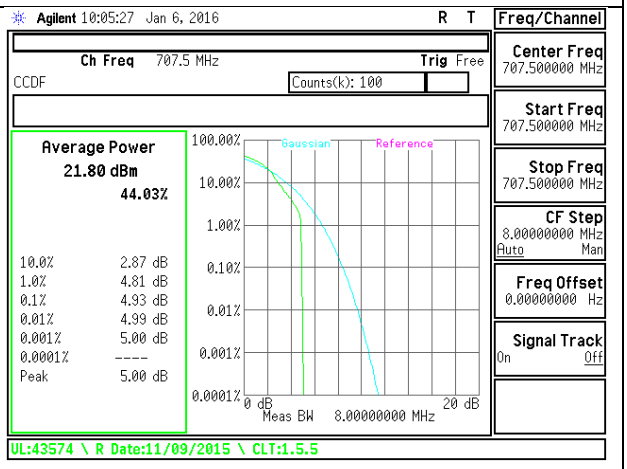
LTE B12 3MHz QPSK Middle Channel



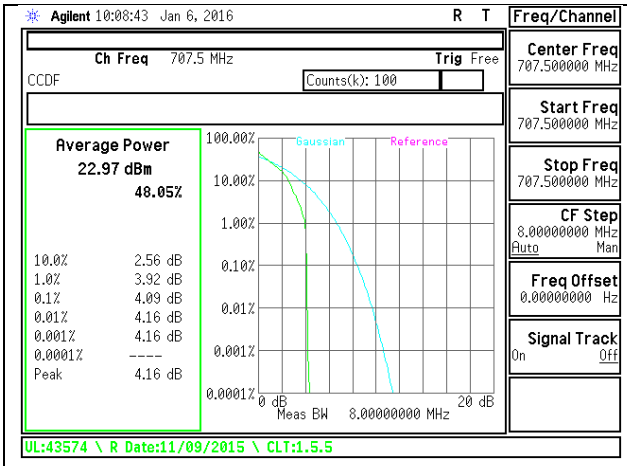
LTE B12 3MHz 16QAM Middle Channel



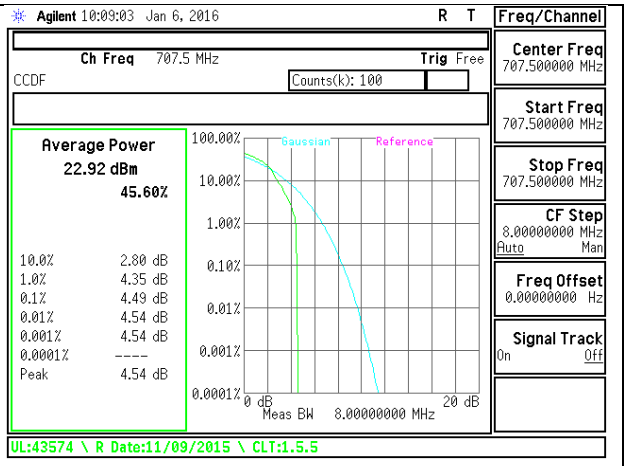
LTE B12 5MHz QPSK Middle Channel



LTE B12 5MHz 16QAM Middle Channel



LTE B12 10MHz QPSK Middle Channel



LTE B12 10MHz 16QAM Middle Channel

10. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

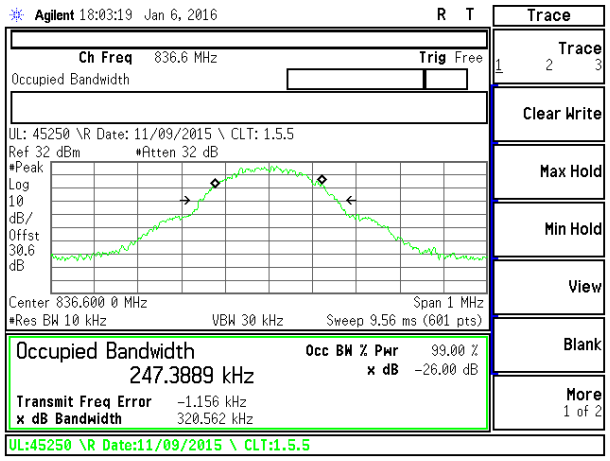
The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v02r02)

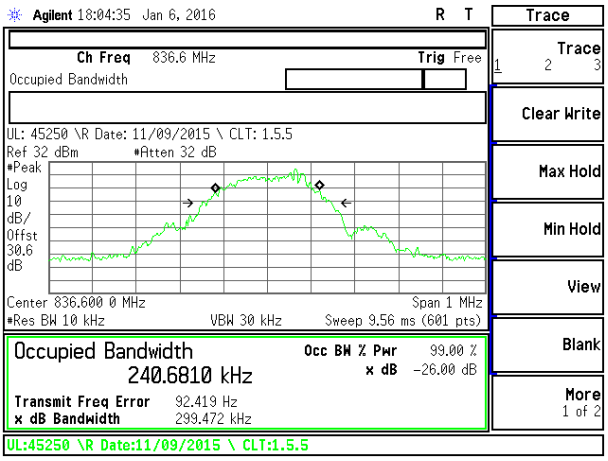
10.1. OCCUPIED BANDWIDTH RESULTS AND PLOTS

GSM

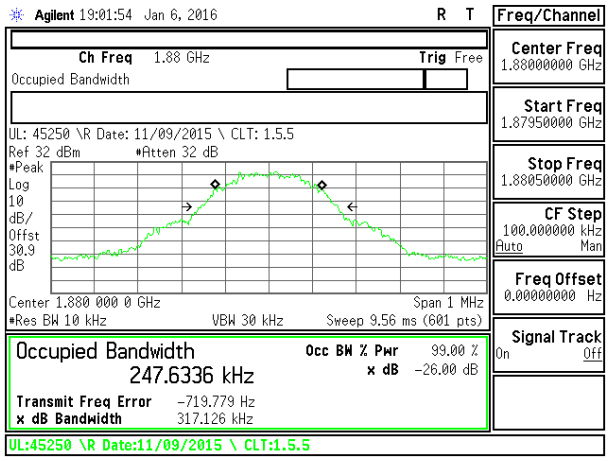
Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB (kHz)
GSM 850	GPRS	128	824.2	244.1	317.1
		190	836.6	247.4	320.6
		251	848.8	251.9	313
	EGPRS	128	824.2	239.3	307.5
		190	836.6	240.7	299.5
		251	848.8	232.7	284.2
GSM 1900	GPRS	512	1850.2	244.5	323.2
		661	1880	247.6	317.1
		810	1909.8	245	310
	EGPRS	512	1850.2	241.4	318.2
		661	1880.0	252.7	296.2
		810	1909.8	248.1	315.1



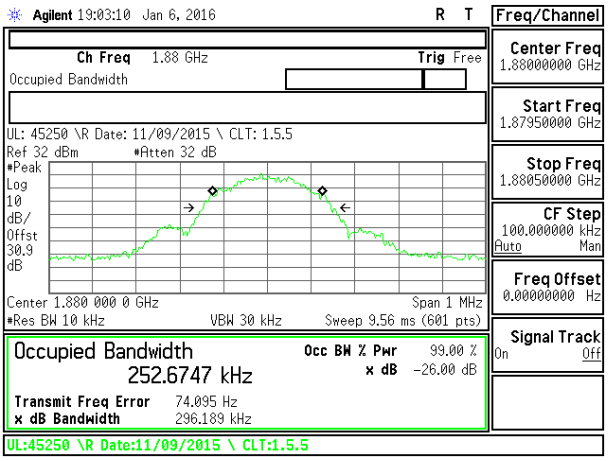
GSM850 GPRS Middle Channel



GSM850 EGPRS Middle Channel



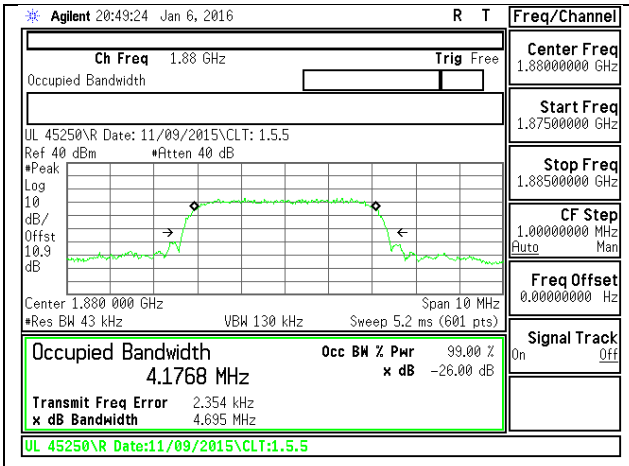
GSM1900 GPRS Middle Channel



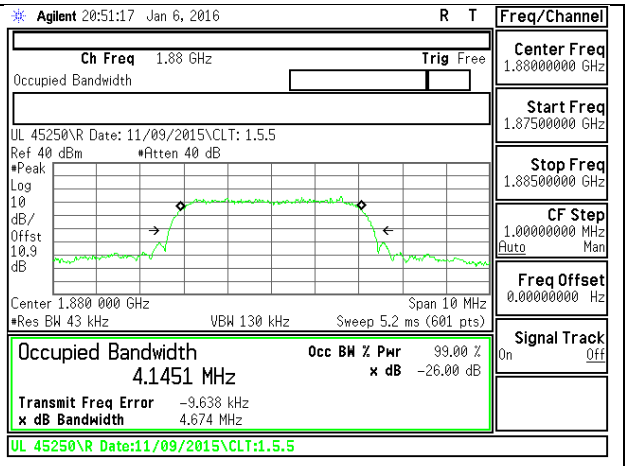
GSM1900 EGPRS Middle Channel

WCDMA

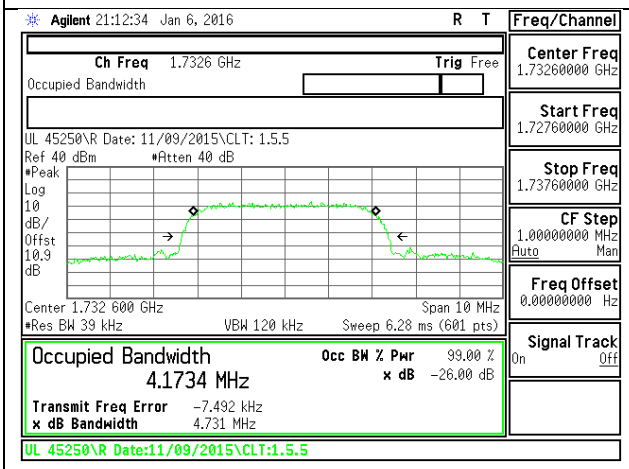
Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB (MHz)
Band 2	REL99	9262	1852.4	4.169	4.705
		9400	1880	4.177	4.695
		9538	1907.6	4.145	4.668
	HSDPA	9262	1852.4	4.152	4.694
		9400	1880.0	4.145	4.674
		9538	1907.6	4.148	4.687
Band 4	REL99	1312	1712.4	4.158	4.694
		1413	1732.6	4.173	4.731
		1513	1752.6	4.166	4.739
	HSDPA	1312	1712.4	4.16	4.695
		1413	1732.6	4.162	4.727
		1513	1752.6	4.154	4.673
Band 5	REL99	4132	826.4	4.137	4.72
		4183	836.6	4.117	4.692
		4233	846.6	4.138	4.693
	HSDPA	4132	826.4	4.122	4.704
		4183	836.6	4.139	4.684
		4233	846.6	4.148	4.73



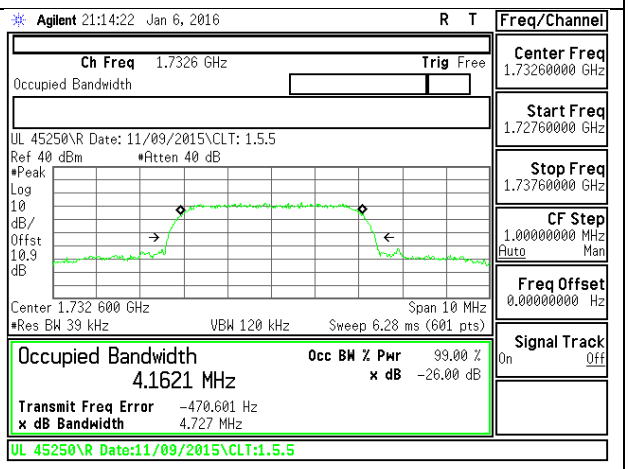
B2 REL99



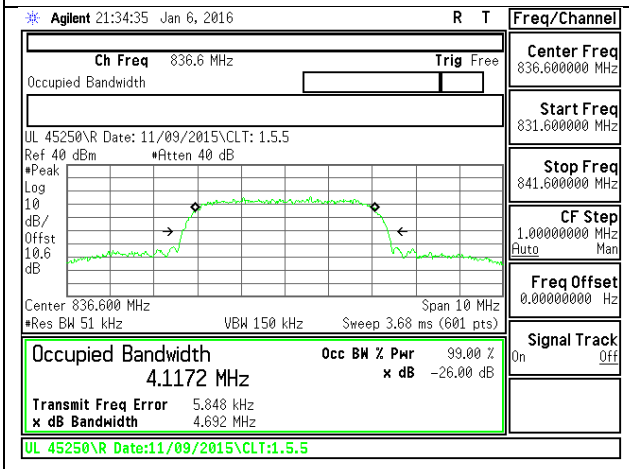
B2 HSDPA



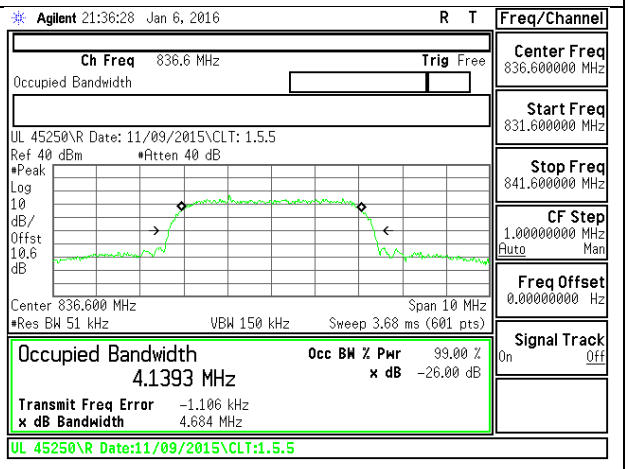
B4 REL99



B4 HSDPA



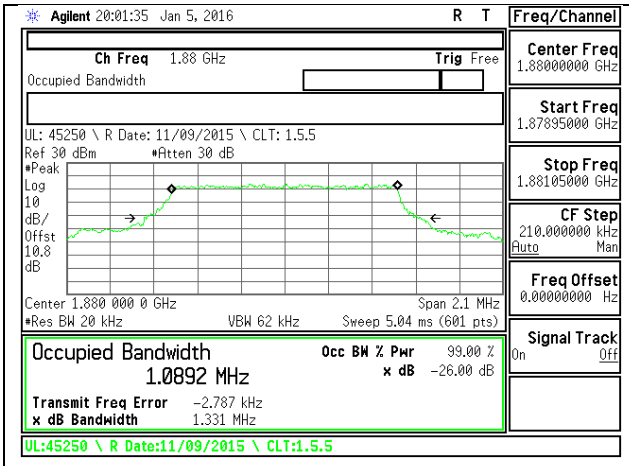
B5 REL99



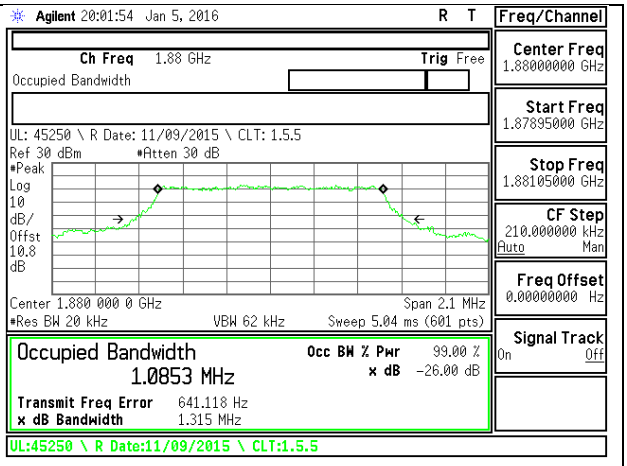
B5 HSDPA

LTE Band 2

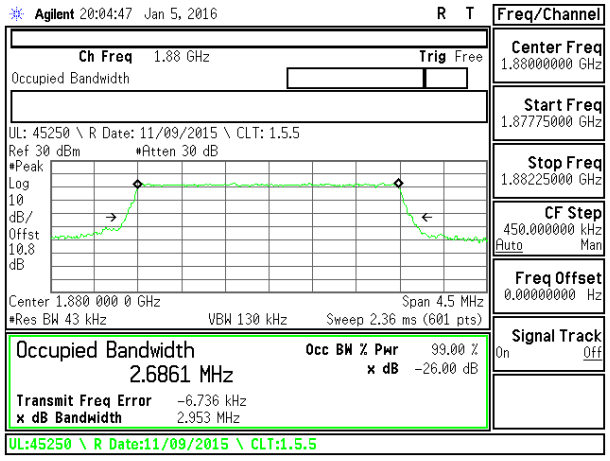
BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
1.4	QPSK	6/0	1850.7	1.089	1.315
		6/0	1880	1.089	1.331
		6/0	1909.3	1.081	1.268
	16QAM	6/0	1850.7	1.089	1.353
		6/0	1880	1.085	1.315
		6/0	1909.3	1.09	1.258
3	QPSK	15/0	1851.5	2.686	2.978
		15/0	1880	2.686	2.953
		15/0	1908.5	2.69	2.956
	16QAM	15/0	1851.5	2.688	2.988
		15/0	1880	2.69	2.958
		15/0	1908.5	2.687	2.987
5	QPSK	25/0	1852.5	4.504	4.948
		25/0	1880	4.507	4.927
		25/0	1907.5	4.514	4.933
	16QAM	25/0	1852.5	4.501	4.979
		25/0	1880	4.496	4.98
		25/0	1907.5	4.502	4.99
10	QPSK	50/0	1855	8.94	9.884
		50/0	1880	8.959	9.751
		50/0	1905	8.946	9.806
	16QAM	50/0	1855	8.947	9.813
		50/0	1880	8.935	9.868
		50/0	1905	8.974	9.791
15	QPSK	75/0	1857.5	13.421	14.630
		75/0	1880	13.387	14.574
		75/0	1902.5	13.402	14.461
	16QAM	75/0	1857.5	13.135	14.508
		75/0	1880	13.415	14.576
		75/0	1902.5	13.411	14.503
20	QPSK	100/0	1860	17.910	19.038
		100/0	1880	17.862	19.351
		100/0	1900	17.844	19.269
	16QAM	100/0	1860	17.854	19.030
		100/0	1880	17.870	19.228
		100/0	1900	17.856	19.234



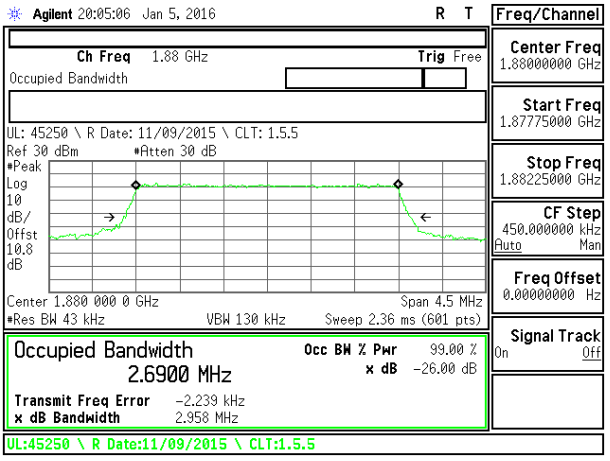
LTE B2 1.4MHz QPSK Middle Channel



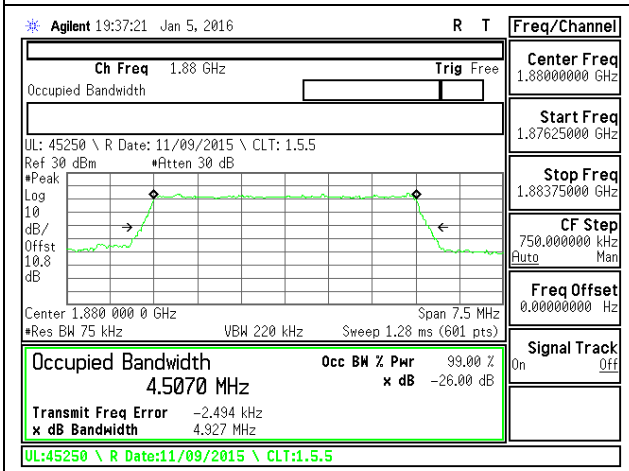
LTE B2 1.4MHz 16QAM Middle Channel



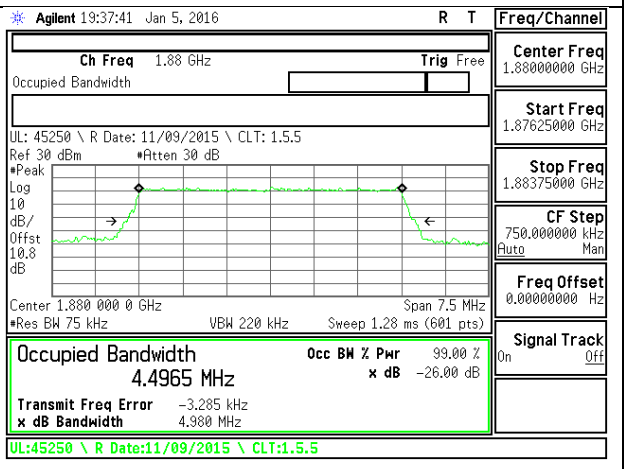
LTE B2 3MHz QPSK Middle Channel



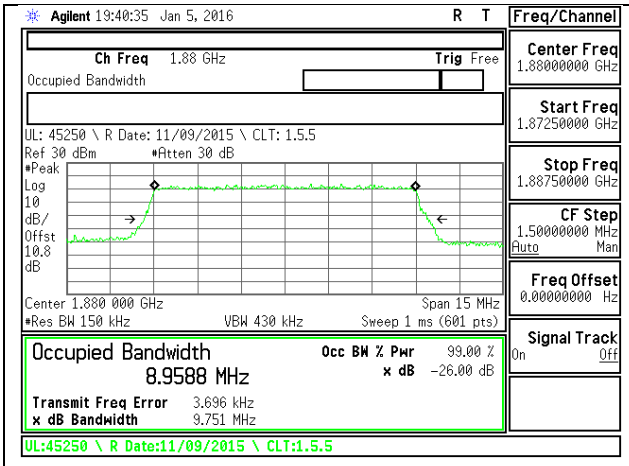
LTE B2 3MHz 16QAM Middle Channel



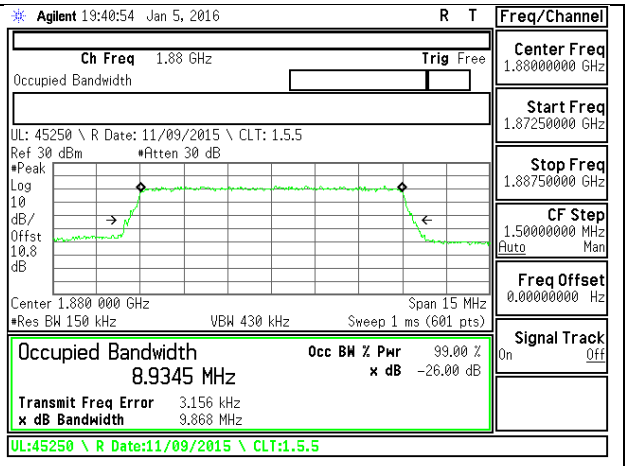
LTE B2 5MHz QPSK Middle Channel



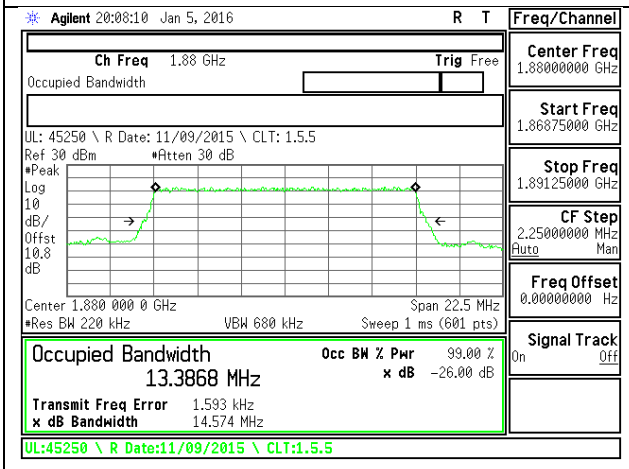
LTE B2 5MHz 16QAM Middle Channel



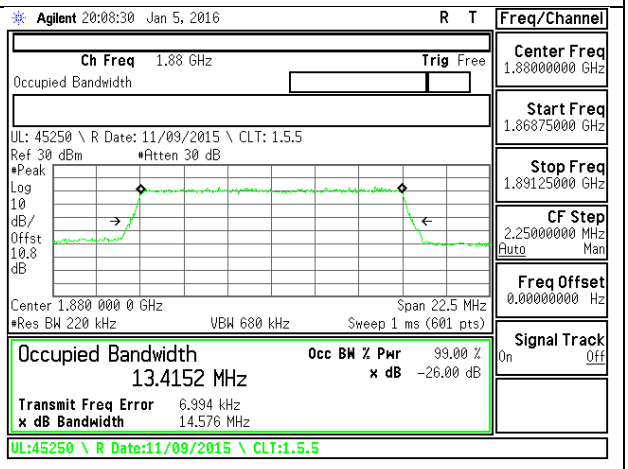
LTE B2 10MHz QPSK Middle Channel



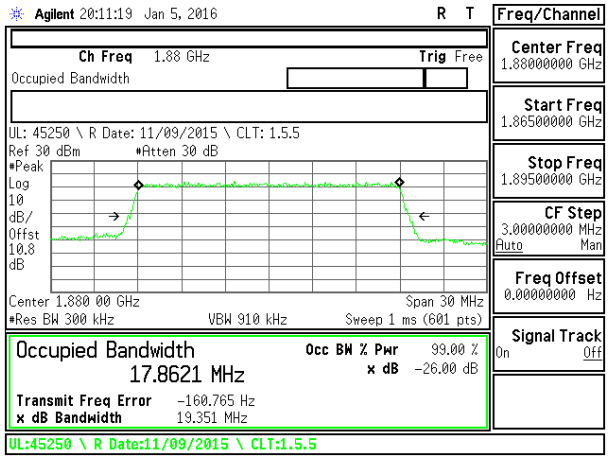
LTE B2 10MHz 16QAM Middle Channel



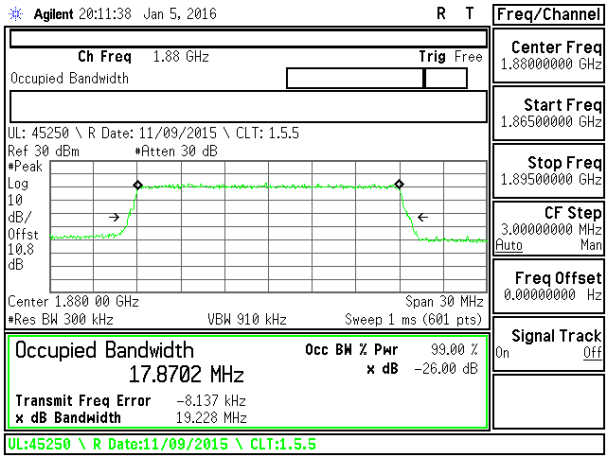
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel



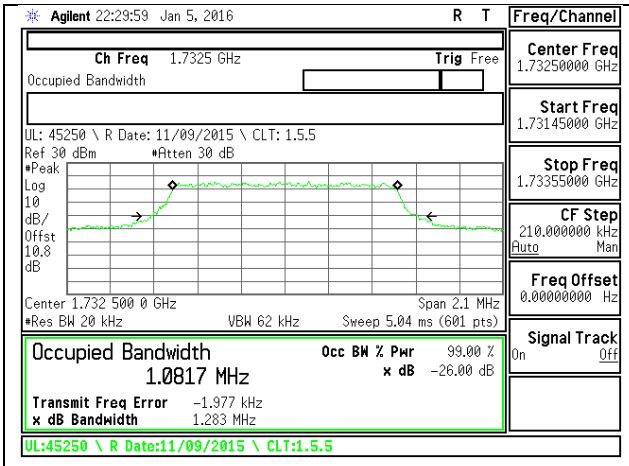
LTE B2 20MHz QPSK Middle Channel



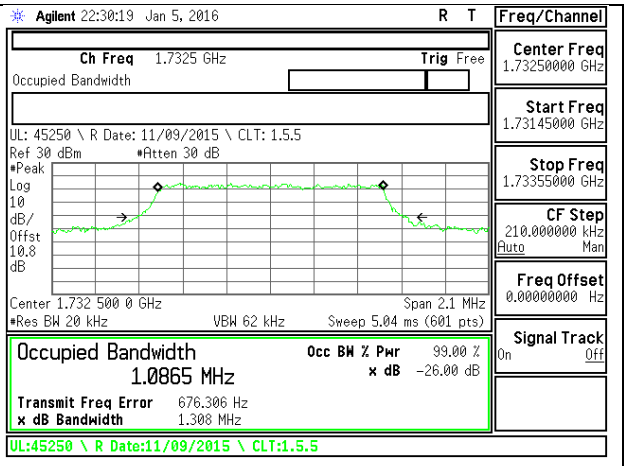
LTE B2 20MHz 16QAM Middle Channel

LTE Band 4

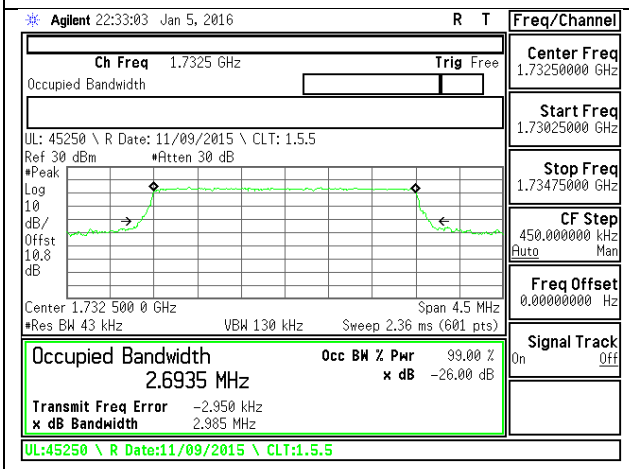
BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
1.4	QPSK	6/0	1710.7	1.088	1.28
		6/0	1732.5	1.082	1.283
		6/0	1754.3	1.088	1.276
	16QAM	6/0	1710.7	1.082	1.278
		6/0	1732.5	1.086	1.308
		6/0	1754.3	1.093	1.277
3	QPSK	15/0	1711.5	2.691	2.947
		15/0	1732.5	2.693	2.985
		15/0	1753.5	2.679	2.961
	16QAM	15/0	1711.5	2.687	2.957
		15/0	1732.5	2.69	2.953
		15/0	1753.5	2.683	2.976
5	QPSK	25/0	1712.5	4.525	4.982
		25/0	1732.5	4.495	4.984
		25/0	1752.5	4.490	4.990
	16QAM	25/0	1712.5	4.506	4.997
		25/0	1732.5	4.506	4.991
		25/0	1752.5	4.498	4.962
10	QPSK	50/0	1715	8.934	9.713
		50/0	1732.5	8.953	9.821
		50/0	1750	8.974	9.797
	16QAM	50/0	1715	9.003	9.824
		50/0	1732.5	8.944	9.822
		50/0	1750	8.947	9.667
15	QPSK	75/0	1717.5	13.400	14.496
		75/0	1732.5	13.418	14.771
		75/0	1747.5	13.451	14.640
	16QAM	75/0	1717.5	13.433	14.567
		75/0	1732.5	13.425	14.740
		75/0	1747.5	13.433	14.497
20	QPSK	100/0	1720	17.852	19.214
		100/0	1732.5	17.874	19.240
		100/0	1745	17.891	19.105
	16QAM	100/0	1720	17.874	19.385
		100/0	1732.5	17.881	19.230
		100/0	1745	17.901	19.358



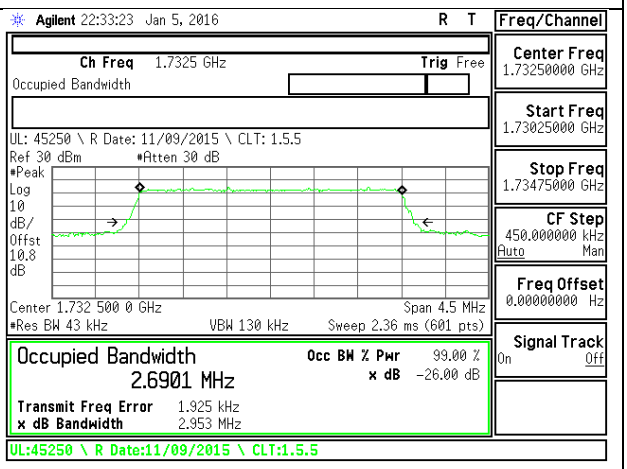
LTE B4 1.4MHz QPSK Middle Channel



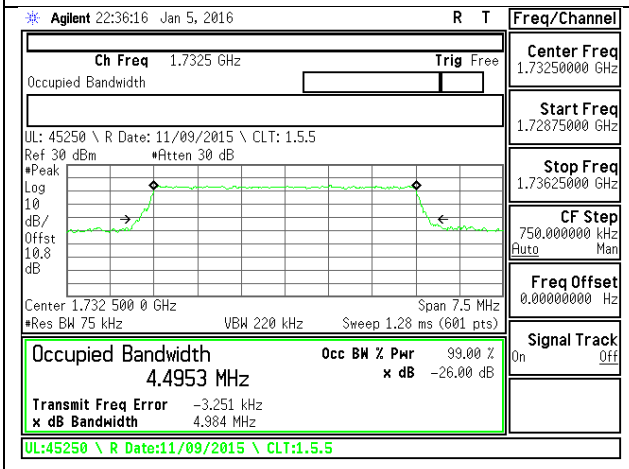
LTE B4 1.4MHz 16QAM Middle Channel



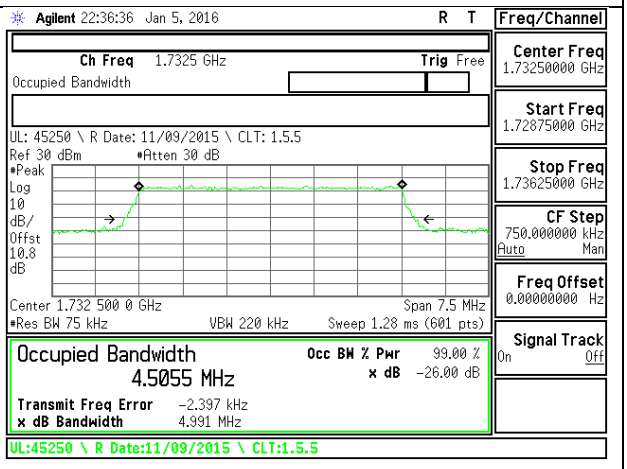
LTE B4 3MHz QPSK Middle Channel



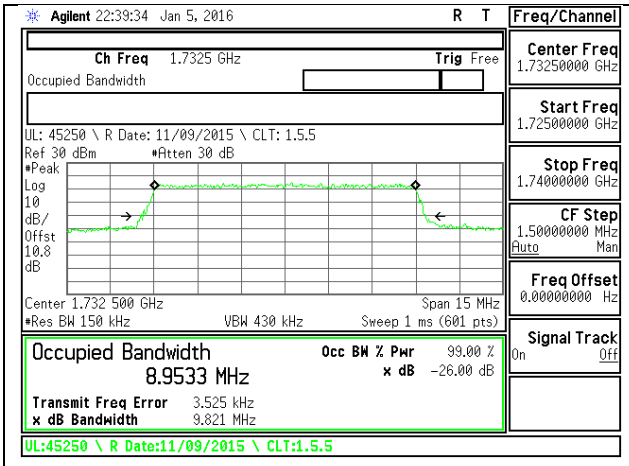
LTE B4 3MHz 16QAM Middle Channel



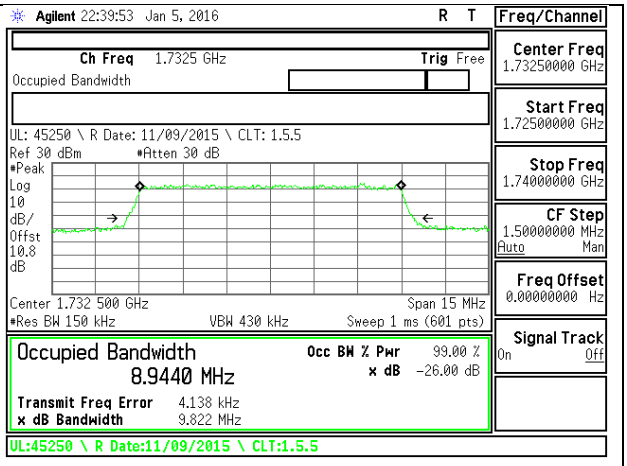
LTE B4 5MHz QPSK Middle Channel



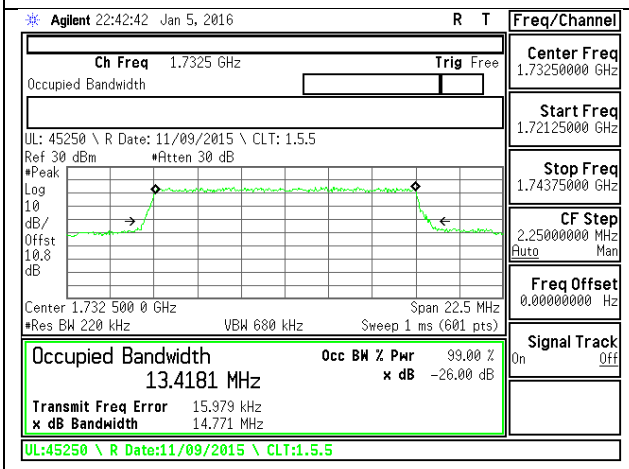
LTE B4 5MHz 16QAM Middle Channel



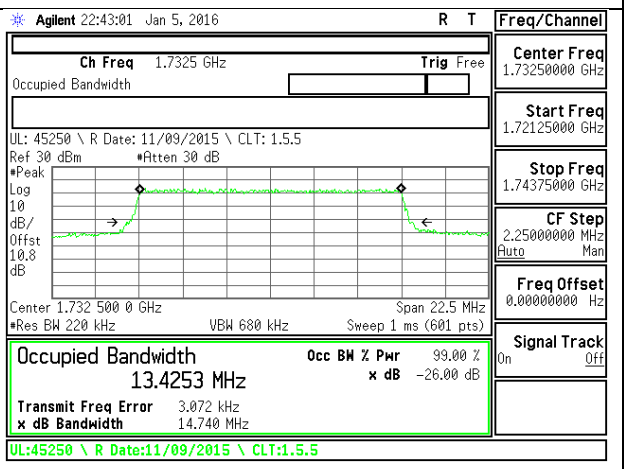
LTE B4 10MHz QPSK Middle Channel



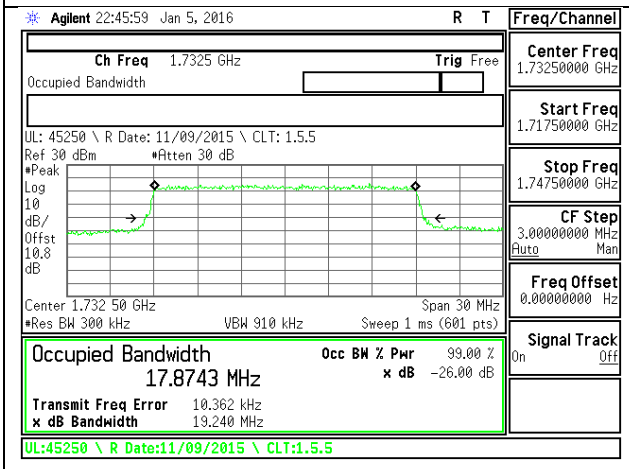
LTE B4 10MHz 16QAM Middle Channel



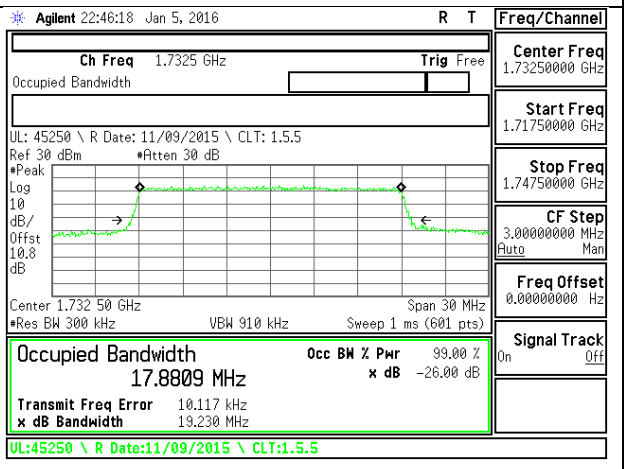
LTE B4 15MHz QPSK Middle Channel



LTE B4 15MHz 16QAM Middle Channel



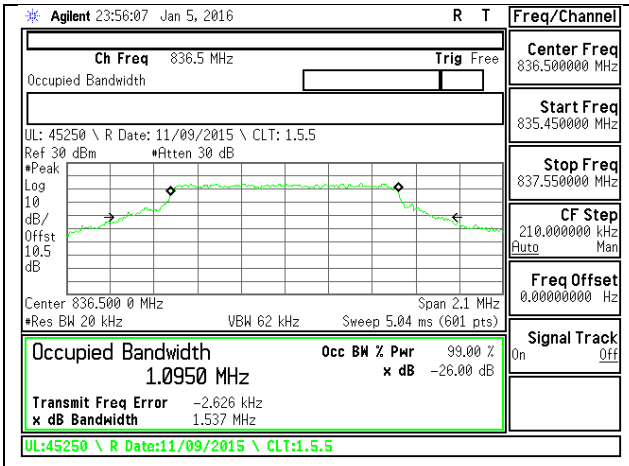
LTE B4 20MHz QPSK Middle Channel



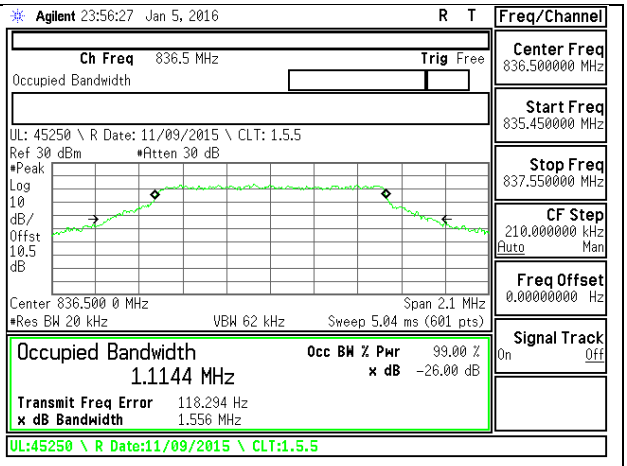
LTE B4 20MHz 16QAM Middle Channel

LTE Band 5

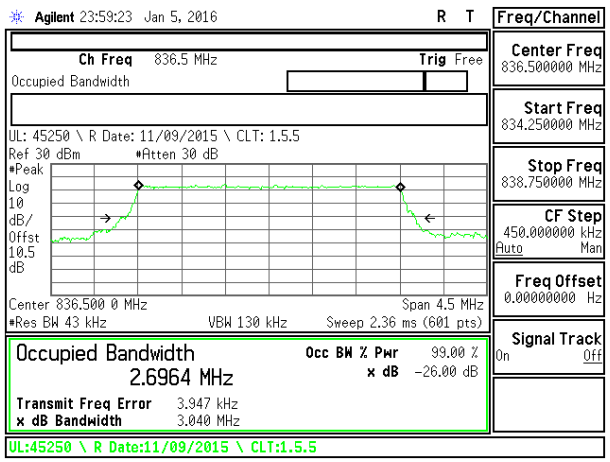
BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
1.4	QPSK	6/0	824.7	1.091	1.429
		6/0	836.5	1.095	1.537
		6/0	848.3	1.15	1.846
	16QAM	6/0	824.7	1.096	1.555
		6/0	836.5	1.114	1.556
		6/0	848.3	1.145	1.593
3	QPSK	15/0	825.5	2.688	2.988
		15/0	836.5	2.696	3.04
		15/0	847.5	2.694	3.05
	16QAM	15/0	825.5	2.69	3.006
		15/0	836.5	2.691	3.069
		15/0	847.5	2.69	3.169
5	QPSK	25/0	826.5	4.5	4.933
		25/0	836.5	4.505	5.03
		25/0	846.5	4.513	5.003
	16QAM	25/0	826.5	4.511	4.987
		25/0	836.5	4.507	4.93
		25/0	846.5	4.5	5
10	QPSK	50/0	829	8.919	9.744
		50/0	836.5	8.956	9.71
		50/0	844	8.96	9.861
	16QAM	50/0	829	8.946	9.802
		50/0	836.5	8.952	9.744
		50/0	844	8.953	9.726



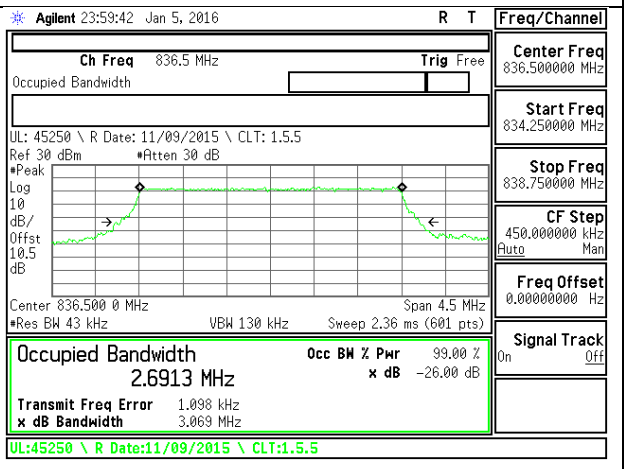
LTE B5 1.4MHz QPSK Middle Channel



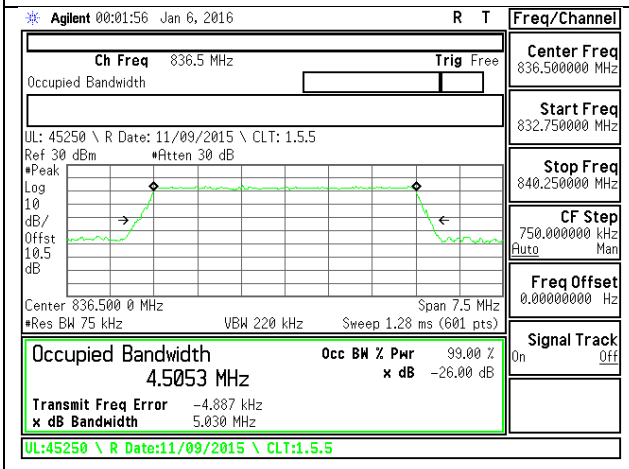
LTE B5 1.4MHz 16QAM Middle Channel



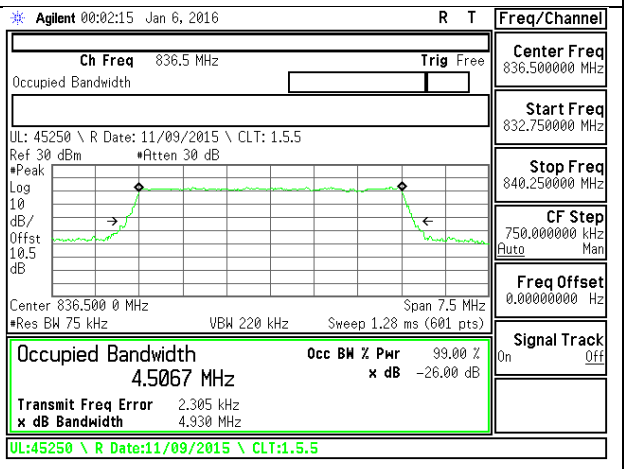
LTE B5 3MHz QPSK Middle Channel



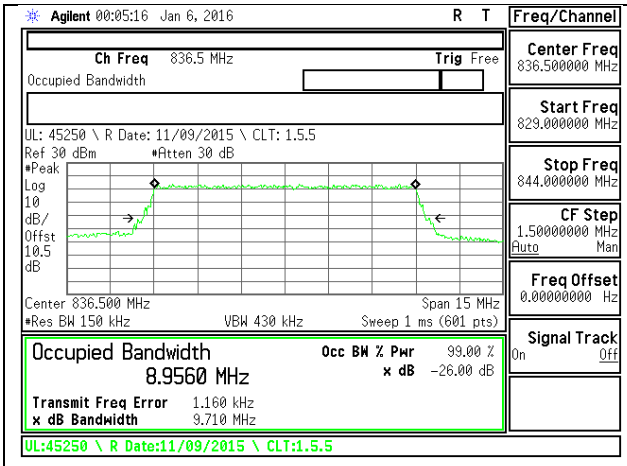
LTE B5 3MHz 16QAM Middle Channel



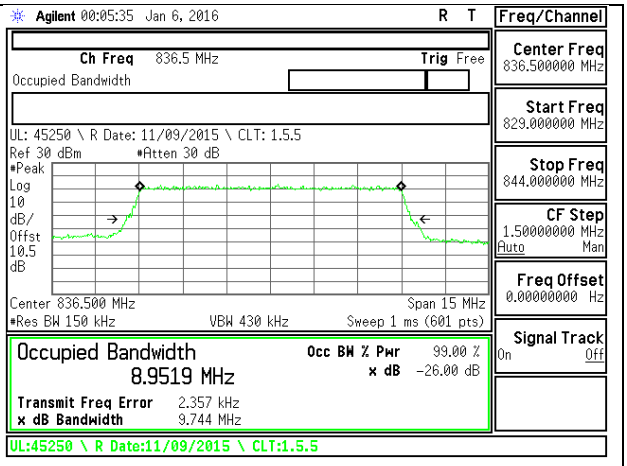
LTE B5 5MHz QPSK Middle Channel



LTE B5 5MHz 16QAM Middle Channel



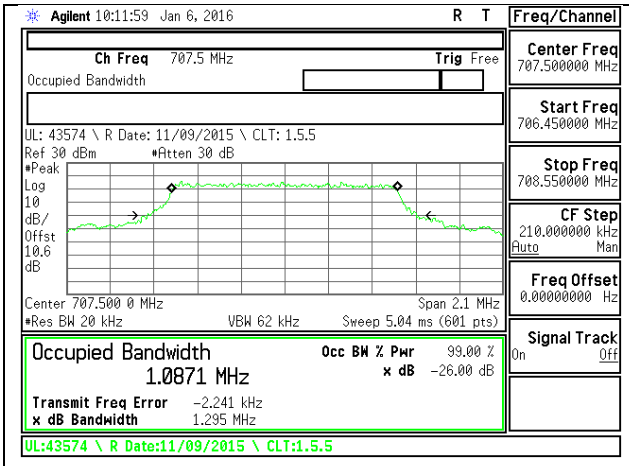
LTE B5 10MHz QPSK Middle Channel



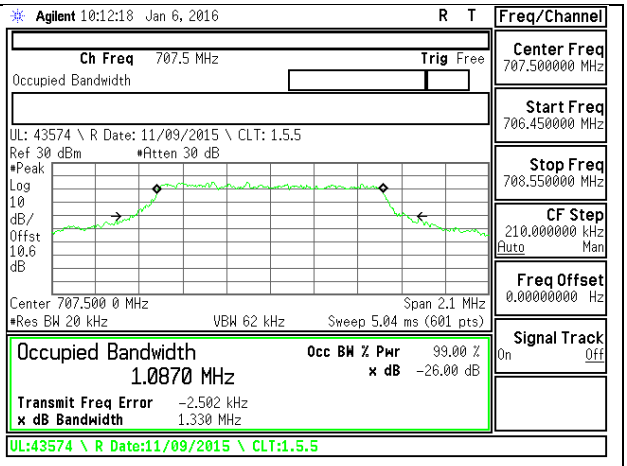
LTE B5 10MHz 16QAM Middle Channel

LTE Band 12

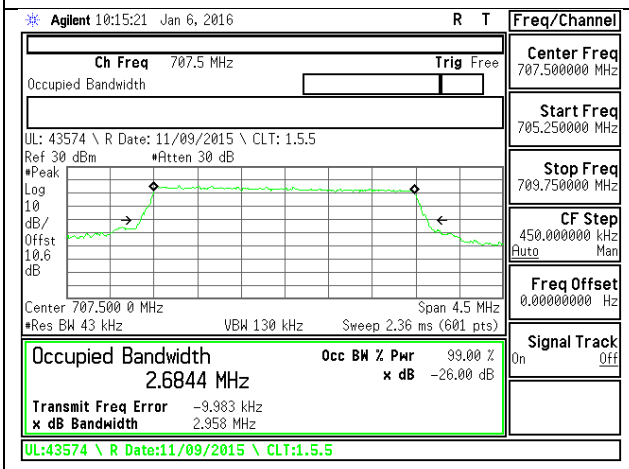
BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
1.4	QPSK	6/0	699.7	1.083	1.298
		6/0	707.5	1.087	1.295
		6/0	715.3	1.090	1.369
	16QAM	6/0	699.7	1.087	1.356
		6/0	707.5	1.087	1.330
		6/0	715.3	1.086	1.437
3	QPSK	15/0	700.5	2.690	2.986
		15/0	707.5	2.684	2.958
		15/0	714.5	2.679	2.972
	16QAM	15/0	700.5	2.695	3.000
		15/0	707.5	2.698	2.956
		15/0	714.5	2.675	2.969
5	QPSK	25/0	701.5	4.511	4.981
		25/0	707.5	4.495	4.895
		25/0	713.5	4.497	4.970
	16QAM	25/0	701.5	4.505	4.986
		25/0	707.5	4.500	4.954
		25/0	713.5	4.517	4.933
10	QPSK	50/0	704	8.913	9.610
		50/0	707.5	8.957	9.586
		50/0	711	9.007	9.809
	16QAM	50/0	704	8.891	9.584
		50/0	707.5	8.957	9.736
		50/0	711	9.008	9.868



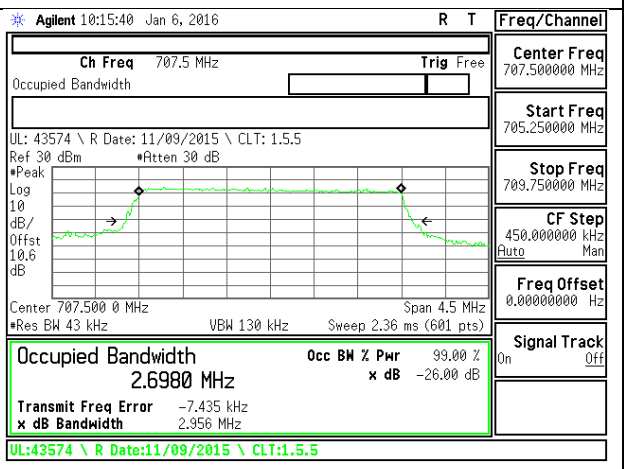
LTE B12 1.4MHz QPSK Middle Channel



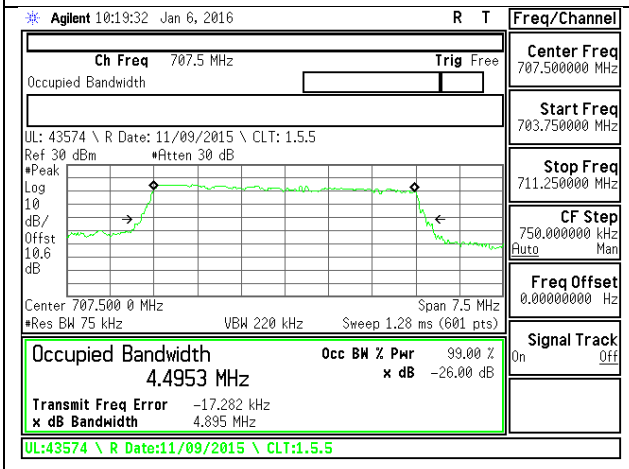
LTE B12 1.4MHz 16QAM Middle Channel



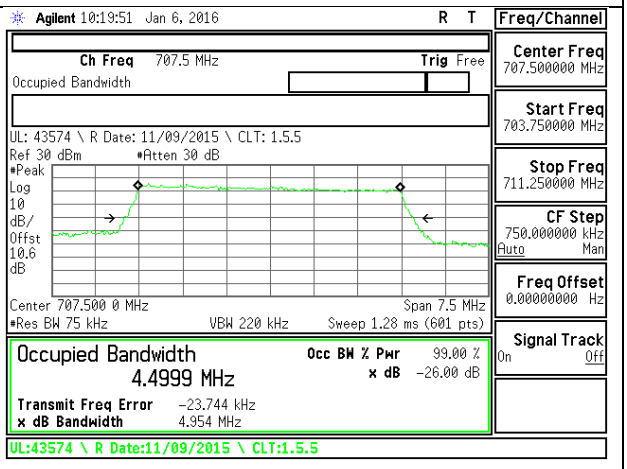
LTE B12 3MHz QPSK Middle Channel



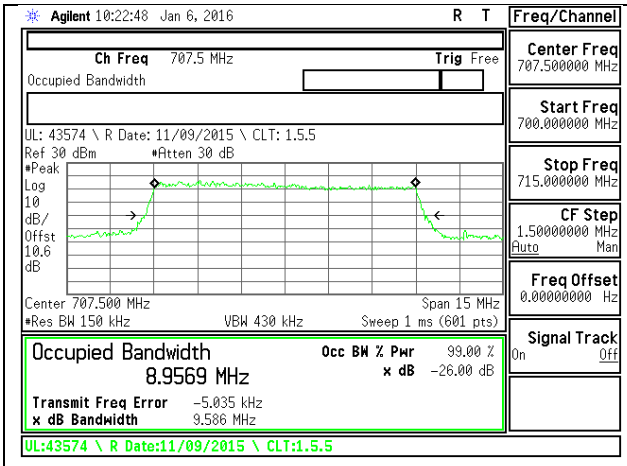
LTE B12 3MHz 16QAM Middle Channel



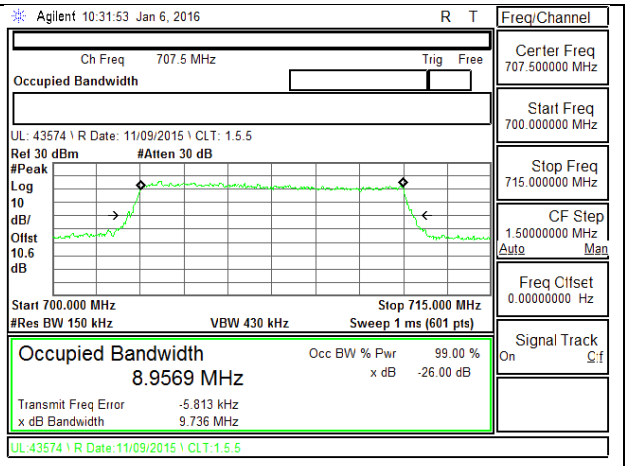
LTE B12 5MHz QPSK Middle Channel



LTE B12 5MHz 16QAM Middle Channel



LTE B12 10MHz QPSK Middle Channel



LTE B12 10MHz 16QAM Middle Channel

11. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238,

LIMITS

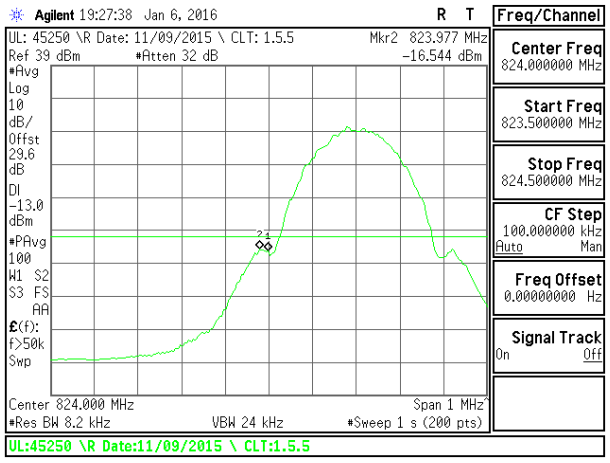
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

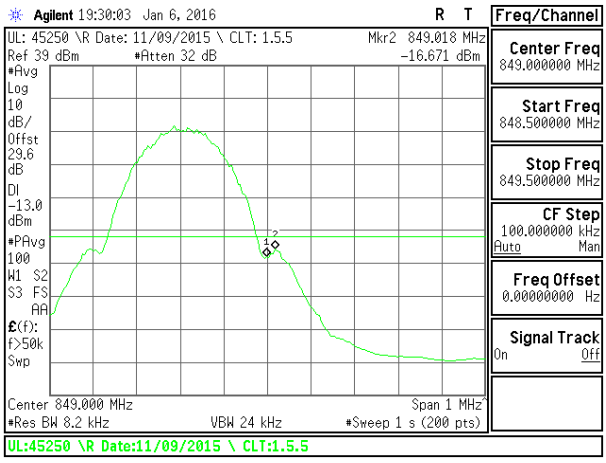
Per KDB 971168 D01 Power Meas License Digital Systems v02r02
The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

11.1. BAND EDGE PLOTS

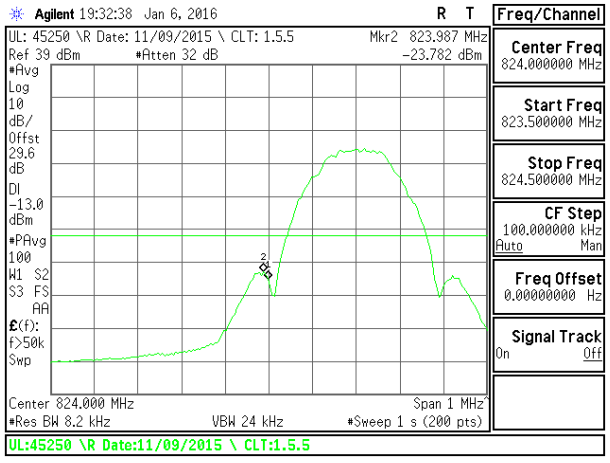
GSM



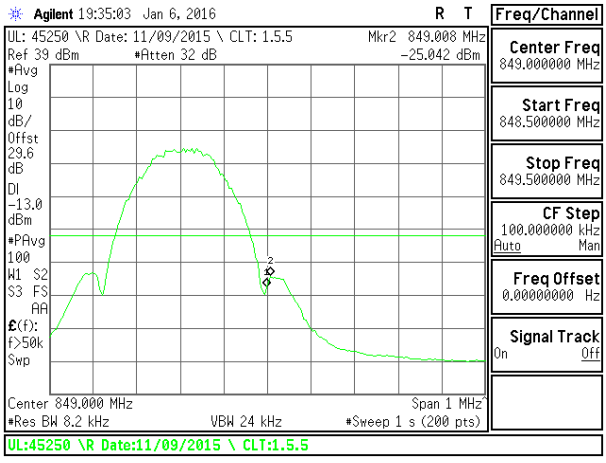
GSM850 GPRS Low channel



GSM850 GPRS High channel



GSM850 EGPRS Low channel



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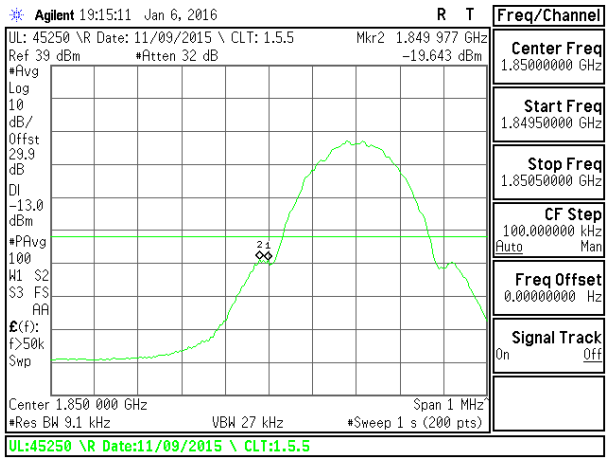
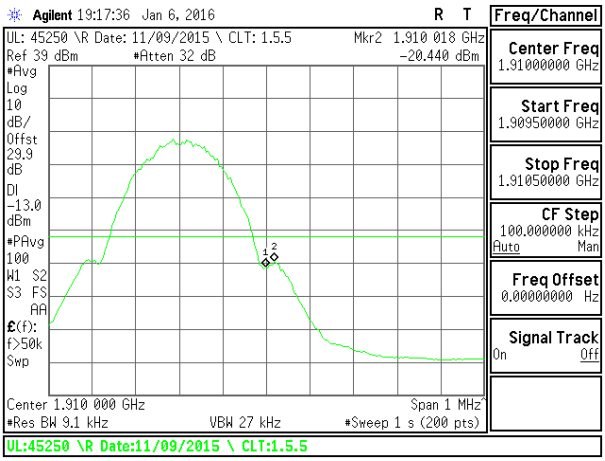
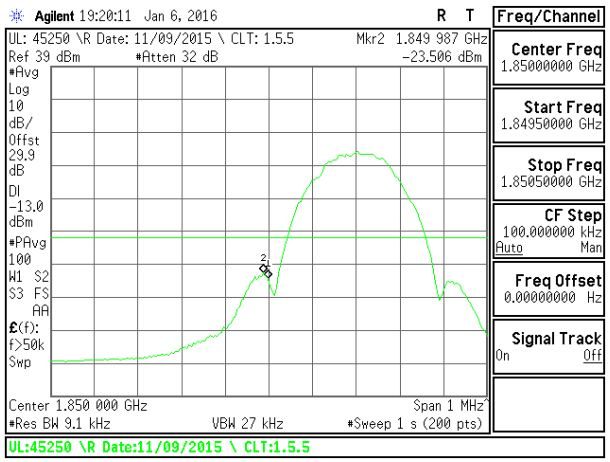


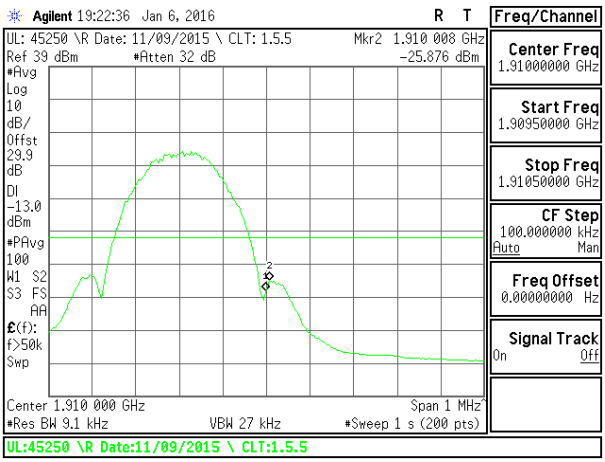
GSM1900 GPRS Low channel



GSM1900 GPRS High channel

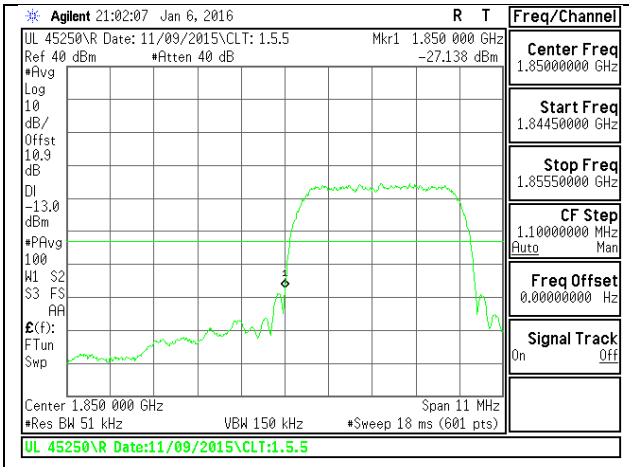


GSM1900 EGPRS Low channel

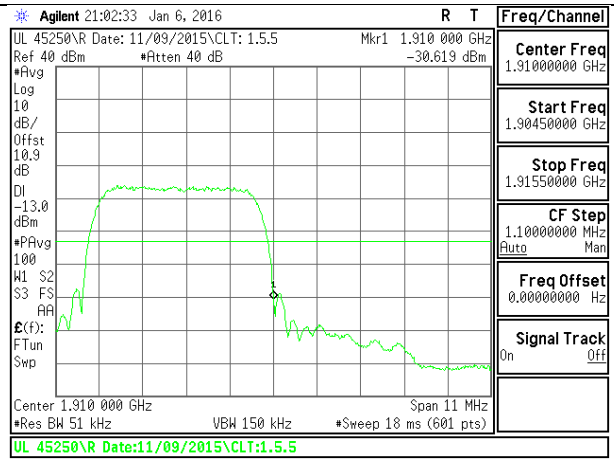


GSM1900 EGPRS High channel

WCDMA



B2 REL99 Low channel



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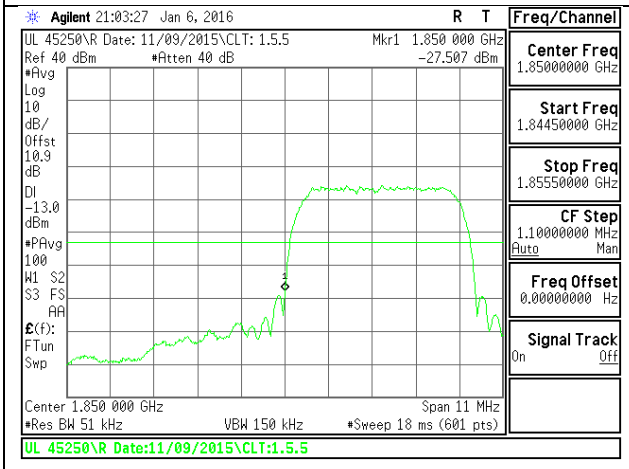
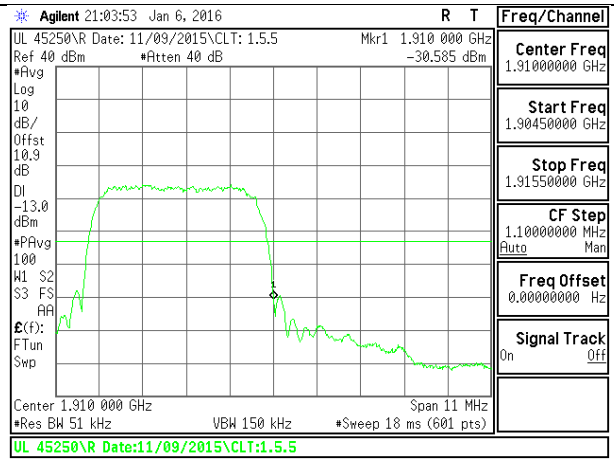


B2 HSDPA Low channel



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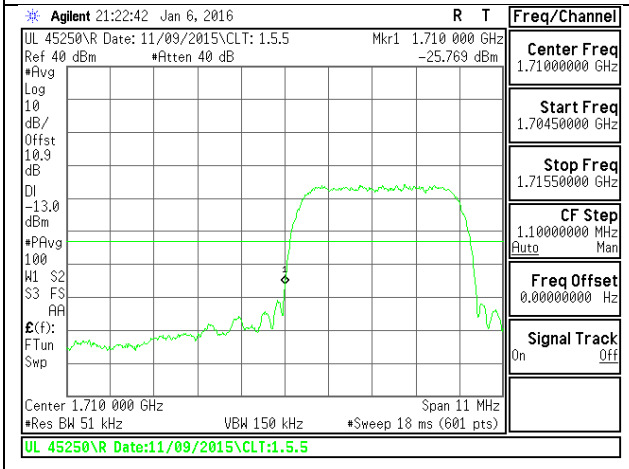
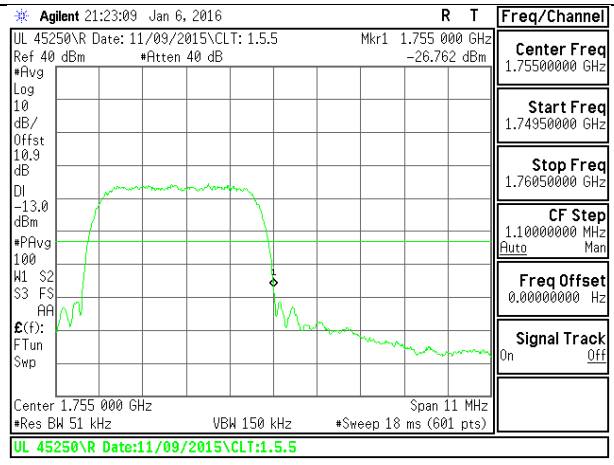


B4 REL99 Low channel



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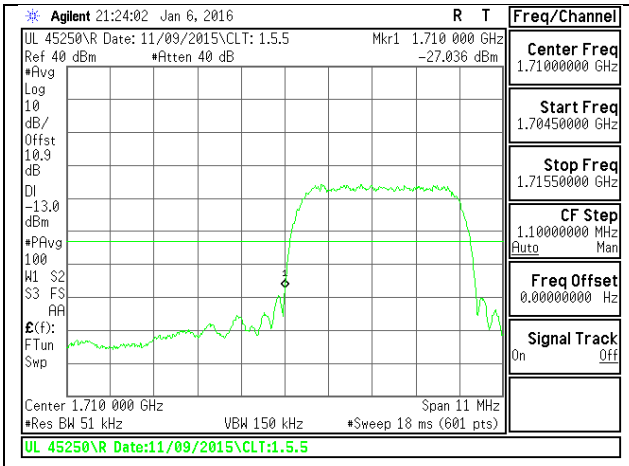

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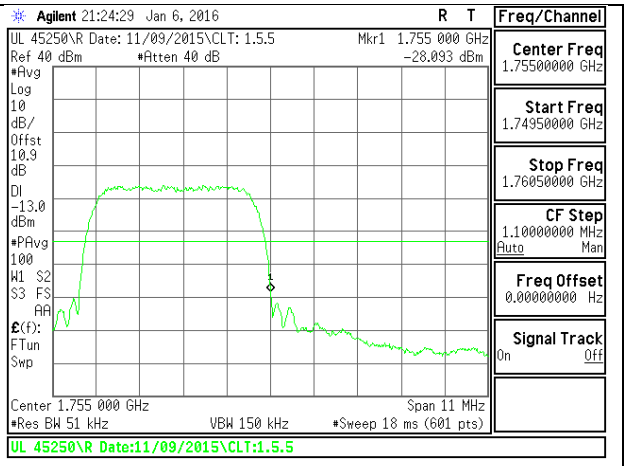

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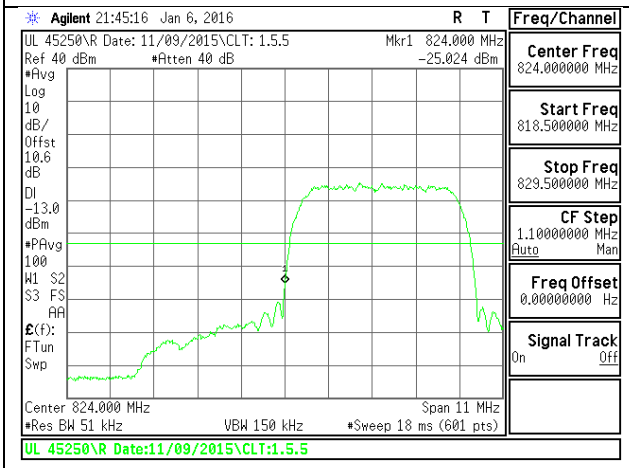

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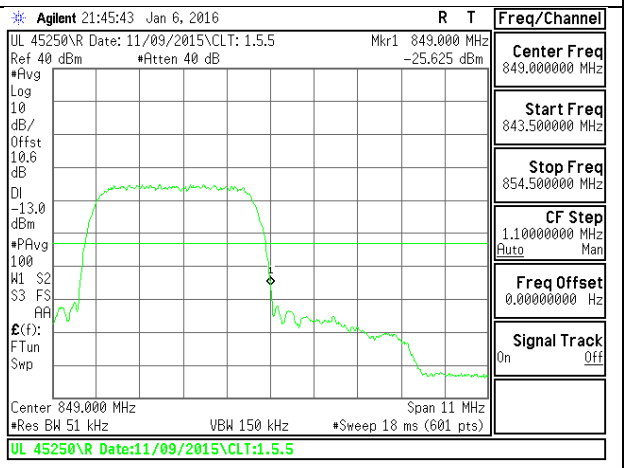
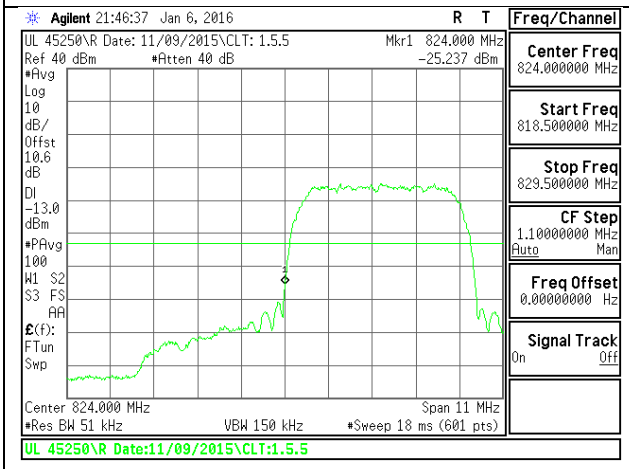


B5 REL99 High channel



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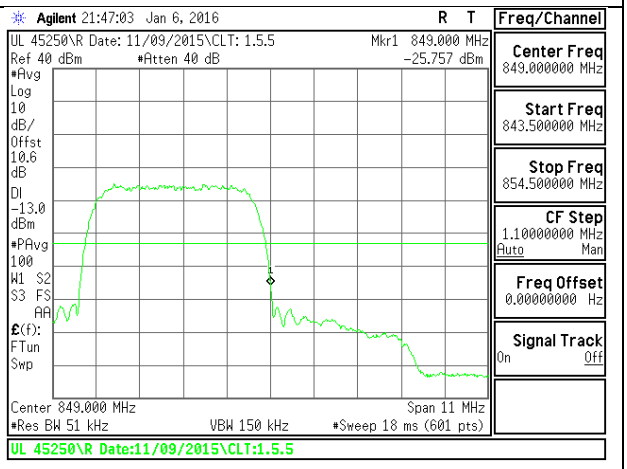
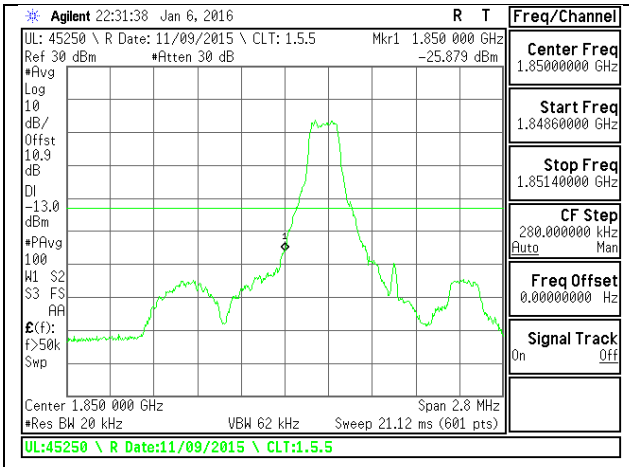
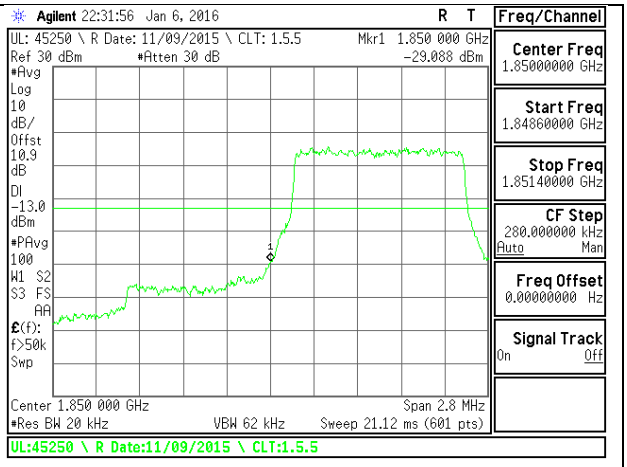


B5 HSDPA High channel

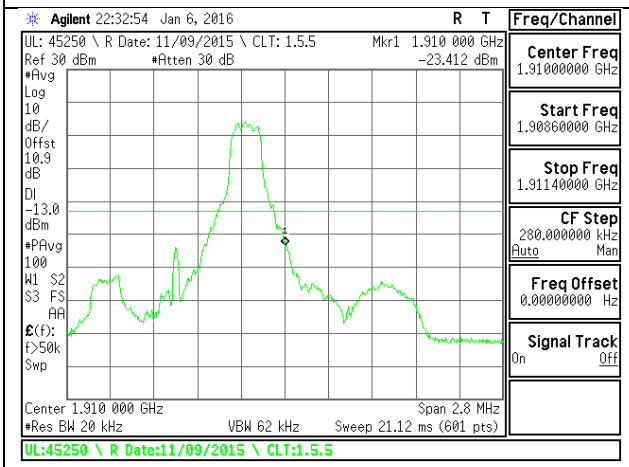
LTE Band 2



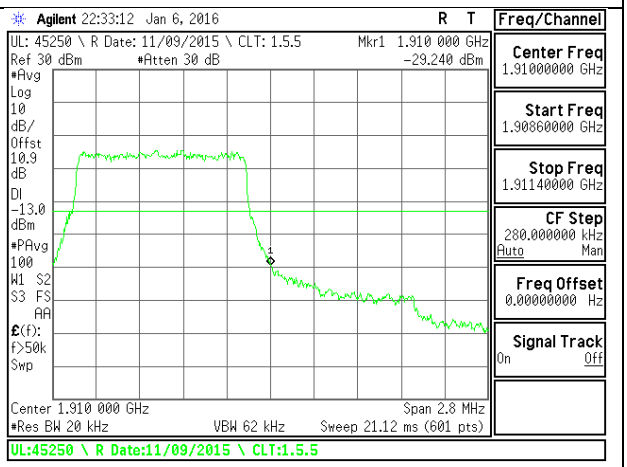
LTE B2 1.4MHz QPSK Low Channel 1RB



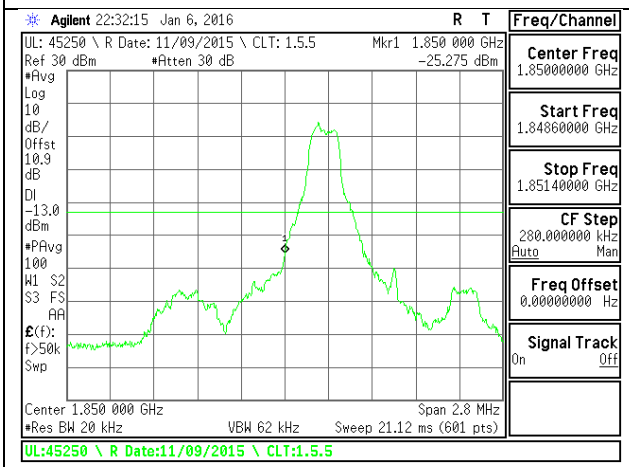
LTE B2 1.4MHz QPSK Low Channel FRB



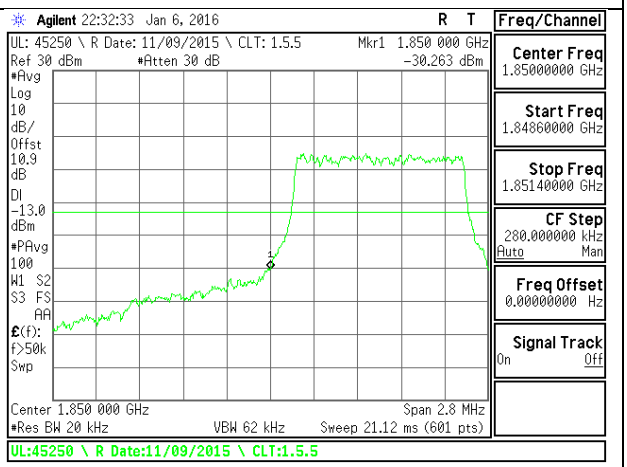
LTE B2 1.4MHz QPSK High Channel 1RB



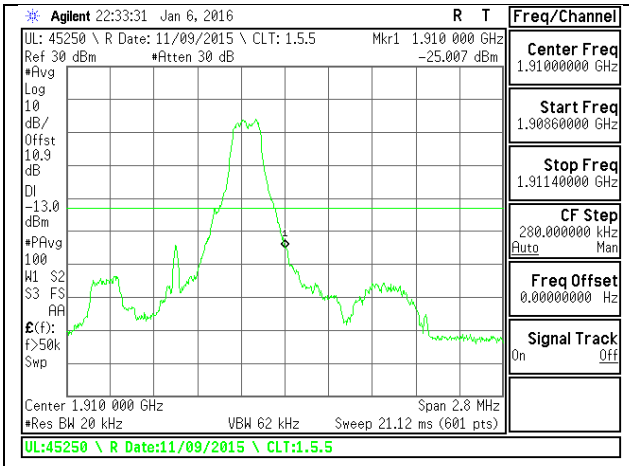
LTE B2 1.4MHz QPSK High Channel FRB



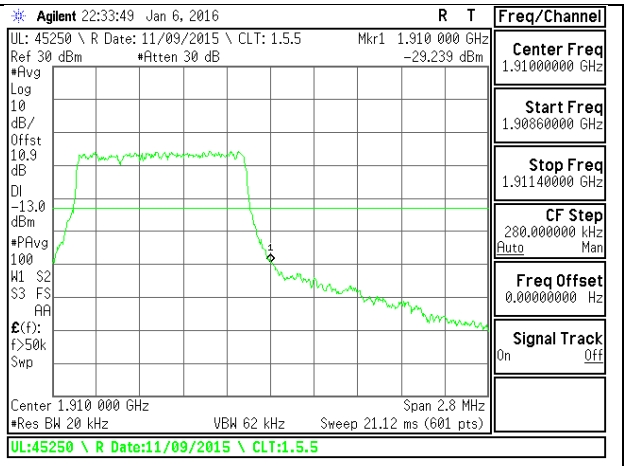
LTE B2 1.4MHz 16QAM Low Channel 1RB



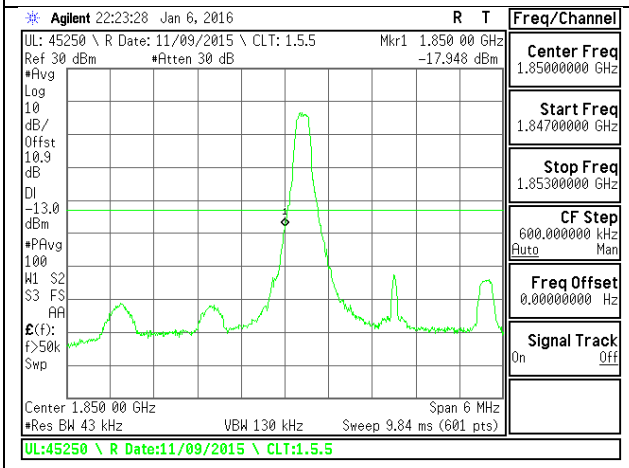
LTE B2 1.4MHz 16QAM Low Channel FRB



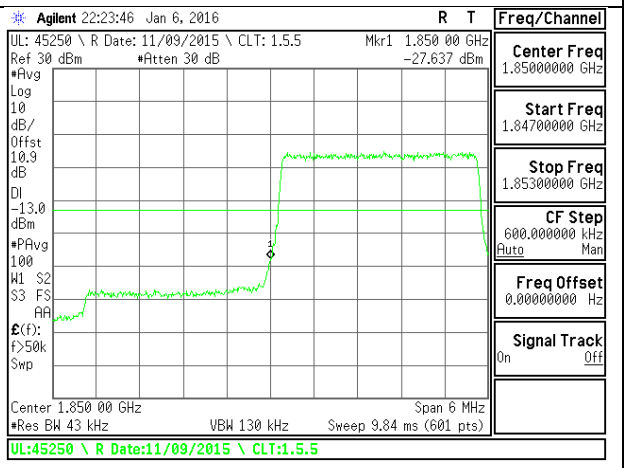
LTE B2 1.4MHz 16QAM High Channel 1RB



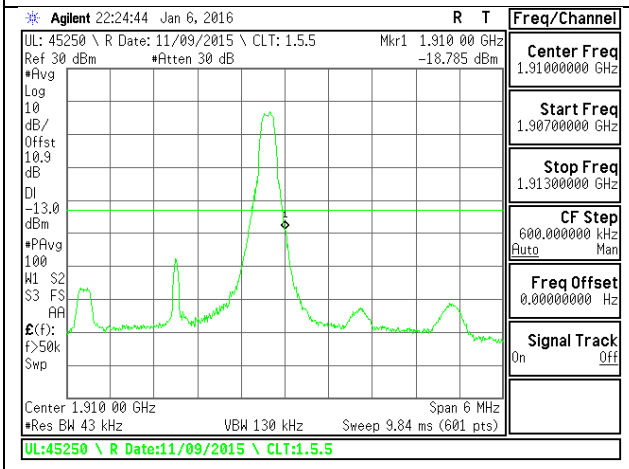
LTE B2 1.4MHz 16QAM High Channel FRB



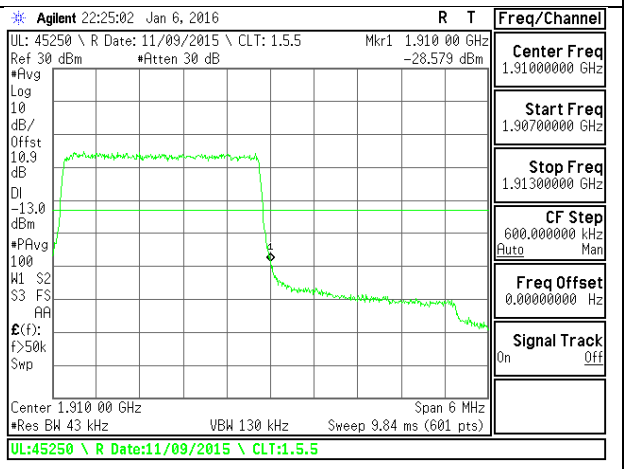
LTE B2 3MHz QPSK Low Channel 1RB



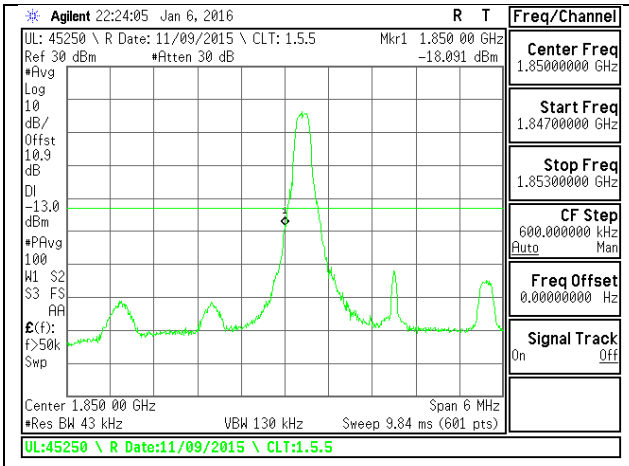
LTE B2 3MHz QPSK Low Channel FRB



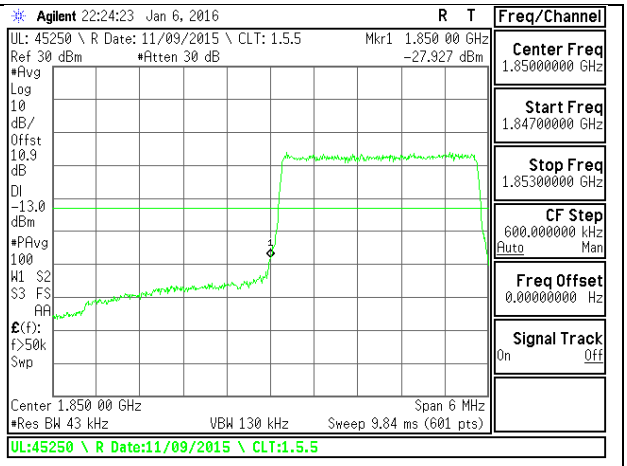
LTE B2 3MHz QPSK High Channel 1RB



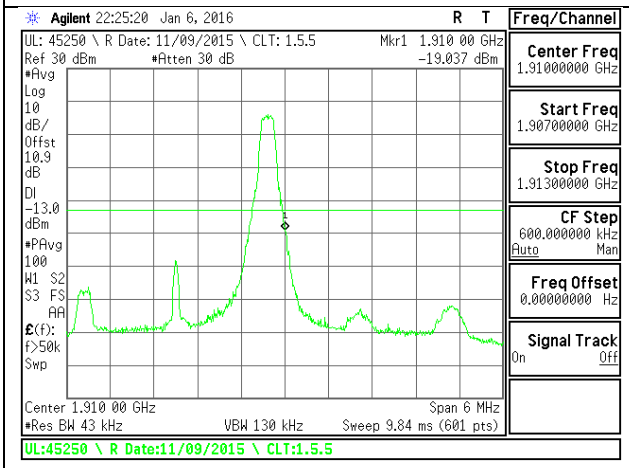
LTE B2 3MHz QPSK High Channel FRB



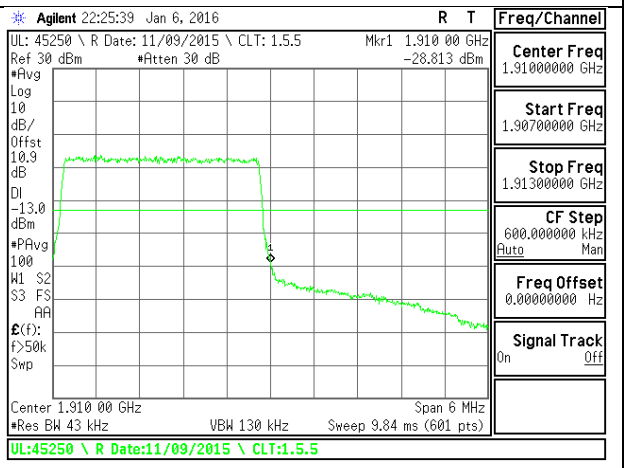
LTE B2 3MHz 16QAM Low Channel 1RB



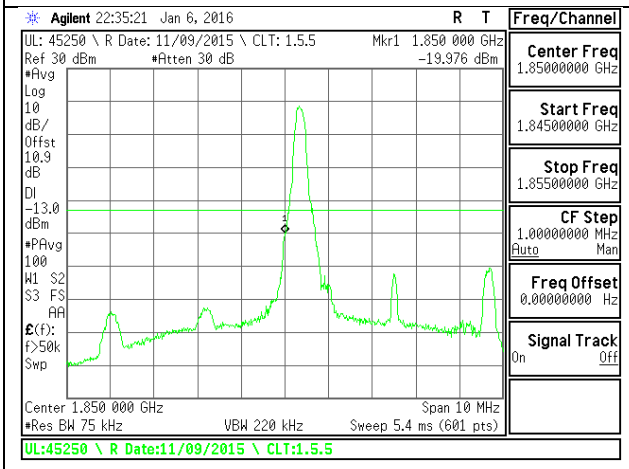
LTE B2 3MHz 16QAM Low Channel FRB



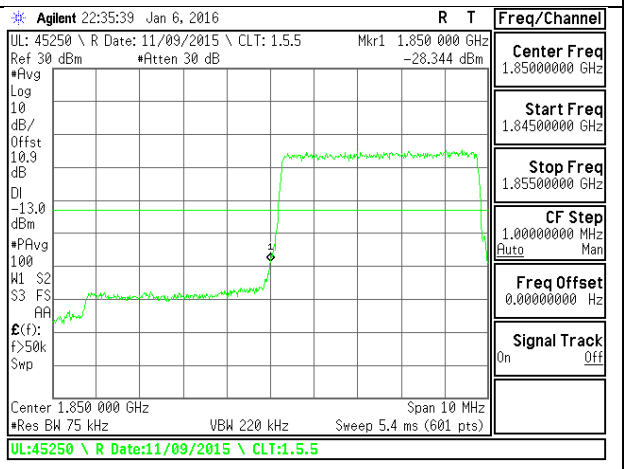
LTE B2 3MHz 16QAM High Channel 1RB



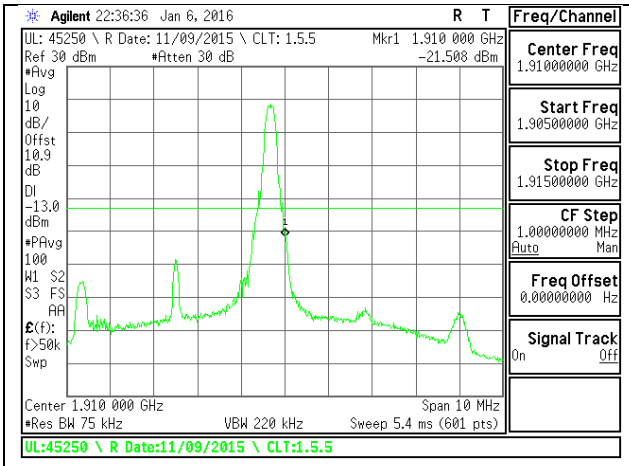
LTE B2 3MHz 16QAM High Channel FRB



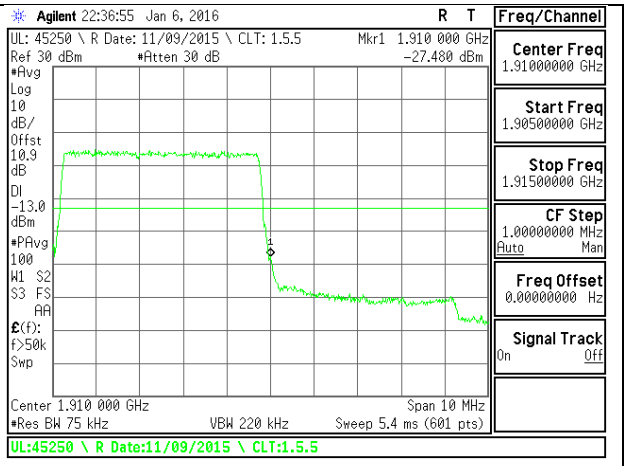
LTE B2 5MHz QPSK Low Channel 1RB



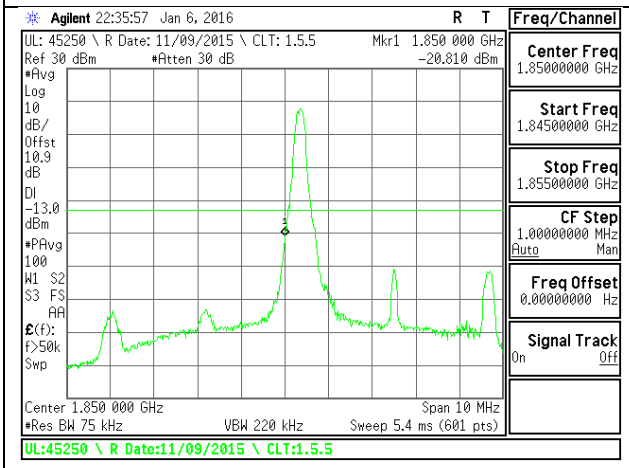
LTE B2 5MHz QPSK Low Channel FRB



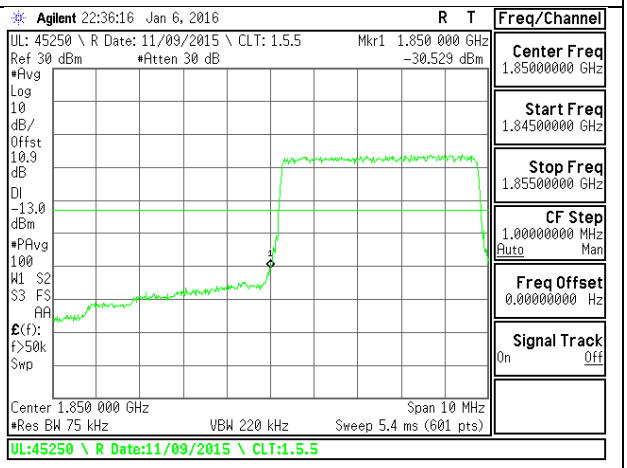
LTE B2 5MHz QPSK High Channel 1RB



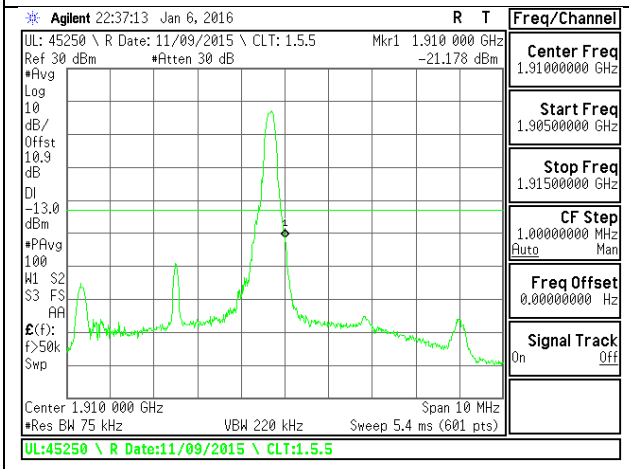
LTE B2 5MHz QPSK High Channel FRB



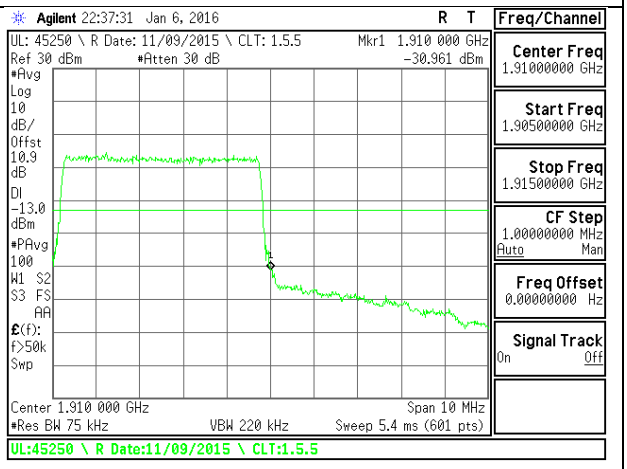
LTE B2 5MHz 16QAM Low Channel 1RB



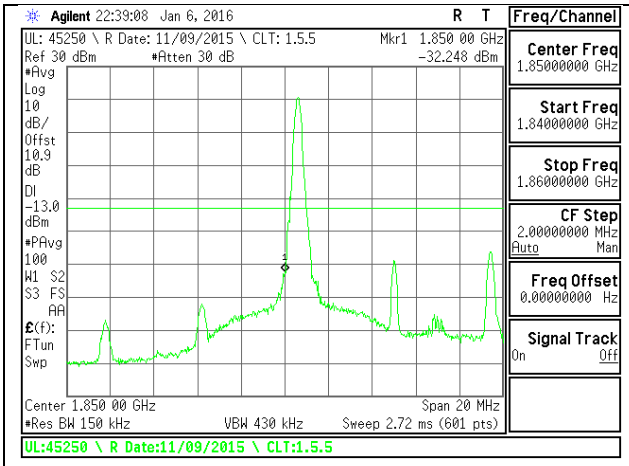
LTE B2 3MHz 16QAM Low Channel FRB



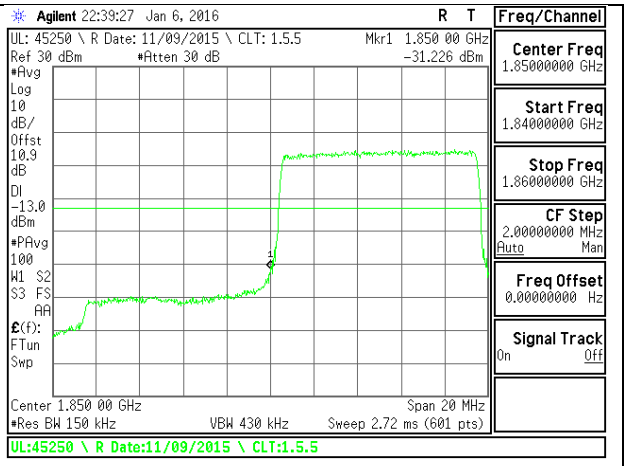
LTE B2 5MHz 16QAM High Channel 1RB



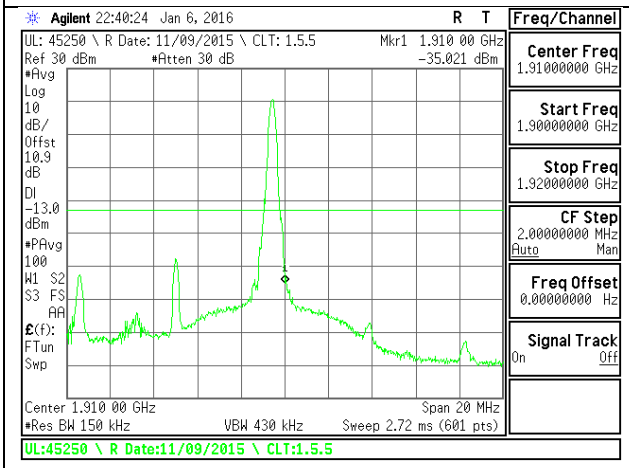
LTE B2 3MHz 16QAM High Channel FRB



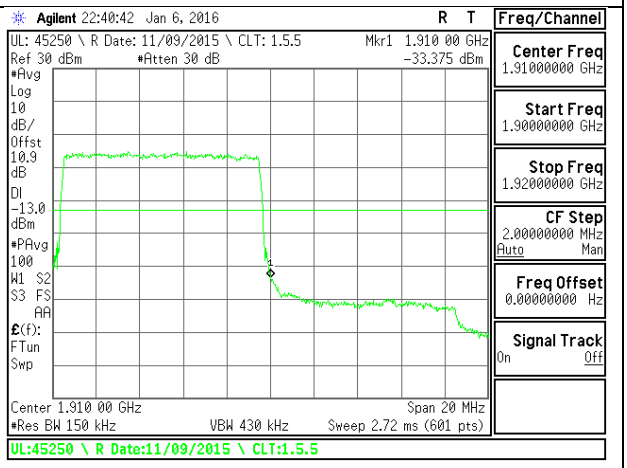
LTE B2 10MHz QPSK Low Channel 1RB



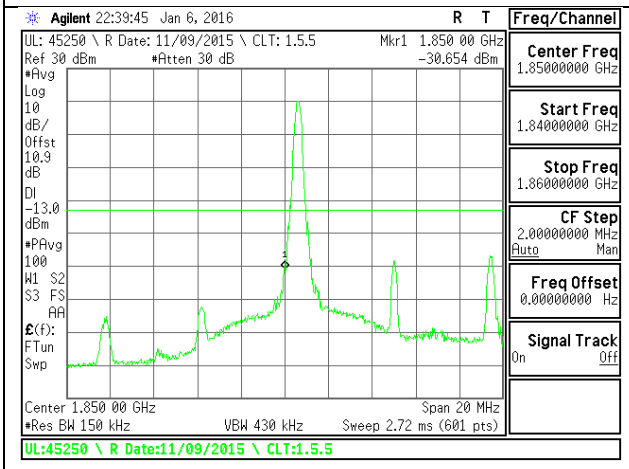
LTE B2 10MHz QPSK Low Channel FRB



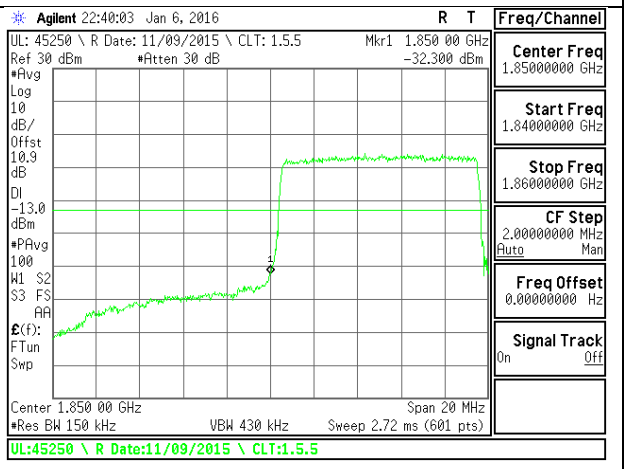
LTE B2 10MHz QPSK High Channel 1RB



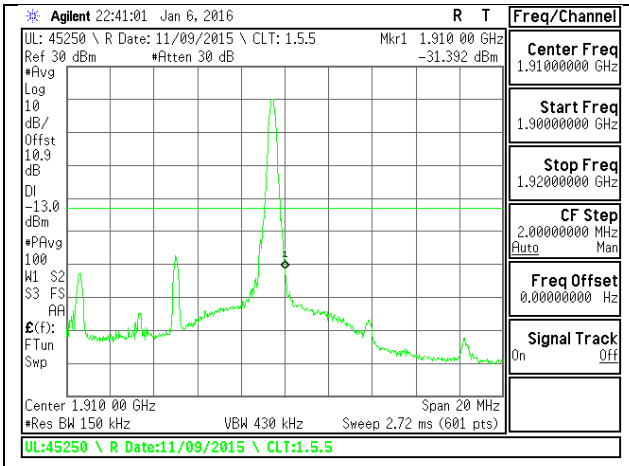
LTE B2 10MHz QPSK High Channel FRB



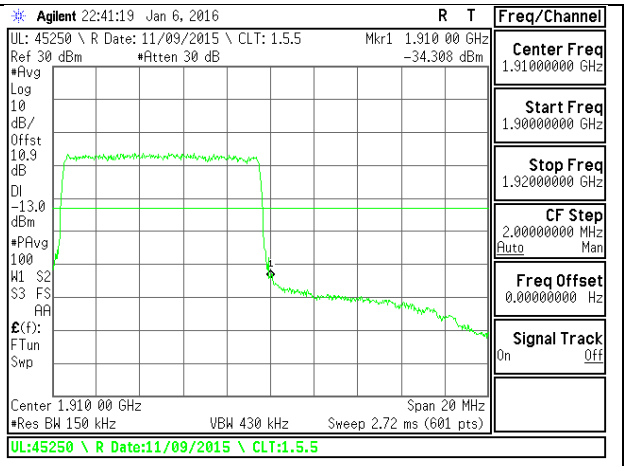
LTE B2 10MHz 16QAM Low Channel 1RB



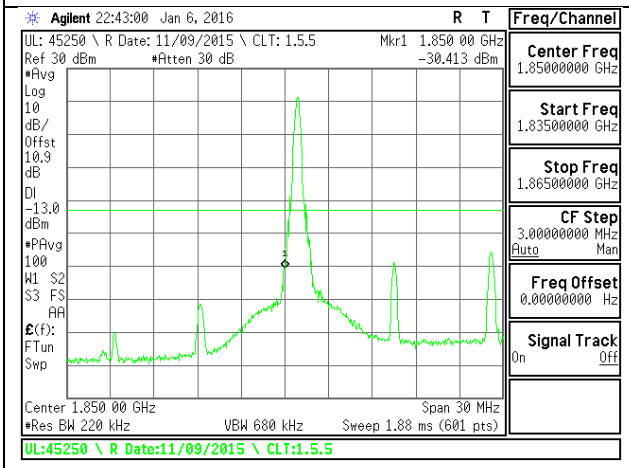
LTE B2 10MHz 16QAM Low Channel FRB



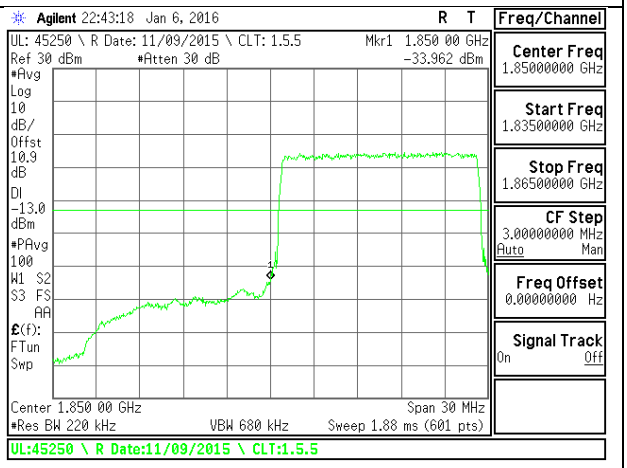
LTE B2 10MHz 16QAM High Channel 1RB



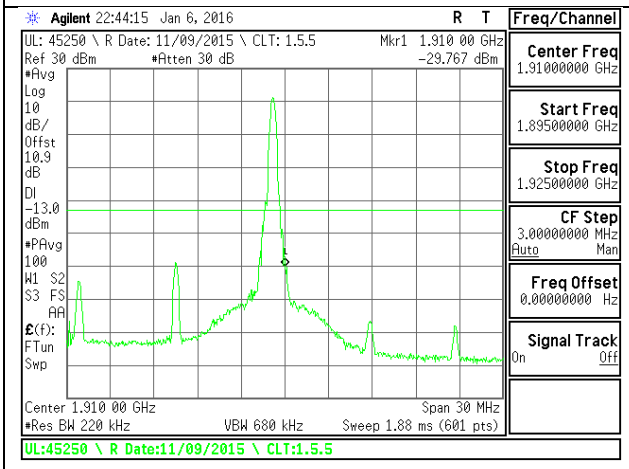
LTE B2 10MHz 16QAM High Channel FRB



LTE B2 15MHz QPSK Low Channel 1RB



LTE B2 15MHz QPSK Low Channel FRB



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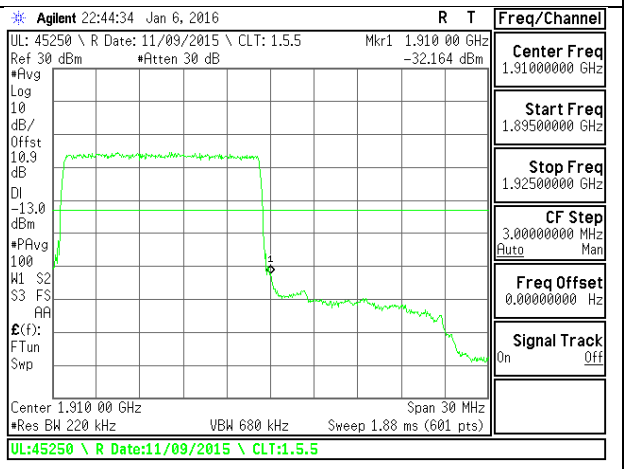
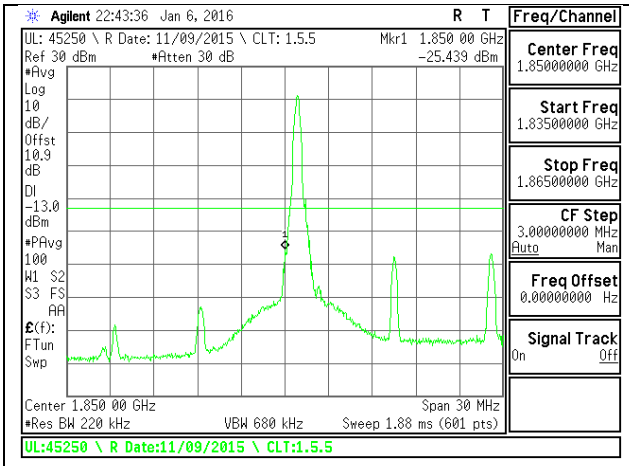
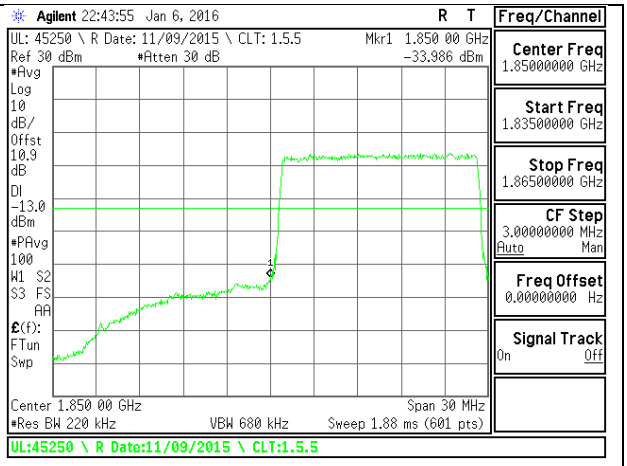


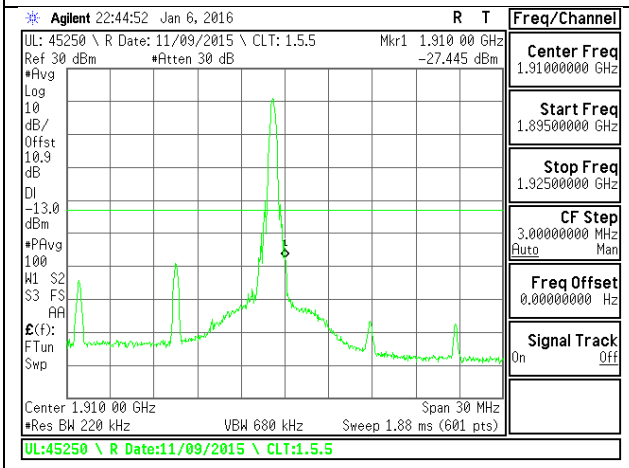
LTE B2 15MHz QPSK High Channel FRB



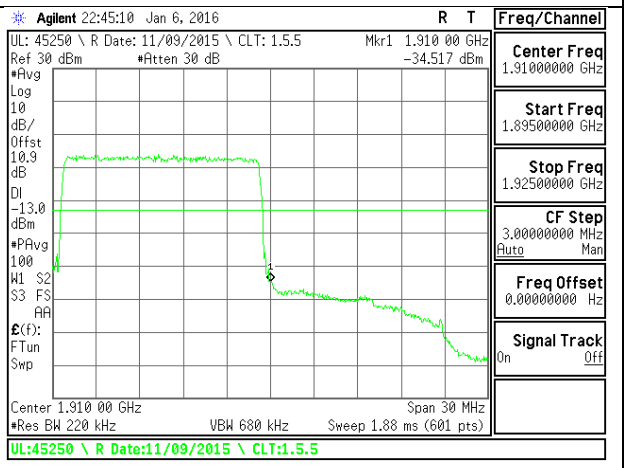
LTE B2 15MHz 16QAM Low Channel 1RB



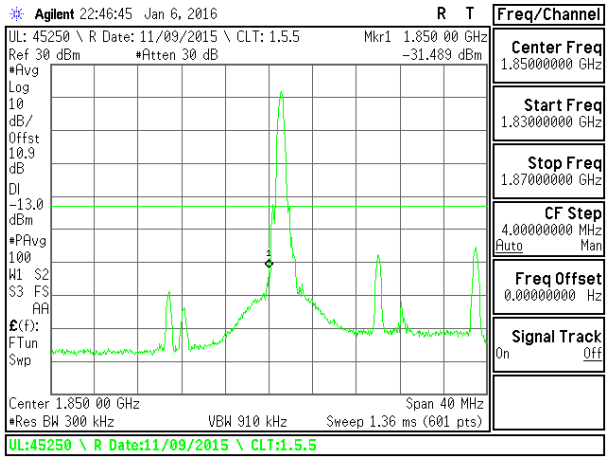
LTE B2 15MHz 16QAM Low Channel FRB



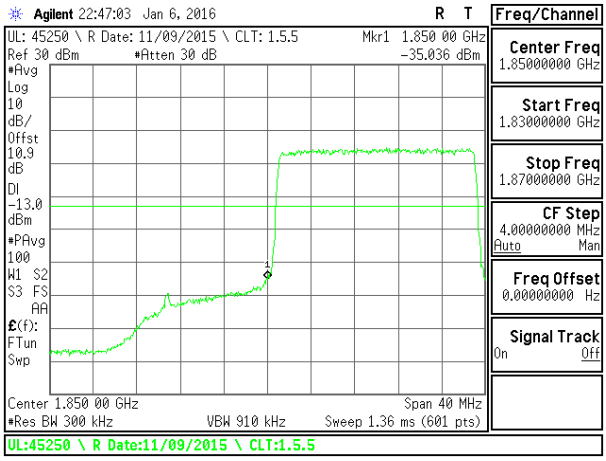
LTE B2 15MHz 16QAM High Channel 1RB



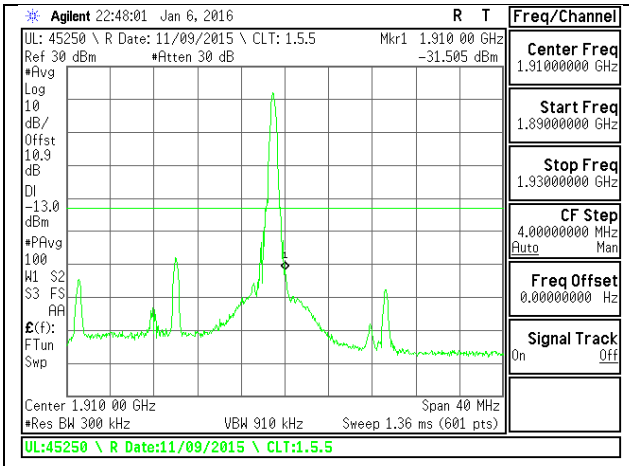
LTE B2 15MHz 16QAM High Channel FRB



LTE B2 20MHz QPSK Low Channel 1RB



LTE B2 20MHz QPSK Low Channel FRB



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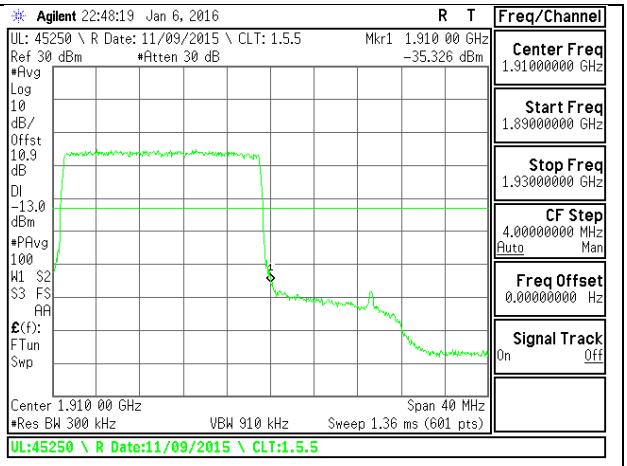

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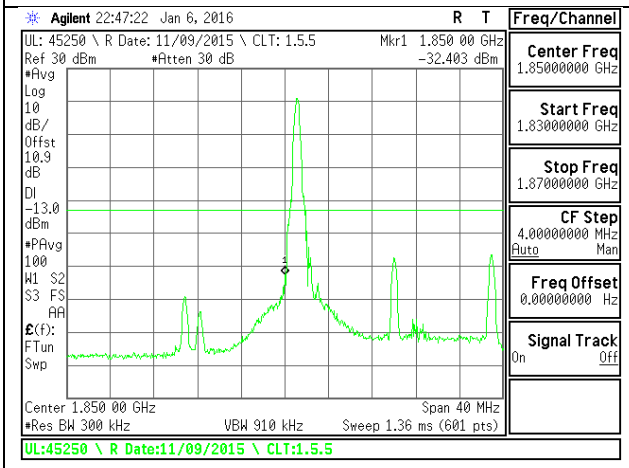
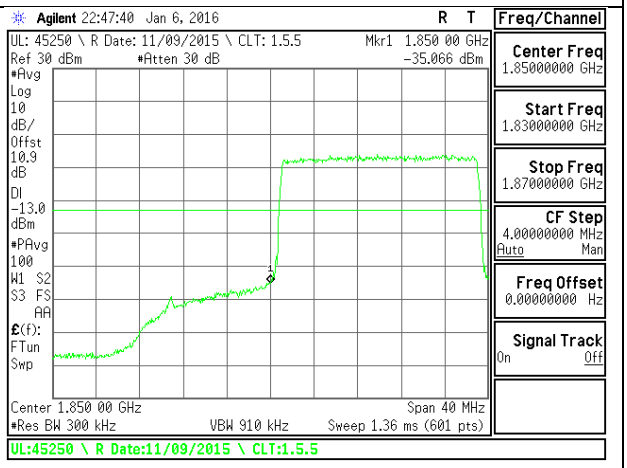
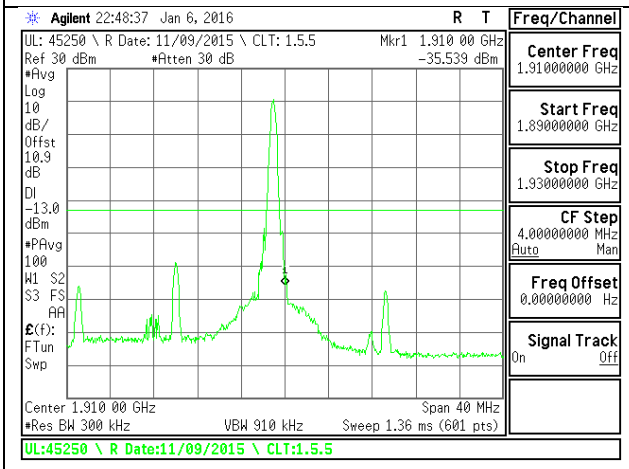


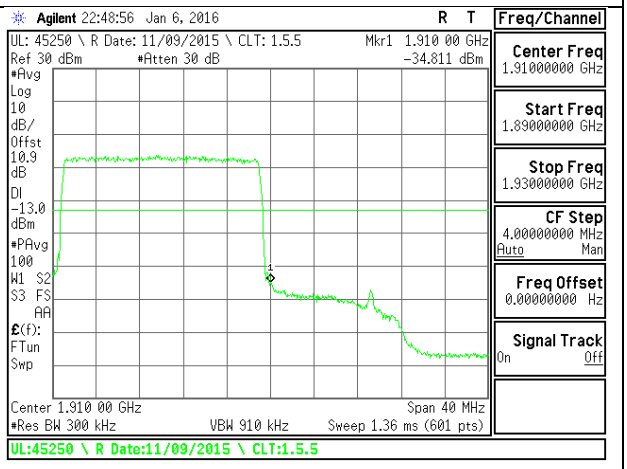
LTE B2 20MHz 16QAM Low Channel 1RB



LTE B2 20MHz 16QAM Low Channel FRB

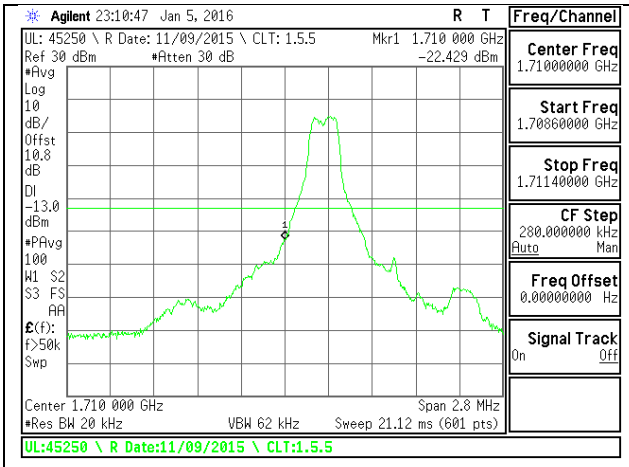


LTE B2 20MHz 16QAM High Channel 1RB

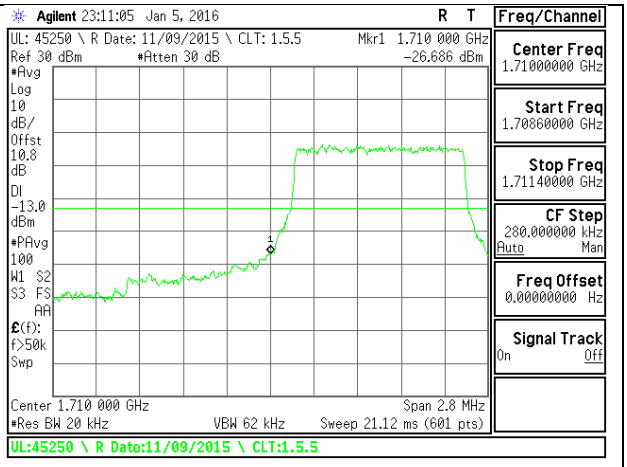


LTE B2 20MHz 16QAM High Channel FRB

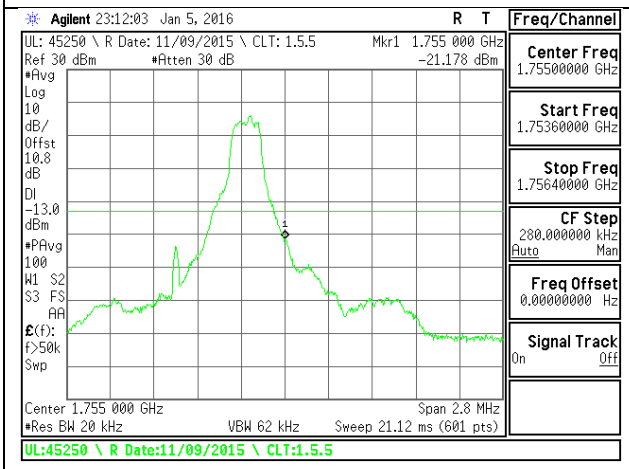
LTE Band 4



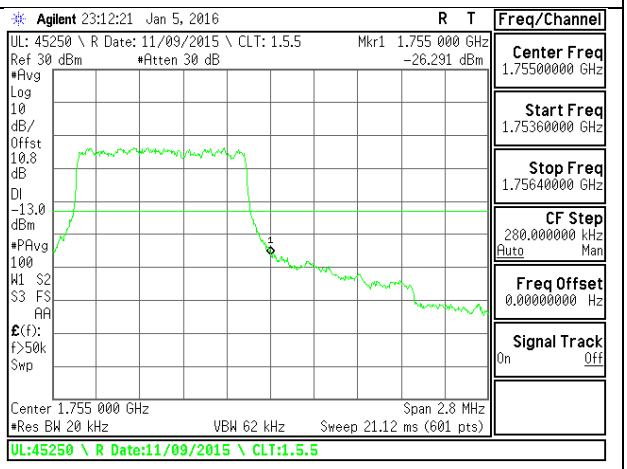
LTE B4 1.4MHz QPSK Low Channel 1RB



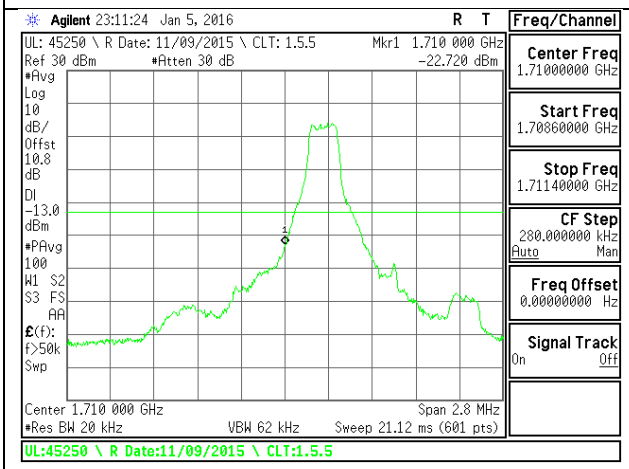
LTE B4 1.4MHz QPSK Low Channel FRB



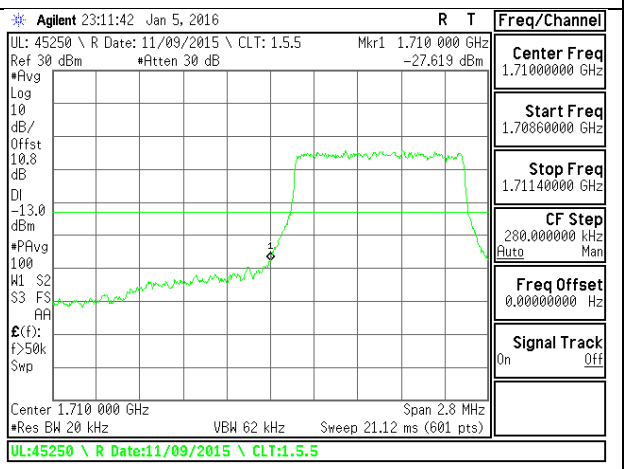
LTE B4 1.4MHz QPSK High Channel 1RB



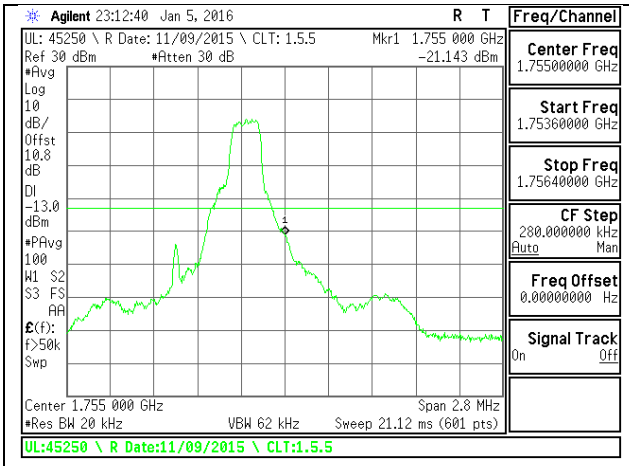
LTE B4 1.4MHz QPSK High Channel FRB



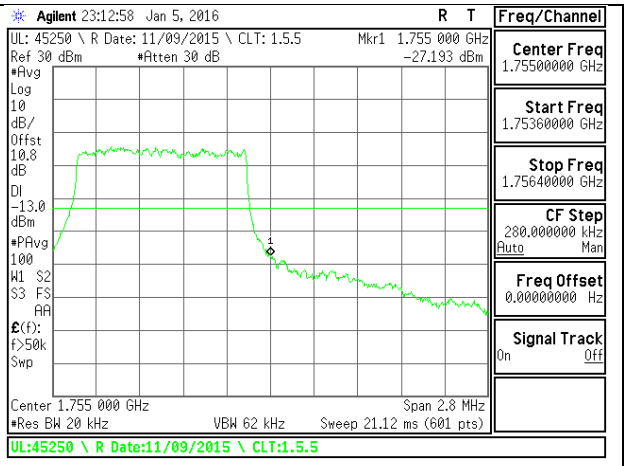
LTE B4 1.4MHz 16QAM Low Channel 1RB



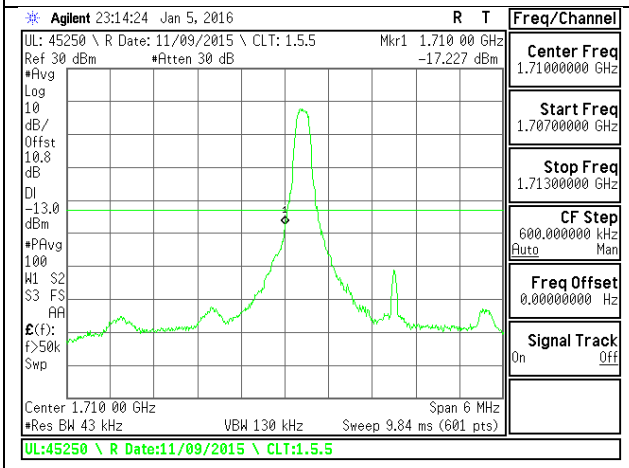
LTE B4 1.4MHz 16QAM Low Channel FRB



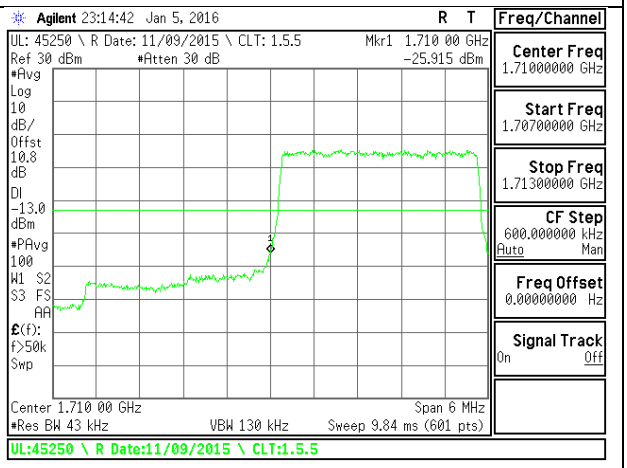
LTE B4 1.4MHz 16QAM High Channel 1RB



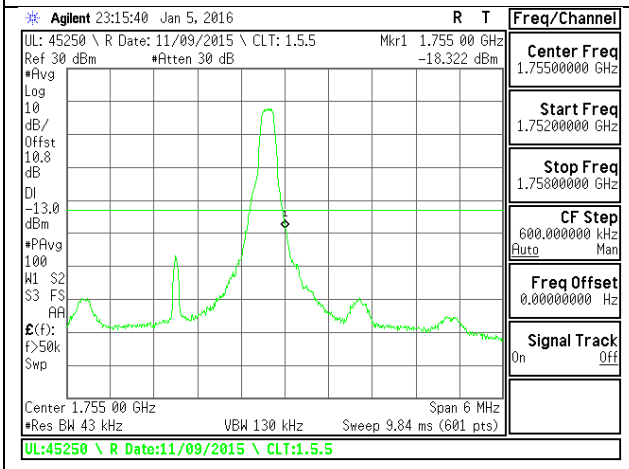
LTE B4 1.4MHz 16QAM High Channel FRB



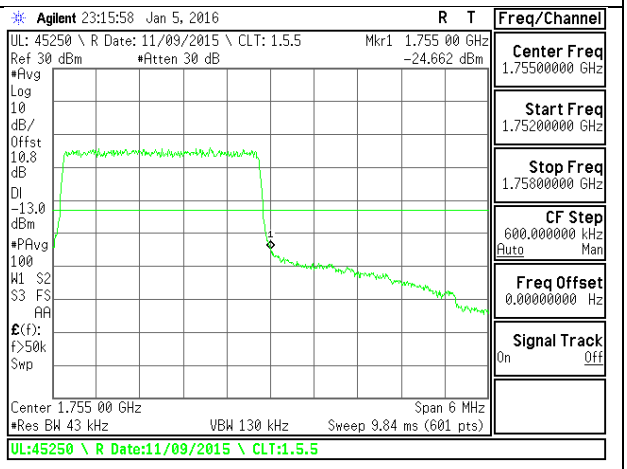
LTE B4 3MHz QPSK Low Channel 1RB



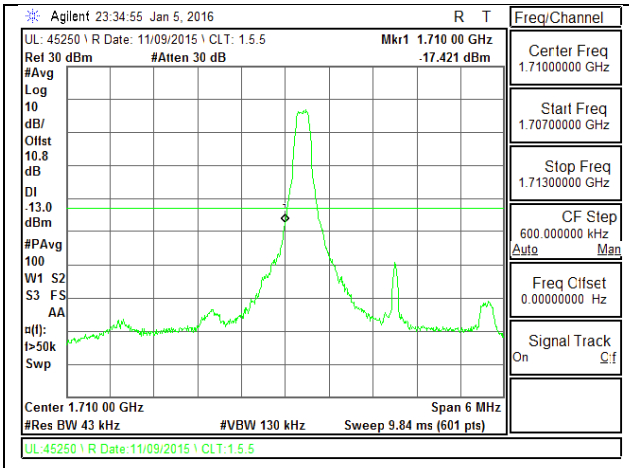
LTE B4 3MHz QPSK Low Channel FRB



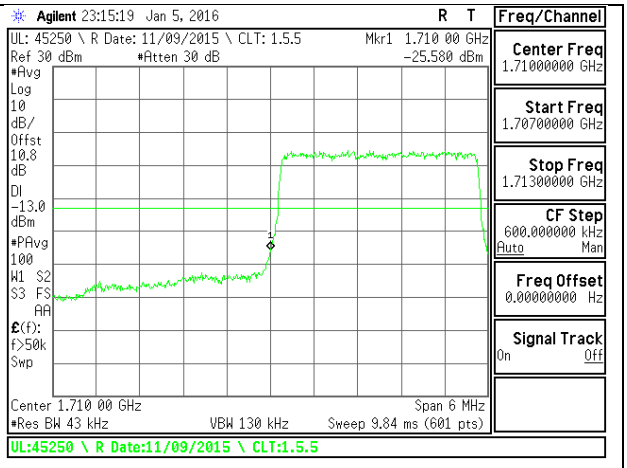
LTE B4 3MHz QPSK High Channel 1RB



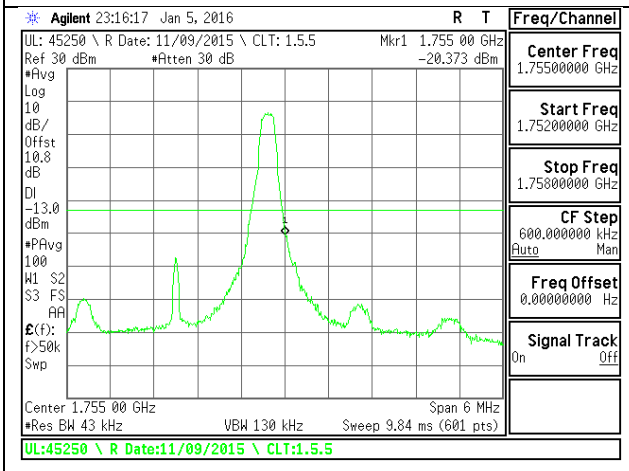
LTE B4 3MHz QPSK High Channel FRB



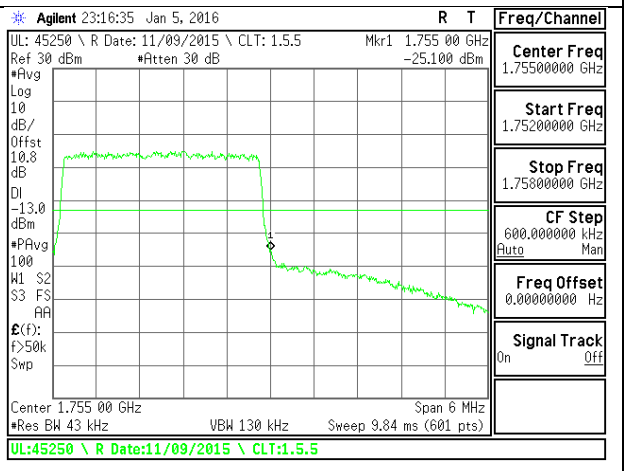
LTE B4 3MHz 16QAM Low Channel 1RB



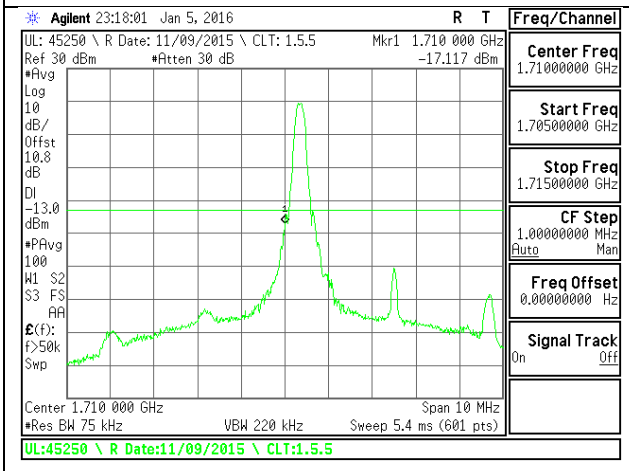
LTE B4 3MHz 16QAM Low Channel FRB



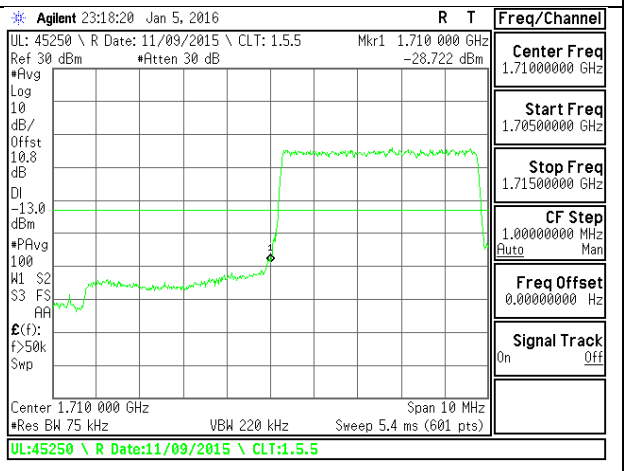
LTE B4 3MHz 16QAM High Channel 1RB



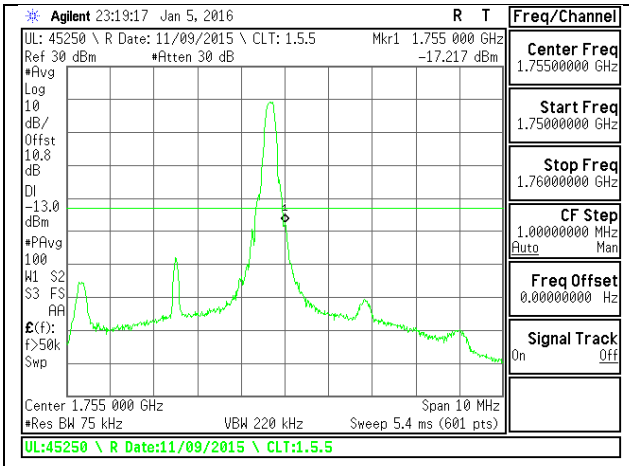
LTE B4 3MHz 16QAM High Channel FRB



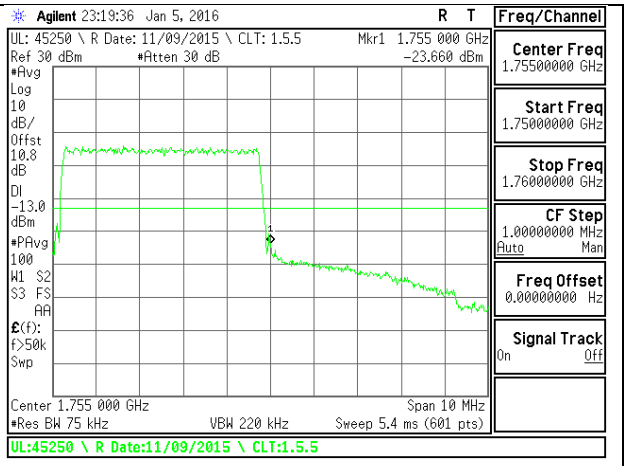
LTE B4 5MHz QPSK Low Channel 1RB



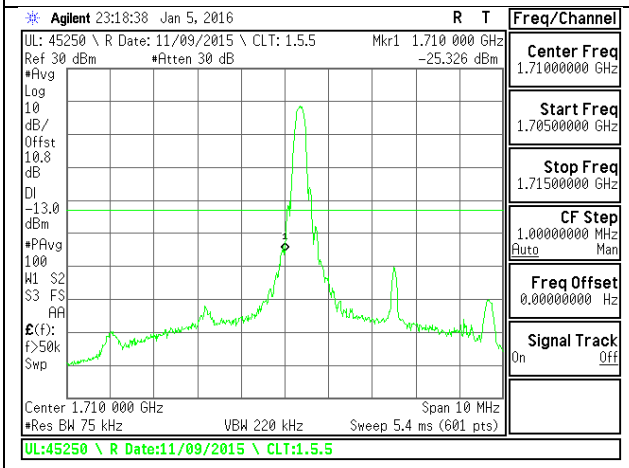
LTE B4 5MHz QPSK Low Channel FRB



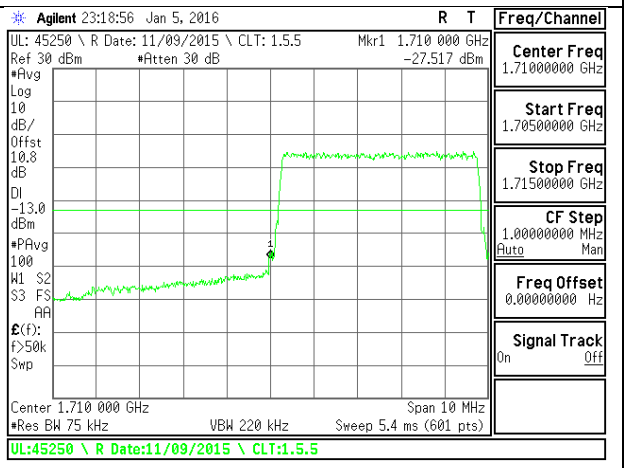
LTE B4 5MHz QPSK High Channel 1RB



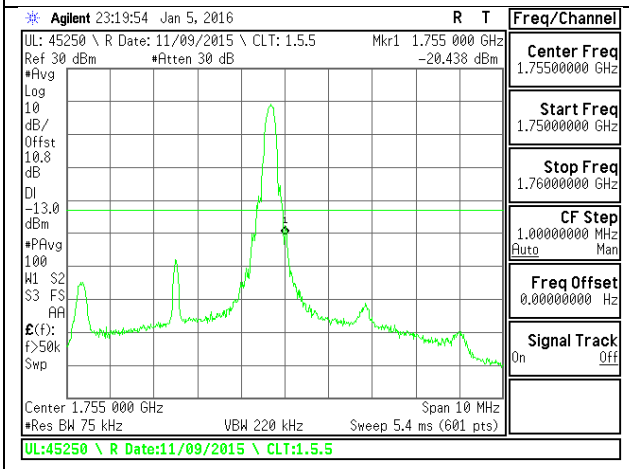
LTE B4 5MHz QPSK High Channel FRB



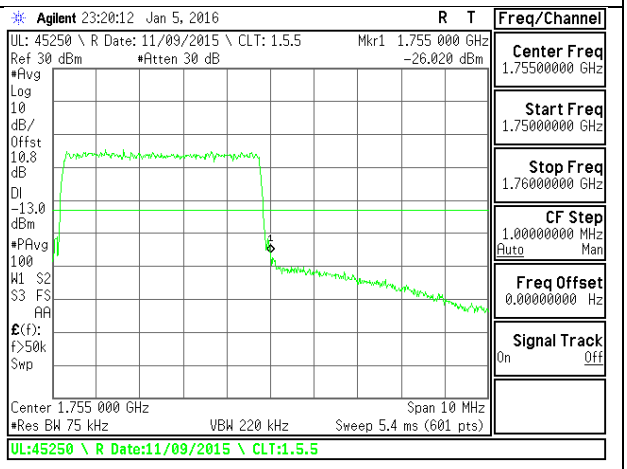
LTE B4 5MHz 16QAM Low Channel 1RB



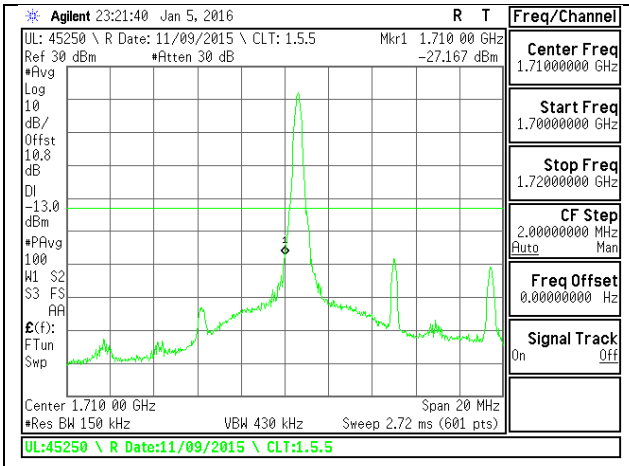
LTE B4 3MHz 16QAM Low Channel FRB



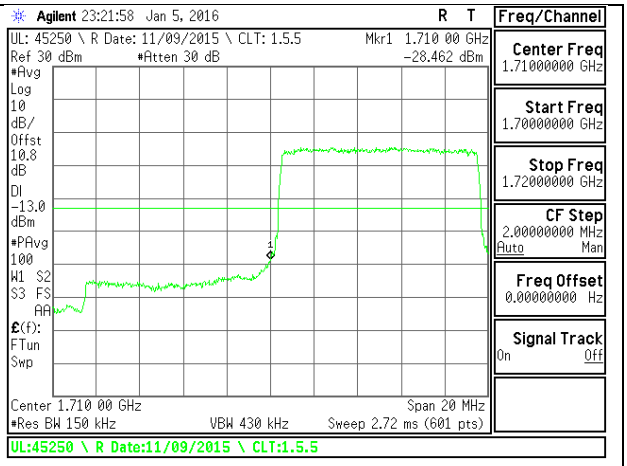
LTE B4 5MHz 16QAM High Channel 1RB



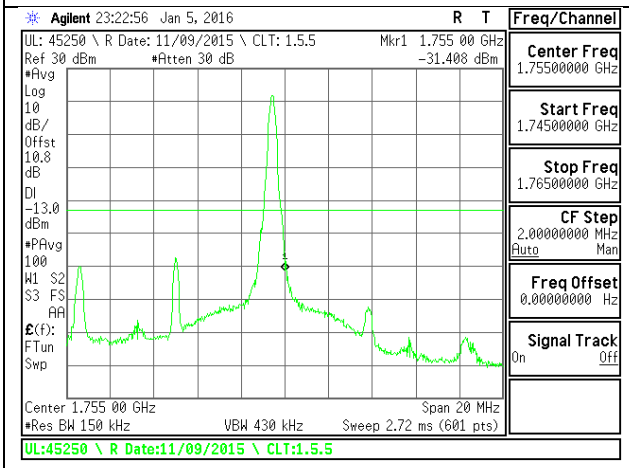
LTE B4 3MHz 16QAM High Channel FRB



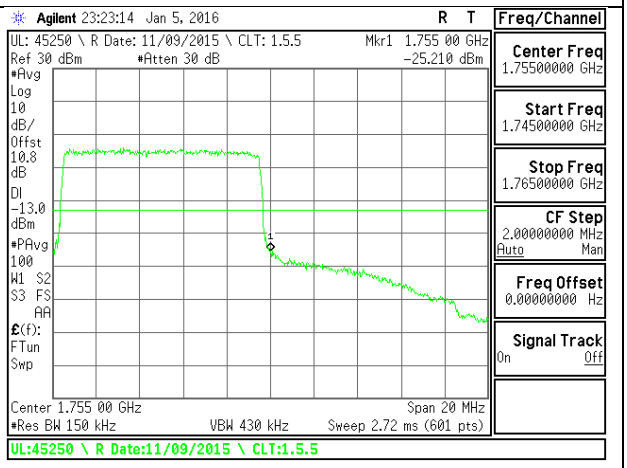
LTE B4 10MHz QPSK Low Channel 1RB



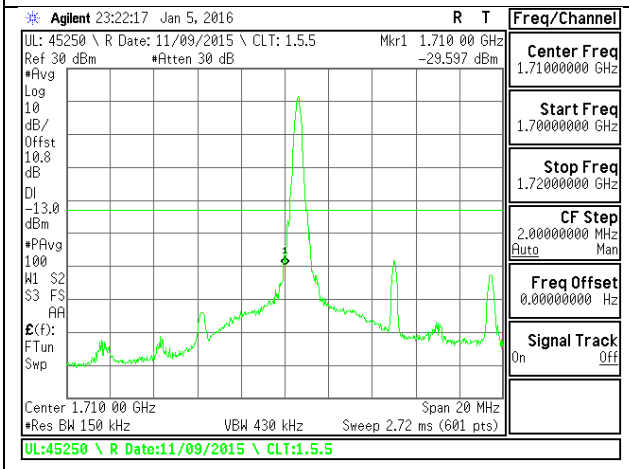
LTE B4 10MHz QPSK Low Channel FRB



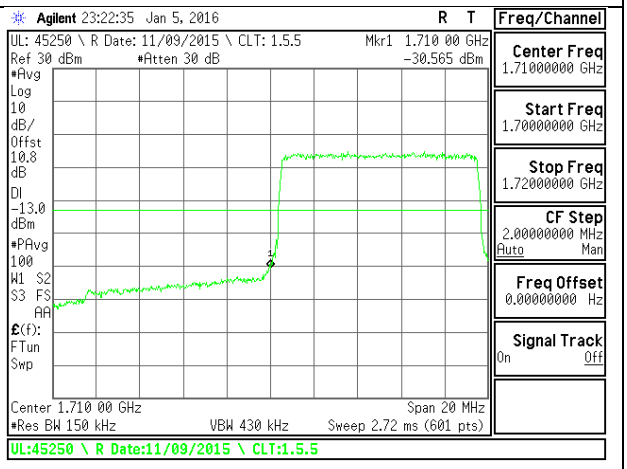
LTE B4 10MHz QPSK High Channel 1RB



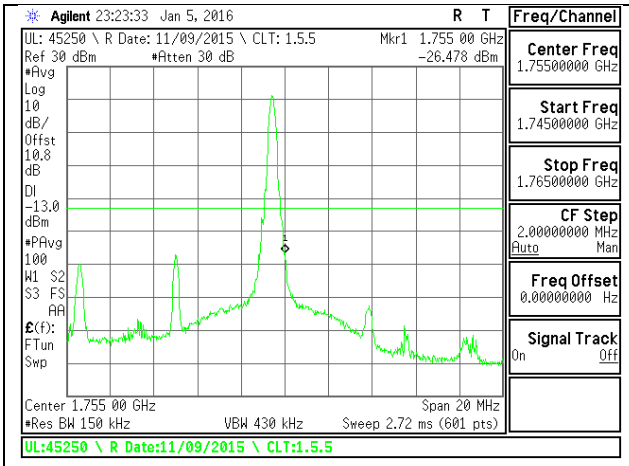
LTE B4 10MHz QPSK High Channel FRB



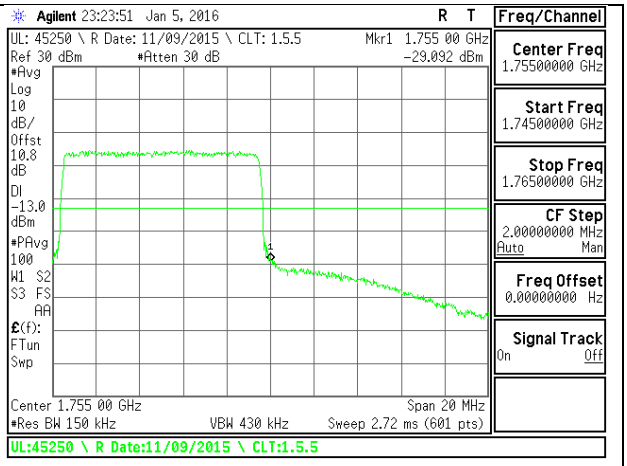
LTE B4 10MHz 16QAM Low Channel 1RB



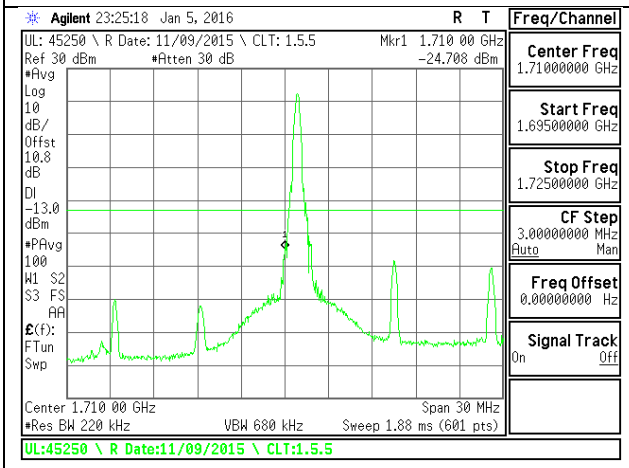
LTE B4 10MHz 16QAM Low Channel FRB



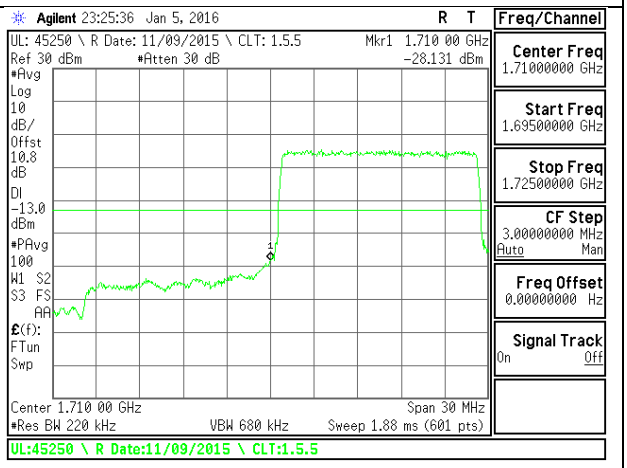
LTE B4 10MHz 16QAM High Channel 1RB



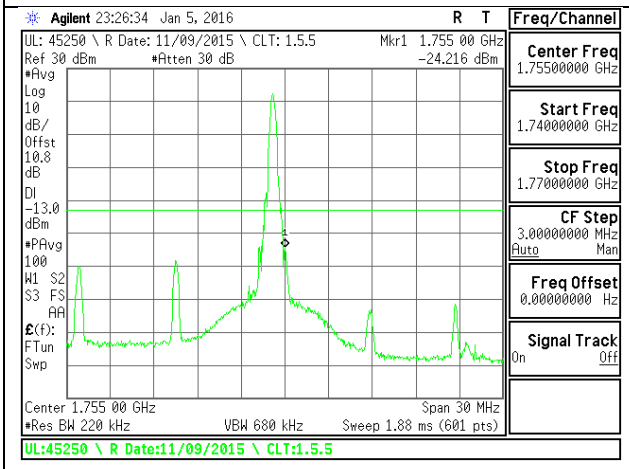
LTE B4 10MHz 16QAM High Channel FRB



LTE B4 15MHz QPSK Low Channel 1RB



LTE B4 15MHz QPSK Low Channel FRB



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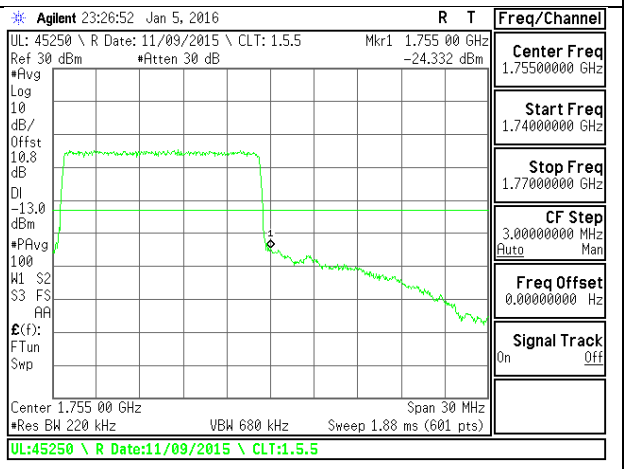
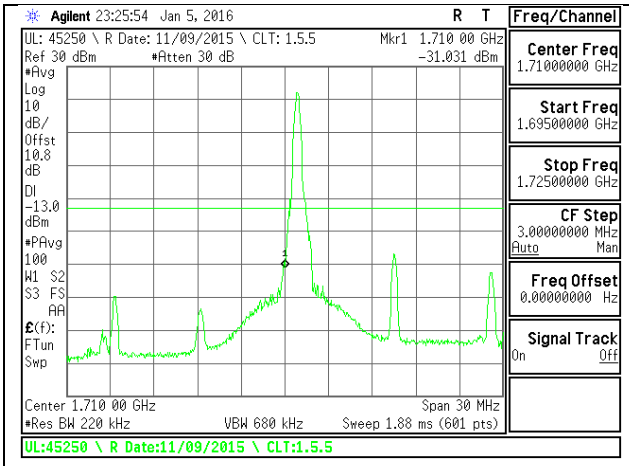


LTE B4 15MHz QPSK High Channel FRB



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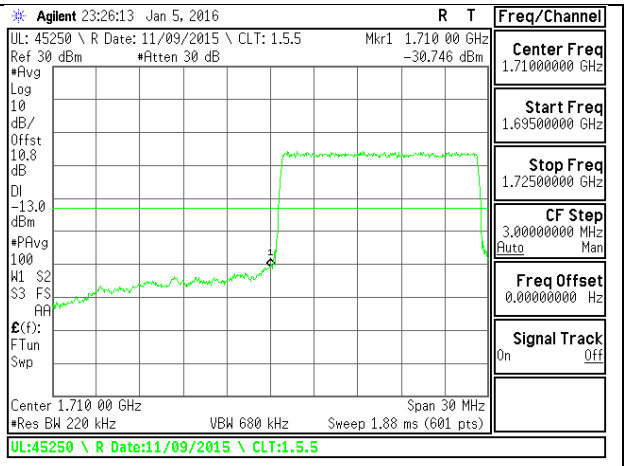
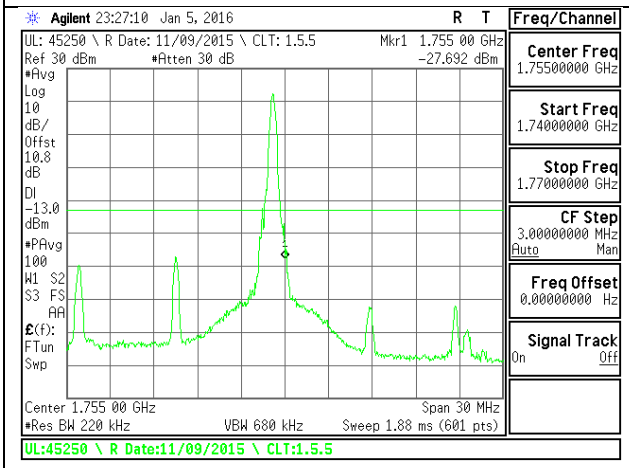
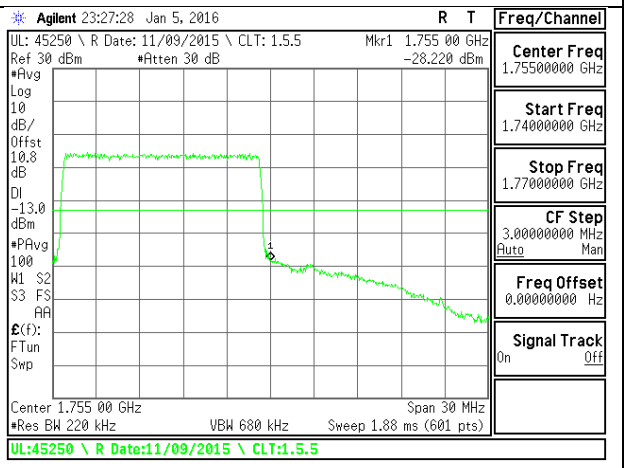


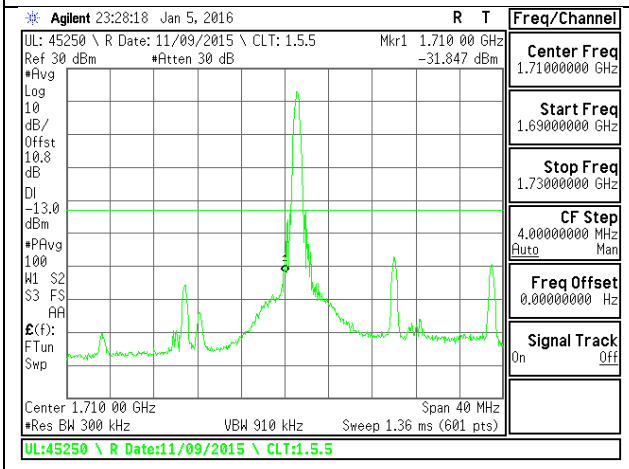
LTE B4 15MHz 16QAM Low Channel FRB



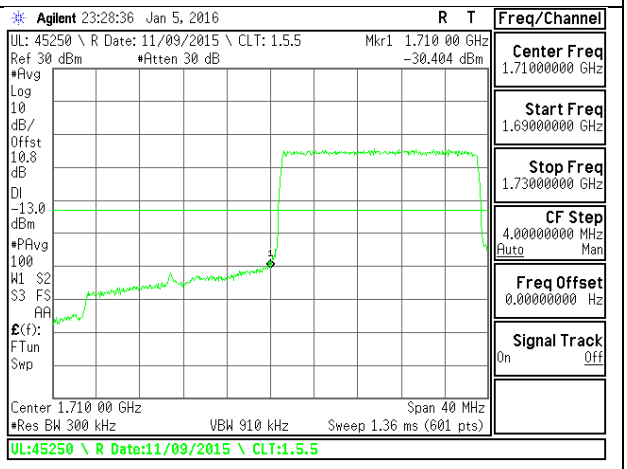
LTE B4 15MHz 16QAM High Channel 1RB



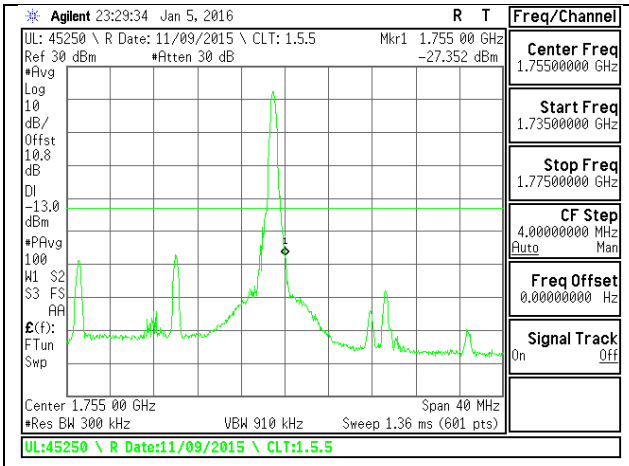
LTE B4 15MHz 16QAM High Channel FRB



LTE B4 20MHz QPSK Low Channel 1RB



LTE B4 20MHz QPSK Low Channel FRB



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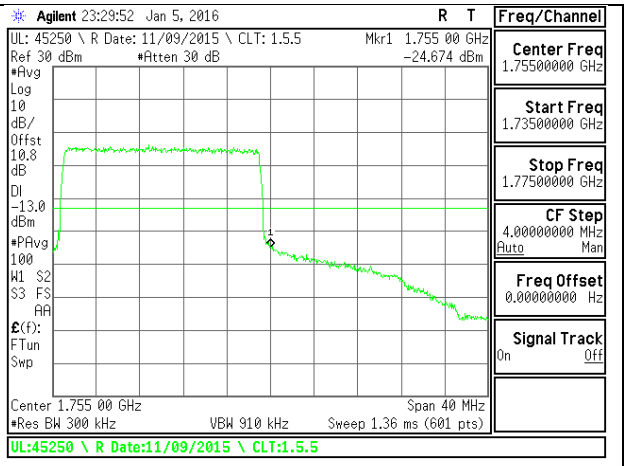

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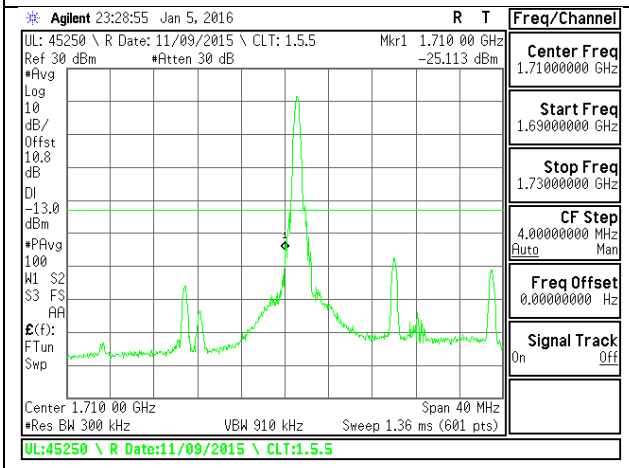
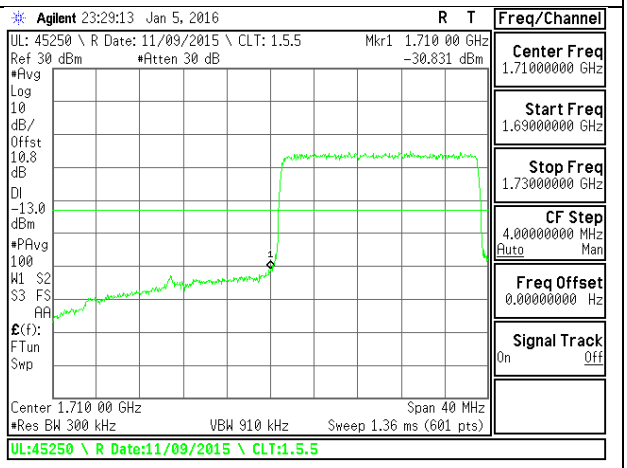
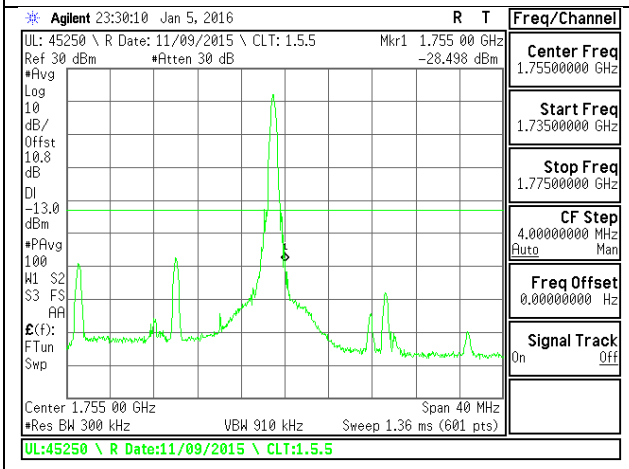


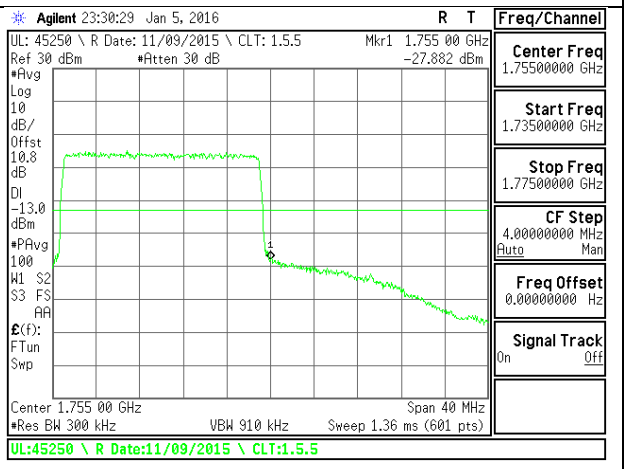
LTE B4 20MHz 16QAM Low Channel 1RB



LTE B4 20MHz 16QAM Low Channel FRB

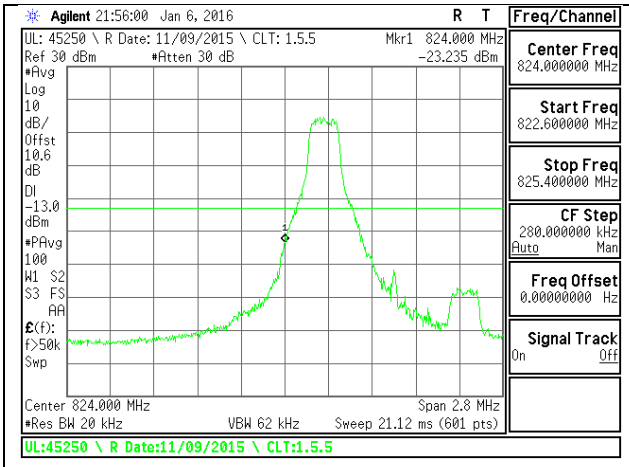


LTE B4 20MHz 16QAM High Channel 1RB

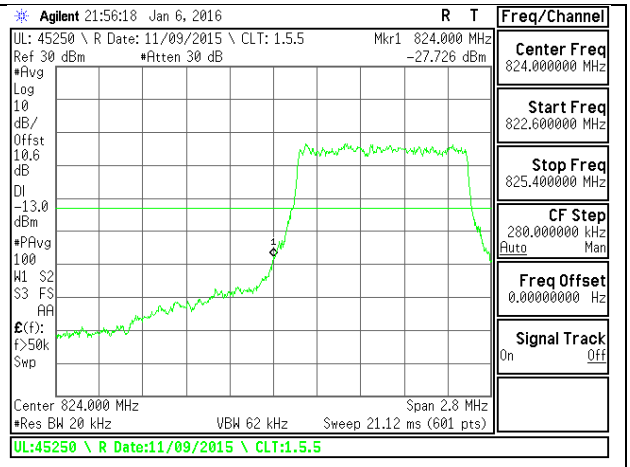


LTE B4 20MHz 16QAM High Channel FRB

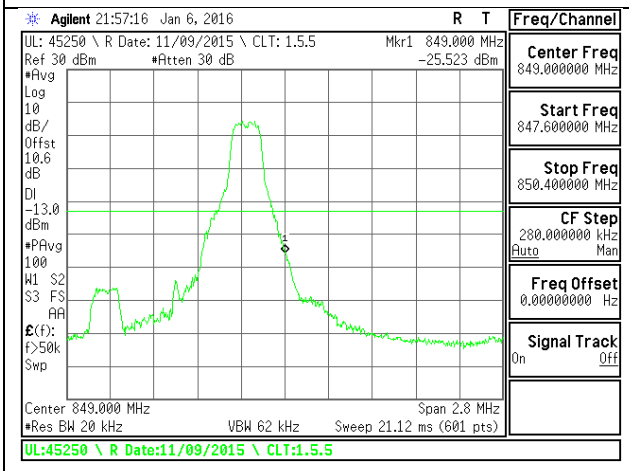
LTE Band 5



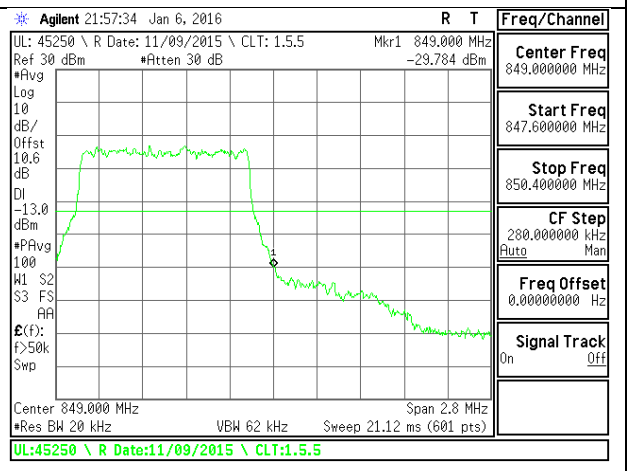
LTE B5 1.4MHz QPSK Low Channel 1RB



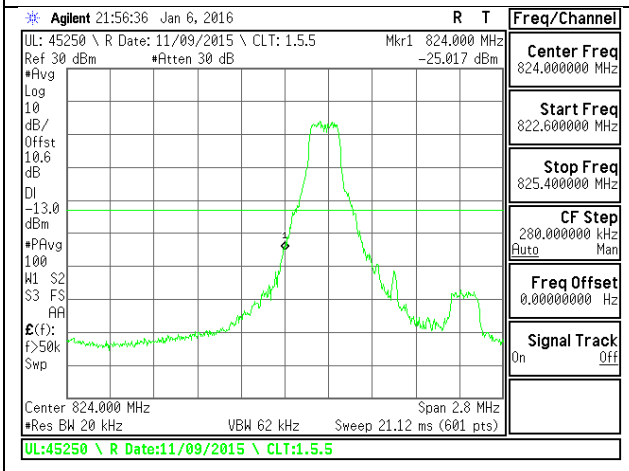
LTE B5 1.4MHz QPSK Low Channel FRB



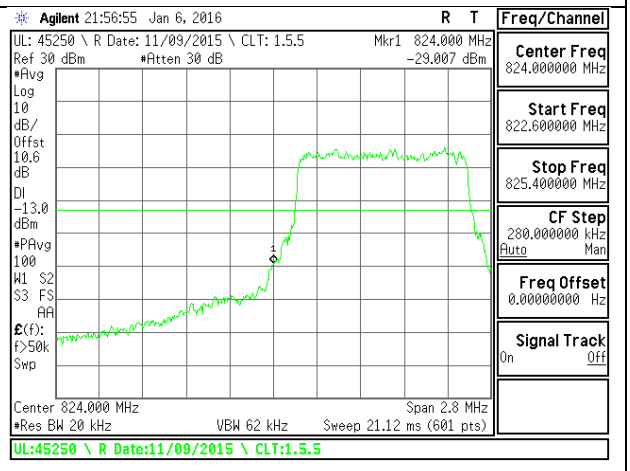
LTE B5 1.4MHz QPSK High Channel 1RB



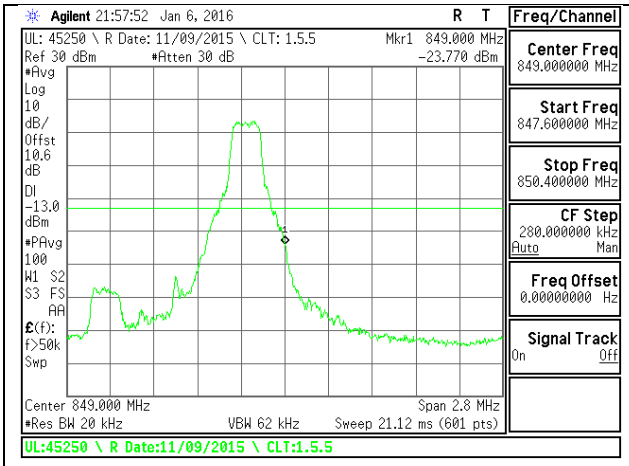
LTE B5 1.4MHz QPSK High Channel FRB



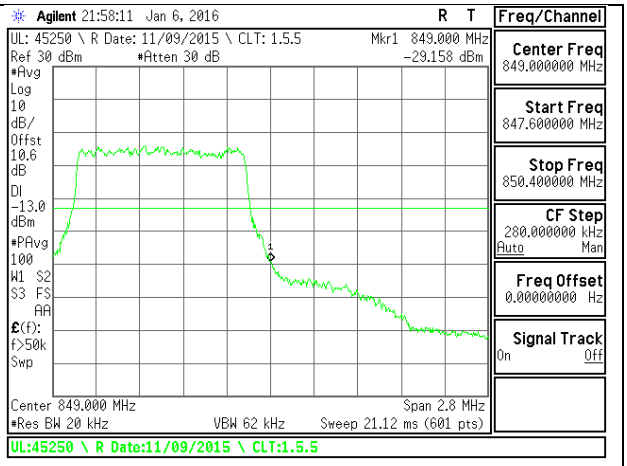
LTE B5 1.4MHz 16QAM Low Channel 1RB



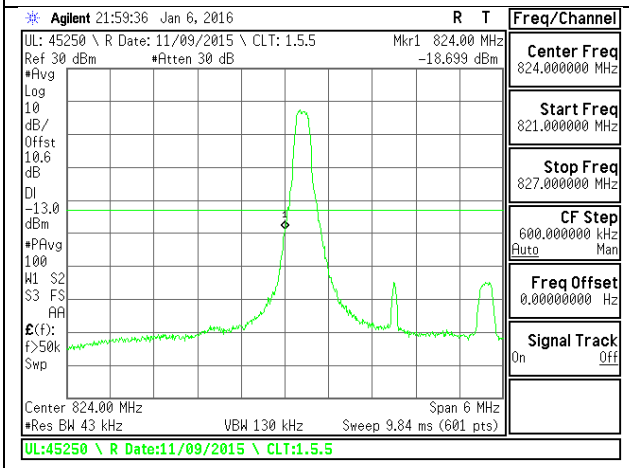
LTE B5 1.4MHz 16QAM Low Channel FRB



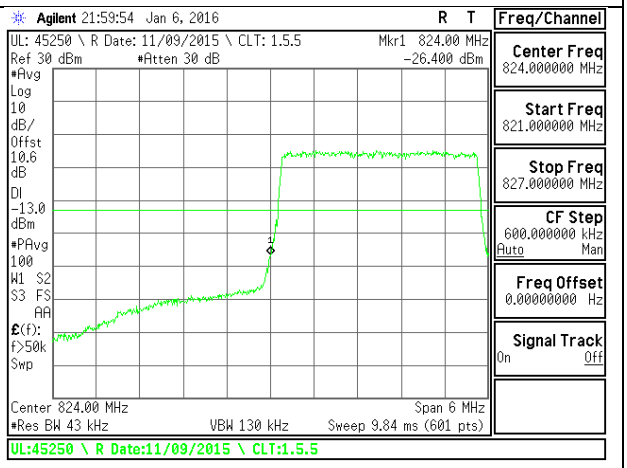
LTE B5 1.4MHz 16QAM High Channel 1RB



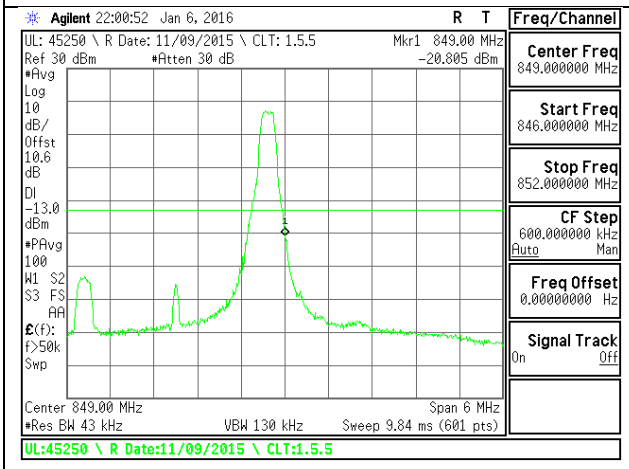
LTE B5 1.4MHz 16QAM High Channel FRB



LTE B5 3MHz QPSK Low Channel 1RB



LTE B5 3MHz QPSK Low Channel FRB



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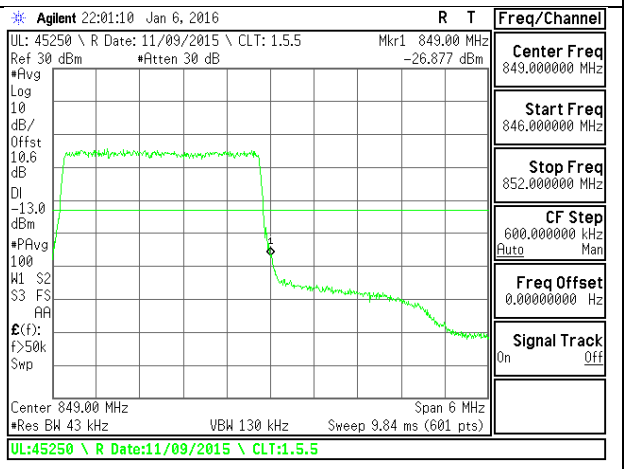

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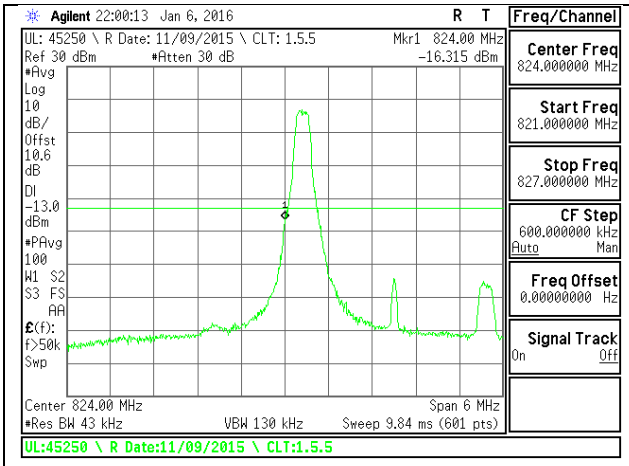
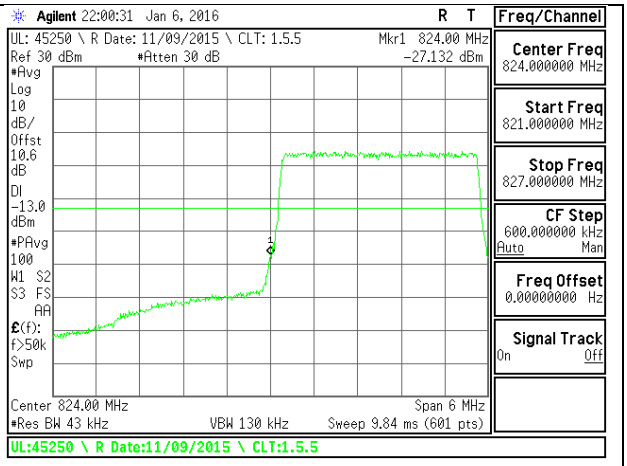
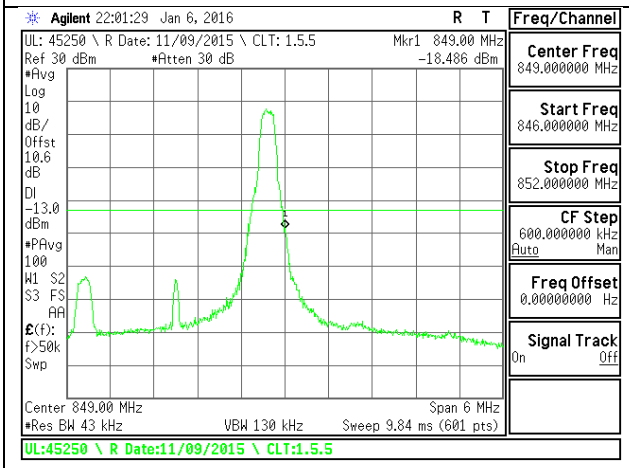


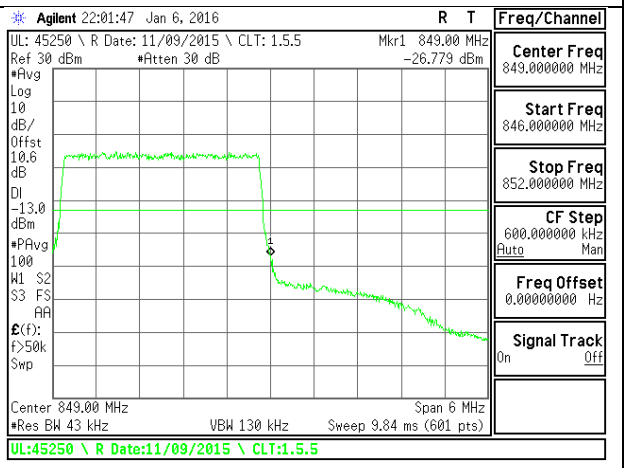
LTE B5 3MHz 16QAM Low Channel 1RB



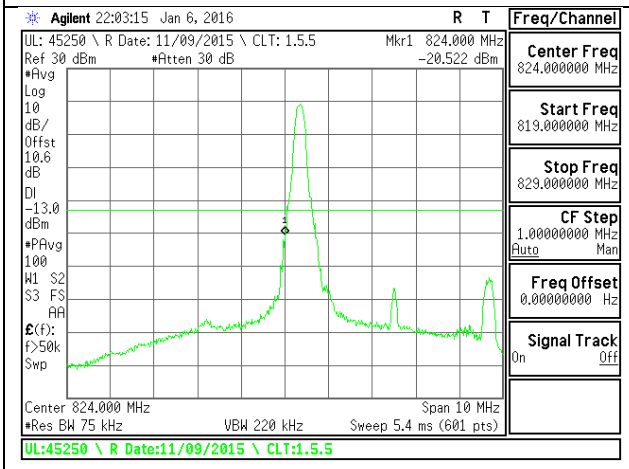
LTE B5 3MHz 16QAM Low Channel FRB



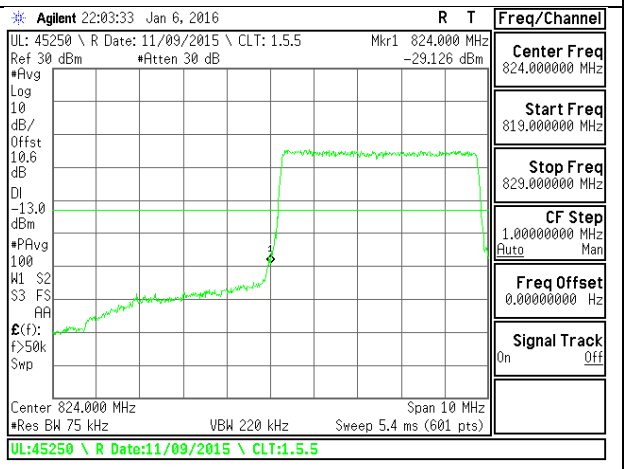
LTE B5 3MHz 16QAM High Channel 1RB



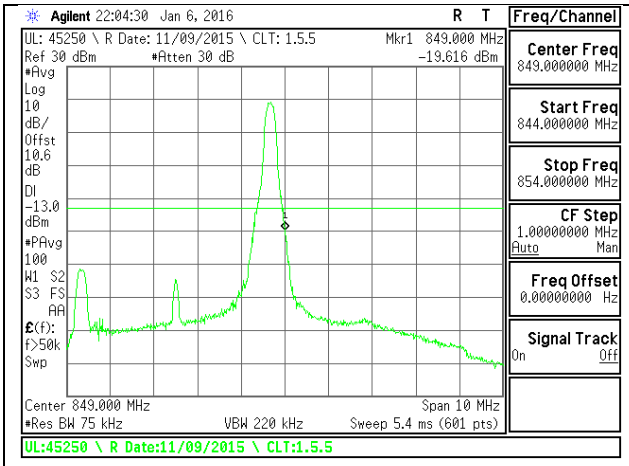
LTE B5 3MHz 16QAM High Channel FRB



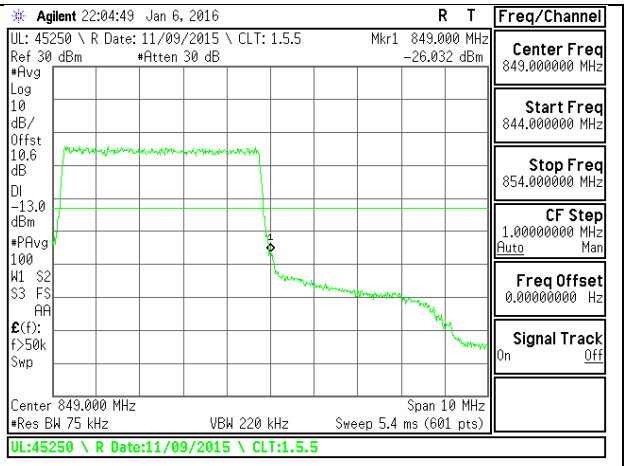
LTE B5 5MHz QPSK Low Channel 1RB



LTE B5 5MHz QPSK Low Channel FRB



LTE B5 5MHz QPSK High Channel 1RB



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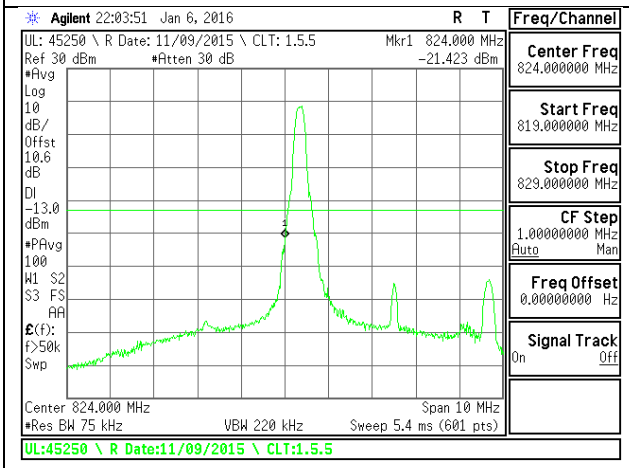
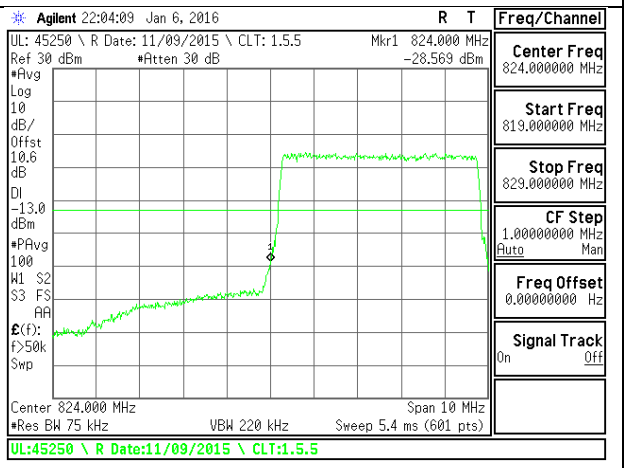
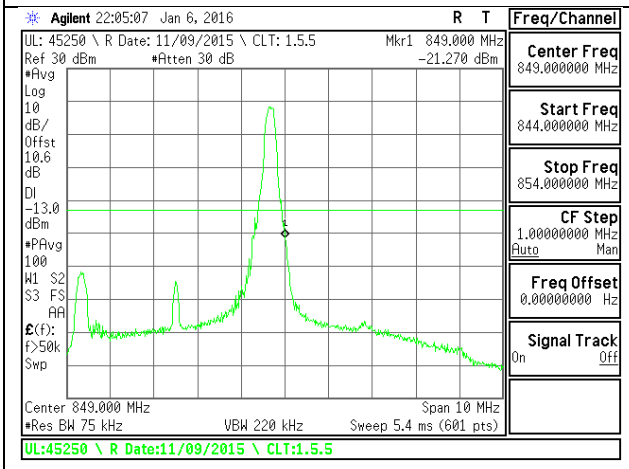


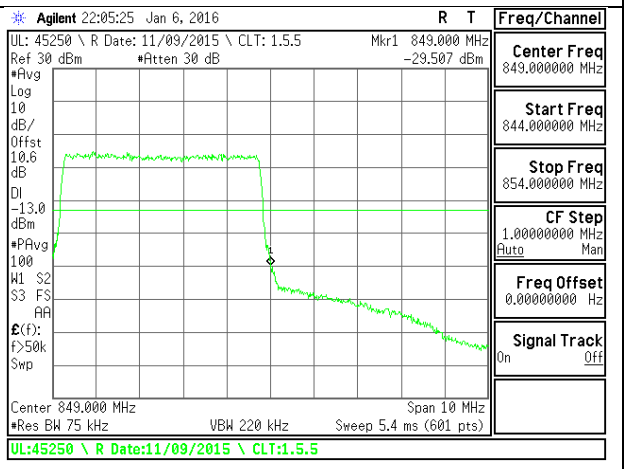
LTE B5 5MHz 16QAM Low Channel 1RB



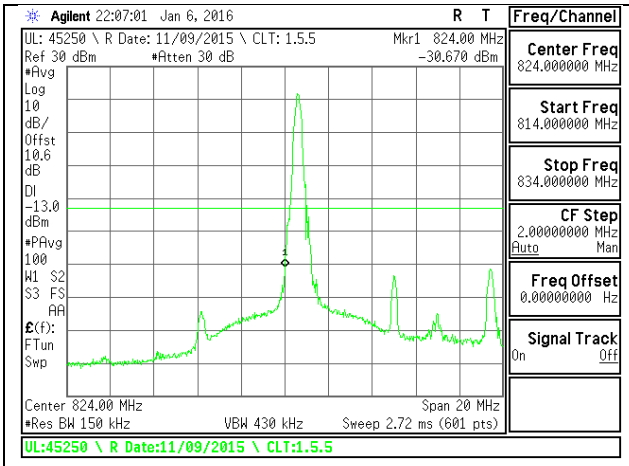
LTE B5 3MHz 16QAM Low Channel FRB



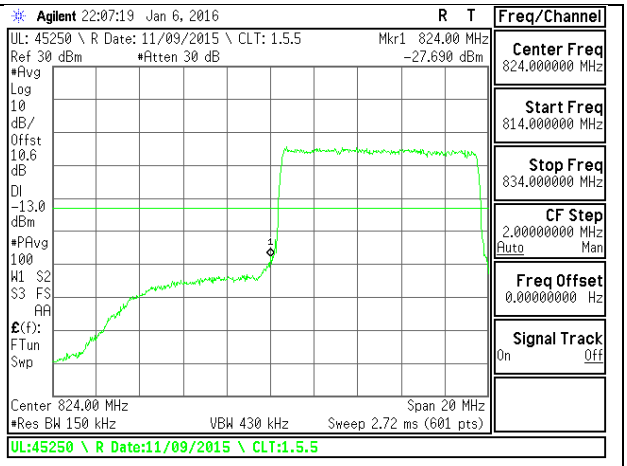
LTE B5 5MHz 16QAM High Channel 1RB



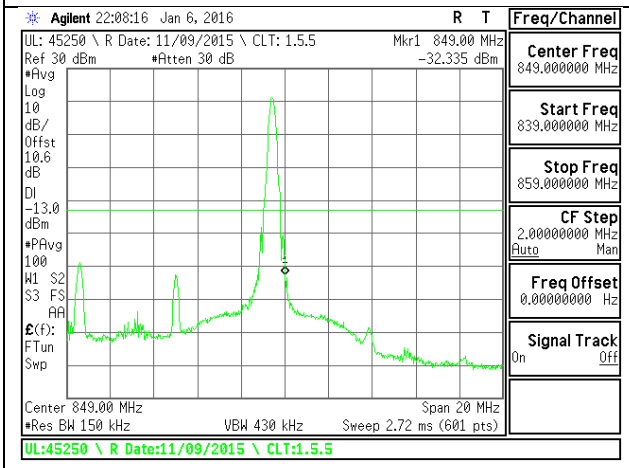
LTE B5 3MHz 16QAM High Channel FRB



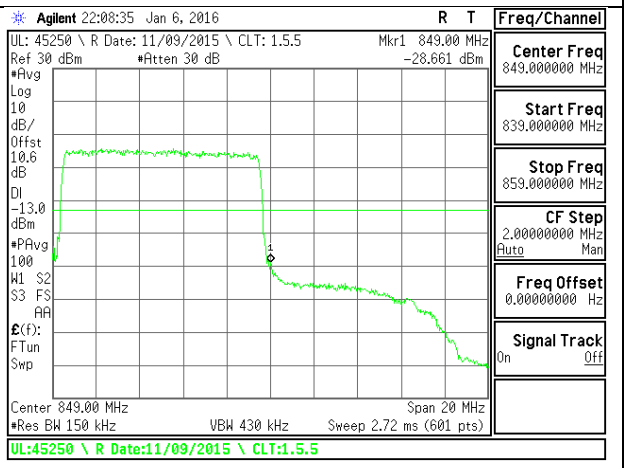
LTE B5 10MHz QPSK Low Channel 1RB



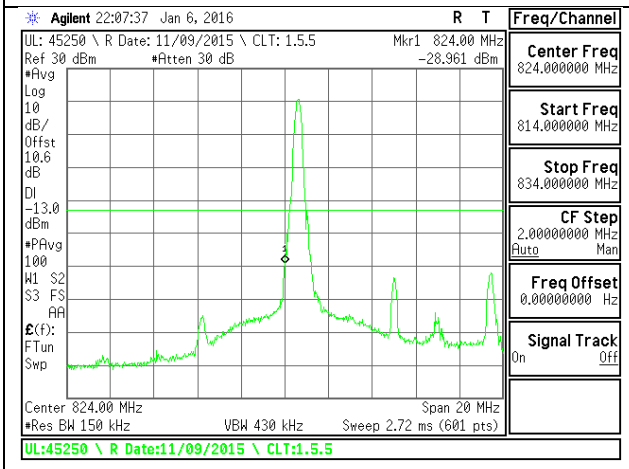
LTE B5 10MHz QPSK Low Channel FRB



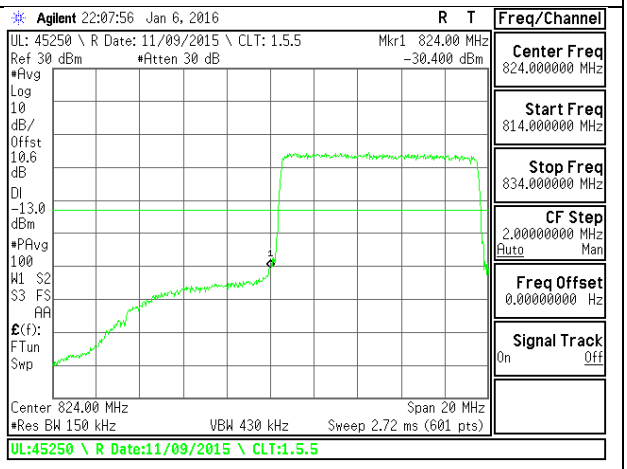
LTE B5 10MHz QPSK High Channel 1RB



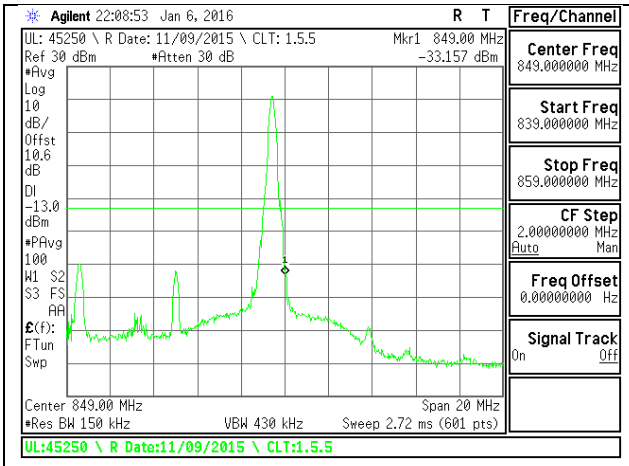
LTE B5 10MHz QPSK High Channel FRB



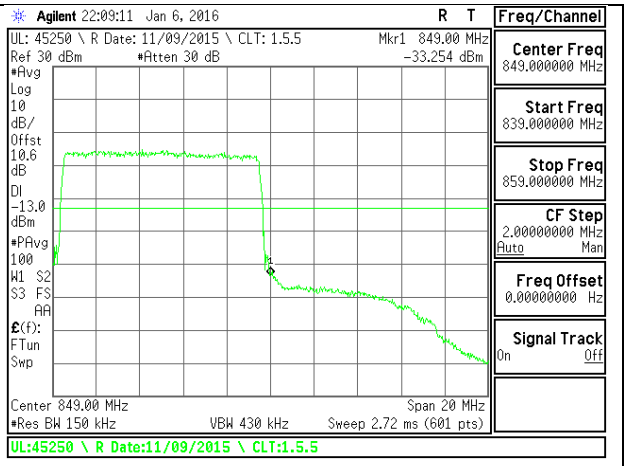
LTE B5 10MHz 16QAM Low Channel 1RB



LTE B5 10MHz 16QAM Low Channel FRB

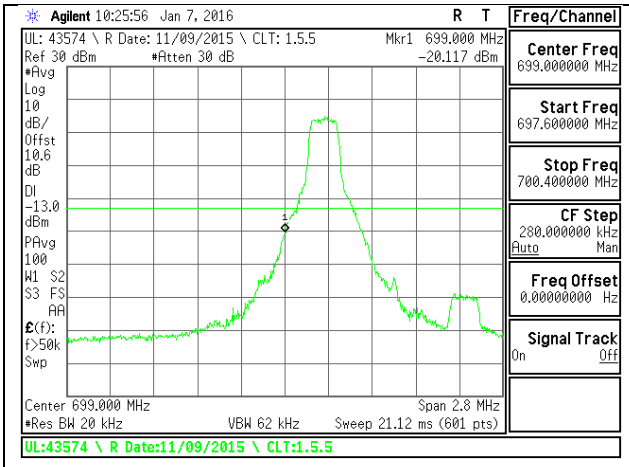


LTE B5 10MHz 16QAM High Channel 1RB

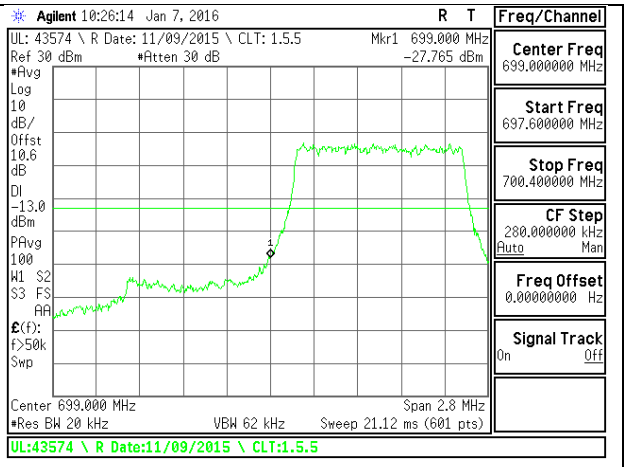


LTE B5 10MHz 16QAM High Channel FRB

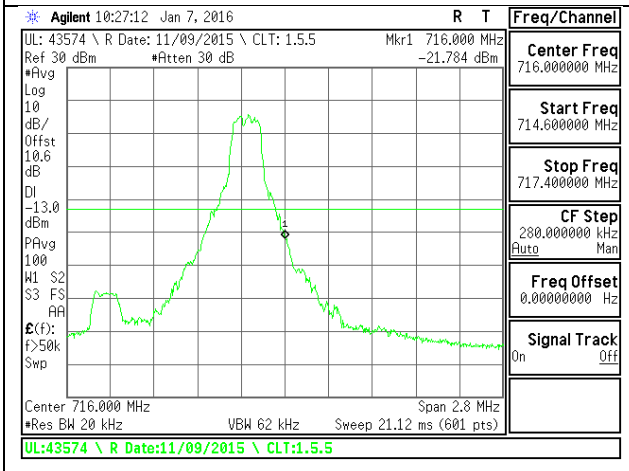
LTE Band 12



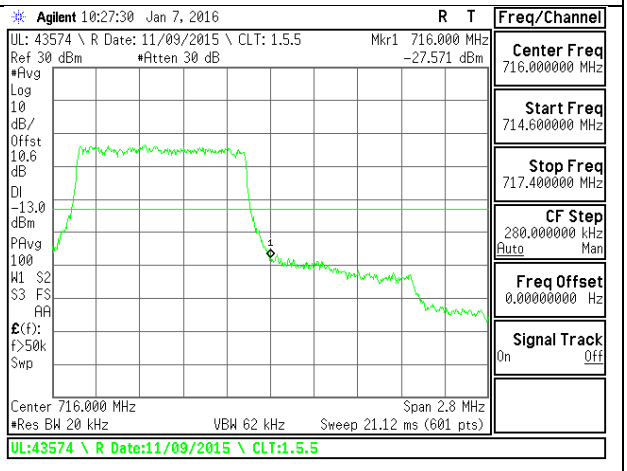
LTE B12 1.4MHz QPSK Low Channel 1RB.gif



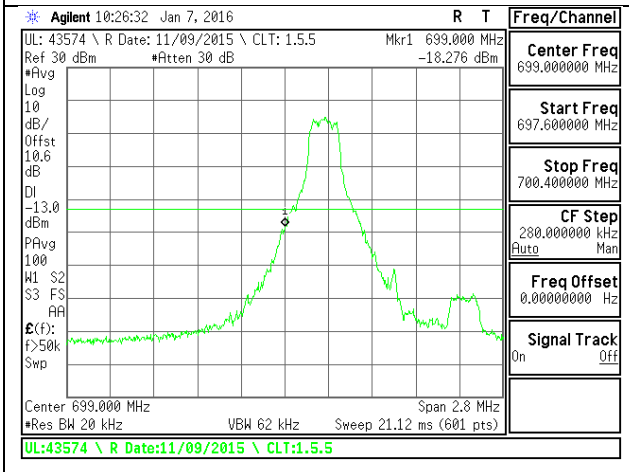
LTE B12 1.4MHz QPSK Low Channel FRB.gif



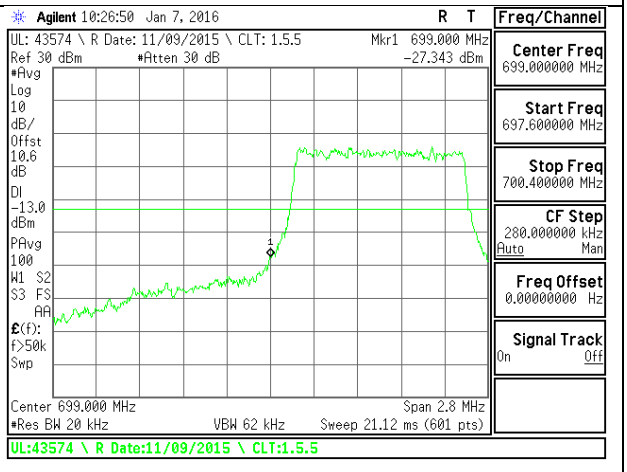
LTE B12 1.4MHz QPSK High Channel 1RB.gif



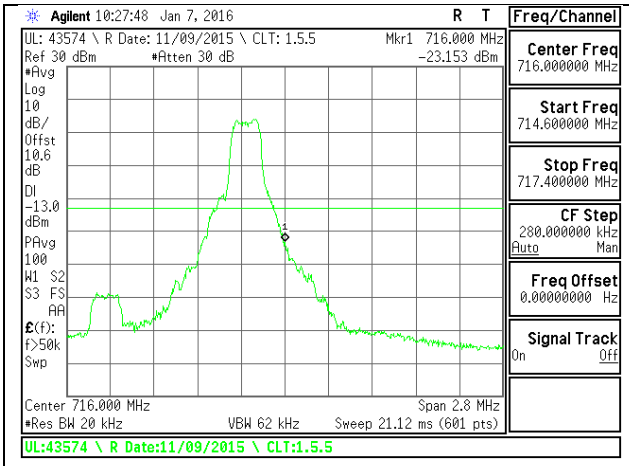
LTE B12 1.4MHz QPSK High Channel FRB.gif



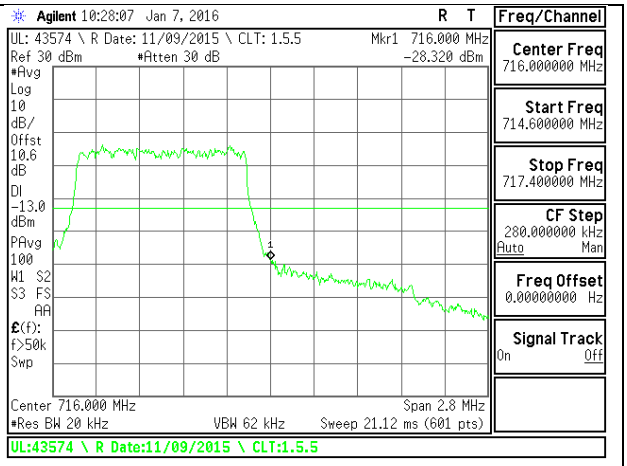
LTE B12 1.4MHz 16QAM Low Channel 1RB.gif



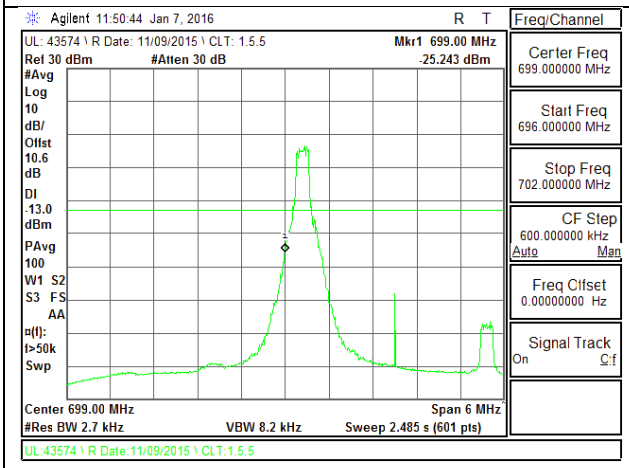
LTE B12 1.4MHz 16QAM Low Channel FRB.gif



LTE B12 1.4MHz 16QAM High Channel 1RB.gif

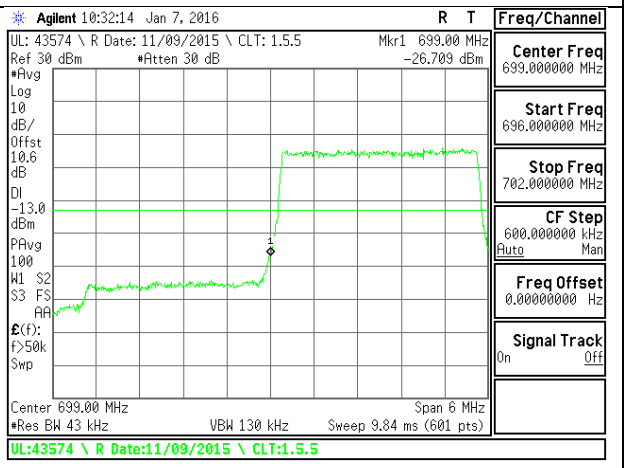


LTE B12 1.4MHz 16QAM High Channel FRB.gif

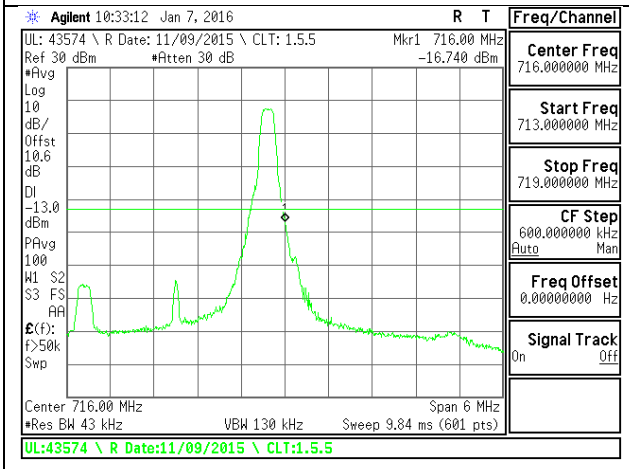


LTE B12 3MHz QPSK Low Channel 1RB.gif

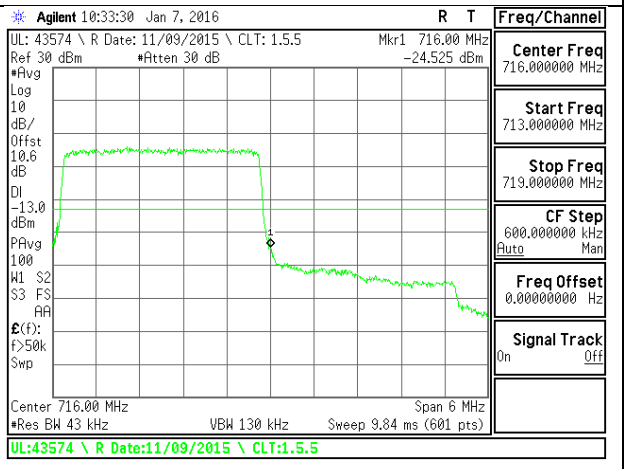
Note: RBW used is 1% of 1RB OBW.



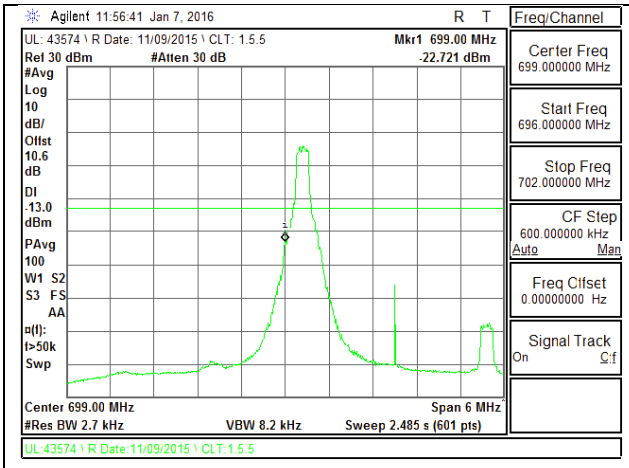
LTE B12 3MHz QPSK Low Channel FRB.gif



LTE B12 3MHz QPSK High Channel 1RB.gif

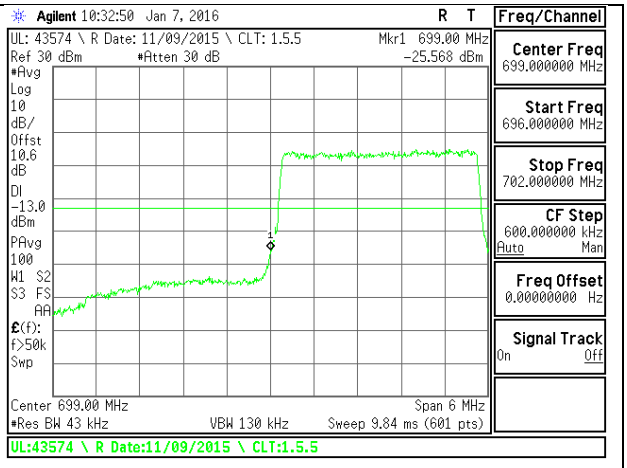


LTE B12 3MHz QPSK High Channel FRB.gif

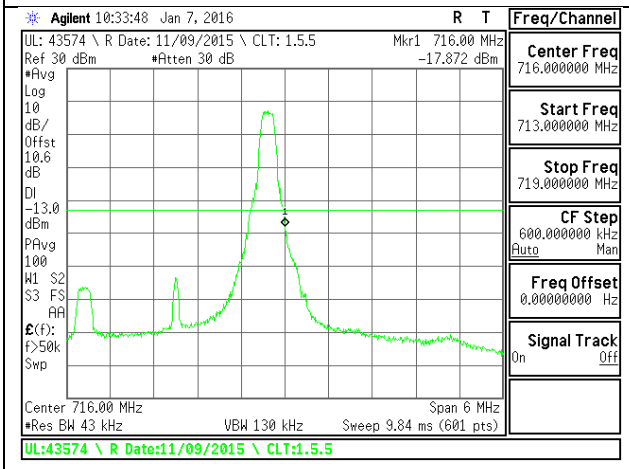


LTE B12 3MHz 16QAM Low Channel 1RB.gif

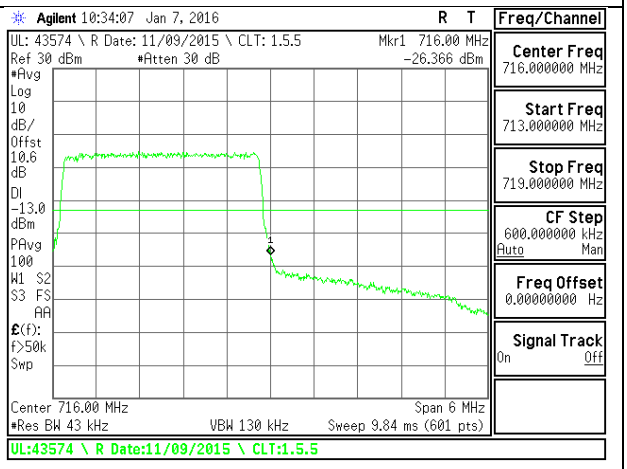
Note: RBW used is 1% of 1RB OBW.



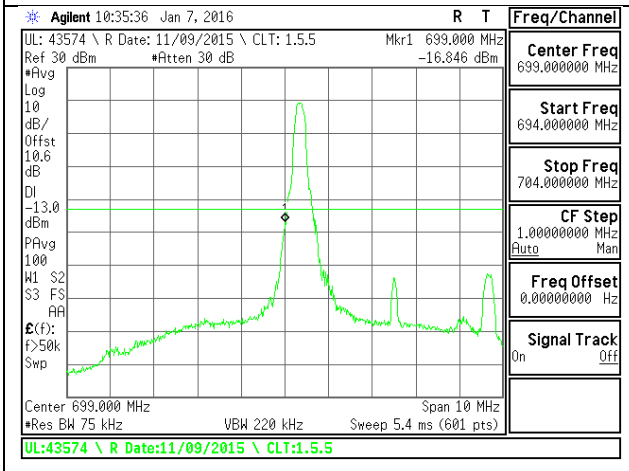
LTE B12 3MHz 16QAM Low Channel FRB.gif



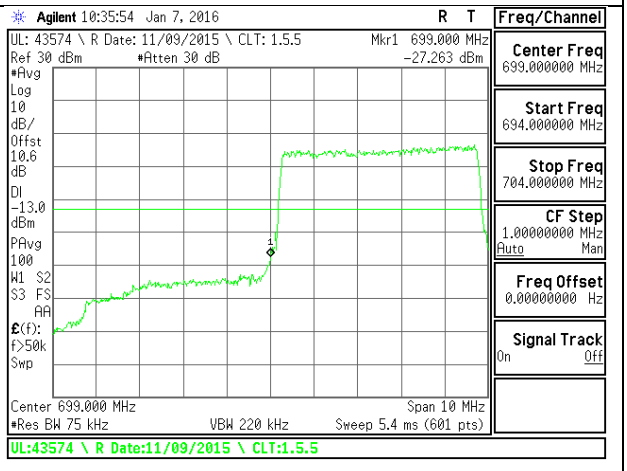
LTE B12 3MHz 16QAM High Channel 1RB.gif



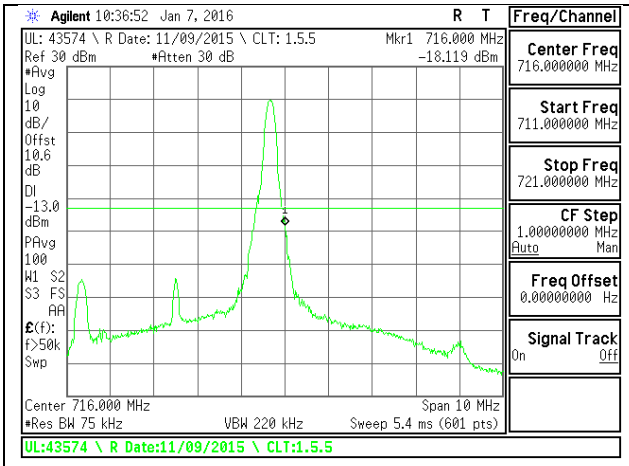
LTE B12 3MHz 16QAM High Channel FRB.gif



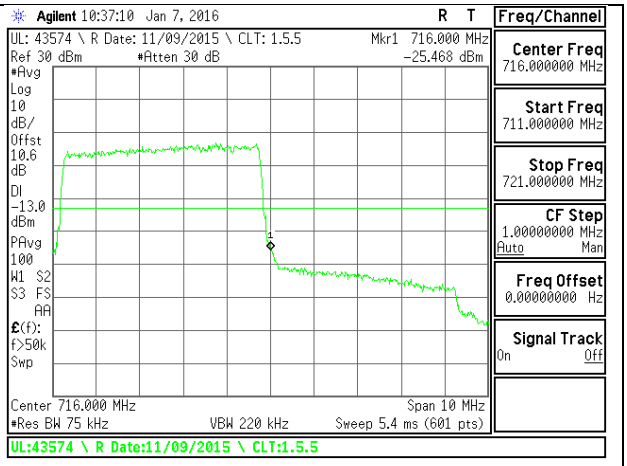
LTE B12 5MHz QPSK Low Channel 1RB.gif



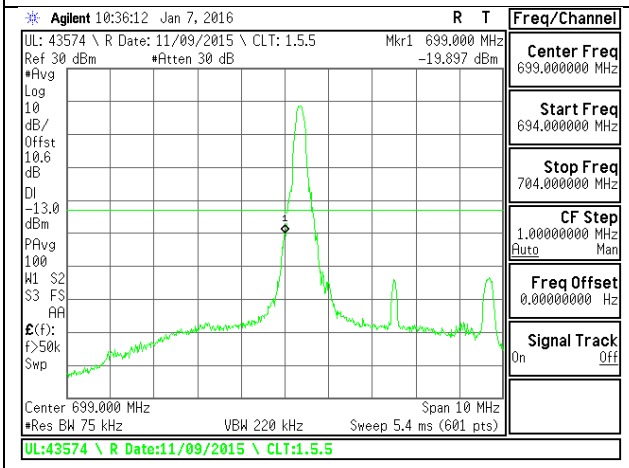
LTE B12 5MHz QPSK Low Channel FRB.gif



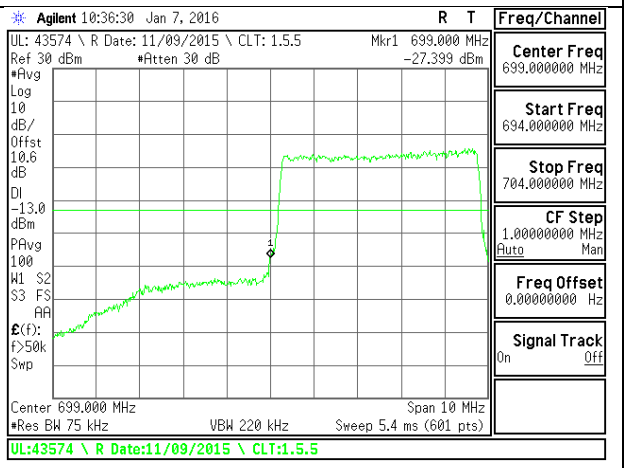
LTE B12 5MHz QPSK High Channel 1RB.gif



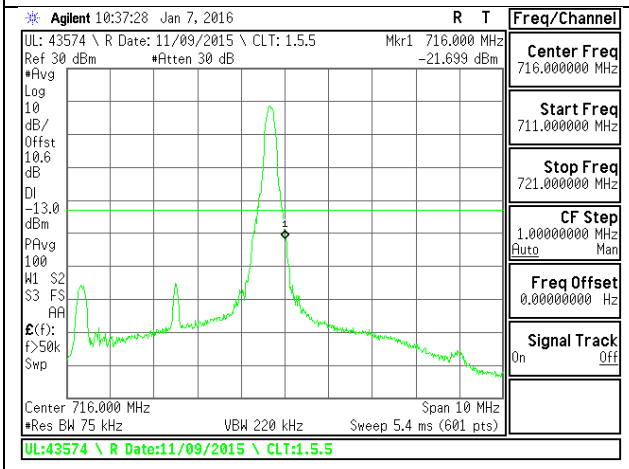
LTE B12 5MHz QPSK High Channel FRB.gif



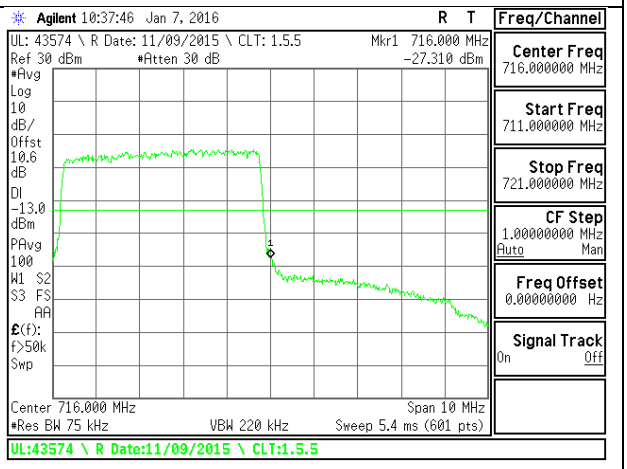
LTE B12 5MHz 16QAM Low Channel 1RB.gif



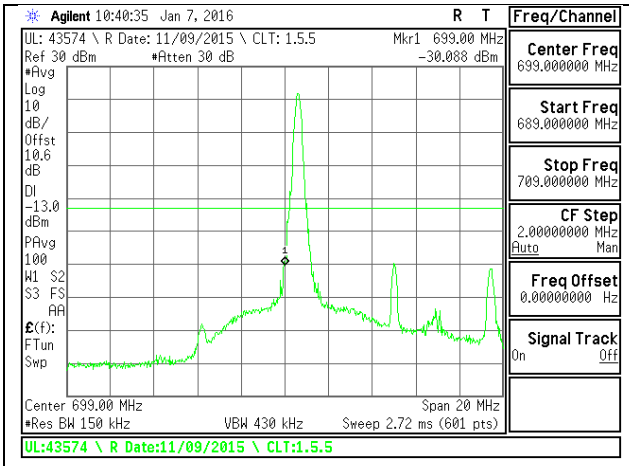
LTE B12 3MHz 16QAM Low Channel FRB.gif



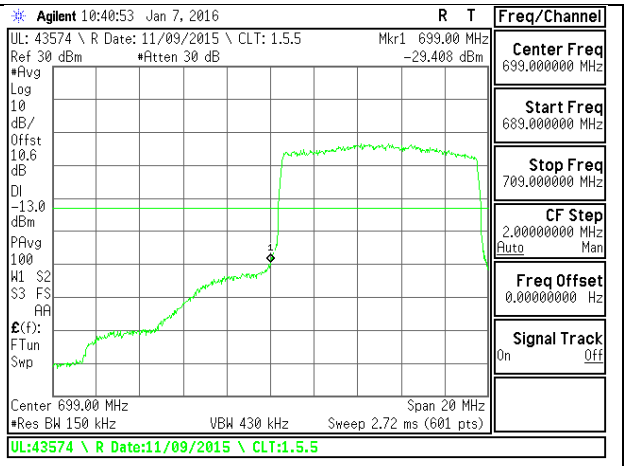
LTE B12 5MHz 16QAM High Channel 1RB.gif



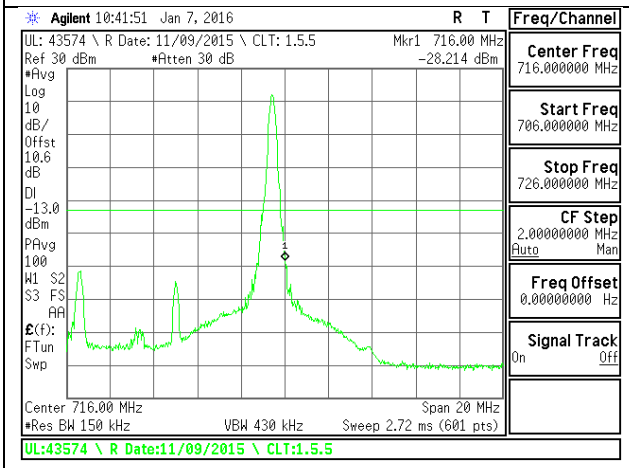
LTE B12 3MHz 16QAM High Channel FRB.gif



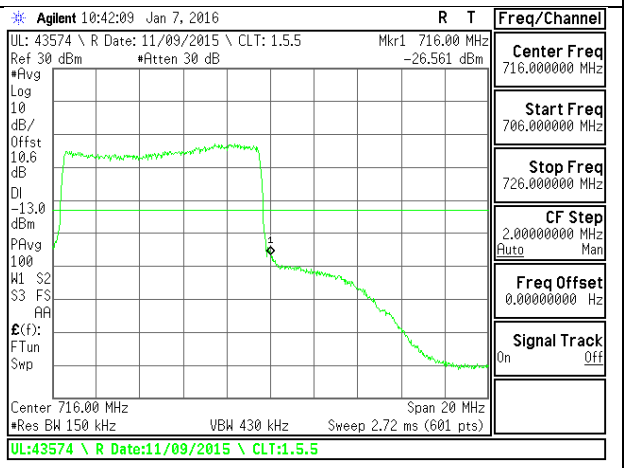
LTE B12 10MHz QPSK Low Channel 1RB.gif



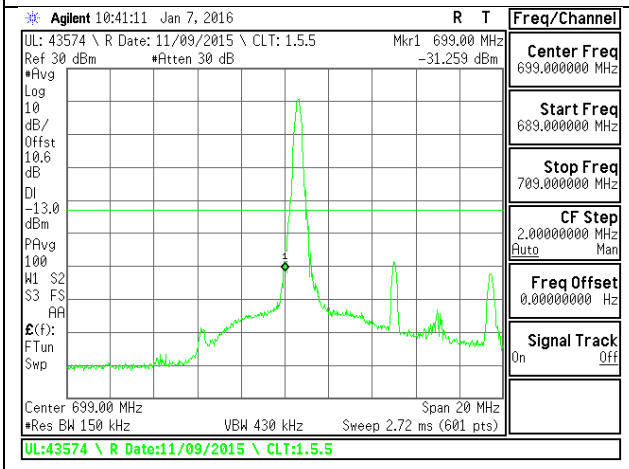
LTE B12 10MHz QPSK Low Channel FRB.gif



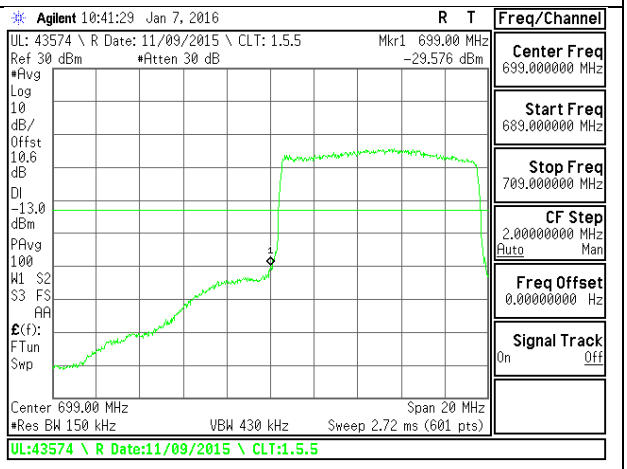
LTE B12 10MHz QPSK High Channel 1RB.gif



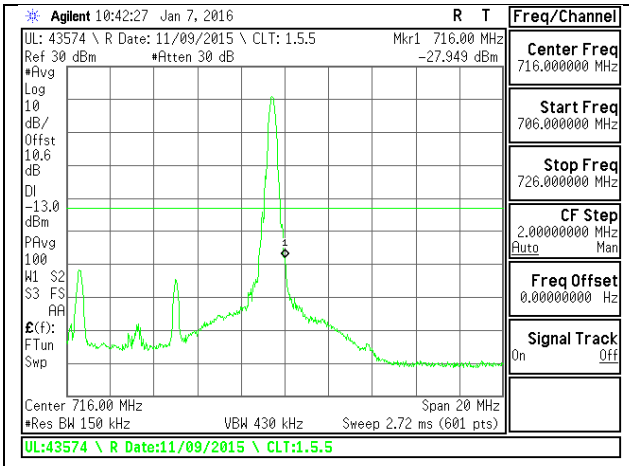
LTE B12 10MHz QPSK High Channel FRB.gif



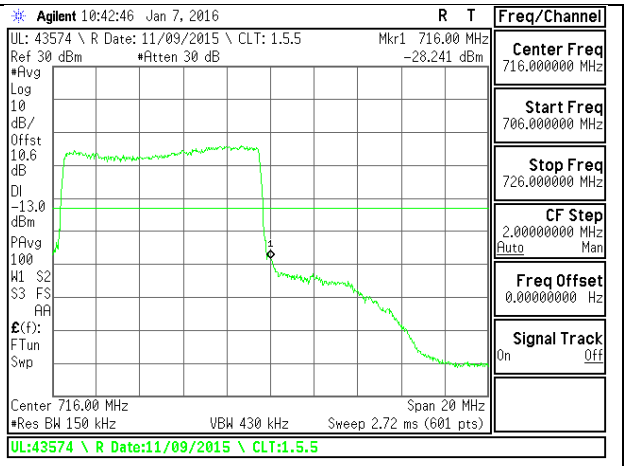
LTE B12 10MHz 16QAM Low Channel 1RB.gif



LTE B12 10MHz 16QAM Low Channel FRB.gif



LTE B12 10MHz 16QAM High Channel 1RB.gif



LTE B12 10MHz 16QAM High Channel FRB.gif

12. OUT OF BAND EMISSIONS

RULE PART(S)

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

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.

TEST PROCEDURE

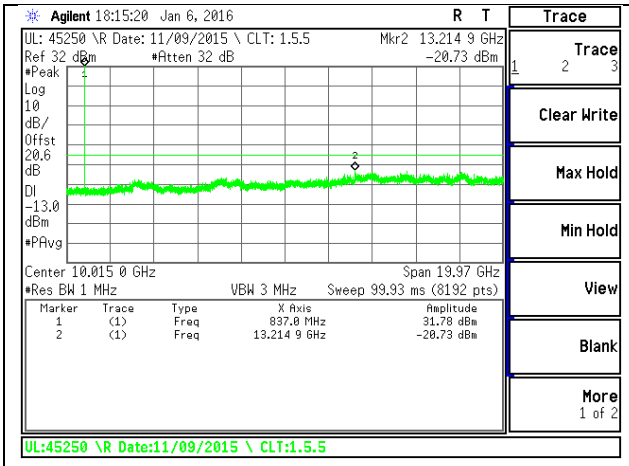
Per KDB 971168 D01 Power Meas License Digital Systems v02r02

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

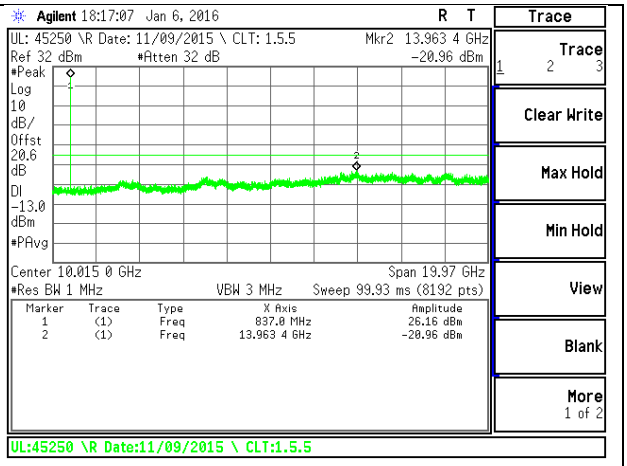
12.1. OUT OF BAND EMISSIONS RESULT AND PLOTS

GSM

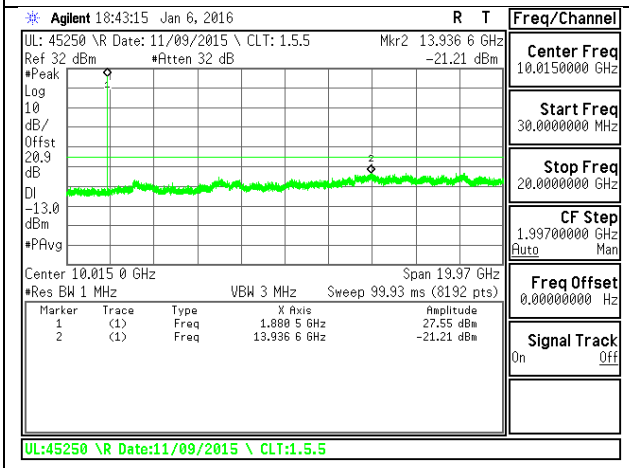
Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM 850	GPRS	824.2	-20.567	-13	-7.567
		836.6	-20.727	-13	-7.727
		848.8	-21.536	-13	-8.536
	EGPRS	824.2	-21.528	-13	-8.528
		836.6	-20.957	-13	-7.957
		848.8	-21.407	-13	-8.407
GSM 1900	GPRS	1850.2	-19.949	-13	-6.949
		1880	-21.209	-13	-8.209
		1909.8	-21.012	-13	-8.012
	EGPRS	1850.2	-20.438	-13	-7.438
		1880	-21.316	-13	-8.316
		1909.8	-21.067	-13	-8.067



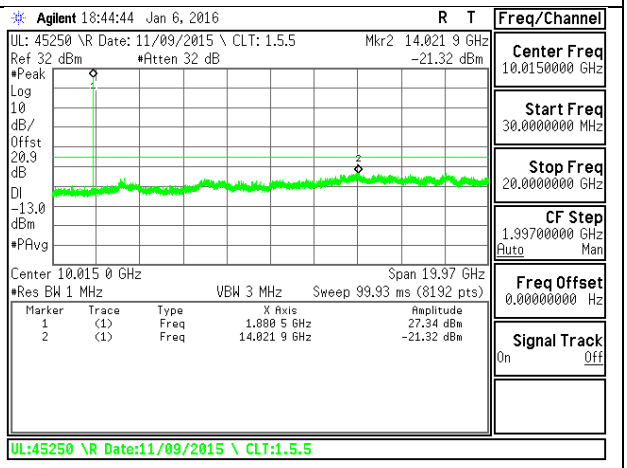
GSM850 GPRS Middle channel



GSM850 EGPRS Middle channel



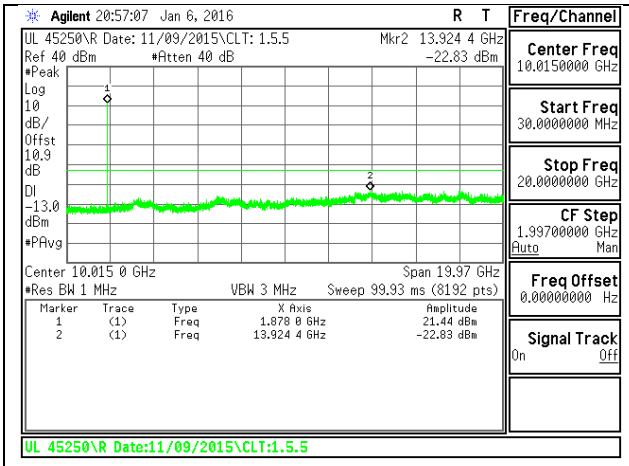
GSM1900 GPRS Middle channel



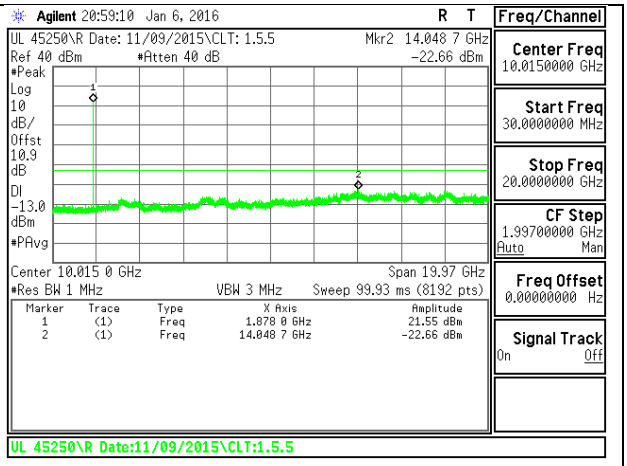
GSM1900 EGPRS Middle channel

WCDMA

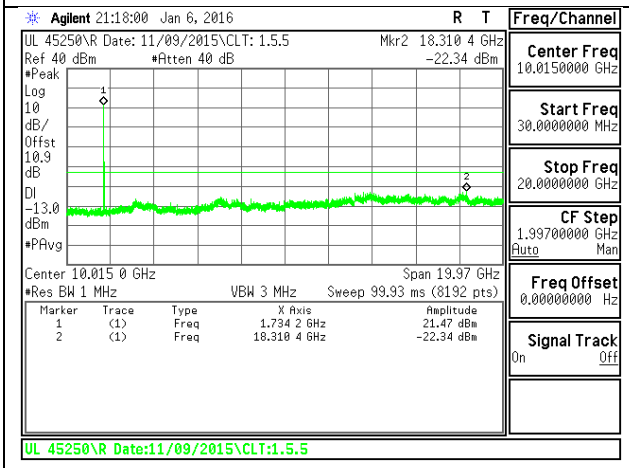
Band	Mode	f (MHz)	Spur (dBm)	99% BW (MHz)	Delta (dB)
Band 2	REL99	1852.4	-23.177	-13	-10.177
		1880	-22.831	-13	-9.831
		1907.6	-22.182	-13	-9.182
	HSDPA	1852.4	-22.764	-13	-9.764
		1880	-22.657	-13	-9.657
		1907.6	-23.258	-13	-10.258
Band 4	REL99	1712.4	-22.295	-13	-9.295
		1732.6	-22.336	-13	-9.336
		1752.6	-21.126	-13	-8.126
	HSDPA	1712.4	-22.418	-13	-9.418
		1732.6	-23.075	-13	-10.075
		1752.6	-23.056	-13	-10.056
Band 5	REL99	826.4	-23.284	-13	-10.284
		836.6	-22.588	-13	-9.588
		846.6	-22.497	-13	-9.497
	HSDPA	826.4	-22.856	-13	-9.856
		836.6	-22.809	-13	-9.809
		846.6	-23.249	-13	-10.249



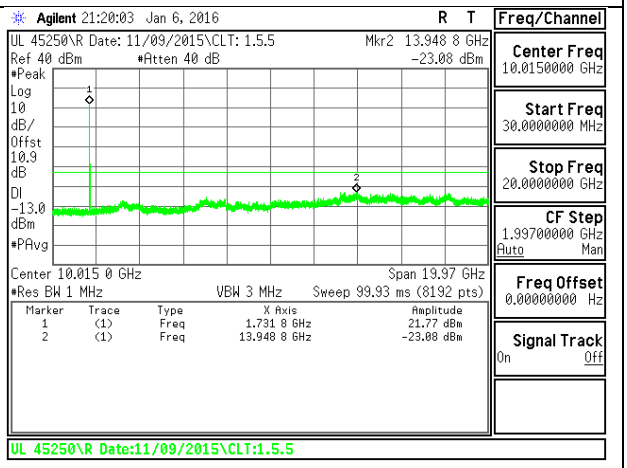
B2 REL99 Middle Channel



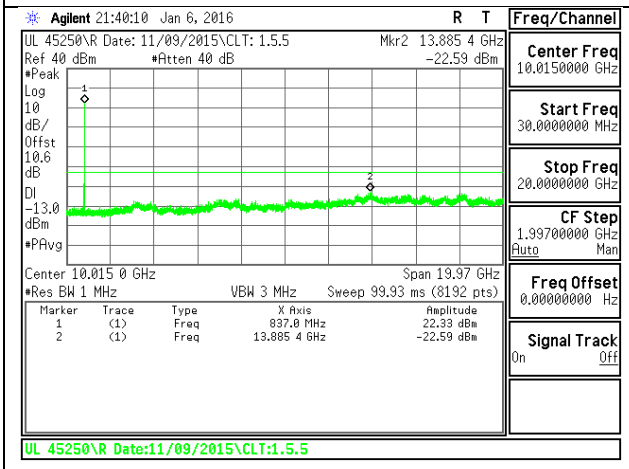
B2 HSDPA Middle Channel



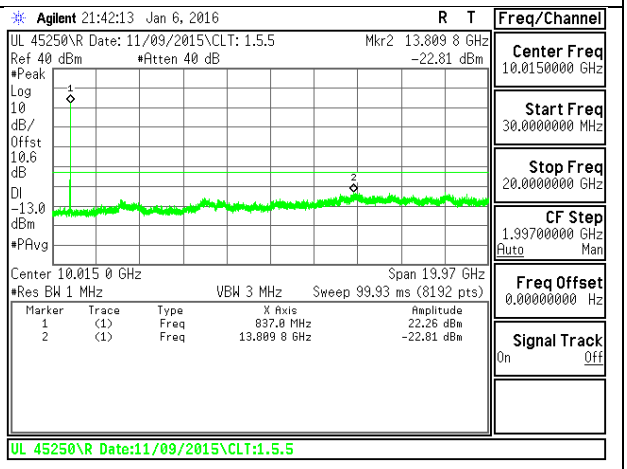
B4 REL99 Middle Channel



B4 HSDPA Middle Channel



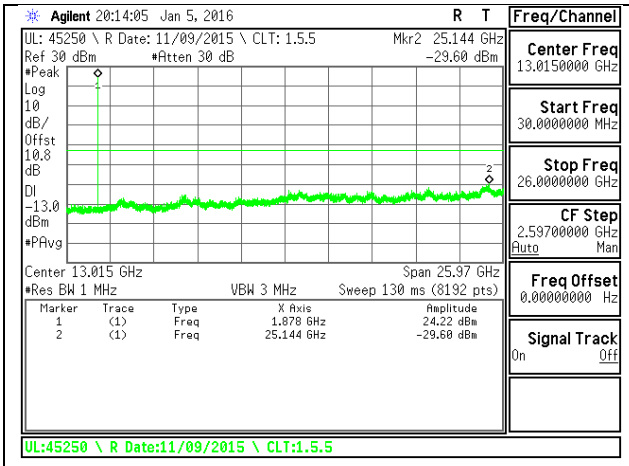
B5 REL99 Middle Channel



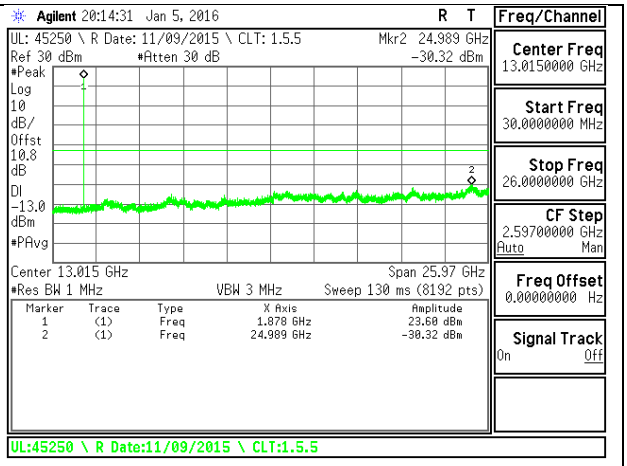
B5 HSDPA Middle Channel

LTE Band 2

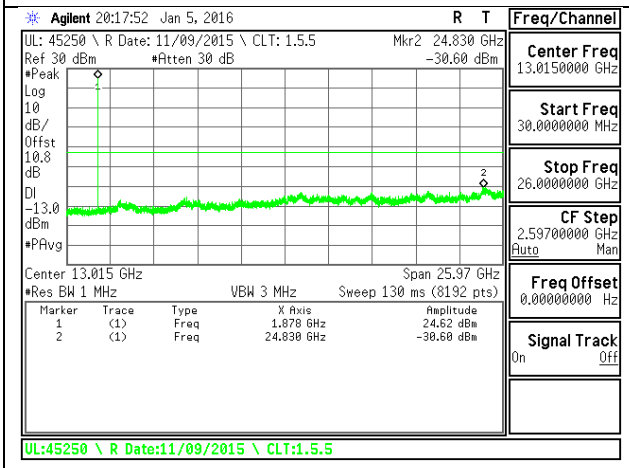
BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
1.4	QPSK	1850.7	-30.00	-13	-17.00
		1880	-29.59	-13	-16.59
		1909.3	-29.98	-13	-16.98
	16QAM	1850.7	-30.02	-13	-17.02
		1880	-30.31	-13	-17.31
		1909.3	-30.43	-13	-17.43
3	QPSK	1851.5	-29.80	-13	-16.80
		1880	-30.60	-13	-17.60
		1908.5	-30.58	-13	-17.58
	16QAM	1851.5	-30.55	-13	-17.55
		1880	-30.53	-13	-17.53
		1908.5	-29.68	-13	-16.68
5	QPSK	1852.5	-30.62	-13	-17.62
		1880	-30.63	-13	-17.63
		1907.5	-30.75	-13	-17.75
	16QAM	1852.5	-30.23	-13	-17.23
		1880	-29.22	-13	-16.22
		1907.5	-29.62	-13	-16.62
10	QPSK	1855	-30.69	-13	-17.69
		1880	-30.00	-13	-17.00
		1905	-30.32	-13	-17.23
	16QAM	1855	-30.26	-13	-17.26
		1880	-29.62	-13	-16.62
		1905	-30.08	-13	-17.08
15	QPSK	1857.5	-29.73	-13	-16.73
		1880	-30.18	-13	-17.18
		1902.5	-30.26	-13	-17.26
	16QAM	1857.5	-30.55	-13	-17.55
		1880	-30.09	-13	-17.09
		1902.5	-30.33	-13	-17.33
20	QPSK	1860	-30.20	-13	-17.20
		1880	-30.43	-13	-17.43
		1900	-28.15	-13	-15.15
	16QAM	1860	-29.92	-13	-16.92
		1880	-30.17	-13	-17.17
		1900	-29.87	-13	-16.87



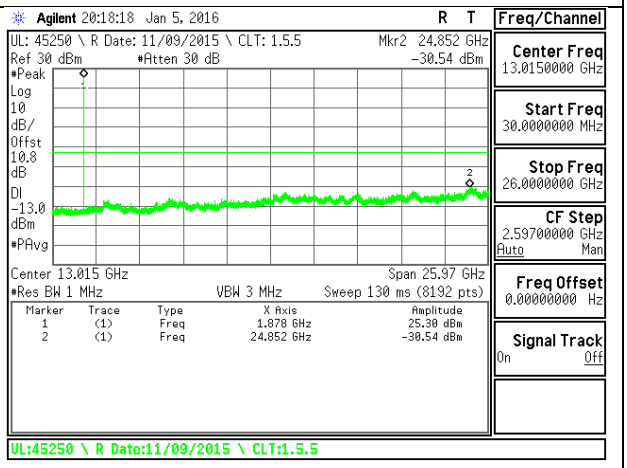
LTE B2 1.4MHz QPSK Middle Channel



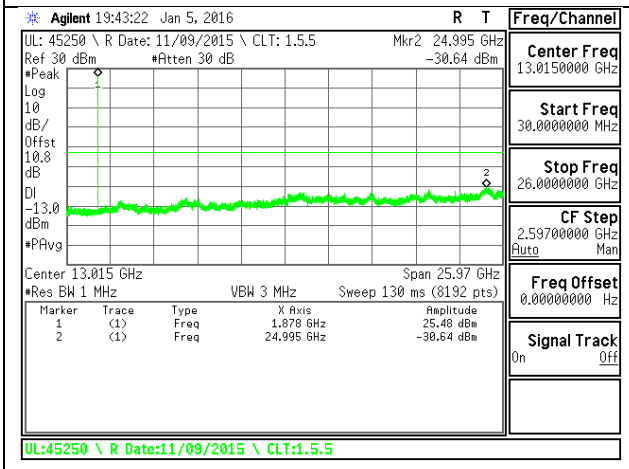
LTE B2 1.4MHz 16QAM Middle Channel



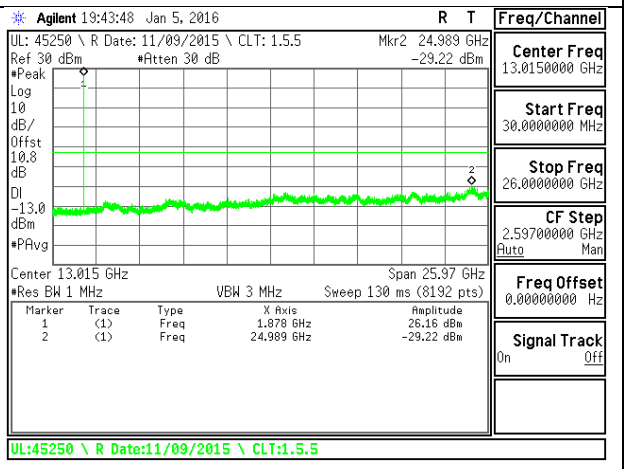
LTE B2 3MHz QPSK Middle Channel



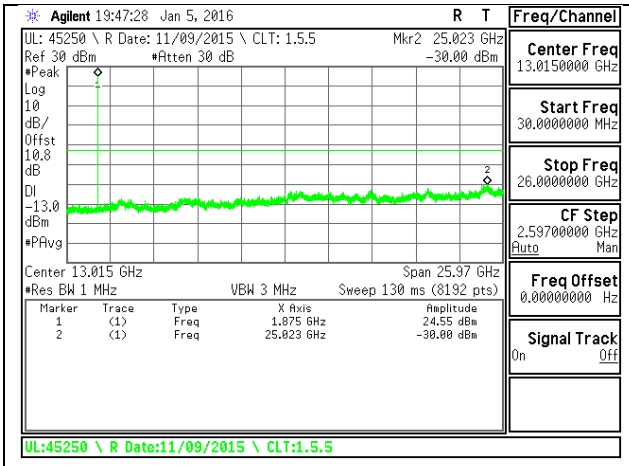
LTE B2 3MHz 16QAM Middle Channel



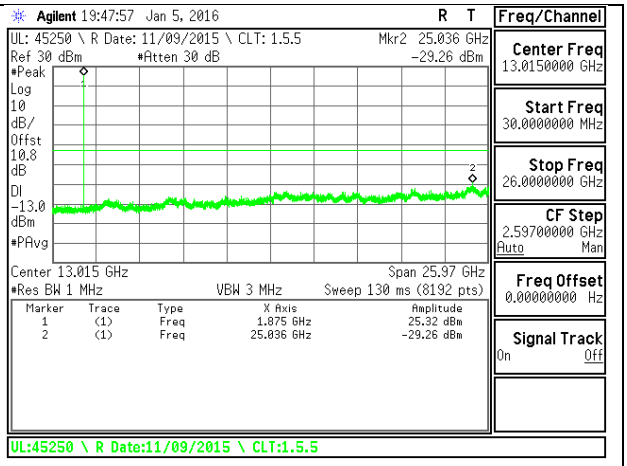
LTE B2 5MHz QPSK Middle Channel



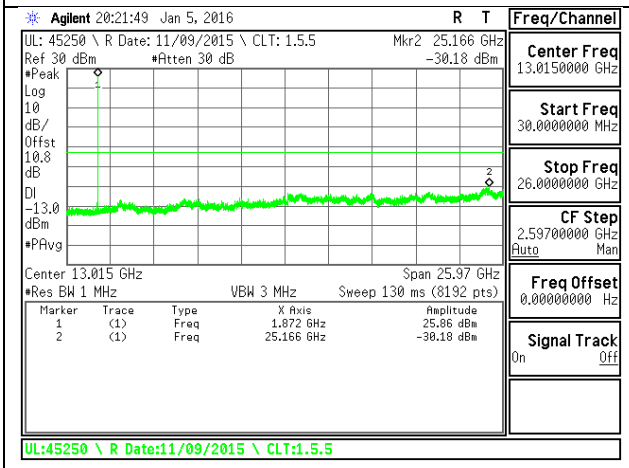
LTE B2 5MHz 16QAM Middle Channel



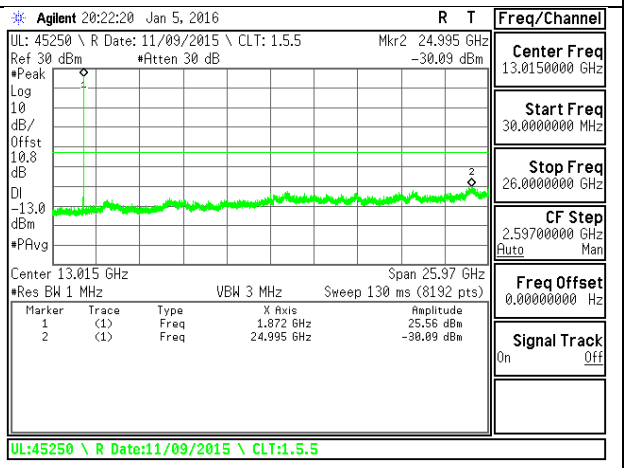
LTE B2 10MHz QPSK Middle Channel



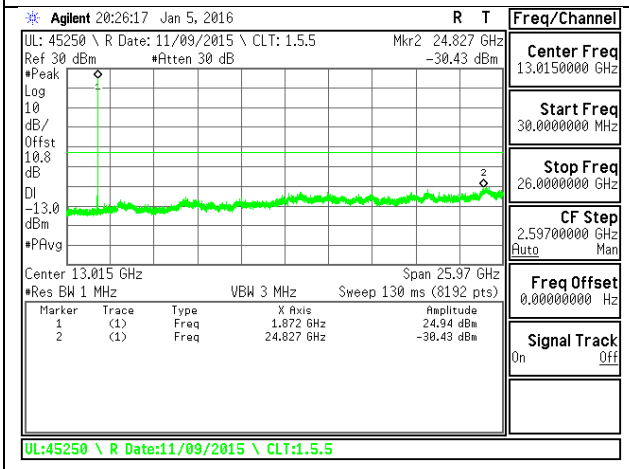
LTE B2 10MHz 16QAM Middle Channel



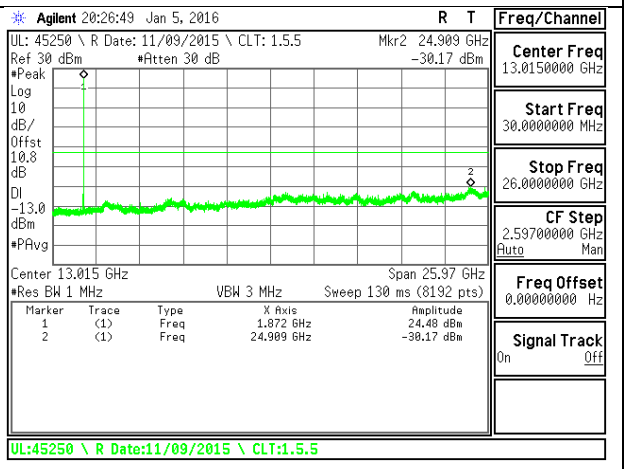
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel



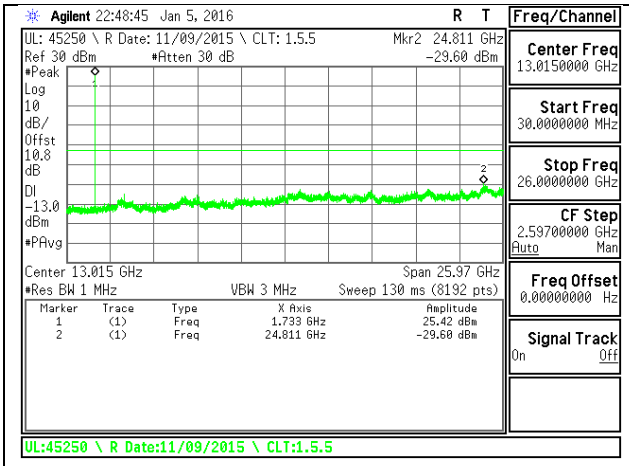
LTE B2 20MHz QPSK Middle Channel



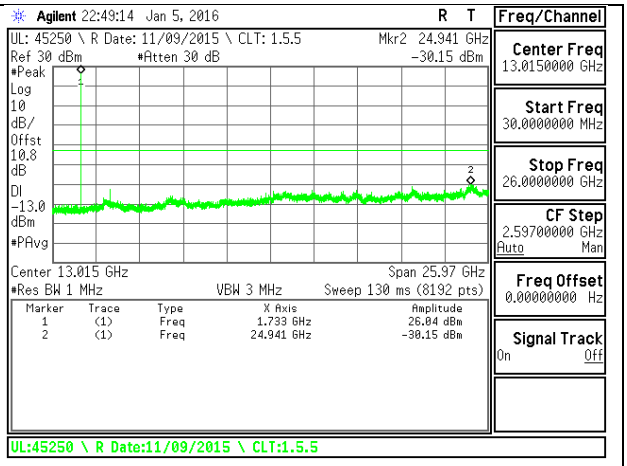
LTE B2 20MHz 16QAM Middle Channel

LTE Band 4

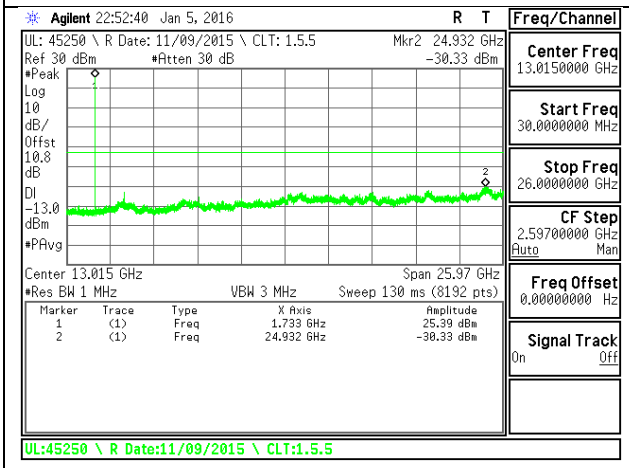
BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
1.4	QPSK	1710.7	-30.192	-13	-17.19
		1732.5	-29.596	-13	-16.59
		1754.3	-29.809	-13	-16.80
	16QAM	1710.7	-30.681	-13	-17.68
		1732.5	-28.488	-13	-15.48
		1754.3	-30.422	-13	-17.42
3	QPSK	1711.5	-30.407	-13	-17.40
		1732.5	-30.327	-13	-17.32
		1753.5	-30.313	-13	-17.31
	16QAM	1711.5	-30.761	-13	-17.76
		1732.5	-29.633	-13	-16.63
		1753.5	-30.537	-13	-17.53
5	QPSK	1712.5	-30.252	-13	-17.25
		1732.5	-29.498	-13	-16.49
		1752.5	-30.074	-13	-17.07
	16QAM	1712.5	-29.797	-13	-16.79
		1732.5	-30.567	-13	-17.56
		1752.5	-29.988	-13	-16.98
10	QPSK	1715	-30.32	-13	-17.32
		1732.5	-30.01	-13	-17.01
		1750	-30.1	-13	-17.10
	16QAM	1715	-30.37	-13	-17.37
		1732.5	-29.80	-13	-16.80
		1750	-30.46	-13	-17.46
15	QPSK	1717.5	-29.72	-13	-16.72
		1732.5	-29.94	-13	-16.94
		1747.5	-29.45	-13	-16.45
	16QAM	1717.5	-30.34	-13	-17.34
		1732.5	-30.45	-13	-17.45
		1747.5	-29.98	-13	-16.98
20	QPSK	1720	-30.08	-13	-17.08
		1732.5	-29.97	-13	-16.97
		1745	-30.07	-13	-17.07
	16QAM	1720	-29.88	-13	-17.32
		1732.5	-30.27	-13	-17.01
		1745	-30.66	-13	-17.10



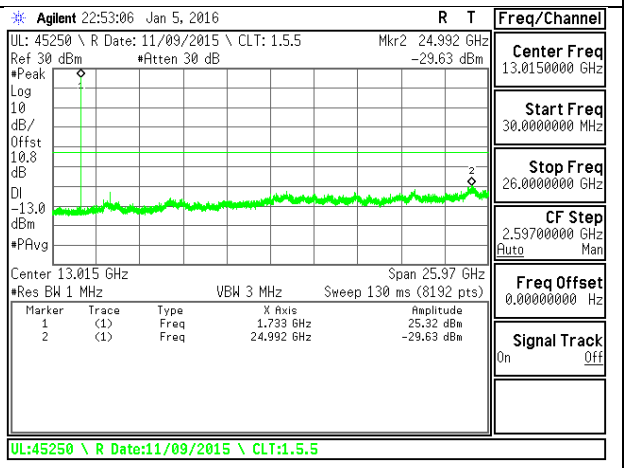
LTE B4 1.4MHz QPSK Middle Channel



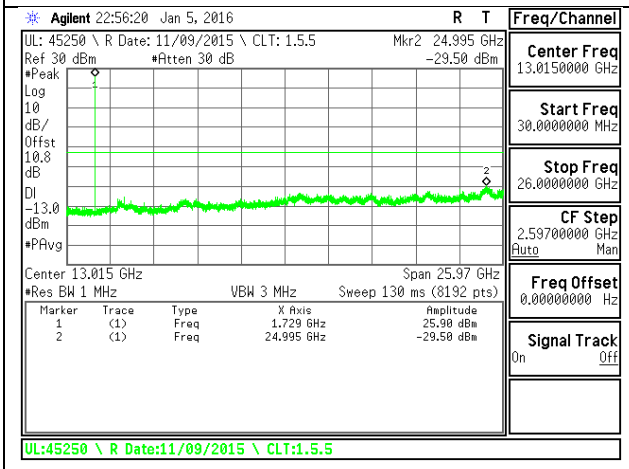
LTE B4 1.4MHz 16QAM Middle Channel



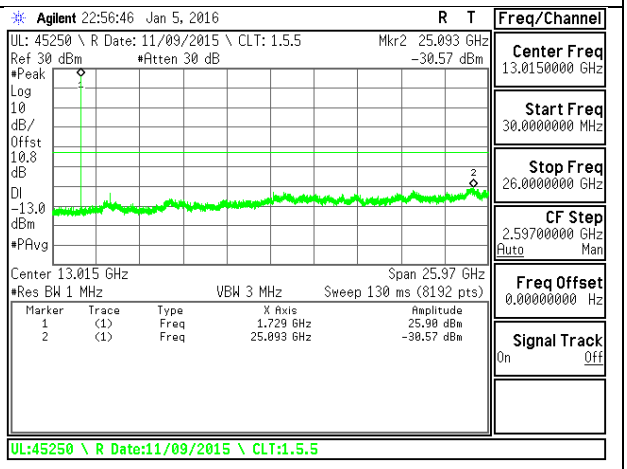
LTE B4 3MHz QPSK Middle Channel



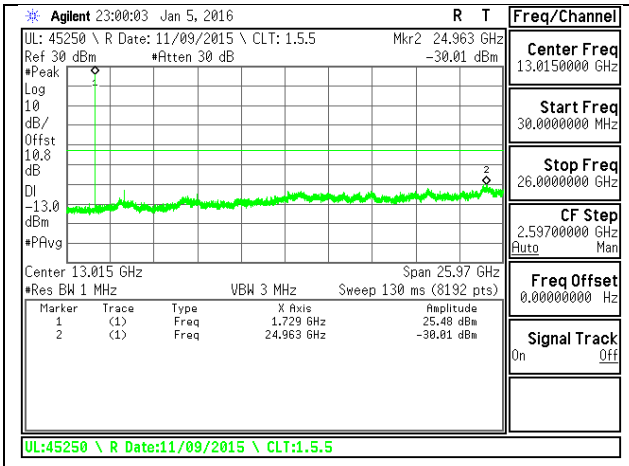
LTE B4 3MHz 16QAM Middle Channel



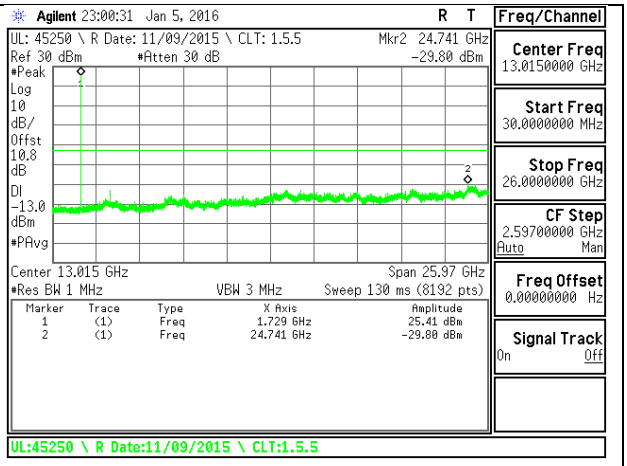
LTE B4 5MHz QPSK Middle Channel



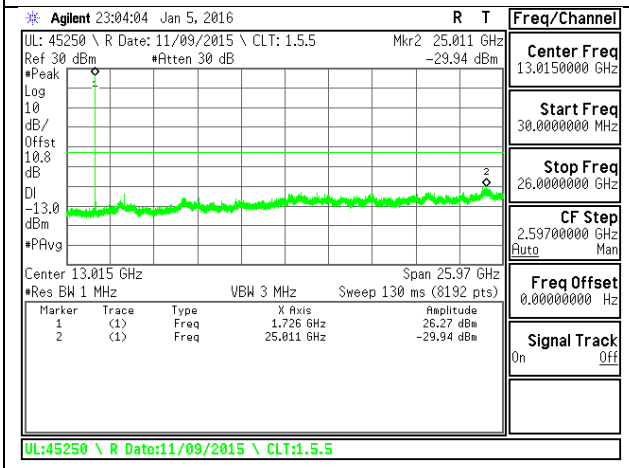
LTE B4 5MHz 16QAM Middle Channel



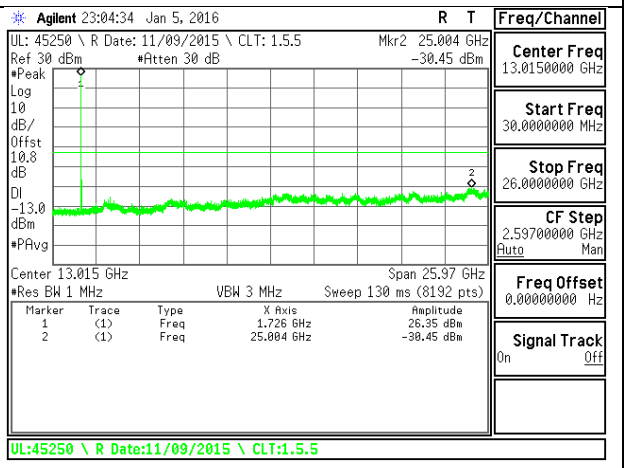
LTE B4 10MHz QPSK Middle Channel



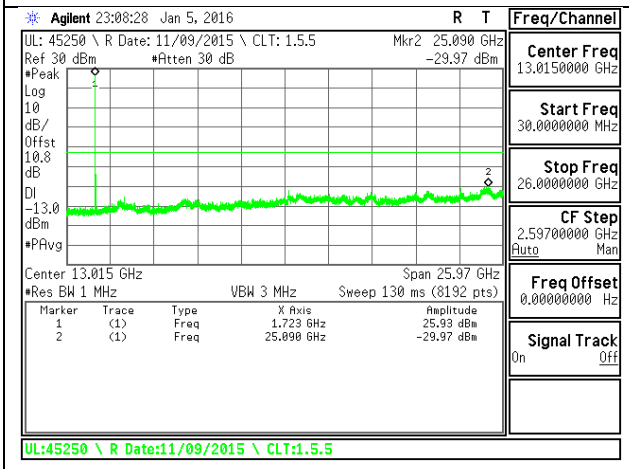
LTE B4 10MHz 16QAM Middle Channel



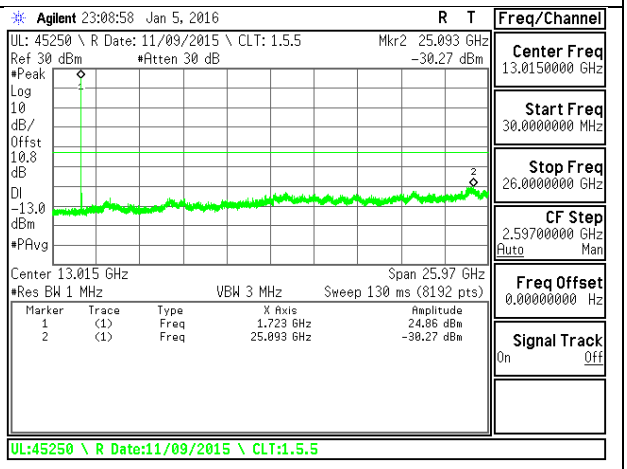
LTE B4 15MHz QPSK Middle Channel



LTE B4 15MHz 16QAM Middle Channel



LTE B4 20MHz QPSK Middle Channel



LTE B4 20MHz 16QAM Middle Channel

LTE Band 5

BW(MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
1.4	QPSK	824.7	-33.723	-13	-20.72
		836.5	-33.711	-13	-20.71
		848.3	-33.52	-13	-20.52
	16QAM	824.7	-33.679	-13	-20.67
		836.5	-33.174	-13	-20.17
		848.3	-33.222	-13	-20.22
3	QPSK	825.5	-33.038	-13	-20.03
		836.5	-33.506	-13	-20.50
		847.5	-33.048	-13	-20.04
	16QAM	825.5	-33.449	-13	-20.44
		836.5	-33.561	-13	-20.56
		847.5	-33.362	-13	-20.36
5	QPSK	826.5	-33.849	-13	-20.84
		836.5	-32.974	-13	-19.97
		846.5	-33.961	-13	-20.96
	16QAM	826.5	-33.26	-13	-20.26
		836.5	-33.468	-13	-20.46
		846.5	-33.231	-13	-20.23
10	QPSK	829	-32.09	-13	-19.09
		836.5	-33.59	-13	-20.59
		844	-33.81	-13	-20.81
	16QAM	829	-32.97	-13	-19.97
		836.5	-33.10	-13	-20.10
		844	-33.63	-13	-20.63