

FCC TEST REPORT



Issued to

GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP.,LTD

For

Mobile Phone

Model Name: OPPO R8006
Trade Name: OPPO
Brand Name: OPPO
FCC ID : R9C-R8006
Standard: 47 CFR Part 27, Subpart L
Test date: 2014-3-4 to 2014-3-28
Issue date: 2014-4-2

By

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Date 2014.4.2



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Date 2014.4.2

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Change History		
Issue	Date	Reason for change
1.0	Apr 2, 2014	First edition



1. GENERAL INFORMATION

1.1 EUT Description

EUT Type.....: Mobile Phone
Serial No.....: (n.a, marked #1 by test site)
Hardware Version: 213095
Software Version.....: R8006_11_140219
Applicant.....: GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP.,LTD
NO.18 HAIBIN ROAD, WUSHA, CHANG'AN, DONGGUAN,
GUANGDONG,CHINA
Manufacturer.....: GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP.,LTD
NO.18 HAIBIN ROAD, WUSHA, CHANG'AN, DONGGUAN,
GUANGDONG,CHINA
Modulation Type.....: LTE Band 4: QPSK, 16QAM
Tx Frequency Range: LTE Band 4: 1710MHz~1755MHz
Rx Frequency Range: LTE Band 4: 2110MHz~2155MHz
Emission Designator: 1M11G7D (LTE Band 4, QPSK, BW 1.4MHz)
1M11W7D (LTE Band 4, 16QAM, BW 1.4MHz)
2M75G7D (LTE Band 4, QPSK, BW 3MHz)
2M76W7D (LTE Band 4, 16QAM, BW 3MHz)
4M52G7D (LTE Band 4, QPSK, BW 5MHz)
4M51W7D (LTE Band 4, 16QAM, BW 5MHz)
9M06G7D (LTE Band 4, QPSK, BW 10MHz)
9M06W7D (LTE Band 4, 16QAM, BW 10MHz)
13M49G7D (LTE Band 4, QPSK, BW 15MHz)
13M49W7D (LTE Band 4, 16QAM, BW 15MHz)
18M58G7D (LTE Band 4, QPSK, BW 20MHz)
18M52W7D (LTE Band 4, 16QAM, BW 20MHz)
Antenna Type.....: PIFA Antenna
Power Supply.....: 3.8V 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 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	<u>PASS</u>
2	27.50(d)(5)	Occupied Bandwidth	<u>PASS</u>
3	2.1049,27.53(g)	Frequency Stability	<u>PASS</u>
4	2.1055, 27.54	Peak to Average Radio	<u>PASS</u>
5	2.1051,2.105727.53(g)	Conducted Spurious Emissions	<u>PASS</u>
6	2.1051,2.1057 27.53(g)(h)	Band Edge	<u>PASS</u>
7	27.50(d)(4)	Equivalent Isotropic Radiated Power	<u>PASS</u>
8	2.1053,2.1057 27.53(g)	Radiated Spurious Emissions	<u>PASS</u>

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 27L REQUIREMENTS

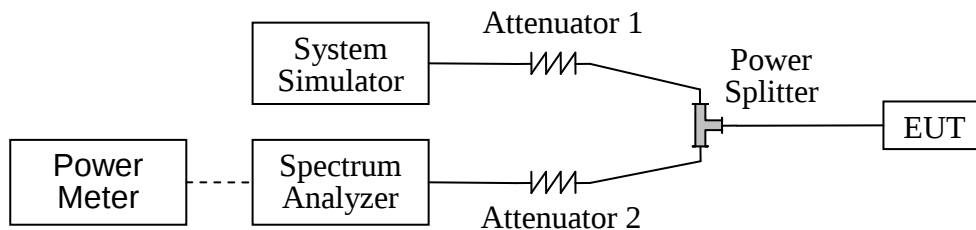
2.1 Transmitter Conducted Output Power

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	2014.02.26	2015.02.25
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E4445A	MY44200685	2014.02.26	2015.02.25
Power Meter	Agilent	E4418B	GB43318055	2014.02.26	2015.02.25
Power Meter	Agilent	E4418B	GB43318055	2014.02.26	2015.02.25
Power Sensor	Agilent	8482A	MY41091706	2014.02.26	2015.02.25
Power Splitter	Weinschel	1506A	NW521	2014.02.26	2015.02.25
Attenuator 1	Resnet	20dB	(n.a.)	2014.02.26	2015.02.25



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Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Attenuator 2	Resnet	3dB	(n.a.)	2014.02.26	2015.02.25

2.1.3 Test Results

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	21.77
				1	49	21.69
				1	99	21.88
				50	0	20.81
				50	25	20.72
				50	49	20.93
				100	0	20.76
			16-QAM	1	0	20.85
				1	49	20.74
				1	99	20.93
				50	0	19.79
				50	25	19.77
				50	49	19.95
				100	0	19.78
	M 20175	1732.5	QPSK	1	0	21.70
				1	49	21.84
				1	99	21.63
				50	0	20.86
				50	25	20.91
				50	49	20.87
				100	0	20.72
			16-QAM	1	0	20.72
				1	49	20.86
				1	99	20.71
				50	0	19.94
				50	25	19.87
				50	49	19.86
				100	0	19.76
	H 20300	1745.0	QPSK	1	0	21.60
				1	49	21.59
				1	99	21.60
				50	0	20.74
				50	25	20.96
				50	49	20.85
				100	0	20.59
			16-QAM	1	0	21.07
				1	49	20.98



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				1	99	21.08
				50	0	19.69
				50	25	19.77
				50	49	19.82
				100	0	19.66

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	21.63
				1	37	21.59
				1	74	21.68
				36	0	20.72
				36	18	20.76
				36	35	20.71
				75	0	20.77
			16-QAM	1	0	21.02
				1	37	21.00
				1	74	21.05
				36	0	19.84
				36	18	19.78
				36	35	19.92
				75	0	19.73
	M 20175	1732.5	QPSK	1	0	21.67
				1	37	21.59
				1	74	21.55
				36	0	20.68
				36	18	20.72
				36	35	20.83
				75	0	20.79
			16-QAM	1	0	20.96
				1	37	20.88
				1	74	20.85
				36	0	19.95
				36	18	19.89
				36	35	19.90
				75	0	19.75
	H 20325	1747.5	QPSK	1	0	21.50
				1	37	21.62
				1	74	21.45
				36	0	20.79
				36	18	20.77
				36	35	20.86
				75	0	20.59
			16-QAM	1	0	20.53



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				1	37	20.61
				1	74	20.42
				36	0	19.72
				36	18	19.68
				36	35	19.74
				75	0	19.59

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	21.63
				1	24	21.66
				1	49	21.62
				25	0	20.76
				25	12	20.77
				25	24	20.69
				50	0	20.67
			16-QAM	1	0	21.02
				1	24	21.00
				1	49	20.99
				25	0	19.84
				25	12	19.75
				25	24	19.68
				50	0	19.66
	M 20175	1732.5	QPSK	1	0	21.73
				1	24	21.69
				1	49	21.53
				25	0	20.78
				25	12	20.76
				25	24	20.84
				50	0	20.69
			16-QAM	1	0	20.97
				1	24	20.87
				1	49	20.83
				25	0	19.94
				25	12	19.86
				25	24	19.92
				50	0	19.72
	H 20350	1750.0	QPSK	1	0	21.33
				1	24	21.52
				1	49	21.36
				25	0	20.59
				25	12	20.61
				25	24	20.57
				50	0	20.48
			16-QAM	1	0	20.42



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				1	24	20.37
				1	49	20.35
				25	0	19.46
				25	12	19.57
				25	24	19.52
				50	0	19.49

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	21.63
				1	12	21.56
				1	24	21.54
				12	0	20.67
				12	6	20.59
				12	11	20.55
				25	0	20.56
			16-QAM	1	0	20.60
				1	12	20.61
				1	24	20.58
				12	0	19.68
				12	6	19.57
				12	11	19.71
				25	0	19.66
	M 20175	1732.5	QPSK	1	0	21.68
				1	12	21.55
				1	24	21.62
				12	0	20.64
				12	6	20.72
				12	11	20.66
				25	0	20.71
			16-QAM	1	0	21.15
				1	12	21.04
				1	24	21.13
				12	0	19.86
				12	6	19.75
				12	11	19.82
				25	0	19.62
	H 20375	1752.5	QPSK	1	0	21.54
				1	12	21.61
				1	24	21.46
				12	0	20.56
				12	6	20.49
				12	11	20.57
				25	0	20.46
			16-QAM	1	0	20.53



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				1	12	20.63
				1	24	20.45
				12	0	19.71
				12	6	19.68
				12	11	19.66
				25	0	19.46

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	21.61
				1	7	21.59
				1	14	21.53
				8	0	20.68
				8	4	20.71
				8	7	20.60
				15	0	20.63
			16-QAM	1	0	21.01
				1	7	20.92
				1	14	20.89
				8	0	19.84
				8	4	19.76
				8	7	19.77
				15	0	20.61
	M 20175	1732.5	QPSK	1	0	21.65
				1	7	21.71
				1	14	21.55
				8	0	20.72
				8	4	20.86
				8	7	20.79
				15	0	20.66
			16-QAM	1	0	20.93
				1	7	20.89
				1	14	20.88
				8	0	19.85
				8	4	19.88
				8	7	19.67
				15	0	19.65
	H 20385	1753.5	QPSK	1	0	21.34
				1	7	21.42
				1	14	21.33
				8	0	20.49
				8	4	20.52
				8	7	20.54
				15	0	20.46
			16-QAM	1	0	20.43



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				1	7	20.52
				1	14	20.41
				8	0	19.67
				8	4	19.72
				8	7	19.58
				15	0	19.50

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	21.71
				1	2	21.69
				1	5	21.66
				3	0	20.76
				3	1	20.81
				3	2	20.77
				6	0	20.71
			16-QAM	1	0	20.80
				1	2	20.78
				1	5	20.82
				3	0	19.92
				3	1	19.86
				3	2	19.88
				6	0	19.74
	M 20175	1732.5	QPSK	1	0	21.66
				1	2	21.38
				1	5	21.05
				3	0	20.75
				3	1	20.73
				3	2	20.82
				6	0	20.71
			16-QAM	1	0	20.93
				1	2	20.82
				1	5	20.89
				3	0	19.96
				3	2	19.99
				3	5	19.87
				6	0	19.73
	H 20393	1754.3	QPSK	1	0	21.38
				1	2	21.42
				1	5	21.35
				3	0	20.56
				3	1	20.49
				3	2	20.51
				6	0	20.49
			16-OAM	1	0	20.39



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				1	2	20.49
				1	5	20.42
				3	0	19.53
				3	1	19.55
				3	2	19.47
				6	0	19.48

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 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	1.0978	1.0964	19965	1711.5	2.7477	2.7494
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	1.305	1.294	19965	1711.5	3.128	3.120

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	4.5236	4.5109	20000	1715.0	9.0510	9.0443
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	5.071	5.043	20000	1715.0	10.176	10.186



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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	13.4090	13.4521	20050	1720.0	18.4764	18.3497
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	14.850	14.800	20050	1720.0	21.321	21.229

**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	1.1088	1.0973	20175	1732.5	2.7516	2.7490
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	1.296	1.312	20175	1732.5	3.121	3.118

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	4.5243	4.5026	20175	1732.5	9.0574	9.0570
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	5.020	5.048	20175	1732.5	10.236	10.159

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	13.4672	13.4589	20175	1732.5	18.5484	18.4954
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20175	1732.5	14.767	14.775	20175	1732.5	21.518	21.156

**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	1.0921	1.1090	20384	1753.4	2.7419	2.7634
Channel Bandwidth: 1.4MHz				Channel Bandwidth: 3MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20392	1754.2	1.301	1.314	20384	1753.4	3.110	3.144

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	4.5079	4.5048	20350	1750.0	9.0540	9.0559
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20375	1752.5	5.035	5.052	20350	1750.0	10.226	10.205

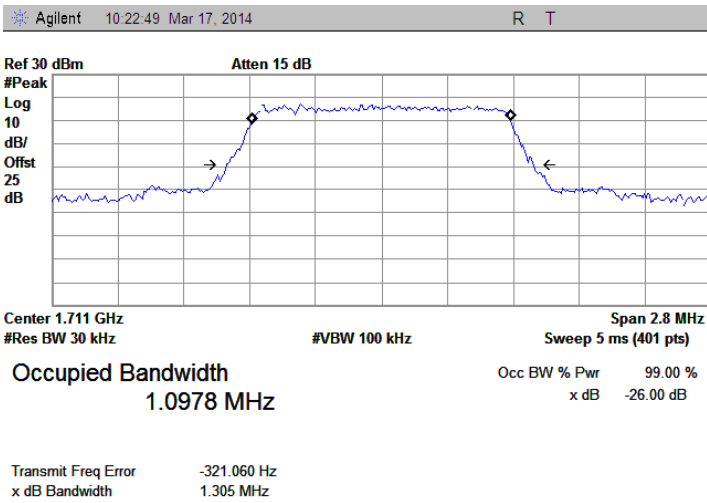
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20325	1747.5	13.4903	13.4868	20300	1745.0	18.5796	18.5205
Channel Bandwidth: 15MHz				Channel Bandwidth: 20MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
20325	1747.5	14.918	14.844	20300	1745.0	21.462	21.302



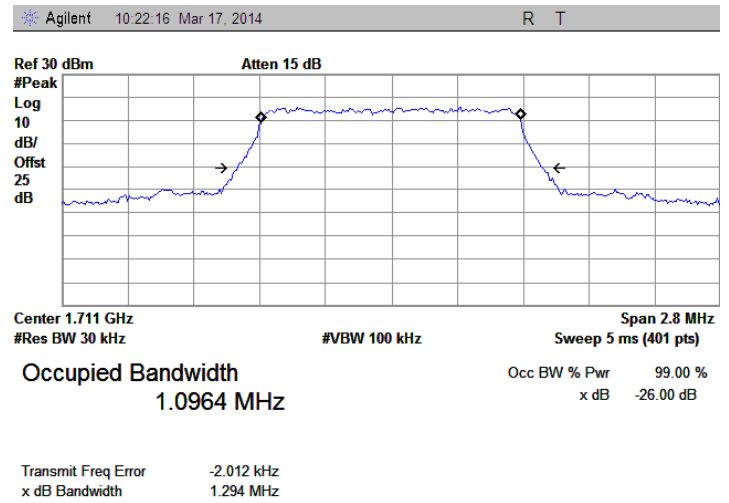
Low channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

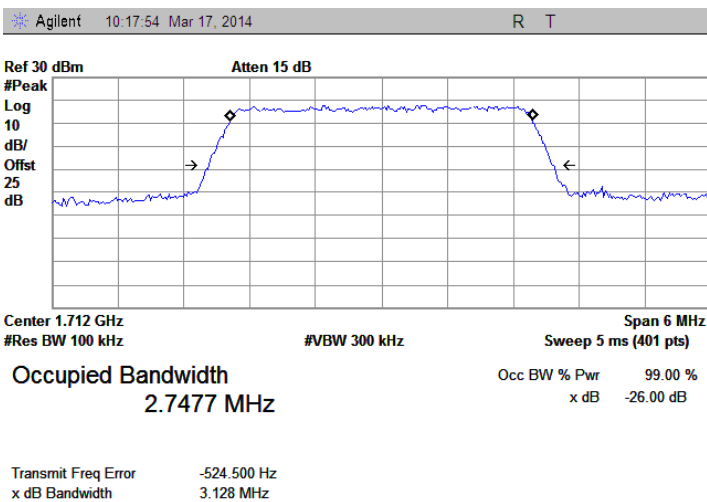


1.4MHz/16QAM

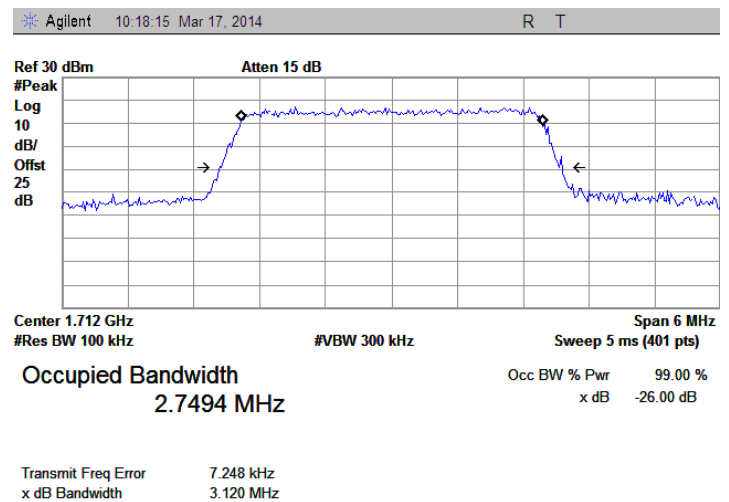


Spectrum Plot of Worst Value

3MHz/QPSK



3MHz/16QAM



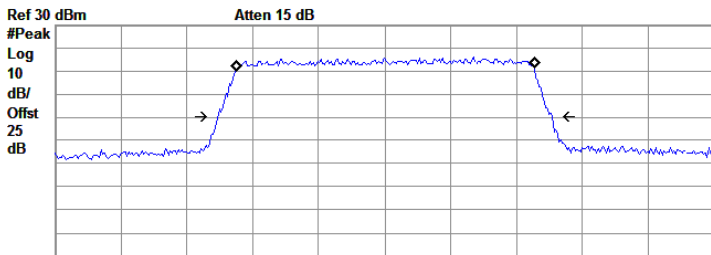


Spectrum Plot of Worst Value

5MHz/QPSK

Agilent 10:10:55 Mar 17, 2014

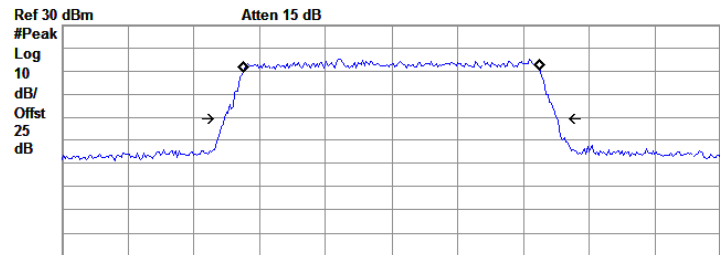
R T

Center 1.712 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
4.5236 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 8.390 kHz
x dB Bandwidth 5.071 MHz

5MHz/16QAM

Agilent 10:11:23 Mar 17, 2014

R T

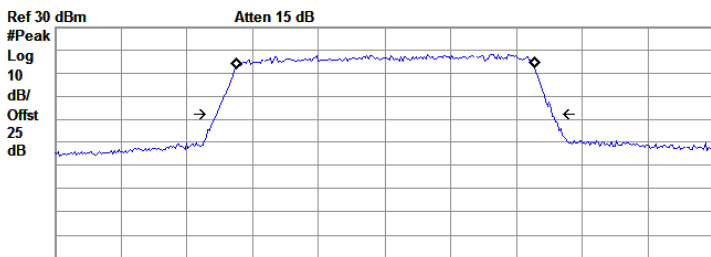
Center 1.712 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
4.5109 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 1.495 kHz
x dB Bandwidth 5.043 MHz

Spectrum Plot of Worst Value

10MHz/QPSK

Agilent 10:06:42 Mar 17, 2014

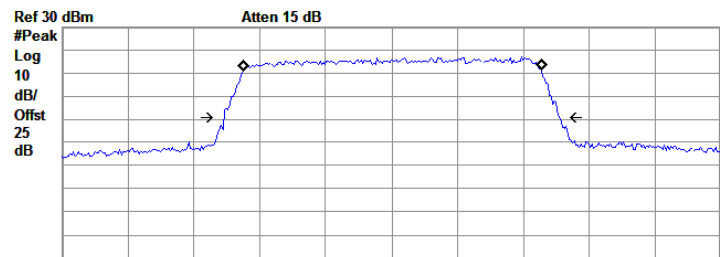
R T

Center 1.715 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
9.0510 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 22.459 kHz
x dB Bandwidth 10.176 MHz

10MHz/16QAM

Agilent 10:07:18 Mar 17, 2014

R T

Center 1.715 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
9.0443 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 24.785 kHz
x dB Bandwidth 10.186 MHz

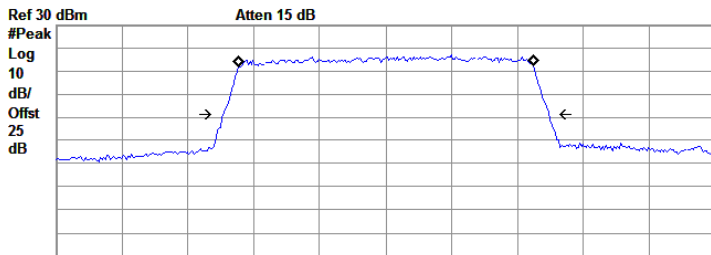


Spectrum Plot of Worst Value

15MHz/QPSK

Agilent 10:00:18 Mar 17, 2014

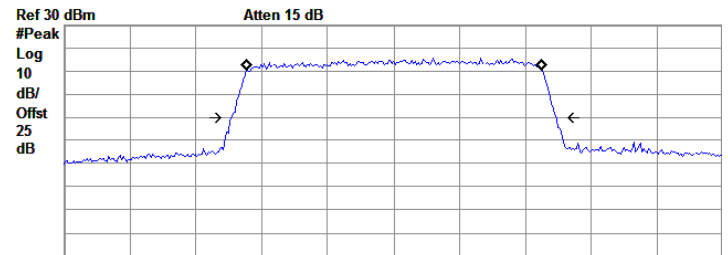
R T

Center 1.718 GHz
#Res BW 300 kHz #VBW 1 MHz Span 30 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
13.4090 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 33.731 kHz
x dB Bandwidth 14.850 MHz

15MHz/16QAM

Agilent 10:00:50 Mar 17, 2014

R T

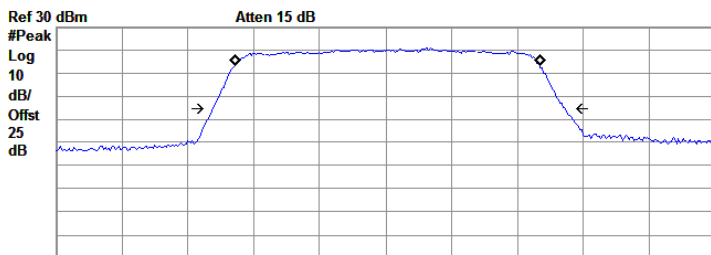
Center 1.718 GHz
#Res BW 300 kHz #VBW 1 MHz Span 30 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
13.4521 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 53.907 kHz
x dB Bandwidth 14.800 MHz

Spectrum Plot of Worst Value

20MHz/QPSK

Agilent 09:55:21 Mar 17, 2014

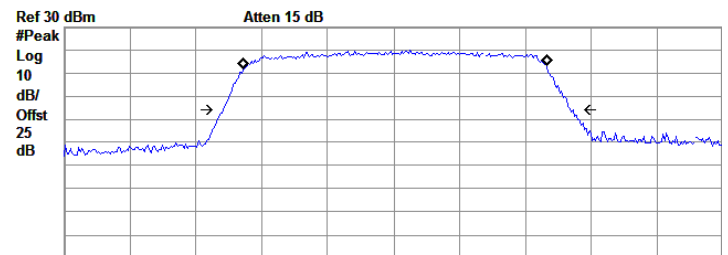
R T

Center 1.72 GHz
#Res BW 1 MHz #VBW 3 MHz Span 40 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
18.4764 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 113.482 kHz
x dB Bandwidth 21.321 MHz

20MHz/16QAM

Agilent 09:55:55 Mar 17, 2014

R T

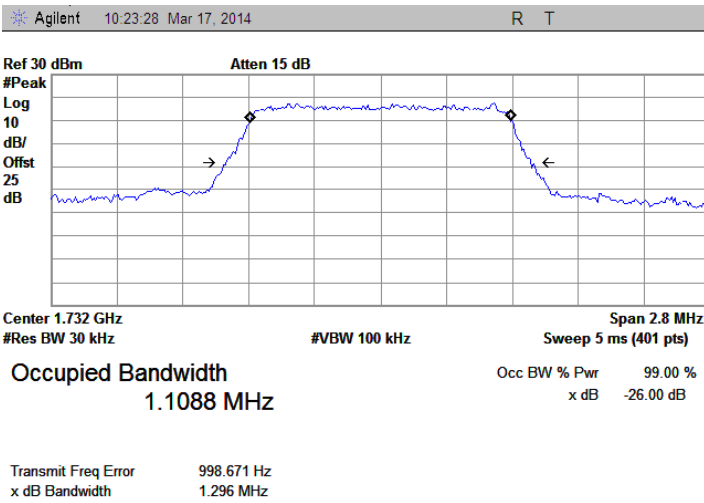
Center 1.72 GHz
#Res BW 1 MHz #VBW 3 MHz Span 40 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
18.3497 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 124.435 kHz
x dB Bandwidth 21.229 MHz



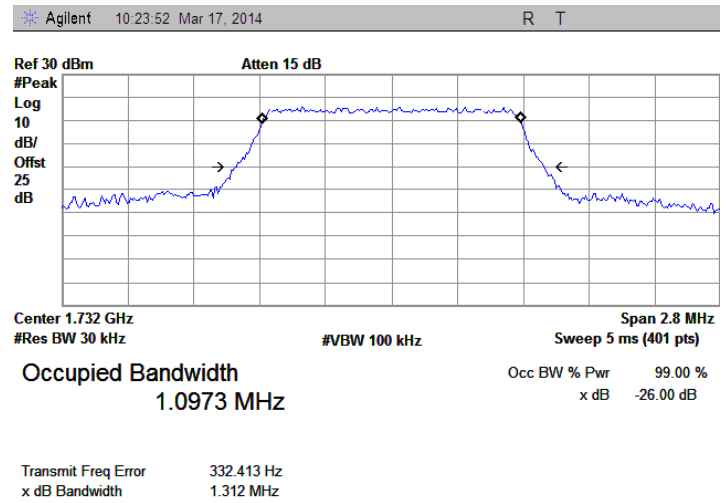
Middle channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

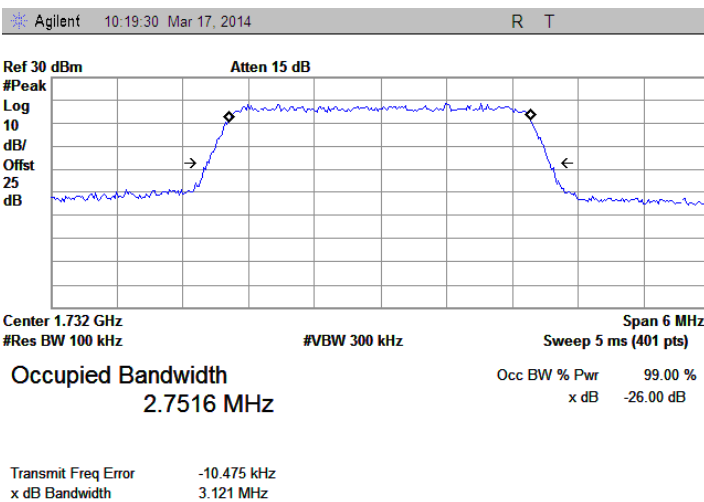


1.4MHz/16QAM

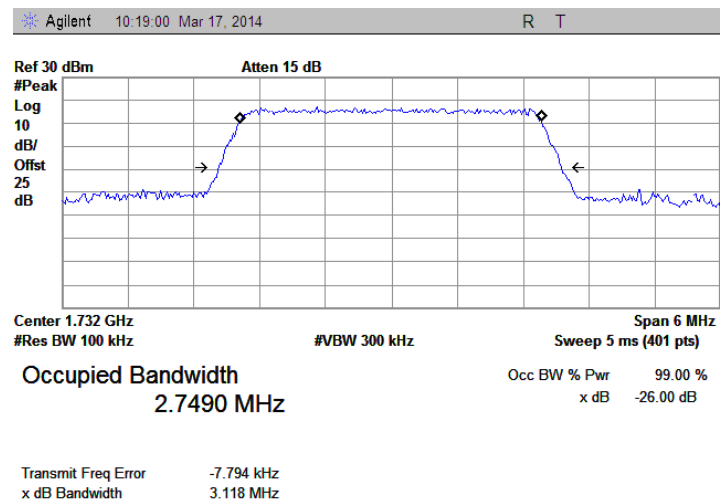


Spectrum Plot of Worst Value

3MHz/QPSK



3MHz/16QAM



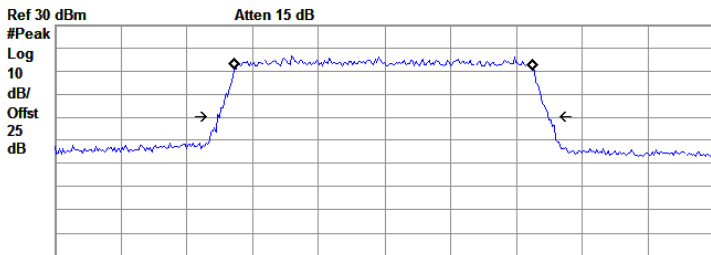


Spectrum Plot of Worst Value

5MHz/QPSK

Agilent 10:12:22 Mar 17, 2014

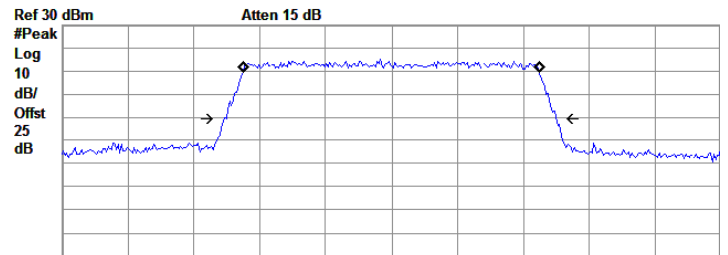
R T

Center 1.732 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
4.5243 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -3.924 kHz
x dB Bandwidth 5.020 MHz

5MHz/16QAM

Agilent 10:11:57 Mar 17, 2014

R T

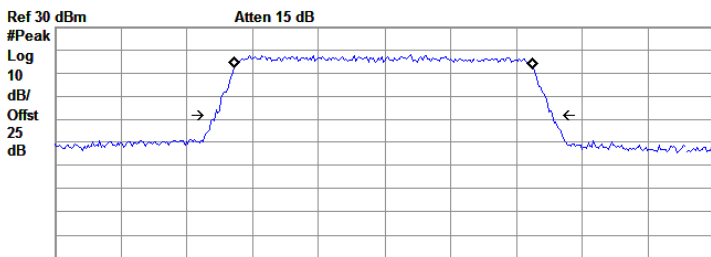
Center 1.732 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
4.5026 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -3.062 kHz
x dB Bandwidth 5.048 MHz

Spectrum Plot of Worst Value

10MHz/QPSK

Agilent 10:08:19 Mar 17, 2014

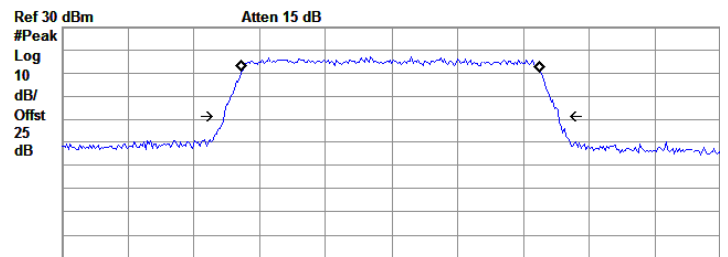
R T

Center 1.732 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
9.0574 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -16.096 kHz
x dB Bandwidth 10.236 MHz

10MHz/16QAM

Agilent 10:07:52 Mar 17, 2014

R T

Center 1.732 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
9.0570 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -11.090 kHz
x dB Bandwidth 10.159 MHz

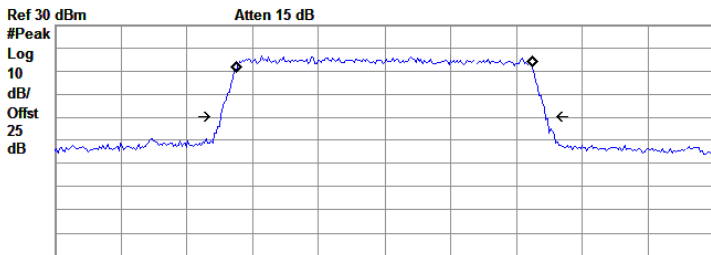


Spectrum Plot of Worst Value

15MHz/QPSK

Agilent 10:02:25 Mar 17, 2014

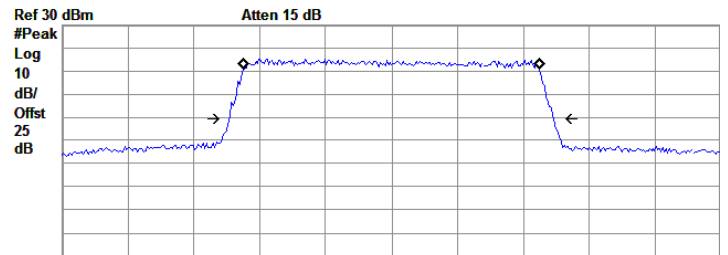
R T

Center 1.732 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 30 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
13.4672 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -15.983 kHz
x dB Bandwidth 14.767 MHz

15MHz/16QAM

Agilent 10:01:24 Mar 17, 2014

R T

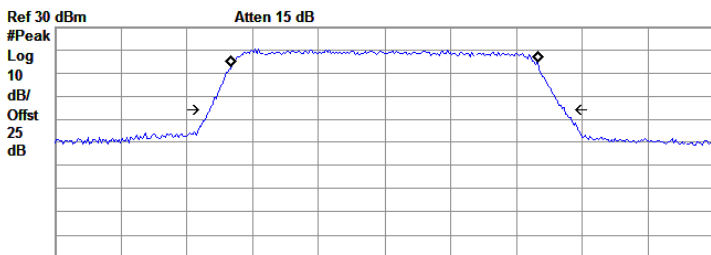
Center 1.732 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 30 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
13.4589 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -5.802 kHz
x dB Bandwidth 14.775 MHz

Spectrum Plot of Worst Value

20MHz/QPSK

Agilent 09:57:07 Mar 17, 2014

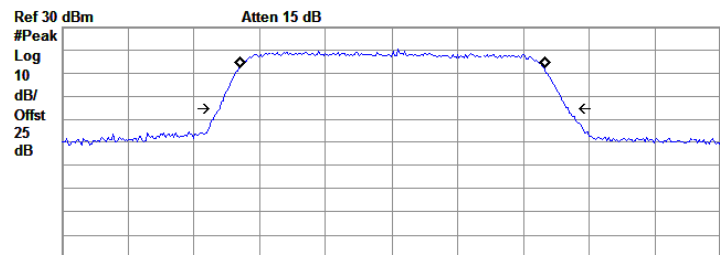
R T

Center 1.732 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 40 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
18.5484 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 22.836 kHz
x dB Bandwidth 21.518 MHz

20MHz/16QAM

Agilent 09:56:41 Mar 17, 2014

R T

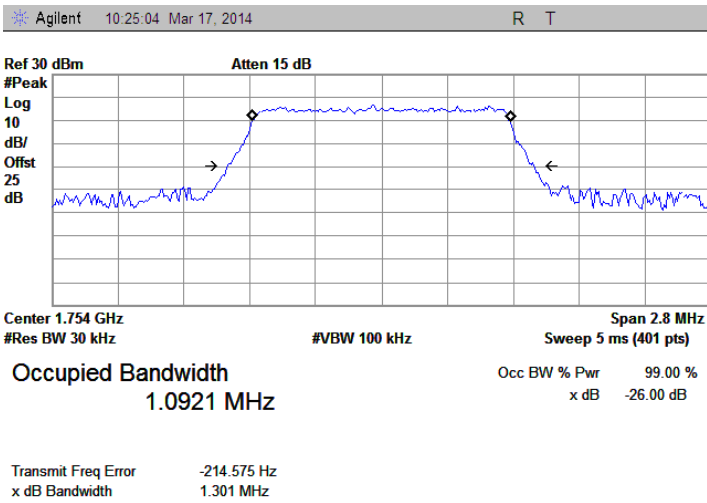
Center 1.732 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 40 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
18.4954 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 22.911 kHz
x dB Bandwidth 21.156 MHz



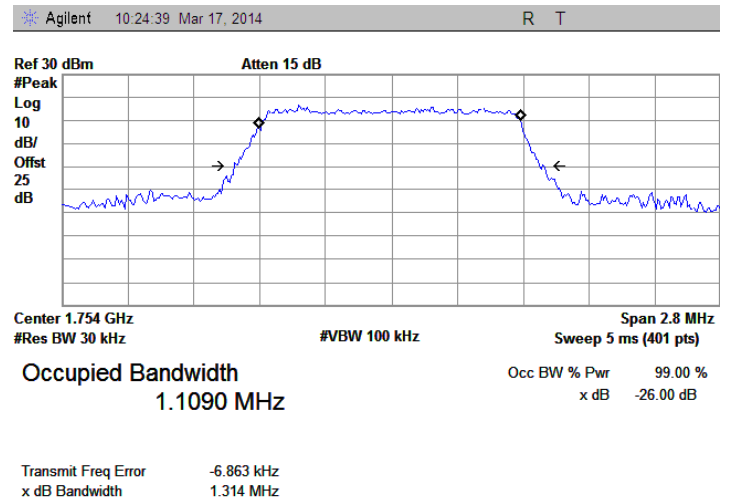
High channel:

Spectrum Plot of Worst Value

1.4MHz/QPSK

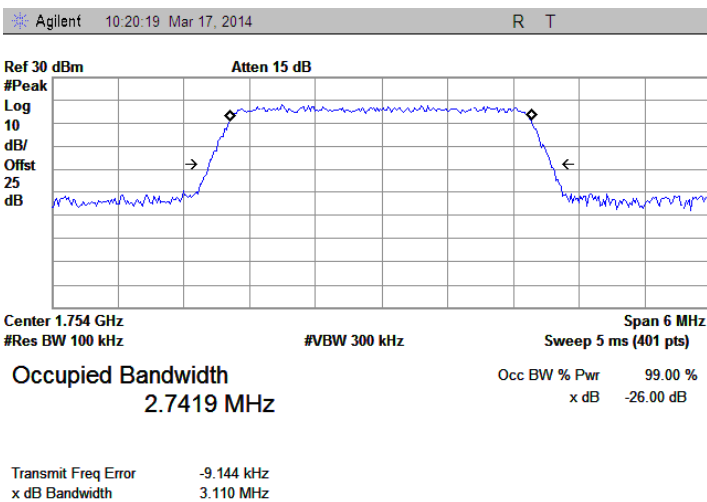


1.4MHz/16QAM

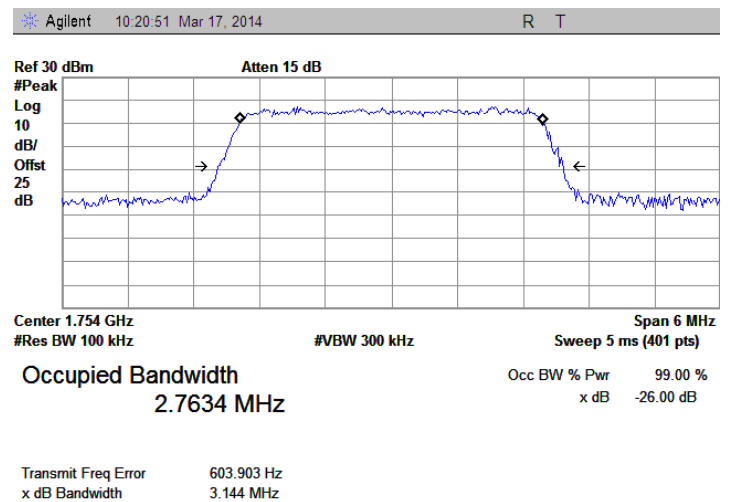


Spectrum Plot of Worst Value

3MHz/QPSK



3MHz/16QAM



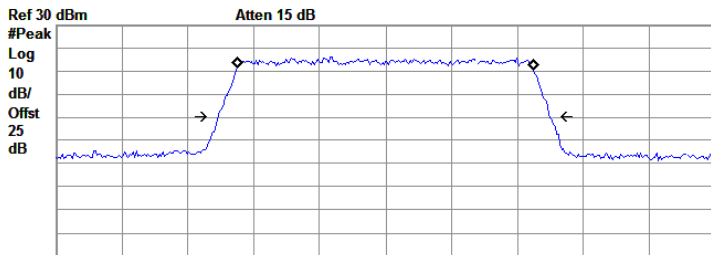


Spectrum Plot of Worst Value

5MHz/QPSK

Agilent 10:15:02 Mar 17, 2014

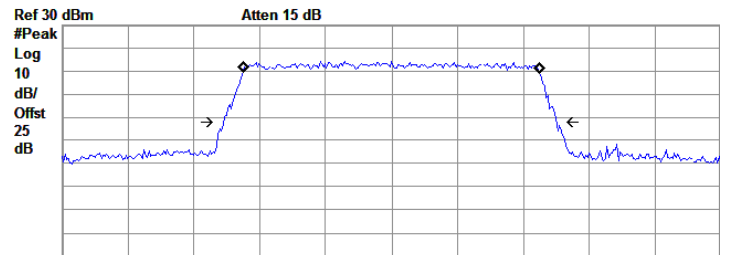
R T

Center 1.752 GHz
#Res BW 100 kHz #VBW 300 kHz Span 10 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
4.5079 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -361.271 Hz
x dB Bandwidth 5.035 MHz

5MHz/16QAM

Agilent 10:15:32 Mar 17, 2014

R T

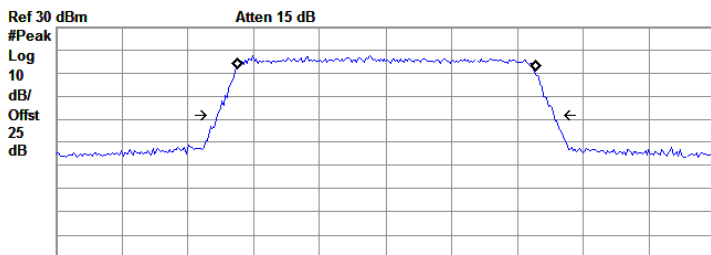
Center 1.752 GHz
#Res BW 100 kHz #VBW 300 kHz Span 10 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
4.5048 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error -1.025 kHz
x dB Bandwidth 5.052 MHz

Spectrum Plot of Worst Value

10MHz/QPSK

Agilent 10:09:00 Mar 17, 2014

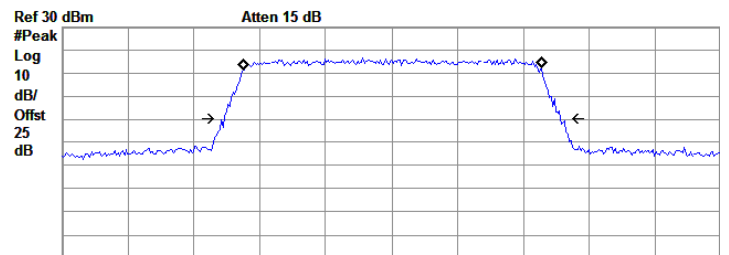
R T

Center 1.75 GHz
#Res BW 300 kHz #VBW 1 MHz Span 20 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
9.0540 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 5.479 kHz
x dB Bandwidth 10.226 MHz

10MHz/16QAM

Agilent 10:09:24 Mar 17, 2014

R T

Center 1.75 GHz
#Res BW 300 kHz #VBW 1 MHz Span 20 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
9.0559 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 19.933 kHz
x dB Bandwidth 10.205 MHz

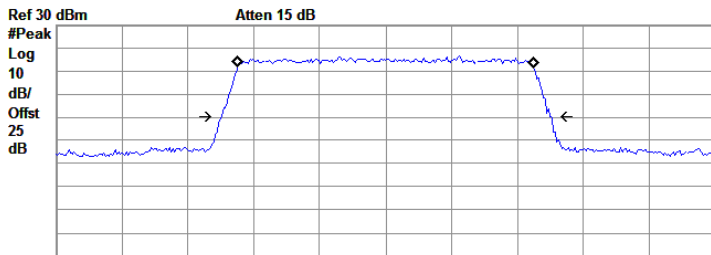


Spectrum Plot of Worst Value

15MHz/QPSK

Agilent 10:03:53 Mar 17, 2014

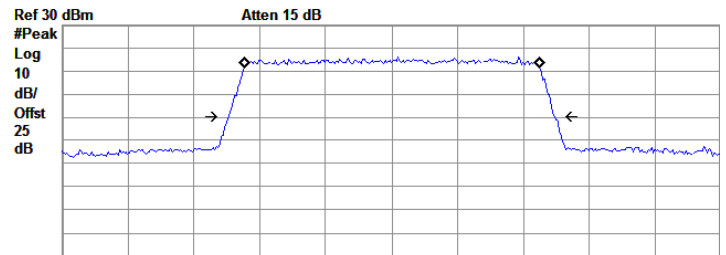
R T

Center 1.748 GHz
#Res BW 300 kHz #VBW 1 MHz Span 30 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
13.4903 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 25.786 kHz
x dB Bandwidth 14.918 MHz

15MHz/16QAM

Agilent 10:04:58 Mar 17, 2014

R T

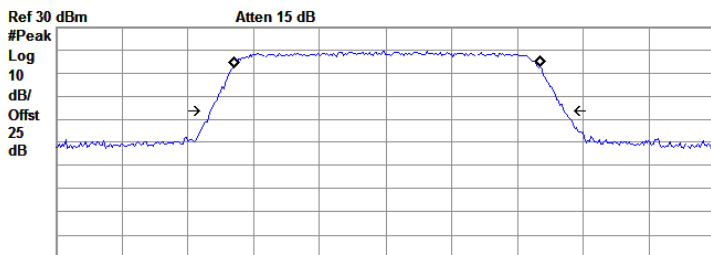
Center 1.748 GHz
#Res BW 300 kHz #VBW 1 MHz Span 30 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
13.4868 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 36.758 kHz
x dB Bandwidth 14.844 MHz

Spectrum Plot of Worst Value

20MHz/QPSK

Agilent 09:57:45 Mar 17, 2014

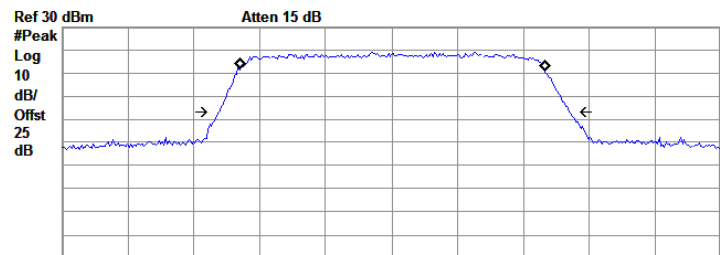
R T

Center 1.745 GHz
#Res BW 1 MHz #VBW 3 MHz Span 40 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
18.5796 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 78.601 kHz
x dB Bandwidth 21.462 MHz

20MHz/16QAM

Agilent 09:58:15 Mar 17, 2014

R T

Center 1.745 GHz
#Res BW 1 MHz #VBW 3 MHz Span 40 MHz
Sweep 4 ms (401 pts)Occupied Bandwidth
18.5205 MHzOcc BW % Pwr 99.00 %
x dB -26.00 dBTransmit Freq Error 32.427 kHz
x dB Bandwidth 21.302 MHz

2.3 Frequency Stability

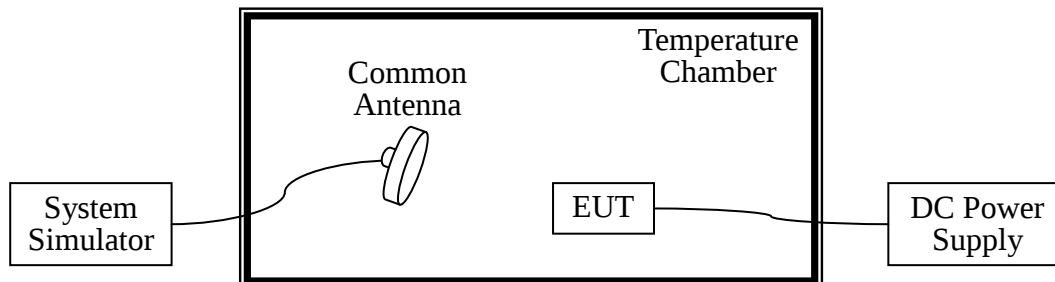
2.3.1 Requirement

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	1201.0002k5 0/124534/wk	2014.02.26	2015.02.25
DC Power Supply	Good Will	GPS-3030DD	EF920938	2014.02.26	2015.02.25
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2014.02.26	2015.02.25

2.3.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.35VDC and 3.6VDC, which are specified by the applicant; the normal temperature here used is 25°C. The frequency deviation limit is ± 2.5 ppm.



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

LTE Band 4 – QPSK - Channel 20175 – Frequency 1732.5MHz – RB 6/0				
Limit: 1732.5MHz*2.5ppm=4331.25Hz				
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Result
100	3.8	-30	12.56	<u>PASS</u>
100		-20	11.66	
100		-10	10.50	
100		0	11.74	
100		+10	11.56	
100		+20	9.48	
100		+30	-10.89	
100		+40	10.83	
100		+55	12.62	
114	4.35	+20	11.12	
95	3.6	+20	12.52	

2.4 Peak to Average Ratio

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:

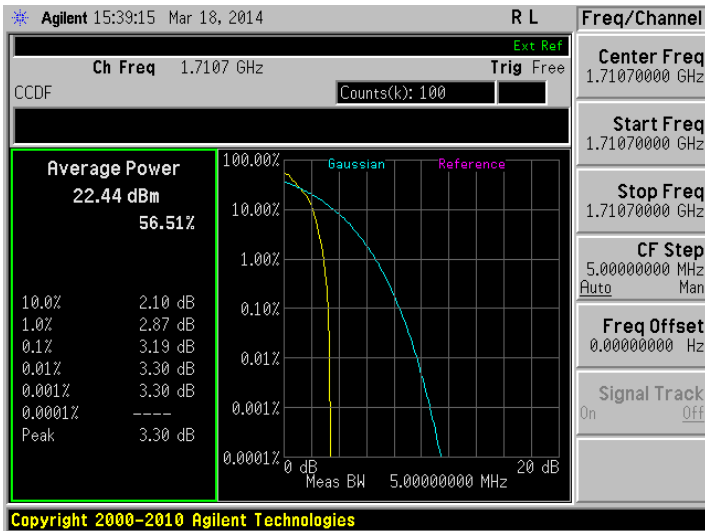
Low channel:

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	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	16QAM
20025	1717.5	5.86	6.95	20050	1720.0	6.67	7.20

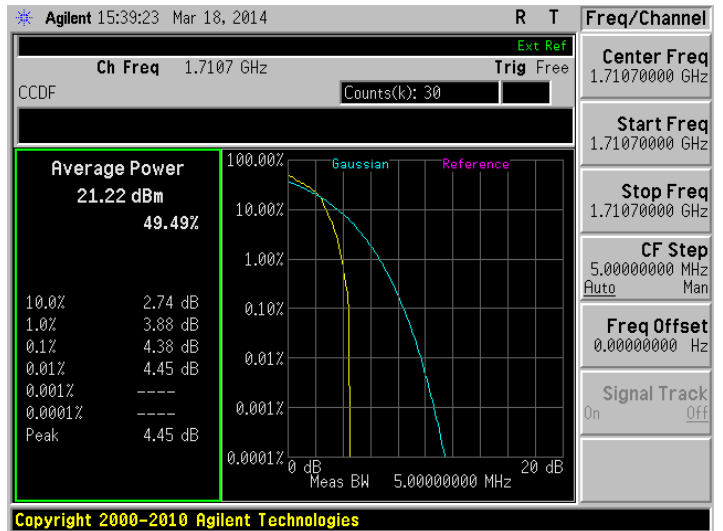


Spectrum Plot of Worst Value (Low channel)

1.4MHz/QPSK

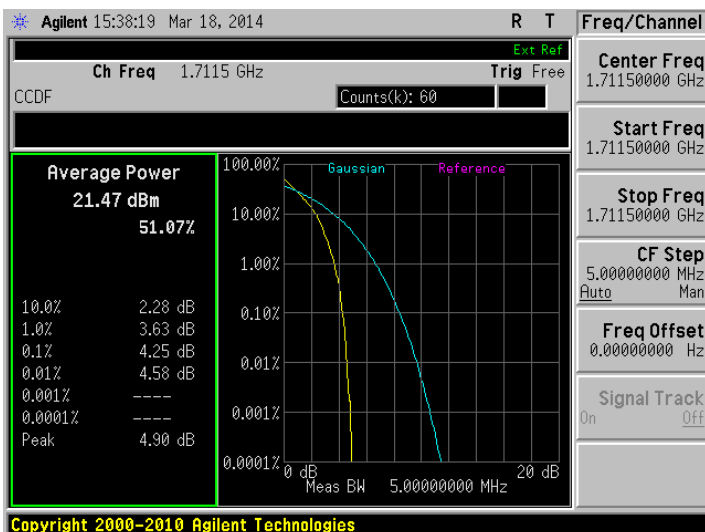


1.4MHz/16QAM

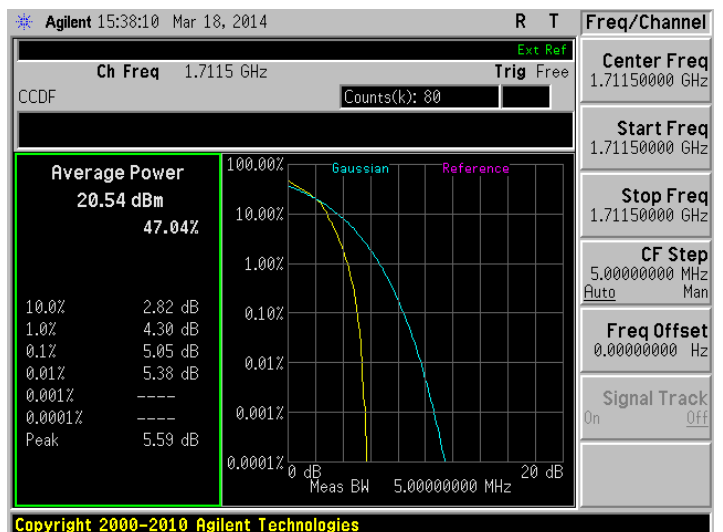


Spectrum Plot of Worst Value

3MHz/QPSK



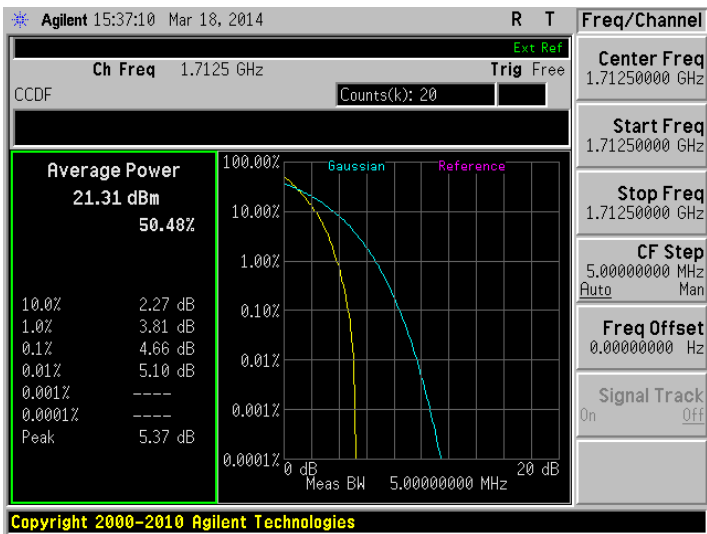
3MHz/16QAM



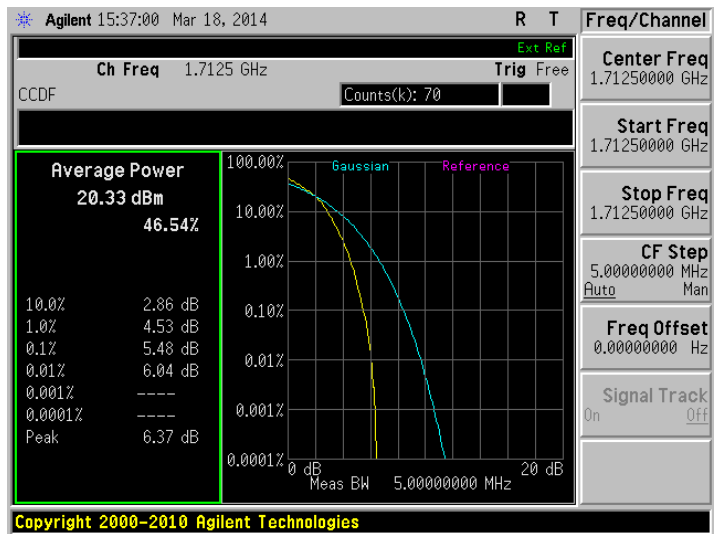


Spectrum Plot of Worst Value

5MHz/QPSK

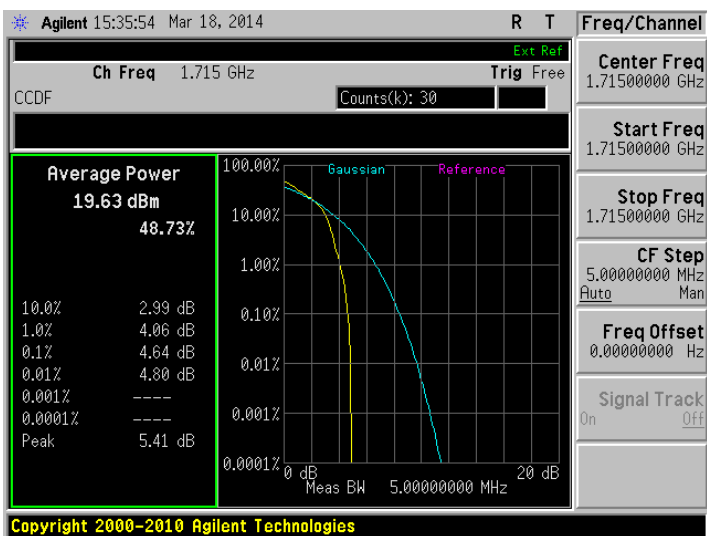


5MHz/16QAM

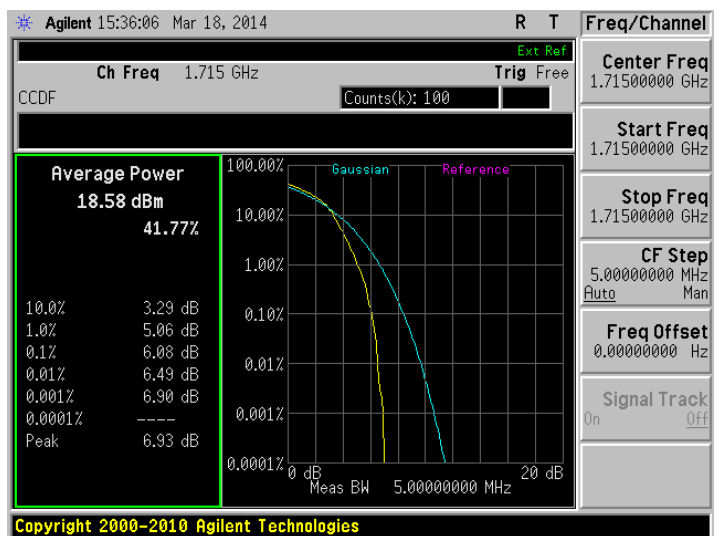


Spectrum Plot of Worst Value

10MHz/QPSK



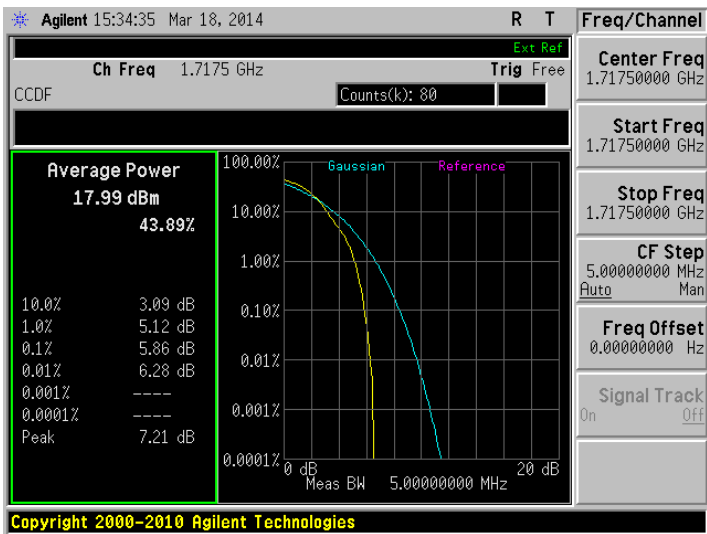
10MHz/16QAM



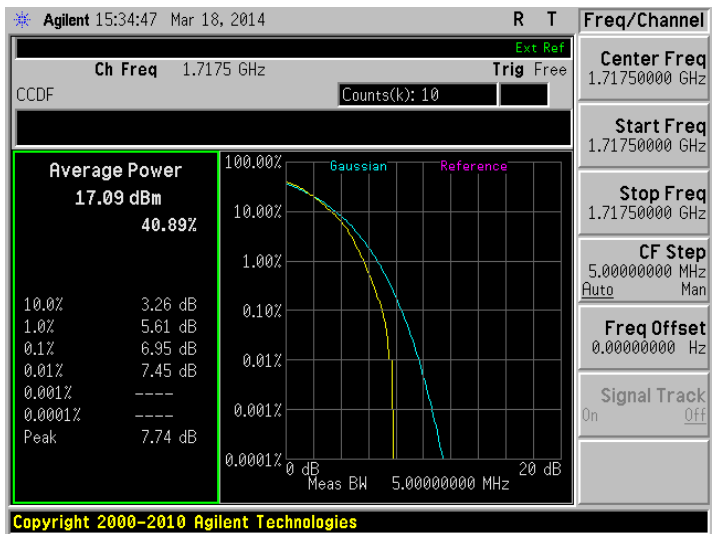


Spectrum Plot of Worst Value

15MHz/QPSK

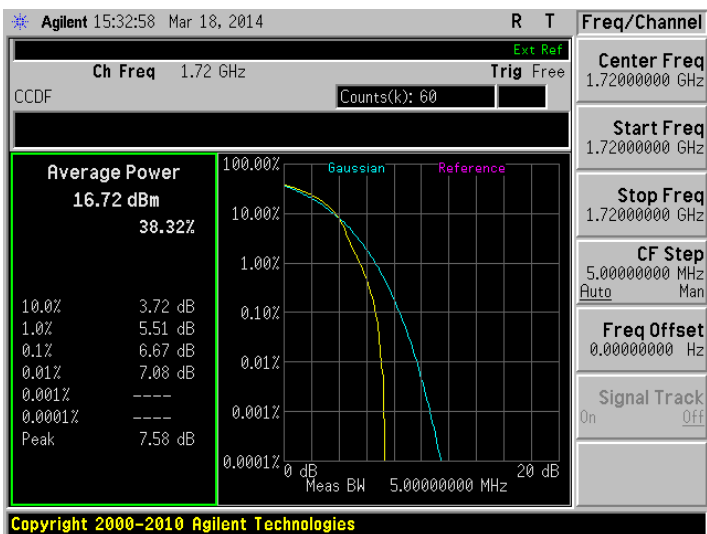


15MHz/16QAM

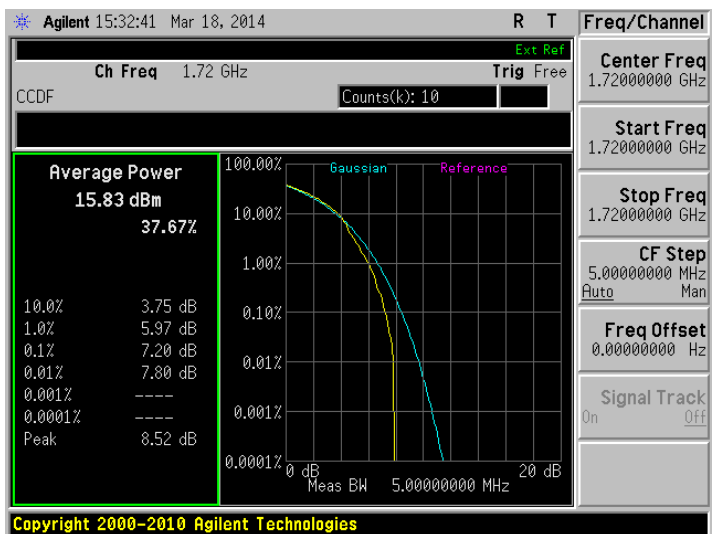


Spectrum Plot of Worst Value

20MHz/QPSK



20MHz/16QAM



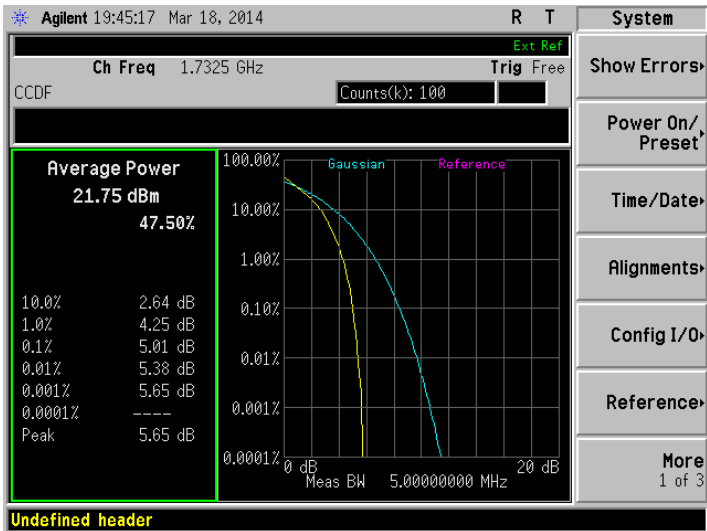
**Middle channel:**

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	16QAM
20175	1732.5	5.21	6.04	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	16QAM
20175	1732.5	5.84	6.88	20175	1732.5	6.56	7.38

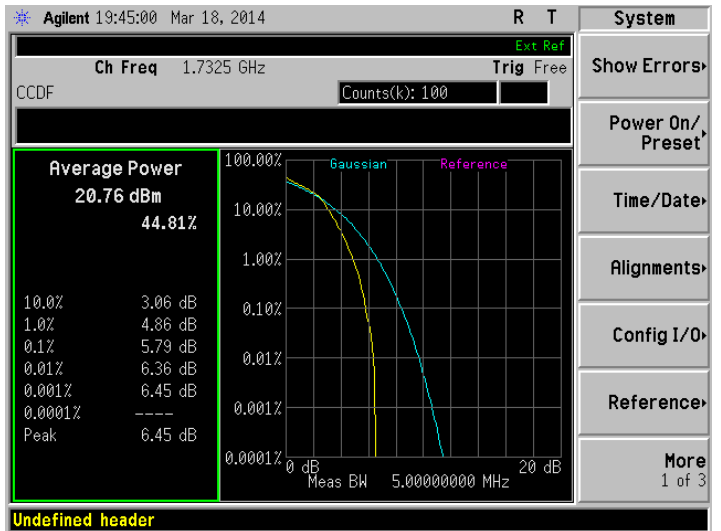


Spectrum Plot of Worst Value

1.4MHz/QPSK

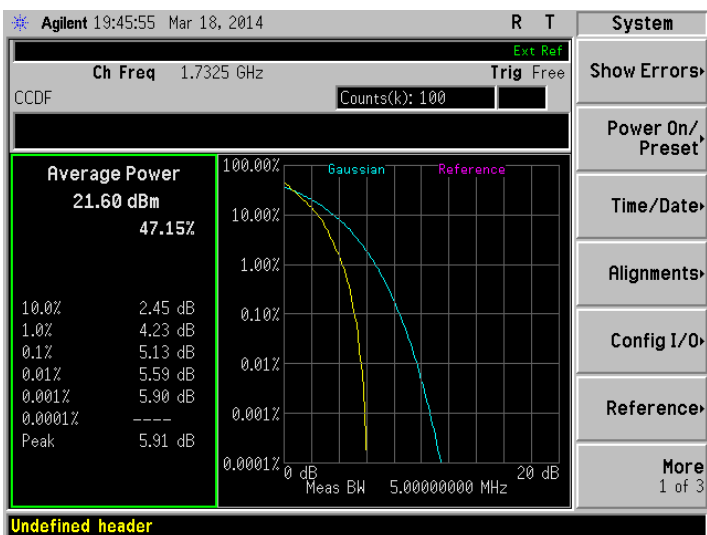


1.4MHz/16QAM

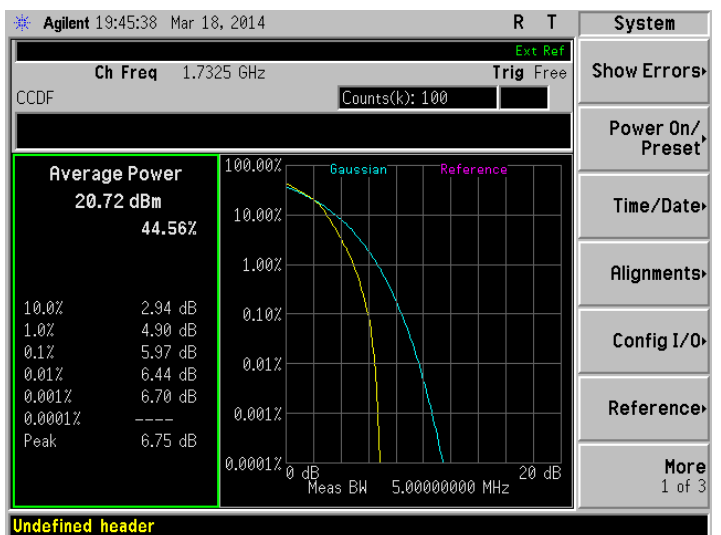


Spectrum Plot of Worst Value

3MHz/QPSK



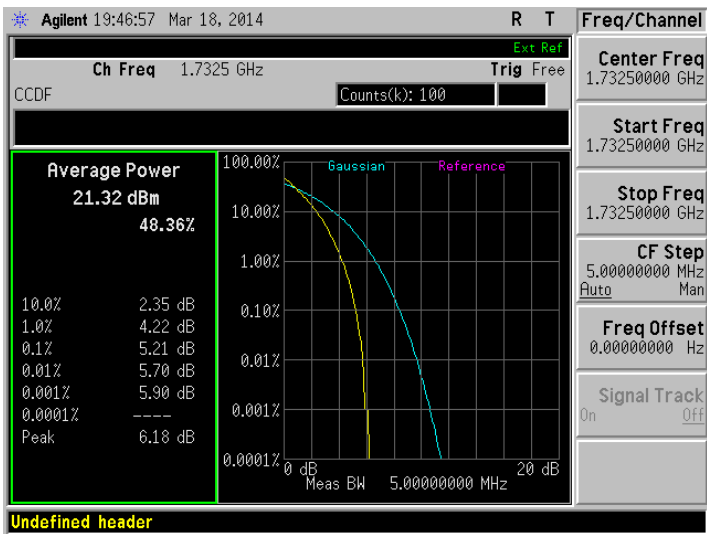
3MHz/16QAM



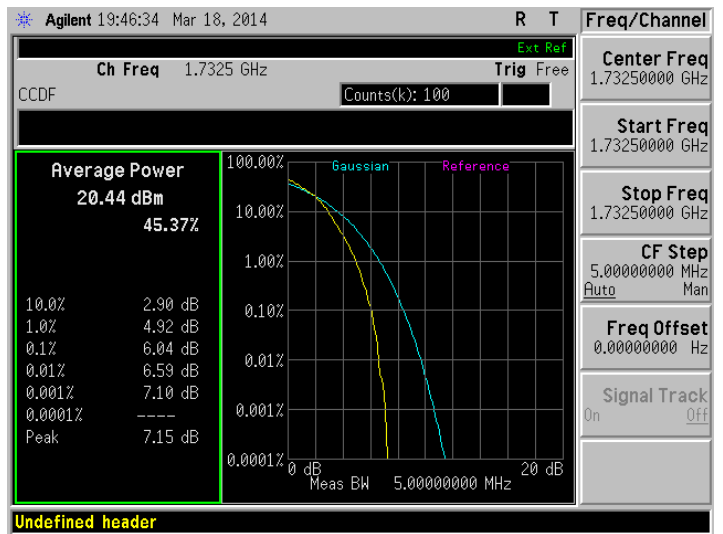


Spectrum Plot of Worst Value

5MHz/QPSK

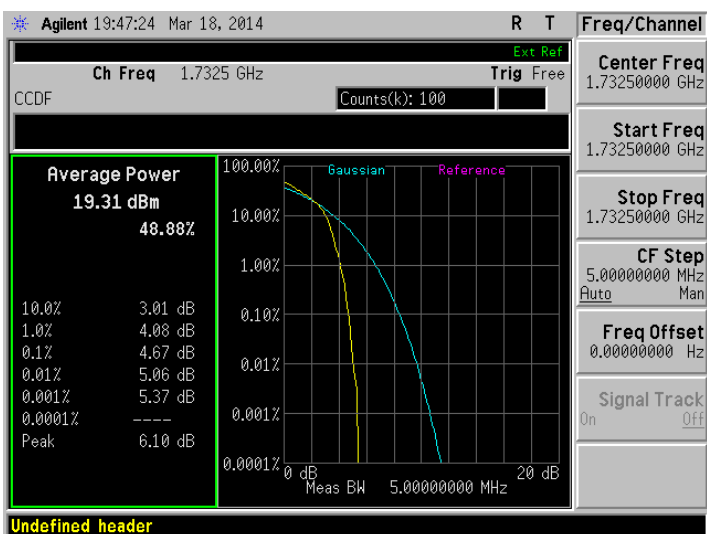


5MHz/16QAM

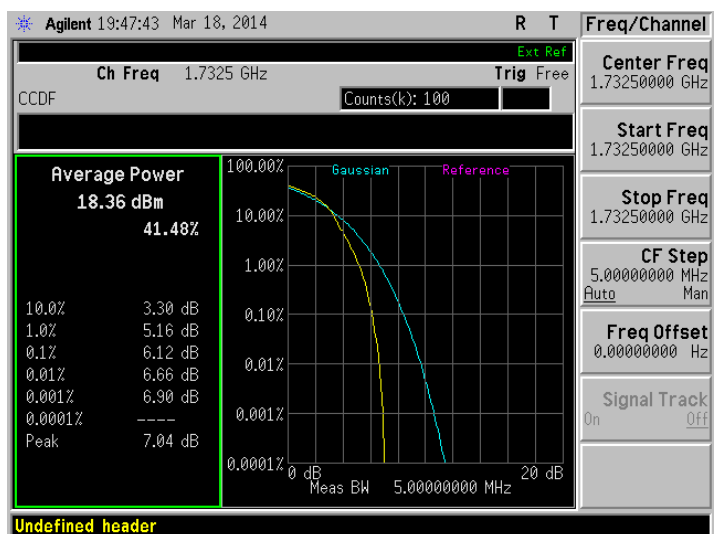


Spectrum Plot of Worst Value

10MHz/QPSK



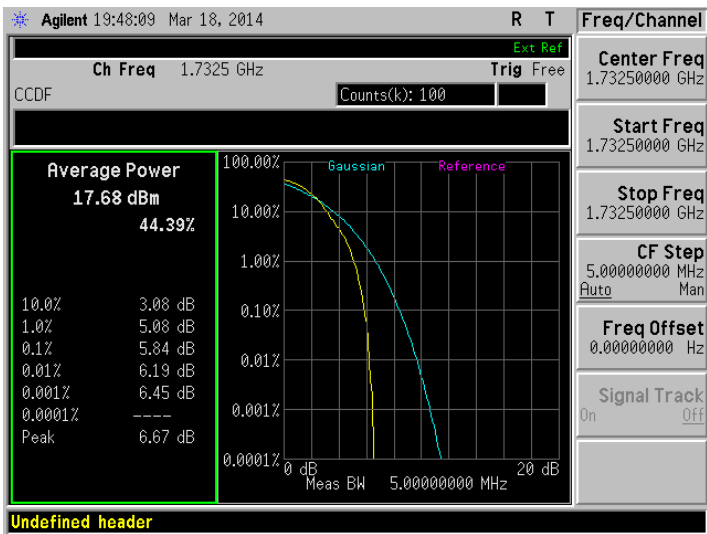
10MHz/16QAM



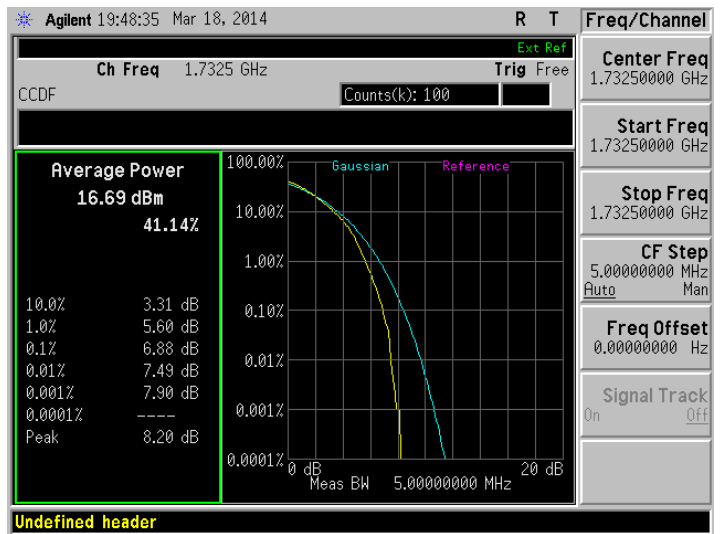


Spectrum Plot of Worst Value

15MHz/QPSK

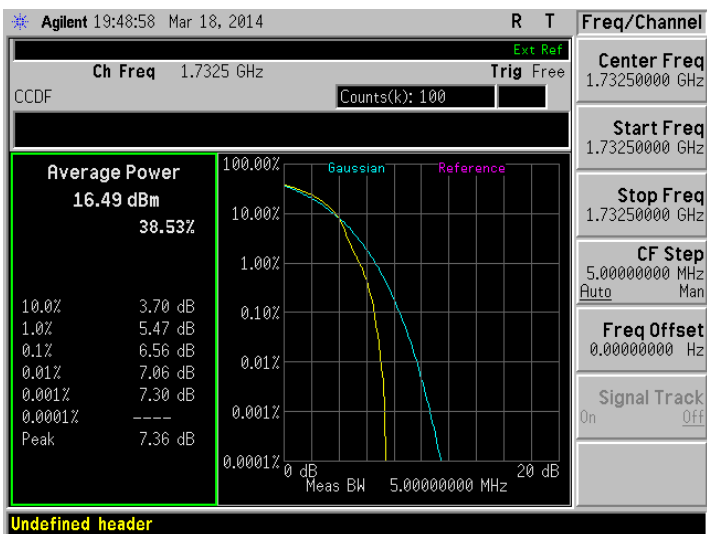


15MHz/16QAM

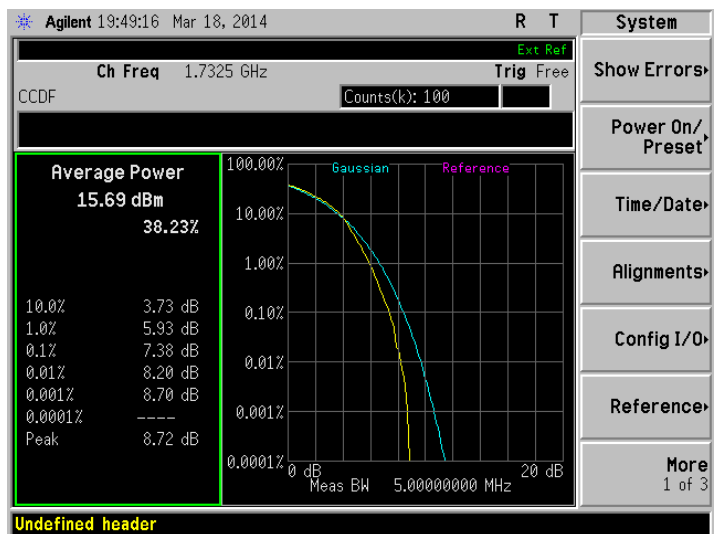


Spectrum Plot of Worst Value

20MHz/QPSK



20MHz/16QAM





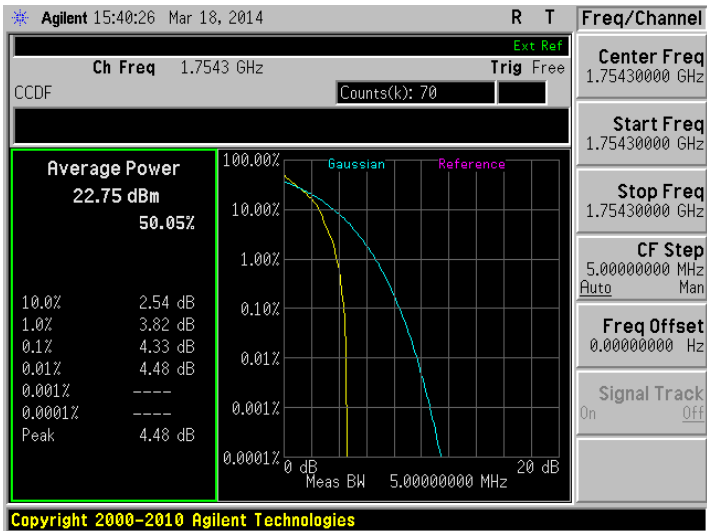
High channel:

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	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	16QAM
20325	1747.5	5.83	6.72	20300	1745.0	6.59	7.14

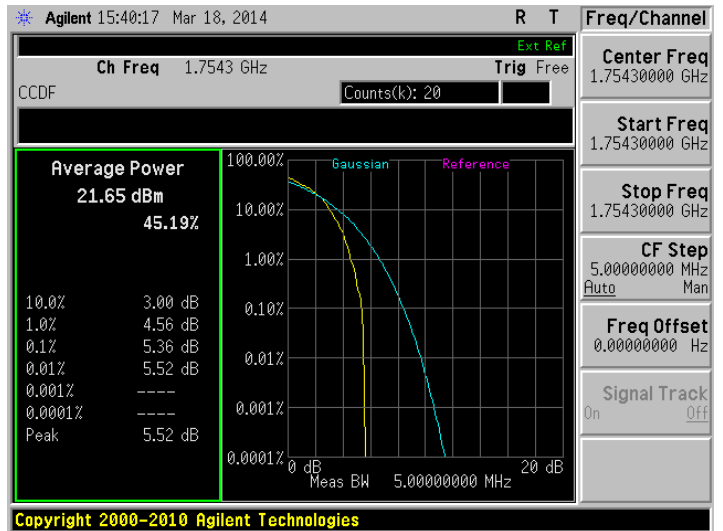


Spectrum Plot of Worst Value

1.4MHz/QPSK

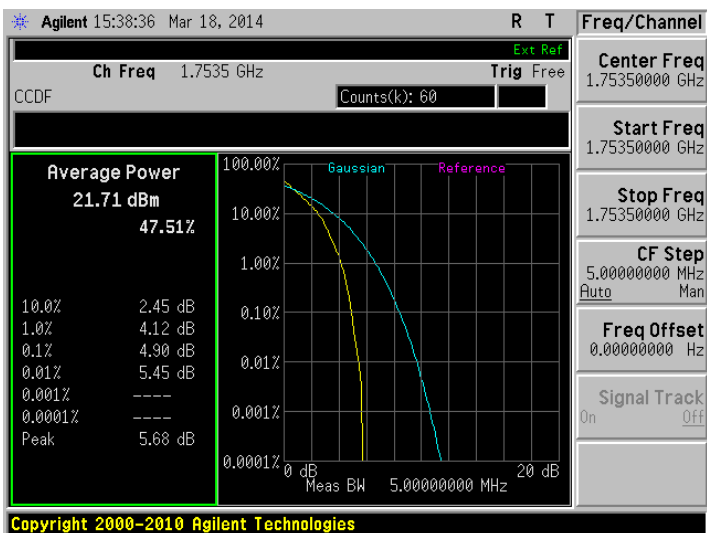


1.4MHz/16QAM

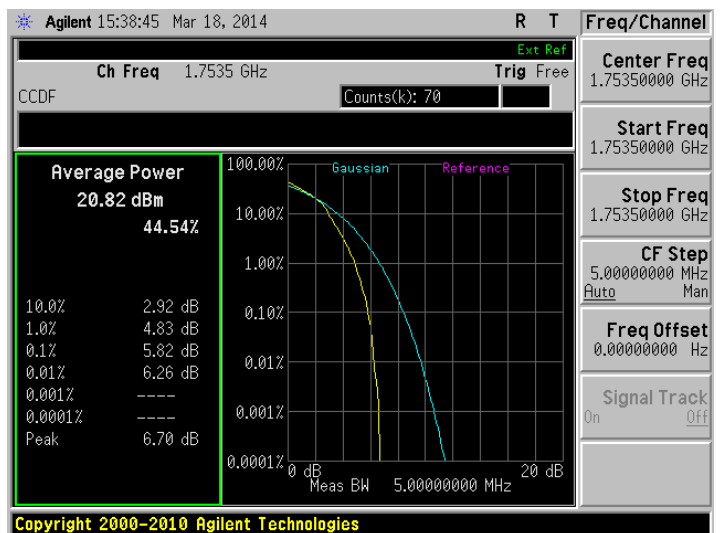


Spectrum Plot of Worst Value

3MHz/QPSK



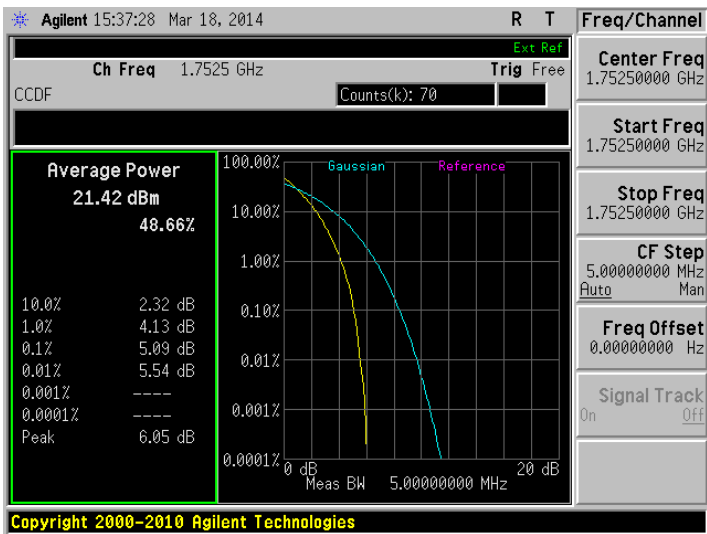
3MHz/16QAM



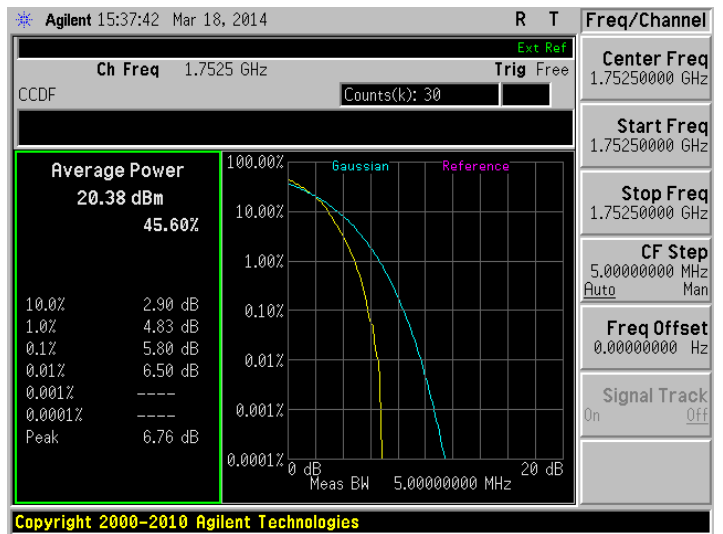


Spectrum Plot of Worst Value

5MHz/QPSK

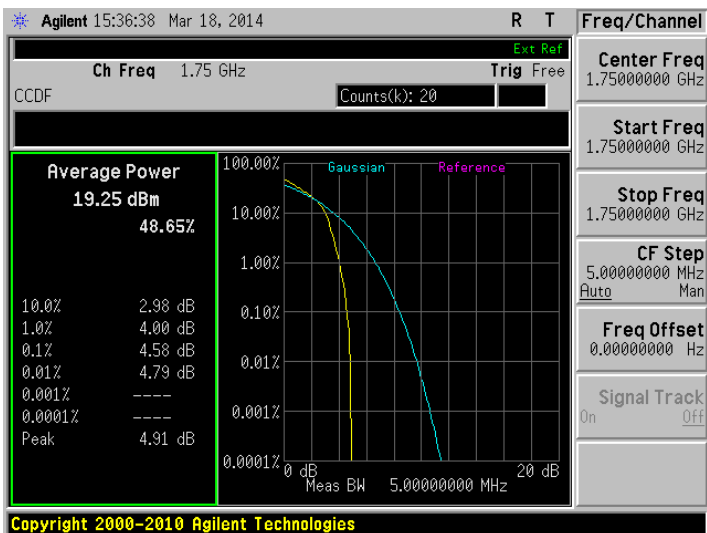


5MHz/16QAM

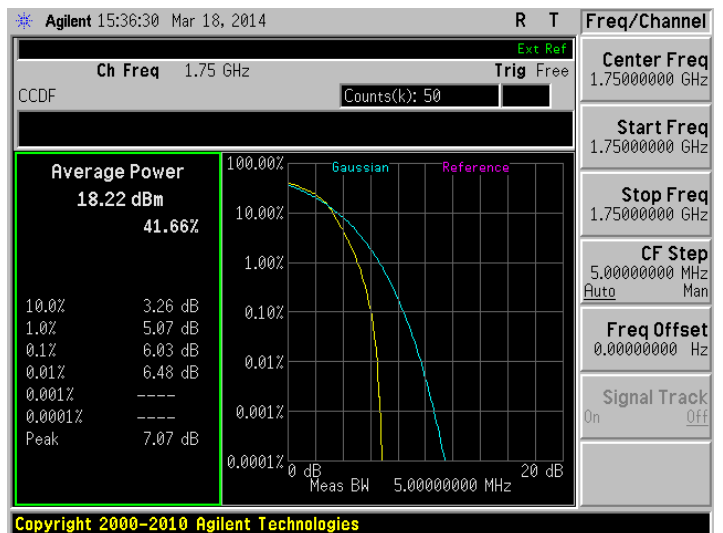


Spectrum Plot of Worst Value

10MHz/QPSK



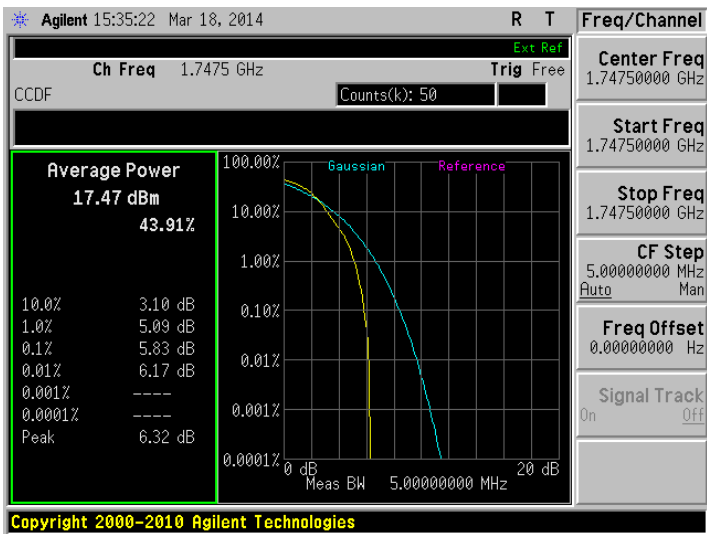
10MHz/16QAM



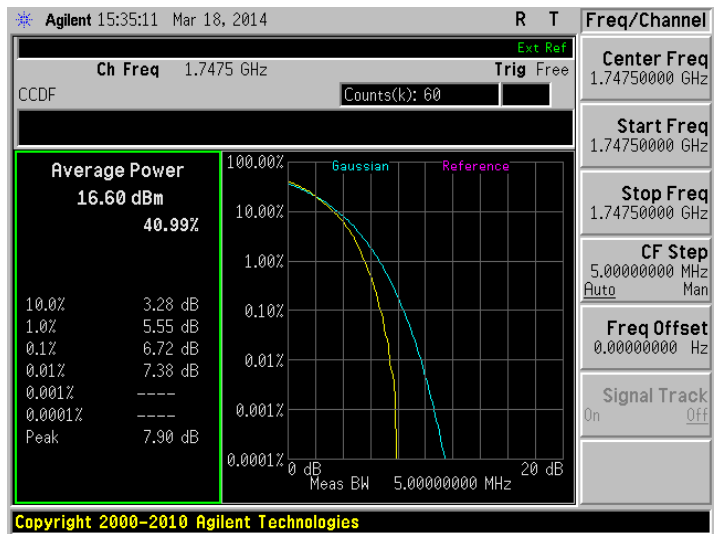


Spectrum Plot of Worst Value

15MHz/QPSK

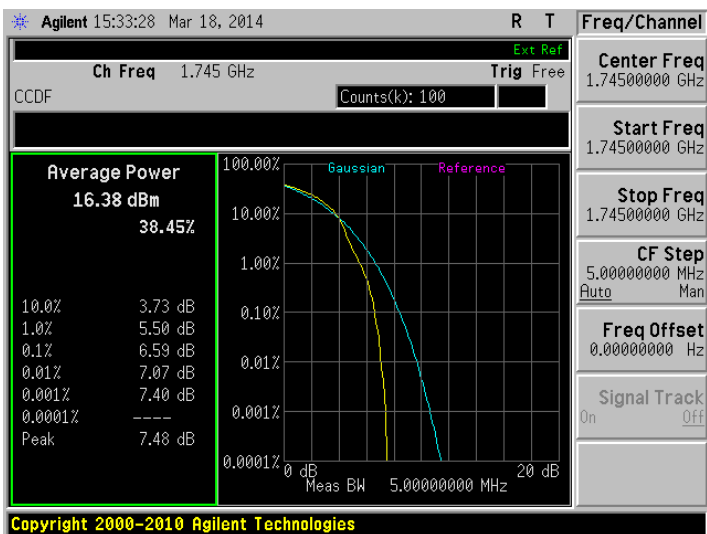


15MHz/16QAM

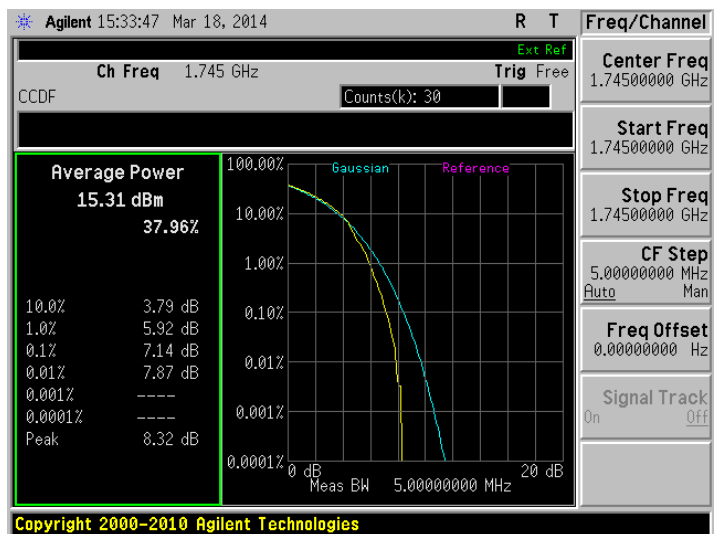


Spectrum Plot of Worst Value

20MHz/QPSK



20MHz/16QAM



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.

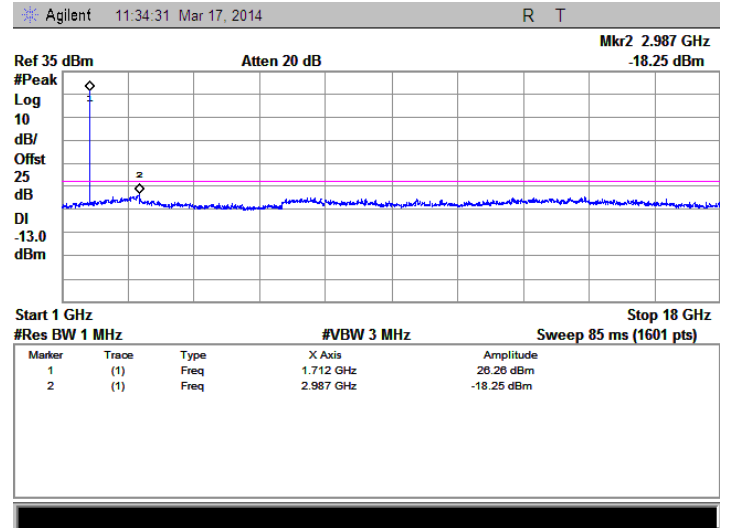
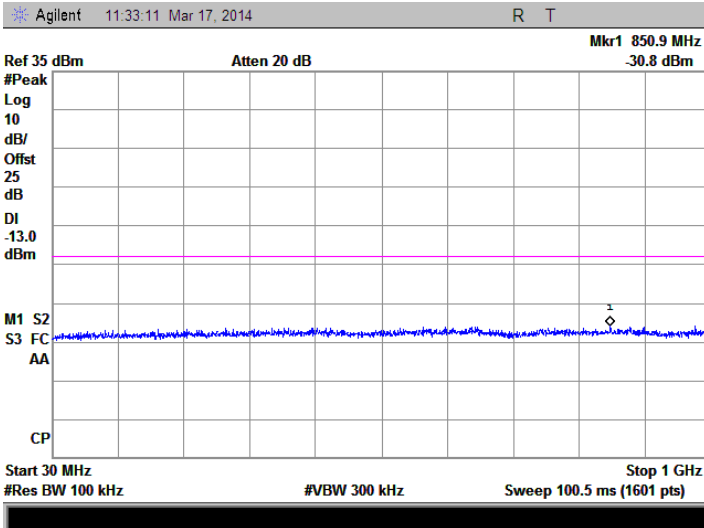


LTE Band 4

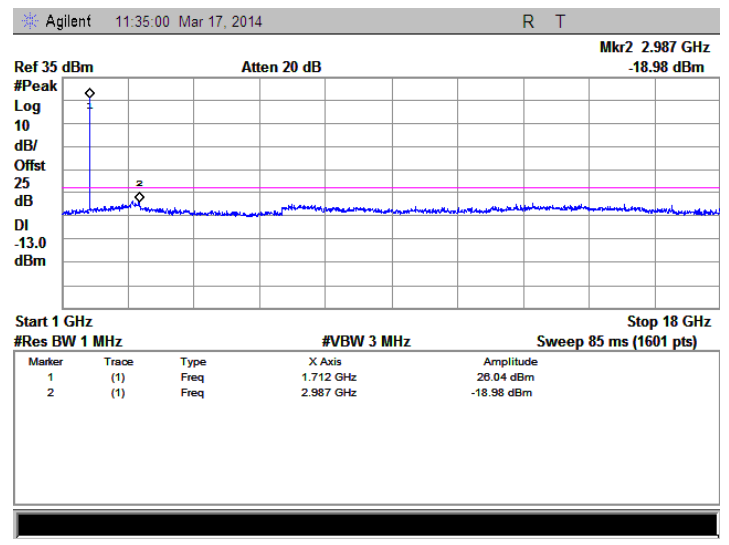
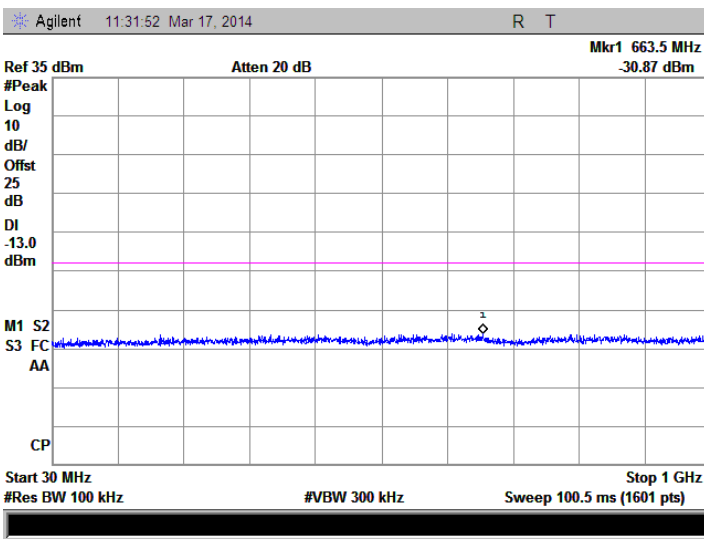
Low channel:

LTE Band 4 1.4MHz BW, Low Channel

QPSK



16QAM

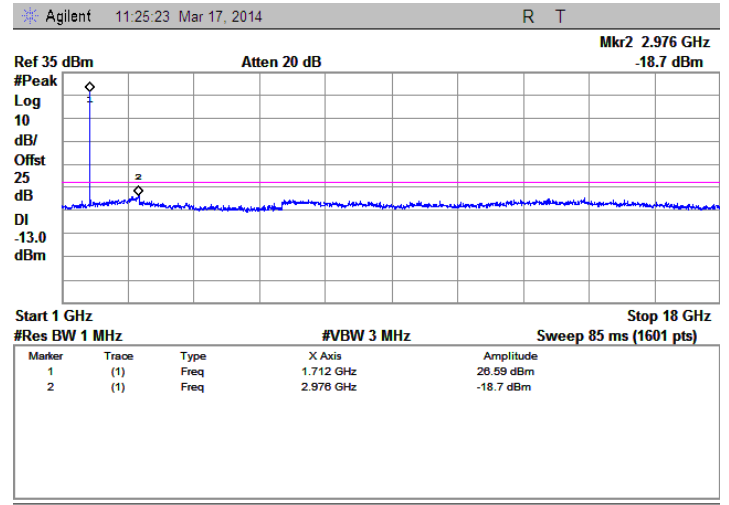
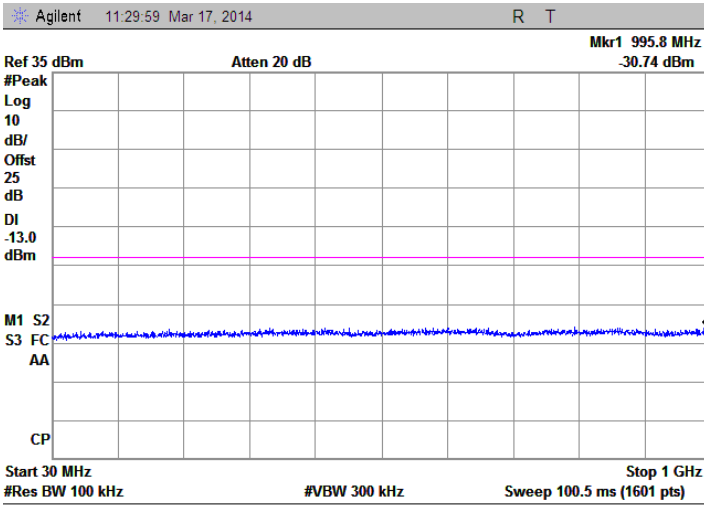




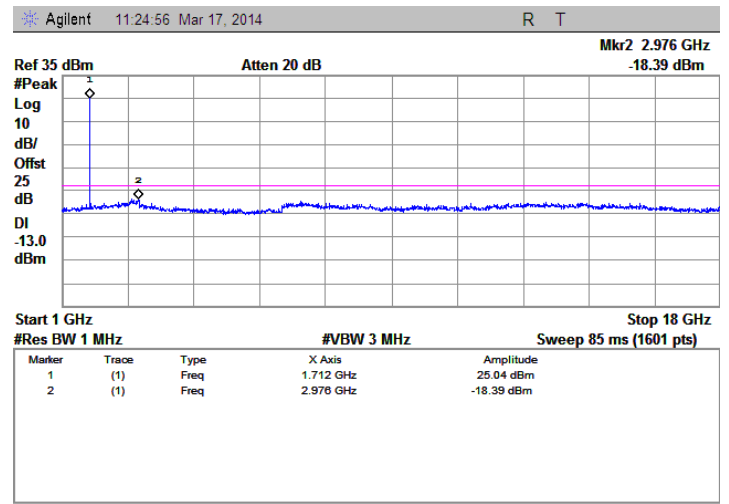
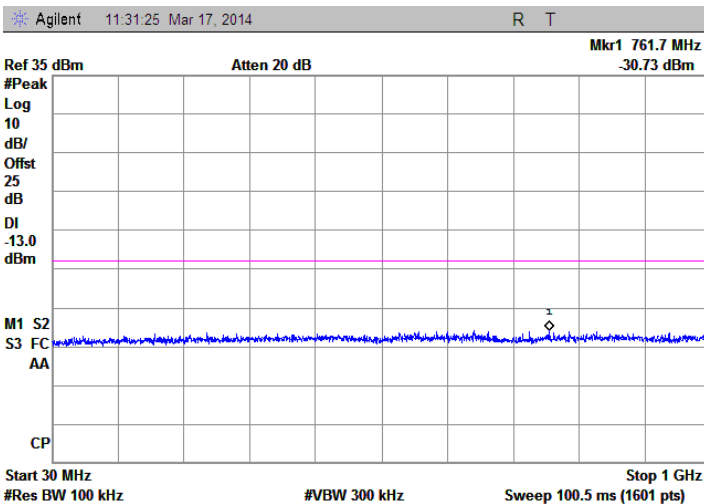
Report No.: SZ14030021W07

LTE Band 4 3MHz BW, Low Channel

QPSK



16QAM



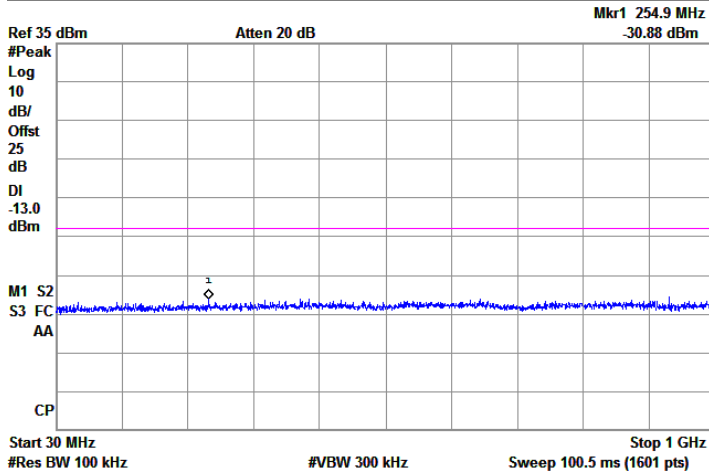


LTE Band 4 5MHz BW, Low Channel

QPSK

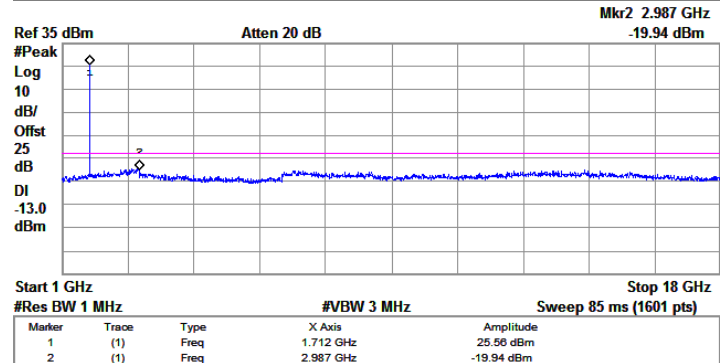
Agilent 11:17:50 Mar 17, 2014

R T



Agilent 11:20:33 Mar 17, 2014

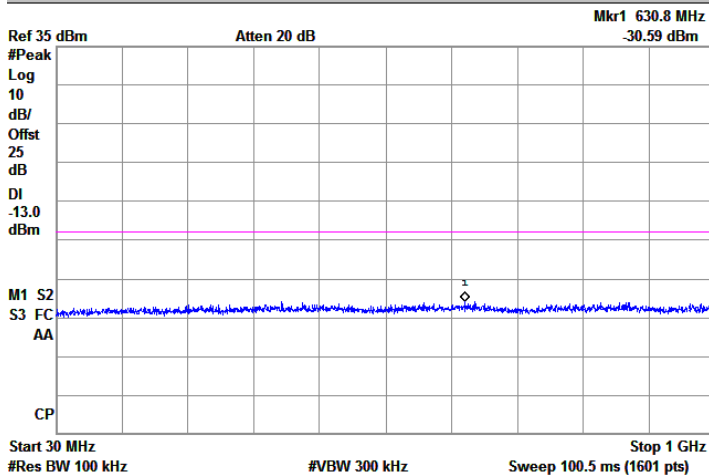
R T



16QAM

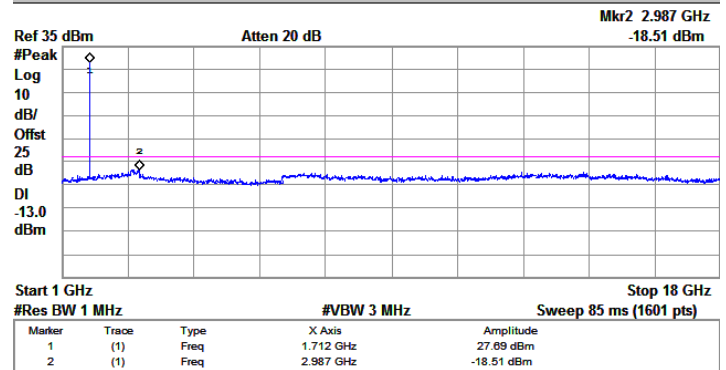
Agilent 11:16:29 Mar 17, 2014

R T



Agilent 11:20:12 Mar 17, 2014

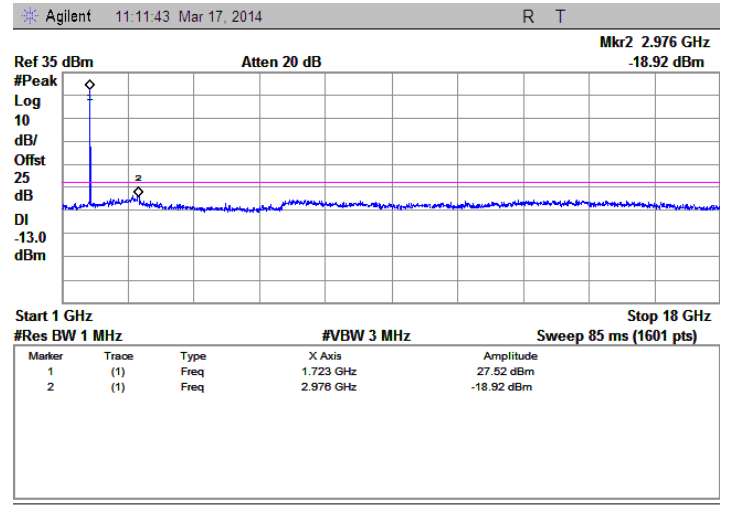
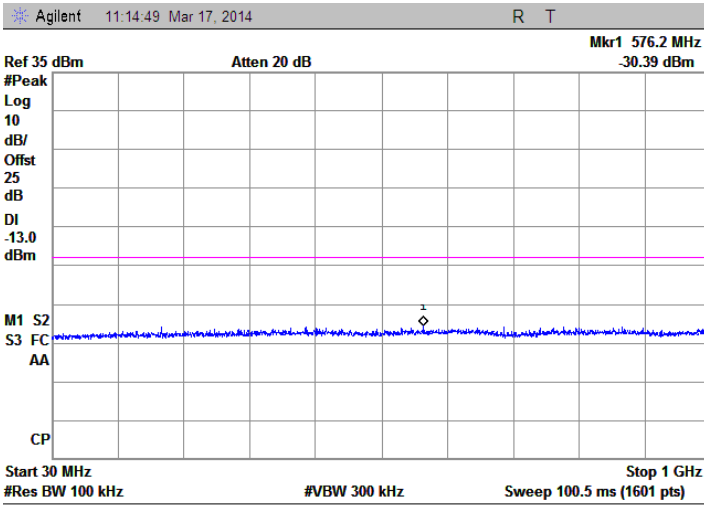
R T



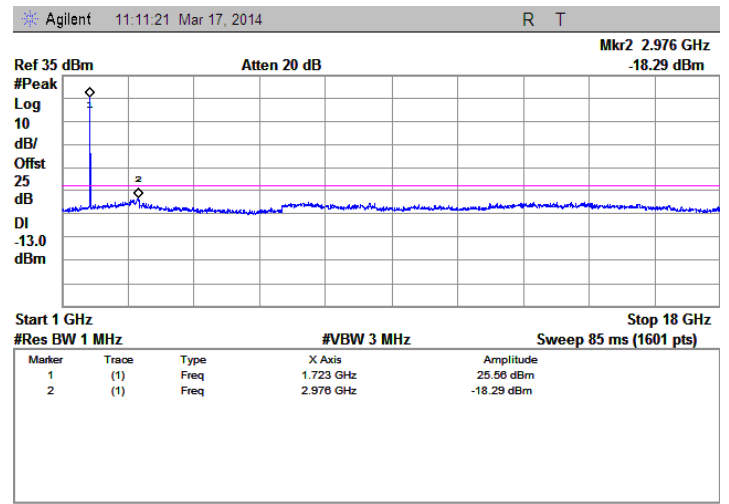
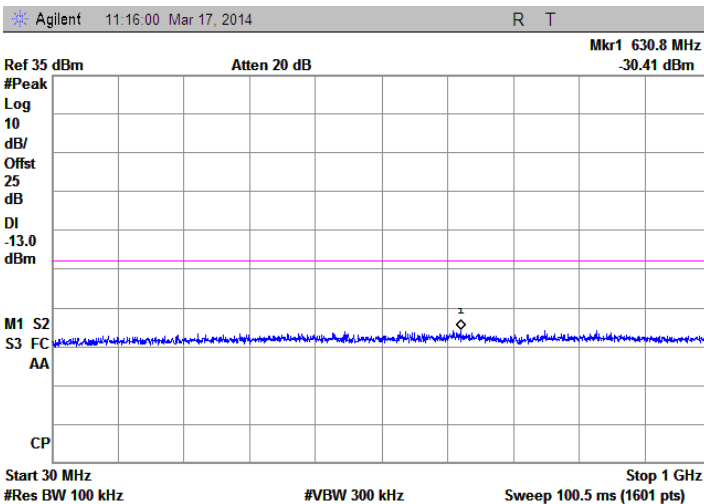


LTE Band 4 10MHz BW, Low Channel

QPSK



16QAM

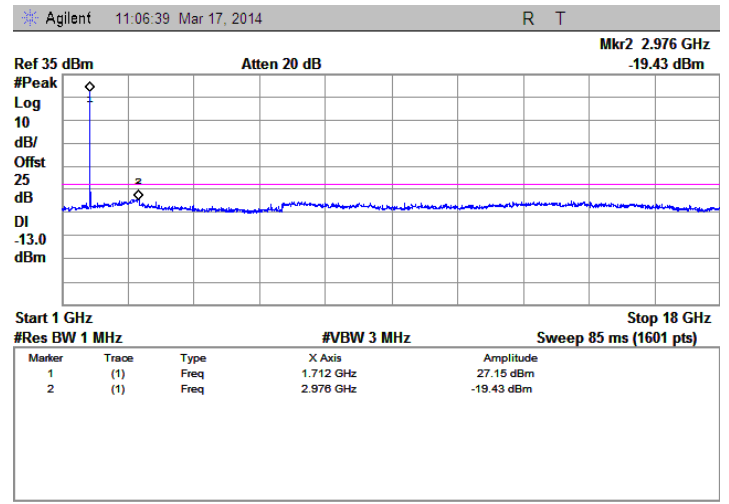
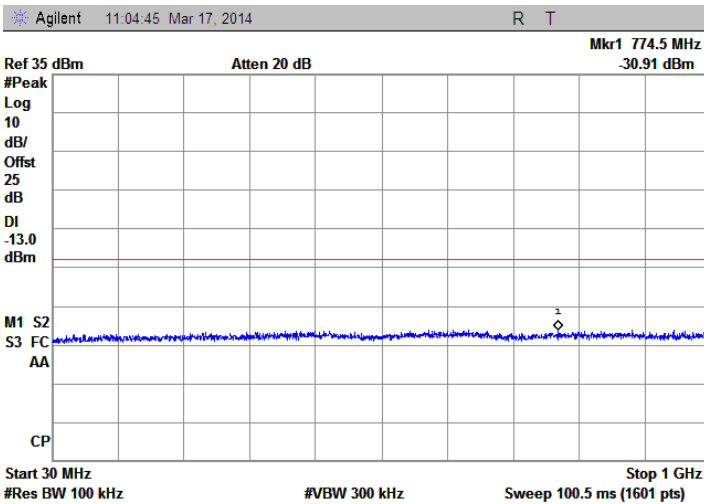




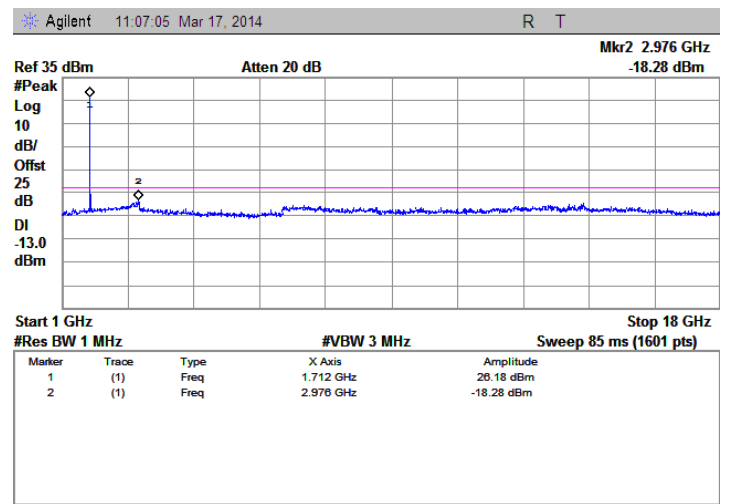
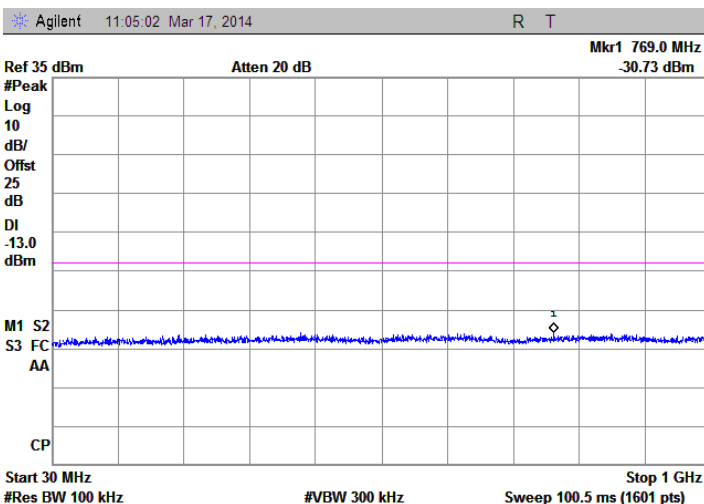
Report No.: SZ14030021W07

LTE Band 4 15MHz BW, Low Channel

QPSK



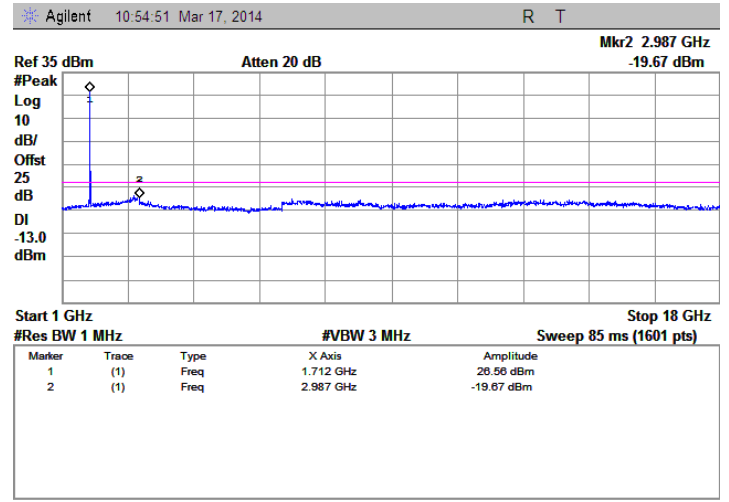
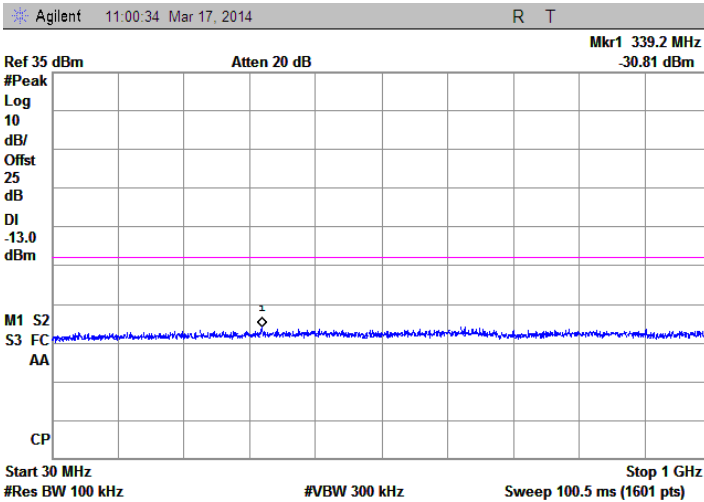
16QAM



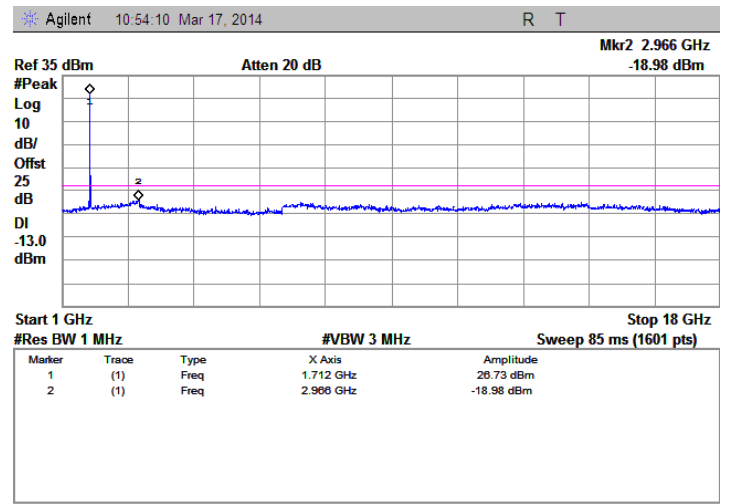
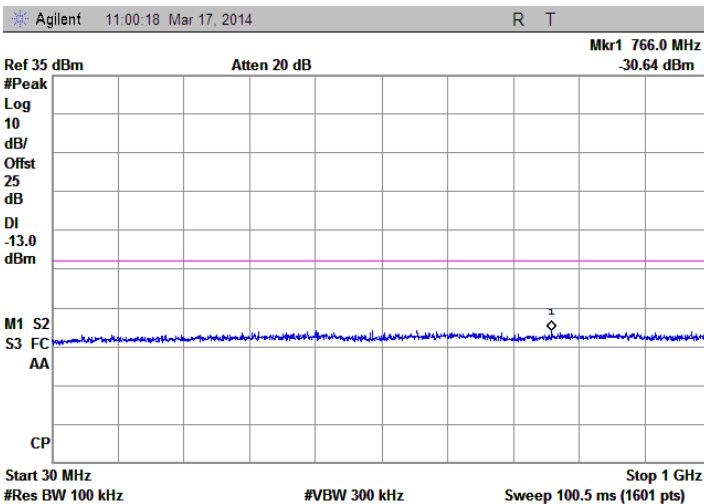


LTE Band 4 20MHz BW, Low Channel

QPSK



16QAM

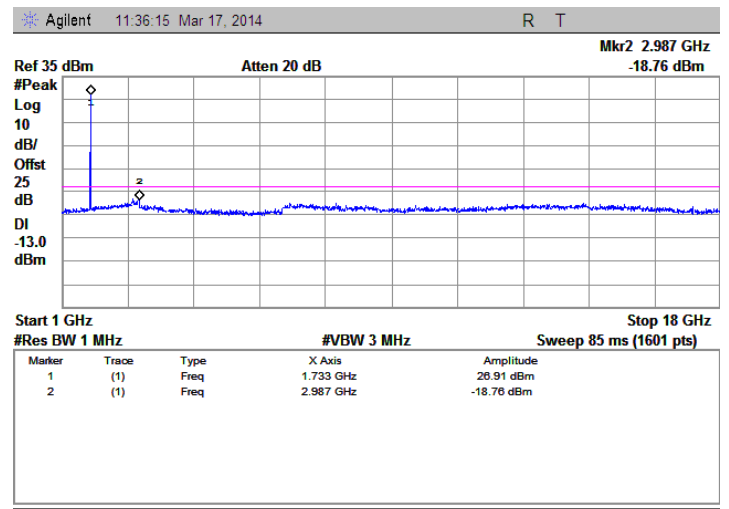
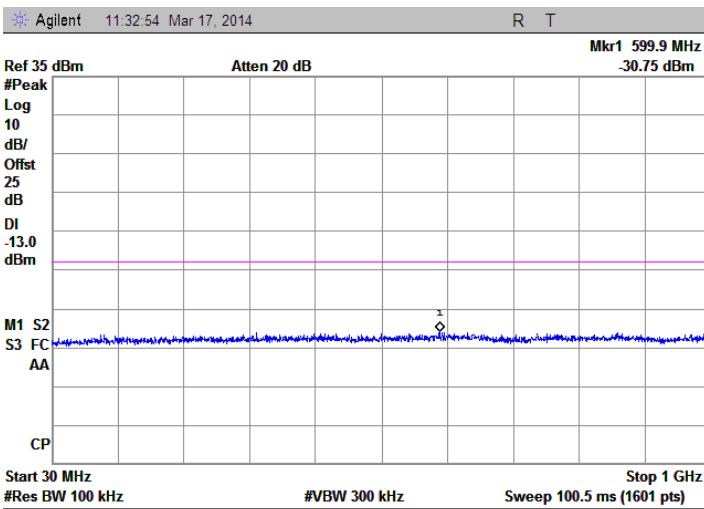




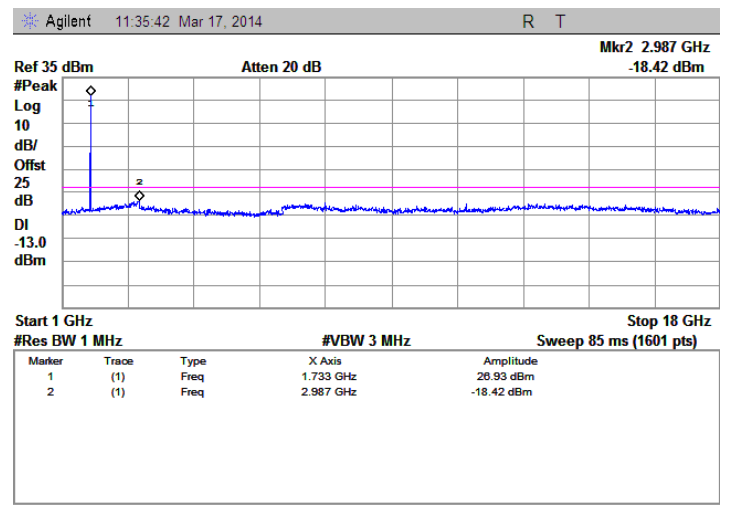
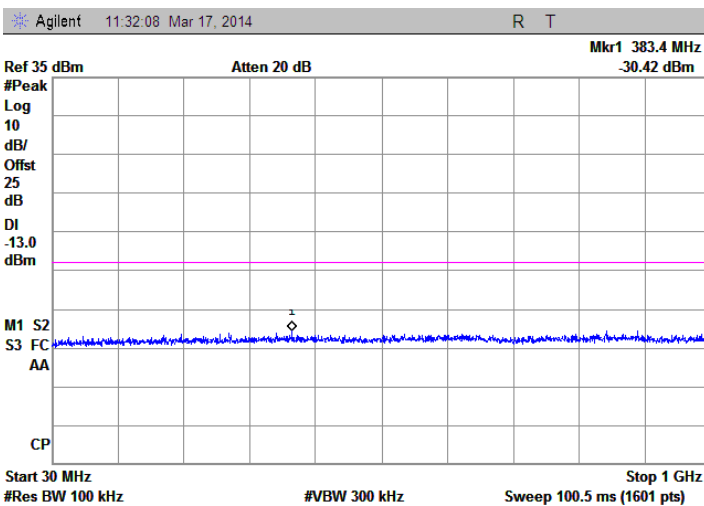
Middle channel:

LTE Band 4 1.4MHz BW, Mid Channel

QPSK



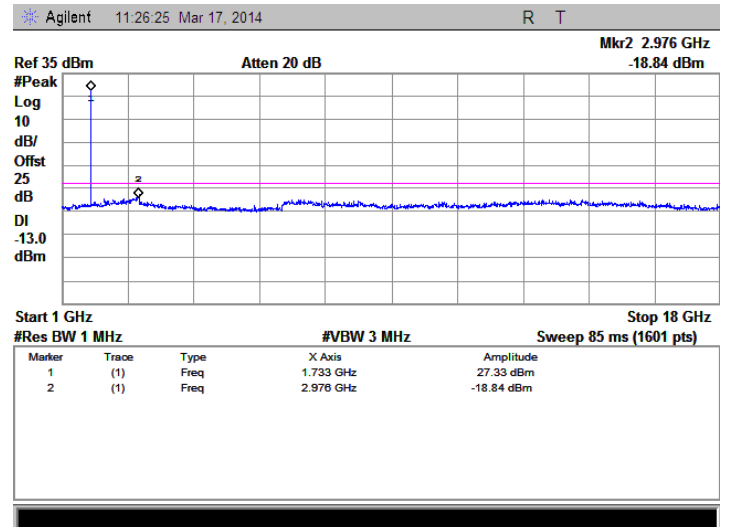
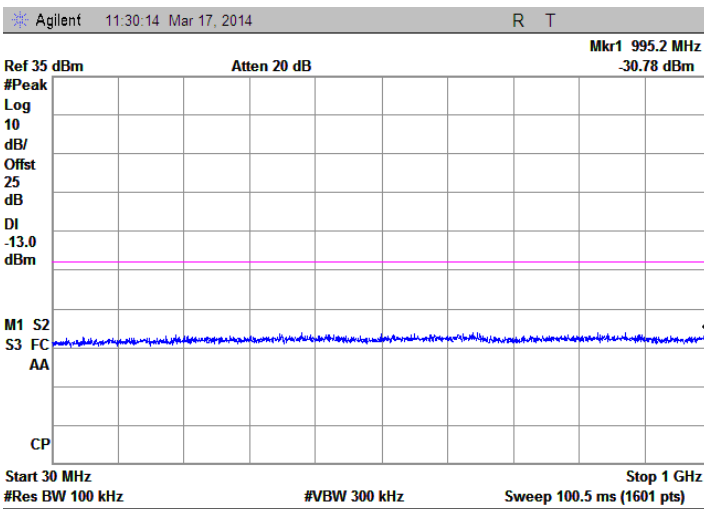
16QAM



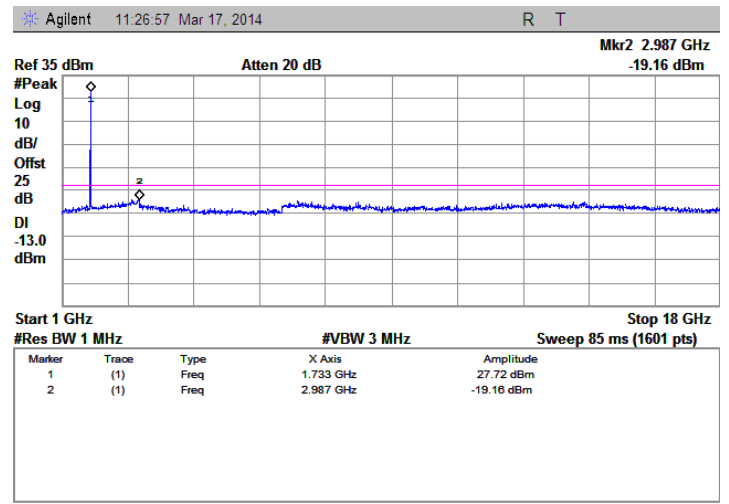
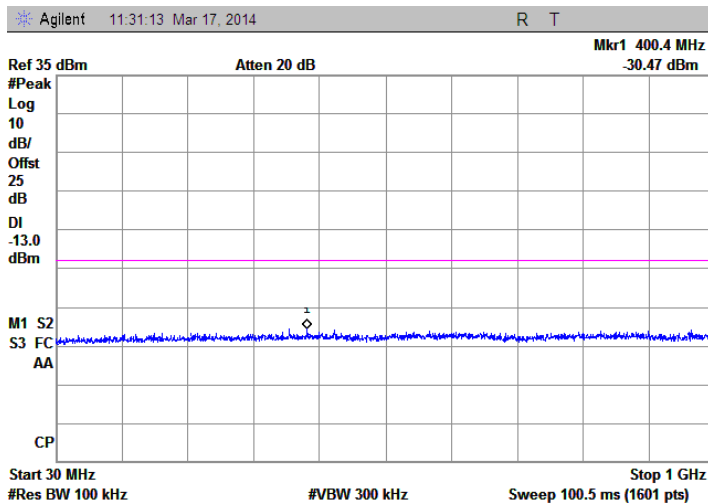


LTE Band 4 3MHz BW, Mid Channel

QPSK



16QAM



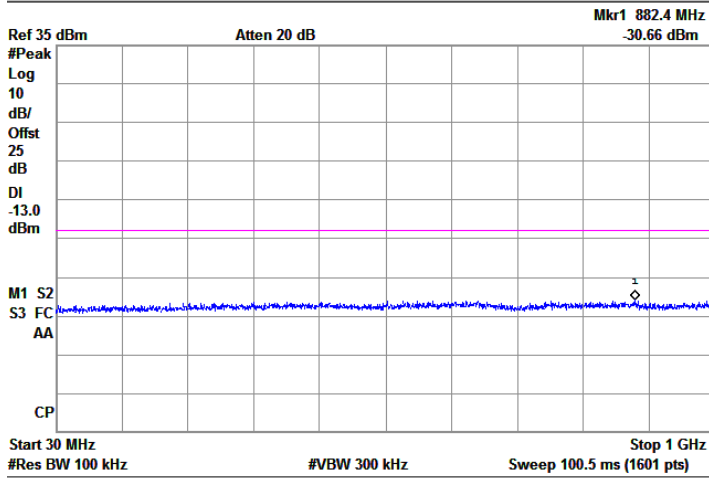


LTE Band 4 5MHz BW, Mid Channel

QPSK

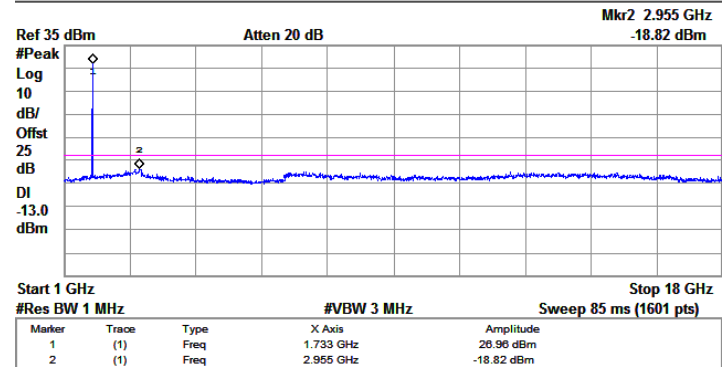
Agilent 11:17:37 Mar 17, 2014

R T



Agilent 11:21:37 Mar 17, 2014

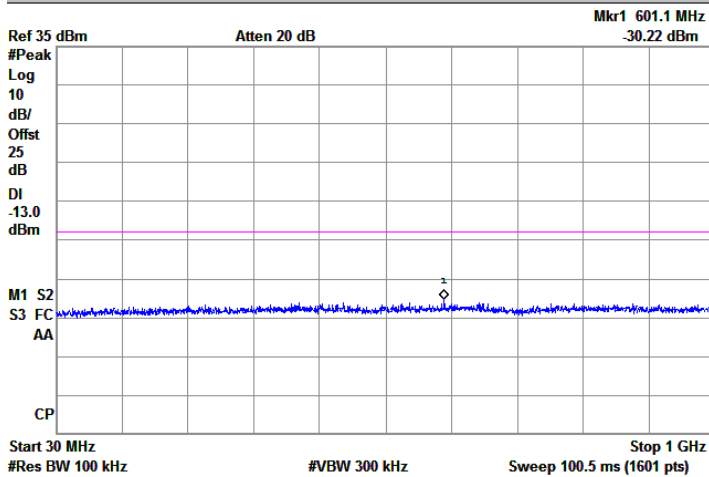
R T



16QAM

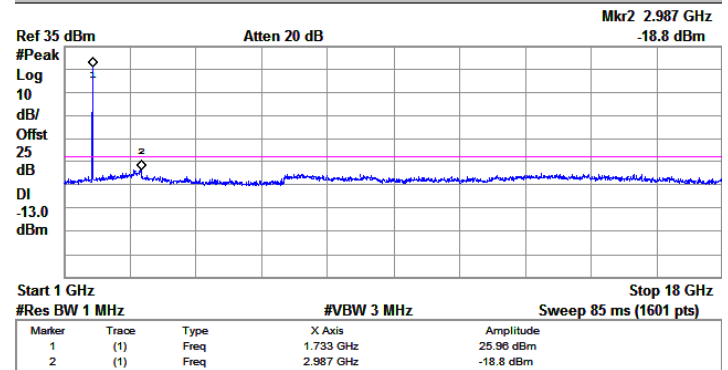
Agilent 11:16:41 Mar 17, 2014

R T



Agilent 11:22:04 Mar 17, 2014

R T





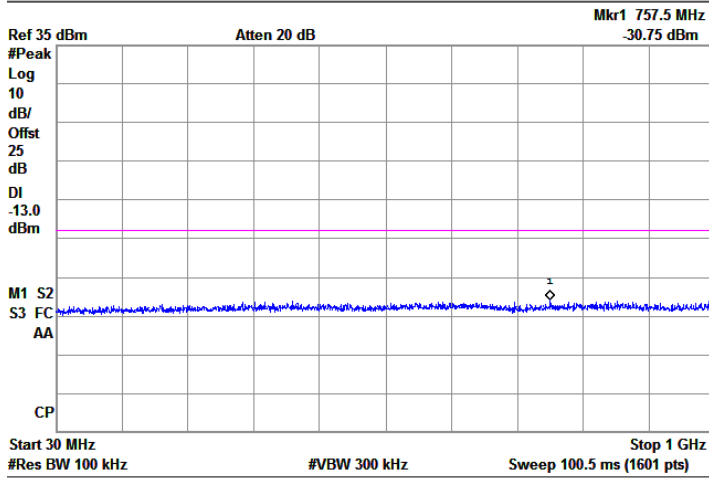
Report No.: SZ14030021W07

LTE Band 4 10MHz BW, Mid Channel

QPSK

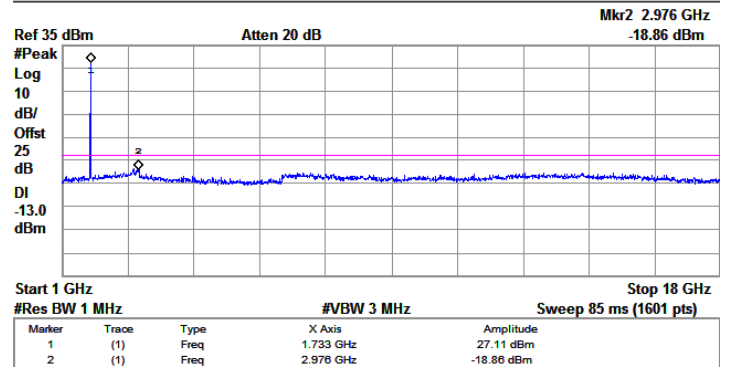
Agilent 11:15:03 Mar 17, 2014

R T



Agilent 11:12:22 Mar 17, 2014

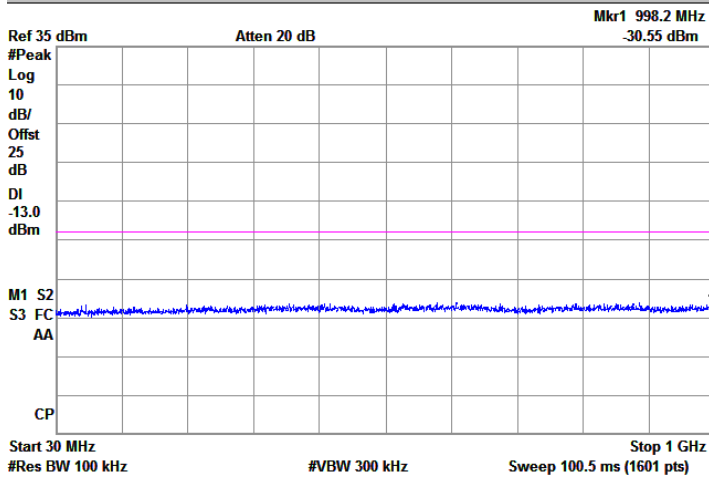
R T



16QAM

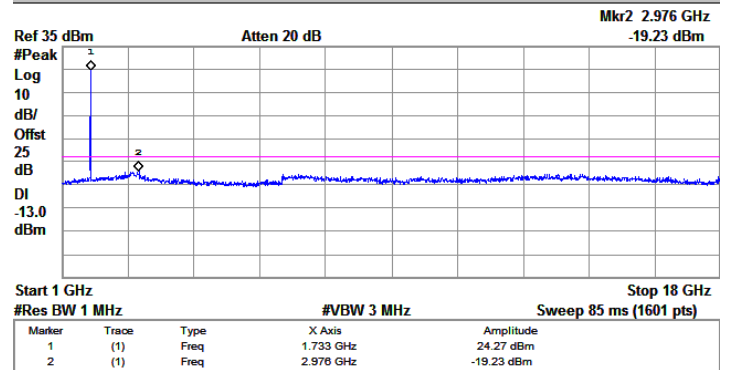
Agilent 11:15:48 Mar 17, 2014

R T



Agilent 11:12:47 Mar 17, 2014

R T





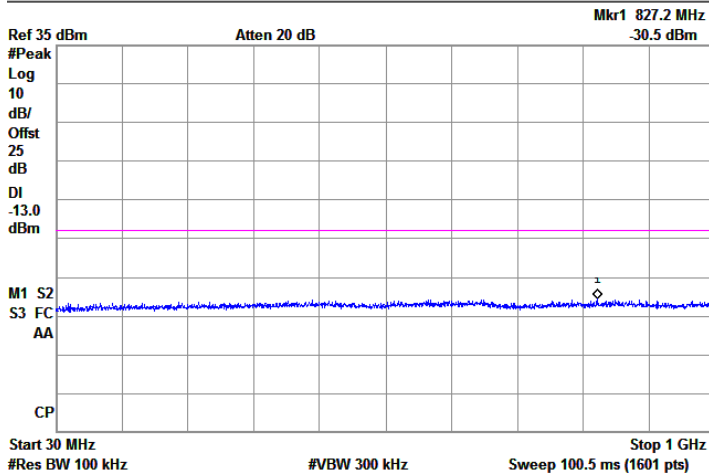
Report No.: SZ14030021W07

LTE Band 4 15MHz BW, Mid Channel

QPSK

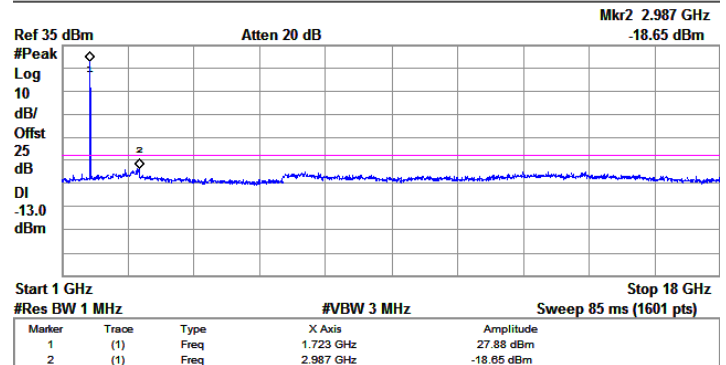
Agilent 11:04:01 Mar 17, 2014

R T



Agilent 11:08:22 Mar 17, 2014

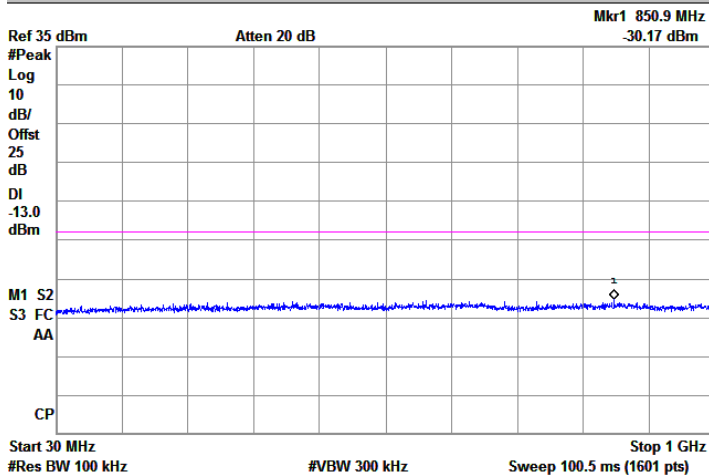
R T



16QAM

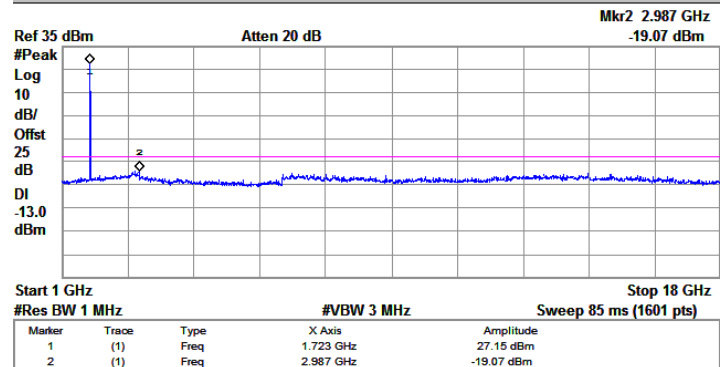
Agilent 11:04:31 Mar 17, 2014

R T



Agilent 11:07:49 Mar 17, 2014

R T

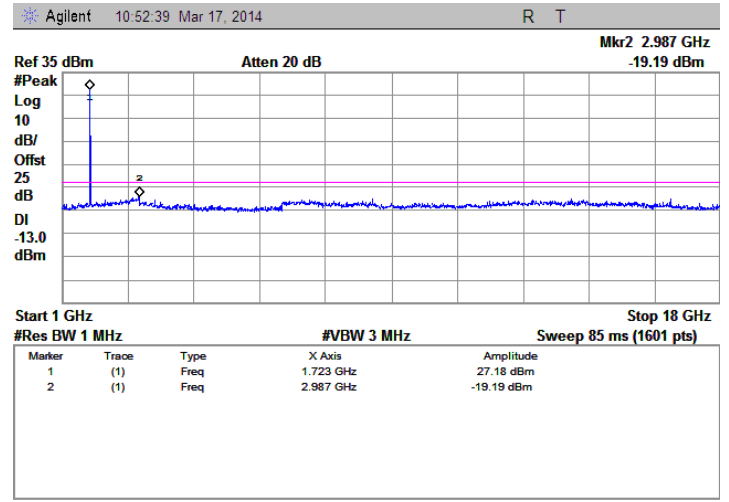
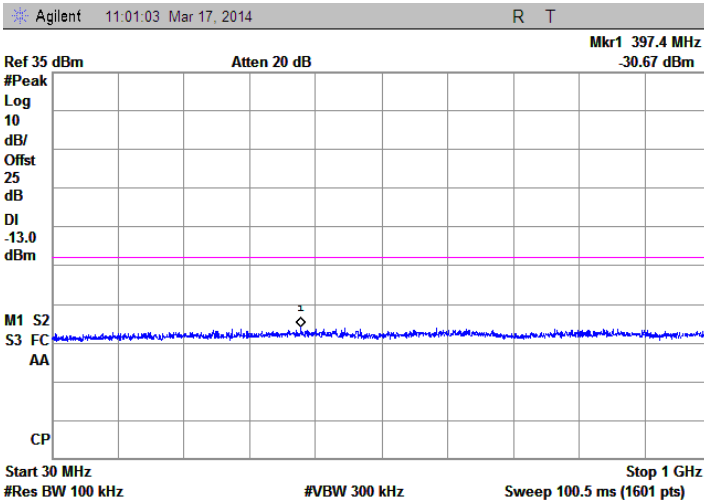




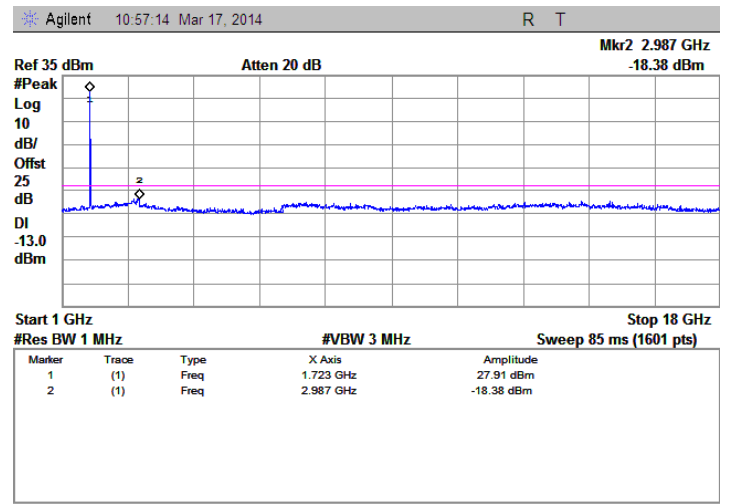
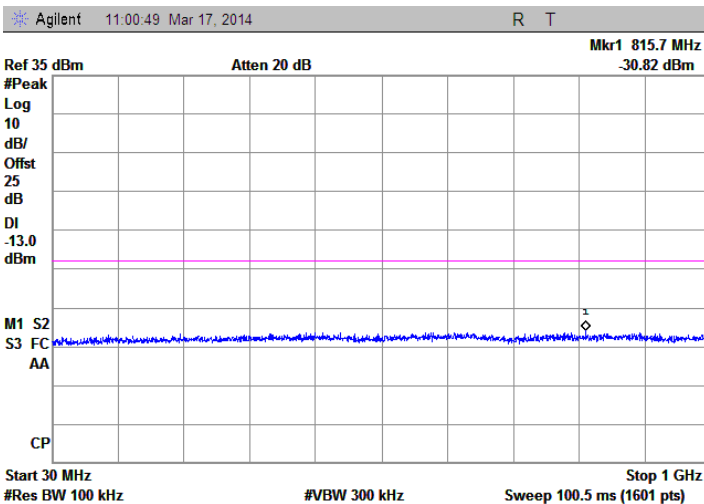
Report No.: SZ14030021W07

LTE Band 4 20MHz BW, Mid Channel

QPSK



16QAM

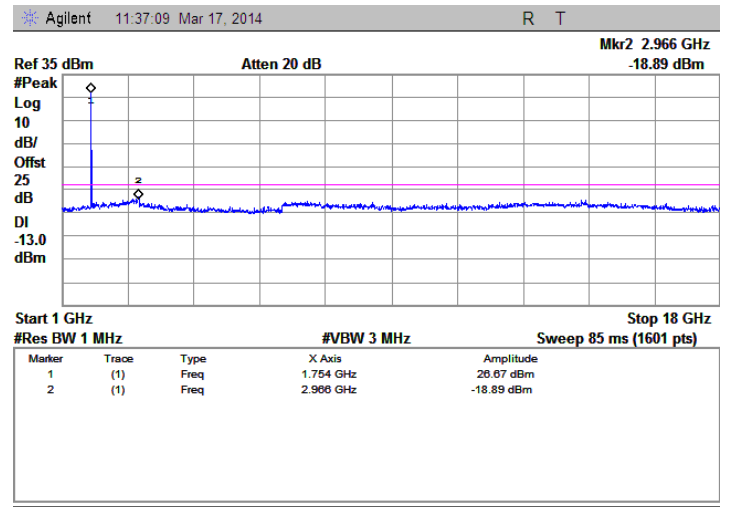
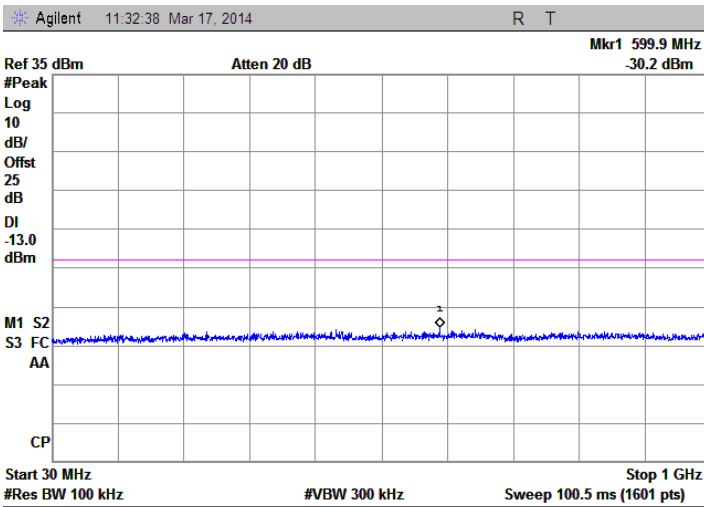




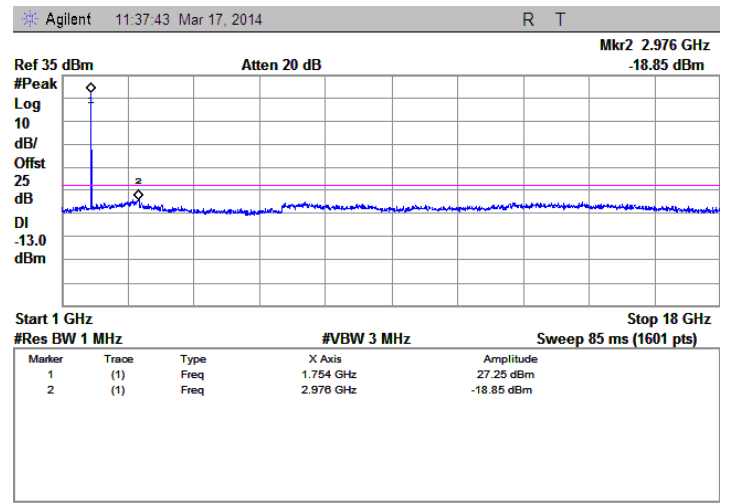
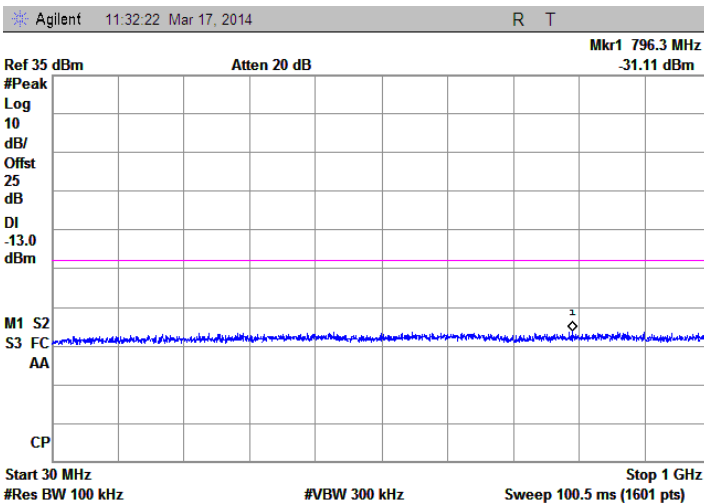
High channel:

LTE Band 4 1.4MHz BW, High Channel

QPSK



16QAM





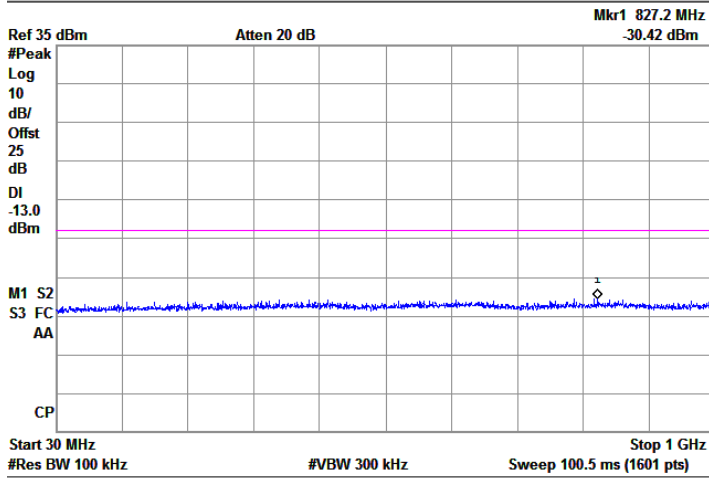
Report No.: SZ14030021W07

LTE Band 4 3MHz BW, High Channel

QPSK

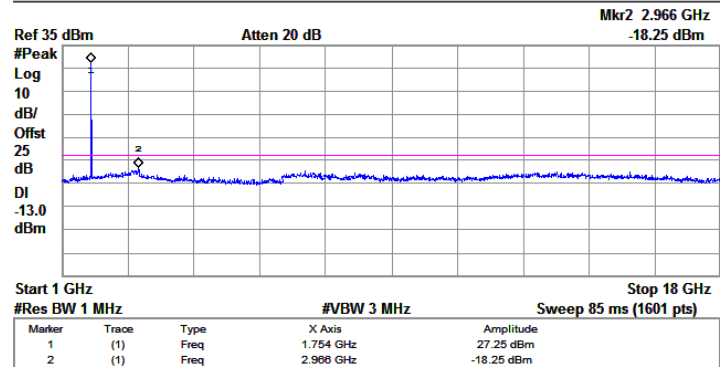
Agilent 11:30:42 Mar 17, 2014

R T



Agilent 11:29:02 Mar 17, 2014

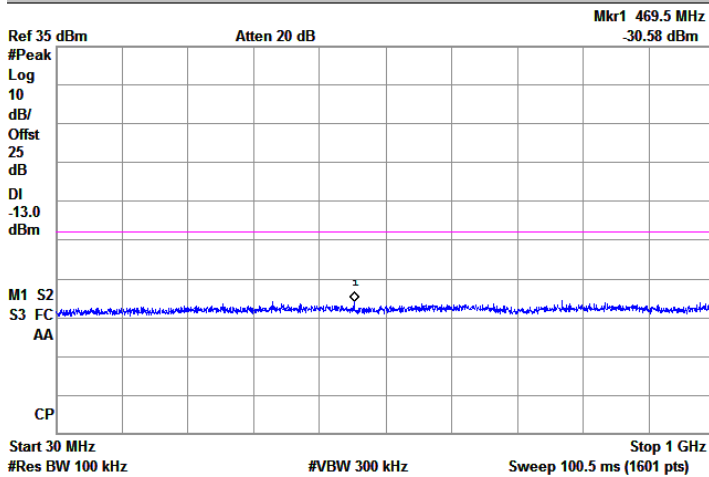
R T



16QAM

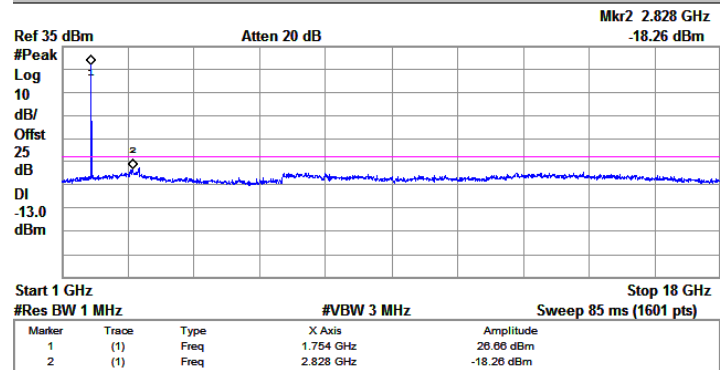
Agilent 11:30:56 Mar 17, 2014

R T



Agilent 11:28:23 Mar 17, 2014

R T





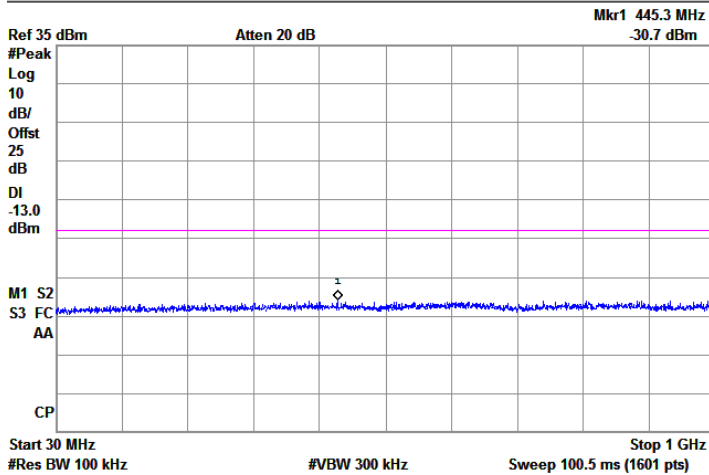
Report No.: SZ14030021W07

LTE Band 4 5MHz BW, High Channel

QPSK

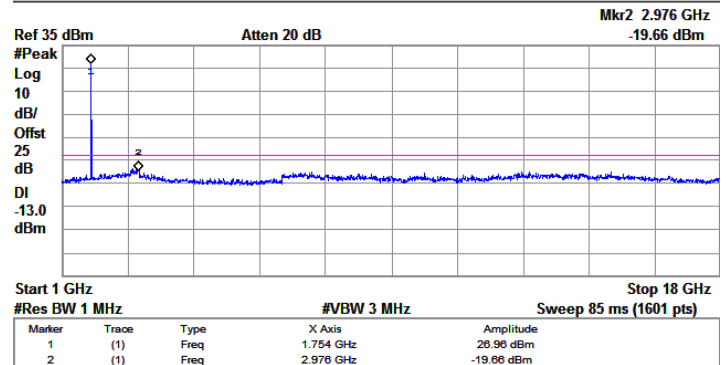
Agilent 11:17:12 Mar 17, 2014

R T



Agilent 11:23:31 Mar 17, 2014

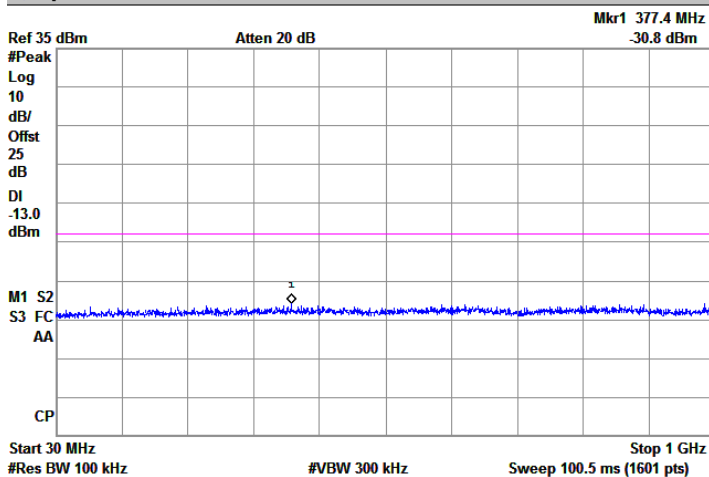
R T



16QAM

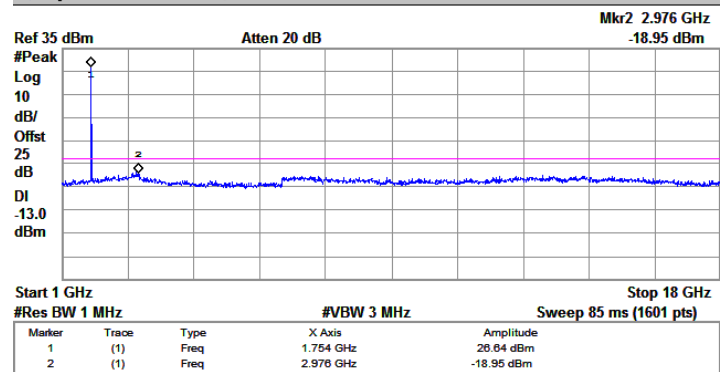
Agilent 11:16:55 Mar 17, 2014

R T



Agilent 11:23:08 Mar 17, 2014

R T

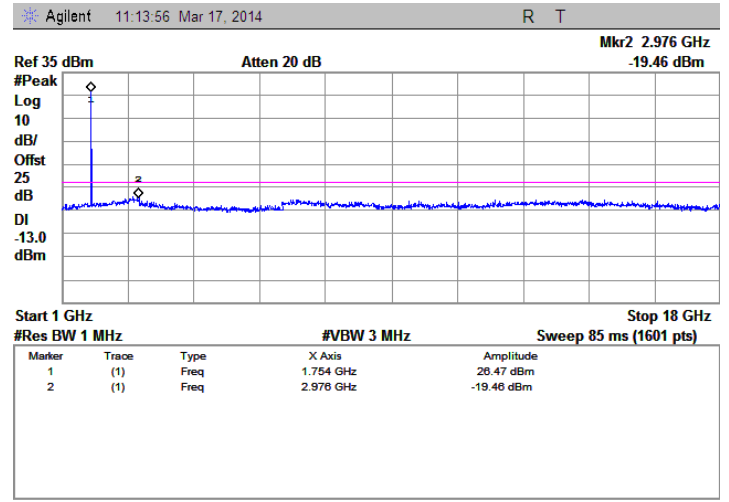
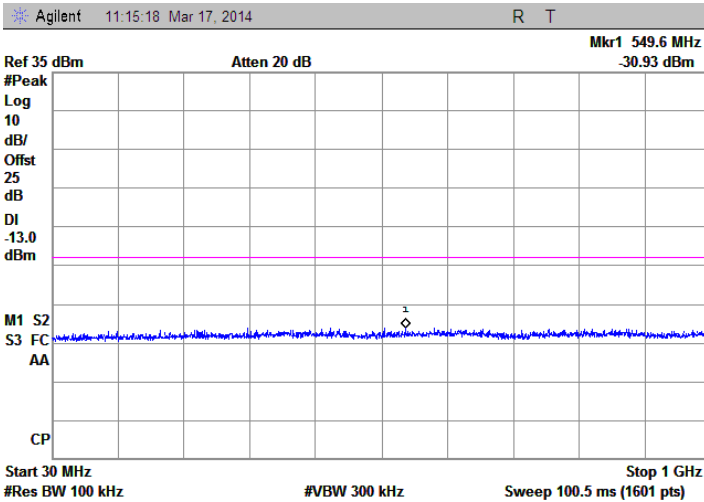




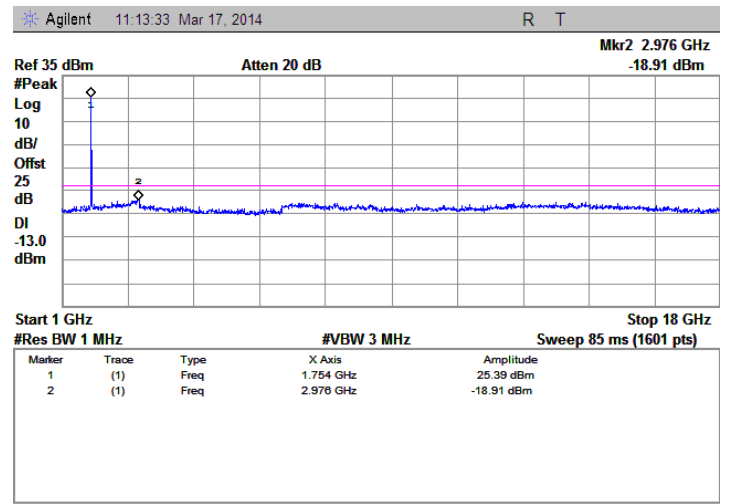
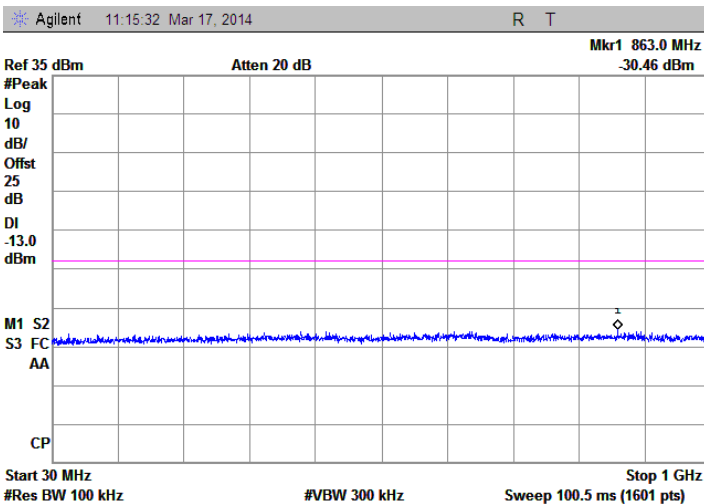
Report No.: SZ14030021W07

LTE Band 4 10MHz BW, High Channel

QPSK



16QAM





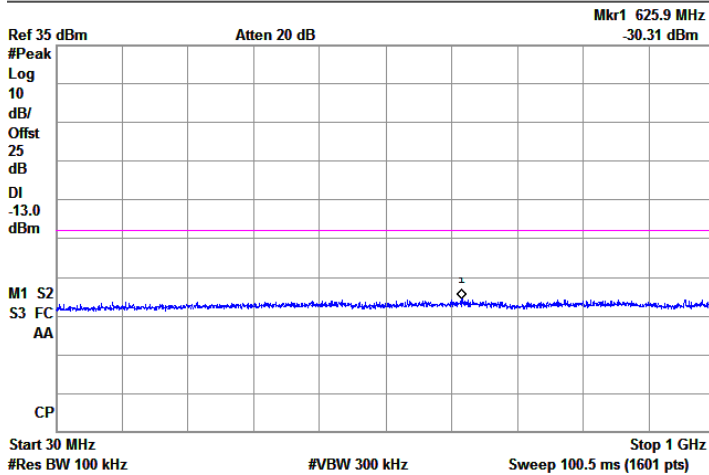
Report No.: SZ14030021W07

LTE Band 4 15MHz BW, High Channel

QPSK

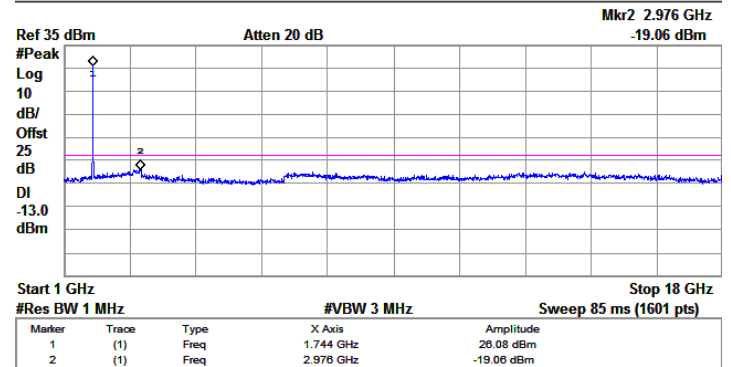
Agilent 11:03:23 Mar 17, 2014

R T



Agilent 11:09:16 Mar 17, 2014

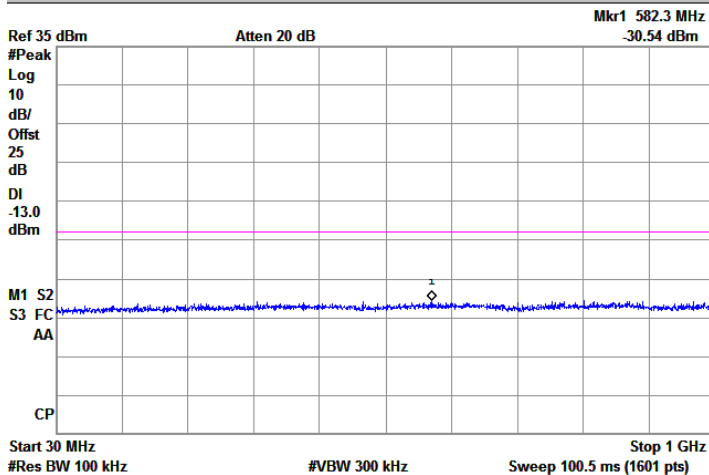
R T



16QAM

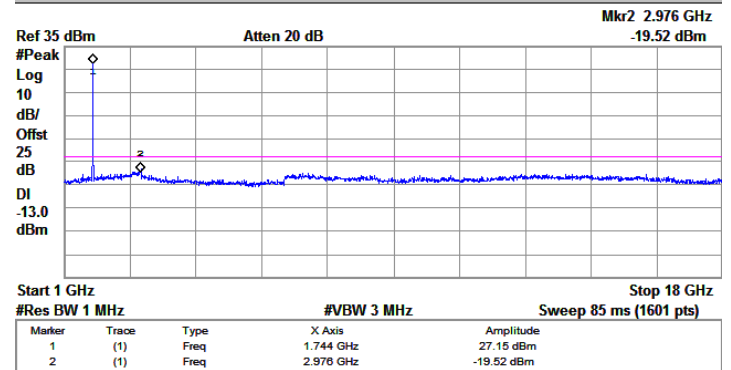
Agilent 11:02:40 Mar 17, 2014

R T



Agilent 11:09:46 Mar 17, 2014

R T





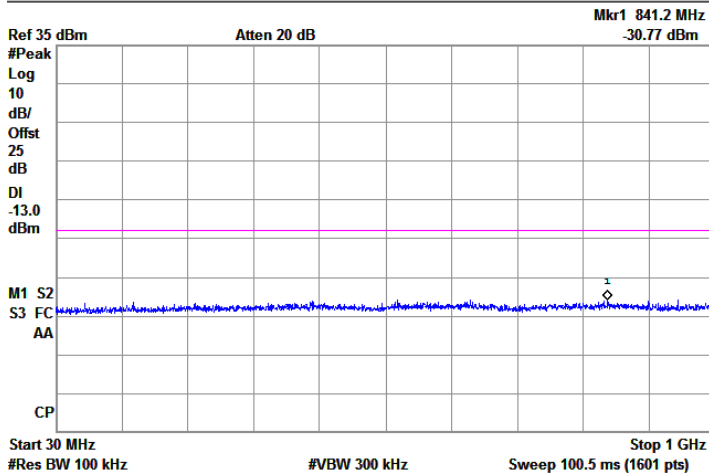
Report No.: SZ14030021W07

LTE Band 4 20MHz BW, High Channel

QPSK

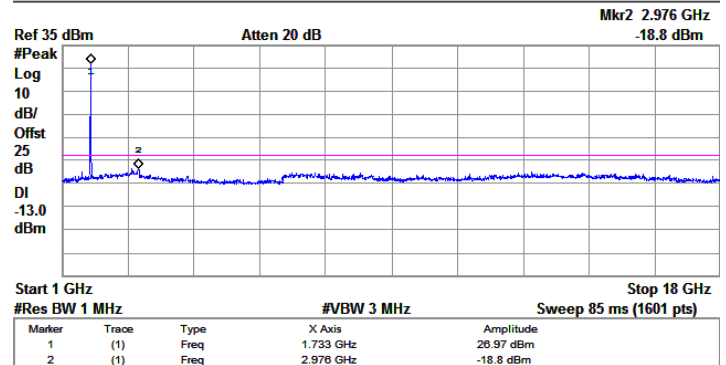
Agilent 10:59:57 Mar 17, 2014

R T



Agilent 10:58:16 Mar 17, 2014

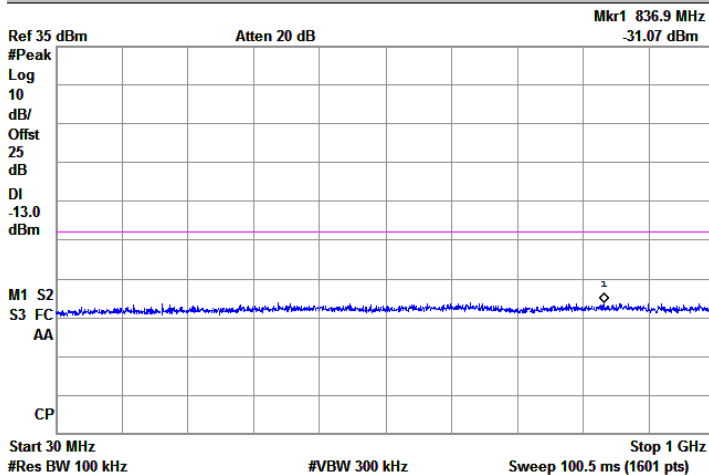
R T



16QAM

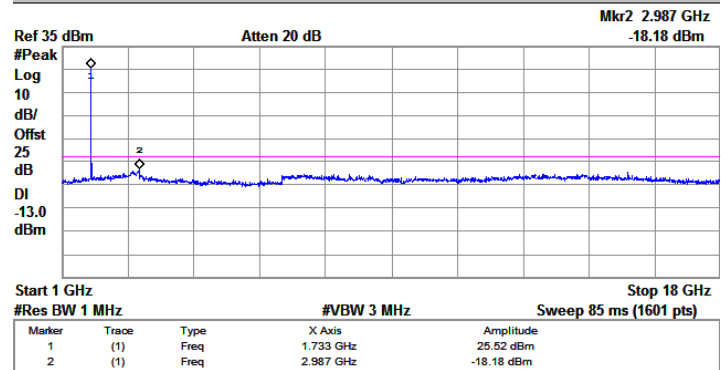
Agilent 10:59:41 Mar 17, 2014

R T



Agilent 10:58:58 Mar 17, 2014

R T



2.6 Band Edge

2.6.1 Requirement

According to FCC section 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 $43 + 10 \log_{10}(P)$ dB.

2.6.2 Test Description

See section 2.1.2 of this report.

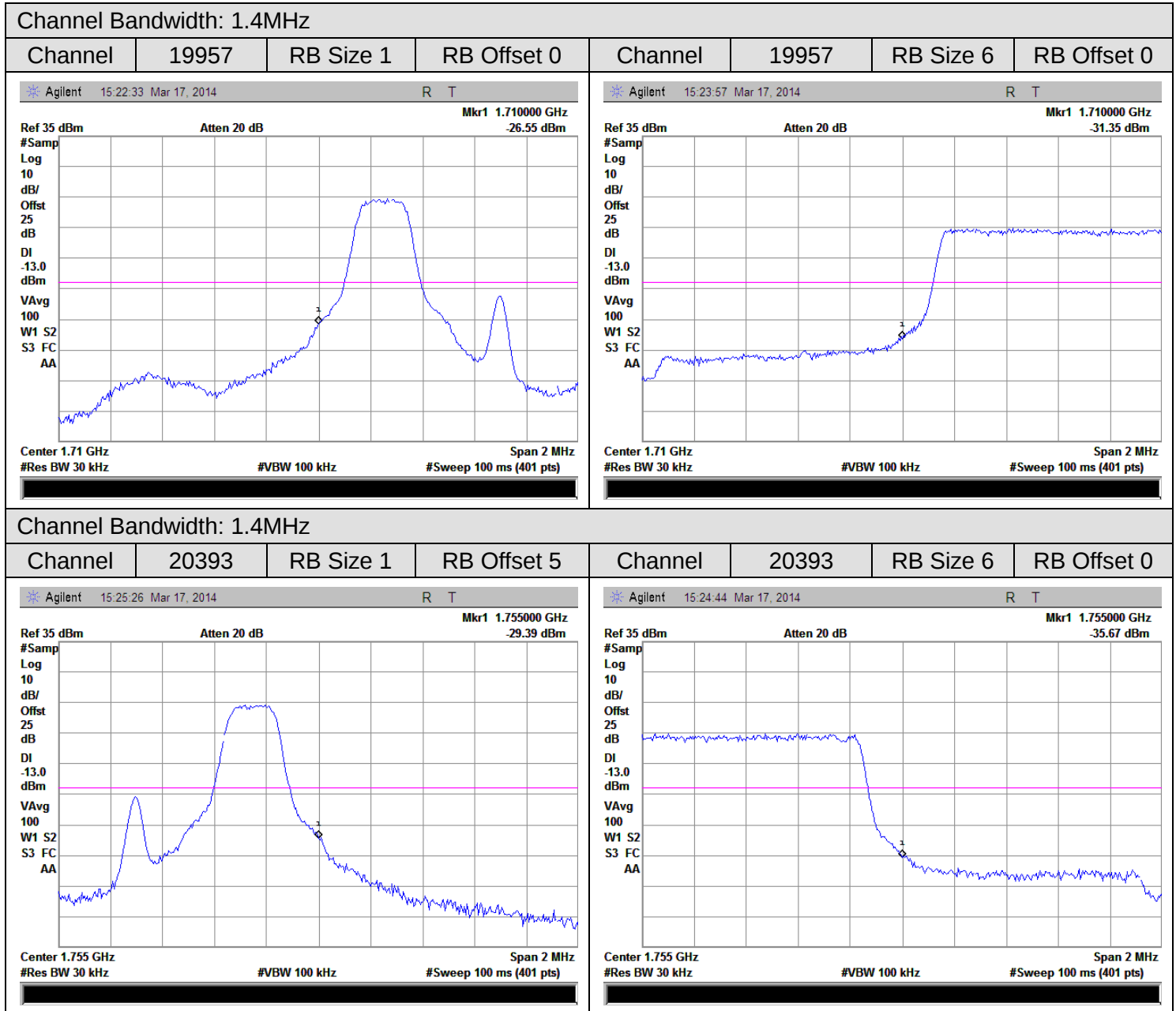
2.6.3 Test Result

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.



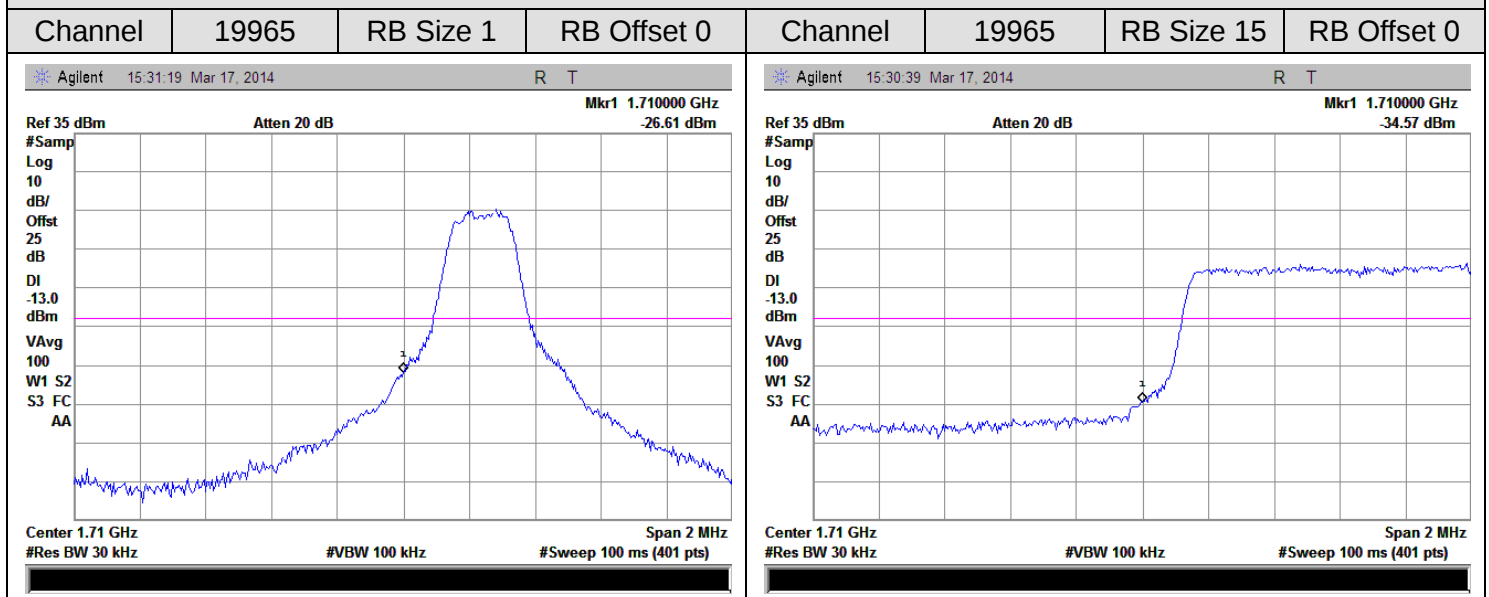
LTE Band 4:



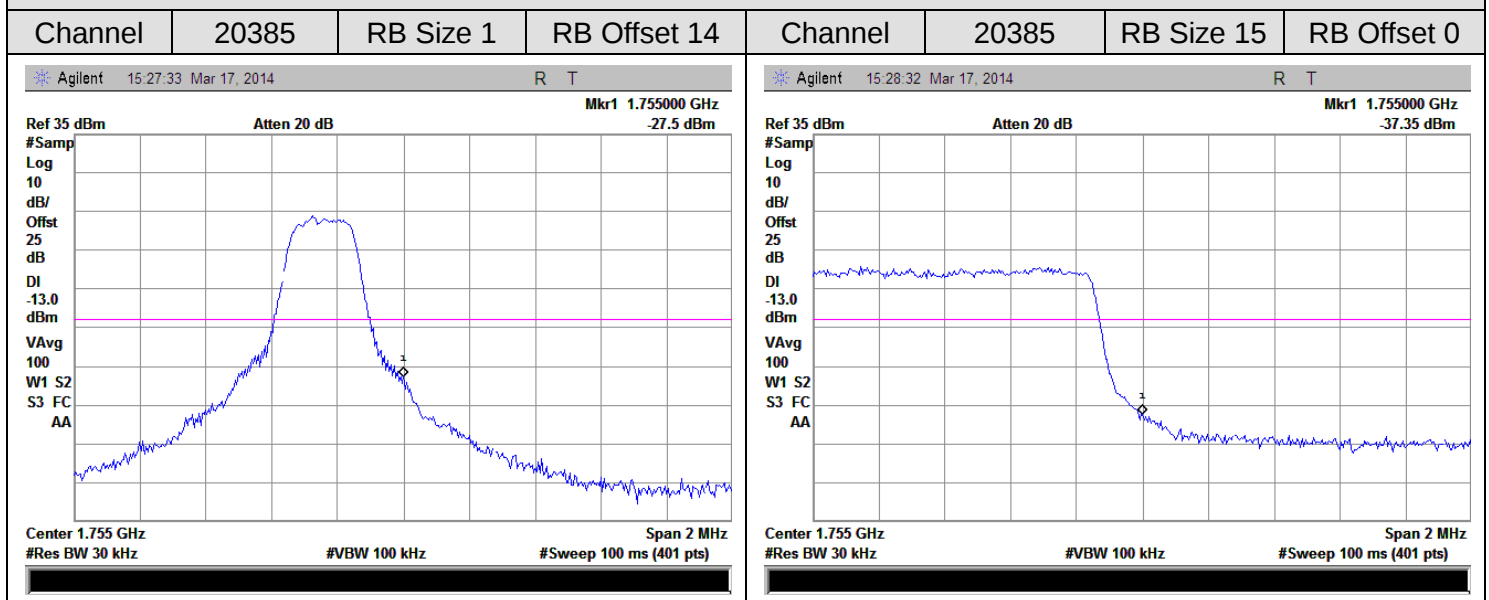


Report No.: SZ14030021W07

Channel Bandwidth: 3MHz



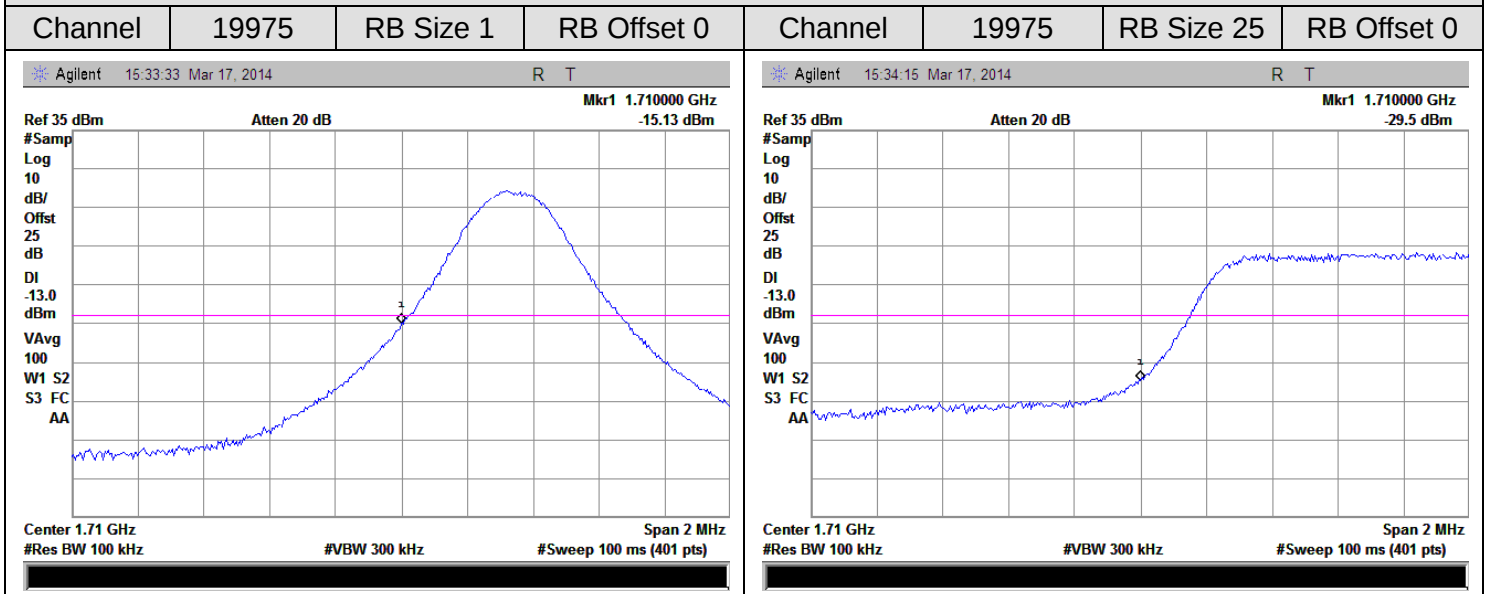
Channel Bandwidth: 3MHz



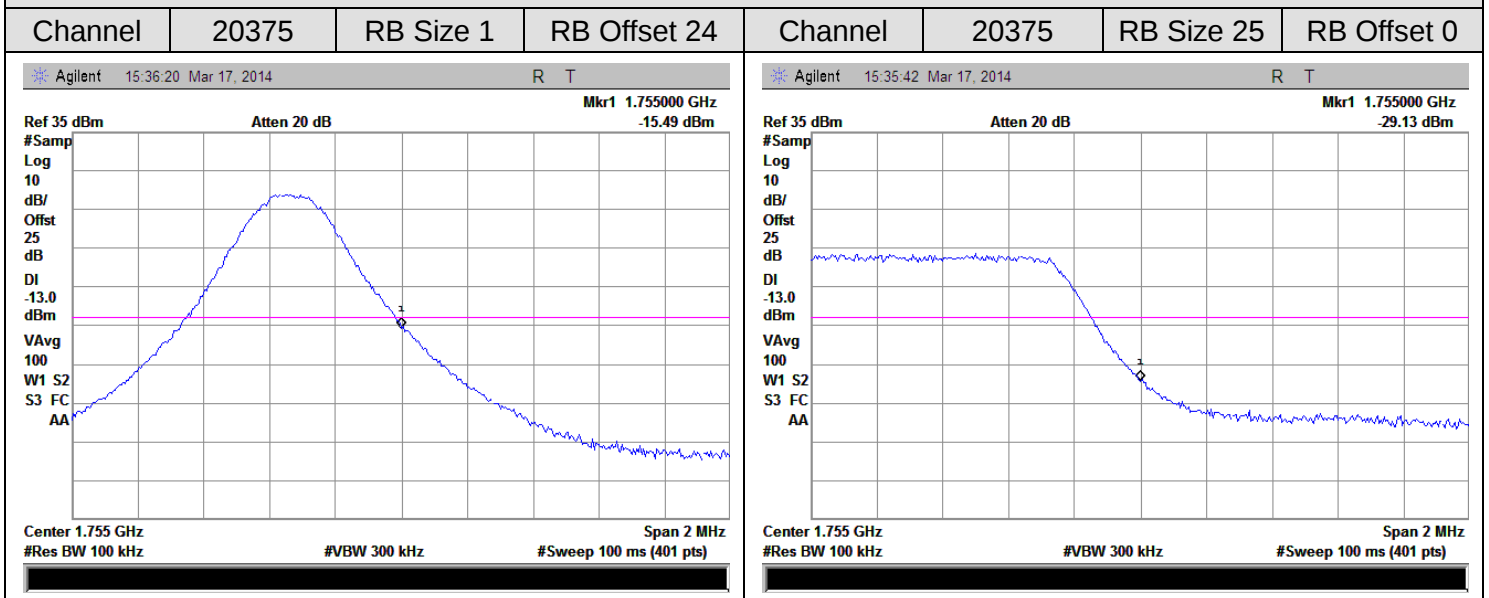


Report No.: SZ14030021W07

Channel Bandwidth: 5MHz



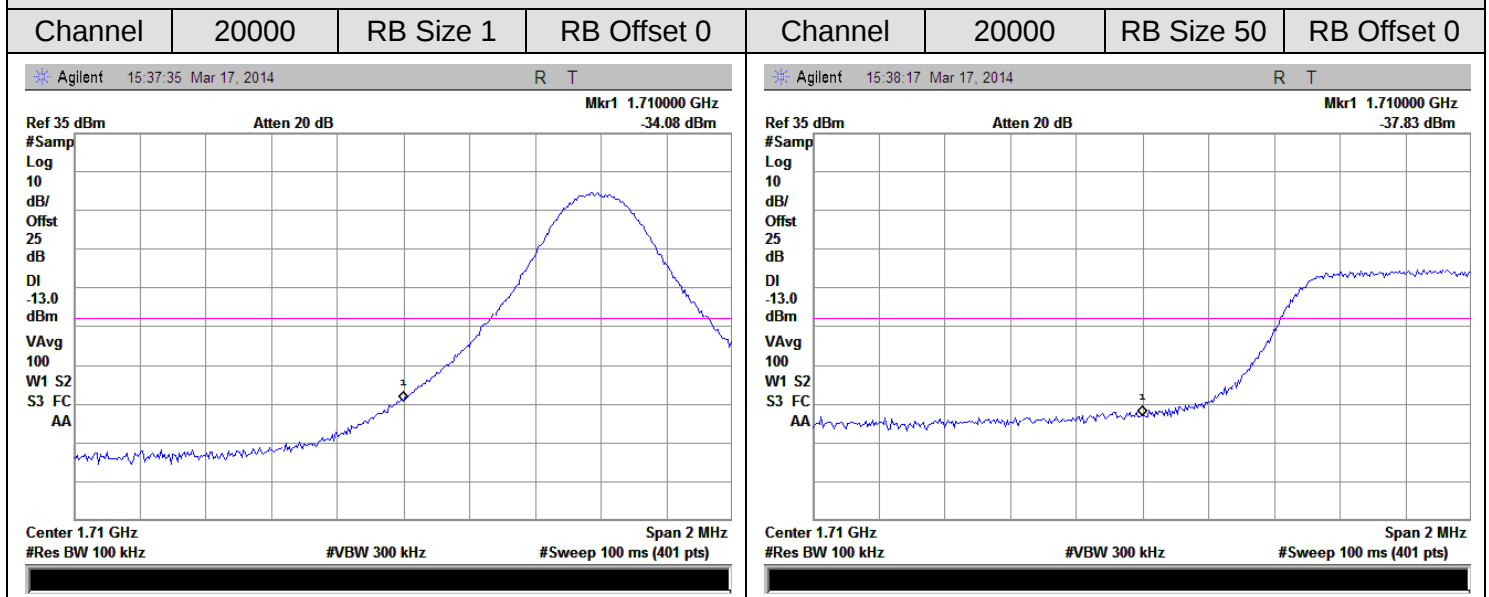
Channel Bandwidth: 5MHz



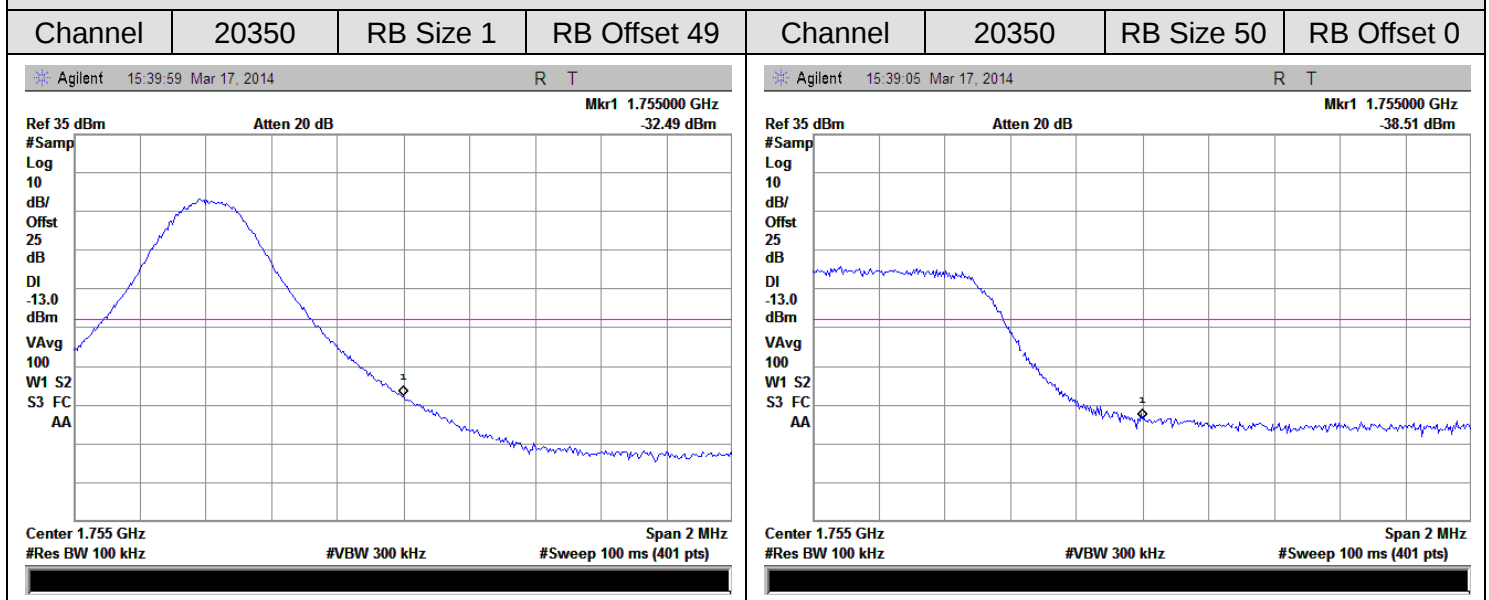


Report No.: SZ14030021W07

Channel Bandwidth: 10MHz



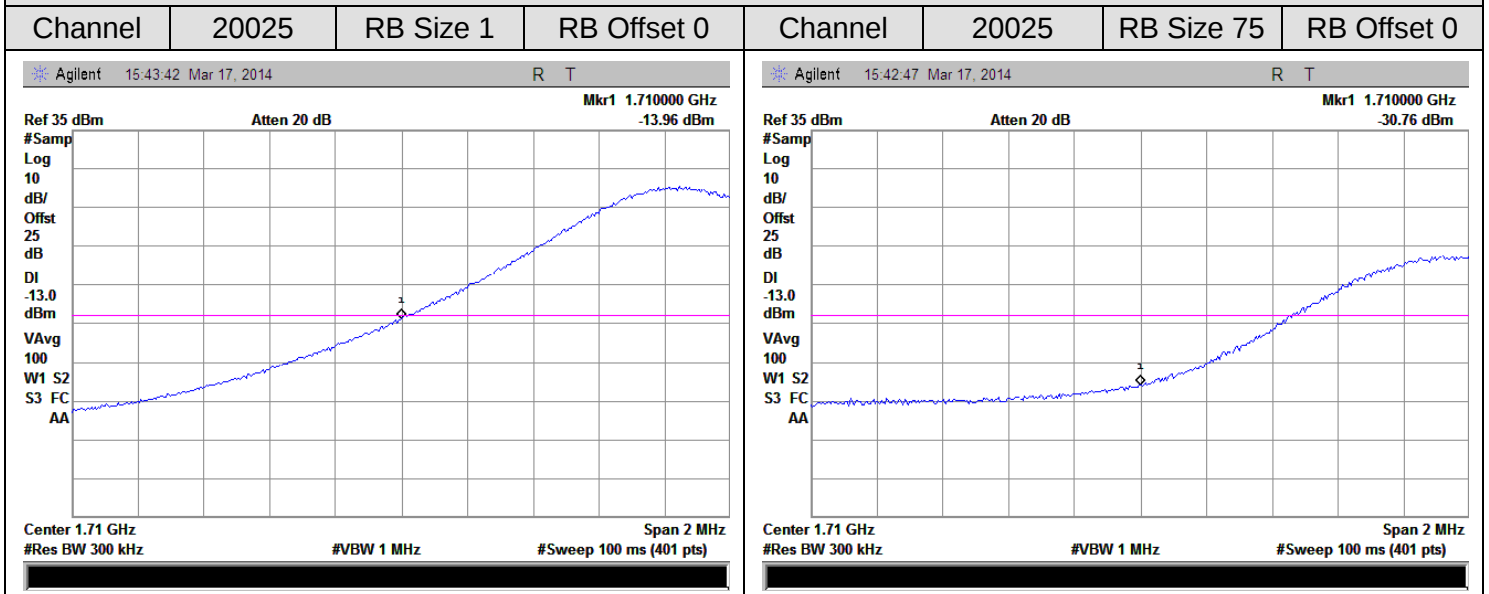
Channel Bandwidth: 10MHz



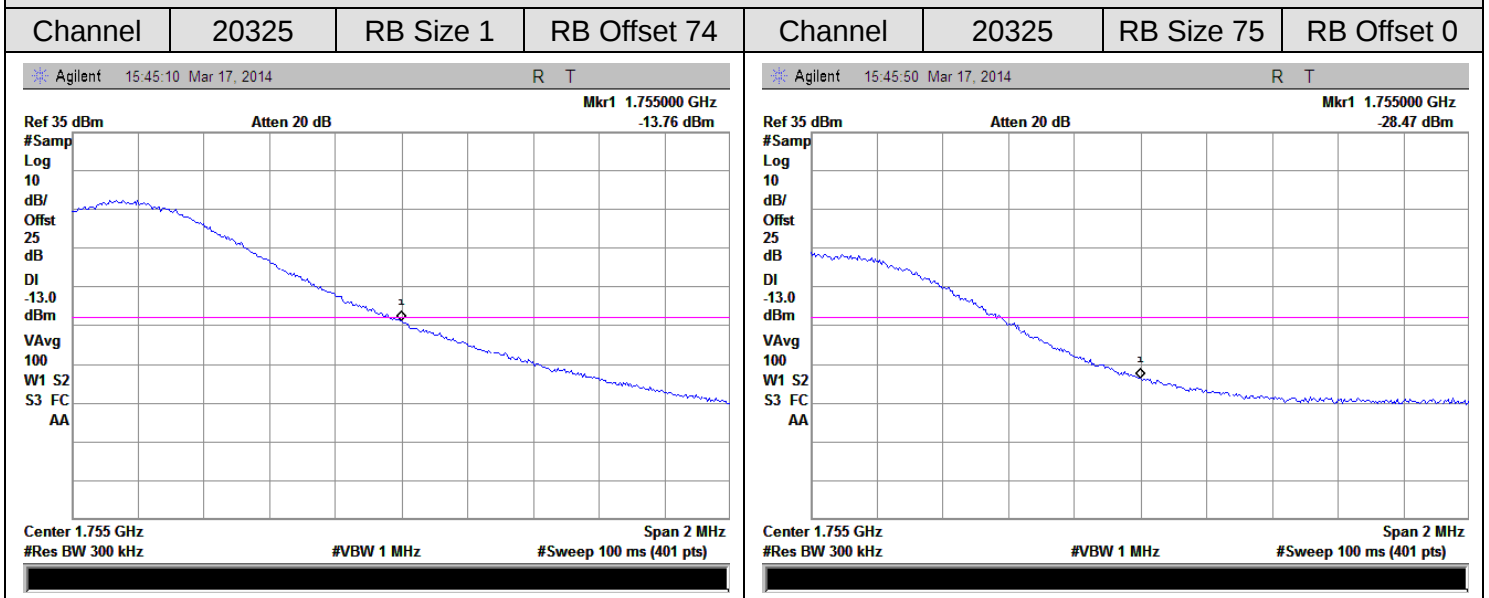


Report No.: SZ14030021W07

Channel Bandwidth: 15MHz



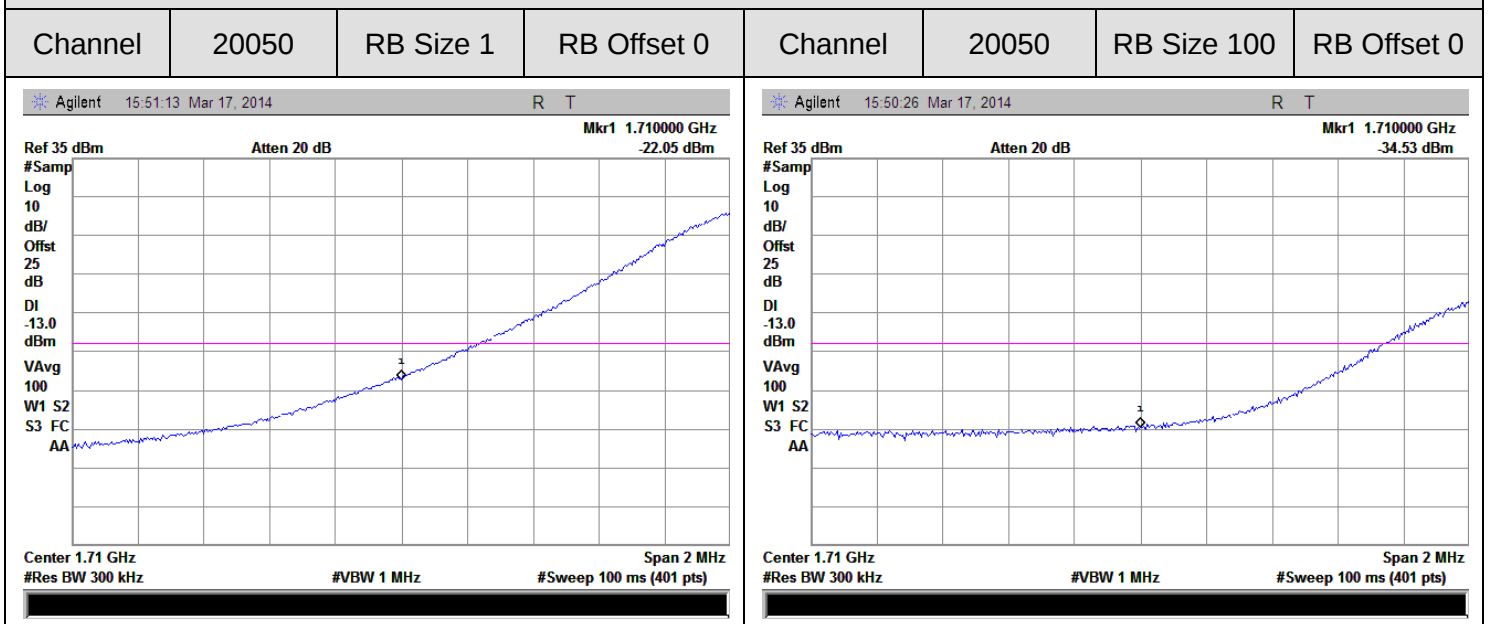
Channel Bandwidth: 15MHz



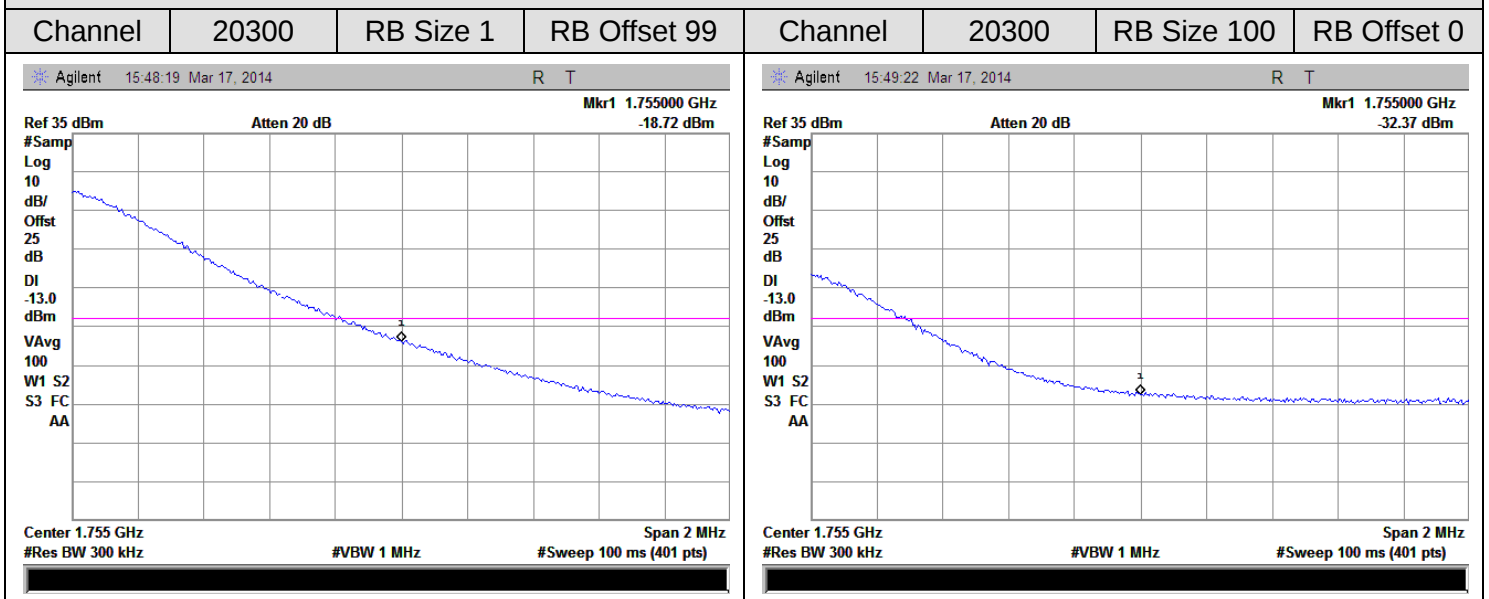


Report No.: SZ14030021W07

Channel Bandwidth: 20MHz



Channel Bandwidth: 20MHz



2.7 Transmitter Radiated Power (EIRP/ERP)

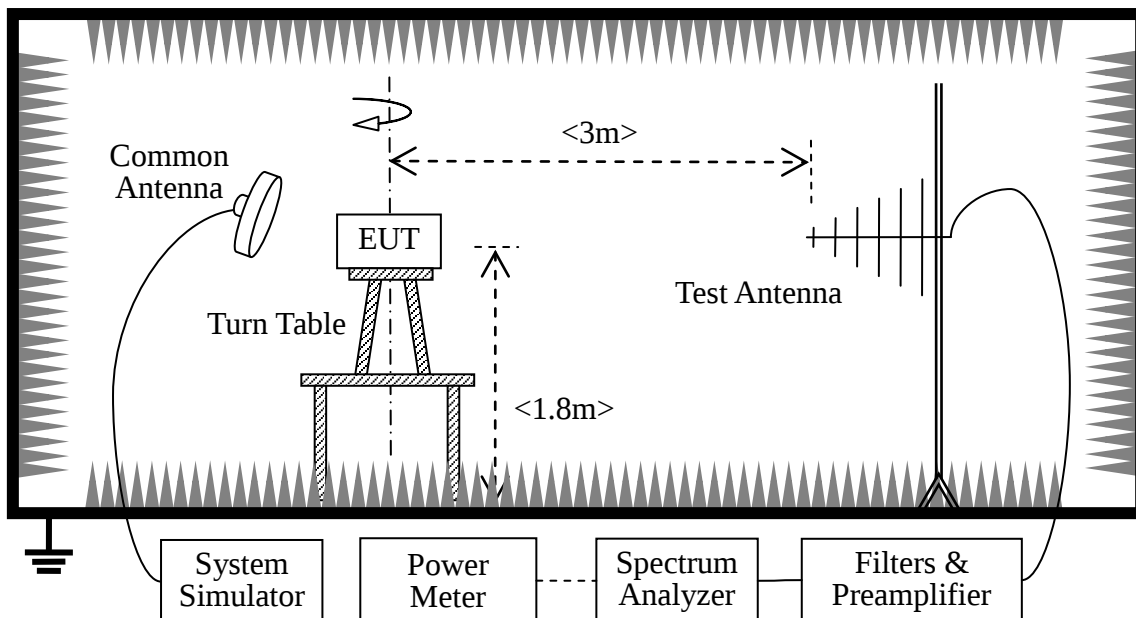
2.7.1 Requirement

According to FCC section 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&	CMW500	1201.0002k50/	2014.02.26	2015.02.25



Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
	Schwarz		124534/wk		
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E4445A	MY44200685	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25

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:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

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

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

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ 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} .



Report No.: SZ14030021W07

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	22.61
					1	49	22.13
					1	99	22.72
					50	0	20.89
					50	25	20.78
					50	49	21.32
					100	0	21.09
				16-QAM	1	0	20.87
					1	49	20.78
					1	99	21.68
					50	0	21.52
					50	25	21.14
					50	49	21.12
					100	0	20.46
		M 20175	1732.5	QPSK	1	0	22.81
					1	49	22.92
					1	99	22.94
					50	0	22.04
					50	25	22.12
					50	49	22.76
					100	0	20.49
				16-QAM	1	0	23.34
					1	49	21.42
					1	99	22.69
					50	0	22.41
					50	25	22.17
					50	49	22.56
					100	0	23.41
		H 20300	1745	QPSK	1	0	22.53
					1	49	22.34
					1	99	23.08
					50	0	23.61
					50	25	23.12
					50	49	23.34
					100	0	23.41
				16-QAM	1	0	22.98
					1	49	23.12



Report No.: SZ14030021W07

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
	15MHz				1	99	22.83
					50	0	22.32
					50	25	22.12
					50	49	22.44
					100	0	21.67
		L 20025	1717.5	QPSK	1	0	22.84
					1	37	23.12
					1	74	23.35
					36	0	23.14
					36	18	23.26
					36	35	22.34
					75	0	21.62
				16-QAM	1	0	22.26
					1	37	22.23
					1	74	22.67
					36	0	22.54
					36	18	21.98
					36	35	21.12
					75	0	21.51
		M 20175	1732.5	QPSK	1	0	23.78
					1	37	23.21
					1	74	23.64
					36	0	23.89
					36	18	22.76
					36	35	23.23
					75	0	22.62
				16-QAM	1	0	22.94
					1	37	23.78
					1	74	23.31
					36	0	22.98
					36	18	22.65
					36	35	22.34
					75	0	21.35
		H 20325	1747.5	QPSK	1	0	23.41
					1	37	23.76
					1	74	23.81
					36	0	23.34



Report No.: SZ14030021W07

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					36	18	23.13
					36	35	22.87
					75	0	22.38
				16-QAM	1	0	22.84
					1	37	23.43
					1	74	23.19
					36	0	23.46
					36	18	23.32
					36	35	22.34
					75	0	22.82
	10MHz	L 20000	1715	QPSK	1	0	23.03
					1	24	23.08
					1	49	23.51
					25	0	23.03
					25	12	22.12
					25	24	22.65
					50	0	21.85
				16-QAM	1	0	23.64
					1	24	23.01
					1	49	23.8
					25	0	23.34
					25	12	23.54
					25	24	21.87
					50	0	20.83
		M 20175	1732.5	QPSK	1	0	24.06
					1	24	24.05
					1	49	23.66
					25	0	22.54
					25	12	23.34
					25	24	24.64
					50	0	23.32
				16-QAM	1	0	23.05
					1	24	23.03
					1	49	23.44
					25	0	22.43
					25	12	22.64
					25	24	23.75



Report No.: SZ14030021W07

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
		H 20350	1750	QPSK	50	0	22.03
					1	0	22.84
					1	24	22.67
					1	49	22.96
					25	0	23.34
					25	12	23.78
					25	24	24.54
					50	0	23.05
				16-QAM	1	0	21.88
					1	24	22.65
					1	49	22.21
					25	0	22.34
					25	12	21.85
					25	24	22.43
					50	0	21.69
	5MHz	L 19975	1712.5	QPSK	1	0	23.63
					1	12	23.53
					1	24	23.54
					12	0	23.87
					12	6	22.64
					12	11	23.42
					25	0	22.51
				16-QAM	1	0	22.33
					1	12	23.64
					1	24	23.04
					12	0	23.74
					12	6	23.53
					12	11	22.24
					25	0	21.33
		M 20175	1732.5	QPSK	1	0	23.65
					1	12	23.23
					1	24	23.44
					12	0	23.43
					12	6	23.68
					12	11	23.43
					25	0	22.25
				16-QAM	1	0	22.38



Report No.: SZ14030021W07

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					1	12	22.18
					1	24	22.94
					12	0	22.89
					12	6	23.43
					12	11	22.43
					25	0	21.88
		H 20375	1752.5	QPSK	1	0	23.09
					1	12	23.37
					1	24	23.27
					12	0	23.87
					12	6	23.67
					12	11	24.23
					25	0	23.07
				16-QAM	1	0	23.6
					1	12	23.74
					1	24	23.83
					12	0	23.34
					12	6	22.36
					12	11	22.57
					25	0	21.46
	3MHz	L 19965	1711.5	QPSK	1	0	23.69
					1	7	23.34
					1	14	23.84
					8	0	23.65
					8	4	23.85
					8	7	23.45
					15	0	22.35
				16-QAM	1	0	23.39
					1	7	22.65
					1	14	23.95
					8	0	23.54
					8	4	22.45
					8	7	22.56
					15	0	21.63
		M 20175	1732.5	QPSK	1	0	23.81
					1	7	23.05
					1	14	23.34



Report No.: SZ14030021W07

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					8	0	23.54
					8	4	23.76
					8	7	22.54
					15	0	21.88
				16-QAM	1	0	22.06
					1	7	22.43
					1	14	22.21
					8	0	23.23
					8	4	22.76
					8	7	22.65
					15	0	21.35
		H 20385	1753.5	QPSK	1	0	21.66
					1	7	23.78
					1	14	23.64
					8	0	23.43
					8	4	22.56
					8	7	23.74
					15	0	22.09
				16-QAM	1	0	23.81
					1	7	23.65
					1	14	23.45
					8	0	22.89
					8	4	23.21
					8	7	22.78
					15	0	21.66
	1.4MHz	L 19957	1710.7	QPSK	1	0	23.26
					1	2	23.58
					1	5	23.51
					3	0	23.92
					3	1	23.62
					3	2	23.34
					6	0	22.39
				16-QAM	1	0	23.22
					1	2	22.34
					1	5	23.13
					3	0	23.74
					3	1	23.83



Report No.: SZ14030021W07

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					3	2	22.76
					6	0	21.55
		M 20175	1732.5	QPSK	1	0	23.88
					1	2	24.98
					1	5	24.11
					3	0	24.34
					3	1	24.45
					3	2	24.85
					6	0	23.16
				16-QAM	1	0	22.98
					1	2	23.09
					1	5	23.55
					3	0	23.77
					3	2	23.34
					3	5	23.48
					6	0	22.51
		H 20393	1754.5	QPSK	1	0	23.85
					1	2	23.48
					1	5	23.77
					3	0	23.38
					3	1	23.74
					3	2	22.98
					6	0	22.53
				16-QAM	1	0	23.2
					1	2	23.68
					1	5	22.93
					3	0	22.38
					3	1	22.73
					3	2	22.98
					6	0	21.85

2.8 Radiated Spurious Emissions

2.8.1 Requirement

According to FCC section 2.1053 and section 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

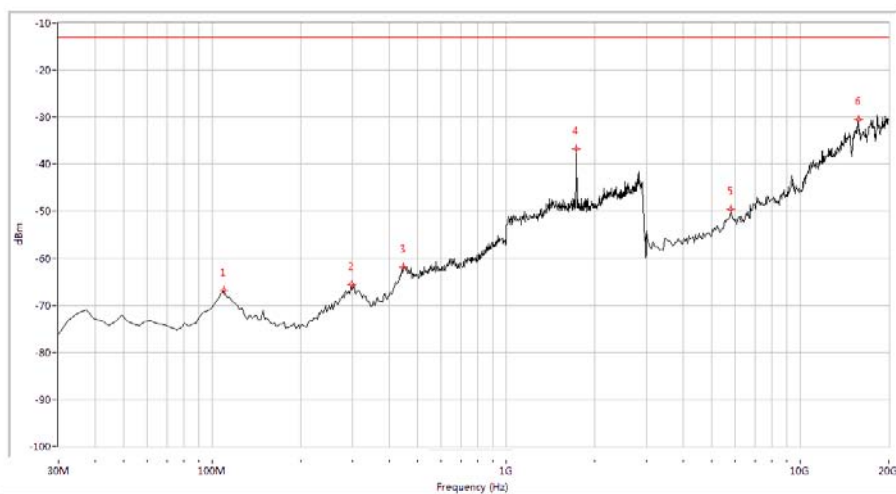
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified.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

Test Plots for the Whole Measurement Frequency Range:

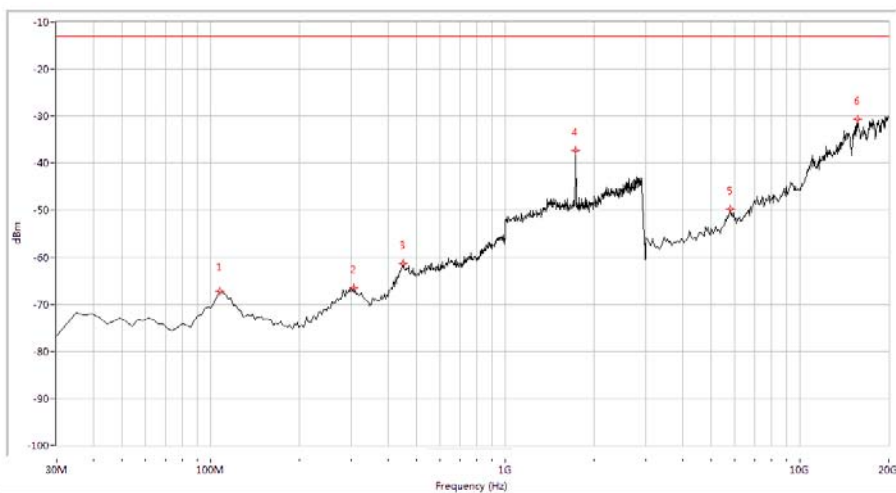
Note1: the power of the EUT transmitting frequency should be ignored.

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 4 1.4MHz BW, Mid Channel, QPSK

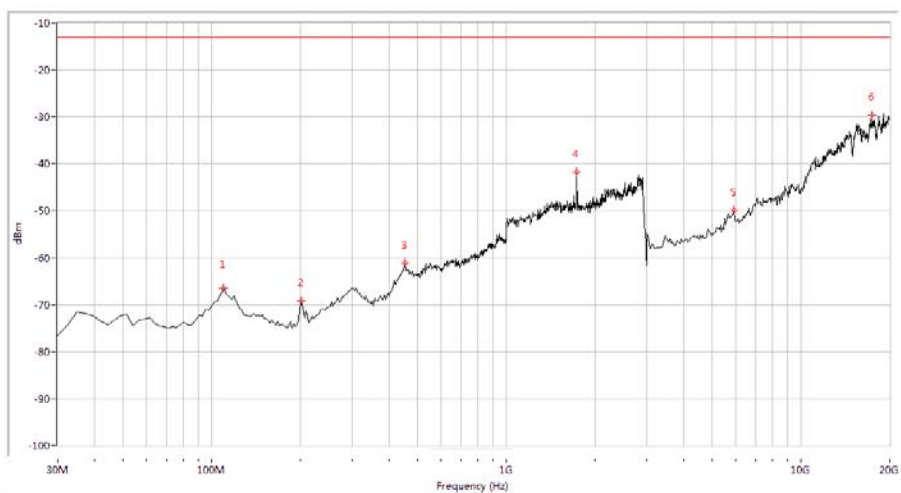


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-66.83	-13.0	53.8	163.5	Horizontal	<u>PASS</u>
298.504	-65.61	-13.0	52.6	78.4	Horizontal	<u>PASS</u>
446.060	-61.81	-13.0	48.8	264.3	Horizontal	<u>PASS</u>
1733.167	-36.70	-13.0	23.7	9.8	Horizontal	<u>PASS</u>
5798.005	-49.55	-13.0	36.6	210.0	Horizontal	<u>PASS</u>
15760.599	-30.53	-13.0	17.5	39.7	Horizontal	<u>PASS</u>

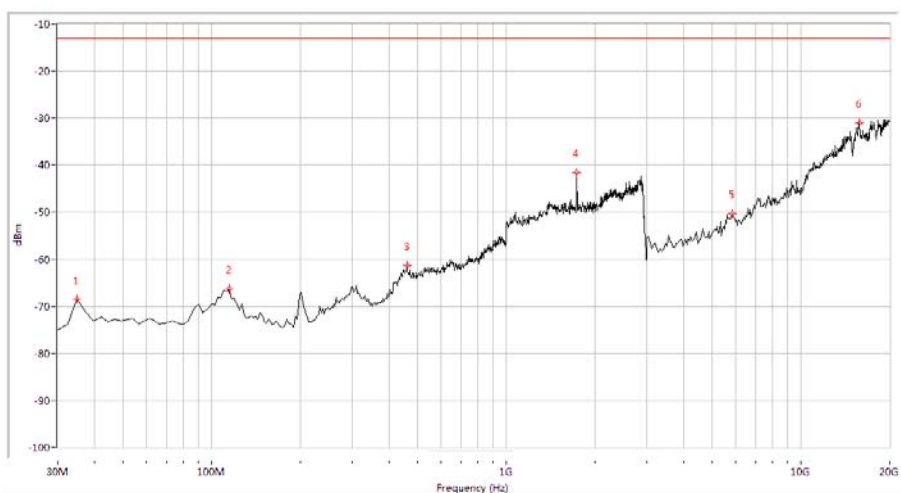


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
107.406	-67.29	-13.0	54.3	136.5	Vertical	<u>PASS</u>
305.761	-66.52	-13.0	53.5	47.8	Vertical	<u>PASS</u>
450.898	-61.30	-13.0	48.3	9.9	Vertical	<u>PASS</u>
1733.167	-37.25	-13.0	24.3	205.4	Vertical	<u>PASS</u>
5798.005	-49.65	-13.0	36.7	63.6	Vertical	<u>PASS</u>
15718.204	-30.61	-13.0	17.6	323.1	Vertical	<u>PASS</u>

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

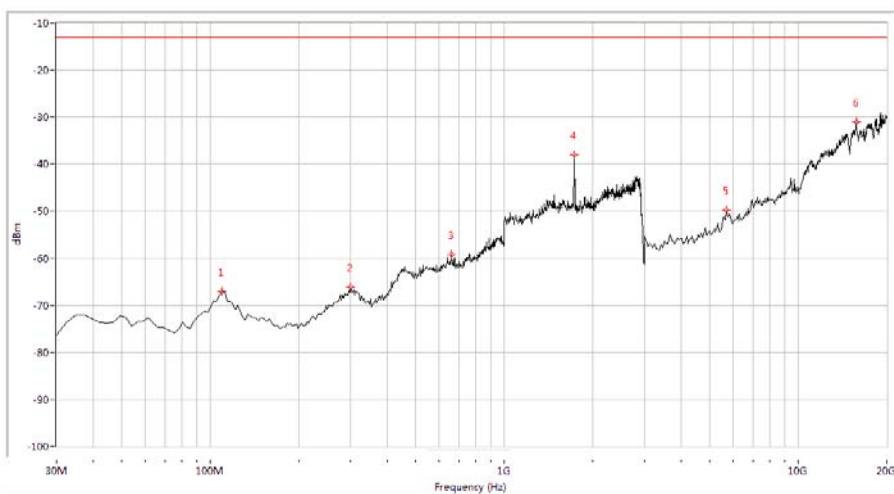


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-66.41	-13.0	53.4	136.5	Horizontal	<u>PASS</u>
201.746	-69.19	-13.0	56.2	24.7	Horizontal	<u>PASS</u>
453.317	-61.17	-13.0	48.2	203.9	Horizontal	<u>PASS</u>
1733.167	-41.74	-13.0	28.7	338.1	Horizontal	<u>PASS</u>
5925.187	-49.94	-13.0	36.9	16.8	Horizontal	<u>PASS</u>
17456.359	-29.66	-13.0	16.7	8.4	Horizontal	<u>PASS</u>

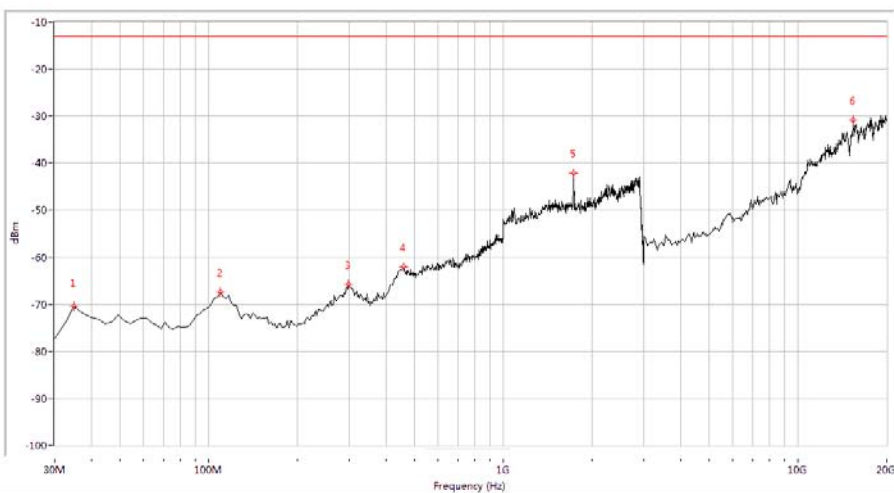


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.52	-13.0	55.5	12.4	Vertical	<u>PASS</u>
114.663	-66.28	-13.0	53.3	36.5	Vertical	<u>PASS</u>
460.574	-61.33	-13.0	48.3	234.7	Vertical	<u>PASS</u>
1733.167	-41.60	-13.0	28.6	152.9	Vertical	<u>PASS</u>
5840.399	-50.23	-13.0	37.2	10.8	Vertical	<u>PASS</u>
15845.387	-31.11	-13.0	18.1	77.3	Vertical	<u>PASS</u>

LTE Band 4 3MHz BW, Mid Channel, QPSK

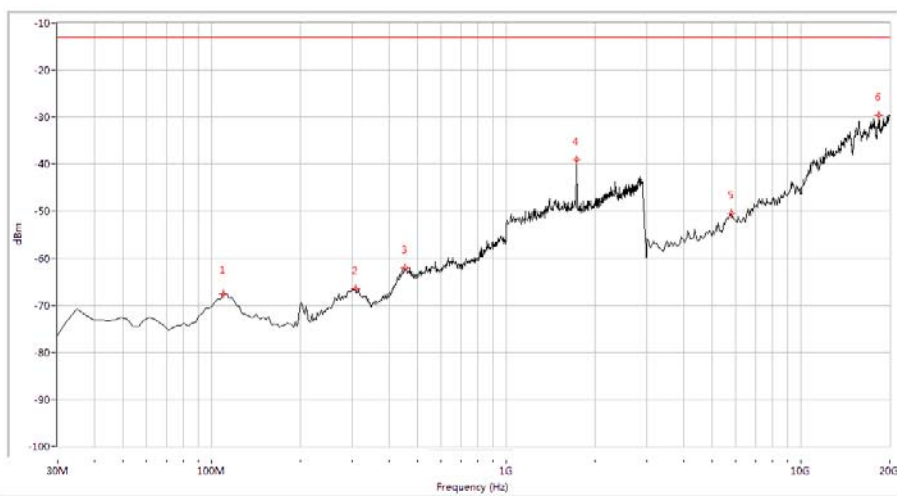


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.08	-13.0	54.1	102.3	Horizontal	<u>PASS</u>
300.923	-66.17	-13.0	53.2	45.6	Horizontal	<u>PASS</u>
663.766	-59.24	-13.0	46.2	33.1	Horizontal	<u>PASS</u>
1733.167	-38.05	-13.0	25.1	78.9	Horizontal	<u>PASS</u>
5713.217	-49.73	-13.0	36.7	268.7	Horizontal	<u>PASS</u>
15760.599	-31.11	-13.0	18.1	116.5	Horizontal	<u>PASS</u>

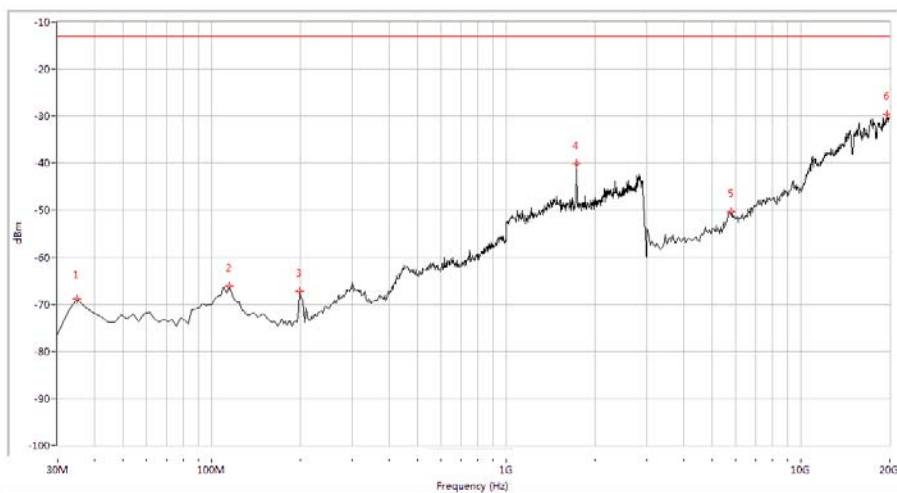


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-70.38	-13.0	57.4	163.4	Vertical	<u>PASS</u>
109.825	-67.36	-13.0	54.4	9.8	Vertical	<u>PASS</u>
298.504	-65.70	-13.0	52.7	214.6	Vertical	<u>PASS</u>
458.155	-62.08	-13.0	49.1	302.8	Vertical	<u>PASS</u>
1733.167	-42.11	-13.0	29.1	47.7	Vertical	<u>PASS</u>
15421.446	-30.79	-13.0	17.8	121.0	Vertical	<u>PASS</u>

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

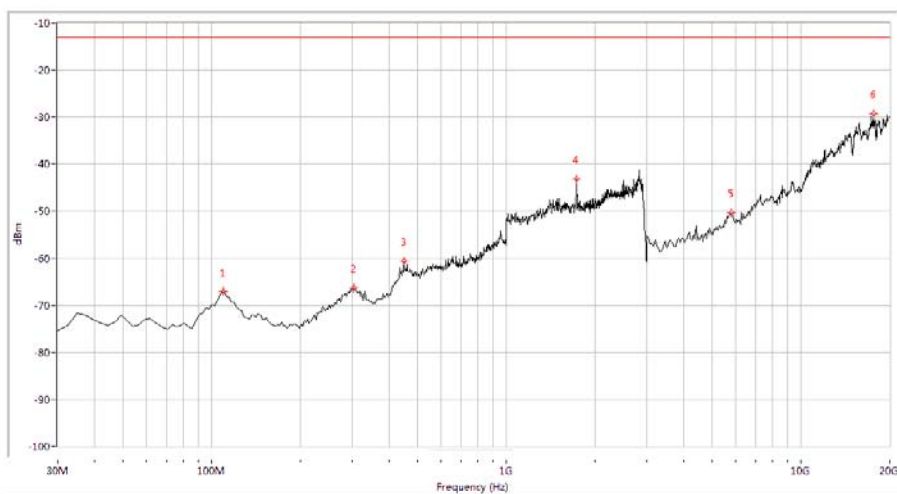


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.51	-13.0	54.5	136.5	Horizontal	<u>PASS</u>
308.180	-66.54	-13.0	53.5	27.8	Horizontal	<u>PASS</u>
453.317	-62.08	-13.0	49.1	120.0	Horizontal	<u>PASS</u>
1733.167	-39.11	-13.0	26.1	69.9	Horizontal	<u>PASS</u>
5798.005	-50.44	-13.0	37.4	46.6	Horizontal	<u>PASS</u>
18389.027	-29.64	-13.0	16.6	302.4	Horizontal	<u>PASS</u>

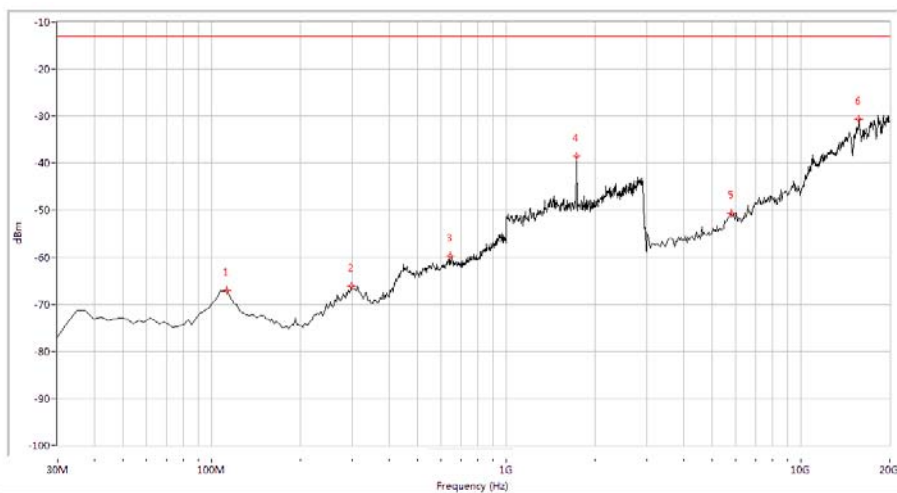


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.85	-13.0	55.8	13.2	Vertical	<u>PASS</u>
114.663	-66.13	-13.0	53.1	45.6	Vertical	<u>PASS</u>
199.327	-67.25	-13.0	54.2	7.8	Vertical	<u>PASS</u>
1733.167	-40.12	-13.0	27.1	323.4	Vertical	<u>PASS</u>
5798.005	-50.36	-13.0	37.4	269.8	Vertical	<u>PASS</u>
19660.848	-29.52	-13.0	16.5	131.5	Vertical	<u>PASS</u>

LTE Band 4 5MHz BW, Mid Channel, QPSK

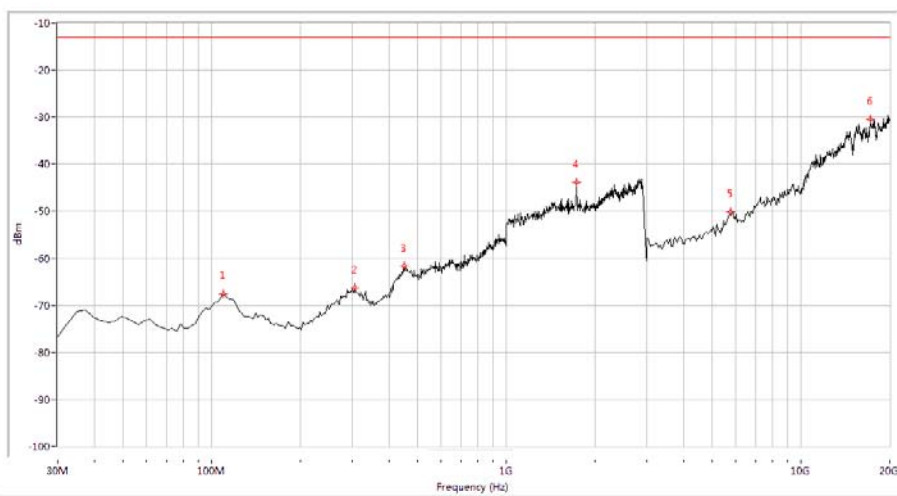


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.11	-13.0	54.1	136.4	Horizontal	<u>PASS</u>
303.342	-66.34	-13.0	53.3	275.8	Horizontal	<u>PASS</u>
450.898	-60.69	-13.0	47.7	96.3	Horizontal	<u>PASS</u>
1733.167	-43.15	-13.0	30.1	101.2	Horizontal	<u>PASS</u>
5798.005	-50.26	-13.0	37.3	9.7	Horizontal	<u>PASS</u>
17625.935	-29.30	-13.0	16.3	46.6	Horizontal	<u>PASS</u>

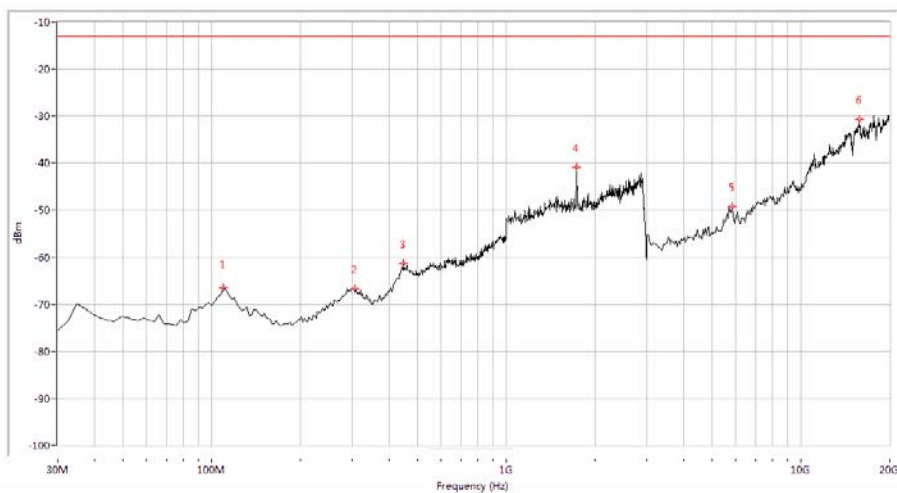


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
112.244	-67.06	-13.0	54.1	16.2	Vertical	<u>PASS</u>
298.504	-66.18	-13.0	53.2	231.3	Vertical	<u>PASS</u>
644.414	-59.74	-13.0	46.7	105.7	Vertical	<u>PASS</u>
1733.167	-38.52	-13.0	25.5	98.9	Vertical	<u>PASS</u>
5798.005	-50.71	-13.0	37.7	45.1	Vertical	<u>PASS</u>
15718.204	-30.76	-13.0	17.8	132.6	Vertical	<u>PASS</u>

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

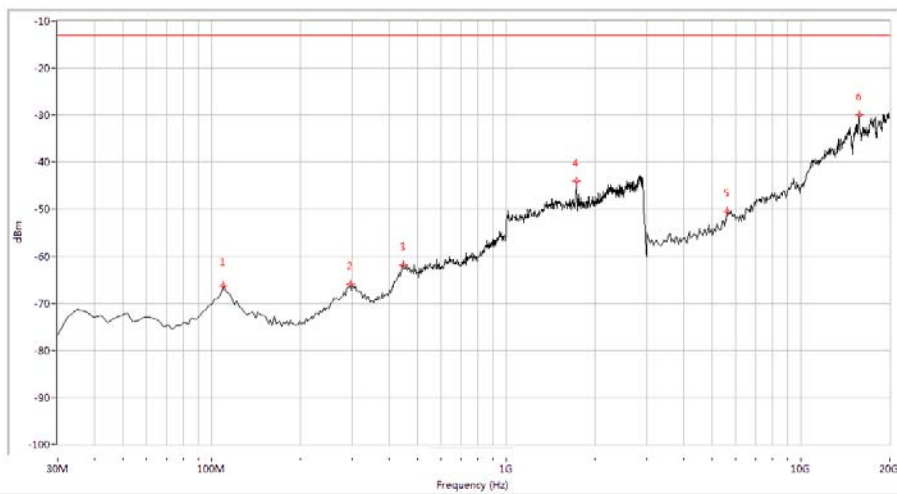


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.53	-13.0	54.5	163.5	Horizontal	<u>PASS</u>
305.761	-66.31	-13.0	53.3	48.7	Horizontal	<u>PASS</u>
450.898	-61.70	-13.0	48.7	98.6	Horizontal	<u>PASS</u>
1733.167	-43.92	-13.0	30.9	323.2	Horizontal	<u>PASS</u>
5755.611	-50.13	-13.0	37.1	204.4	Horizontal	<u>PASS</u>
17201.995	-30.48	-13.0	17.5	23.9	Horizontal	<u>PASS</u>

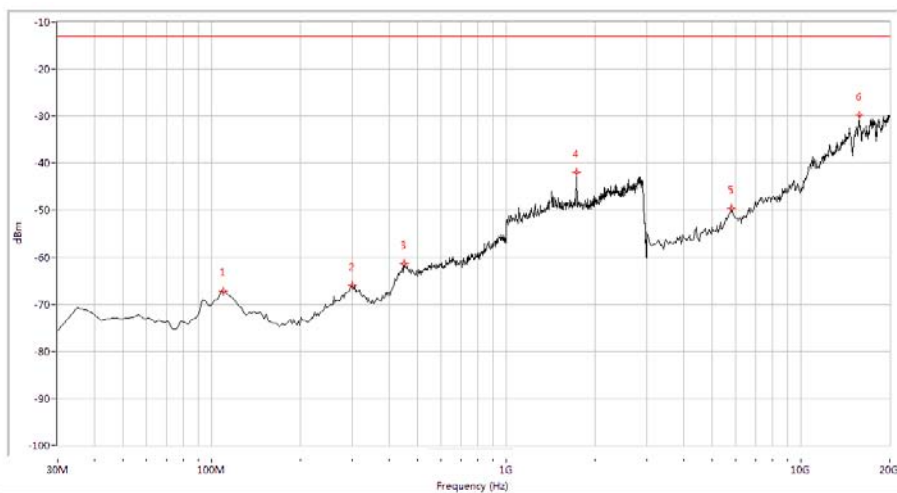


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-66.55	-13.0	53.6	16.5	Vertical	<u>PASS</u>
305.761	-66.71	-13.0	53.7	38.9	Vertical	<u>PASS</u>
448.479	-61.34	-13.0	48.3	245.7	Vertical	<u>PASS</u>
1733.167	-40.86	-13.0	27.9	305.6	Vertical	<u>PASS</u>
5840.399	-49.26	-13.0	36.3	87.0	Vertical	<u>PASS</u>
15845.387	-30.75	-13.0	17.7	6.4	Vertical	<u>PASS</u>

LTE Band 4 10MHz BW, Mid Channel, QPSK

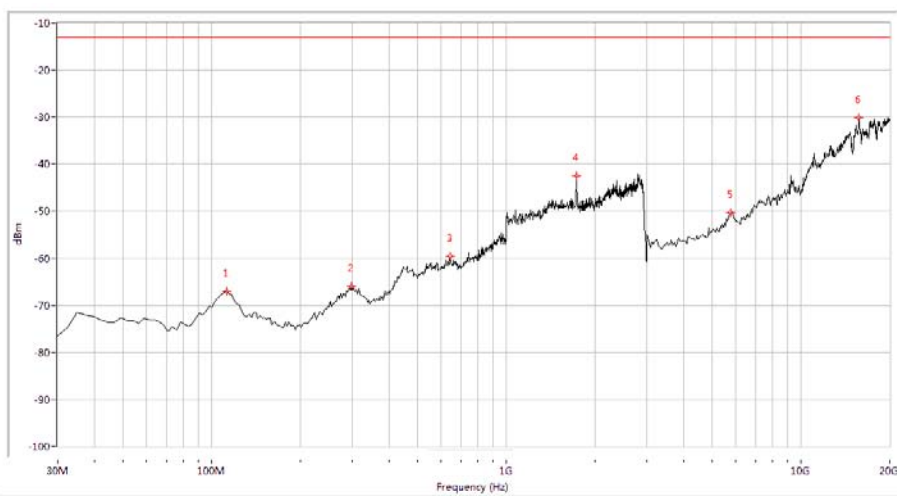


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-66.32	-13.0	53.3	132.4	Horizontal	<u>PASS</u>
296.085	-66.04	-13.0	53.0	236.5	Horizontal	<u>PASS</u>
446.060	-61.81	-13.0	48.8	78.9	Horizontal	<u>PASS</u>
1728.180	-44.10	-13.0	31.1	4.6	Horizontal	<u>PASS</u>
5628.429	-50.43	-13.0	37.4	12.0	Horizontal	<u>PASS</u>
15760.599	-30.04	-13.0	17.0	201.8	Horizontal	<u>PASS</u>

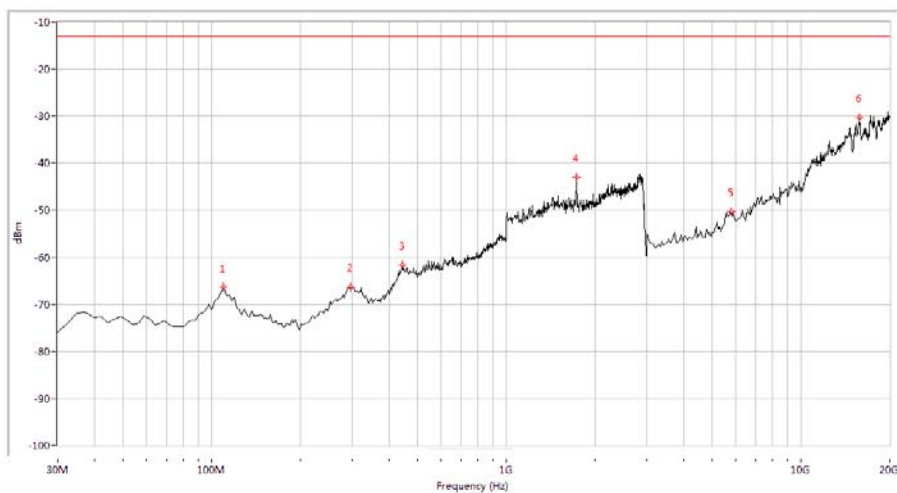


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.22	-13.0	54.2	16.4	Vertical	<u>PASS</u>
300.923	-66.04	-13.0	53.0	253.5	Vertical	<u>PASS</u>
450.898	-61.37	-13.0	48.4	8.7	Vertical	<u>PASS</u>
1728.180	-41.90	-13.0	28.9	132.9	Vertical	<u>PASS</u>
5798.005	-49.63	-13.0	36.6	108.8	Vertical	<u>PASS</u>
15760.599	-29.72	-13.0	16.7	36.6	Vertical	<u>PASS</u>

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

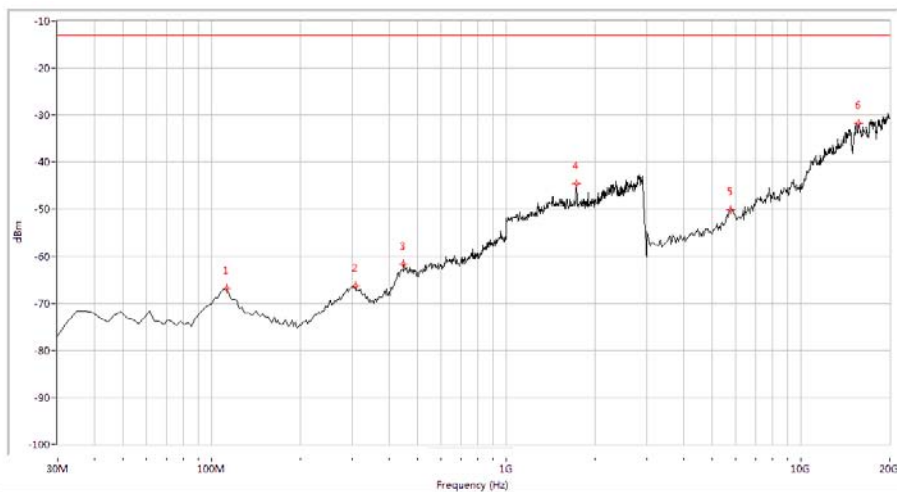


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
112.244	-67.11	-13.0	54.1	136.2	Horizontal	<u>PASS</u>
298.504	-65.94	-13.0	52.9	24.1	Horizontal	<u>PASS</u>
644.414	-59.57	-13.0	46.6	203.8	Horizontal	<u>PASS</u>
1728.180	-42.41	-13.0	29.4	9.9	Horizontal	<u>PASS</u>
5755.611	-50.25	-13.0	37.2	77.4	Horizontal	<u>PASS</u>
15718.204	-30.06	-13.0	17.1	63.5	Horizontal	<u>PASS</u>

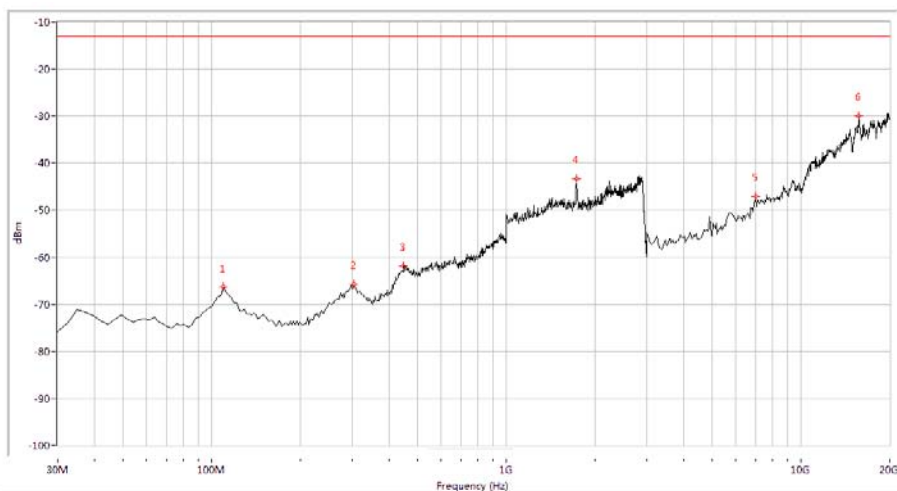


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-66.37	-13.0	53.4	136.4	Vertical	<u>PASS</u>
296.085	-66.29	-13.0	53.3	52.7	Vertical	<u>PASS</u>
443.641	-61.72	-13.0	48.7	241.6	Vertical	<u>PASS</u>
1733.167	-43.00	-13.0	30.0	309.8	Vertical	<u>PASS</u>
5798.005	-50.29	-13.0	37.3	120.5	Vertical	<u>PASS</u>
15845.387	-30.35	-13.0	17.3	6.1	Vertical	<u>PASS</u>

LTE Band 4 15MHz BW, Mid Channel, QPSK

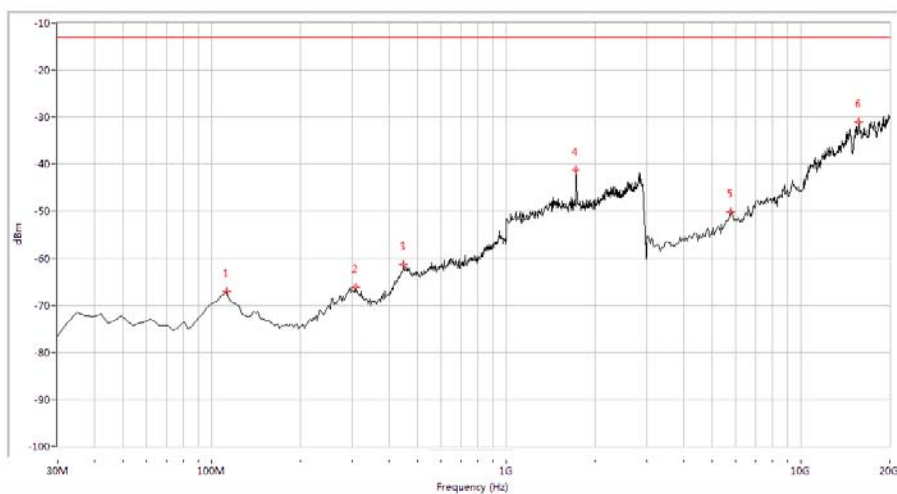


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
112.244	-66.83	-13.0	53.8	63.4	Horizontal	<u>PASS</u>
308.180	-66.29	-13.0	53.3	248.7	Horizontal	<u>PASS</u>
448.479	-61.67	-13.0	48.7	2.0	Horizontal	<u>PASS</u>
1728.180	-44.61	-13.0	31.6	336.9	Horizontal	<u>PASS</u>
5755.611	-50.14	-13.0	37.1	145.8	Horizontal	<u>PASS</u>
15718.204	-31.79	-13.0	18.8	66.2	Horizontal	<u>PASS</u>

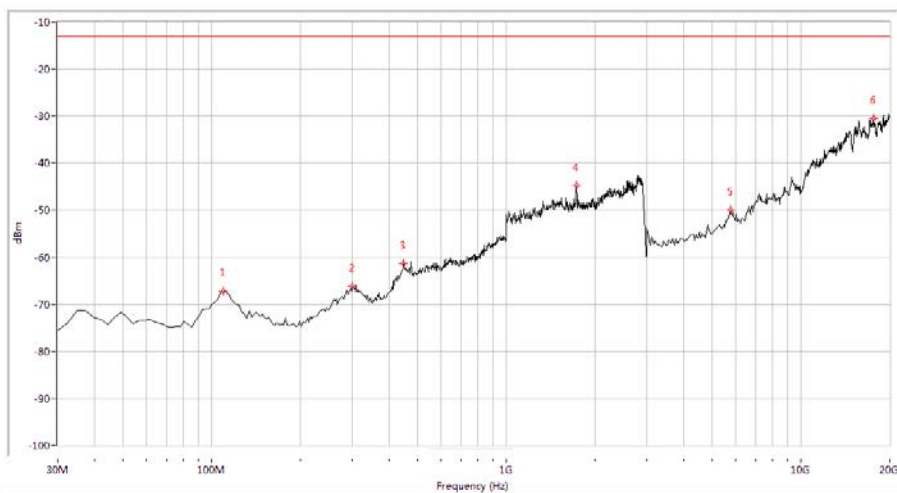


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-66.28	-13.0	53.3	5.9	Vertical	<u>PASS</u>
303.342	-65.77	-13.0	52.8	254.6	Vertical	<u>PASS</u>
448.479	-61.81	-13.0	48.8	28.3	Vertical	<u>PASS</u>
1733.167	-43.39	-13.0	30.4	173.1	Vertical	<u>PASS</u>
7027.431	-47.09	-13.0	34.1	257.9	Vertical	<u>PASS</u>
15718.204	-29.94	-13.0	16.9	233.6	Vertical	<u>PASS</u>

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

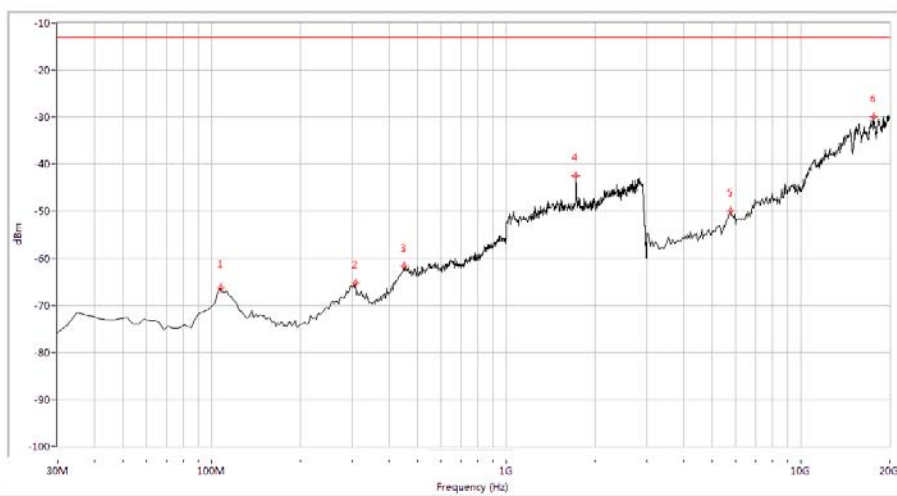


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
112.244	-67.08	-13.0	54.1	163.5	Horizontal	<u>PASS</u>
308.180	-66.12	-13.0	53.1	32.4	Horizontal	<u>PASS</u>
448.479	-61.36	-13.0	48.4	207.8	Horizontal	<u>PASS</u>
1723.192	-41.23	-13.0	28.2	36.9	Horizontal	<u>PASS</u>
5755.611	-50.12	-13.0	37.1	103.0	Horizontal	<u>PASS</u>
15718.204	-30.96	-13.0	18.0	8.7	Horizontal	<u>PASS</u>

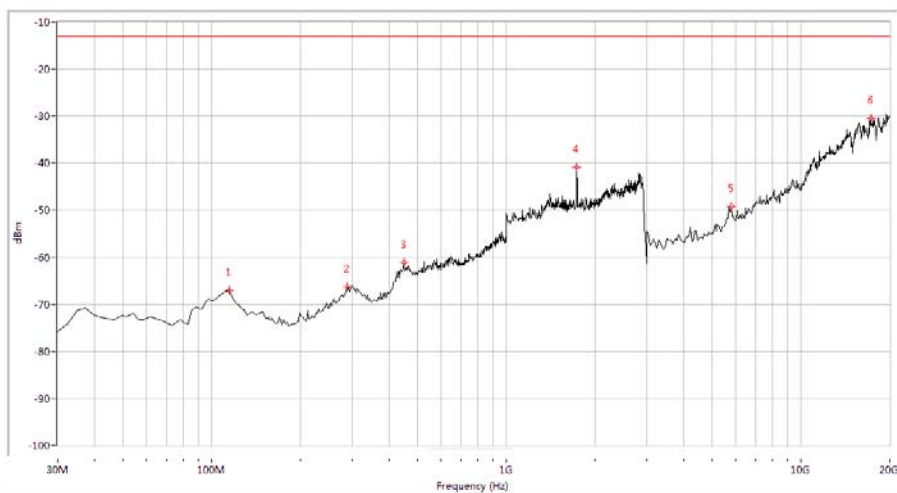


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.28	-13.0	54.3	144.	Vertical	<u>PASS</u>
300.923	-66.22	-13.0	53.2	8.7	Vertical	<u>PASS</u>
448.479	-61.37	-13.0	48.4	63.0	Vertical	<u>PASS</u>
1733.167	-44.74	-13.0	31.7	289.3	Vertical	<u>PASS</u>
5755.611	-49.90	-13.0	36.9	23.1	Vertical	<u>PASS</u>
17710.723	-30.45	-13.0	17.5	101.2	Vertical	<u>PASS</u>

LTE Band 4 20MHz BW, Mid Channel, QPSK

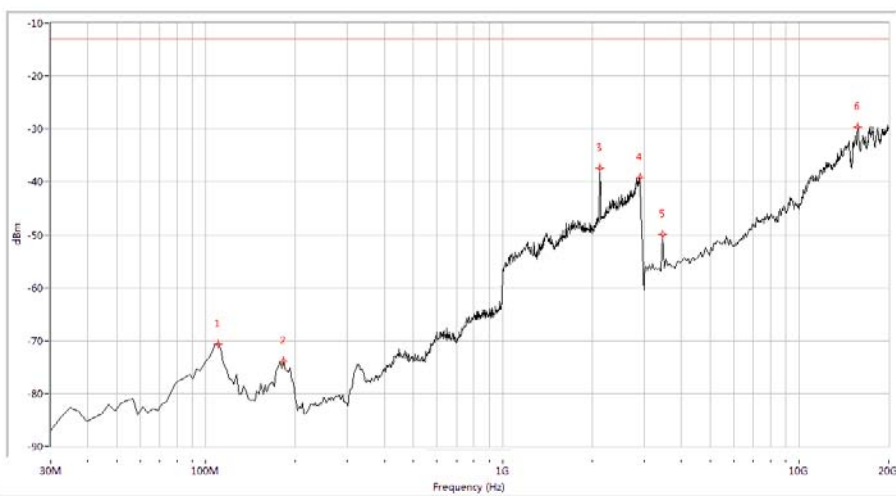


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
107.406	-66.32	-13.0	53.3	15.2	Horizontal	<u>PASS</u>
308.180	-65.20	-13.0	52.2	63.7	Horizontal	<u>PASS</u>
450.898	-61.67	-13.0	48.7	8.9	Horizontal	<u>PASS</u>
1723.192	-42.41	-13.0	29.4	213.0	Horizontal	<u>PASS</u>
5755.611	-49.99	-13.0	37.0	9.8	Horizontal	<u>PASS</u>
17710.723	-29.96	-13.0	17.0	128.3	Horizontal	<u>PASS</u>

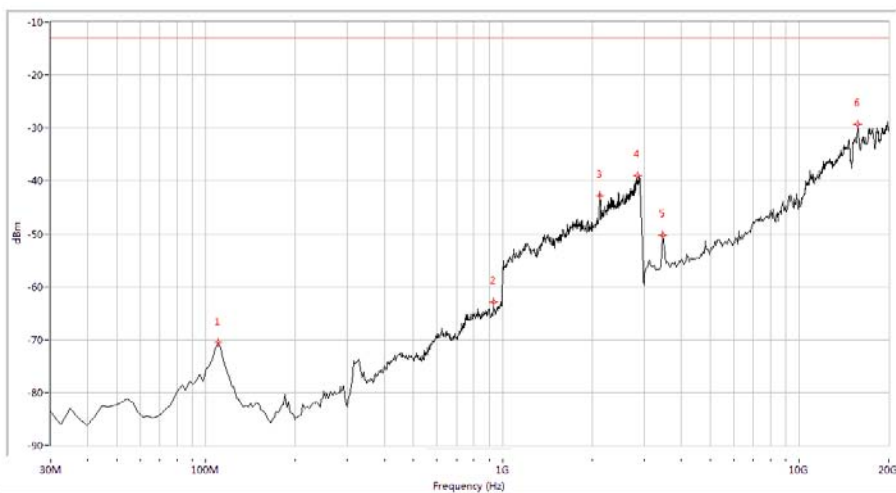


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
114.663	-67.07	-13.0	54.1	13.4	Vertical	<u>PASS</u>
288.828	-66.36	-13.0	53.4	45.5	Vertical	<u>PASS</u>
450.898	-61.11	-13.0	48.1	245.7	Vertical	<u>PASS</u>
1733.167	-40.75	-13.0	27.7	332.8	Vertical	<u>PASS</u>
5798.005	-49.17	-13.0	36.2	9.6	Vertical	<u>PASS</u>
17286.783	-30.46	-13.0	17.5	12.0	Vertical	<u>PASS</u>

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.61	-13.0	57.6	60.3	Horizontal	<u>PASS</u>
182.394	-73.88	-13.0	60.9	27.9	Horizontal	<u>PASS</u>
2127.182	-37.47	-13.0	24.5	-0.0	Horizontal	<u>PASS</u>
2900.249	-39.07	-13.0	26.1	145.7	Horizontal	<u>PASS</u>
3466.334	-49.97	-13.0	37.0	9.1	Horizontal	<u>PASS</u>
15718.204	-29.63	-13.0	16.6	360.0	Horizontal	<u>PASS</u>



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.54	-13.0	57.5	1.9	Vertical	<u>PASS</u>
932.269	-62.88	-13.0	49.9	47.6	Vertical	<u>PASS</u>
2122.195	-42.77	-13.0	29.8	108.8	Vertical	<u>PASS</u>
2845.387	-38.99	-13.0	26.0	291.8	Vertical	<u>PASS</u>
3466.334	-50.23	-13.0	37.2	301.2	Vertical	<u>PASS</u>
15760.599	-29.37	-13.0	16.4	244.7	Vertical	<u>PASS</u>

** END OF REPORT **