Report No.: SZ13060036W02

FCC TEST REPORT

TESTING
CNAS L3572

Issued to

TCT Mobile Limited

For

LTE USB Modem/LTE AP

Model Name:	One Touch W800O
Trade Name:	Alcatel
Brand Name:	Alcatel
FCC ID :	RAD403
Standard:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E 47 CFR Part 27, Subpart L
Test date:	2013-6-28 to 2013-7-18
Issue date:	2013-7-19

By

Shenzhen Morlab Communications Technology Co., Ltd.

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Date 2013.7.19	*Date* 2013.7.19	*Date* 2013.7.19

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Change History		
Issue	Date	Reason for change
1.0	Jul 19, 2013	First edition

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type	LTE USB Modem/LTE AP
Serial No.	(n.a, marked #1 by test site)
Hardware Version	V2.0
Software Version	S1_B15001S_1110000_B10001S
Applicant	TCT Mobile Limited 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
Manufacturer	TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED 70 Huifeng 4rd,ZhongKai Hi-tech Development District , Huizhou, Guangdong 516006 P.R.China （TCL Mobile Communication Co.,LTD.Huizhou
Modulation Type.....	LTE Band 2: QPSK, 16QAM LTE Band 5: QPSK, 16QAM LTE Band 17: QPSK, 16QAM LTE Band 4: QPSK, 16QAM
Tx Frequency Range.....	LTE Band 2: 1850 - 1910MHz LTE Band 5: 824 - 849MHz LTE Band 17: 704MHz~716MHz LTE Band 4: 1710MHz~1755MHz
Rx Frequency Range	LTE Band 2: 1930 - 1990MHz LTE Band 5: 869 - 894MHz LTE Band 17: 734MHz~746MHz LTE Band 4: 2110MHz~2155MHz
Emission Designator.....	4M54G7D (LTE Band 17, QPSK, BW 5MHz) 4M53W7D (LTE Band 17, 16QAM, BW 5MHz) 9M18G7D (LTE Band 17, QPSK, BW 10MHz) 9M16W7D (LTE Band 17, 16QAM, BW 10MHz) 1M12G7D (LTE Band 4, QPSK, BW 1.4MHz) 1M11W7D (LTE Band 4, 16QAM, BW 1.4MHz) 2M76G7D (LTE Band 4, QPSK, BW 3MHz) 2M77 W7D (LTE Band 4, 16QAM, BW 3MHz) 4M52G7D (LTE Band 4, QPSK, BW 5MHz) 4M52 W7D (LTE Band 4, 16QAM, BW 5MHz) 9M08G7D (LTE Band 4, QPSK, BW 10MHz) 9M09 W7D (LTE Band 4, 16QAM, BW 10MHz) 13M47G7D (LTE Band 4, QPSK, BW 15MHz) 13M47 W7D (LTE Band 4, 16QAM, BW 15MHz)

18M60G7D (LTE Band 4, QPSK, BW 20MHz)
18M52W7D (LTE Band 4, 16QAM, BW 20MHz)
1M11G7D (LTE Band 2, QPSK, BW 1.4MHz)
1M11W7D (LTE Band 2, 16QAM, BW 1.4MHz)
2M76G7D (LTE Band 2, QPSK, BW 3MHz)
2M77 W7D (LTE Band 2, 16QAM, BW 3MHz)
4M52G7D (LTE Band 2, QPSK, BW 5MHz)
4M52 W7D (LTE Band 2, 16QAM, BW 5MHz)
9M08G7D (LTE Band 2, QPSK, BW 10MHz)
9M06 W7D (LTE Band 2, 16QAM, BW 10MHz)
13M49G7D (LTE Band 2, QPSK, BW 15MHz)
13M451W7D (LTE Band 2, 16QAM, BW 15MHz)
18M66G7D (LTE Band 2, QPSK, BW 20MHz)
18M53W7D (LTE Band 2, 16QAM, BW 20MHz)
1M09G7D (LTE Band 5, QPSK, BW 1.4MHz)
1M11W7D (LTE Band 5, 16QAM, BW 1.4MHz)
2M77G7D (LTE Band 5, QPSK, BW 3MHz)
2M77 W7D (LTE Band 5, 16QAM, BW 3MHz)
4M51G7D (LTE Band 5, QPSK, BW 5MHz)
4M55 W7D (LTE Band 5, 16QAM, BW 5MHz)
9M09G7D (LTE Band 5, QPSK, BW 10MHz)
9M09 W7D (LTE Band 5, 16QAM, BW 10MHz)

Antenna Type..... PIFA Antenna
Power Supply ..... 5V DC Power

1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2 and Part 27 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-09 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-09 Edition)	Personal Communications Services
2	47 CFR Part 27	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	2.1046	Transmitter Conducted Output Power	PASS
2	24.232(d) ,27.50(d)(5)	Occupied Bandwidth	PASS
3	2.1049,22.917 24.238, 27.53(g)	Frequency Stability	PASS
4	2.1055,22.355 24.235,27.54	Peak to Average Radio	PASS
5	2.1051,2.1057 22.917,24.238, 27.53(g)	Conducted Spurious Emissions	PASS
6	2.1051,2.1057 22.917,24.238 27.53(g)(h)	Band Edge	PASS
7	22.913,24.232 27.50(d)(4)	Equivalent Isotropic Radiated Power	PASS
8	2.1053,2.1057 22.917,24.238 27.53(g)	Radiated Spurious Emissions	PASS

1.3 Facilities and Accreditations

1.3.1 Facilities

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572.

All measurement facilities used to collect the measurement data are located at 3/F, Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055 P. R. China. The test site is constructed in conformance with the requirements of TIA/EIA 603.D: 2010, ANSI C63.4: 2009 and CISPR Publication 22: 2010. The FCC registration number is 695796.

1.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

2. 47 CFR PART 2, PART 27 REQUIREMENTS

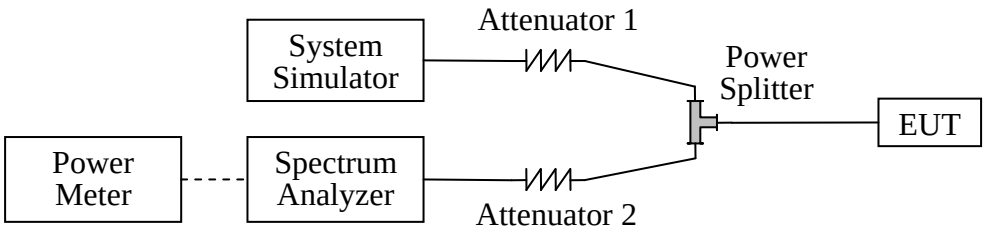
2.1 Transmitter Conducted Output Power

2.1.1 Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

2.1.2 Test Description

1. Test Setup:



The EUT, which is powered 5V DC power (USB port), is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k50/124534/wk	2012.05	2014.05
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2012.05	2014.05
Spectrum Analyzer	Agilent	E4445A	MY44200685	2012.05	2014.05
Power Meter	Agilent	E4418B	GB43318055	2012.05	2014.05
Power Meter	Agilent	E4418B	GB43318055	2012.05	2014.05
Power Sensor	Agilent	8482A	MY41091706	2012.05	2014.05
Power Splitter	Weinschel	1506A	NW521	2012.05	2014.05
Attenuator 1	Resnet	20dB	(n.a.)	2012.05	2014.05
Attenuator 2	Resnet	3dB	(n.a.)	2012.05	2014.05

2.1.3 Test Results

LTE BAND 2

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
20MHz	L 18700	1860.0	QPSK	1	0	21.78
				1	49	21.65
				1	99	21.25
				50	0	20.54
				50	25	20.49
				50	49	20.46
				100	0	20.55
			16-QAM	1	0	20.50
				1	49	20.31
				1	99	20.12
				50	0	19.60
				50	25	19.47
				50	49	19.52
				100	0	19.66
	M 18900	1880.0	QPSK	1	0	21.17
				1	49	21.19
				1	99	21.24
				50	0	20.22
				50	25	20.21
				50	49	20.20
				100	0	20.18
			16-QAM	1	0	20.27
				1	49	20.50
				1	99	20.69
				50	0	19.42
				50	25	19.30
				50	49	19.17
				100	0	19.15
	H 19100	1900.0	QPSK	1	0	21.58
				1	49	21.42
				1	99	21.67
				50	0	20.52
				50	25	20.34
				50	49	20.42
				100	0	20.44
			16-QAM	1	0	20.37
				1	49	20.40
				1	99	20.45
				50	0	19.20

				50	25	19.18
				50	49	19.12
				100	0	19.22

LTE BAND 2 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
15MHz	L 18675	1857.5	QPSK	1	0	21.72
				1	37	21.78
				1	74	21.60
				36	0	20.69
				36	18	20.70
				36	35	20.68
				75	0	20.80
			16-QAM	1	0	20.40
				1	37	20.41
				1	74	20.37
				36	0	19.02
				36	18	18.91
				36	35	19.17
				75	0	19.12
	M 18900	1880.0	QPSK	1	0	21.08
				1	37	21.10
				1	74	21.17
				36	0	20.08
				36	18	20.03
				36	35	20.10
				75	0	20.06
			16-QAM	1	0	20.32
				1	37	20.41
				1	74	20.29
				36	0	19.28
				36	18	19.12
				36	35	19.15
				75	0	19.04
	H 19125	1902.5	QPSK	1	0	21.72
				1	37	21.65
				1	74	21.65
				36	0	20.35
				36	18	20.55
				36	35	20.41
				75	0	20.45
			16-QAM	1	0	20.59
				1	37	20.32

				1	74	19.70
				36	0	19.15
				36	18	19.21
				36	35	19.20
				75	0	19.41

LTE BAND 2 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
10MHz	L 18650	1855.0	QPSK	1	0	21.84
				1	24	21.80
				1	49	21.73
				25	0	20.42
				25	12	20.37
				25	24	20.51
				50	0	20.90
			16-QAM	1	0	21.78
				1	24	21.61
				1	49	21.21
				25	0	20.17
				25	12	20.15
				25	24	20.12
				50	0	19.86
	M 18900	1880.0	QPSK	1	0	21.21
				1	24	21.17
				1	49	21.14
				25	12	20.12
				25	12	20.07
				25	12	20.09
				50	0	20.12
			16-QAM	1	0	19.87
				1	24	19.92
				1	49	19.88
				25	12	19.01
				25	12	19.11
				25	12	19.07
				50	0	19.07
	H 19150	1905.0	QPSK	1	0	21.71
				1	24	21.52
				1	49	21.47
				25	0	20.23
				25	12	20.14
				25	24	20.15
				50	0	20.18

			16-QAM	1	0	20.23
				1	24	20.21
				1	49	19.97
				25	0	19.17
				25	12	19.23
				25	24	19.41
				50	0	19.21

LTE BAND 2 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
5MHz	L 18625	1852.5	QPSK	1	0	21.50
				1	12	21.43
				1	24	21.41
				12	0	20.42
				12	6	20.35
				12	11	20.41
				25	0	20.92
			16-QAM	1	0	20.48
				1	12	20.46
				1	24	20.32
				12	0	19.60
				12	6	19.41
				12	11	19.32
				25	0	19.46
	M 18900	1880.0	QPSK	1	0	21.23
				1	12	21.28
				1	24	21.30
				12	0	20.14
				12	6	20.07
				12	11	20.05
				25	0	20.09
			16-QAM	1	0	20.01
				1	12	20.11
				1	24	20.12
				12	0	19.11
				12	6	19.06
				12	11	19.03
				25	0	19.15
	H 19175	1907.5	QPSK	1	0	21.45
				1	12	21.42
				1	24	20.81
				12	0	20.13

				12	6	20.21
				12	11	20.14
				25	0	19.97
			16-QAM	1	0	20.65
				1	12	20.45
				1	24	20.38
				12	0	19.01
				12	6	19.12
				12	11	19.05
				25	0	18.95

LTE BAND 2 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
3MHz	L 18615	1851.5	QPSK	1	0	21.61
				1	7	21.60
				1	14	21.64
				8	0	21.03
				8	4	21.06
				8	7	21.02
				15	0	21.05
			16-QAM	1	0	21.42
				1	7	21.40
				1	14	21.43
				8	0	20.32
				8	4	20.35
				8	7	20.41
				15	0	20.14
	M 18900	1880.0	QPSK	1	0	21.08
				1	7	21.13
				1	14	21.24
				8	0	20.05
				8	4	20.12
				8	7	20.07
				15	0	20.22
			16-QAM	1	0	19.97
				1	7	20.04
				1	14	20.05
				8	0	19.98
				8	4	19.82
				8	7	19.90
				15	0	19.30
	H	1908.4	QPSK	1	0	21.25
				1	7	21.20

	19184			1	14	21.17
				8	0	20.06
				8	4	20.02
				8	7	19.92
				15	0	19.76
			16-QAM	1	0	19.87
				1	7	19.91
				1	14	19.83
				8	0	19.21
				8	4	19.12
				8	7	19.11
				15	0	18.84

LTE BAND 2 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
1.4MHz	L 18607	1850.7	QPSK	1	0	21.63
				1	2	21.60
				1	5	21.69
				3	0	20.52
				3	1	20.50
				3	2	20.49
				6	0	20.80
			16-QAM	1	0	20.59
				1	2	20.52
				1	5	20.65
				3	0	19.42
				3	1	19.60
				3	2	19.51
				6	0	19.51
	M 18900	1880.0	QPSK	1	0	21.19
				1	2	21.17
				1	5	21.11
				3	0	20.16
				3	1	20.06
				3	2	20.09
				6	0	20.18
			16-QAM	1	0	20.08
				1	2	20.05
				1	5	19.99
				3	0	19.13
				3	2	19.05
				3	5	19.10
				6	0	19.22

	H 19192	1909.2	QPSK	1	0	20.83
				1	2	20.92
				1	5	20.85
				3	0	19.96
				3	1	19.85
				3	2	19.90
				6	0	19.60
			16-QAM	1	0	19.73
				1	2	19.80
				1	5	19.53
				3	0	18.80
				3	1	18.90
				3	2	18.85
				6	0	18.74

LTE BAND 4

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
20MHz	L 20050	1720.0	QPSK	1	0	22.57
				1	49	22.23
				1	99	21.91
				50	0	21.02
				50	25	21.00
				50	49	21.05
				100	0	21.05
			16-QAM	1	0	21.26
				1	49	21.27
				1	99	21.16
				50	0	20.11
				50	25	20.12
				50	49	20.08
				100	0	20.09
	M 20175	1732.5	QPSK	1	0	21.81
				1	49	22.11
				1	99	22.21
				50	0	21.12
				50	25	21.05
				50	49	21.01
				100	0	20.69
			16-QAM	1	0	21.01
				1	49	21.12
				1	99	21.17
				50	0	19.91

				50	25	19.89
				50	49	20.05
				100	0	19.67
	H 20300	1745.0	QPSK	1	0	22.24
				1	49	22.12
				1	99	21.90
				50	0	21.02
				50	25	21.00
				50	49	21.03
				100	0	21.03
			16-QAM	1	0	21.26
				1	49	21.17
				1	99	21.39
				50	0	19.83
				50	25	19.80
				50	49	19.82
				100	0	20.03

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
15MHz	L 20025	1717.5	QPSK	1	0	22.66
				1	37	22.21
				1	74	22.01
				36	0	21.12
				36	18	21.20
				36	35	21.15
				75	0	21.12
			16-QAM	1	0	21.20
				1	37	21.34
				1	74	21.44
				36	0	20.23
				36	18	20.21
				36	35	20.16
				75	0	20.24
	M 20175	1732.5	QPSK	1	0	21.96
				1	37	21.70
				1	74	21.80
				36	0	20.64
				36	18	20.60
				36	35	20.52
				75	0	20.63
			16-QAM	1	0	21.05
				1	37	21.02

				1	74	21.06
				36	0	20.13
				36	18	20.10
				36	35	20.08
				75	0	20.16
	H 20325	1747.5	QPSK	1	0	22.19
				1	37	22.08
				1	74	21.95
				36	0	21.02
				36	18	21.05
				36	35	21.01
				75	0	20.98
			16-QAM	1	0	20.69
				1	37	20.70
				1	74	20.55
				36	0	20.05
				36	18	20.03
				36	35	20.05
				75	0	20.11

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
10MHz	L 20000	1715.0	QPSK	1	0	22.38
				1	24	22.50
				1	49	22.25
				25	0	21.25
				25	12	21.32
				25	24	21.33
				50	0	21.49
			16-QAM	1	0	20.94
				1	24	20.82
				1	49	20.83
				25	0	20.31
				25	12	20.25
				25	24	20.21
				50	0	20.15
	M 20175	1732.5	QPSK	1	0	21.68
				1	24	21.87
				1	49	22.01
				25	0	21.12
				25	12	21.09
				25	24	21.17
				50	0	21.25

			16-QAM	1	0	21.32
				1	24	21.34
				1	49	21.54
				25	0	19.81
				25	12	20.02
				25	24	19.90
				50	0	19.82
	H 20350	1750.0	QPSK	1	0	22.10
				1	24	22.07
				1	49	21.91
				25	0	21.06
				25	12	21.11
				25	24	21.02
				50	0	21.03
			16-QAM	1	0	20.86
				1	24	20.91
				1	49	20.90
				25	0	20.01
				25	12	20.04
				25	24	20.03
				50	0	20.02

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
5MHz	L 19975	1712.5	QPSK	1	0	22.58
				1	12	22.42
				1	24	22.50
				12	0	21.12
				12	6	21.18
				12	11	21.11
				25	0	21.61
			16-QAM	1	0	21.73
				1	12	21.71
				1	24	21.69
				12	0	20.62
				12	6	20.61
				12	11	20.58
				25	0	20.63
	M 20175	1732.5	QPSK	1	0	21.67
				1	12	21.70
				1	24	21.67
				12	0	20.41

				12	6	20.37
				12	11	20.42
				25	0	20.50
			16-QAM	1	0	20.57
				1	12	20.63
				1	24	20.74
				12	0	19.51
				12	6	19.62
				12	11	19.54
				25	0	19.67
	H 20375	1752.5	QPSK	1	0	22.19
				1	12	22.16
				1	24	22.01
				12	0	21.04
				12	6	21.05
				12	11	21.03
				25	0	21.01
			16-QAM	1	0	21.18
				1	12	21.27
				1	24	21.26
				12	0	20.31
				12	6	20.21
				12	11	20.25
				25	0	20.06

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
3MHz	L 19965	1711.5	QPSK	1	0	22.63
				1	7	22.60
				1	14	22.64
				8	0	21.70
				8	4	21.68
				8	7	21.62
				15	0	21.73
			16-QAM	1	0	21.36
				1	7	21.30
				1	14	21.26
				8	0	20.52
				8	4	20.58
				8	7	20.62
				15	0	20.73
	M	1732.5	QPSK	1	0	22.29
				1	7	22.31

	20175			1	14	22.36
				8	0	21.29
				8	4	21.32
				8	7	21.25
				15	0	21.33
			16-QAM	1	0	21.01
				1	7	20.93
				1	14	20.97
				8	0	19.87
				8	4	19.83
				8	7	19.90
				15	0	19.82
	H 20384	1753.4	QPSK	1	0	22.37
				1	7	22.05
				1	14	21.82
				8	0	21.05
				8	4	21.02
				8	7	21.04
				15	0	20.99
			16-QAM	1	0	21.12
				1	7	21.10
				1	14	20.86
				8	0	20.03
				8	4	20.07
				8	7	20.05
				15	0	20.11

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
1.4MHz	L 19957	1710.7	QPSK	1	0	22.49
				1	2	22.45
				1	5	22.51
				3	0	21.36
				3	1	21.42
				3	2	21.41
				6	0	21.66
			16-QAM	1	0	21.28
				1	2	21.25
				1	5	21.34
				3	0	20.09
				3	1	20.12
				3	2	20.23
				6	0	20.13

	M 20175	1732.5	QPSK	1	0	21.70
				1	2	21.79
				1	5	21.88
				3	0	20.72
				3	1	20.71
				3	2	20.67
				6	0	20.68
			16-QAM	1	0	21.12
				1	2	21.14
				1	5	21.22
				3	0	19.98
				3	2	20.02
				3	5	19.91
				6	0	19.82
	H 20392	1754.2	QPSK	1	0	21.91
				1	2	21.88
				1	5	21.84
				3	0	20.81
				3	1	20.89
				3	2	20.93
				6	0	20.98
			16-QAM	1	0	20.98
				1	2	20.95
				1	5	20.93
				3	0	19.94
				3	1	19.91
				3	2	19.92
				6	0	19.88

LTE BAND 5

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
10MHz	L 20450	829.0	QPSK	1	0	22.32
				1	24	22.41
				1	49	22.40
				25	0	21.28
				25	12	21.23
				25	24	21.30
				50	0	21.27
			16-QAM	1	0	21.27
				1	24	21.28
				1	49	21.19
				25	0	20.07

				25	12	20.09
				25	24	20.15
				50	0	20.15
	M 20525	836.5	QPSK	1	0	22.19
				1	24	22.14
				1	49	22.09
				25	0	21.06
				25	12	21.04
				25	24	21.01
				50	0	20.99
			16-QAM	1	0	21.01
				1	24	21.12
				1	49	20.87
				25	0	20.08
				25	12	20.11
				25	24	20.05
				50	0	20.01
	H 20600	844.0	QPSK	1	0	22.38
				1	24	22.02
				1	49	22.07
				25	0	21.10
				25	12	21.09
				25	24	21.10
				50	0	21.09
			16-QAM	1	0	21.53
				1	24	21.52
				1	49	21.62
				25	0	20.25
				25	12	20.17
				25	24	20.29
				50	0	20.32

LTE BAND 5 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
5MHz	L 20425	826.5	QPSK	1	0	22.12
				1	12	22.27
				1	24	22.30
				12	0	21.20
				12	6	21.17
				12	11	21.18
				25	0	21.15
			16-QAM	1	0	21.36
				1	12	21.32

				1	24	21.40
				12	0	20.12
				12	6	20.01
				12	11	20.08
				25	0	20.10
	M 20525	836.5	QPSK	1	0	22.08
				1	12	22.05
				1	24	21.98
				12	0	21.08
				12	6	21.04
				12	11	21.10
				25	0	21.04
			16-QAM	1	0	21.09
				1	12	21.12
				1	24	21.26
				12	0	20.20
				12	6	20.17
				12	11	20.12
				25	0	20.18
	H 20625	846.5	QPSK	1	0	22.42
				1	12	22.30
				1	24	22.24
				12	0	21.32
				12	6	21.40
				12	11	21.45
				25	0	21.45
			16-QAM	1	0	21.38
				1	12	21.26
				1	24	21.38
				12	0	20.40
				12	6	20.11
				12	11	20.12
				25	0	20.28

LTE BAND 5 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
3MHz	L 20415	825.5	QPSK	1	0	22.08
				1	7	22.14
				1	14	22.27
				8	0	21.23
				8	4	21.30
				8	7	21.24
				15	0	21.26

			16-QAM	1	0	21.25
				1	7	21.31
				1	14	21.25
				8	0	20.21
				8	4	20.21
				8	7	20.17
				15	0	20.29
	M 20525	836.5	QPSK	1	0	22.14
				1	7	22.13
				1	14	22.14
				8	0	21.10
				8	4	21.05
				8	7	21.04
				15	0	20.98
			16-QAM	1	0	21.73
				1	7	21.61
				1	14	21.60
				8	0	20.25
				8	4	20.32
				8	7	20.64
				15	0	20.12
	H 20634	847.4	QPSK	1	0	22.27
				1	7	22.09
				1	14	21.91
				8	0	21.09
				8	4	21.18
				8	7	21.28
				15	0	21.21
			16-QAM	1	0	21.09
				1	7	21.05
				1	14	20.79
				8	0	20.06
				8	4	20.03
				8	7	20.05
				15	0	20.18

LTE BAND 5 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
1.4MHz	L 20407	824.7	QPSK	1	0	22.24
				1	2	22.20
				1	5	22.30
				3	0	21.21

				3	1	21.18
				3	2	21.19
				6	0	21.18
			16-QAM	1	0	21.17
				1	2	21.10
				1	5	21.21
				3	0	20.09
				3	1	20.11
				3	2	20.08
				6	0	20.18
	M 20525	836.5	QPSK	1	0	22.22
				1	2	22.24
				1	5	22.32
				3	0	21.26
				3	1	21.21
				3	2	21.23
				6	0	21.19
			16-QAM	1	0	21.08
				1	2	21.05
				1	5	21.07
				3	0	20.10
				3	1	20.09
				3	2	20.20
				6	0	20.30
	H 20642	848.2	QPSK	1	0	22.28
				1	2	22.26
				1	5	22.31
				3	0	21.17
				3	1	21.20
				3	2	21.23
				6	0	21.36
			16-QAM	1	0	21.25
				1	2	21.16
				1	5	21.14
				3	0	20.24
				3	1	20.15
				3	2	20.20
				6	0	20.32

LTE BAND 17

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
10MHz	L	709.0	QPSK	1	0	22.28
				1	24	22.12

	23780			1	49	22.07
				25	0	21.11
				25	12	21.06
				25	24	21.05
				50	0	21.19
			16-QAM	1	0	21.26
				1	24	21.32
				1	49	21.23
				25	0	20.08
				25	12	20.07
				25	24	20.05
				50	0	20.10
	M 23790	710.0	QPSK	1	0	22.20
				1	24	22.13
				1	49	22.19
				25	0	21.08
				25	12	21.06
				25	24	21.05
				50	0	21.08
			16-QAM	1	0	21.83
				1	24	21.80
				1	49	21.66
				25	0	20.09
				25	12	20.04
				25	24	20.15
				50	0	20.10
	H 23800	711.0	QPSK	1	0	22.45
				1	24	22.24
				1	49	21.83
				25	0	21.01
				25	12	21.04
				25	24	21.02
				50	0	21.03
			16-QAM	1	0	21.12
				1	24	21.05
				1	49	20.54
				25	0	20.02
				25	12	20.01
				25	24	20.05
				50	0	20.08

LTE BAND 17 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	

5MHz	L 23755	706.5	QPSK	1	0	22.20
				1	12	22.24
				1	24	22.31
				12	0	21.20
				12	6	21.18
				12	11	21.16
				25	0	21.17
			16-QAM	1	0	21.49
				1	12	21.50
				1	24	21.77
				12	0	20.14
				12	6	20.13
				12	11	20.15
				25	0	20.16
	M 23790	710.0	QPSK	1	0	22.40
				1	12	22.21
				1	24	21.95
				12	0	21.15
				12	6	21.21
				12	11	21.23
				25	0	21.26
			16-QAM	1	0	21.56
				1	12	21.47
				1	24	21.13
				12	0	20.21
				12	6	20.24
				12	11	20.20
				25	0	20.23
	H 23825	713.5	QPSK	1	0	22.08
				1	12	21.76
				1	24	21.89
				12	0	20.80
				12	6	20.76
				12	11	20.89
				25	0	20.85
			16-QAM	1	0	20.69
				1	12	20.45
				1	24	20.40
				12	0	19.72
				12	6	19.80
				12	11	19.81
				25	0	19.92

2.2 Occupied Bandwidth

2.2.1 Definition

According to FCC section 2.1049 and 27.53(g), the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth.

2.2.2 Test Description

See section 2.1.2 of this report.

2.2.3 Test Results

LTE Band 17

Low channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	4.52	4.54	23780	709	9.13	9.12
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	5.11	5.13	23780	709	10.37	10.33

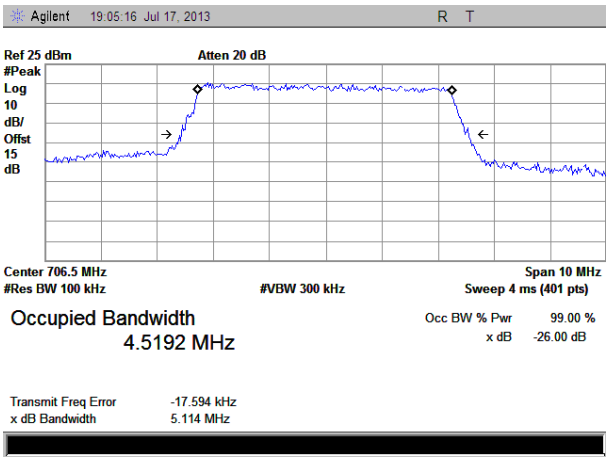
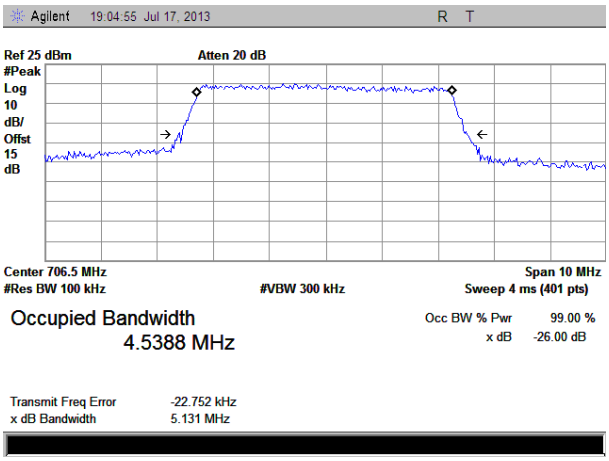
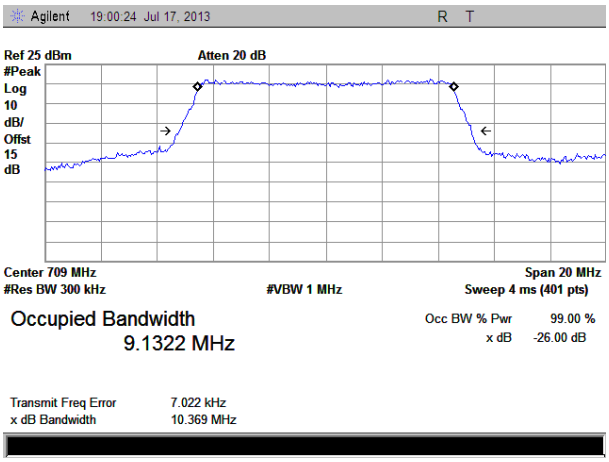
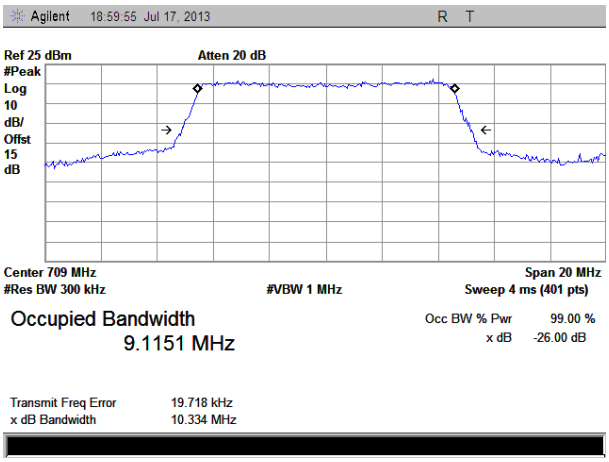
Middle channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23790	710.0	4.5376	4.5345	23790	710.0	9.1761	9.1564
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23790	710.0	5.119	5.167	23790	710.0	10.475	10.341

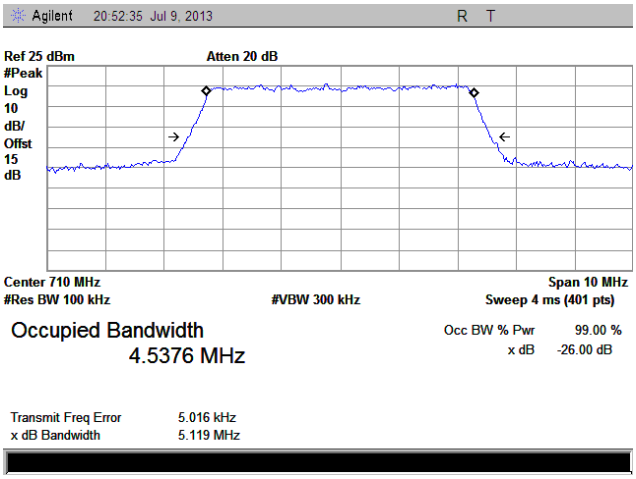
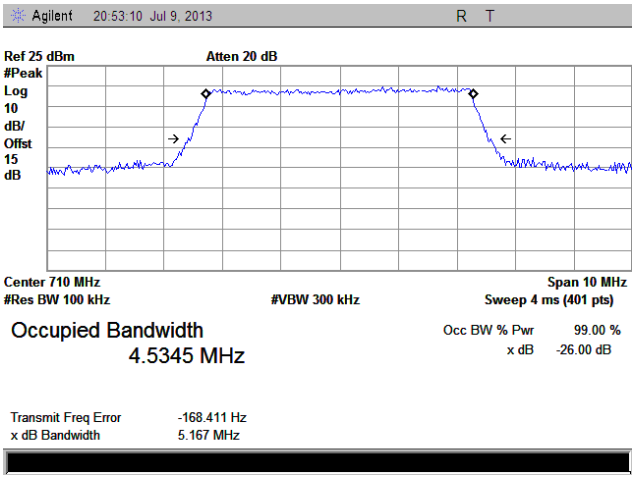
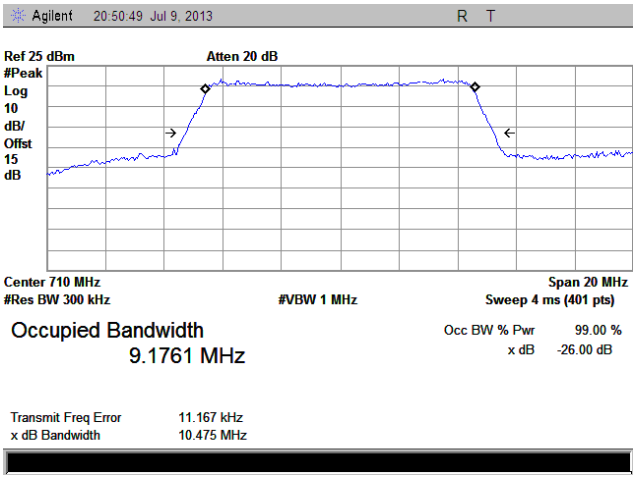
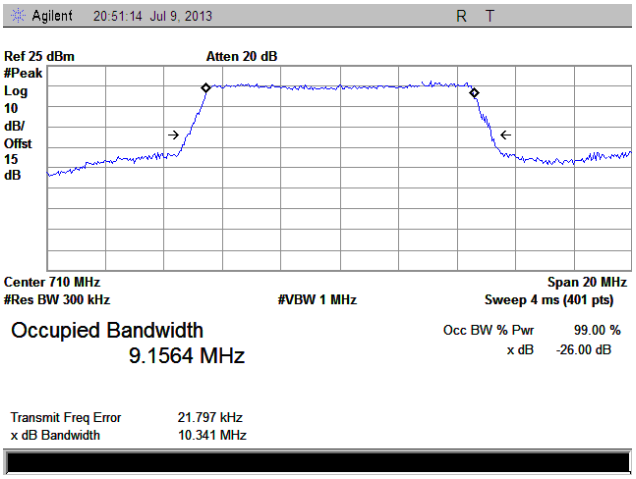
High channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23825	713.5	4.53	4.50	23800	711	9.07	9.09
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23825	713.5	5.09	5.10	23800	711	10.28	10.25

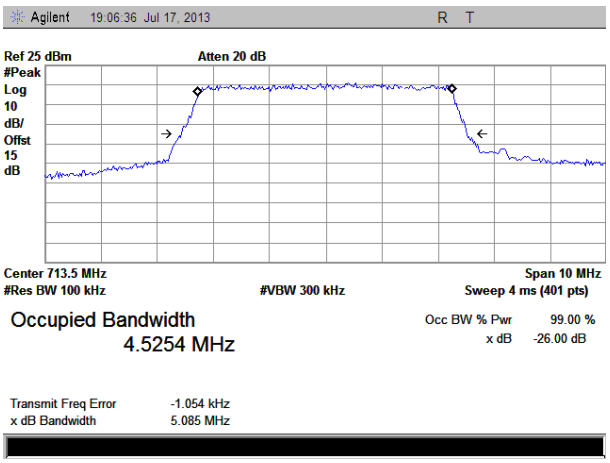
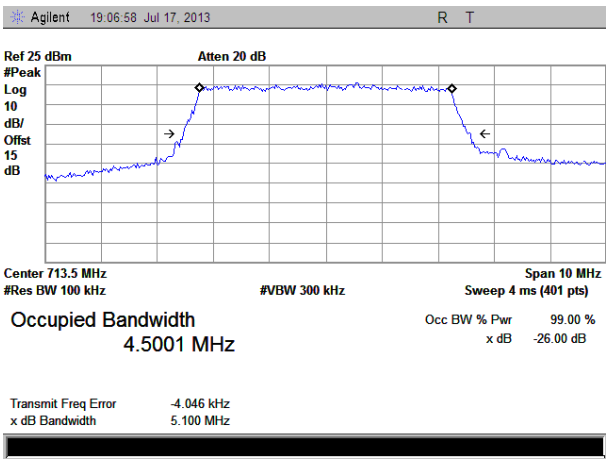
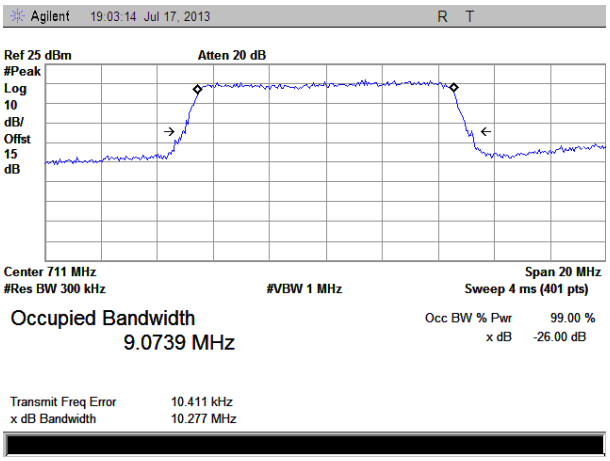
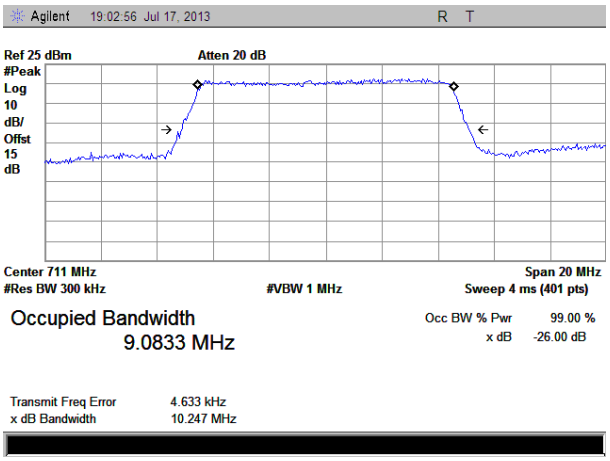
Low channel:

Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

Middle channel:

Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

High channel:

Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

LTE Band 4

Low channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	1.12	1.11	19965	1711.5	2.76	2.77
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	1.35	1.31	19965	1711.5	3.21	3.22

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	4.51	4.51	20000	1715.0	9.07	9.07
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	5.12	5.02	20000	1715.0	10.35	10.37

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	13.48	13.47	20050	1720.0	18.60	18.51
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	15.06	15.11	20050	1720.0	21.37	21.47

Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	1.1032	1.1043	20175	1732.5	2.7610	2.7678
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	1.293	1.335	20175	1732.5	3.182	3.216

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	4.5086	4.5186	20175	1732.5	9.0551	9.0394
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	5.114	5.162	20175	1732.5	10.359	10.315

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	13.4733	13.4672	20175	1732.5	18.4790	18.4951
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	15.092	14.991	20175	1732.5	21.524	21.142

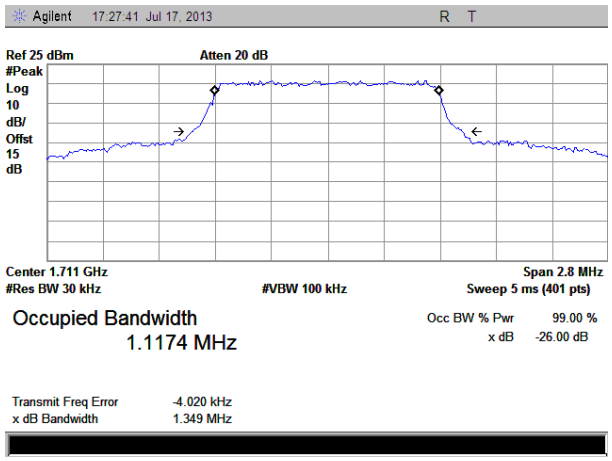
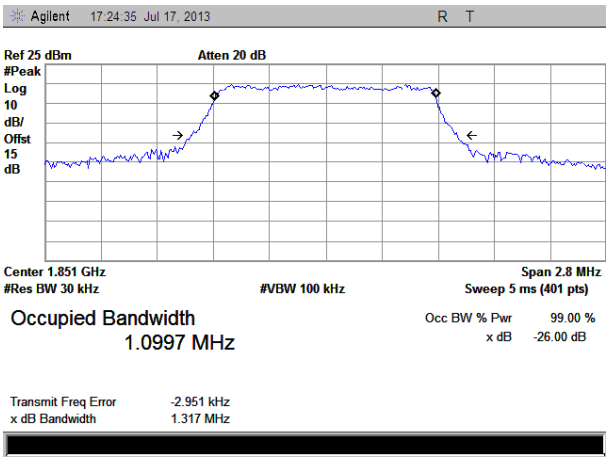
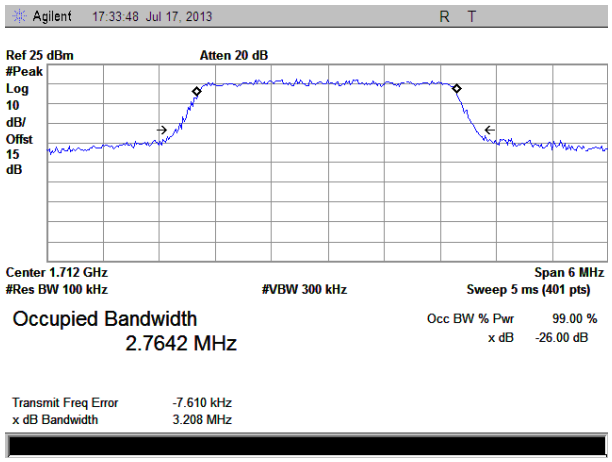
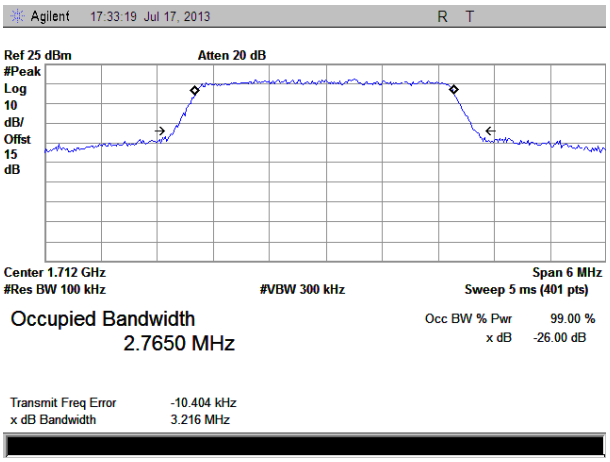
High channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20392	1754.2	1.09	1.10	20384	1753.4	2.75	2.76
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20392	1754.2	1.32	1.31	20384	1753.4	3.16	3.20

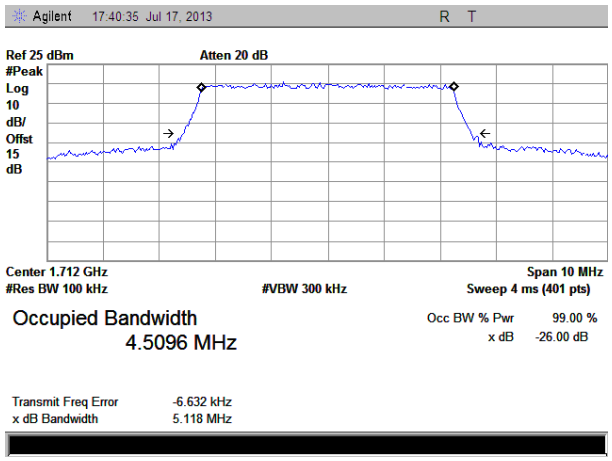
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20375	1752.5	4.52	4.51	20350	1750.0	9.08	9.09
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20375	1752.5	5.13	5.07	20350	1750.0	10.28	10.41

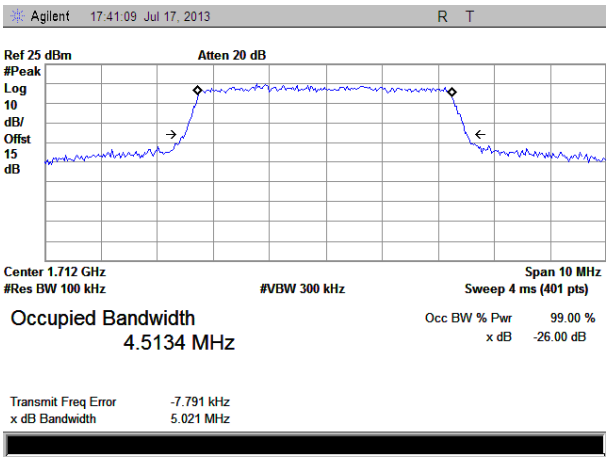
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20325	1747.5	13.43	13.47	20300	1745.0	18.51	18.52
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20325	1747.5	15.03	15.02	20300	1745.0	21.34	21.47

Low channel:

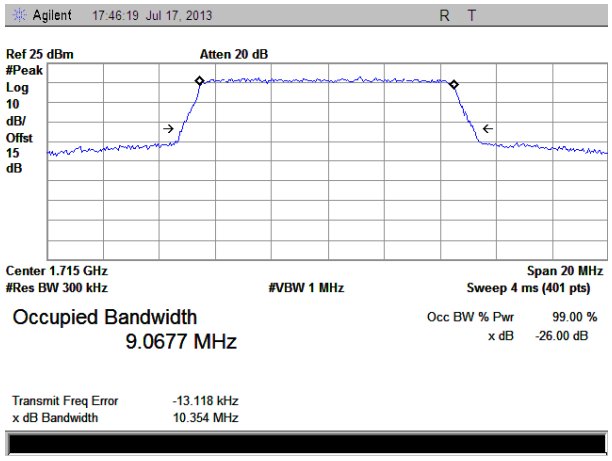
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	

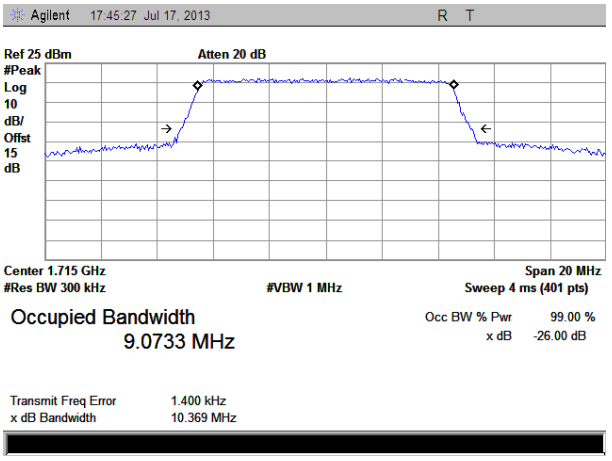
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM



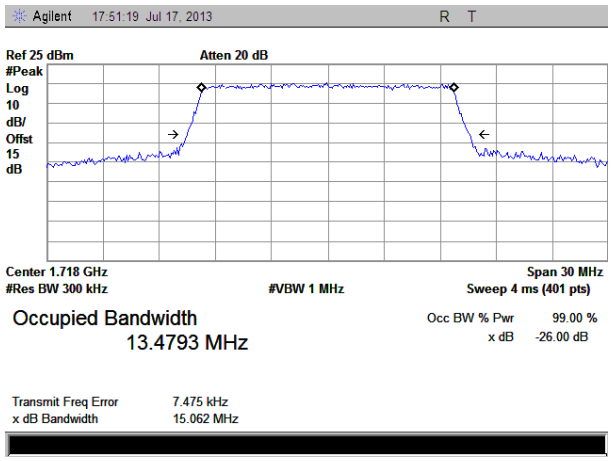


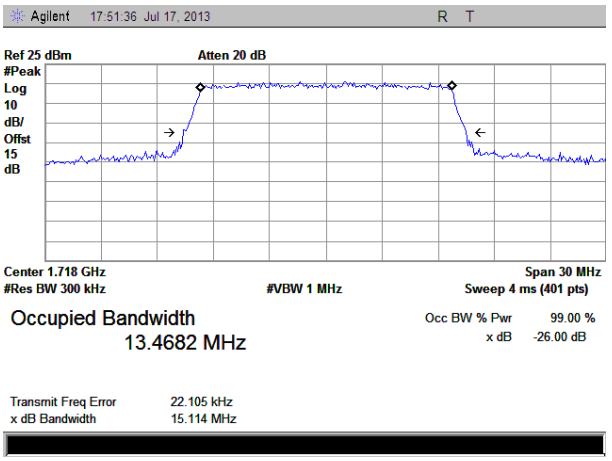
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM



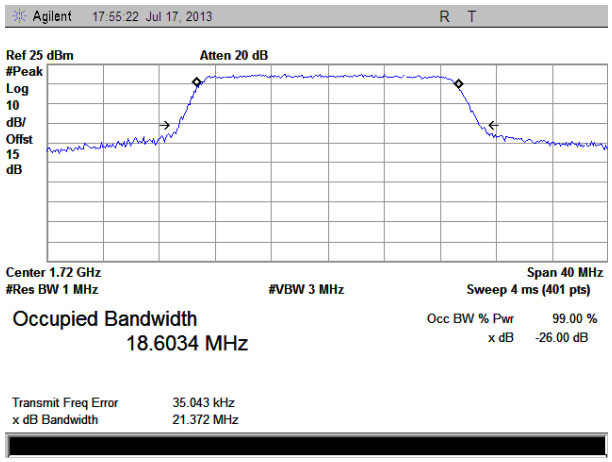


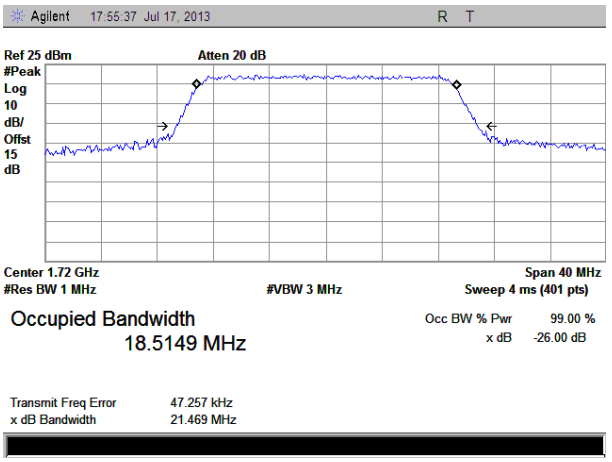
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM





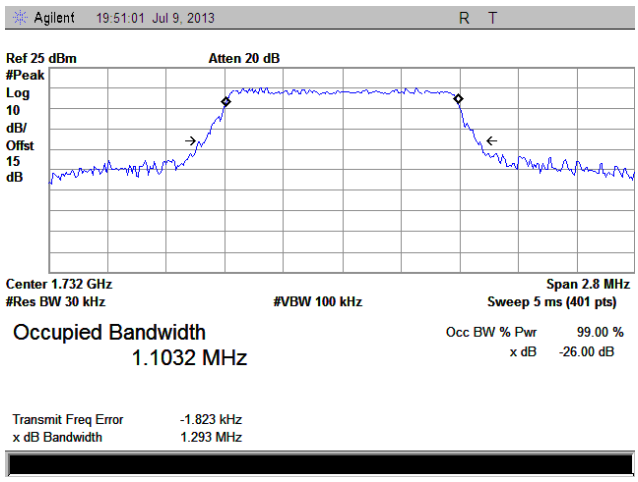
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM

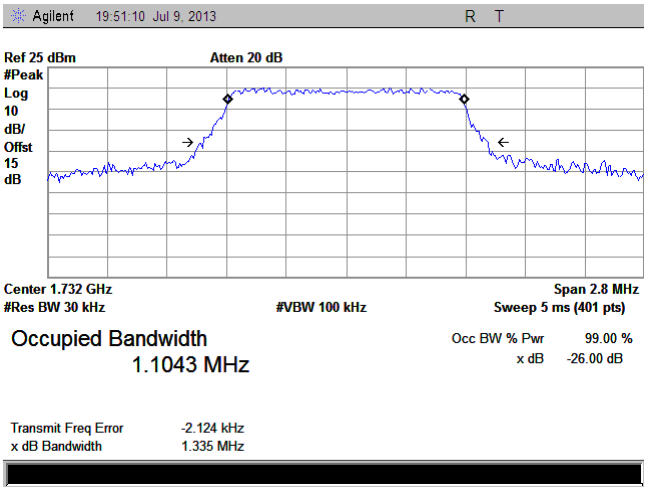




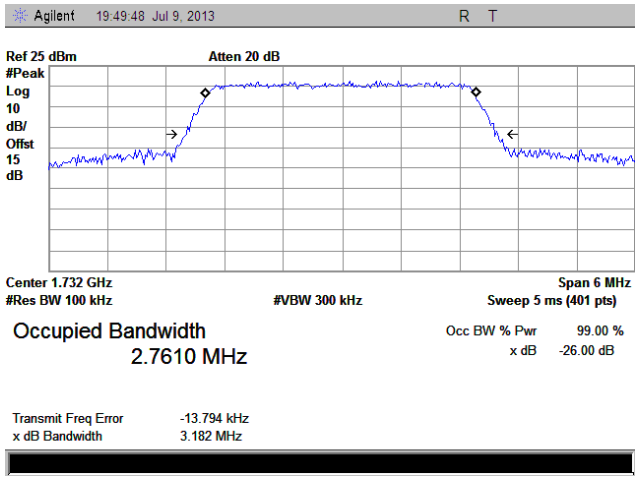
Middle channel:

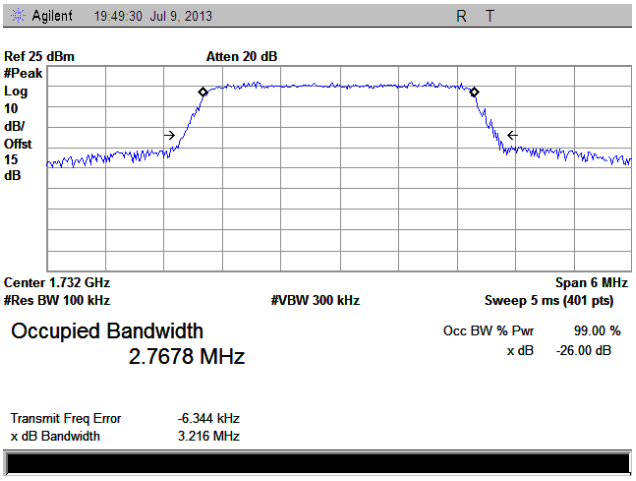
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM



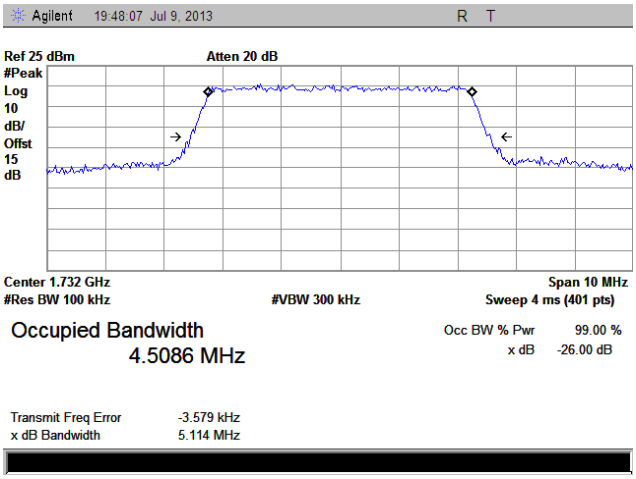


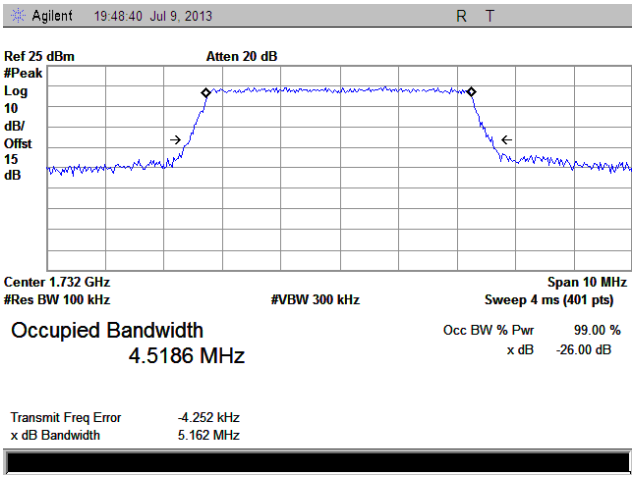
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM



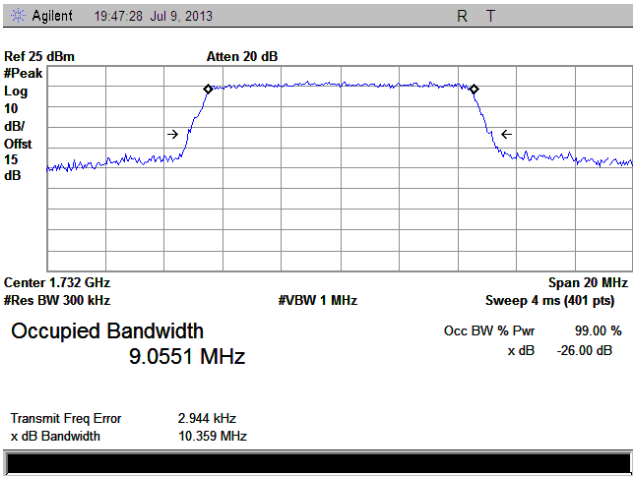


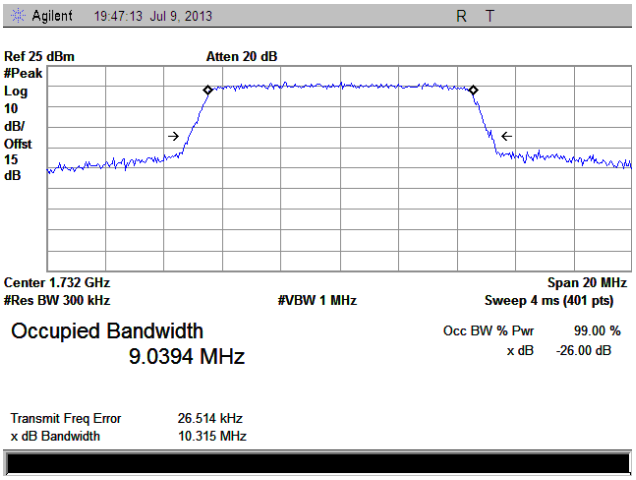
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM

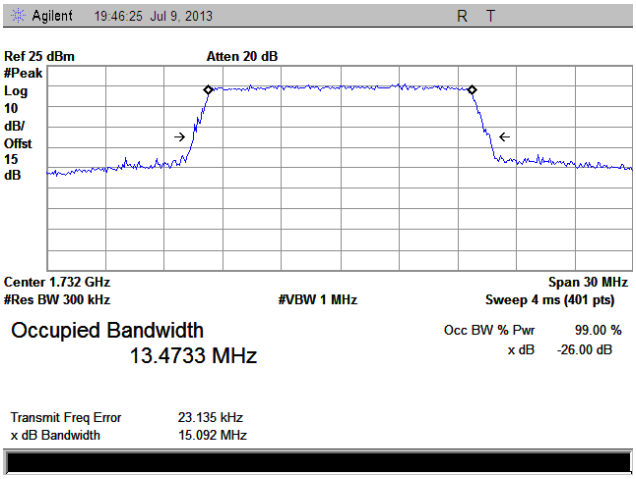
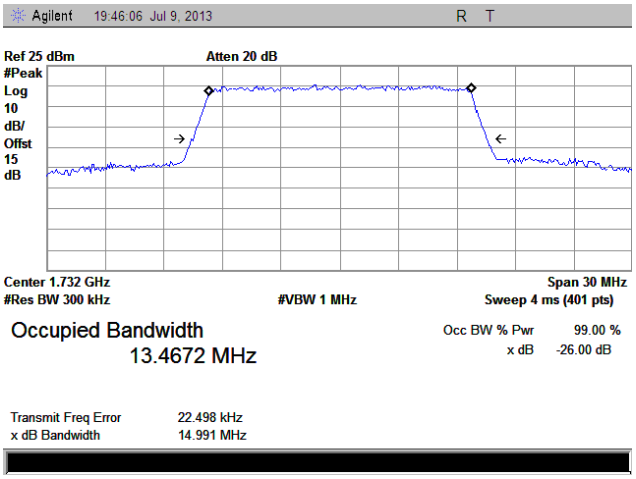


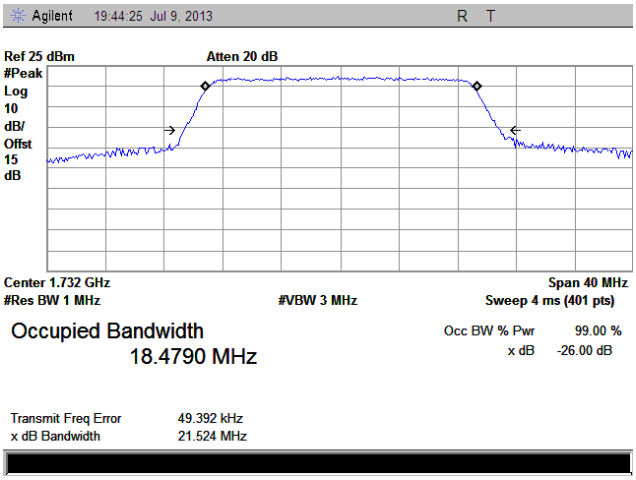
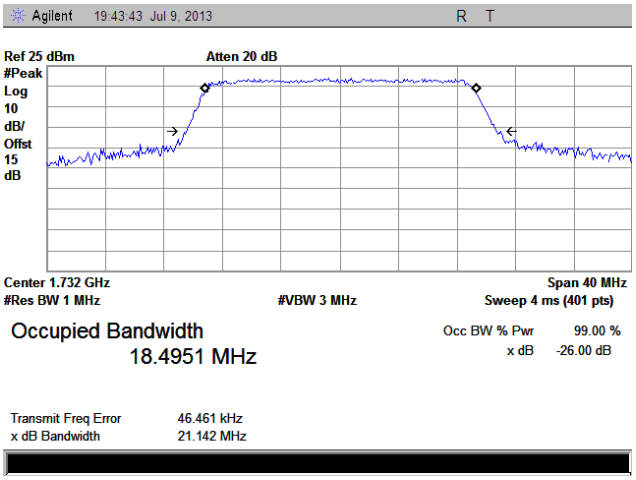


Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM

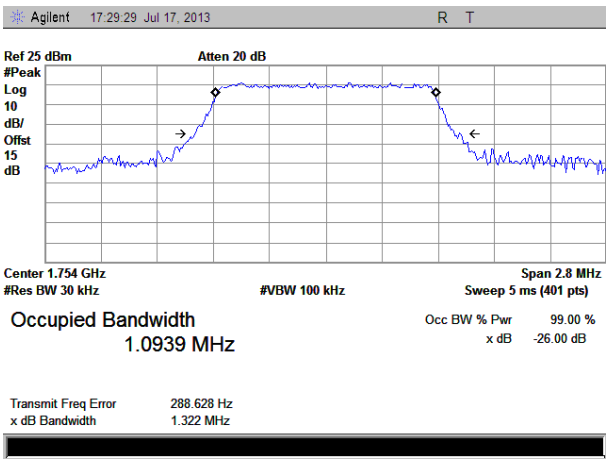
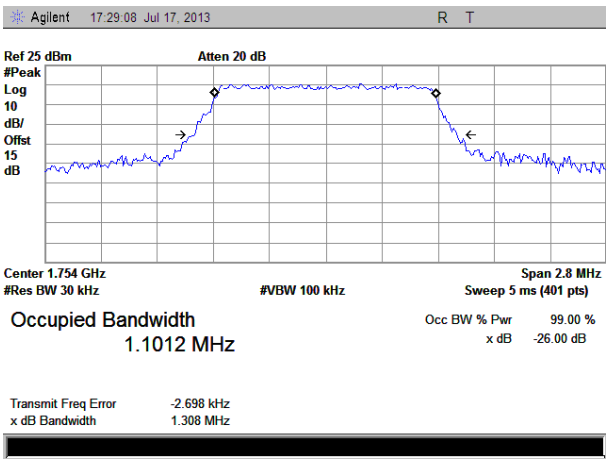
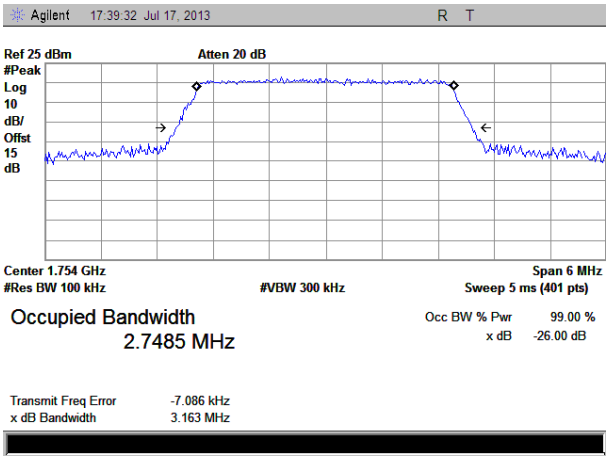
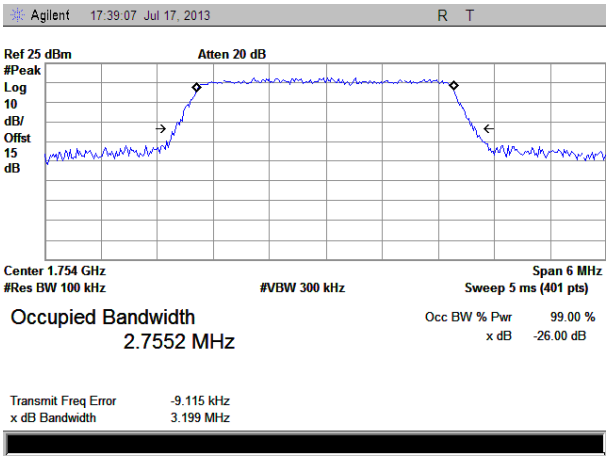


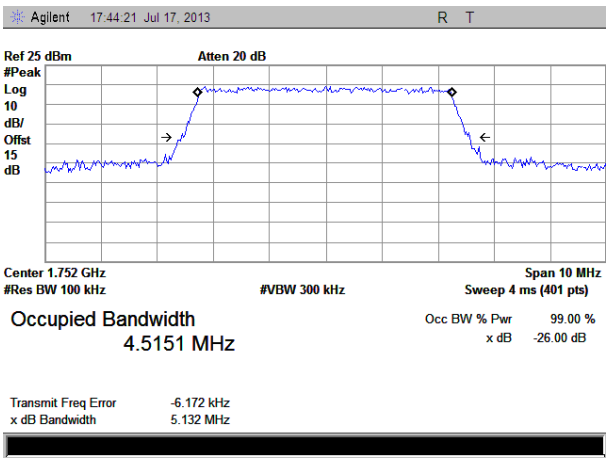
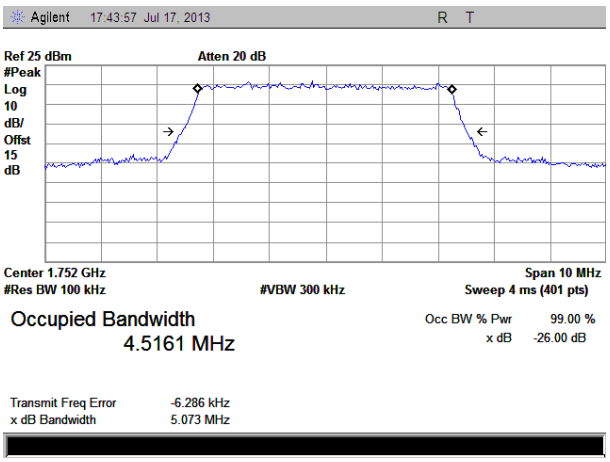
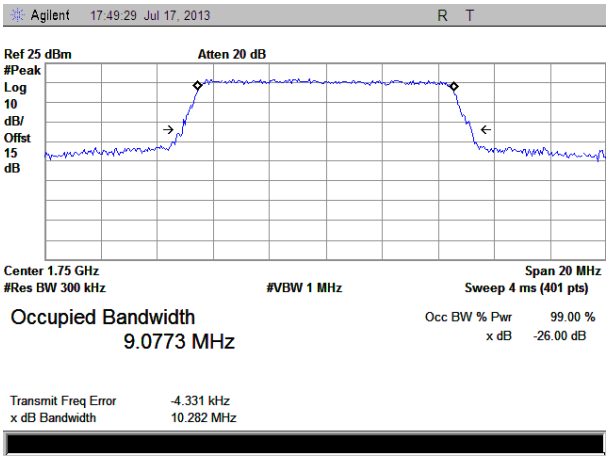
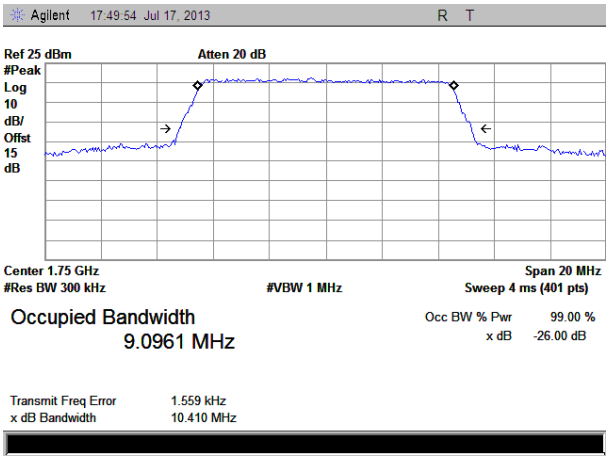


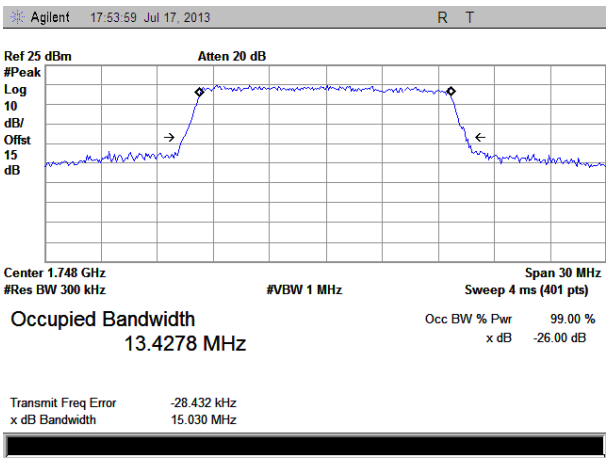
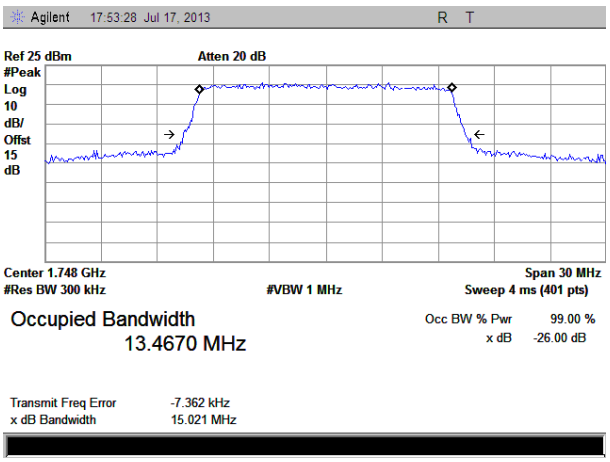
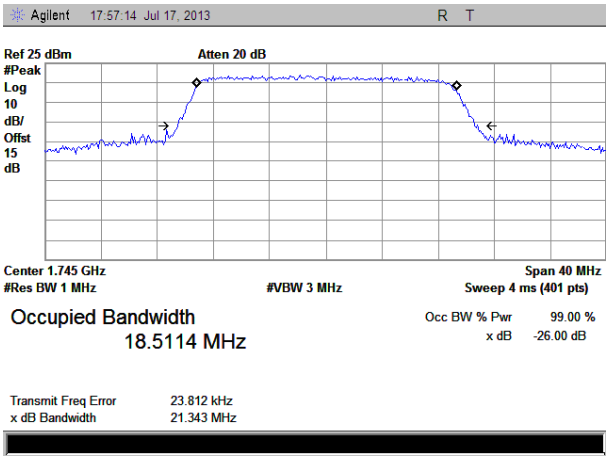
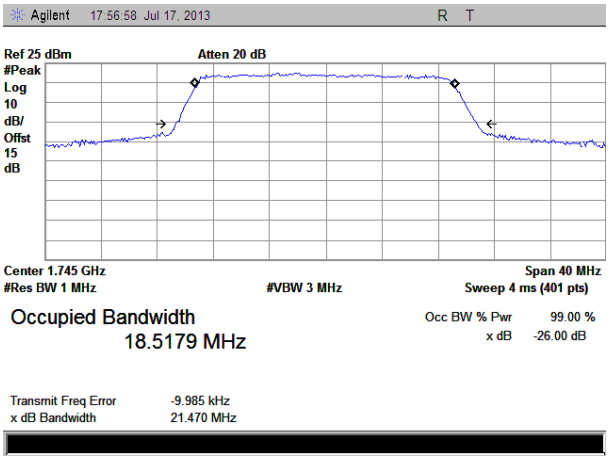
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	

Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

High channel:

Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	

Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

LTE Band 2

Low channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.11	1.09	18615	1851.5	2.76	2.77
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.32	1.32	18615	1851.5	3.22	3.18

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.51	4.52	18650	1855.0	9.06	9.06
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	5.13	5.09	18650	1855.0	10.28	10.32

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	13.49	13.51	18700	1860.0	18.66	18.53
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	15.04	15.05	18700	1860.0	21.65	21.38

Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	1.1021	1.1022	18900	1880.0	2.7636	2.7677
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	1.337	1.306	18900	1880.0	3.197	3.187

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	4.5175	4.5196	18900	1880.0	9.0827	9.0560
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	5.077	5.111	18900	1880.0	10.924	10.295

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	13.4603	13.4387	18900	1880.0	18.4069	18.3540
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	15.070	15.003	18900	1880.0	21.298	21.078

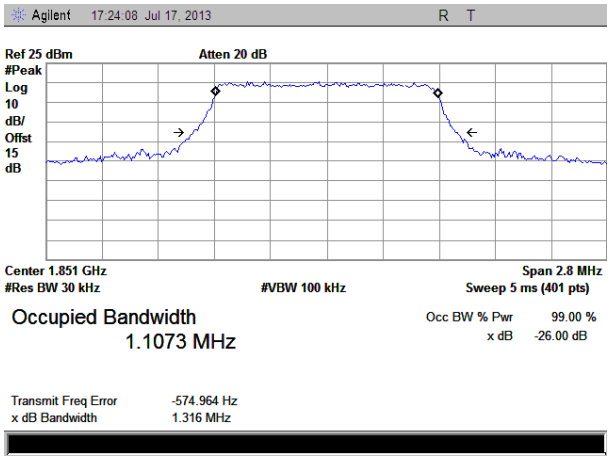
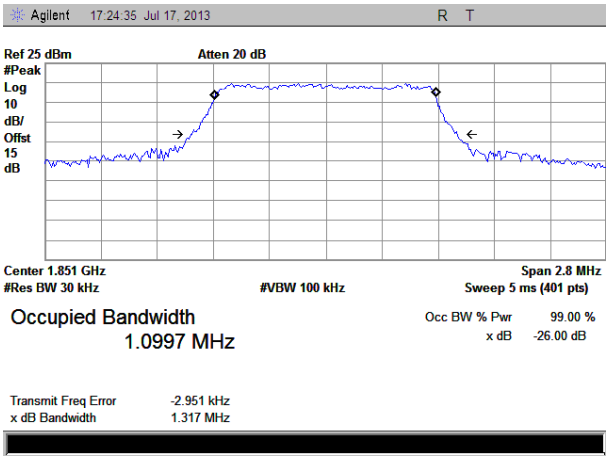
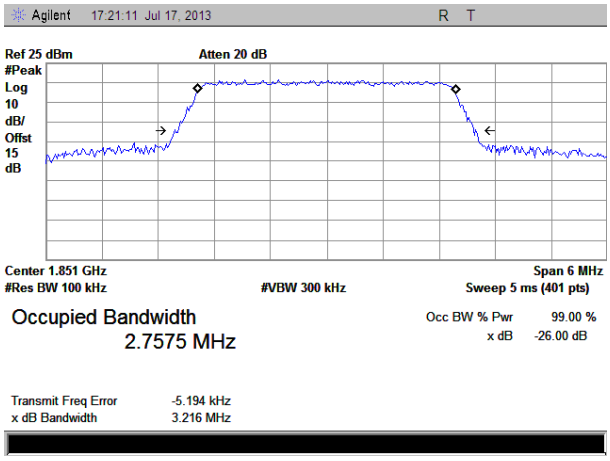
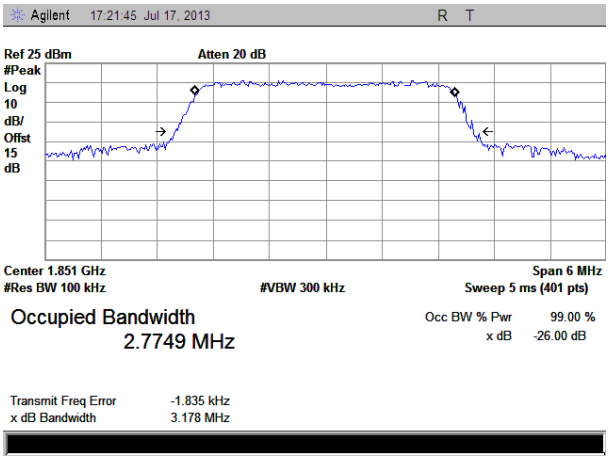
High channel:

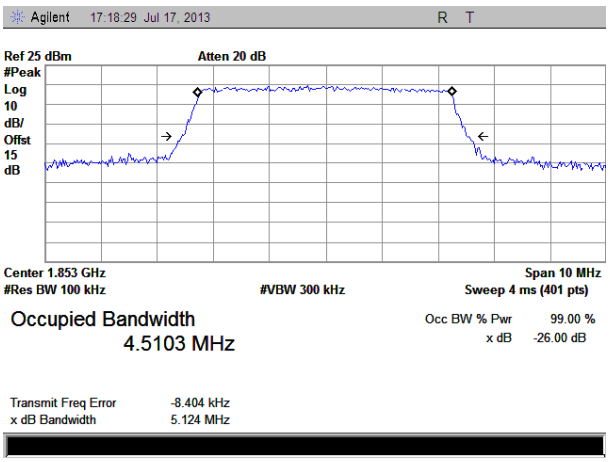
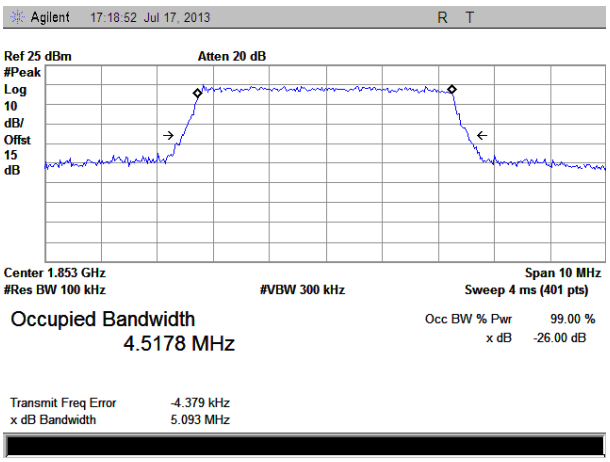
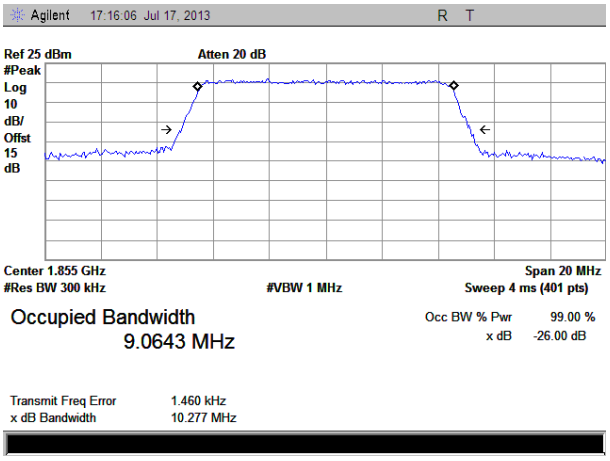
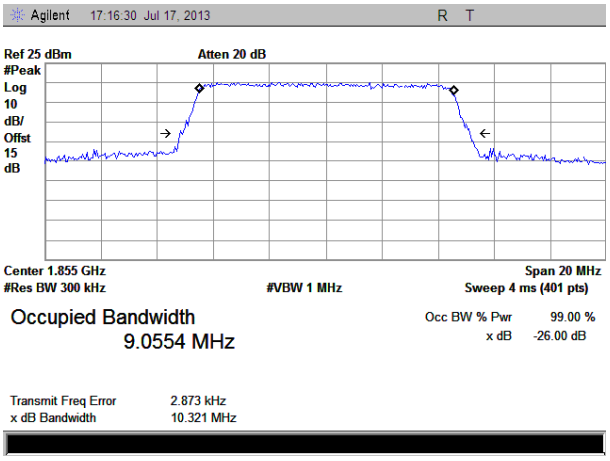
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19192	1909.2	1.11	1.11	19184	1908.4	2.75	2.75
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19192	1909.2	1.34	1.32	19184	1908.4	3.21	3.18

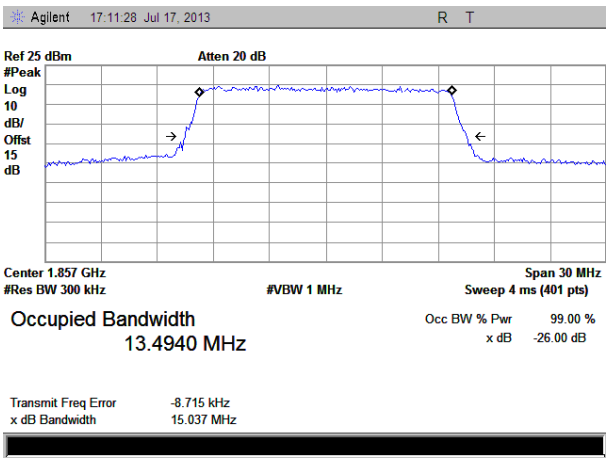
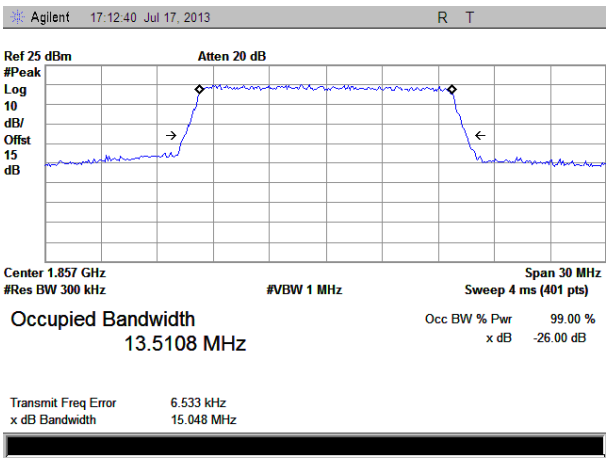
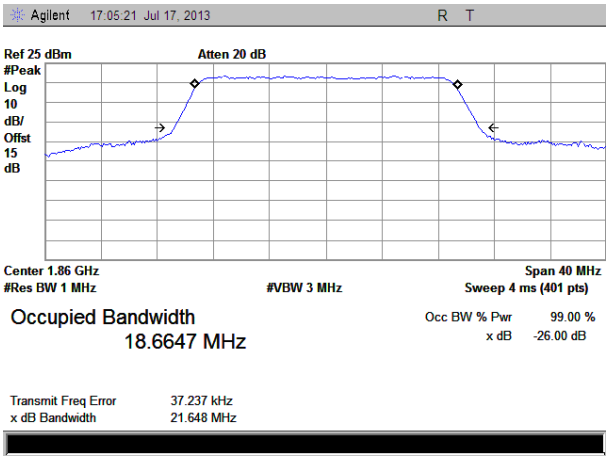
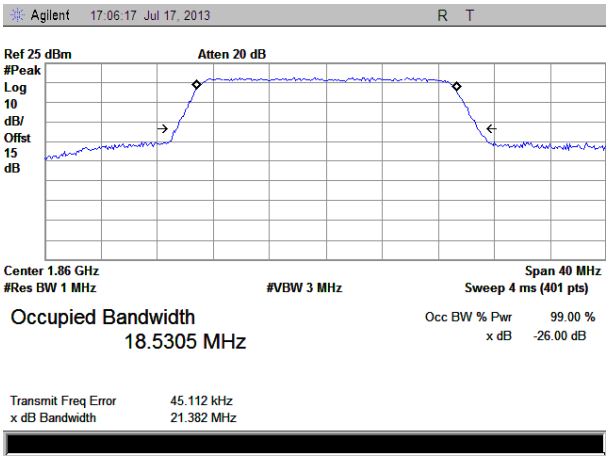
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19175	1907.5	4.50	4.50	19150	1905.0	9.06	9.02
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19175	1907.5	5.04	5.10	19150	1905.0	10.42	10.25

Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19125	1902.5	13.43	13.43	19100	1900.0	18.55	18.53
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19125	1902.5	15.12	15.00	19100	1900.0	21.51	21.52

Low channel:

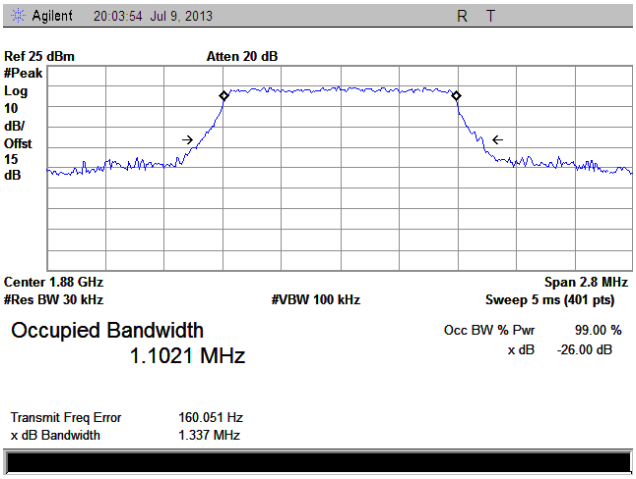
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	

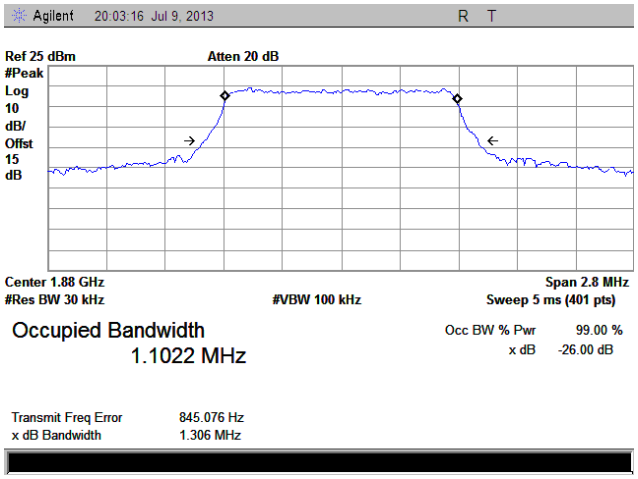
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

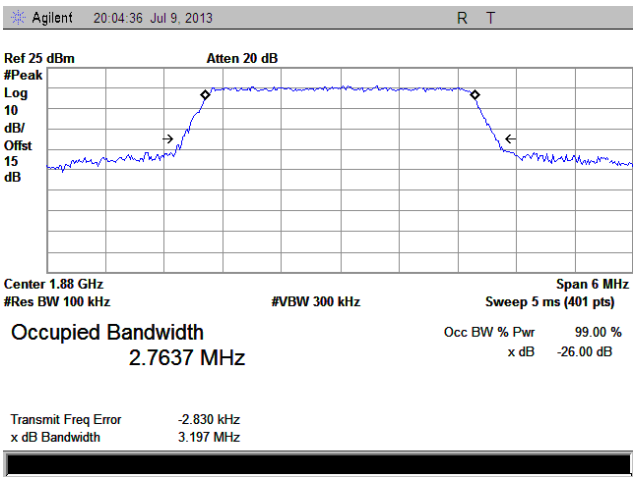
Middle channel:

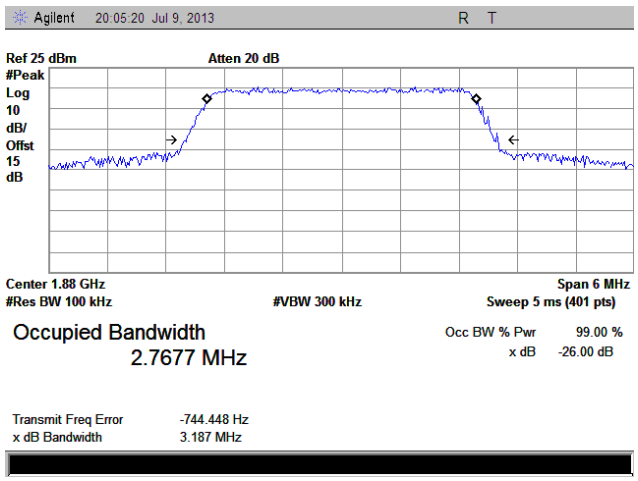
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM



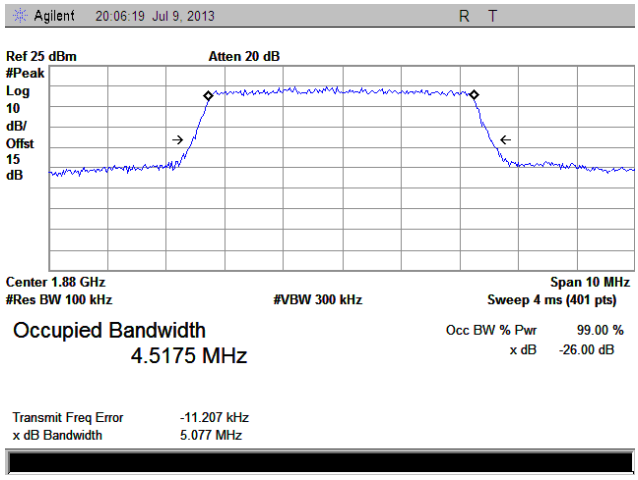


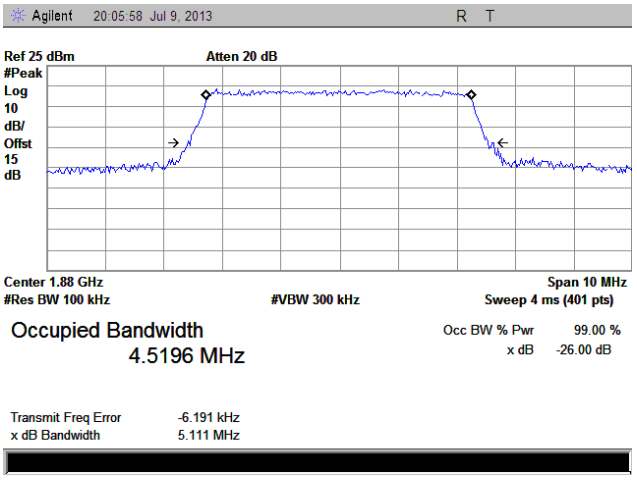
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM



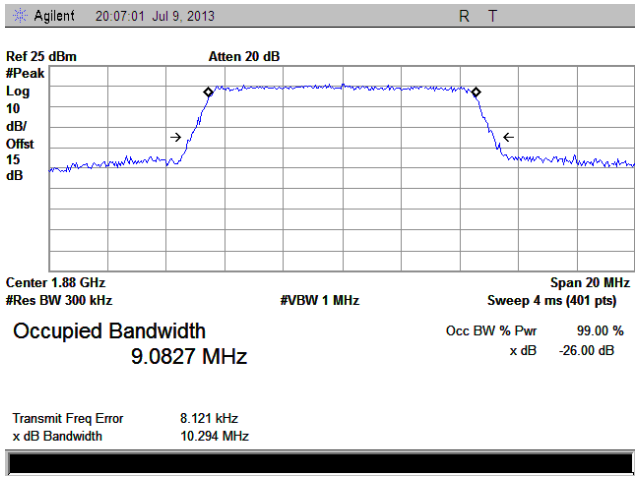


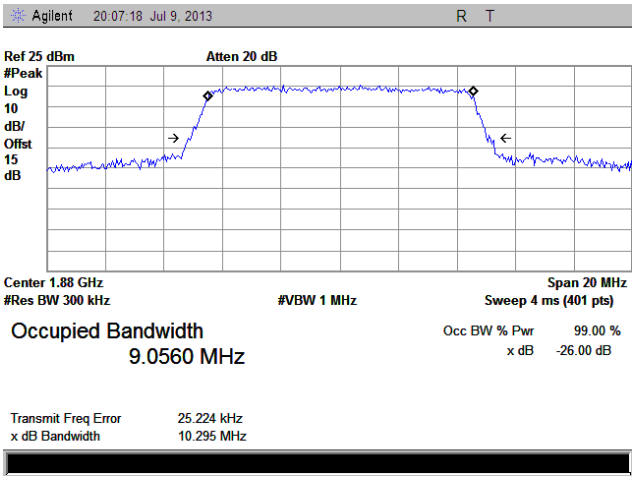
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM



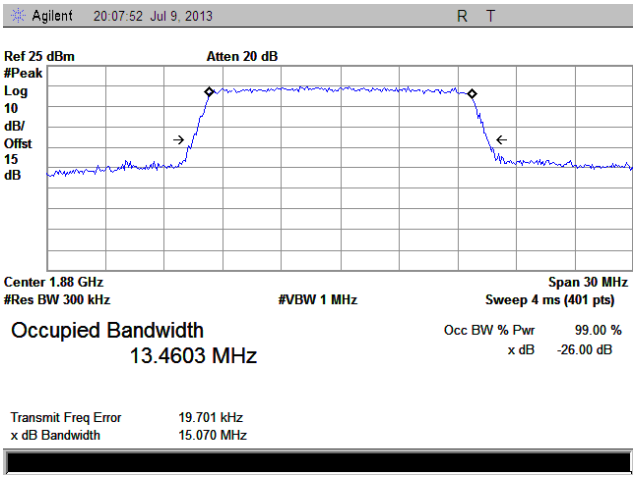


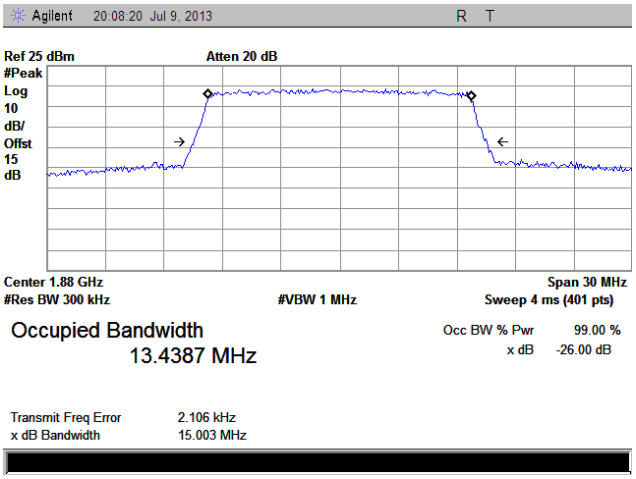
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM



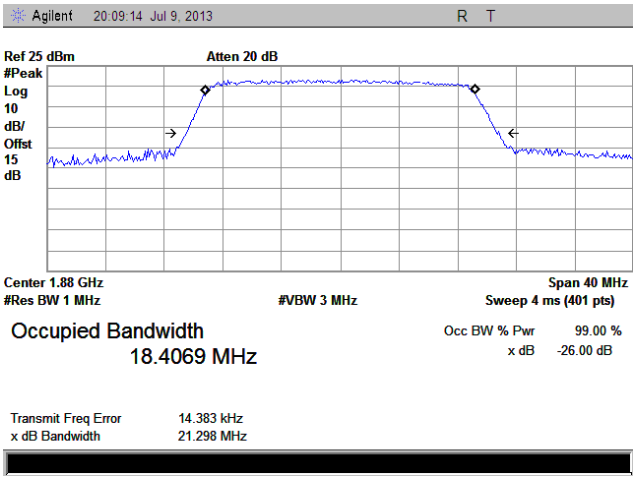


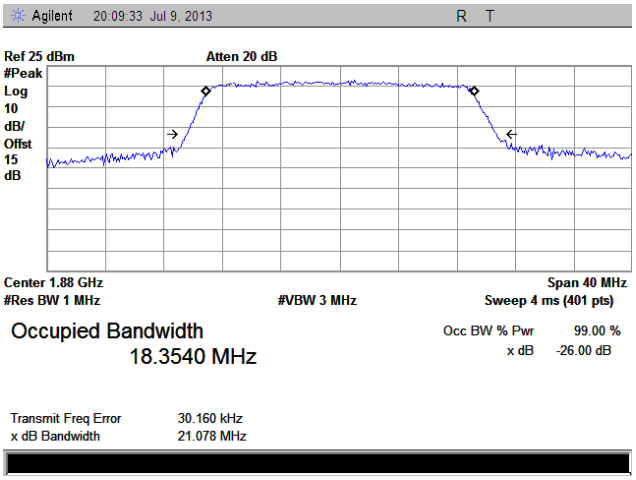
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM



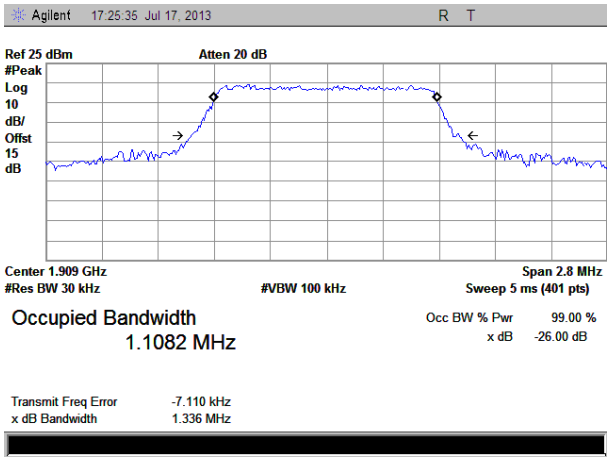
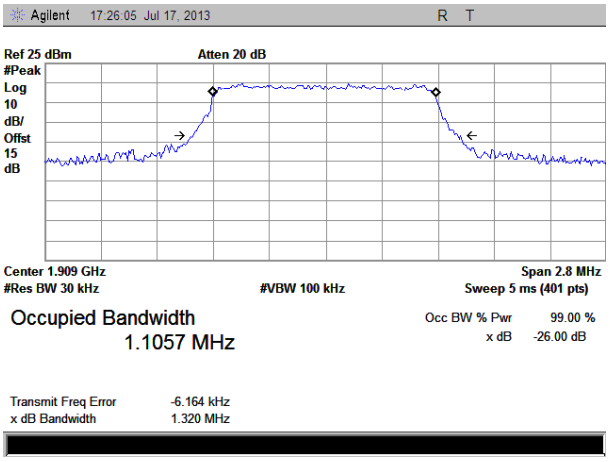
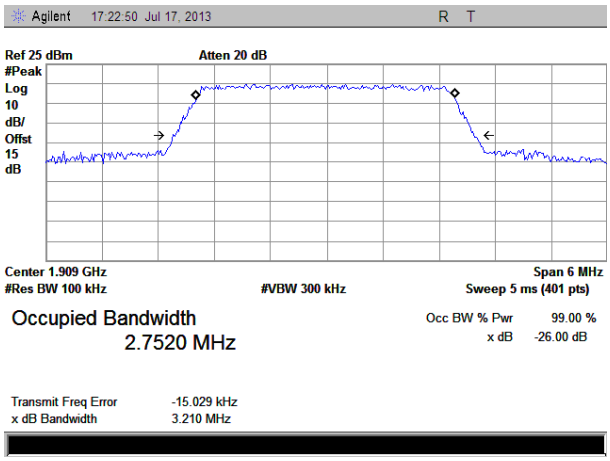
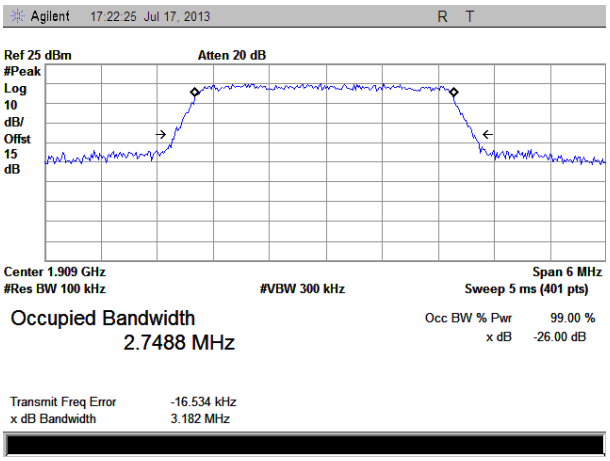


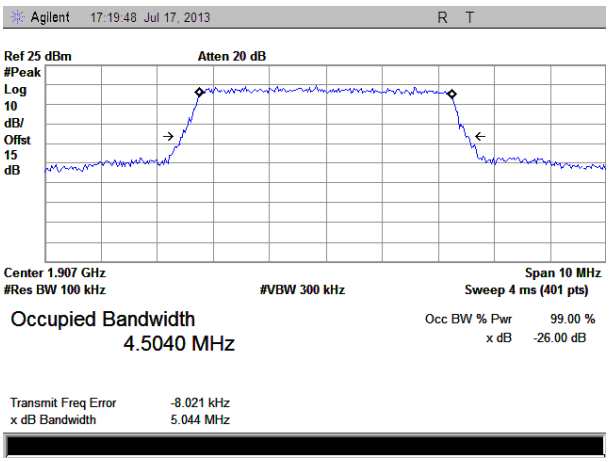
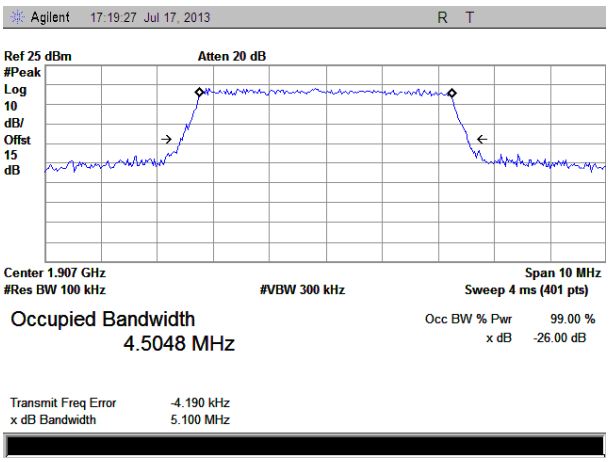
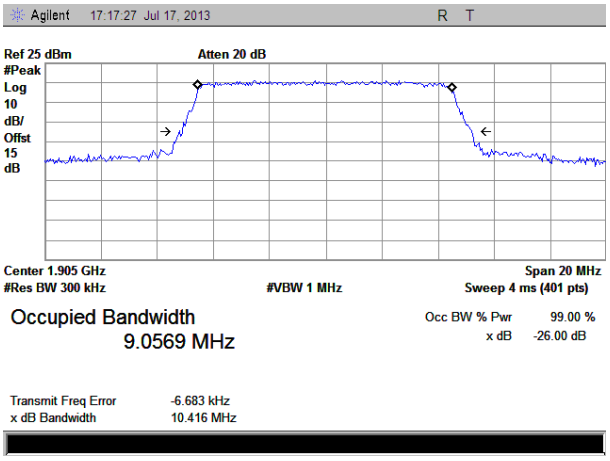
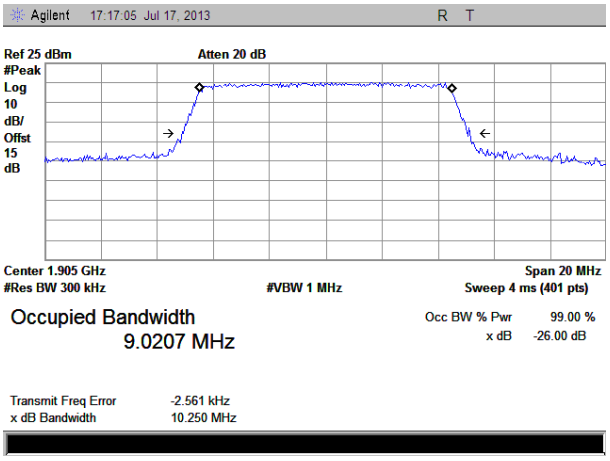
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM

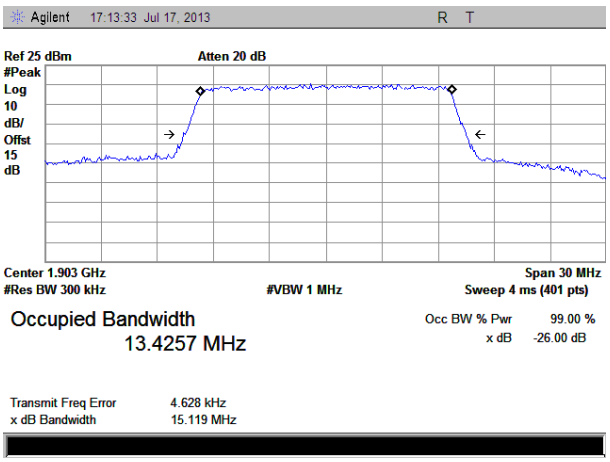
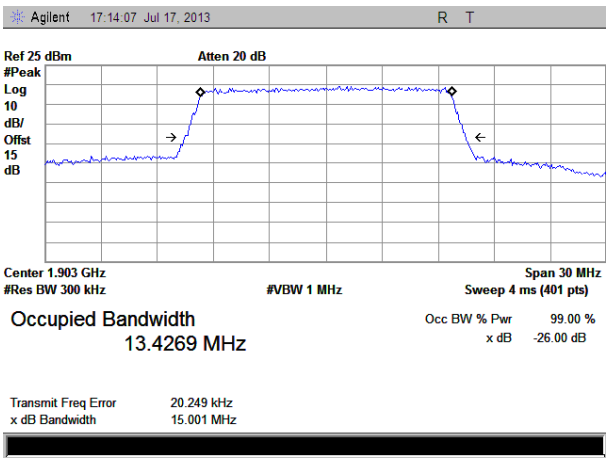
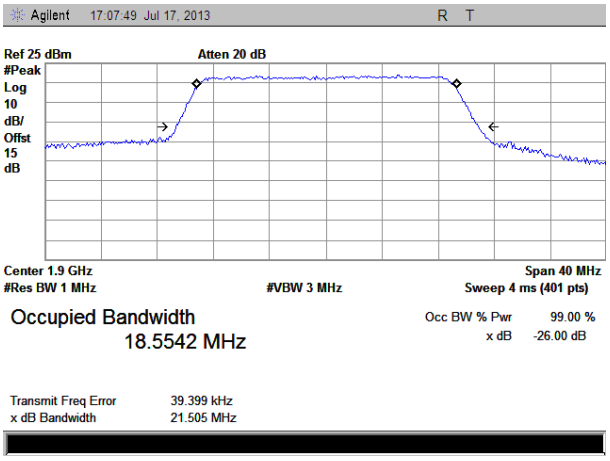
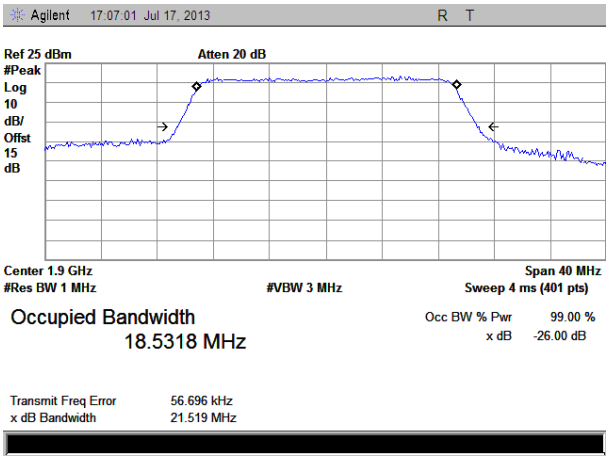




High channel:

Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	

Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

LTE Band 5

Low channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20407	824.7	1.09	1.11	20415	825.5	2.77	2.77
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20407	824.7	1.31	1.33	20415	825.5	3.24	3.17

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20425	826.5	4.51	4.55	20450	829.0	9.04	9.06
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20425	826.5	5.06	5.33	20450	829.0	10.26	10.66

Middle channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	1.1010	1.1048	20525	836.5	2.7623	2.7678
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	1.309	1.325	20525	836.5	3.220	3.164

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	4.5102	4.5063	20525	836.5	9.0906	9.0906
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20525	836.5	5.062	5.092	20525	836.5	10.366	10.366

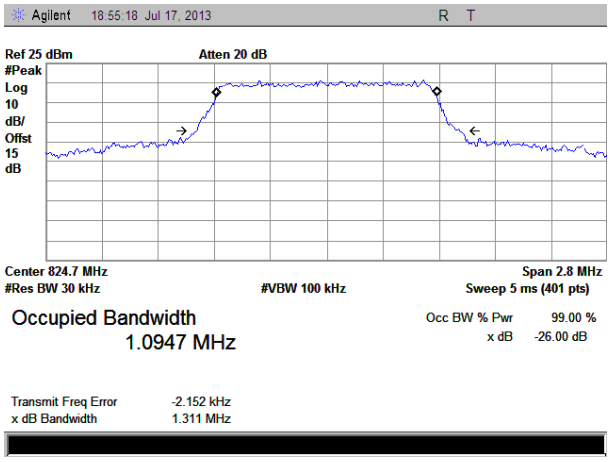
High channel:

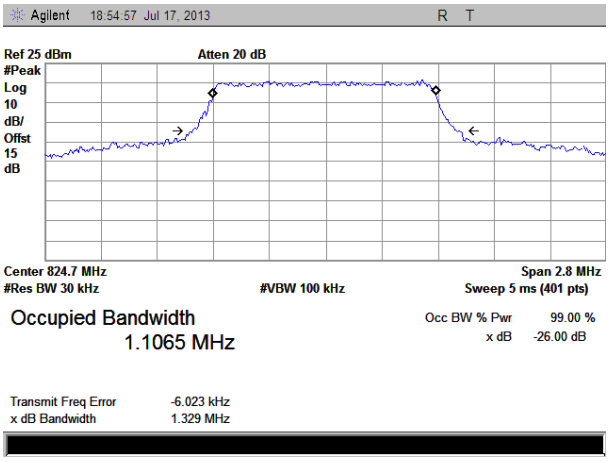
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20642	848.2	1.10	1.09	20634	847.4	2.75	2.75
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20642	848.2	1.33	1.33	20634	847.4	3.18	3.18

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20625	846.5	4.50	4.50	20600	844.0	9.06	9.09
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz) QPSK	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20625	846.5	5.01	5.10	20600	844.0	10.67	10.70

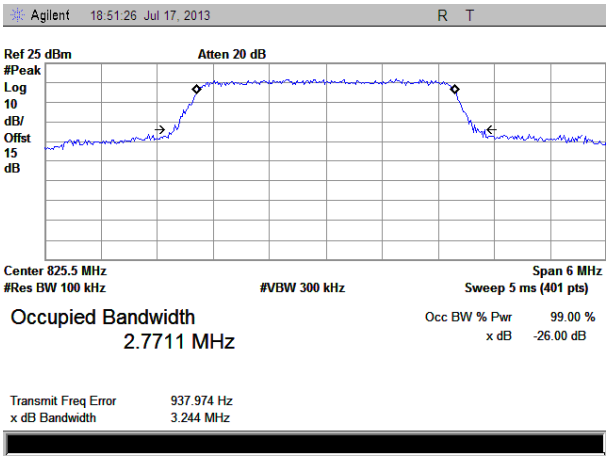
Low channel:

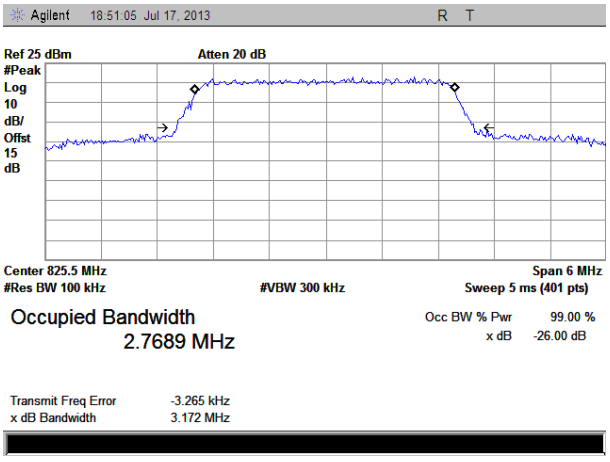
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM



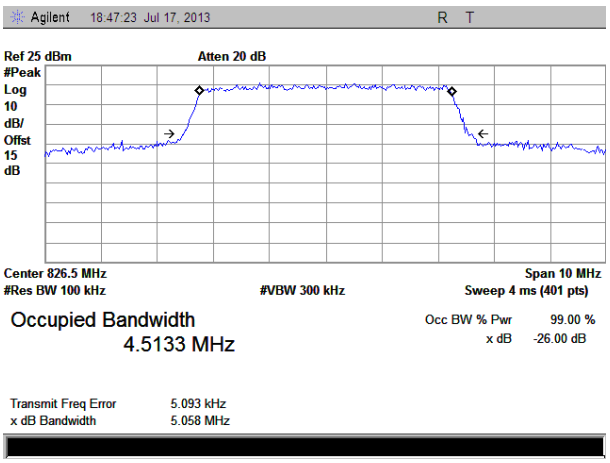


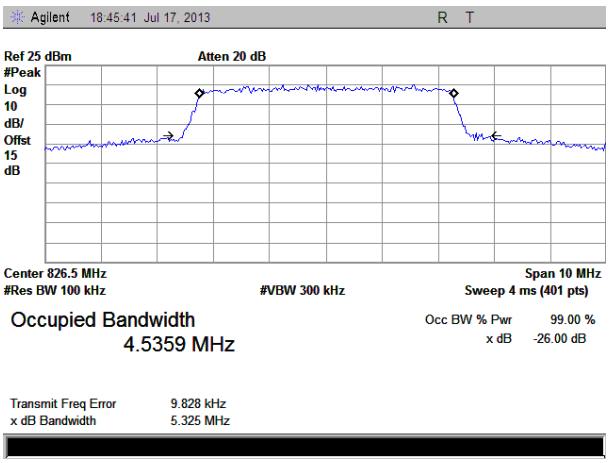
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM

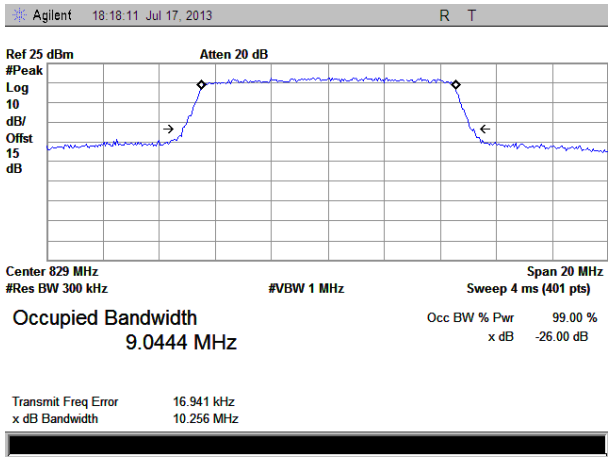
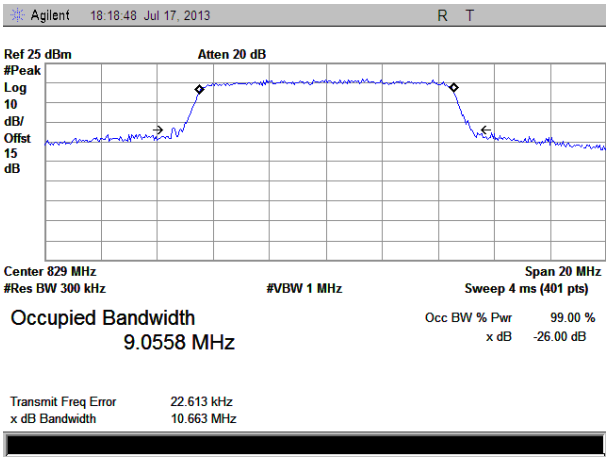




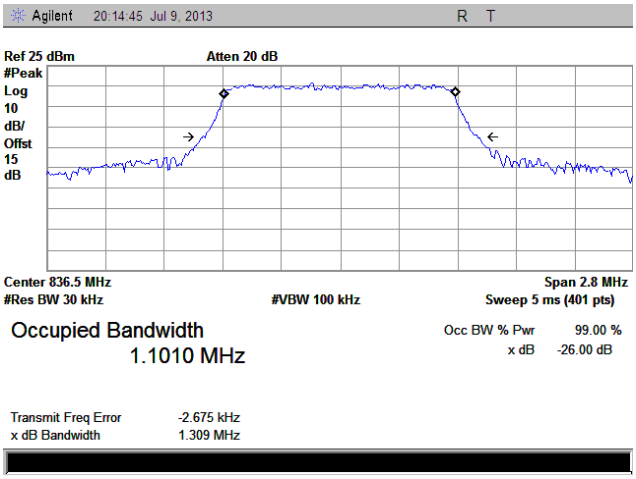
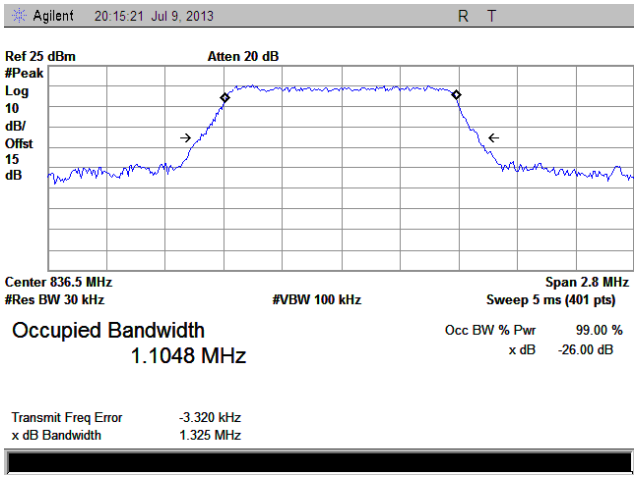
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM

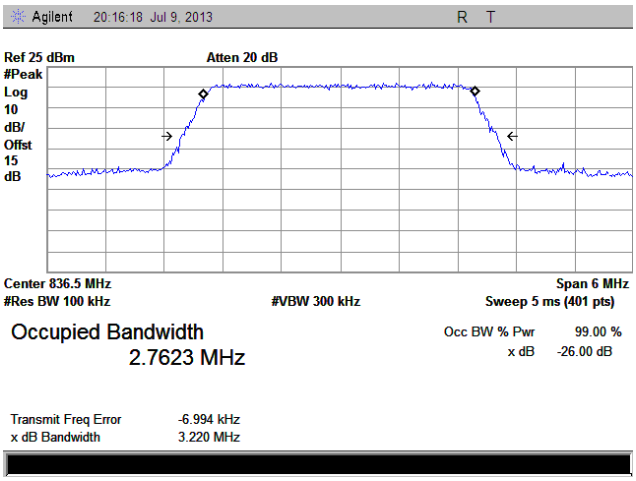
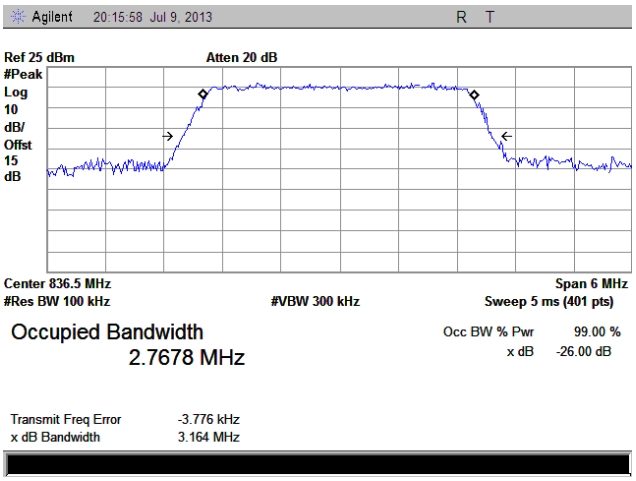


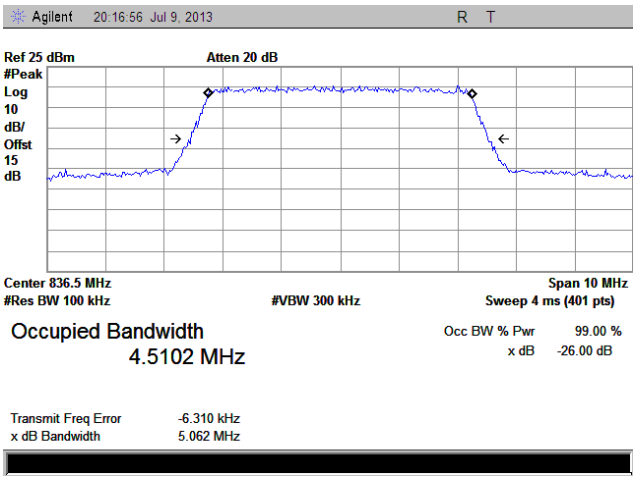
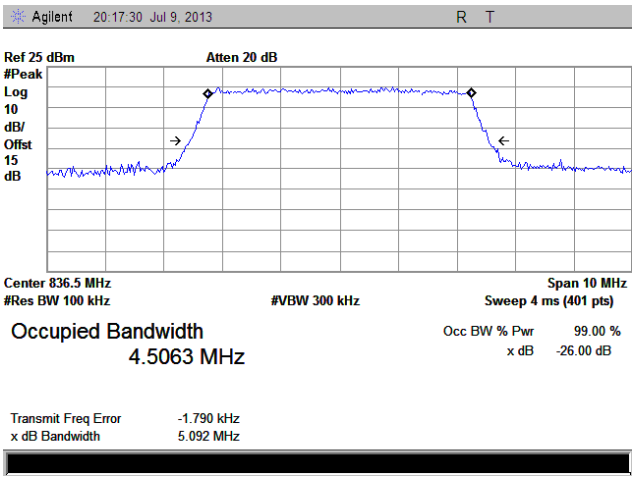


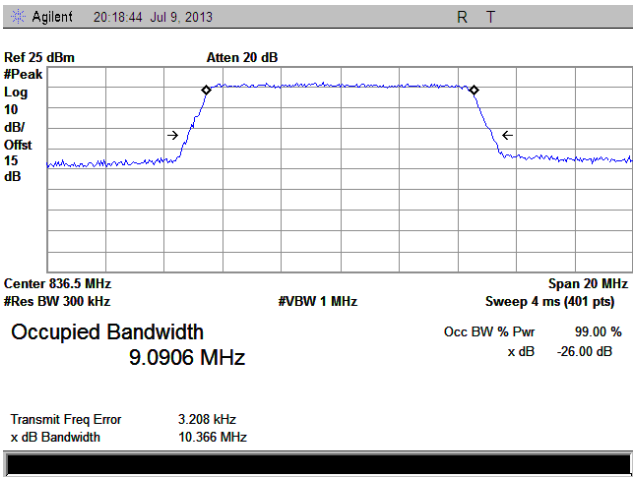
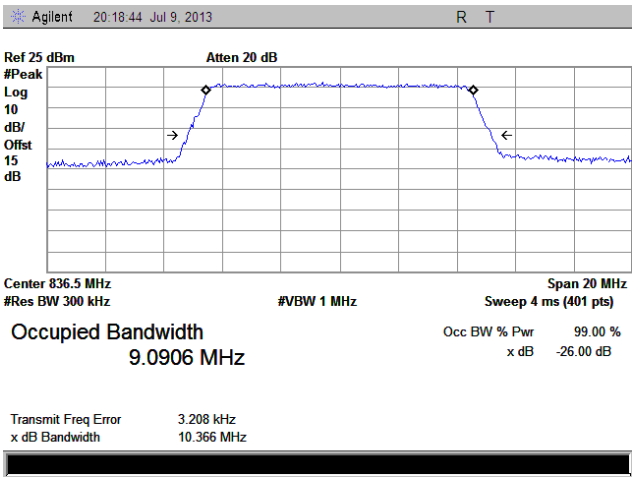
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

Middle channel:

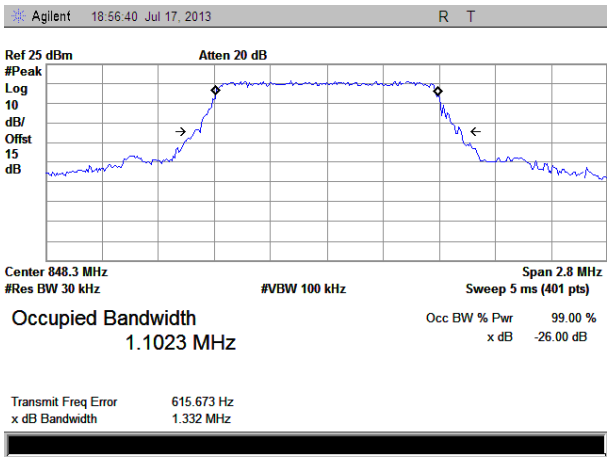
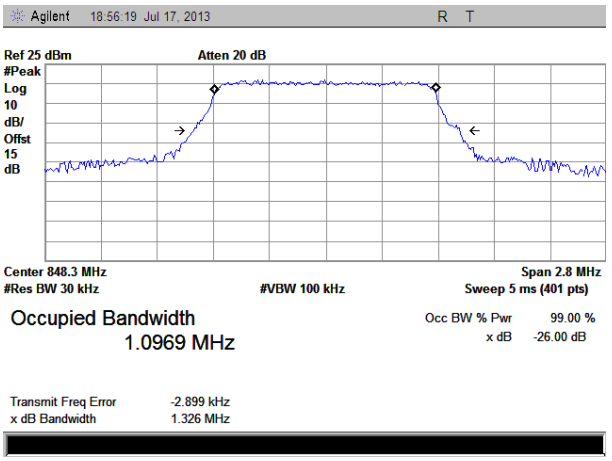
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	

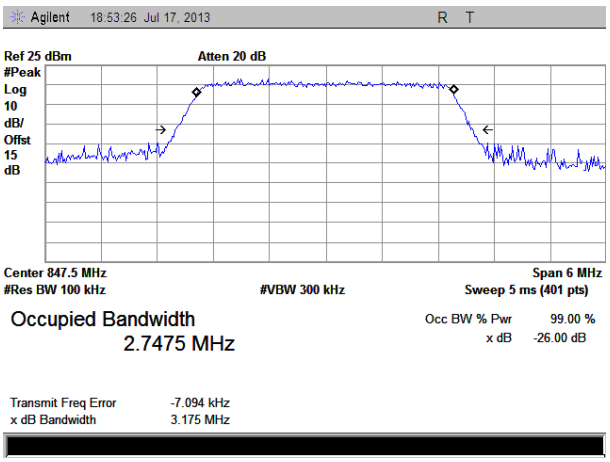
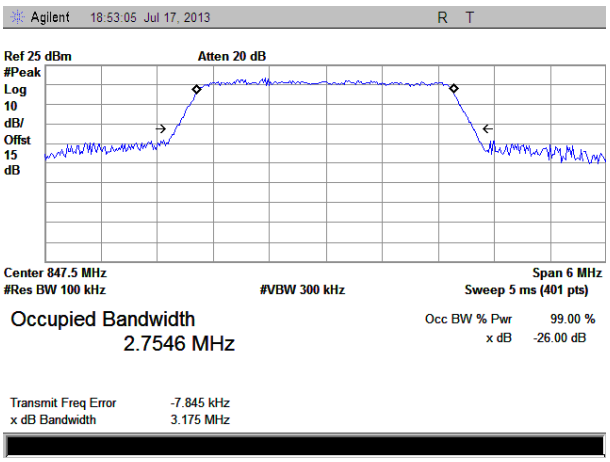
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	

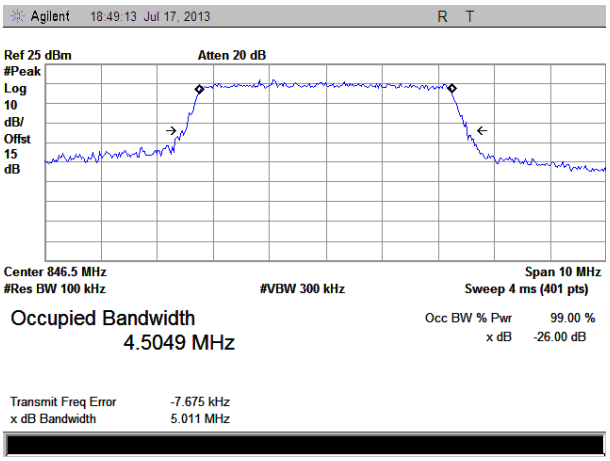
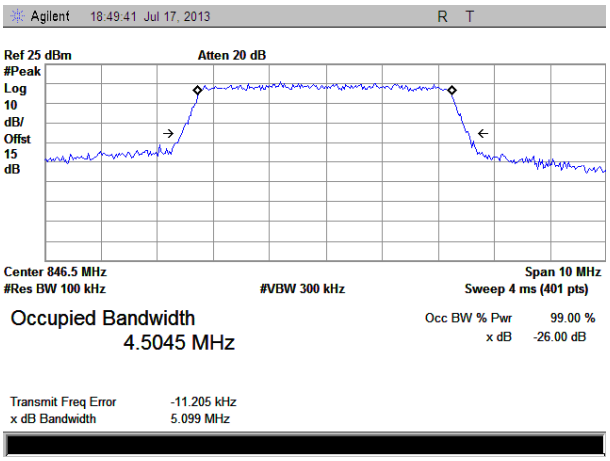
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	

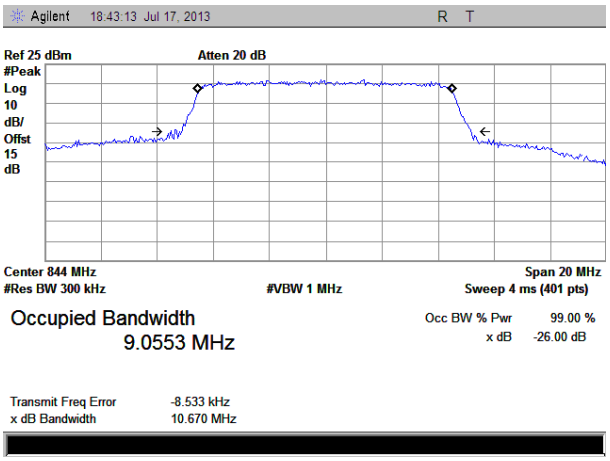
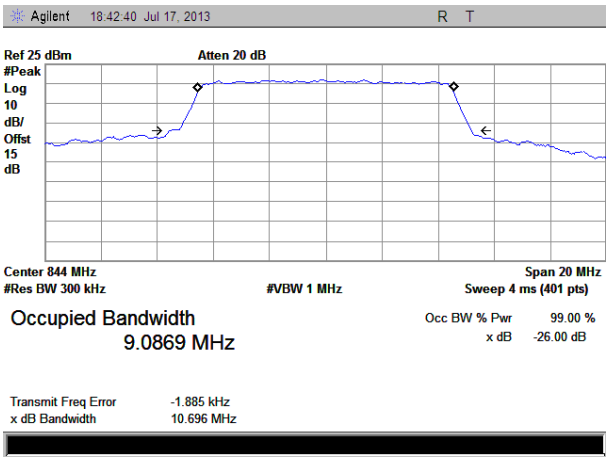
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

High channel:

Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	

Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	

Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	

Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	

2.3 Frequency Stability

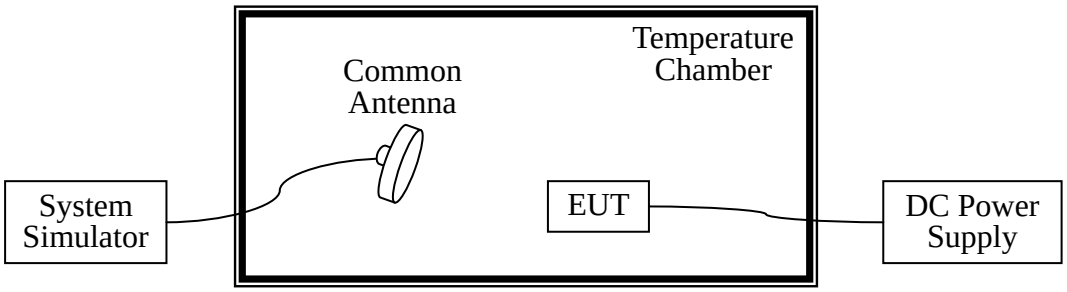
2.3.1 Requirement

According to FCC section 2.1055 and FCC section 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.
(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.3.2 Test Description

1. Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k50/124534/wk	2012.05	2014.05
DC Power Supply	Good Will	GPS-3030DD	EF920938	2012.05	2014.05
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2012.05	2014.05

2.3.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 5.0VDC, 5.25VDC and 4.75VDC,

which are specified by the applicant; the normal temperature here used is 20°C. The frequency deviation limit is ±2.5ppm.

The testing was performed using one RB and Bandwidth setting for each band.

LTE Band 17 – QPSK - Channel 23790 – Frequency 710MHz – RB 25/0 Limit: 710MHz*2.5ppm=1775Hz				
Voltage (%)	Power (VDC)	Temp (℃)	Fre. Dev. (Hz)	Result
100	5.0	-30	5.32	PASS
100		-20	-5.64	
100		-10	-5.79	
100		0	-4.58	
100		+10	-4.21	
100		+20	5.35	
100		+30	-5.31	
100		+40	5.60	
100		+50	-6.08	
115	5.25	+20	-6.37	
85	4.75	+20	-5.49	

LTE Band 4 – QPSK - Channel 20175 – Frequency 1732.5MHz – RB 6/0 Limit: 1732.5MHz*2.5ppm=4331.25Hz				
Voltage (%)	Power (VDC)	Temp (℃)	Fre. Dev. (Hz)	Result
100	5.0	-30	12.66	PASS
100		-20	11.76	
100		-10	10.70	
100		0	11.64	
100		+10	11.46	
100		+20	9.38	
100		+30	-10.99	
100		+40	10.80	
100		+50	12.72	
115	5.25	+20	11.10	
85	4.75	+20	12.62	

LTE Band 2 – QPSK - Channel 18900 – Frequency 1880.0MHz – RB 6/0 Limit: 1880.0MHz*1ppm=1880.0Hz				
Voltage (%)	Power (VDC)	Temp (℃)	Fre. Dev. (Hz)	Result
100	5.0	-30	9.81	PASS
100		-20	15.16	
100		-10	9.73	
100		0	8.62	
100		+10	10.47	
100		+20	9.38	
100		+30	-9.81	
100		+40	9.87	
100		+50	11.76	
115	5.25	+20	13.05	
85	4.75	+20	13.12	

LTE Band 5 – QPSK - Channel 20525 – Frequency 836.5MHz – RB 6/0 Limit: 836.5 MHz*2.5ppm=2091.25Hz				
Voltage (%)	Power (VDC)	Temp (℃)	Fre. Dev. (Hz)	Result
100	5.0	-30	12.77	PASS
100		-20	20.01	
100		-10	13.72	
100		0	12.67	
100		+10	13.41	
100		+20	9.38	
100		+30	-10.99	
100		+40	11.22	
100		+50	11.33	
115	5.25	+20	8.99	
85	4.75	+20	10.61	

2.4 Peak to Average Radio

2.4.1 Requirement

According to FCC section 27.50(d) (5), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

2.4.2 Test Description

See section 2.1.2 of this report.

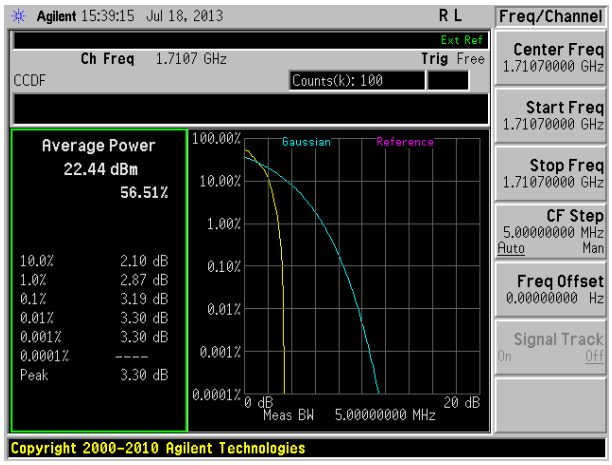
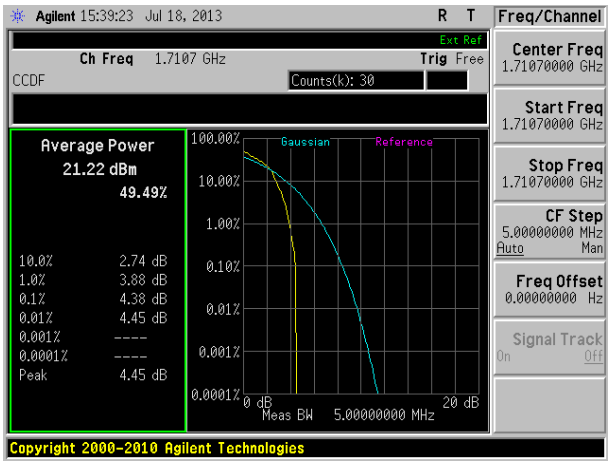
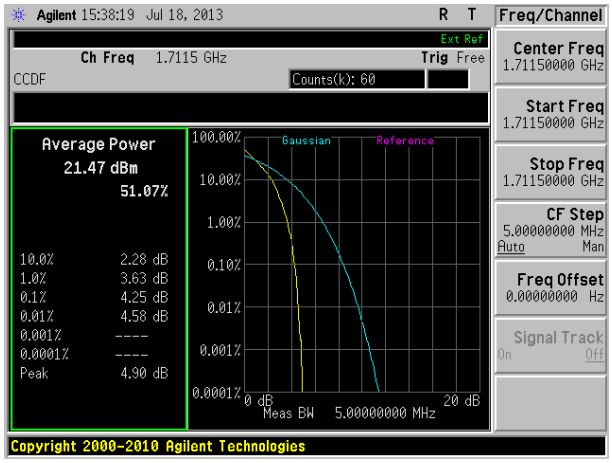
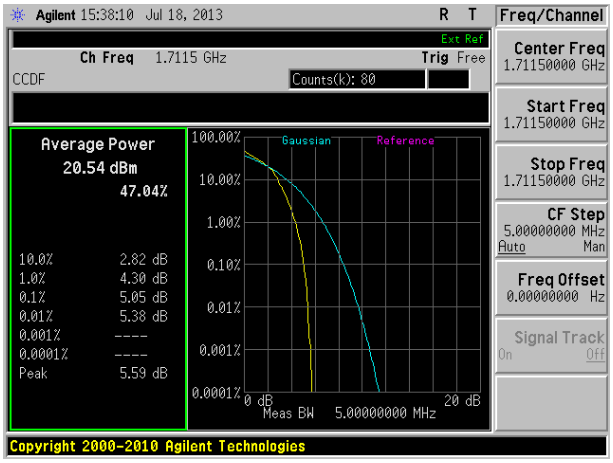
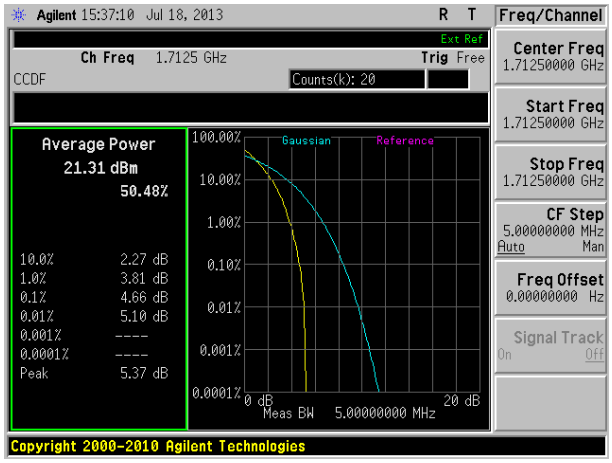
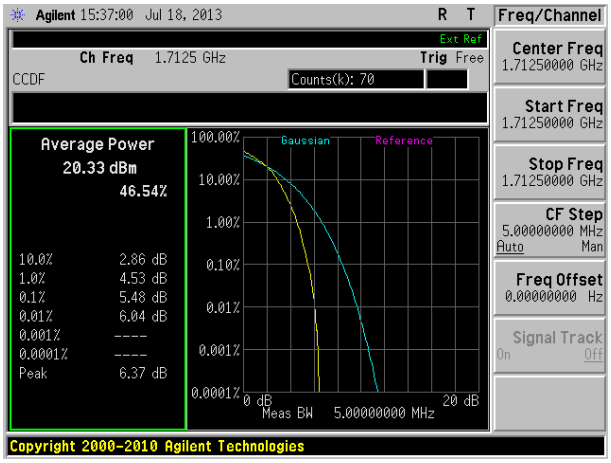
2.4.3 Test Result

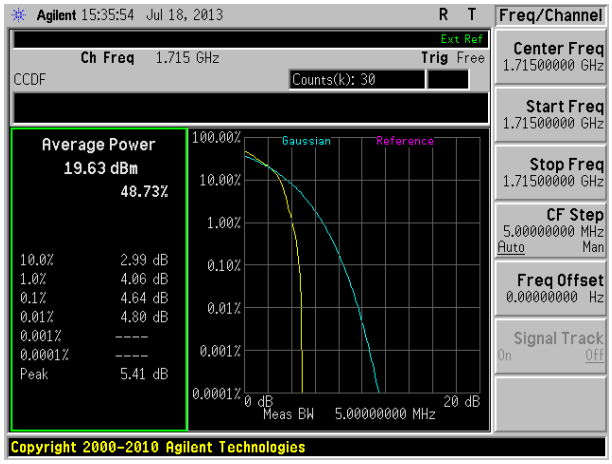
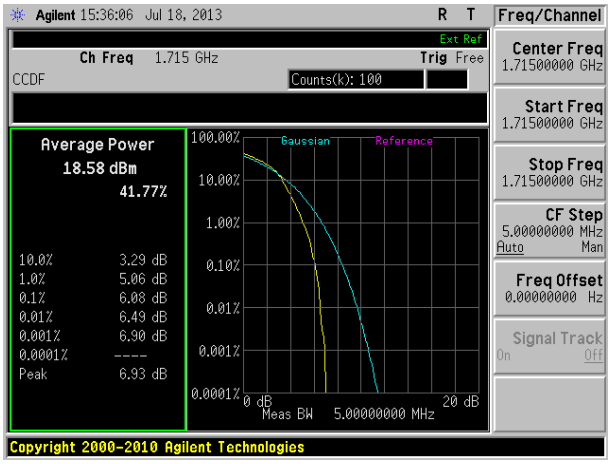
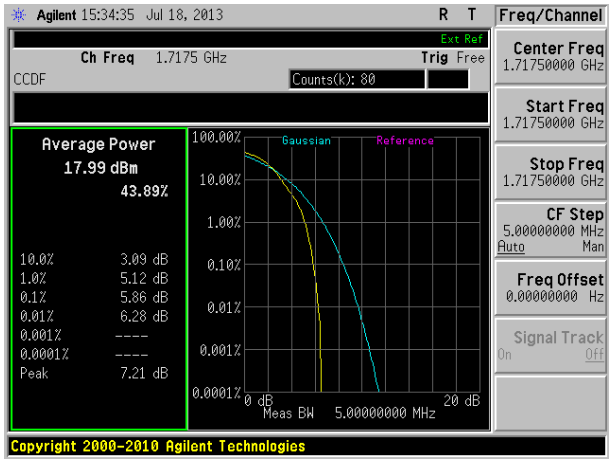
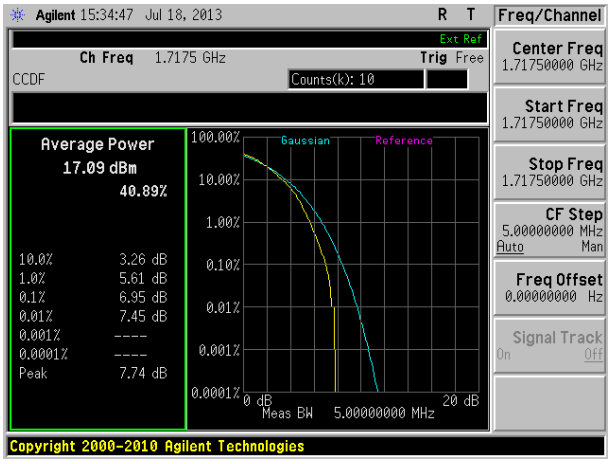
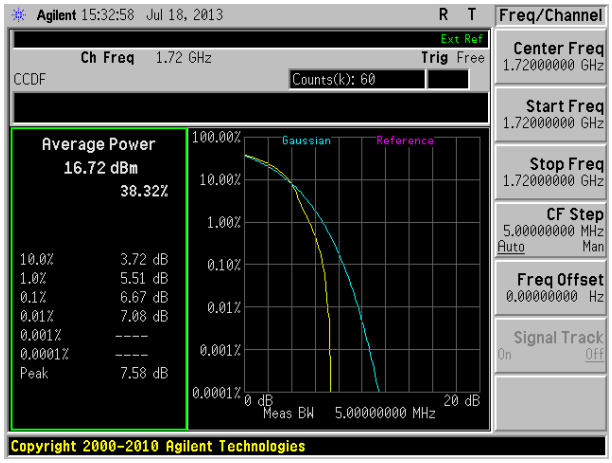
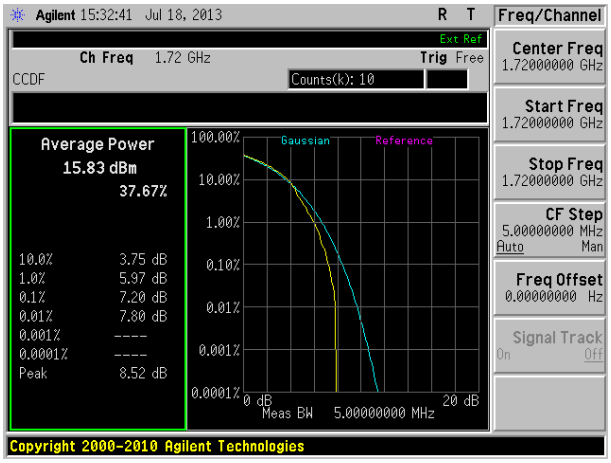
Record the maximum PAPR level associated with a probability of 0.1%.

LTE Band 4:

Low channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	3.19	4.38	19965	1771.5	4.25	5.05
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
19975	1712.5	4.66	5.48	20000	1715.0	4.64	6.08
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
20025	1717.5	5.86	6.95	20050	1720.0	6.67	7.20

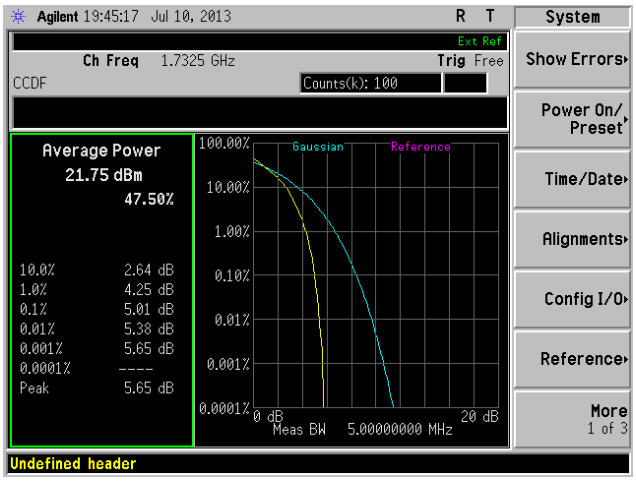
Spectrum Plot of Worst Value (Low channel)	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	

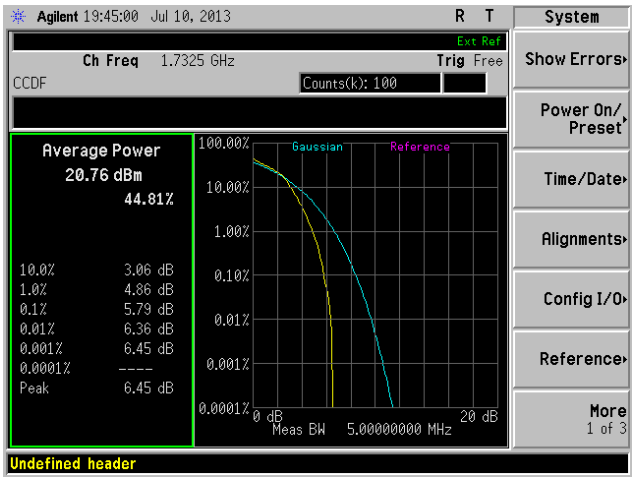
10MHz/QPSK	10MHz/16QAM
	
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

Middle channel:

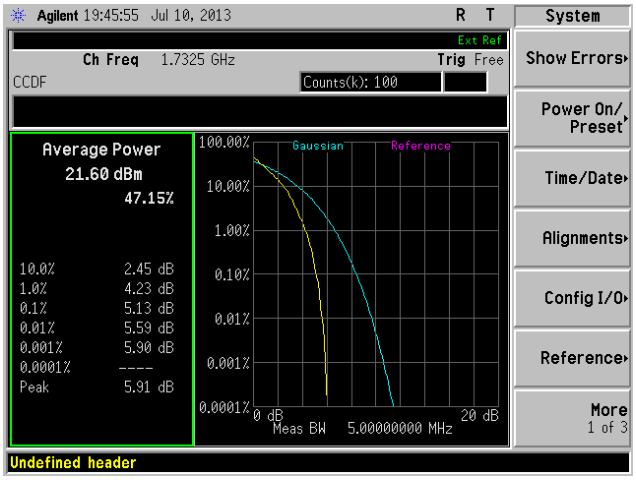
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	5.01	5.79	20175	1732.5	5.13	5.97
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
20175	1732.5	5.21	5.04	20175	1732.5	4.67	6.12
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
20175	1732.5	5.84	6.88	20175	1732.5	6.56	7.38

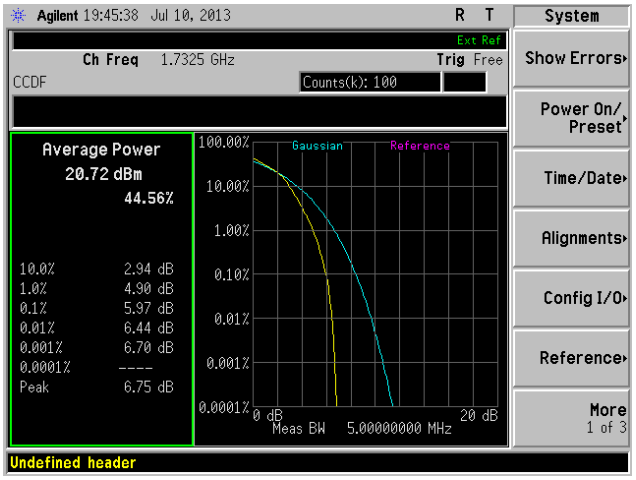
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM



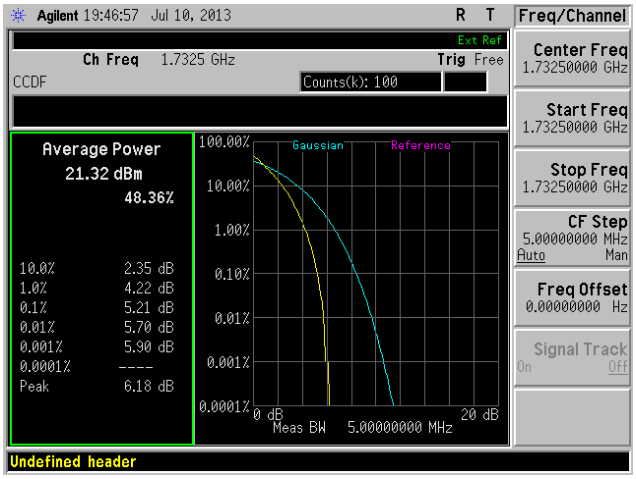


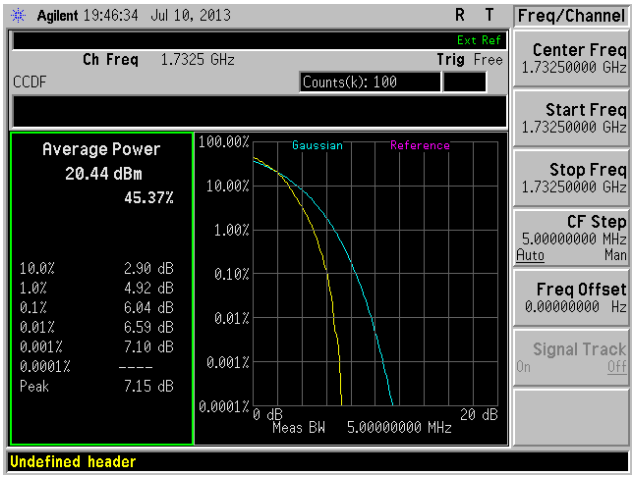
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM



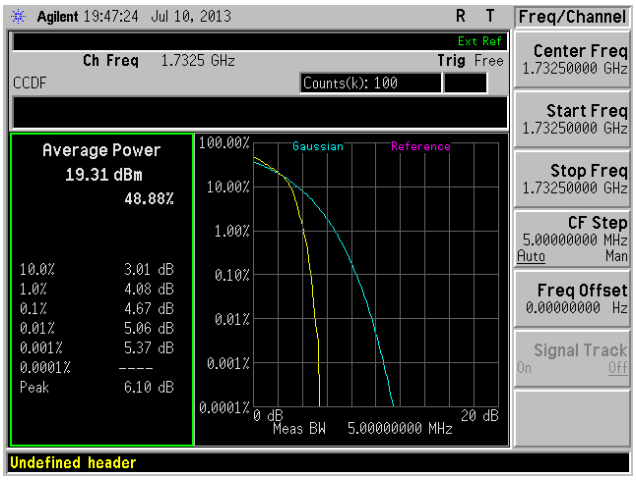
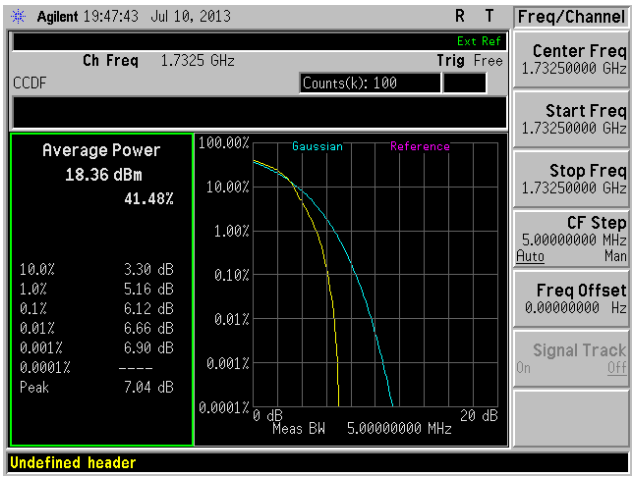
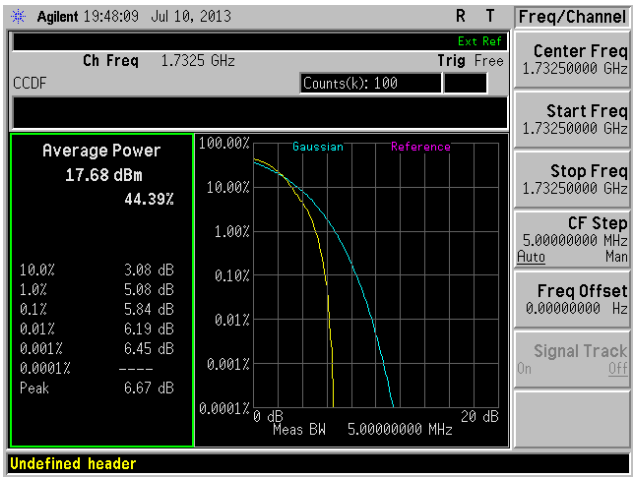
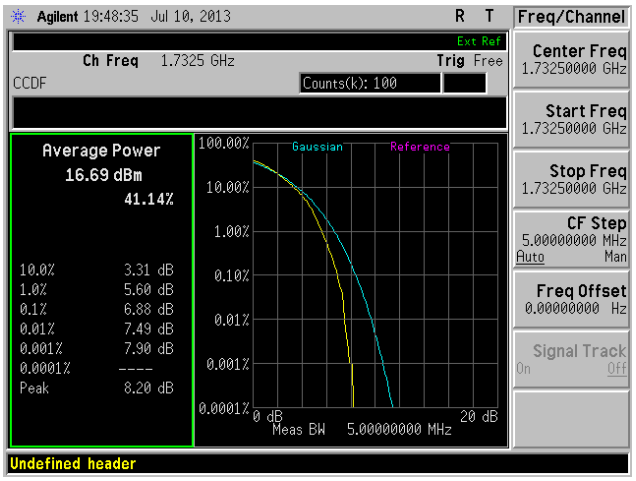
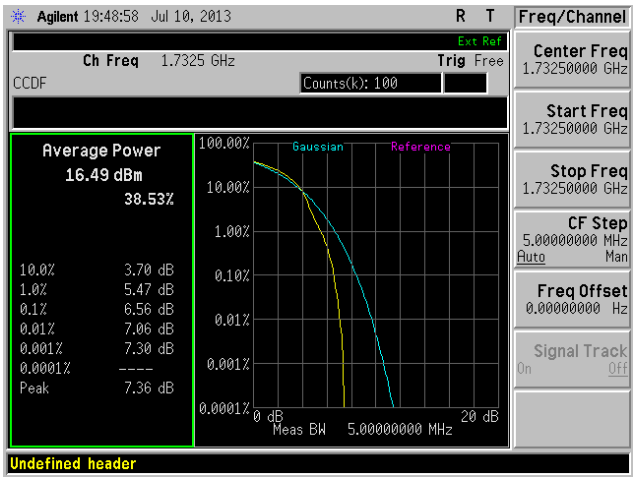
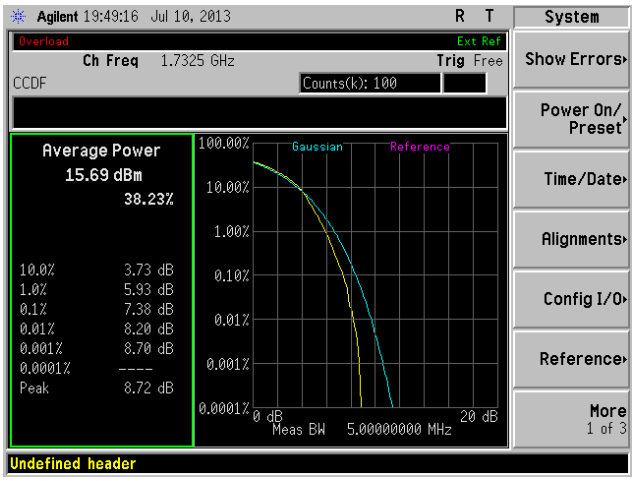


Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM



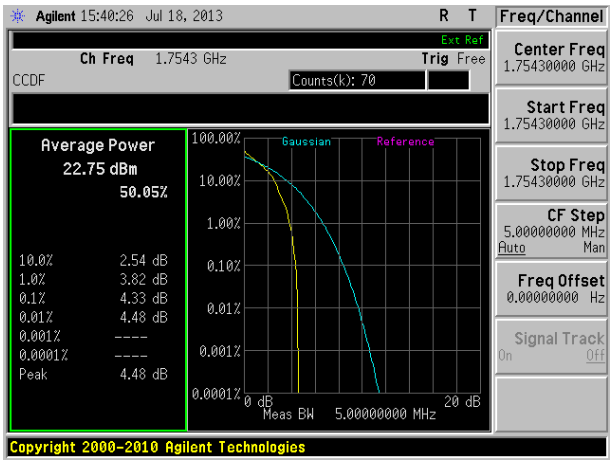
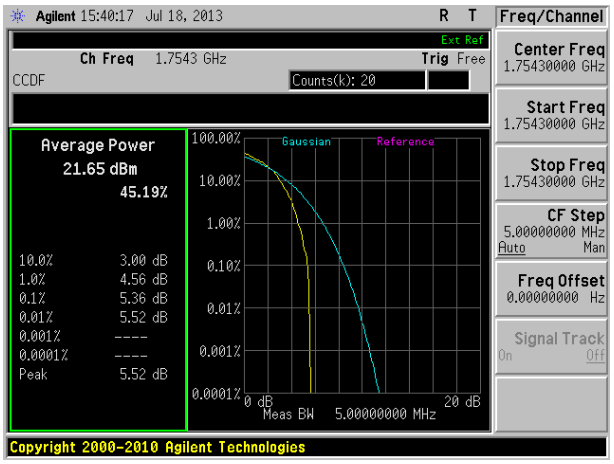
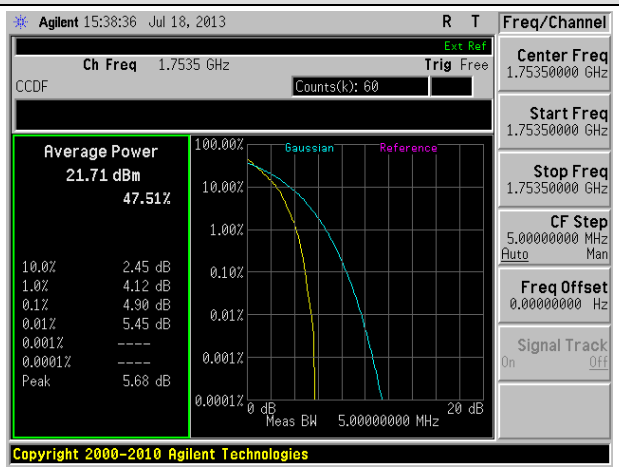
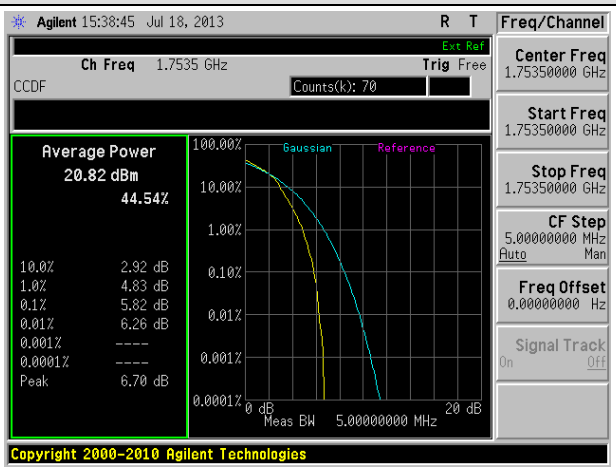
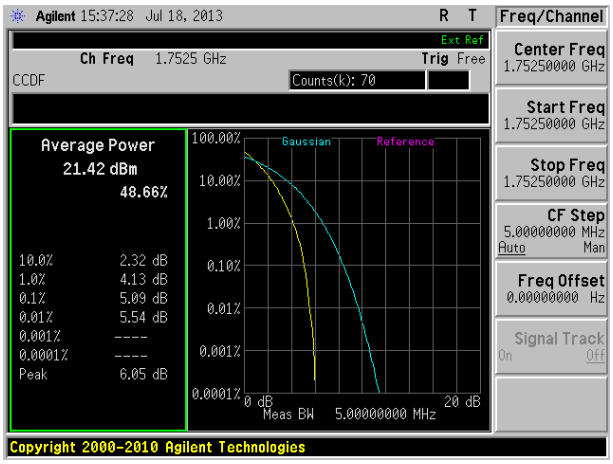
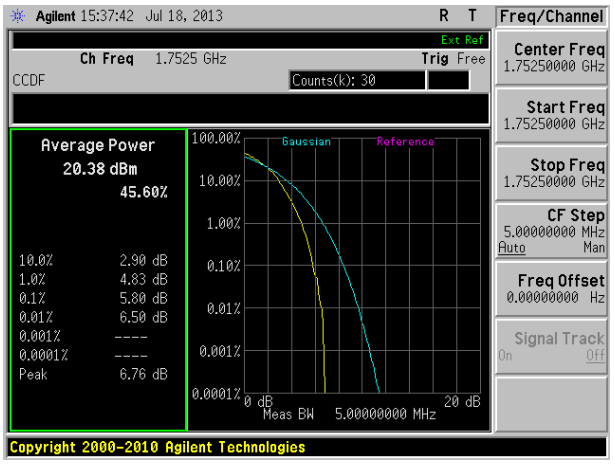


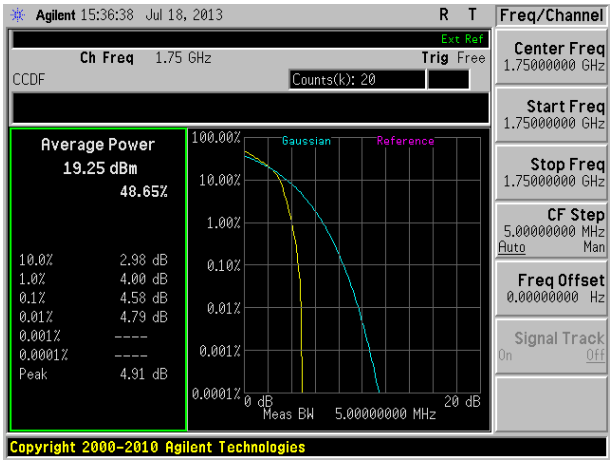
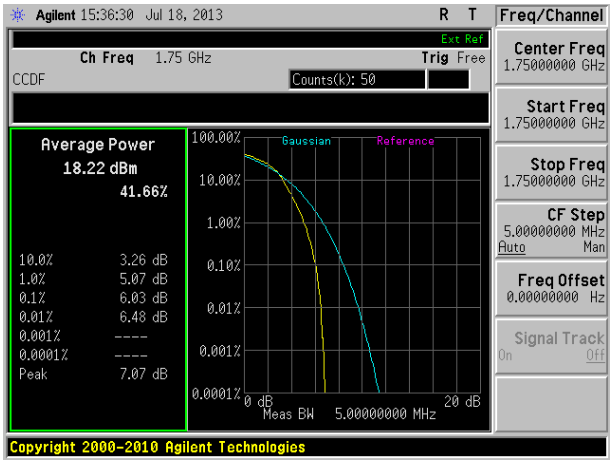
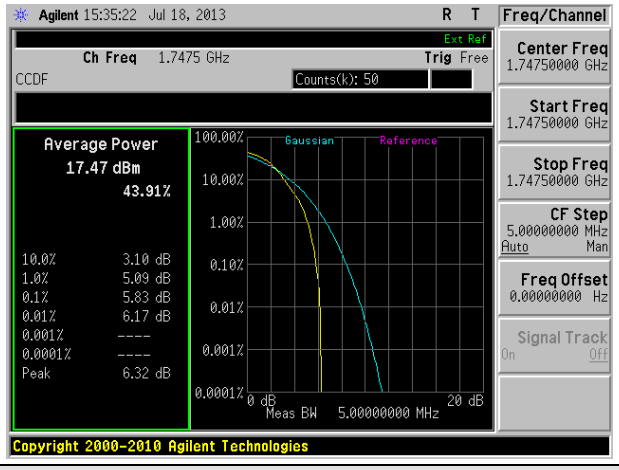
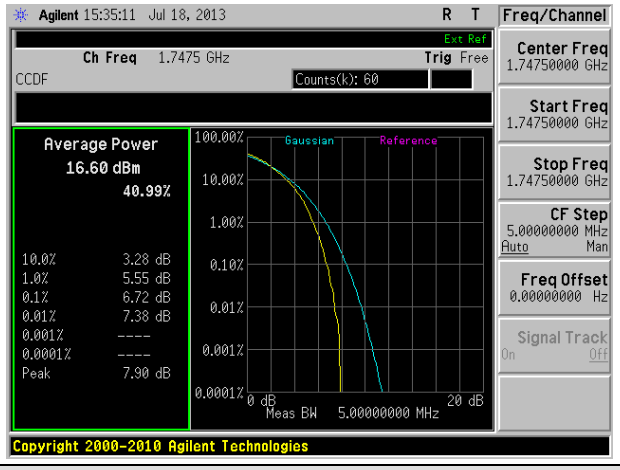
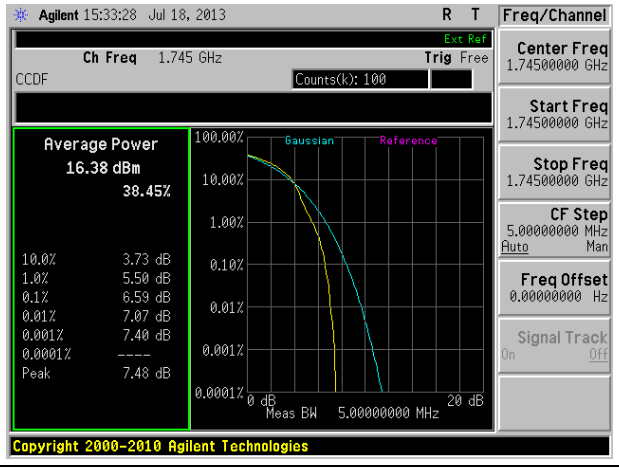
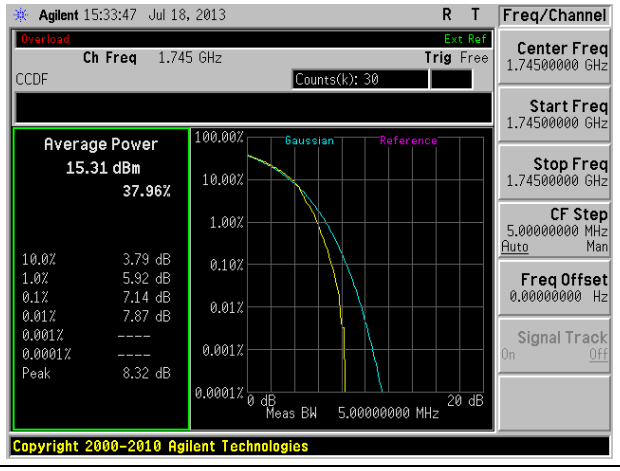
Spectrum Plot of Worst Value

10MHz/QPSK	10MHz/16QAM
	
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

High channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20392	1754.2	4.33	5.36	20384	1753.4	4.90	5.82
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
20375	1752.5	5.09	5.80	20350	1750.0	4.58	6.03
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
20325	1747.5	5.83	6.72	20300	1745.0	6.59	7.14

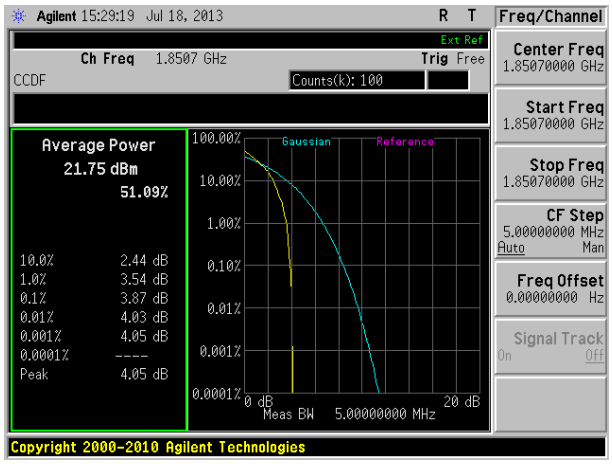
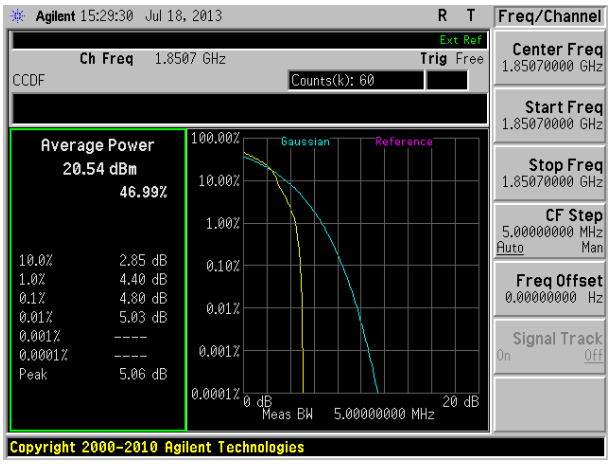
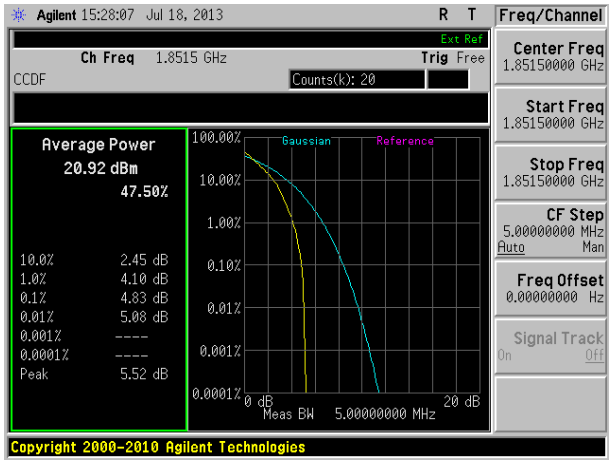
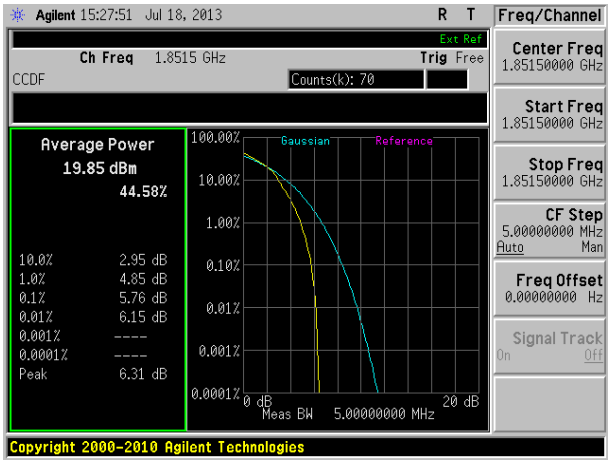
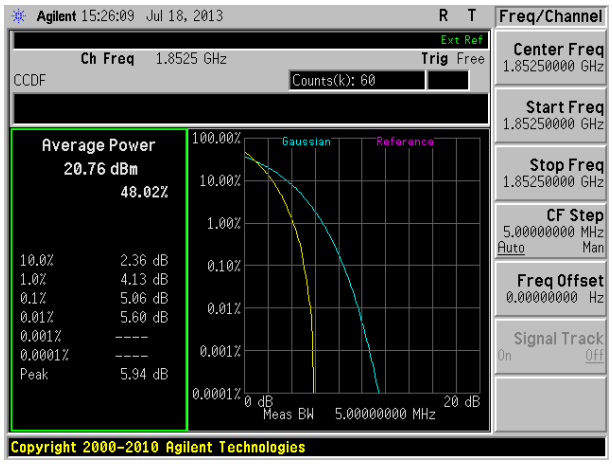
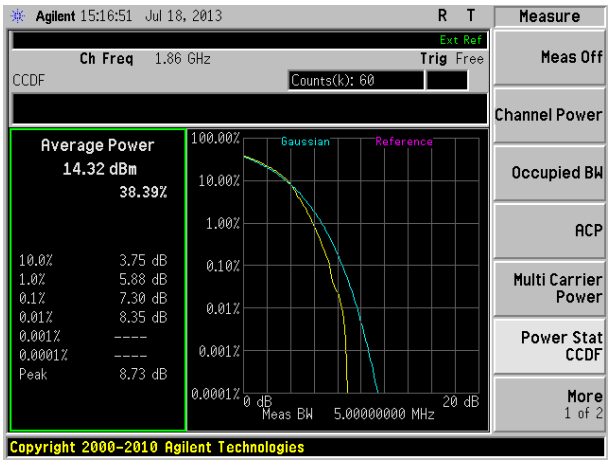
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	

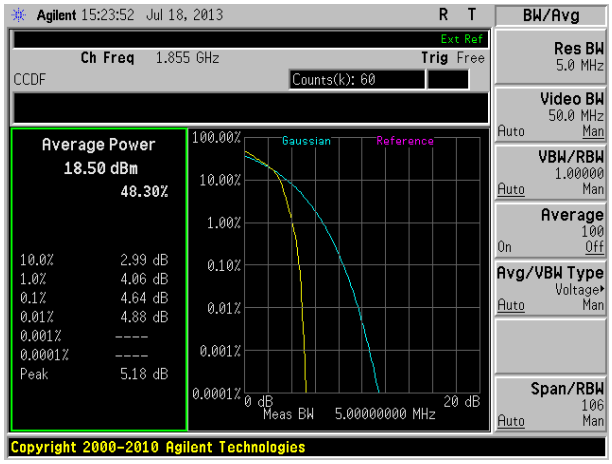
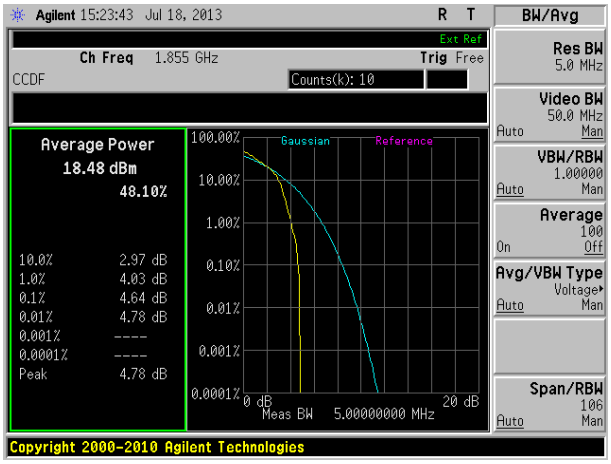
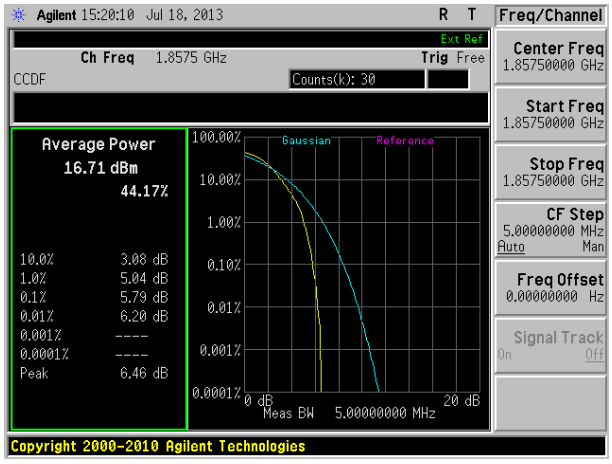
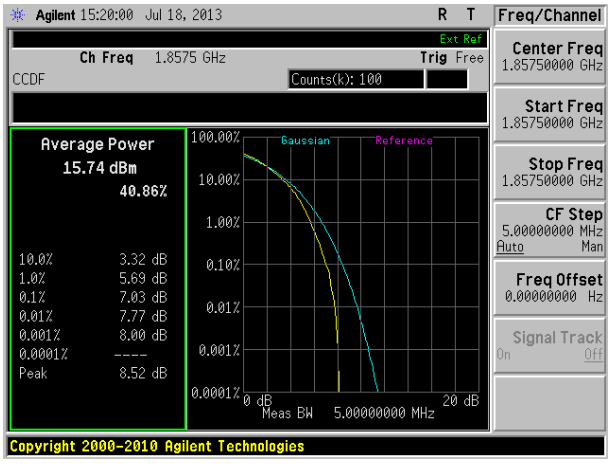
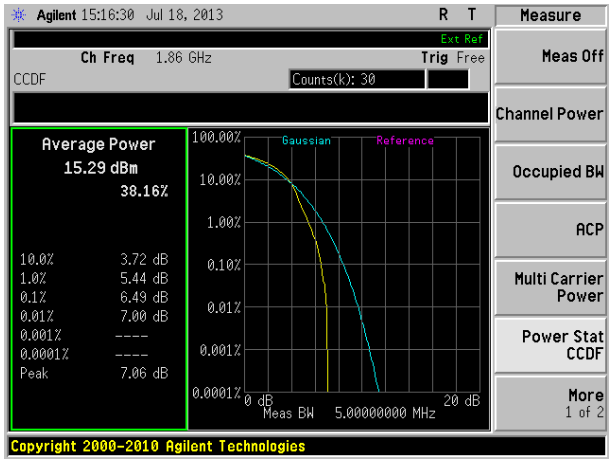
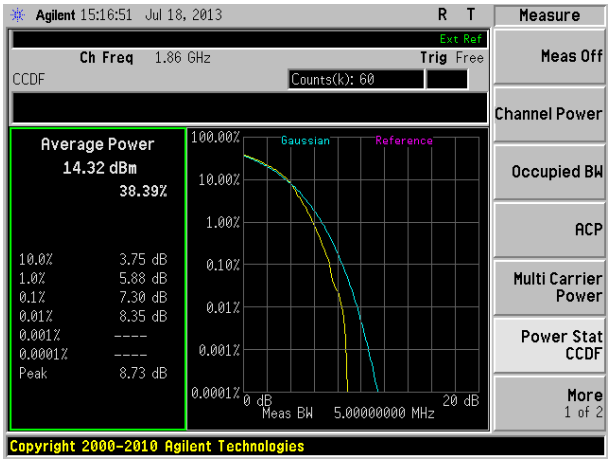
10MHz/QPSK	10MHz/16QAM
	
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

LTE Band 2:

Low channel:

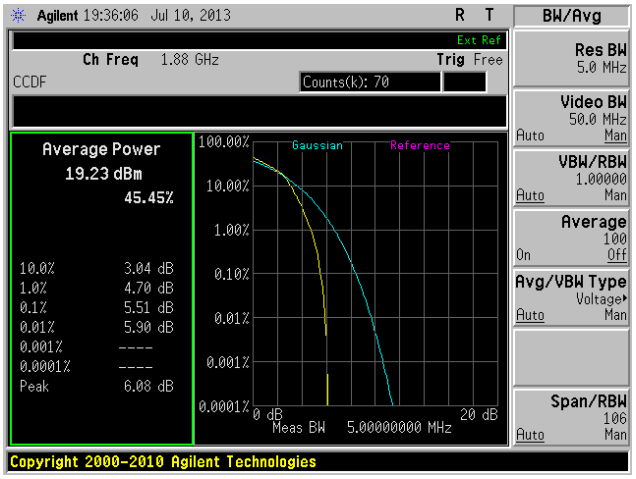
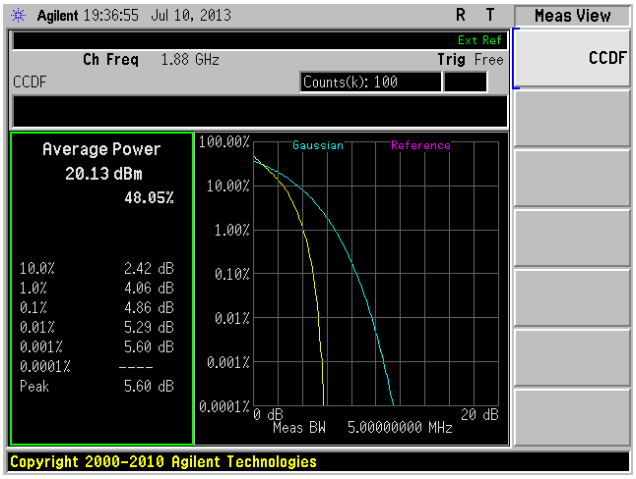
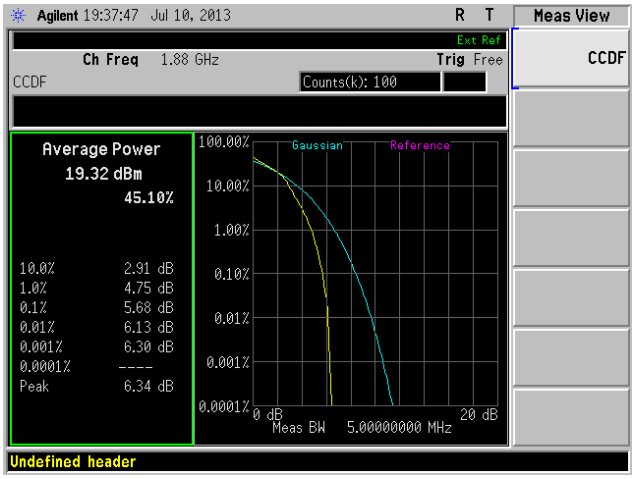
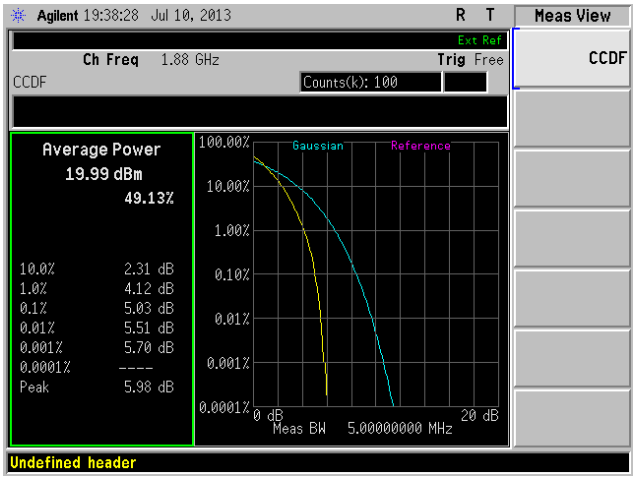
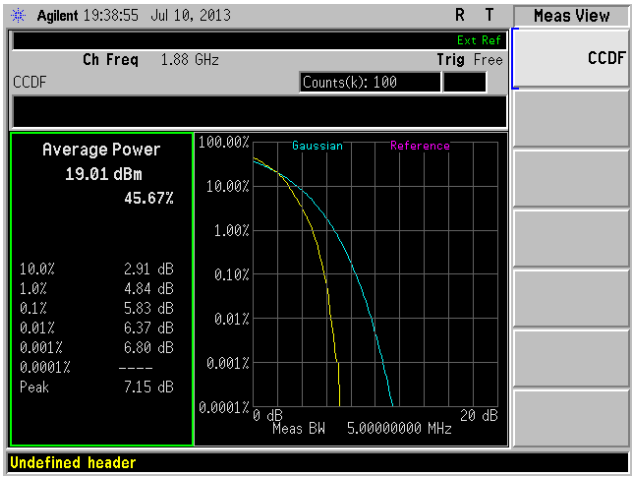
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	3.87	4.80	18615	1851.5	4.83	5.76
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
18625	1852.5	5.06	7.30	18650	1855.0	4.64	4.64
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
18675	1857.5	5.79	7.03	18700	1860.0	6.49	7.30

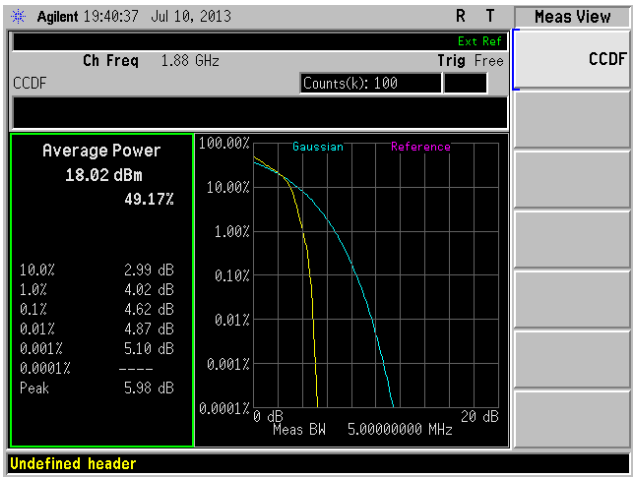
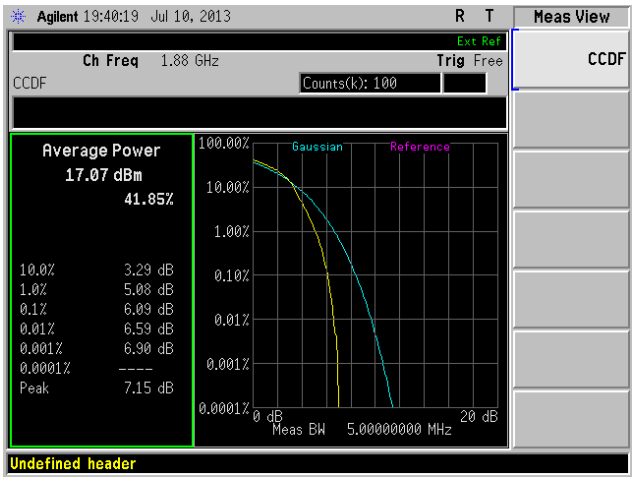
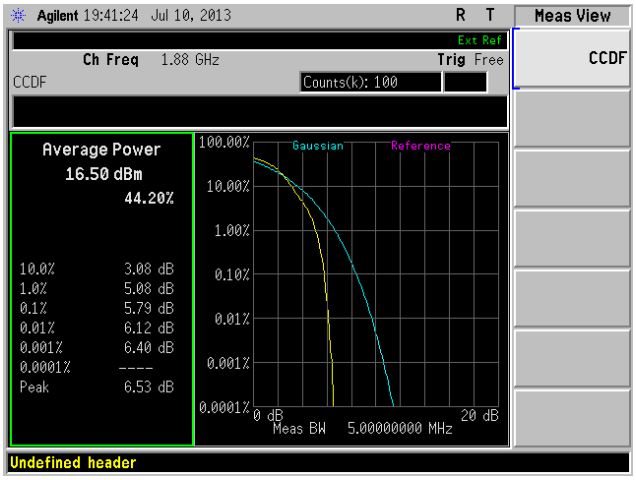
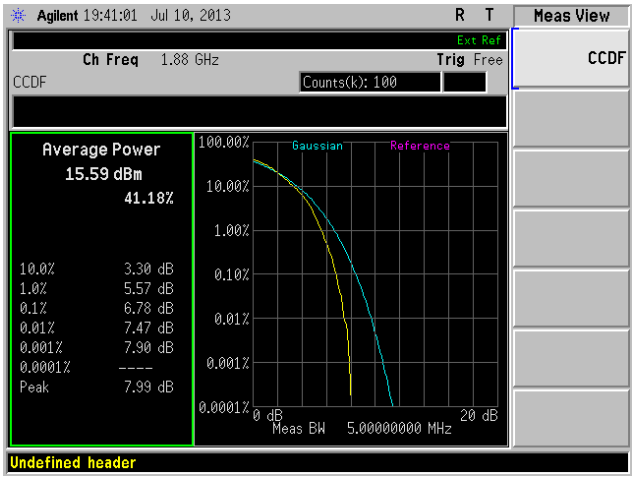
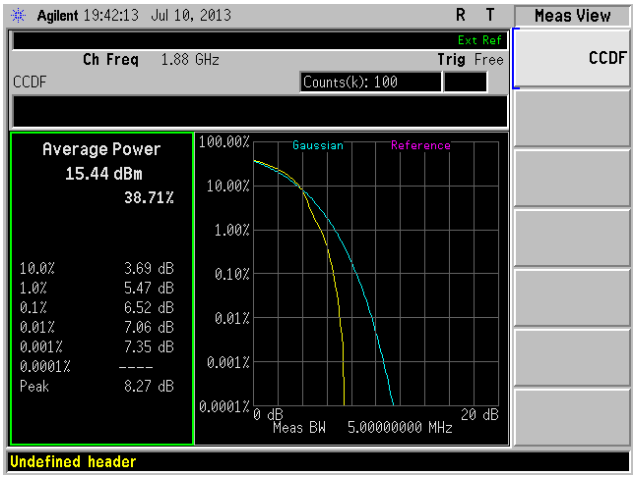
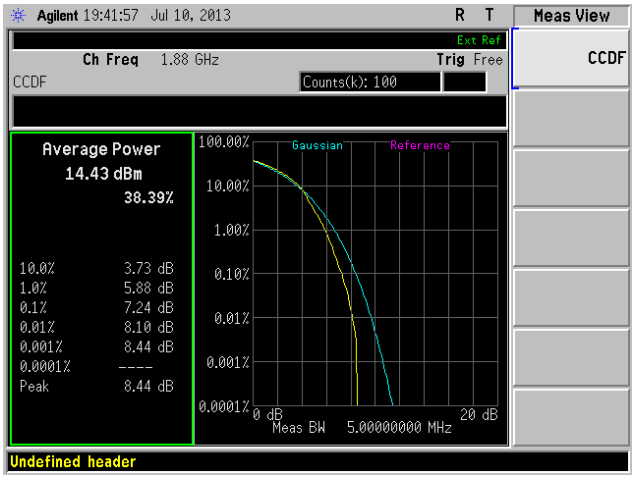
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	

10MHz/QPSK	10MHz/16QAM
	
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

Middle channel:

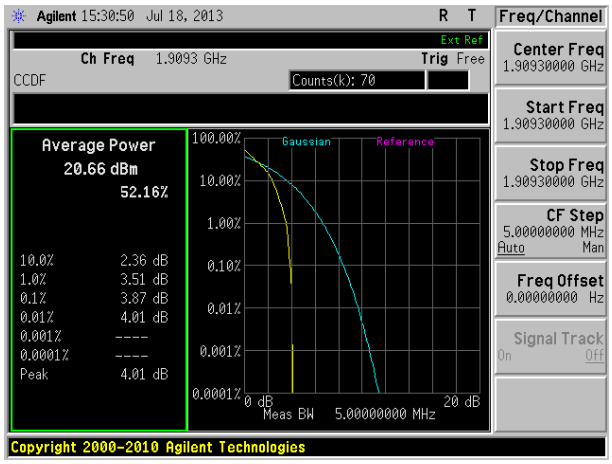
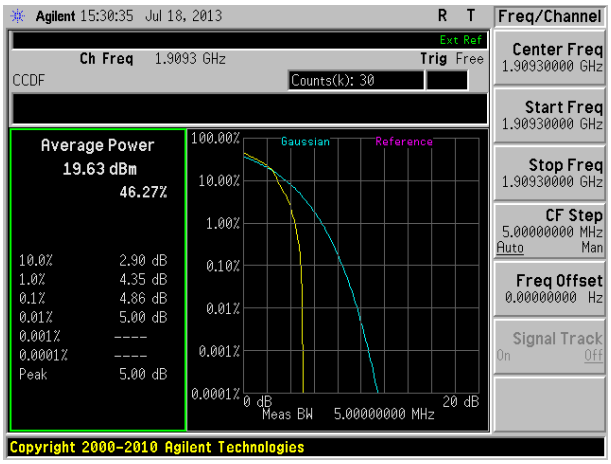
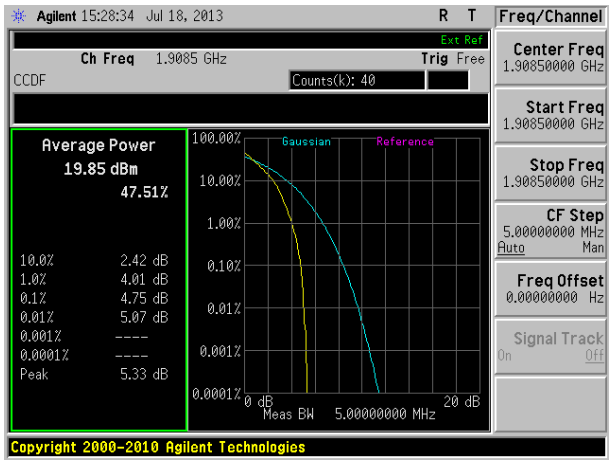
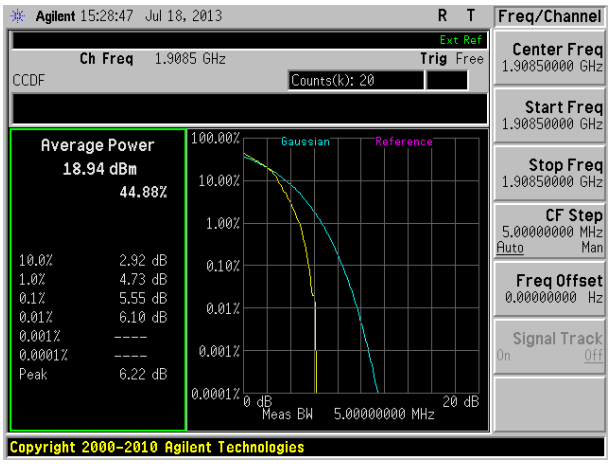
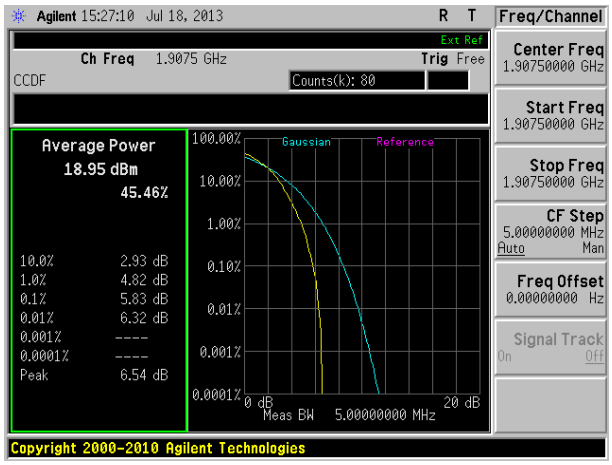
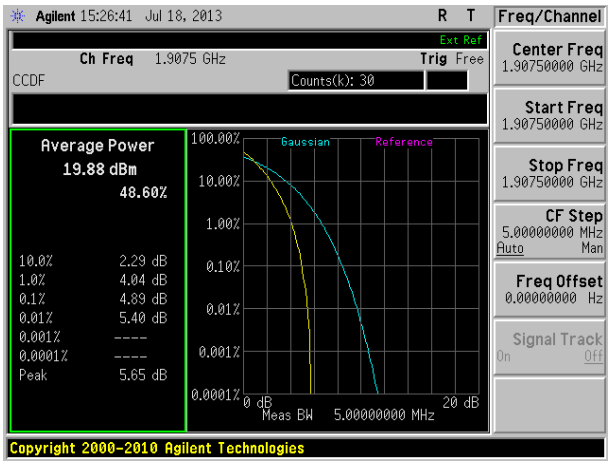
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18900	1880.0	4.70	5.51	18900	1880.0	4.86	5.68
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
18900	1880.0	5.03	5.83	18900	1880.0	4.62	6.09
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
18900	1880.0	5.79	6.78	18900	1880.0	5.47	7.24

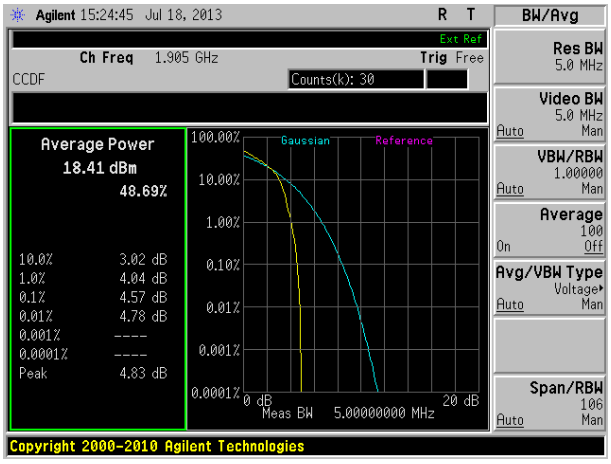
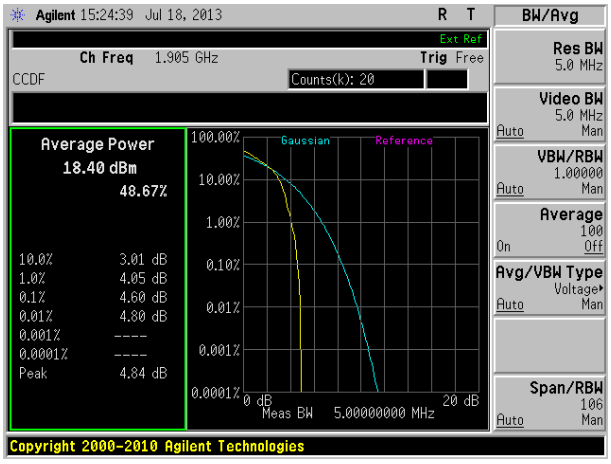
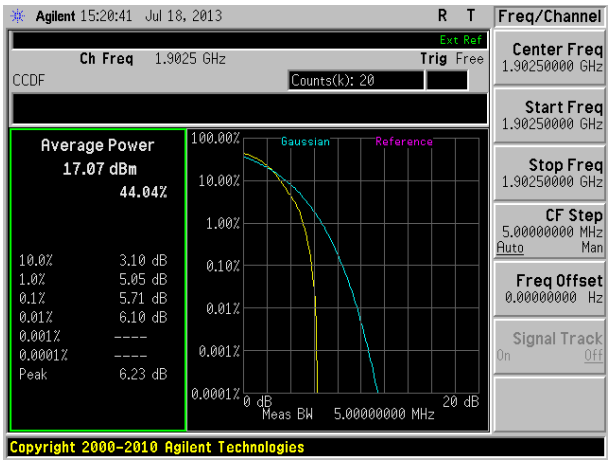
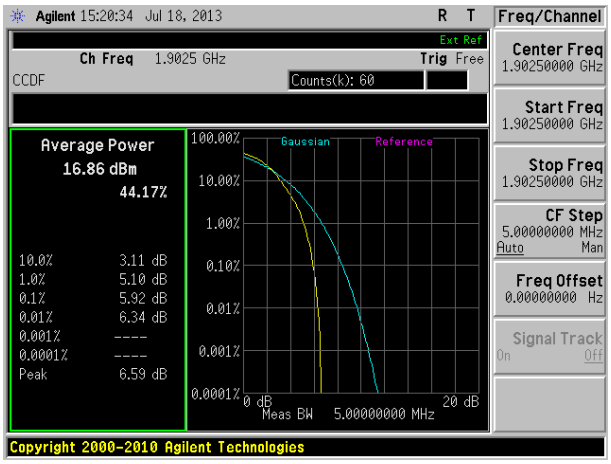
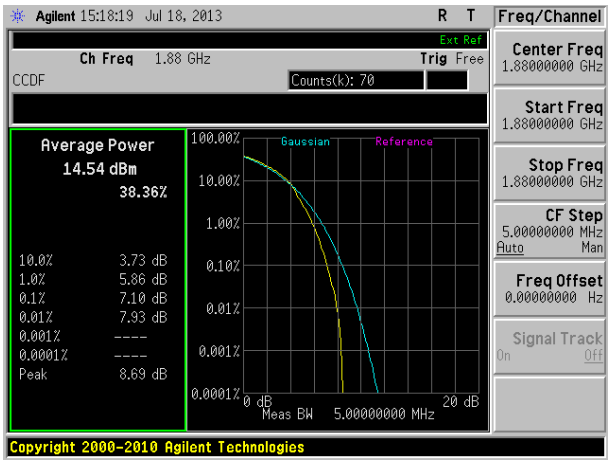
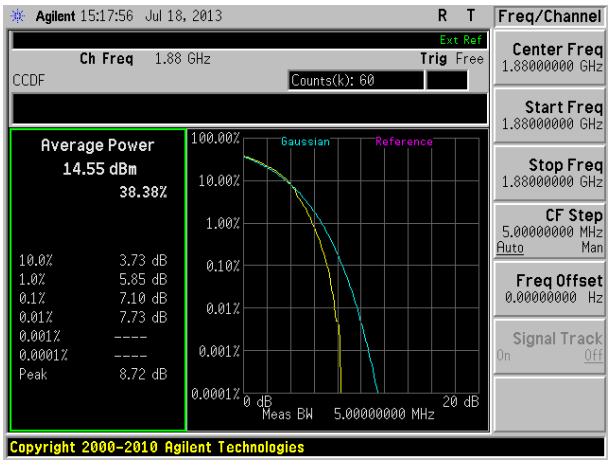
Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	

Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM
	
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

High channel:

Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19192	1909.2	3.87	4.86	19184	1908.4	4.75	5.55
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
19175	1907.5	5.83	4.89	19150	1905.0	4.57	4.60
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM		QPSK	QPSK	16QAM
19125	1902.5	5.71	5.92	19100	1900.0	7.10	7.10

Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
3MHz/QPSK	3MHz/16QAM
	
Spectrum Plot of Worst Value	
5MHz/QPSK	5MHz/16QAM
	
Spectrum Plot of Worst Value	
10MHz/QPSK	10MHz/16QAM

Spectrum Plot of Worst Value	
1.4MHz/QPSK	1.4MHz/16QAM
	
Spectrum Plot of Worst Value	
15MHz/QPSK	15MHz/16QAM
	
Spectrum Plot of Worst Value	
20MHz/QPSK	20MHz/16QAM
	

2.5 Conducted Spurious Emissions

2.5.1 Test Requirement

According to FCC section 2.1051 and 27.53(g), 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. This calculated to be -13dBm.

2.5.2 Test Procedure

See section 2.1.2 of this report.

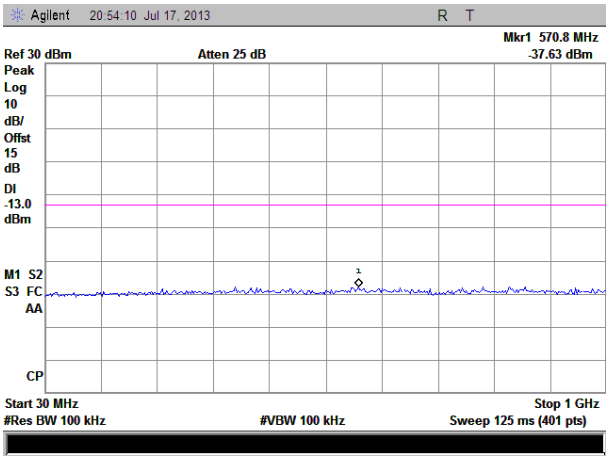
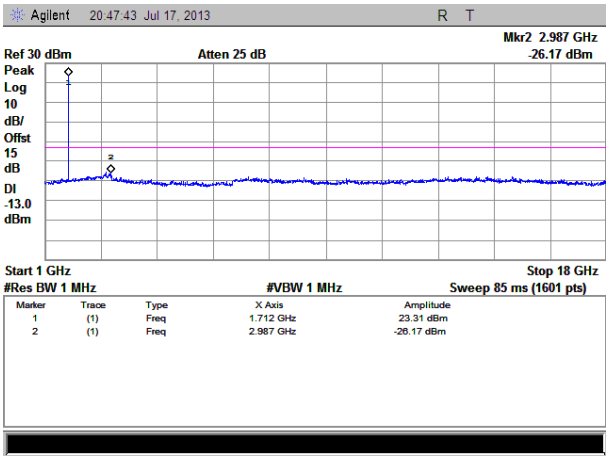
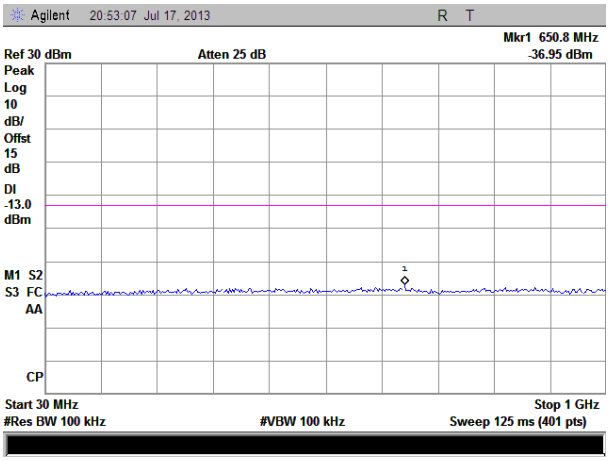
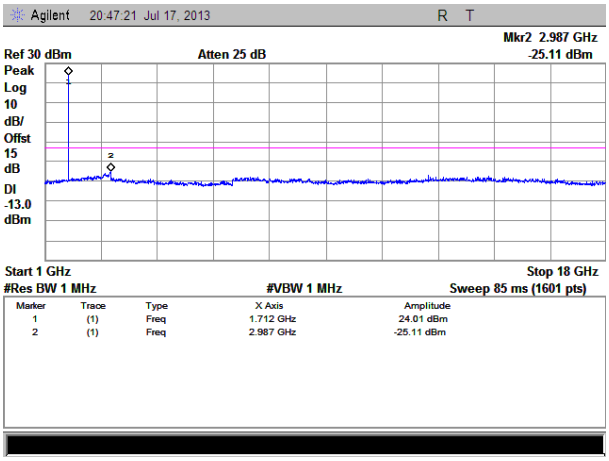
Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

2.5.3 Test Result

Compliant. See attached pots.

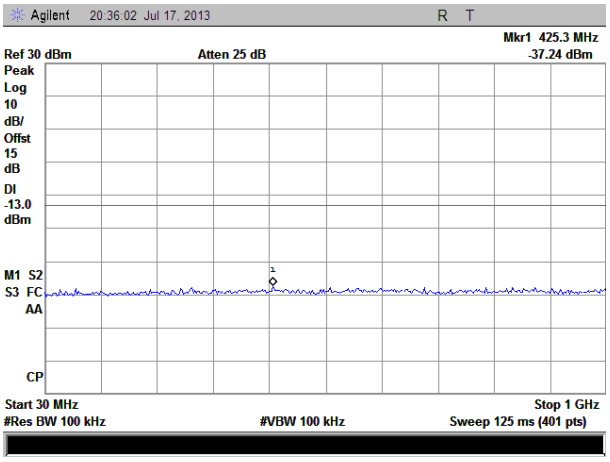
LTE Band 4

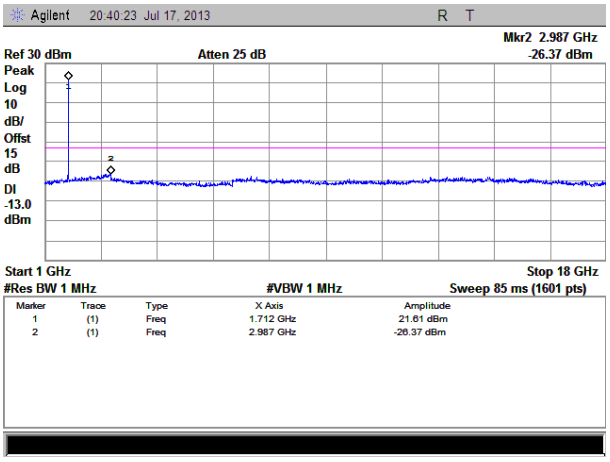
Low channel:

LTE Band 4 1.4MHz BW, Low Channel	
QPSK	
	
16QAM	
	

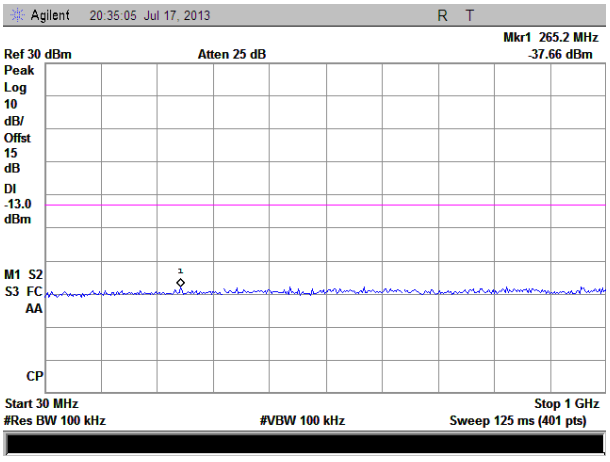
LTE Band 4 3MHz BW, Low Channel

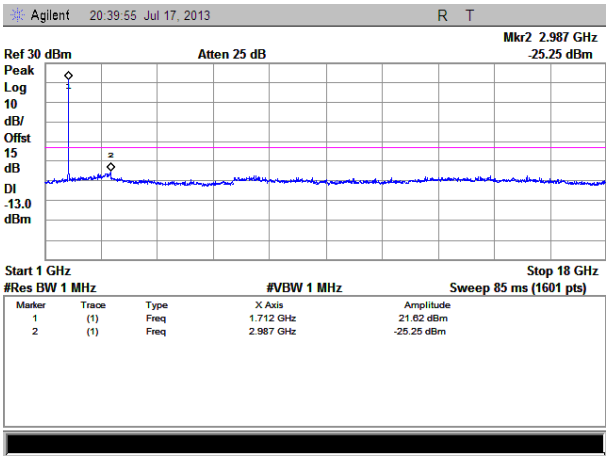
QPSK





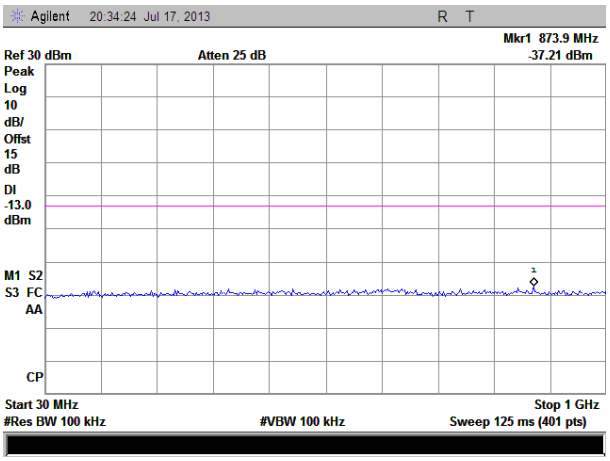
16QAM

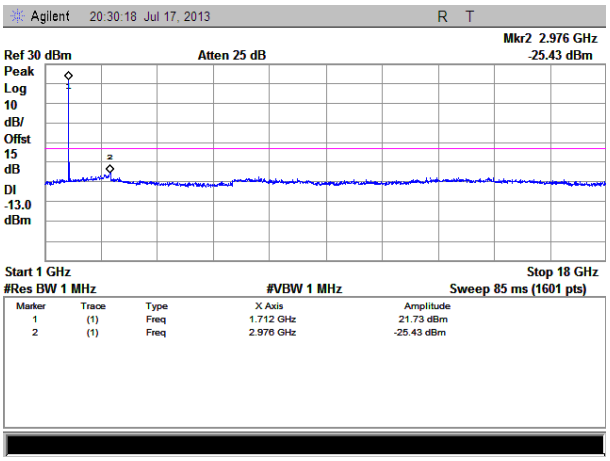


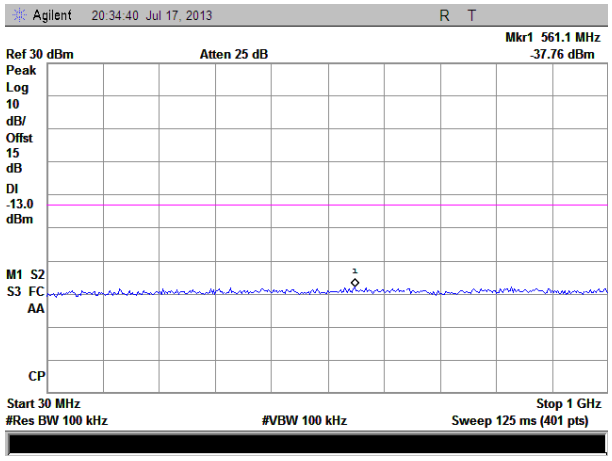
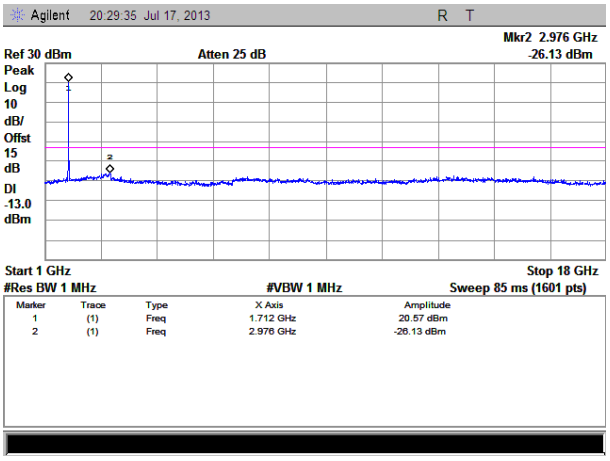


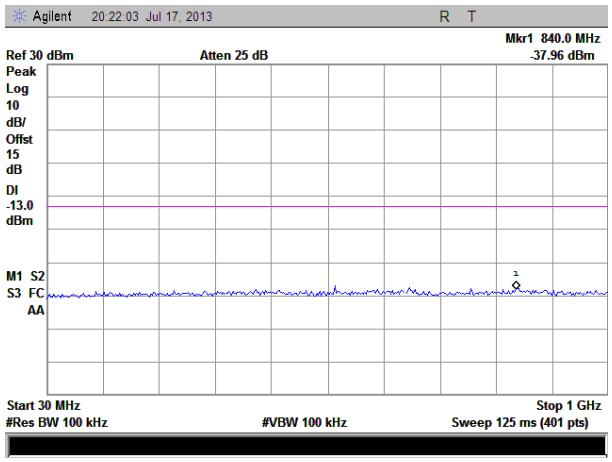
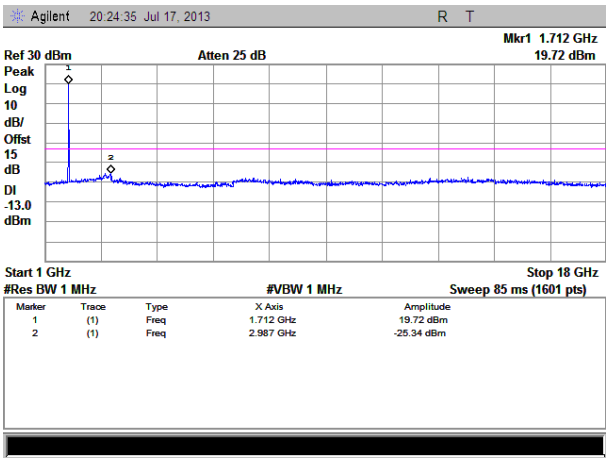
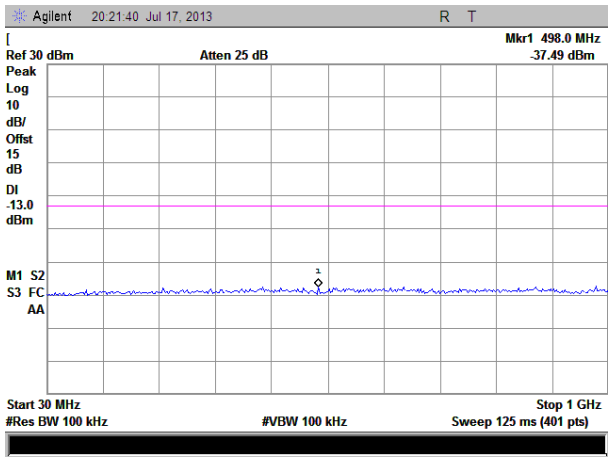
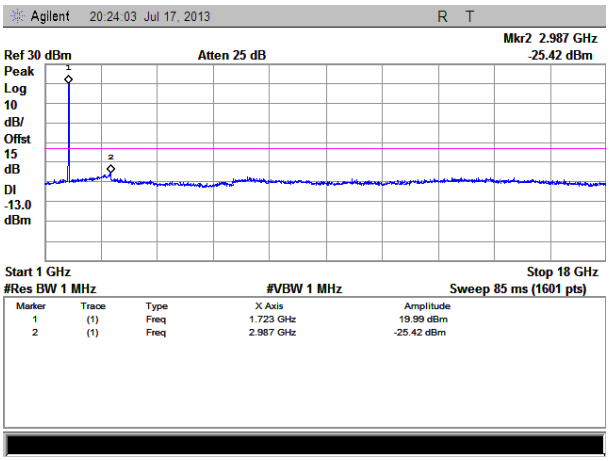
LTE Band 4 5MHz BW, Low Channel

QPSK



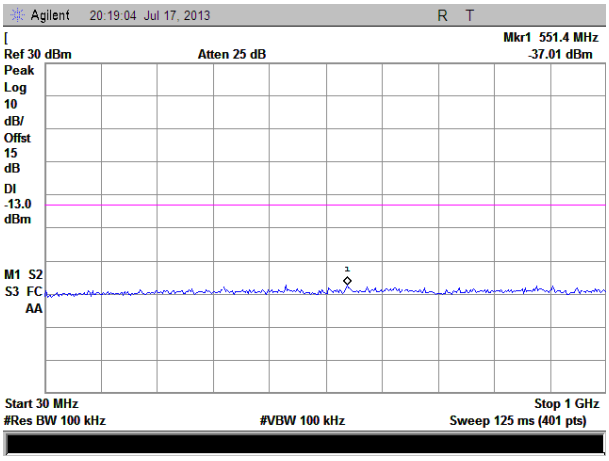


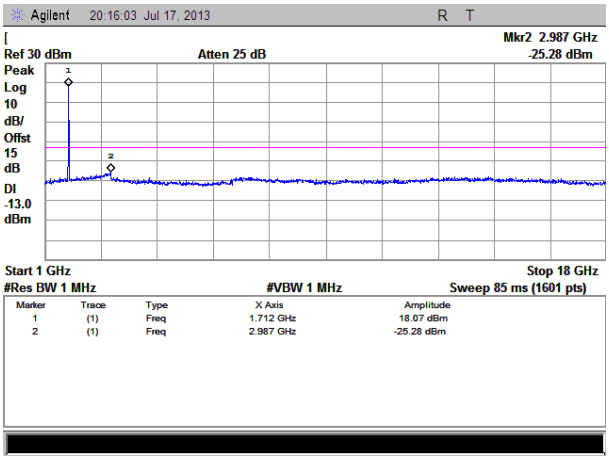
16QAM	
	

LTE Band 4 10MHz BW, Low Channel	
QPSK	
	
16QAM	
	

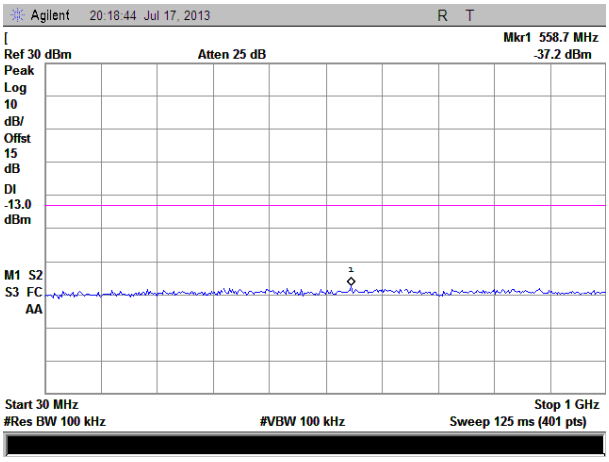
LTE Band 4 15MHz BW, Low Channel

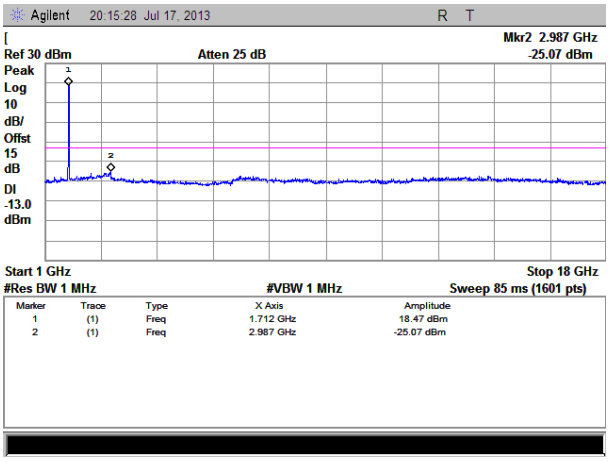
QPSK





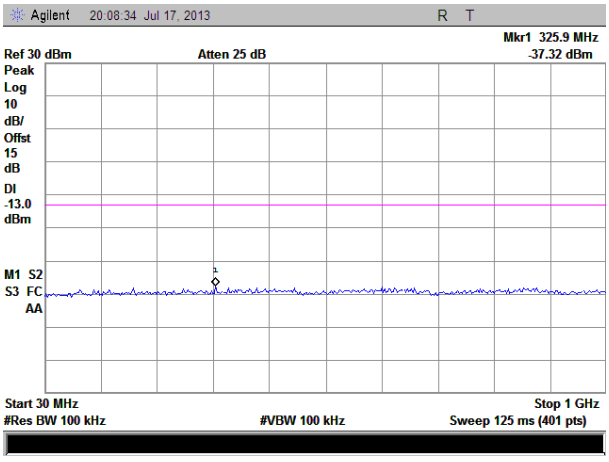
16QAM

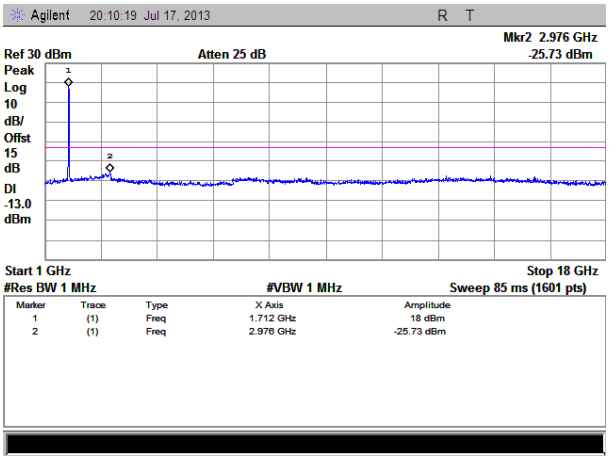




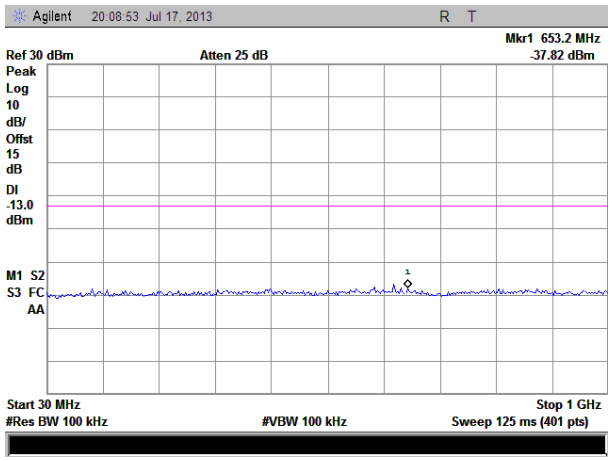
LTE Band 4 20MHz BW, Low Channel

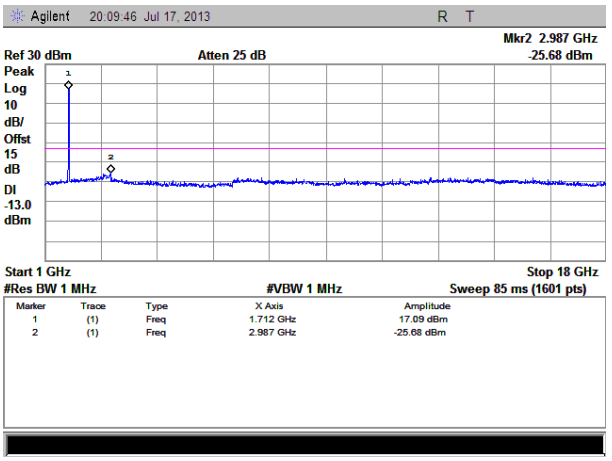
QPSK





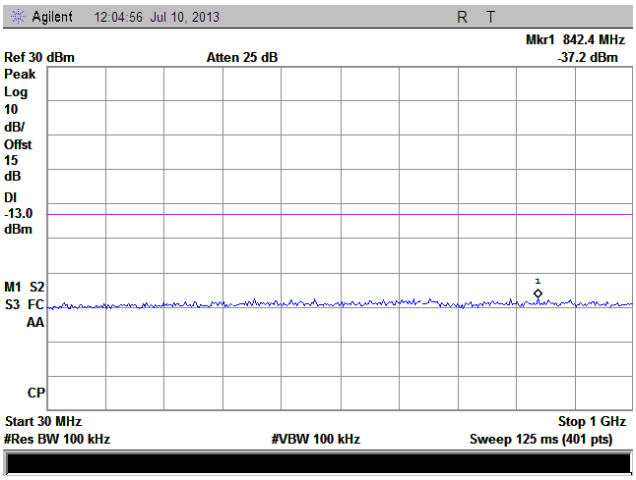
16QAM

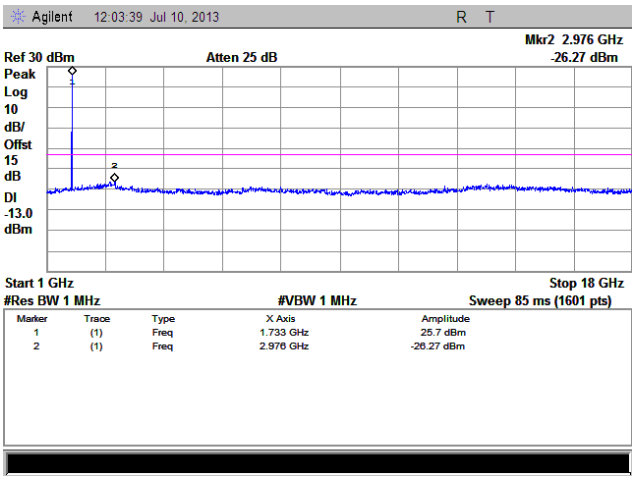




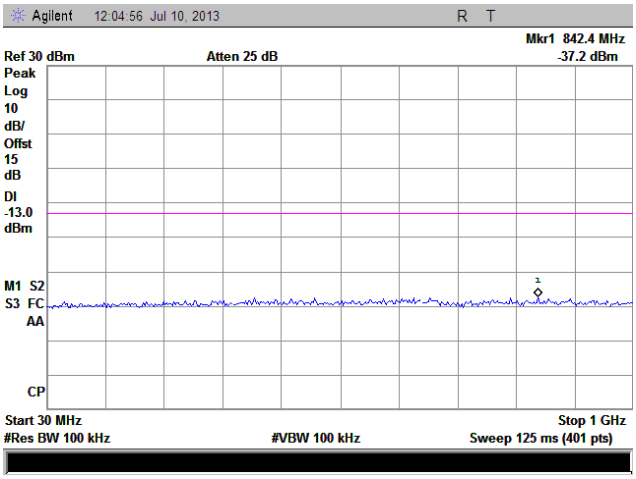
Middle channel:

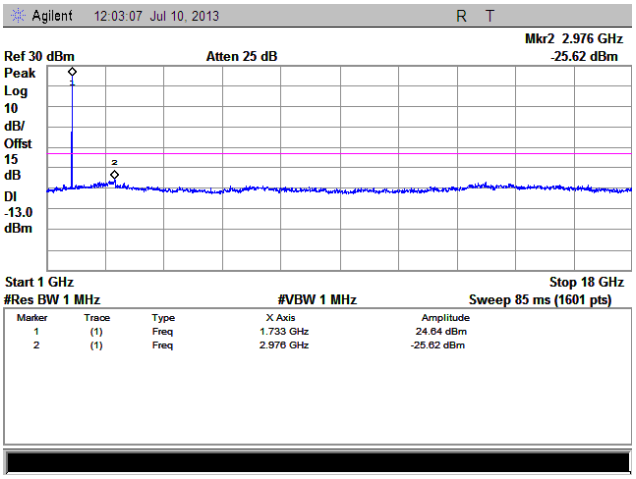
LTE Band 4 1.4MHz BW, Mid Channel
QPSK

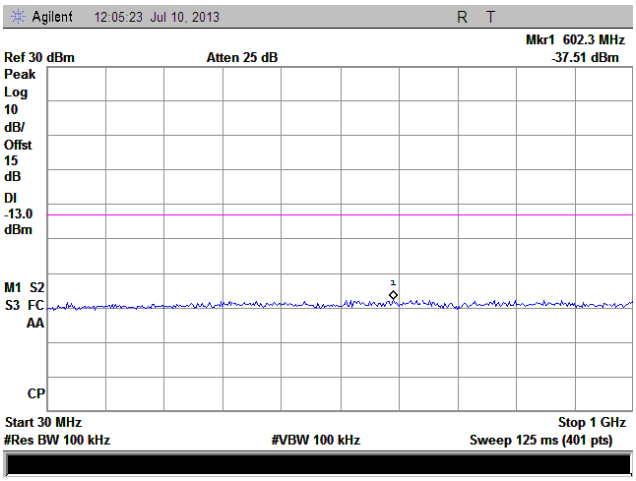
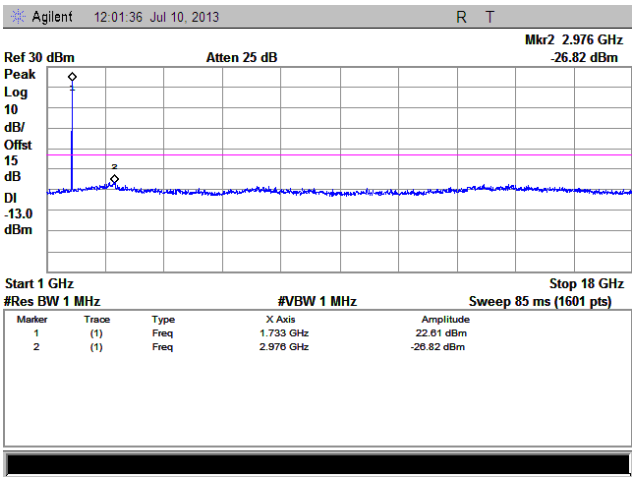
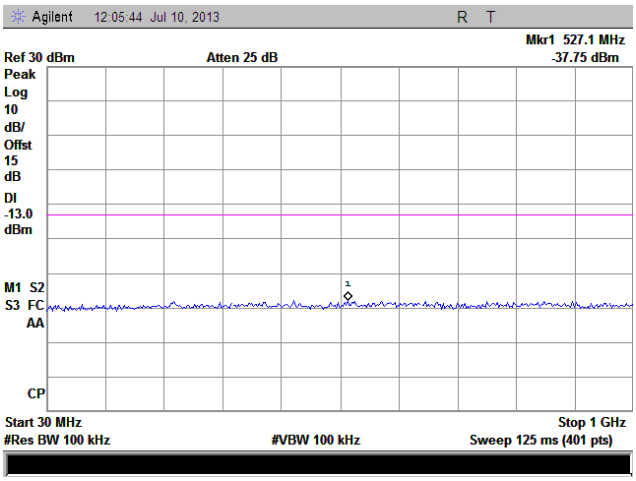
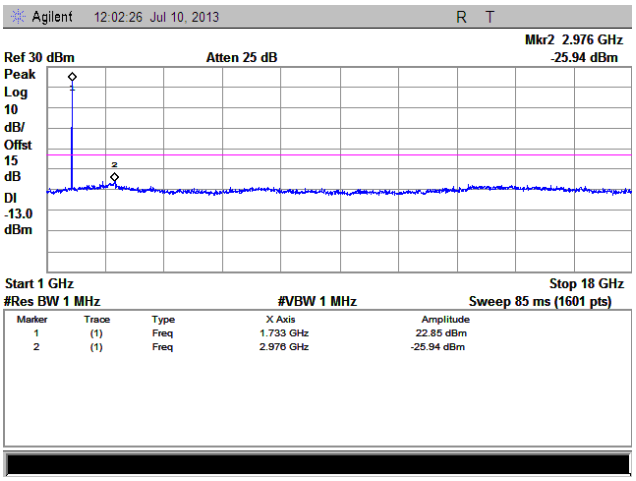


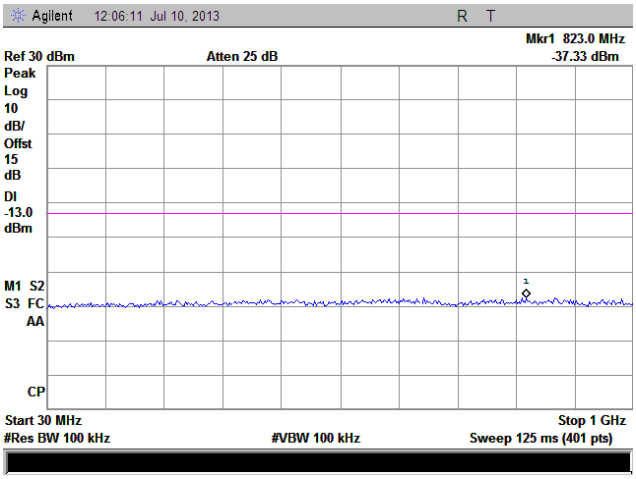
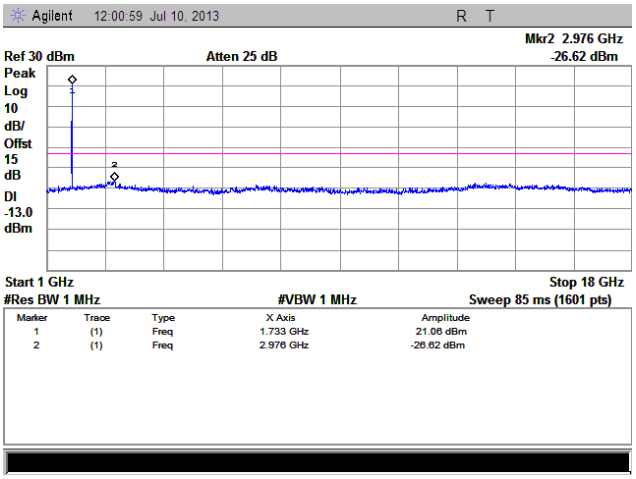


16QAM





LTE Band 4 3MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 4 5MHz BW, Mid Channel	
QPSK	
	
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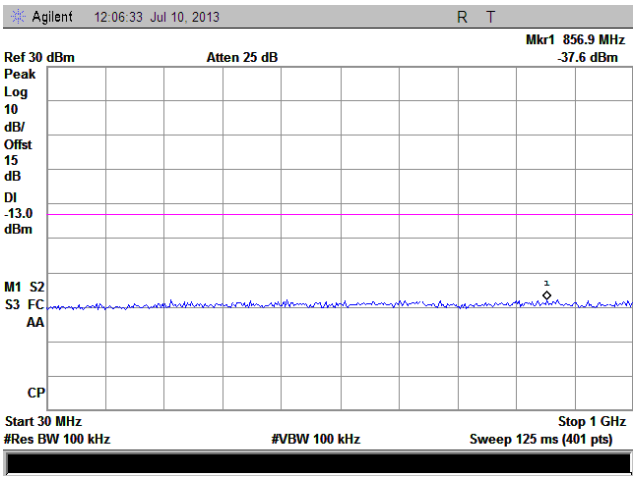
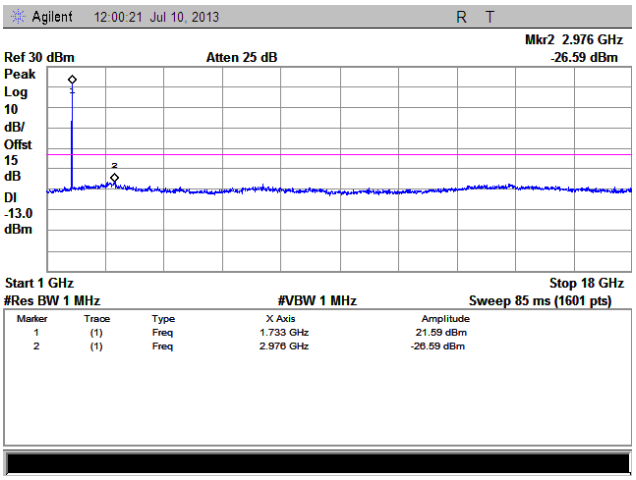
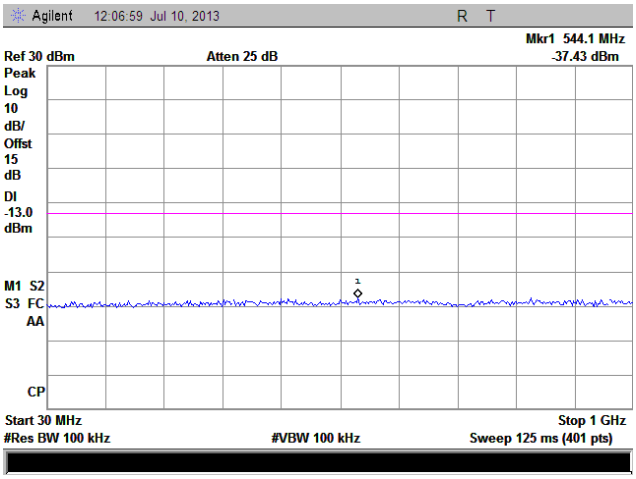
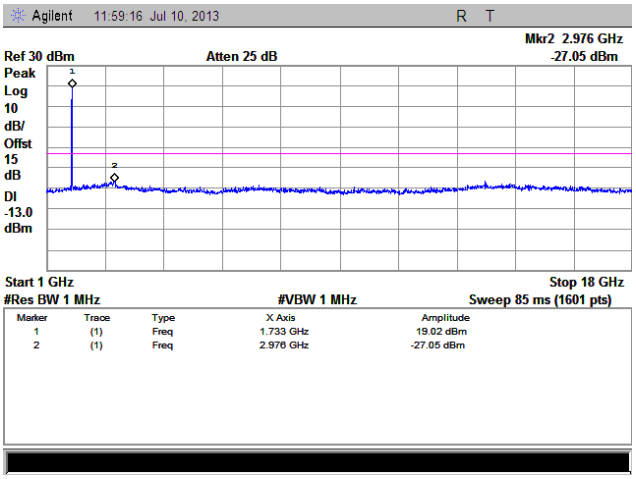
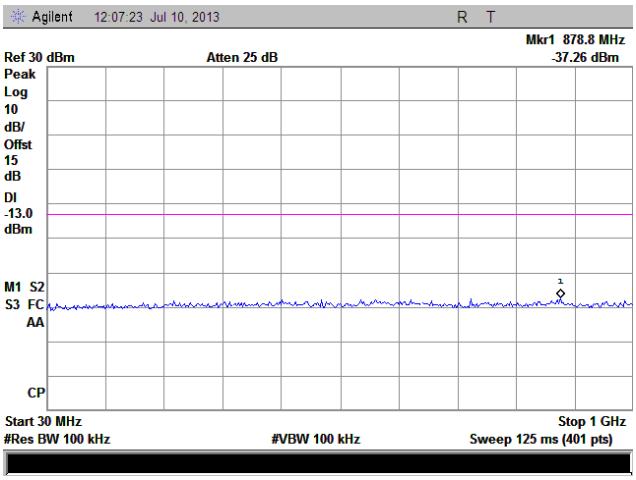
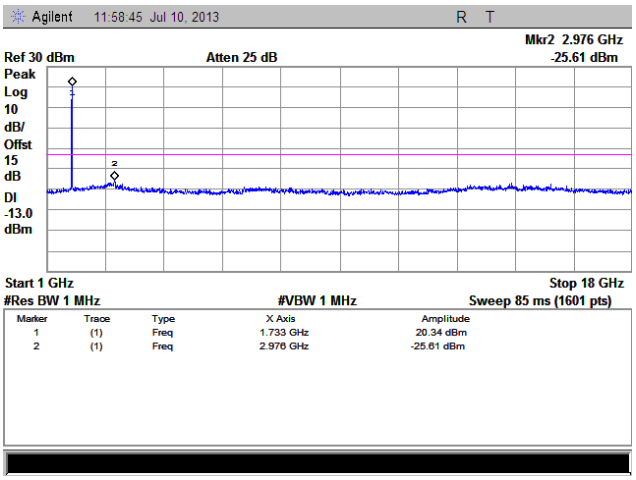
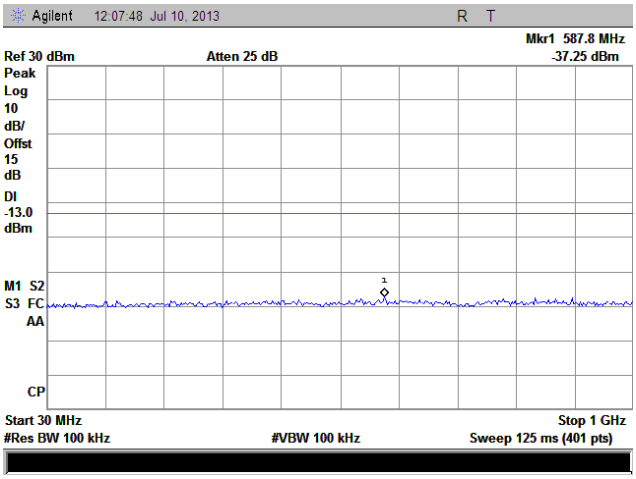
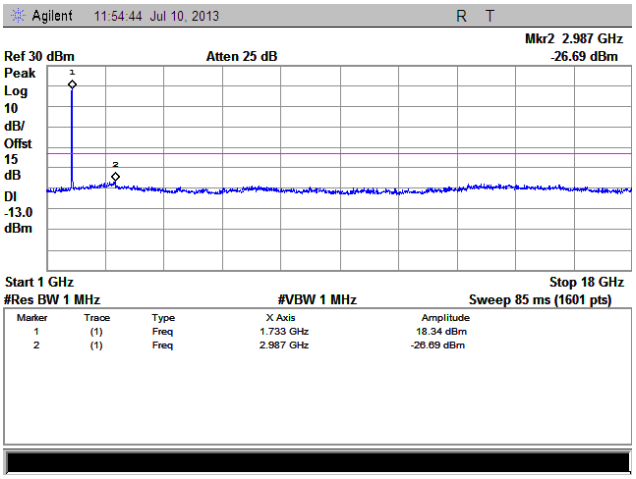
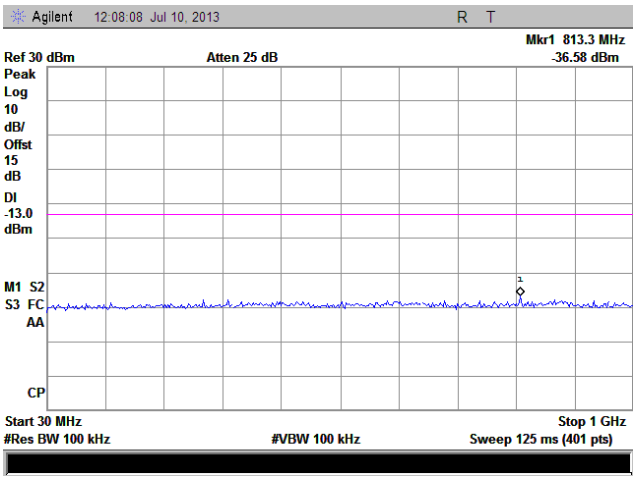
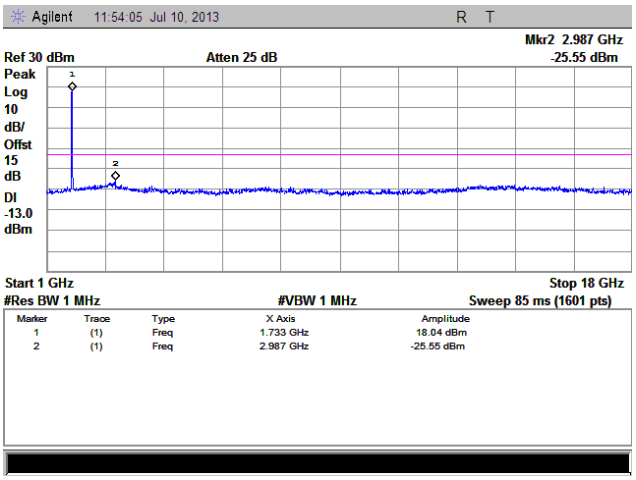
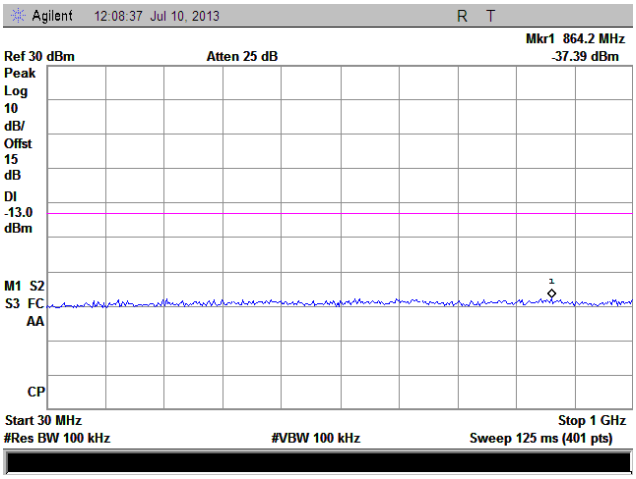
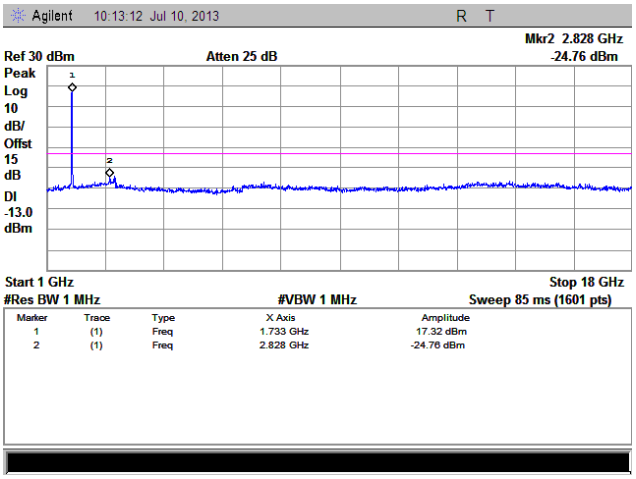
	

LTE Band 4 10MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 4 15MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 4 20MHz BW, Mid Channel	
QPSK	
	
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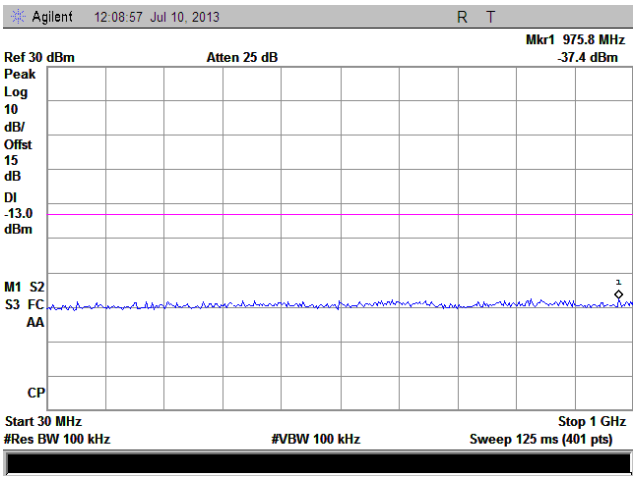
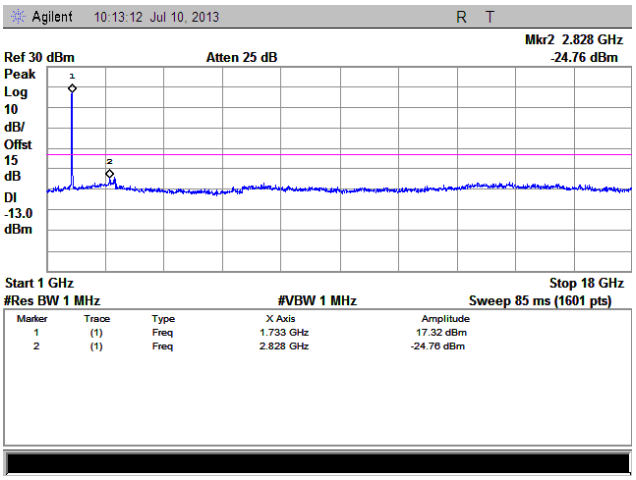
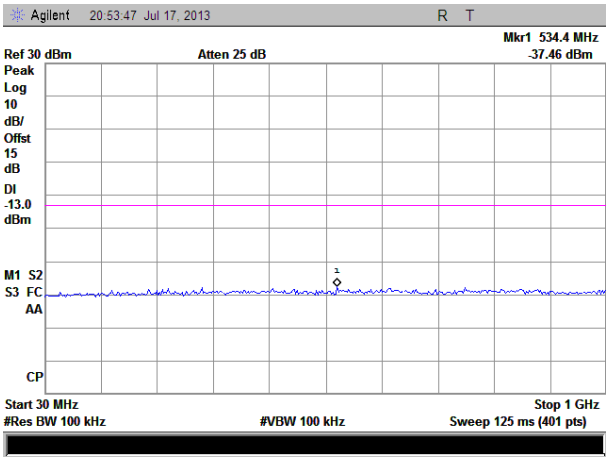
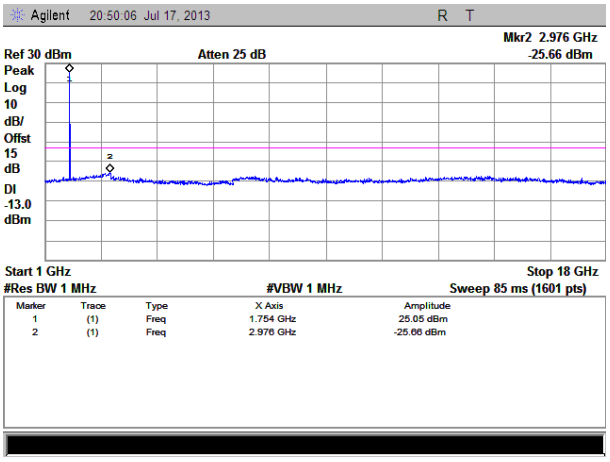
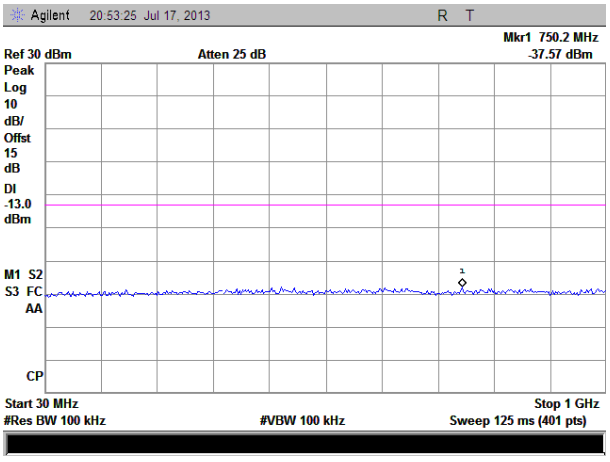
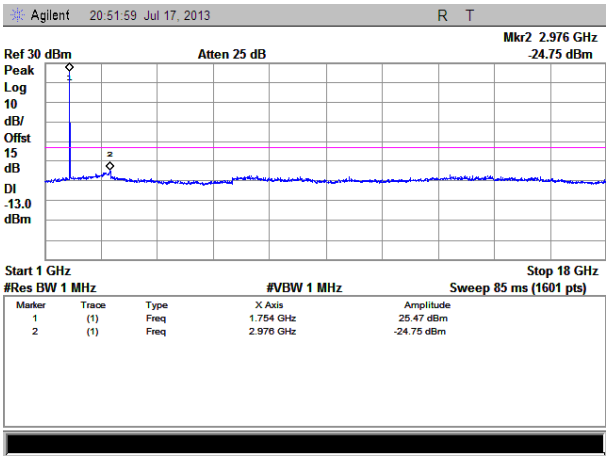
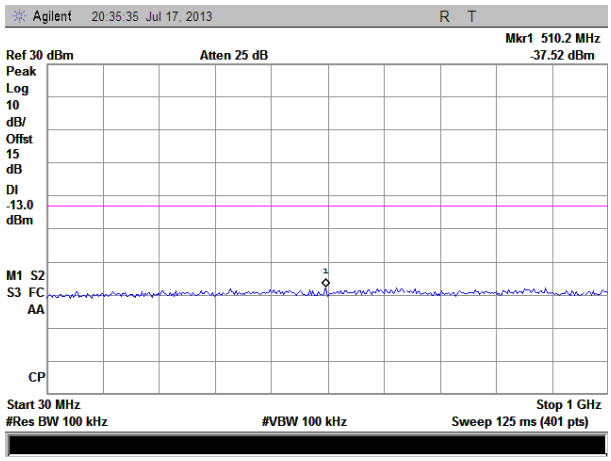
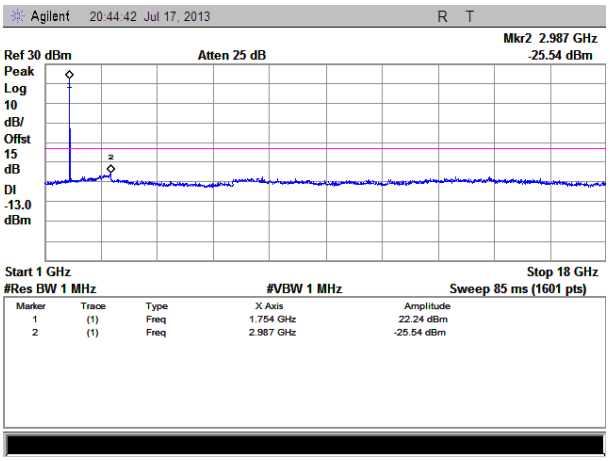
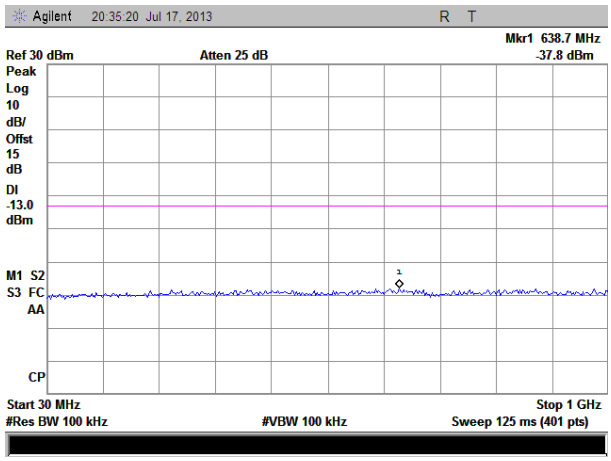
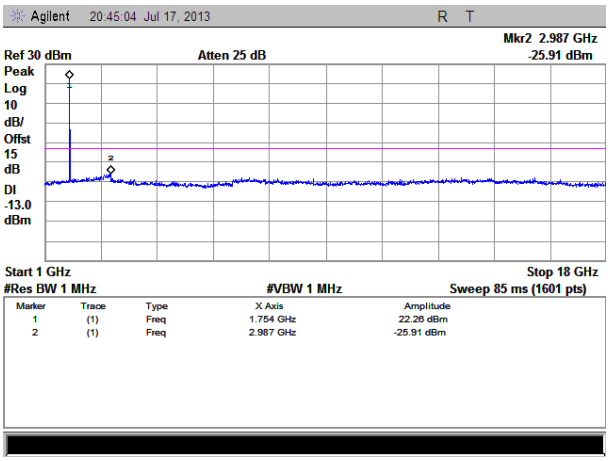
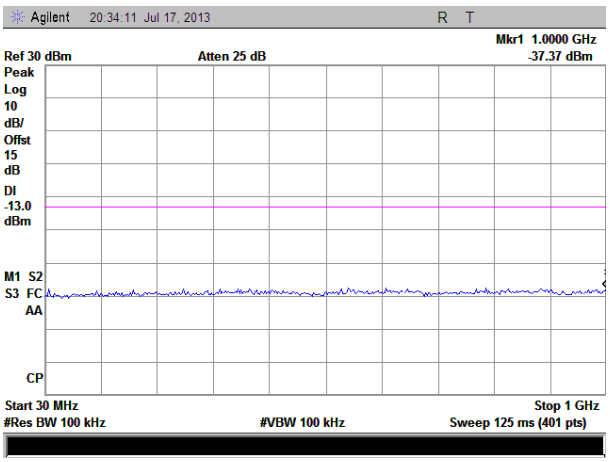
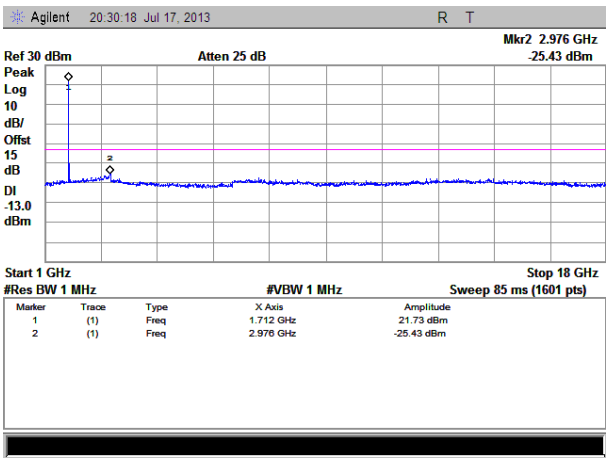
	

High channel:

LTE Band 4 1.4MHz BW, High Channel	
QPSK	
	
16QAM	
	

LTE Band 4 3MHz BW, High Channel	
QPSK	
	
16QAM	
	

LTE Band 4 5MHz BW, High Channel	
QPSK	
	
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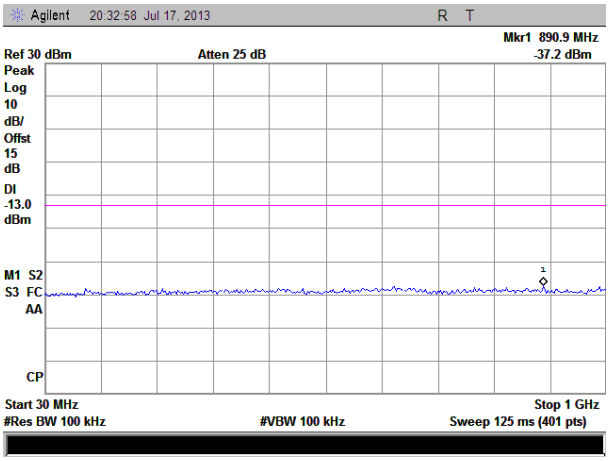
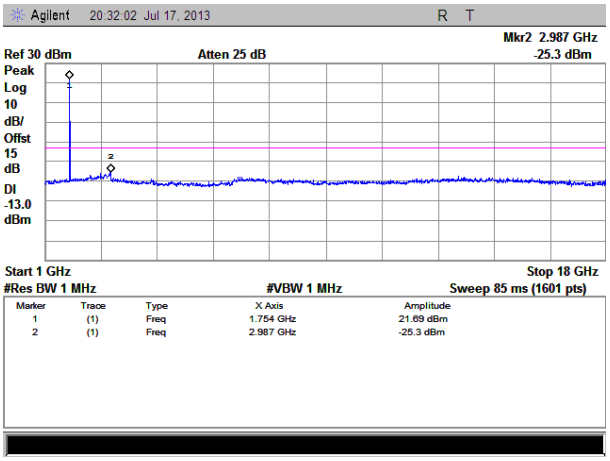
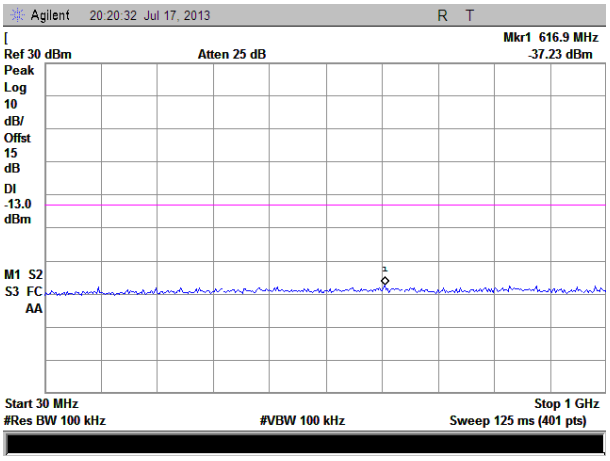
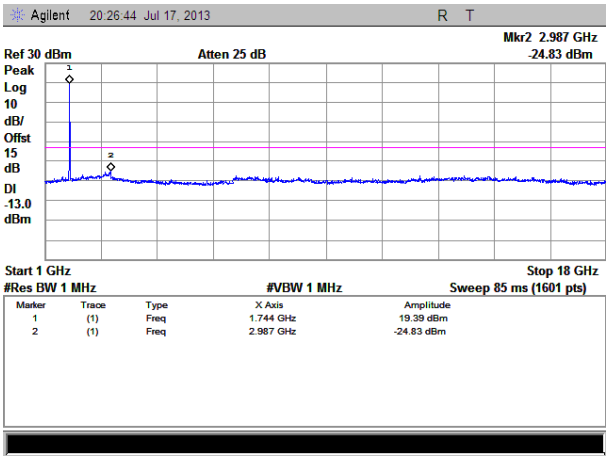
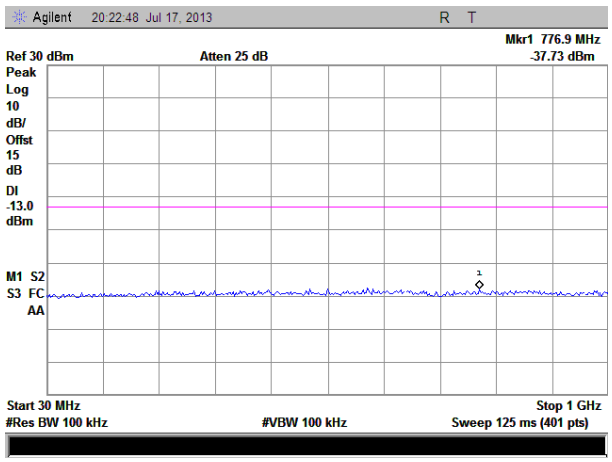
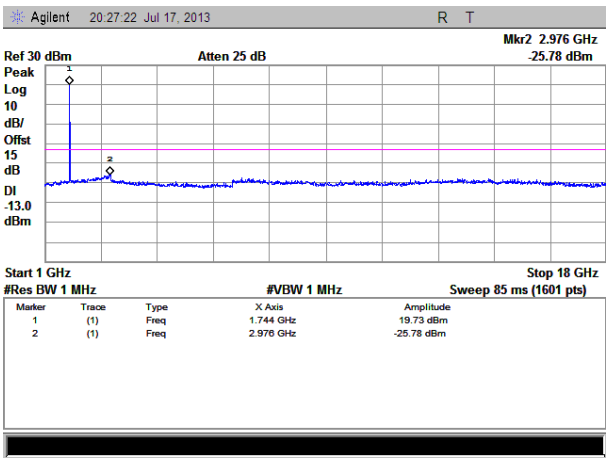
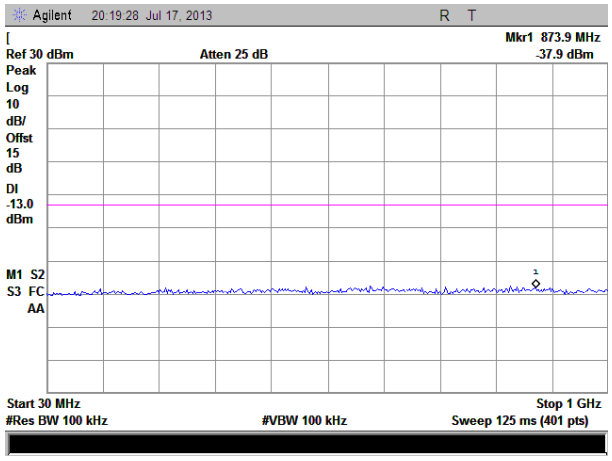
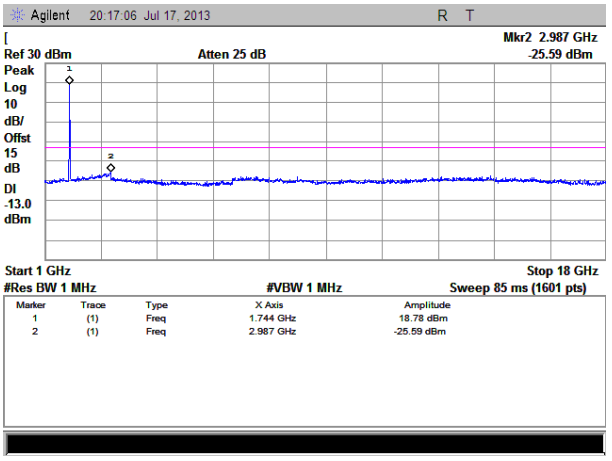
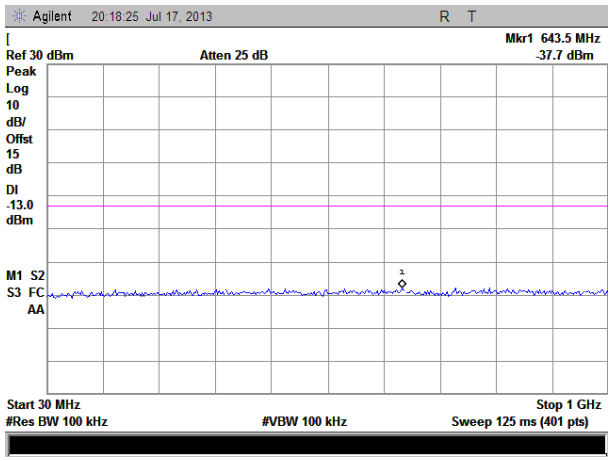
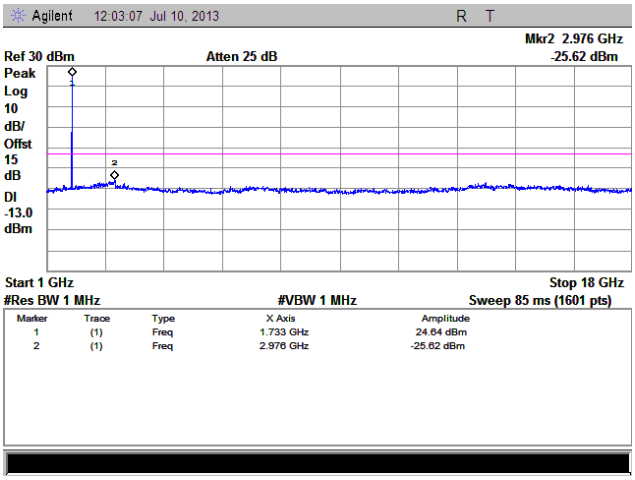
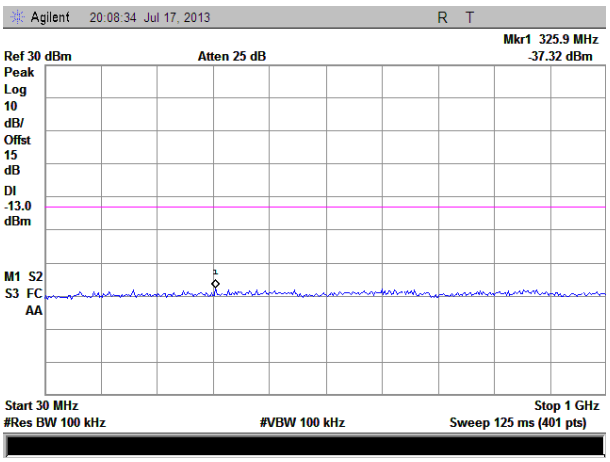
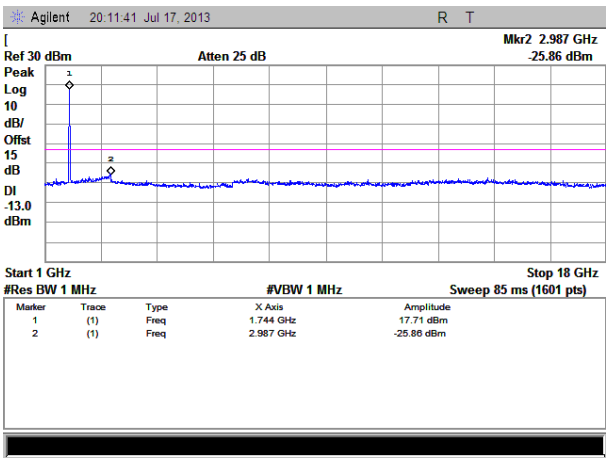
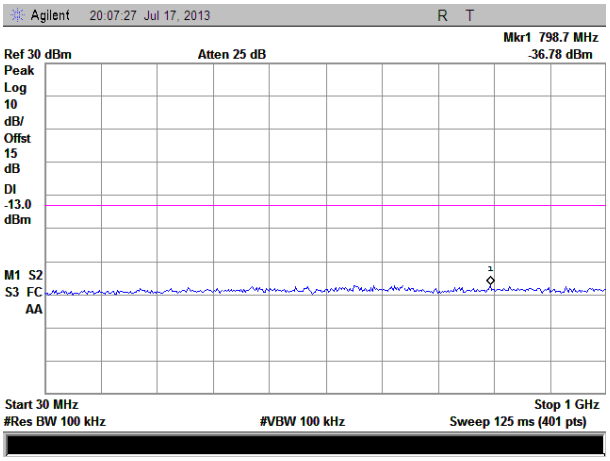
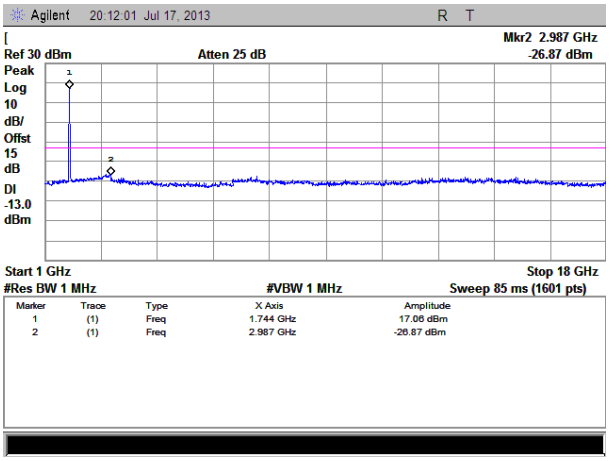
	

LTE Band 4 10MHz BW, High Channel	
QPSK	
	
16QAM	

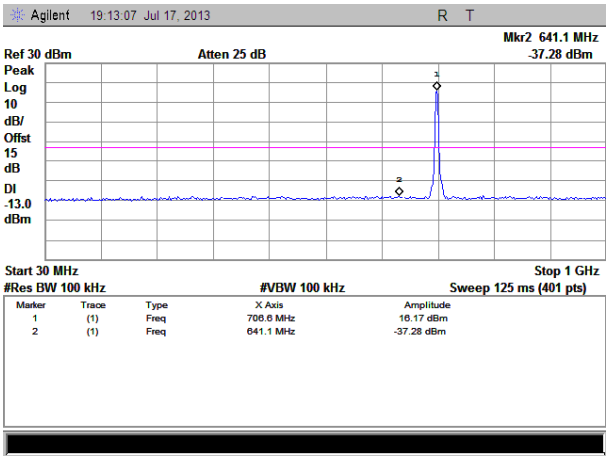
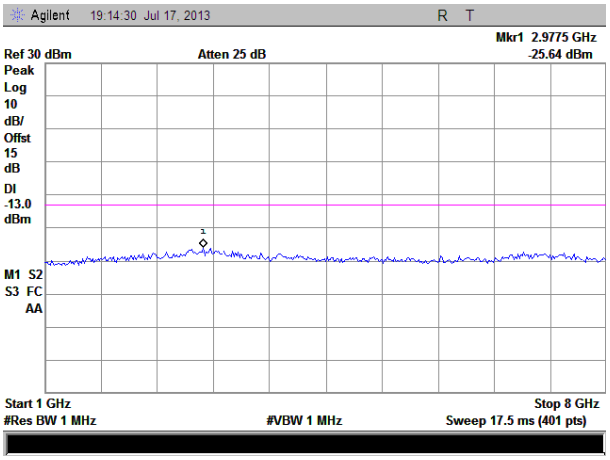
LTE Band 4 10MHz BW, High Channel	
QPSK	
	

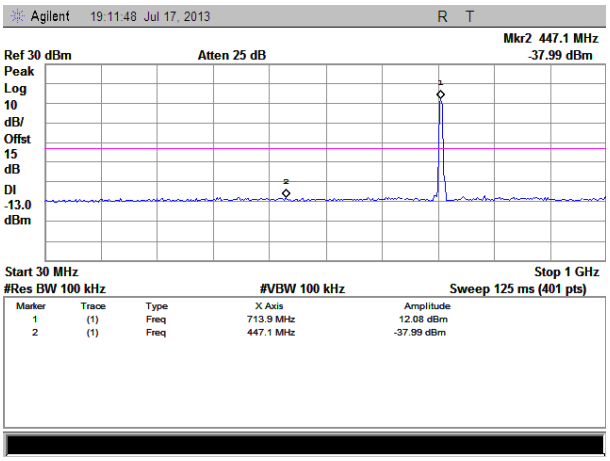
LTE Band 4 15MHz BW, High Channel	
QPSK	
	
16QAM	
	

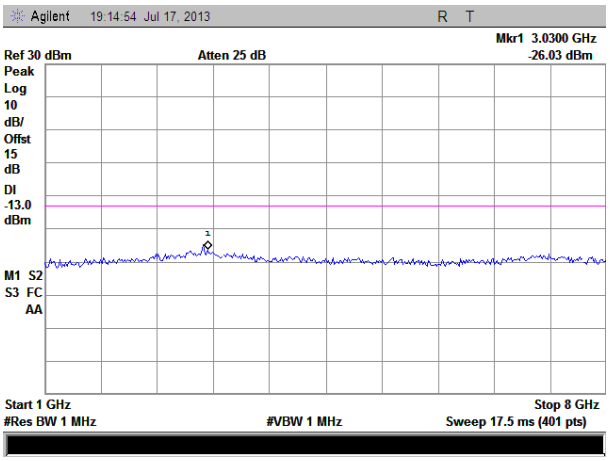
LTE Band 4 20MHz BW, High Channel	
QPSK	
	
16QAM	
	

LTE Band 17

Low channel:

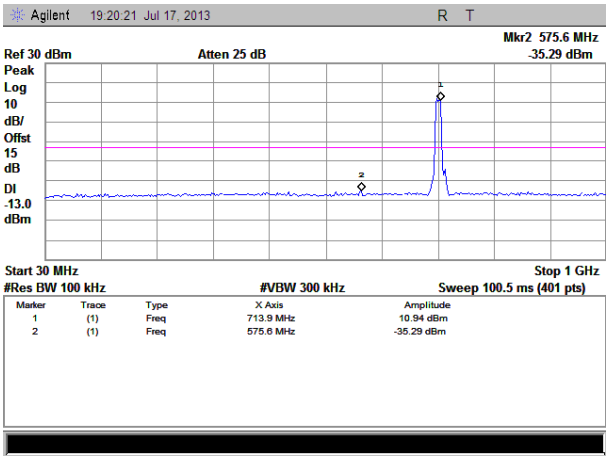
LTE Band 17 5MHz BW, Low Channel	
QPSK	
	
16QAM	

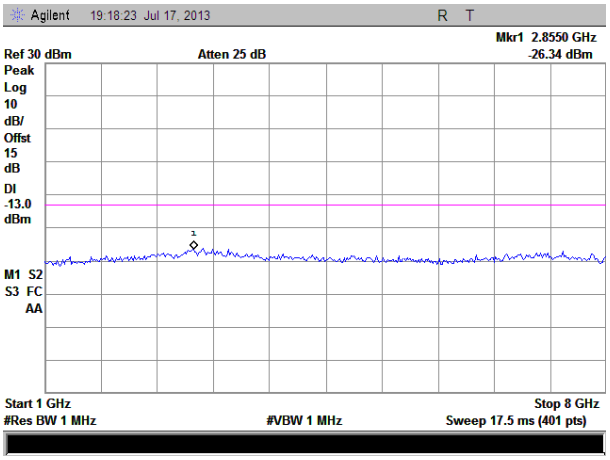




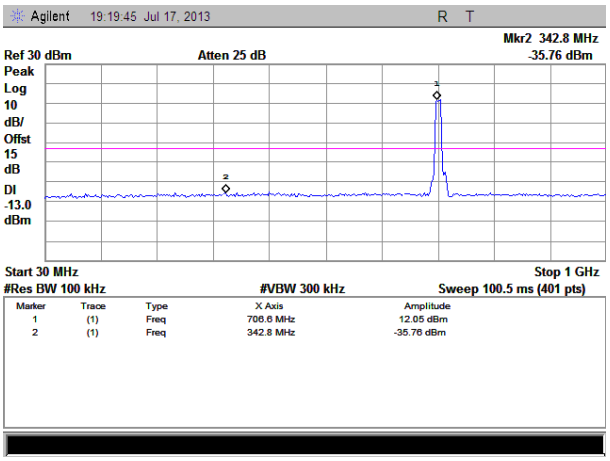
LTE Band 17 10MHz BW, Low Channel

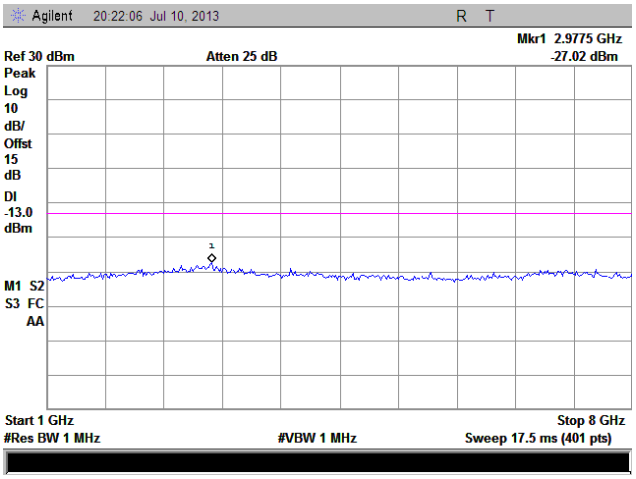
QPSK



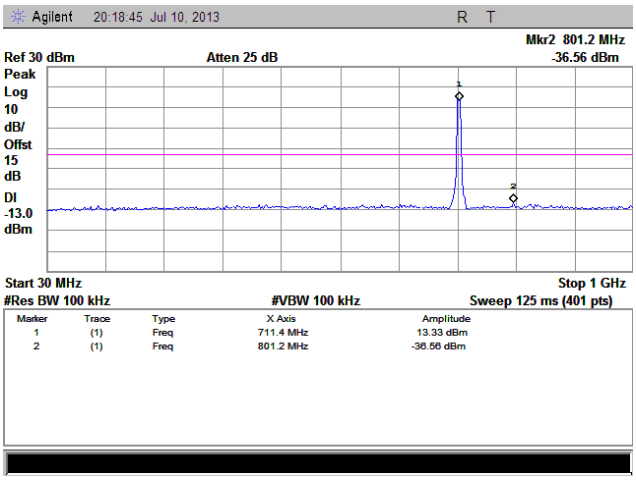
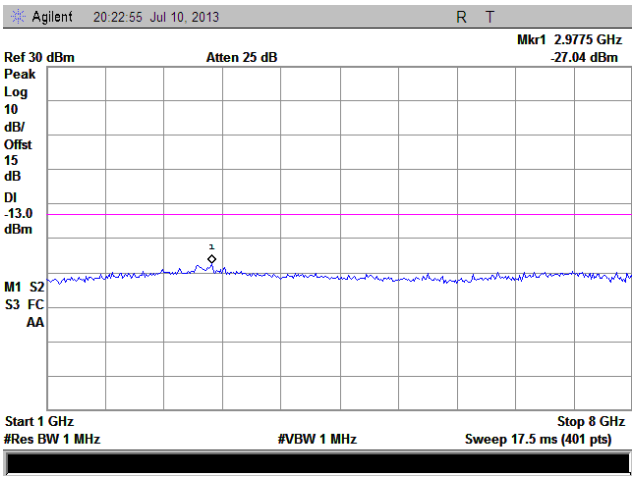
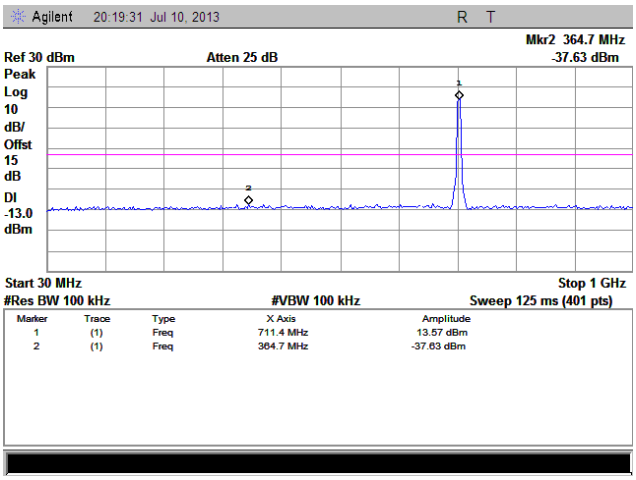
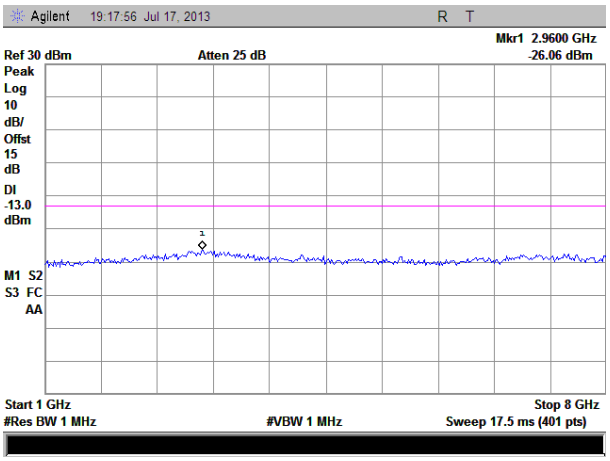


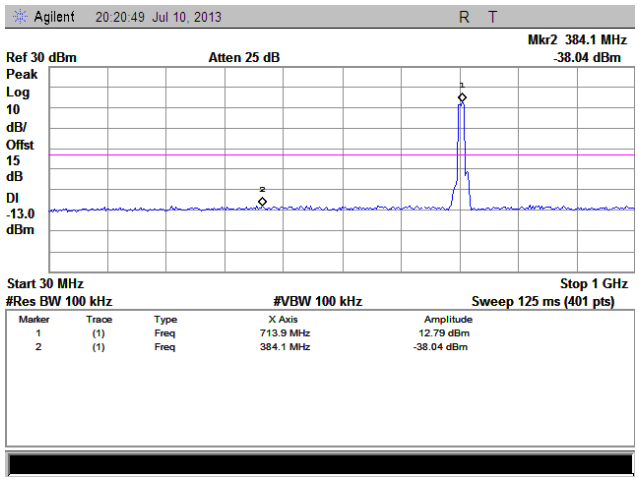
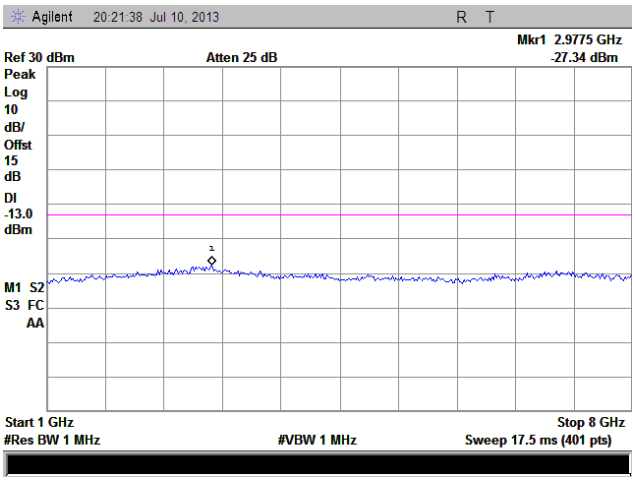
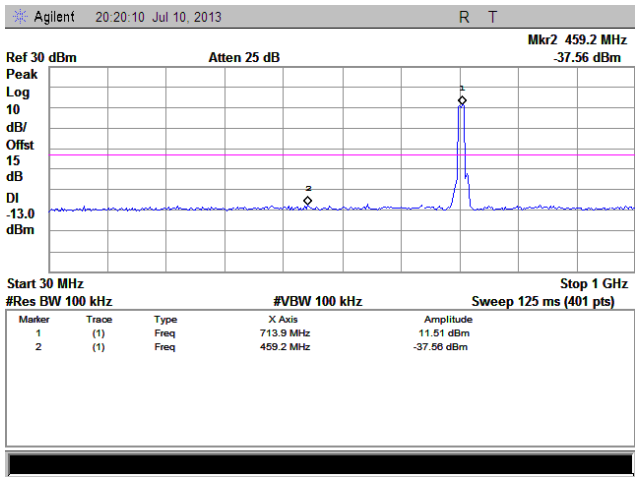
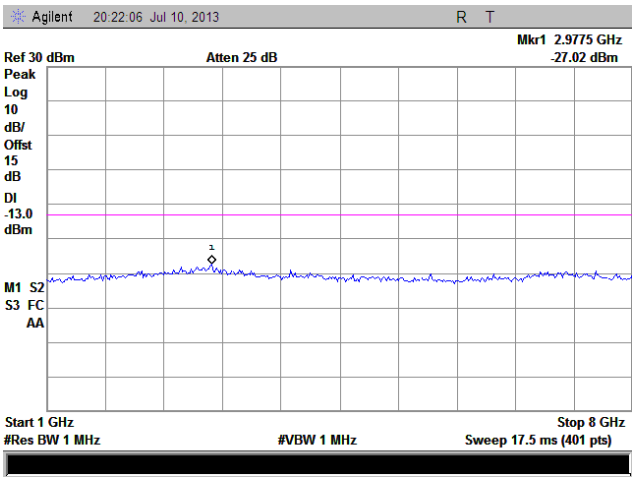
16QAM



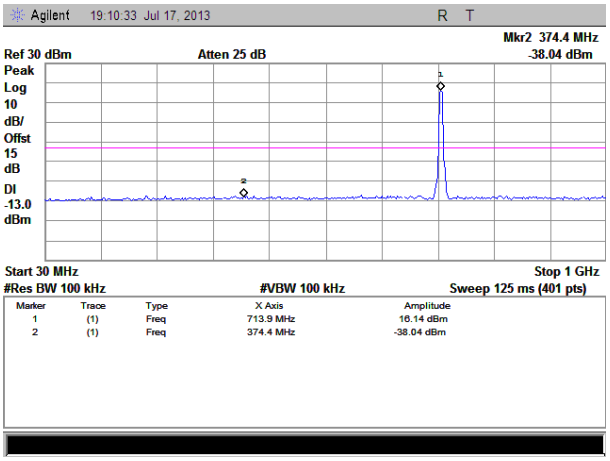
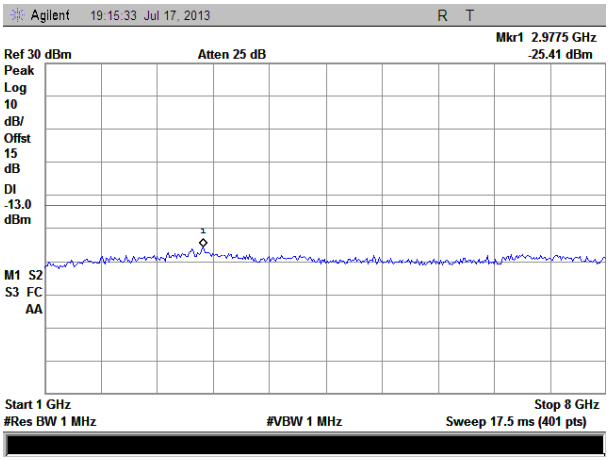
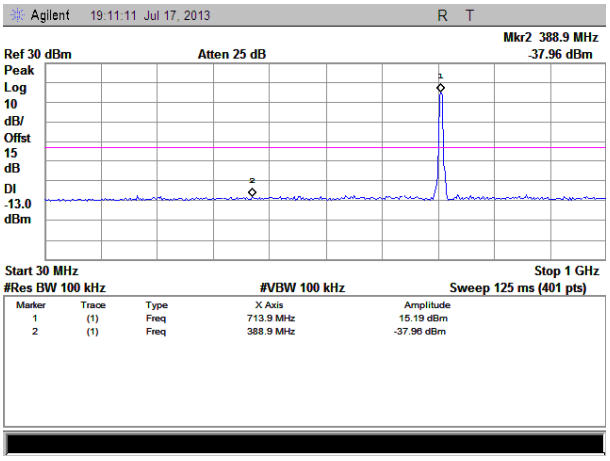
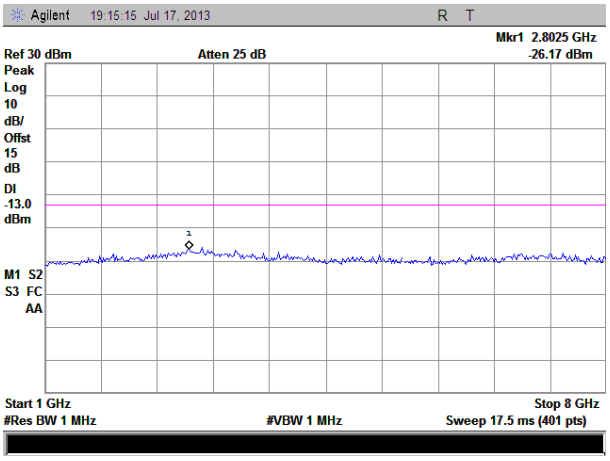
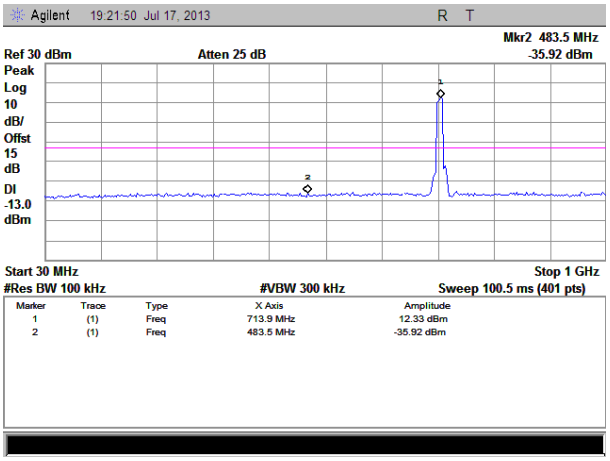
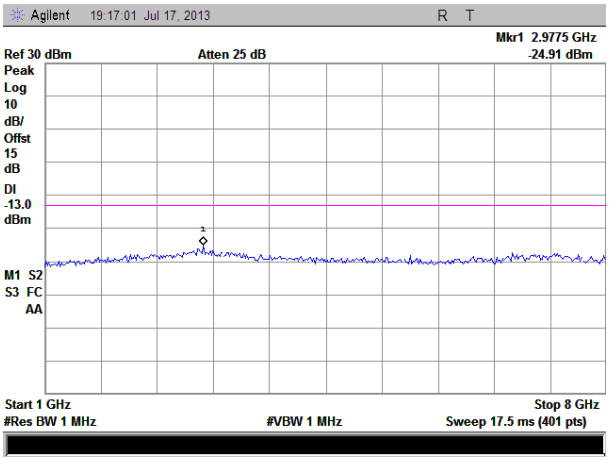


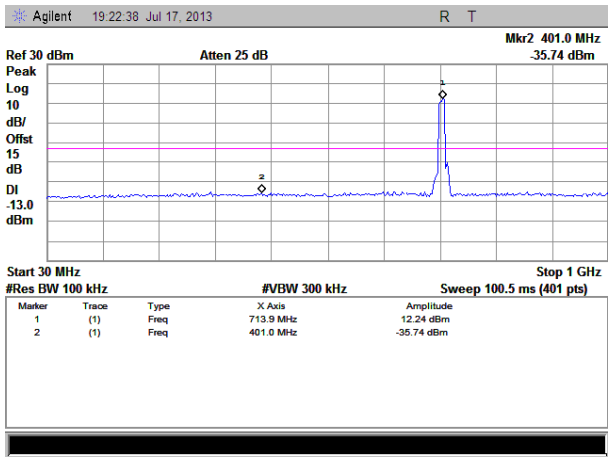
Middle channel:

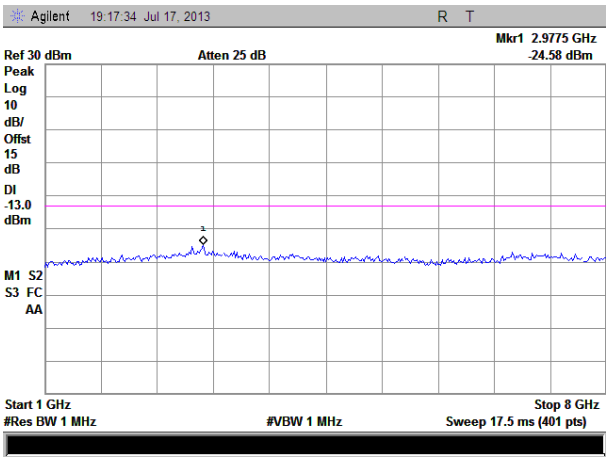
LTE Band 17 5MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 17 10MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

High channel:

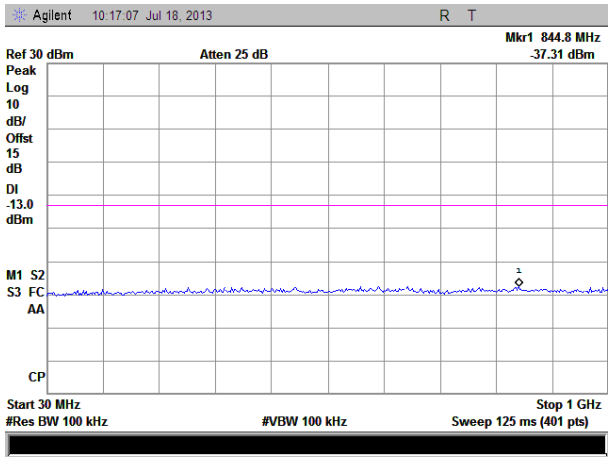
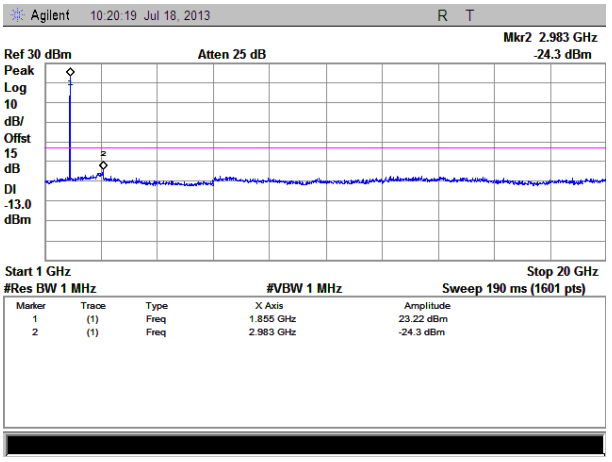
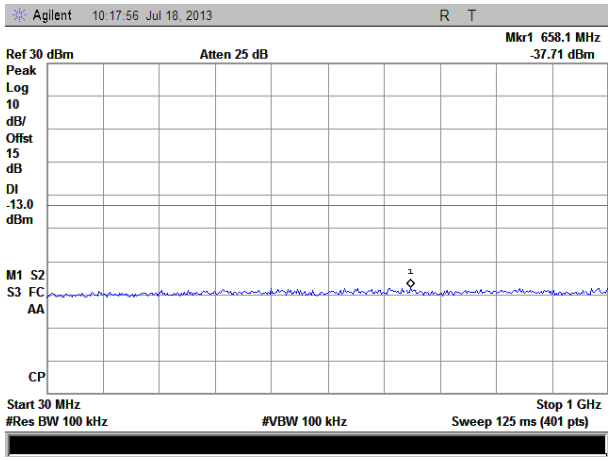
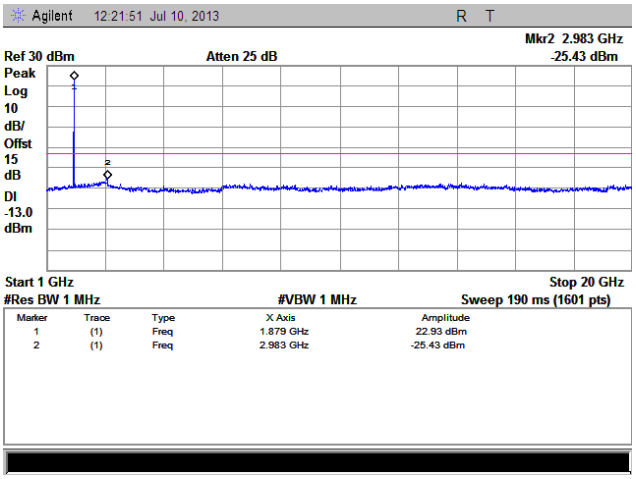
LTE Band 17 5MHz BW, High Channel	
QPSK	
	
16QAM	
	
LTE Band 17 10MHz BW, High Channel	
QPSK	
	
16QAM	

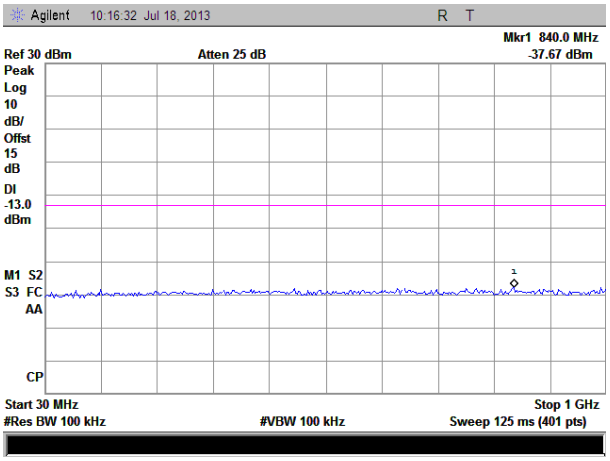
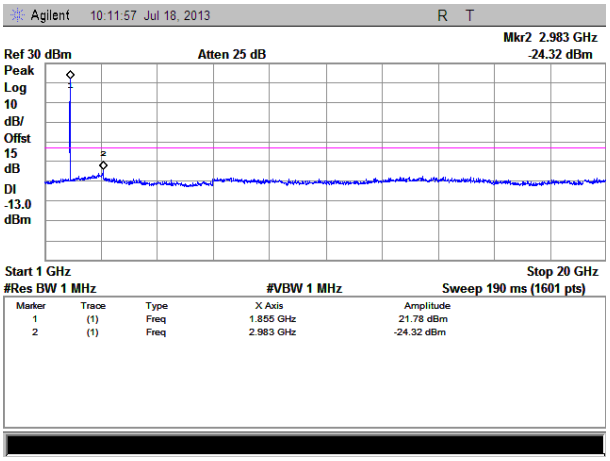
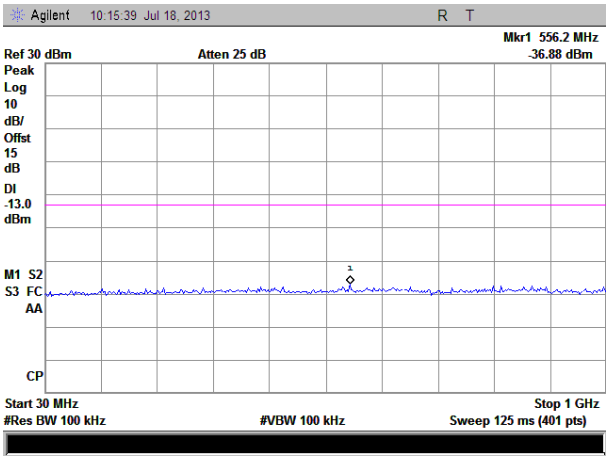
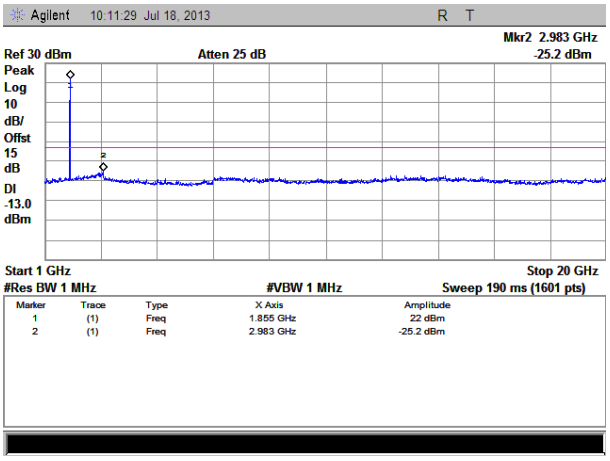


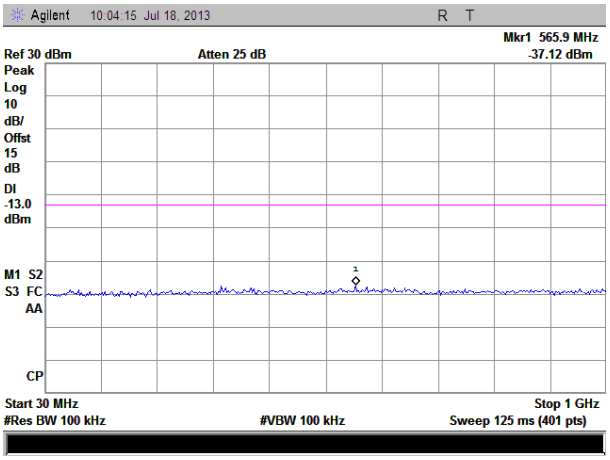
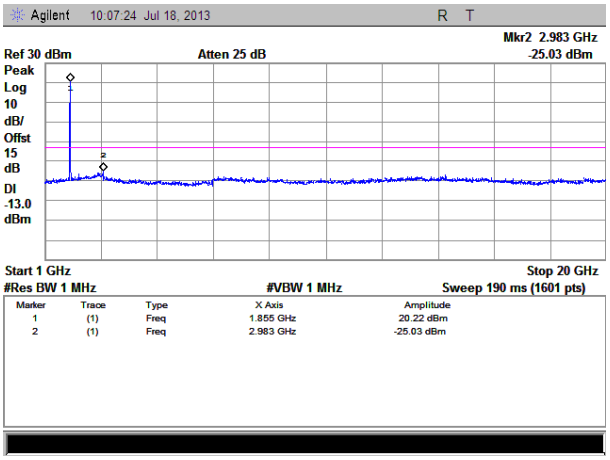


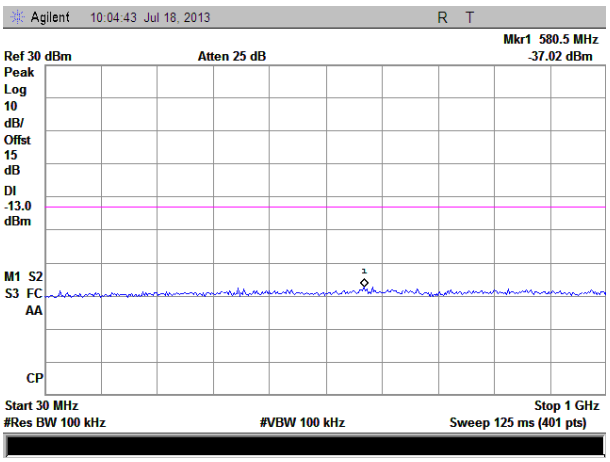
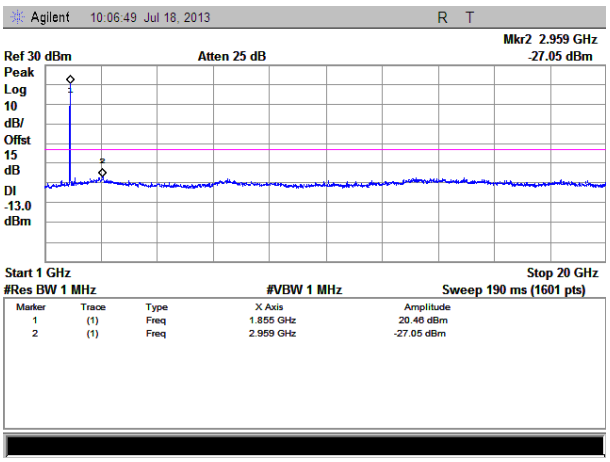
LTE Band 2

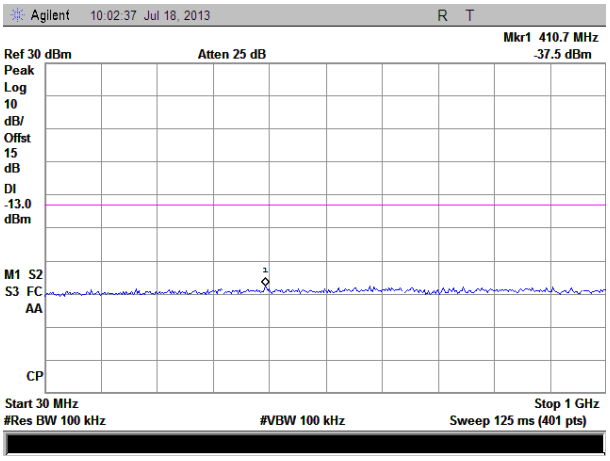
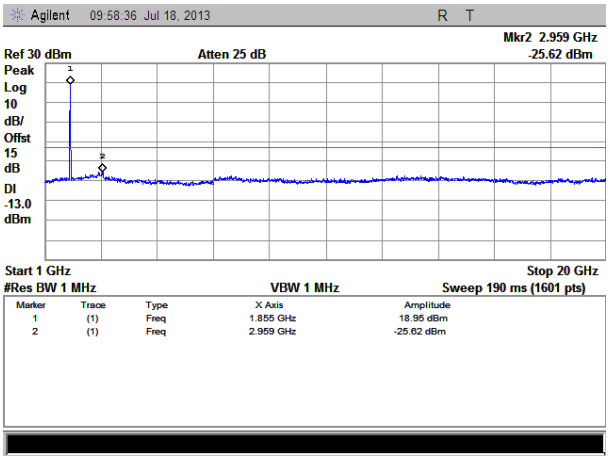
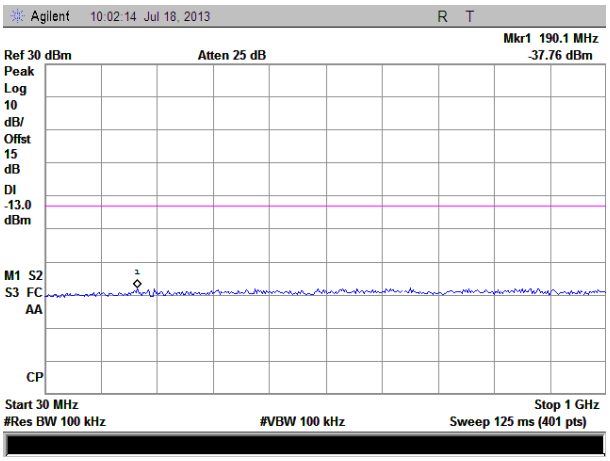
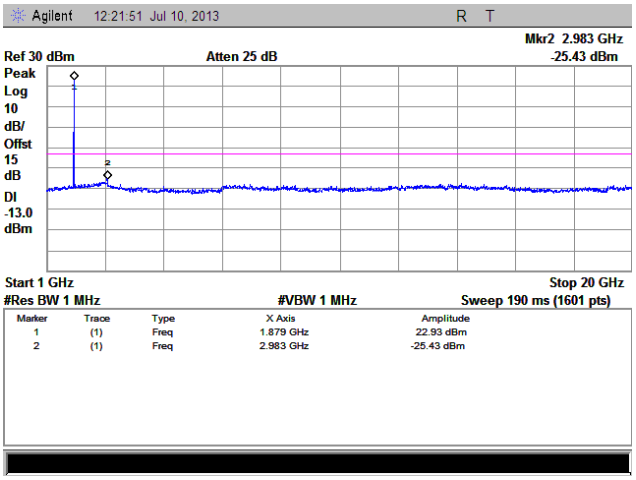
Low channel:

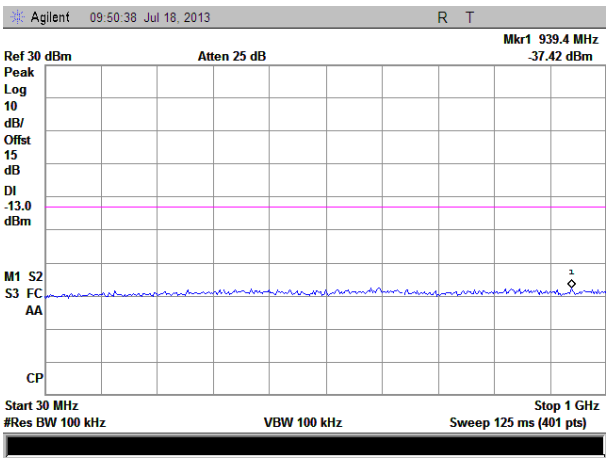
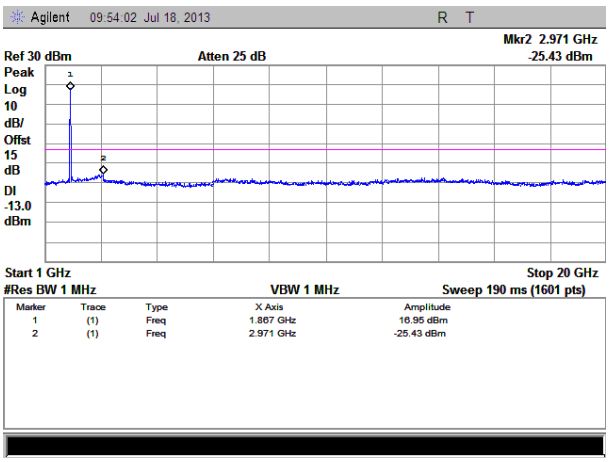
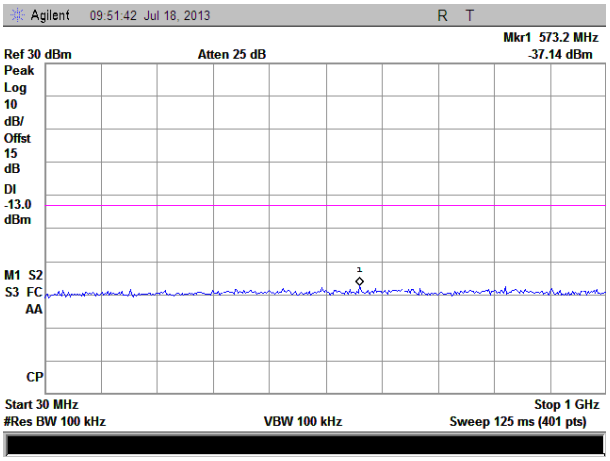
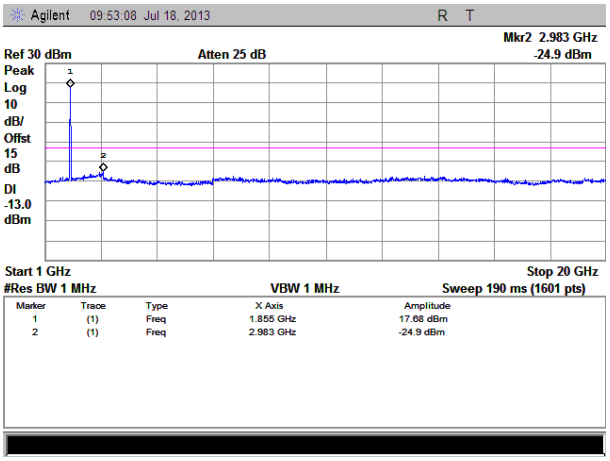
LTE Band 2 1.4MHz BW, Low Channel	
QPSK	
	
16QAM	
	

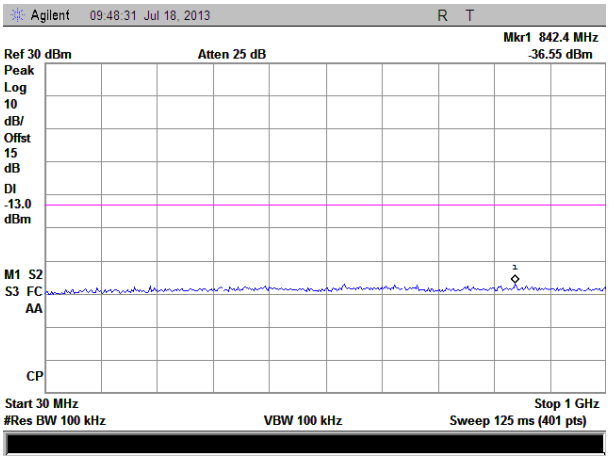
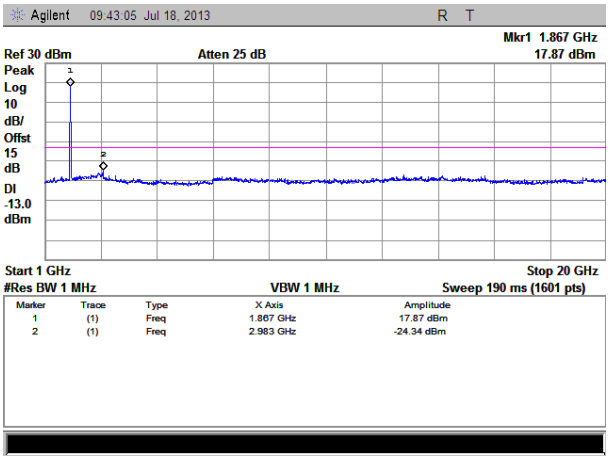
LTE Band 2 3MHz BW, Low Channel	
QPSK	
	
16QAM	
	

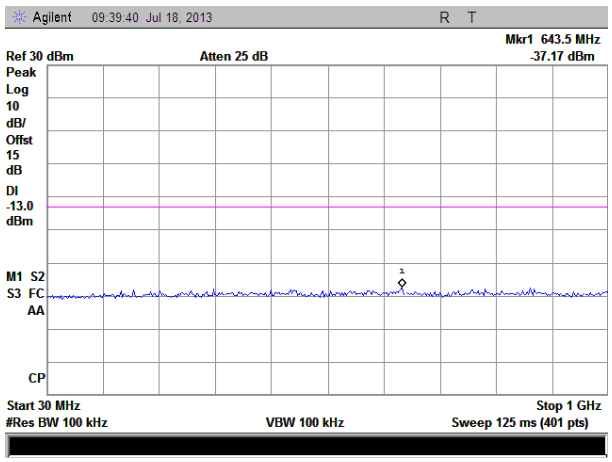
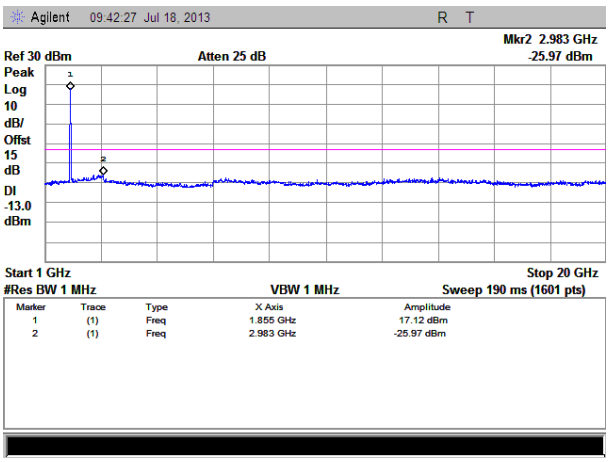
LTE Band 2 5MHz BW, Low Channel	
QPSK	
	
16QAM	

LTE Band 2 5MHz BW, Low Channel	
QPSK	
	

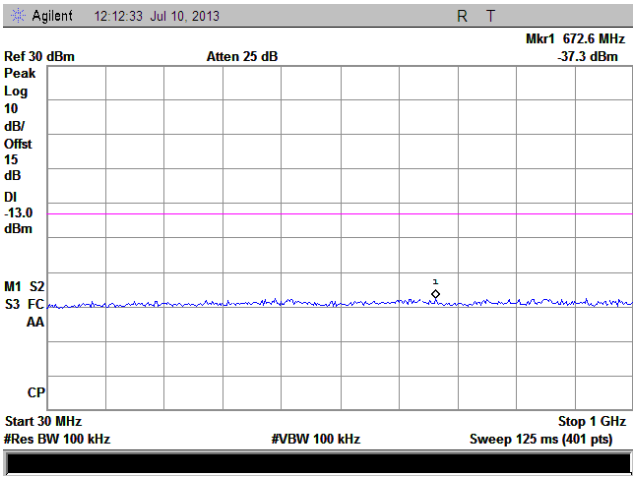
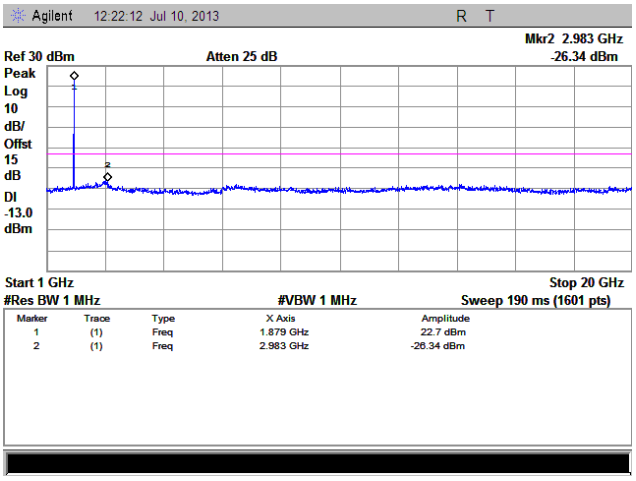
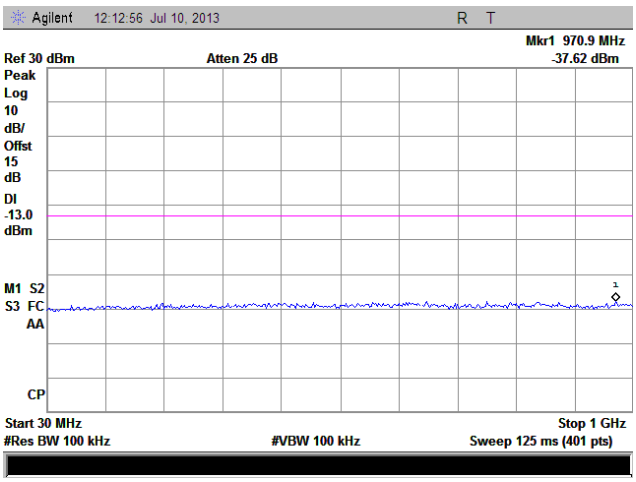
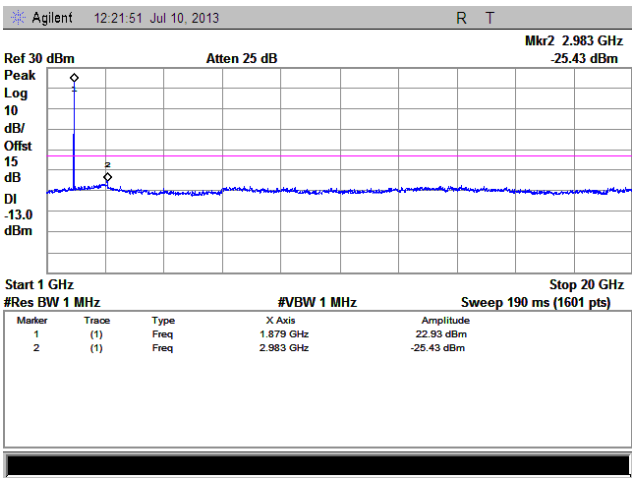
LTE Band 2 10MHz BW, Low Channel	
QPSK	
	
16QAM	
	

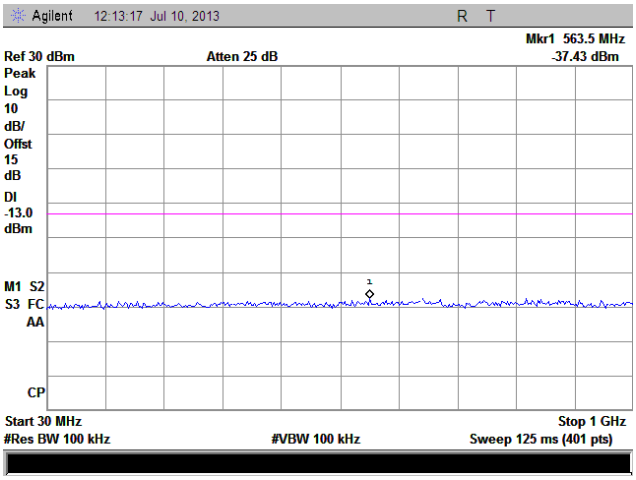
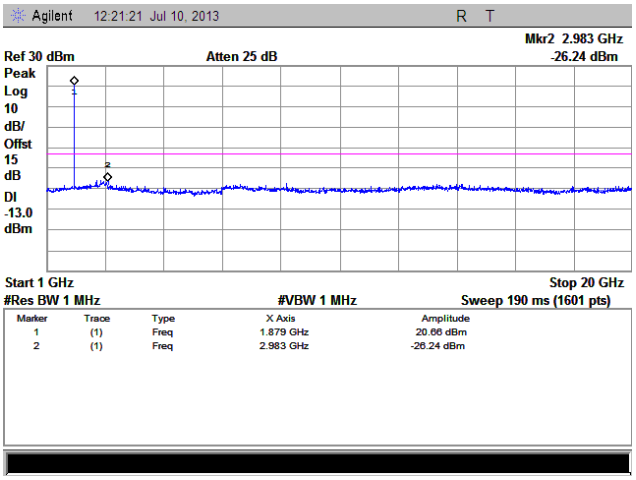
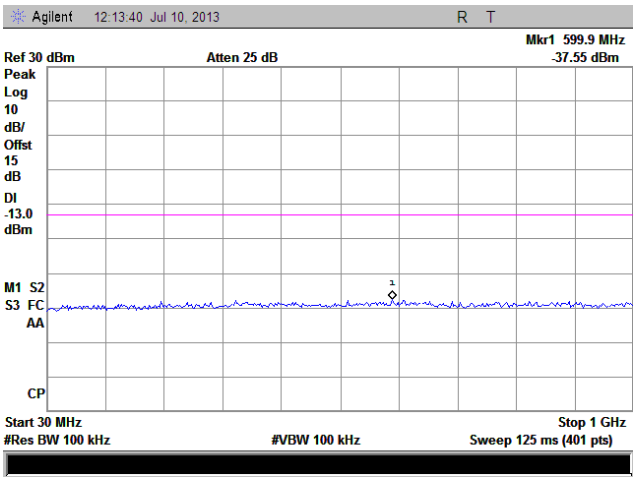
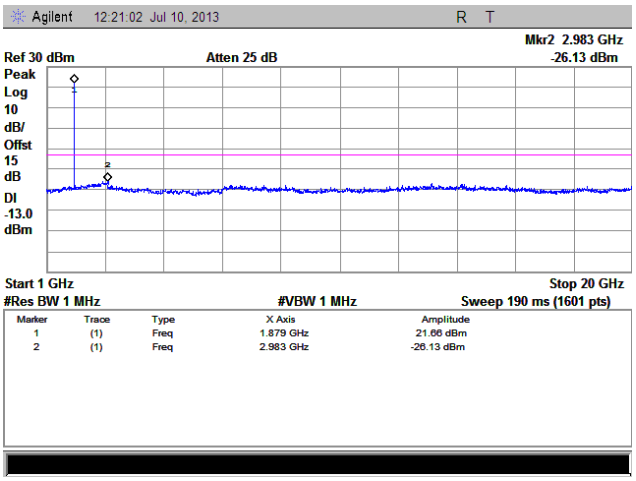
LTE Band 2 15MHz BW, Low Channel	
QPSK	
	
16QAM	
	

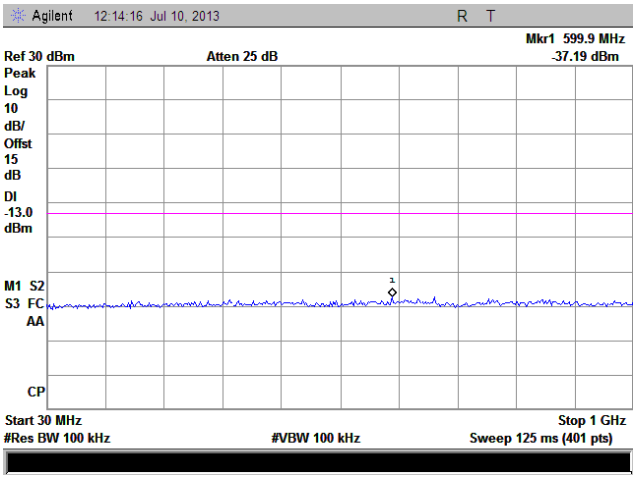
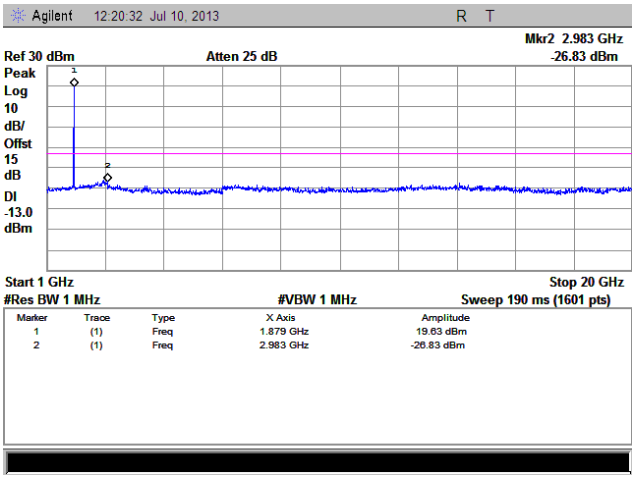
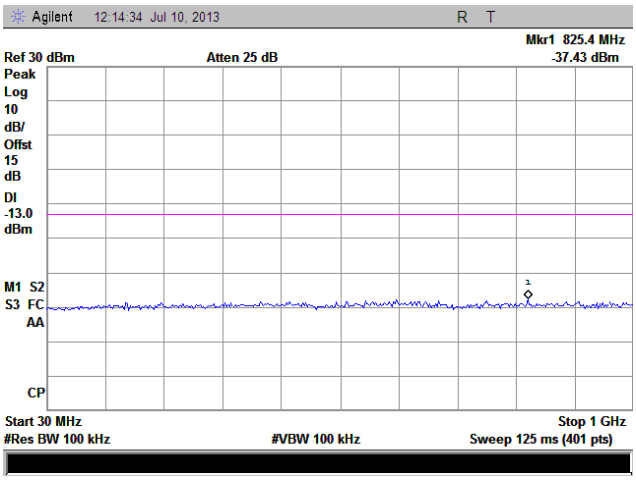
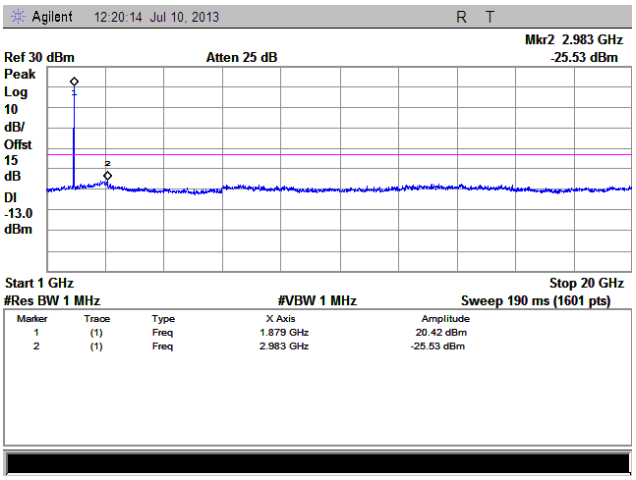
LTE Band 2 20MHz BW, Low Channel	
QPSK	
	
16QAM	

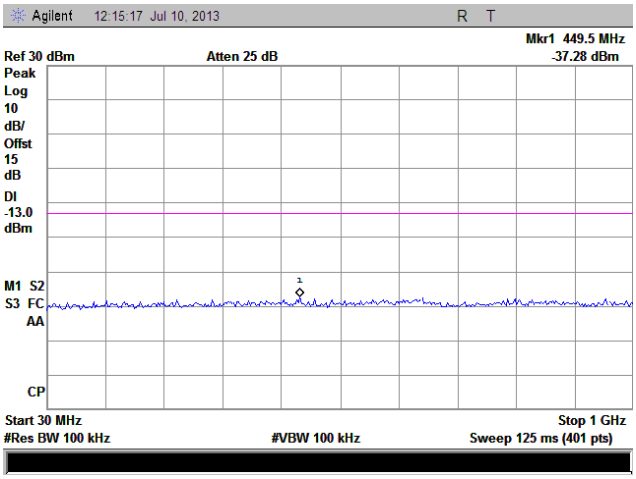
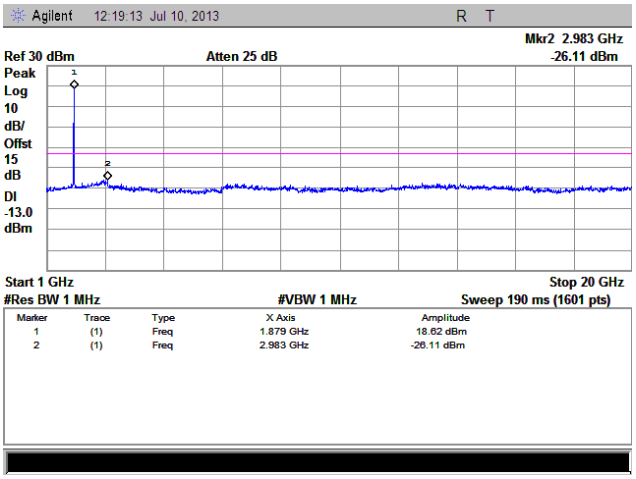
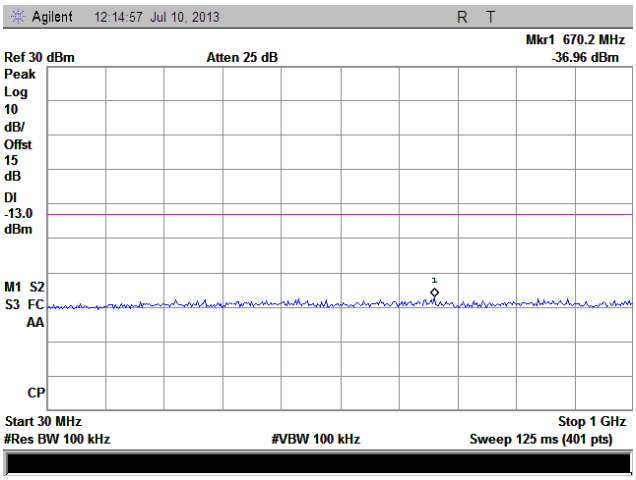
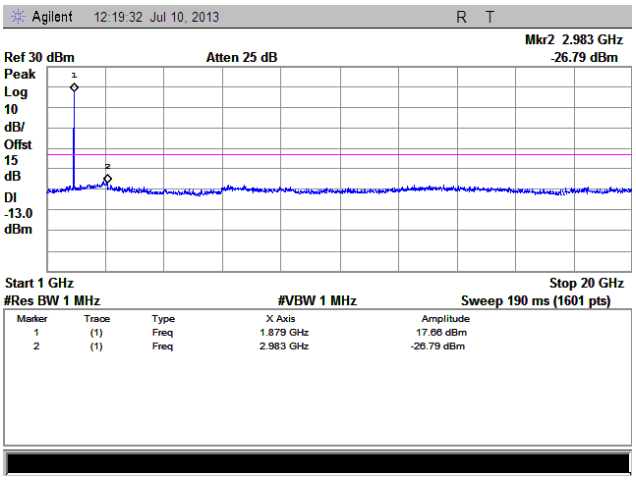
LTE Band 2 20MHz BW, Low Channel	
QPSK	
	

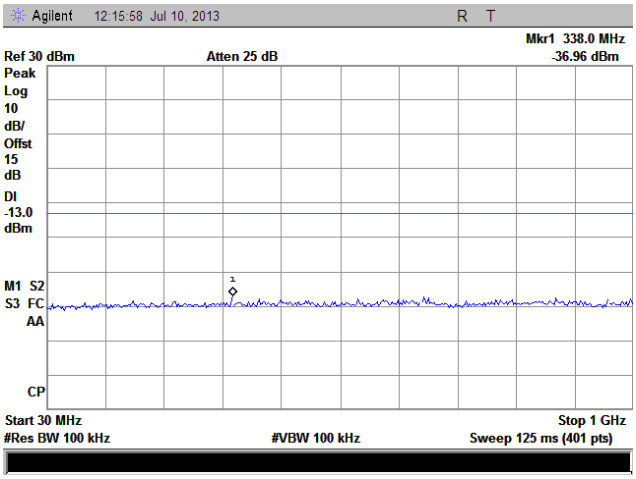
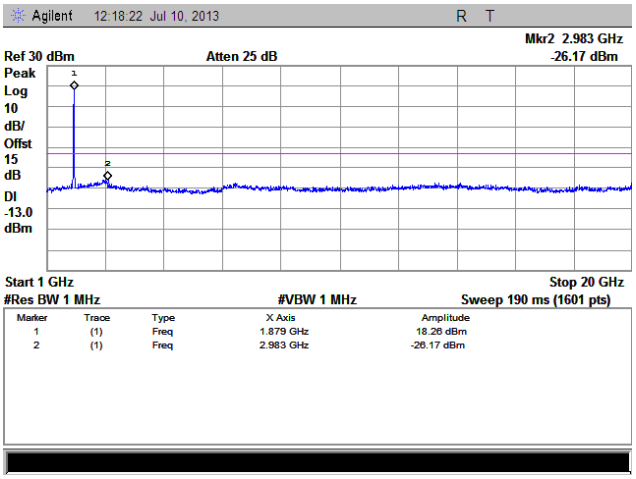
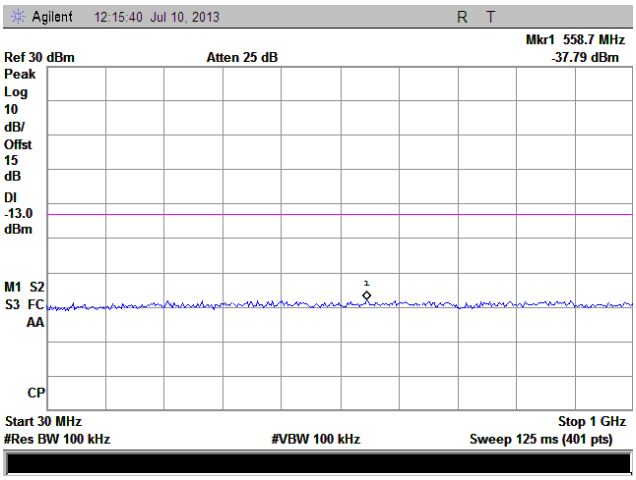
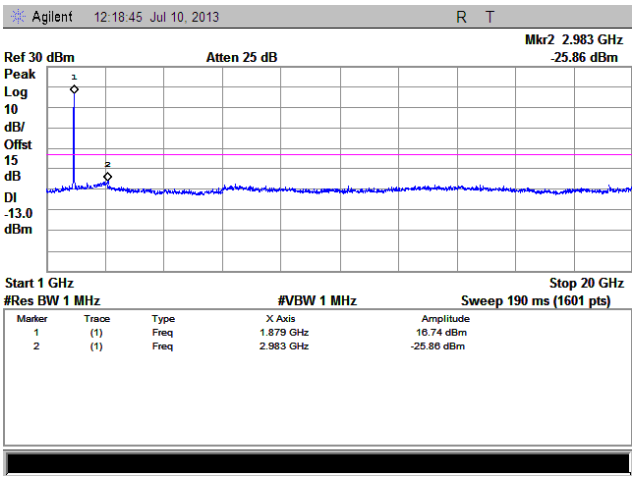
Middle channel:

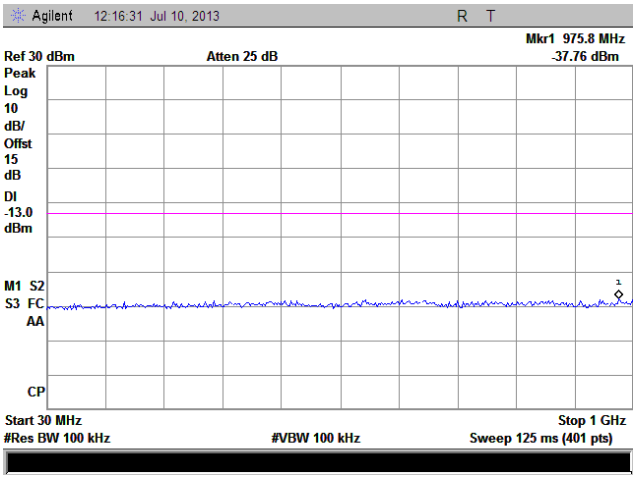
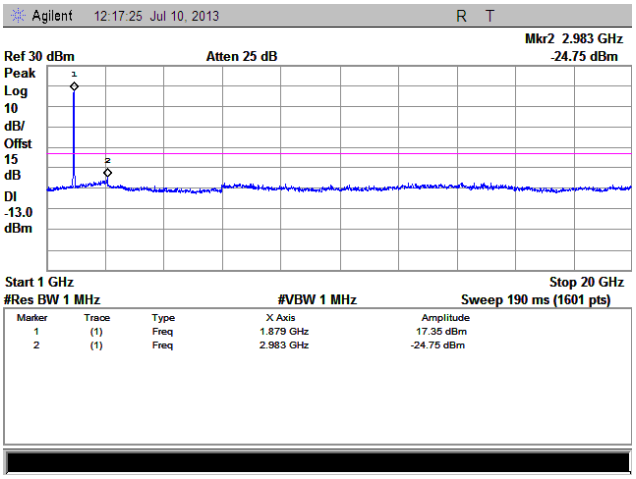
LTE Band 2 1.4MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 2 3MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 2 5MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 2 10MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 2 15MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 2 20MHz BW, Mid Channel	
QPSK	
	
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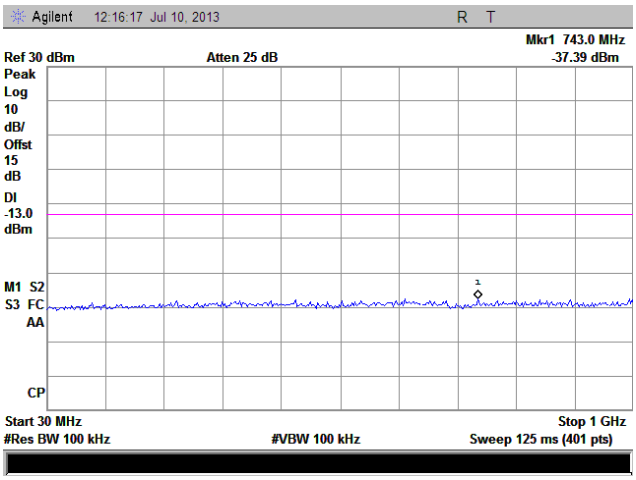
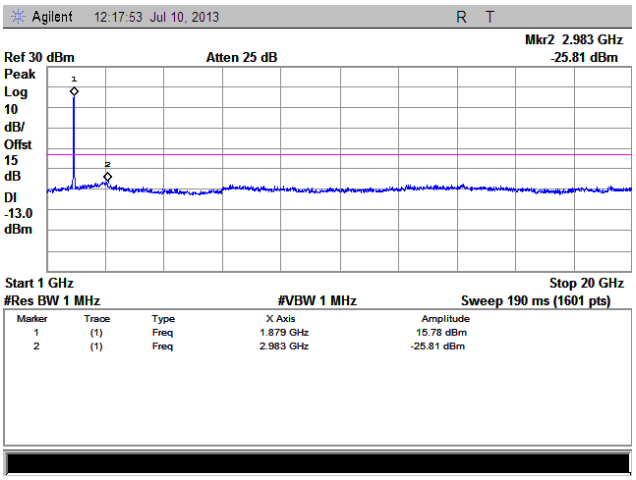
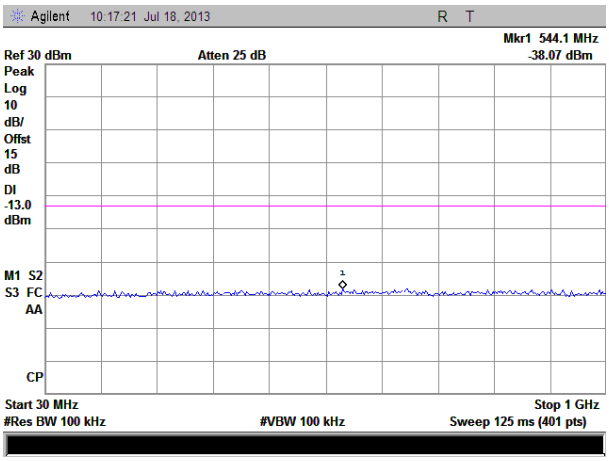
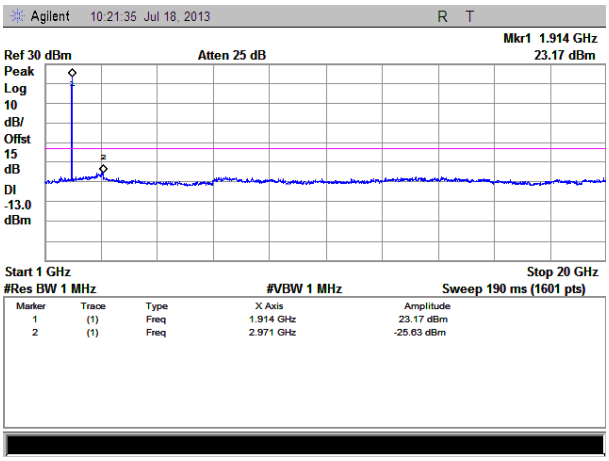
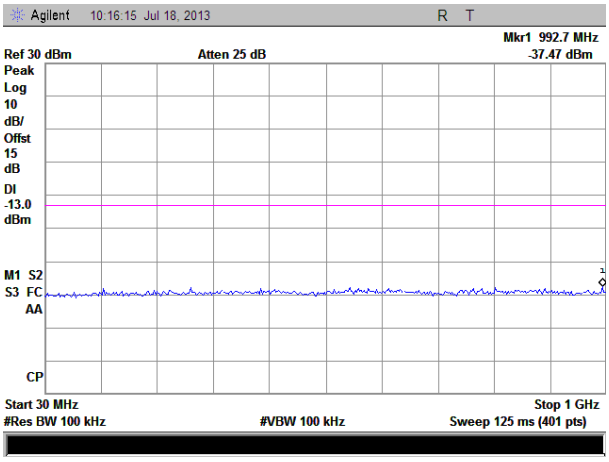
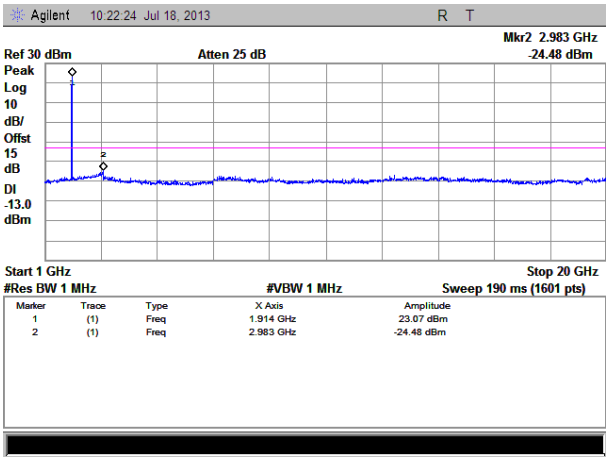
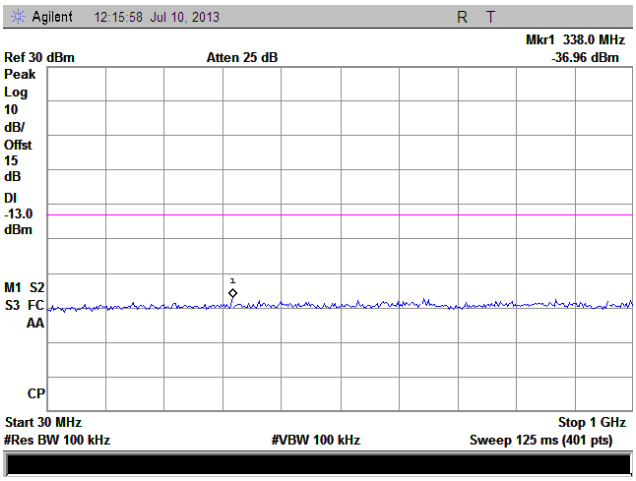
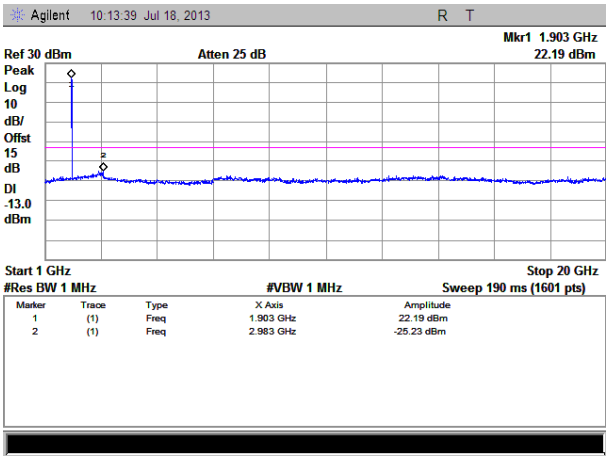
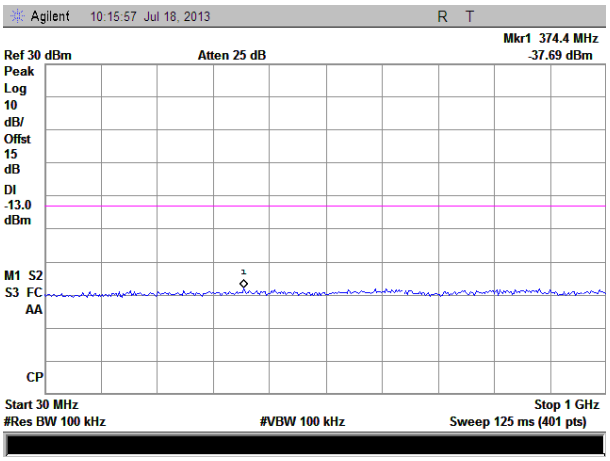
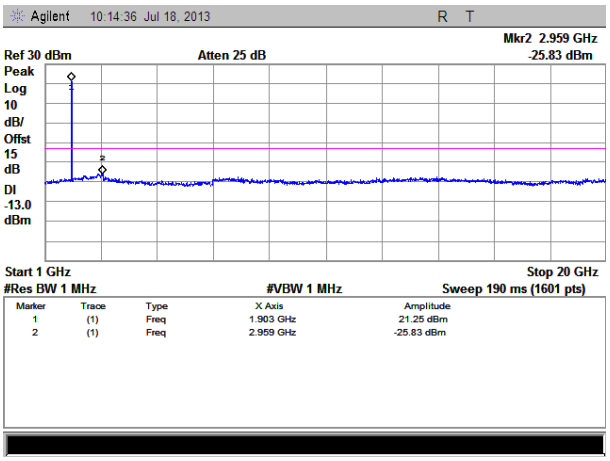
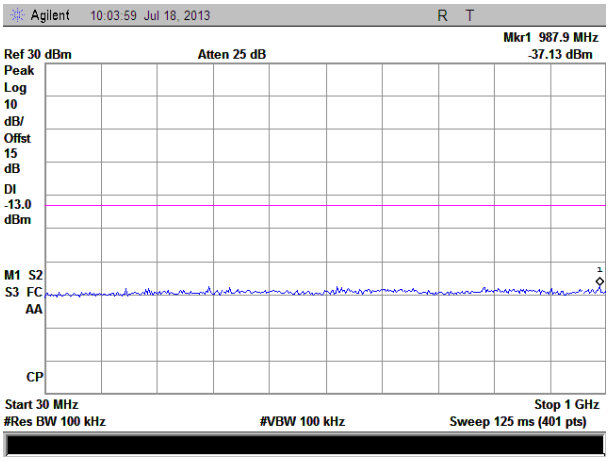
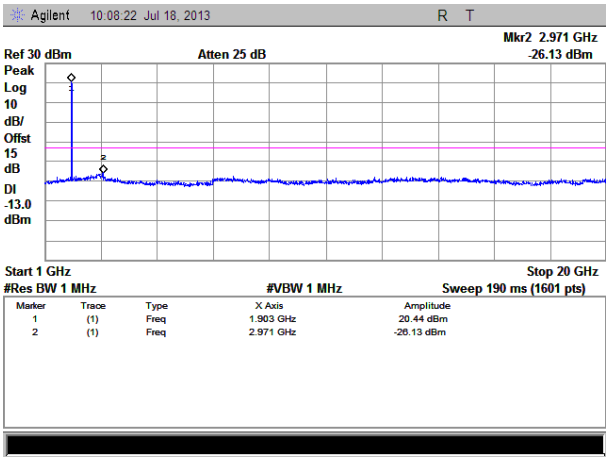
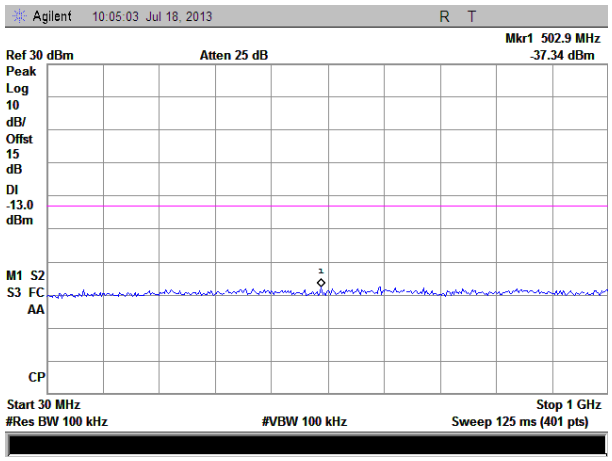
	

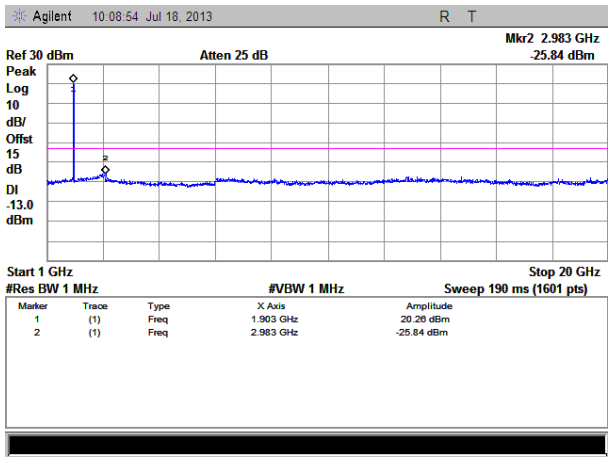
High channel:

LTE Band 2 1.4MHz BW, High Channel	
QPSK	
	
16QAM	
	

LTE Band 2 3MHz BW, High Channel	
QPSK	
	
16QAM	
	

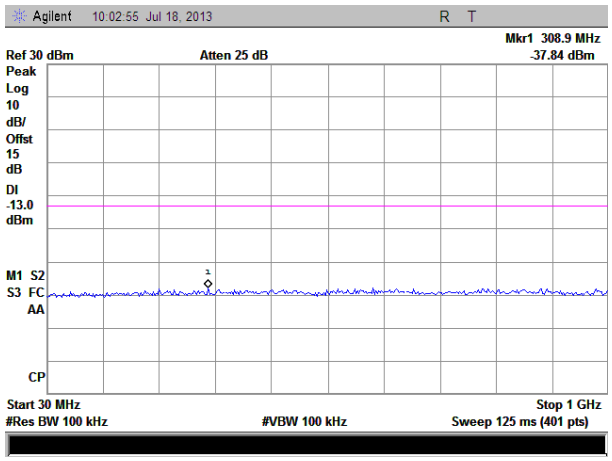
LTE Band 2 5MHz BW, High Channel	
QPSK	
	
16QAM	

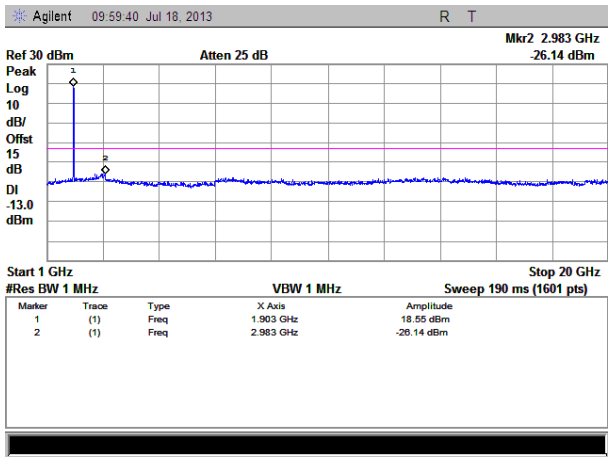




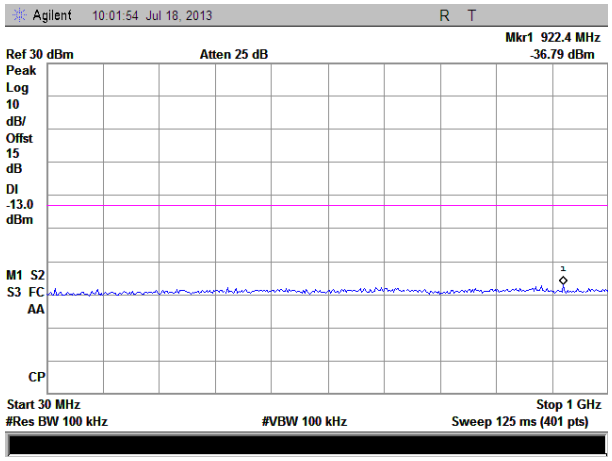
LTE Band 2 10MHz BW, High Channel

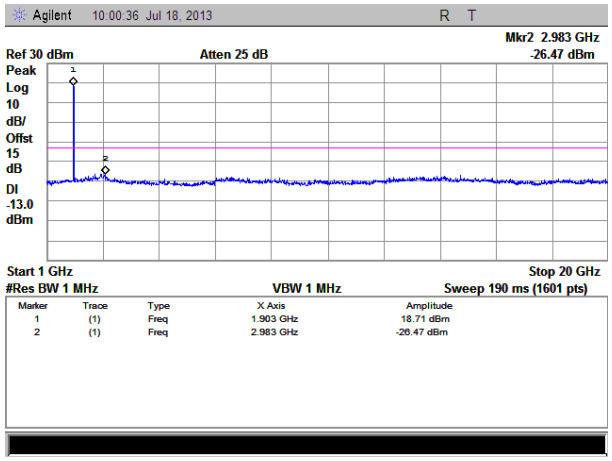
QPSK

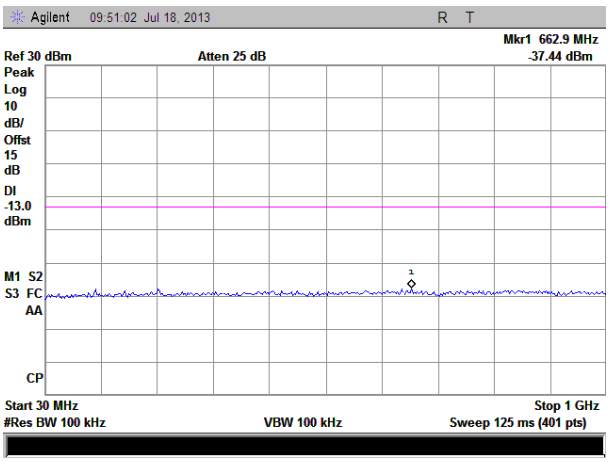
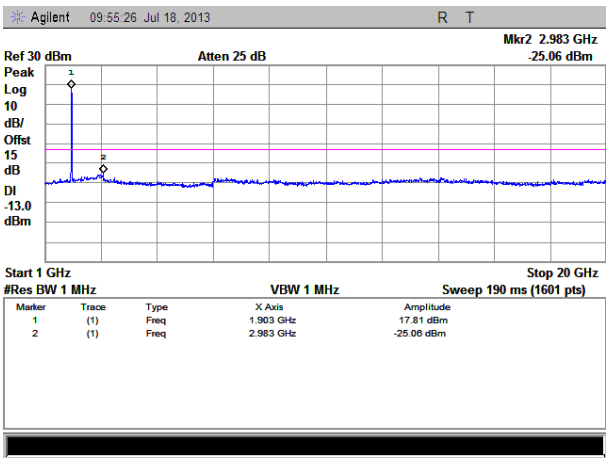
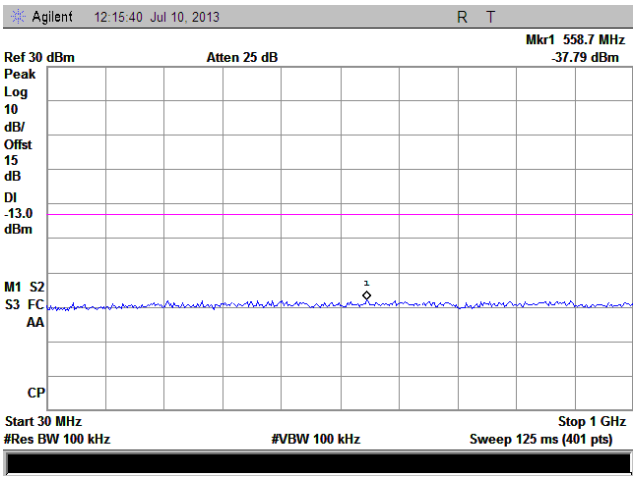
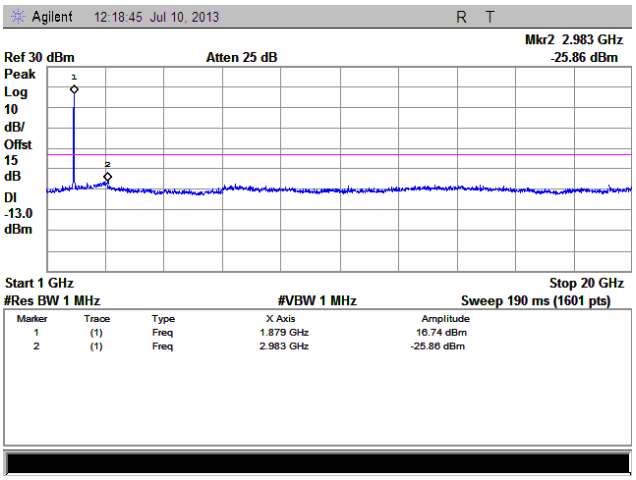


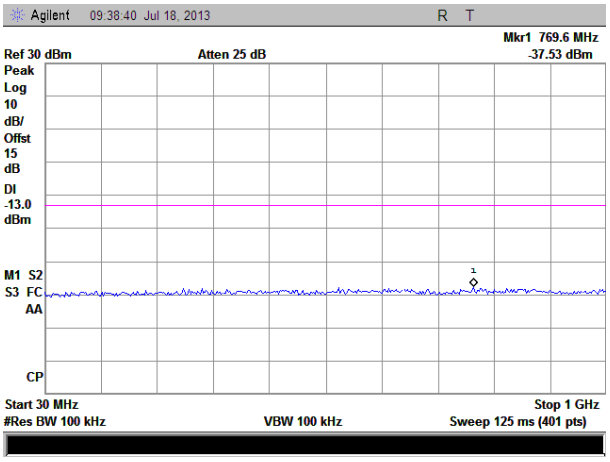
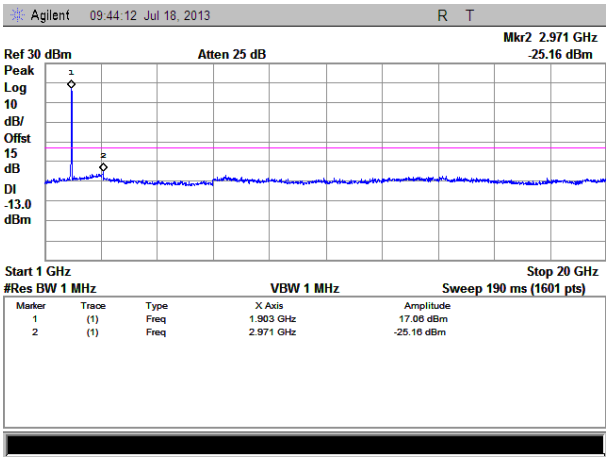


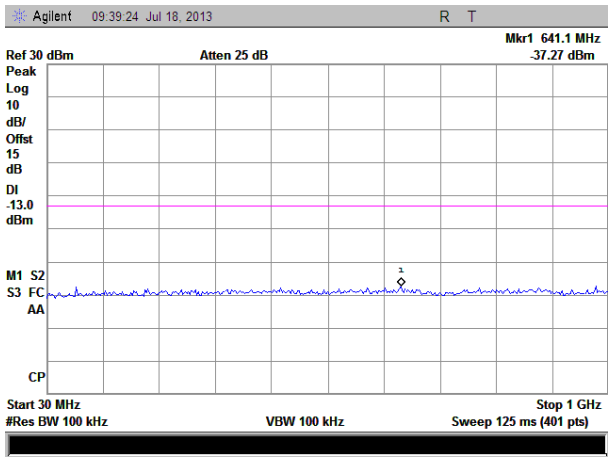
16QAM

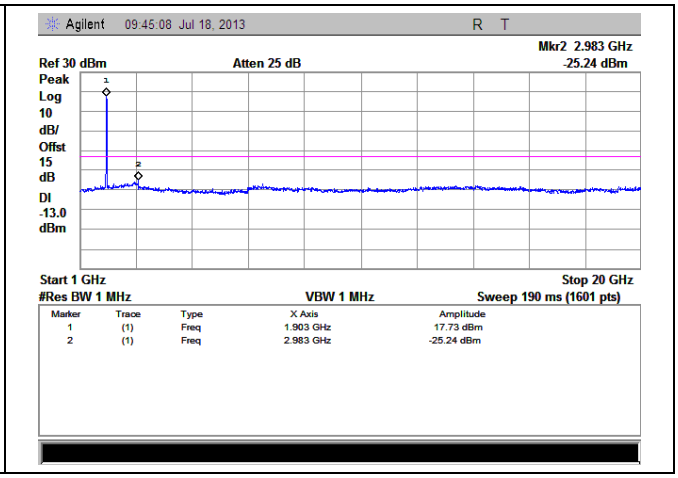




LTE Band 2 15MHz BW, High Channel	
QPSK	
	
16QAM	
	

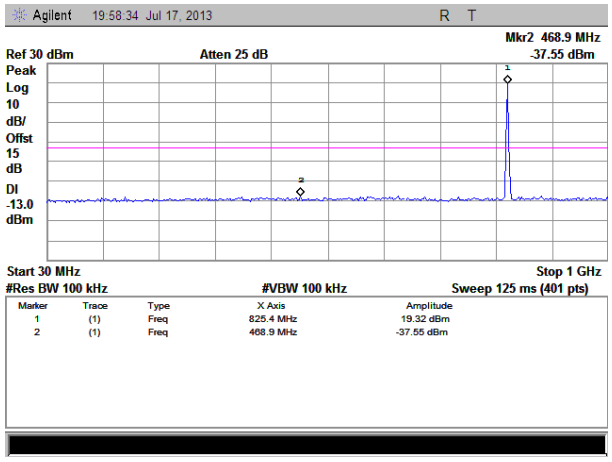
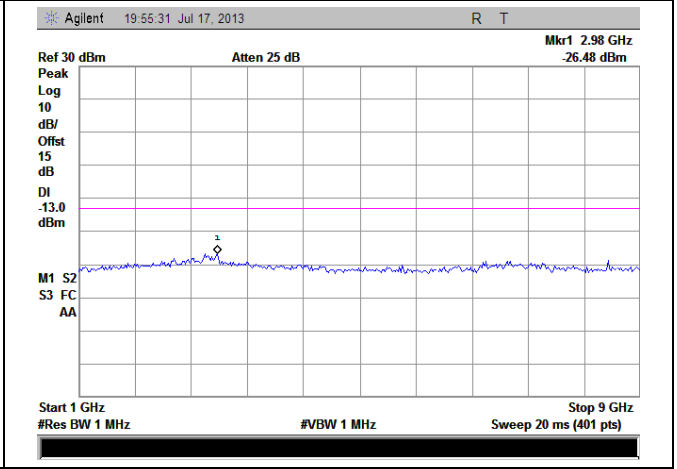
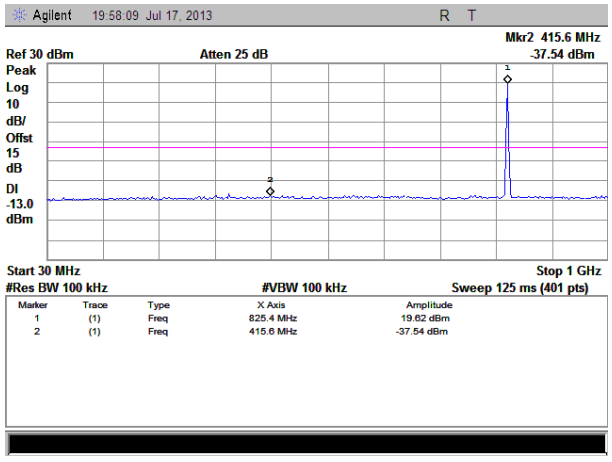
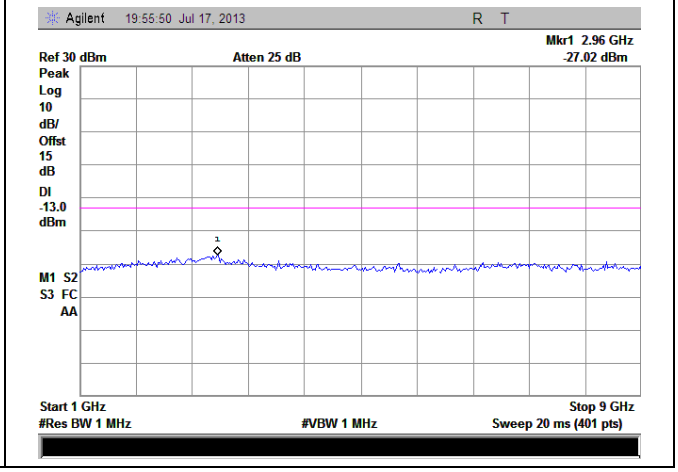
LTE Band 2 20MHz BW, High Channel	
QPSK	
	
16QAM	



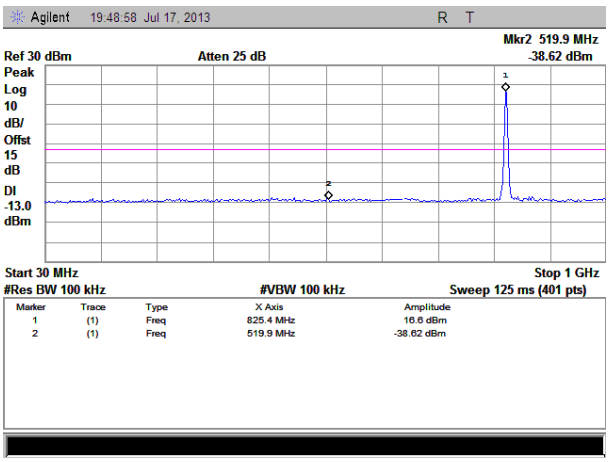


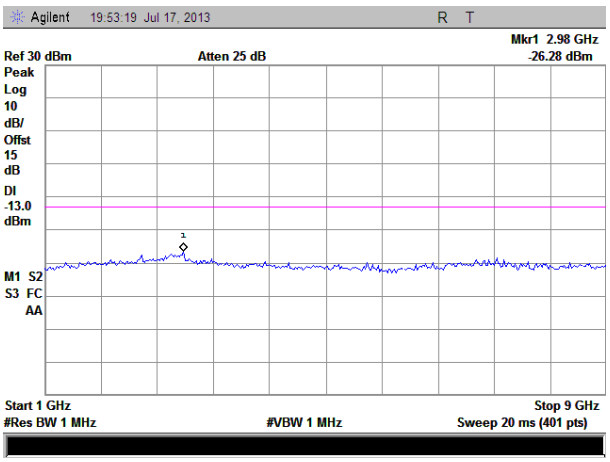
LTE Band 5

Low channel:

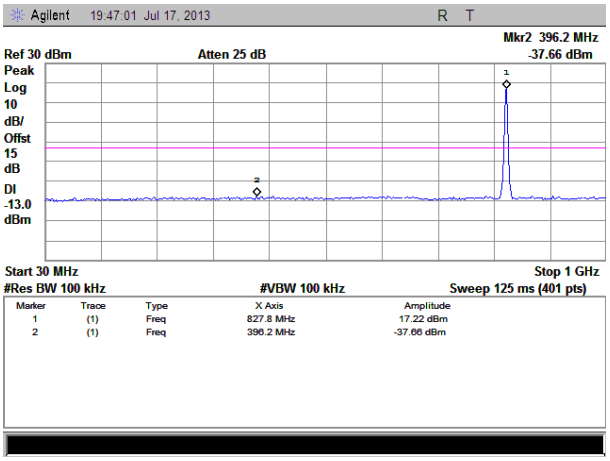
LTE Band 5 1.4MHz BW, Low Channel	
QPSK	
	
16QAM	
	

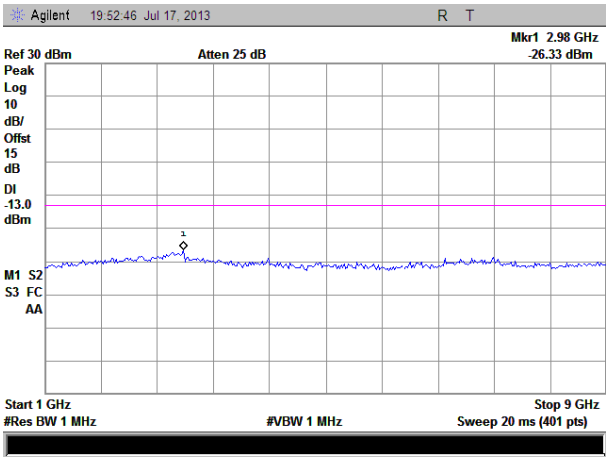
LTE Band 5 3MHz BW, Low Channel
QPSK



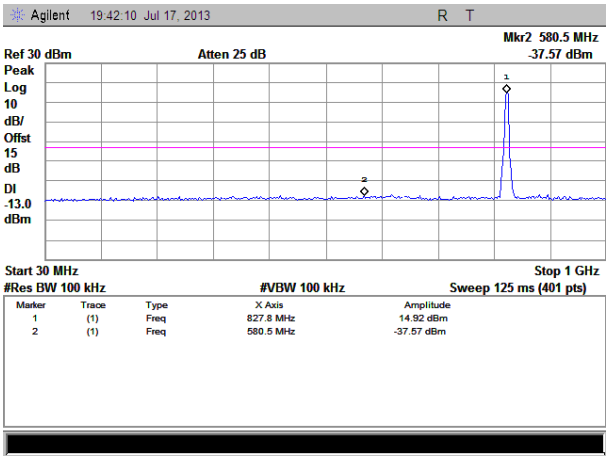


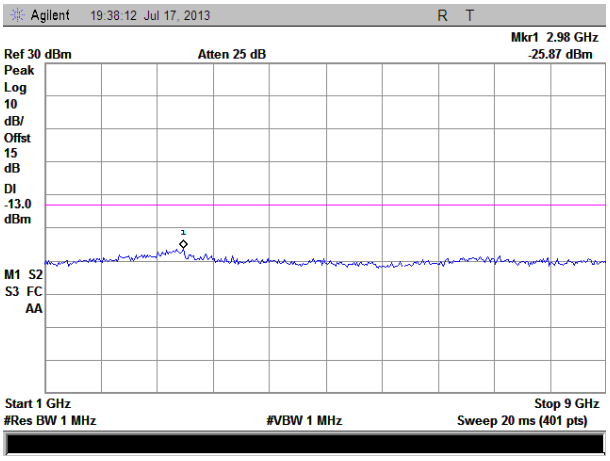
16QAM





LTE Band 5 5MHz BW, Low Channel
QPSK

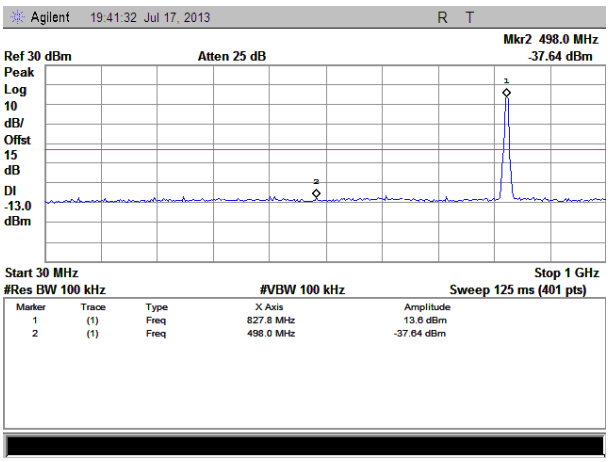


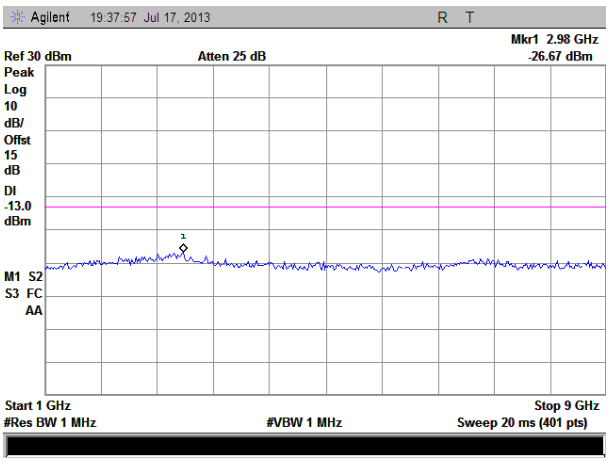


16QAM

LTE Band 5 5MHz BW, Low Channel

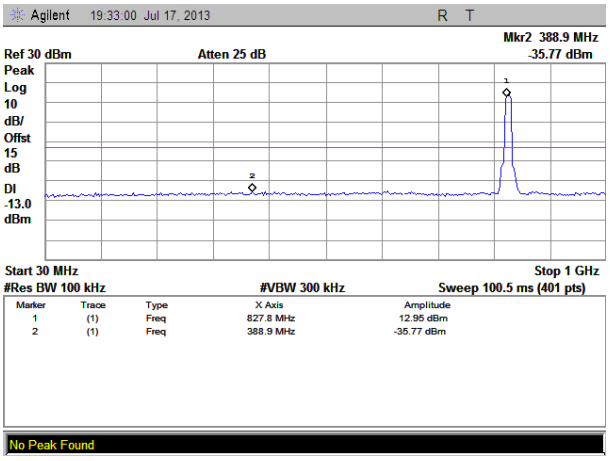
QPSK

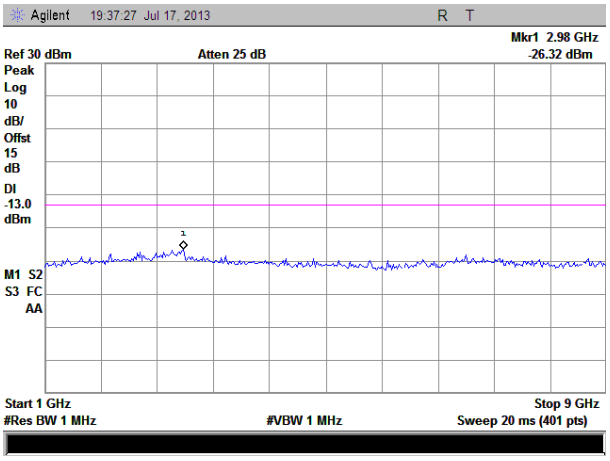




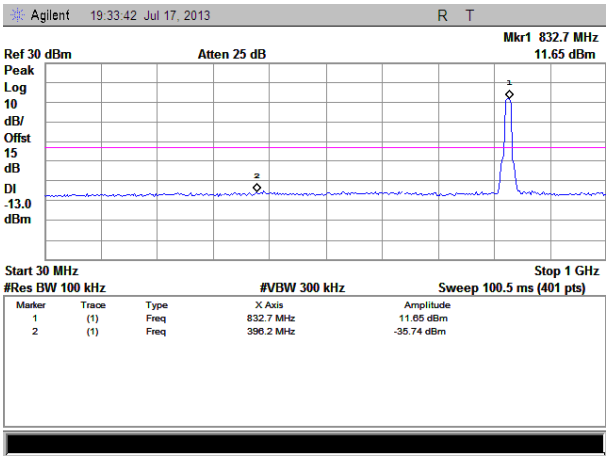
LTE Band 5 10MHz BW, Low Channel

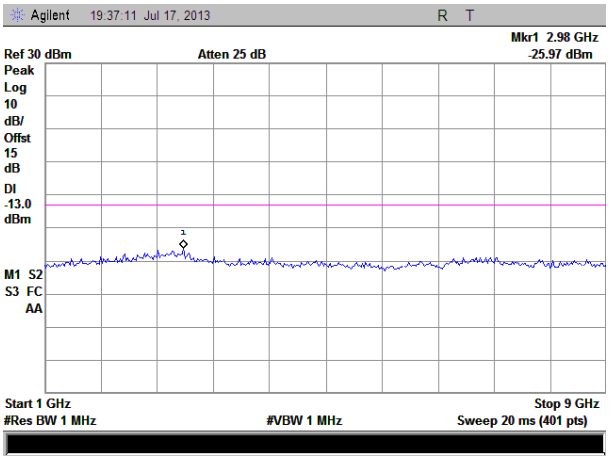
QPSK



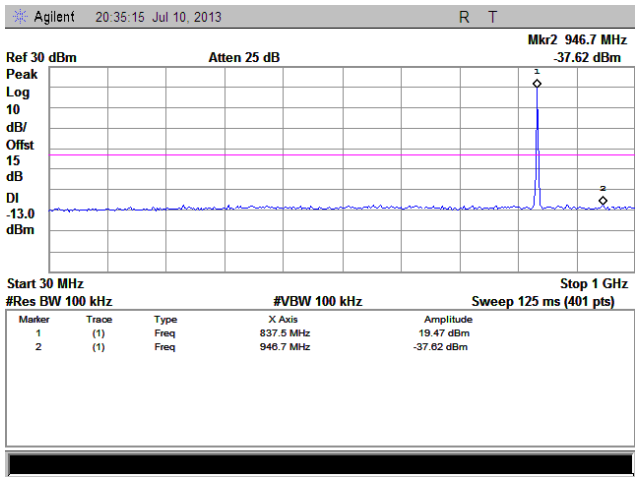
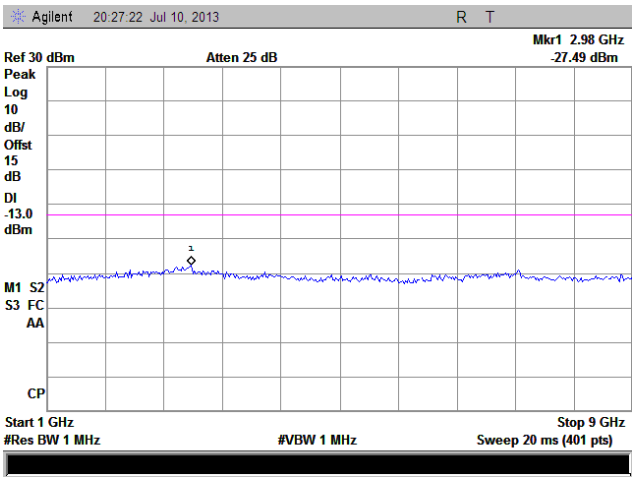
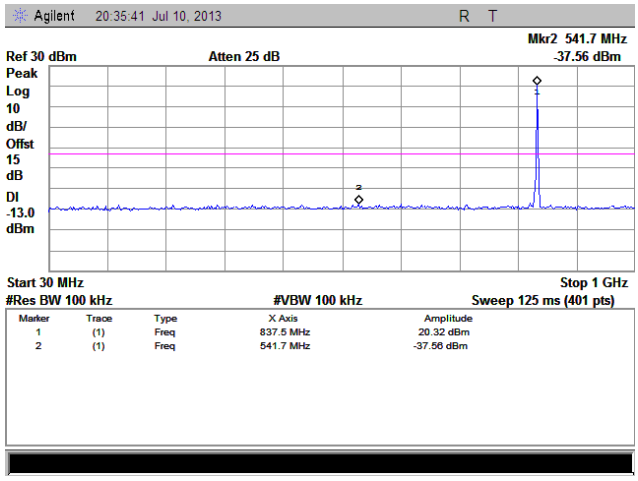
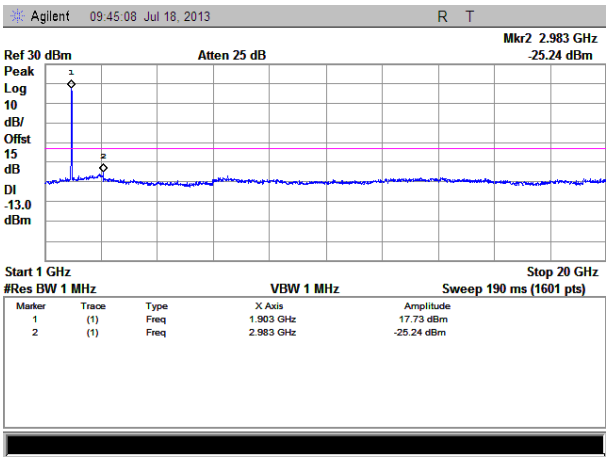


16QAM



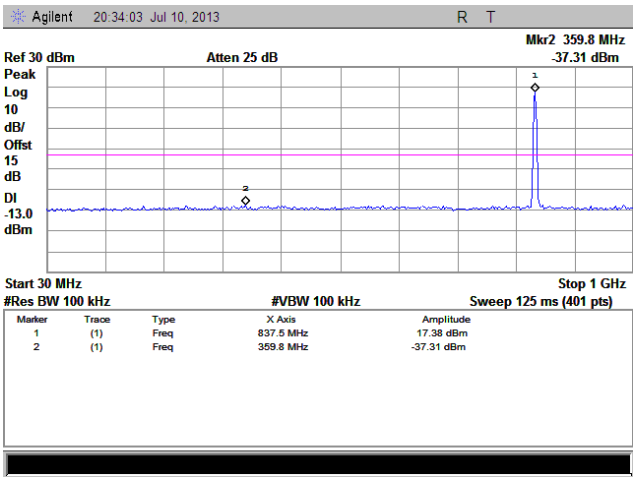


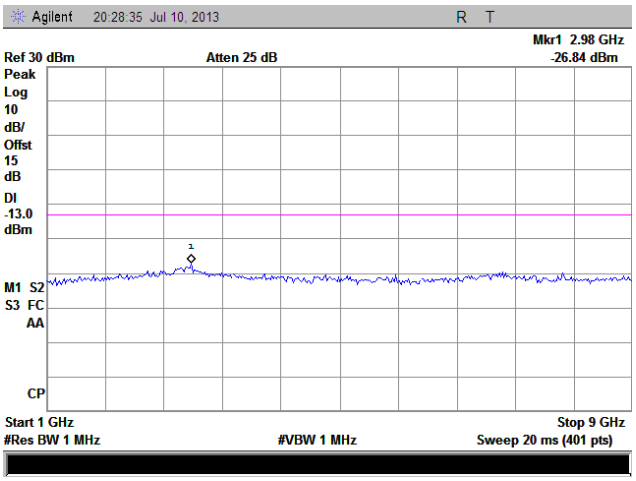
Middle channel:

LTE Band 5 1.4MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

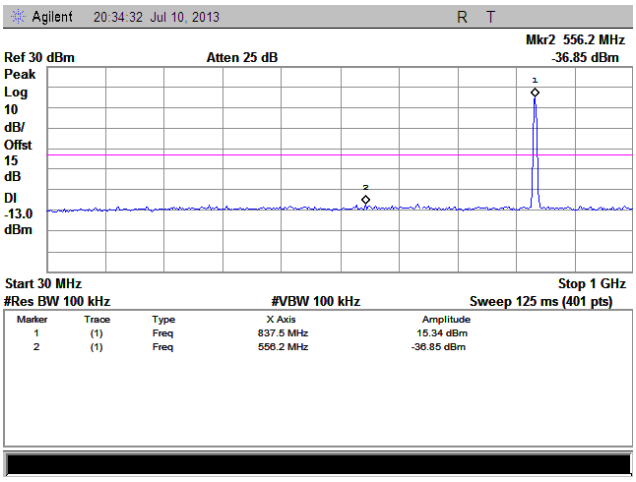
LTE Band 5 3MHz BW, Mid Channel

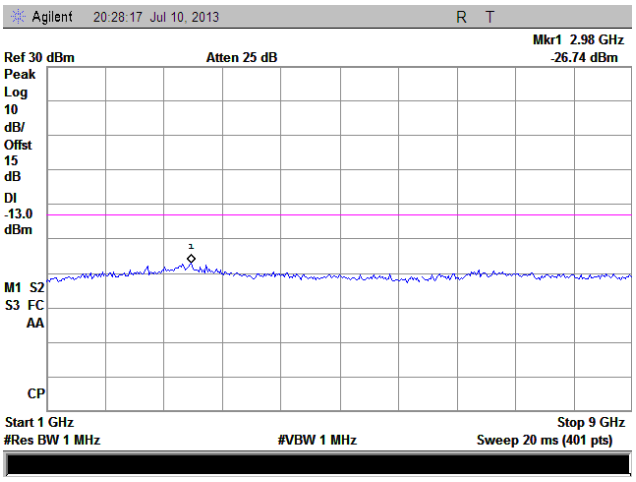
QPSK

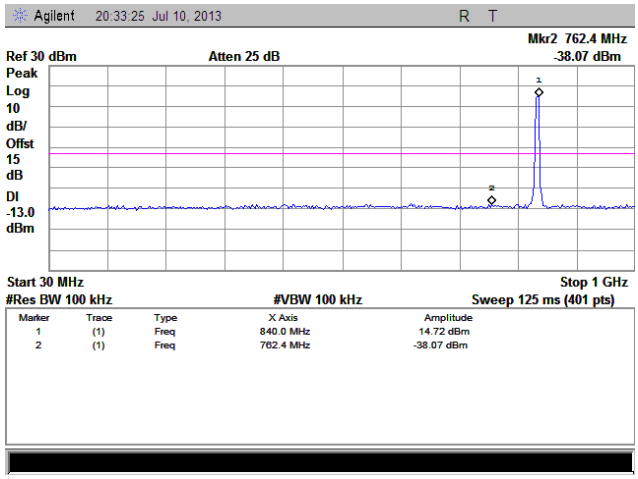
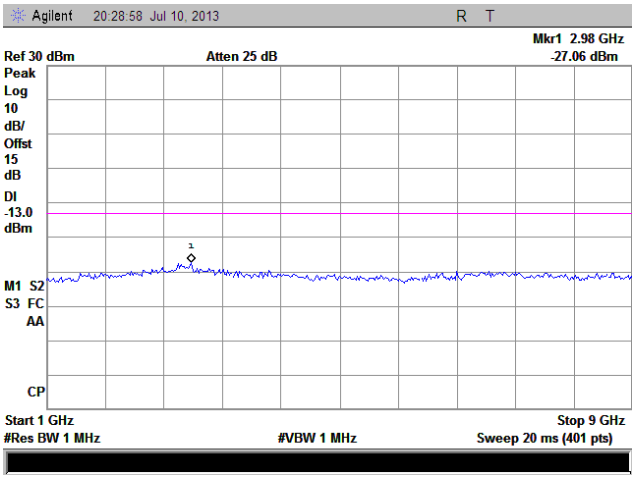
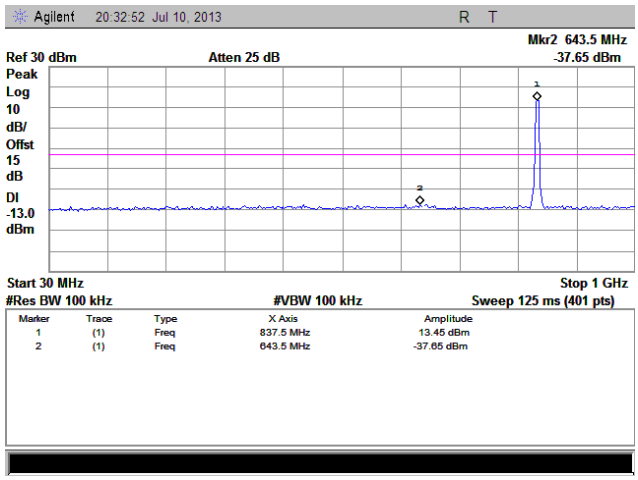
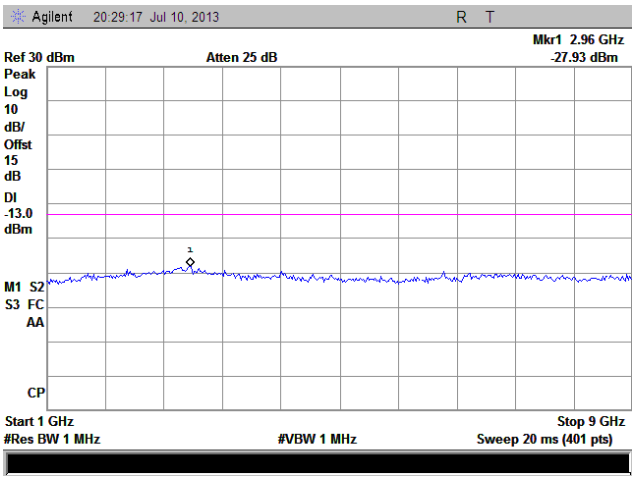


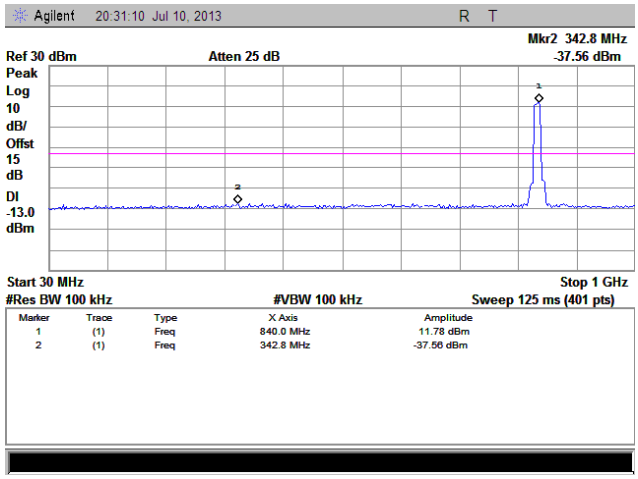
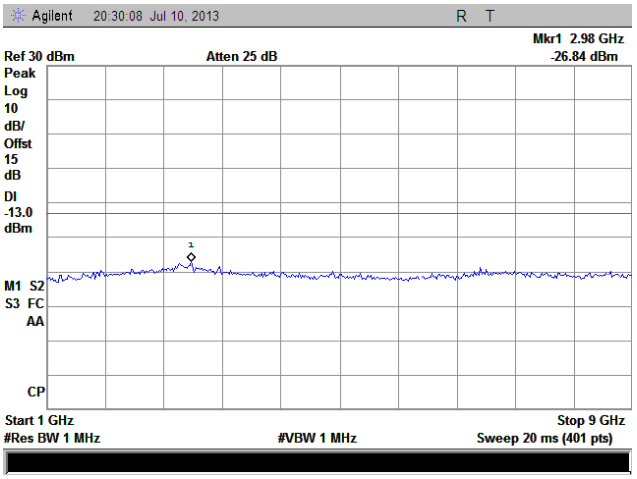
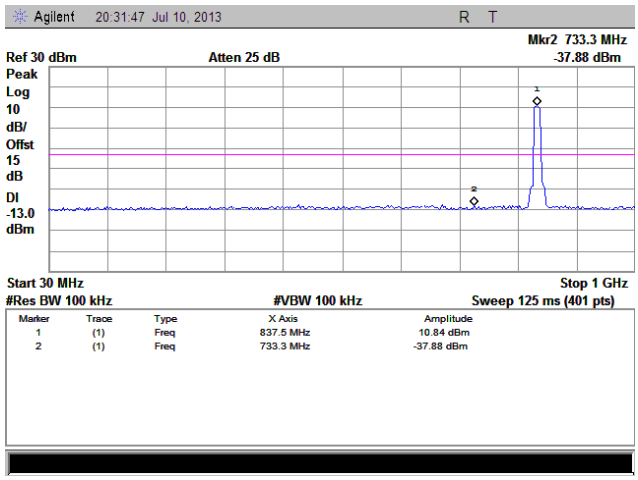
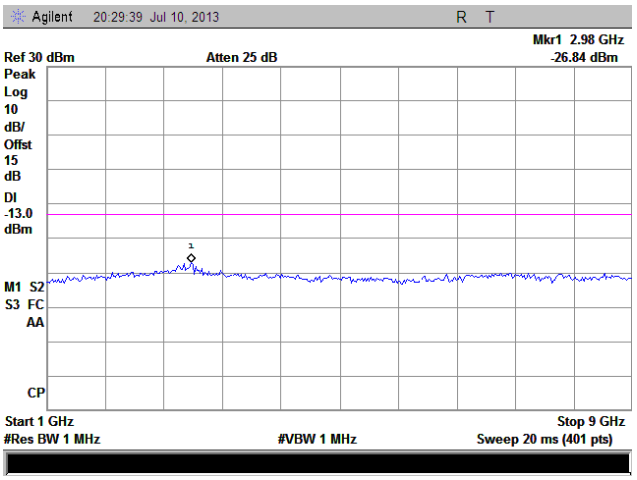


16QAM

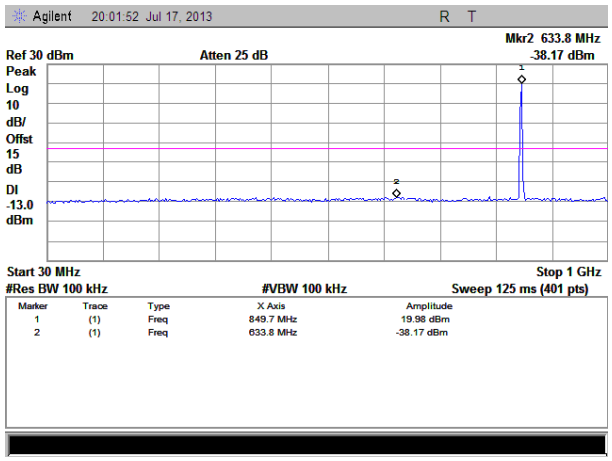
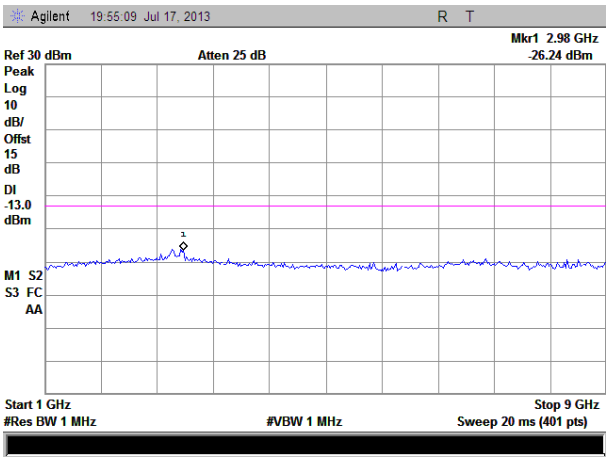
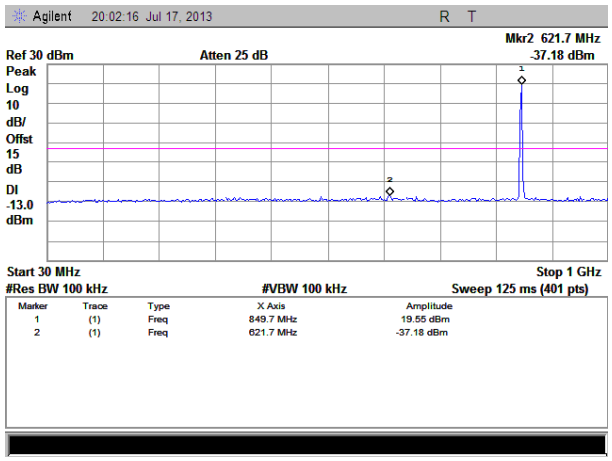
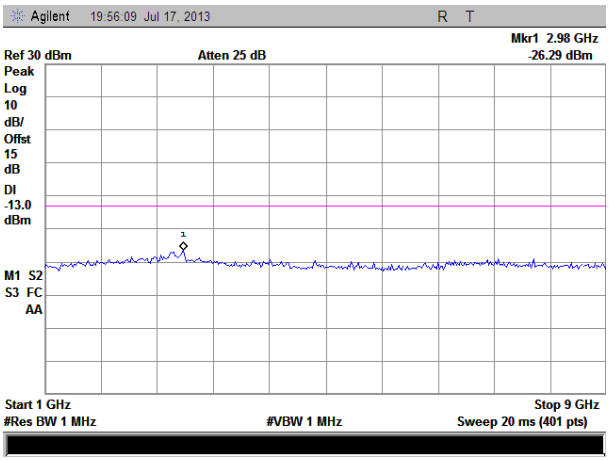


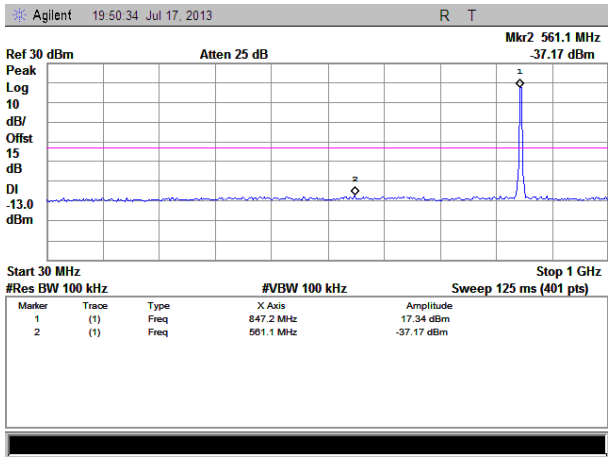
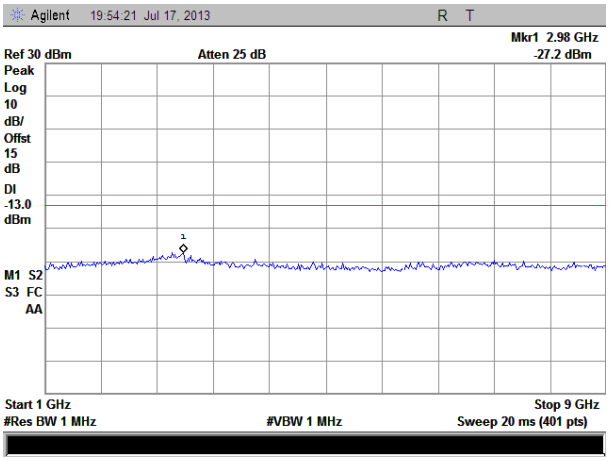


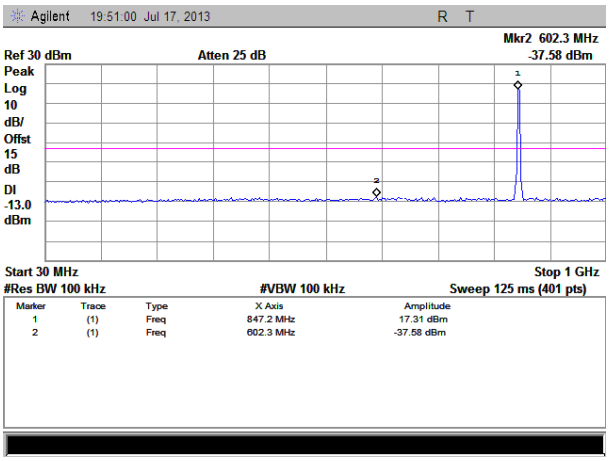
LTE Band 5 5MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

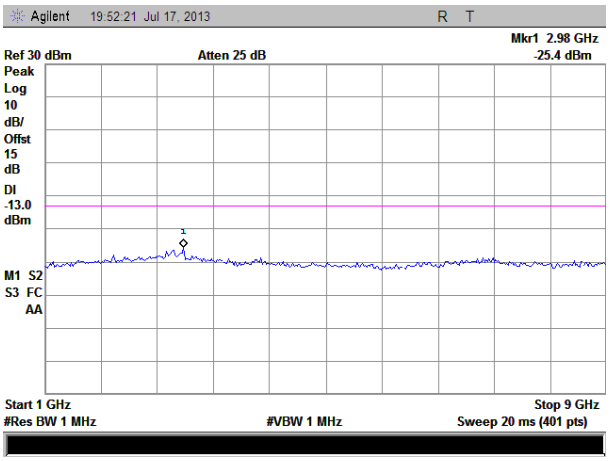
LTE Band 5 10MHz BW, Mid Channel	
QPSK	
	
16QAM	
	

High channel:

LTE Band 5 1.4MHz BW, High Channel	
QPSK	
	
16QAM	
	

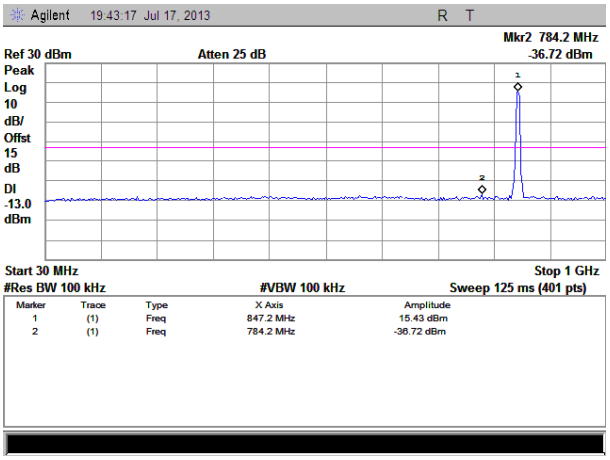
LTE Band 5 3MHz BW, High Channel	
QPSK	
	
16QAM	

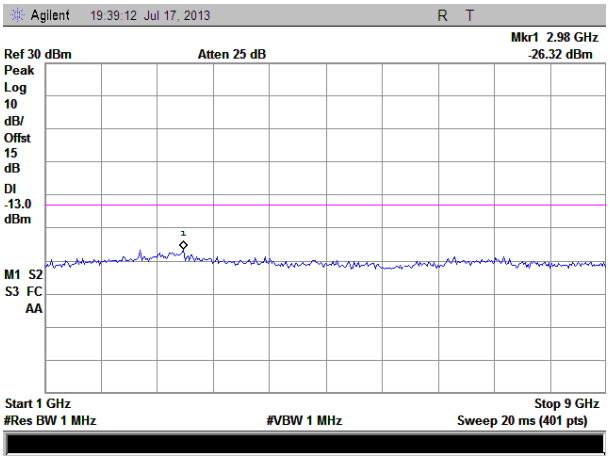




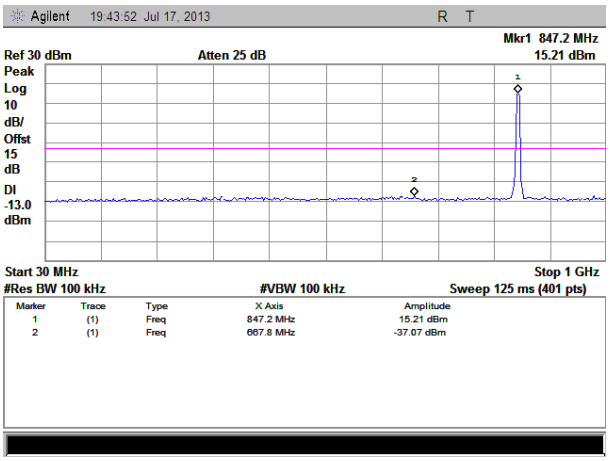
LTE Band 5 5MHz BW, High Channel

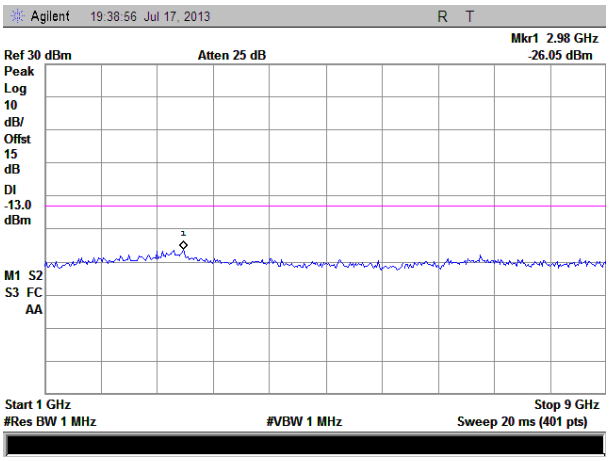
QPSK

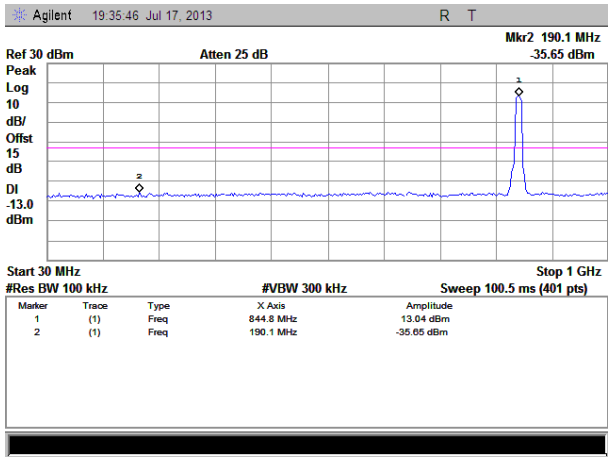
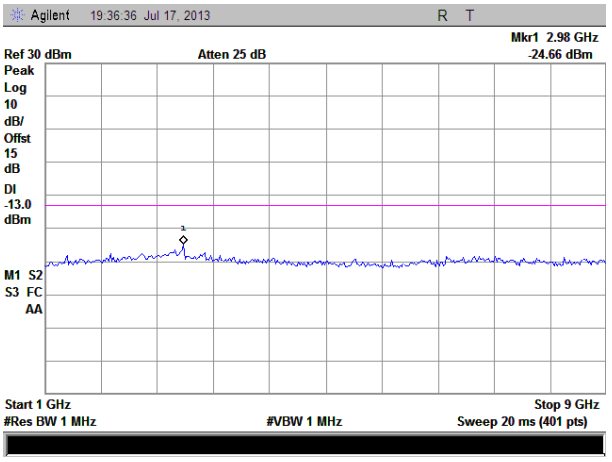
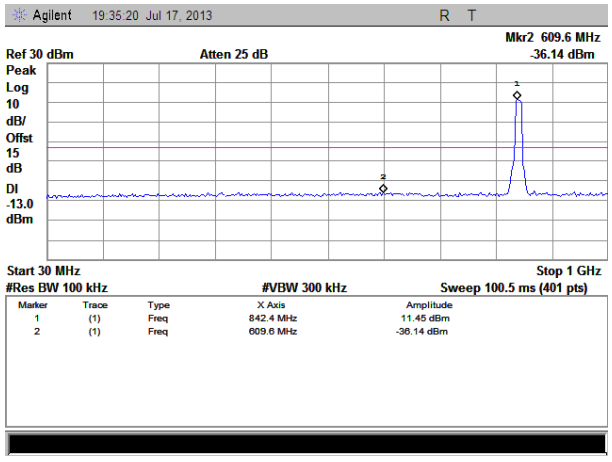
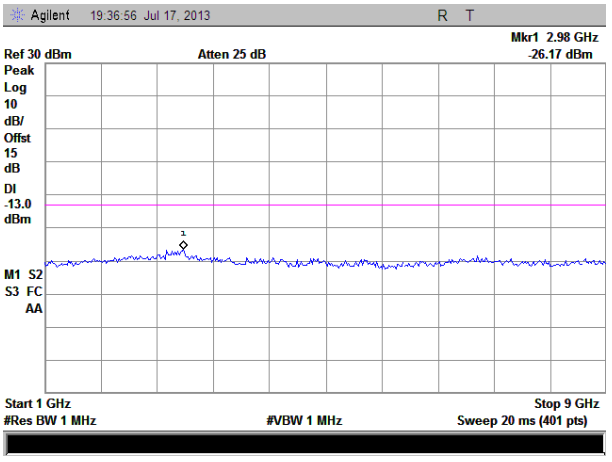




16QAM





LTE Band 5 10MHz BW, High Channel	
QPSK	
	
16QAM	
	

2.6 Band Edge

2.6.1 Requirement

According to FCC section 22.917(a) and FCC section 24.238(a), 27.53(g) (h)

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

(h) For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

2.6.2 Test Description

See section 2.1.2 of this report.

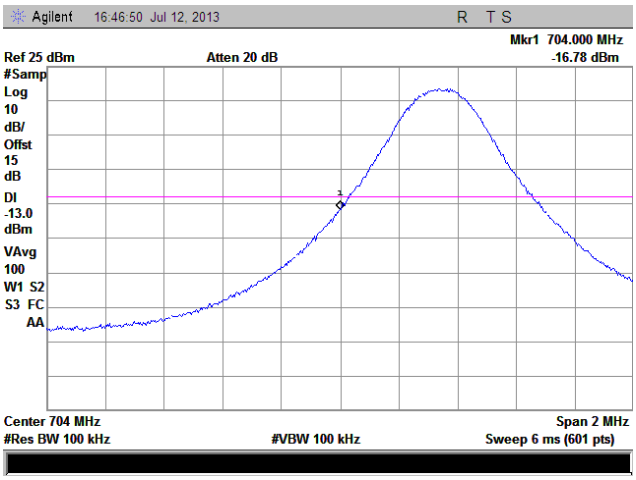
2.6.3 Test Result

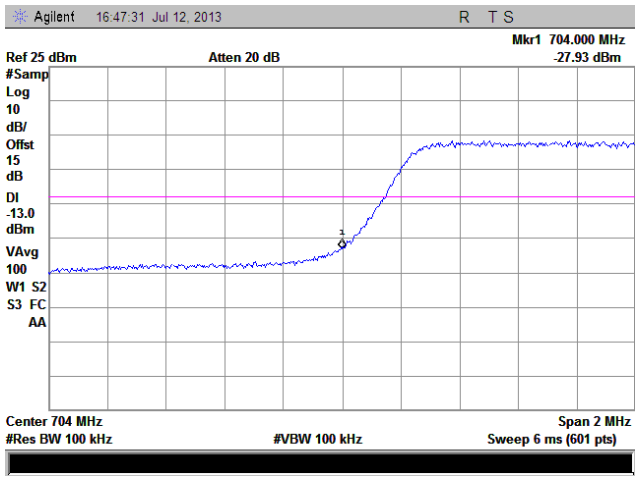
The center frequency of spectrum is the band edge frequency and span is 2MHz, Record the max trace into the test report.

PASS. See the attached plots.

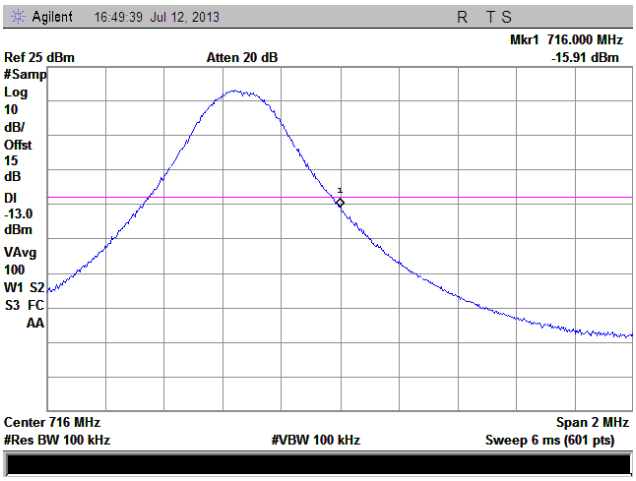
LTE Band 17:

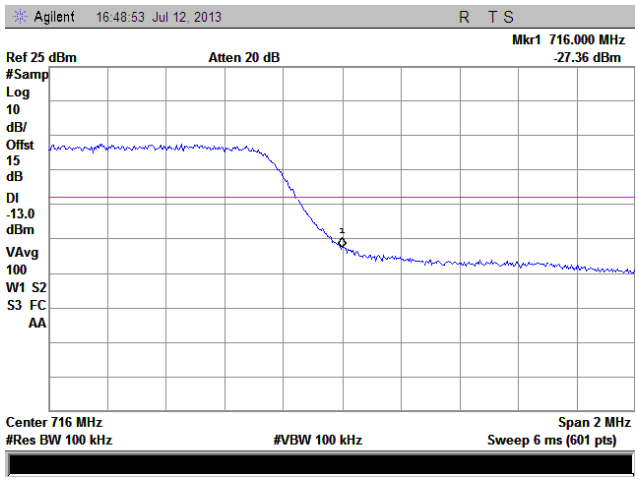
Channel Bandwidth: 5MHz							
Channel	23755	RB Size 1	RB Offset 0	Channel	23755	RB Size 25	RB Offset 0



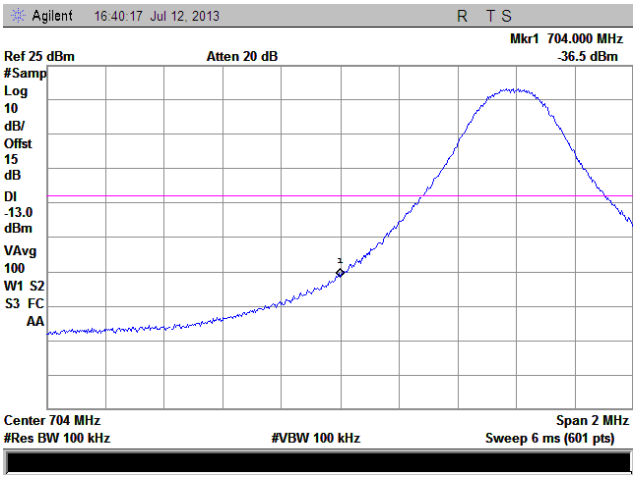


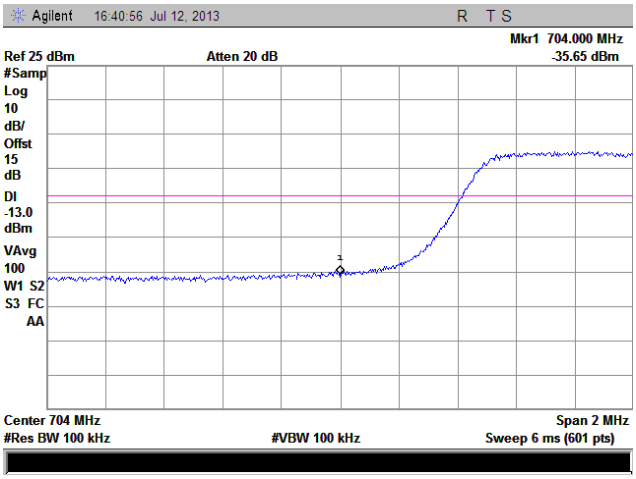
Channel Bandwidth: 5MHz							
Channel	23825	RB Size 1	RB Offset 24	Channel	23825	RB Size 25	RB Offset 0



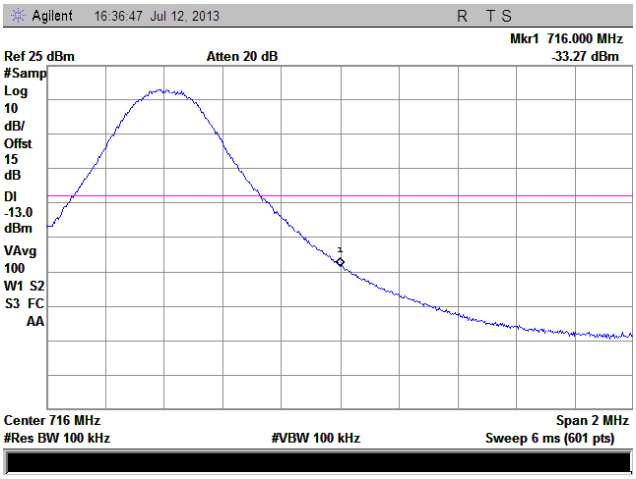


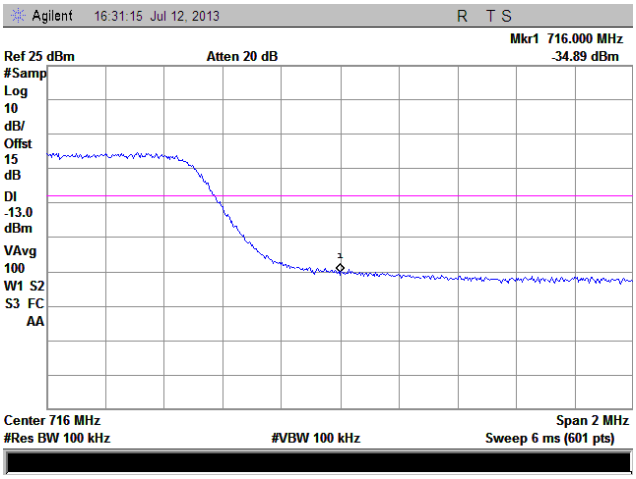
Channel Bandwidth: 10MHz							
Channel	23780	RB Size 1	RB Offset 0	Channel	23800	RB Size 50	RB Offset 0





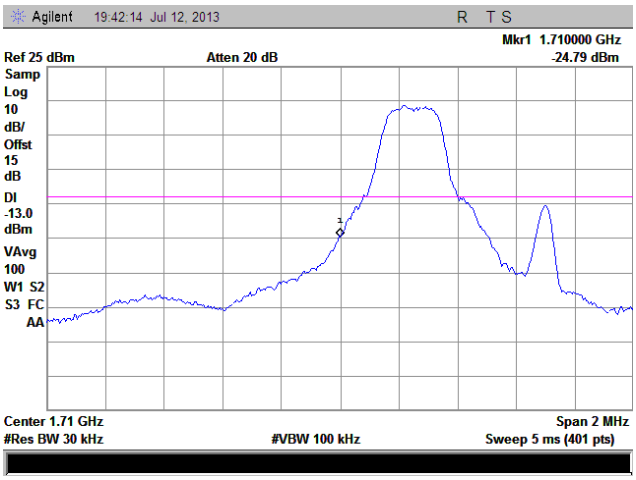
Channel Bandwidth: 10MHz							
Channel	23780	RB Size 1	RB Offset 49	Channel	23800	RB Size 50	RB Offset 0

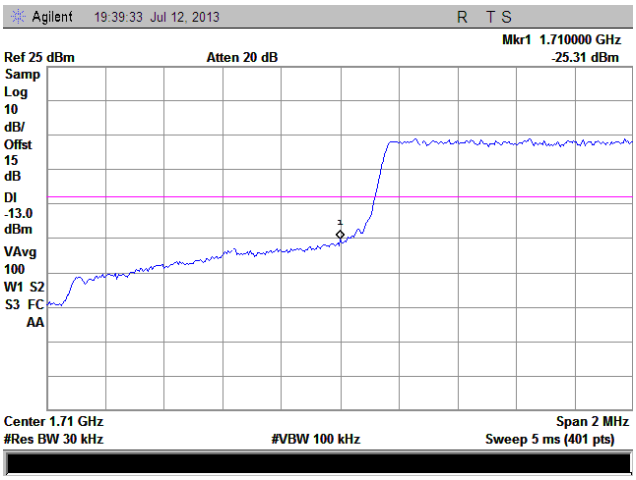




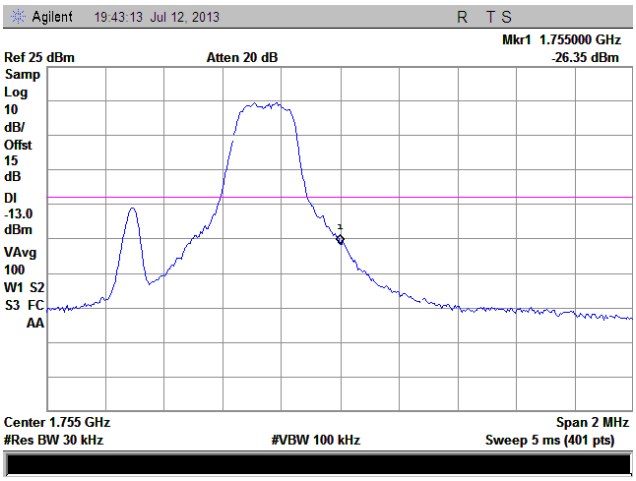
LTE Band 4:

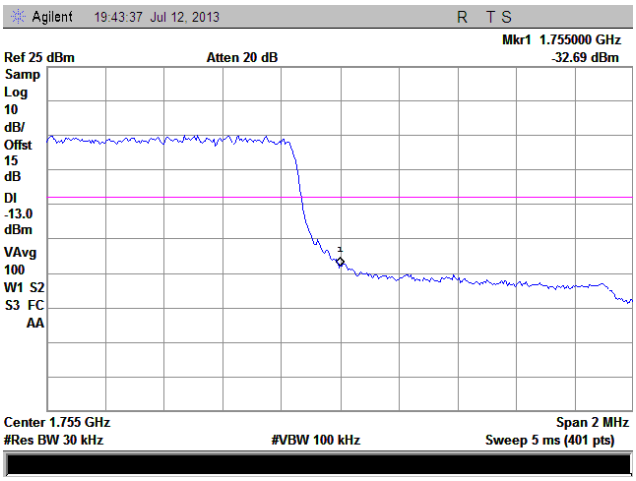
Channel Bandwidth: 1.4MHz							
Channel	19957	RB Size 1	RB Offset 0	Channel	20393	RB Size 6	RB Offset 0



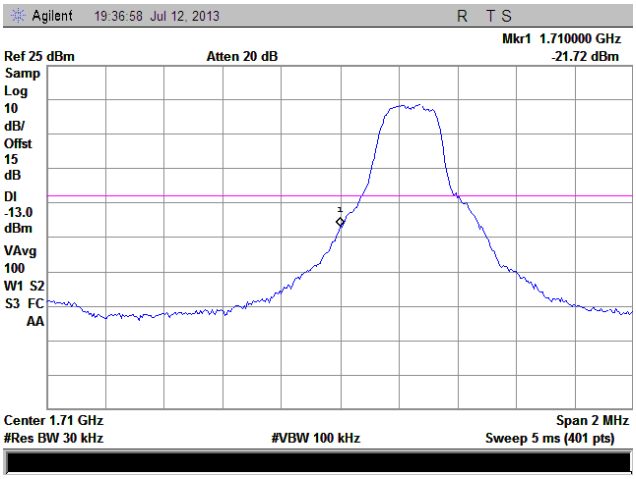


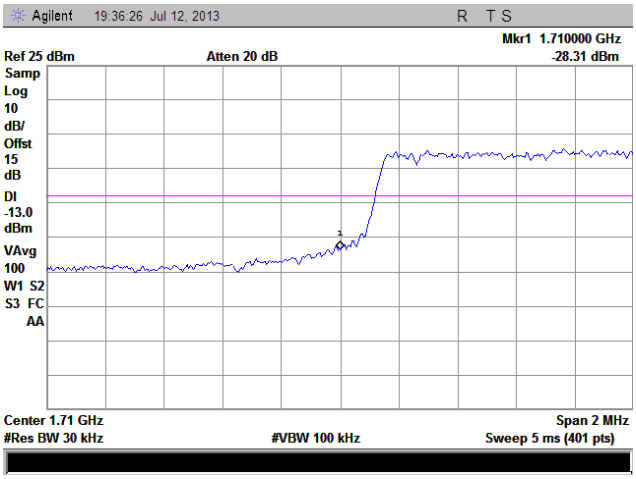
Channel Bandwidth: 1.4MHz							
Channel	19957	RB Size 1	RB Offset 5	Channel	20393	RB Size 6	RB Offset 0



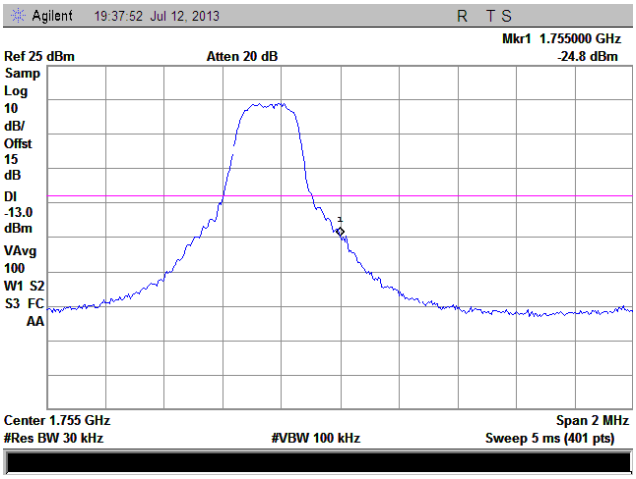


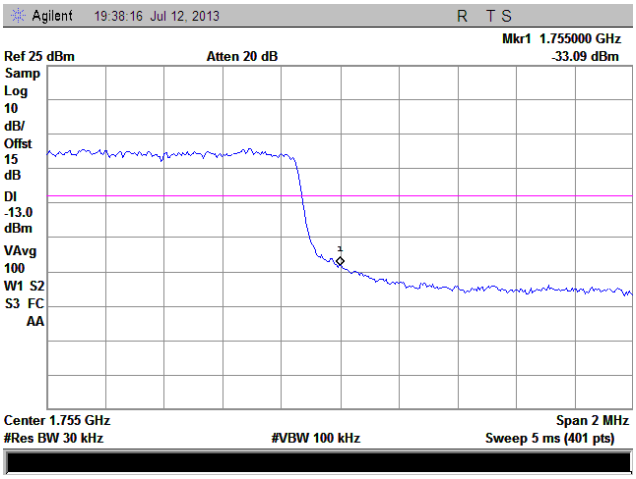
Channel Bandwidth: 3MHz							
Channel	19965	RB Size 1	RB Offset 0	Channel	20385	RB Size 15	RB Offset 0



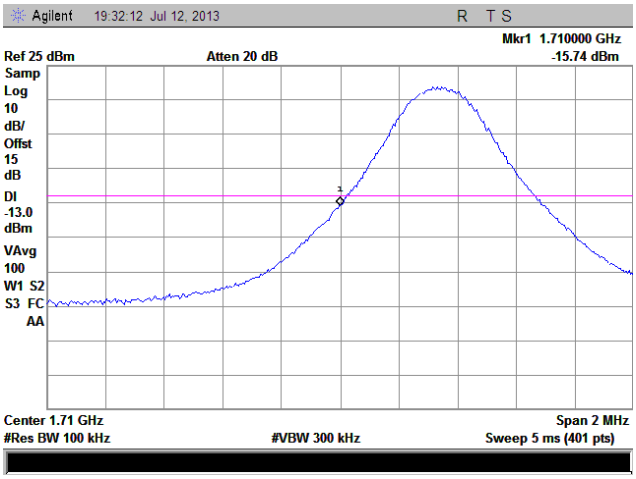


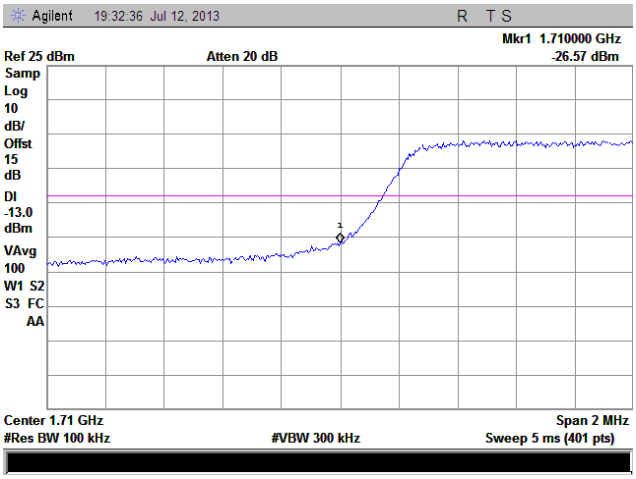
Channel Bandwidth: 3MHz							
Channel	19965	RB Size 1	RB Offset 14	Channel	20385	RB Size 15	RB Offset 0



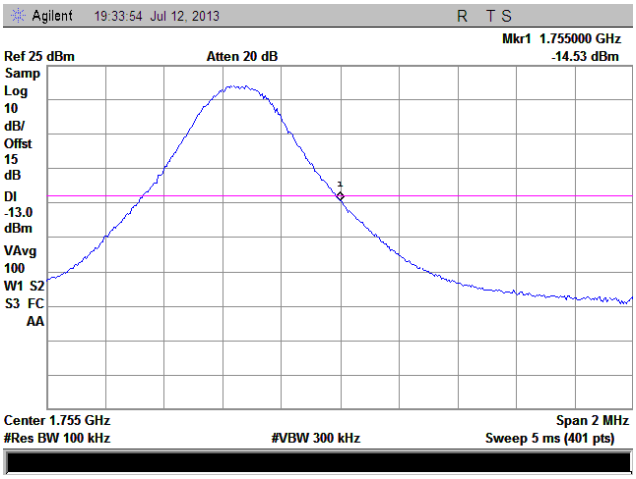


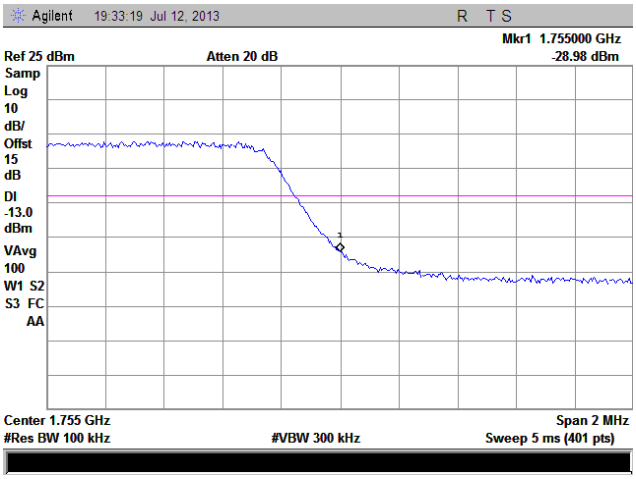
Channel Bandwidth: 5MHz							
Channel	19975	RB Size 1	RB Offset 0	Channel	20375	RB Size 25	RB Offset 0



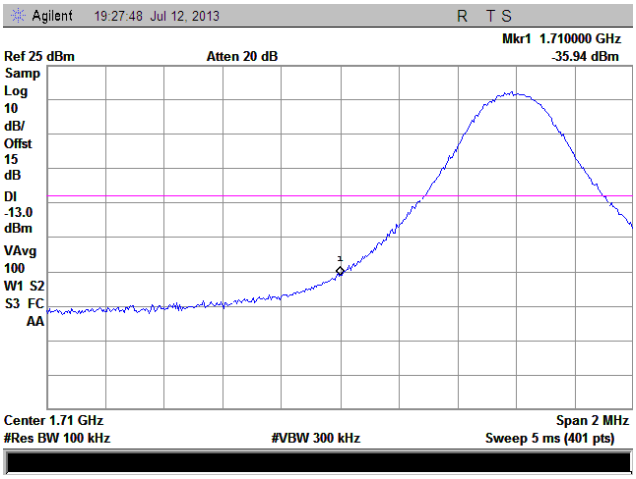


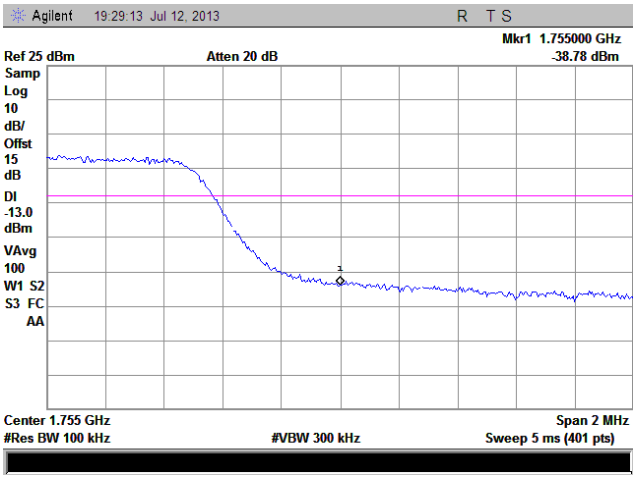
Channel Bandwidth: 5MHz							
Channel	19975	RB Size 1	RB Offset 24	Channel	20375	RB Size 25	RB Offset 0



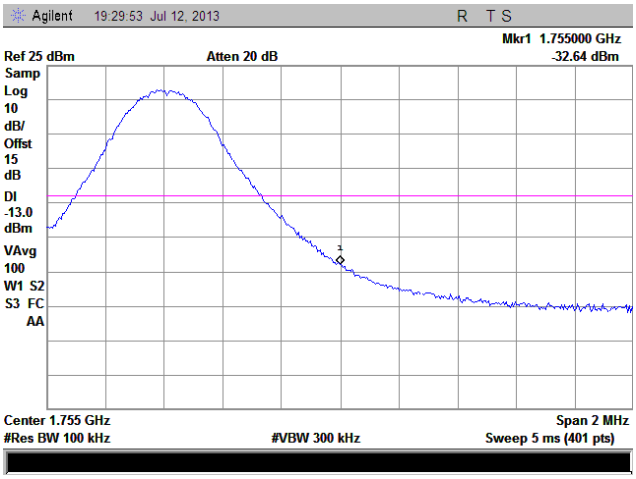


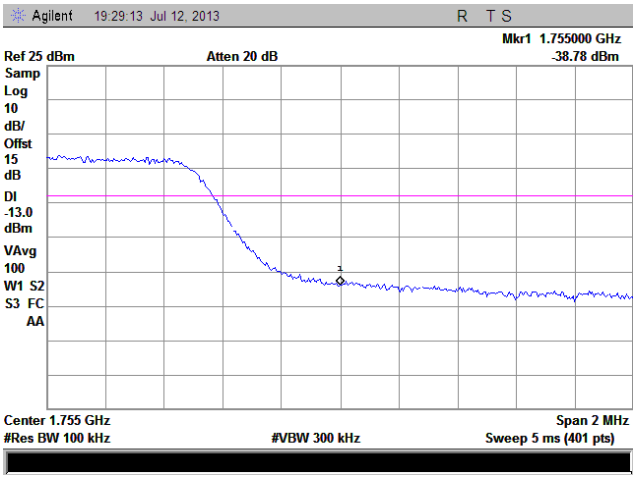
Channel Bandwidth: 10MHz							
Channel	20000	RB Size 1	RB Offset 0	Channel	20350	RB Size 50	RB Offset 0



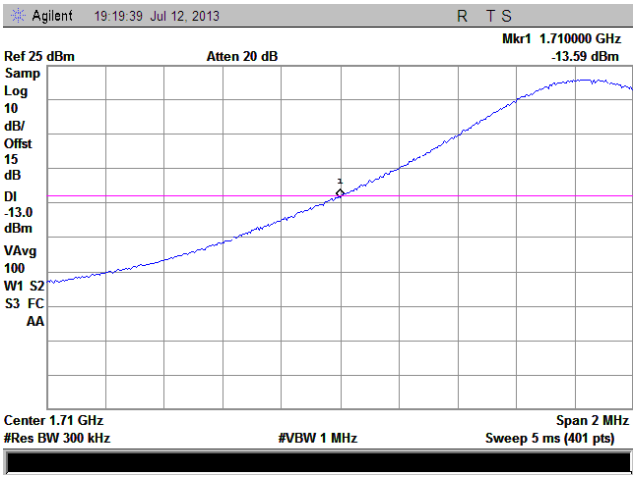


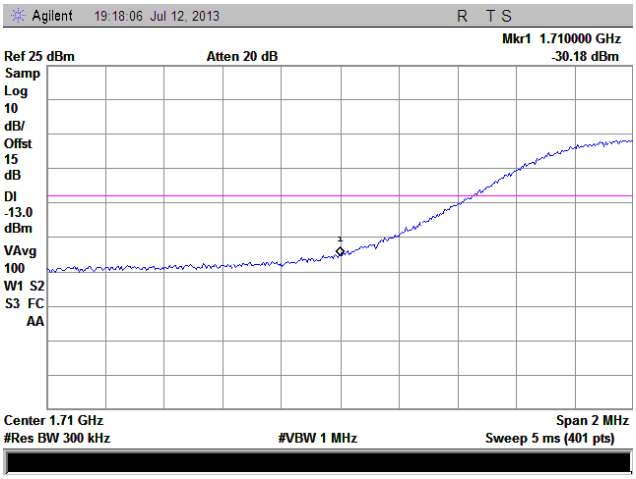
Channel Bandwidth: 10MHz							
Channel	20000	RB Size 1	RB Offset 49	Channel	20350	RB Size 50	RB Offset 0



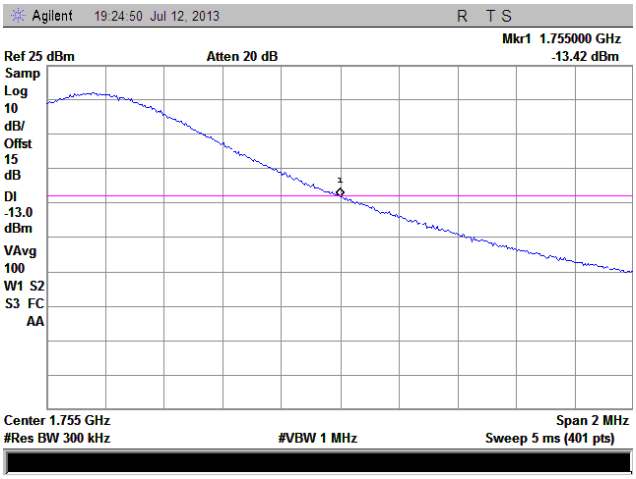


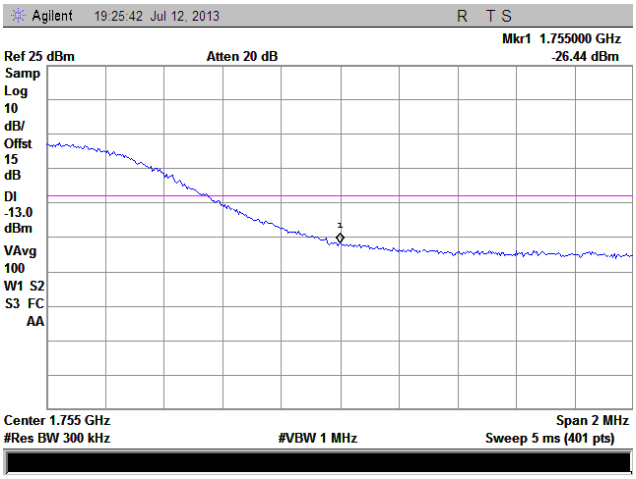
Channel Bandwidth: 15MHz							
Channel	20025	RB Size 1	RB Offset 0	Channel	20325	RB Size 75	RB Offset 0



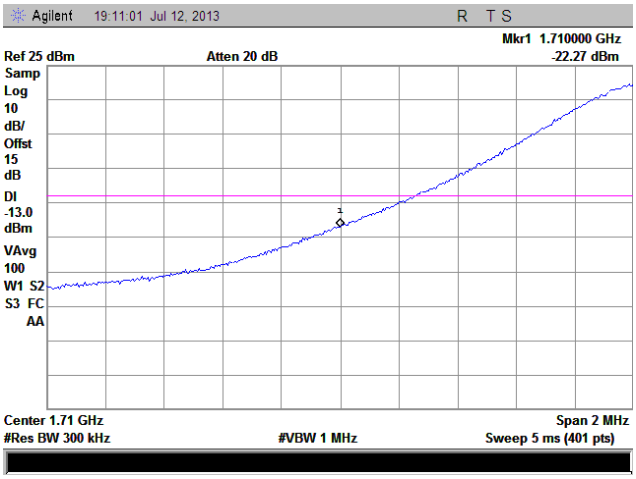


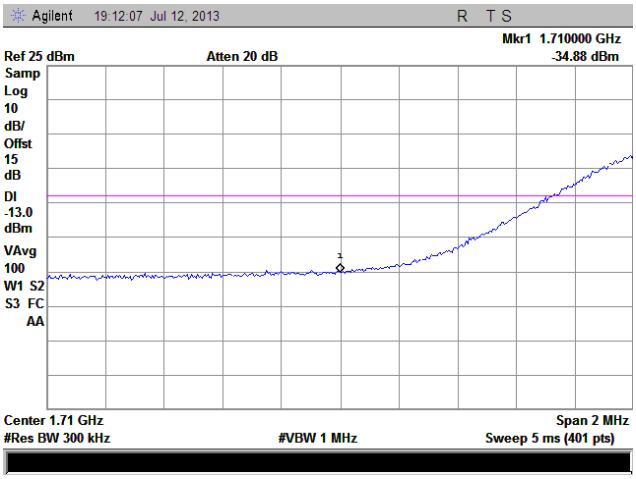
Channel Bandwidth: 15MHz							
Channel	20025	RB Size 1	RB Offset 74	Channel	20325	RB Size 75	RB Offset 0



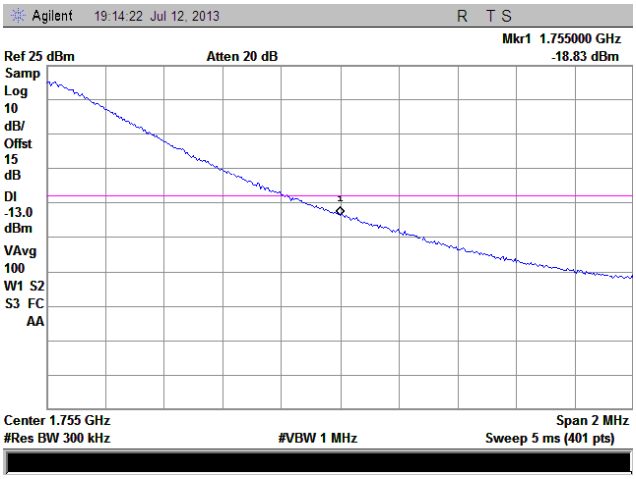


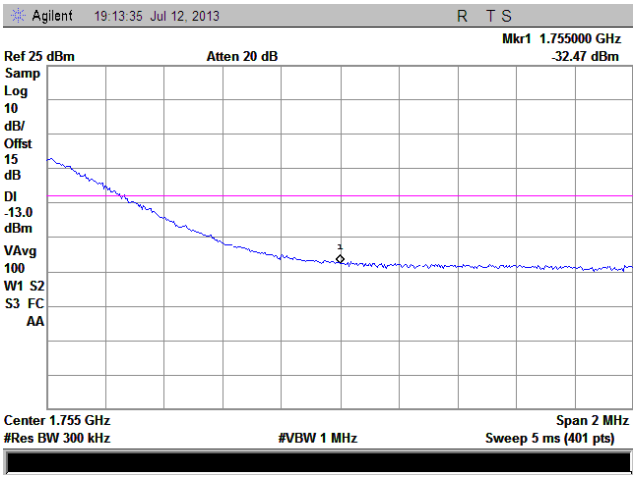
Channel Bandwidth: 20MHz							
Channel	20050	RB Size 1	RB Offset 0	Channel	20300	RB Size 100	RB Offset 0





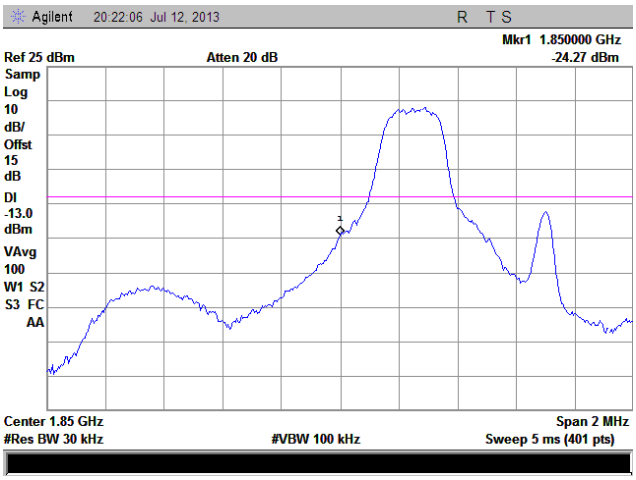
Channel Bandwidth: 20MHz							
Channel	20050	RB Size 1	RB Offset 99	Channel	20300	RB Size 100	RB Offset 0

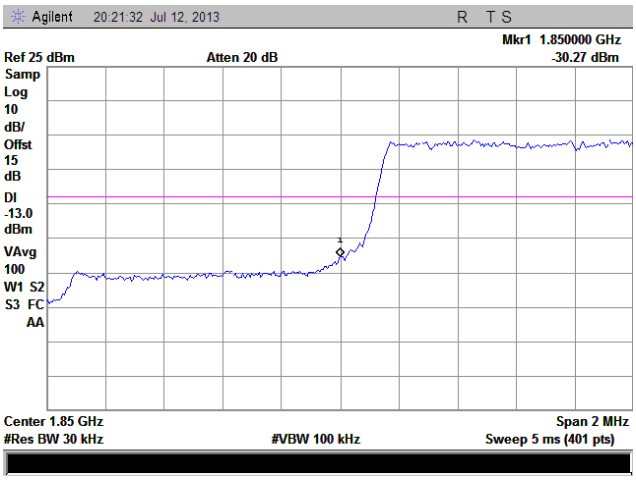




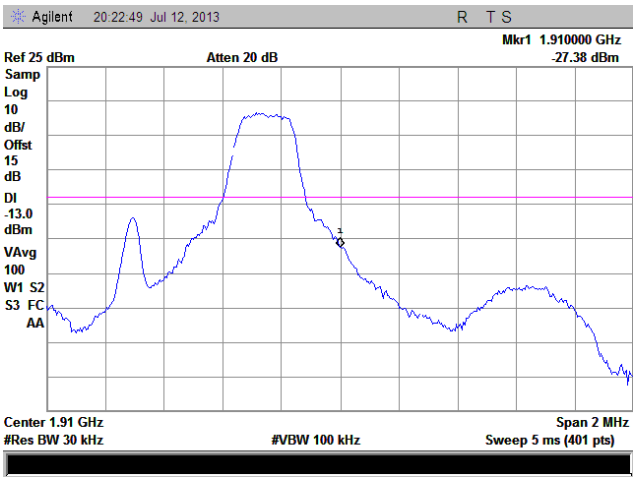
LTE Band 2:

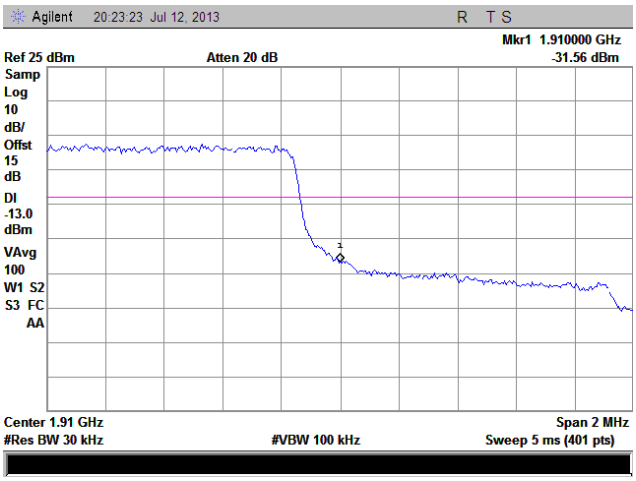
Channel Bandwidth: 1.4MHz							
Channel	18607	RB Size 1	RB Offset 0	Channel	18607	RB Size 6	RB Offset 0



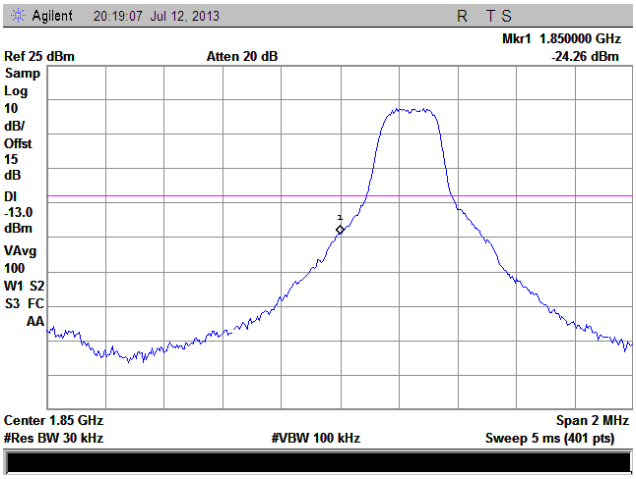


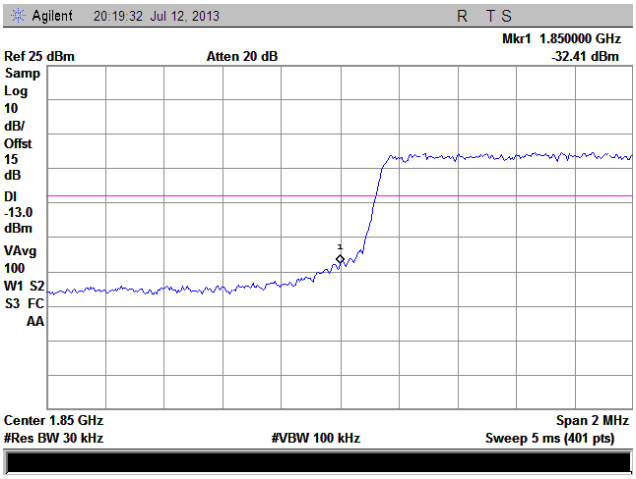
Channel Bandwidth: 1.4MHz							
Channel	19192	RB Size 1	RB Offset 0	Channel	19192	RB Size 6	RB Offset 0



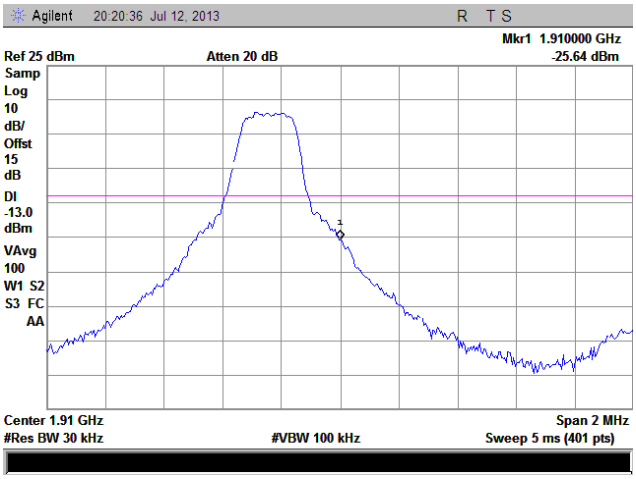


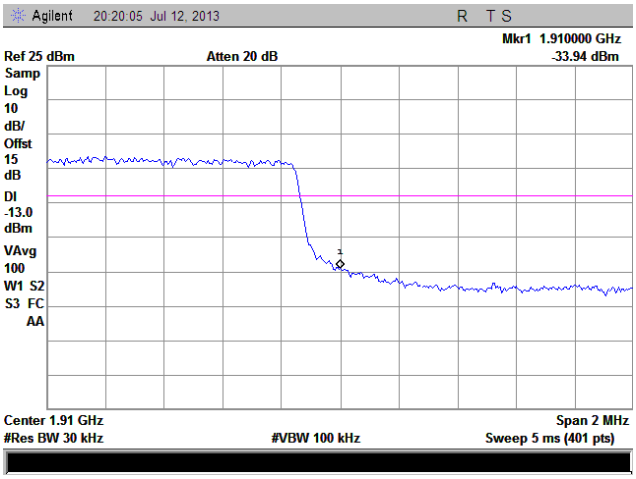
Channel Bandwidth: 3MHz							
Channel	18165	RB Size 1	RB Offset 0	Channel	18165	RB Size 15	RB Offset 0



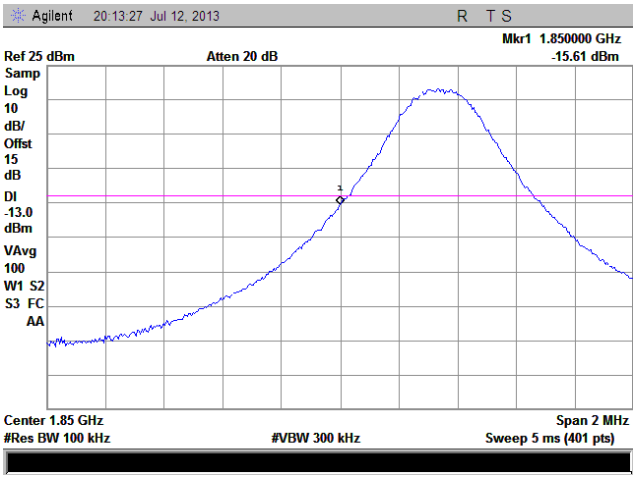


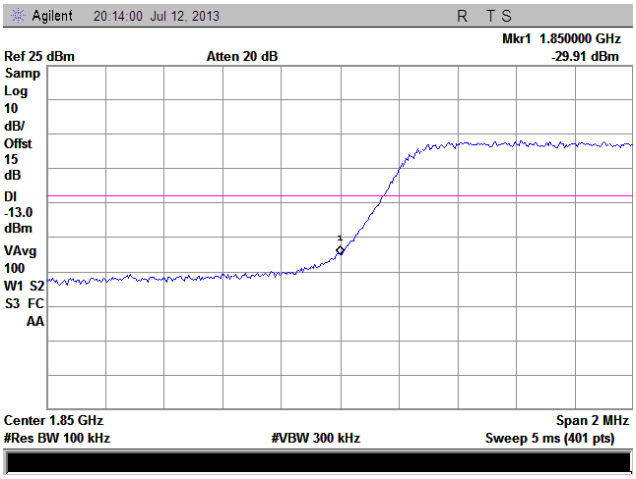
Channel Bandwidth: 3MHz							
Channel	19184	RB Size 1	RB Offset 0	Channel	19184	RB Size 15	RB Offset 0



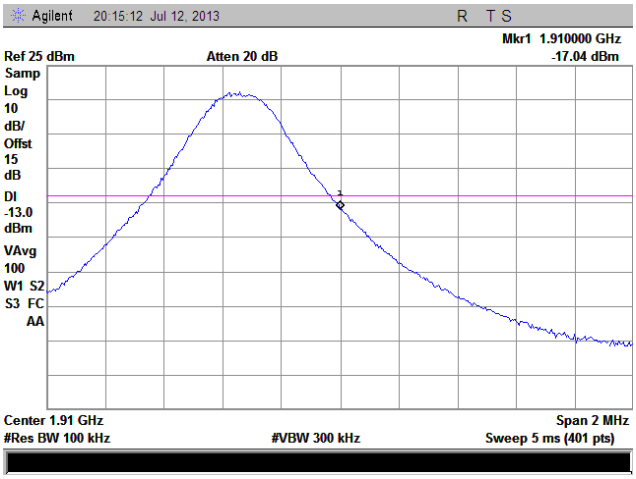


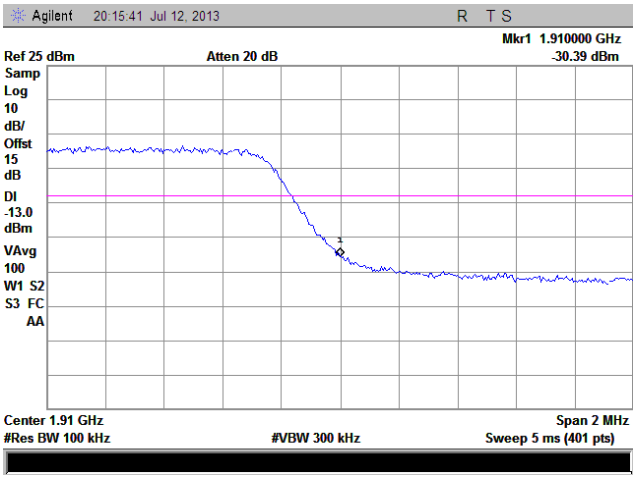
Channel Bandwidth: 5MHz							
Channel	18625	RB Size 1	RB Offset 0	Channel	18625	RB Size 25	RB Offset 0



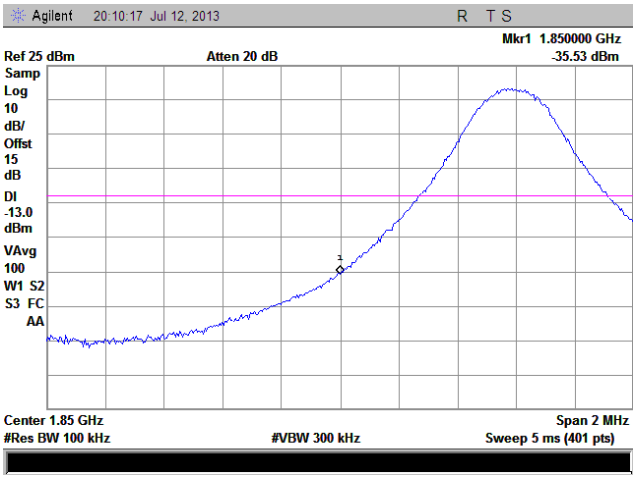


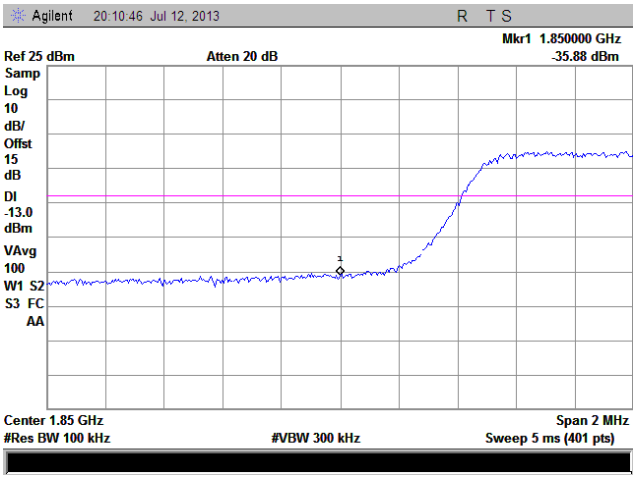
Channel Bandwidth: 5MHz							
Channel	19175	RB Size 1	RB Offset 0	Channel	19175	RB Size 25	RB Offset 0



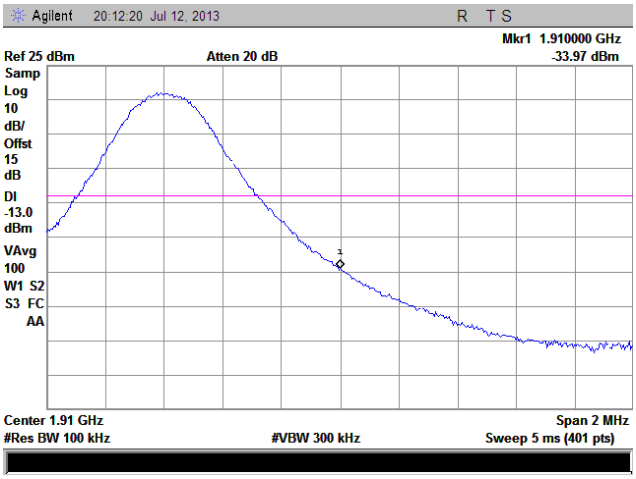


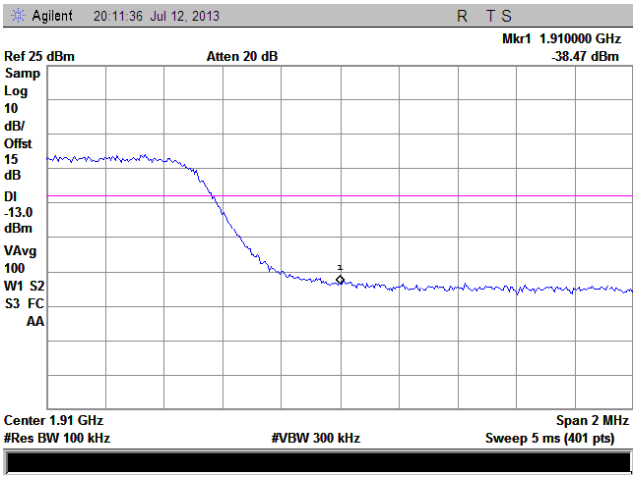
Channel Bandwidth: 10MHz							
Channel	18650	RB Size 1	RB Offset 0	Channel	19650	RB Size 50	RB Offset 0



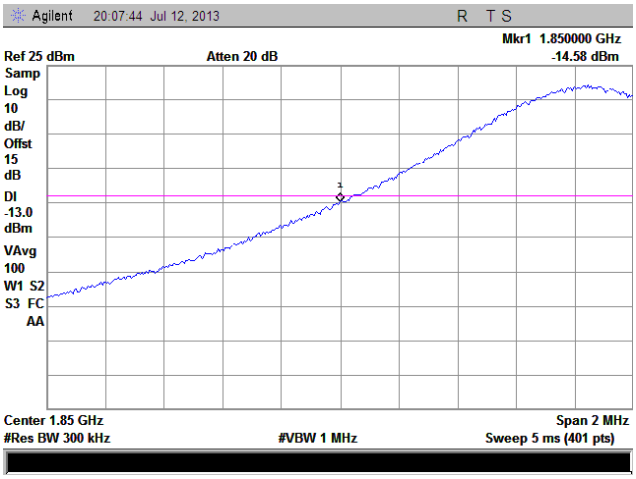


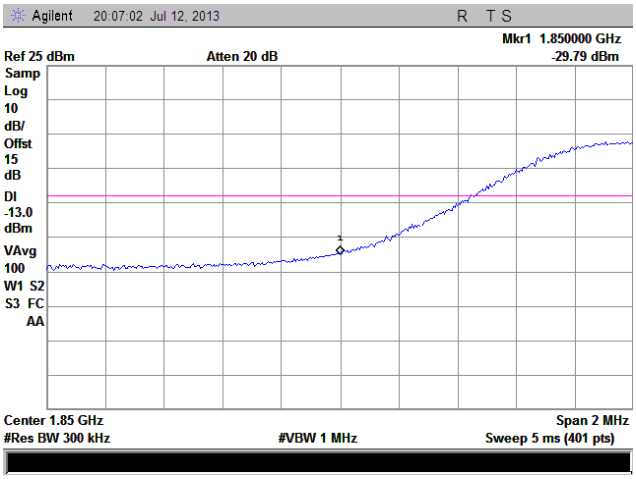
Channel Bandwidth: 10MHz							
Channel	19150	RB Size 1	RB Offset 49	Channel	19150	RB Size 50	RB Offset 0



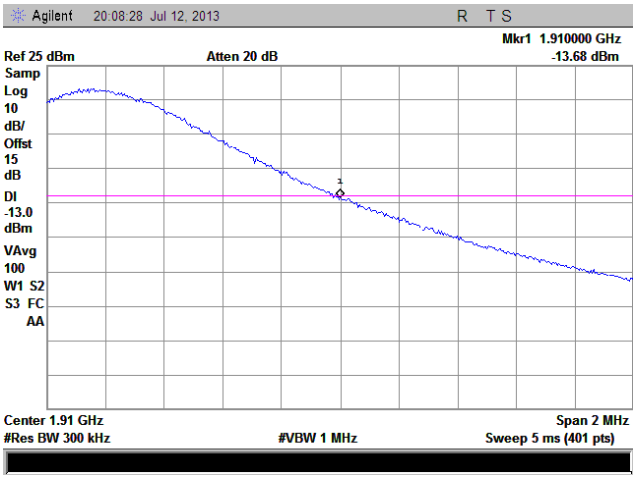


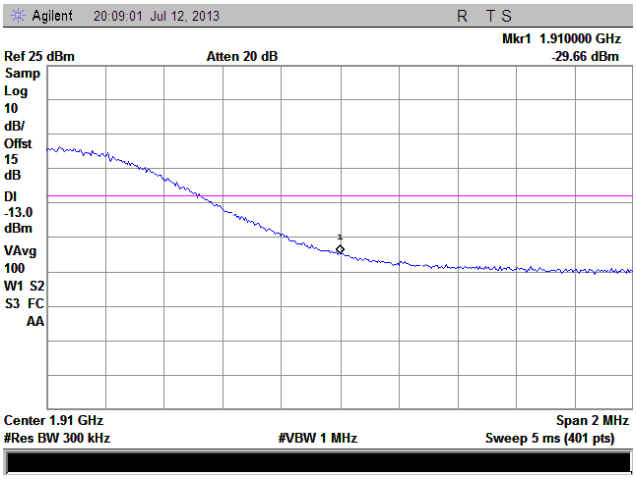
Channel Bandwidth: 15MHz							
Channel	18675	RB Size 1	RB Offset 0	Channel	18675	RB Size 75	RB Offset 0



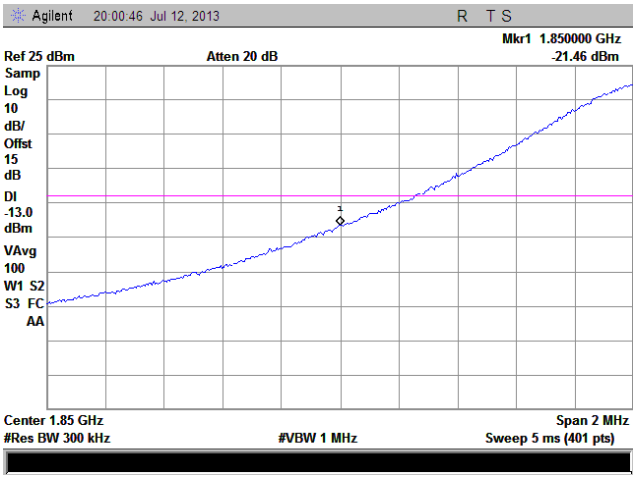


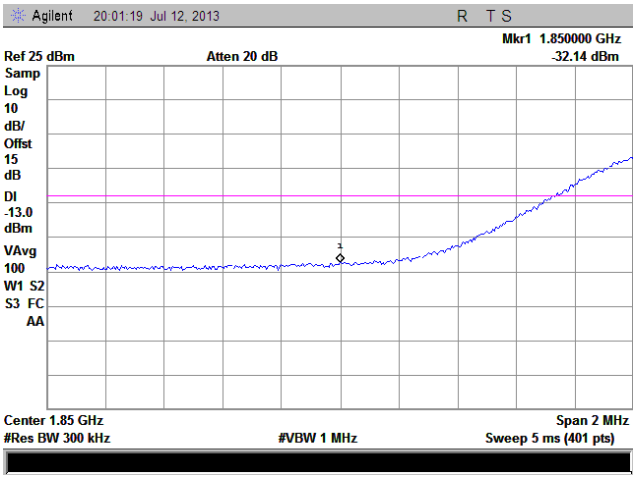
Channel Bandwidth: 15MHz							
Channel	19125	RB Size 1	RB Offset 0	Channel	19125	RB Size 75	RB Offset 0



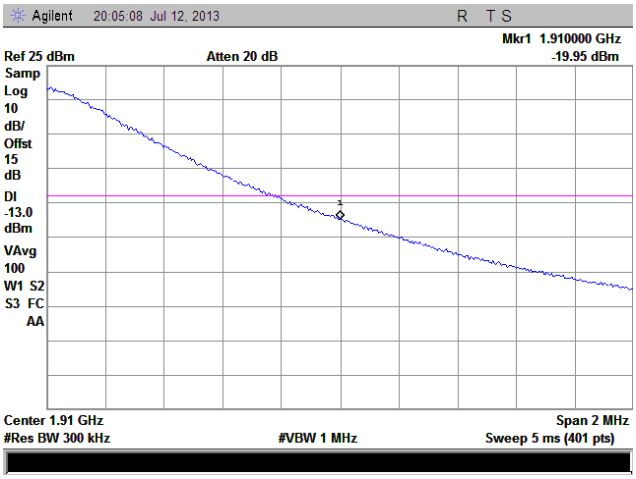


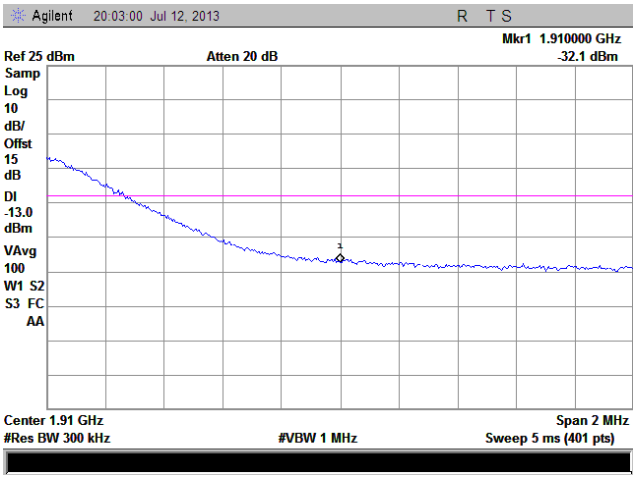
Channel Bandwidth: 20MHz							
Channel	18700	RB Size 1	RB Offset 0	Channel	18700	RB Size 100	RB Offset 0





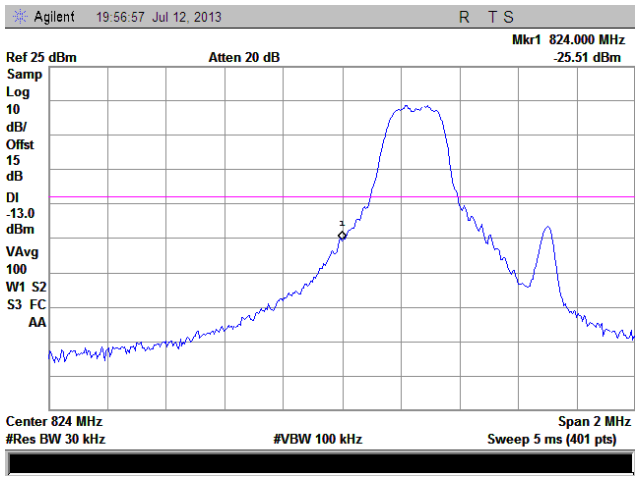
Channel Bandwidth: 20MHz							
Channel	19100	RB Size 1	RB Offset 0	Channel	19100	RB Size 100	RB Offset 0

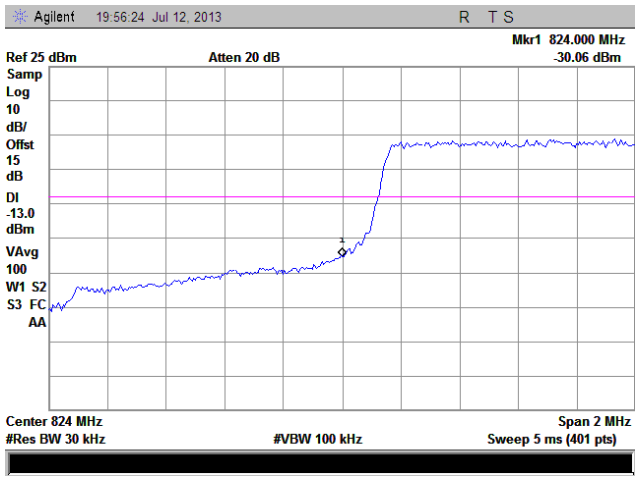




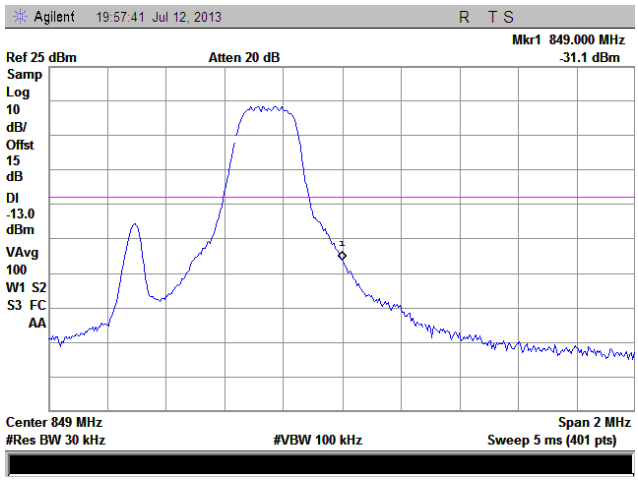
LTE Band 5:

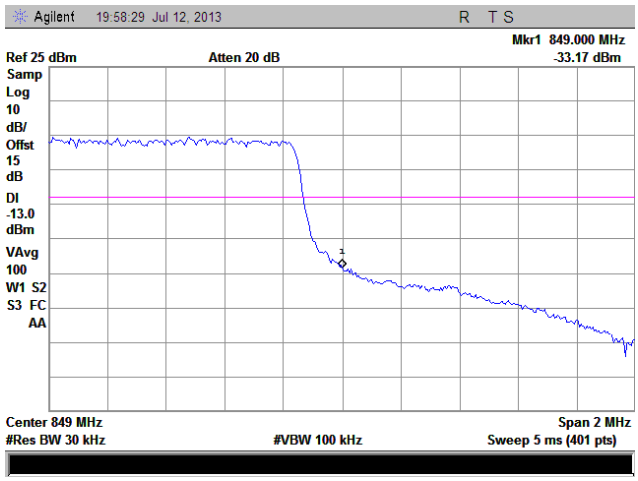
Channel Bandwidth: 1.4MHz							
Channel	20407	RB Size 1	RB Offset 0	Channel	20407	RB Size 6	RB Offset 0



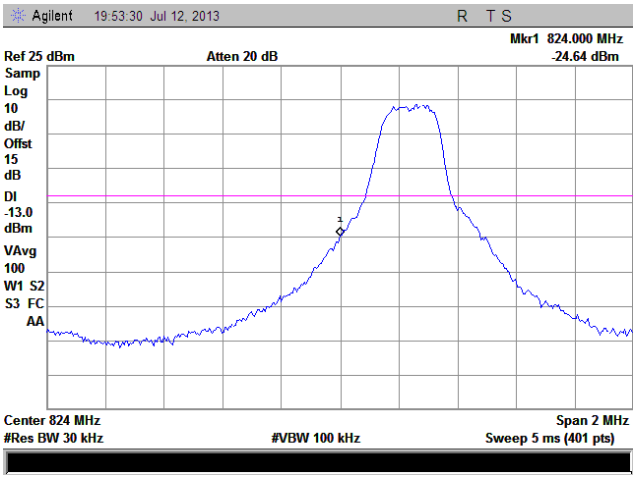


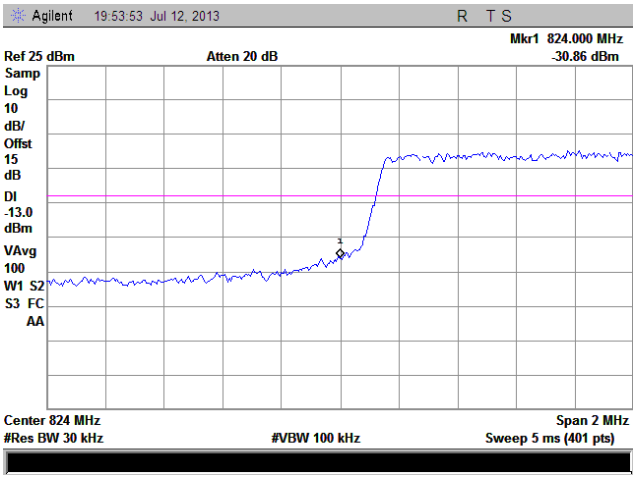
Channel Bandwidth: 1.4MHz							
Channel	20642	RB Size 1	RB Offset 0	Channel	20642	RB Size 6	RB Offset 0



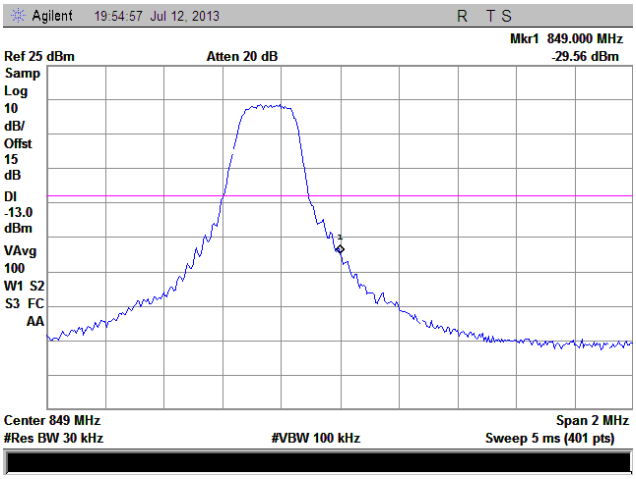


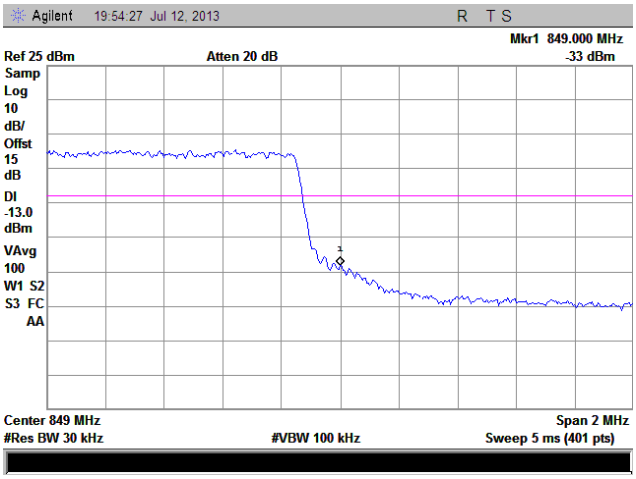
Channel Bandwidth: 3MHz							
Channel	20415	RB Size 1	RB Offset 0	Channel	20415	RB Size 15	RB Offset 0



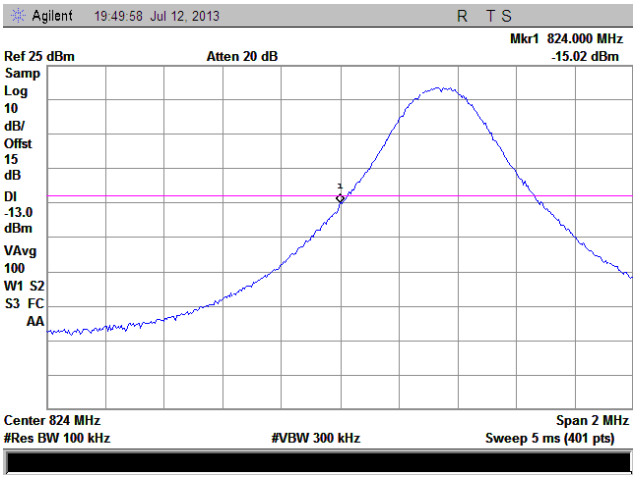


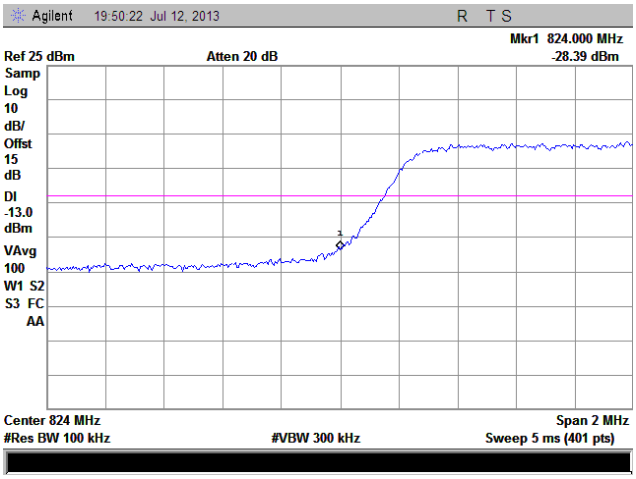
Channel Bandwidth: 3MHz							
Channel	20634	RB Size 1	RB Offset 0	Channel	20634	RB Size 15	RB Offset 0



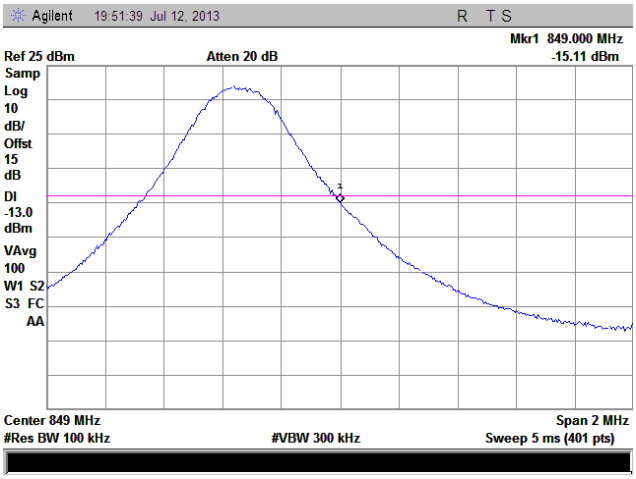


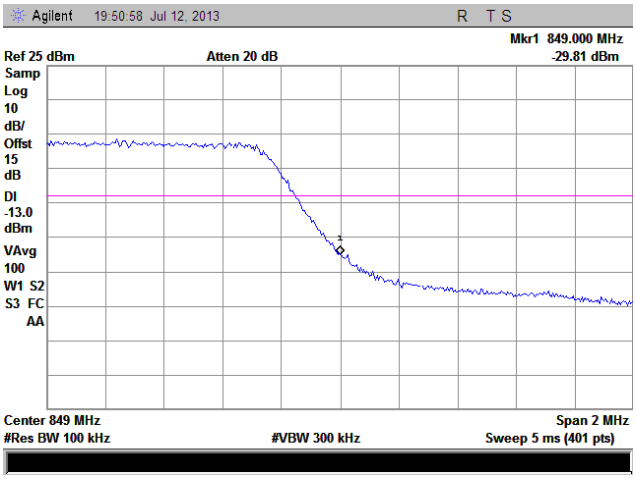
Channel Bandwidth: 5MHz							
Channel	20425	RB Size 1	RB Offset 0	Channel	20425	RB Size 25	RB Offset 0



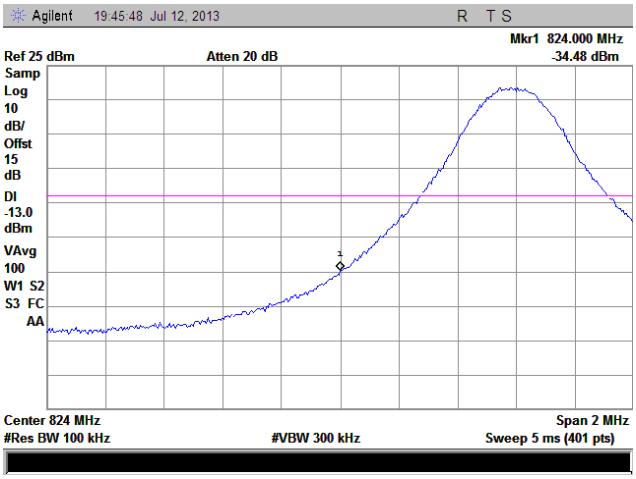


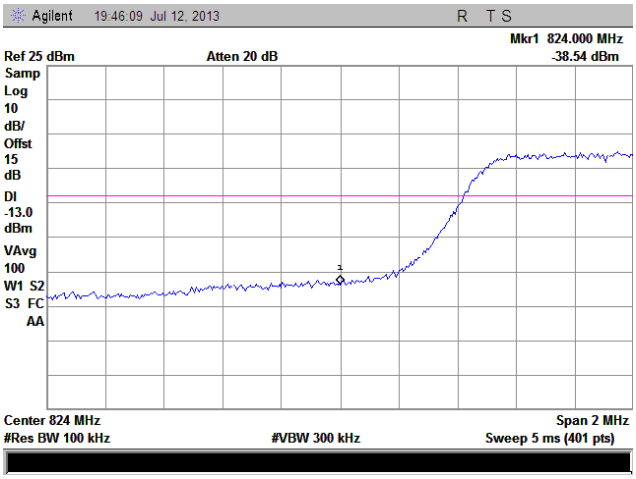
Channel Bandwidth: 5MHz							
Channel	20625	RB Size 1	RB Offset 0	Channel	20625	RB Size 25	RB Offset 0



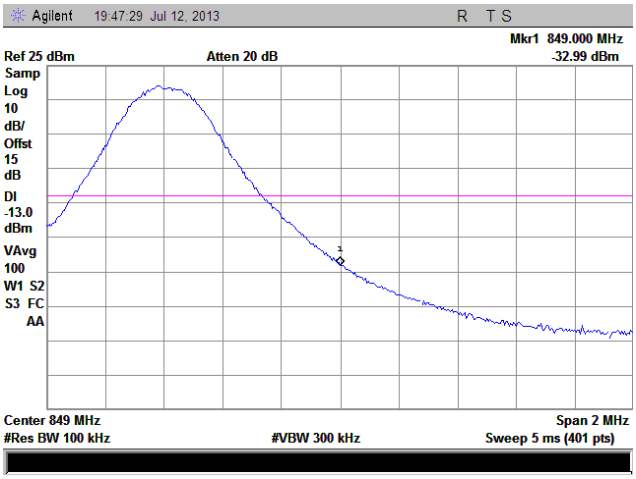


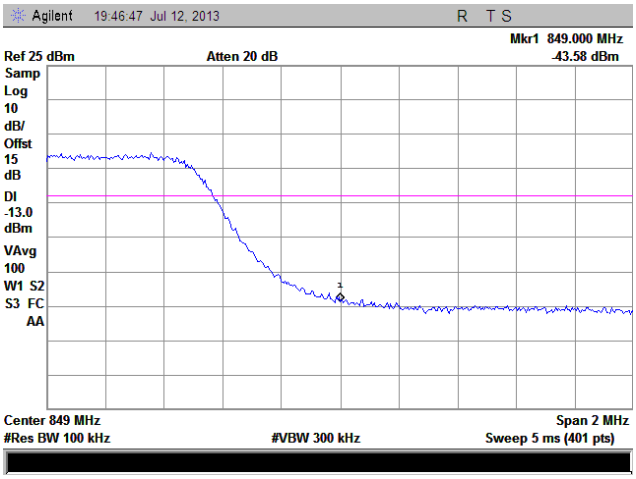
Channel Bandwidth: 10MHz							
Channel	20450	RB Size 1	RB Offset 0	Channel	20450	RB Size 50	RB Offset 0





Channel Bandwidth: 10MHz							
Channel	20600	RB Size 1	RB Offset 0	Channel	20600	RB Size 50	RB Offset 0





2.7 Transmitter Radiated Power (EIRP/ERP)

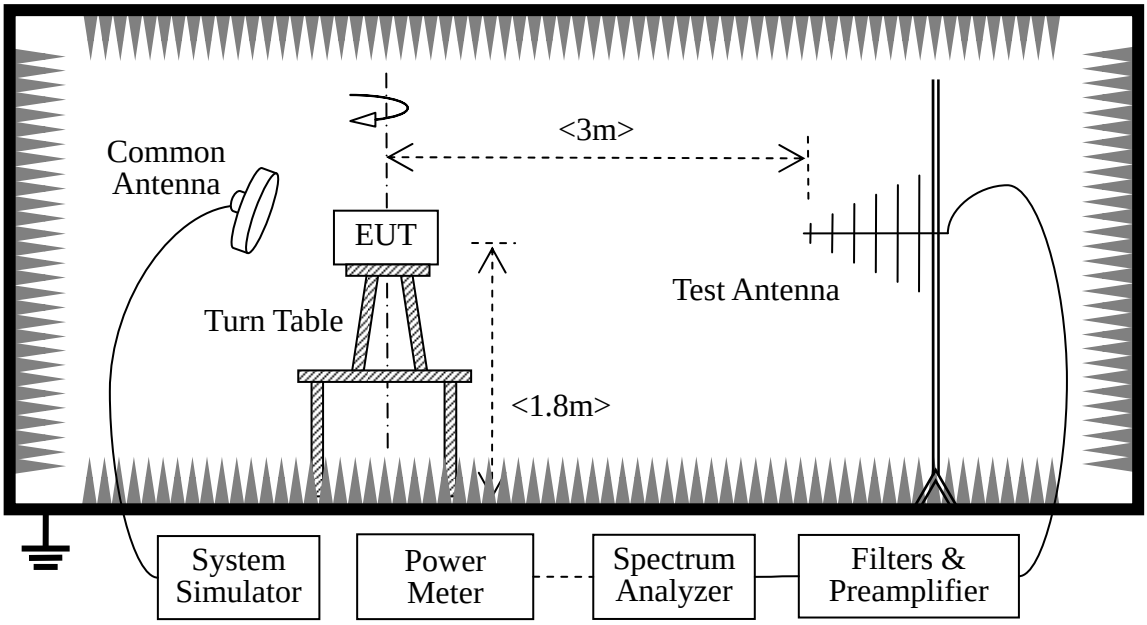
2.7.1 Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power, 27.50 (d), fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.

Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

2.7.2 Test Description

1. Test Setup:



The EUT, which is powered by the PC, is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), and it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k50 /124534/wk	2012.05	2014.05
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2012.05	2014.05
Spectrum Analyzer	Agilent	E4445A	MY44200685	2012.05	2014.05
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05	2014.05
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2012.05	2014.05
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2012.05	2014.05

2.7.3 Test Result

The EUT was verified under all configurations (RB size and offset) and the worst case radiated power reported for each modulation/channel bandwidth.

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

$A_{SUBST} = P_{SUBST\_TX} - P_{SUBST\_RX} - L_{SUBST\_CABLES} + G_{SUBST\_TX\_ANT}$

$A_{TOT} = L_{CABLES} + A_{SUBST}$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

$G_{SUBST\_TX\_ANT}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT}.

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
LTE Band 2	20MHz	L 18700	1860.0	QPSK	1	0	22.12
				16-QAM	1	0	19.49
		M 20175	1880.0	QPSK	1	49	22.25
				16-QAM	1	99	19.61
		H 19100	1900.0	QPSK	1	99	22.23
				16-QAM	1	99	19.92
	15MHz	L 18675	1857.5	QPSK	1	74	22.46
				16-QAM	1	37	19.87
		M 18900	1880.0	QPSK	1	74	21.47
				16-QAM	1	37	19.59
		H 19125	1902.5	QPSK	1	0	21.52
				16-QAM	1	0	19.65
	10MHz	L 18650	1855.0	QPSK	1	0	22.28
				16-QAM	1	49	19.58
		M 18900	1800.0	QPSK	1	0	22.31
				16-QAM	1	24	19.76
		H 19150	1905.0	QPSK	1	0	22.42
				16-QAM	1	24	20.2
	5MHz	L 18625	1852.5	QPSK	1	0	22.54
				16-QAM	1	0	19.95
		M 18900	1880.0	QPSK	1	24	21.63
				16-QAM	1	24	19.79
		H 19175	1907.5	QPSK	1	0	21.86
				16-QAM	1	0	19.91
	3MHz	L 18615	1851.5	QPSK	1	14	23.84
				16-QAM	1	14	20.29
		M 18900	1880.0	QPSK	1	14	22.47
				16-QAM	1	14	20.52
		H 19184	1908.4	QPSK	1	0	22.61
				16-QAM	1	7	20.76
	1.4MHz	L 18607	1850.7	QPSK	1	5	22.83
				16-QAM	1	5	20.94
		M 18900	1880.0	QPSK	1	0	22.38
				16-QAM	1	0	20.83
		H 19192	1909.2	QPSK	1	2	22.54
				16-QAM	1	2	20.79

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
LTE Band 4	20MHz	L 20050	1720	QPSK	1	0	24.58
				16-QAM	1	49	19.45
		M 20175	1732.5	QPSK	1	99	24.62
				16-QAM	1	99	19.51
		H 20300	1745	QPSK	1	0	24.92
				16-QAM	1	99	19.66
	15MHz	L 20025	1717.5	QPSK	1	0	24.69
				16-QAM	1	74	19.78
		M 20175	1732.5	QPSK	1	0	24.47
				16-QAM	1	74	19.53
		H 20325	1747.5	QPSK	1	0	24.56
				16-QAM	1	37	19.64
	10MHz	L 20000	1715	QPSK	1	24	19.71
				16-QAM	1	0	19.49
		M 20175	1732.5	QPSK	1	49	24.62
				16-QAM	1	49	19.74
		H 20350	1750	QPSK	1	0	24.85
				16-QAM	1	0	19.73
	5MHz	L 19975	1712.5	QPSK	1	0	24.86
				16-QAM	1	0	19.91
		M 20175	1732.5	QPSK	1	12	24.72
				16-QAM	1	24	19.68
		H 20375	1752.5	QPSK	1	0	24.75
				16-QAM	1	12	19.89
	3MHz	L 19965	1711.5	QPSK	1	14	24.87
				16-QAM	1	0	19.98
		M 20175	1732.5	QPSK	1	14	25.14
				16-QAM	1	0	20.26
		H 20385	1753.5	QPSK	1	0	25.13
				16-QAM	1	0	20.31
	1.4MHz	L 19957	1710.7	QPSK	1	5	25.49
				16-QAM	6	0	20.63
		M 20175	1732.5	QPSK	1	5	25.04
				16-QAM	1	5	20.12
		H 20393	1754.5	QPSK	1	0	25.27
				16-QAM	1	0	20.45

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
LTE Band 5	10MHz	L 20450	829.0	QPSK	1	24	25.2
				16-QAM	1	24	20.46
		M 20525	836.5	QPSK	1	0	25.9
				16-QAM	1	24	20.78
		H 20600	844.0	QPSK	1	0	26.83
				16-QAM	1	49	20.24
	5MHz	L 20425	826.5	QPSK	1	24	25.57
				16-QAM	1	24	20.45
		M 20525	836.5	QPSK	1	0	25.12
				16-QAM	1	24	19.91
		H 20625	846.5	QPSK	1	0	25.48
				16-QAM	1	0	20.74
	3MHz	L 20415	825.5	QPSK	1	14	25.48
				16-QAM	1	7	22.75
		M 20525	836.5	QPSK	1	0	26.48
				16-QAM	1	0	22.14
		H 20634	847.4	QPSK	1	0	26.41
				16-QAM	1	0	22.9
	1.4MHz	L 20407	824.7	QPSK	1	5	26.65
				16-QAM	1	5	21.99
		M 20525	836.5	QPSK	1	5	26.82
				16-QAM	1	0	22.09
		H 20642	848.2	QPSK	1	5	26.93
				16-QAM	1	0	21.73

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
LTE Band 17	10MHz	L 23780	709	QPSK	1	0	22.94
				16-QAM	1	24	13.15
		M 23790	710	QPSK	1	0	23.07
				16-QAM	1	0	13.88
		H 23800	711	QPSK	1	0	23.47
				16-QAM	1	0	14.98
	5MHz	L 23755	706.5	QPSK	1	24	24.29
				16-QAM	1	24	15.12
		M 23790	710	QPSK	1	0	24.24
				16-QAM	1	0	15.27
		H 23825	713.5	QPSK	1	0	25.11
				16-QAM	1	0	15.68

2.8 Radiated Spurious Emissions

2.8.1 Requirement

According to FCC section 2.1053 and section 22.917(a) and section 24.238(a),27.53(g), 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. This calculated to be -13dBm.

2.8.2 Test Description

See section 2.7.2 of this report.

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.8.3 Test Result

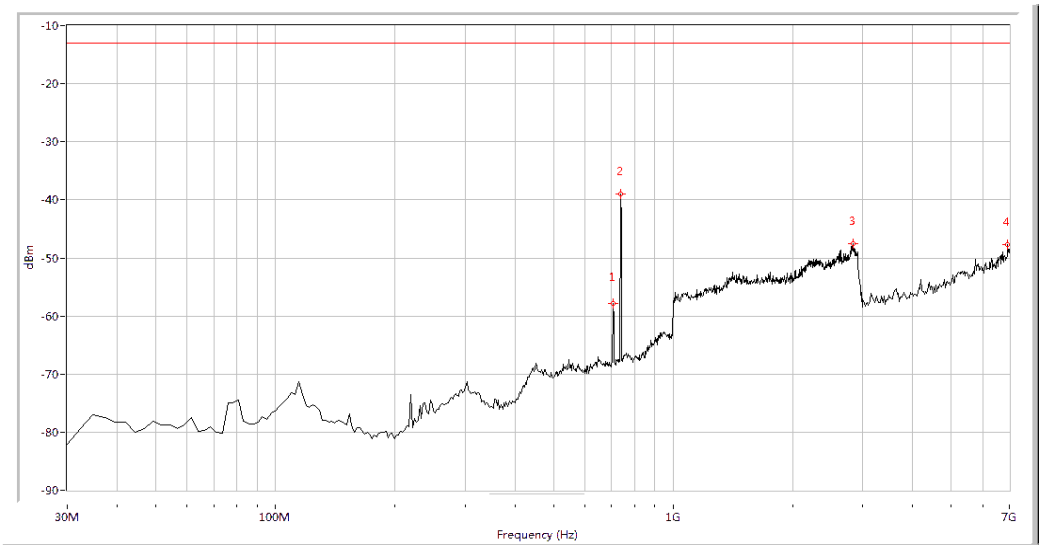
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

Test Plots for the Whole Measurement Frequency Range:

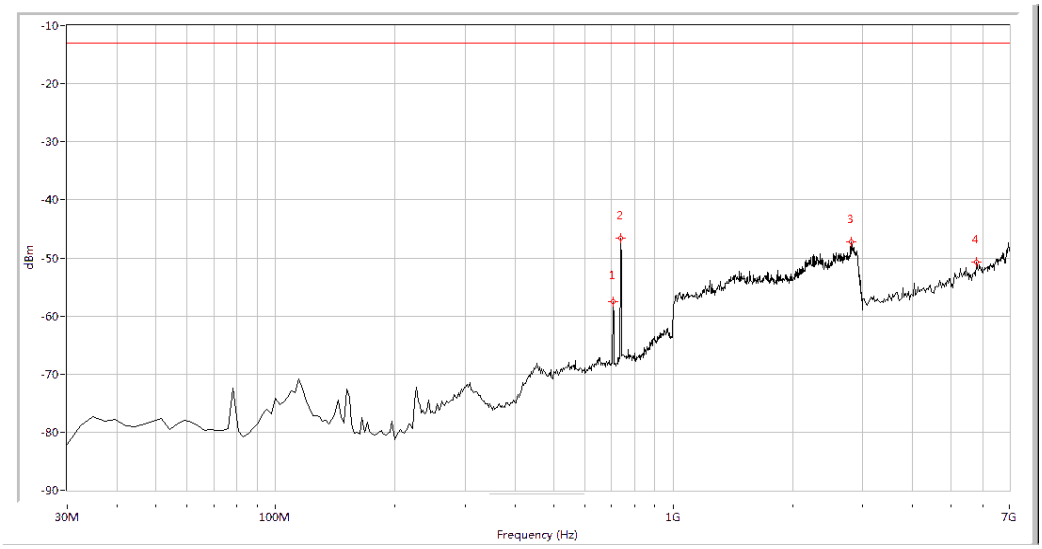
Note1: the power of the EUT transmitting frequency should be ignored.

Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

LTE Band 17 5MHz BW, Mid Channel, QPSK

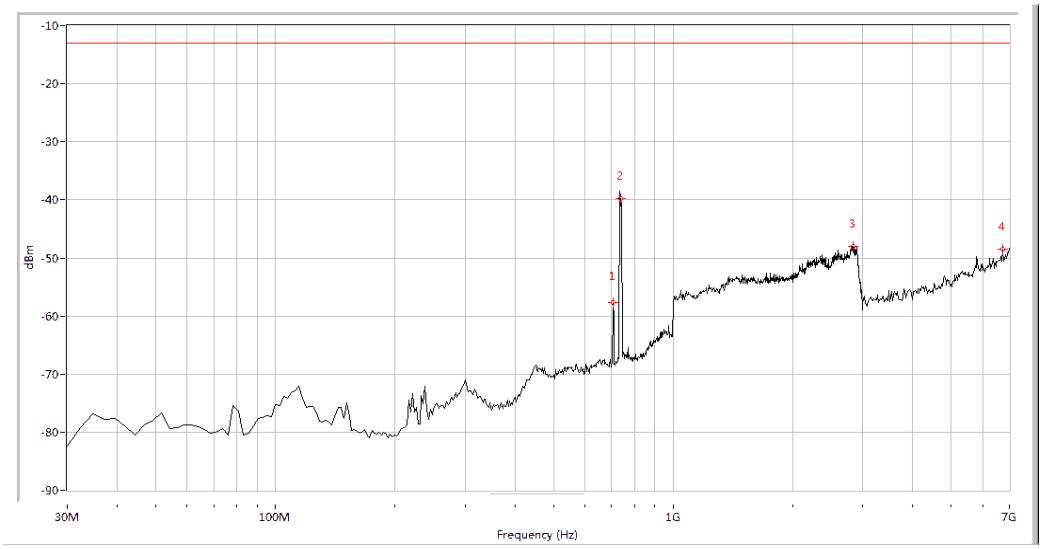


\Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-57.84	-13.0	44.8	-0.0	Horizontal	PASS
738.753	-39.04	-13.0	26.0	268.0	Horizontal	PASS
2835.411	-47.54	-13.0	34.5	2.4	Horizontal	PASS
6938.903	-47.64	-13.0	34.6	39.9	Horizontal	PASS

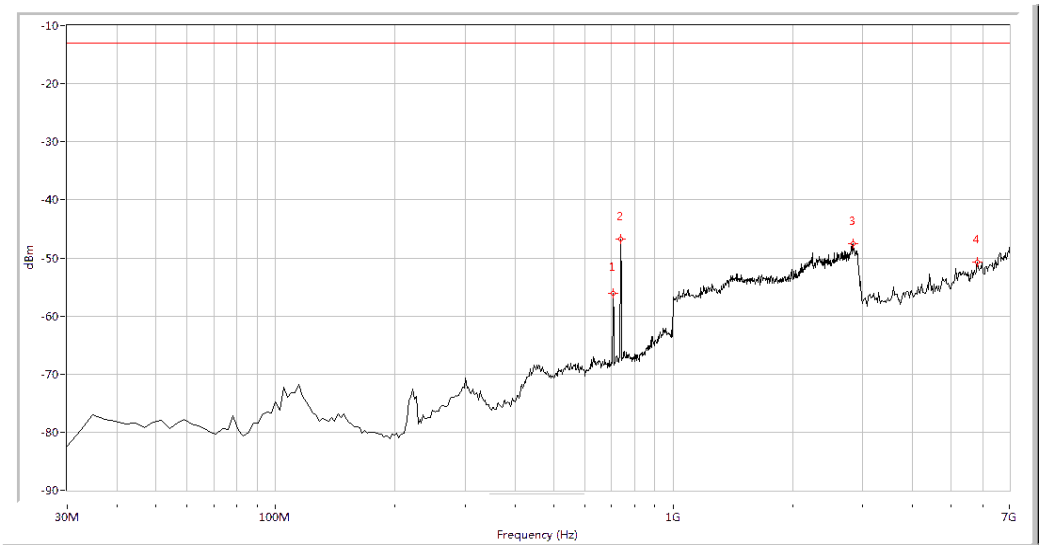


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-57.51	-13.0	44.5	-0.0	Vertical	PASS
738.753	-46.57	-13.0	33.6	268.0	Vertical	PASS
2800.499	-47.22	-13.0	34.2	341.7	Vertical	PASS
5796.135	-50.79	-13.0	37.8	97.5	Vertical	PASS

LTE Band 17 5MHz BW, Mid Channel, 16QAM

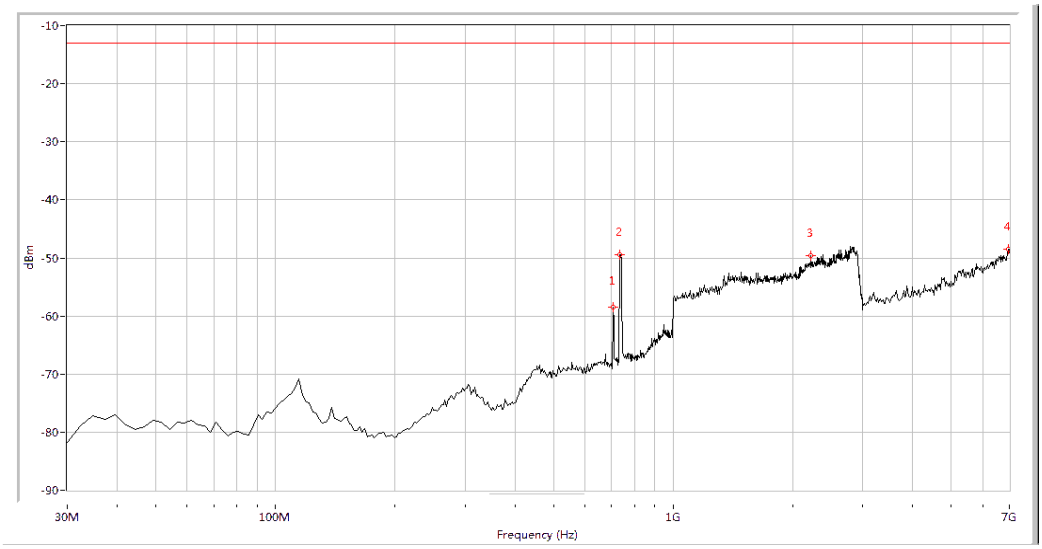


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-57.64	-13.0	44.6	-0.0	Horizontal	PASS
738.753	-39.79	-13.0	26.8	268.0	Horizontal	PASS
2830.424	-48.08	-13.0	35.1	1.4	Horizontal	PASS
6720.075	-48.49	-13.0	35.5	334.2	Horizontal	PASS

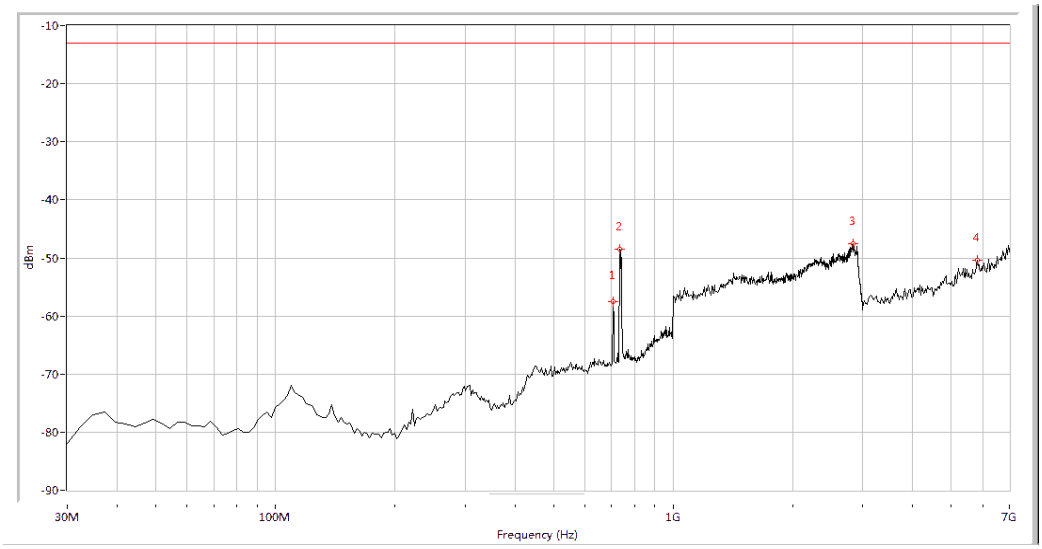


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-56.08	-13.0	43.1	-0.0	Vertical	PASS
738.753	-46.68	-13.0	33.7	268.0	Vertical	PASS
2840.399	-47.47	-13.0	34.5	98.2	Vertical	PASS
5820.449	-50.79	-13.0	37.8	246.4	Vertical	PASS

LTE Band 17 10MHz BW, Mid Channel, QPSK

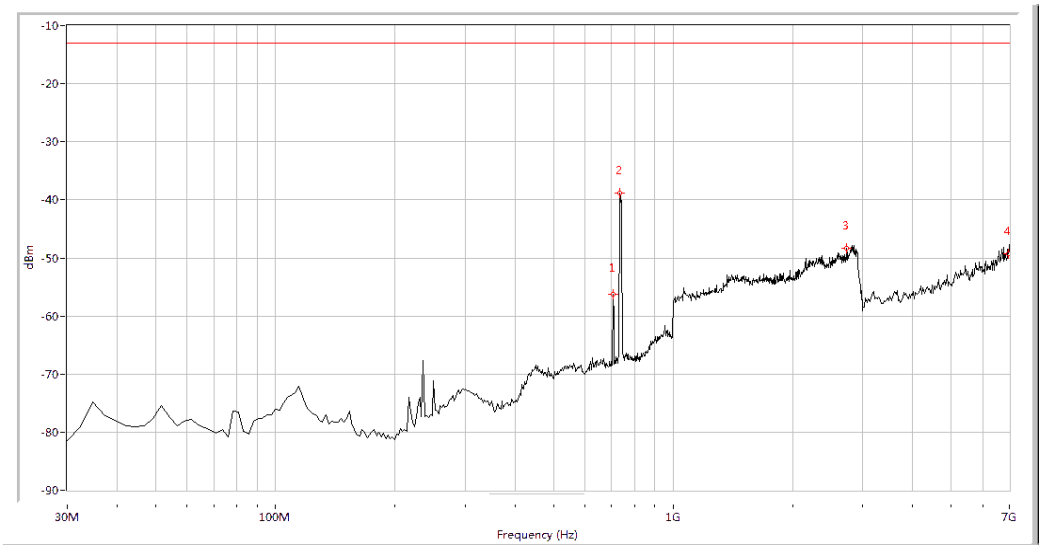


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-58.47	-13.0	45.5	-0.0	Horizontal	PASS
733.915	-49.48	-13.0	36.5	240.8	Horizontal	PASS
2216.958	-49.64	-13.0	36.6	137.7	Horizontal	PASS
6963.217	-48.44	-13.0	35.4	10.8	Horizontal	PASS

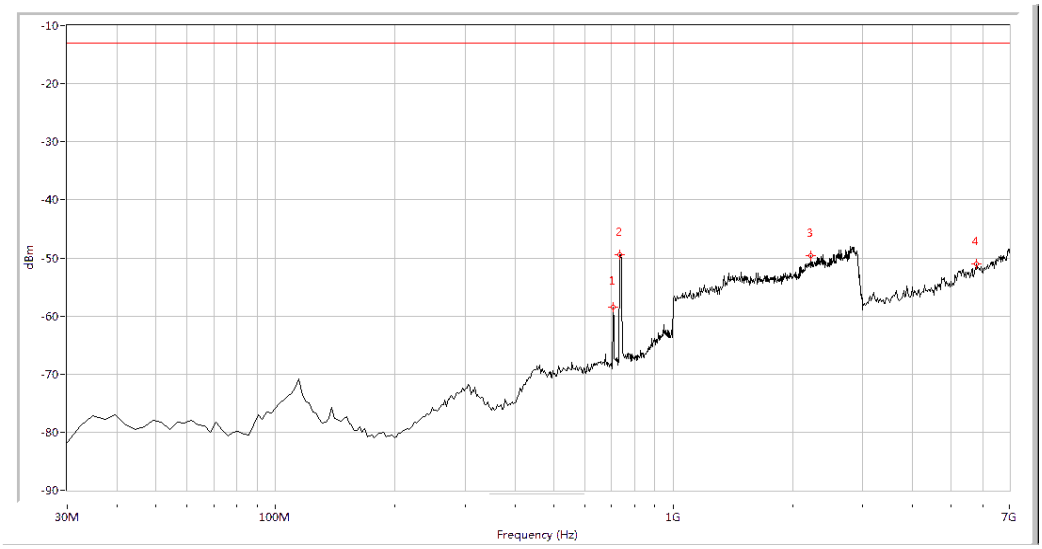


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-57.58	-13.0	44.6	-0.0	Vertical	PASS
733.915	-48.43	-13.0	35.4	240.8	Vertical	PASS
2830.424	-47.56	-13.0	34.6	1.4	Vertical	PASS
5820.449	-50.38	-13.0	37.4	246.4	Vertical	PASS

LTE Band 17 10MHz BW, Mid Channel, 16QAM

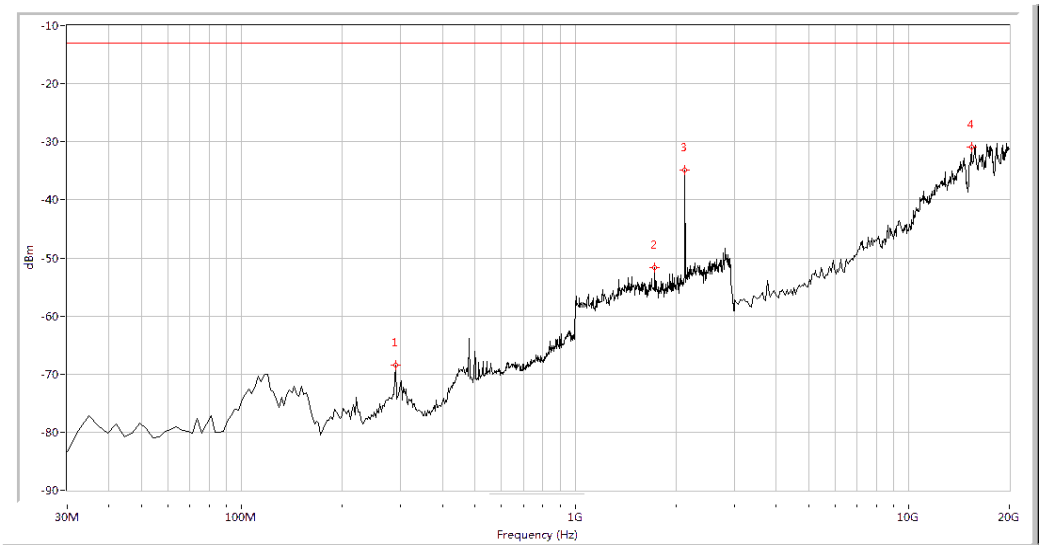


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-56.33	-13.0	43.3	-0.0	Horizontal	PASS
733.915	-38.86	-13.0	25.9	240.8	Horizontal	PASS
2730.673	-48.40	-13.0	35.4	190.6	Horizontal	PASS
6963.217	-49.24	-13.0	36.2	10.8	Horizontal	PASS

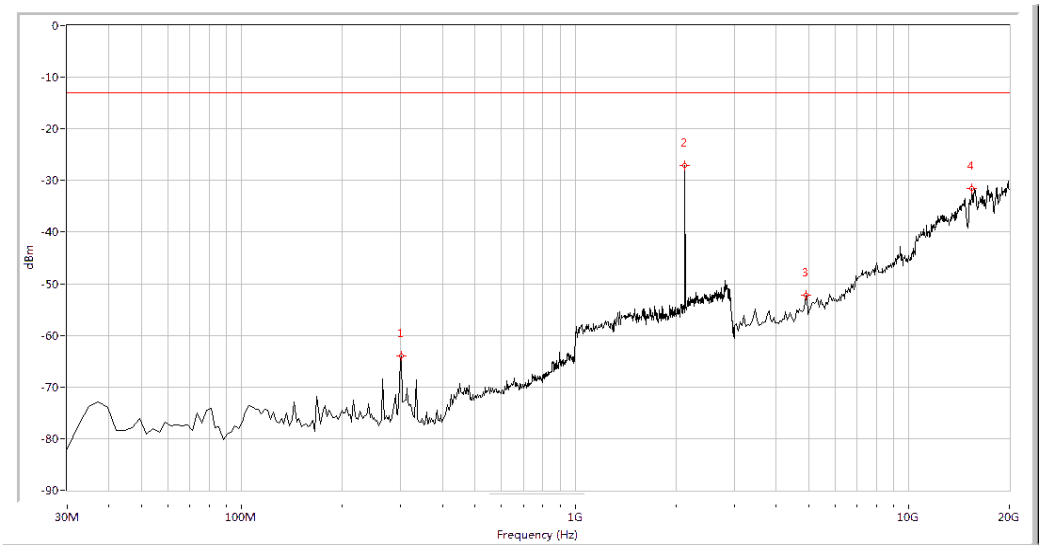


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
707.307	-58.47	-13.0	45.5	-0.0	Vertical	PASS
733.915	-49.48	-13.0	36.5	240.8	Vertical	PASS
2216.958	-49.64	-13.0	36.6	137.7	Vertical	PASS
5796.135	-51.10	-13.0	38.1	97.5	Vertical	PASS

LTE Band 4 1.4MHz BW, Mid Channel, QPSK

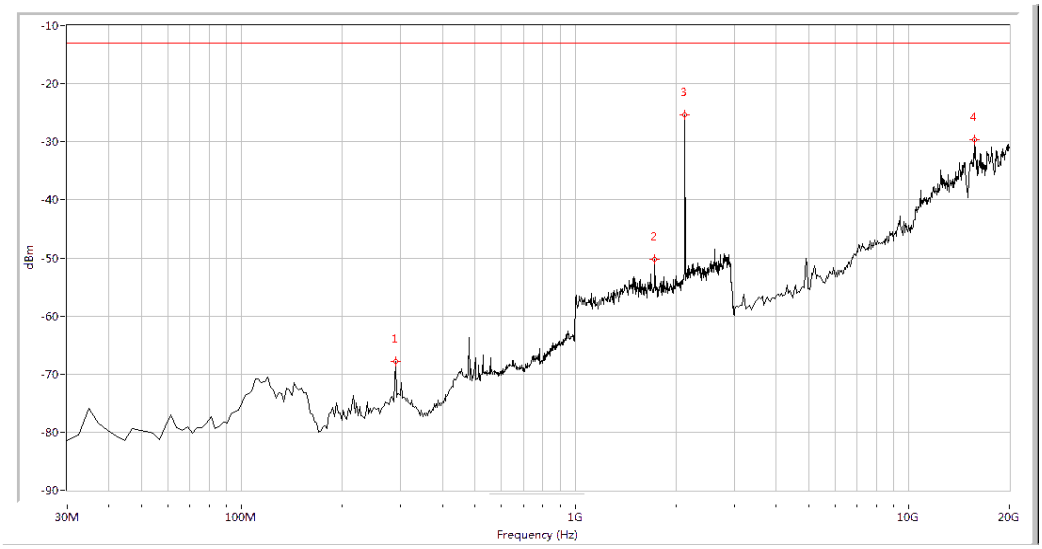


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-68.47	-13.0	55.5	0.0	Horizontal	PASS
1733.167	-51.59	-13.0	38.6	0.0	Horizontal	PASS
2132.170	-34.92	-13.0	21.9	0.0	Horizontal	PASS
15379.052	-30.98	-13.0	18.0	0.0	Horizontal	PASS

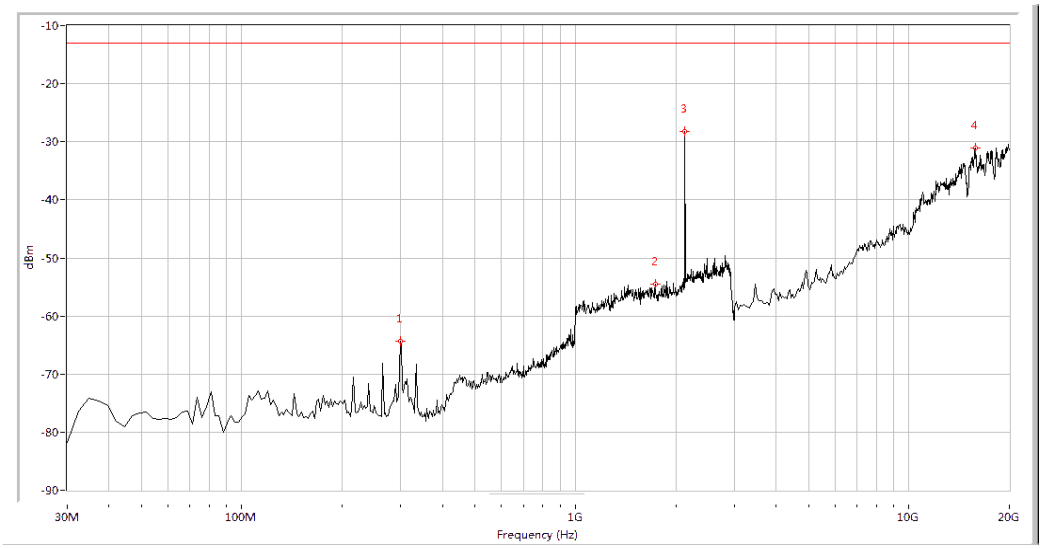


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.03	-13.0	51.0	0.0	Vertical	PASS
2132.170	-27.16	-13.0	14.2	0.0	Vertical	PASS
4907.731	-52.18	-13.0	39.2	0.0	Vertical	PASS
15463.840	-31.48	-13.0	18.5	0.0	Vertical	PASS

LTE Band 4 1.4MHz BW, Mid Channel, 16QAM

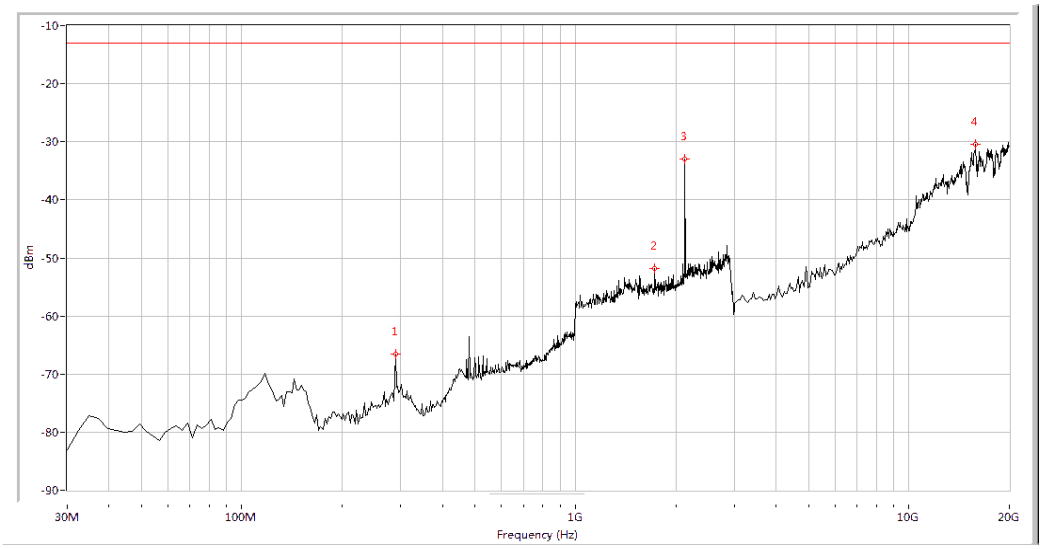


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-67.85	-13.0	54.9	0.0	Horizontal	PASS
1733.167	-50.26	-13.0	37.3	0.0	Horizontal	PASS
2132.170	-25.35	-13.0	12.4	0.0	Horizontal	PASS
15760.599	-29.62	-13.0	16.6	0.0	Horizontal	PASS

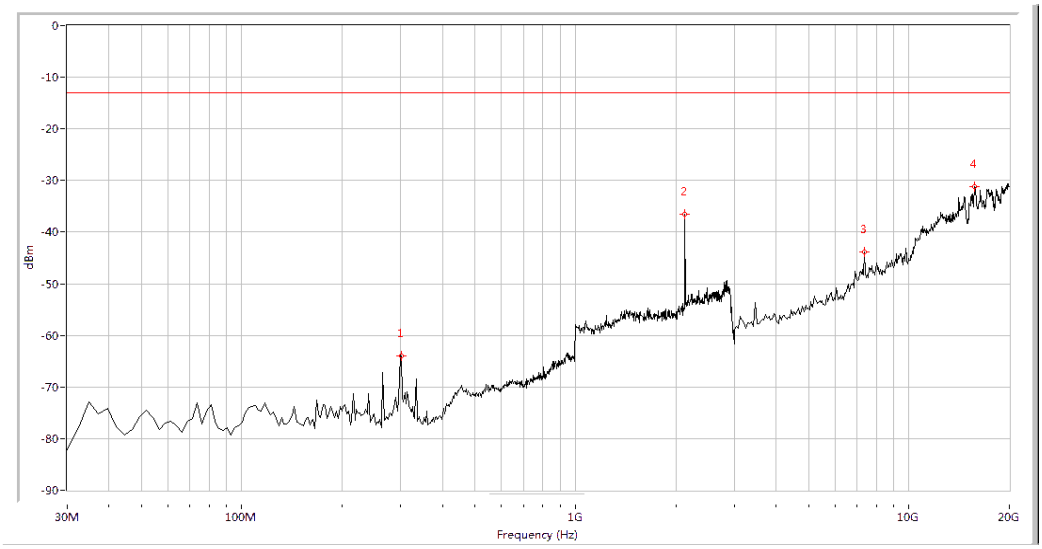


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.26	-13.0	51.3	0.0	Vertical	PASS
1738.155	-54.53	-13.0	41.5	0.0	Vertical	PASS
2132.170	-28.23	-13.0	15.2	0.0	Vertical	PASS
15802.993	-31.14	-13.0	18.1	0.0	Vertical	PASS

LTE Band 4 3MHz BW, Mid Channel, QPSK

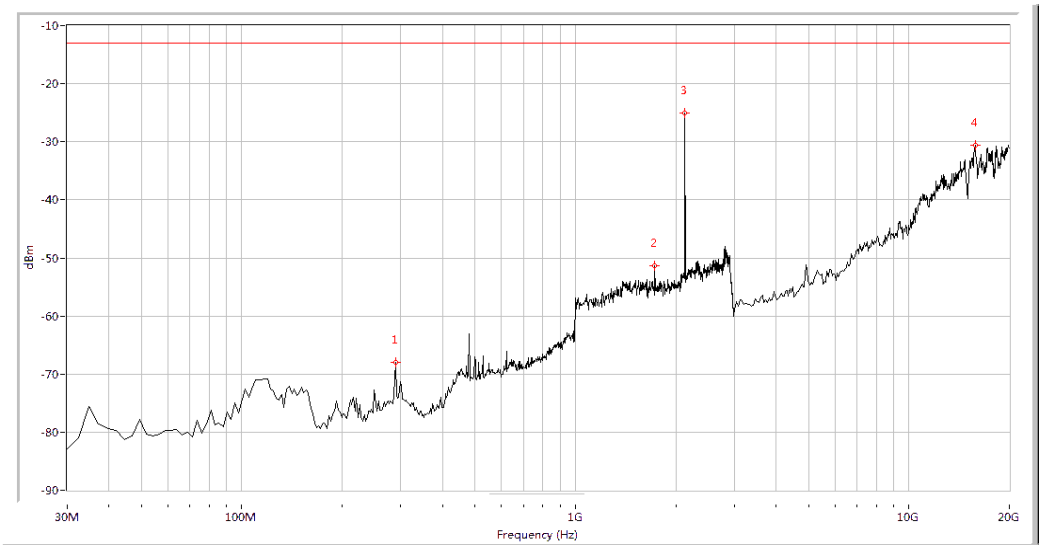


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.61	-13.0	53.6	0.0	Horizontal	PASS
1733.167	-51.87	-13.0	38.9	0.0	Horizontal	PASS
2132.170	-33.03	-13.0	20.0	0.0	Horizontal	PASS
15845.387	-30.36	-13.0	17.4	0.0	Horizontal	PASS

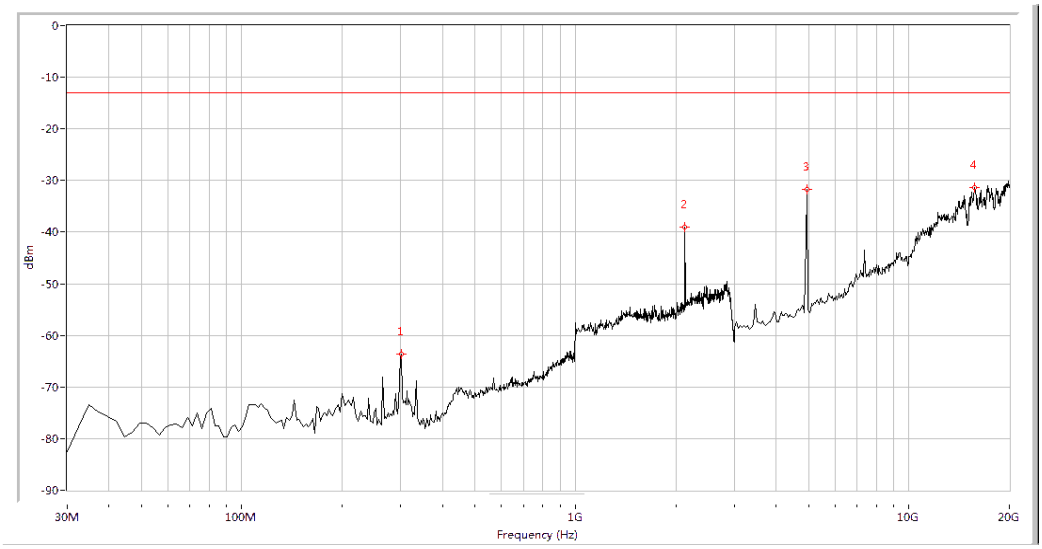


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.06	-13.0	51.1	0.0	Vertical	PASS
2132.170	-36.59	-13.0	23.6	0.0	Vertical	PASS
7366.584	-43.86	-13.0	30.9	0.0	Vertical	PASS
15760.599	-31.11	-13.0	18.1	0.0	Vertical	PASS

LTE Band 4 3MHz BW, Mid Channel, 16QAM

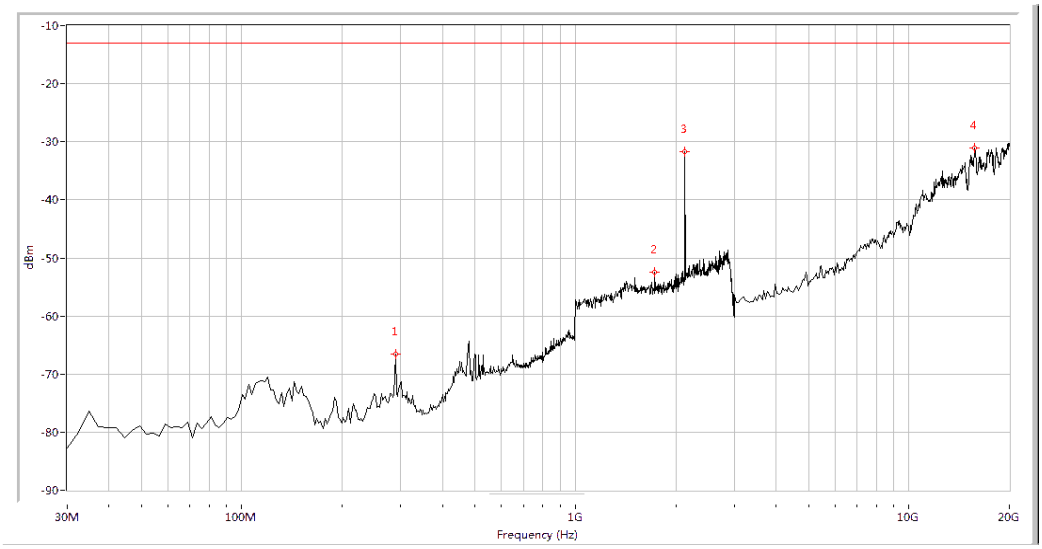


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-67.97	-13.0	55.0	0.0	Horizontal	PASS
1733.167	-51.29	-13.0	38.3	0.0	Horizontal	PASS
2132.170	-25.12	-13.0	12.1	0.0	Horizontal	PASS
15802.993	-30.55	-13.0	17.5	0.0	Horizontal	PASS

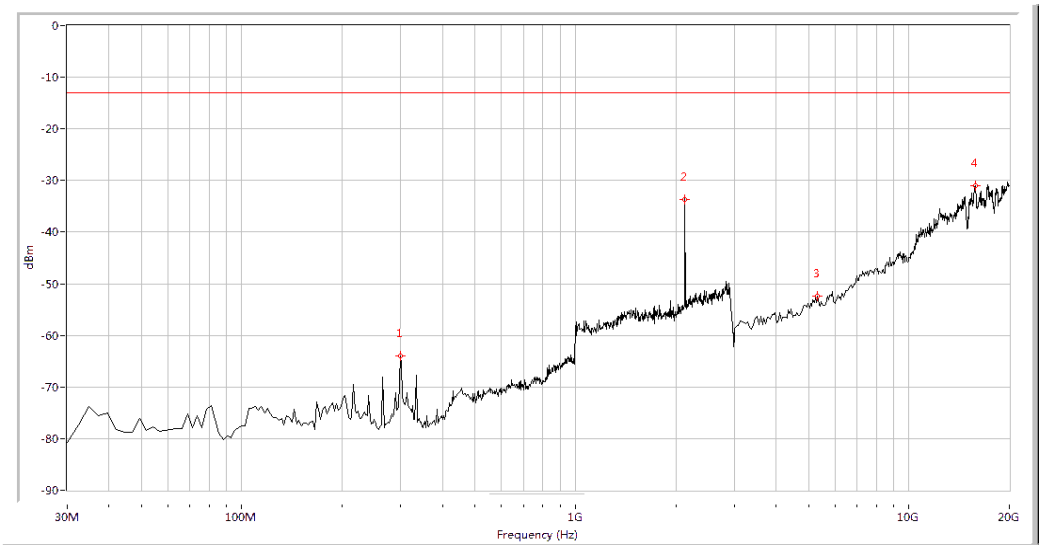


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-63.71	-13.0	50.7	0.0	Vertical	PASS
2132.170	-39.03	-13.0	26.0	0.0	Vertical	PASS
4950.125	-31.78	-13.0	18.8	0.0	Vertical	PASS
15760.599	-31.31	-13.0	18.3	0.0	Vertical	PASS

LTE Band 4 5MHz BW, Mid Channel, QPSK

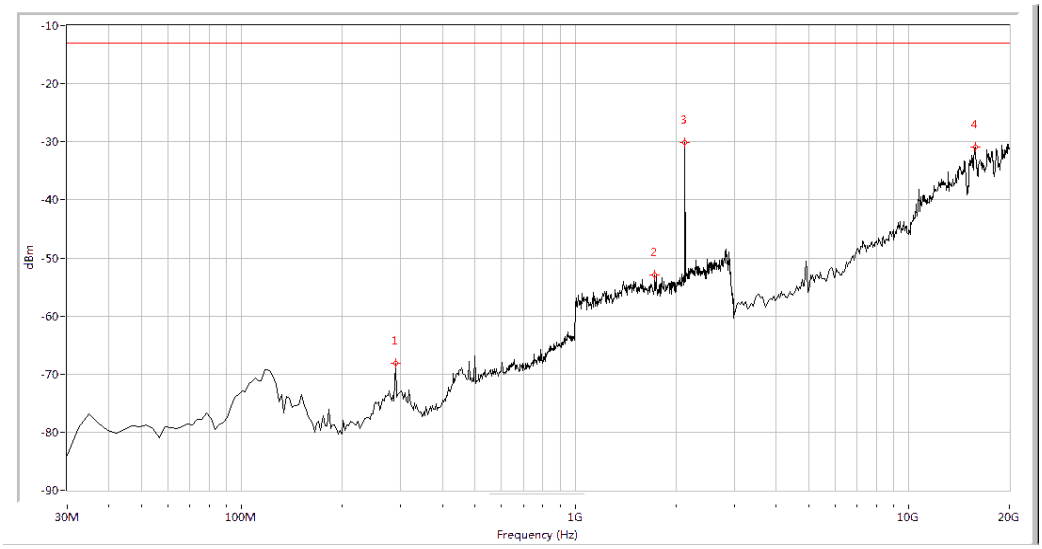


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.61	-13.0	53.6	0.0	Horizontal	PASS
1733.167	-52.50	-13.0	39.5	0.0	Horizontal	PASS
2132.170	-31.69	-13.0	18.7	0.0	Horizontal	PASS
15760.599	-31.09	-13.0	18.1	0.0	Horizontal	PASS

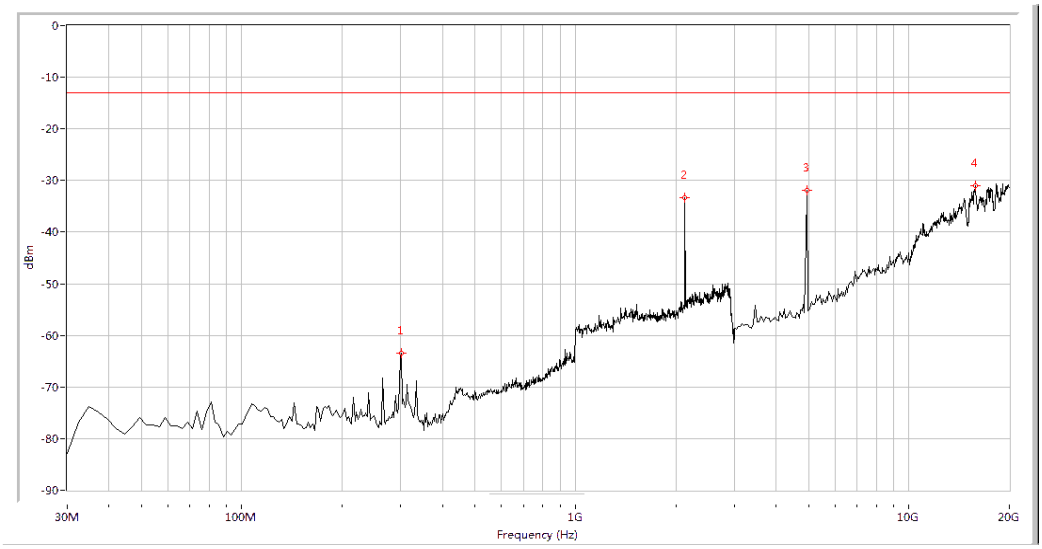


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.02	-13.0	51.0	0.0	Vertical	PASS
2132.170	-33.74	-13.0	20.7	0.0	Vertical	PASS
5331.671	-52.32	-13.0	39.3	0.0	Vertical	PASS
15802.993	-31.01	-13.0	18.0	0.0	Vertical	PASS

LTE Band 4 5MHz BW, Mid Channel, 16QAM

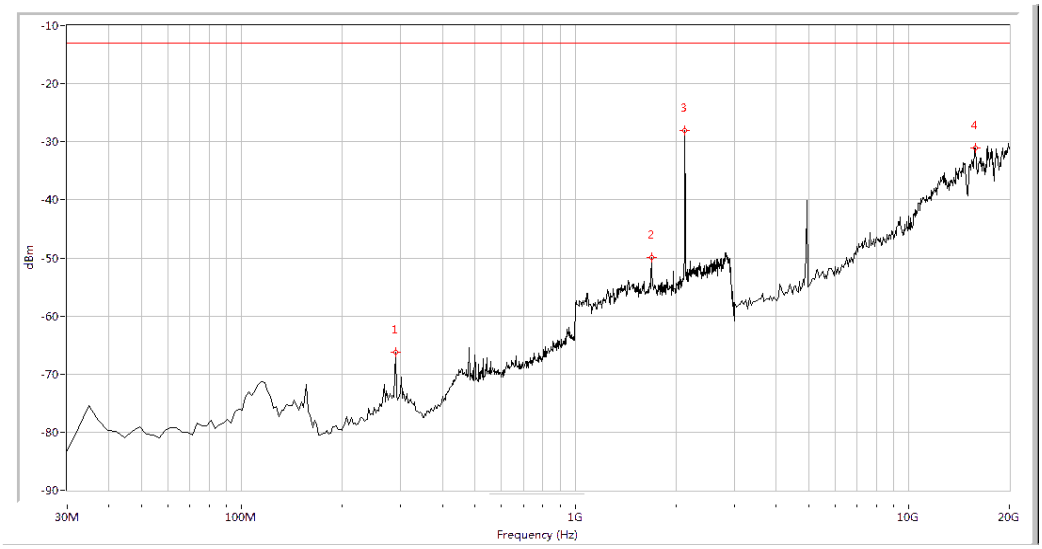


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-68.16	-13.0	55.2	0.0	Horizontal	PASS
1733.167	-52.98	-13.0	40.0	0.0	Horizontal	PASS
2132.170	-30.19	-13.0	17.2	0.0	Horizontal	PASS
15802.993	-30.95	-13.0	17.9	0.0	Horizontal	PASS

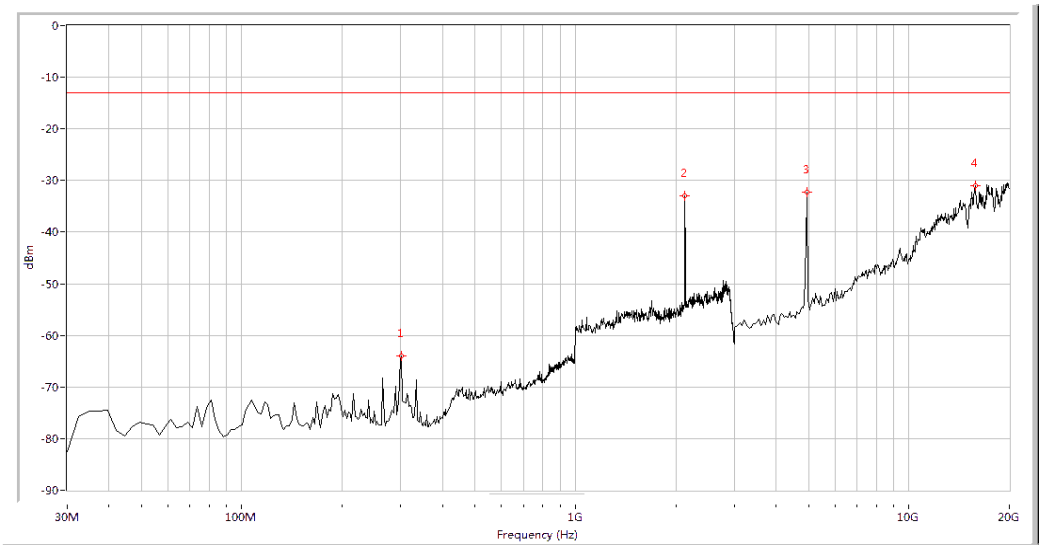


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-63.37	-13.0	50.4	0.0	Vertical	PASS
2132.170	-33.32	-13.0	20.3	0.0	Vertical	PASS
4950.125	-31.98	-13.0	19.0	0.0	Vertical	PASS
15802.993	-31.03	-13.0	18.0	0.0	Vertical	PASS

LTE Band 4 10MHz BW, Mid Channel, QPSK

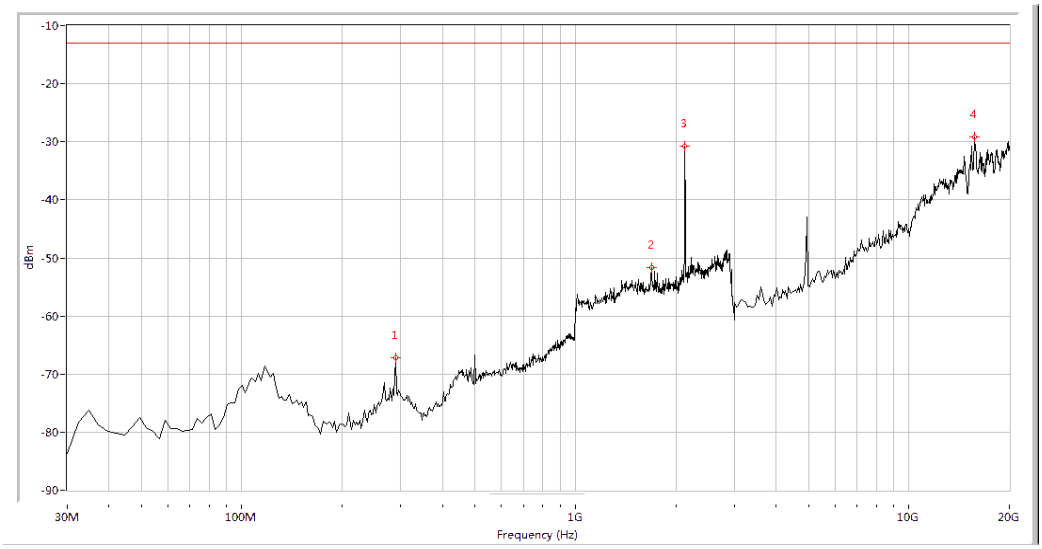


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.17	-13.0	53.2	0.0	Horizontal	PASS
1693.267	-49.87	-13.0	36.9	0.0	Horizontal	PASS
2132.170	-28.02	-13.0	15.0	0.0	Horizontal	PASS
15802.993	-31.00	-13.0	18.0	0.0	Horizontal	PASS

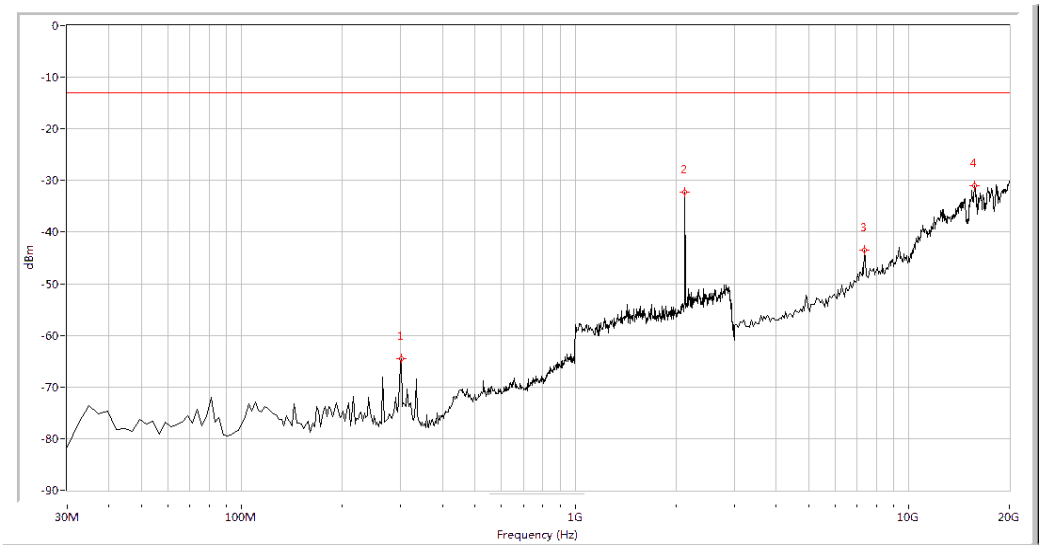


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-63.93	-13.0	50.9	0.0	Vertical	PASS
2132.170	-32.89	-13.0	19.9	0.0	Vertical	PASS
4950.125	-32.22	-13.0	19.2	0.0	Vertical	PASS
15802.993	-31.03	-13.0	18.0	0.0	Vertical	PASS

LTE Band 4 10MHz BW, Mid Channel, 16QAM

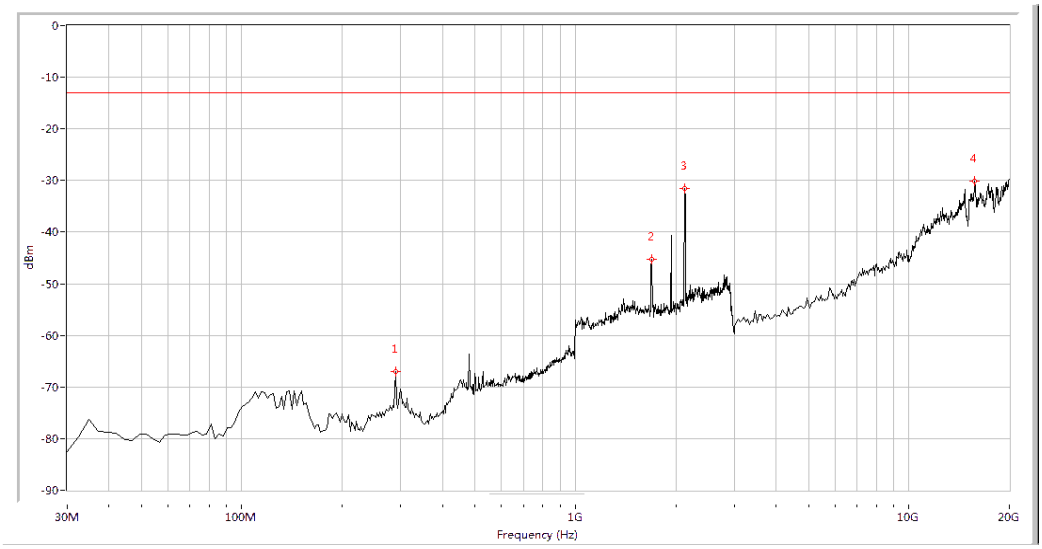


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-67.26	-13.0	54.3	0.0	Horizontal	PASS
1693.267	-51.70	-13.0	38.7	0.0	Horizontal	PASS
2132.170	-30.70	-13.0	17.7	0.0	Horizontal	PASS
15760.599	-29.22	-13.0	16.2	0.0	Horizontal	PASS

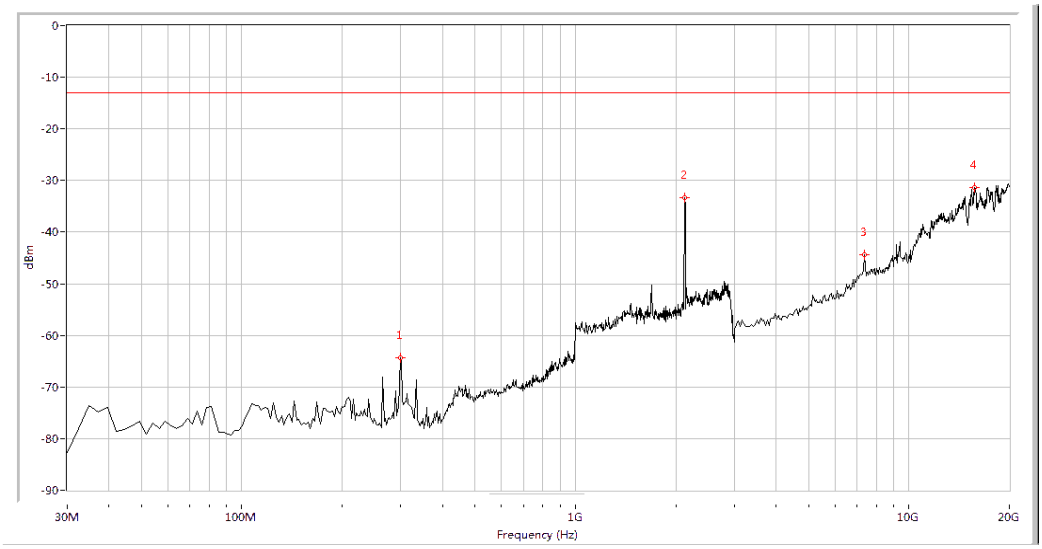


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.47	-13.0	51.5	0.0	Vertical	PASS
2127.182	-32.32	-13.0	19.3	0.0	Vertical	PASS
7366.584	-43.48	-13.0	30.5	0.0	Vertical	PASS
15760.599	-31.04	-13.0	18.0	0.0	Vertical	PASS

LTE Band 4 15MHz BW, Mid Channel, QPSK

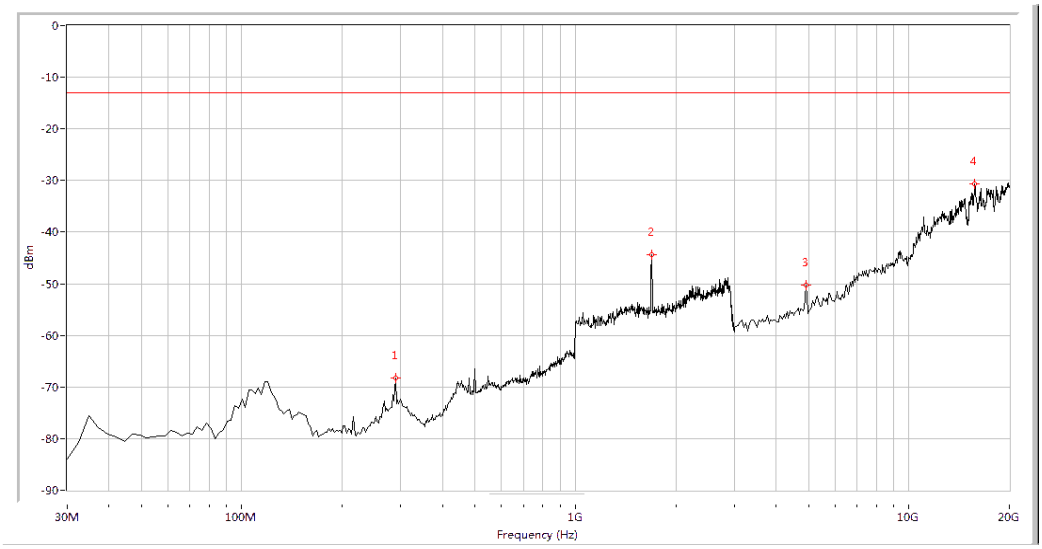


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.98	-13.0	54.0	0.0	Horizontal	PASS
1693.267	-45.22	-13.0	32.2	0.0	Horizontal	PASS
2127.182	-31.60	-13.0	18.6	0.0	Horizontal	PASS
15760.599	-30.08	-13.0	17.1	0.0	Horizontal	PASS

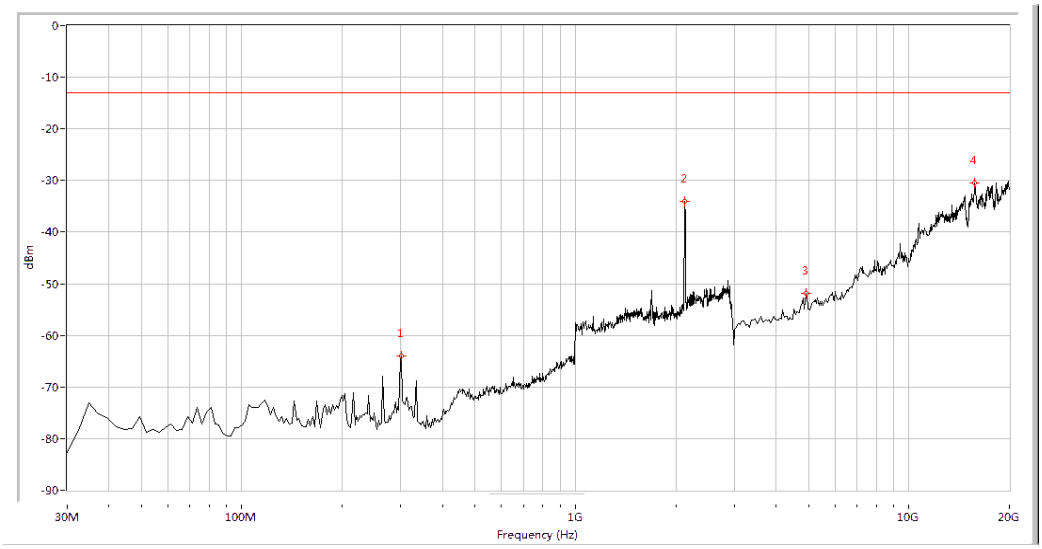


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.33	-13.0	51.3	0.0	Vertical	PASS
2132.170	-33.37	-13.0	20.4	0.0	Vertical	PASS
7366.584	-44.40	-13.0	31.4	0.0	Vertical	PASS
15760.599	-31.31	-13.0	18.3	0.0	Vertical	PASS

LTE Band 4 15MHz BW, Mid Channel, 16QAM

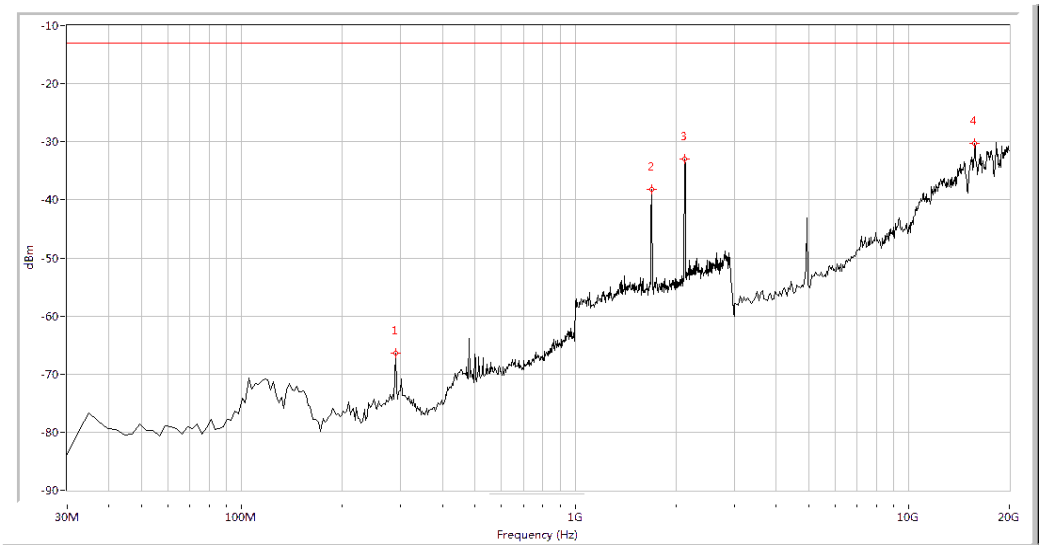


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-68.26	-13.0	55.3	0.0	Horizontal	PASS
1698.254	-44.30	-13.0	31.3	0.0	Horizontal	PASS
4907.731	-50.20	-13.0	37.2	0.0	Horizontal	PASS
15760.599	-30.70	-13.0	17.7	0.0	Horizontal	PASS

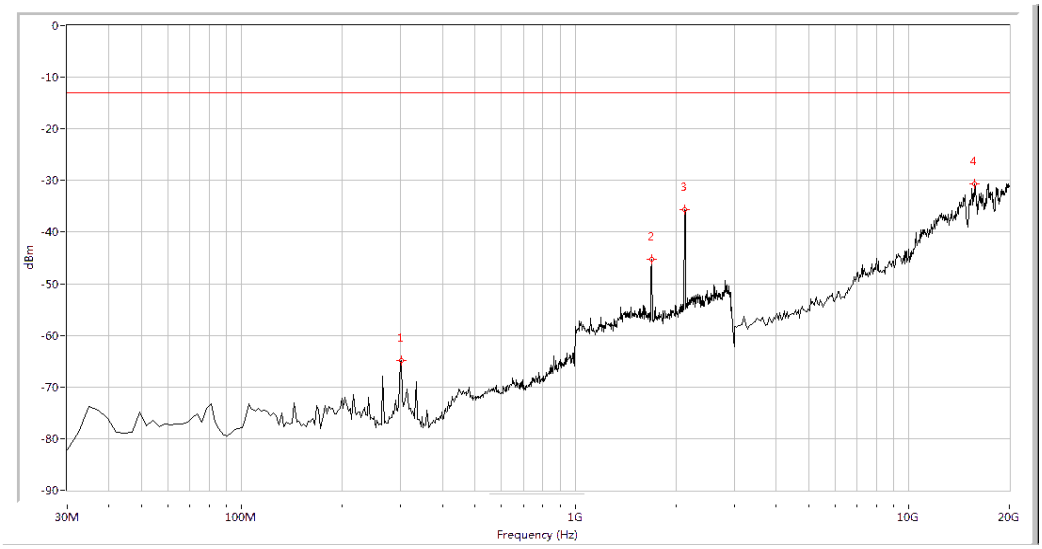


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-63.97	-13.0	51.0	0.0	Vertical	PASS
2127.182	-34.01	-13.0	21.0	0.0	Vertical	PASS
4907.731	-51.84	-13.0	38.8	0.0	Vertical	PASS
15760.599	-30.39	-13.0	17.4	0.0	Vertical	PASS

LTE Band 4 20MHz BW, Mid Channel, QPSK

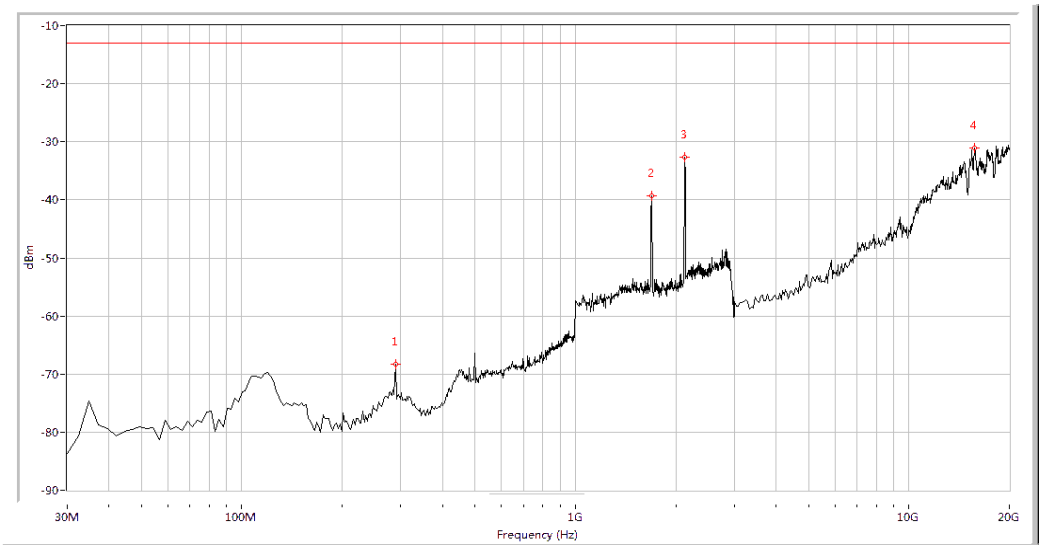


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.44	-13.0	53.4	0.0	Horizontal	PASS
1693.267	-38.24	-13.0	25.2	0.0	Horizontal	PASS
2127.182	-32.97	-13.0	20.0	0.0	Horizontal	PASS
15760.599	-30.27	-13.0	17.3	0.0	Horizontal	PASS

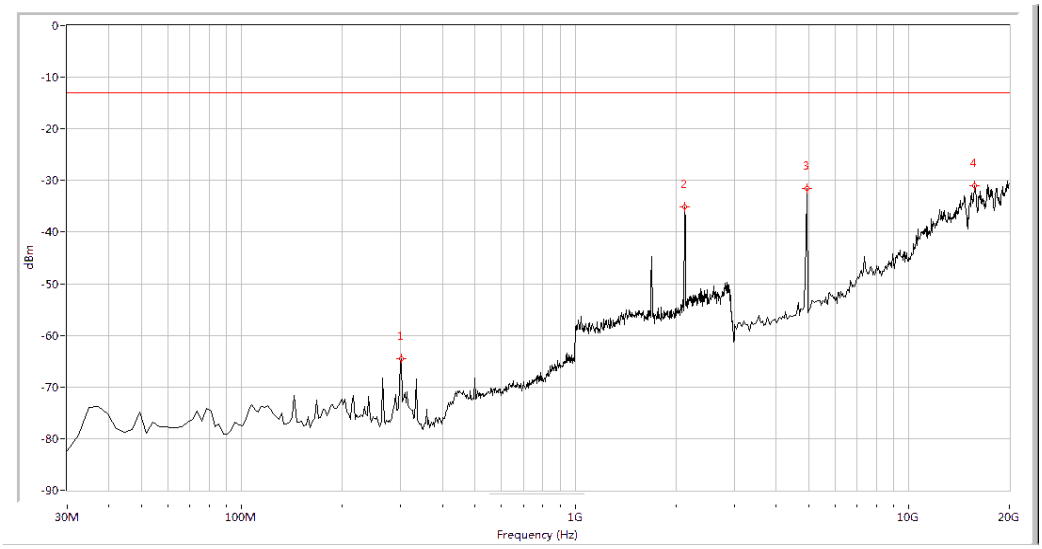


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.90	-13.0	51.9	0.0	Vertical	PASS
1693.267	-45.23	-13.0	32.2	0.0	Vertical	PASS
2132.170	-35.70	-13.0	22.7	0.0	Vertical	PASS
15760.599	-30.59	-13.0	17.6	0.0	Vertical	PASS

LTE Band 4 20MHz BW, Mid Channel, 16QAM						

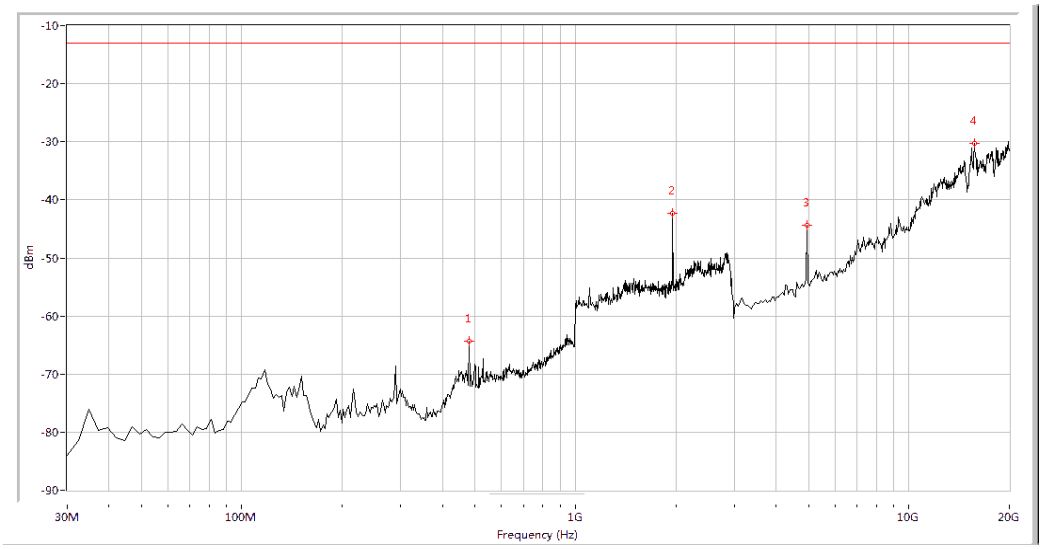


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-68.36	-13.0	55.4	0.0	Horizontal	PASS
1693.267	-39.27	-13.0	26.3	0.0	Horizontal	PASS
2127.182	-32.70	-13.0	19.7	0.0	Horizontal	PASS
15760.599	-31.05	-13.0	18.1	0.0	Horizontal	PASS

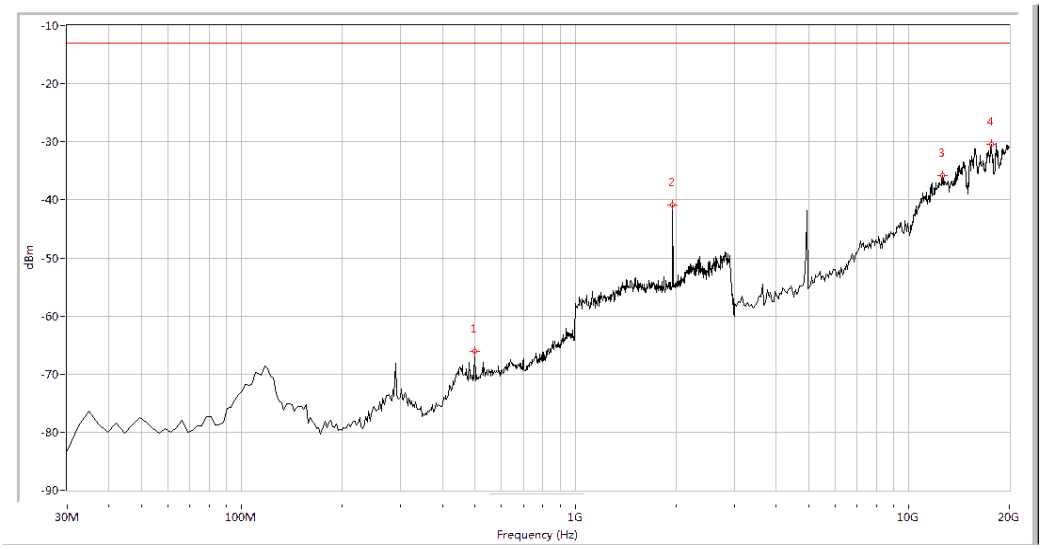


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.47	-13.0	51.5	0.0	Vertical	PASS
2127.182	-35.06	-13.0	22.1	0.0	Vertical	PASS
4950.125	-31.57	-13.0	18.6	0.0	Vertical	PASS
15760.599	-31.03	-13.0	18.0	0.0	Vertical	PASS

LTE Band 2 1.4MHz BW, Mid Channel, QPSK

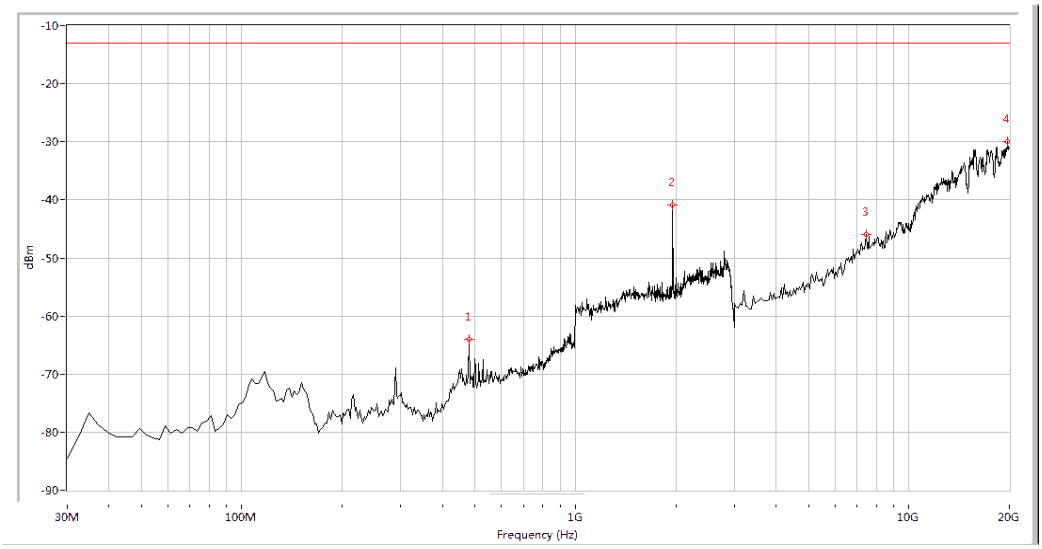


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-64.41	-13.0	51.4	0.0	Horizontal	PASS
1957.606	-42.30	-13.0	29.3	0.0	Horizontal	PASS
4950.125	-44.33	-13.0	31.3	0.0	Horizontal	PASS
15718.204	-30.33	-13.0	17.3	0.0	Horizontal	PASS

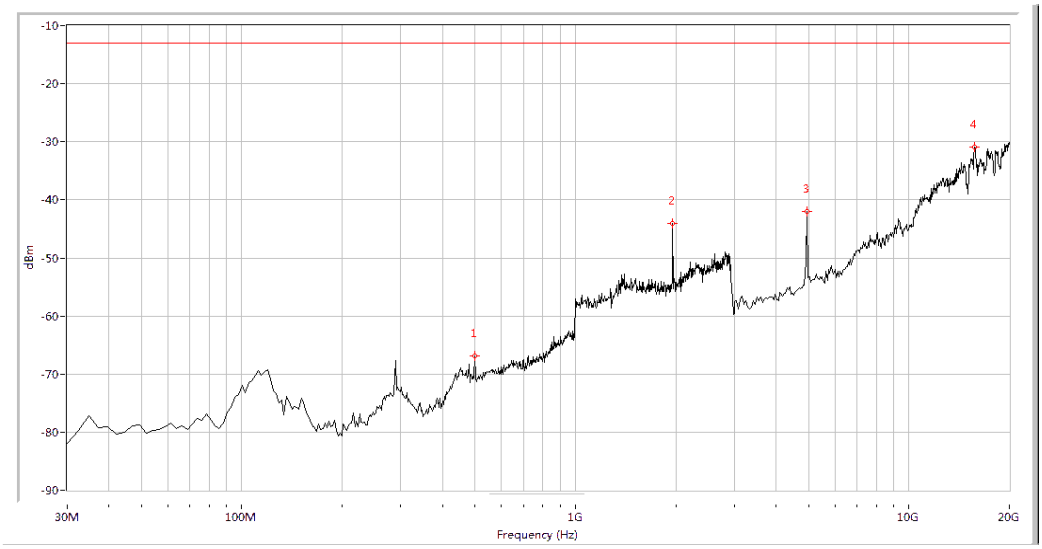


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
499.277	-66.04	-13.0	53.0	0.0	Vertical	PASS
1957.606	-40.96	-13.0	28.0	0.0	Vertical	PASS
12581.047	-35.86	-13.0	22.9	0.0	Vertical	PASS
17625.935	-30.46	-13.0	17.5	0.0	Vertical	PASS

LTE Band 2 1.4MHz BW, Mid Channel, 16QAM

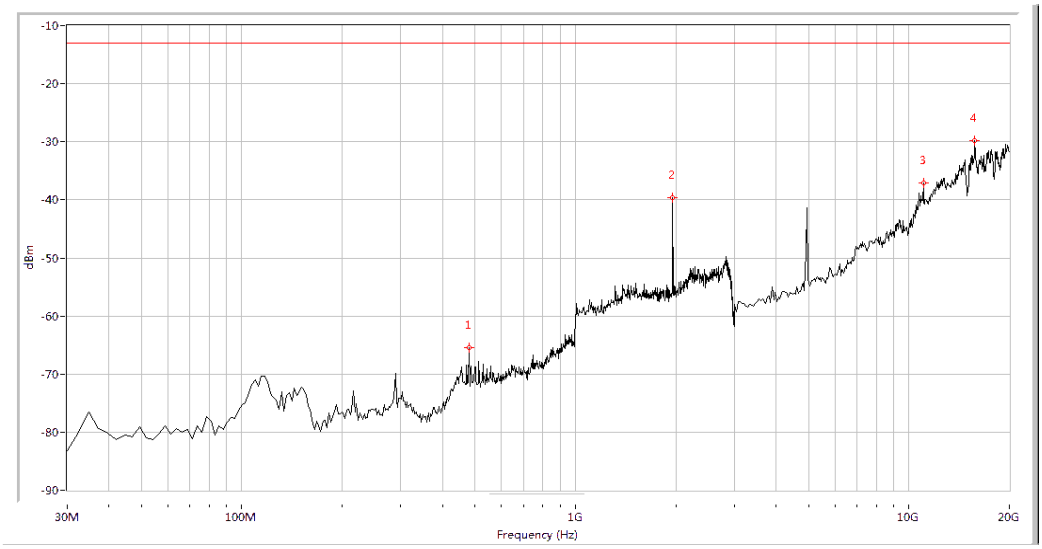


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-64.09	-13.0	51.1	0.0	Horizontal	PASS
1957.606	-40.91	-13.0	27.9	0.0	Horizontal	PASS
7451.372	-46.03	-13.0	33.0	0.0	Horizontal	PASS
19788.030	-29.94	-13.0	16.9	0.0	Horizontal	PASS

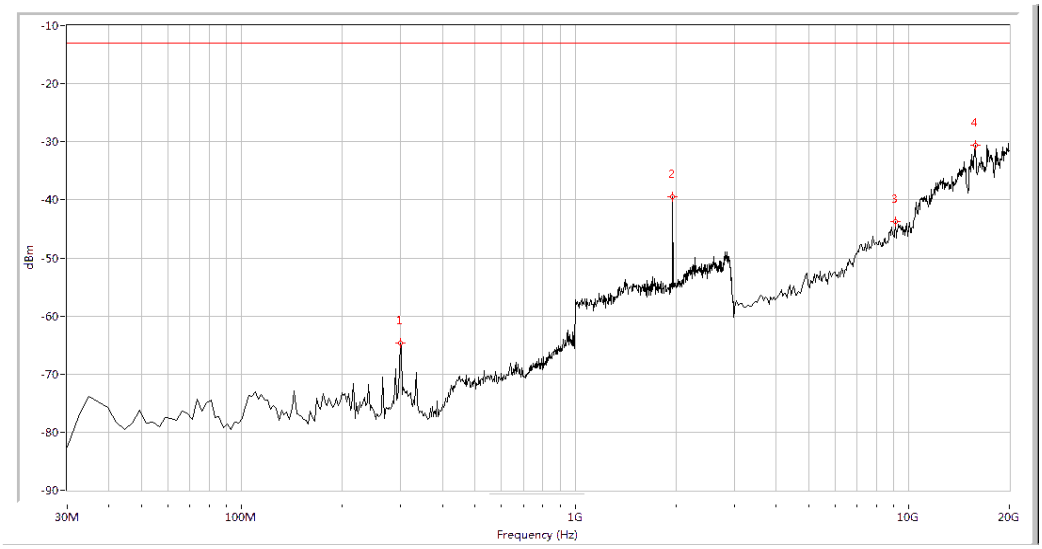


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
499.277	-66.84	-13.0	53.8	0.0	Vertical	PASS
1957.606	-44.04	-13.0	31.0	0.0	Vertical	PASS
4950.125	-41.94	-13.0	28.9	0.0	Vertical	PASS
15718.204	-30.85	-13.0	17.8	0.0	Vertical	PASS

LTE Band 2 3MHz BW, Mid Channel, QPSK

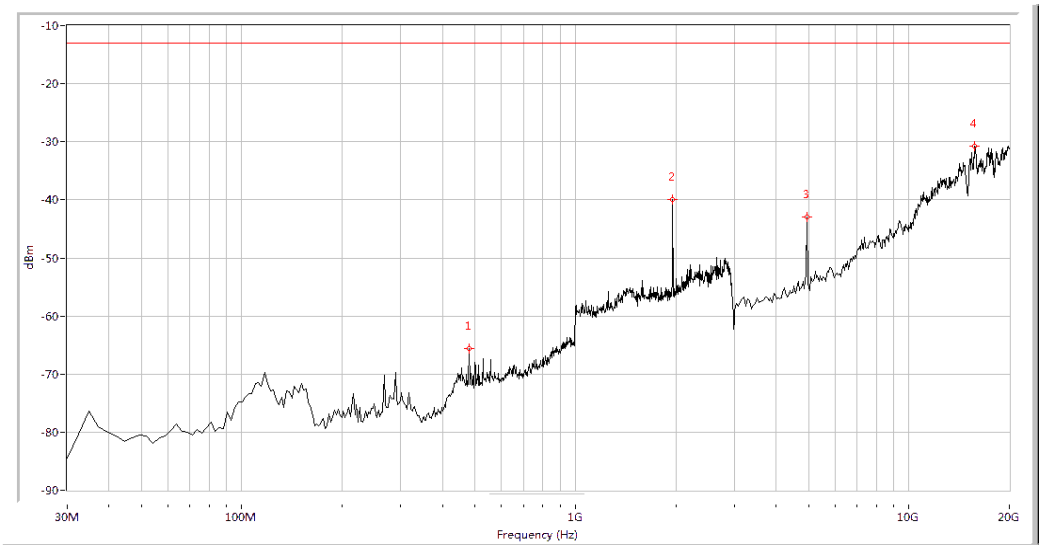


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.40	-13.0	52.4	0.0	Horizontal	PASS
1957.606	-39.55	-13.0	26.6	0.0	Horizontal	PASS
11054.863	-37.01	-13.0	24.0	0.0	Horizontal	PASS
15760.599	-29.86	-13.0	16.9	0.0	Horizontal	PASS

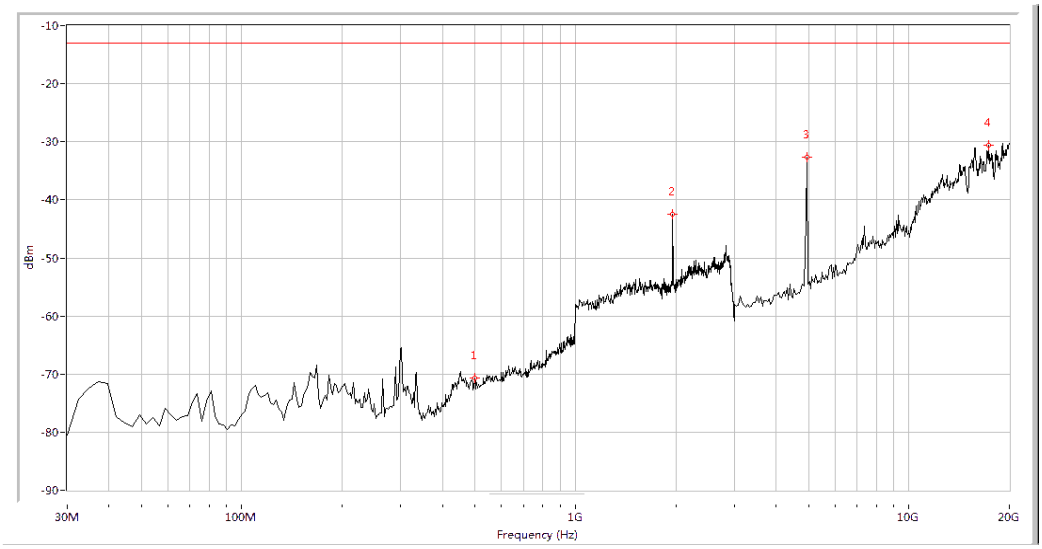


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.58	-13.0	51.6	0.0	Vertical	PASS
1957.606	-39.49	-13.0	26.5	0.0	Vertical	PASS
9104.738	-43.79	-13.0	30.8	0.0	Vertical	PASS
15802.993	-30.67	-13.0	17.7	0.0	Vertical	PASS

LTE Band 2 3MHz BW, Mid Channel, 16QAM

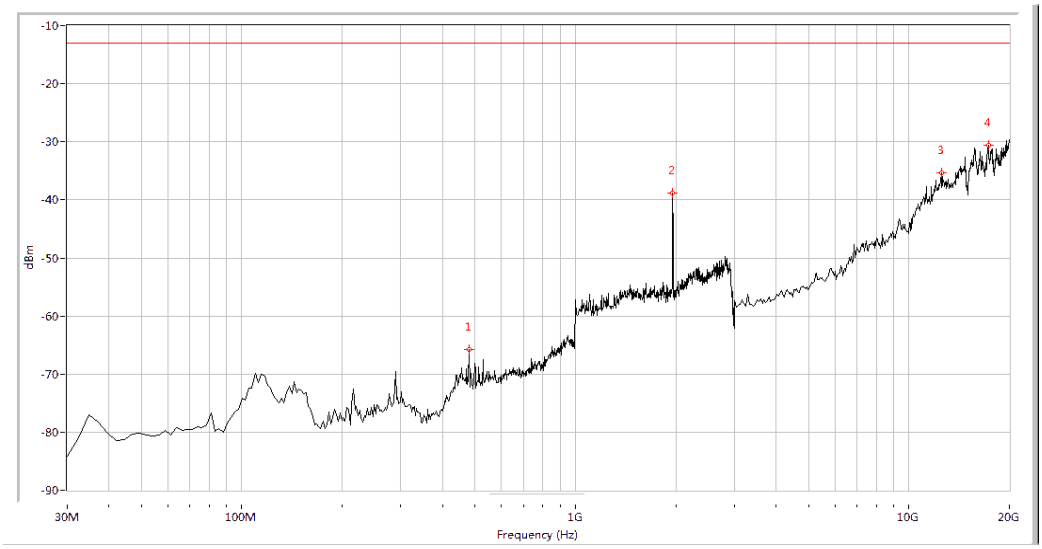


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.57	-13.0	52.6	0.0	Horizontal	PASS
1957.606	-39.97	-13.0	27.0	0.0	Horizontal	PASS
4950.125	-43.01	-13.0	30.0	0.0	Horizontal	PASS
15760.599	-30.73	-13.0	17.7	0.0	Horizontal	PASS

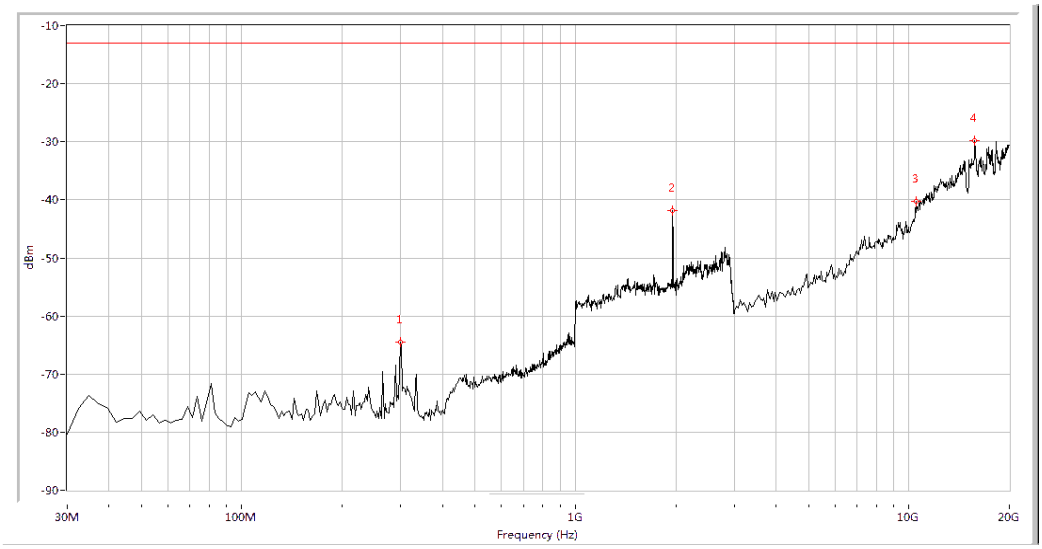


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
499.277	-70.60	-13.0	57.6	0.0	Vertical	PASS
1957.606	-42.47	-13.0	29.5	0.0	Vertical	PASS
4950.125	-32.72	-13.0	19.7	0.0	Vertical	PASS
17286.783	-30.56	-13.0	17.6	0.0	Vertical	PASS

LTE Band 2 5MHz BW, Mid Channel, QPSK

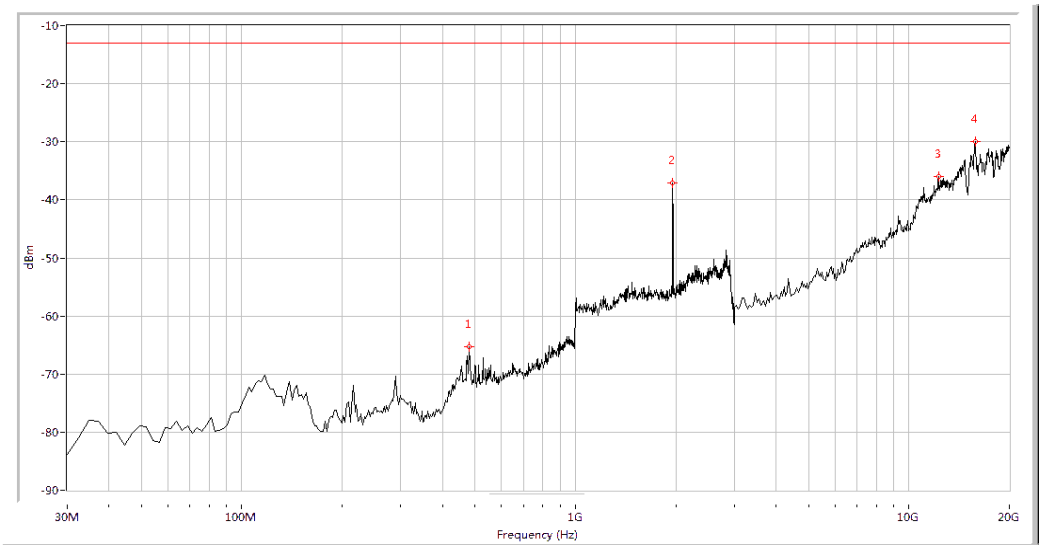


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.83	-13.0	52.8	0.0	Horizontal	PASS
1957.606	-38.77	-13.0	25.8	0.0	Horizontal	PASS
12496.259	-35.32	-13.0	22.3	0.0	Horizontal	PASS
17286.783	-30.61	-13.0	17.6	0.0	Horizontal	PASS

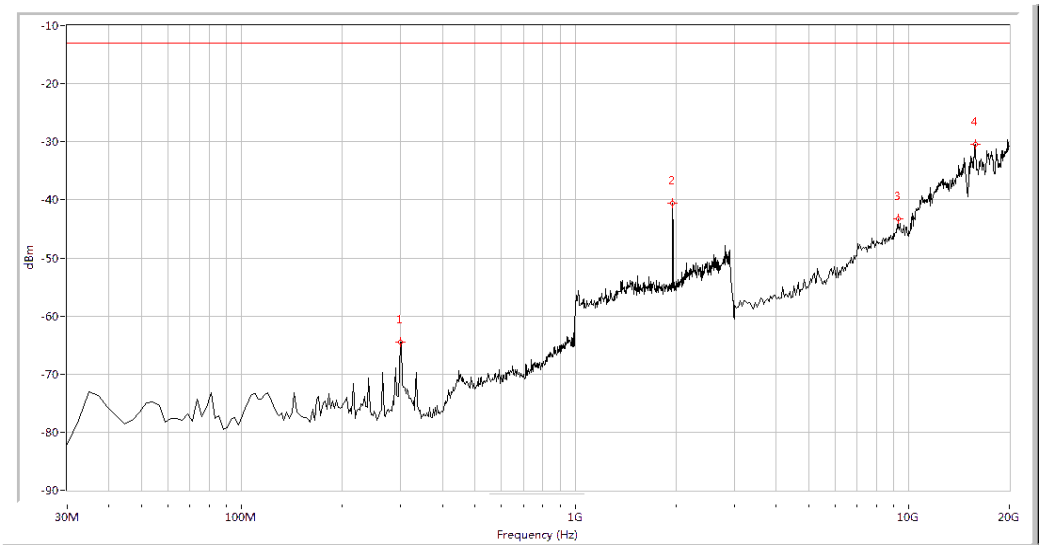


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.42	-13.0	51.4	0.0	Vertical	PASS
1957.606	-41.91	-13.0	28.9	0.0	Vertical	PASS
10503.741	-40.31	-13.0	27.3	0.0	Vertical	PASS
15760.599	-29.75	-13.0	16.7	0.0	Vertical	PASS

LTE Band 2 5MHz BW, Mid Channel, 16QAM

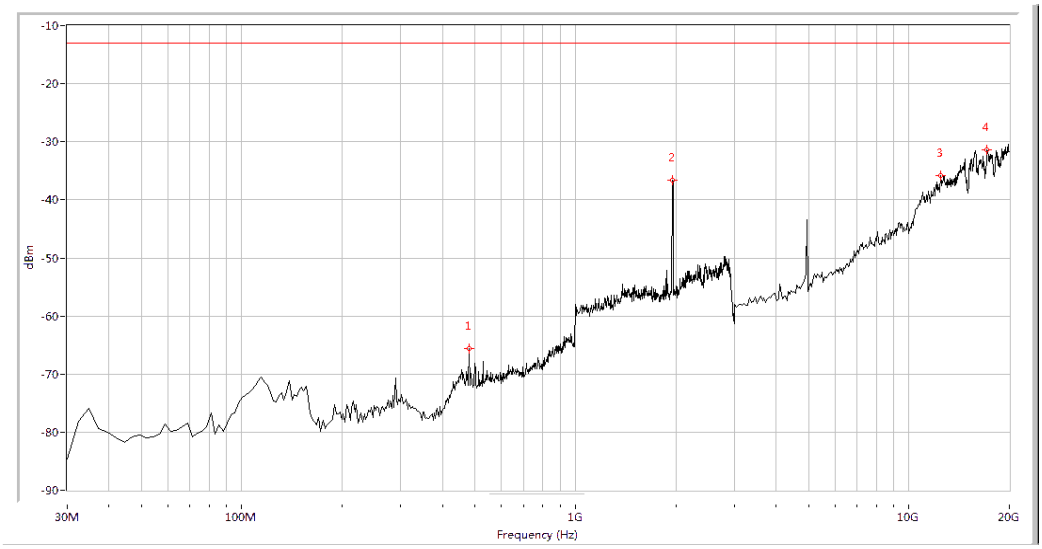


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.35	-13.0	52.3	0.0	Horizontal	PASS
1957.606	-37.01	-13.0	24.0	0.0	Horizontal	PASS
12284.289	-36.06	-13.0	23.1	0.0	Horizontal	PASS
15802.993	-29.88	-13.0	16.9	0.0	Horizontal	PASS

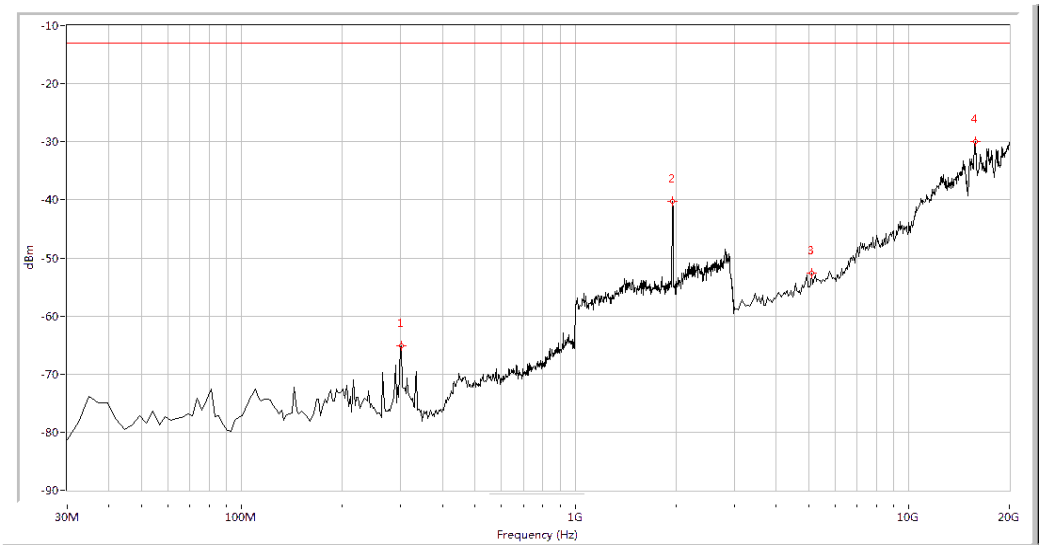


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.42	-13.0	51.4	0.0	Vertical	PASS
1957.606	-40.62	-13.0	27.6	0.0	Vertical	PASS
9274.314	-43.25	-13.0	30.2	0.0	Vertical	PASS
15802.993	-30.45	-13.0	17.5	0.0	Vertical	PASS

LTE Band 2 10MHz BW, Mid Channel, QPSK

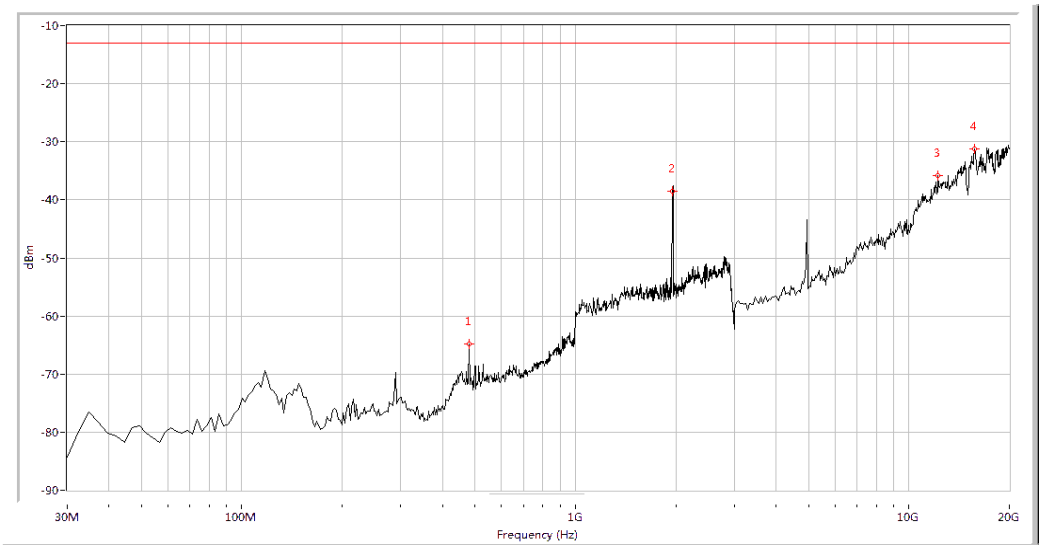


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.55	-13.0	52.5	0.0	Horizontal	PASS
1957.606	-36.60	-13.0	23.6	0.0	Horizontal	PASS
12411.471	-35.85	-13.0	22.8	0.0	Horizontal	PASS
17159.601	-31.45	-13.0	18.4	0.0	Horizontal	PASS

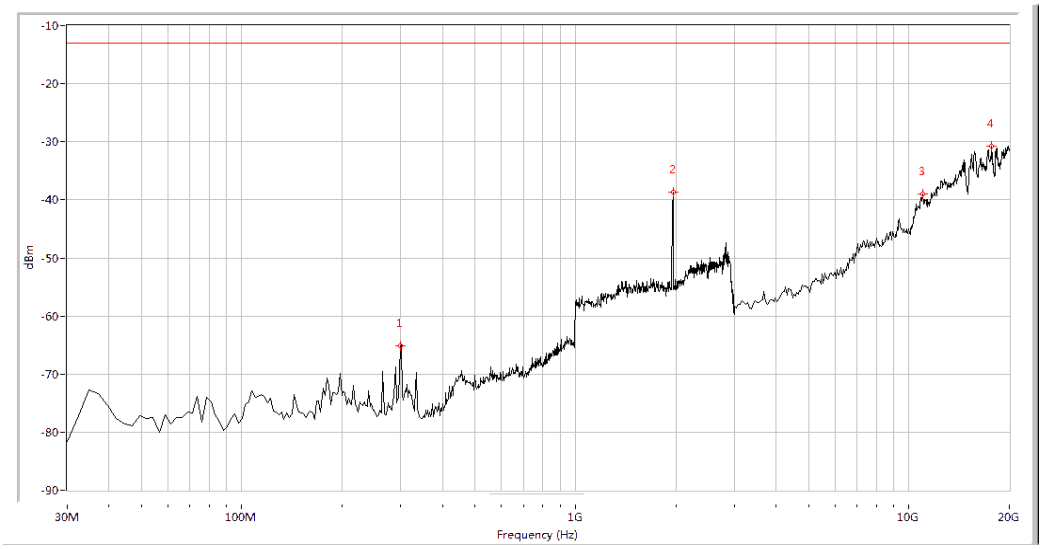


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-65.12	-13.0	52.1	0.0	Vertical	PASS
1957.606	-40.32	-13.0	27.3	0.0	Vertical	PASS
5119.701	-52.54	-13.0	39.5	0.0	Vertical	PASS
15802.993	-29.97	-13.0	17.0	0.0	Vertical	PASS

LTE Band 2 10MHz BW, Mid Channel, 16QAM						

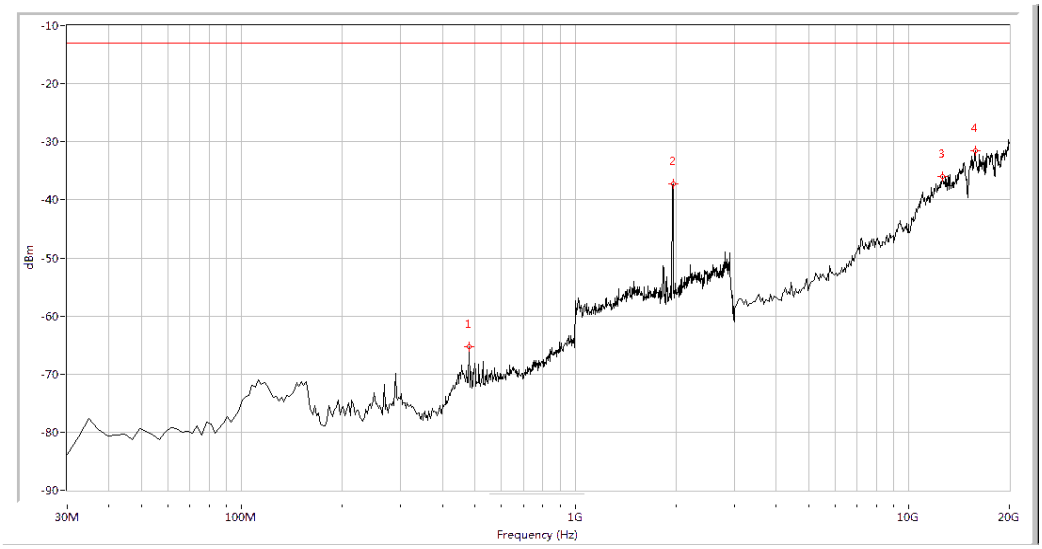


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-64.76	-13.0	51.8	0.0	Horizontal	PASS
1957.606	-38.45	-13.0	25.4	0.0	Horizontal	PASS
12241.895	-35.79	-13.0	22.8	0.0	Horizontal	PASS
15760.599	-31.22	-13.0	18.2	0.0	Horizontal	PASS

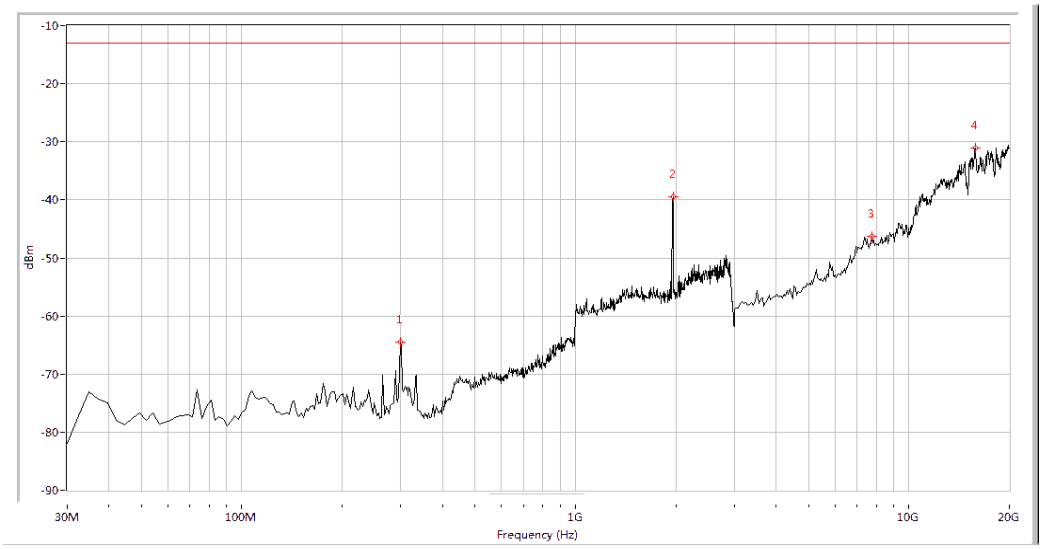


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-65.14	-13.0	52.1	0.0	Vertical	PASS
1962.594	-38.66	-13.0	25.7	0.0	Vertical	PASS
10970.075	-38.94	-13.0	25.9	0.0	Vertical	PASS
17710.723	-30.77	-13.0	17.8	0.0	Vertical	PASS

LTE Band 2 15MHz BW, Mid Channel, QPSK

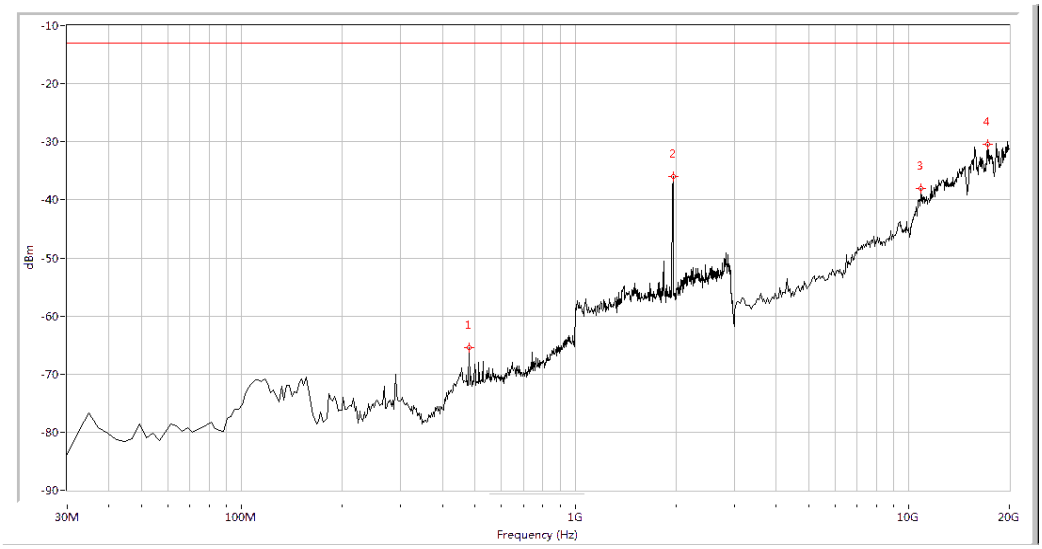


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.25	-13.0	52.3	0.0	Horizontal	PASS
1962.594	-37.18	-13.0	24.2	0.0	Horizontal	PASS
12623.441	-35.94	-13.0	22.9	0.0	Horizontal	PASS
15802.993	-31.51	-13.0	18.5	0.0	Horizontal	PASS

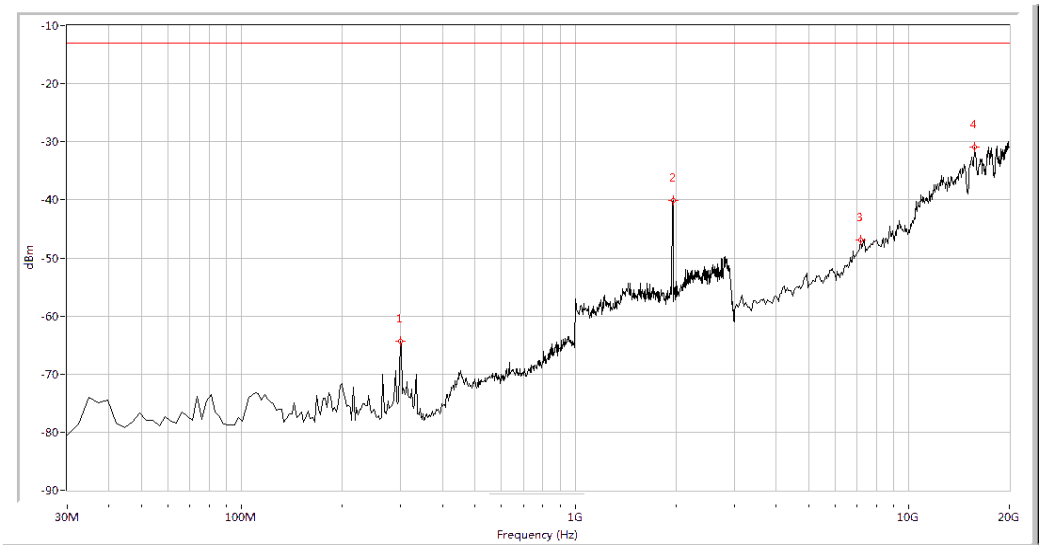


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.47	-13.0	51.5	0.0	Vertical	PASS
1962.594	-39.49	-13.0	26.5	0.0	Vertical	PASS
7748.130	-46.35	-13.0	33.4	0.0	Vertical	PASS
15802.993	-31.11	-13.0	18.1	0.0	Vertical	PASS

LTE Band 2 15MHz BW, Mid Channel, 16QAM

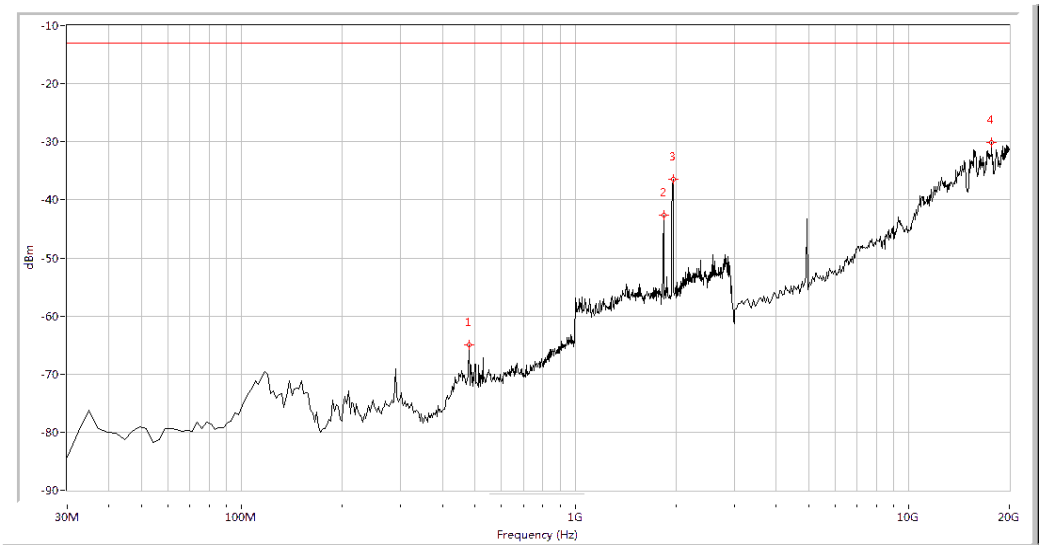


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.40	-13.0	52.4	0.0	Horizontal	PASS
1962.594	-35.94	-13.0	22.9	0.0	Horizontal	PASS
10885.287	-37.96	-13.0	25.0	0.0	Horizontal	PASS
17201.995	-30.41	-13.0	17.4	0.0	Horizontal	PASS

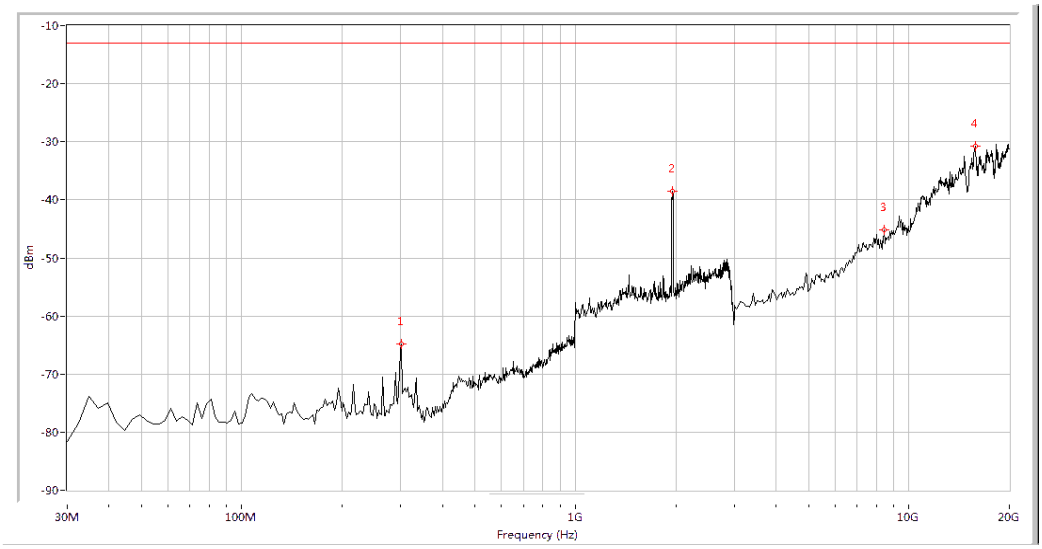


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-64.33	-13.0	51.3	0.0	Vertical	PASS
1962.594	-40.13	-13.0	27.1	0.0	Vertical	PASS
7154.613	-46.96	-13.0	34.0	0.0	Vertical	PASS
15760.599	-30.83	-13.0	17.8	0.0	Vertical	PASS

LTE Band 2 20MHz BW, Mid Channel, QPSK

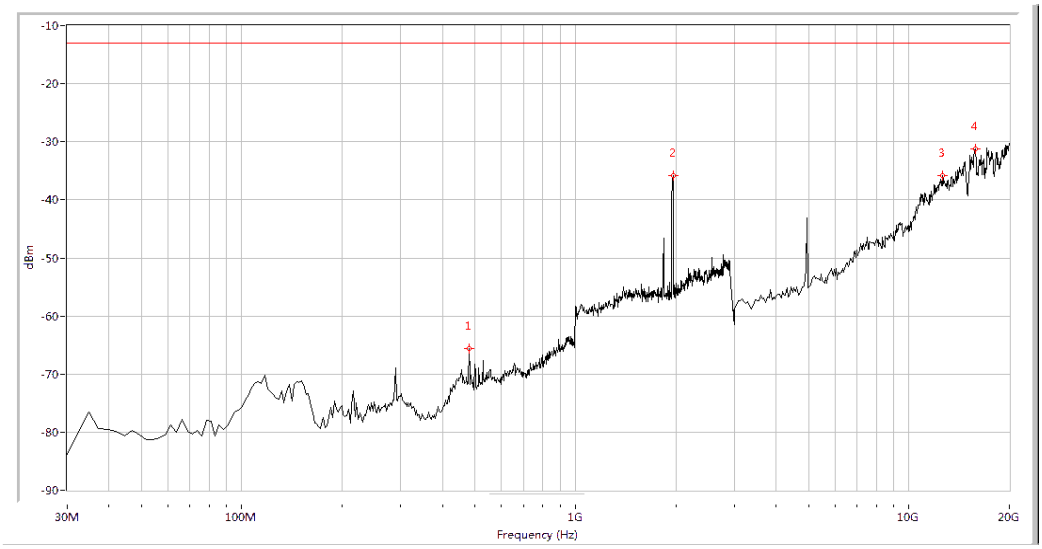


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-64.97	-13.0	52.0	0.0	Horizontal	PASS
1837.905	-42.69	-13.0	29.7	0.0	Horizontal	PASS
1967.581	-36.40	-13.0	23.4	0.0	Horizontal	PASS
17668.329	-30.19	-13.0	17.2	0.0	Horizontal	PASS

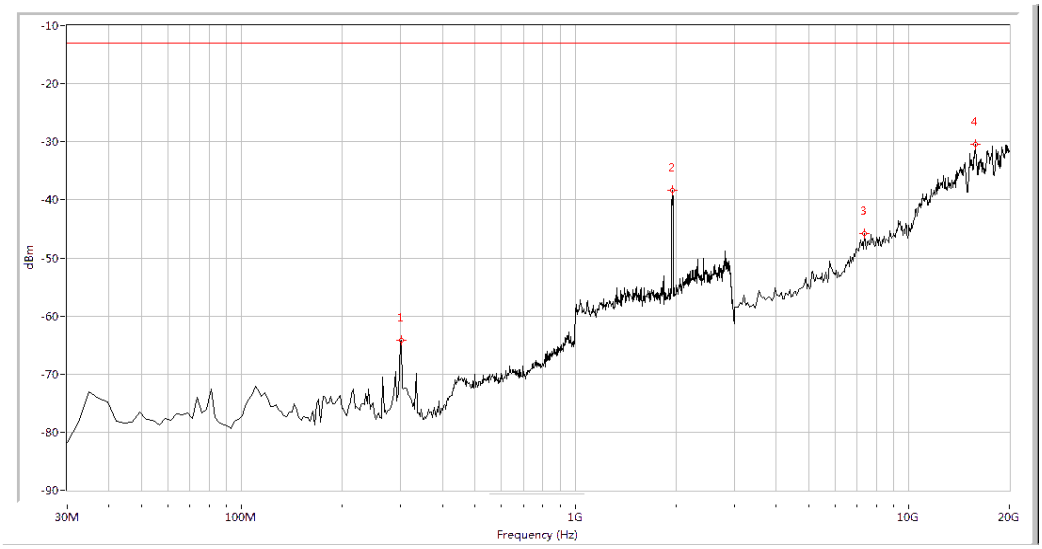


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.76	-13.0	51.8	0.0	Vertical	PASS
1952.618	-38.57	-13.0	25.6	0.0	Vertical	PASS
8426.434	-45.10	-13.0	32.1	0.0	Vertical	PASS
15845.387	-30.75	-13.0	17.7	0.0	Vertical	PASS

LTE Band 2 20MHz BW, Mid Channel, 16QAM

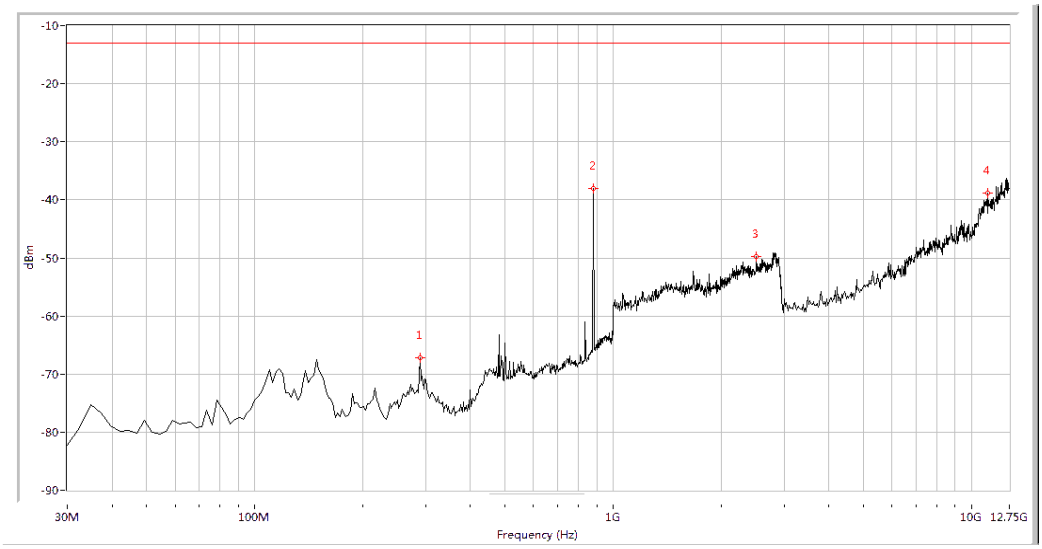


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
479.925	-65.56	-13.0	52.6	0.0	Horizontal	PASS
1967.581	-35.86	-13.0	22.9	0.0	Horizontal	PASS
12581.047	-35.89	-13.0	22.9	0.0	Horizontal	PASS
15845.387	-31.20	-13.0	18.2	0.0	Horizontal	PASS

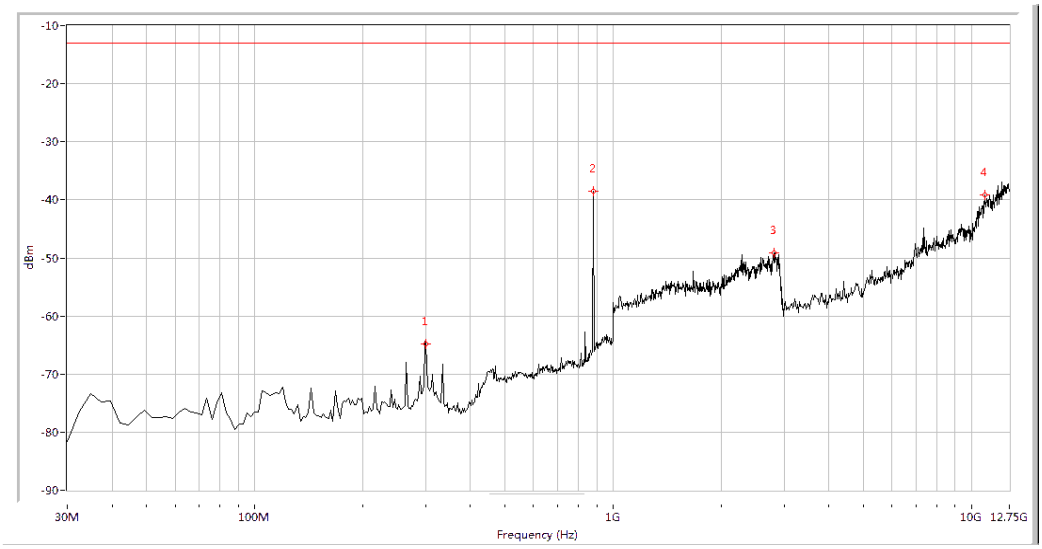


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.19	-13.0	51.2	0.0	Vertical	PASS
1952.618	-38.31	-13.0	25.3	0.0	Vertical	PASS
7366.584	-45.81	-13.0	32.8	0.0	Vertical	PASS
15845.387	-30.45	-13.0	17.5	0.0	Vertical	PASS

LTE Band 5 1.4MHz BW, Mid Channel, QPSK

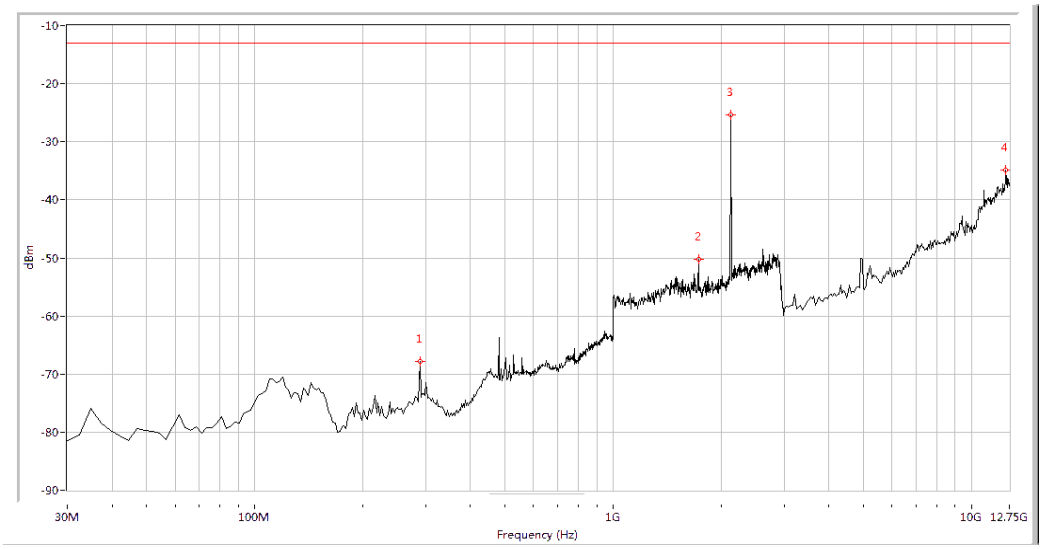


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-67.26	-13.0	54.3	0.0	Horizontal	PASS
879.052	-38.08	-13.0	25.1	0.0	Horizontal	PASS
2506.234	-49.74	-13.0	36.7	0.0	Horizontal	PASS
11096.633	-38.86	-13.0	25.9	0.0	Horizontal	PASS

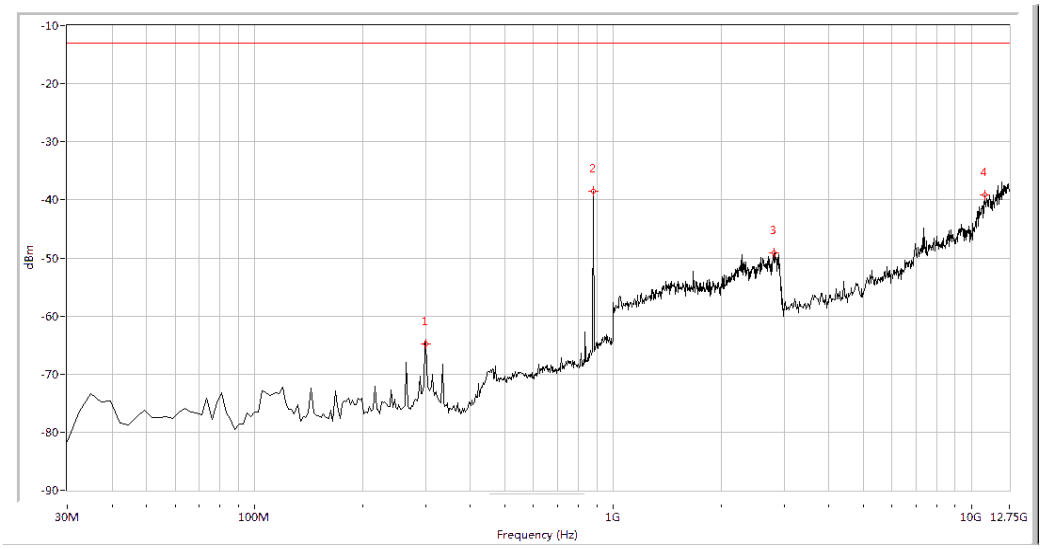


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.89	-13.0	51.9	0.0	Vertical	PASS
879.052	-38.48	-13.0	25.5	0.0	Vertical	PASS
2815.461	-49.17	-13.0	36.2	0.0	Vertical	PASS
10902.120	-39.18	-13.0	26.2	0.0	Vertical	PASS

LTE Band 5 1.4MHz BW, Mid Channel, 16QAM

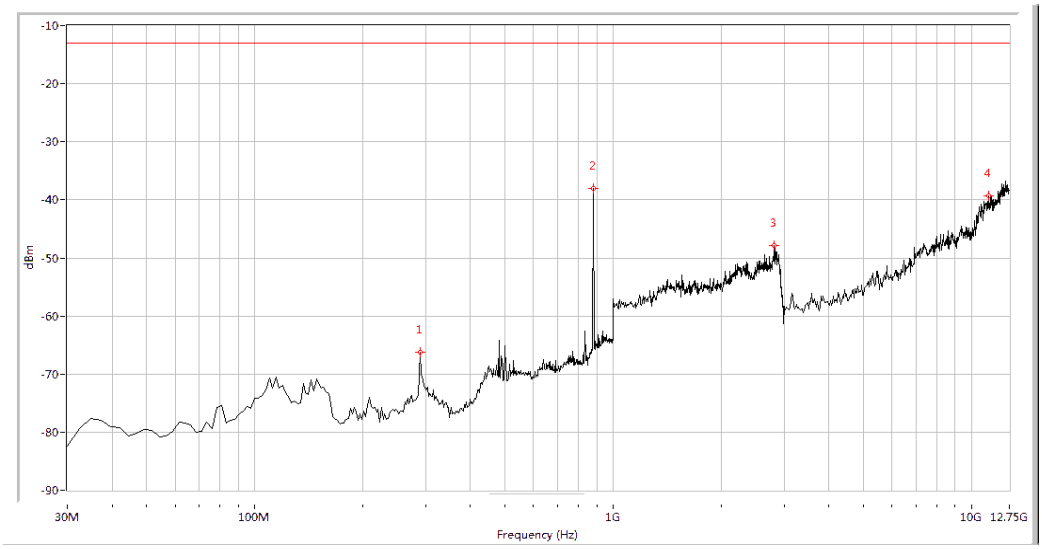


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-67.85	-13.0	54.9	0.0	Horizontal	PASS
1733.167	-50.26	-13.0	37.3	0.0	Horizontal	PASS
2132.170	-25.35	-13.0	12.4	0.0	Horizontal	PASS
12453.865	-34.94	-13.0	21.9	0.0	Horizontal	PASS

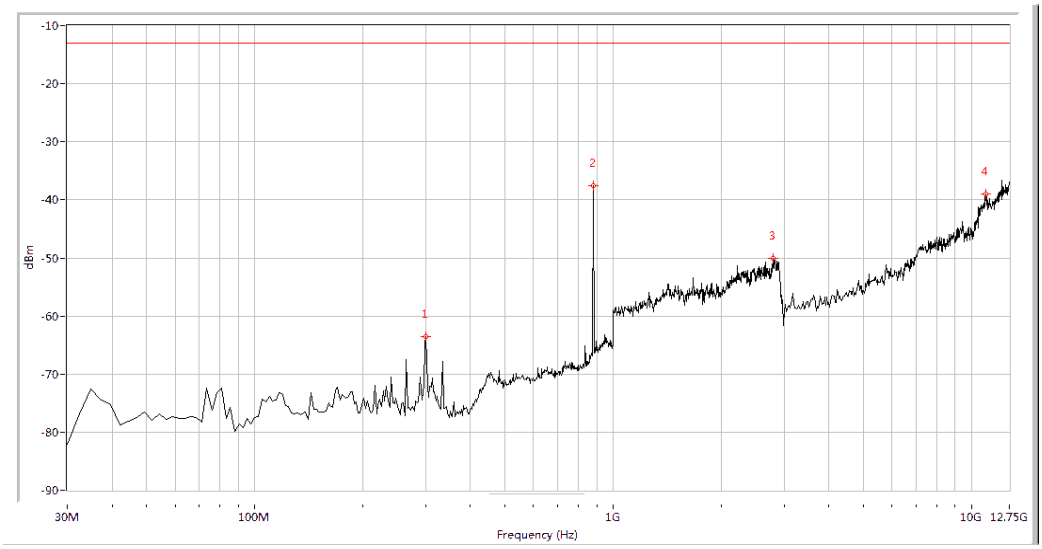


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
301.827	-64.89	-13.0	51.2	0.0	Vertical	PASS
877.059	-38.51	-13.0	25.7	0.0	Vertical	PASS
2816.461	-49.19	-13.0	36.2	0.0	Vertical	PASS
10903.170	-39.11	-13.0	26.2	0.0	Vertical	PASS

LTE Band 5 3MHz BW, Mid Channel, QPSK

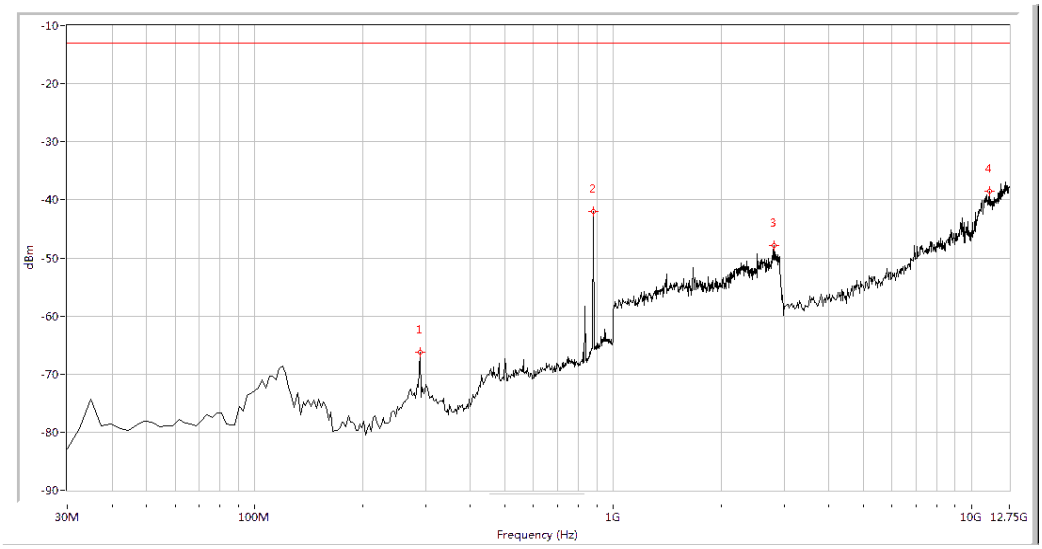


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.31	-13.0	53.3	0.0	Horizontal	PASS
879.052	-38.00	-13.0	25.0	0.0	Horizontal	PASS
2820.449	-47.85	-13.0	34.8	0.0	Horizontal	PASS
11193.890	-39.31	-13.0	26.3	0.0	Horizontal	PASS

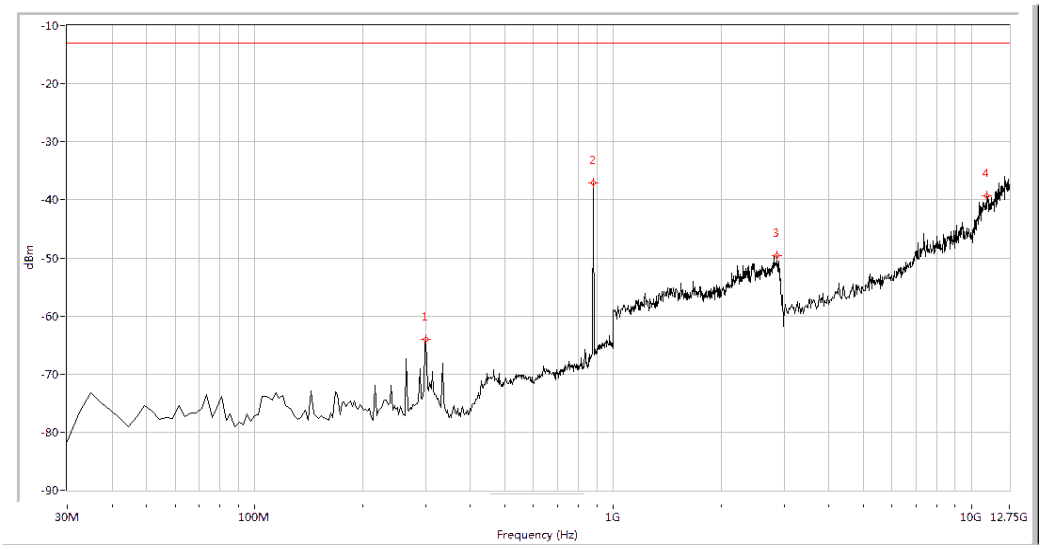


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-63.62	-13.0	50.6	0.0	Vertical	PASS
879.052	-37.59	-13.0	24.6	0.0	Vertical	PASS
2800.499	-50.05	-13.0	37.0	0.0	Vertical	PASS
10975.062	-39.04	-13.0	26.0	0.0	Vertical	PASS

LTE Band 5 3MHz BW, Mid Channel, 16QAM						

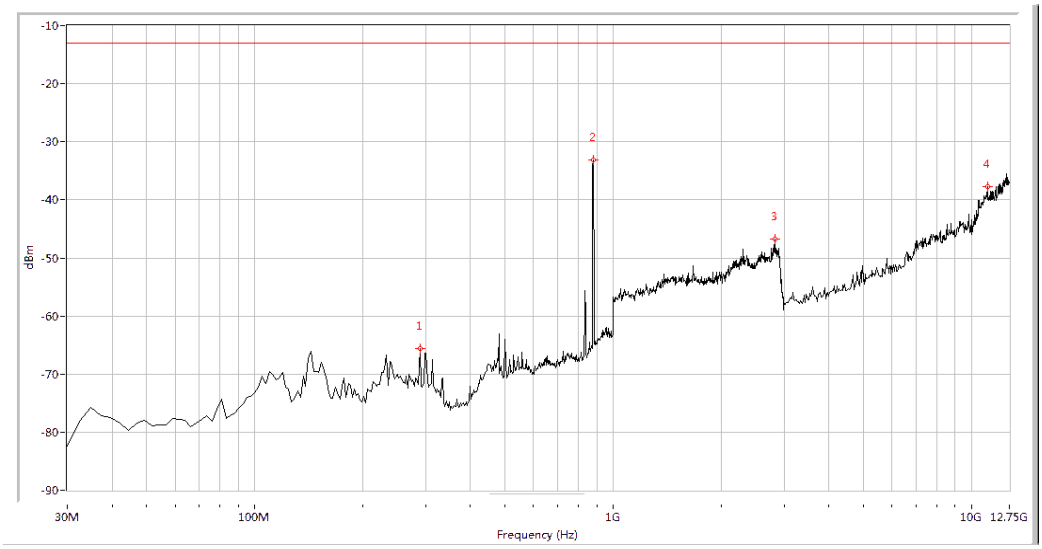


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.20	-13.0	53.2	0.0	Horizontal	PASS
879.052	-41.94	-13.0	28.9	0.0	Horizontal	PASS
2820.449	-47.91	-13.0	34.9	0.0	Horizontal	PASS
11218.204	-38.55	-13.0	25.6	0.0	Horizontal	PASS

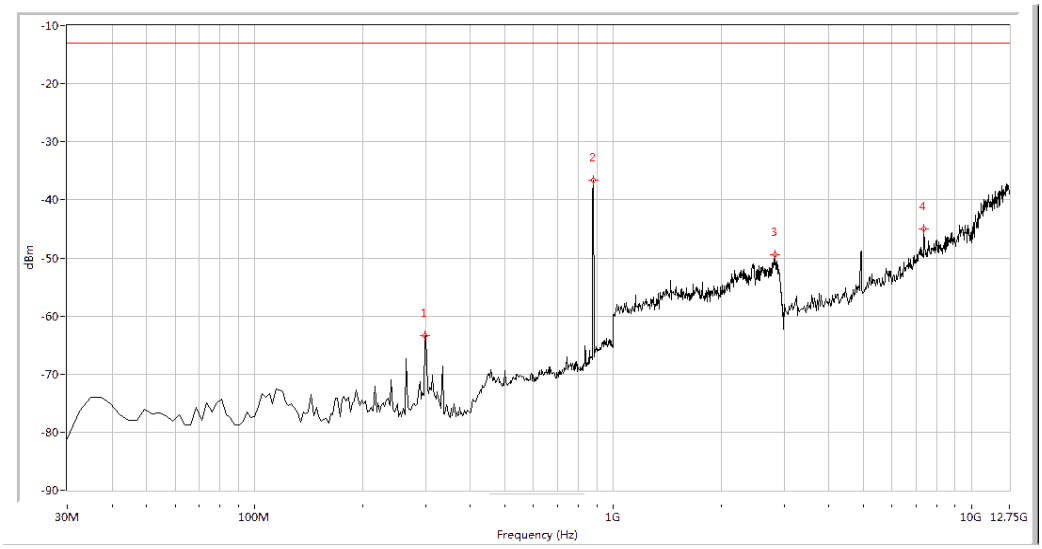


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.05	-13.0	51.0	0.0	Vertical	PASS
879.052	-37.07	-13.0	24.1	0.0	Vertical	PASS
2865.337	-49.59	-13.0	36.6	0.0	Vertical	PASS
10999.377	-39.38	-13.0	26.4	0.0	Vertical	PASS

LTE Band 5 5MHz BW, Mid Channel, QPSK

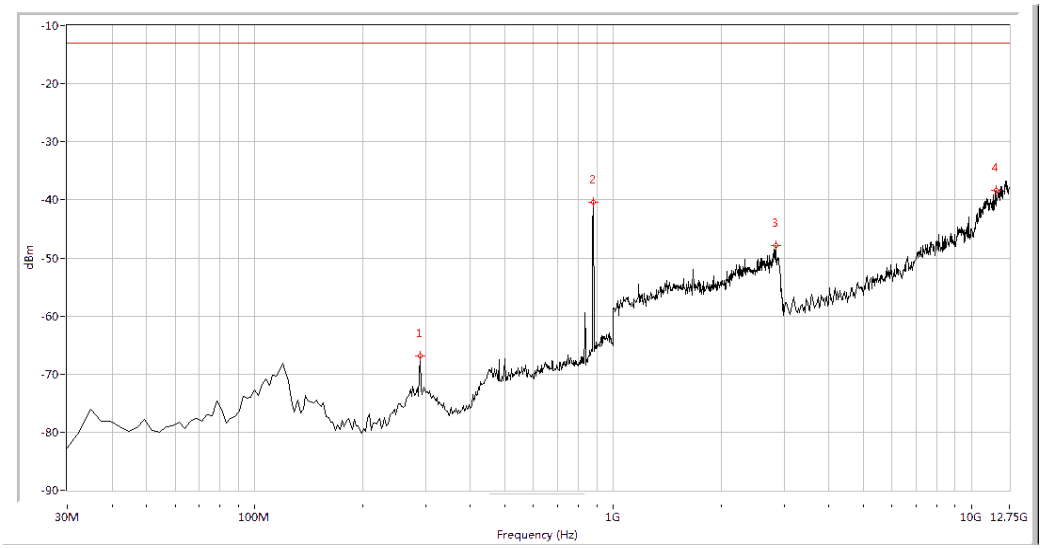


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-65.65	-13.0	52.6	0.0	Horizontal	PASS
879.052	-33.19	-13.0	20.2	0.0	Horizontal	PASS
2825.436	-46.77	-13.0	33.8	0.0	Horizontal	PASS
11072.319	-37.78	-13.0	24.8	0.0	Horizontal	PASS

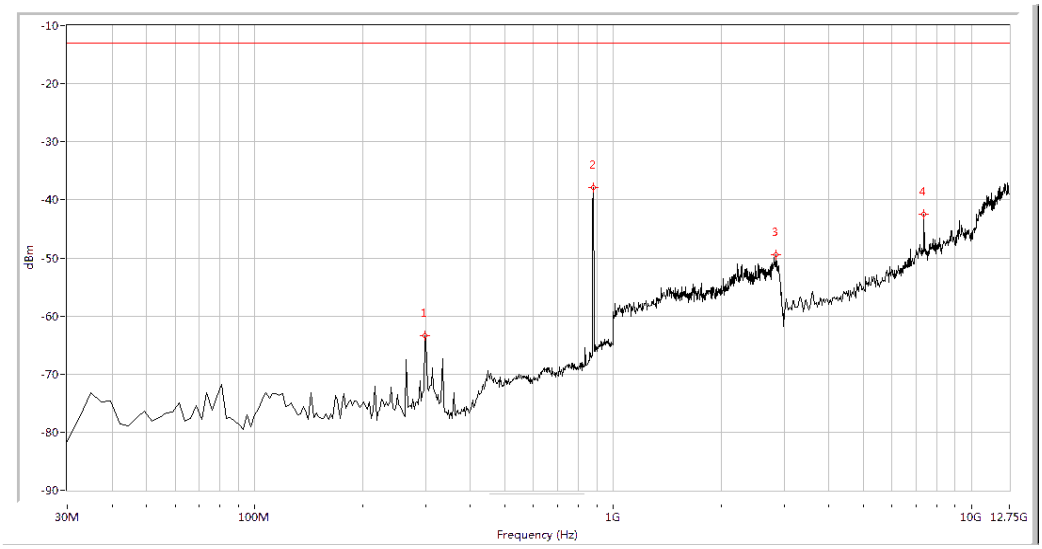


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-63.46	-13.0	50.5	0.0	Vertical	PASS
879.052	-36.60	-13.0	23.6	0.0	Vertical	PASS
2830.424	-49.46	-13.0	36.5	0.0	Vertical	PASS
7376.559	-44.94	-13.0	31.9	0.0	Vertical	PASS

LTE Band 5 5MHz BW, Mid Channel, 16QAM

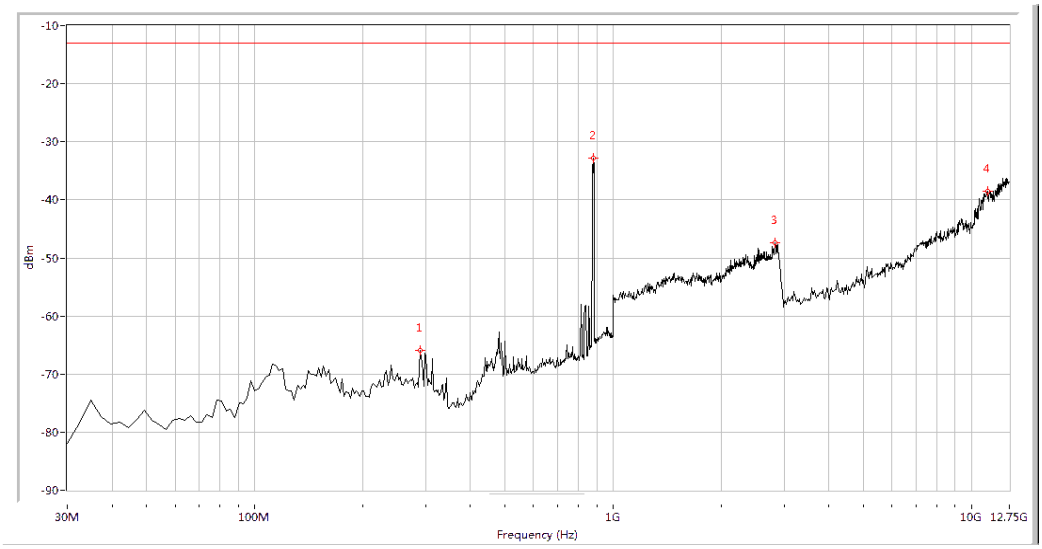


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-66.93	-13.0	53.9	0.0	Horizontal	PASS
879.052	-40.47	-13.0	27.5	0.0	Horizontal	PASS
2840.399	-47.85	-13.0	34.8	0.0	Horizontal	PASS
11680.175	-38.41	-13.0	25.4	0.0	Horizontal	PASS

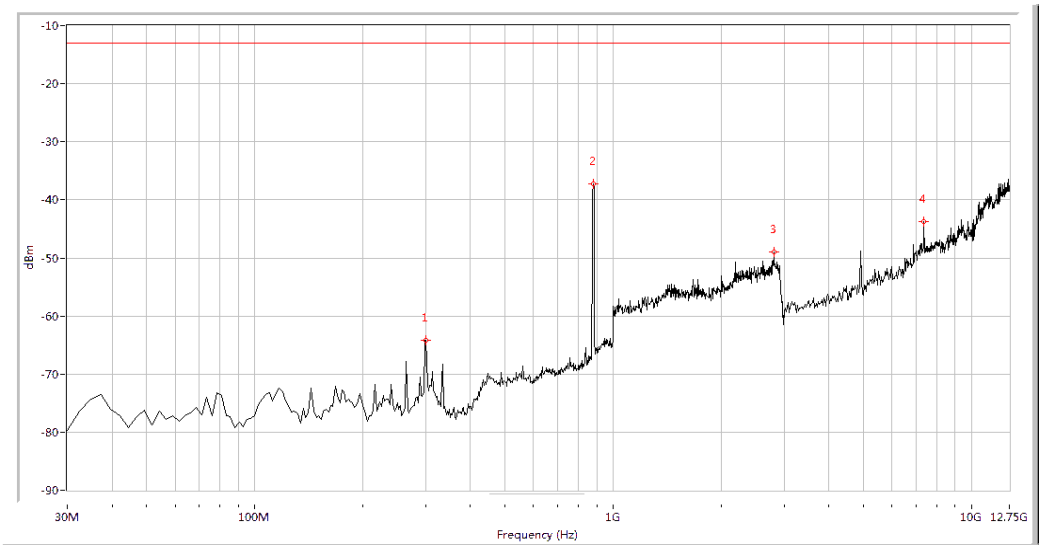


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
298.504	-63.43	-13.0	50.4	0.0	Vertical	PASS
879.052	-37.93	-13.0	24.9	0.0	Vertical	PASS
2845.387	-49.50	-13.0	36.5	0.0	Vertical	PASS
7376.559	-42.47	-13.0	29.5	0.0	Vertical	PASS

LTE Band 5 10MHz BW, Mid Channel, QPSK

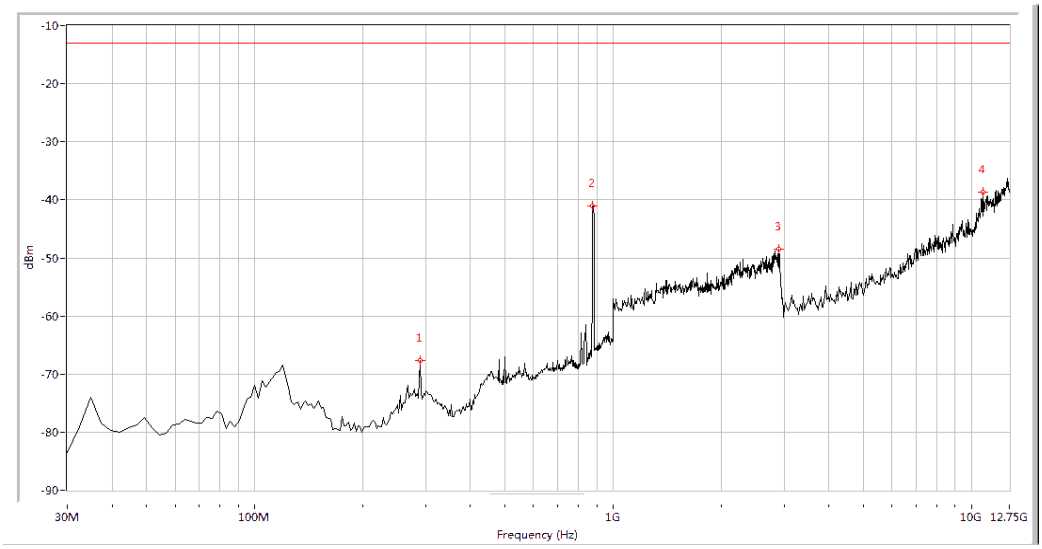


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-65.92	-13.0	52.9	0.0	Horizontal	PASS
881.471	-32.82	-13.0	19.8	0.0	Horizontal	PASS
2830.424	-47.31	-13.0	34.3	0.0	Horizontal	PASS
11096.633	-38.48	-13.0	25.5	0.0	Horizontal	PASS

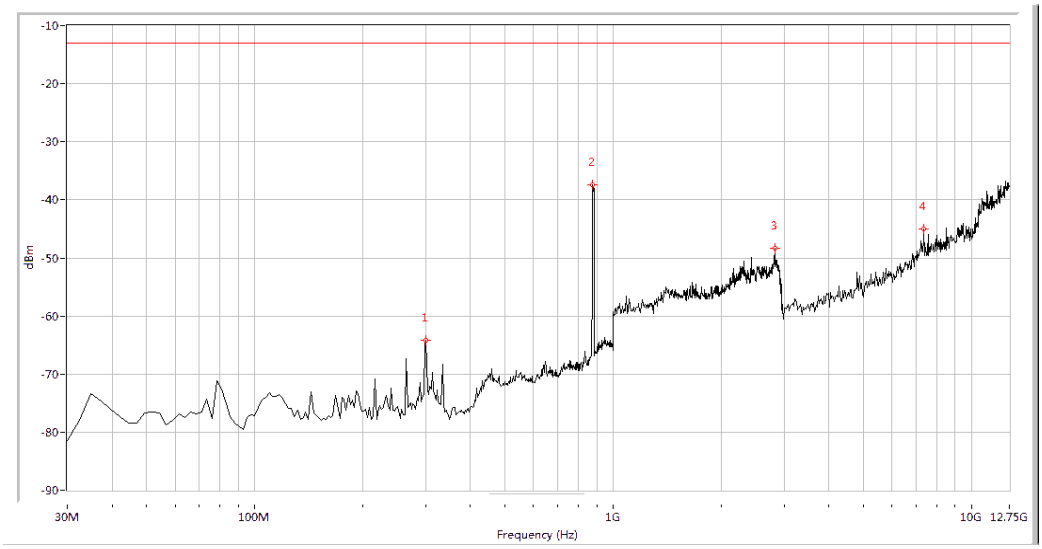


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.24	-13.0	51.2	0.0	Vertical	PASS
881.471	-37.28	-13.0	24.3	0.0	Vertical	PASS
2810.474	-48.96	-13.0	36.0	0.0	Vertical	PASS
7376.559	-43.76	-13.0	30.8	0.0	Vertical	PASS

LTE Band 5 10MHz BW, Mid Channel, 16QAM



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-67.74	-13.0	54.7	0.0	Horizontal	PASS
876.633	-41.08	-13.0	28.1	0.0	Horizontal	PASS
2895.262	-48.52	-13.0	35.5	0.0	Horizontal	PASS
10756.234	-38.67	-13.0	25.7	0.0	Horizontal	PASS



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
300.923	-64.23	-13.0	51.2	0.0	Vertical	PASS
876.633	-37.42	-13.0	24.4	0.0	Vertical	PASS
2825.436	-48.35	-13.0	35.4	0.0	Vertical	PASS
7376.559	-44.95	-13.0	31.9	0.0	Vertical	PASS

** END OF REPORT **