



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/UMTS BAR PHONE WITH 802.11BGN, BLUETOOTH AND BLE

MODEL NUMBER: GT-S7270L

FCC ID: A3LGTS7270L

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Prepared for

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NVLAP LAB CODE 200065-0

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	5/22/13		
A	5/23/13	Update Antenna gain information from P21,36,54.	P. Kim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
 416, MAETAN 3-DONG, YEONGTONG-GU
 SUWON-CITY, GYEONGGI-DO, 443-742, SOUTH KOREA

EUT DESCRIPTION: GSM/UMTS BAR PHONE WITH 802.11BGN, BT & BLE

MODEL: GT-S7270L

SERIAL NUMBER: 1624866 (CONDUCTED) AND 1624864 (RADIATED)

DATE TESTED: MAY 6-7, 2013.

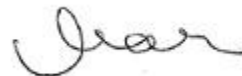
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

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:

PHILIP KIM
 WISE PROJECT MANAGER
 UL CCS

MONA HUA
 EMC ENGINEER
 UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

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 bar-style cell phone featuring 802.11 bgn 1x1+ BT4.0 +basic rates +EDR+GSM/WCDMA850/1900MHz.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	19.91	97.95
2412 - 2462	802.11g	22.53	179.06
2412 - 2462	802.11n HT20	21.41	138.36

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a FPCB antenna, with a maximum gain of 0.51 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was REV 1.0 and the software was S7270L.010

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that the Y-orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y-orientation.

Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11a mode: 6 Mbps

802.11n HT20 mode: MCS0

5.1. DESCRIPTION OF TEST SETUP**SUPPORT EQUIPMENT**

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung Electronics	ETA0U10JBS	DW2D203DS/7-E	DoC
Headset	Samsung Electronics	N/A	N/A	DoC

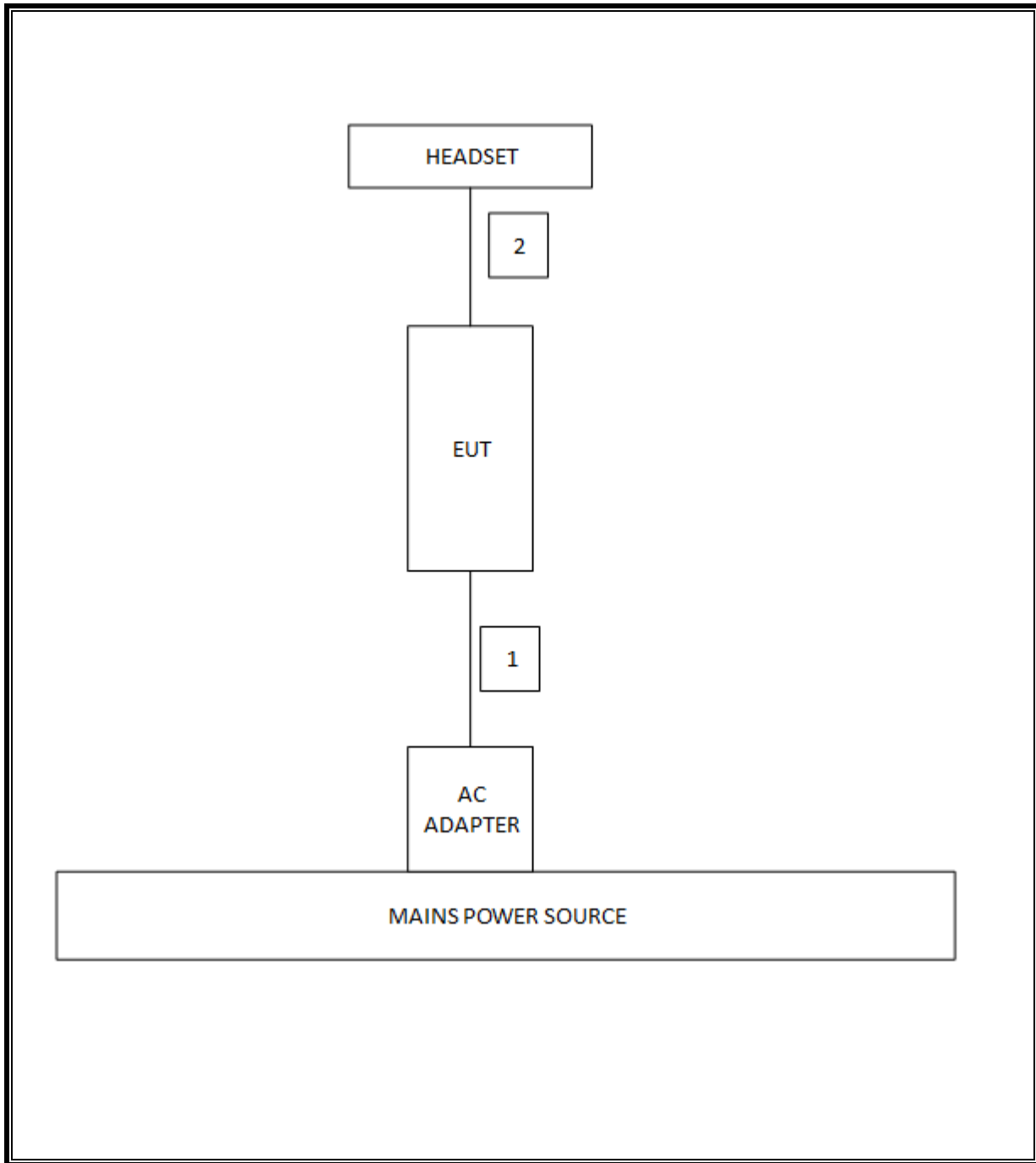
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Shielded	1.6m	N/A
2	Headset	1	Audio	Shielded	1.5m	N/A

TEST SETUP

The EUT is a stand-alone unit that was tested in the worst case orientation and configuration, where applicable, during the tests. Test software exercised the radio.

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 Date	Cal Due
Antenna, Horn, 18 GHz	EMCO	3115	C00872	09/20/12	09/20/13
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	07/28/12	07/28/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	10/21/12	10/21/13
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	10/21/12	10/21/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	02/21/13	02/21/14
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRC13192	N02683	CNR	CNR
Bilog 30-2000MHz	Sunol	JB1	C01071	07/26/12	07/26/13
Power meter	HP	437B	T226	06/25/12	06/25/13
Power Sensor	HP	8481A	T233	06/26/12	06/26/13
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	01/14/13	01/14/14
LISN, 10 kHz ~ 30 MHz	Solar	8012-50-R-24-BNC	N02481	03/07/12	03/07/14

7. MEASUREMENT METHODS

KDB 558074 Measurement Procedure PK2 is used for power and PKPSD is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

7.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS**LIMITS**

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.2. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS**LIMITS**

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.2.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11b	8.60	8.70	0.989	98.9%	0.00	0.010
802.11g	15.11	15.30	0.988	98.8%	0.00	0.010
802.11n HT20	1.34	1.44	0.928	92.8%	0.32	0.748

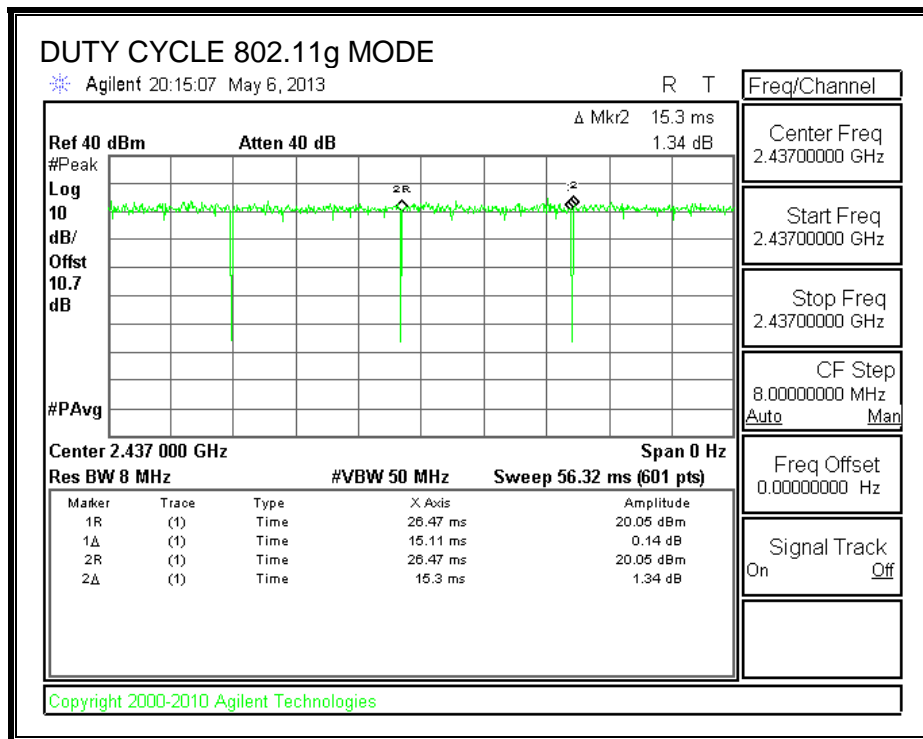
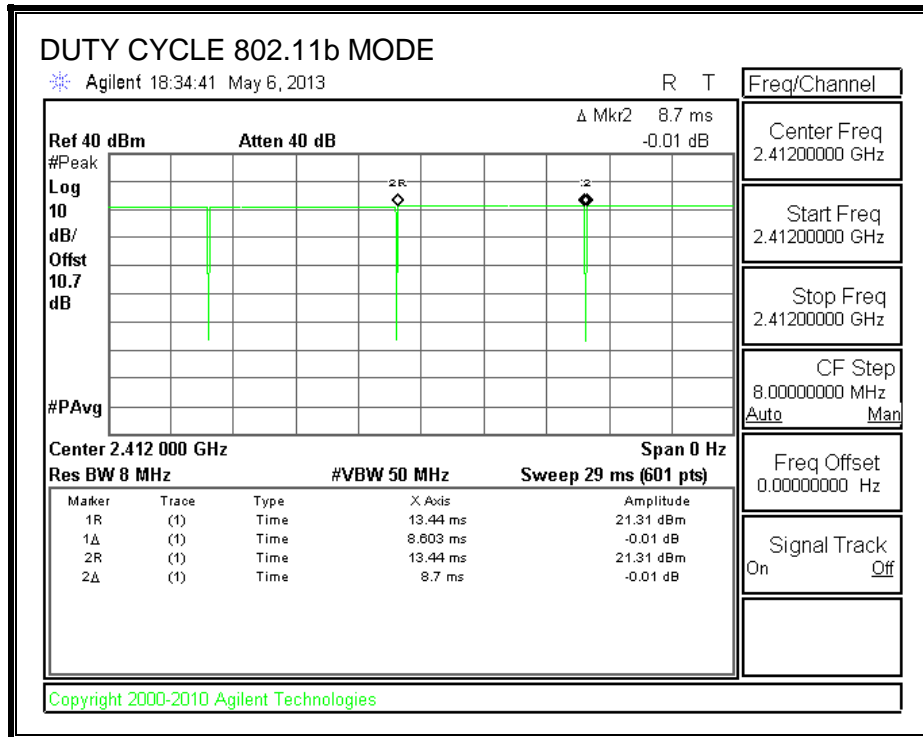
7.2.2. MEASUREMENT METHOD FOR POWER AND PPSD

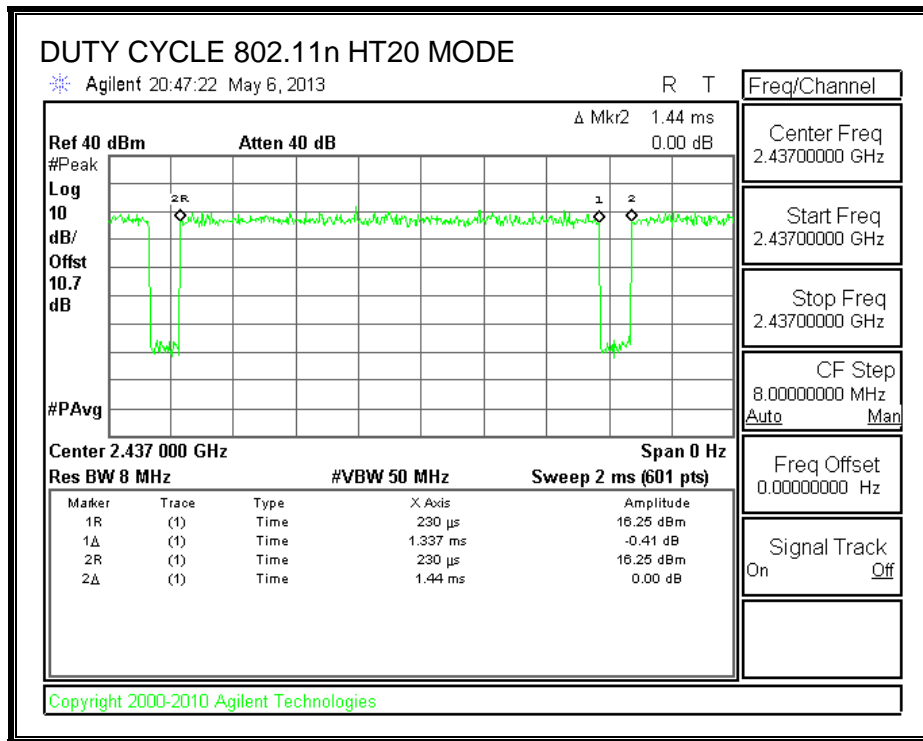
If the Duty Cycle is less than 98% and consistent therefore KDB 789033 Method SA-2 is used.

**7.2.3. MEASUREMENT METHOD FOR AVERAGE SPURIOUS EMISSIONS
ABOVE 1 GHz**

If the Duty Cycle is less than 98% and consistent, KDB 789033 Method AD with Power RMS Averaging and duty cycle correction is used.

7.2.4. DUTY CYCLE PLOTS





8. ANTENNA PORT TEST RESULTS

8.1. 802.11b MODE IN THE 2.4 GHz BAND

8.1.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

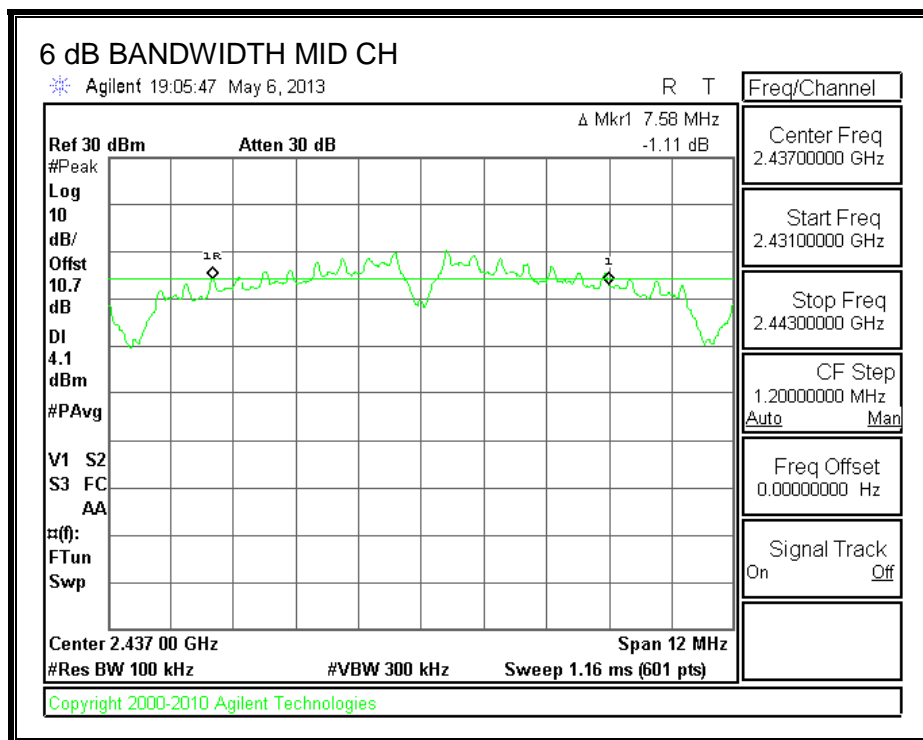
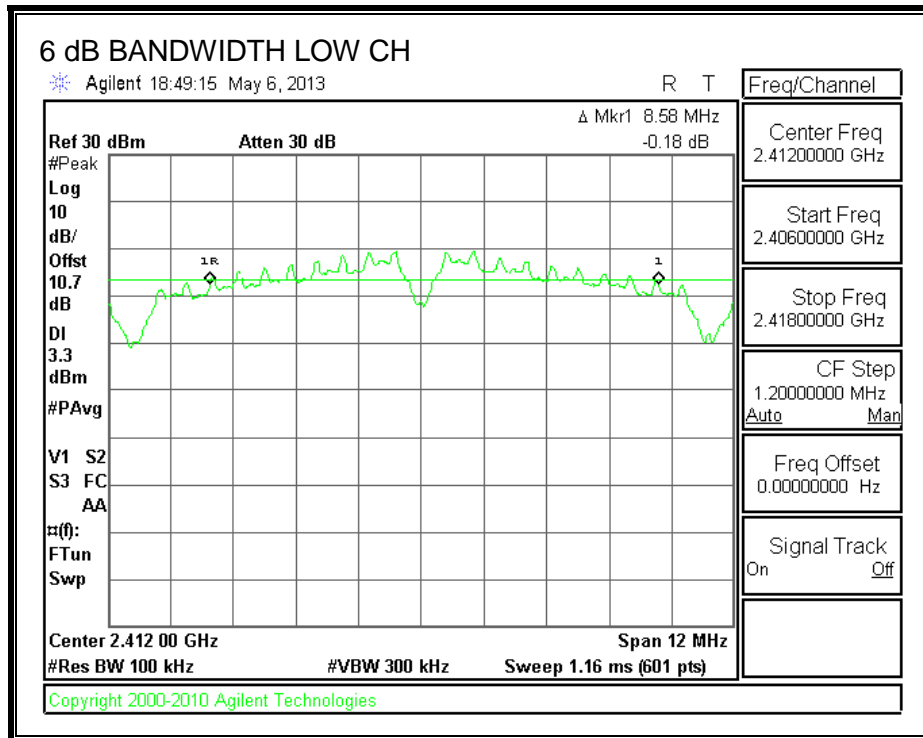
TEST PROCEDURE

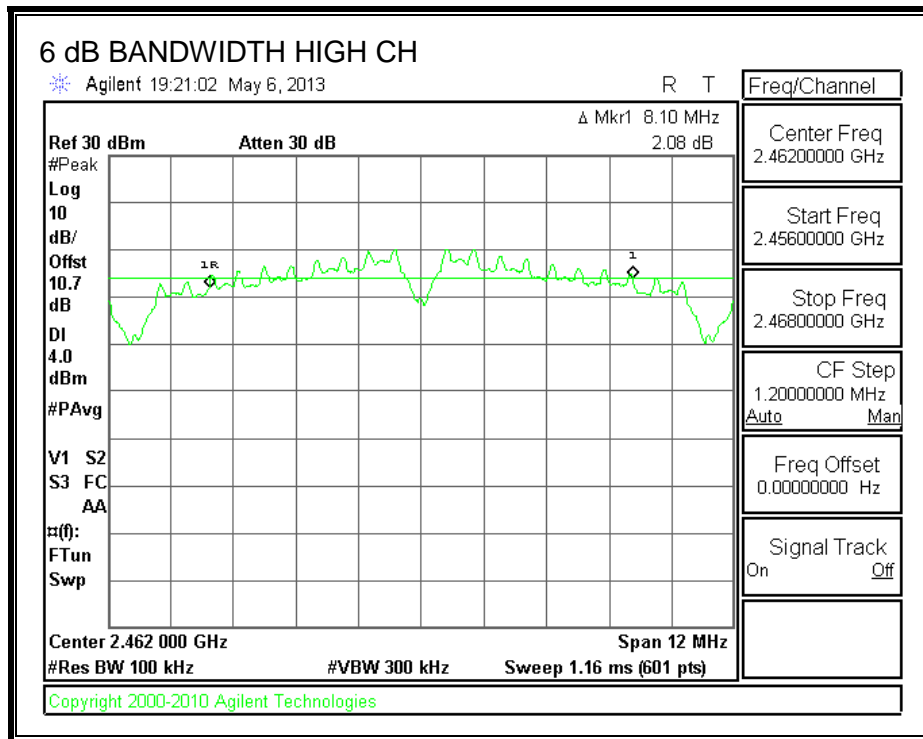
The transmitter output is connected to a spectrum analyzer with the RBW set between 1% and 5% of the EBW, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	8.580	0.5
Mid	2437	7.580	0.5
High	2462	8.100	0.5

6 dB BANDWIDTH





8.1.2. AVERAGE POWER**LIMITS**

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.7 dB (including 10 dB pad and .7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	16.40
Mid	2437	16.50
High	2462	16.70

8.1.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

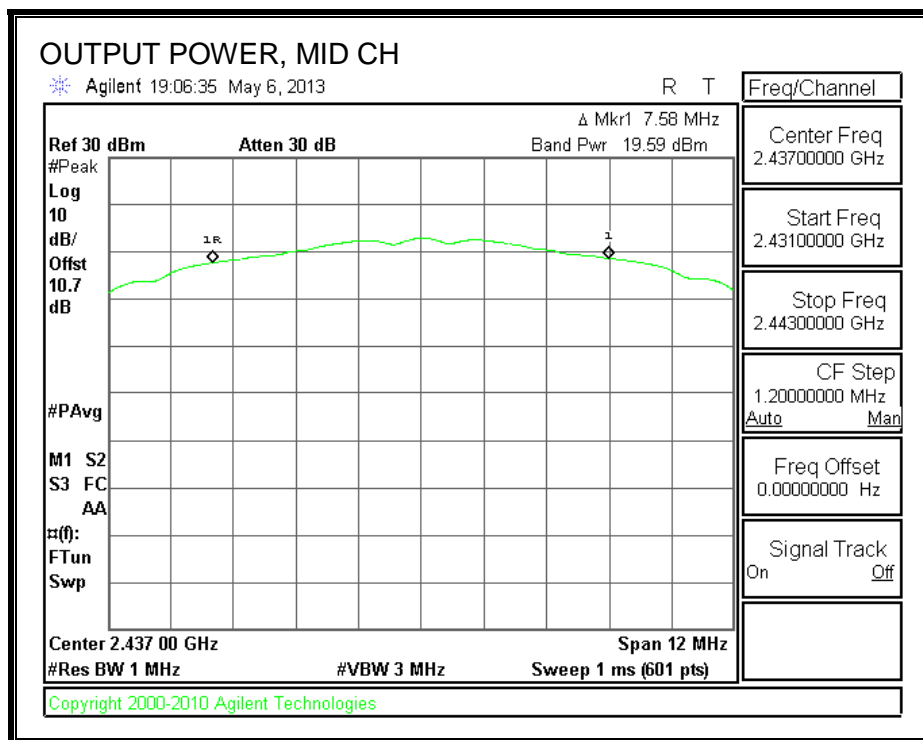
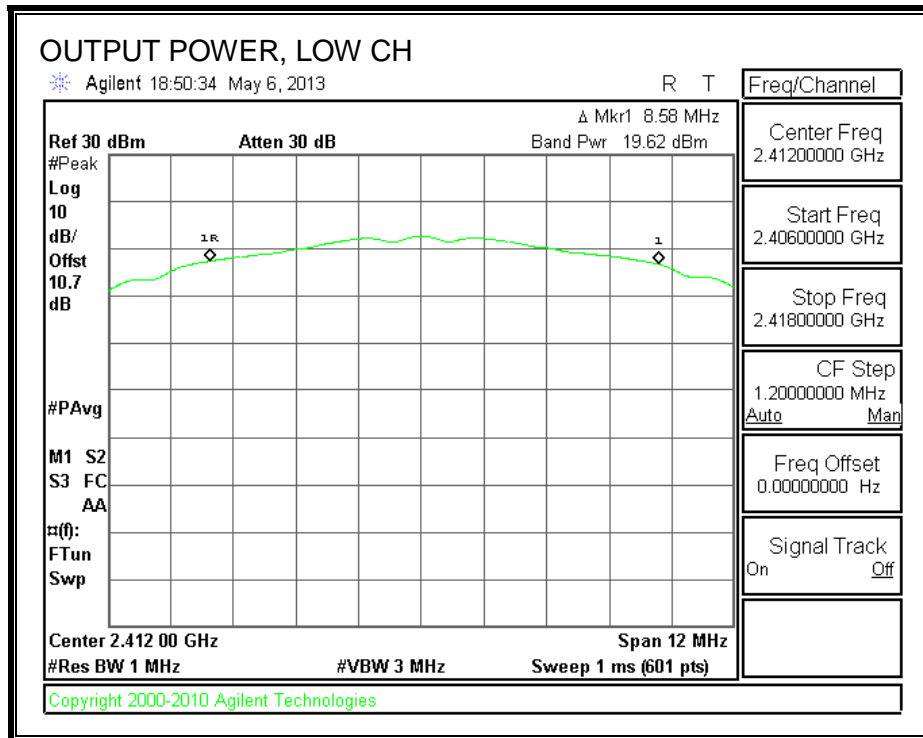
RESULTS**Limits**

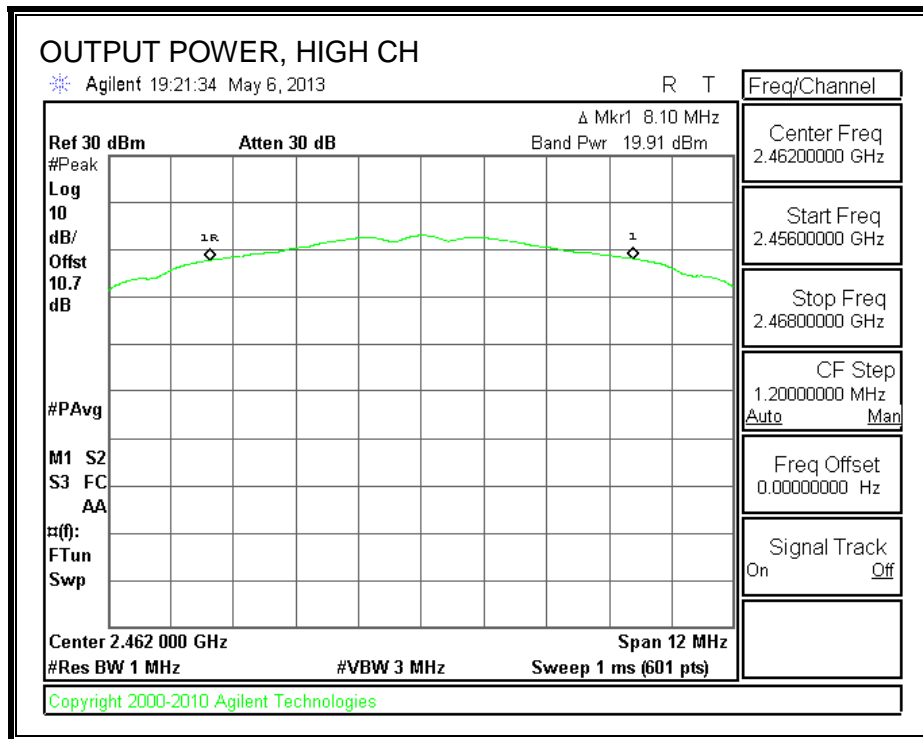
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	0.51	30.00	30	36	30.00
Mid	2437	0.51	30.00	30	36	30.00
High	2462	0.51	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	19.62	19.62	30.00	-10.38
Mid	2437	19.59	19.59	30.00	-10.41
High	2462	19.91	19.91	30.00	-10.09

OUTPUT POWER





8.1.4. PSD**LIMITS**

FCC §15.247

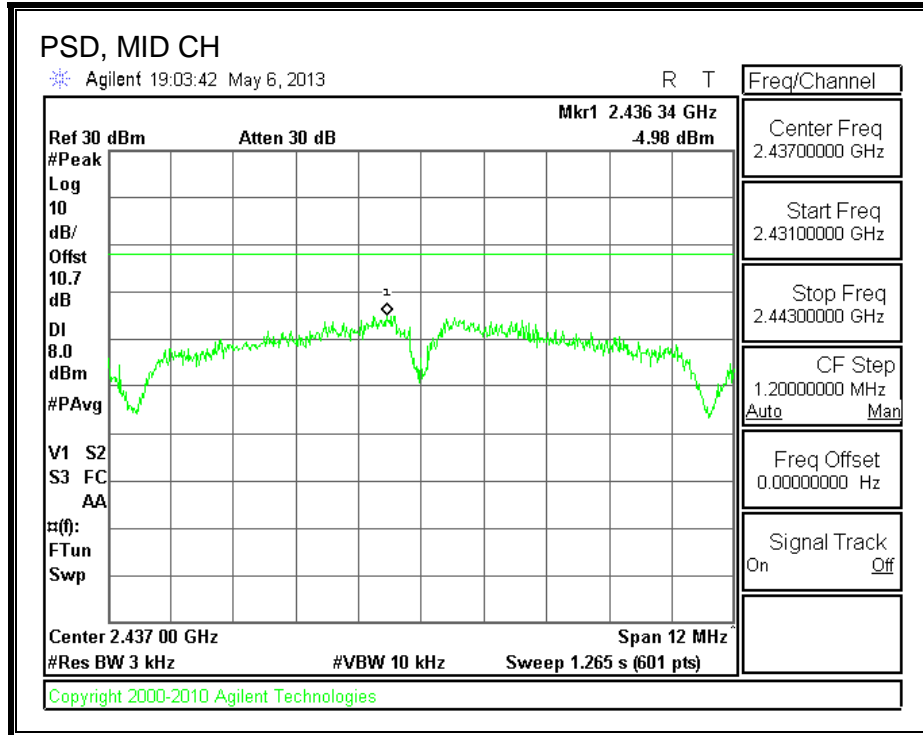
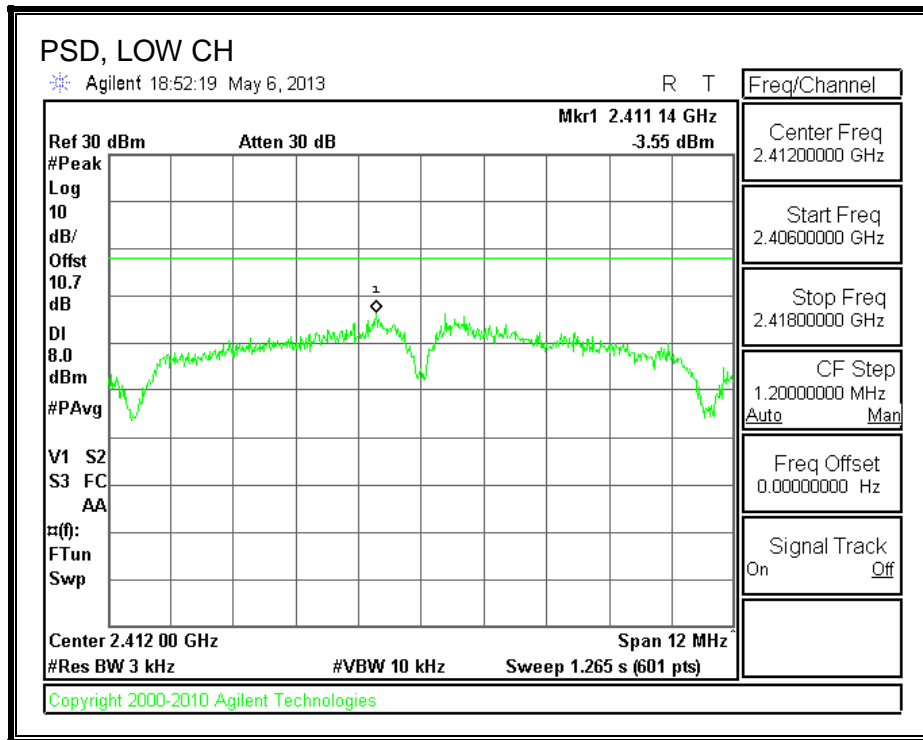
IC RSS-210 A8.2

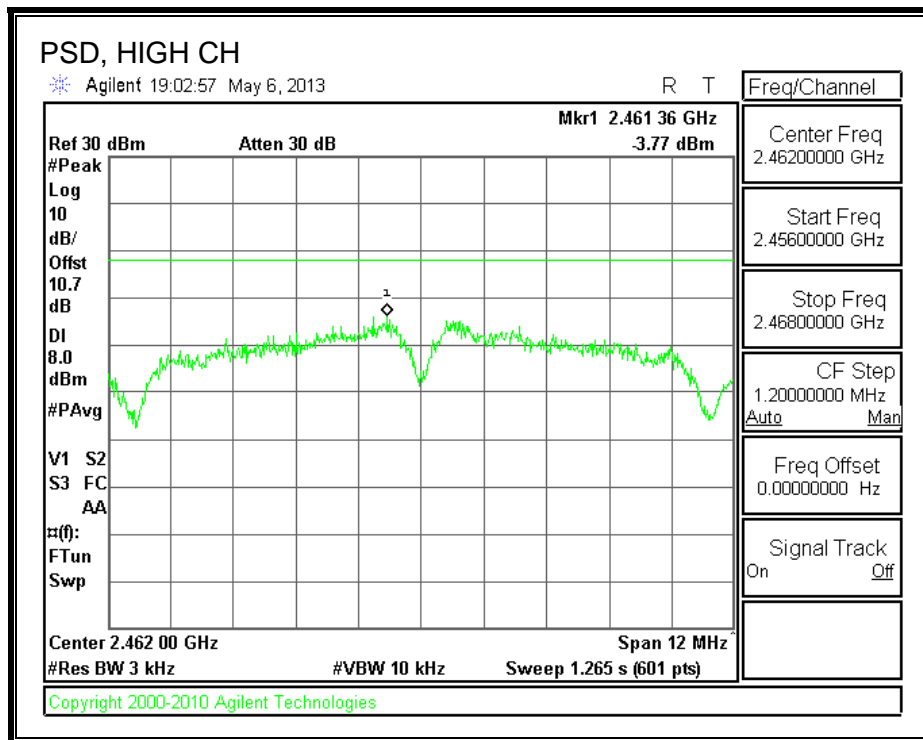
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS**PSD Results**

Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-3.55	8.0	-11.6
Mid	2437	-4.98	8.0	-13.0
High	2462	-3.77	8.0	-11.8

PSD





8.1.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

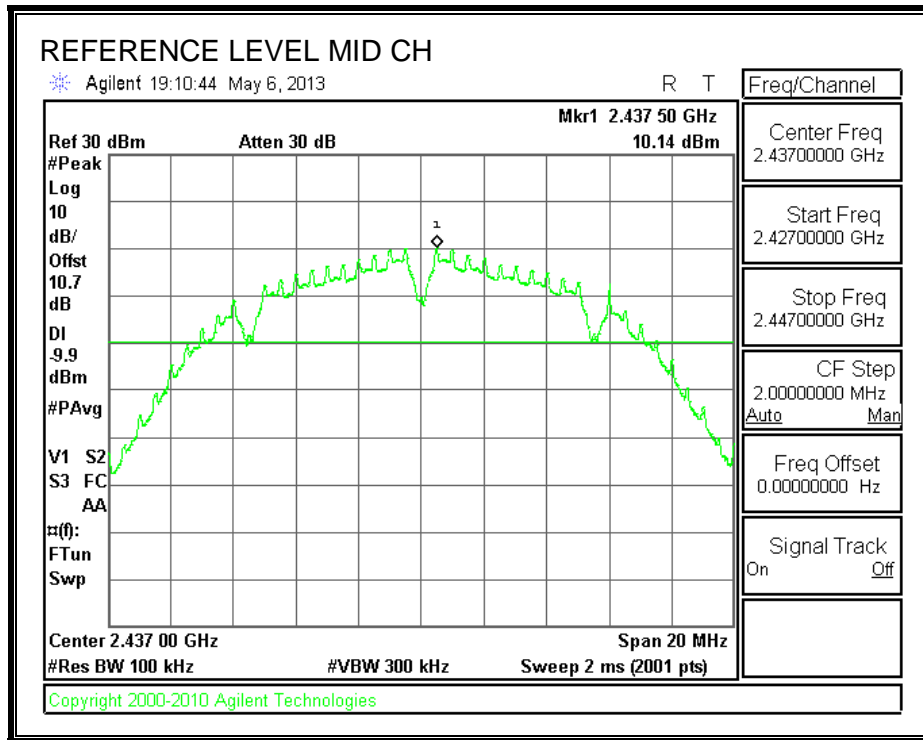
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

TEST PROCEDURE

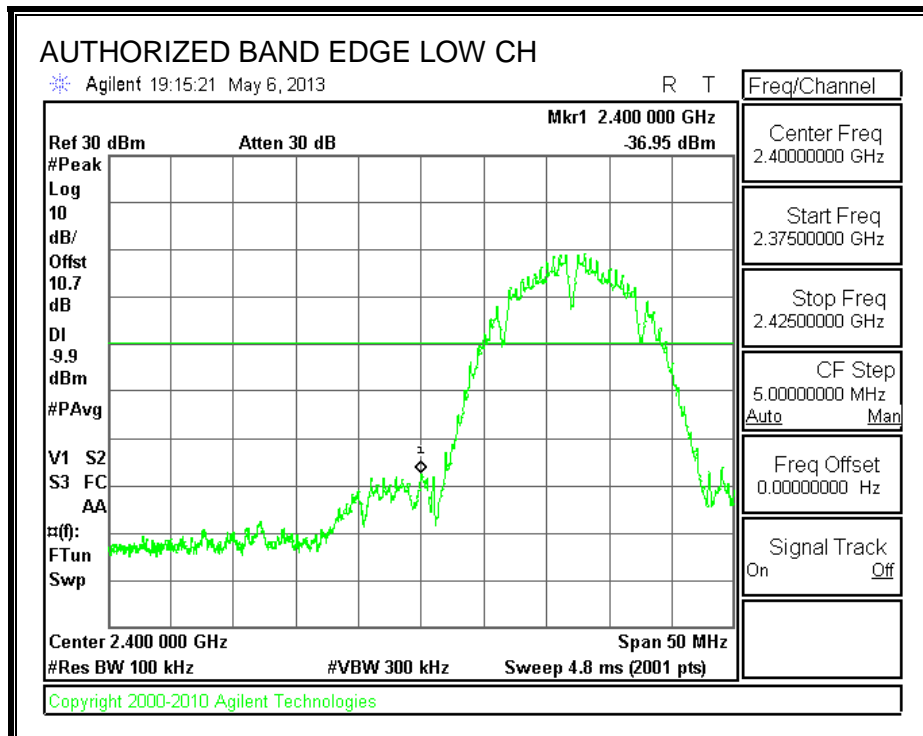
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

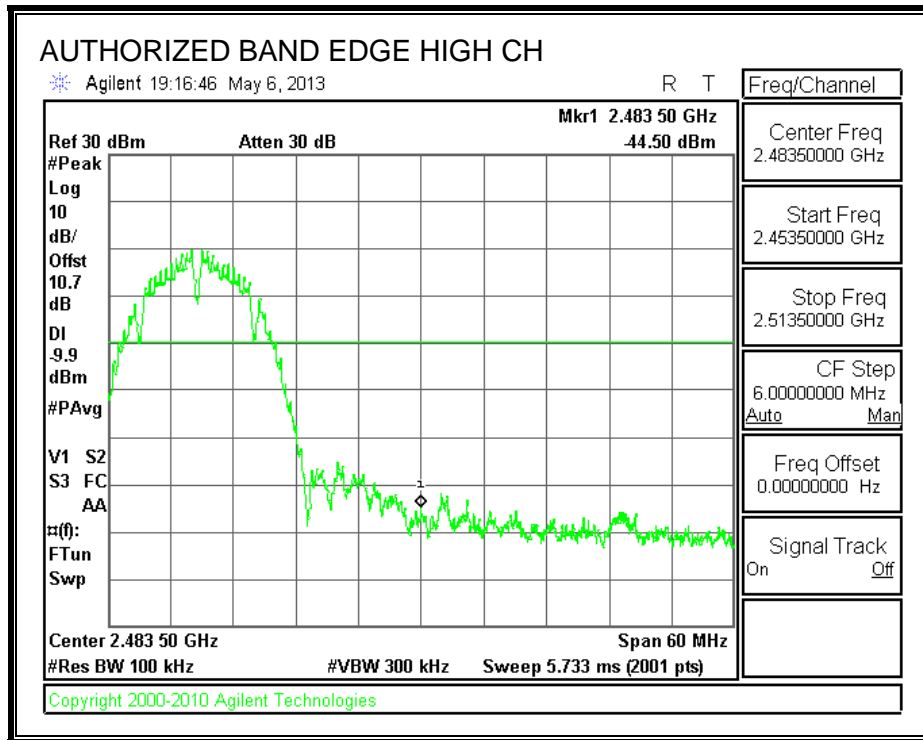
IN-BAND REFERENCE LEVEL



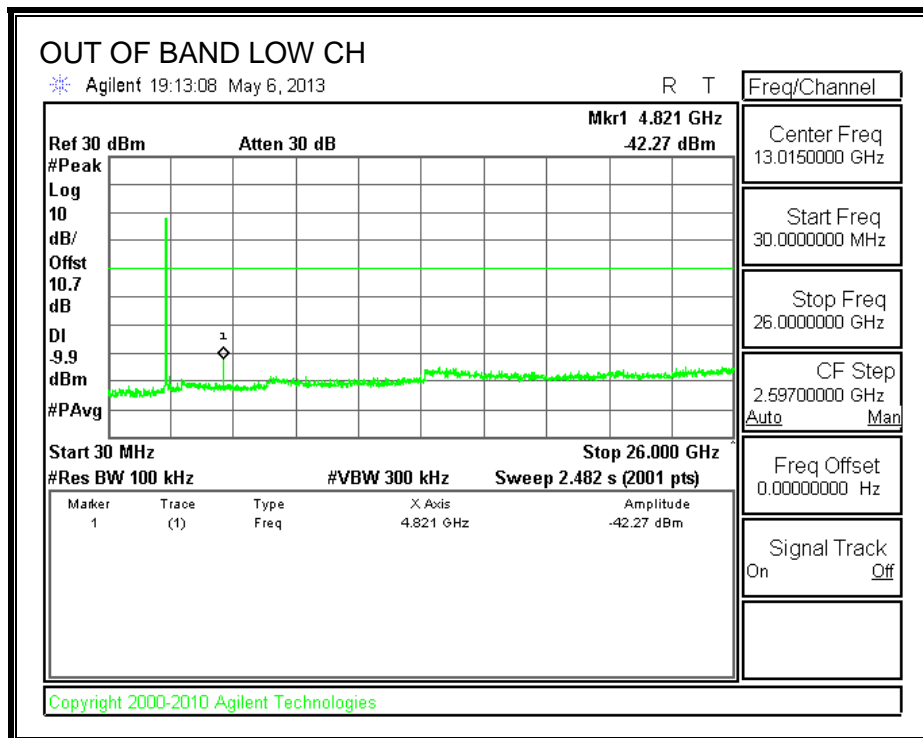
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS



8.2. 802.11g MODE IN THE 2.4 GHz BAND**8.2.1. 6 dB BANDWIDTH****LIMITS**

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

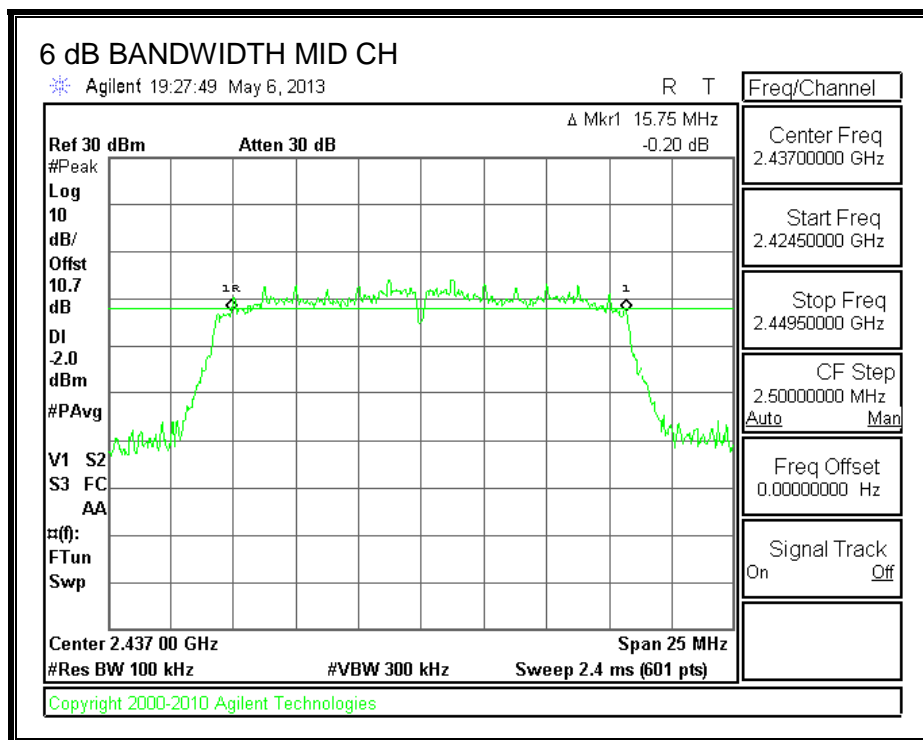
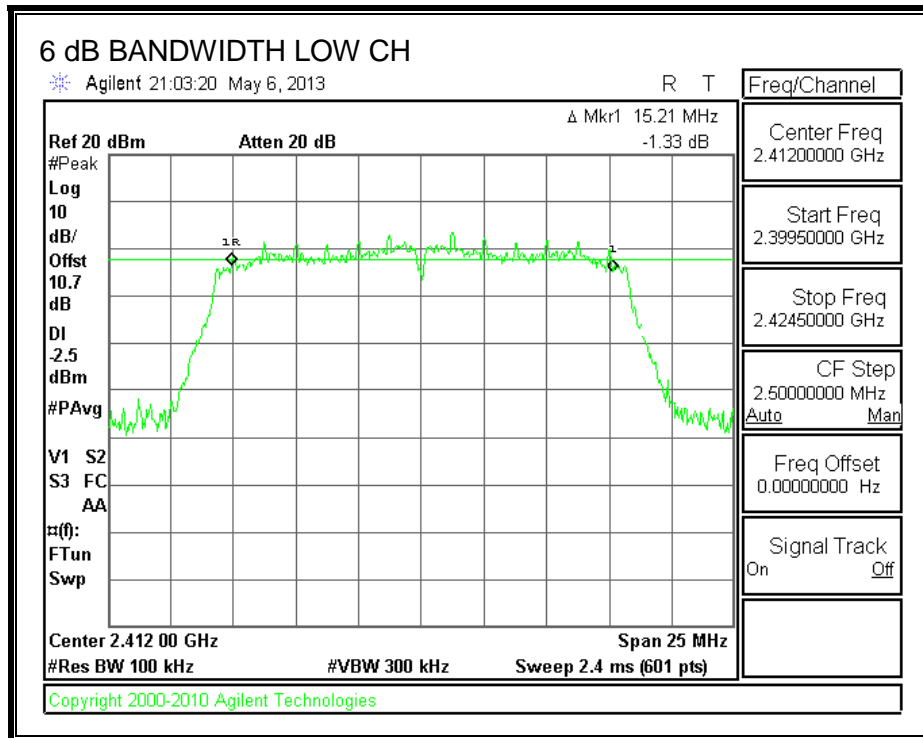
TEST PROCEDURE

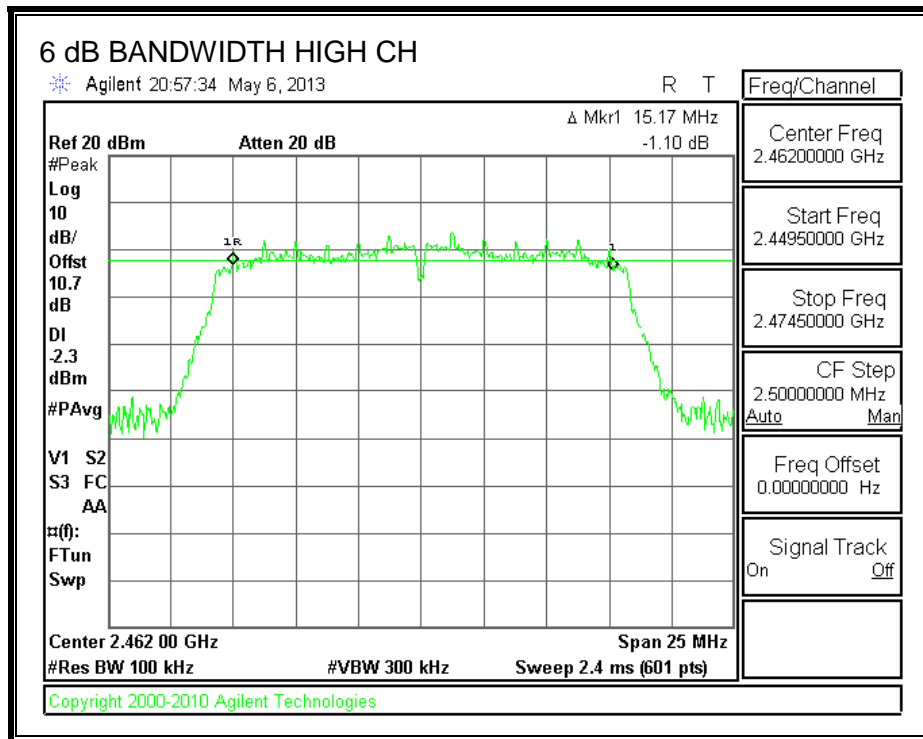
The transmitter output is connected to a spectrum analyzer with the RBW set between 1% and 5% of the EBW, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	15.210	0.5
Mid	2437	15.750	0.5
High	2462	15.170	0.5

6 dB BANDWIDTH





8.2.2. AVERAGE POWER**LIMITS**

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.7 dB (including 11 dB pad and 0.7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	13.20
Mid	2437	13.30
High	2462	13.50

8.2.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

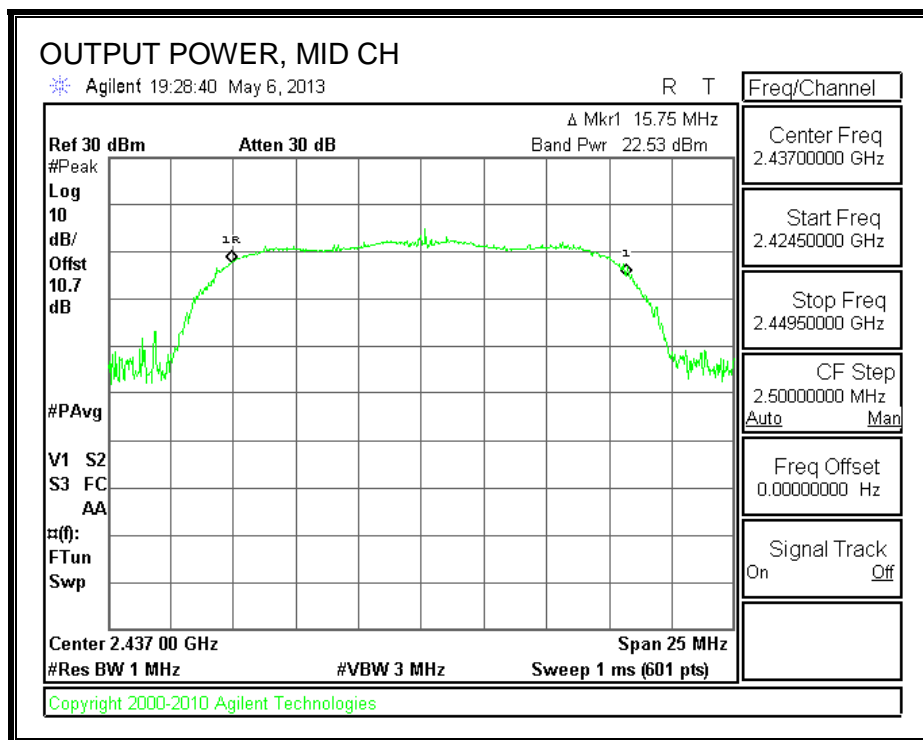
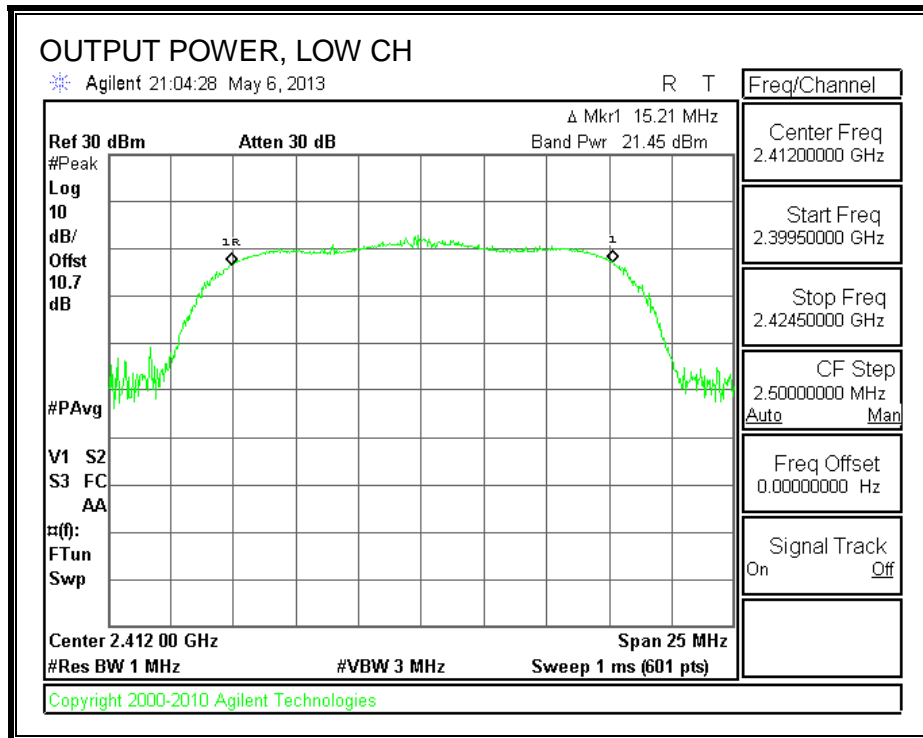
RESULTS**Limits**

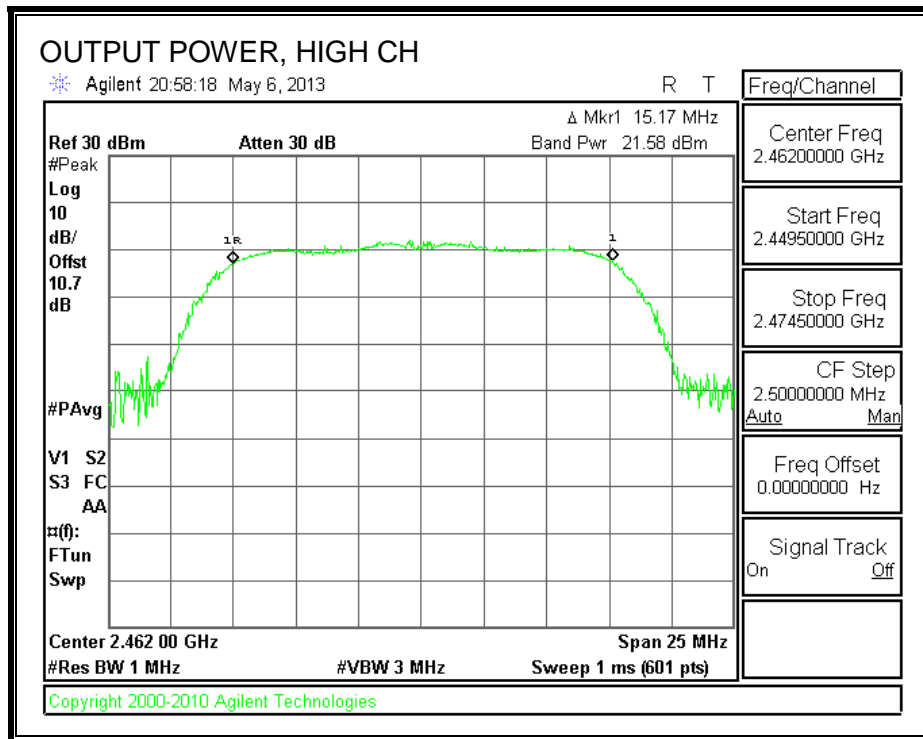
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	0.51	30.00	30	36	30.00
Mid	2437	0.51	30.00	30	36	30.00
High	2462	0.51	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	21.45	21.45	30.00	-8.55
Mid	2437	22.53	22.53	30.00	-7.47
High	2462	21.58	21.58	30.00	-8.42

OUTPUT POWER





8.2.4. PSD**LIMITS**

FCC §15.247

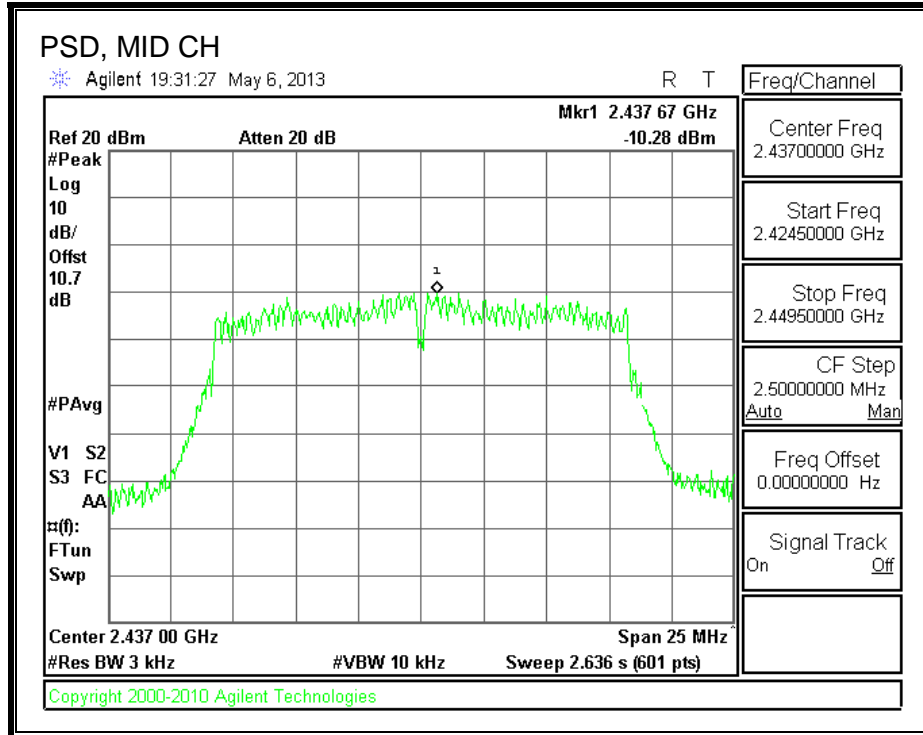
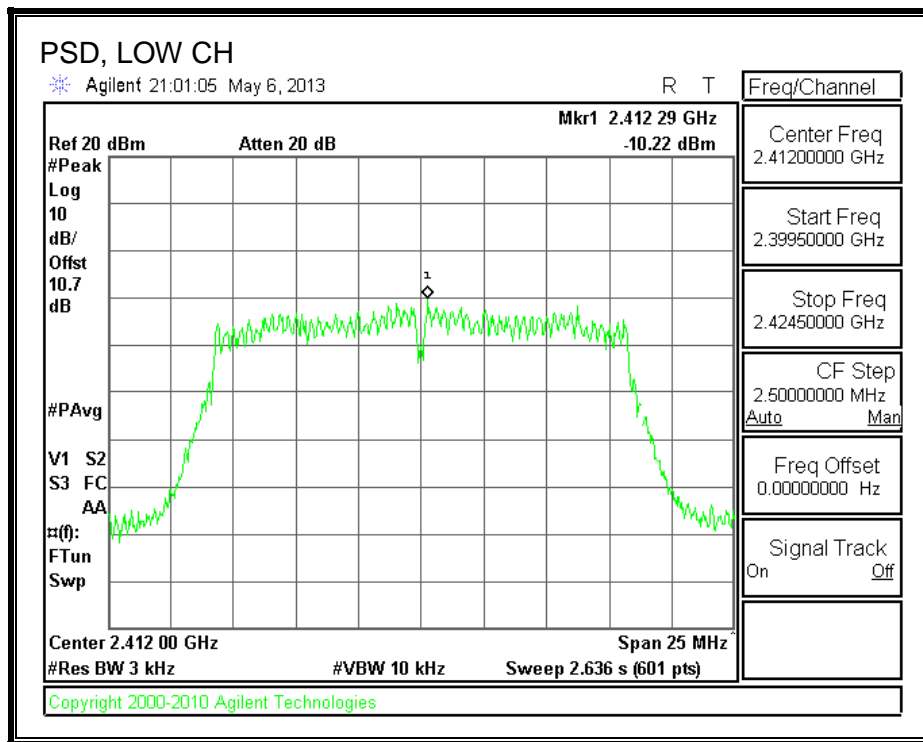
IC RSS-210 A8.2

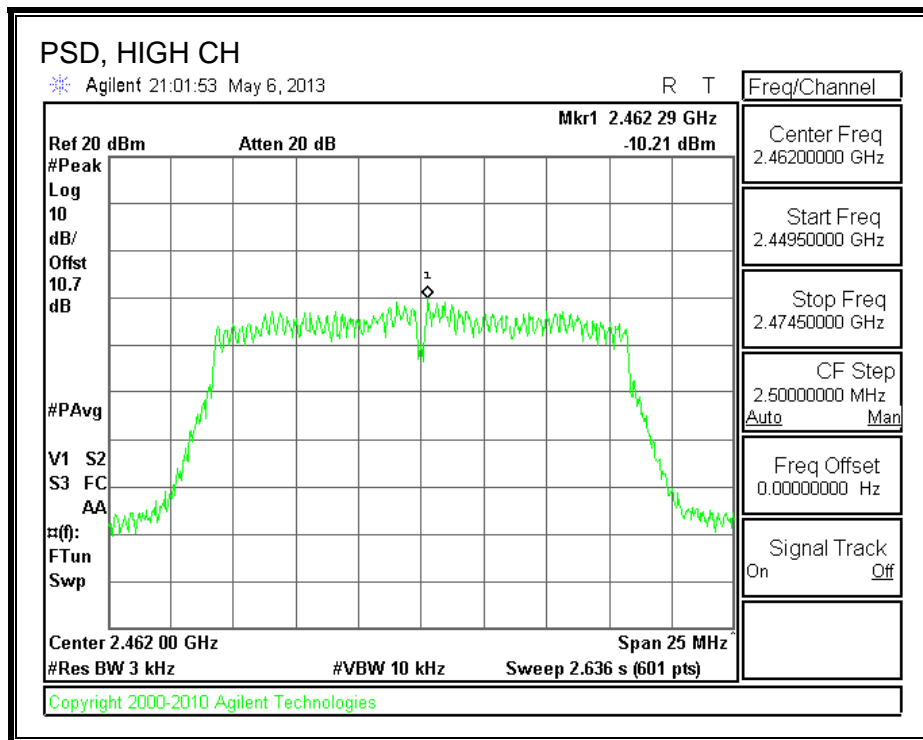
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS**PSD Results**

Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-10.22	8.0	-18.2
Mid	2437	-10.28	8.0	-18.3
High	2462	-10.21	8.0	-18.2

PSD





8.2.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

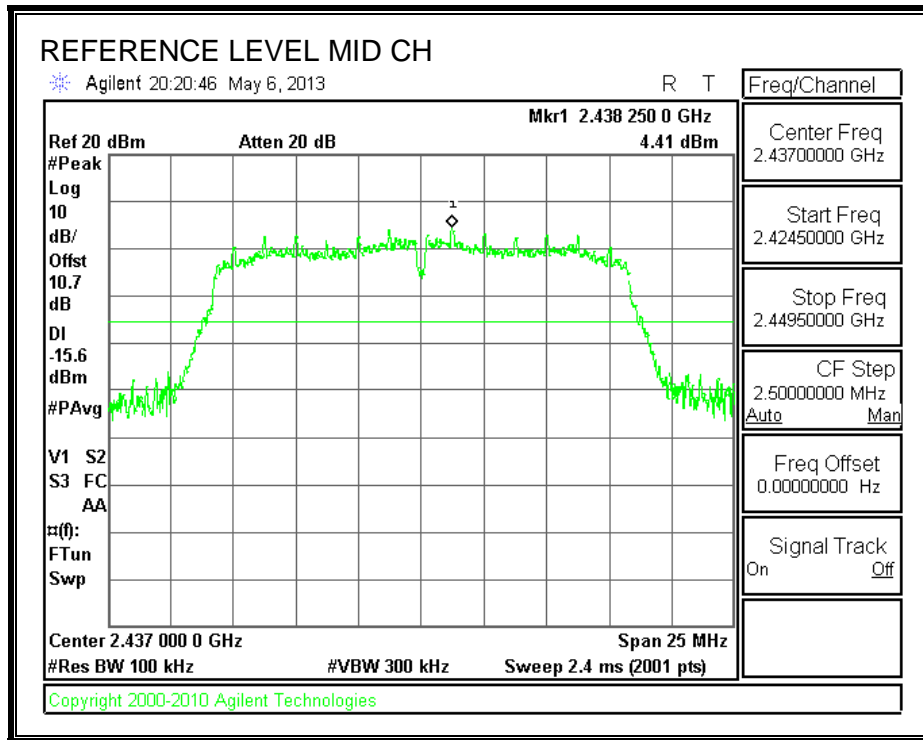
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

TEST PROCEDURE

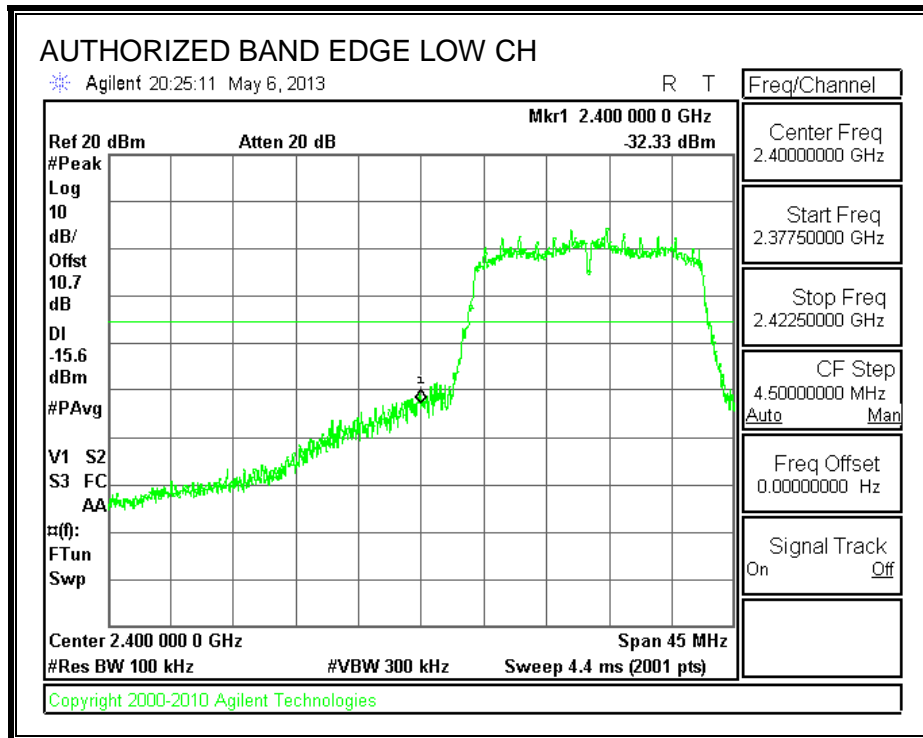
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

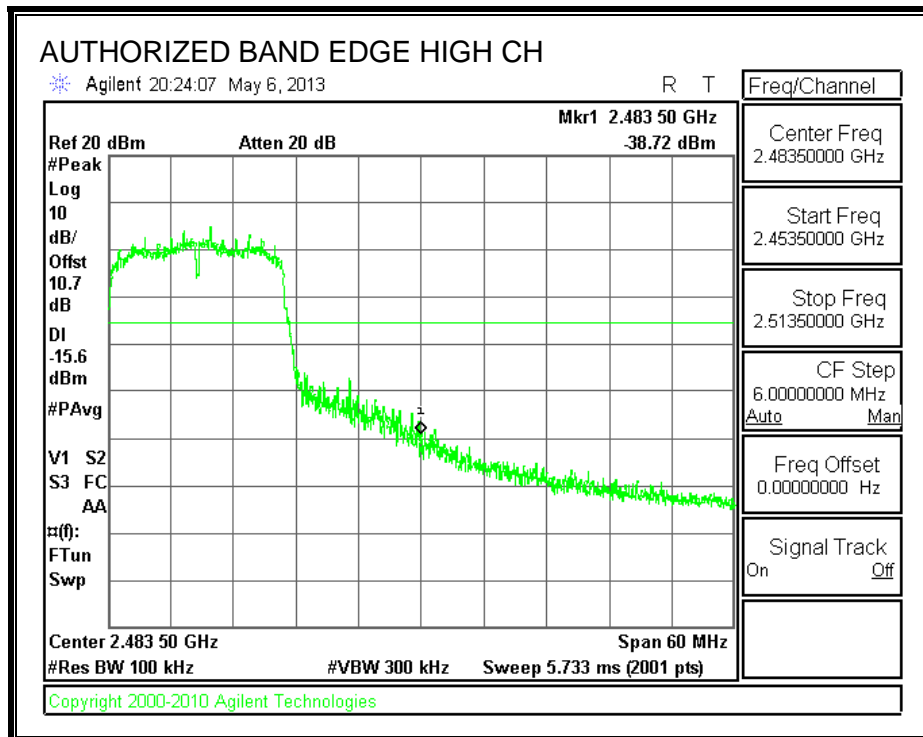
IN-BAND REFERENCE LEVEL



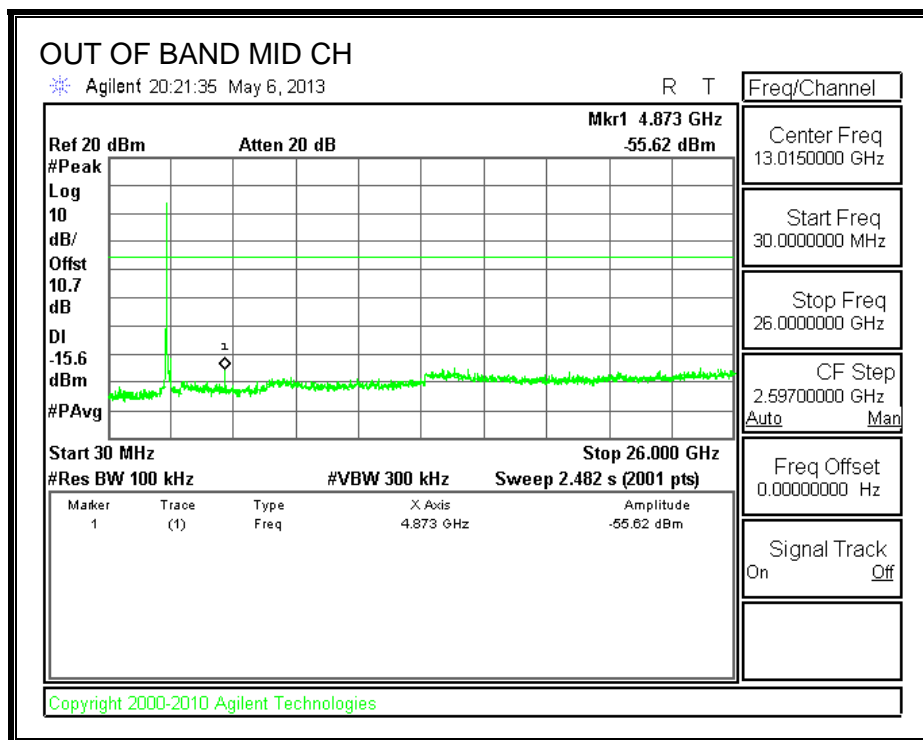
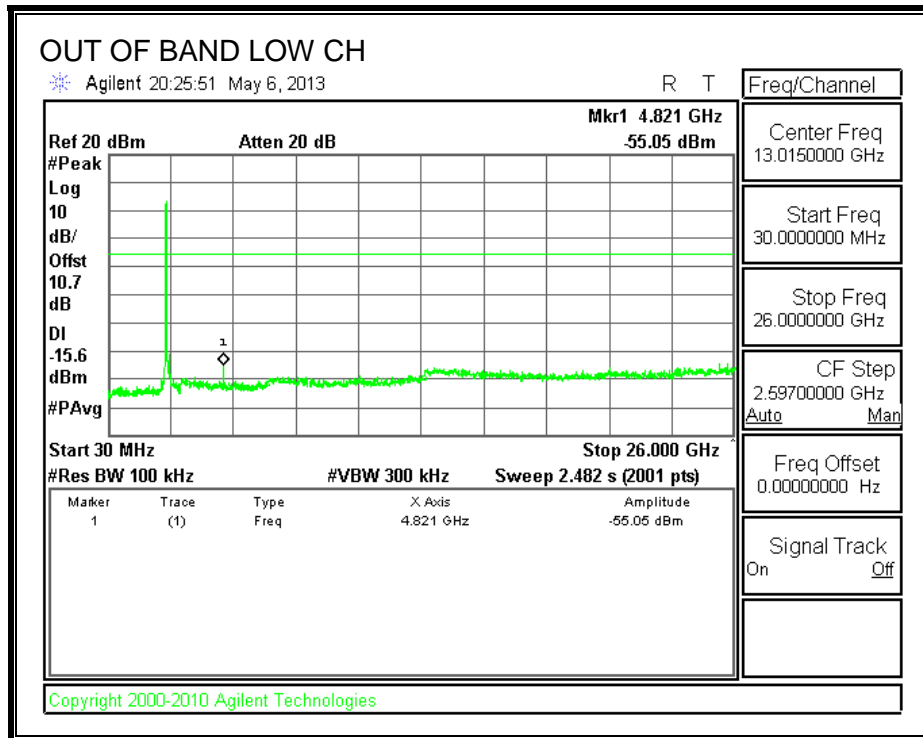
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS



8.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND**8.3.1. 6 dB BANDWIDTH****LIMITS**

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

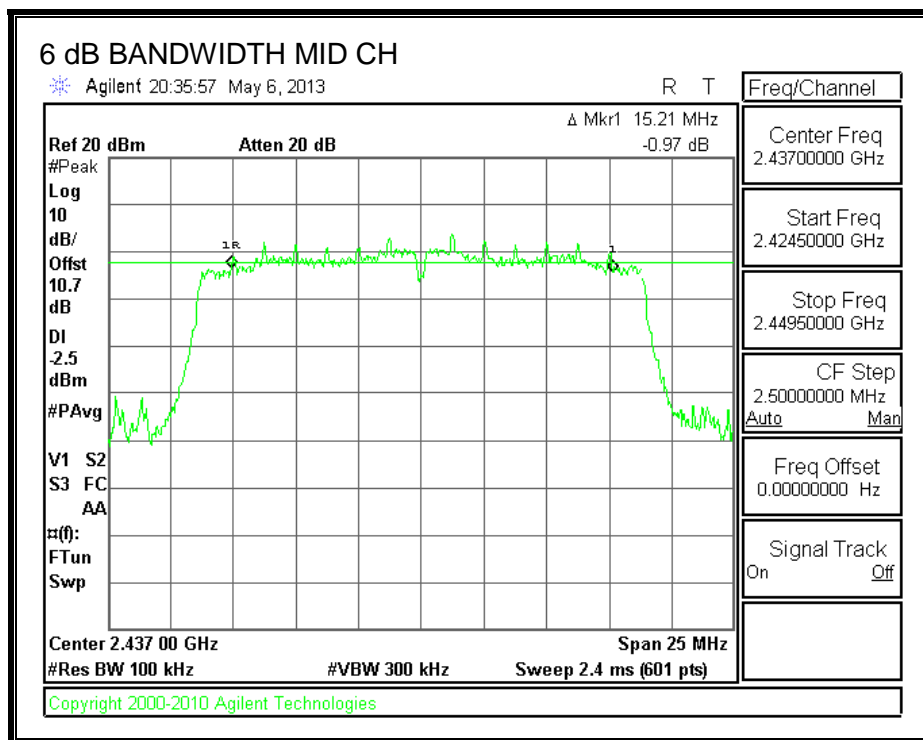
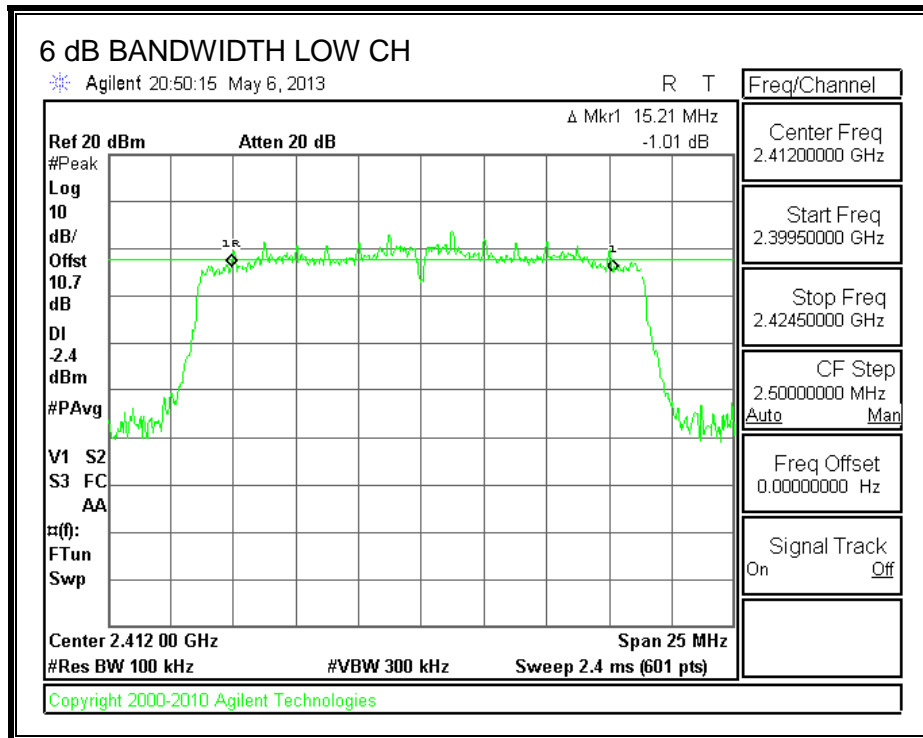
TEST PROCEDURE

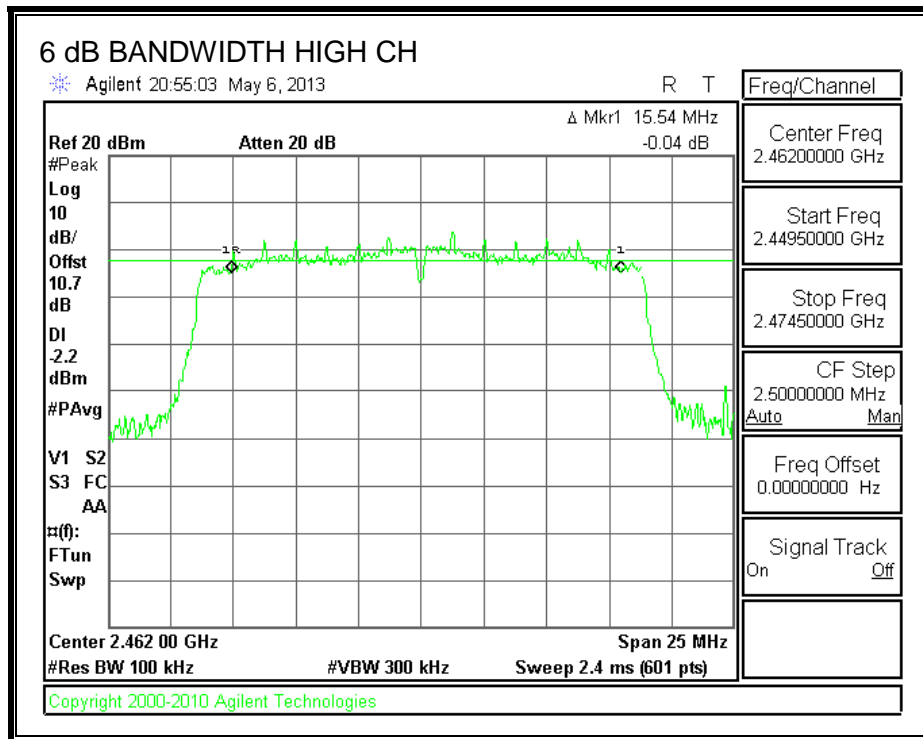
The transmitter output is connected to a spectrum analyzer with the RBW set between 1% and 5% of the EBW, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	15.210	0.5
Mid	2437	15.210	0.5
High	2462	15.540	0.5

6 dB BANDWIDTH





8.3.2. AVERAGE POWER**LIMITS**

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.7 dB (including 11 dB pad and .7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	2412	12.20
Mid	2437	12.30
High	2462	12.50

8.3.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

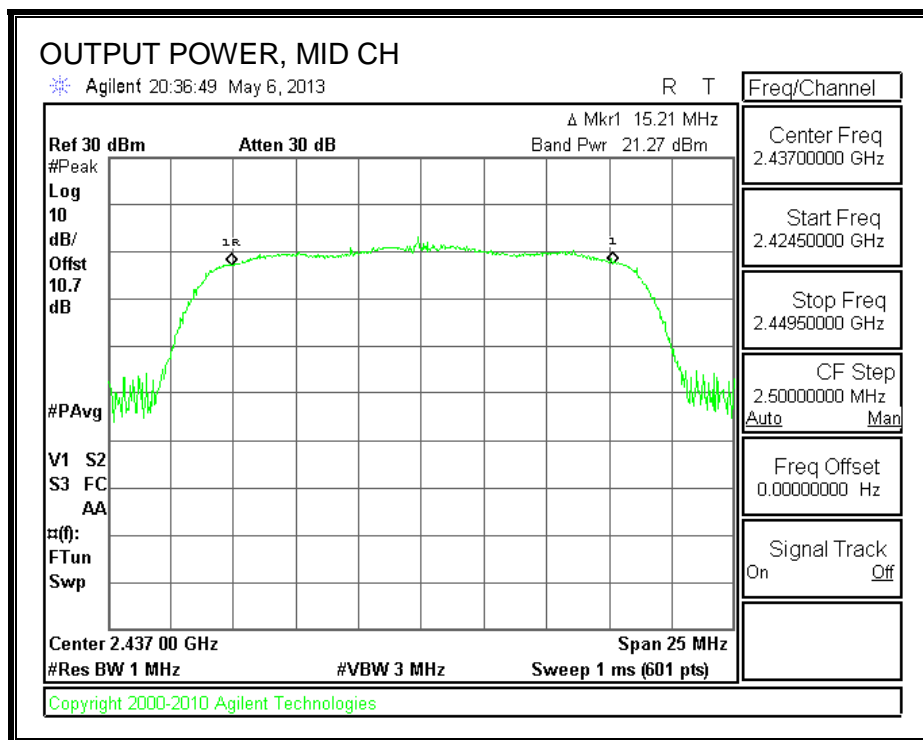
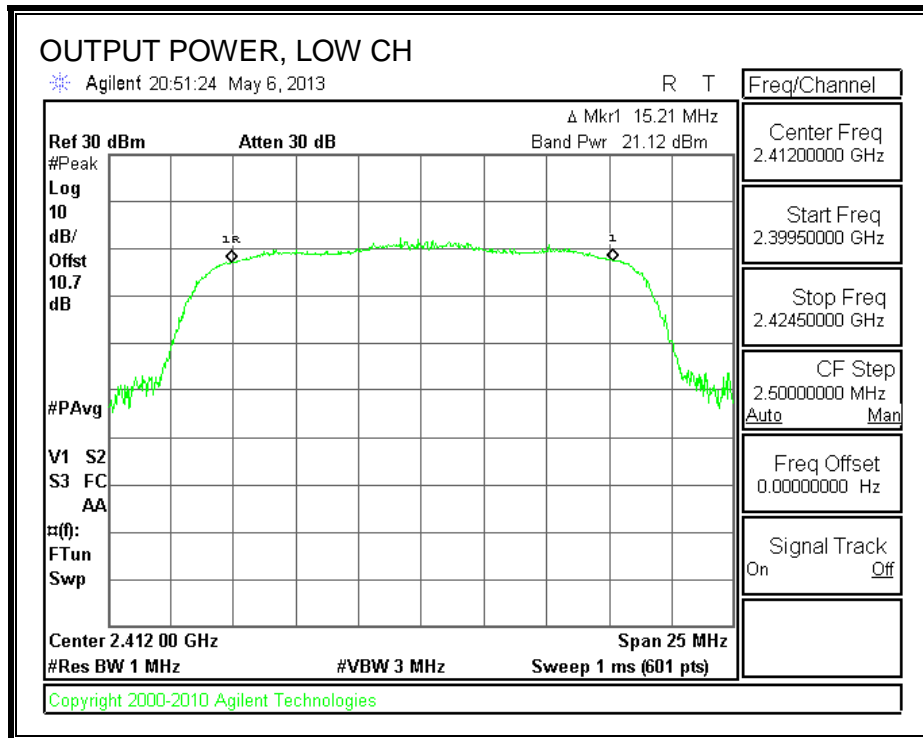
RESULTS**Limits**

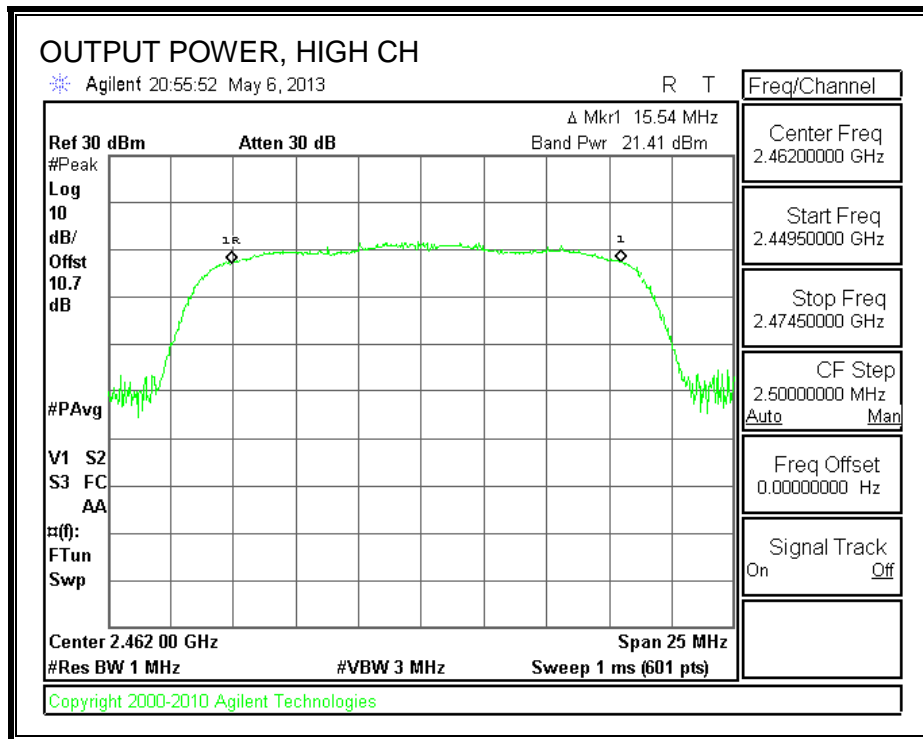
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	0.51	30.00	30	36	30.00
Mid	2437	0.51	30.00	30	36	30.00
High	2462	0.51	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	21.12	21.12	30.00	-8.88
Mid	2437	21.27	21.27	30.00	-8.73
High	2462	21.41	21.41	30.00	-8.59

OUTPUT POWER





8.3.4. PSD**LIMITS**

FCC §15.247

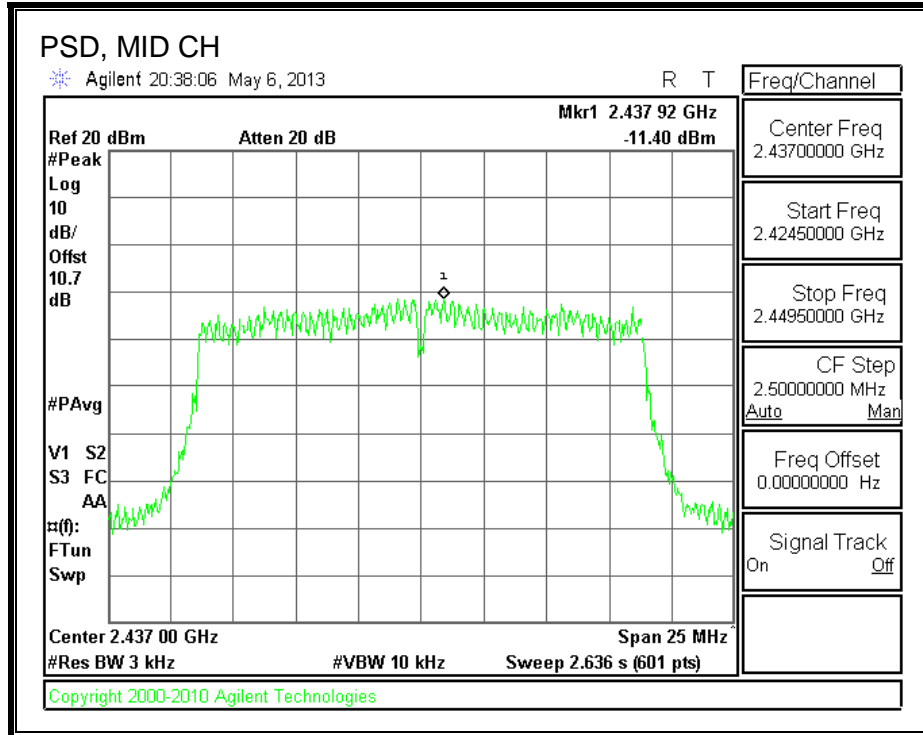
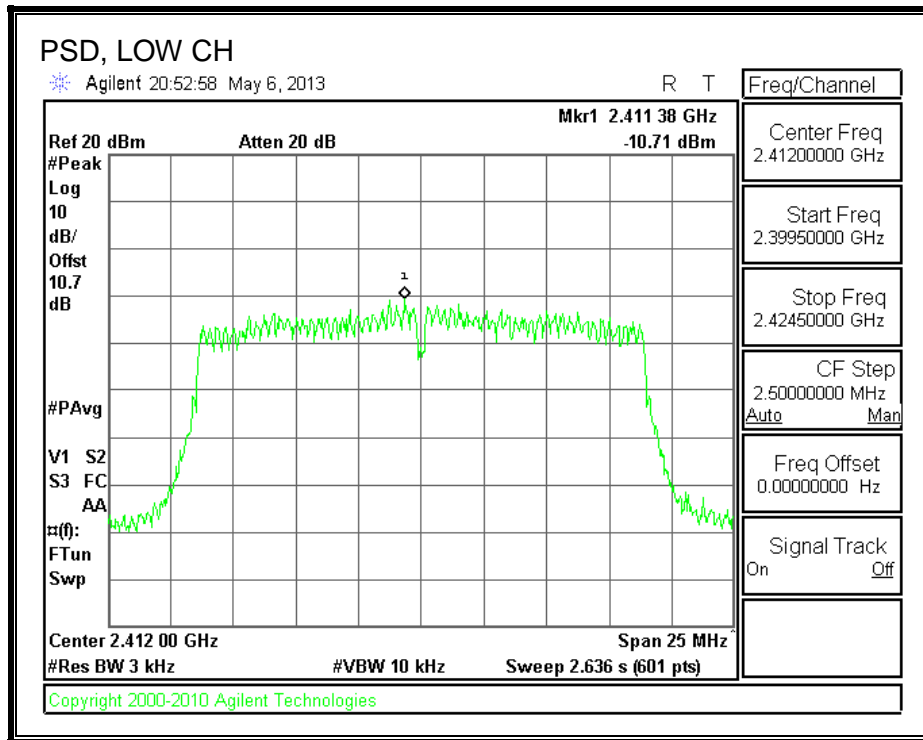
IC RSS-210 A8.2

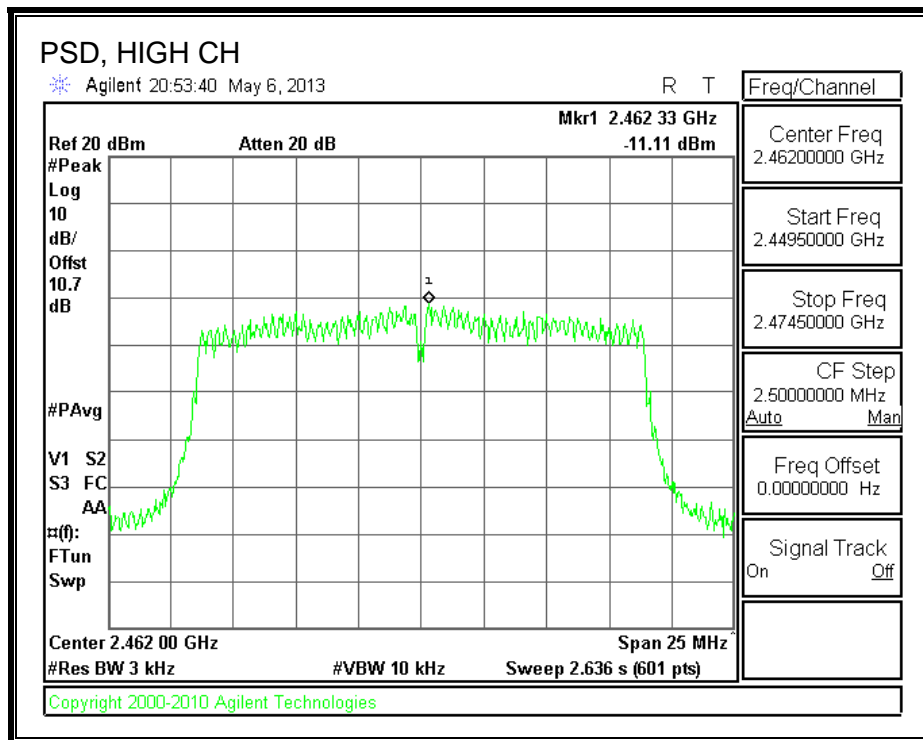
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS**PSD Results**

Channel	Frequency (MHz)	Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-10.71	8.0	-18.7
Mid	2437	-11.40	8.0	-19.4
High	2462	-11.11	8.0	-19.1

PSD





8.3.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

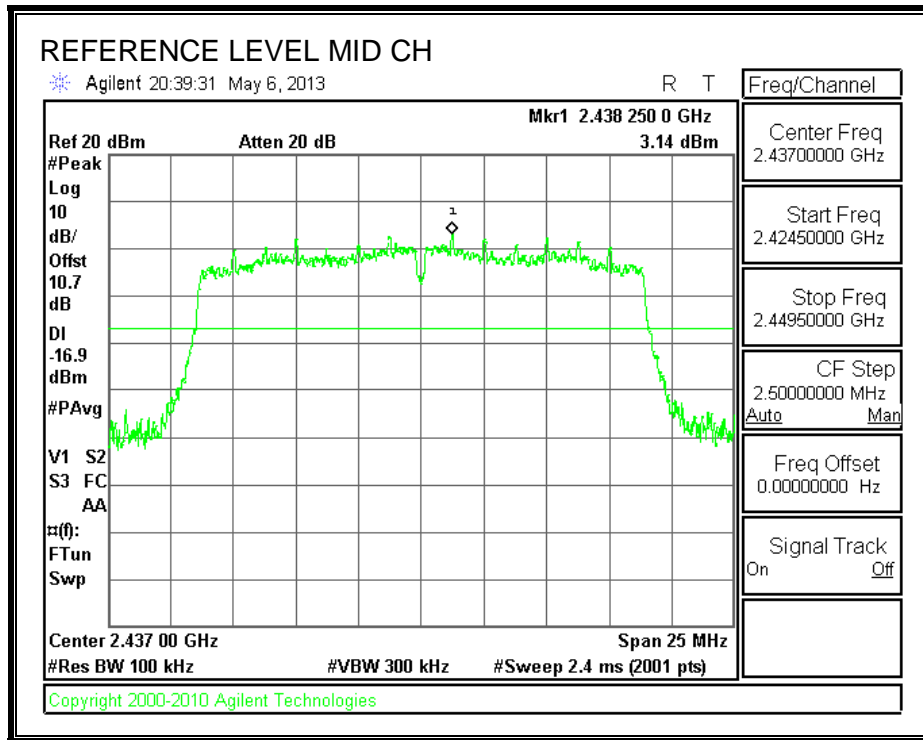
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

TEST PROCEDURE

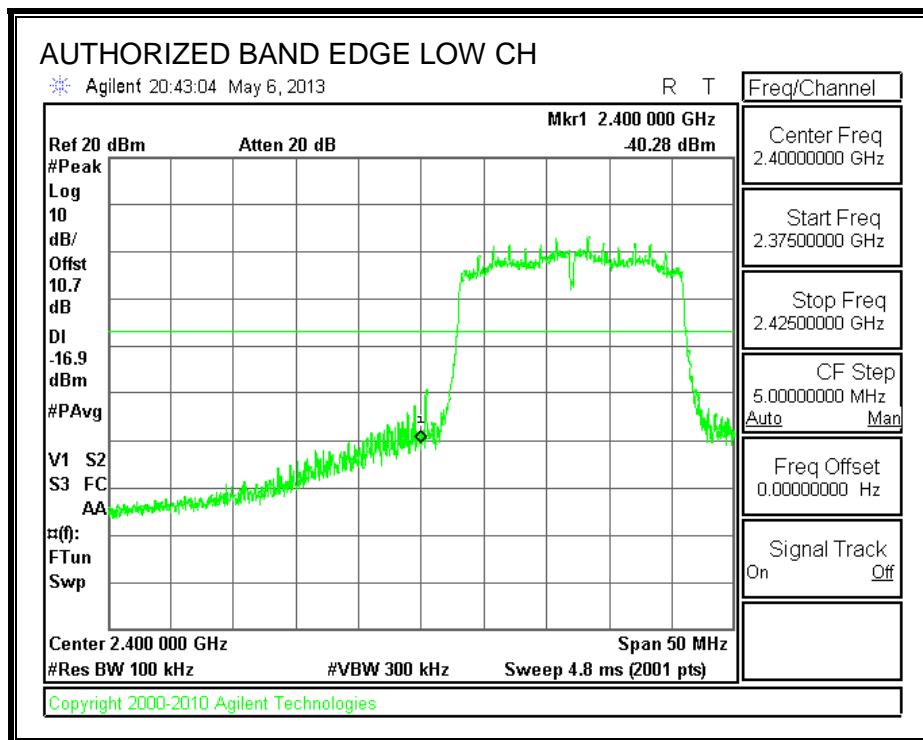
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

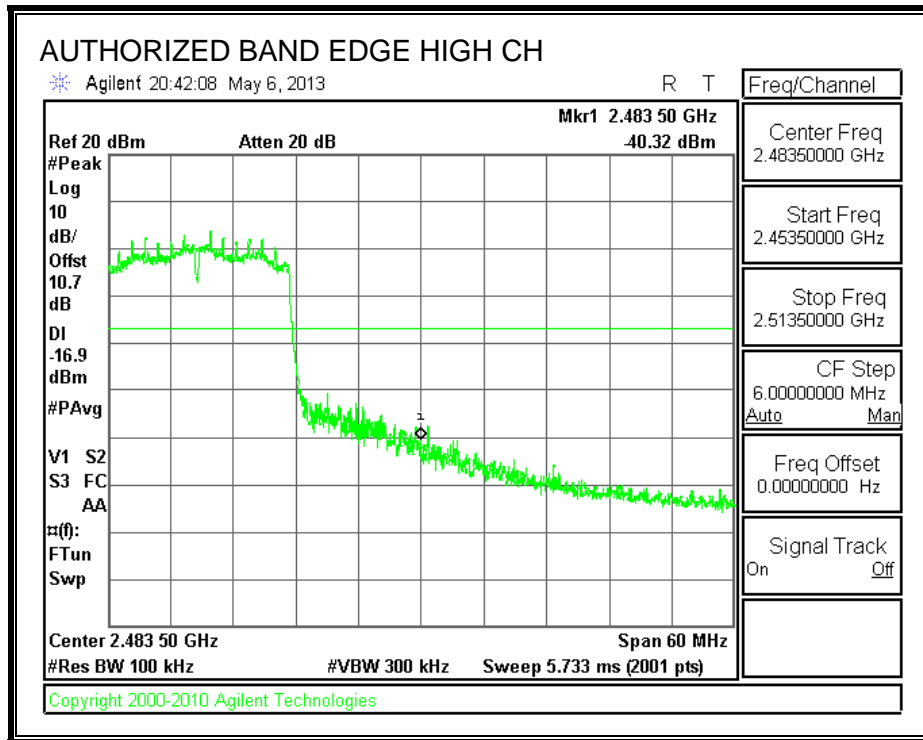
IN-BAND REFERENCE LEVEL



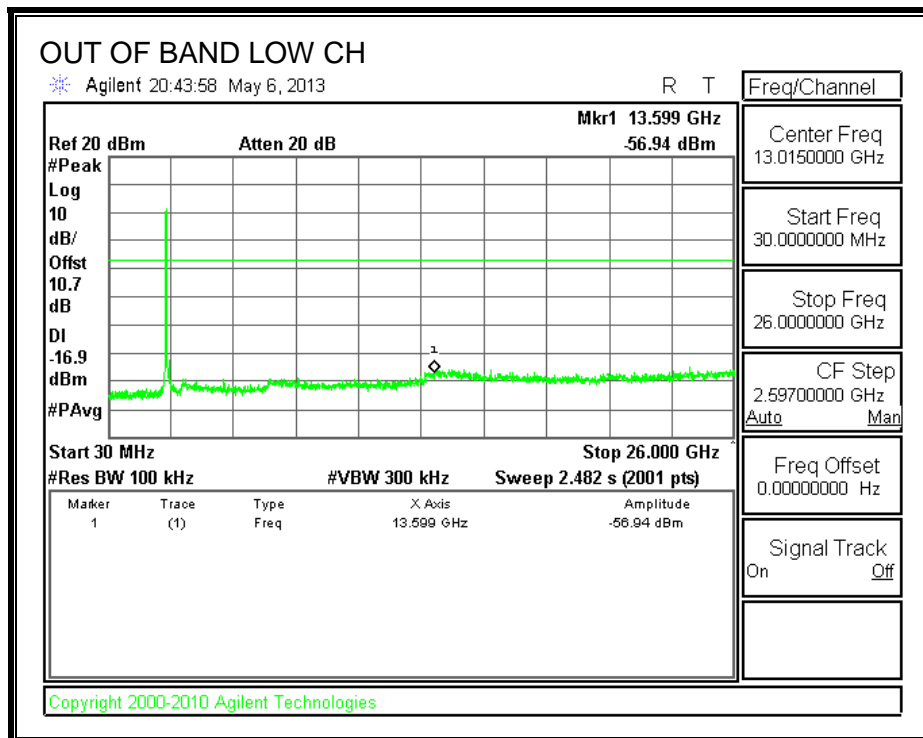
LOW CHANNEL BANDEDGE

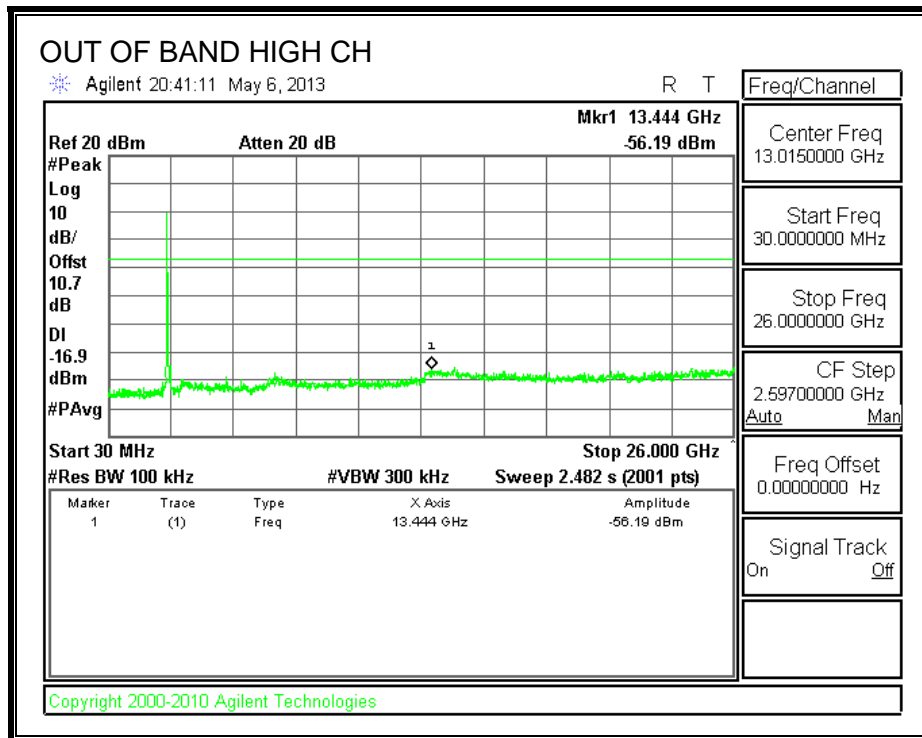
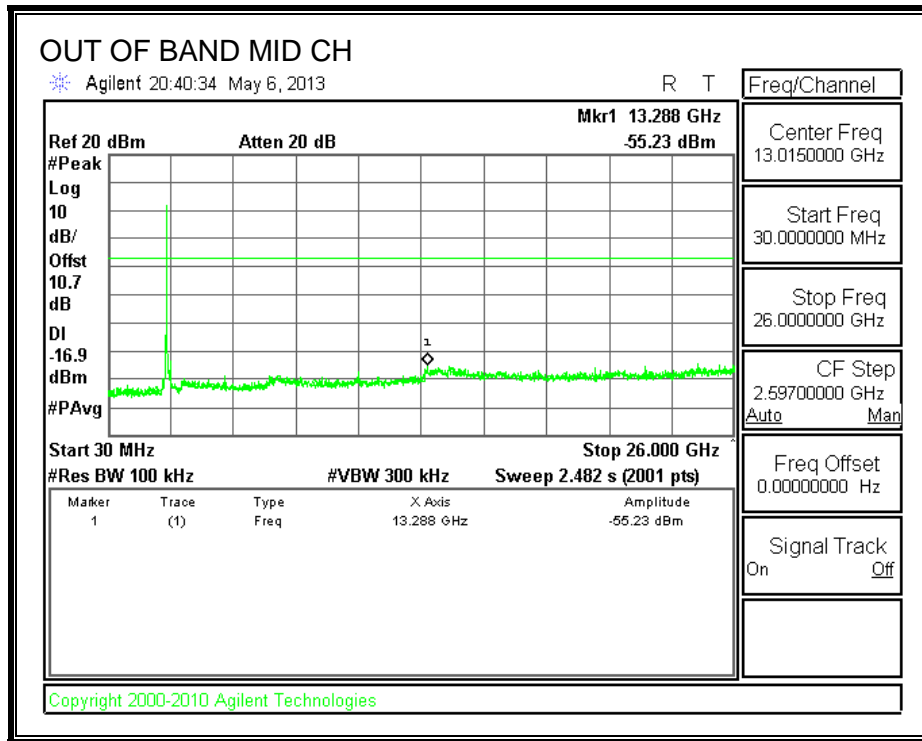


HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS





9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

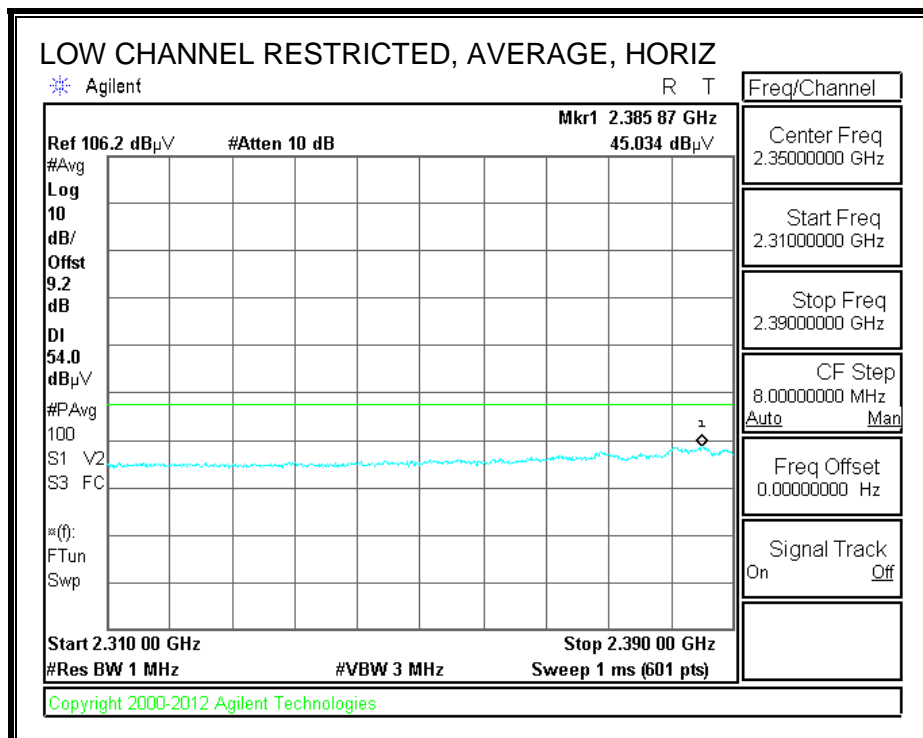
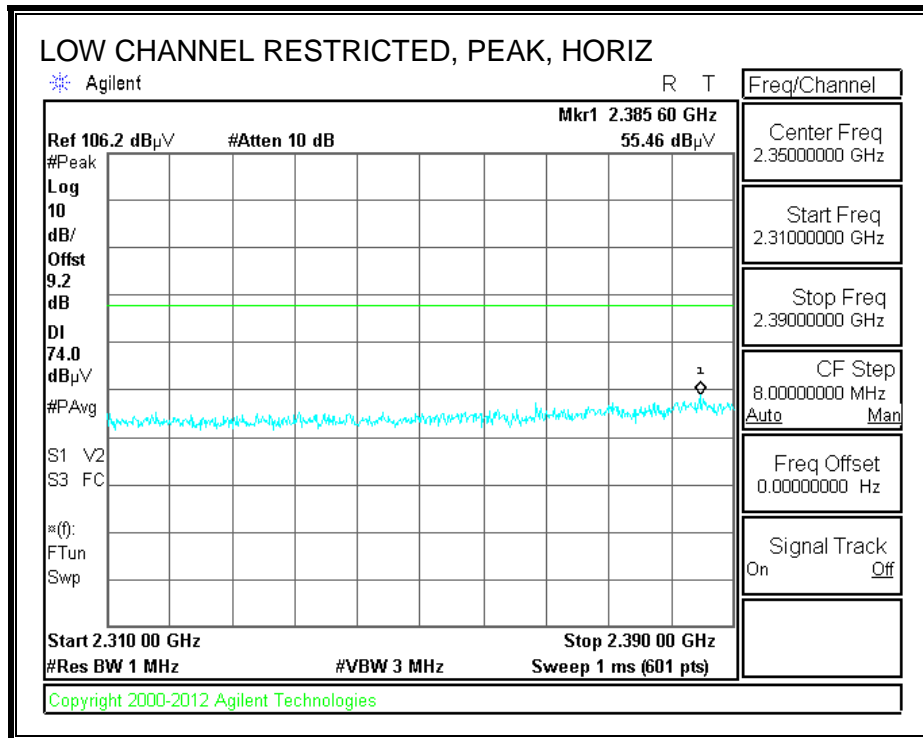
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

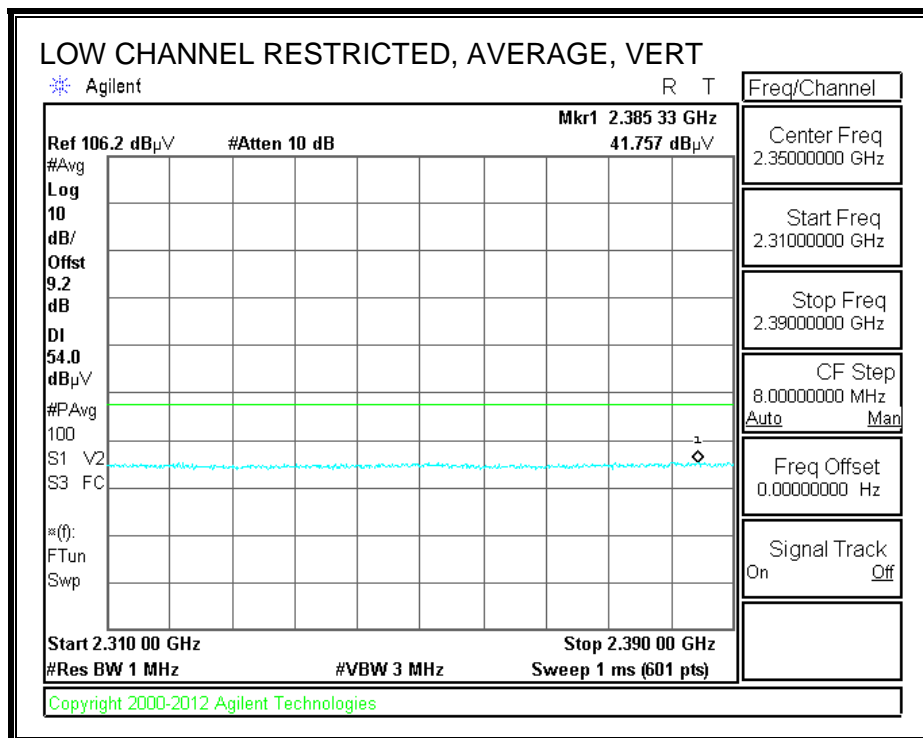
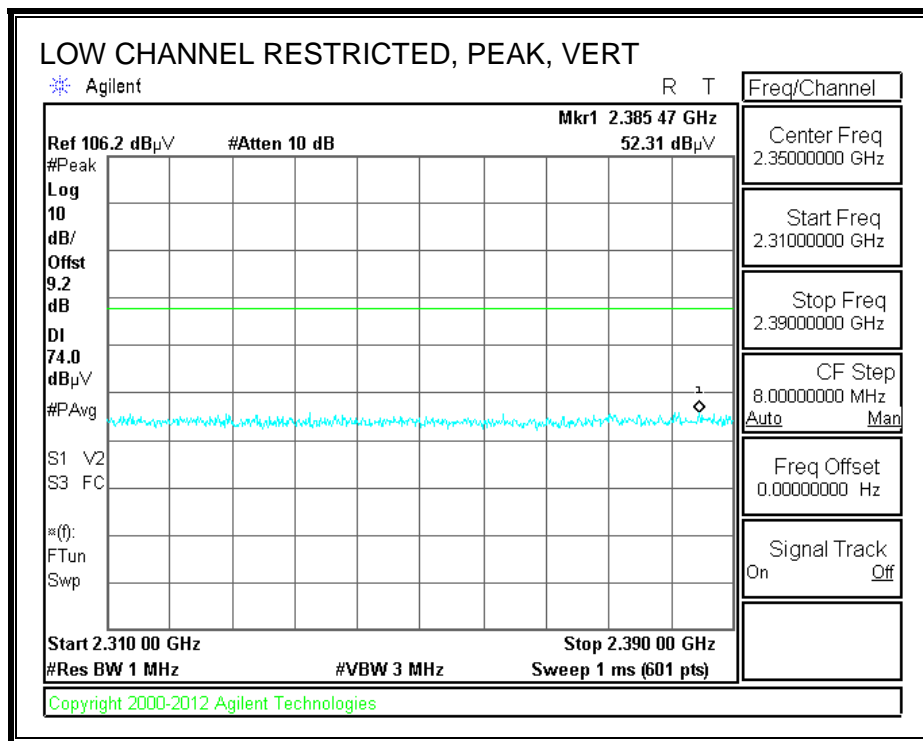
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

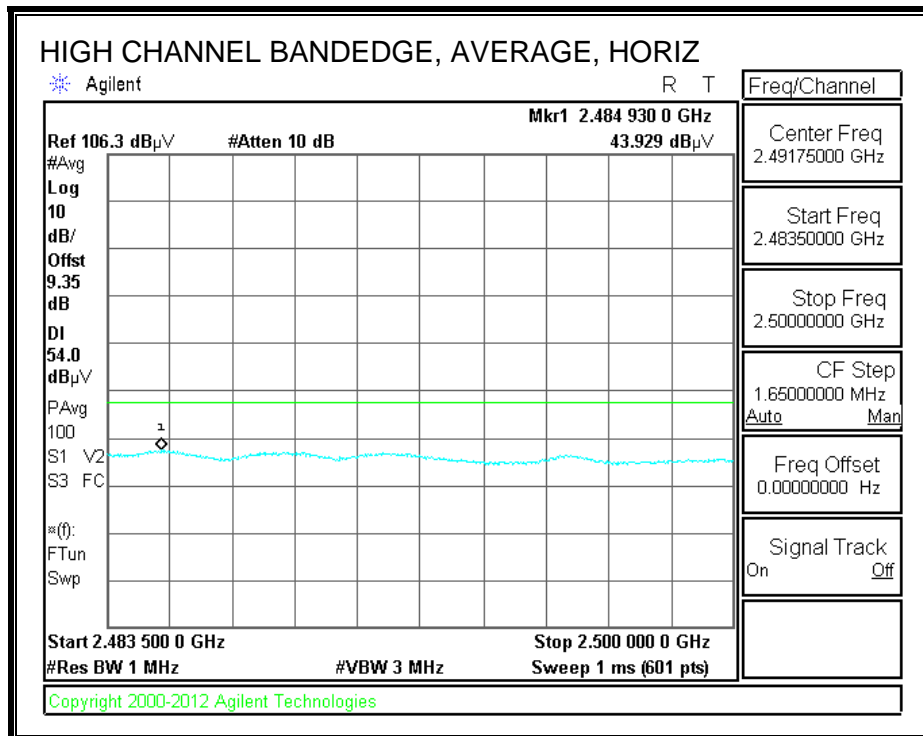
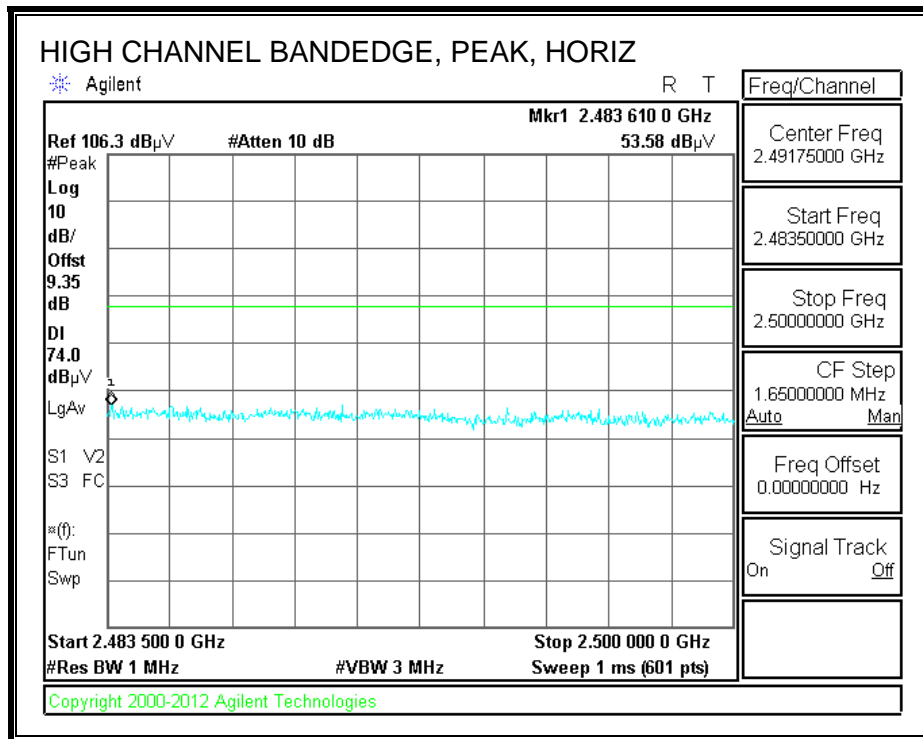
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

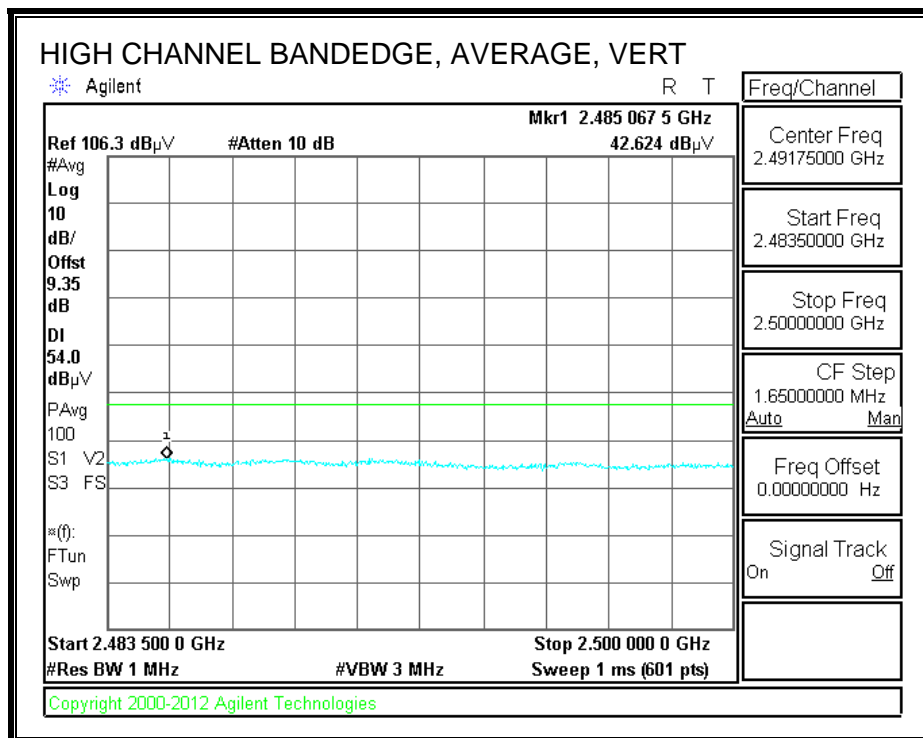
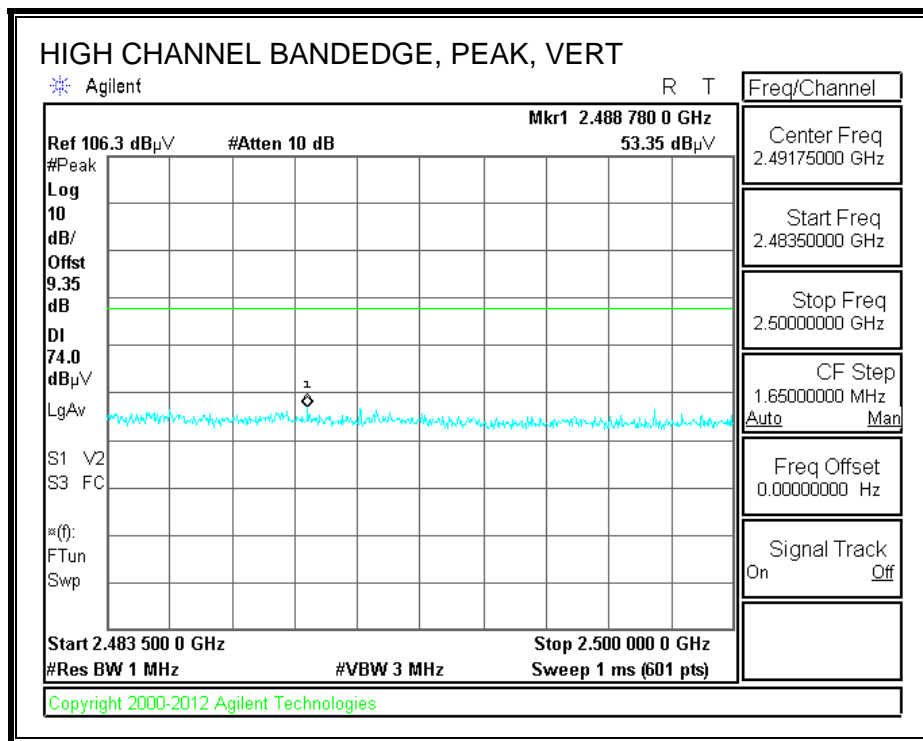
9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. 802.11b MODE IN THE 2.4 GHz RESTRICTED BANDEDGE

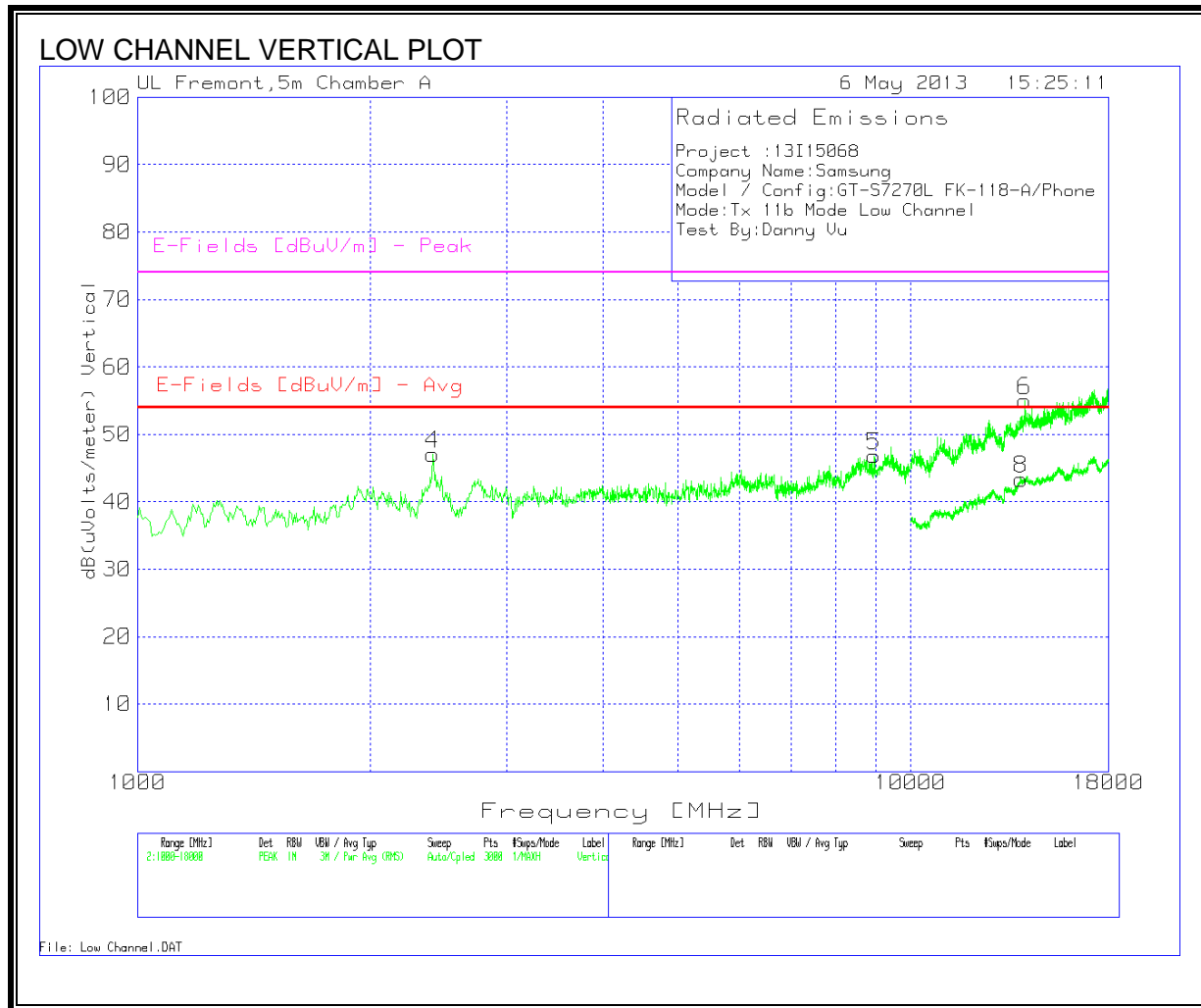


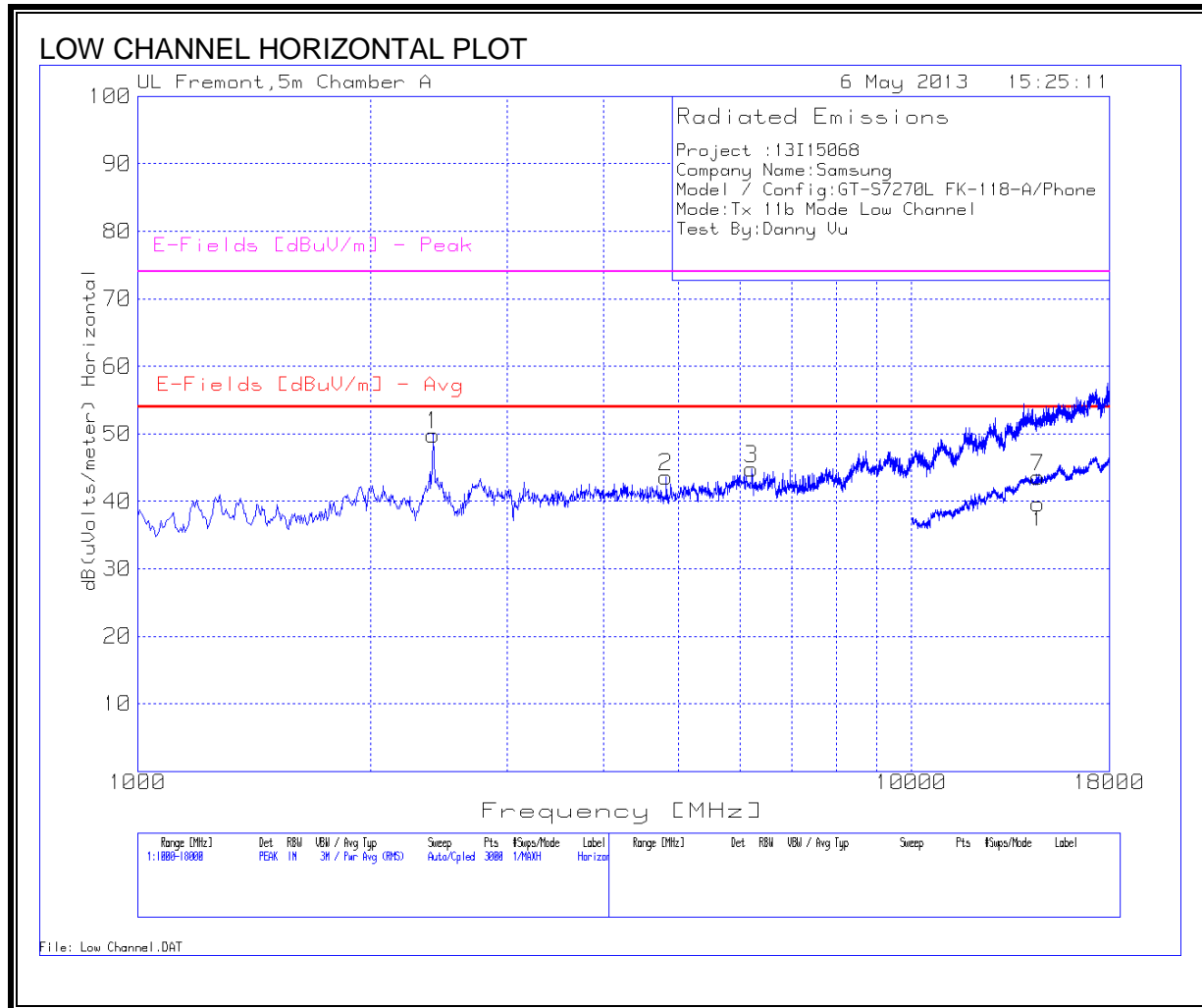






802.11b MODE IN THE 2.4 GHz HARMONICS AND SPURIOUS EMISSIONS





LOW CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11b Mode Low Channel
 Test By:Danny Vu

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
*1	2410.06	49.21	PK	32.2	-36.9	4.4	0.9	49.81	53.97	-4.16	74	-24.19	100	Horz
2	4822.452	38.55	PK	33.9	-35.7	6.7	0.2	43.65	53.97	-10.32	74	-30.35	100	Horz
3	6221.186	36.86	PK	35.4	-35.6	7.9	0.2	44.76	53.97	-9.21	74	-29.24	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
*4	2410.06	46.47	PK	32.2	-36.9	4.4	0.9	47.07	53.97	-6.9	74	-26.93	100	Vert
5	8962.025	36.86	PK	35.9	-36.1	9.8	0.4	46.86	53.97	-7.11	74	-27.14	100	Vert
6	14035.976	36.86	PK	39.1	-33.8	12.5	0.4	55.06	53.97	1.09	74	-18.94	100	Vert

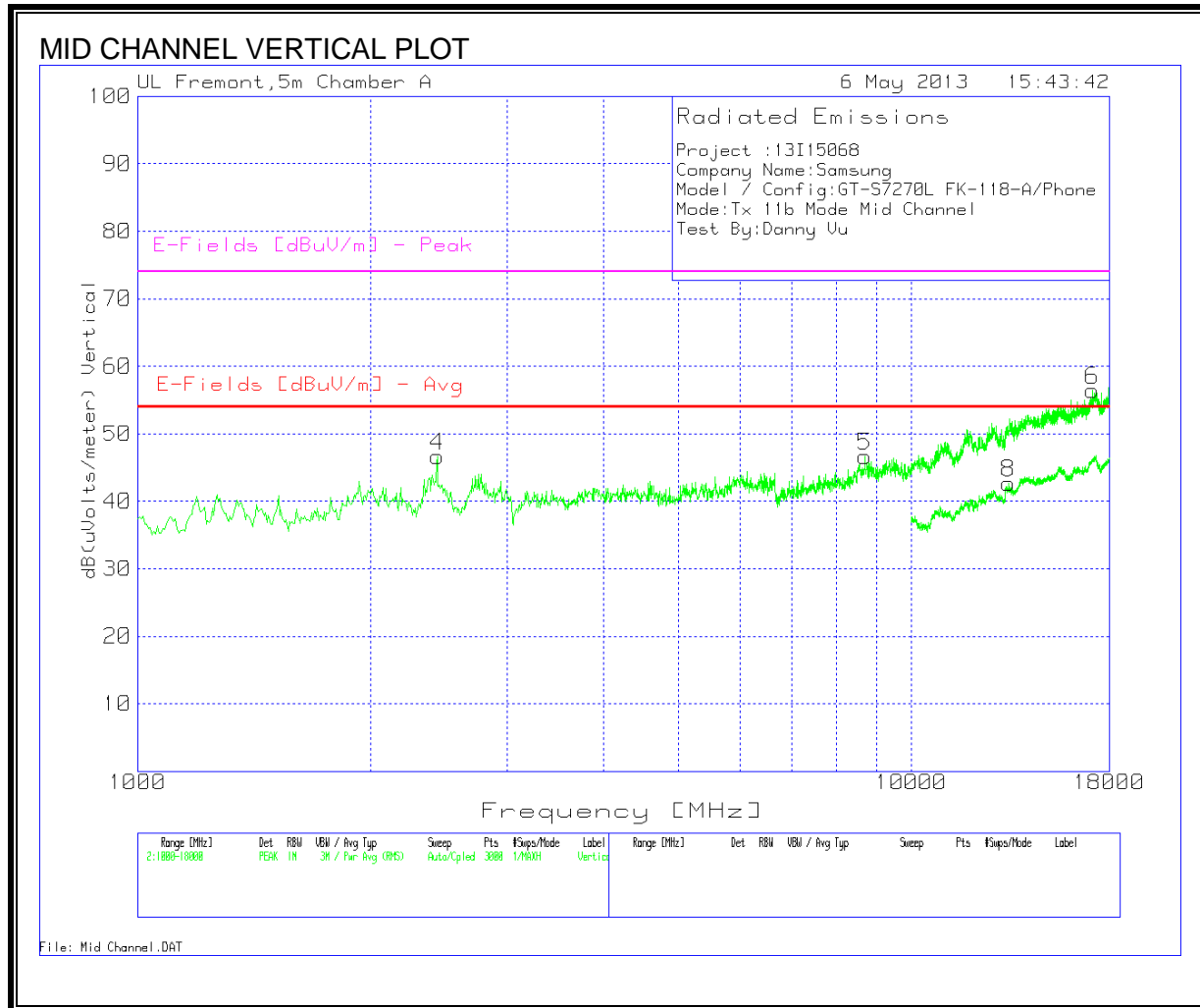
Horizontal 10000 - 18000MHz

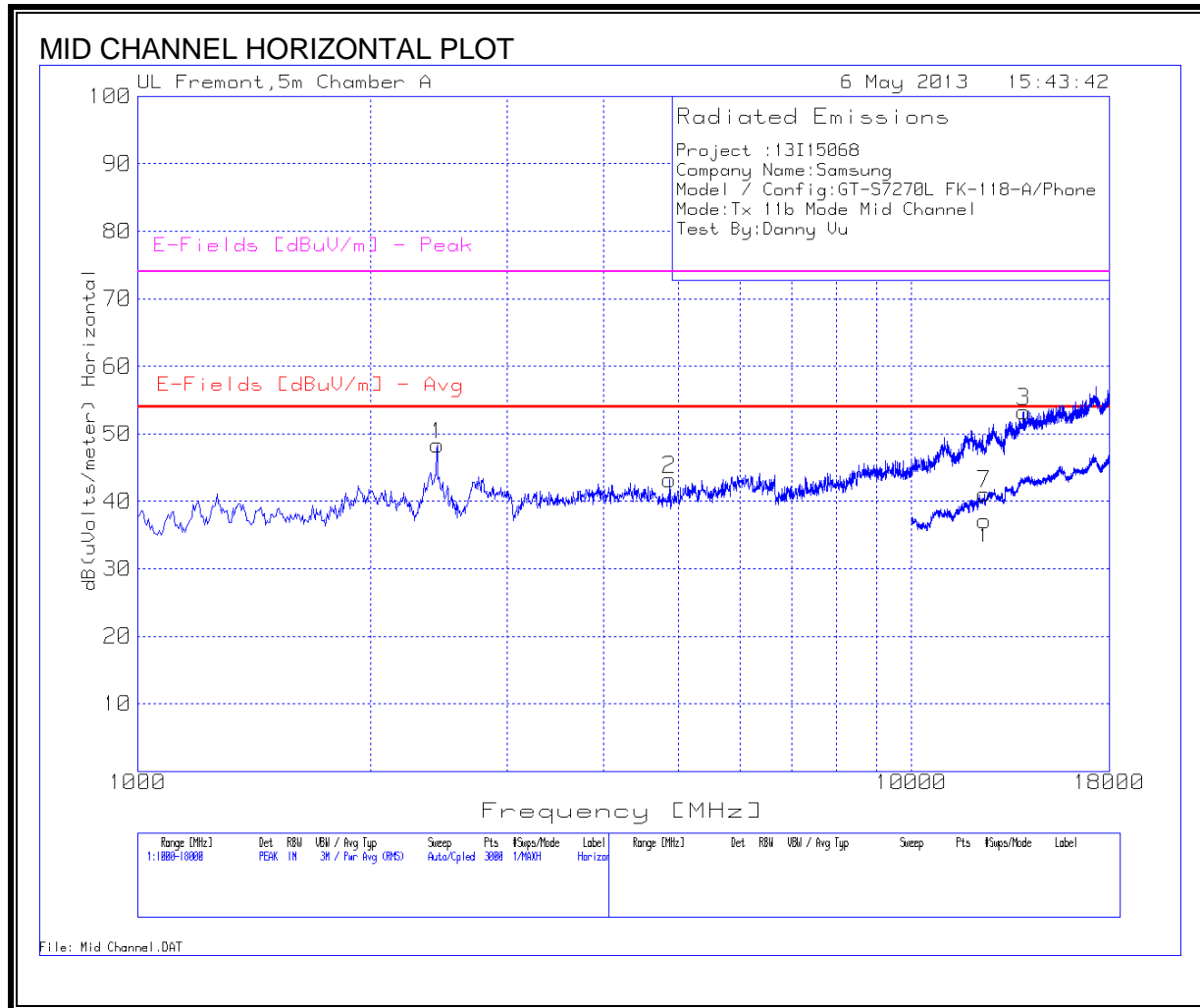
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7	14573.713	24.96	PK	39.9	-34.4	12.7	0.4	43.56	53.97	-10.41	74	-30.44	100	Horz

Vertical 10000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
8	13894.053	25.33	PK	39	-33.8	12.4	0.4	43.33	53.97	-10.64	74	-30.67	100	Vert

* Fundamental Frequencies
 PK - Peak detector
 Av - Average detector





MID CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11b Mode Mid Channel
 Test By:Danny Vu

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
*1	2438.374	47.52	PK	32.3	-36.9	4.5	0.9	48.32	53.97	-5.65	74	-25.68	100	Horz
2	4873.418	37.92	PK	34	-35.7	6.8	0.2	43.22	53.97	-10.75	74	-30.78	100	Horz
**3	13951.033	35.26	PK	39.1	-33.8	12.4	0.3	53.26	53.97	-0.71	74	-20.74	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
*4	2438.374	45.81	PK	32.3	-36.9	4.5	0.9	46.61	53.97	-7.36	74	-27.39	100	Vert
5	8701.532	36.89	PK	35.8	-36.0	9.6	0.4	46.69	53.97	-7.28	74	-27.31	100	Vert
**6	17144.903	35.3	PK	40.9	-34.2	14	0.5	56.5	53.97	2.53	74	-17.5	100	Vert

Horizontal 10000 - 18000MHz

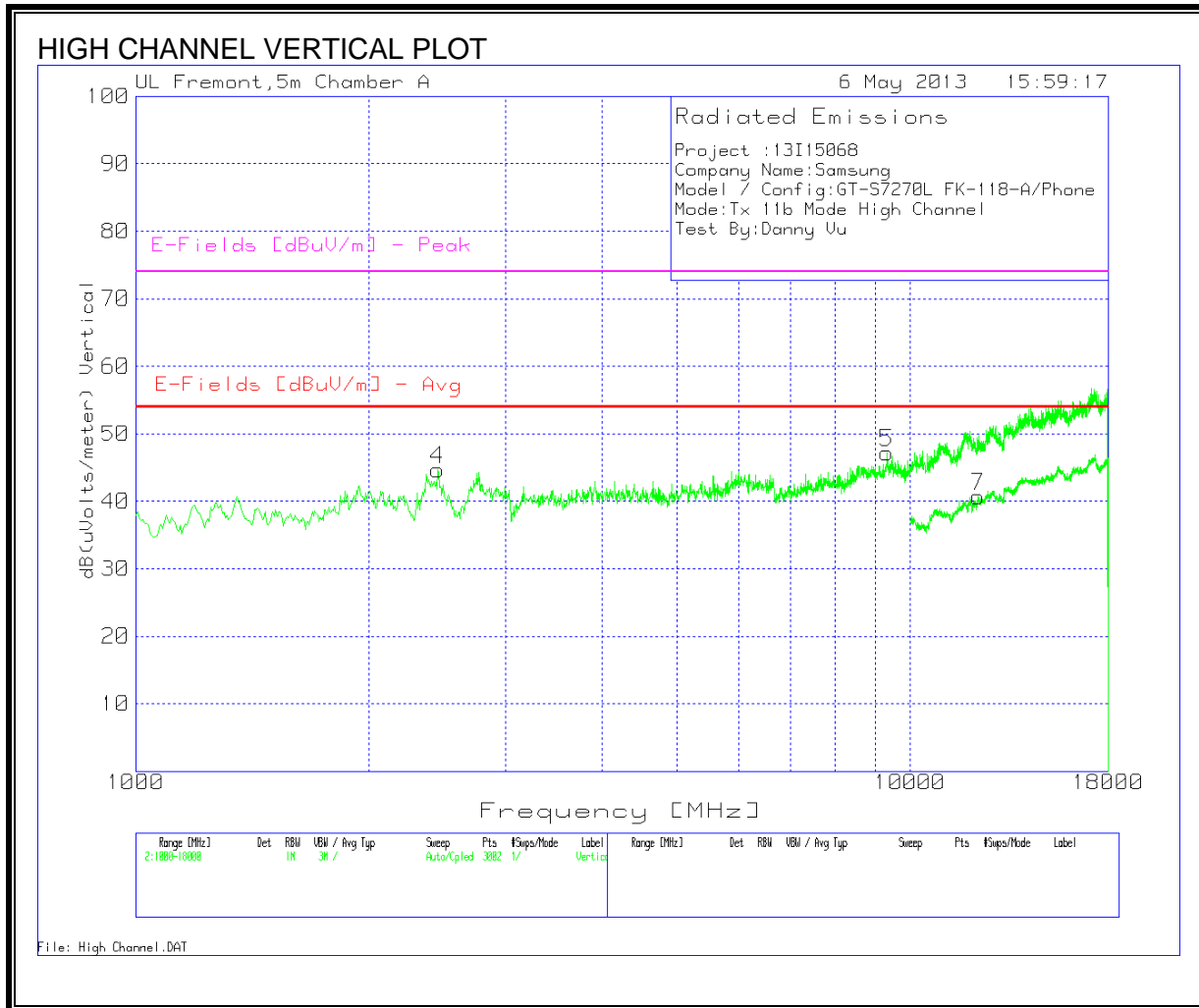
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7	12422.789	24.95	PK	39	-35	11.7	0.5	41.15	53.97	-12.82	74	-32.85	100	Horz

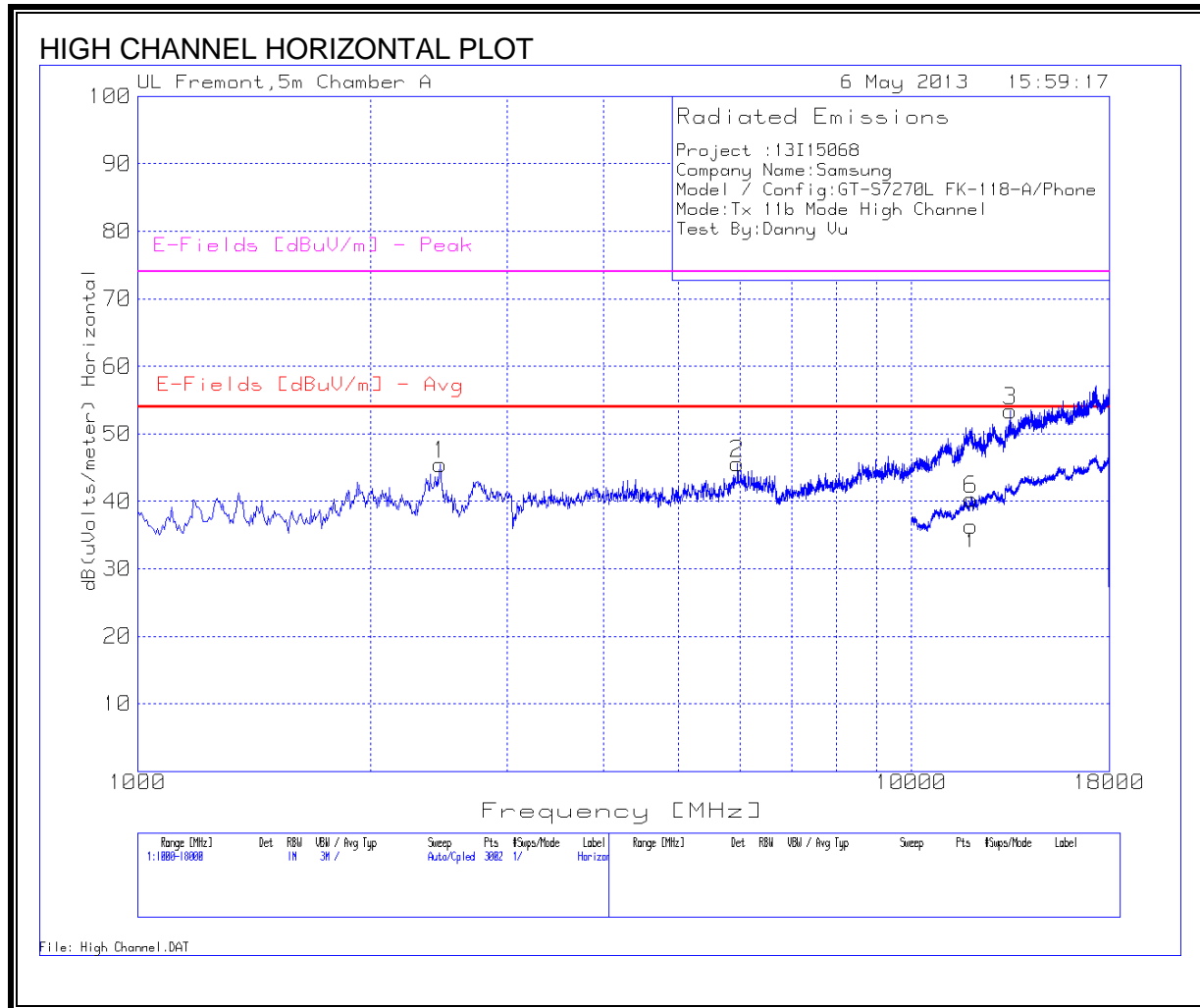
Vertical 10000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
8	13362.319	25.1	PK	39.1	-34	12.1	0.4	42.7	53.97	-11.27	74	-31.3	100	Vert

* Fundamental Frequencies
 ** Not in Restricted Band

PK - Peak detector
 Av - Average detector





HIGH CHANNEL HORIZONTAL AND VERTICAL DATA

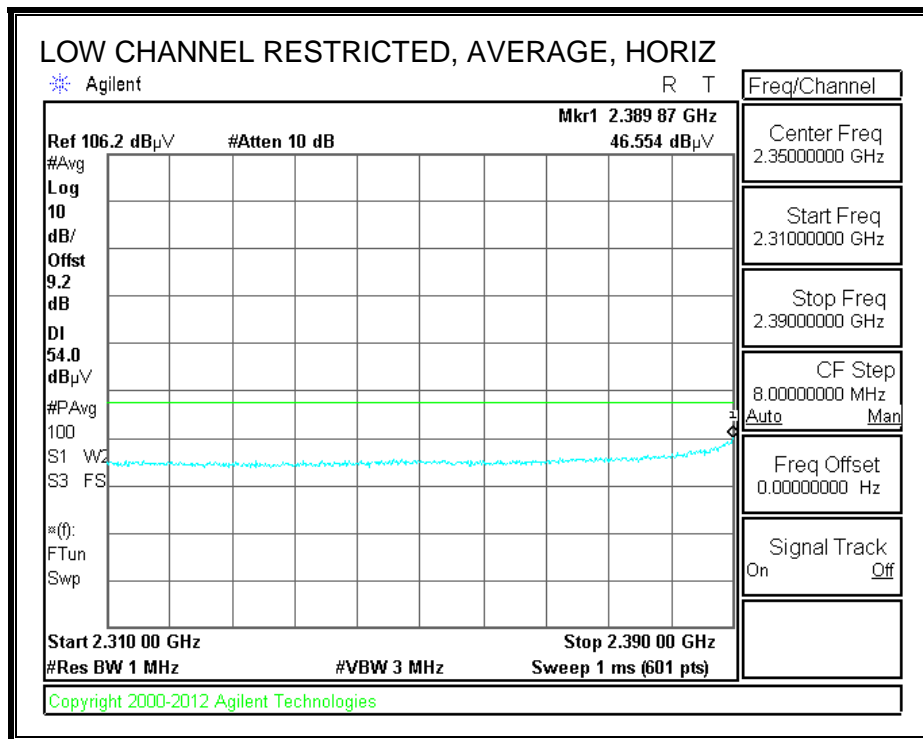
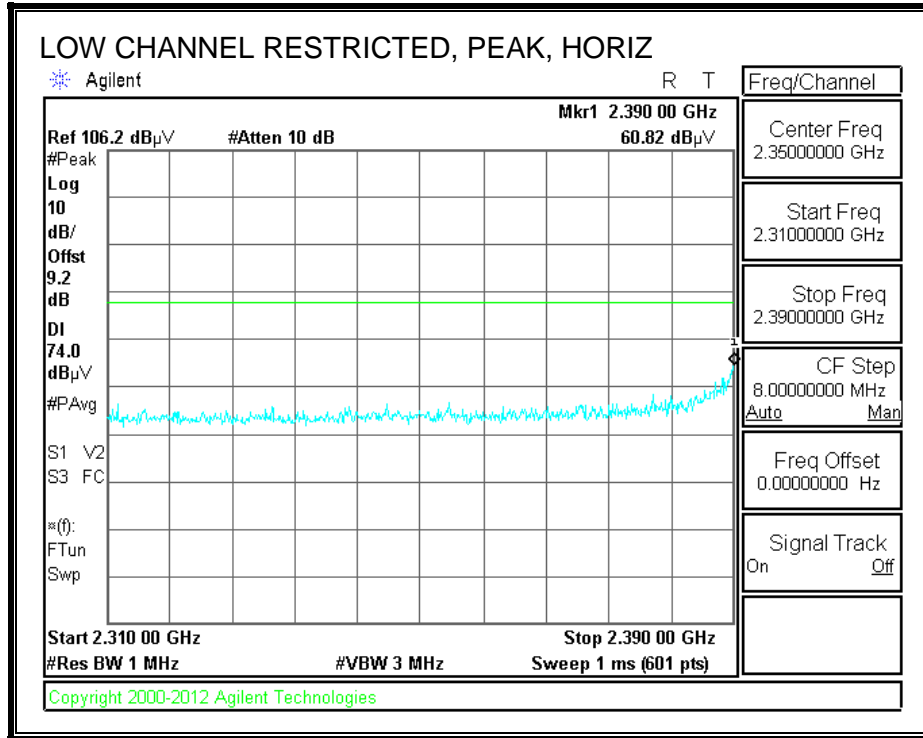
Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11b Mode High Channel
 Test By:Danny Vu

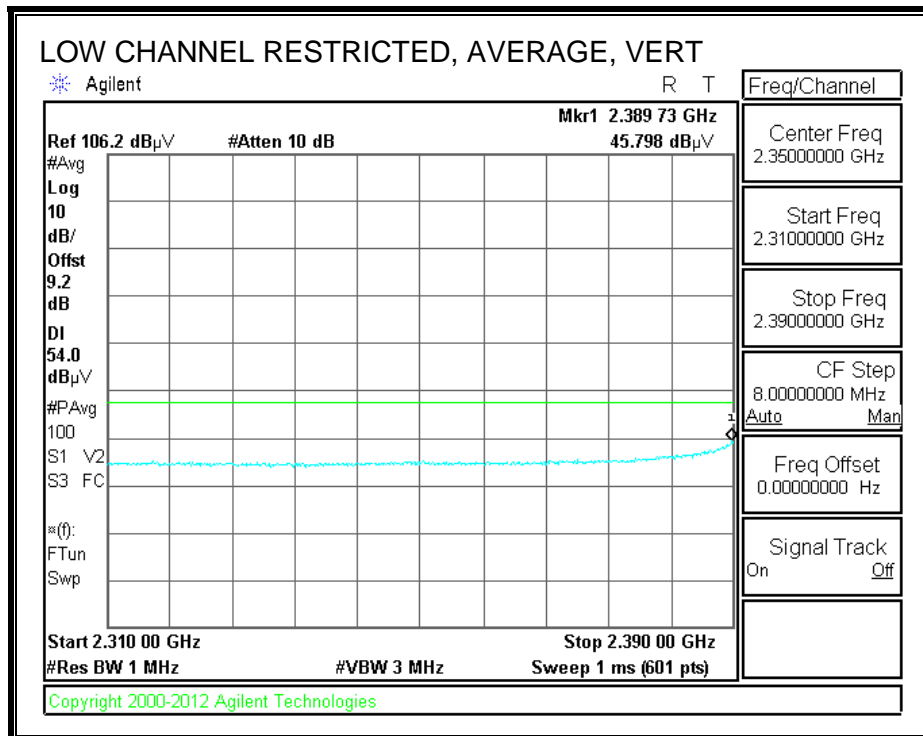
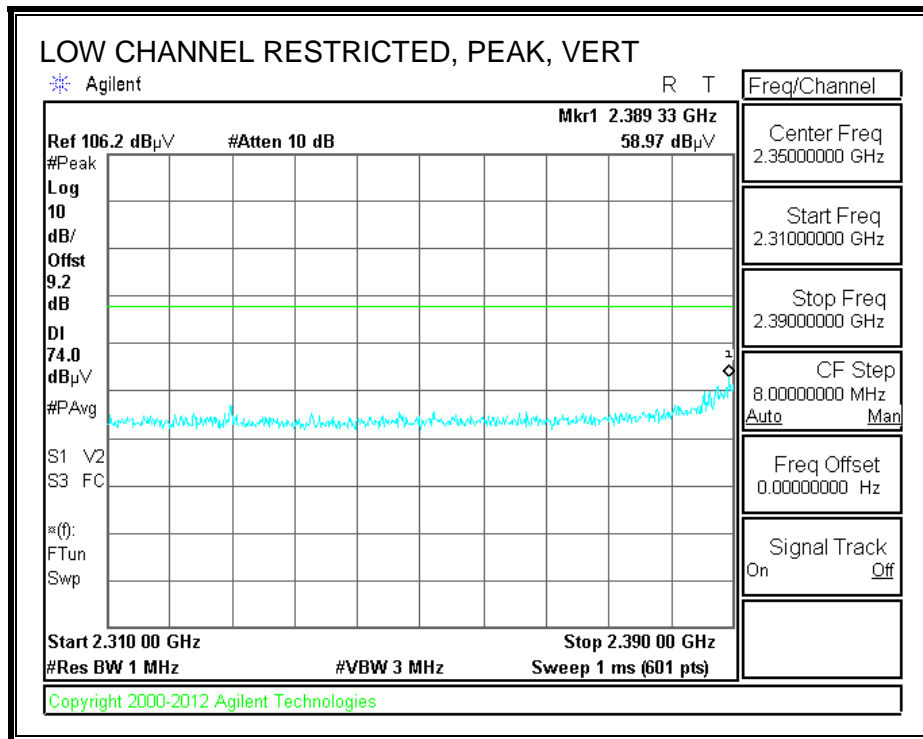
Horizontal 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
1	2461.026	44.5	PK	32.4	-36.8	4.5	0.9	45.5	53.97	-8.47	74	-28.5	100	Horz
2	5960.693	38.11	PK	35.2	-35.6	7.7	0.2	45.61	53.97	-8.36	74	-28.39	100	Horz
*3	13401.732	35.66	PK	39.1	-34	12.2	0.4	53.36	53.97	-0.61	74	-20.64	100	Horz
Vertical 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
4	2455.363	43.69	PK	32.4	-36.8	4.5	0.9	44.69	53.97	-9.28	74	-29.31	100	Vert
5	9335.776	36.59	PK	36.3	-36.2	10	0.5	47.19	53.97	-6.78	74	-26.81	100	Vert
Horizontal 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
6	11935.032	25.19	PK	38.7	-35.7	11.4	0.7	40.29	53.97	-13.68	74	-33.71	100	Horz
Vertical 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
7	12242.879	24.74	PK	39	-35.3	11.6	0.7	40.74	53.97	-13.23	74	-33.26	100	Vert

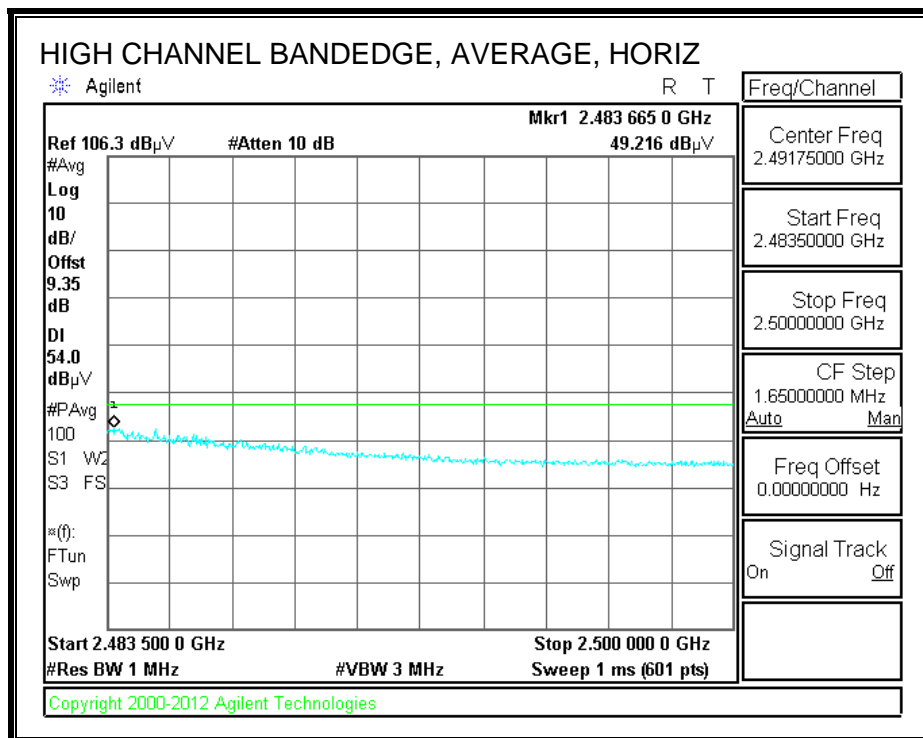
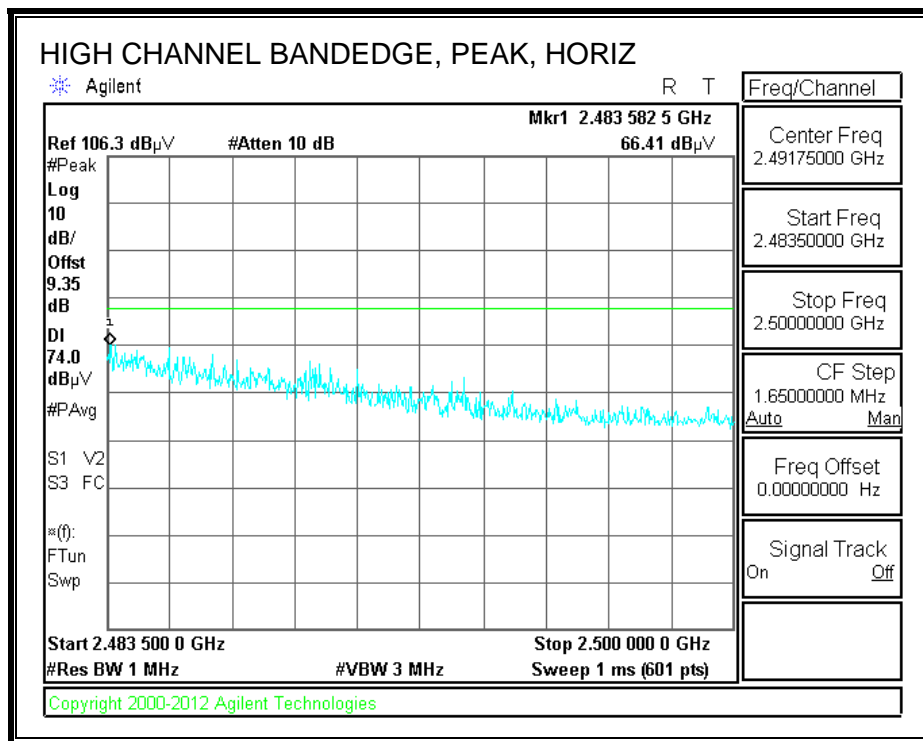
* Not in Restricted Band

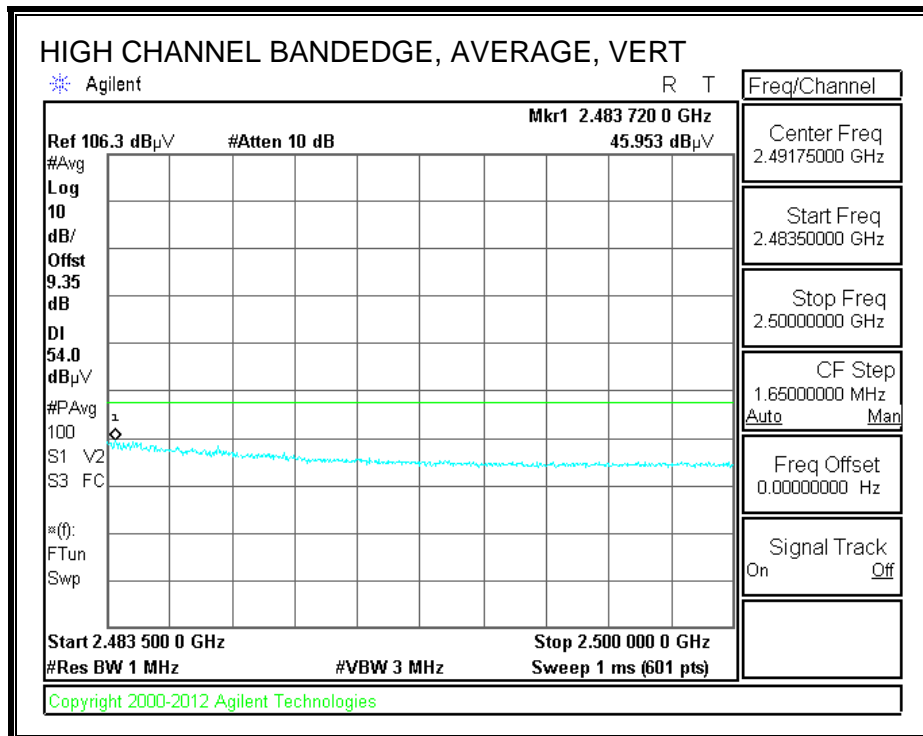
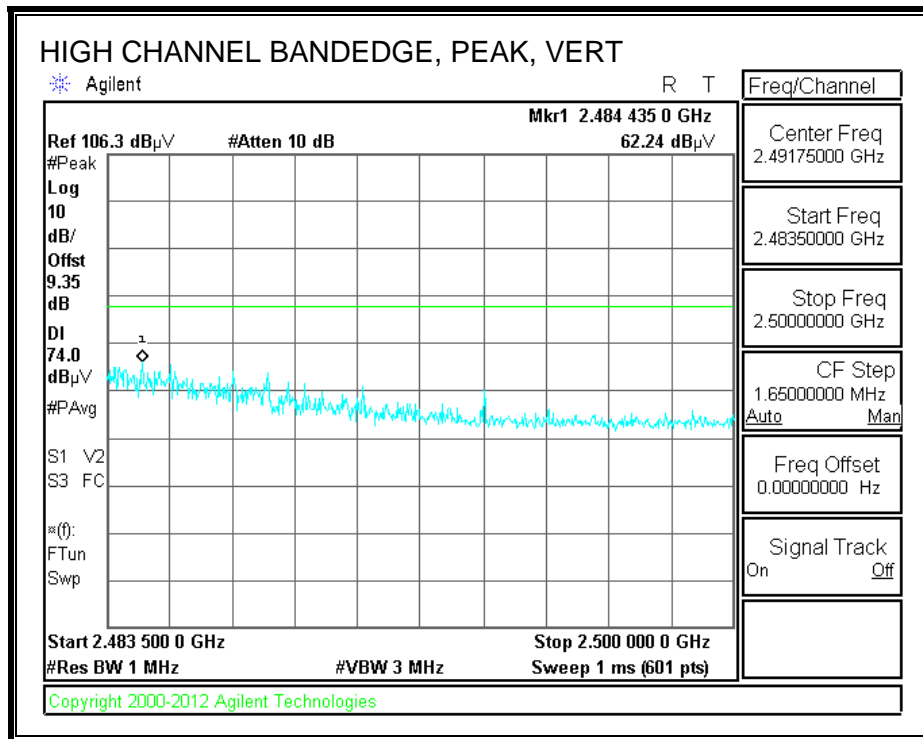
PK - Peak detector
 Av - Average detector

9.2.2. 802.11g MODE IN THE 2.4 GHz RESTRICTED BANDEDGE

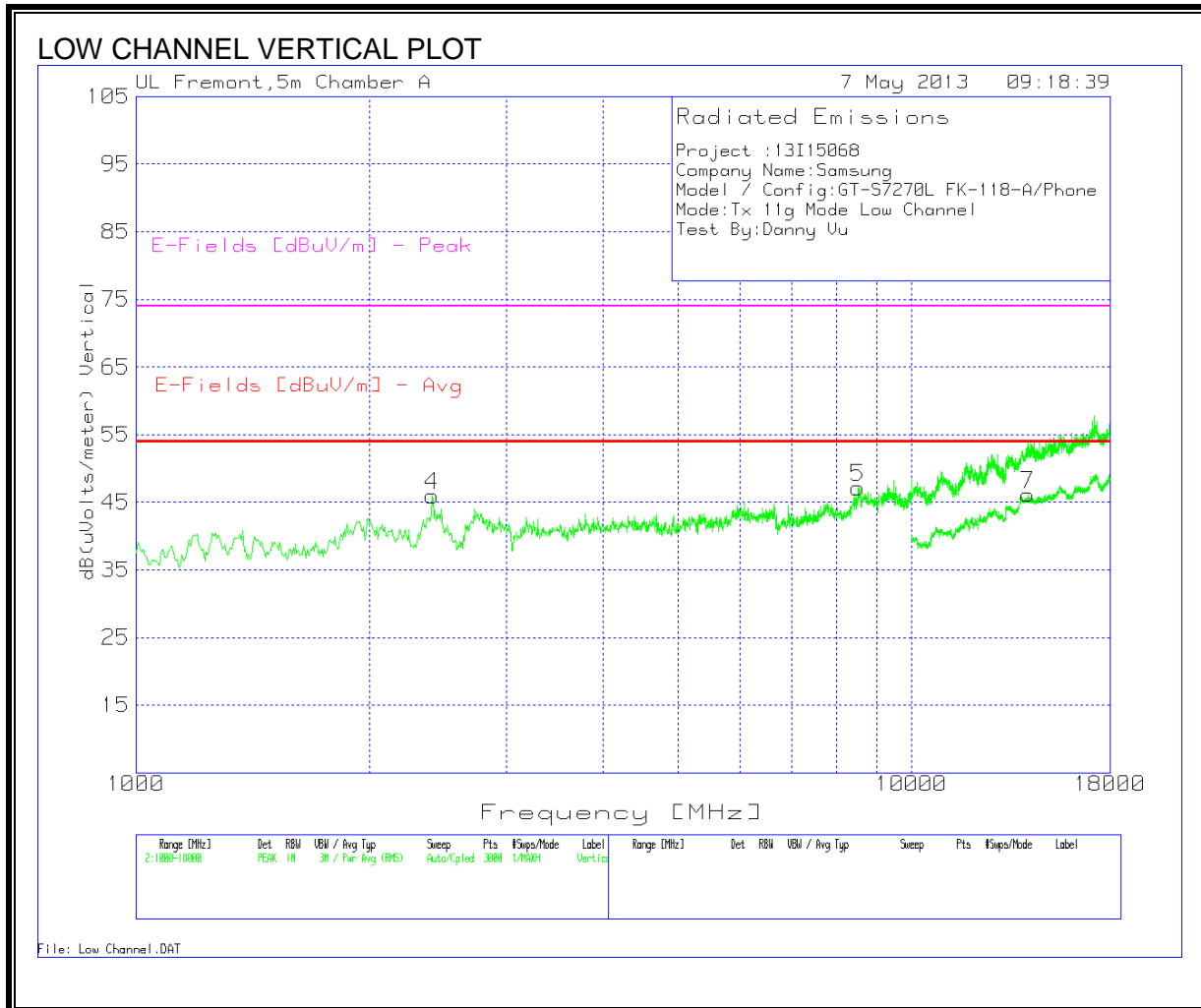


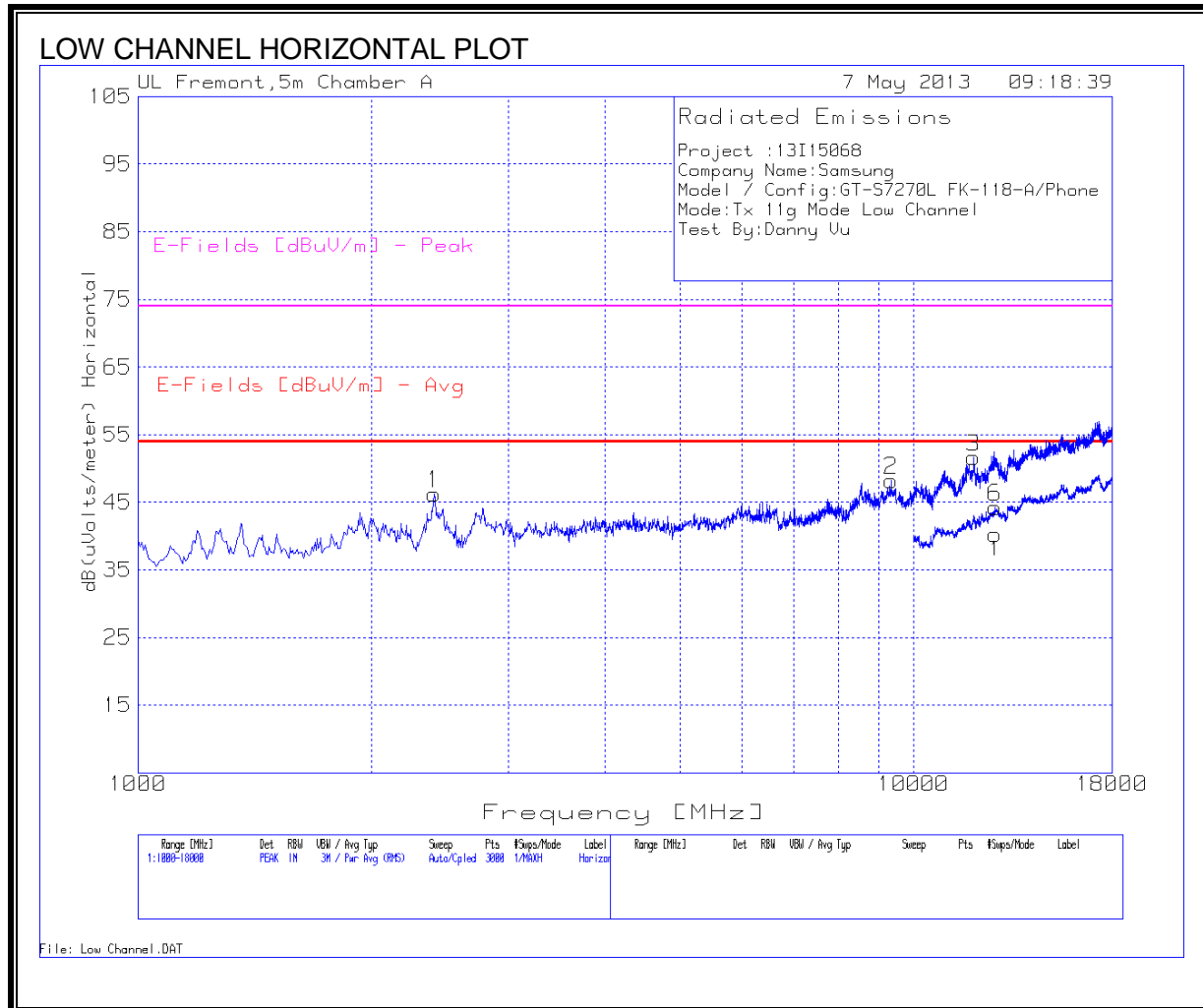






802.11g MODE IN THE 2.4 GHz HARMONICS AND SPURIOUS EMISSIONS





LOW CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068														
Company Name:Samsung														
Model / Config:GT-S7270L FK-118-A/Phone														
Mode:Tx 11g Mode Low Channel														
Test By:Danny Vu														

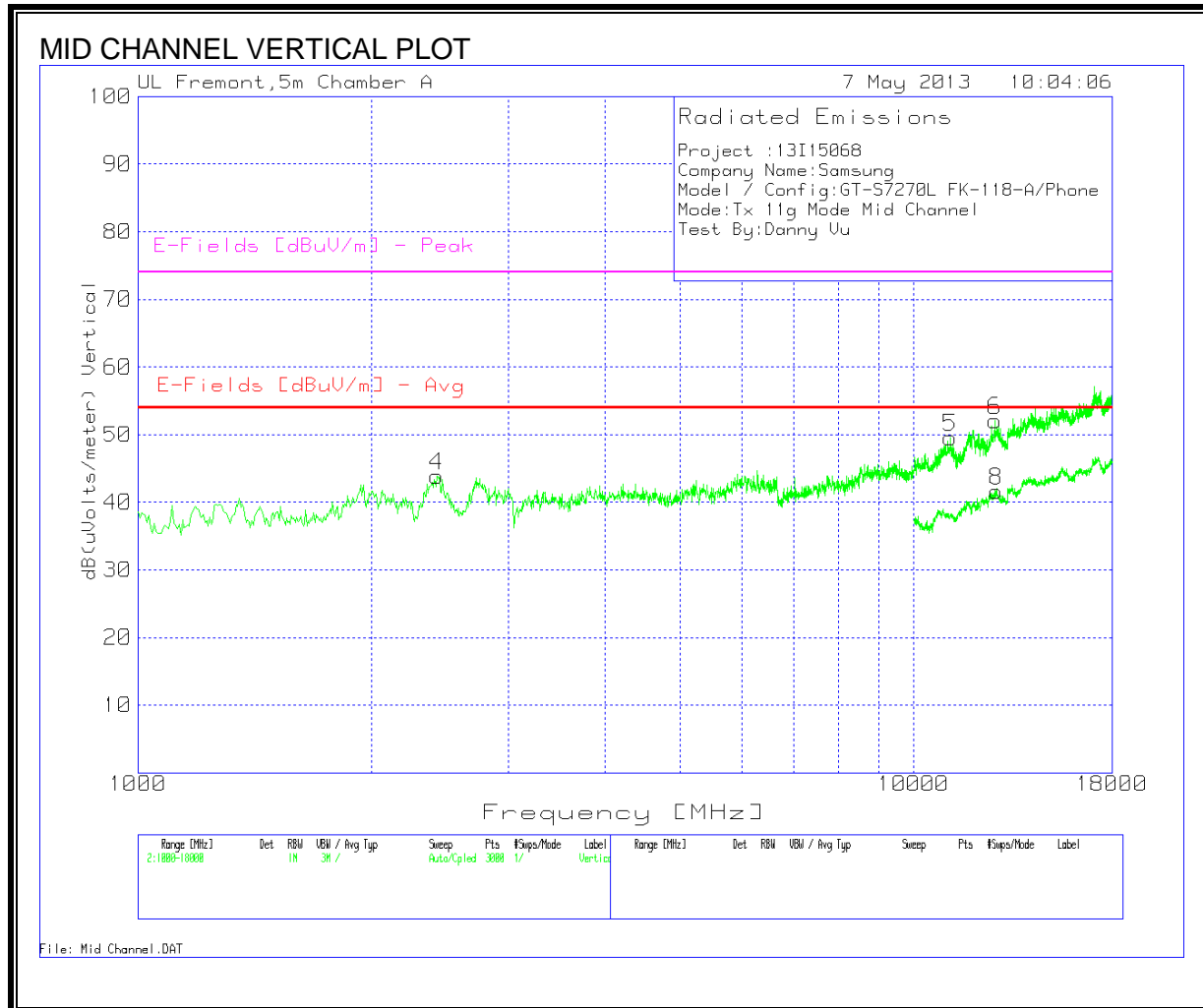
Horizontal 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
*1	2410.06	45.69	PK	32.2	-36.9	4.4	0.9	46.29	53.97	-7.68	74	-27.71	200	Horz
**2	9358.428	37.53	PK	36.4	-36.2	10	0.5	48.23	53.97	-5.74	74	-25.77	100	Horz
**3	11952.032	36.9	PK	38.8	-35.7	11.4	0.2	51.6	53.97	-2.37	74	-22.4	100	Horz

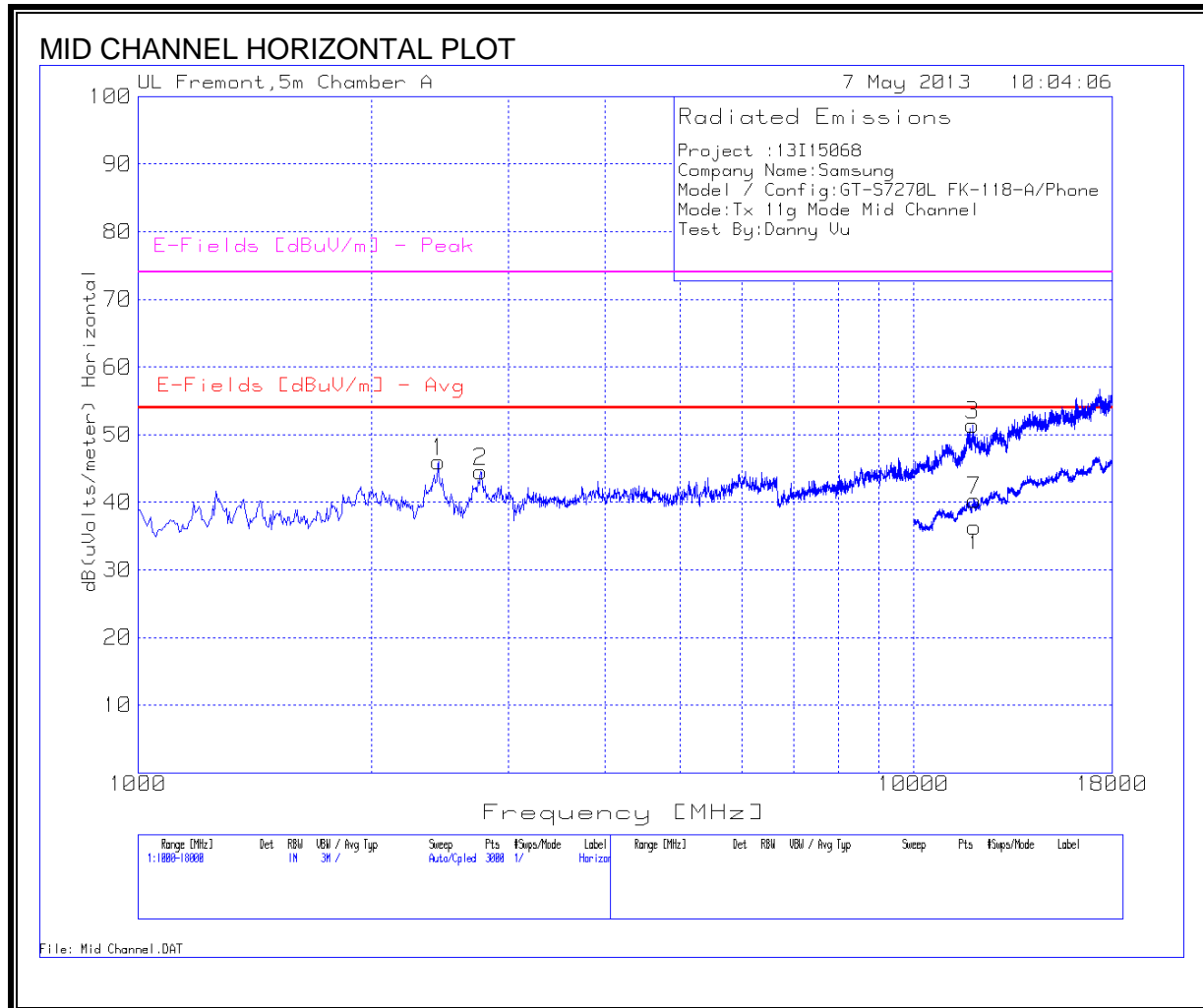
Vertical 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
*4	2410.06	45.4	PK	32.2	-36.9	4.4	0.9	46	53.97	-7.97	74	-28	200	Vert
5	8531.646	37.7	PK	35.7	-36	9.5	0.3	47.2	53.97	-6.77	74	-26.8	200	Vert

Horizontal 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
6	12730.635	27.48	PK	39.2	-34.6	11.8	0.4	44.28	53.97	-9.69	74	-29.72	100	Horz

Vertical 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
7	14101.949	27.97	PK	39.2	-33.9	12.5	0.4	46.17	53.97	-7.8	74	-27.83	100	Vert

* Fundamental Frequencies
 ** Not in Restricted Band
 PK - Peak detector
 Av - Average detector





MID CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11g Mode Mid Channel
 Test By:Danny Vu

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
*1	2438.374	45.2	PK	32.3	-36.9	4.5	0.9	46	53.97	-7.97	74	-28	100	Horz
2	2766.822	43.1	PK	32.6	-36.8	4.8	0.9	44.6	53.97	-9.37	74	-29.4	100	Horz
**3	11906.729	36.32	PK	38.7	-35.7	11.4	0.7	51.42	53.97	-2.55	74	-22.58	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
4	2427.049	43.13	PK	32.2	-36.9	4.5	0.9	43.83	53.97	-10.14	74	-30.17	100	Vert
**5	11153.564	35.6	PK	37.9	-35.6	11	0.7	49.6	53.97	-4.37	74	-24.4	100	Vert
**6	12733.511	35.16	PK	39.2	-34.6	11.8	0.5	52.06	53.97	-1.91	74	-21.94	100	Vert

Horizontal 10000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
7	11967.016	25.16	PK	38.8	-35.7	11.4	0.6	40.26	53.97	-13.71	74	-33.74	100	Horz

Vertical 10000 - 18000MHz

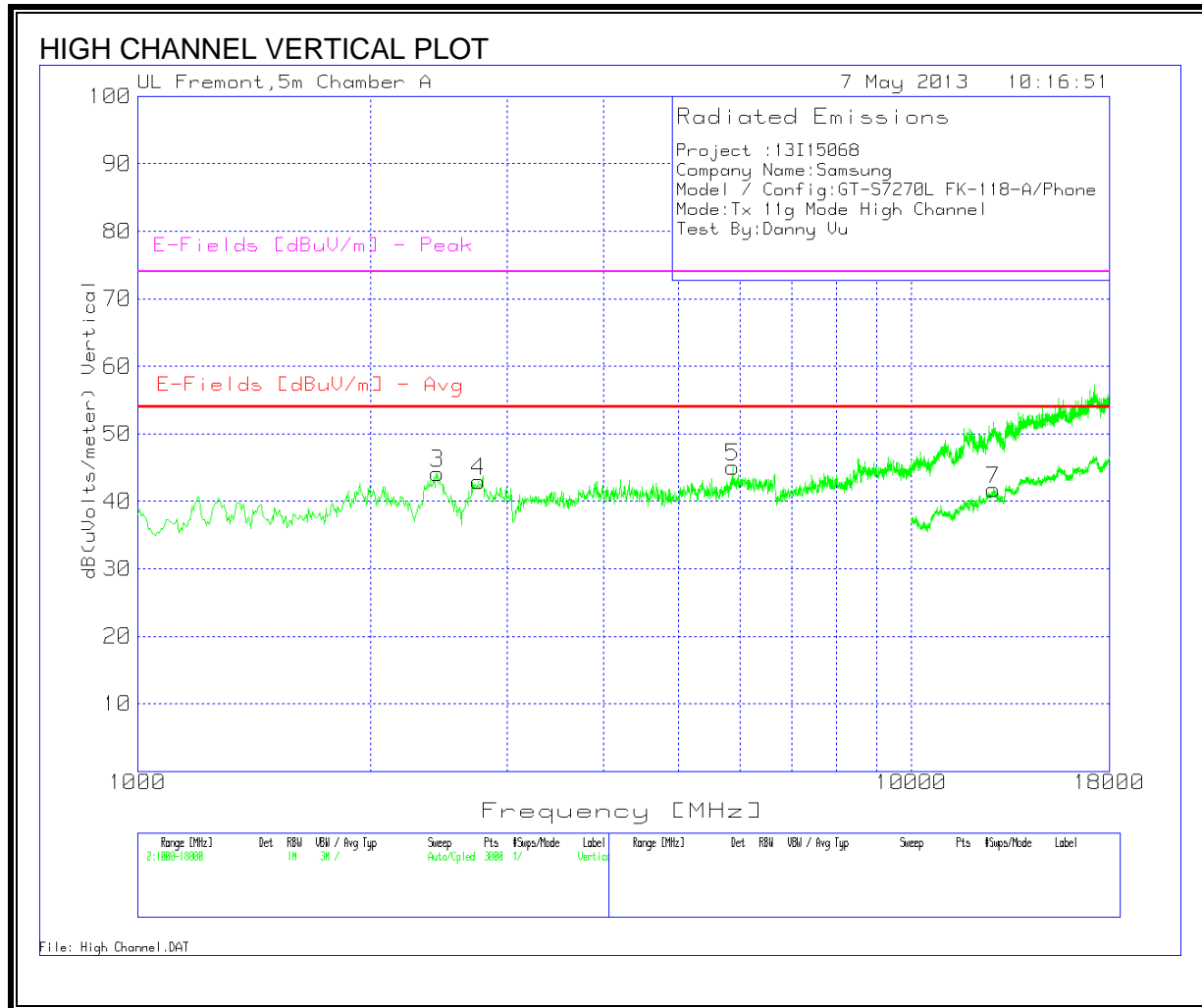
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
8	12774.613	24.83	PK	39.1	-34.5	11.8	0.4	41.63	53.97	-12.34	74	-32.37	100	Vert

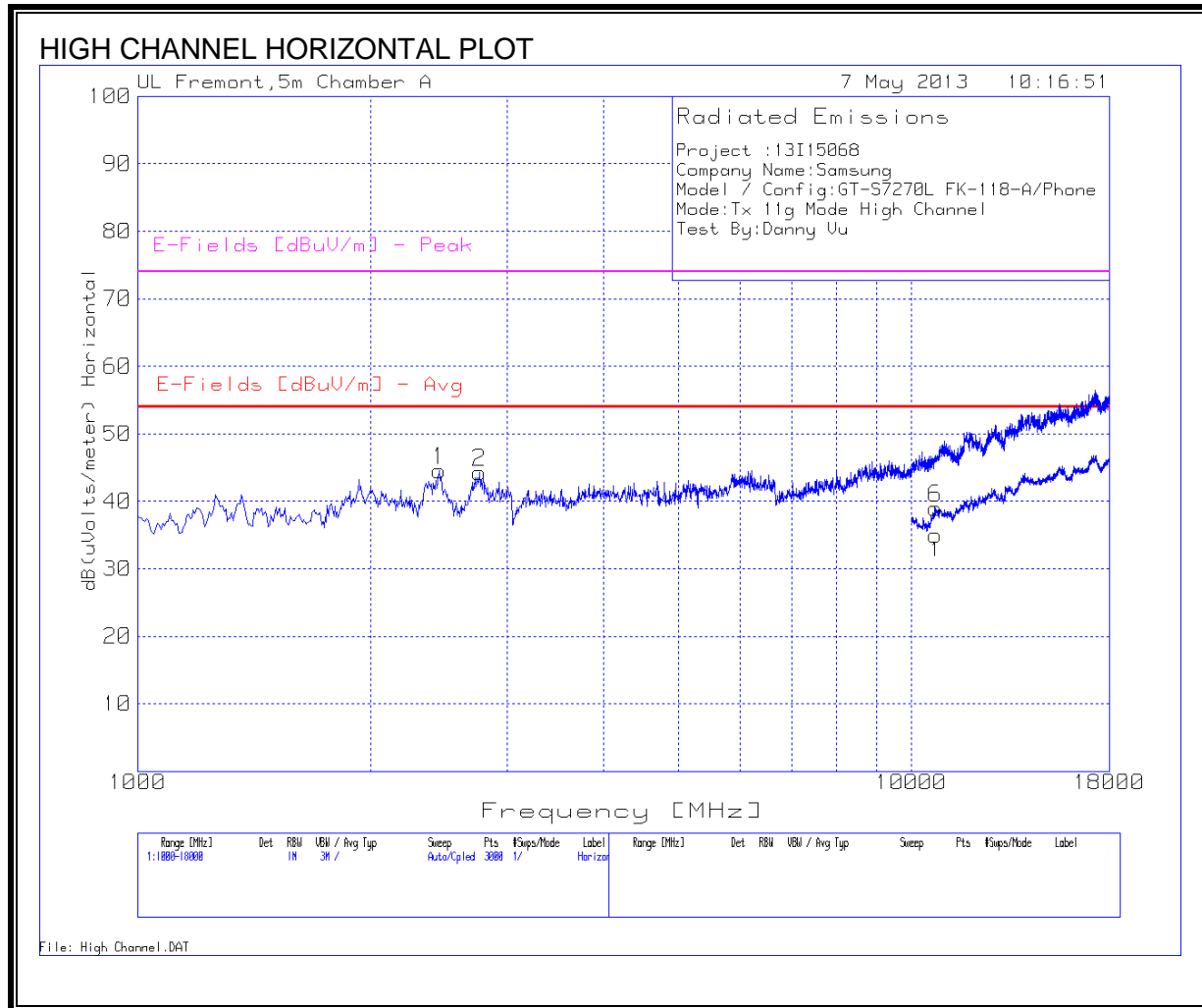
* Fundamental Frequencies

** Not in Restricted Band

PK - Peak detector

Av - Average detector



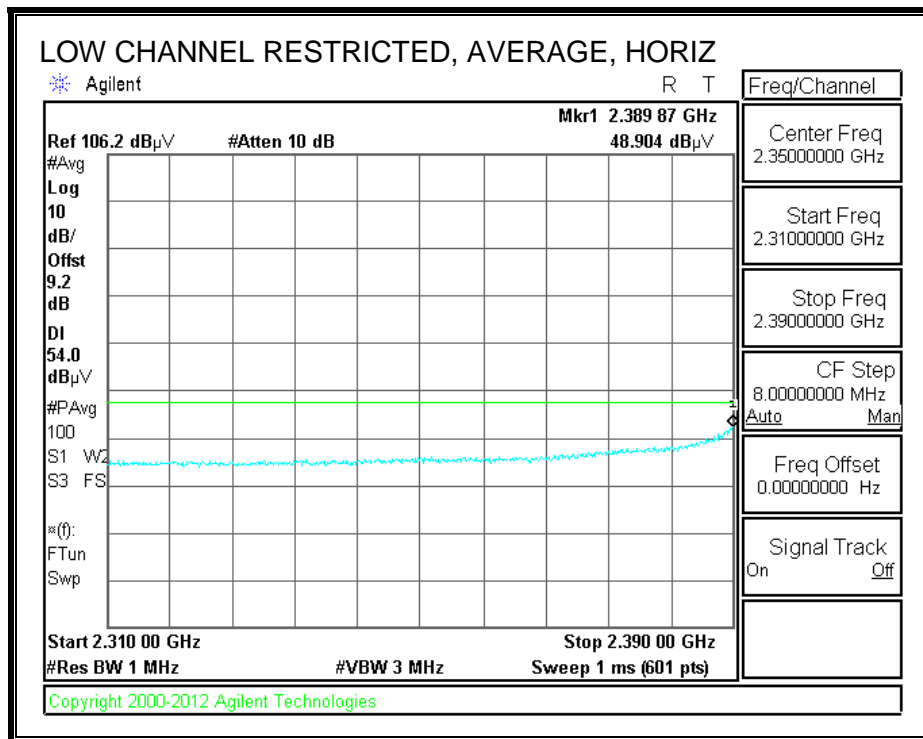
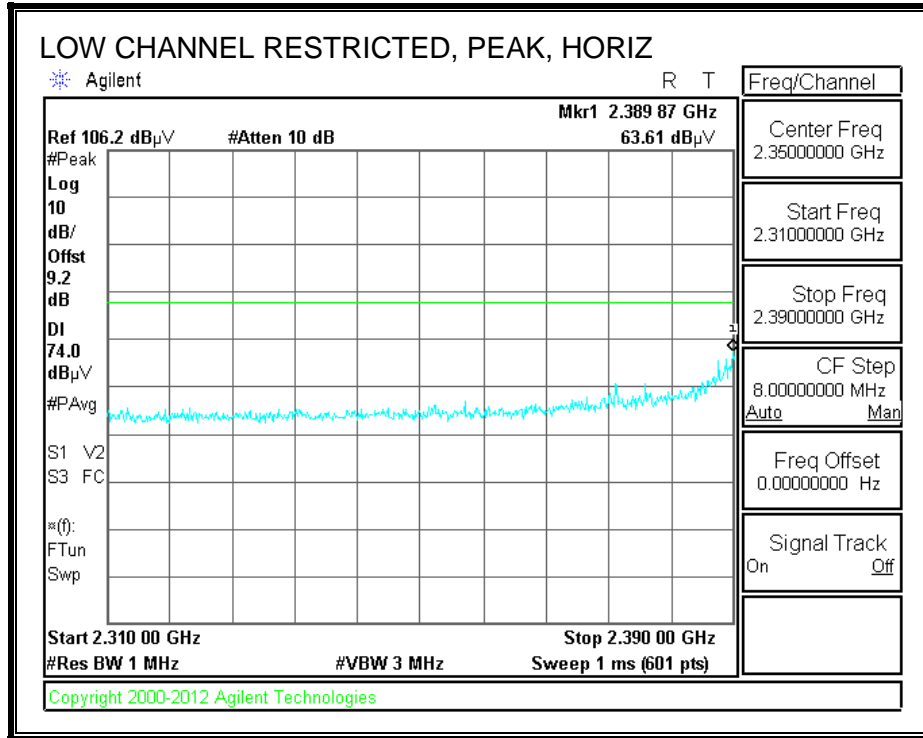


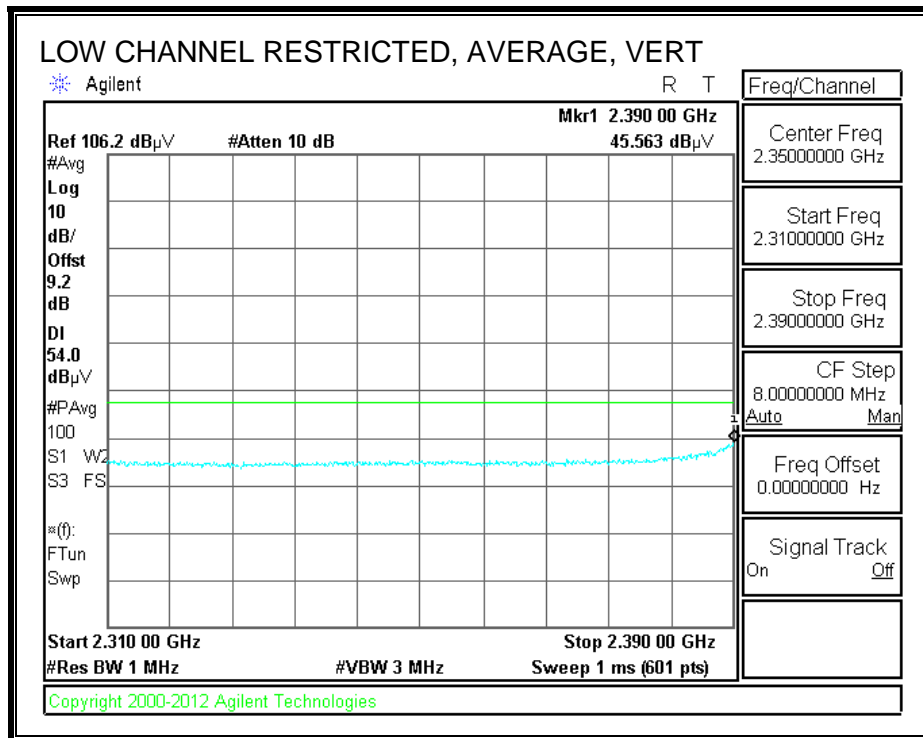
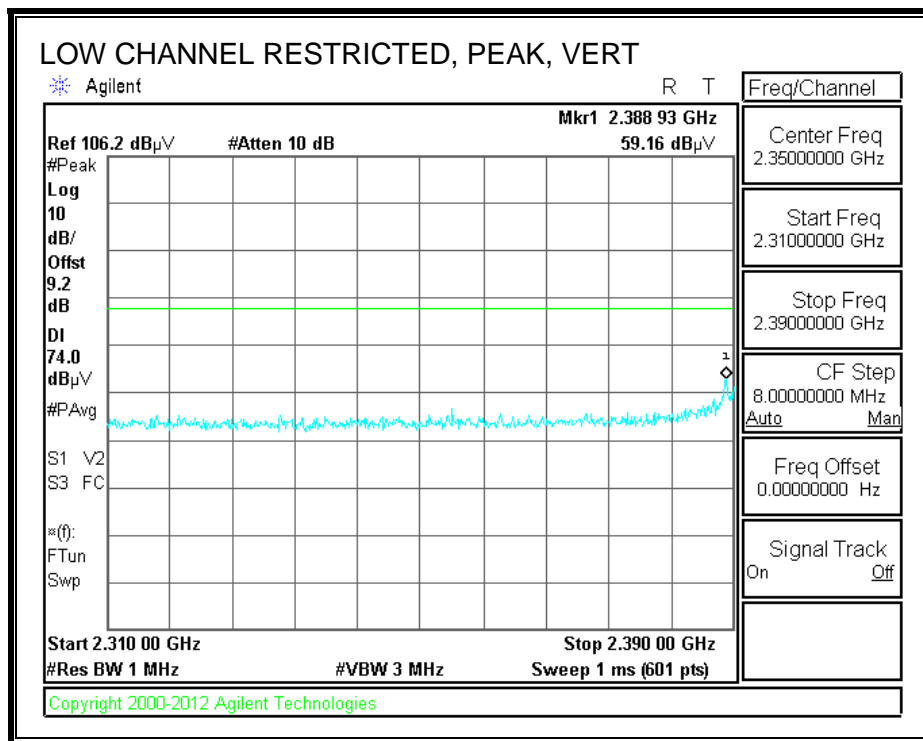
HIGH CHANNEL HORIZONTAL AND VERTICAL DATA

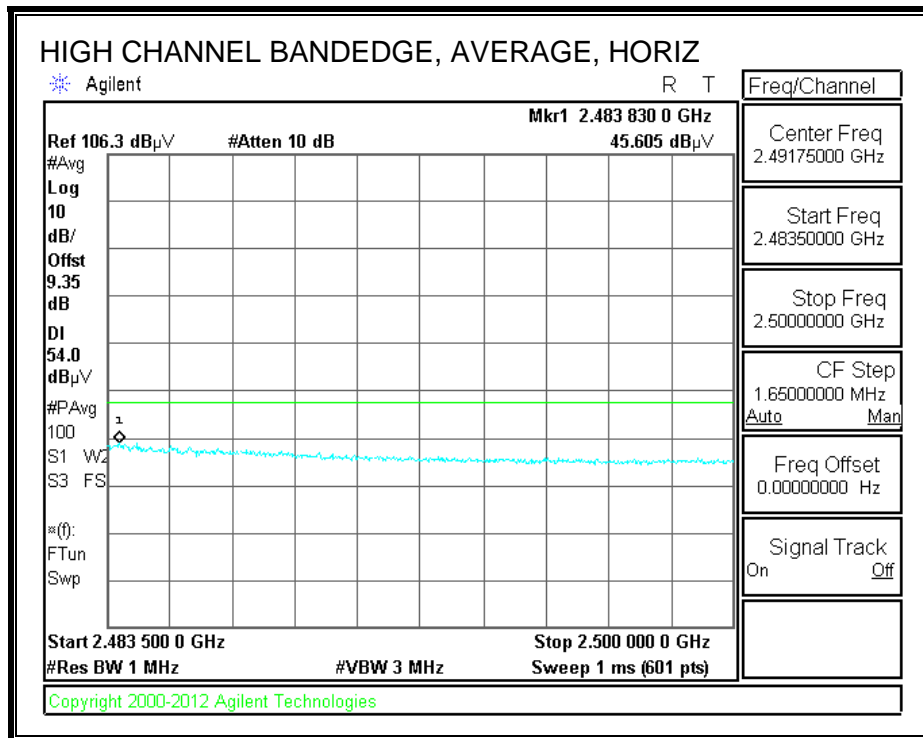
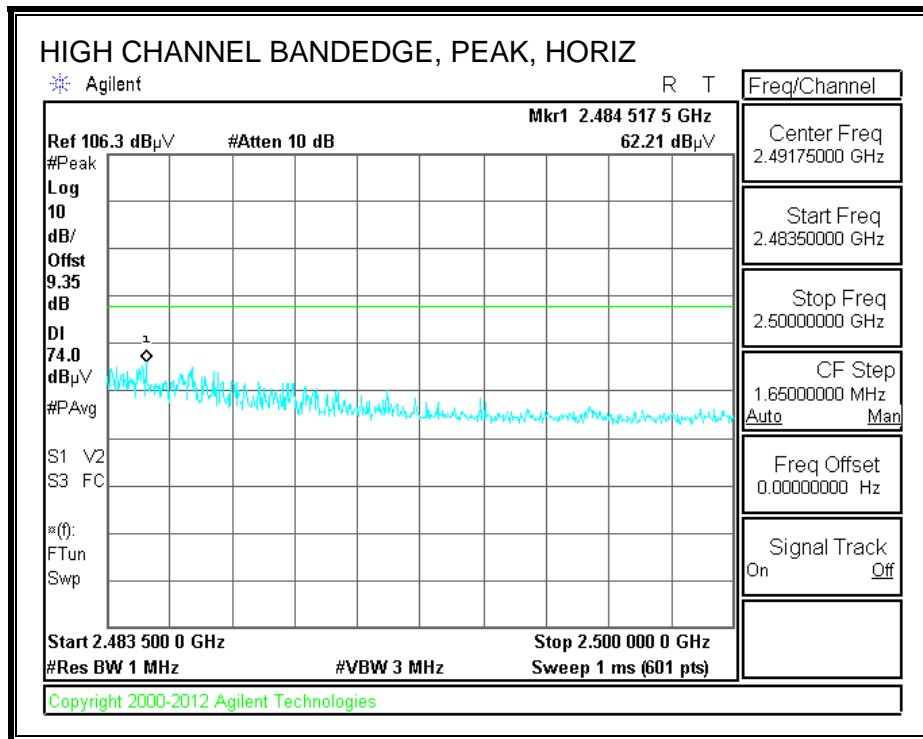
Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11g Mode High Channel
 Test By:Danny Vu

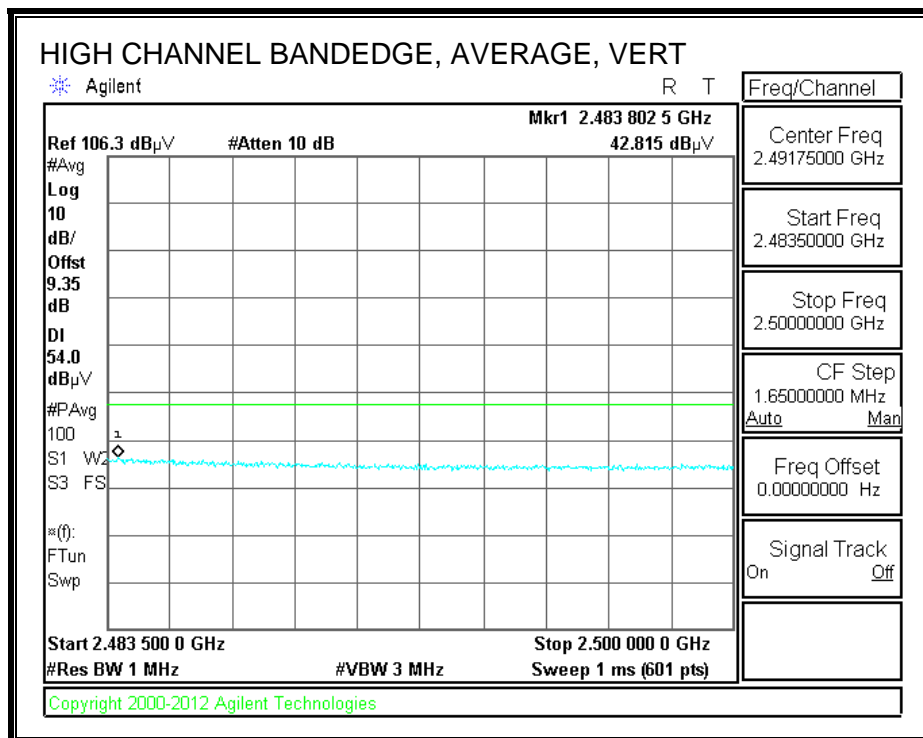
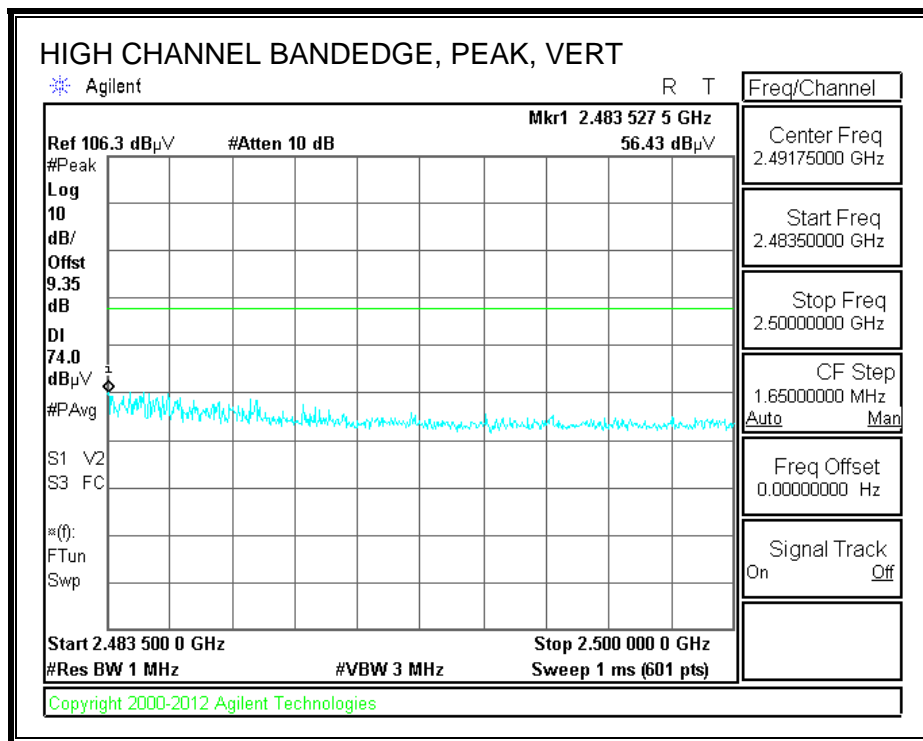
Horizontal 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
1	2455.363	43.56	PK	32.4	-36.8	4.5	0.9	44.56	53.97	-9.41	74	-29.44	100	Horz
2	2766.822	42.75	PK	32.6	-36.8	4.8	0.9	44.25	53.97	-9.72	74	-29.75	100	Horz
Vertical 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
3	2438.374	43.35	PK	32.3	-36.9	4.5	0.9	44.15	53.97	-9.82	74	-29.85	100	Vert
4	2761.159	41.48	PK	32.6	-36.8	4.8	0.9	42.98	53.97	-10.99	74	-31.02	100	Vert
5	5870.087	37.78	PK	35	-35.5	7.6	0.2	45.08	53.97	-8.89	74	-28.92	100	Vert
Horizontal 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
6	10747.626	25.52	PK	37.9	-35.8	10.8	0.6	39.02	53.97	-14.95	74	-34.98	100	Horz
Vertical 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7	12770.615	24.91	PK	39.1	-34.5	11.8	0.4	41.71	53.97	-12.26	74	-32.29	100	Vert
PK - Peak detector														
Av - Average detector														

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz RESTRICTED BANDEGE

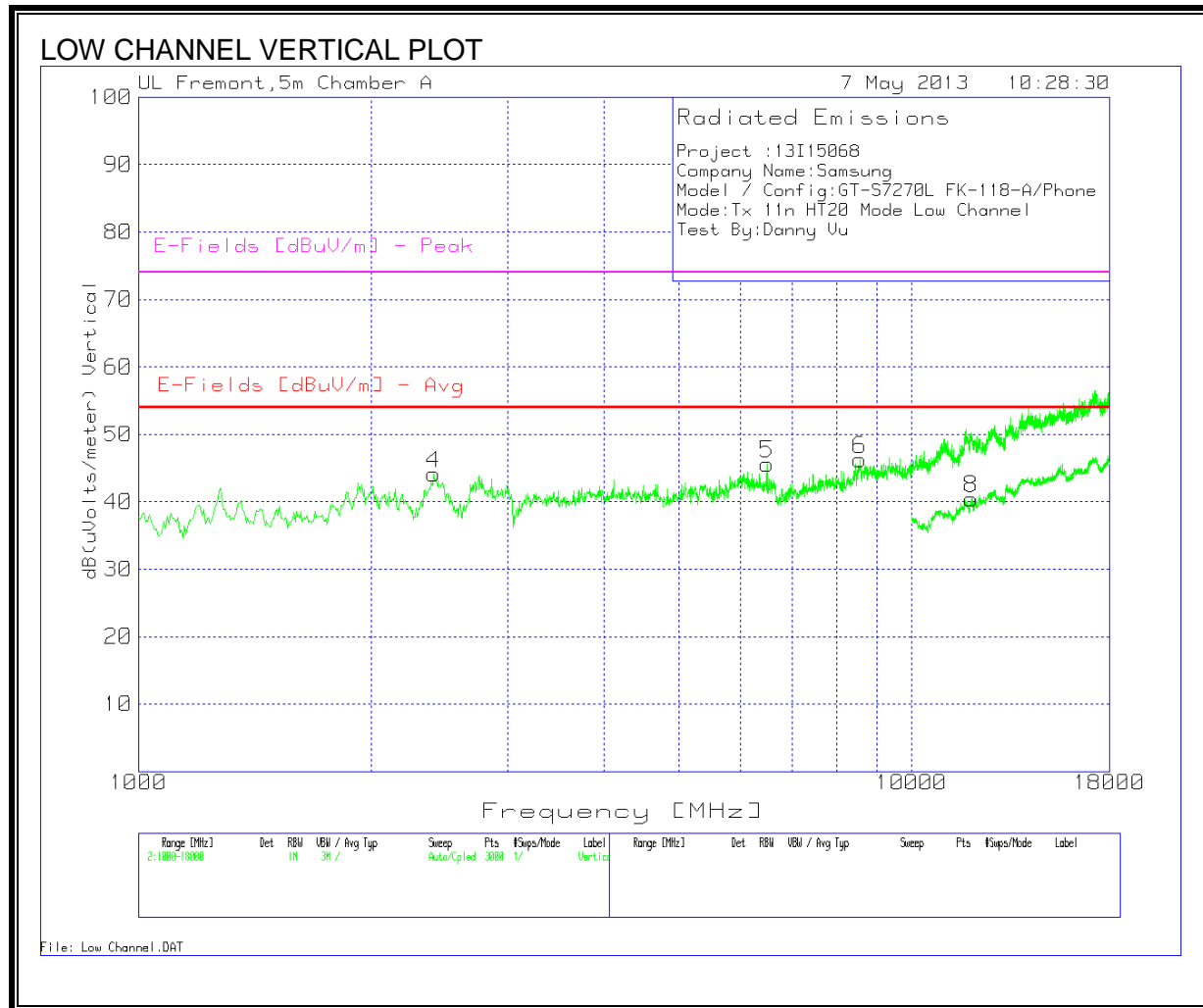


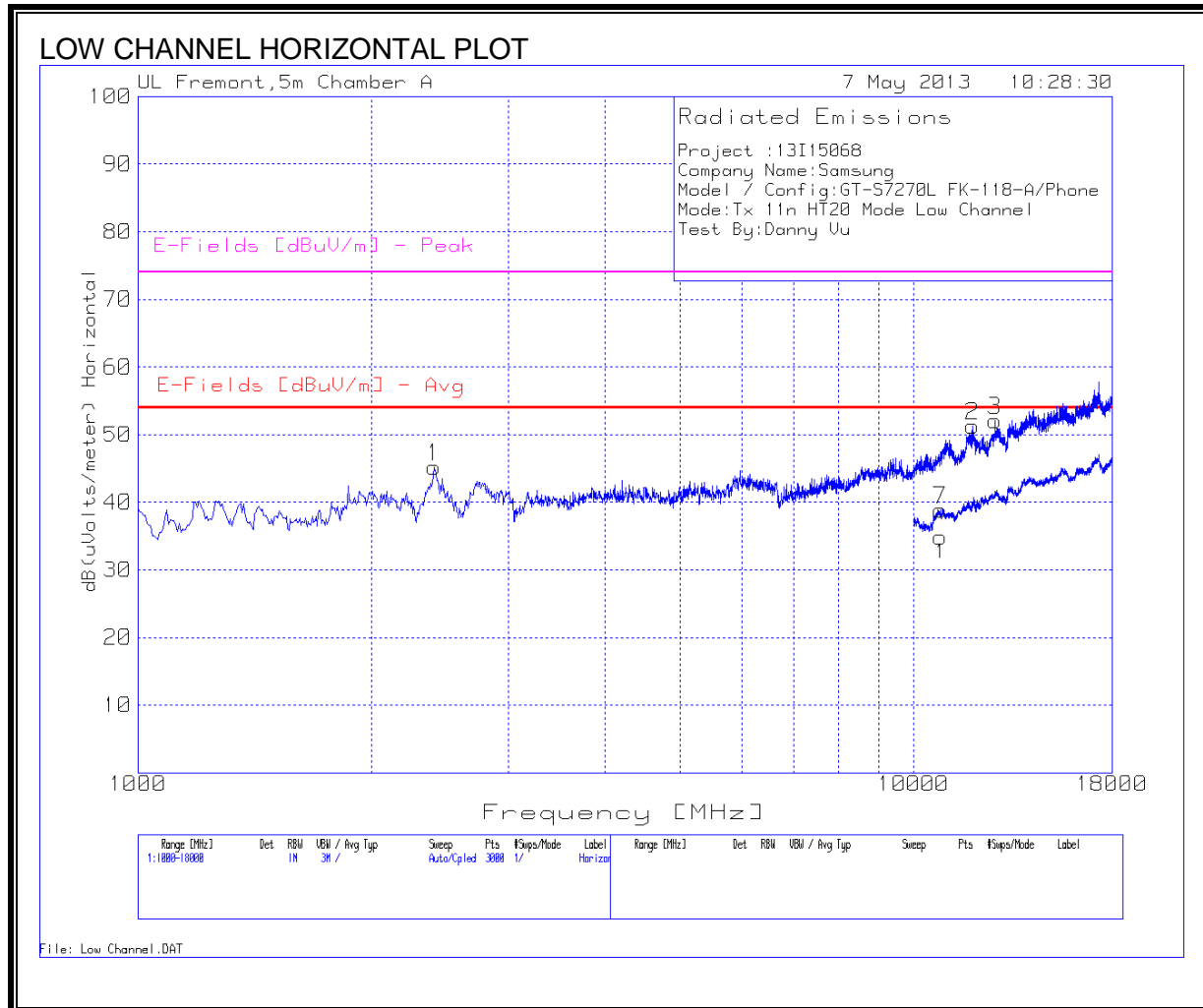






802.11n MODE IN THE 2.4 GHz HARMONICS AND SPURIOUS EMISSIONS





LOW CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11n HT20 Mode Low Channel
 Test By:Danny Vu

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
1	2410.06	44.65	PK	32.2	-36.9	4.4	0.9	45.25	53.97	-8.72	74	-28.75	100	Horz
**2	11912.392	36.27	PK	38.7	-35.7	11.4	0.6	51.27	53.97	-2.7	74	-22.73	100	Horz
**3	12733.511	35.24	PK	39.2	-34.6	11.8	0.5	52.14	53.97	-1.83	74	-21.86	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
*4	2410.06	43.49	PK	32.2	-36.9	4.4	0.9	44.09	53.97	-9.88	74	-29.91	100	Vert
5	6493.005	37.36	PK	35.5	-35.6	8.1	0.3	45.66	53.97	-8.31	74	-28.34	100	Vert
6	8576.949	36.71	PK	35.7	-36	9.5	0.4	46.31	53.97	-7.66	74	-27.69	100	Vert

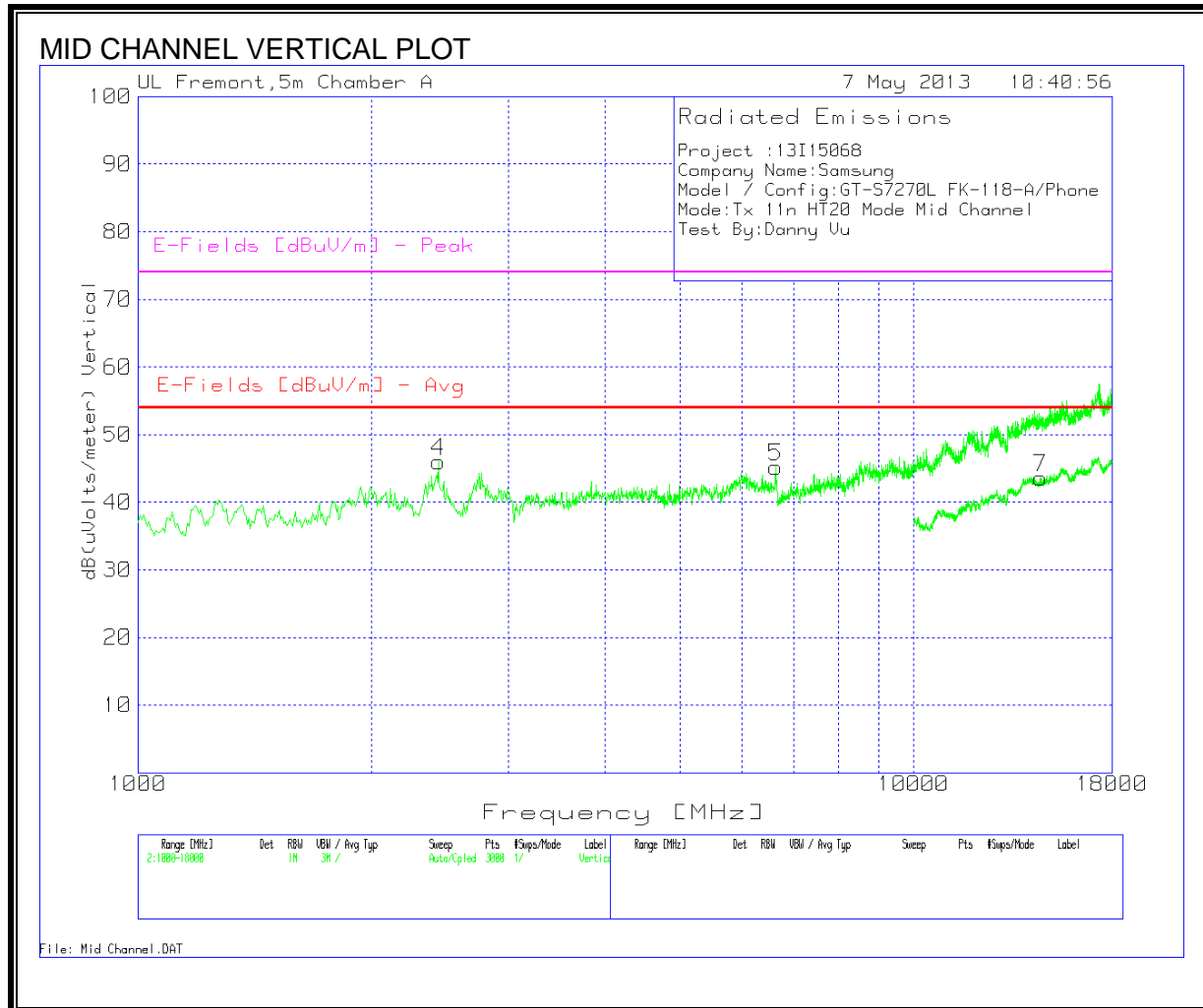
Horizontal 10000 - 18000MHz

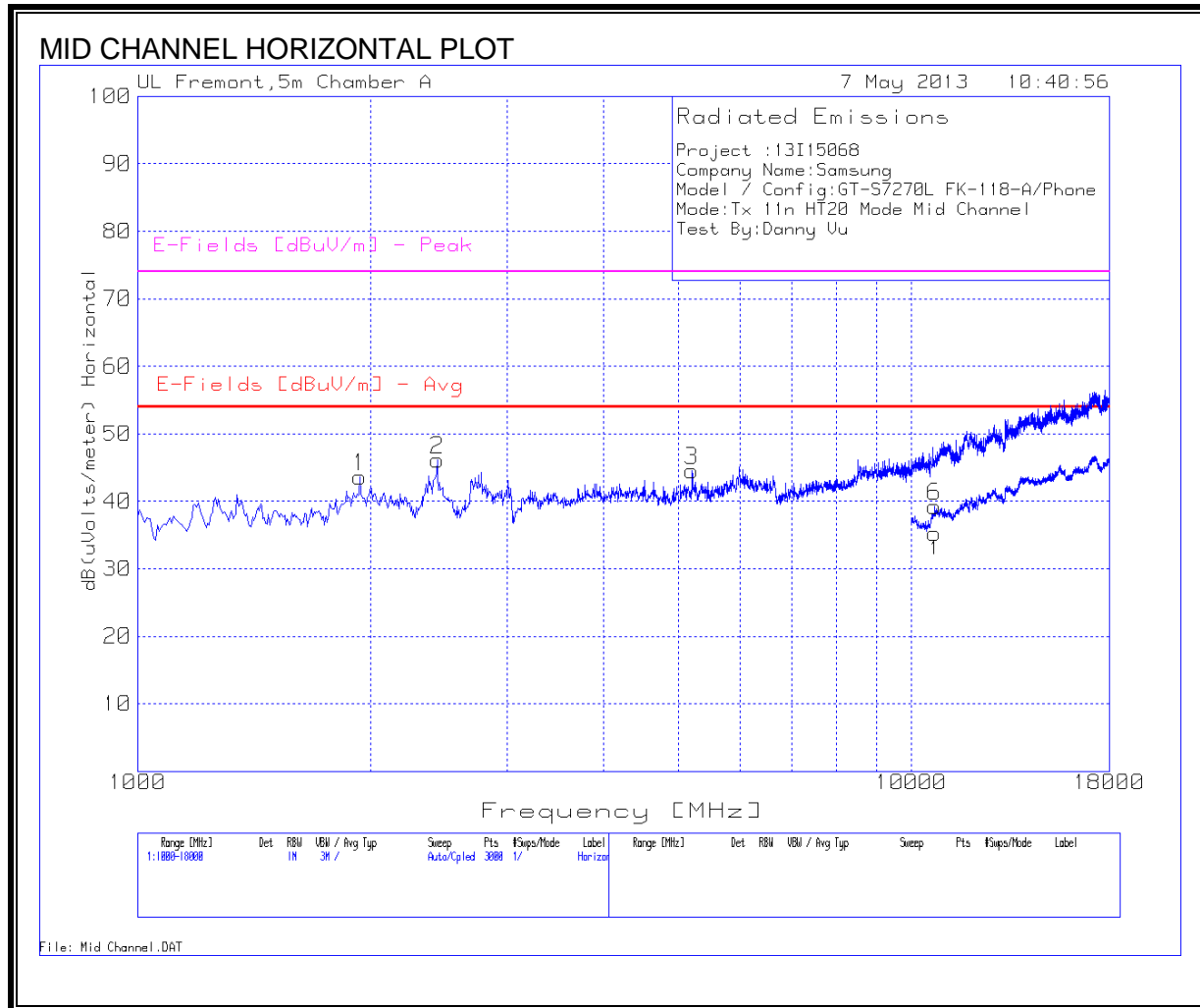
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7	10835.582	25.17	PK	38	-35.7	10.8	0.6	38.87	53.97	-15.1	74	-35.13	100	Horz

Vertical 10000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
8	11931.034	25.29	PK	38.7	-35.7	11.4	0.7	40.39	53.97	-13.58	74	-33.61	100	Vert

* Fundamental Frequencies
 ** Not in Restricted Band
 PK - Peak detector
 Av - Average detector





MID CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11n HT20 Mode Mid Channel
 Test By:Danny Vu

Horizontal 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
1	1940.04	44.08	PK	31.8	-37.2	4	0.9	43.58	53.97	-10.39	74	-30.42	100	Horz
*2	2438.374	45.39	PK	32.3	-36.9	4.5	0.9	46.19	53.97	-7.78	74	-27.81	100	Horz
3	5207.528	38.53	PK	34.2	-35.5	7.1	0.2	44.53	53.97	-9.44	74	-29.47	100	Horz

Vertical 1000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
*4	2438.374	45.15	PK	32.3	-36.9	4.5	0.9	45.95	53.97	-8.02	74	-28.05	100	Vert
5	6634.577	36.8	PK	35.5	-35.6	8.2	0.3	45.2	53.97	-8.77	74	-28.8	100	Vert

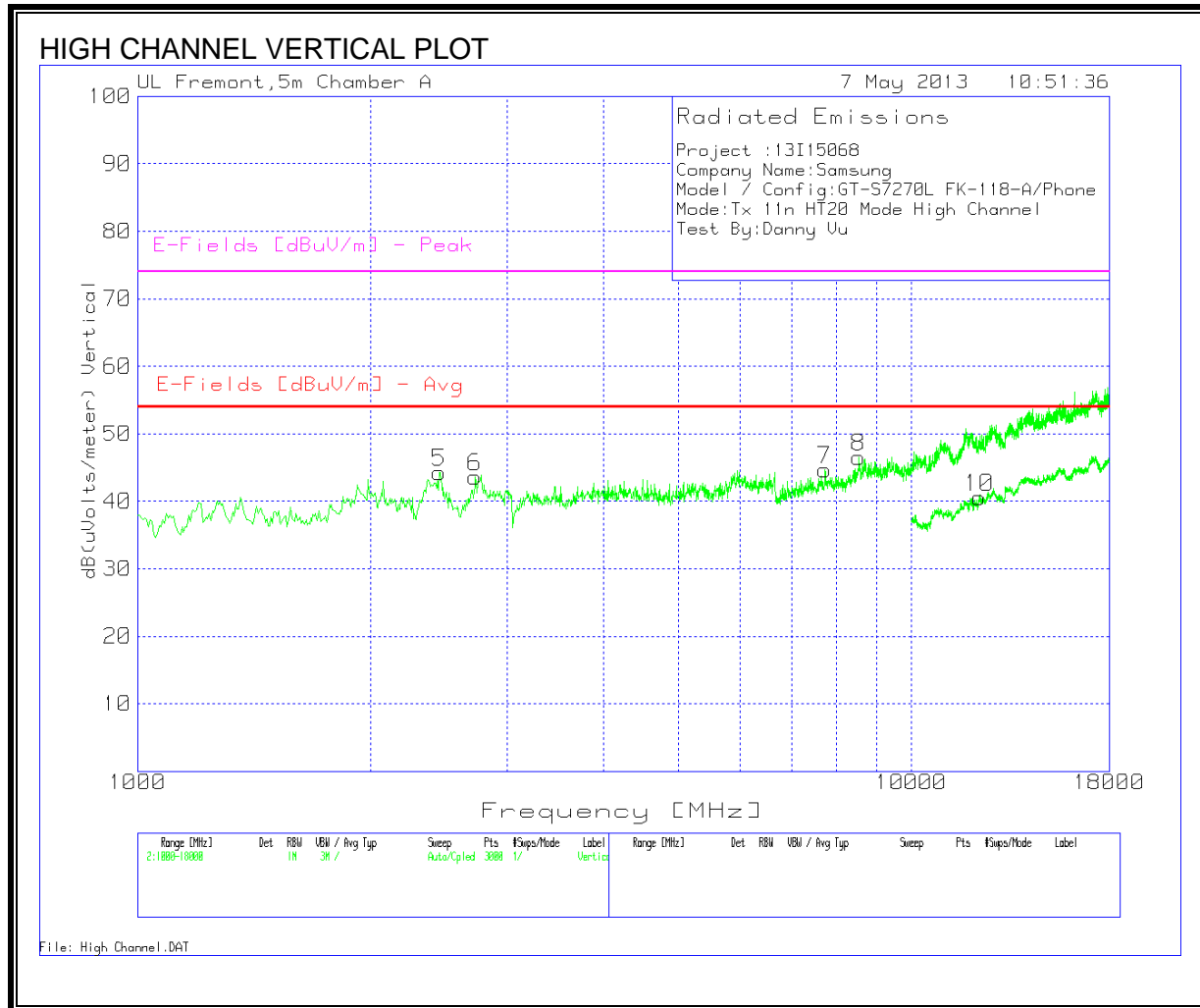
Horizontal 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
6	10715.642	25.71	PK	37.9	-35.8	10.8	0.6	39.21	53.97	-14.76	74	-34.79	100	Horz

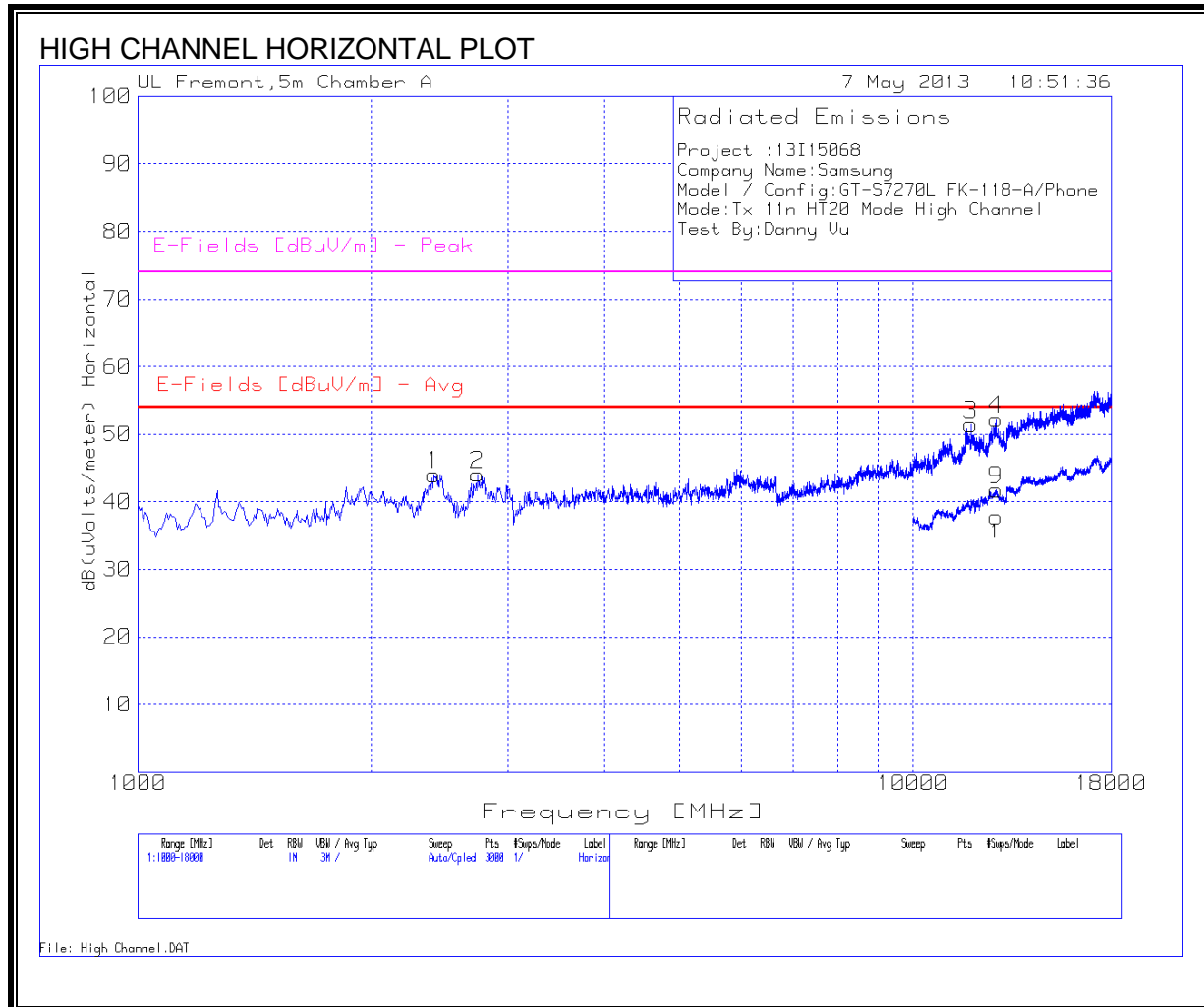
Vertical 10000 - 18000MHz														
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
7	14561.719	25.07	PK	39.9	-34.4	12.7	0.4	43.67	53.97	-10.3	74	-30.33	100	Vert

* Fundamental Frequencies

PK - Peak detector

Av - Average detector





HIGH CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L FK-118-A/Phone
 Mode:Tx 11n HT20 Mode High Channel
 Test By: Danny Vu

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
1	2410.06	43.47	PK	32.2	-36.9	4.4	0.9	44.07	53.97	-9.9	74	-29.93	100	Horz
2	2744.171	42.48	PK	32.7	-36.8	4.8	0.9	44.08	53.97	-9.89	74	-29.92	100	Horz
*3	11872.751	36.34	PK	38.7	-35.7	11.4	0.7	51.44	53.97	-2.53	74	-22.56	100	Horz
*4	12795.803	35.38	PK	39.1	-34.5	11.8	0.5	52.28	53.97	-1.69	74	-21.72	100	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
5	2455.363	43.31	PK	32.4	-36.8	4.5	0.9	44.31	53.97	-9.66	74	-29.69	100	Vert
6	2732.845	41.98	PK	32.7	-36.8	4.8	0.9	43.58	53.97	-10.39	74	-30.42	100	Vert
7	7733.178	35.74	PK	35.5	-35.9	9	0.3	44.64	53.97	-9.33	74	-29.36	100	Vert
8	8548.634	36.8	PK	35.7	-36	9.5	0.5	46.5	53.97	-7.47	74	-27.5	100	Vert

Horizontal 10000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
9	12782.609	25.01	PK	39.1	-34.5	11.8	0.4	41.81	53.97	-12.16	74	-32.19	100	Horz

Vertical 10000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
10	12242.879	24.59	PK	39	-35.3	11.6	0.7	40.59	53.97	-13.38	74	-33.41	100	Vert

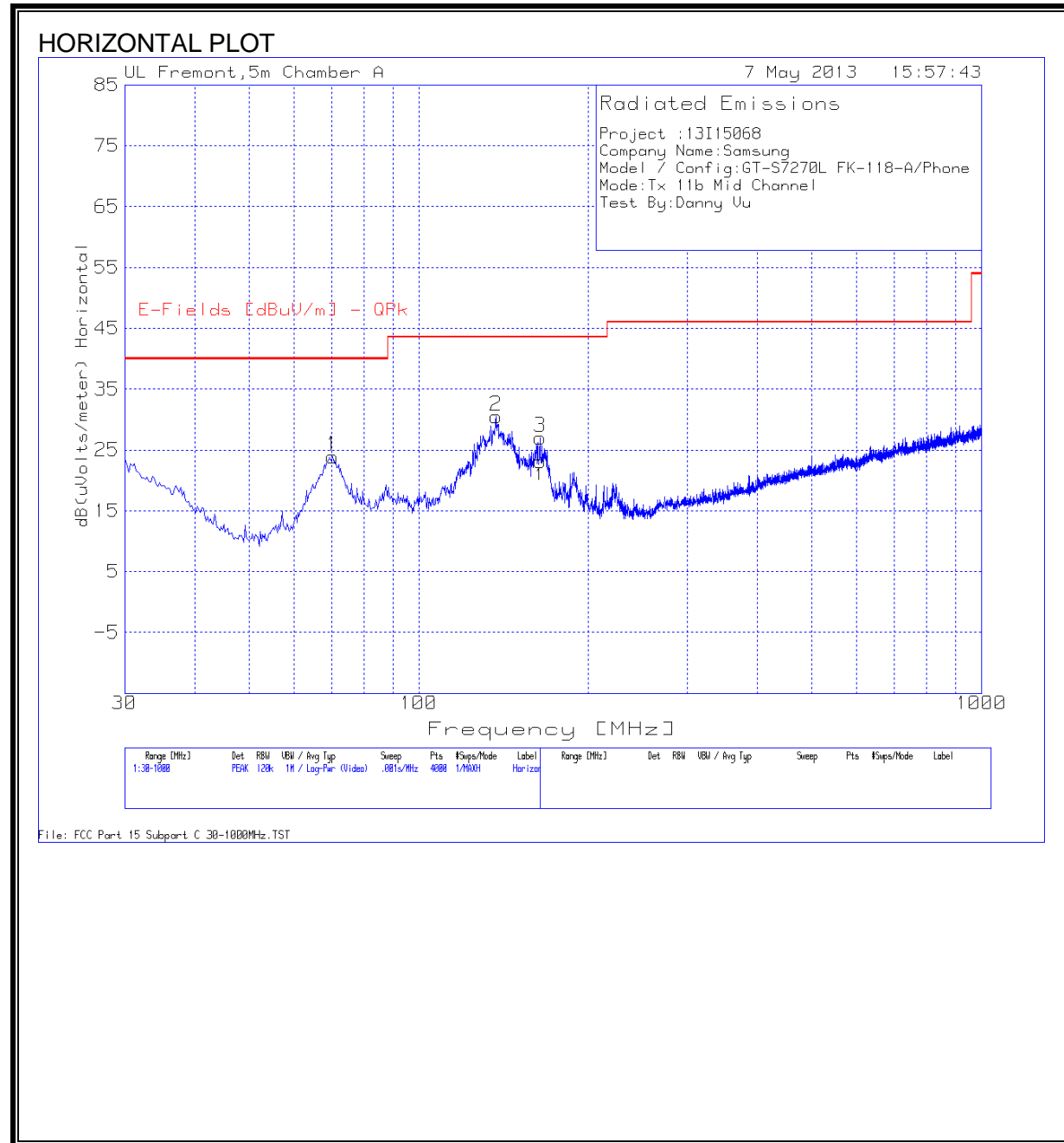
* Not in Restricted Band

PK - Peak detector

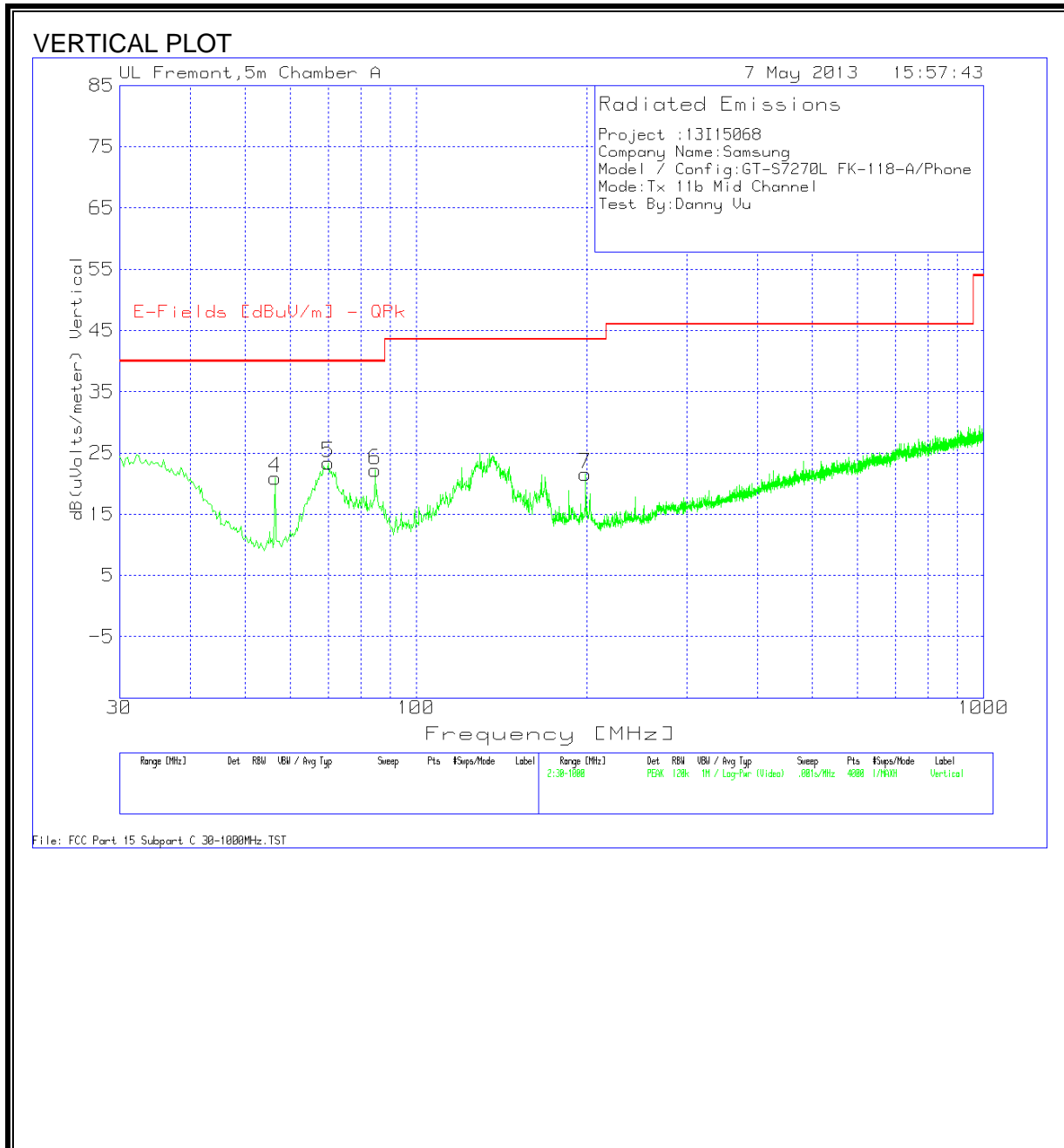
Av - Average detector

9.3. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



HORIZONTAL AND VERTICAL DATA

Project :13I15068										
Company Name:Samsung										
Model / Config:GT-S7270L FK-118-A/Phone										
Mode:Tx 11b Mid Channel										
Test By:Danny Vu										

Horizontal 30 - 1000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (dBmV)	Detector	T185 Antenna Factor dB/m	T64 preamp/cable loss [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
1	70.2248	43.08	PK	8.1	-27.3	23.88	40	-16.12	300	Horz
2	137.1047	43.85	PK	13.4	-26.8	30.45	43.52	-13.07	200	Horz
3	164.2443	41.57	PK	11.9	-26.5	26.97	43.52	-16.55	200	Horz

Vertical 30 - 1000MHz

Marker No.	Test Frequency	Meter Reading (dBmV)	Detector	T185 Antenna Factor dB/m	T64 preamp/cable loss [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
4	56.4127	41.45	PK	6.9	-27.4	20.95	40	-19.05	200	Vert
5	69.9825	42.54	PK	8.1	-27.3	23.34	40	-16.66	300	Vert
6	84.7639	41.87	PK	7.5	-27.1	22.27	40	-17.73	200	Vert
7	198.8958	35.69	PK	12.1	-26.2	21.59	43.52	-21.93	200	Vert

PK - Peak detector
 QP - Quasi-Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS**LIMITS**

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

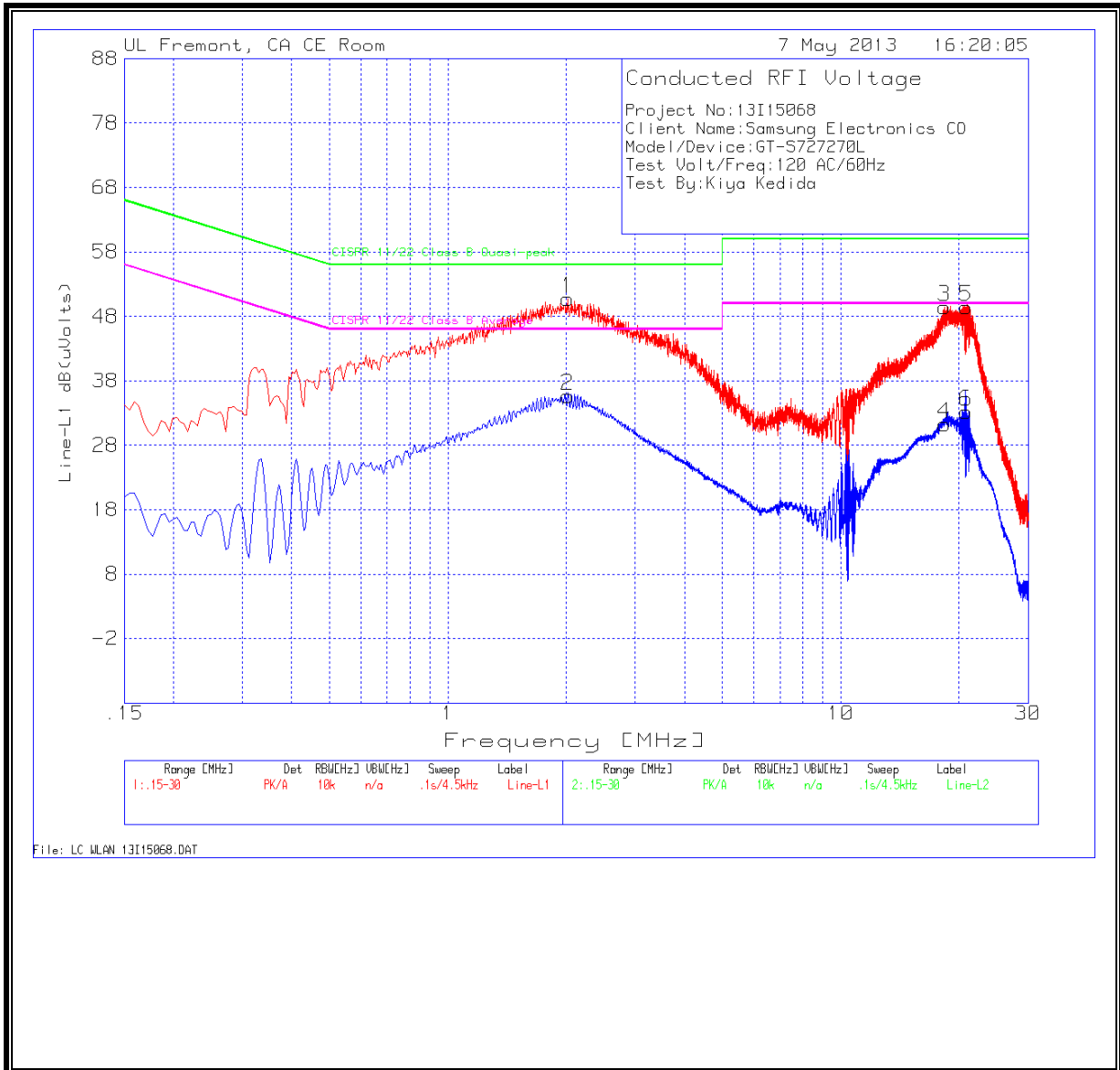
Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

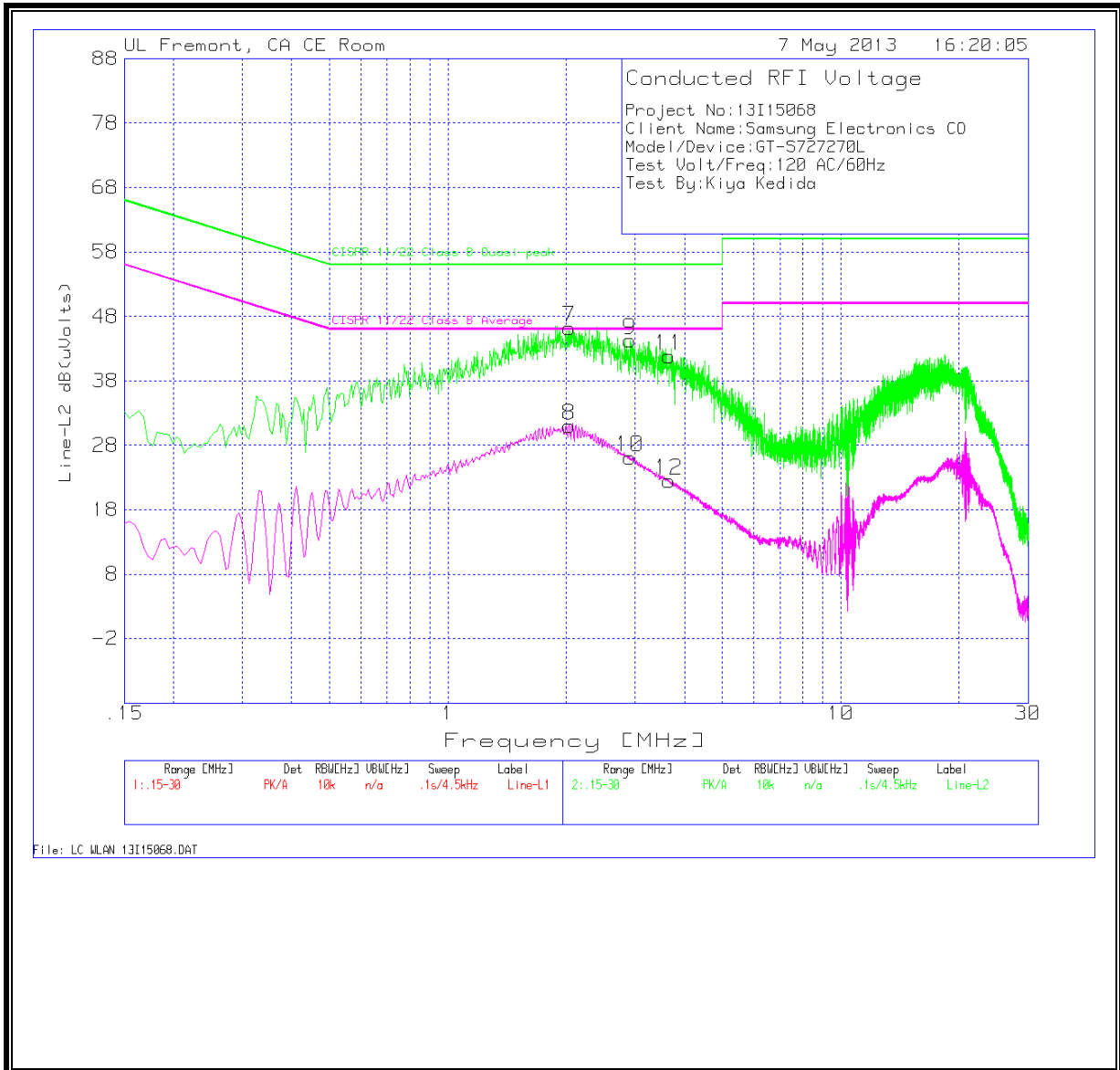
6 WORST EMISSIONS

Project No:13115068									
Client Name:Samsung Electronics CO									
Model/Device:GT-S727270L									
Test Volt/Freq:120 AC/60Hz									
Test By:Kiya Kedida									
Line-L1 .15 - 30MHz									
Test Frequency (MHz)	Meter Reading (dBmV)	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin	CISPR 11/22 Class B Average	Margin
2.0175	50.58	PK	0.1	0.1	50.78	56	-5.22	-	-
2.0175	35.45	Av	0.1	0.1	35.65	-	-	46	-10.35
18.3525	49.05	PK	0.2	0.2	49.45	60	-10.55	-	-
18.3525	30.87	Av	0.2	0.2	31.27	-	-	50	-18.73
20.895	48.95	PK	0.3	0.2	49.45	60	-10.55	-	-
20.895	32.74	Av	0.3	0.2	33.24	-	-	50	-16.76
Line-L2 .15 - 30MHz									
Test Frequency (MHz)	Meter Reading (dBmV)	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin	CISPR 11/22 Class B Average	Margin
2.04	46.02	PK	0.1	0.1	46.22	56	-9.78	-	-
2.04	30.82	Av	0.1	0.1	31.02	-	-	46	-14.98
2.9085	44.1	PK	0.1	0.1	44.3	56	-11.7	-	-
2.9085	25.87	Av	0.1	0.1	26.07	-	-	46	-19.93
3.651	41.6	PK	0.2	0.1	41.9	56	-14.1	-	-
3.651	22.23	Av	0.2	0.1	22.53	-	-	46	-23.47
PK - Peak detector									
QP - Quasi-Peak detector									
Av - Average detector									

LINE 1 RESULTS

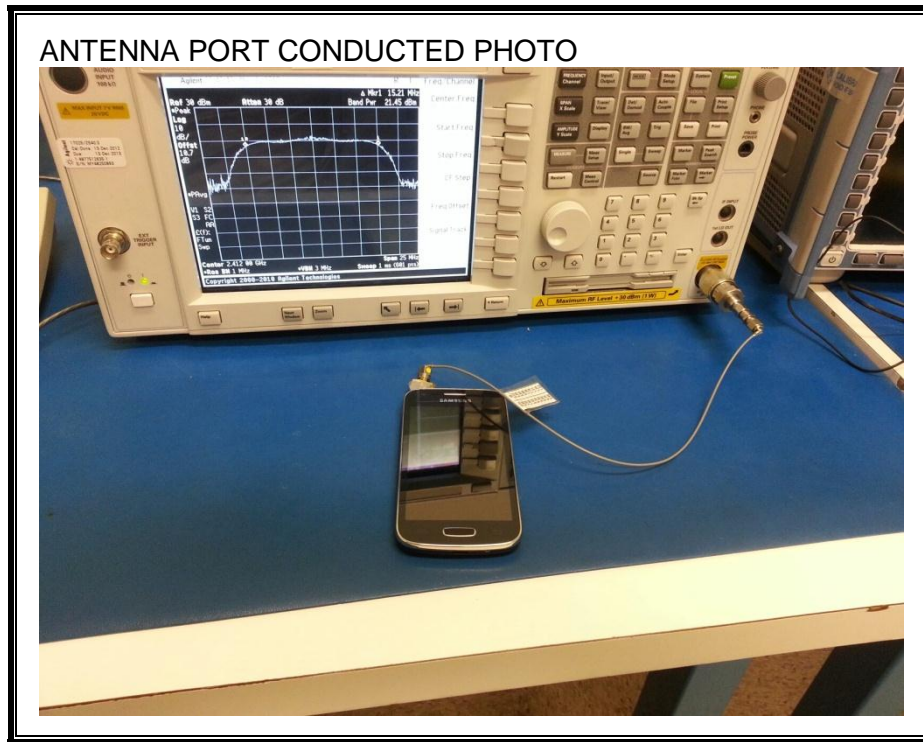


LINE 2 RESULTS

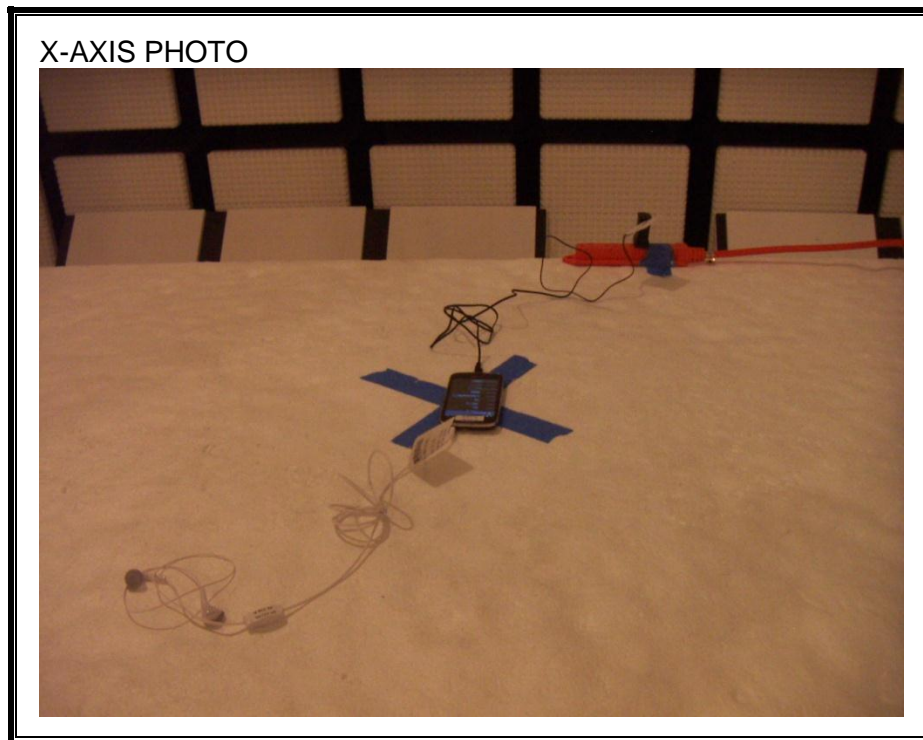


11. SETUP PHOTOS

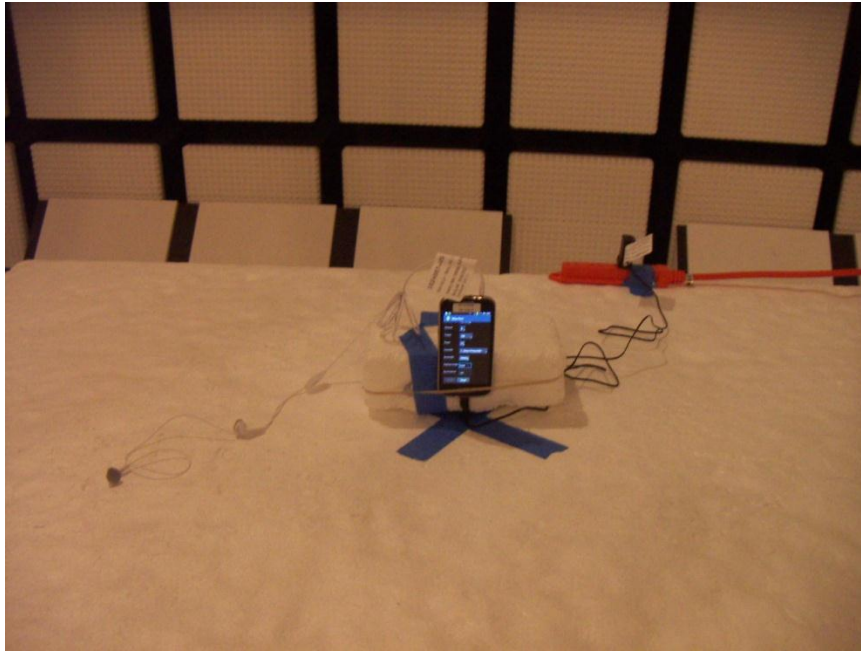
ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP



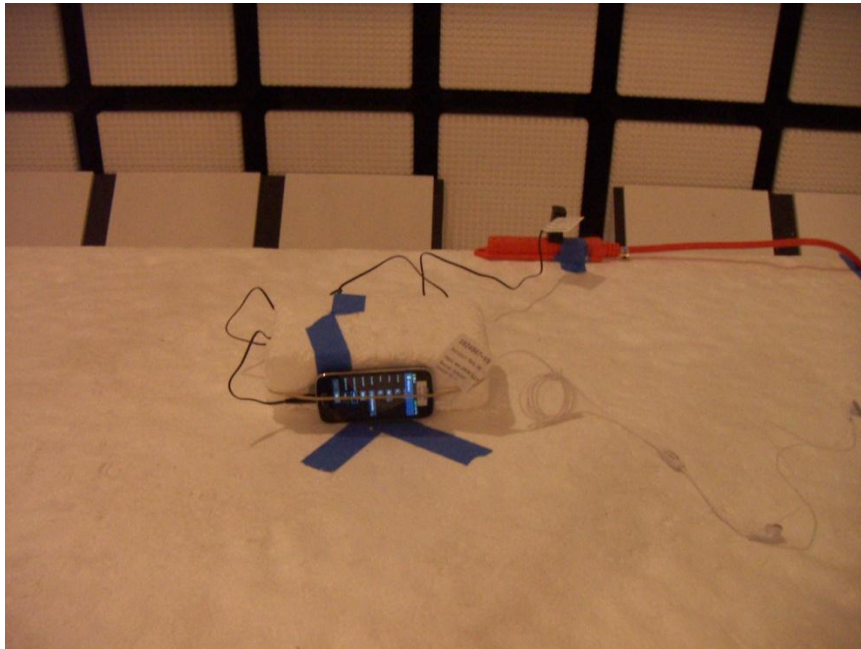
RADIATED RF MEASUREMENT SETUP FOR PORTABLE CONFIGURATION



Y-AXIS PHOTO



Z-AXIS PHOTO



POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP

LINE CONDUCTED FRONT PHOTO



LINE CONDUCTED BACK PHOTO



END OF REPORT