



FCC CFR47 PART 27 SUBPART M

CERTIFICATION TEST REPORT

FOR

CDMA, LTE, WIMAX, AND WIFI MOBILE HOT SPOT

MODEL NUMBER: AC803S

FCC ID: N7NAC803S

REPORT NUMBER: 11U14068-3

ISSUE DATE: MARCH 01, 2012

Prepared for

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Prepared by

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NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
<u>---</u>	<u>03/01/12</u>	<u>Initial Issue</u>	<u>T. Chan</u>

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY	5
4.1. <i>MEASURING INSTRUMENT CALIBRATION</i>	5
4.2. <i>SAMPLE CALCULATION</i>	5
4.3. <i>MEASUREMENT UNCERTAINTY</i>	5
5. EQUIPMENT UNDER TEST	6
5.1. <i>DESCRIPTION OF EUT</i>	6
5.2. <i>MAXIMUM OUTPUT POWER</i>	6
5.3. <i>DESCRIPTION OF AVAILABLE ANTENNAS</i>	6
5.4. <i>SOFTWARE AND FIRMWARE</i>	6
5.5. <i>WORST-CASE CONFIGURATION AND MODE</i>	6
5.6. <i>DESCRIPTION OF TEST SETUP</i>	7
6. TEST AND MEASUREMENT EQUIPMENT	10
7. ANTENNA PORT TEST RESULTS	11
7.1. <i>26 dB and 99% BANDWIDTH</i>	11
7.2. <i>RF OUTPUT POWER AT THE ANTENNA TERMINALS</i>	20
7.3. <i>LIMITS OF CHANNEL EDGE</i>	40
7.4. <i>CONDUCTED SPURIOUS EMISSIONS</i>	46
7.5. <i>FREQUENCY STABILITY MEASUREMENT</i>	59
8. RADIATED TEST RESULTS	61
8.1. <i>RADIATED POWER (ERP & EIRP)</i>	61
8.2. <i>FIELD STRENGTH OF SPURIOUS RADIATION</i>	72
9. SETUP PHOTOS	83

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SIERRA WIRELESS INC.
2200 FARADAY AVE. SUITE 150
CARLSBAD, CA 92008, U.S.A.

EUT DESCRIPTION: CDMA, LTE, WIMAX, AND WIFI MOBILE HOT SPOT

MODEL: AC803S

SERIAL NUMBER: CDW2911001210-E (107144)

DATE TESTED: DECEMBER 09 TO JANUARY 17, 2012

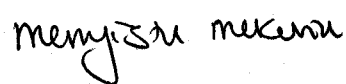
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 27 SUBPART M	PASS

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

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

Approved & Released For UL CCS By:

Tested By:



THU CHAN
ENGINEERING MANAGER
UL CCS

MENGISTU MEKURIA
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603C (2004), FCC CFR 47 Part 2, and FCC CFR 47 Part 27M.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Mobile hotspot that features with CDMA, LTE, WIMAX, and WIFI transceiver that is manufacture by Sierra Wireless Inc.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum Peak Average conducted output power as follows:

Band/Frequency range (MHz)	Modulation	Conducted		EIRP (EUT)		EIRP (EUT WITH CRADLE)	
		dBm	mW	dBm	mW	dBm	mW
5MHz 2498.5 - 2687.5	QPSK	22.81	191.0	27.28	534.6	25.21	331.9
	16QAM	22.77	189.2	27.45	555.9	25.18	329.6
10MHz 2501.0 - 2685	QPSK	22.86	193.2	28.22	663.7	25.88	387.3
	16QAM	22.85	192.8	28.18	657.7	25.94	392.6

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integrated PIFA antenna, with a maximum peak gain of 2.5dBi.

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was X350 VSG Beceem Diagnostic Control Panel. Version 4.00.00.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power.

To determine the worst-case, the EUT was investigated for X, Y and Z Positions, and the worst position among them with AC Adapter. After the investigation the worst case is turned out to be X-position with AC Adapter for both 5MHz and 10MHz Bands.

5.6. DESCRIPTION OF TEST SETUP

RADIATED TESTS SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST			
Description	Manufacturer	Model	Serial Number
AC ADAPTER	Sierra Wireless	SSW-2013	201034
CRADLE	Sierra Wireless	DC103	1145-0003

I/O CABLES (RF Conducted Test)

I/O CABLE LIST						
Cable No.	Port	# of Identic Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A
2	RF	1	RF	SHELDED	0.1m	N/A
3	RF	1	SMA	SHELDED	0.6 m	N/A

CONFIGURATION 1: I/O CABLES (RF Radiated Test)

I/O CABLE LIST						
Cable No.	Port	# of Identica Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A

CONFIGURATION 2: I/O CABLES (RF Radiated Test)

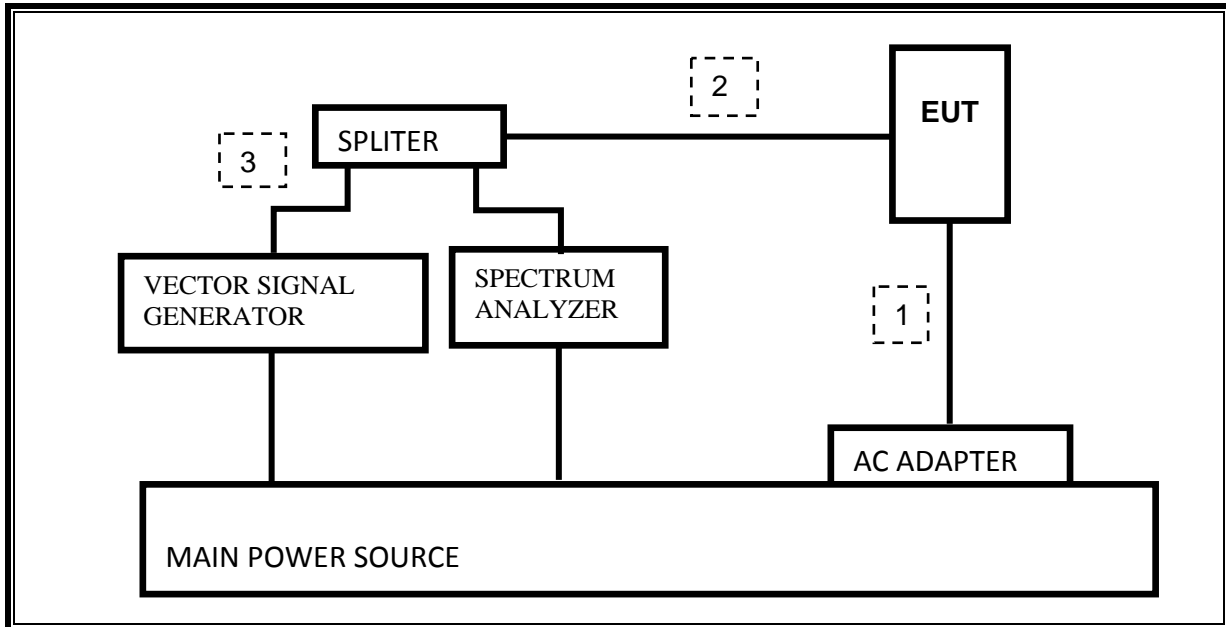
I/O CABLE LIST						
Cable No.	Port	# of Identica Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	Built-in	UN-SHELDED	2.0m	Ferrite core at one end (Cradle Unit)

TEST SETUP

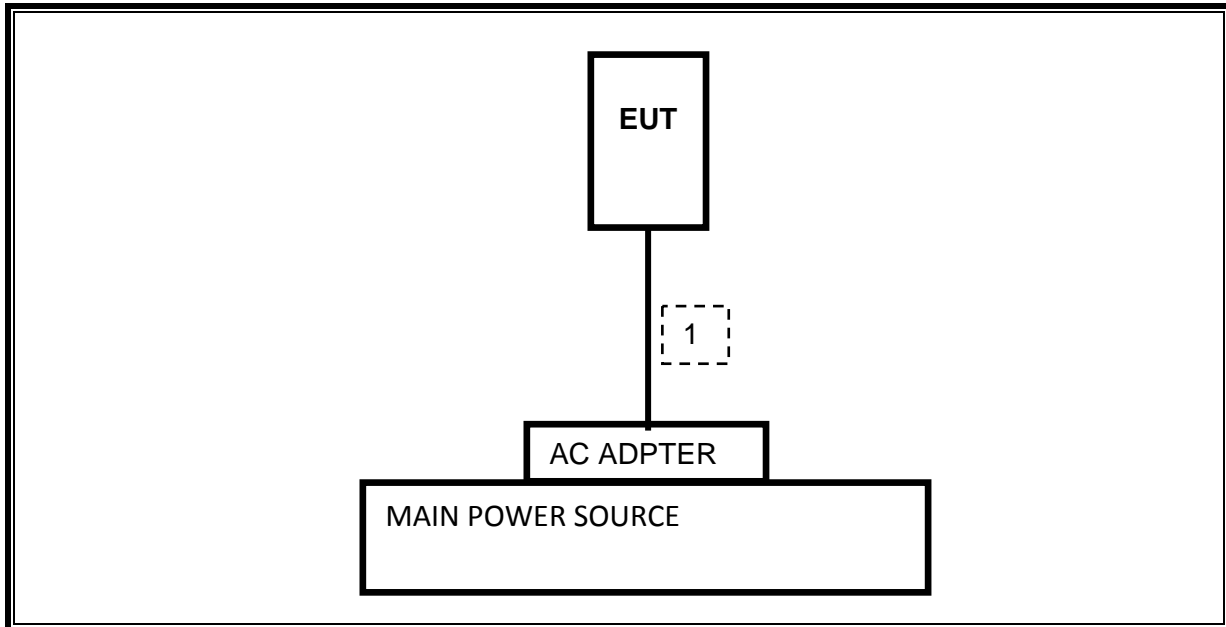
Configuration 1: The EUT is a stand-alone device and was tested with AC/USB Adapter.

Configuration 2: The EUT sat on the cradle unit that was connected with DC Adapter

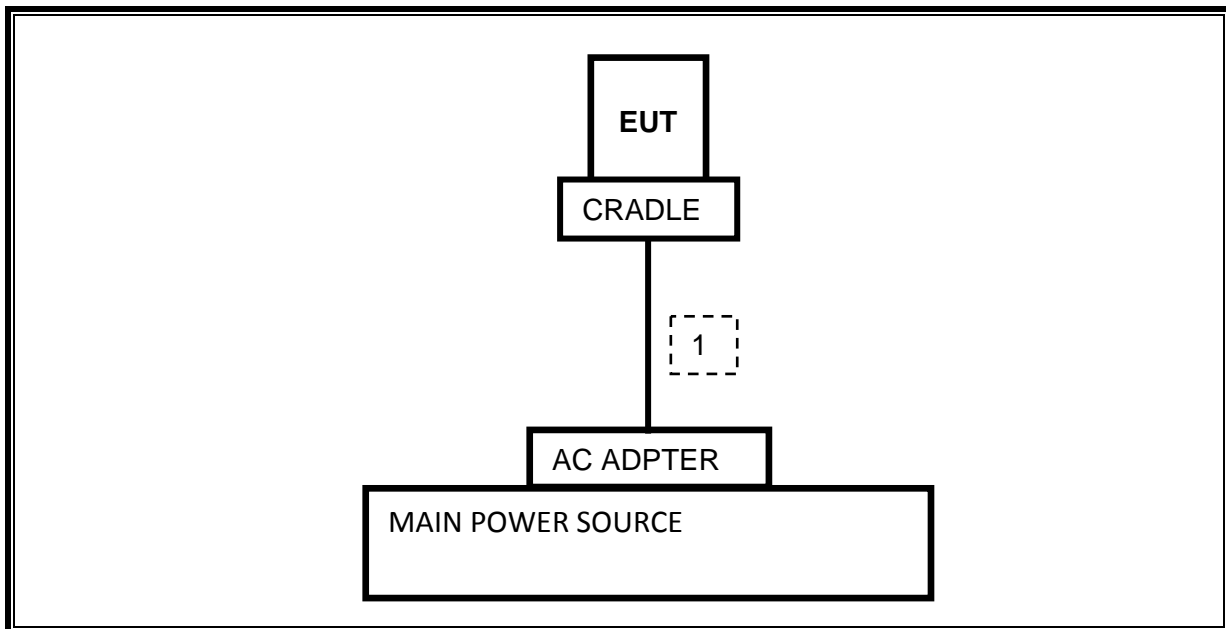
CONDUCTED SETUP DIAGRAM FOR TESTS



CONFIGURATION 1: RADIATED SETUP DIAGRAM FOR TESTS



CONFIGURATION 2: RADIATED SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	04/07/12
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/30/12
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/12
Antenna, Horn, 18 GHz	EMCO	3115	C00945	06/29/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/16/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	07/12/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	01/27/12
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	10/20/12
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Directional Coupler	RF-Lambda	RFDC5M06G15	N/A	CNR
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/14/12

7. ANTENNA PORT TEST RESULTS

7.1. 26 dB and 99% BANDWIDTH

LIMITS

§2.1049 & §27.53 (m)(6)

TEST PROCEDURE

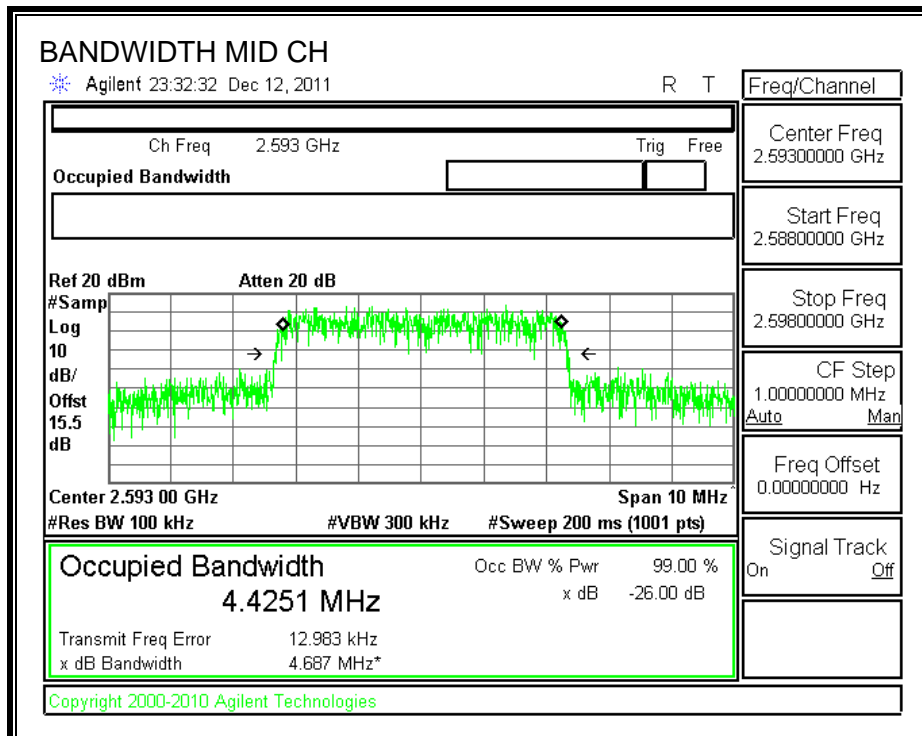
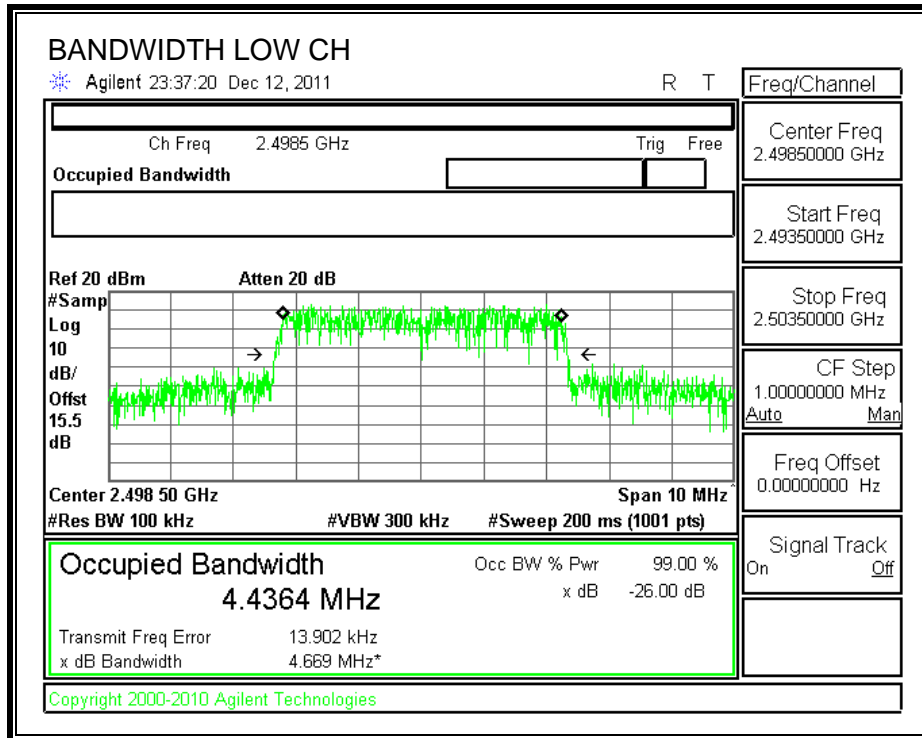
The transmitter outputs are connected to the spectrum analyzer via a combiner. The RBW is set to 1% to 3% of the measured bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal bandwidth function is utilized.

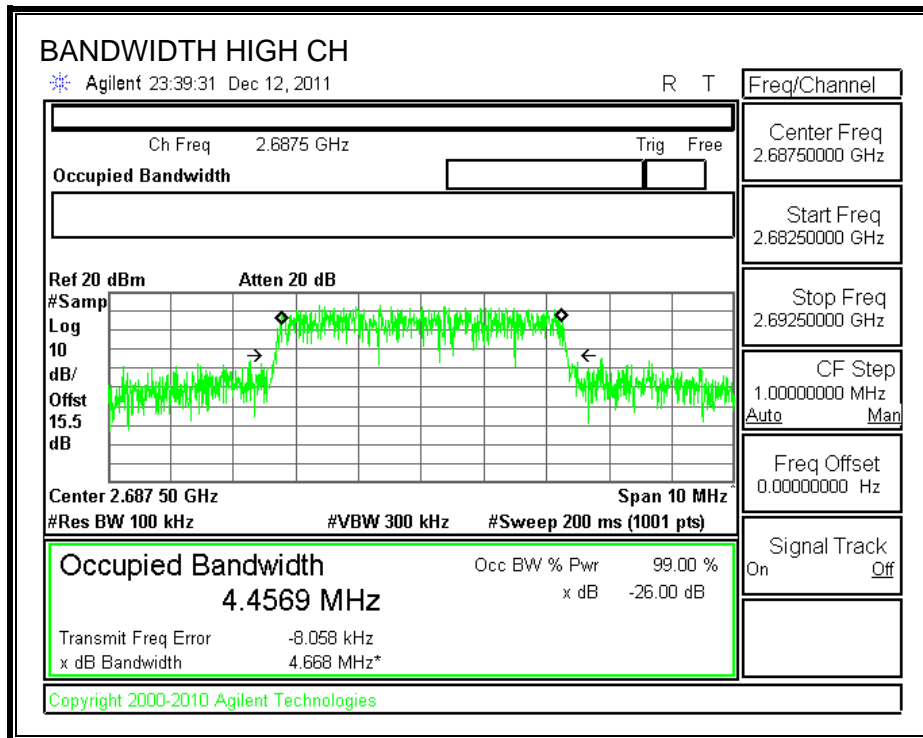
RESULTS

Mode		Channel	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
5MHz	QPSK	Low	2498.5	4.4364	4.6690
		Middle	2593.0	4.4251	4.6870
		High	2687.5	4.4569	4.6680
	16QAM	Low	2498.5	4.4254	4.6620
		Middle	2593.0	4.4263	4.6610
		High	2687.5	4.4537	4.6570
10MHz	QPSK	Low	2501.0	9.0902	9.5640
		Middle	2596.0	9.0999	9.5320
		High	2685.0	9.1297	9.5830
	16QAM	Low	2501.0	8.9995	9.5370
		Middle	2596.0	9.0691	9.4970
		High	2685.0	9.1133	9.5220

5MHz_QPSK

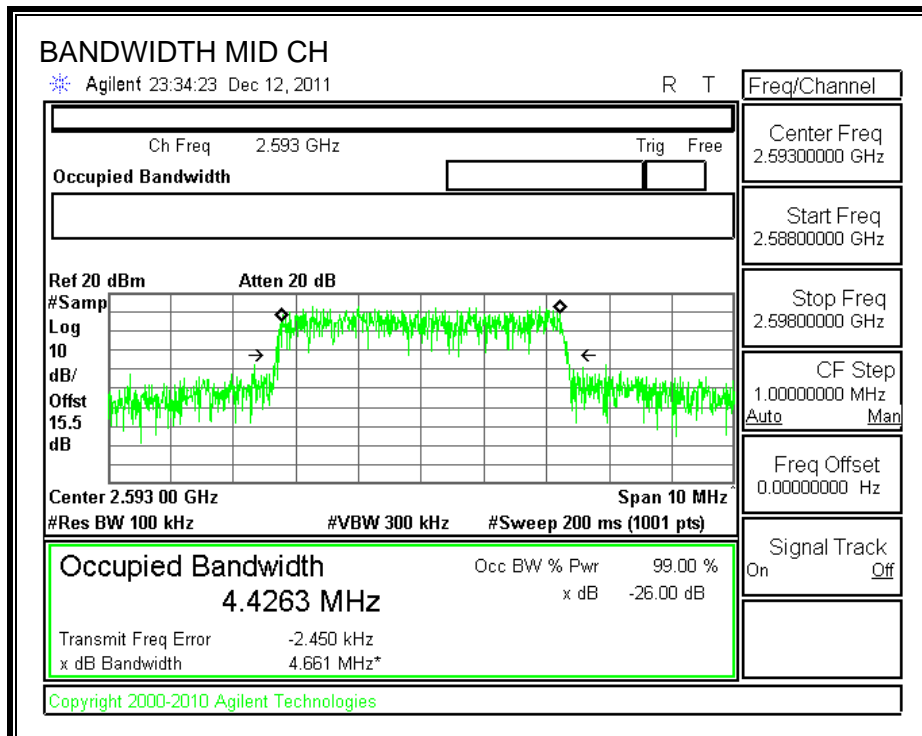
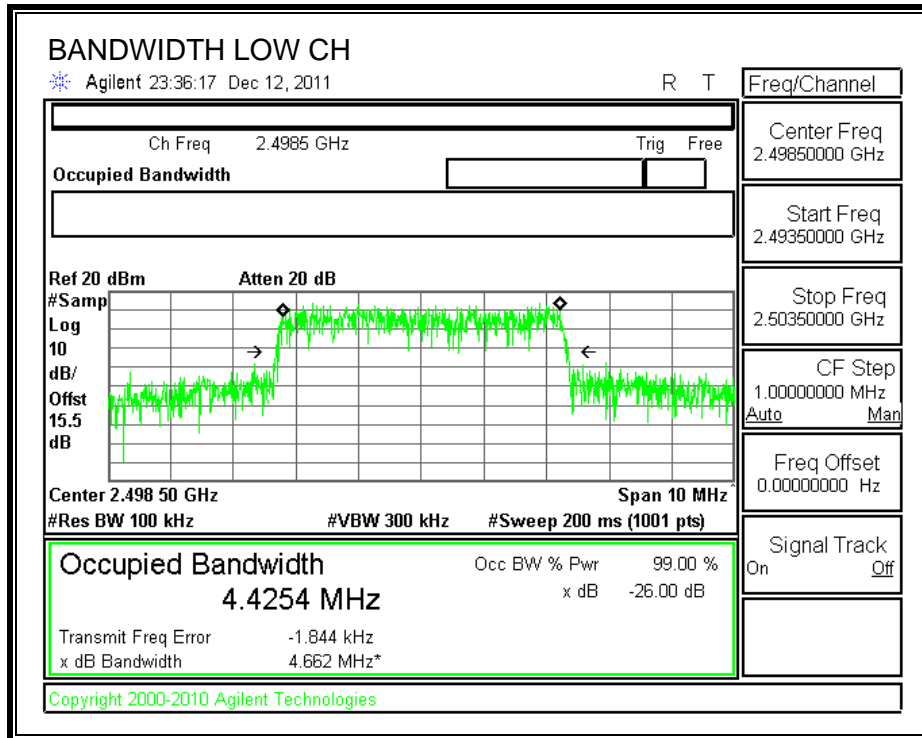
26 dB and 99% BANDWIDTH

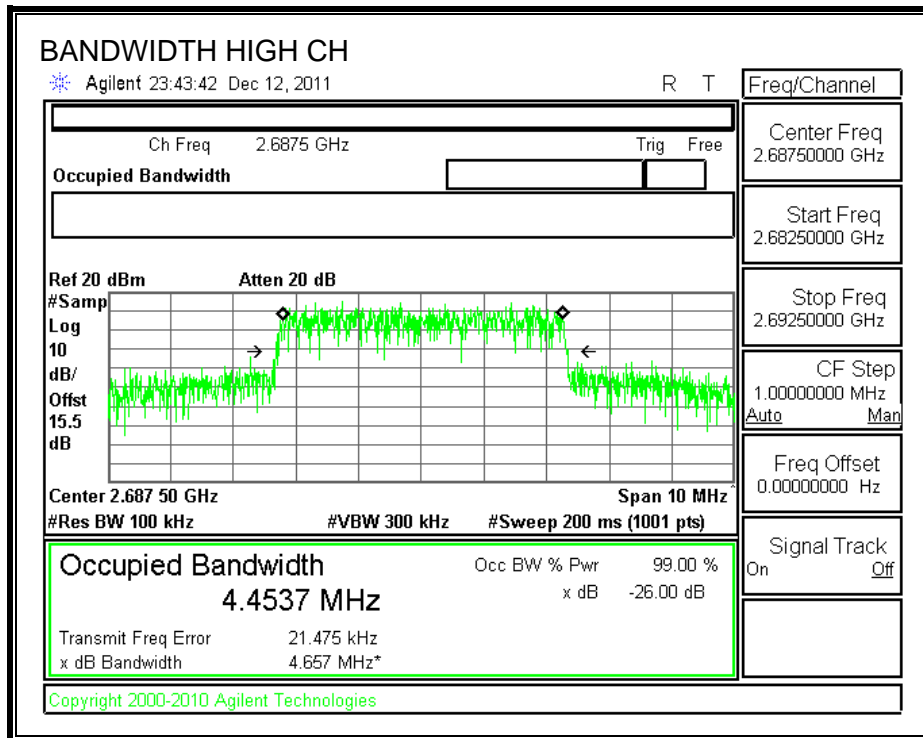




5MHz_16QAM

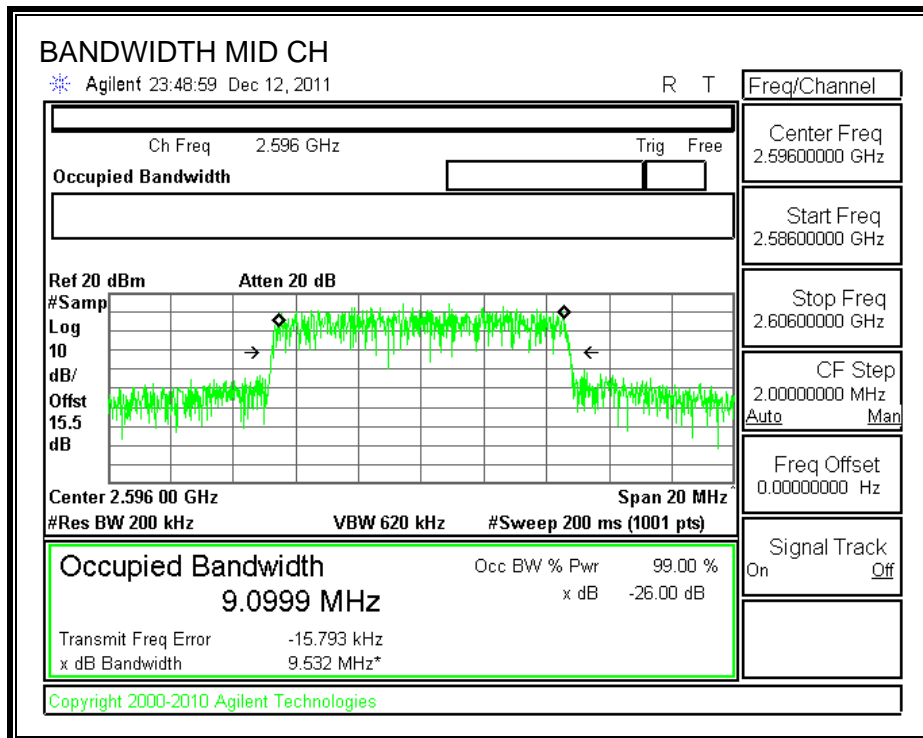
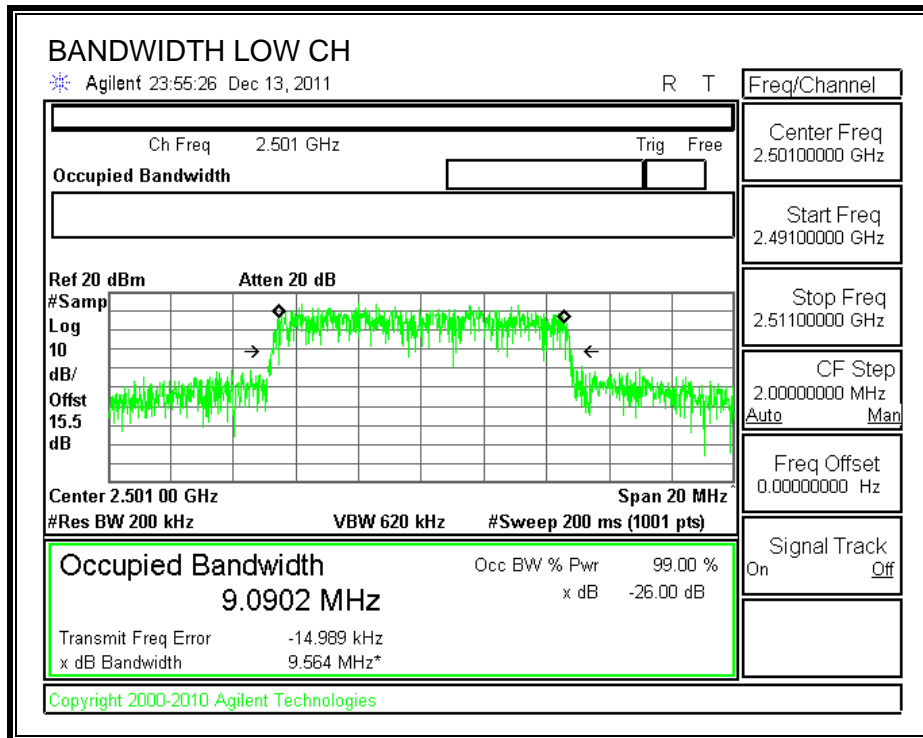
26 dB and 99% BANDWIDTH

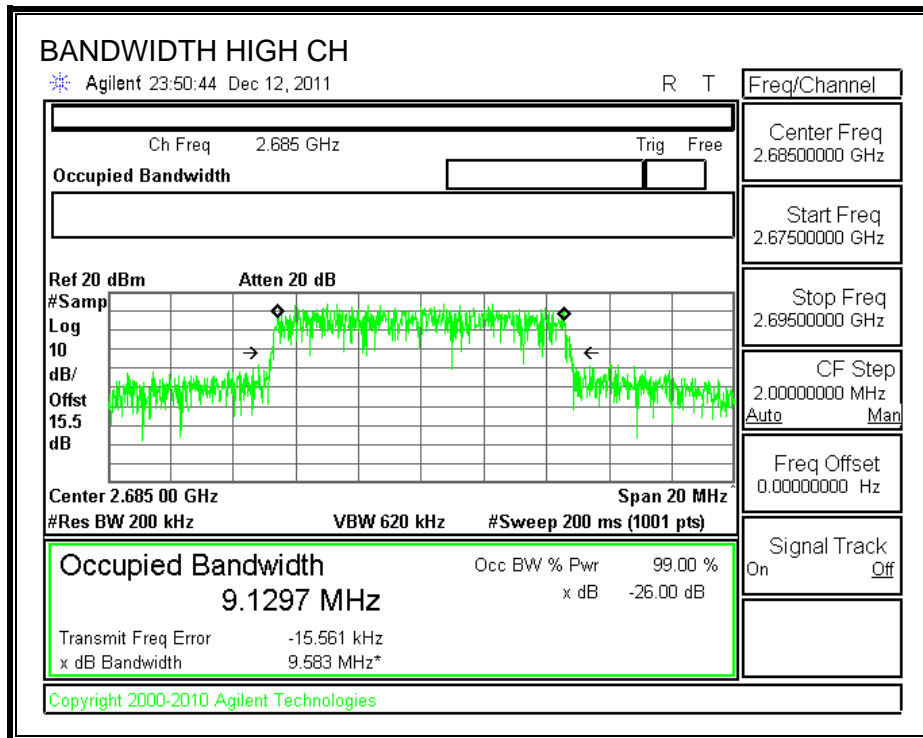




10MHz_QPSK

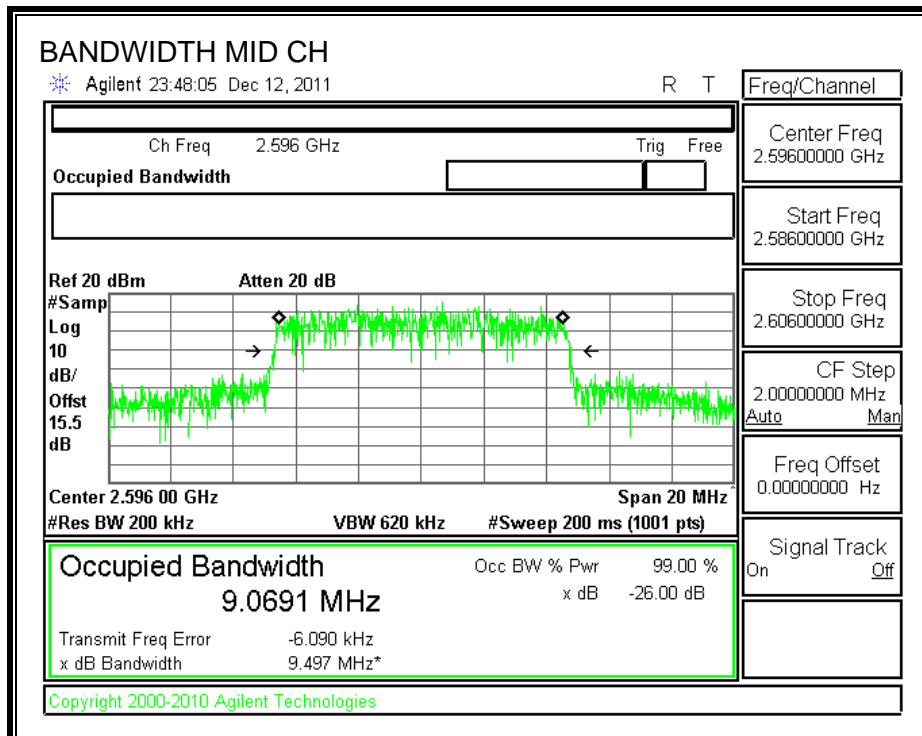
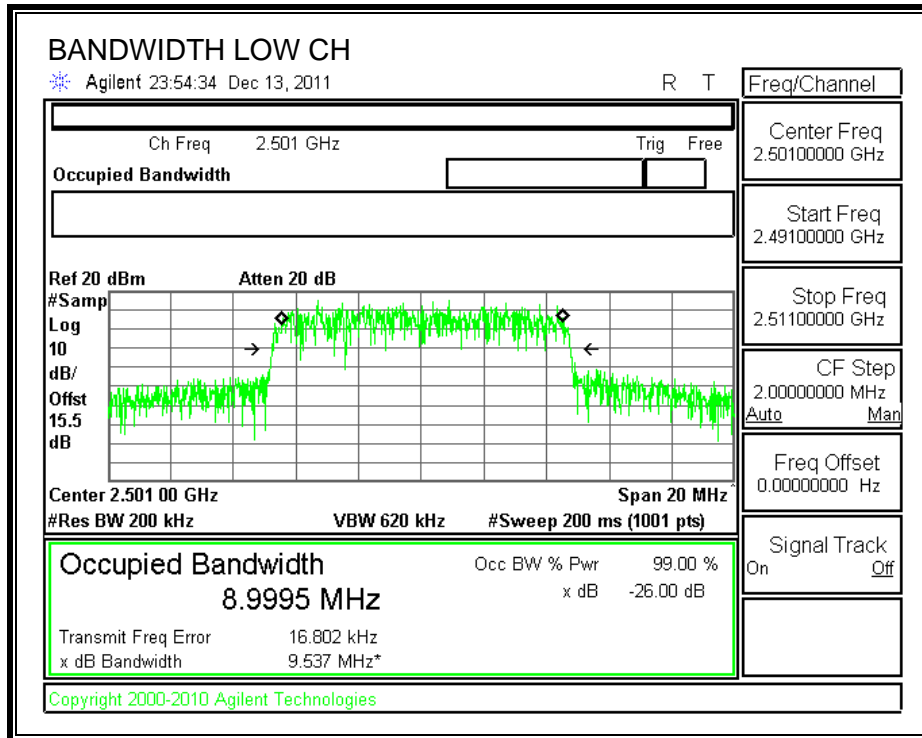
26 dB and 99% BANDWIDTH

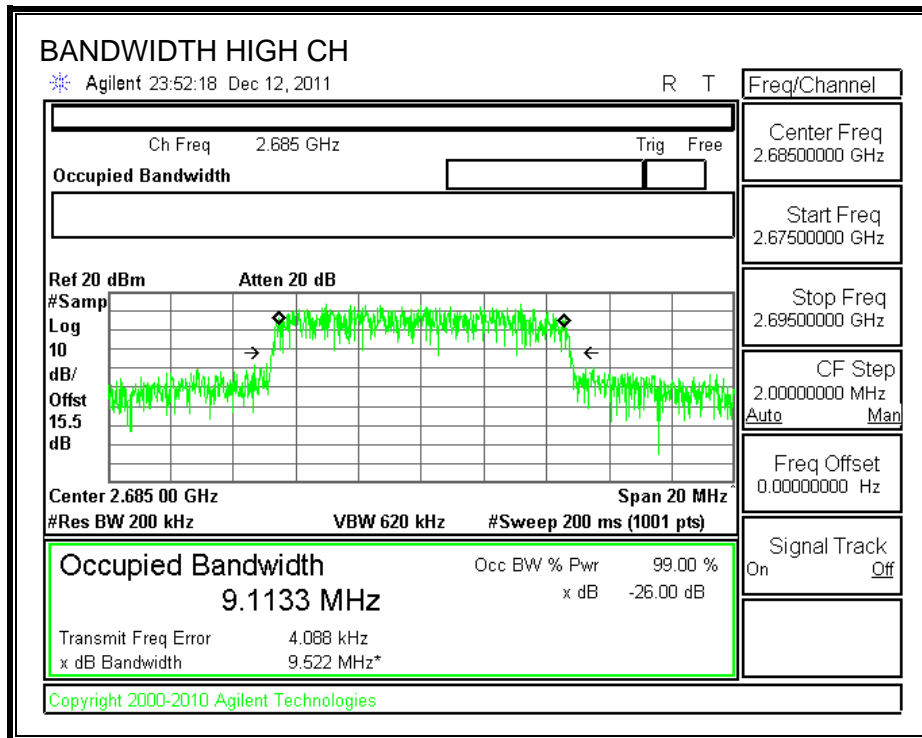




10MHz_16QAM

26 dB and 99% BANDWIDTH





7.2. RF OUTPUT POWER AT THE ANTENNA TERMINALS

LIMITS

§2.1046 & §27.50 (h)(2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17 and §27.50 (i) and KDB 971168

RESULTS

RF Conducted at Antenna Port 1:

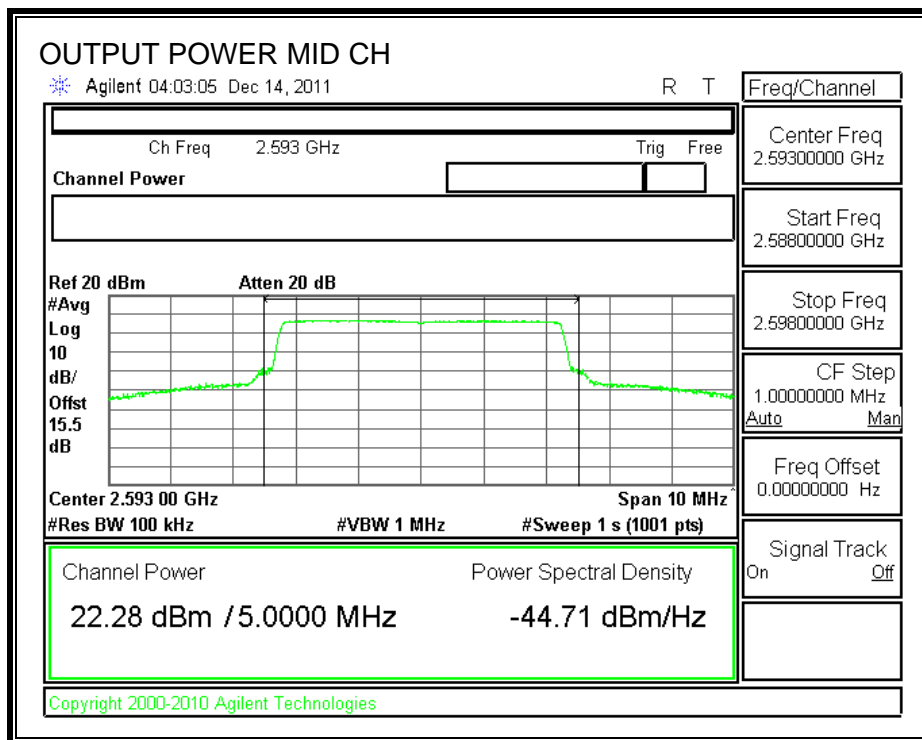
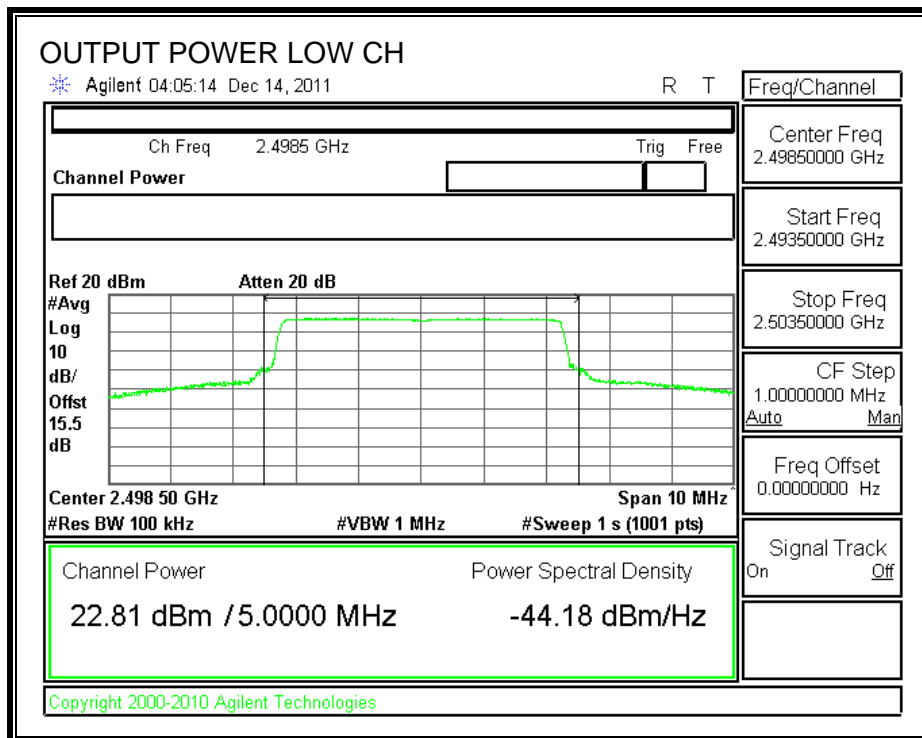
Band	Mode	Test Vector file name	Channel	Frequency (MHz)	Output power (dBm)	Output power (mW)
5MHz	QPSK	T5D29U184Q12S85	Low	2498.5	22.81	190.99
			Middle	2593.0	22.28	169.04
			High	2687.5	22.71	186.64
	16QAM	T5D29U1816Q34S85	Low	2498.5	22.77	189.23
			Middle	2593.0	22.22	166.72
			High	2687.5	22.69	185.78
10MHz	QPSK	T10D29U184Q12S175	Low	2501.0	22.86	193.20
			Middle	2596.0	22.24	167.49
			High	2685.0	22.84	192.31
	16QAM	T10D29U1816Q12S175	Low	2501.0	22.85	192.75
			Middle	2596.0	22.25	167.88
			High	2685.0	22.77	189.23

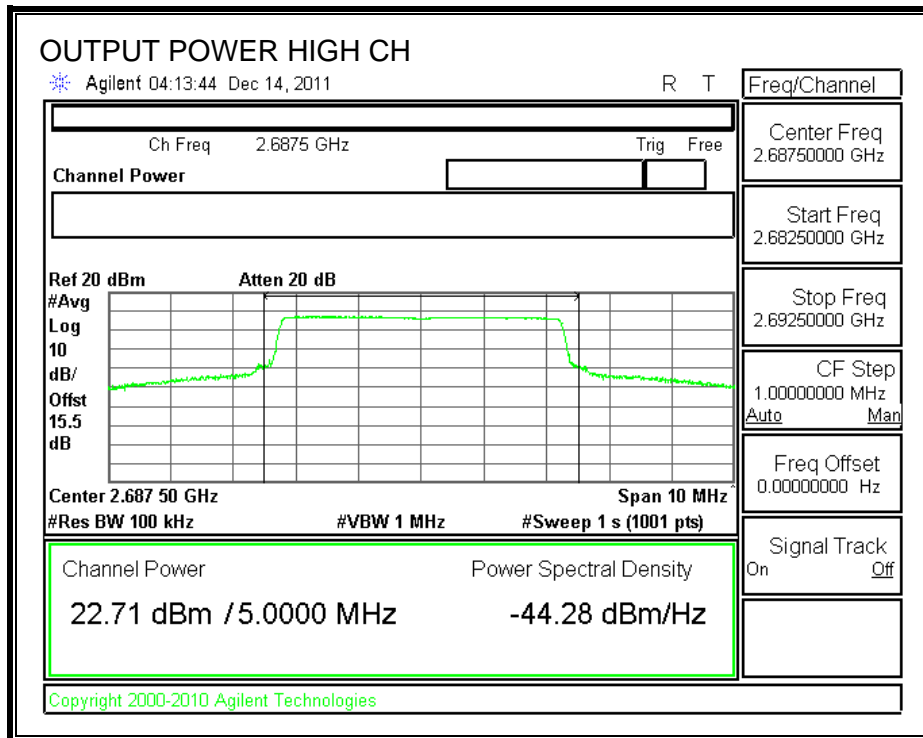
RF Conducted at Antenna Port 2:

Band	Mode	Test Vector file name	Channel	Frequency (MHz)	Output power (dBm)	Output power (mW)
5MHz	QPSK	T5D29U184Q12S85	Low	2498.5	22.72	187.07
			Middle	2593.0	22.26	168.27
			High	2687.5	22.54	179.47
	16QAM	T5D29U1816Q34S85	Low	2498.5	22.61	182.39
			Middle	2593.0	22.16	164.44
			High	2687.5	22.47	176.60
10MHz	QPSK	T10D29U184Q12S175	Low	2501.0	22.85	192.75
			Middle	2593.0	22.22	166.72
			High	2685.0	22.79	190.11
	16QAM	T10D29U1816Q12S175	Low	2501.0	22.79	190.11
			Middle	2593.0	22.19	165.58
			High	2685.0	22.77	189.23

5MHz_QPSK AT ANTENNA 1

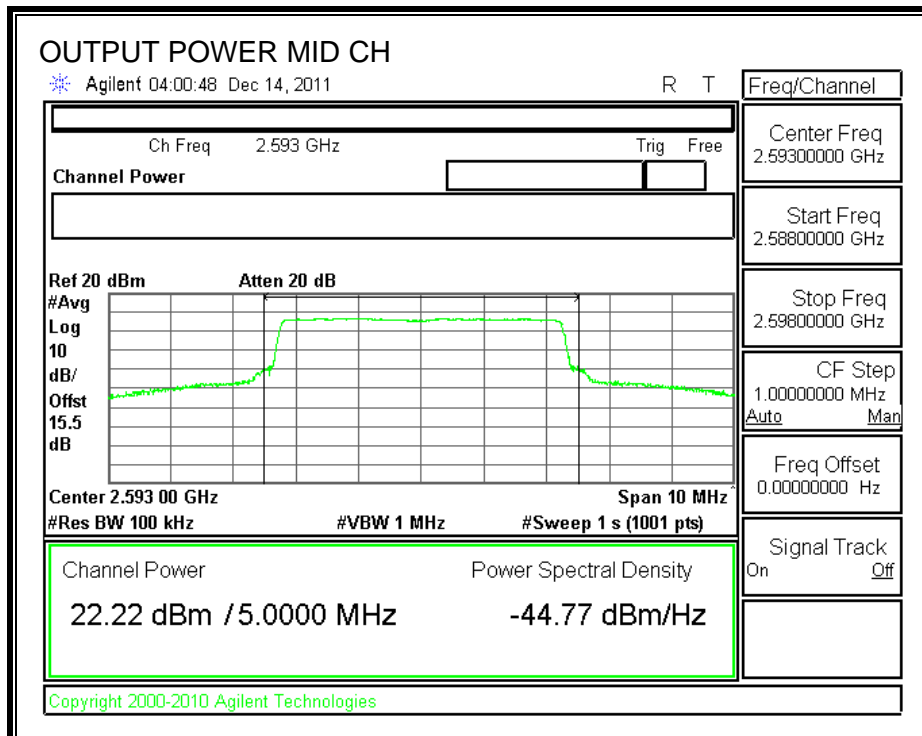
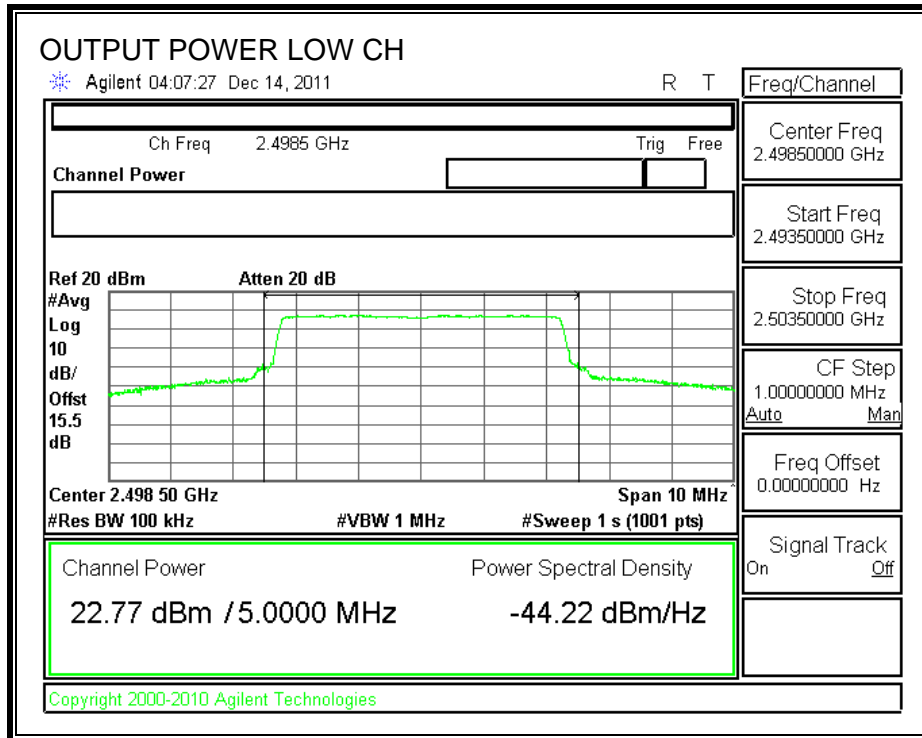
OUTPUT POWER

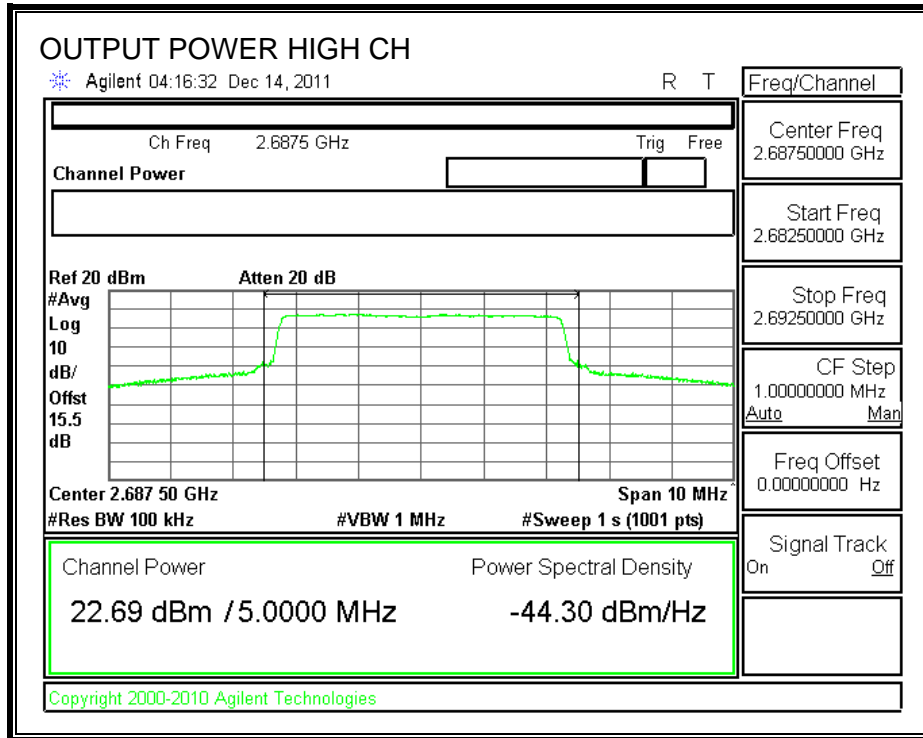




5MHz_16QAM AT ANTENNA 1

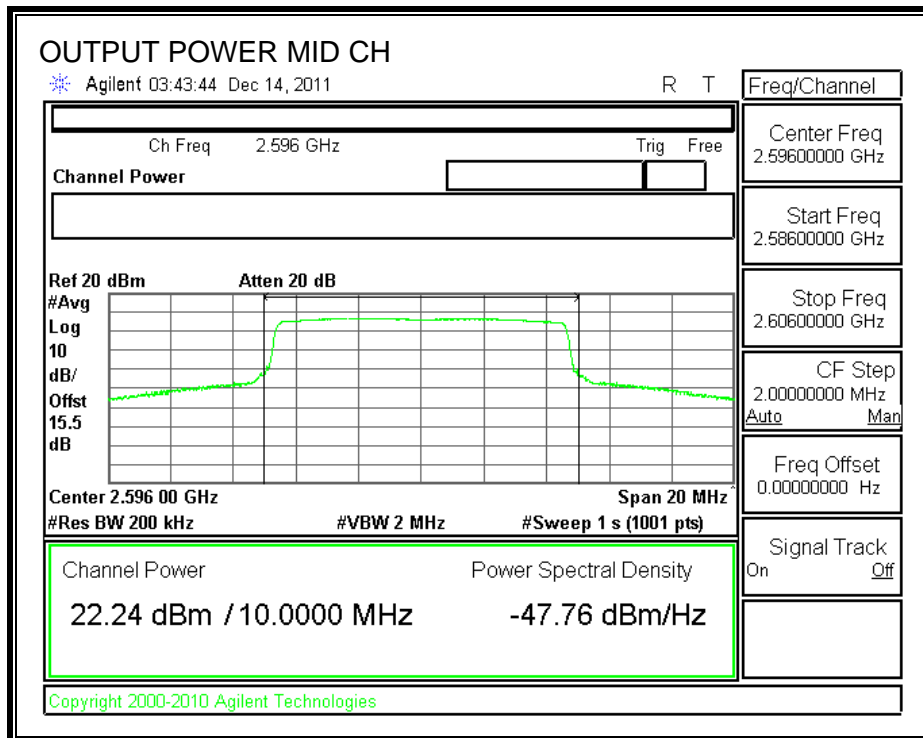
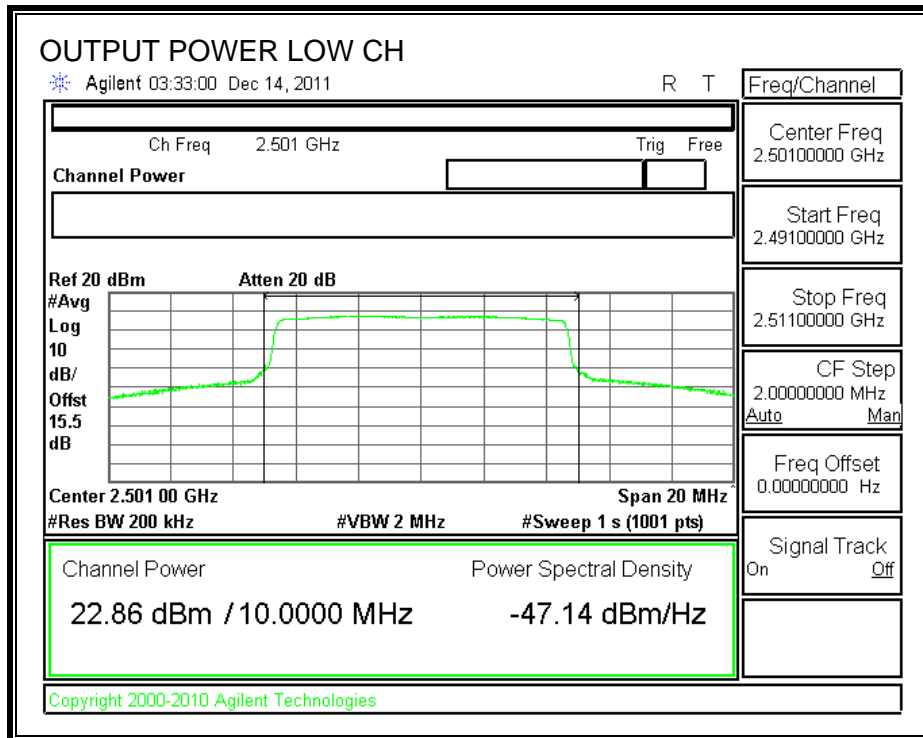
OUTPUT POWER

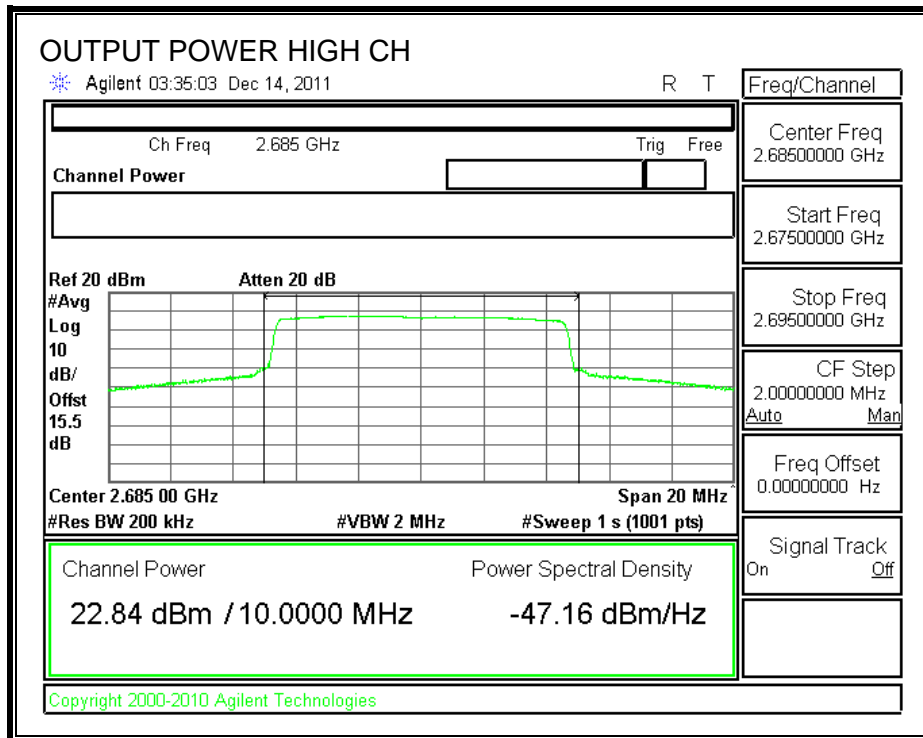




10MHz_QPSK AT ANTENNA 1

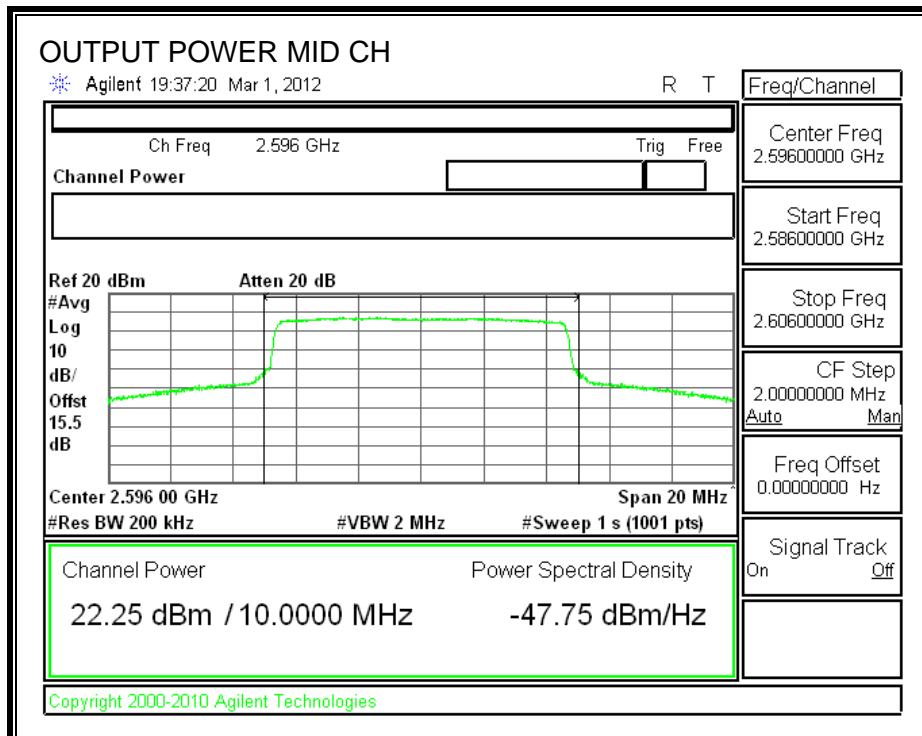
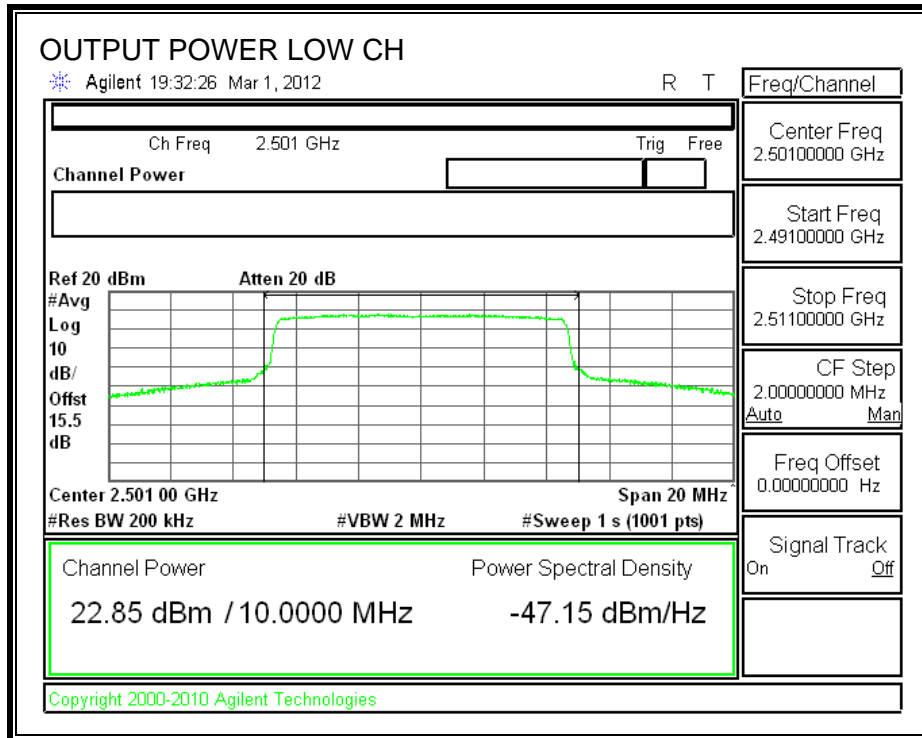
OUTPUT POWER

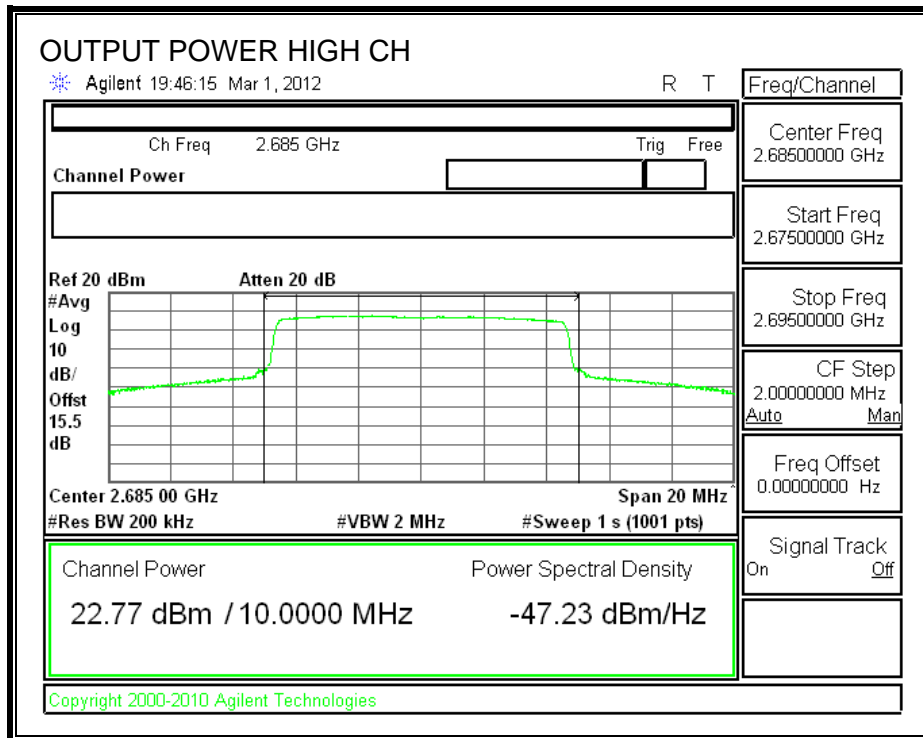




10MHz_16QAM AT ANTENNA 1

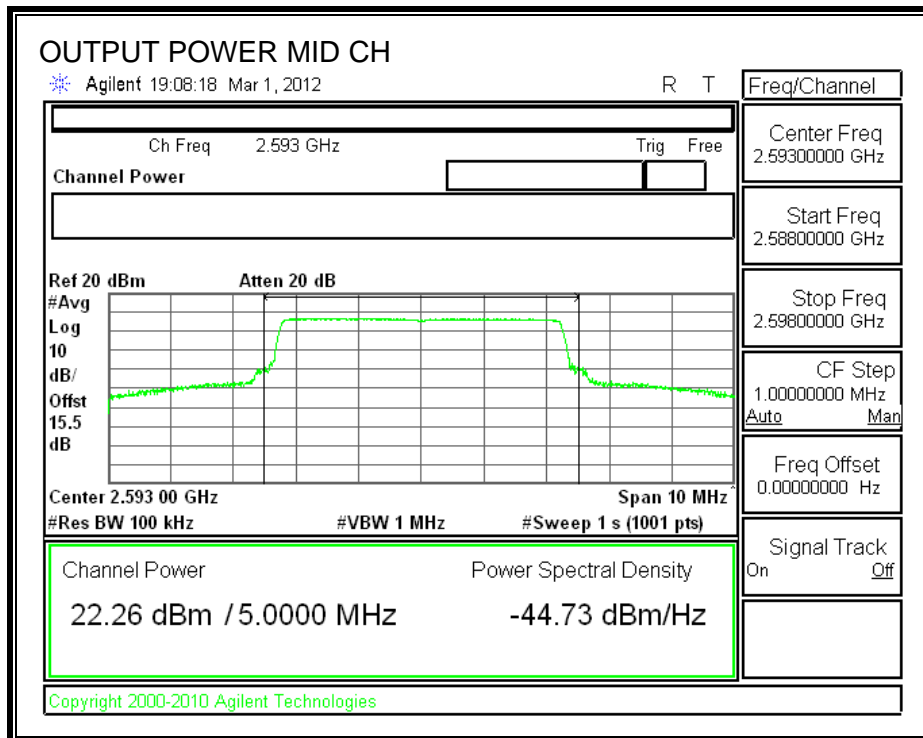
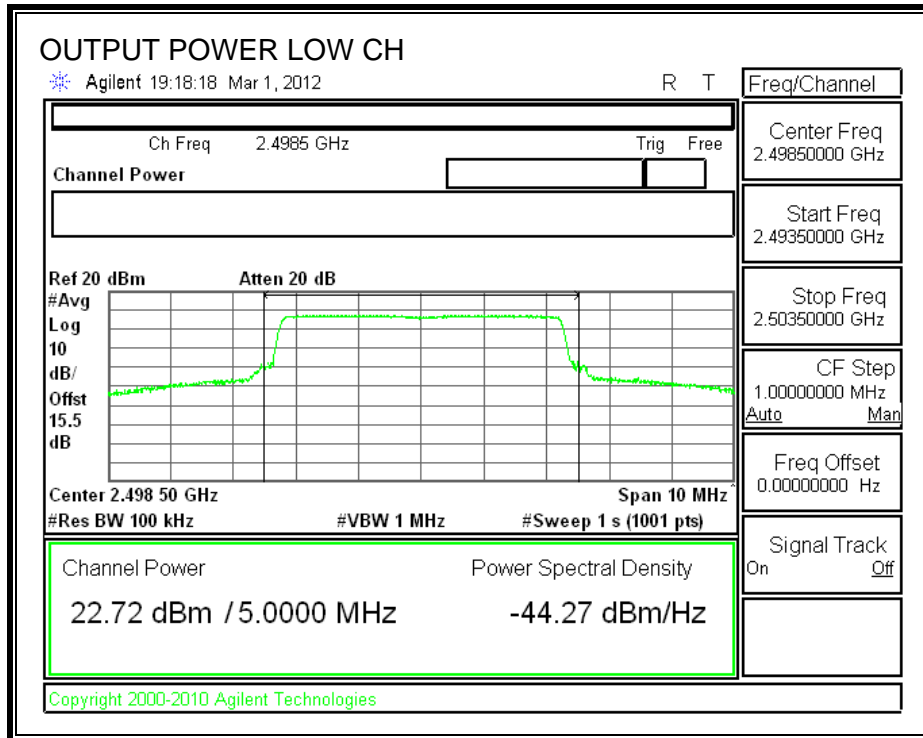
OUTPUT POWER

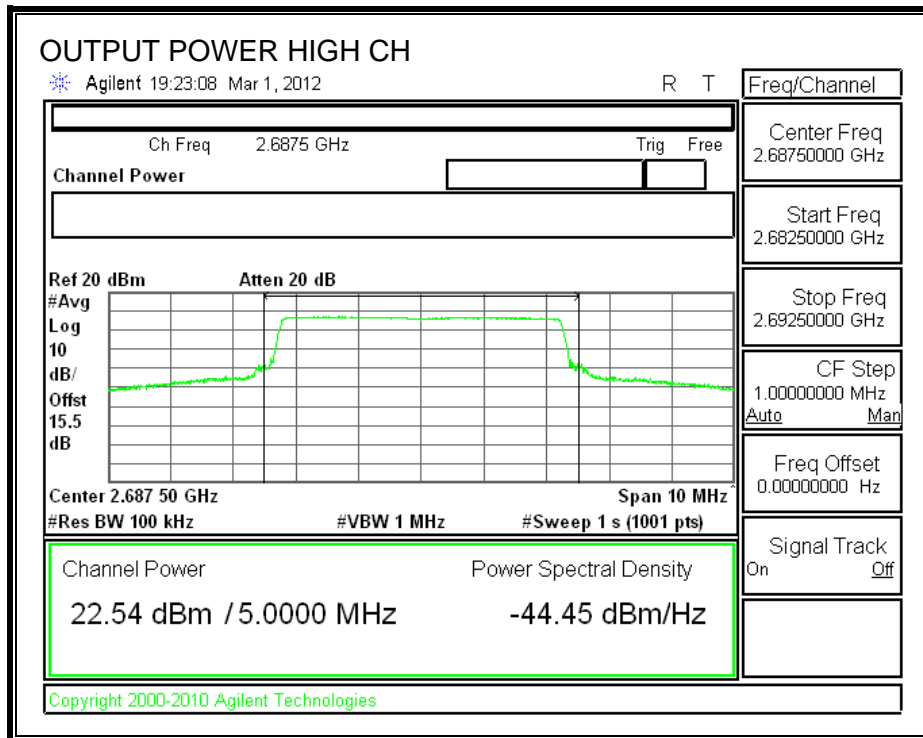




5MHz_QPSK AT ANTENNA 2

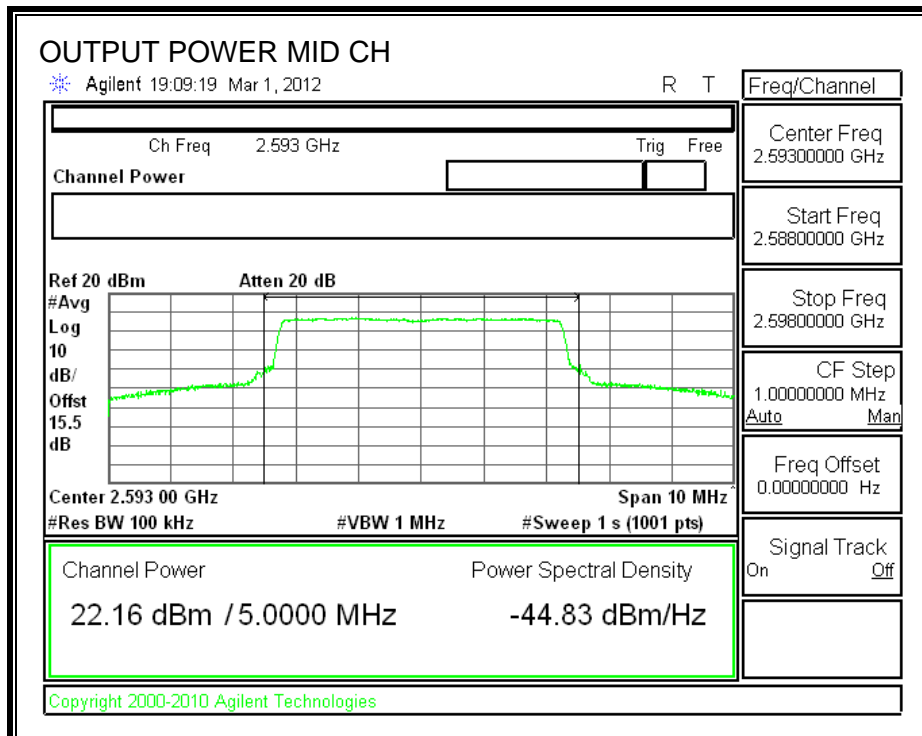
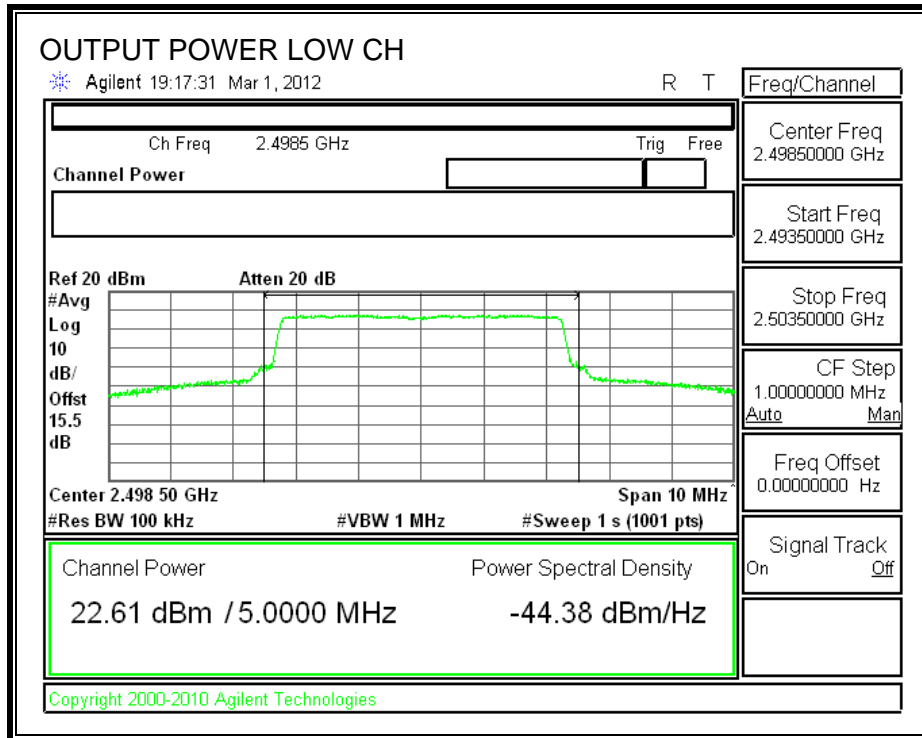
OUTPUT POWER

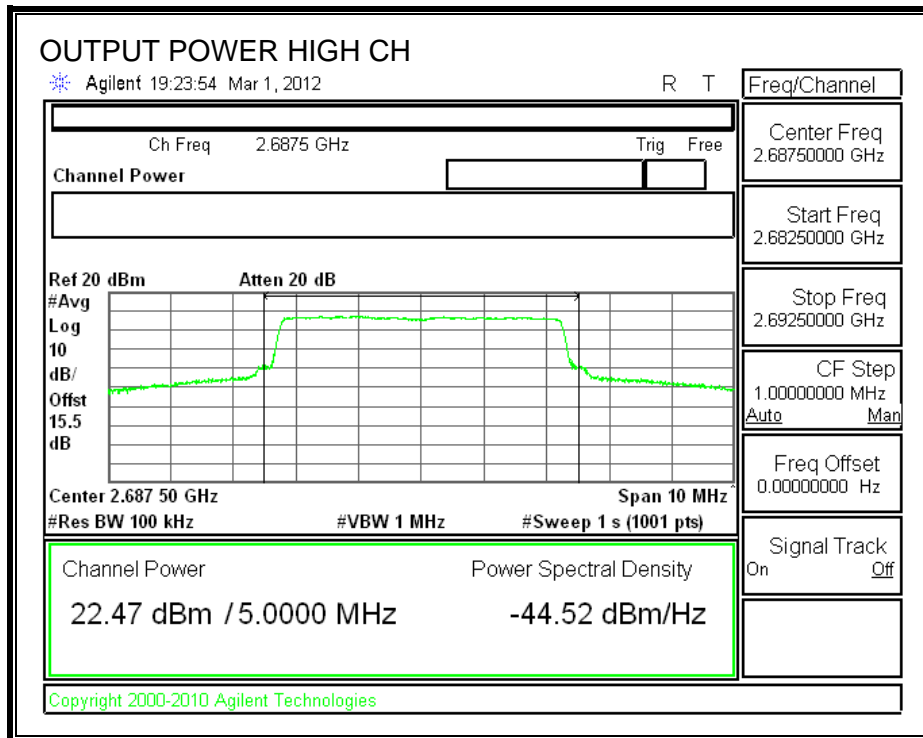




5MHz_16QAM AT ANTENNA 2

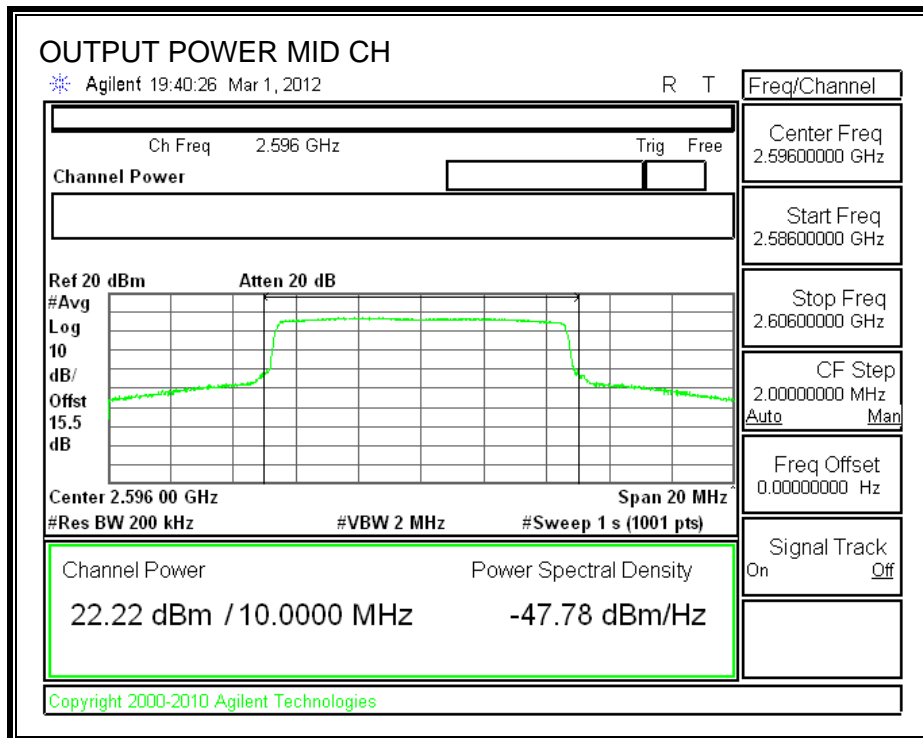
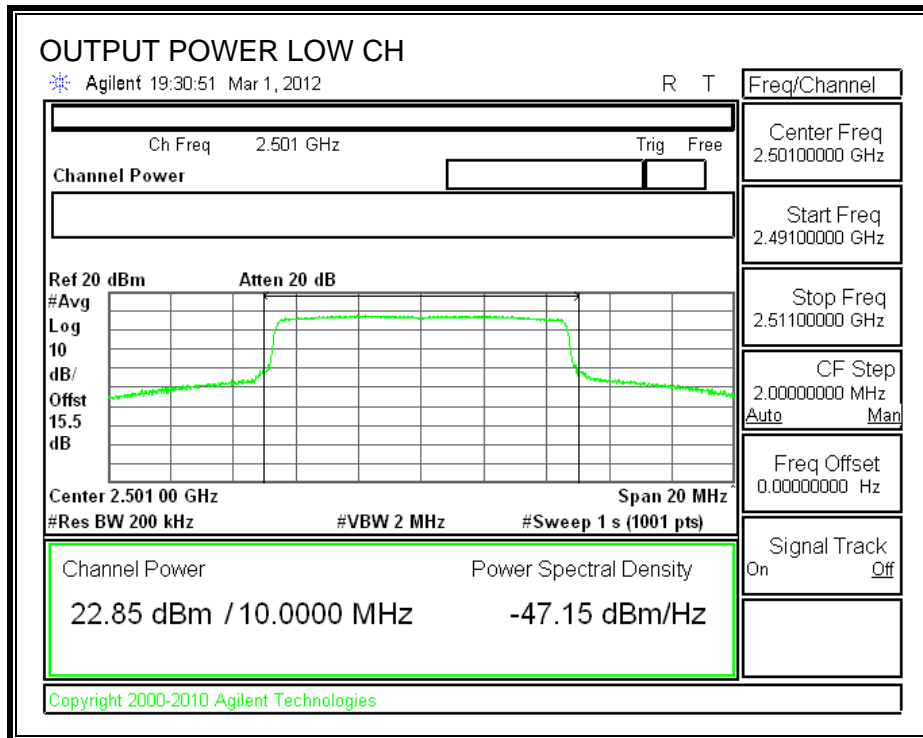
OUTPUT POWER

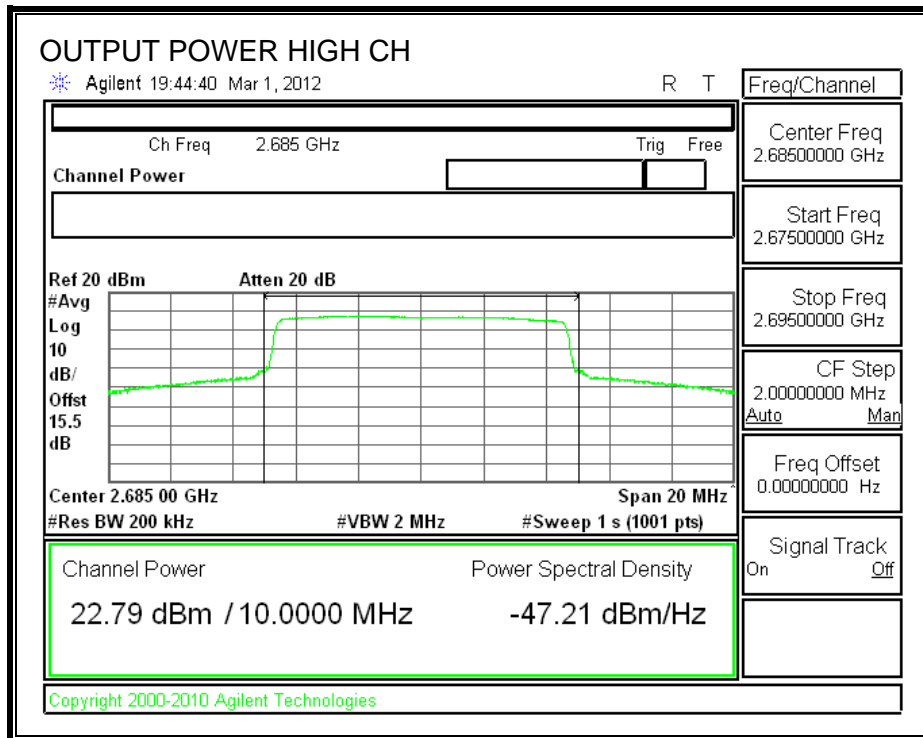




10MHz_QPSK AT ANTENNA 2

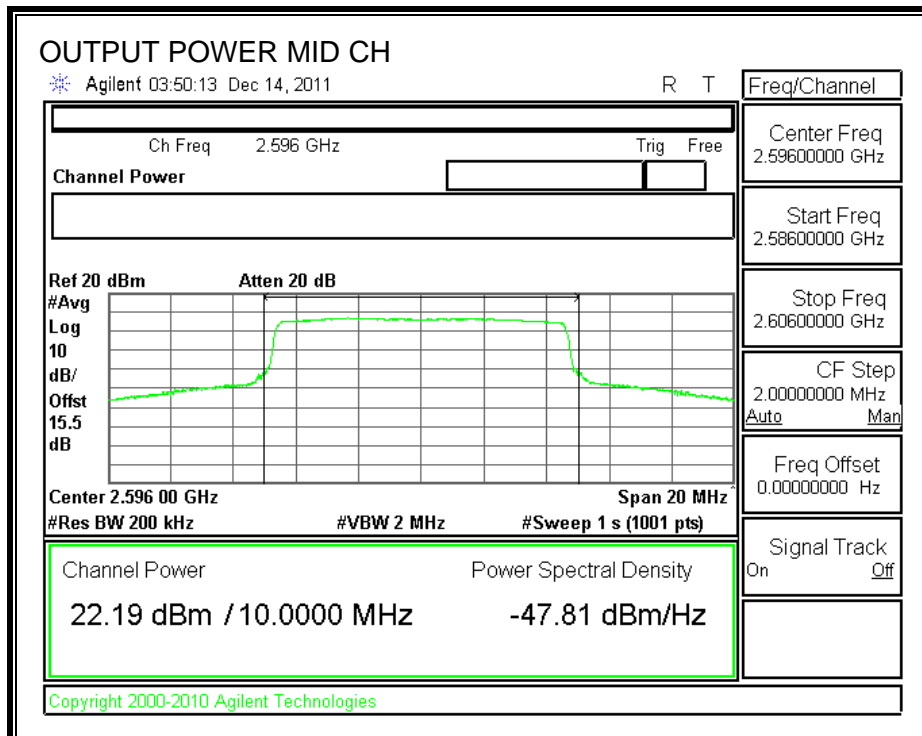
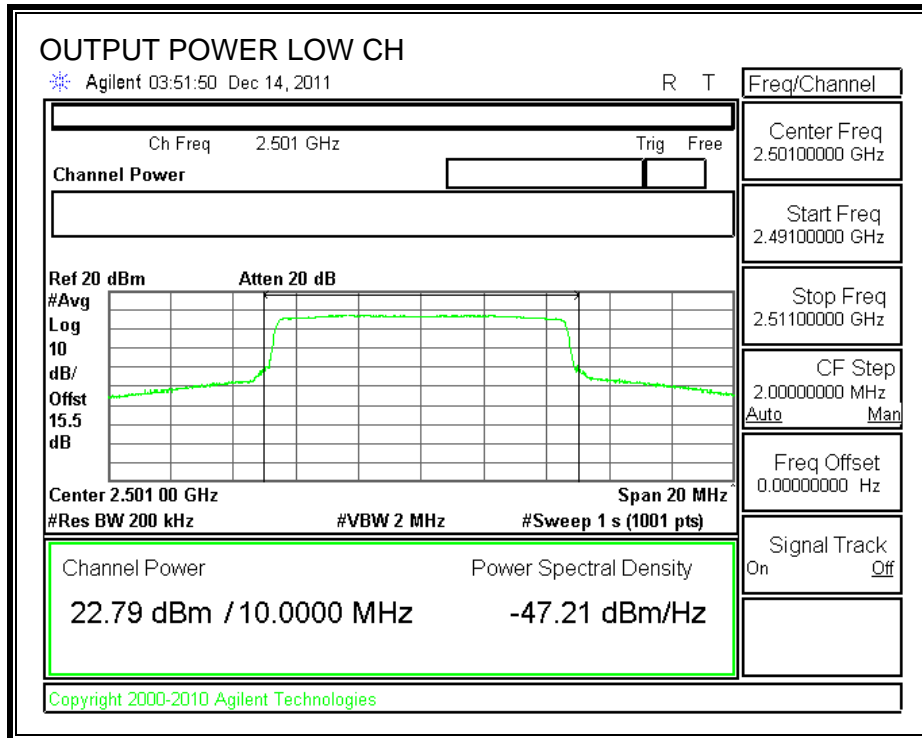
OUTPUT POWER

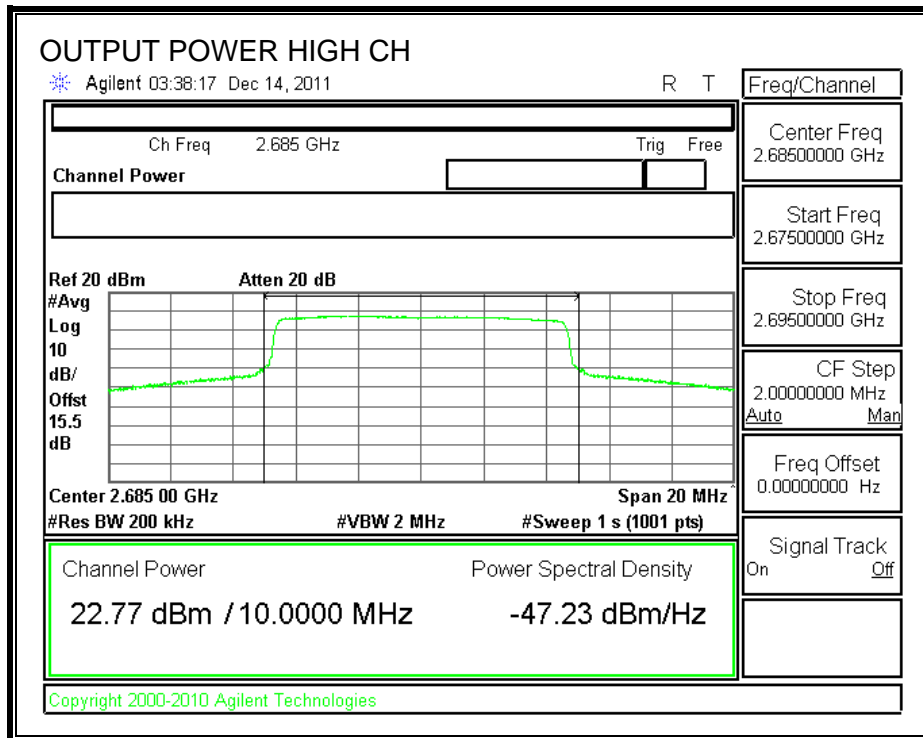




10MHz_16QAM AT ANTENNA 2

OUTPUT POWER



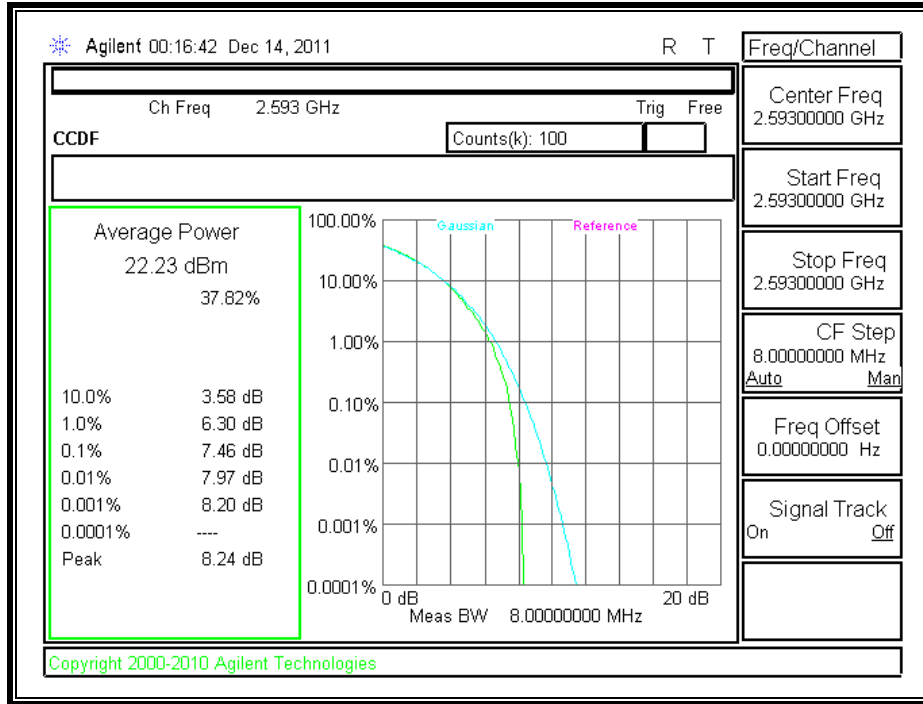


Peak-To-Average Ratio:

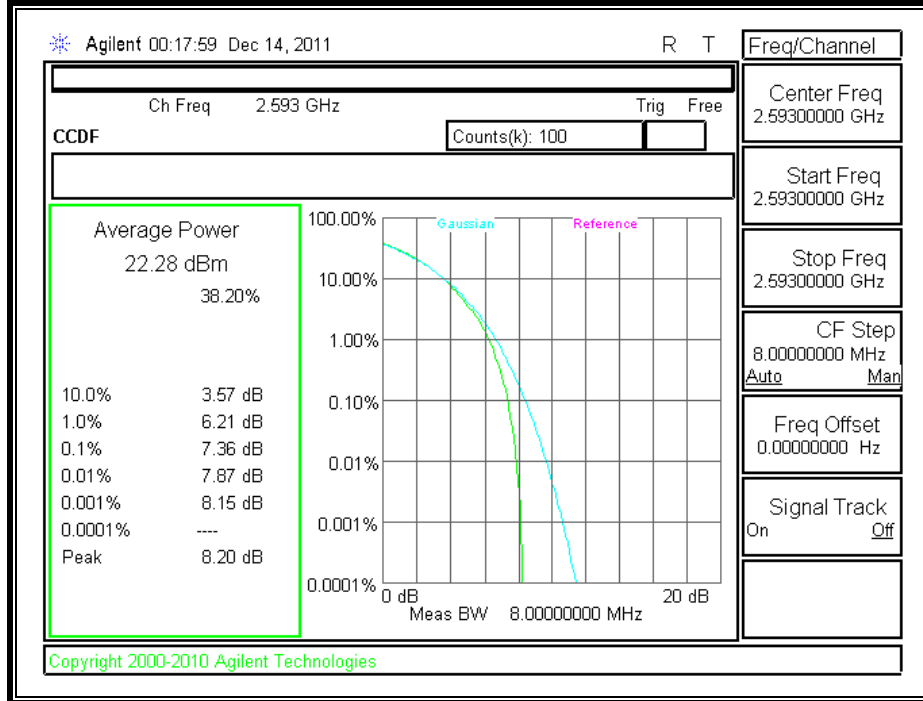
Offset: 0.5 (cable) + 15 (Coupler) = 15.5 dB

Mode	Channel Band-width (MHZ)	f (MHz)	Couducted Power (dBm)		Peak-to-Average Ratio (PAR)
			*Peak	Average	
QPSK	5	2593.0	30.47	22.23	8.24
Mode	Channel Band-width	f (MHz)	Couducted Power (dBm)		Peak-to-Average Ratio
			*Peak	Average	
16QAM	5	2593.0	30.48	22.28	8.20
Mode	Channel Band-width	f (MHz)	Couducted Power (dBm)		Peak-to-Average Ratio
			*Peak	Average	
QPSK	10	2596.0	30.79	21.39	9.4
Mode	Channel Band-width	f (MHz)	Couducted Power (dBm)		Peak-to-Average Ratio
			*Peak	Average	
16QAM	10	2596.0	30.26	21.33	8.93
*Peak Reading = Average Reading + Peak-to-Average Ratio					

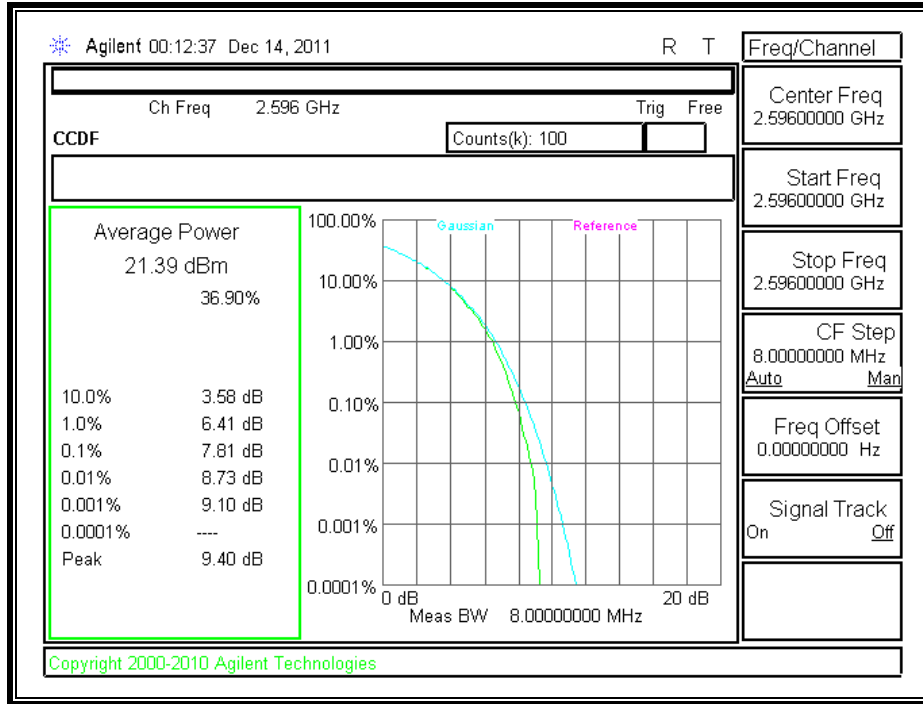
5MHz QPSK



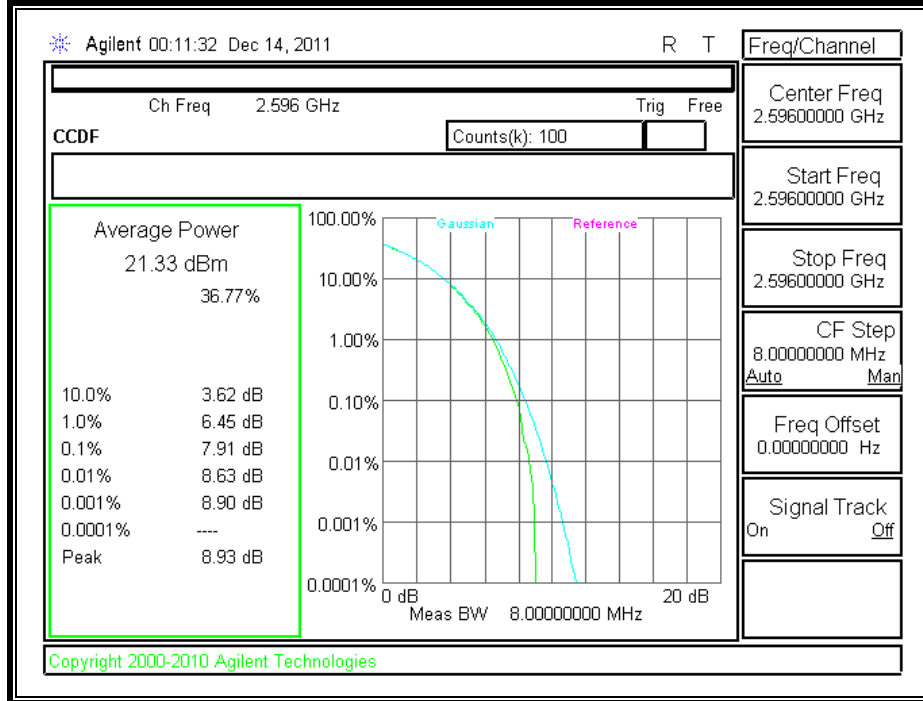
5MHz 16QAM



10MHz QPSK



10MHz 16QAM



7.3. LIMITS OF CHANNEL EDGE

LIMITs

§2.1051

§27.53 (m)(4)(6) For mobile digital stations, the attenuation factor shall be not less than $43 + 10 \log (P)$ dB at the channel edge, the limit of emission equal to -13dBm, and $55 + 10 \log (P)$ dB at 5.5 megahertz from the channel edges, the limit of emission equal to -25dBm.

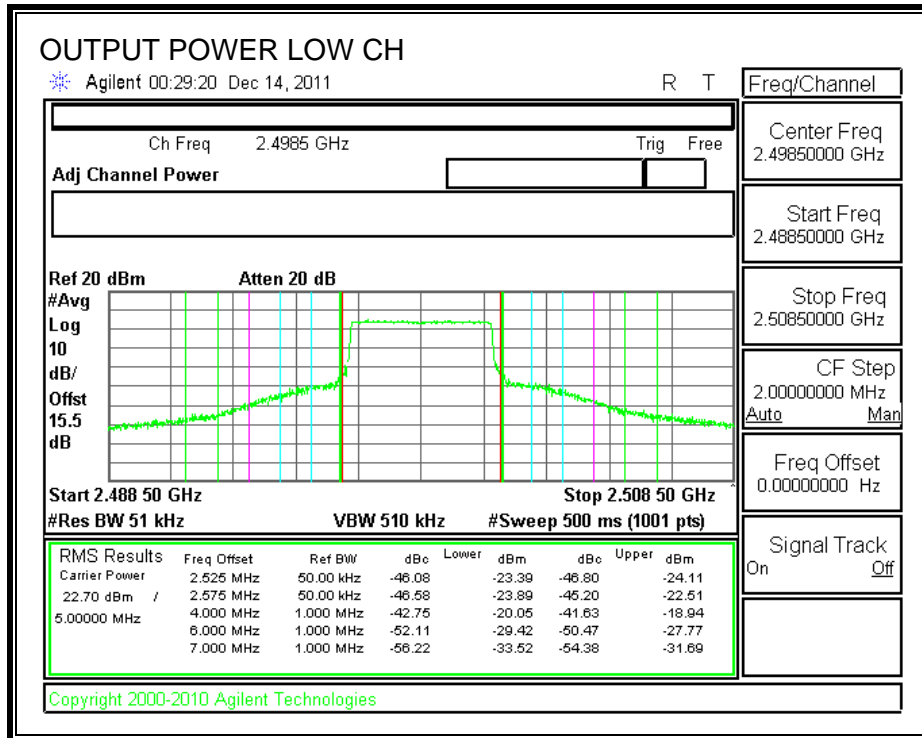
TEST PROCEDURE

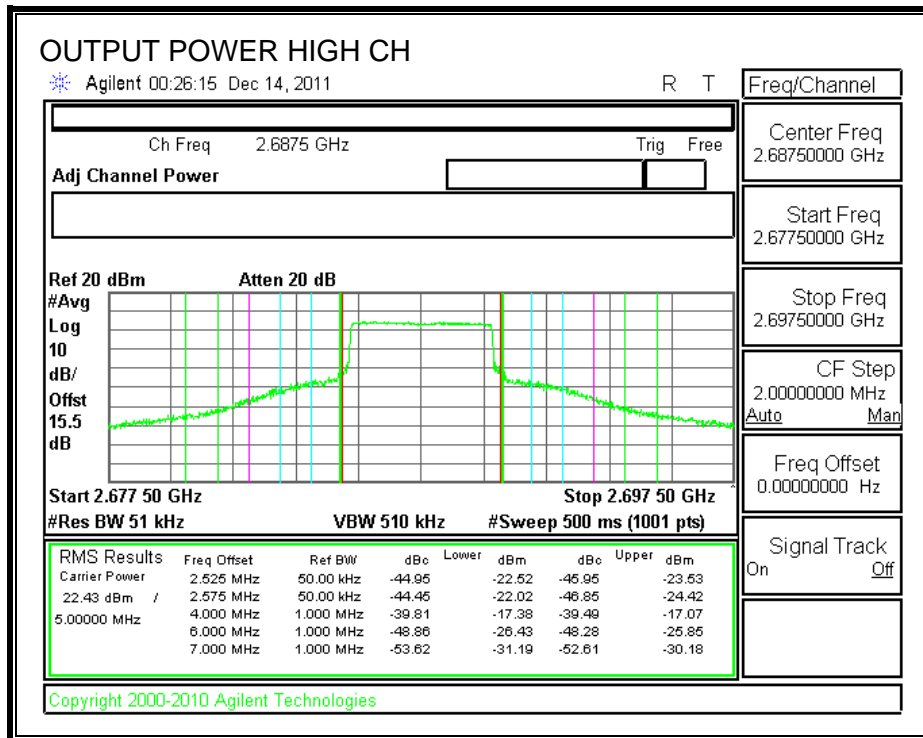
ANSI / TIA / EIA 603 Clause 3.2.12

RESULTS

5MHz_QPSK

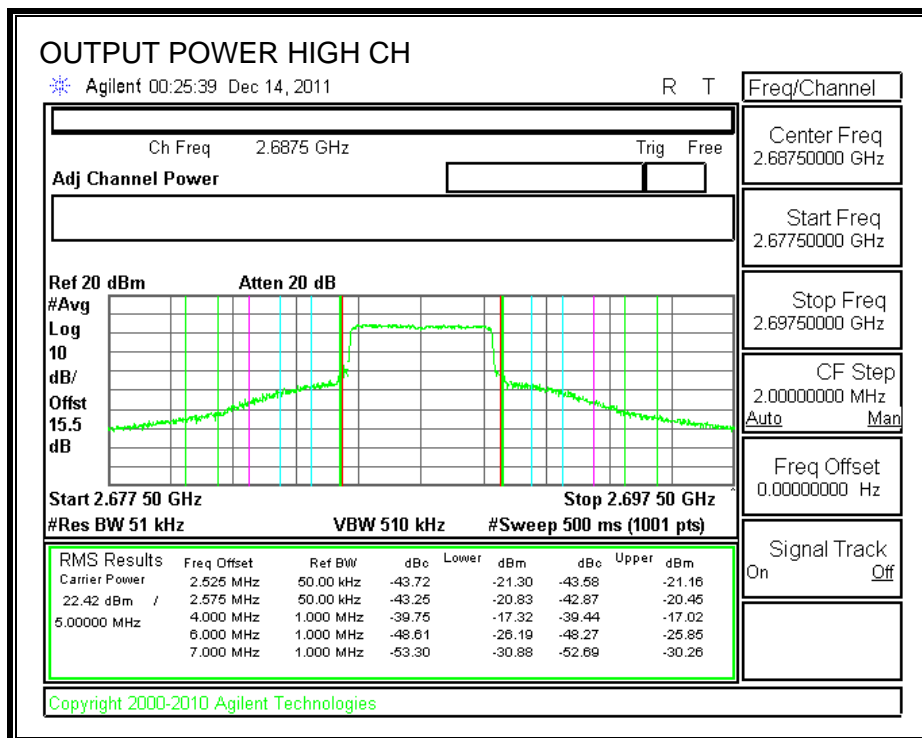
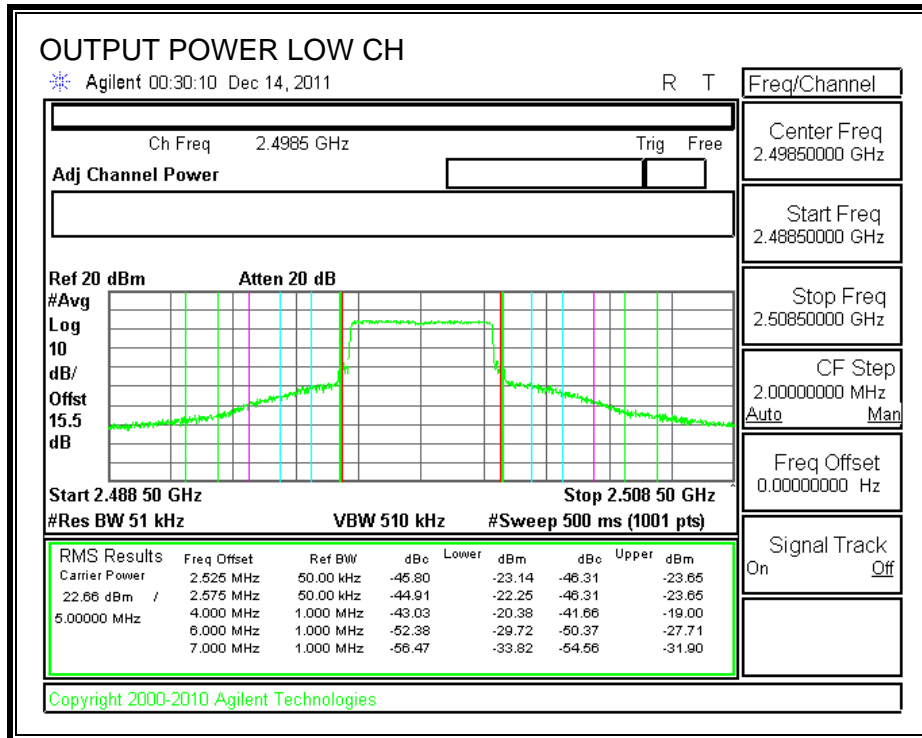
OUTPUT POWER





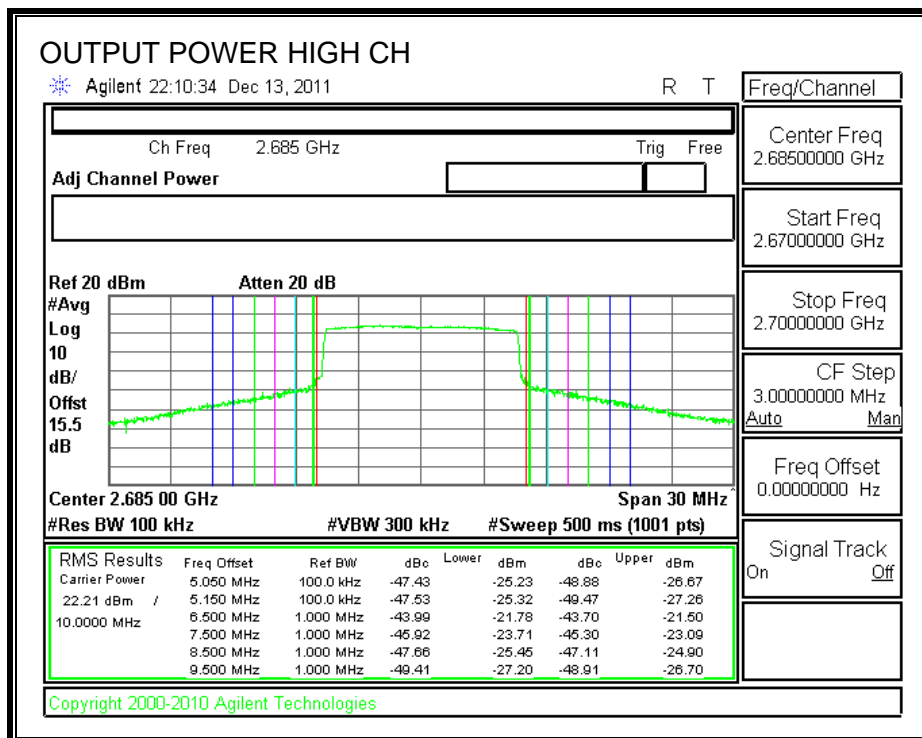
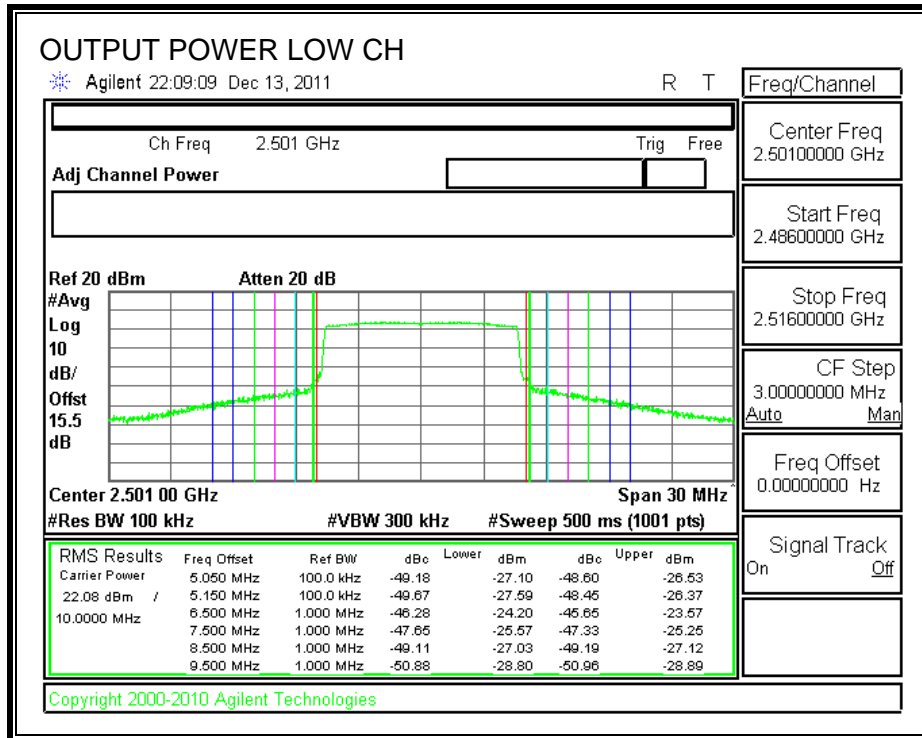
5MHz_16QAM

OUTPUT POWER



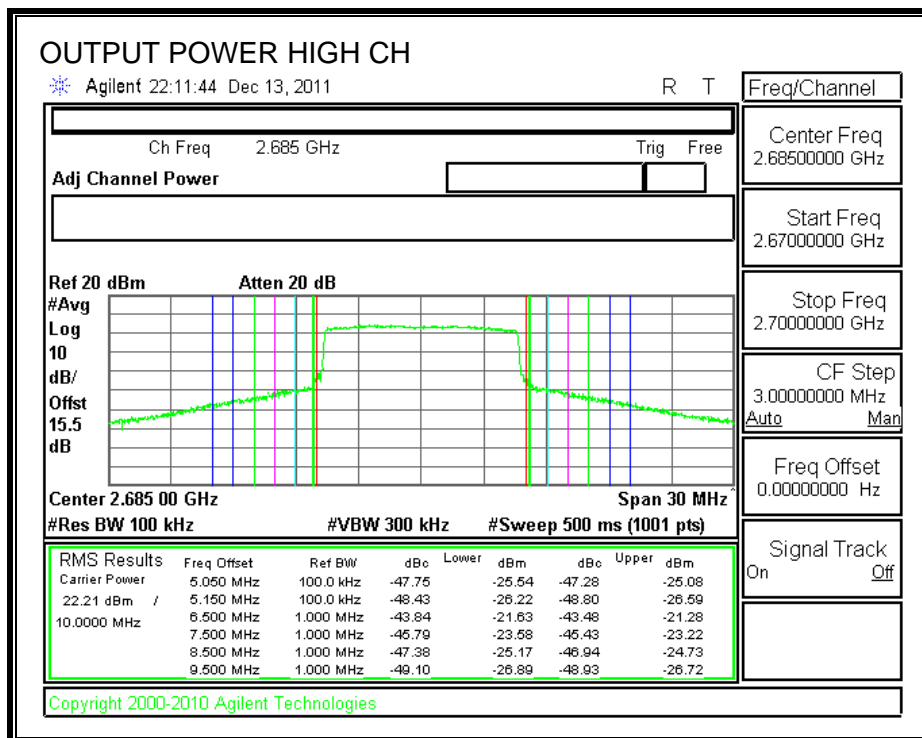
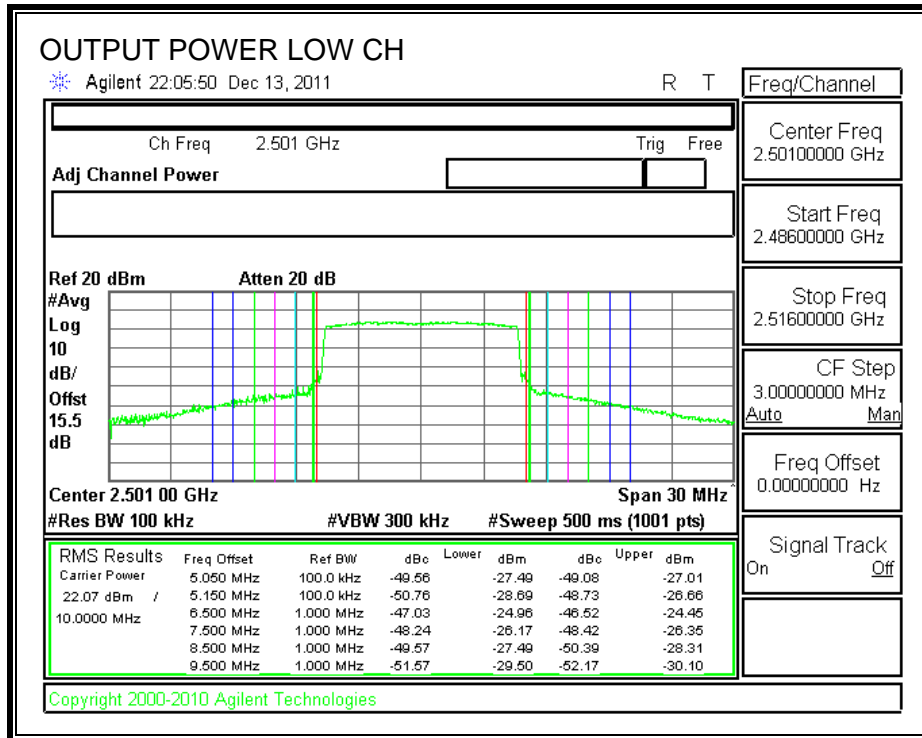
10MHz_QPSK

OUTPUT POWER



10MHz_16QAM

OUTPUT POWER



7.4. CONDUCTED SPURIOUS EMISSIONS

LIMIT

§2.1051

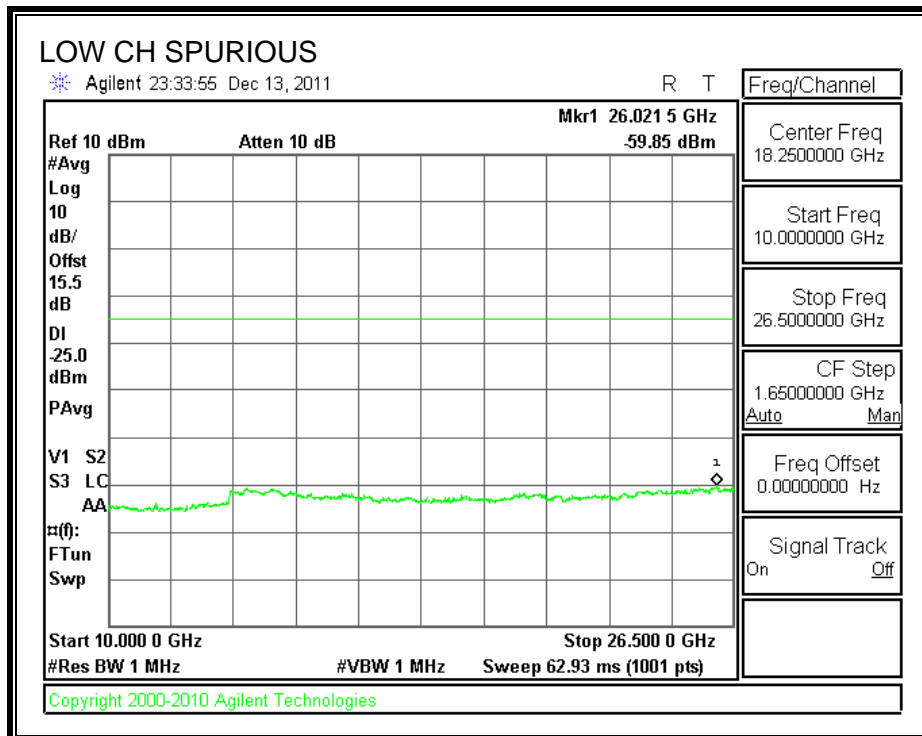
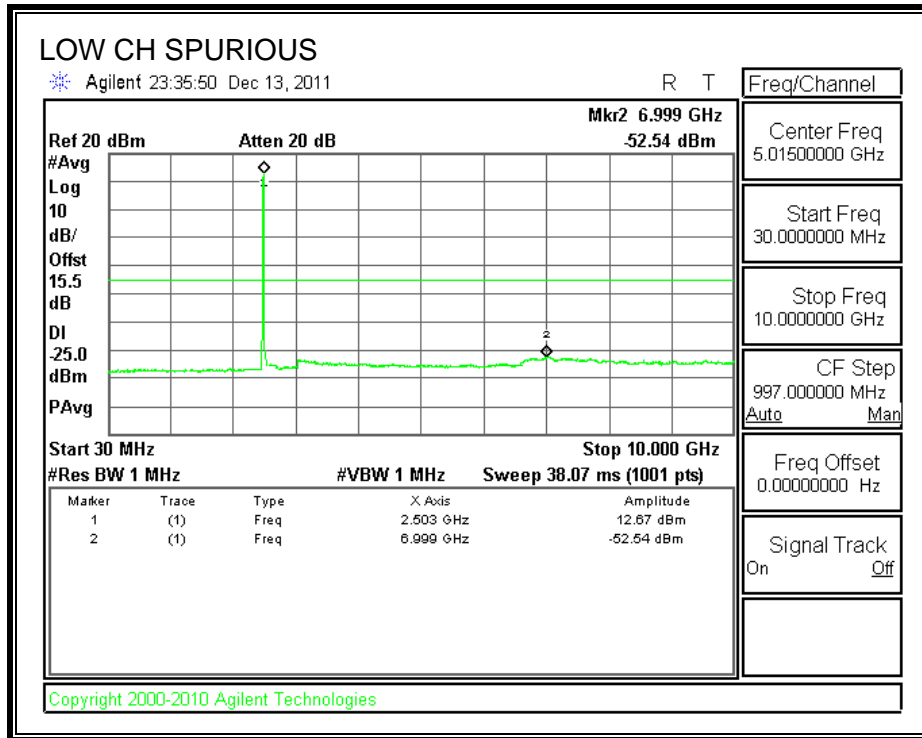
§27.53 (m)(4)(6) For mobile digital stations, the attenuation factor shall be not less than $43 + 10 \log (P)$ dB at the channel edge and $55 + 10 \log (P)$ dB at 5.5 megahertz from the channel edges.

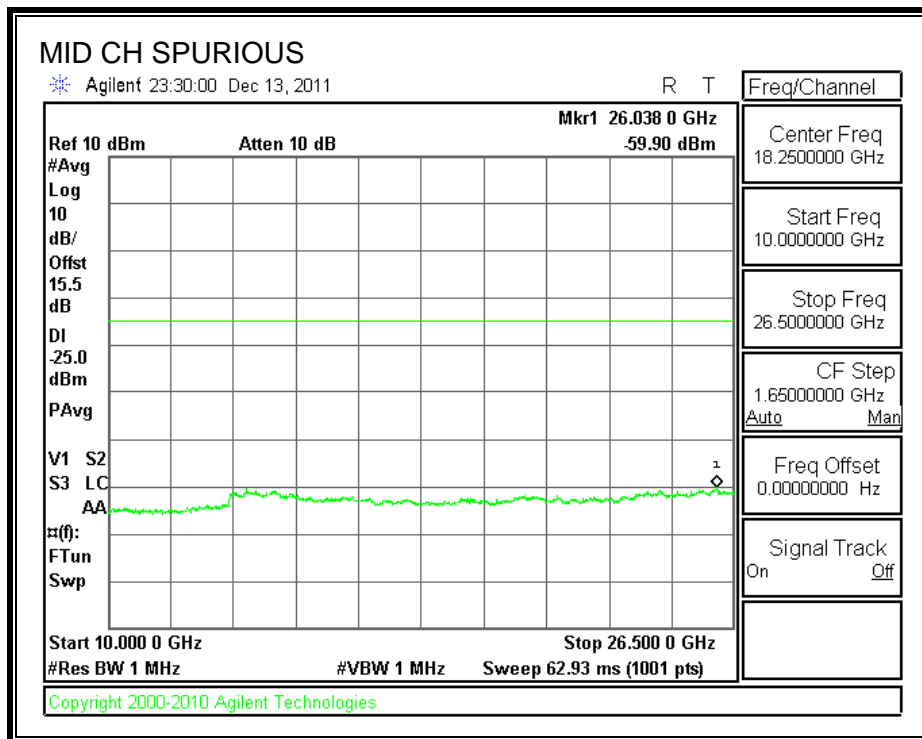
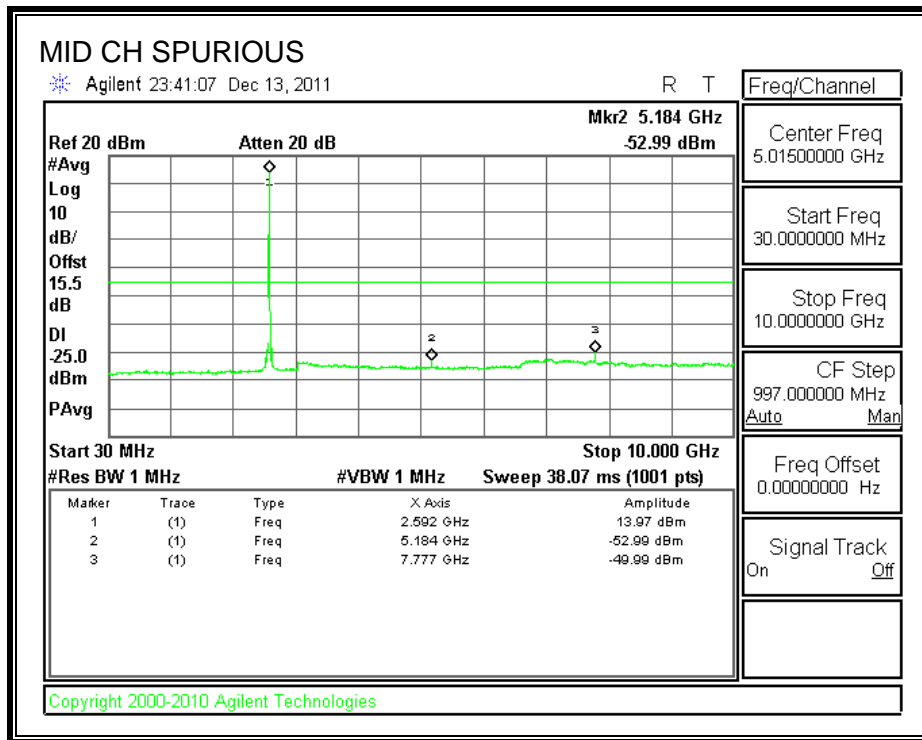
TEST PROCEDURE

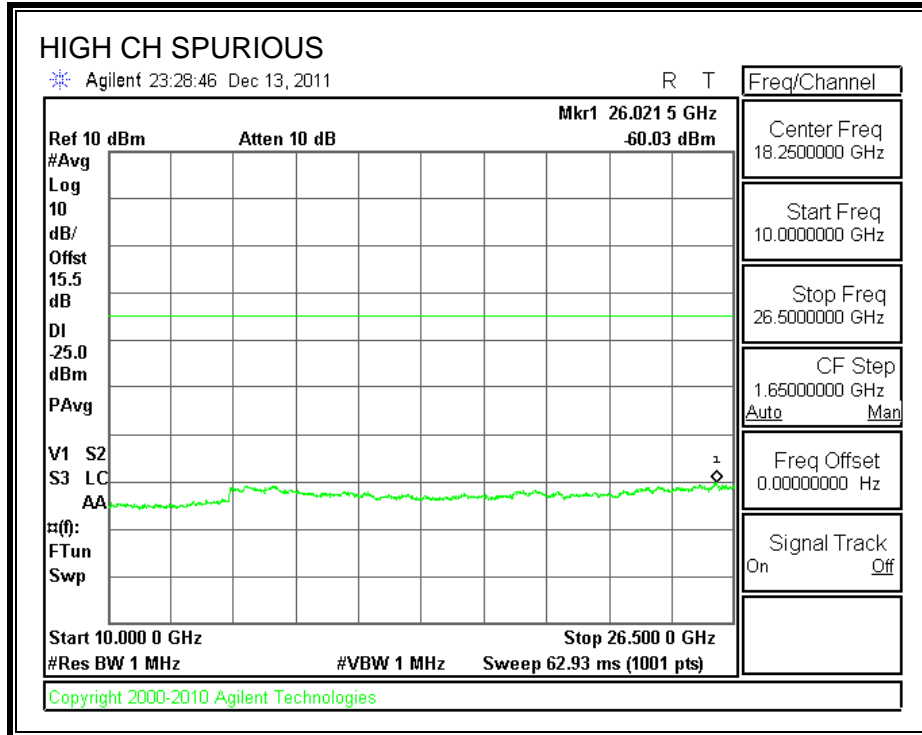
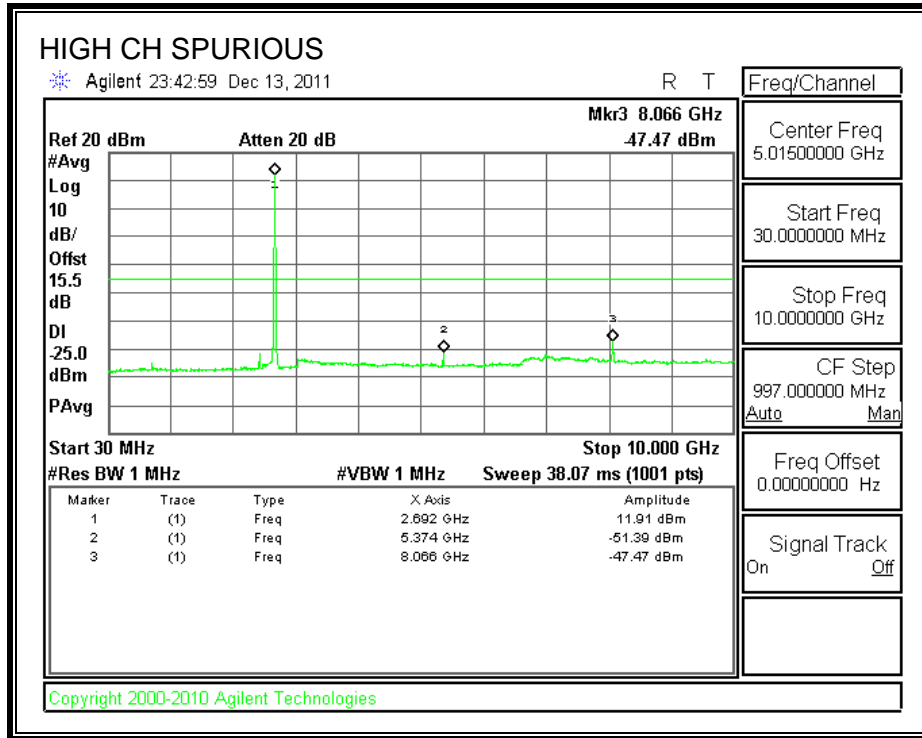
ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 27

RESULTS

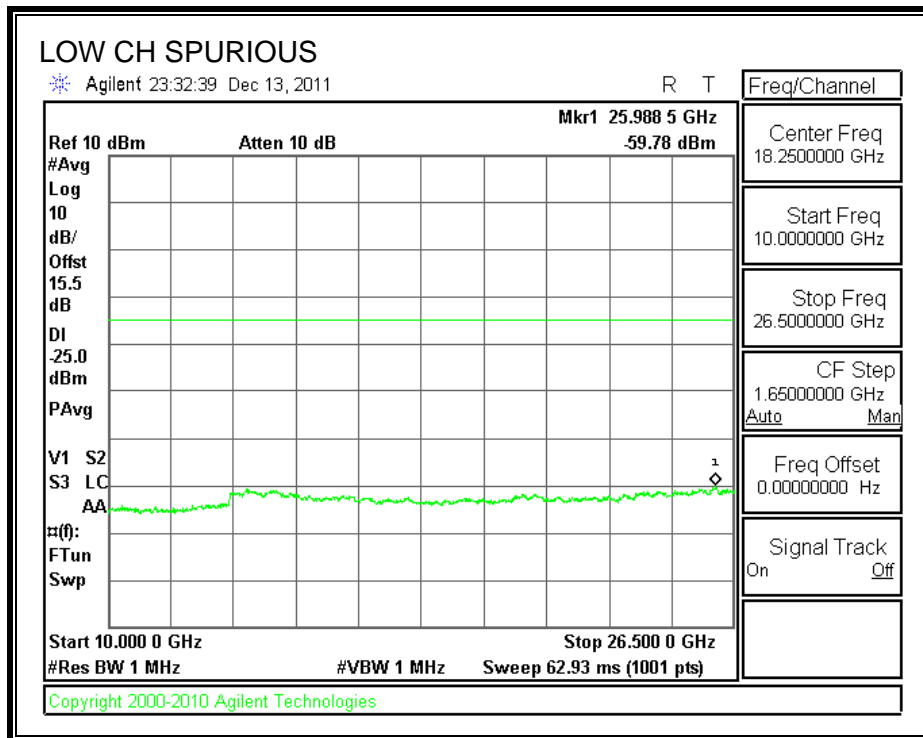
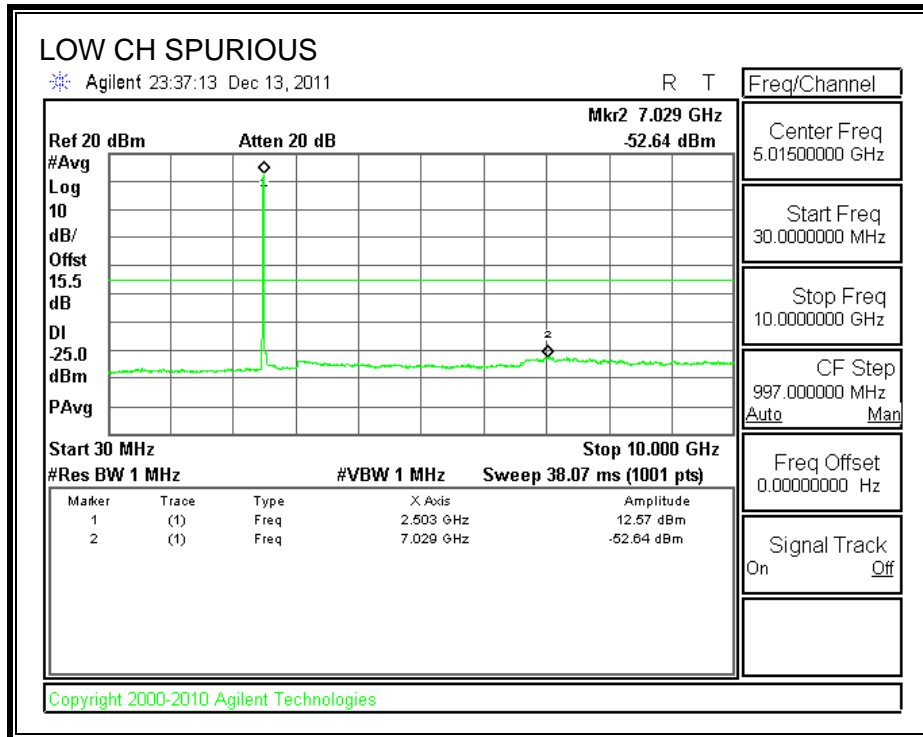
5MHz_QPSK

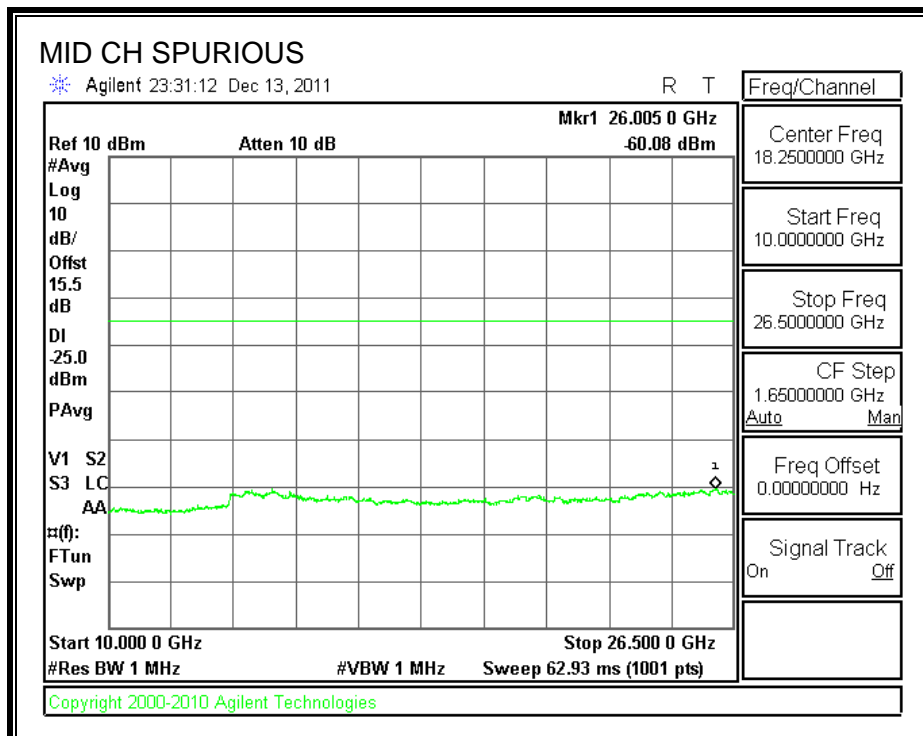
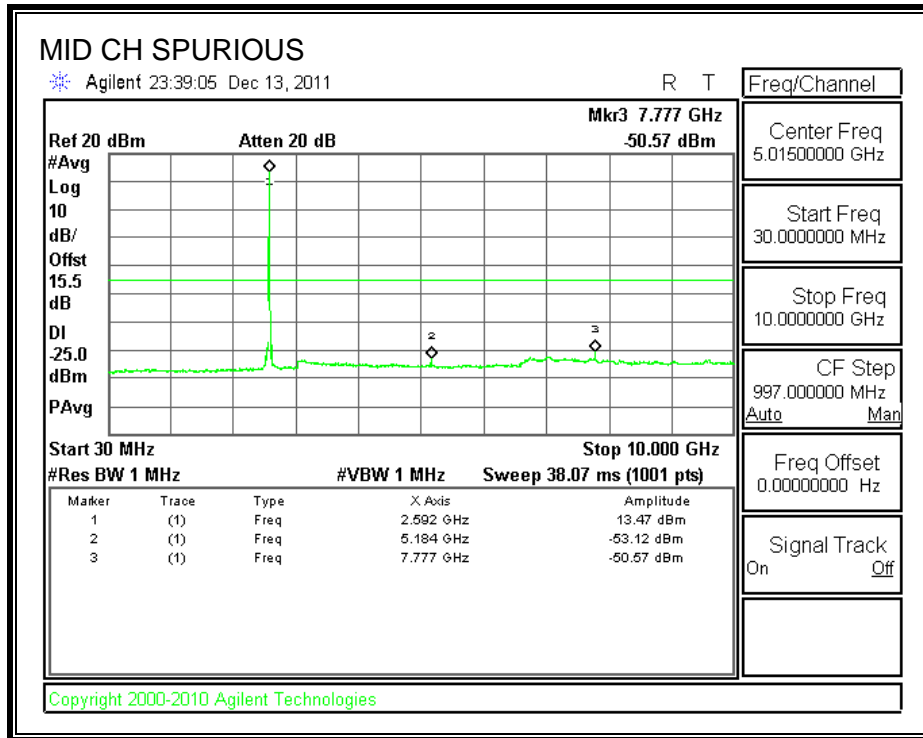


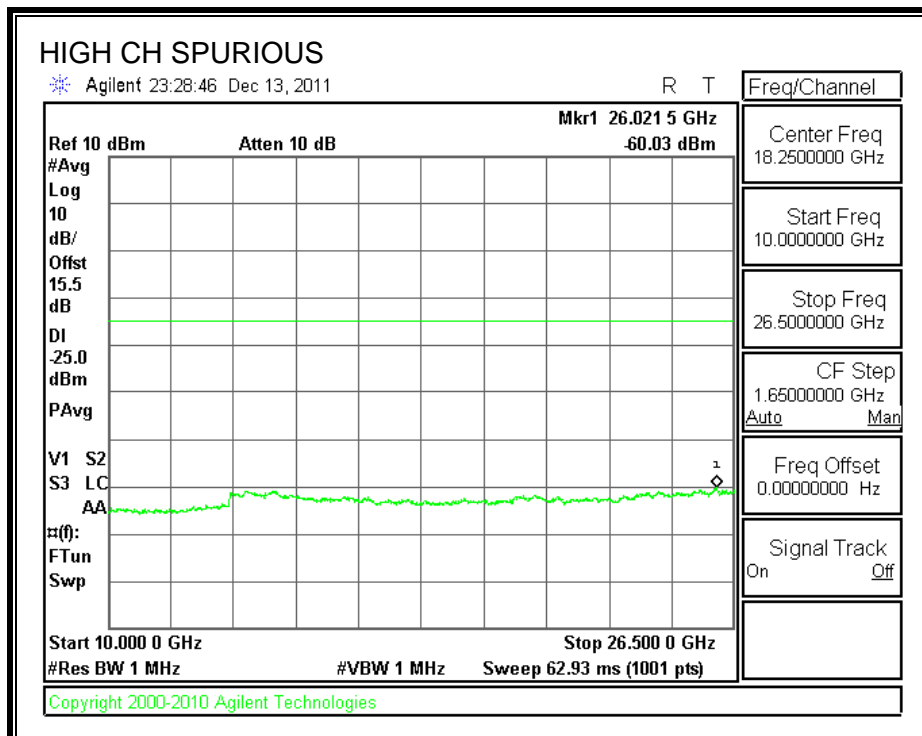
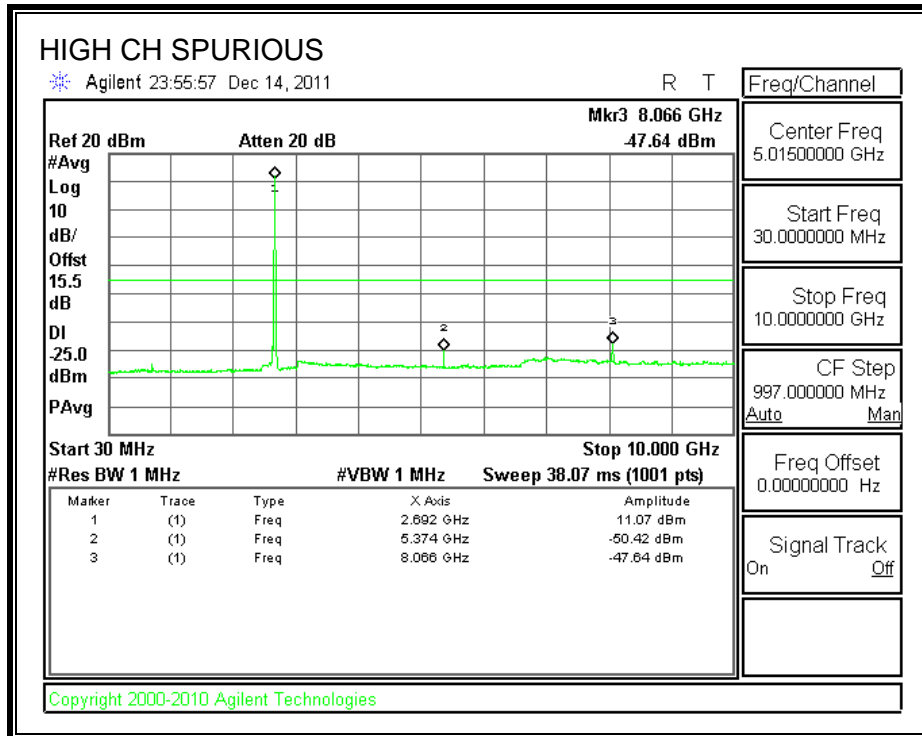




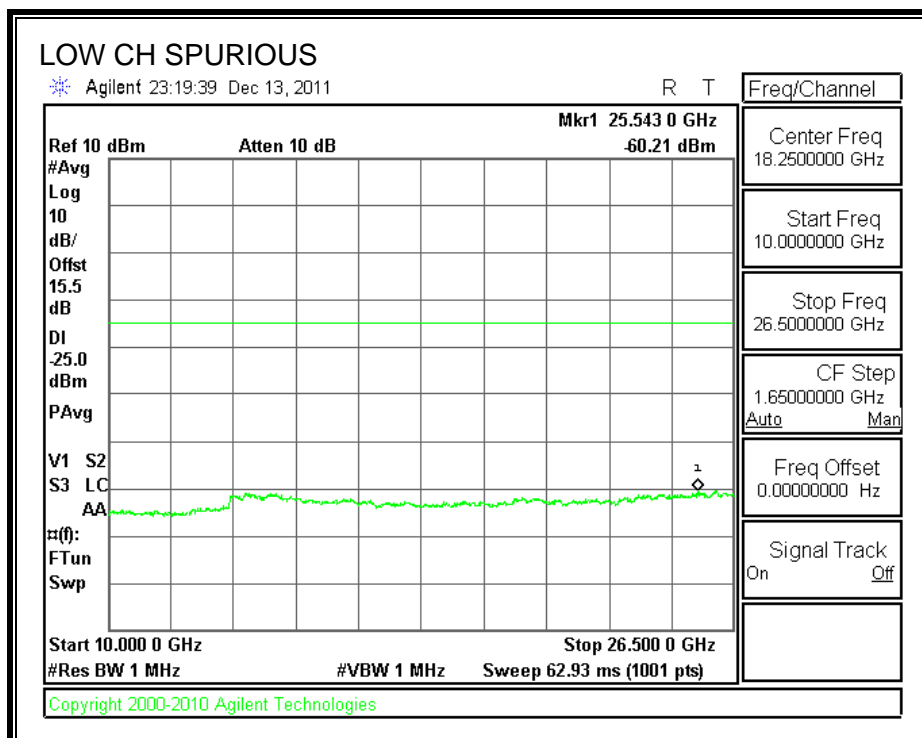
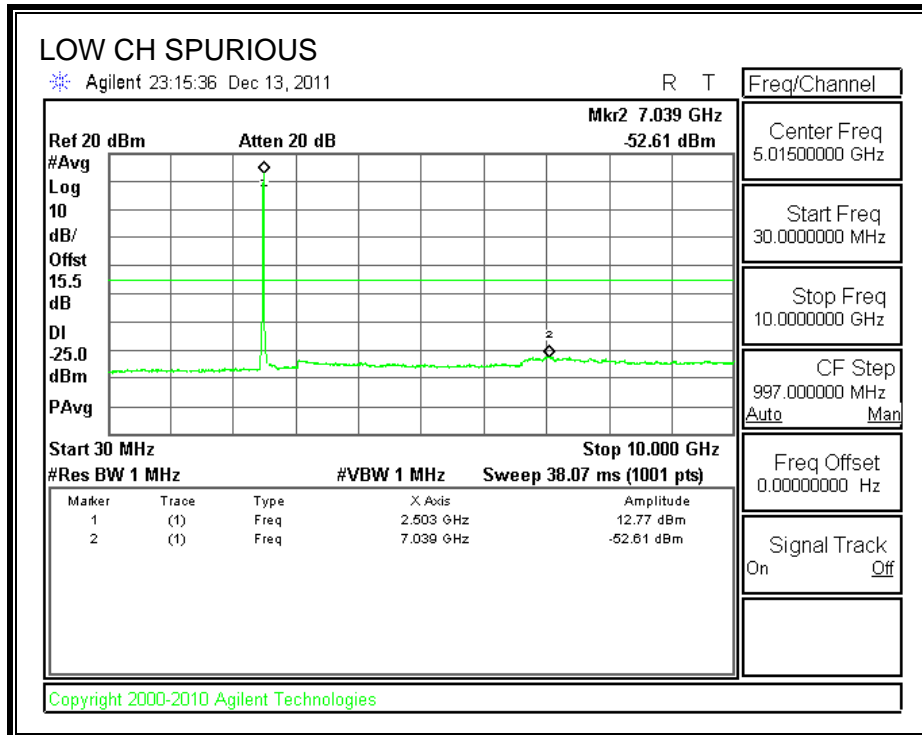
5MHz_16QAM

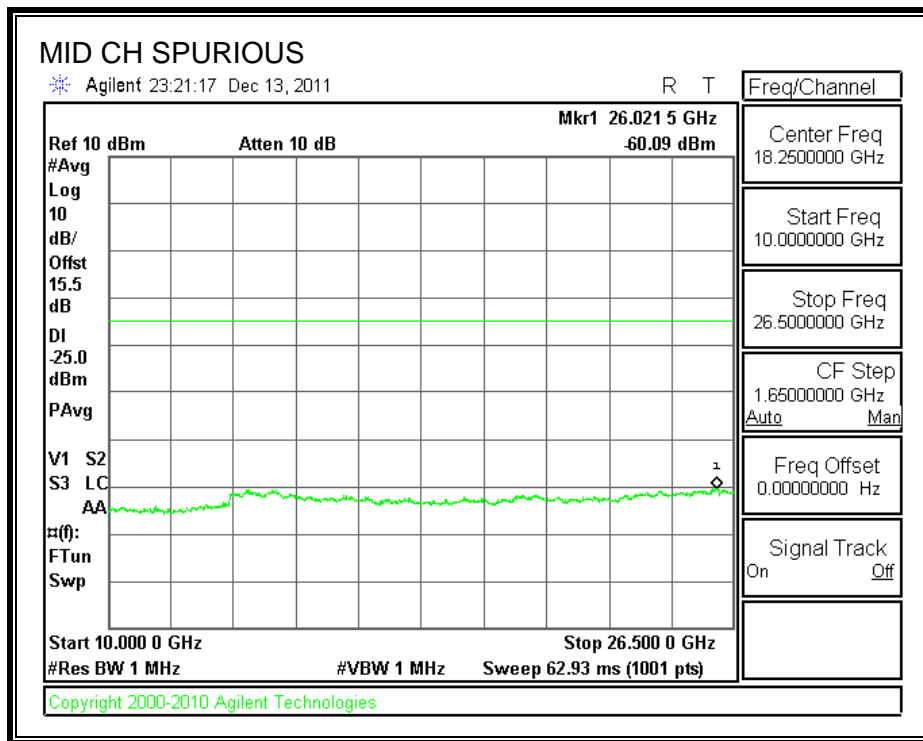
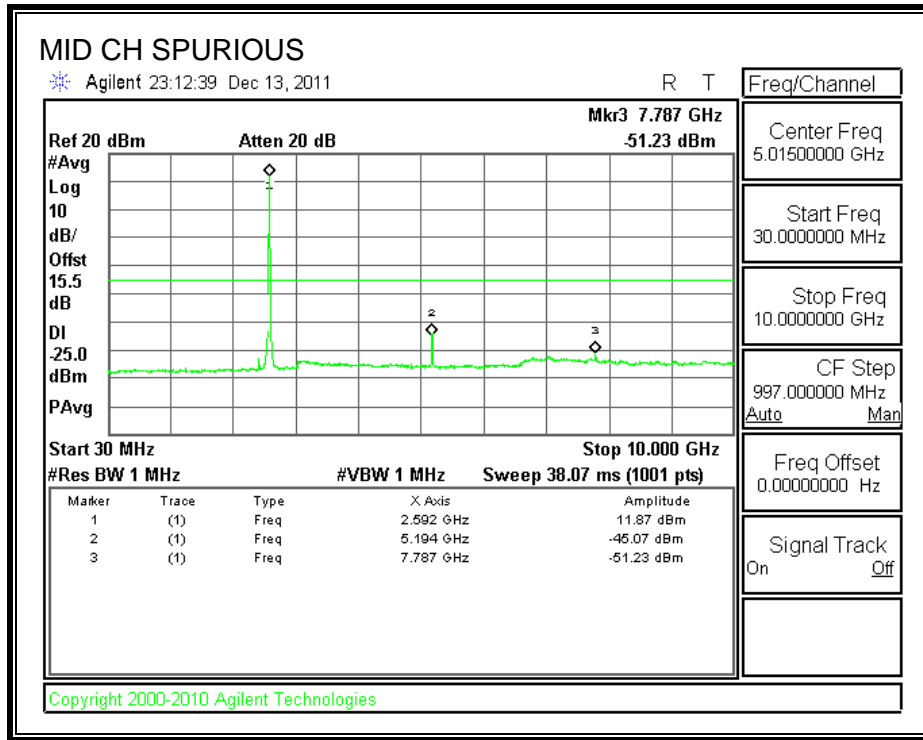


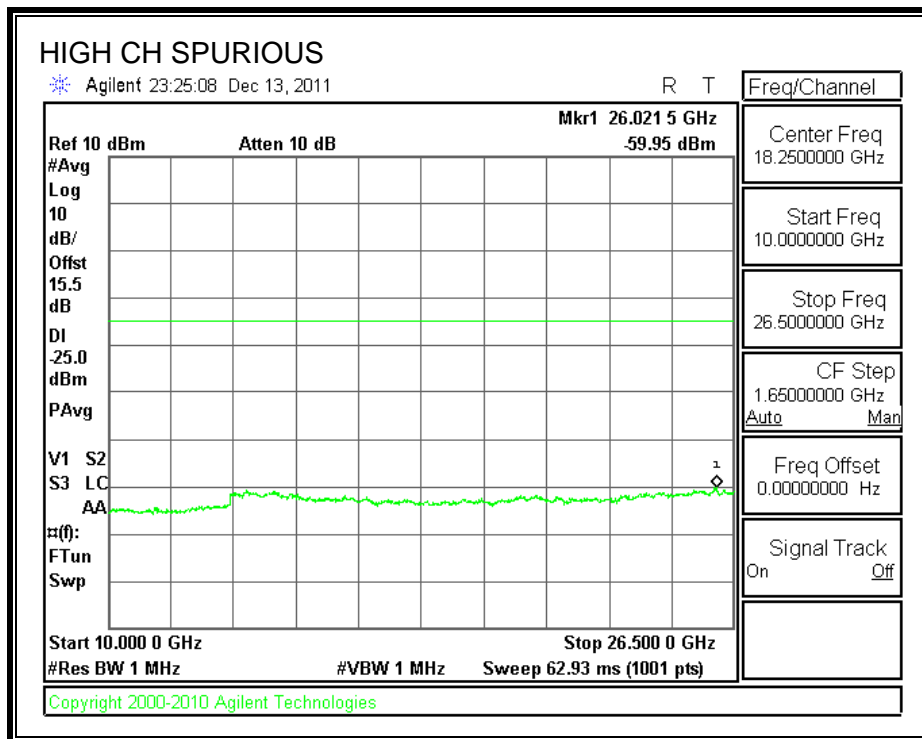
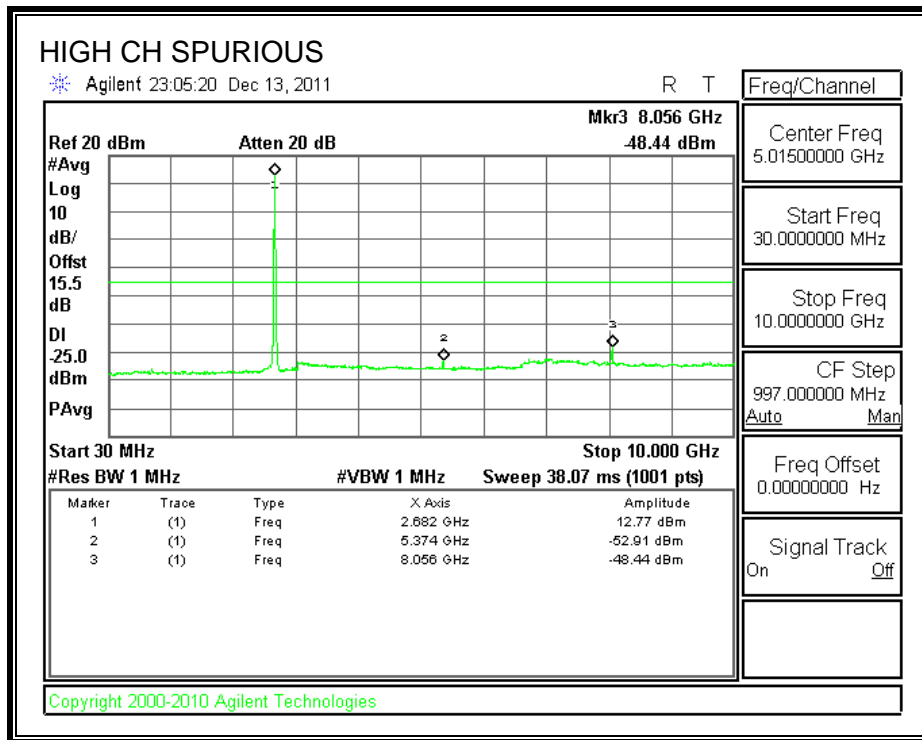




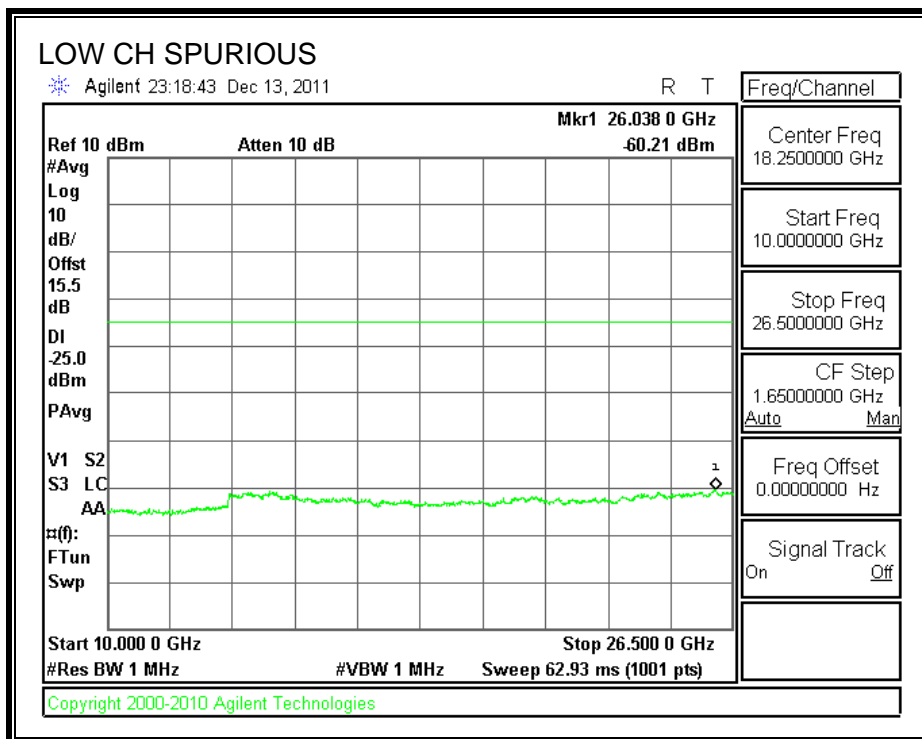
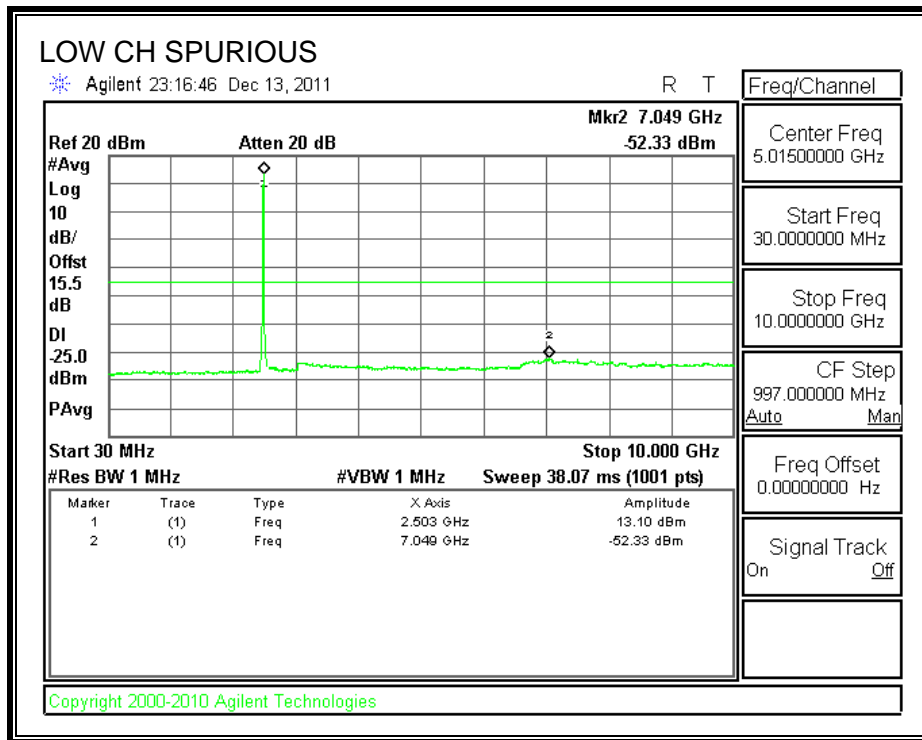
10MHz_QPSK

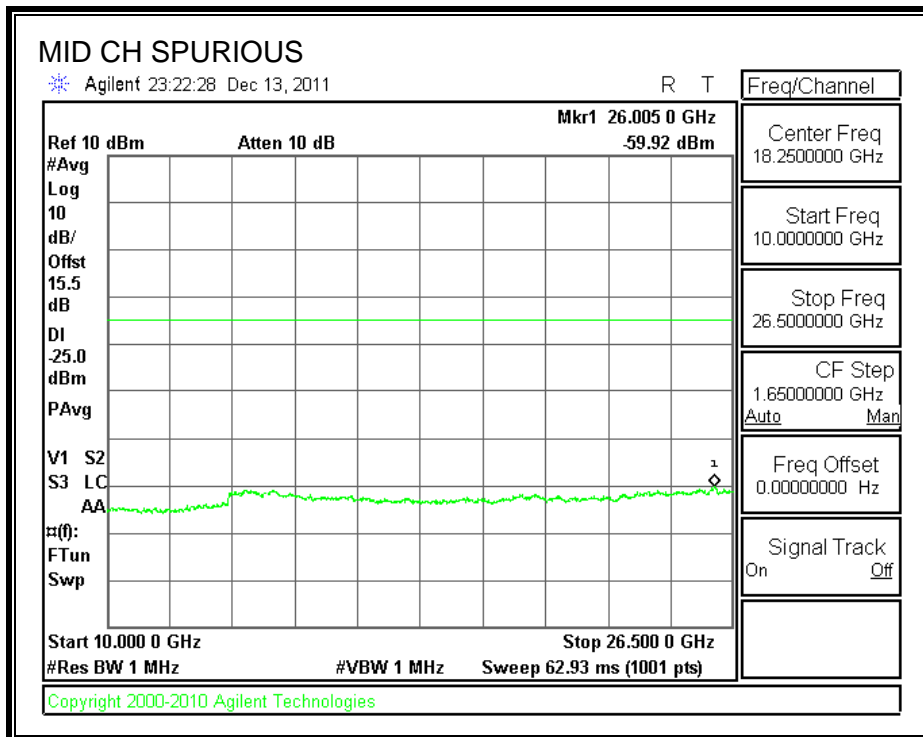
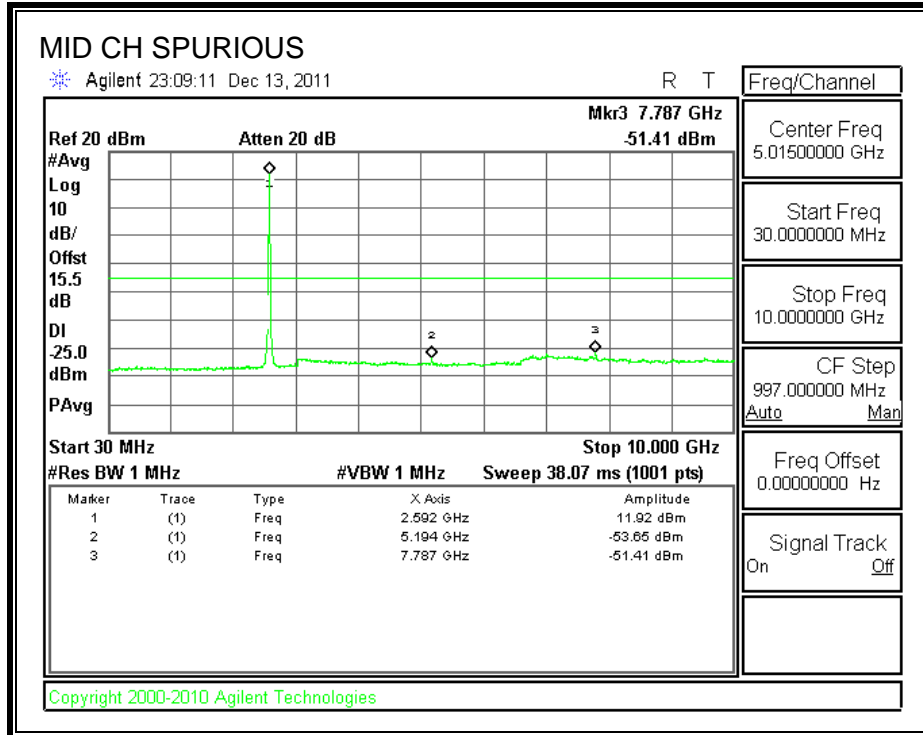


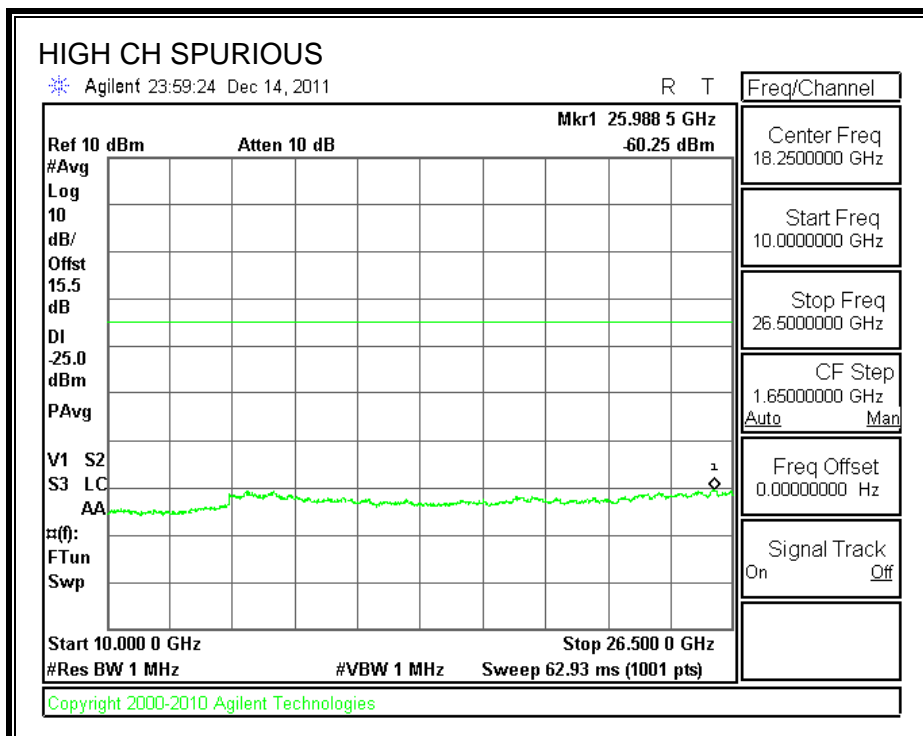
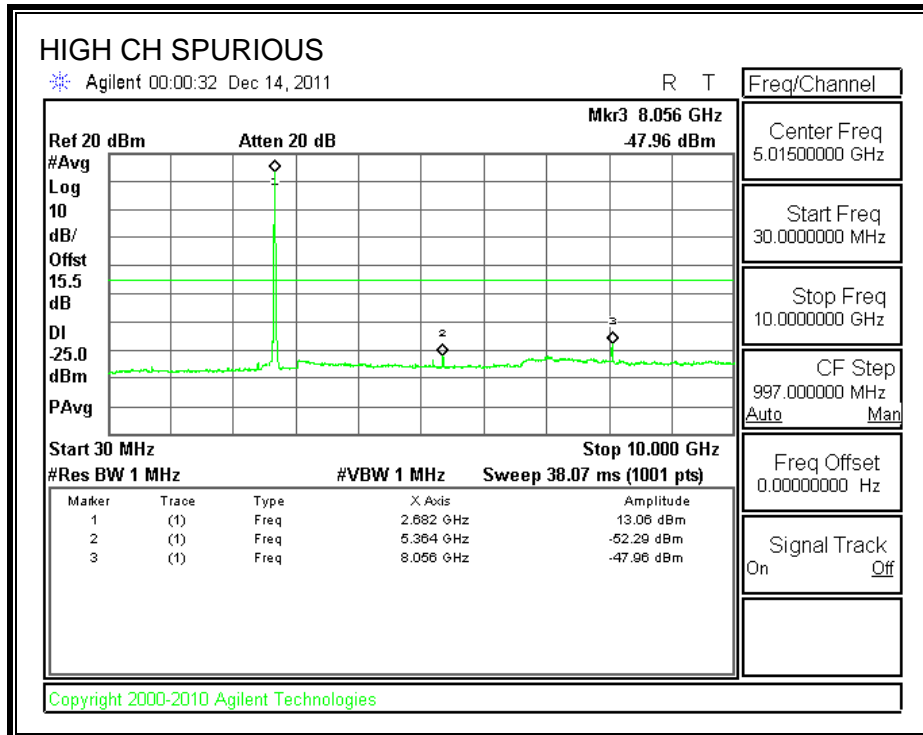




10MHz_16QAM







7.5. FREQUENCY STABILITY MEASUREMENT

LIMIT

§27.54 & 2.1055 Frequency stability.

Manufacturers of wireless medical telemetry devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all of the manufacturer's specified conditions.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.3.1 and 2.3.2

TEST RESULTS

5MHz BAND WIDTH

Reference Frequency: 2593.000000 MHz @ 20°C				
Limit: ± 20 ppm = 51860 Hz				
Power (Vac)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
4.20	50	2592.999996	0.001	Within the authorized frequency band
4.20	40	2592.999989	0.004	
4.20	30	2592.999994	0.002	
4.20	20	2593.000000	0.000	
4.20	10	2592.999998	0.001	
4.20	0	2592.999996	0.001	
4.20	-10	2592.999996	0.001	
4.20	-20	2593.000000	0.000	
4.20	-30	2592.999993	0.003	
85%	20	2592.99999	0.004	Within the authorized frequency band
115%	20	2593.00000	0.000	Within the authorized frequency band

10MHz BAND WIDTH

Reference Frequency: 2592.998178 MHz @ 20°C				
Limit: ± 20 ppm = 51860 Hz				
Power (Vac)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
4.20	50	2592.998178	0.000	Within the authorized frequency band
4.20	40	2592.998178	0.000	
4.20	30	2592.998178	0.000	
4.20	20	2592.998170	0.003	
4.20	10	2592.998170	0.003	
4.20	0	2592.998178	0.000	
4.20	-10	2592.998178	0.000	
4.20	-20	2592.998178	0.000	
4.20	-30	2592.998178	0.000	
85%	20	2592.998185	-0.003	Within the authorized frequency band
115%	20	2592.998178	0.000	Within the authorized frequency band

8. RADIATED TEST RESULTS

8.1. RADIATED POWER (ERP & EIRP)

LIMITS

§2.1046 & §27.50 (h)(2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17 and §27.50 (i) and KDB 971168

RESULTS

Configuration 1: EUT ALONE

Mode	Mode	Channel	Frequency (MHz)	EIRP (dBm)	EIRP (mW)
5MHz	QPSK	Low	2498.5	25.85	384.59
		Middle	2593.0	26.74	472.06
		High	2687.5	27.28	534.56
	16QAM	Low	2498.5	26.10	407.38
		Middle	2593.0	26.83	481.95
		High	2687.5	27.45	555.90
10MHz	QPSK	Low	2501.0	26.62	459.20
		Middle	2596.0	27.28	534.56
		High	2685.0	28.22	663.74
	16QAM	Low	2501.0	26.63	460.26
		Middle	2596.0	27.28	534.56
		High	2685.0	28.18	657.66

Above 1GHz at 5MHz Bandwidth

5MHz_QPSK

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/05/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC ADAPTER
Mode: TX, 5MHz BAND_QPSK MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
 Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.499	8.6	V	0.52	9.29	17.35	33.0	-15.7	
2.499	17.1	H	0.52	9.25	25.85	33.0	-7.2	
2.593	8.5	V	0.52	9.41	17.43	33.0	-15.6	
2.593	18.1	H	0.52	9.18	26.74	33.0	-6.3	
2.688	10.3	V	0.52	9.64	19.39	33.0	-13.6	
2.688	18.2	H	0.52	9.60	27.28	33.0	-5.7	

Rev. 3.17.11

5MHz_16QAM

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/05/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC ADA[[TER
Mode: TX, 5MHz BAND_16QAM MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
 Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.499	8.6	V	0.52	9.29	17.33	33.0	-15.7	
2.499	17.4	H	0.52	9.25	26.10	33.0	-6.9	
2.593	8.4	V	0.52	9.41	17.30	33.0	-15.7	
2.593	18.2	H	0.52	9.18	26.83	33.0	-6.2	
2.688	10.4	V	0.52	9.64	19.48	33.0	-13.5	
2.688	18.4	H	0.52	9.60	27.45	33.0	-5.5	

Rev. 3.17.11

10MHz_QPSK

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/05/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC ADA[[TER
Mode: TX, 10MHz BAND_QPSK MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
 Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.501	8.2	V	0.52	9.29	16.98	33.0	-16.0	
2.501	17.9	H	0.52	9.25	26.62	33.0	-6.4	
2.596	7.6	V	0.52	9.41	16.49	33.0	-16.5	
2.596	18.6	H	0.52	9.18	27.28	33.0	-5.7	
2.685	9.9	V	0.52	9.64	19.04	33.0	-14.0	
2.685	19.1	H	0.52	9.60	28.22	33.0	-4.8	

Rev. 3.17.11

10MHz_16QAM

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/05/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC ADA[ITER
Mode: TX, 10MHz BAND_16QAM MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.501	8.2	V	0.52	9.29	16.98	33.0	-16.0	
2.501	17.9	H	0.52	9.25	26.63	33.0	-6.4	
2.596	7.5	V	0.52	9.41	16.42	33.0	-16.6	
2.596	18.6	H	0.52	9.18	27.28	33.0	-5.7	
2.685	10.0	V	0.52	9.64	19.07	33.0	-13.9	
2.685	19.1	H	0.52	9.60	28.18	33.0	-4.8	

Rev. 3.17.11

Configuration 2: EUT WITH CRADLE

Mode	Mode	Channel	Frequency (MHz)	EIRP (dBm)	EIRP (mW)
5MHz	QPSK	Low	2498.5	25.02	317.69
		Middle	2593.0	24.18	261.82
		High	2687.5	25.21	331.89
	16QAM	Low	2498.5	25.04	319.15
		Middle	2593.0	24.20	263.03
		High	2687.5	25.18	329.61
10MHz	QPSK	Low	2501.0	25.68	369.83
		Middle	2596.0	24.79	301.30
		High	2685.0	25.88	387.26
	16QAM	Low	2501.0	25.66	368.13
		Middle	2596.0	24.86	306.20
		High	2685.0	25.94	392.64

5MHz_QPSK

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/05/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC CRADLE
Mode: TX, 5MHz BAND_QPSK MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
 Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.499	10.5	V	0.52	9.29	19.25	33.0	-13.8	
2.499	16.3	H	0.52	9.25	25.02	33.0	-8.0	
2.593	9.8	V	0.52	9.41	18.64	33.0	-14.4	
2.593	15.5	H	0.52	9.18	24.18	33.0	-8.8	
2.688	10.1	V	0.52	9.64	19.25	33.0	-13.8	
2.688	16.1	H	0.52	9.60	25.21	33.0	-7.8	

Rev. 3.17.11

5MHz_16QAM

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/13/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC CRADLE
Mode: TX, 5MHz BAND_16QAM MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
 Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.499	10.5	V	0.52	9.29	19.25	33.0	-13.8	
2.499	16.3	H	0.52	9.25	25.04	33.0	-8.0	
2.593	9.7	V	0.52	9.41	18.63	33.0	-14.4	
2.593	15.5	H	0.52	9.18	24.20	33.0	-8.8	
2.688	10.1	V	0.52	9.64	19.26	33.0	-13.7	
2.688	16.1	H	0.52	9.60	25.18	33.0	-7.8	

Rev. 3.17.11

10MHz_QPSK

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/13/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC CRADLE
Mode: TX, 10MHz BAND_QPSK MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
 Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.501	9.7	V	0.52	9.29	18.43	33.0	-14.6	
2.501	17.0	H	0.52	9.25	25.68	33.0	-7.3	
2.596	8.6	V	0.52	9.41	17.47	33.0	-15.5	
2.596	16.1	H	0.52	9.18	24.79	33.0	-8.2	
2.685	10.6	V	0.52	9.64	19.76	33.0	-13.2	
2.685	16.8	H	0.52	9.60	25.88	33.0	-7.1	

Rev. 3.17.11

10MHz_16QAM

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber B**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/05/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC CRADLE
Mode: TX, 10MHz BAND_16QAM MODE

Test Equipment:

Receiving: Horn T59, and Camber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
2.501	9.7	V	0.52	9.29	18.43	33.0	-14.6	
2.501	16.9	H	0.52	9.25	25.66	33.0	-7.3	
2.596	8.6	V	0.52	9.41	17.47	33.0	-15.5	
2.596	16.2	H	0.52	9.18	24.86	33.0	-8.1	
2.685	10.6	V	0.52	9.64	19.74	33.0	-13.3	
2.685	16.9	H	0.52	9.60	25.94	33.0	-7.1	

Rev. 3.17.11

8.2. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§2.1053

§27.53 (m)(4) For mobile digital stations, the attenuation factor shall be not less than $43 + 10 \log (P)$ dB at the channel edge and $55 + 10 \log (P)$ dB at 5.5 megahertz from the channel edges.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 27

RESULTS

Configuration 1: EUT ALONE

Below 1GHz (Worst Case)

Compliance Certification Services
30 - 1000MHz Substitution Measurement

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 1/13/2012
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC ACAPTER
Mode: TX, WORST-CASE

Chamber

5m Chamber B

Pre-amplifier

T10 8447D

Filter

Limit

PART 27

f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
57.20	-53.5	H	3.0	32.0	29.6		-51.1	-25.0	-26.1	
60.10	-40.8	V	3.0	30.1	29.6		-40.3	-25.0	-15.3	
404.40	-63.4	V	3.0	25.6	29.3		-67.0	-25.0	-42.0	
461.60	-64.0	V	3.0	26.7	29.5		-66.8	-25.0	-41.8	
607.20	-63.9	V	3.0	29.7	29.6		-63.8	-25.0	-38.8	

Rev. 03.03.09

Above 1GHz at 5MHz Bandwidth

Compliance Certification Services									
Above 1GHz High Frequency Substitution Measurement									
Company:		SIERRA WIRELESS							
Project #:		11U14068							
Date:		01/16/12							
Test Engineer:		MENGISTU MEKURIA							
Configuration:		EUT ALONE							
Mode:		TX, WiMax 5MHZ BAND QPSK MODE							
Chamber		Pre-amplifier			Filter		Limit		
5m Chamber A		T144 8449B			Filter 1		Part 27		
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2498.5MHz									
4.997	-14.6	V	3.0	36.3	1.0	-49.9	-25.0	-24.9	
7.496	-16.9	V	3.0	36.6	1.0	-52.5	-25.0	-27.5	
9.994	-16.4	V	3.0	37.2	1.0	-52.5	-25.0	-27.5	
4.997	-14.9	H	3.0	36.3	1.0	-50.2	-25.0	-25.2	
7.496	-26.1	H	3.0	36.6	1.0	-61.7	-25.0	-36.7	
9.994	-18.1	H	3.0	37.2	1.0	-54.3	-25.0	-29.3	
Mid Ch, 2593.0MHz									
5.186	-11.1	V	3.0	36.3	1.0	-46.4	-25.0	-21.4	
7.779	-10.9	V	3.0	36.7	1.0	-46.6	-25.0	-21.6	
10.372	-15.1	V	3.0	37.1	1.0	-51.2	-25.0	-26.2	
5.186	-14.7	H	3.0	36.3	1.0	-49.9	-25.0	-24.9	
7.779	-20.8	H	3.0	36.7	1.0	-56.5	-25.0	-31.5	
10.372	-17.0	H	3.0	37.1	1.0	-53.1	-25.0	-28.1	
High Ch, 2687.5MHz									
5.375	-8.3	V	3.0	36.3	1.0	-43.6	-25.0	-18.6	
8.063	-5.2	V	3.0	36.7	1.0	-40.9	-25.0	-15.9	
10.750	-10.8	V	3.0	37.0	1.0	-46.7	-25.0	-21.7	
5.375	-6.9	H	3.0	36.3	1.0	-42.2	-25.0	-17.2	
8.063	-12.9	H	3.0	36.7	1.0	-48.6	-25.0	-23.6	
10.750	-10.3	H	3.0	37.0	1.0	-46.3	-25.0	-21.3	
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									

5MHz_16QAM

Compliance Certification Services
 Above 1GHz High Frequency Substitution Measurement

Company: SIERRA WIRELESS
 Project #: 11U14068
 Date: 01/16/12
 Test Engineer: MENGISTU MEKURIA
 Configuration: EUT ALONE
 Mode: TX, WiMax 5MHz BAND 16QAM MODE

Chamber	Pre-amplifier	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2498.5MHz									
4.997	-15.7	V	3.0	36.3	1.0	-51.0	-25.0	-26.0	
7.496	-9.6	V	3.0	36.6	1.0	-45.2	-25.0	-20.2	
9.994	-8.5	V	3.0	37.2	1.0	-44.7	-25.0	-19.7	
4.997	-16.0	H	3.0	36.3	1.0	-51.4	-25.0	-26.4	
7.496	-10.1	H	3.0	36.6	1.0	-45.7	-25.0	-20.7	
9.994	-10.2	H	3.0	37.2	1.0	-46.3	-25.0	-21.3	
Mid Ch, 2593.0MHz									
5.186	-12.3	V	3.0	36.3	1.0	-47.5	-25.0	-22.5	
7.779	-3.6	V	3.0	36.7	1.0	-39.3	-25.0	-14.3	
10.372	-7.3	V	3.0	37.1	1.0	-43.4	-25.0	-18.4	
5.186	-15.8	H	3.0	36.3	1.0	-51.0	-25.0	-26.0	
7.779	-4.8	H	3.0	36.7	1.0	-40.5	-25.0	-15.5	
10.372	-9.1	H	3.0	37.1	1.0	-45.1	-25.0	-20.1	
High Ch, 2687.5MHz									
5.375	-9.5	V	3.0	36.3	1.0	-44.8	-25.0	-19.8	
8.063	2.1	V	3.0	36.7	1.0	-33.6	-25.0	-8.6	
10.750	-2.9	V	3.0	37.0	1.0	-38.9	-25.0	-13.9	
5.375	-8.0	H	3.0	36.3	1.0	-43.3	-25.0	-18.3	
8.063	3.1	H	3.0	36.7	1.0	-32.6	-25.0	-7.6	
10.750	-2.4	H	3.0	37.0	1.0	-38.4	-25.0	-13.4	

Rev. 03.03.09

Note: No other emissions were detected above the system noise floor.

Above 1GHz at 10MHz Bandwidth

10MHz_QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/16/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX, WiMax 10MHZ BAND QPSK MODE

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501.0MHz									
5.002	-17.8	V	3.0	36.3	1.0	-53.1	-25.0	-28.1	
7.788	-11.2	V	3.0	36.7	1.0	-46.9	-25.0	-21.9	
10.740	-13.6	V	3.0	37.0	1.0	-49.6	-25.0	-24.6	
5.002	-18.1	H	3.0	36.3	1.0	-53.4	-25.0	-28.4	
7.788	-13.6	H	3.0	36.7	1.0	-49.3	-25.0	-24.3	
10.740	-17.1	H	3.0	37.0	1.0	-53.0	-25.0	-28.0	
Mid Ch, 2596.0MHz									
5.192	-14.4	V	3.0	36.2	1.0	-49.6	-25.0	-24.6	
7.788	-5.6	V	3.0	36.7	1.0	-41.3	-25.0	-16.3	
10.384	-13.1	V	3.0	37.1	1.0	-49.2	-25.0	-24.2	
5.192	-17.9	H	3.0	36.2	1.0	-53.1	-25.0	-28.1	
7.788	-8.7	H	3.0	36.7	1.0	-44.3	-25.0	-19.3	
10.384	-15.7	H	3.0	37.1	1.0	-51.8	-25.0	-26.8	
High Ch, 2685.0MHz									
5.370	-11.6	V	3.0	36.3	1.0	-46.9	-25.0	-21.9	
8.055	0.1	V	3.0	36.7	1.0	-35.7	-25.0	-10.7	
10.740	-8.8	V	3.0	37.0	1.0	-44.8	-25.0	-19.8	
5.370	-10.1	H	3.0	36.3	1.0	-45.4	-25.0	-20.4	
8.055	-0.8	H	3.0	36.7	1.0	-36.5	-25.0	-11.5	
10.740	-9.1	H	3.0	37.0	1.0	-45.1	-25.0	-20.1	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

10MHz_16QAM

**Compliance Certification Services
 Above 1GHz High Frequency Substitution Measurement**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/16/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX, WiMax 10MHZ BAND 16QAM MODE

Chamber	Pre-amplifier	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501.0MHz									
5.002	-15.5	V	3.0	36.3	1.0	-50.8	-25.0	-25.8	
7.788	-9.4	V	3.0	36.7	1.0	-45.0	-25.0	-20.0	
10.740	-12.2	V	3.0	37.0	1.0	-48.2	-25.0	-23.2	
5.002	-15.9	H	3.0	36.3	1.0	-51.2	-25.0	-26.2	
7.788	-11.2	H	3.0	36.7	1.0	-46.9	-25.0	-21.9	
10.740	-14.0	H	3.0	37.0	1.0	-49.9	-25.0	-24.9	
Mid Ch, 2596.0MHz									
5.192	-12.0	V	3.0	36.2	1.0	-47.3	-25.0	-22.3	
7.788	-3.8	V	3.0	36.7	1.0	-39.4	-25.0	-14.4	
10.384	-11.7	V	3.0	37.1	1.0	-47.8	-25.0	-22.8	
5.192	-15.7	H	3.0	36.2	1.0	-50.9	-25.0	-25.9	
7.788	-6.2	H	3.0	36.7	1.0	-41.9	-25.0	-16.9	
10.384	-12.6	H	3.0	37.1	1.0	-48.7	-25.0	-23.7	
High Ch, 2685.0MHz									
5.370	-9.3	V	3.0	36.3	1.0	-44.6	-25.0	-19.6	
8.055	1.9	V	3.0	36.7	1.0	-33.8	-25.0	-8.8	
10.740	-7.4	V	3.0	37.0	1.0	-43.3	-25.0	-18.3	
5.370	-7.9	H	3.0	36.3	1.0	-43.2	-25.0	-18.2	
8.055	1.7	H	3.0	36.7	1.0	-34.1	-25.0	-9.1	
10.740	-6.0	H	3.0	37.0	1.0	-42.0	-25.0	-17.0	

Rev. 03.03.09

Note: No other emissions were detected above the system noise floor.

Configuration 2: EUT WITH CRADLE

Below 1GHz (Worst Case)

Compliance Certification Services
30 - 1000MHz Substitution Measurement

Company: SIERRA WIRELESS
 Project #: 11U14068
 Date: 1/13/2011
 Test Engineer: MENGISTU MEKURIA
 Configuration: EUT WITH CRADLE AND AC ACAPTER
 Mode: TX, WORST-CASE

Chamber

5m Chamber B

Pre-amplifier

T10 8447D

Filter

Limit

PART 27

f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
568.53	-64.5	H	3.0	26.8	29.7		-67.4	-25.0	-42.4	
872.00	-64.2	H	3.0	31.8	28.9		-61.3	-25.0	-36.3	
297.70	-55.9	V	3.0	23.2	28.8		-61.5	-25.0	-36.5	
550.90	-65.7	V	3.0	28.5	29.7		-66.8	-25.0	-41.8	

Rev. 03.03.09

Above 1GHz at 5MHz Bandwidth

5MHz_QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/16/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH CRADLE
Mode: TX, WiMax 5MHZ BAND QPSK MODE

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2498.5MHz									
4.997	-5.0	V	3.0	36.3	1.0	-40.3	-25.0	-15.3	
7.496	-23.8	V	3.0	36.6	1.0	-59.4	-25.0	-34.4	
9.994	-15.6	V	3.0	37.2	1.0	-51.7	-25.0	-26.7	
4.997	-3.5	H	3.0	36.3	1.0	-38.8	-25.0	-13.8	
7.496	-27.6	H	3.0	36.6	1.0	-63.2	-25.0	-38.2	
9.994	-11.1	H	3.0	37.2	1.0	-47.2	-25.0	-22.2	
Mid Ch, 2593.0MHz									
5.186	-1.5	V	3.0	36.3	1.0	-36.8	-25.0	-11.8	
7.779	-17.9	V	3.0	36.7	1.0	-53.5	-25.0	-28.5	
10.372	-14.3	V	3.0	37.1	1.0	-50.4	-25.0	-25.4	
5.186	-3.3	H	3.0	36.3	1.0	-38.5	-25.0	-13.5	
7.779	-22.3	H	3.0	36.7	1.0	-57.9	-25.0	-32.9	
10.372	-10.0	H	3.0	37.1	1.0	-46.0	-25.0	-21.0	
High Ch, 2687.5MHz									
5.375	1.2	V	3.0	36.3	1.0	-34.0	-25.0	-9.0	
8.063	-12.2	V	3.0	36.7	1.0	-47.9	-25.0	-22.9	
10.750	-10.0	V	3.0	37.0	1.0	-45.9	-25.0	-20.9	
5.375	4.5	H	3.0	36.3	1.0	-30.8	-25.0	-5.8	
8.063	-14.3	H	3.0	36.7	1.0	-50.1	-25.0	-25.1	
10.750	-3.3	H	3.0	37.0	1.0	-39.3	-25.0	-14.3	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

5MHz_16QAM

Compliance Certification Services
 Above 1GHz High Frequency Substitution Measurement

Company: SIERRA WIRELESS
 Project #: 11U14068
 Date: 01/16/12
 Test Engineer: MENGISTU MEKURIA
 Configuration: EUT WITH CRADLE
 Mode: TX, WiMax 5MHZ BAND 16QAM MODE

Chamber	Pre-amplifier	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2498.5MHz									
4.997	-6.1	V	3.0	36.3	1.0	-41.4	-25.0	-16.4	
7.496	-16.5	V	3.0	36.6	1.0	-52.1	-25.0	-27.1	
9.994	-7.7	V	3.0	37.2	1.0	-43.9	-25.0	-18.9	
4.997	-4.6	H	3.0	36.3	1.0	-40.0	-25.0	-15.0	
7.496	-11.6	H	3.0	36.6	1.0	-47.2	-25.0	-22.2	
9.994	-3.1	H	3.0	37.2	1.0	-39.3	-25.0	-14.3	
Mid Ch, 2593.0MHz									
5.186	-2.7	V	3.0	36.3	1.0	-37.9	-25.0	-12.9	
7.779	-10.6	V	3.0	36.7	1.0	-46.2	-25.0	-21.2	
10.372	-6.5	V	3.0	37.1	1.0	-42.6	-25.0	-17.6	
5.186	-4.4	H	3.0	36.3	1.0	-39.6	-25.0	-14.6	
7.779	-6.3	H	3.0	36.7	1.0	-41.9	-25.0	-16.9	
10.372	-2.0	H	3.0	37.1	1.0	-38.1	-25.0	-13.1	
High Ch, 2687.5MHz									
5.375	0.1	V	3.0	36.3	1.0	-35.2	-25.0	-10.2	
8.063	-4.9	V	3.0	36.7	1.0	-40.6	-25.0	-15.6	
10.750	-2.1	V	3.0	37.0	1.0	-38.1	-25.0	-13.1	
5.375	3.4	H	3.0	36.3	1.0	-31.9	-25.0	-6.9	
8.063	1.7	H	3.0	36.7	1.0	-34.1	-25.0	-9.1	
10.750	4.6	H	3.0	37.0	1.0	-31.4	-25.0	-6.4	

Rev. 03.03.09

Note: No other emissions were detected above the system noise floor.

Above 1GHz at 10MHz Bandwidth

10MHz_QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/16/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH CRADLE
Mode: TX, WiMax 10MHZ BAND QPSK MODE

Chamber
 5m Chamber A

Pre-amplifer
 T144 8449B

Filter
 Filter 1

Limit
 Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501.0MHz									
5.002	-8.3	V	3.0	36.3	1.0	-43.6	-25.0	-18.6	
7.788	-18.2	V	3.0	36.7	1.0	-53.8	-25.0	-28.8	
10.740	-12.8	V	3.0	37.0	1.0	-48.8	-25.0	-23.8	
5.002	-6.7	H	3.0	36.3	1.0	-42.0	-25.0	-17.0	
7.788	-15.1	H	3.0	36.7	1.0	-50.8	-25.0	-25.8	
10.740	-10.0	H	3.0	37.0	1.0	-46.0	-25.0	-21.0	
Mid Ch, 2596.0MHz									
5.192	-4.8	V	3.0	36.2	1.0	-40.1	-25.0	-15.1	
7.788	-12.6	V	3.0	36.7	1.0	-48.2	-25.0	-23.2	
10.384	-12.3	V	3.0	37.1	1.0	-48.4	-25.0	-23.4	
5.192	-6.5	H	3.0	36.2	1.0	-41.7	-25.0	-16.7	
7.788	-10.1	H	3.0	36.7	1.0	-45.8	-25.0	-20.8	
10.384	-8.7	H	3.0	37.1	1.0	-44.8	-25.0	-19.8	
High Ch, 2685.0MHz									
5.370	-2.1	V	3.0	36.3	1.0	-37.3	-25.0	-12.3	
8.055	-6.9	V	3.0	36.7	1.0	-42.6	-25.0	-17.6	
10.740	-8.0	V	3.0	37.0	1.0	-44.0	-25.0	-19.0	
5.370	1.3	H	3.0	36.3	1.0	-34.0	-25.0	-9.0	
8.055	-2.2	H	3.0	36.7	1.0	-38.0	-25.0	-13.0	
10.740	-2.1	H	3.0	37.0	1.0	-38.0	-25.0	-13.0	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

10MHz_16QAM

**Compliance Certification Services
 Above 1GHz High Frequency Substitution Measurement**

Company: SIERRA WIRELESS
Project #: 11U14068
Date: 01/16/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH CRADLE
Mode: TX, WiMax 10MHZ BAND 16QAM MODE

Chamber	Pre-amplifier	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501.0MHz									
5.002	-5.9	V	3.0	36.3	1.0	-41.2	-25.0	-16.2	
7.788	-16.3	V	3.0	36.7	1.0	-52.0	-25.0	-27.0	
10.740	-11.4	V	3.0	37.0	1.0	-47.4	-25.0	-22.4	
5.002	-4.5	H	3.0	36.3	1.0	-39.8	-25.0	-14.8	
7.788	-12.7	H	3.0	36.7	1.0	-48.3	-25.0	-23.3	
10.740	-6.9	H	3.0	37.0	1.0	-42.9	-25.0	-17.9	
Mid Ch, 2596.0MHz									
5.192	-2.5	V	3.0	36.2	1.0	-37.7	-25.0	-12.7	
7.788	-10.7	V	3.0	36.7	1.0	-46.4	-25.0	-21.4	
10.384	-10.9	V	3.0	37.1	1.0	-47.0	-25.0	-22.0	
5.192	-4.3	H	3.0	36.2	1.0	-39.5	-25.0	-14.5	
7.788	-7.7	H	3.0	36.7	1.0	-43.4	-25.0	-18.4	
10.384	-5.6	H	3.0	37.1	1.0	-41.7	-25.0	-16.7	
High Ch, 2685.0MHz									
5.370	0.3	V	3.0	36.3	1.0	-35.0	-25.0	-10.0	
8.055	-5.0	V	3.0	36.7	1.0	-40.7	-25.0	-15.7	
10.740	-6.6	V	3.0	37.0	1.0	-42.5	-25.0	-17.5	
5.370	3.5	H	3.0	36.3	1.0	-31.8	-25.0	-6.8	
8.055	0.2	H	3.0	36.7	1.0	-35.5	-25.0	-10.5	
10.740	1.0	H	3.0	37.0	1.0	-34.9	-25.0	-9.9	

Rev. 03.03.09

Note: No other emissions were detected above the system noise floor.