



FCC CFR47 PART 15 SUBPART C

**BLUETOOTH LOW ENERGY
CERTIFICATION TEST REPORT**

FOR

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

MODEL NUMBER: GT-S7270L

FCC ID: A3LGTS7270L

REPORT NUMBER: 13115068-2

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Prepared for

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SUWON-CITY, GYEONGGI-DO 443-742, SOUTH KOREA**

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NVLAP LAB CODE 200065-0

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--	5/22/2013	Initial Issue	

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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 07 TO 10, 2013

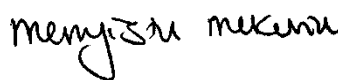
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

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:

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 WISE PROGRAM MANAGER
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MENGISTU MEKURIA
 WISE ENGINEER
 UL VERIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, 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 peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	BT LE	8.13	6.50

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an 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 Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Power Adapter	Samsung	ETA0U10JBS	FK-118-B	N/A
Headset	Samsung	GT-S7270	N/A	N/A

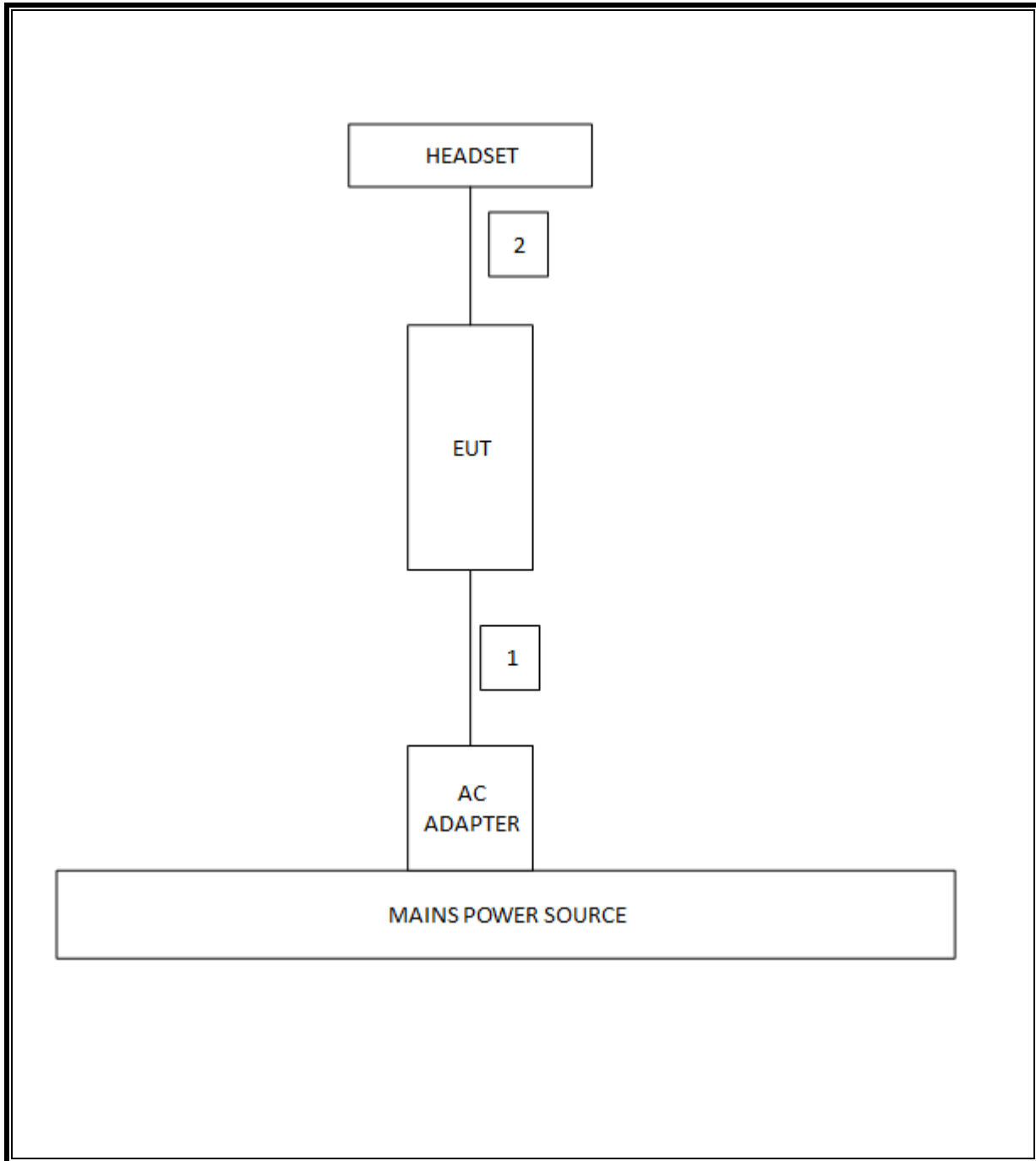
I/O CABLES

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 Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	03/22/14
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01176	12/13/13
Antenna, Horn, 18 GHz	ETS	3117	C01022	02/21/14
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	02/21/14
Power Sensor, 18 GHz	Agilent / HP	8481A	N02781	09/24/13
Power Meter	Agilent / HP	437B		08/09/13
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRM50702	N02685	CNR
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	02/13/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/08/13
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/14

7. ANTENNA PORT TEST RESULTS

7.1. 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.

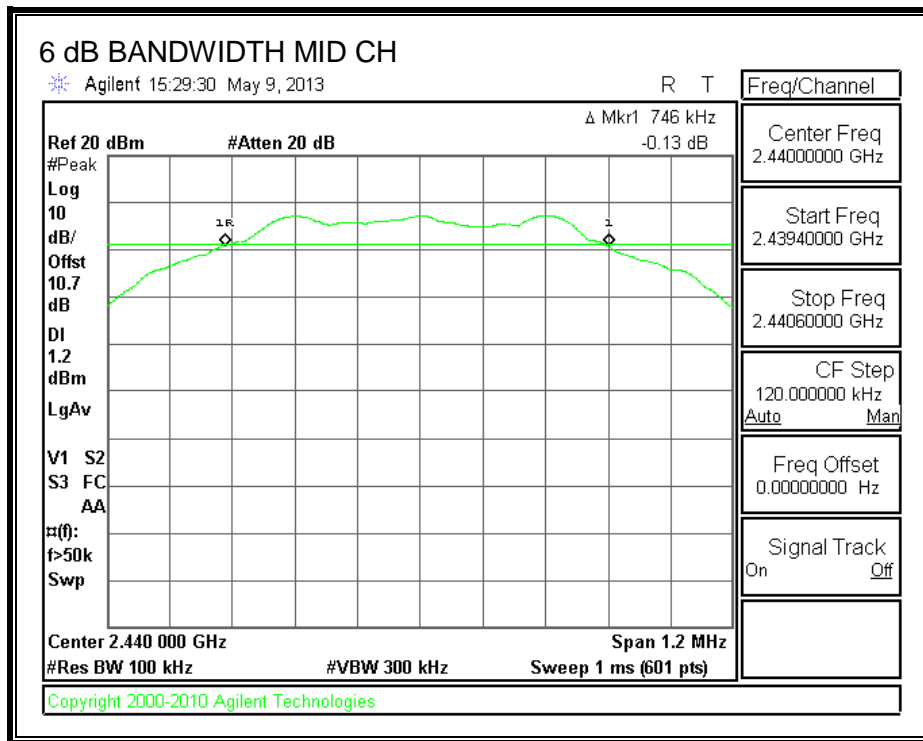
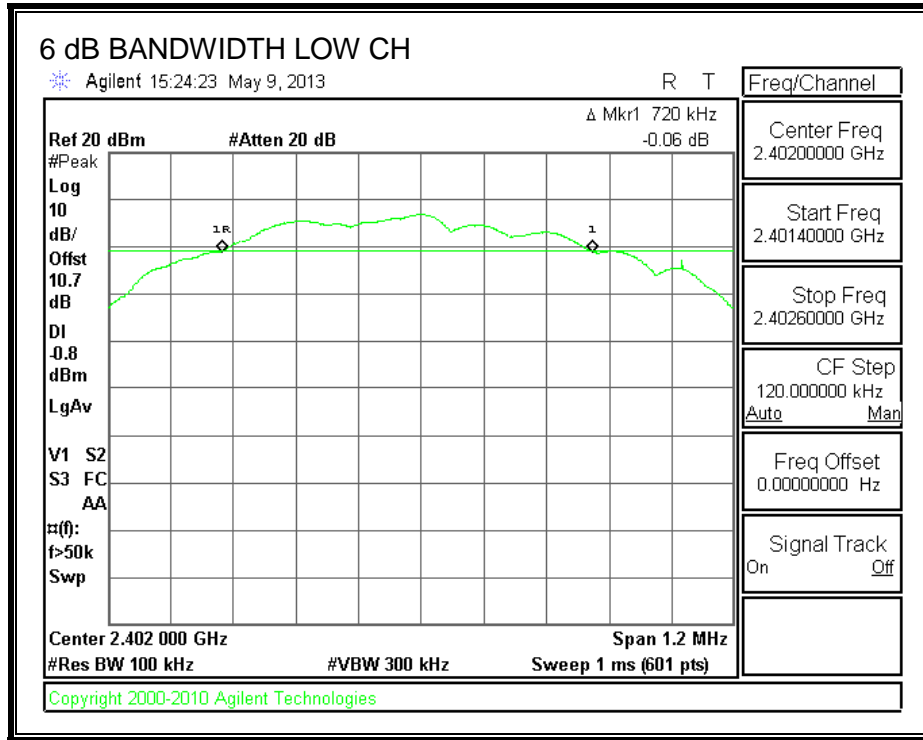
TEST PROCEDURE

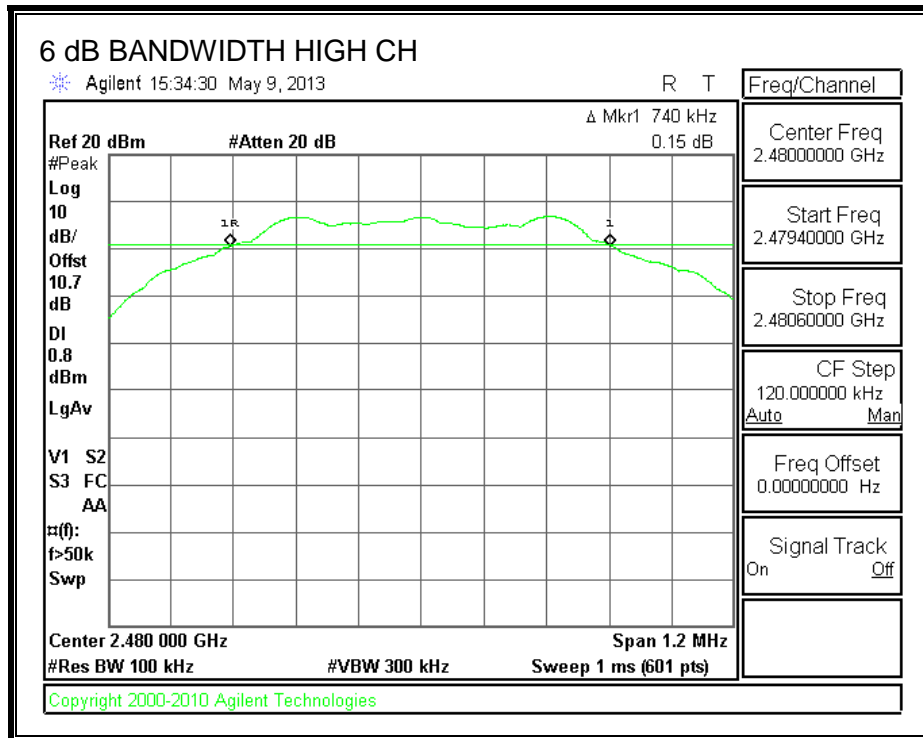
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum Limit (MHz)
Low	2402	720.0000	0.5
Middle	2440	746.0000	0.5
High	2480	740.0000	0.5

6 dB BANDWIDTH





7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

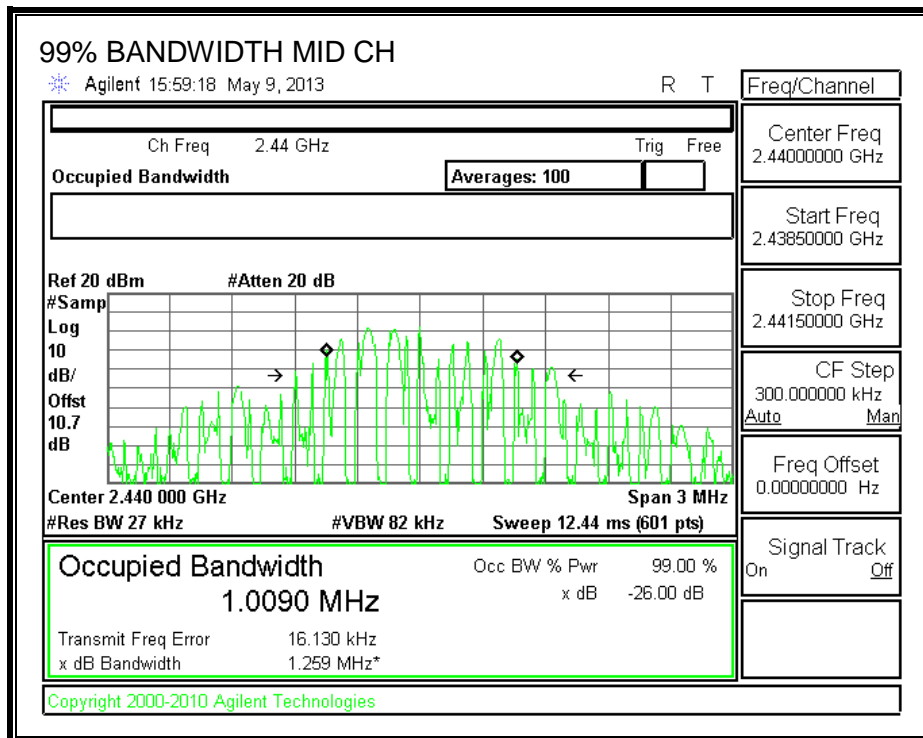
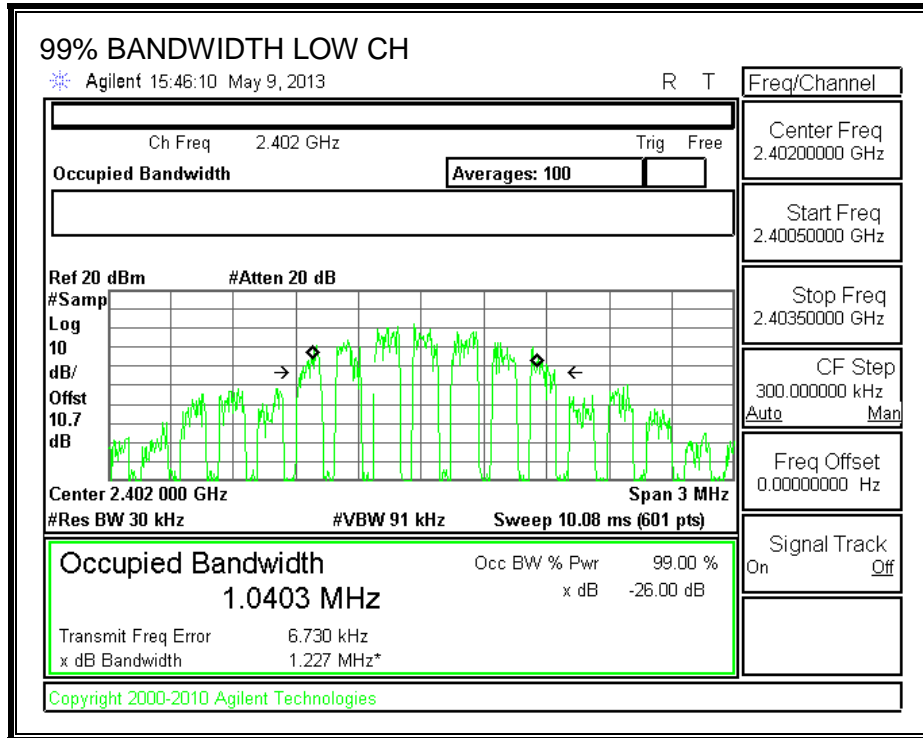
TEST PROCEDURE

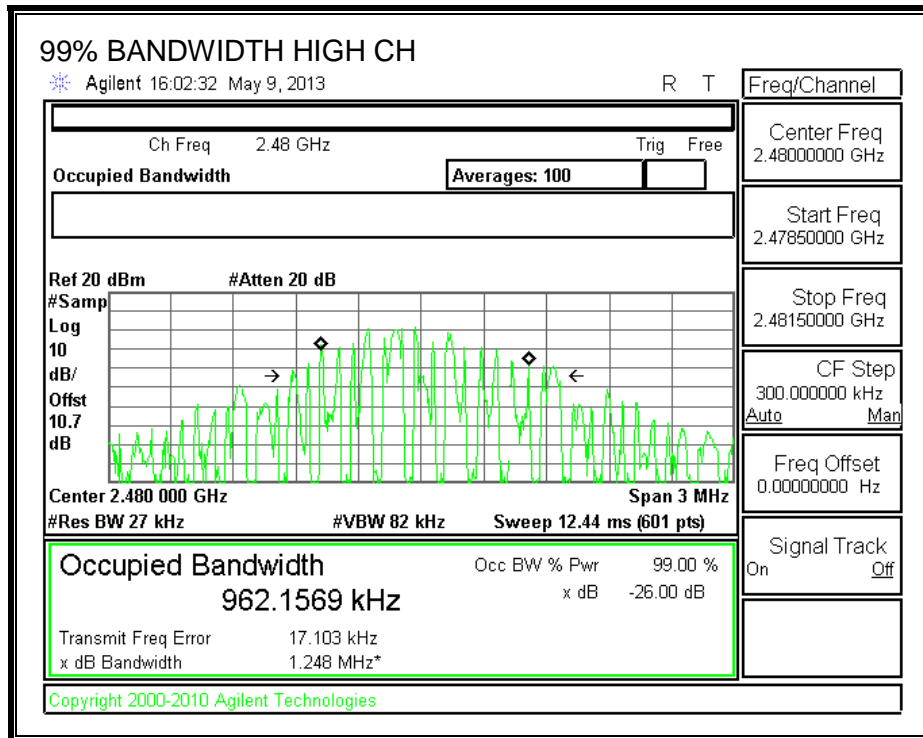
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0403
Middle	2440	1.0090
High	2480	0.9622

99% BANDWIDTH





7.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

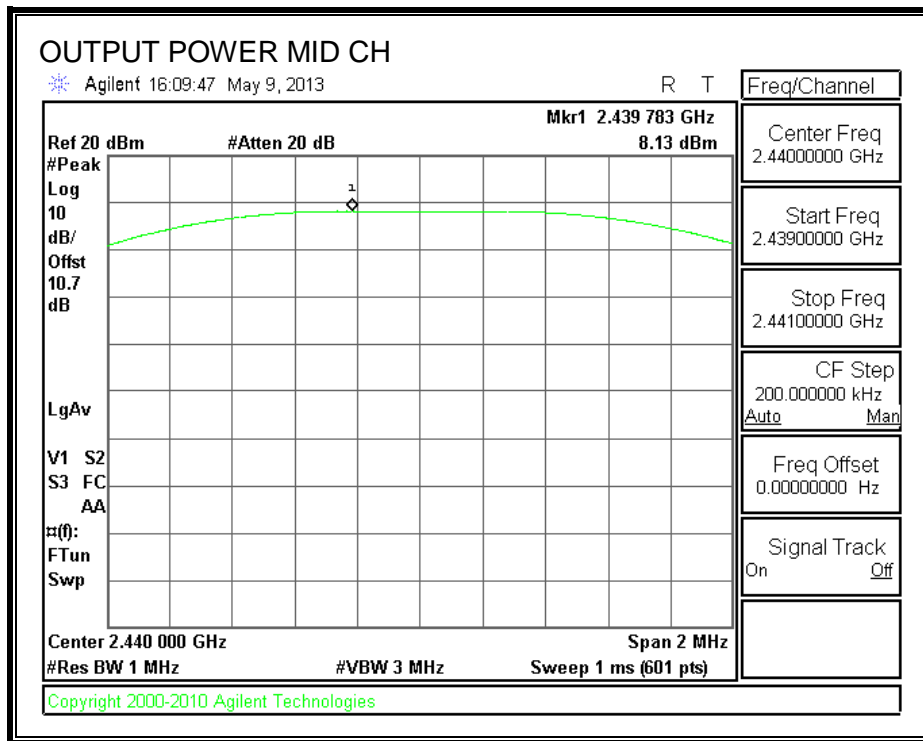
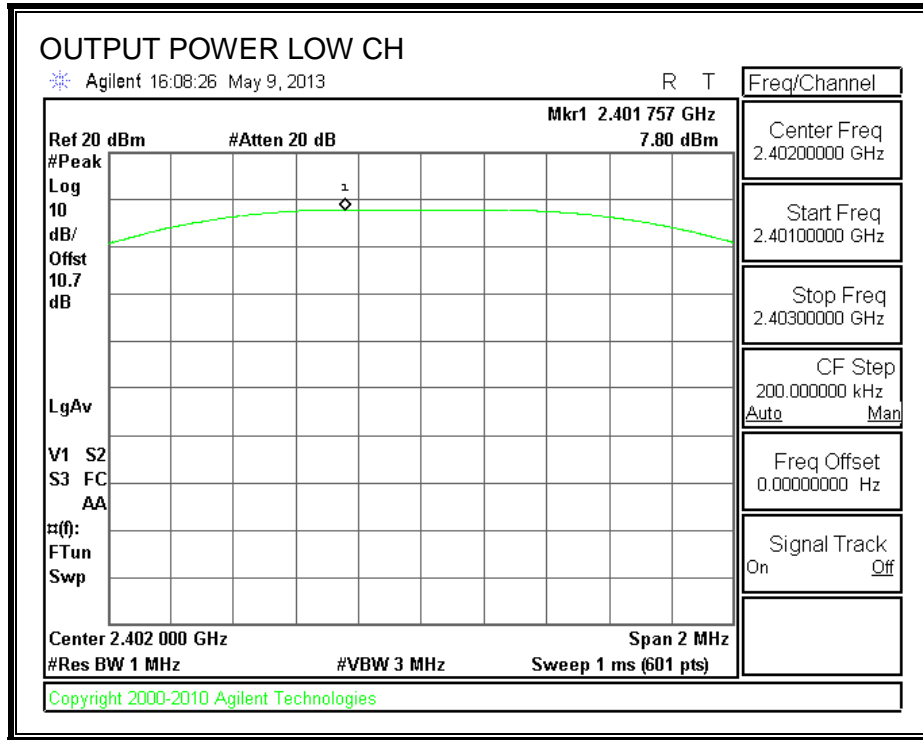
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

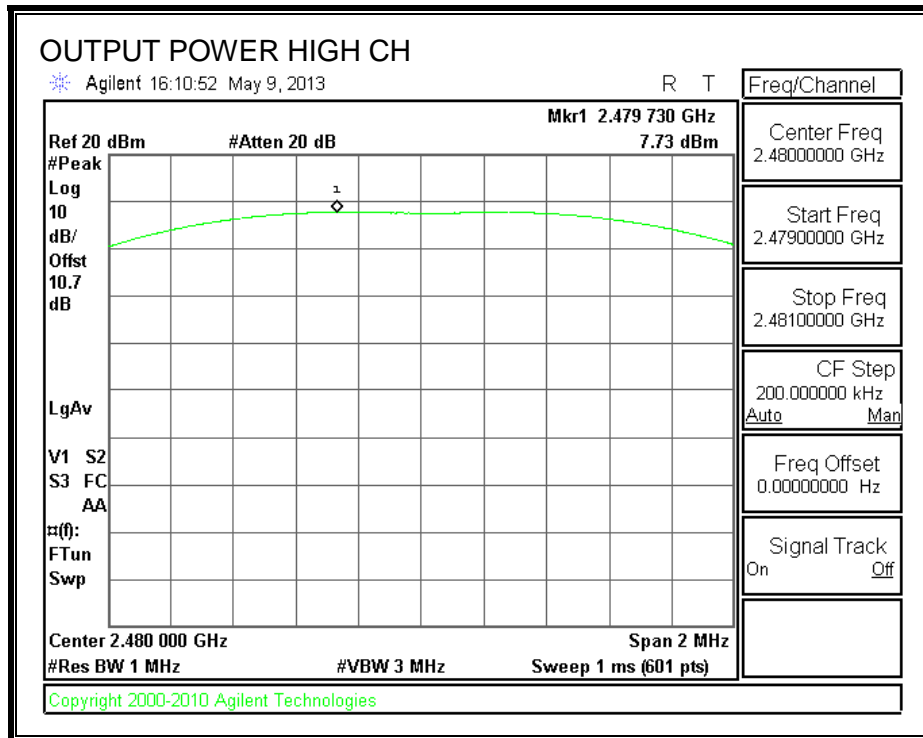
Peak power is measured using wide bandwidth Peak Power Meter.

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.800	30	-22.200
Middle	2440	8.130	30	-21.870
High	2480	7.730	30	-22.270

OUTPUT POWER





7.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 10.68 dB (including 10 dB pad and 0.68 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	6.65
Middle	2440	6.74
High	2480	6.57

7.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

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.

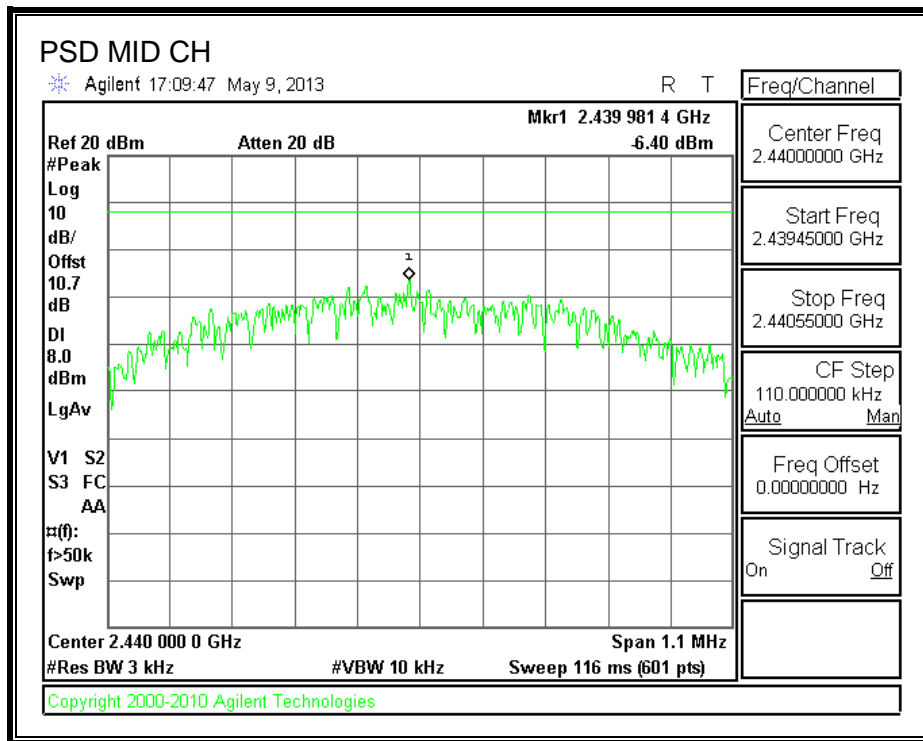
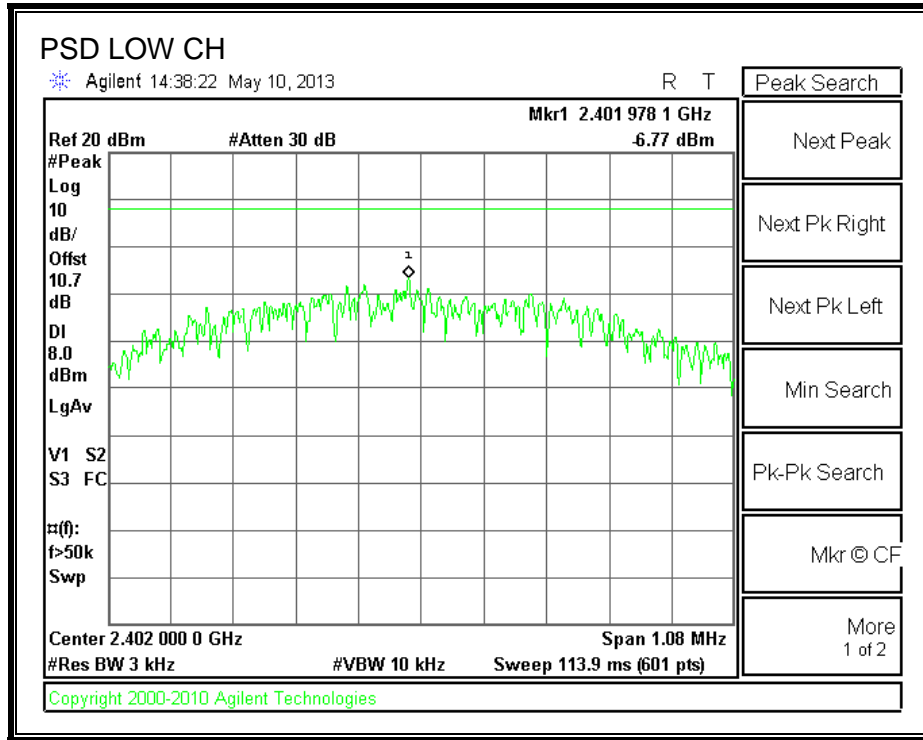
TEST PROCEDURE

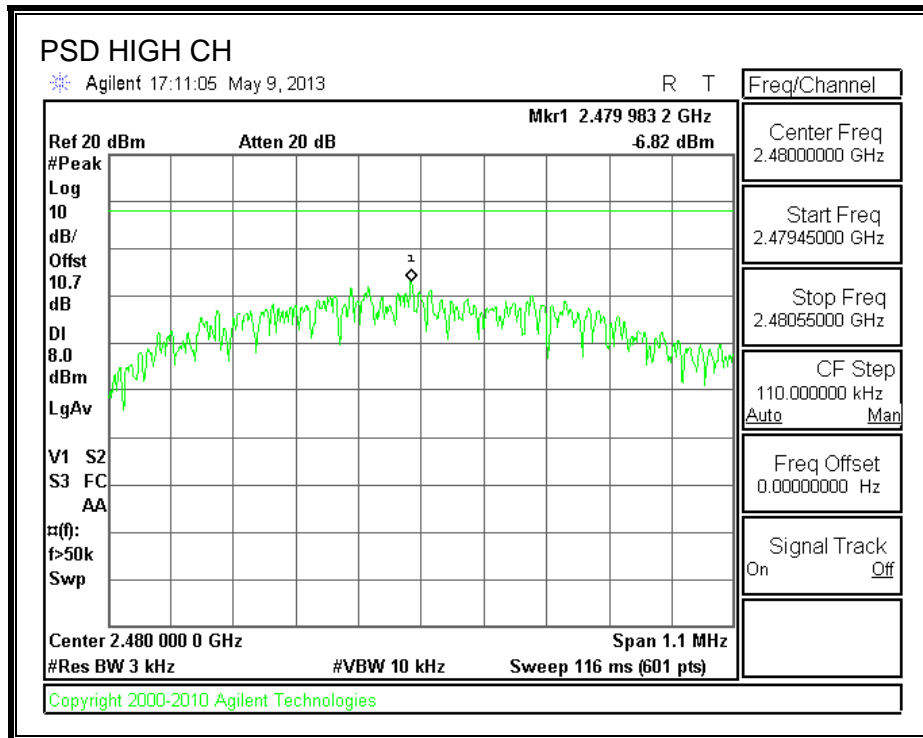
Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-6.77	8	-14.77
Middle	2440	-6.40	8	-14.40
High	2480	-6.82	8	-14.82

POWER SPECTRAL DENSITY





7.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

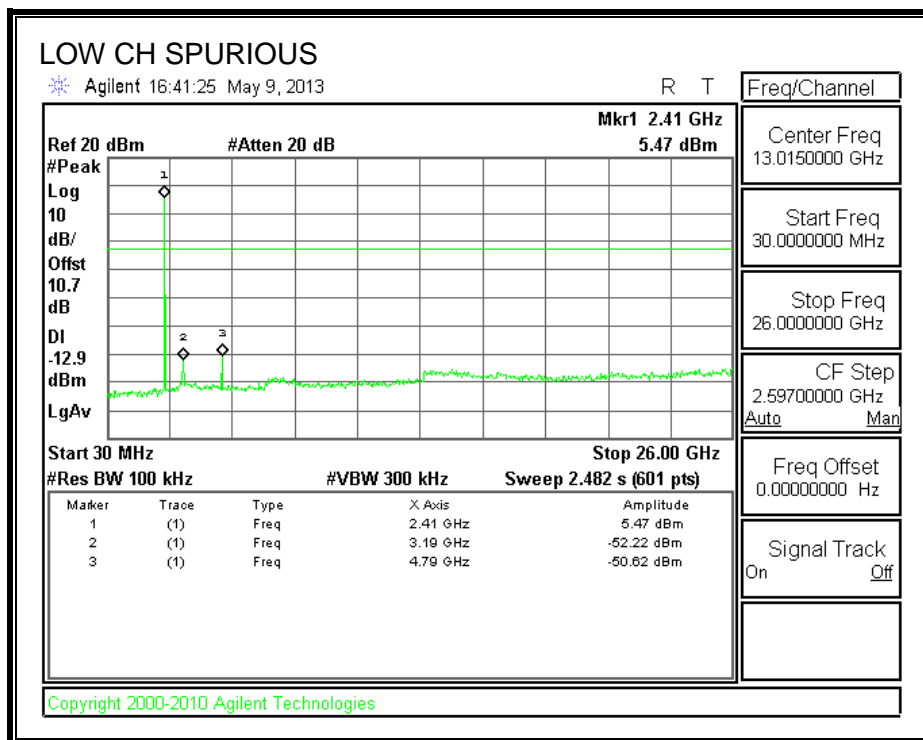
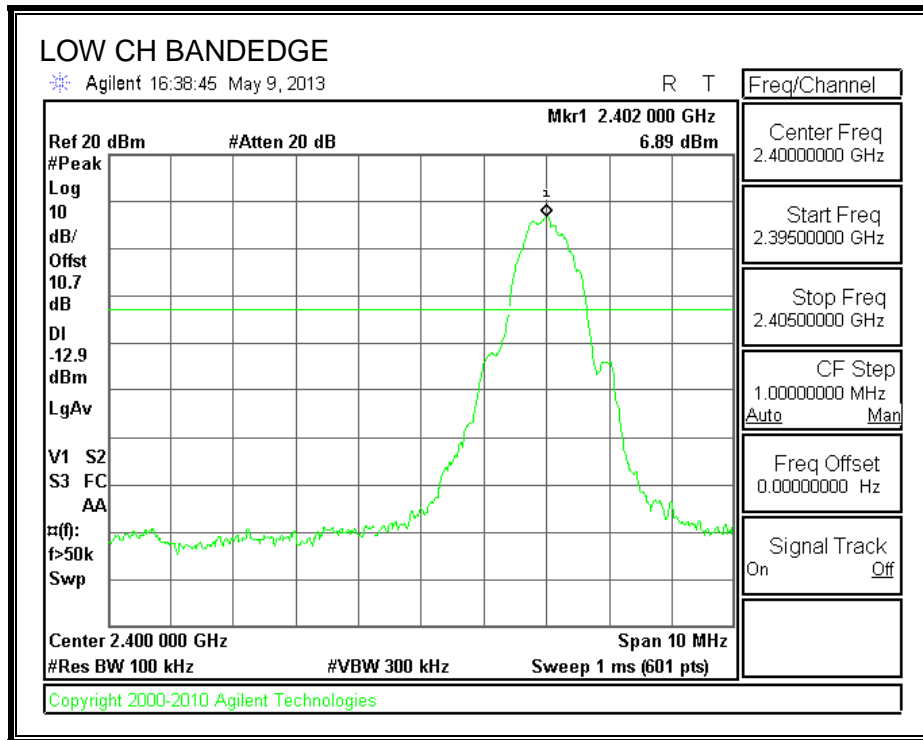
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

TEST PROCEDURE

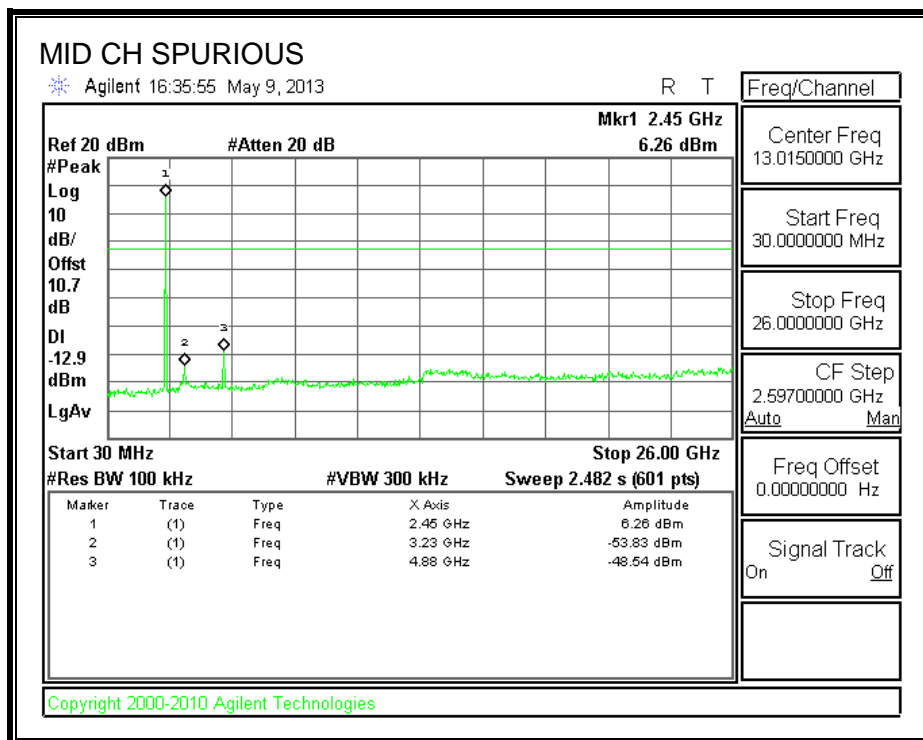
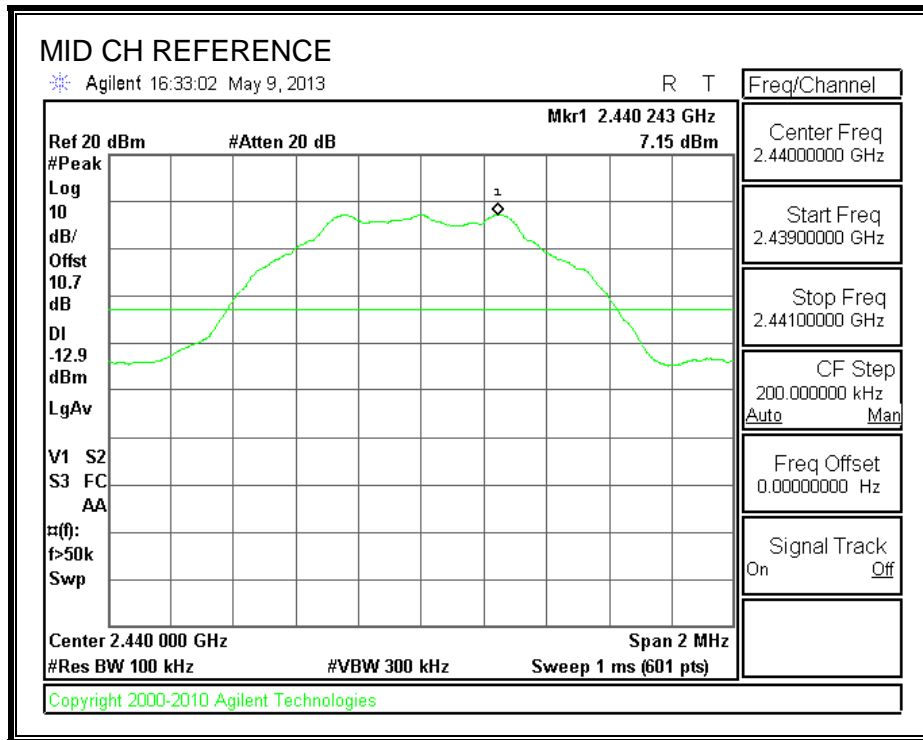
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

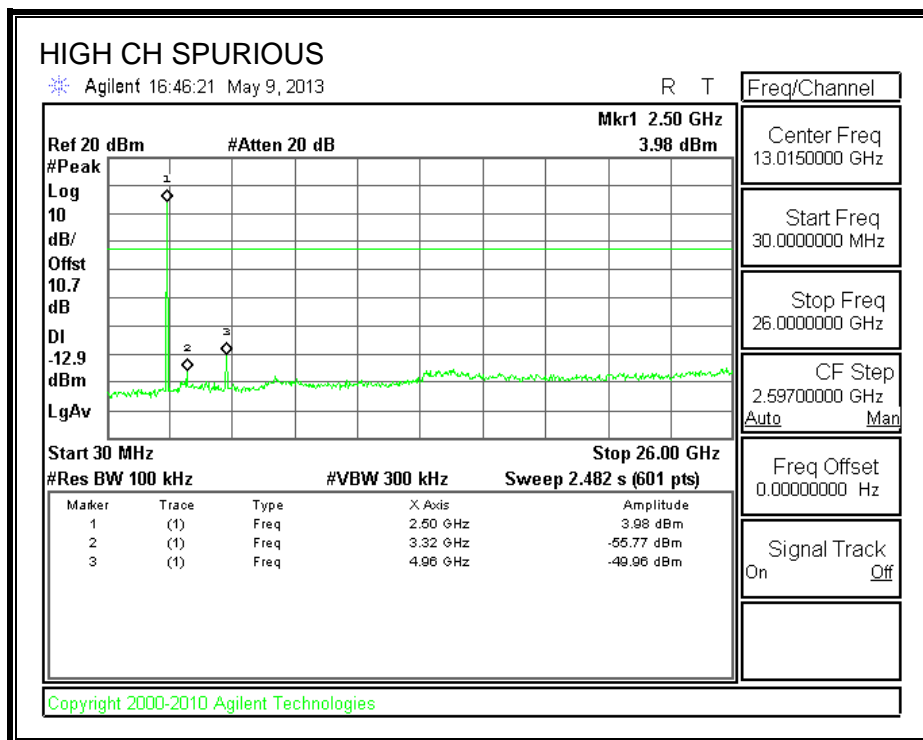
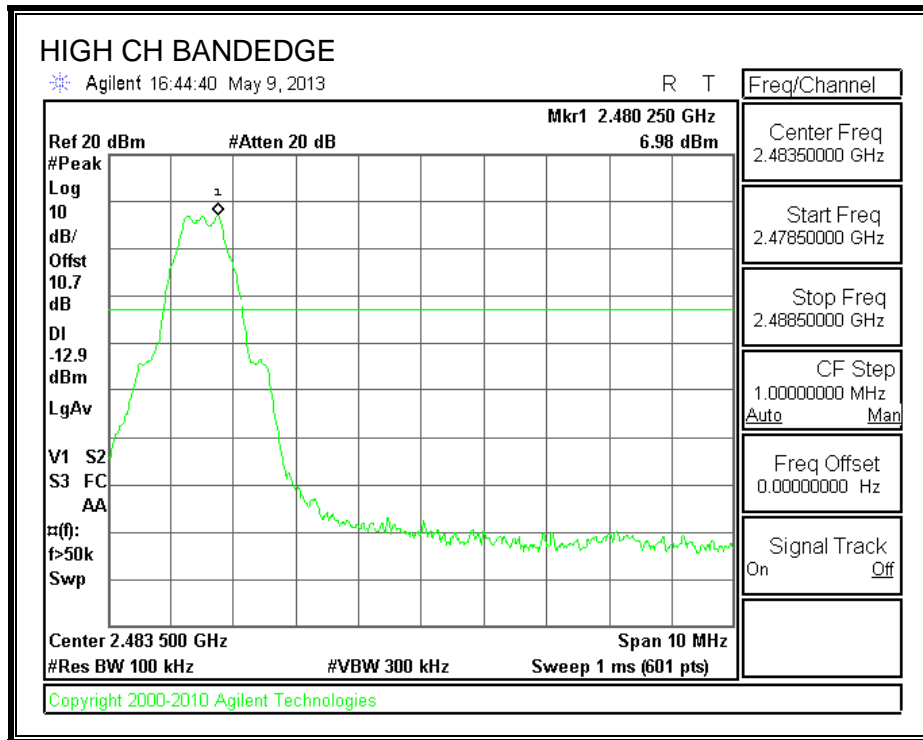
SPURIOUS EMISSIONS, LOW CHANNEL



SPURIOUS EMISSIONS, MID CHANNEL



SPURIOUS EMISSIONS, HIGH CHANNEL



8. RADIATED TEST RESULTS

8.1. 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. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

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, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

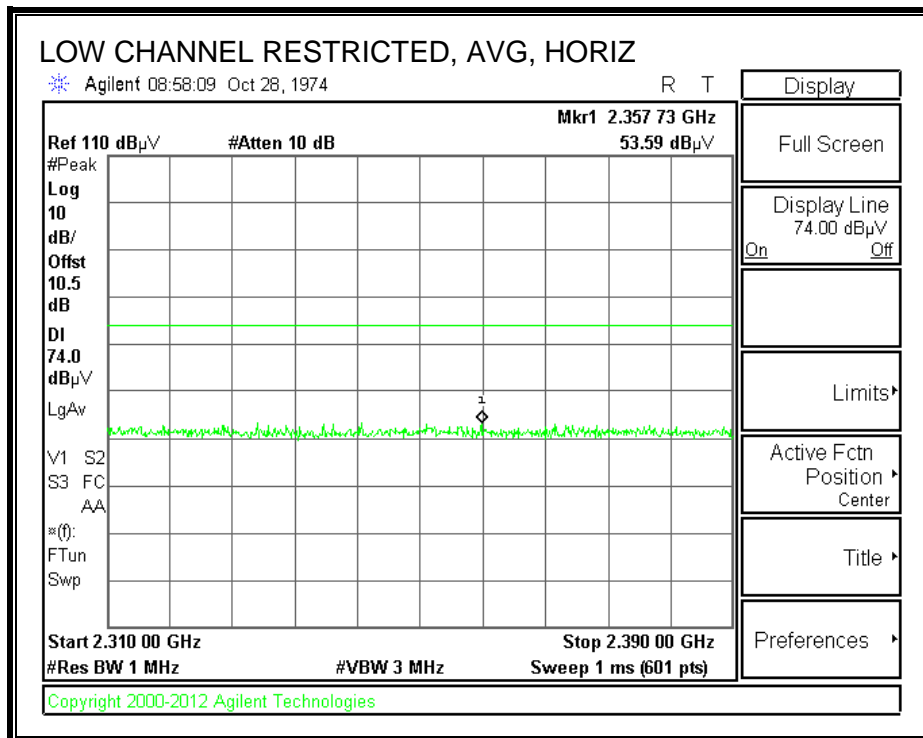
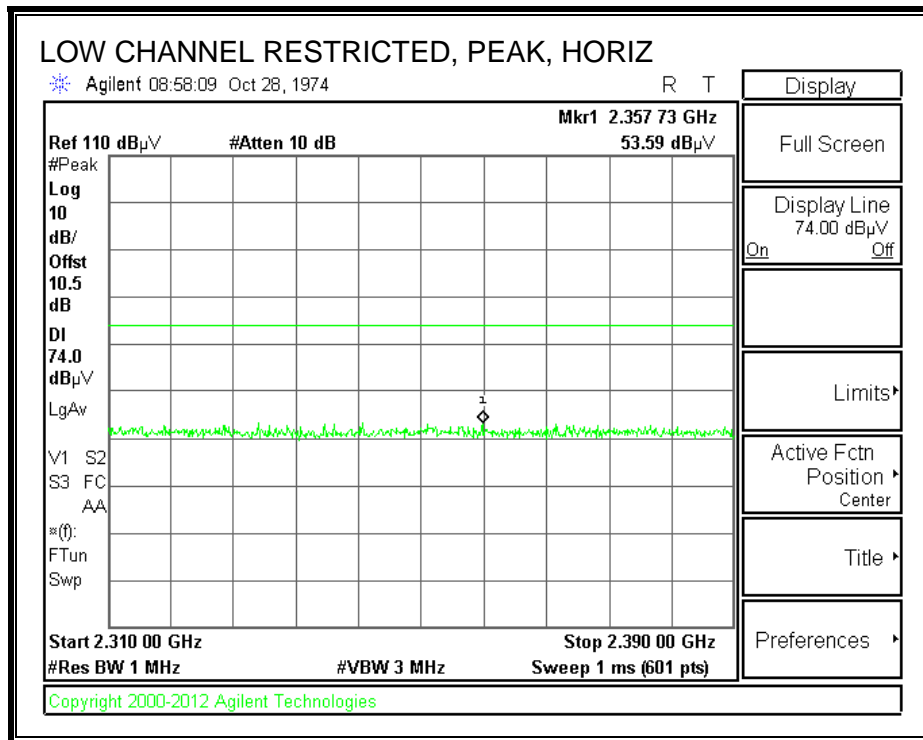
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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.

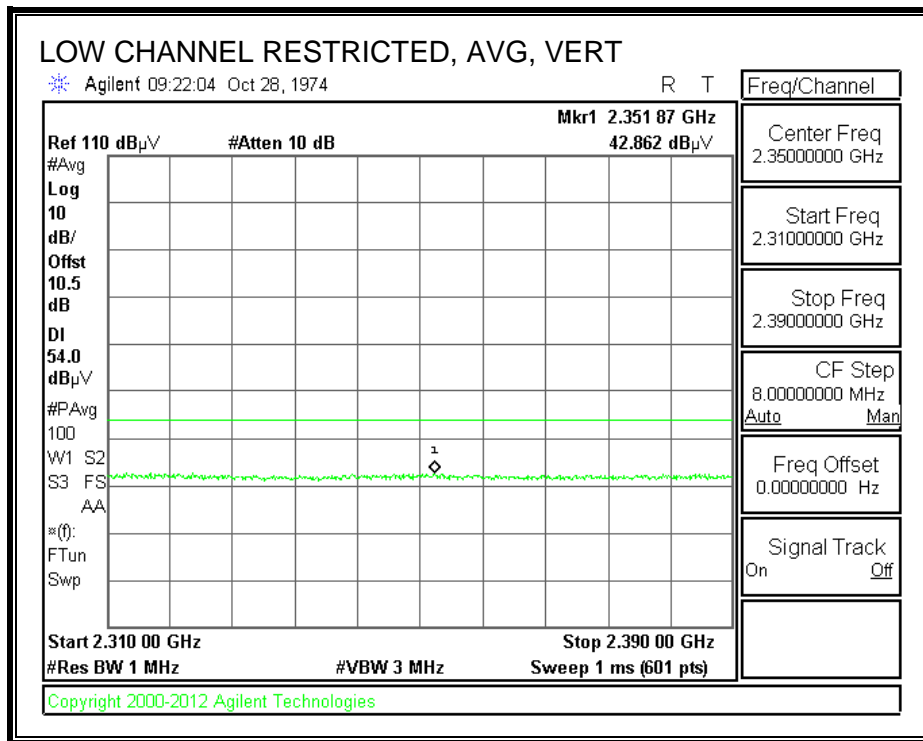
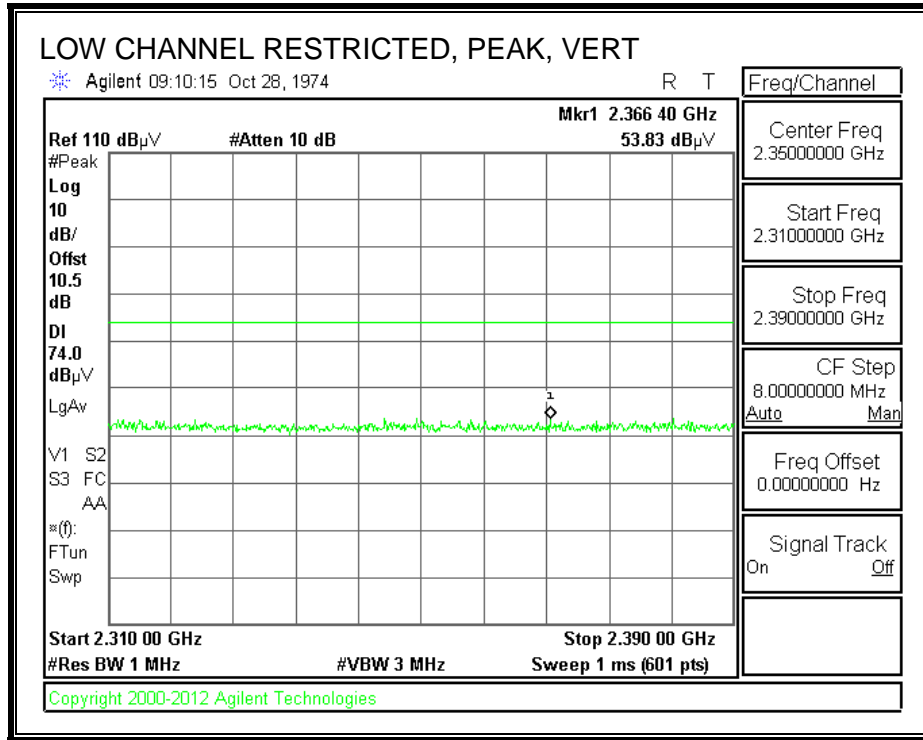
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

8.1. TX ABOVE 1 GHz FOR BLUETOOTH LOW ENERGY MODE

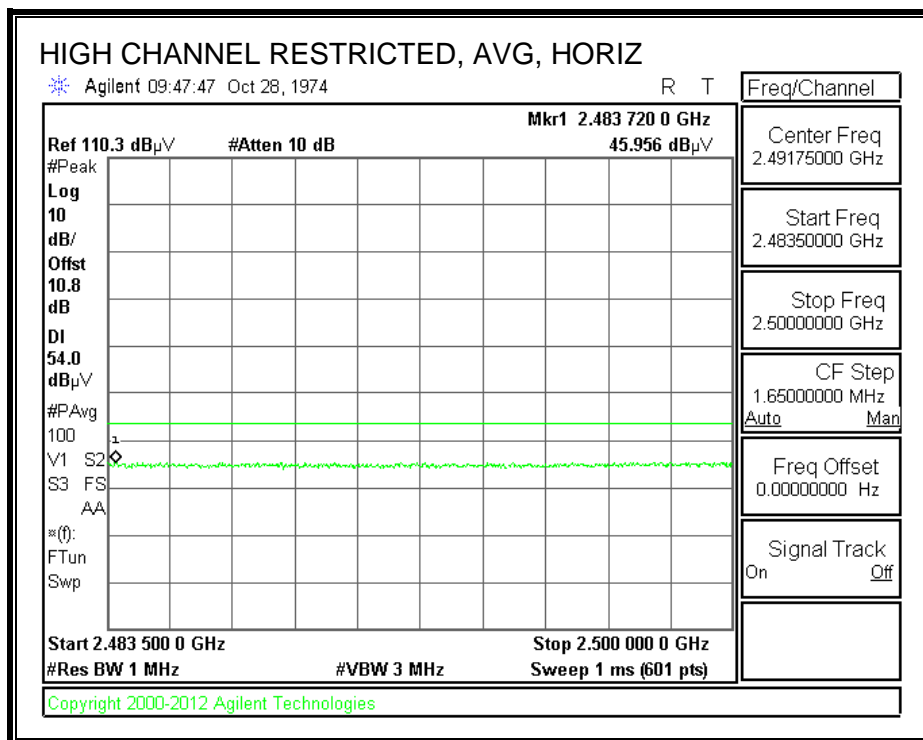
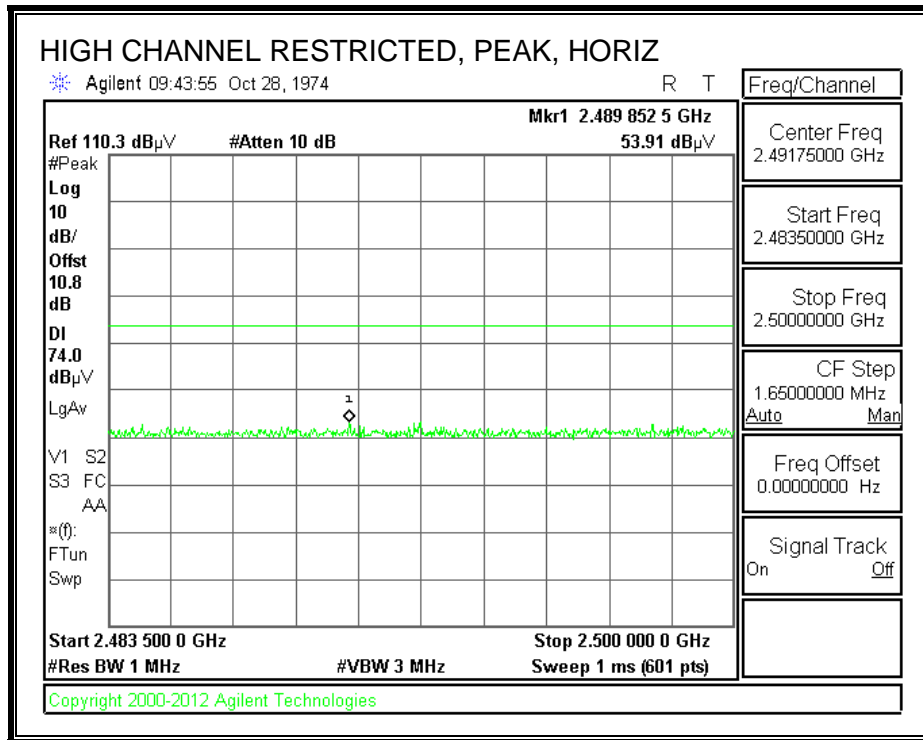
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



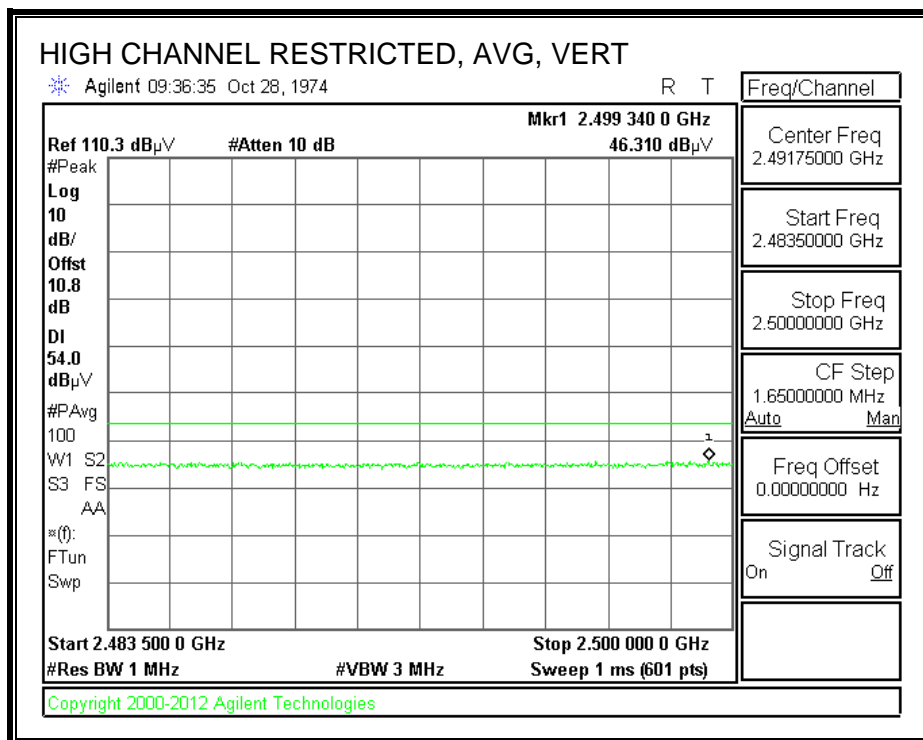
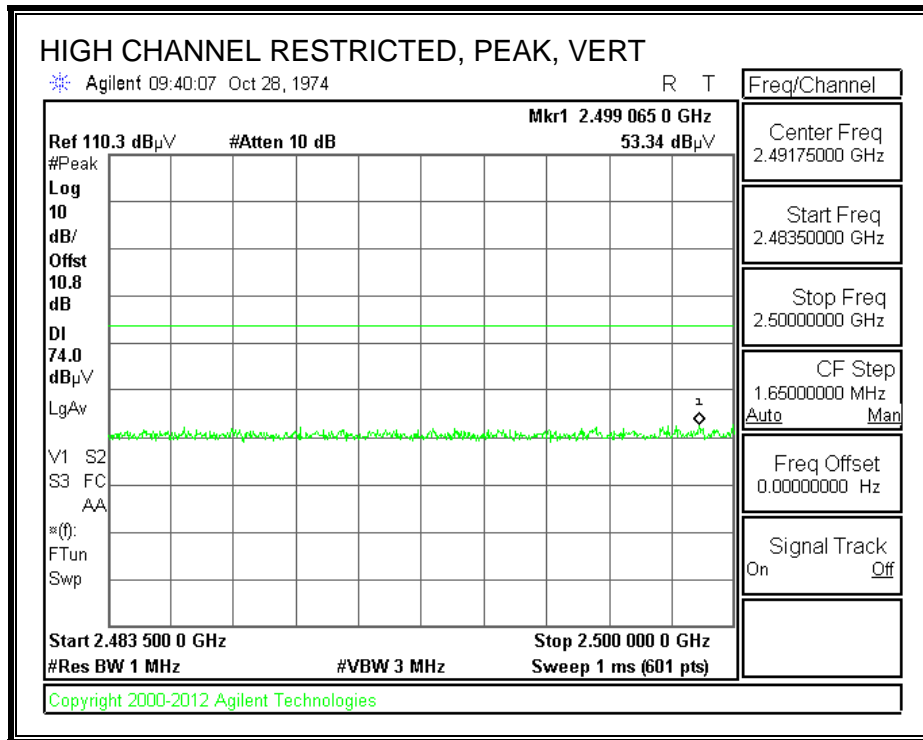
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



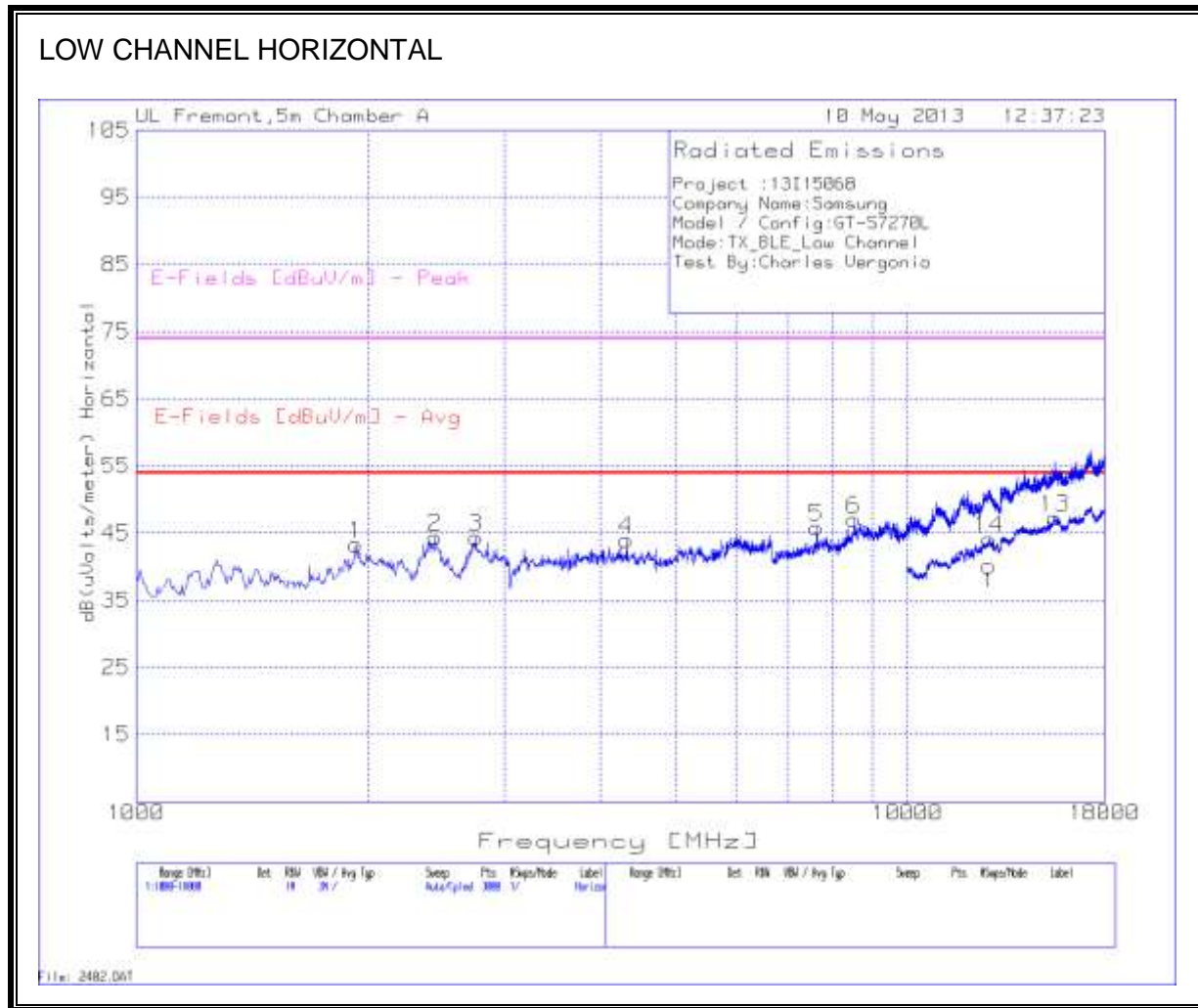
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



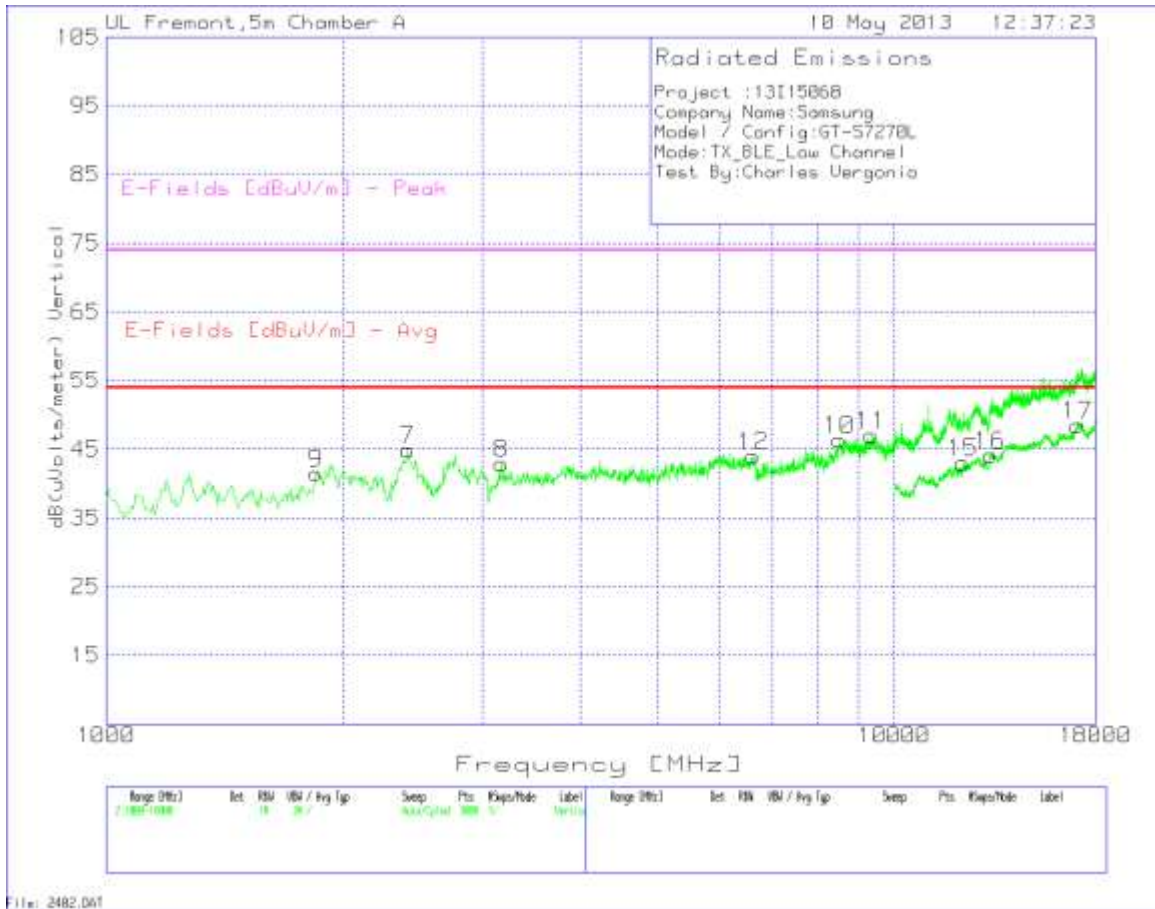
RESTRICTED BANEDGE (HIGH CHANNEL, VERTICAL)



HARMONICS AND SPURIOUS EMISSIONS



LOW CHANNEL VERTICAL



LOW CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068
 Company Name:Samsung
 Model / Config:GT-S7270L
 Mode:TX_BLE_Low Channel
 Test By:Charles Vergonio

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency [MHz]	Meter Reading [MHz]	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	1928.714	43.85	PK	31.8	-37.2	4	0.9	43.35	53.97	-10.62	74	-30.65	100	Horz
2	2444.037	43.55	PK	32.3	-36.9	4.5	0.9	44.35	53.97	-9.62	74	-29.65	100	Horz
3	2755.496	42.84	PK	32.6	-36.8	4.8	0.9	44.34	53.97	-9.63	74	-29.66	200	Horz
4	4324.117	39.77	PK	33.6	-35.9	6.3	0.2	43.97	53.97	-10	74	-30.03	100	Horz
5	7631.246	36.89	PK	35.5	-35.8	8.9	0.3	45.79	53.97	-8.18	74	-28.21	100	Horz
6	8531.646	37.58	PK	35.7	-36	9.5	0.3	47.08	53.97	-6.89	74	-26.92	200	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency [MHz]	Meter Reading [MHz]	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	2415.723	44.24	PK	32.2	-36.9	4.5	0.9	44.94	53.97	-9.03	74	-29.06	100	Vert
8	3174.55	40.29	PK	33.4	-36.6	5.2	0.6	42.89	53.97	-11.08	74	-31.11	100	Vert
9	1849.434	43.04	PK	31.1	-37.3	3.9	0.8	41.54	53.97	-12.43	74	-32.46	200	Vert
10	8525.983	36.85	PK	35.7	-36	9.5	0.3	46.35	53.97	-7.62	74	-27.65	200	Vert
11	9347.102	36.46	PK	36.3	-36.2	10	0.5	47.06	53.97	-6.91	74	-26.94	100	Vert
12	6628.914	35.54	PK	35.5	-35.6	8.2	0.3	43.94	53.97	-10.03	74	-30.06	200	Vert

Horizontal 10000 - 18000MHz

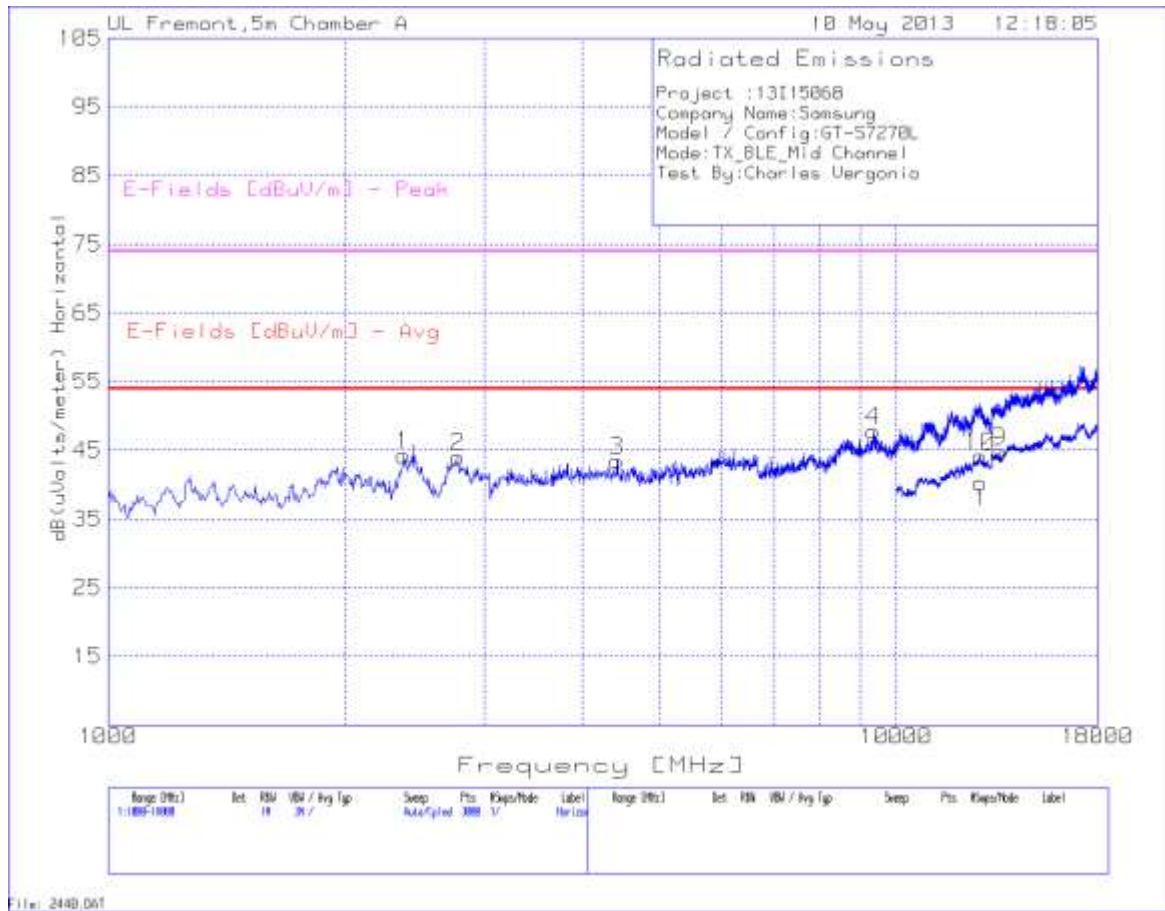
Marker No.	Test Frequency [MHz]	Meter Reading [MHz]	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin [dB]	E-Fields [dBuV/m] Peak	Margin [dB]	Height [cm]	Polarity
13	15529.235	28.14	PK	40.6	-35.1	13.2	0.4	47.24	53.97	-6.73	74	-26.76	100	Horz
14	12762.619	27.35	PK	39.1	-34.5	11.8	0.4	44.15	53.97	-9.82	74	-29.85	200	Horz

Vertical 10000 - 18000MHz

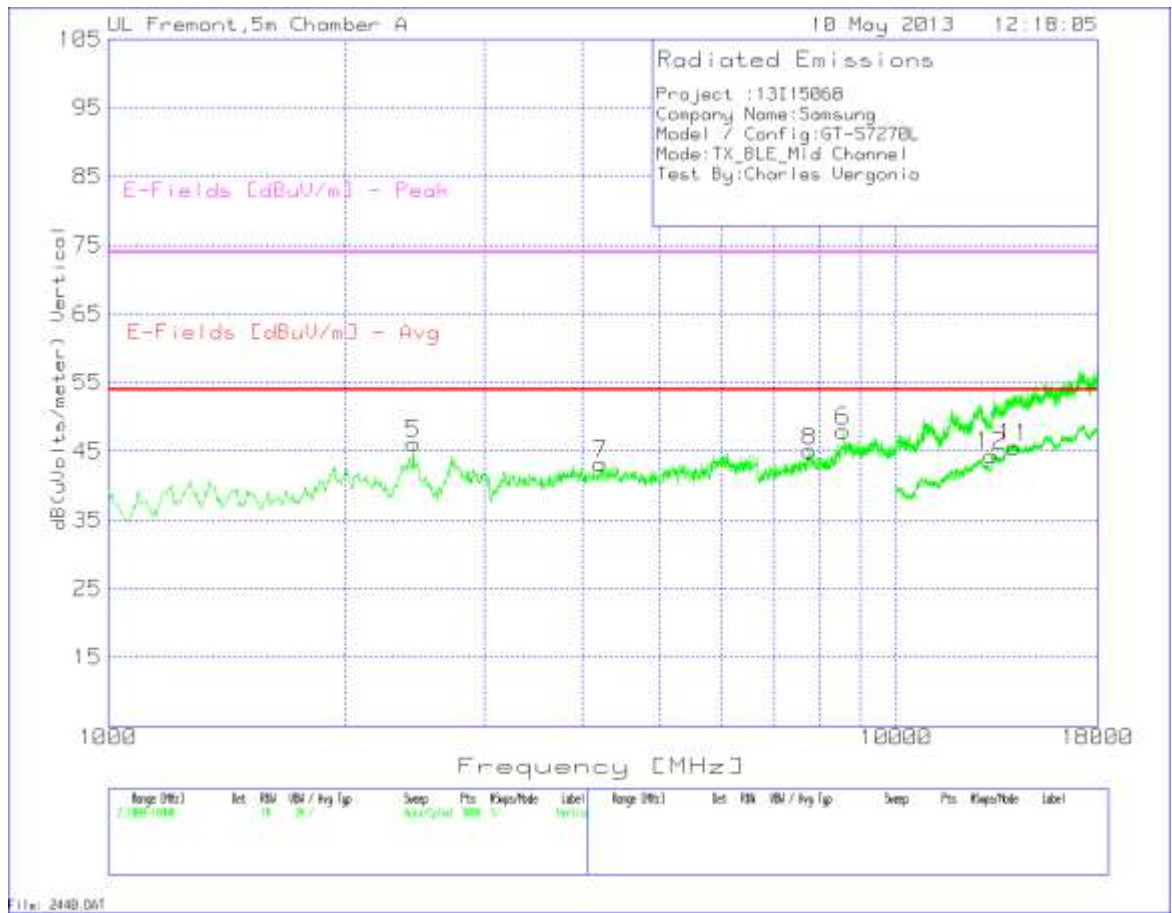
Marker No.	Test Frequency [MHz]	Meter Reading [MHz]	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin [dB]	E-Fields [dBuV/m] Peak	Margin [dB]	Height [cm]	Polarity
15	12238.881	27.08	PK	39	-35.3	11.6	0.7	43.08	53.97	-10.89	74	-30.92	200	Vert
16	13242.379	26.62	PK	39.1	-34.1	12.1	0.4	44.12	53.97	-9.85	74	-29.88	100	Vert
17	17092.454	27.42	PK	40.5	-34.2	14	0.4	48.52	53.97	-5.45	74	-25.48	200	Vert

PK - Peak detector

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



MID CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068

Company Name:Samsung

Model / Config:GT-57270L

Mode:TX_BLE_Mid Channel

Test By:Charles Vergonio

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	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	2370.42	43.87	PK	32	-36.9	4.4	0.9	44.27	53.97	-9.7	74	-29.73	100	Horz
2	2783.811	42.34	PK	32.6	-36.7	4.8	0.9	43.94	53.97	-10.03	74	-30.06	200	Horz
3	4428.881	38.93	PK	33.7	-35.8	6.4	0.2	43.43	53.97	-10.54	74	-30.57	100	Horz
4	9358.428	37.16	PK	36.4	-36.2	10	0.5	47.86	53.97	-6.11	74	-26.14	200	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	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
5	2438.374	45.31	PK	32.3	-36.9	4.5	0.9	46.11	53.97	-7.86	74	-27.89	200	Vert
6	8565.623	38.36	PK	35.7	-36	9.5	0.4	47.96	53.97	-6.01	74	-26.04	100	Vert
7	4222.185	39.04	PK	33.5	-35.9	6.3	0.3	43.24	53.97	-10.73	74	-30.76	100	Vert
8	7761.492	36.19	PK	35.5	-35.9	9	0.2	44.95	53.97	-8.98	74	-29.01	100	Vert

Horizontal 10000 - 18000MHz

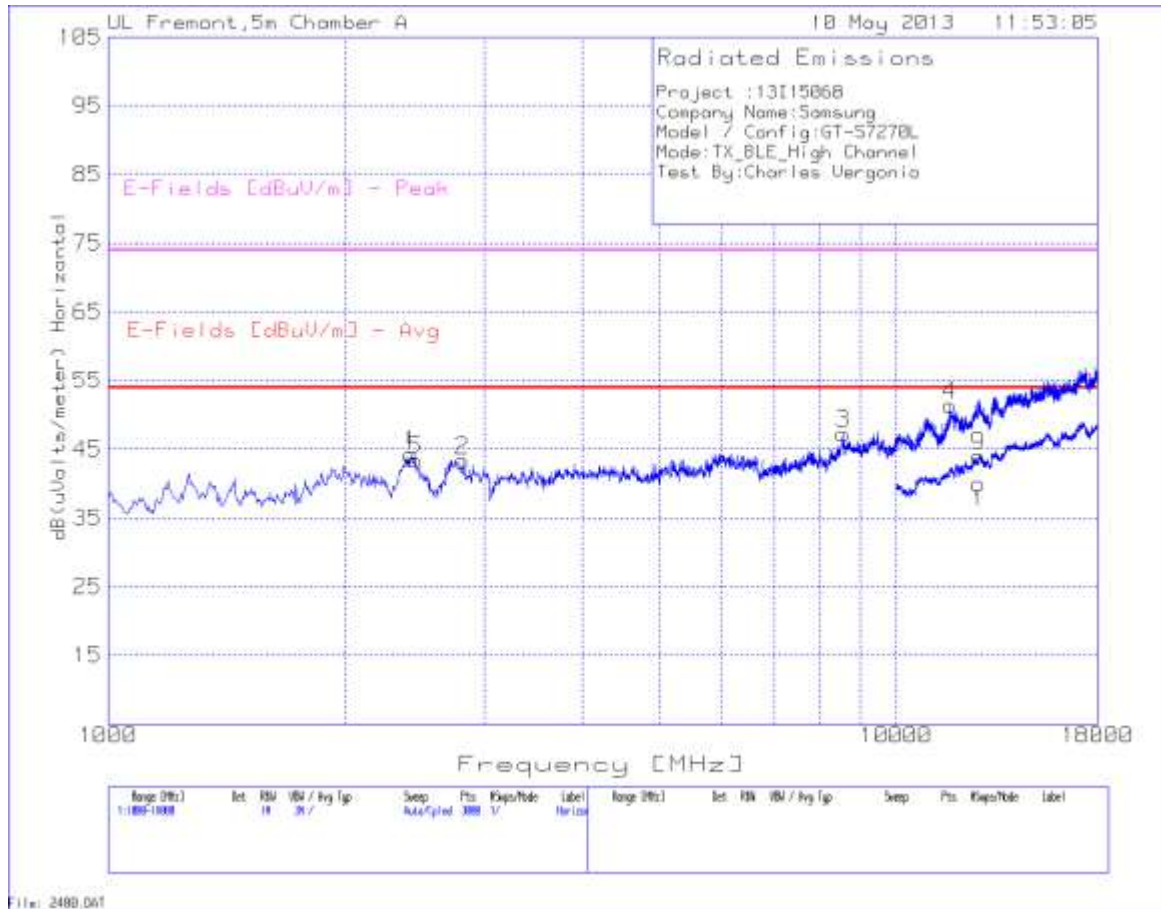
Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/ meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
9	13534.233	27.22	PK	38.9	-33.9	12.2	0.4	44.82	53.97	-9.15	74	-29.18	100	Horz
10	12802.599	27.18	PK	39.1	-34.4	11.8	0.5	44.18	53.97	-9.79	74	-29.82	200	Horz

Vertical 10000 - 18000MHz

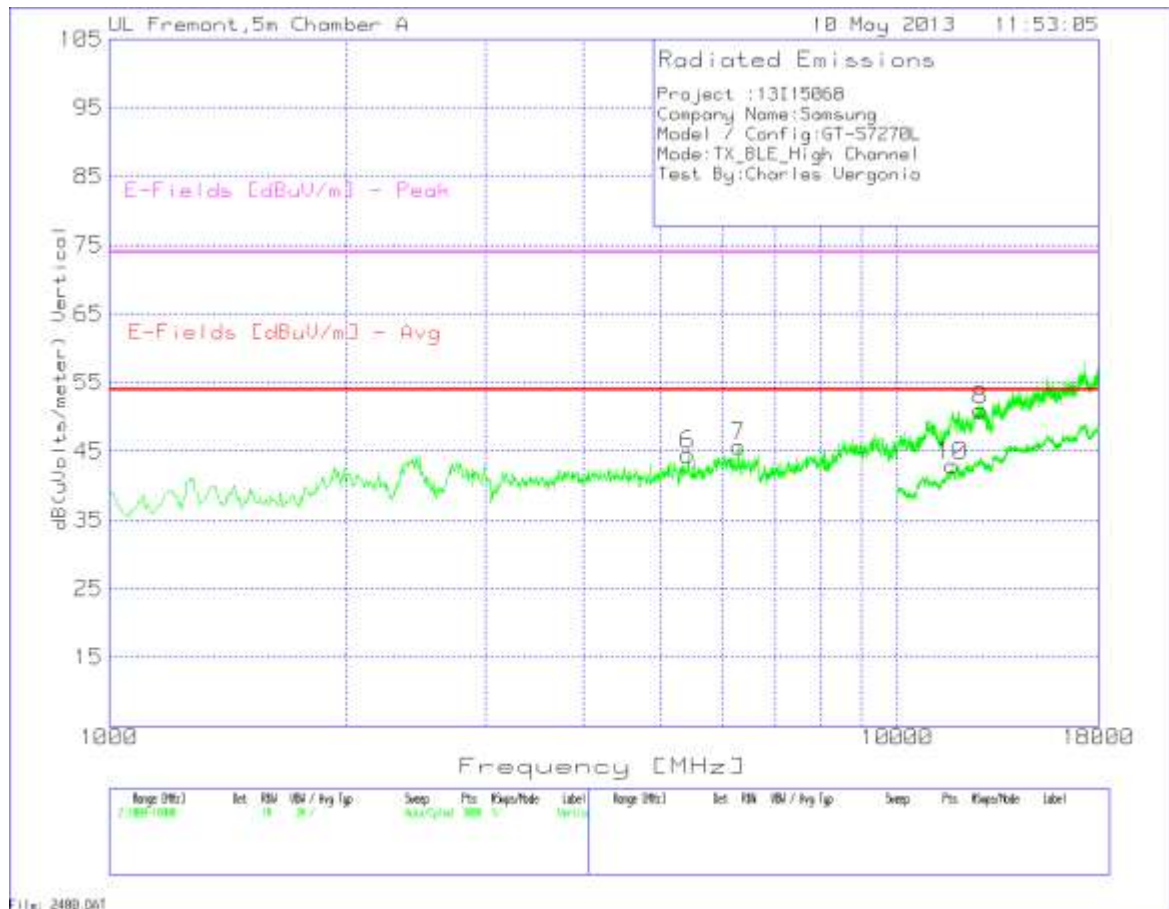
Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/ meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
11	14105.947	27.41	PK	39.2	-33.9	12.5	0.4	45.61	53.97	-8.36	74	-28.39	200	Vert
12	13218.391	26.94	PK	39.1	-34.1	12.1	0.4	44.44	53.97	-9.53	74	-29.56	200	Vert

PK - Peak detector

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



HIGH CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13115068

Company Name:Samsung

Model / Config:GT-57270L

Mode:TX_BLE_Low Channel

Test By:Charles Vergonio

Horizontal 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	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	1928.714	43.85	PK	31.8	-37.2	4	0.9	43.35	53.97	-10.62	74	-30.65	100	Horz
2	2444.037	43.55	PK	32.3	-36.9	4.5	0.9	44.35	53.97	-9.62	74	-29.65	100	Horz
3	2755.496	42.84	PK	32.6	-36.8	4.8	0.9	44.34	53.97	-9.63	74	-29.66	200	Horz
4	4324.117	39.77	PK	33.6	-35.9	6.3	0.2	43.97	53.97	-10	74	-30.03	100	Horz
5	7631.246	36.89	PK	35.5	-35.8	8.9	0.3	45.79	53.97	-8.18	74	-28.21	100	Horz
6	8531.646	37.58	PK	35.7	-36	9.5	0.3	47.08	53.97	-6.89	74	-26.92	200	Horz

Vertical 1000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	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	2415.723	44.24	PK	32.2	-36.9	4.5	0.9	44.94	53.97	-9.03	74	-29.06	100	Vert
8	3174.55	40.29	PK	33.4	-36.6	5.2	0.6	42.89	53.97	-11.08	74	-31.11	100	Vert
9	1849.434	43.04	PK	31.1	-37.3	3.9	0.8	41.54	53.97	-12.43	74	-32.46	200	Vert
10	8525.983	36.85	PK	35.7	-36	9.5	0.3	46.35	53.97	-7.62	74	-27.65	200	Vert
11	9347.102	36.46	PK	36.3	-36.2	10	0.5	47.06	53.97	-6.91	74	-26.94	100	Vert
12	6628.914	35.54	PK	35.5	-35.6	8.2	0.3	43.94	53.97	-10.03	74	-30.06	200	Vert

Horizontal 10000 - 18000MHz

Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	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
13	15529.235	28.14	PK	40.6	-35.1	13.2	0.4	47.24	53.97	-6.73	74	-26.76	100	Horz
14	12762.619	27.35	PK	39.1	-34.5	11.8	0.4	44.15	53.97	-9.82	74	-29.85	200	Horz

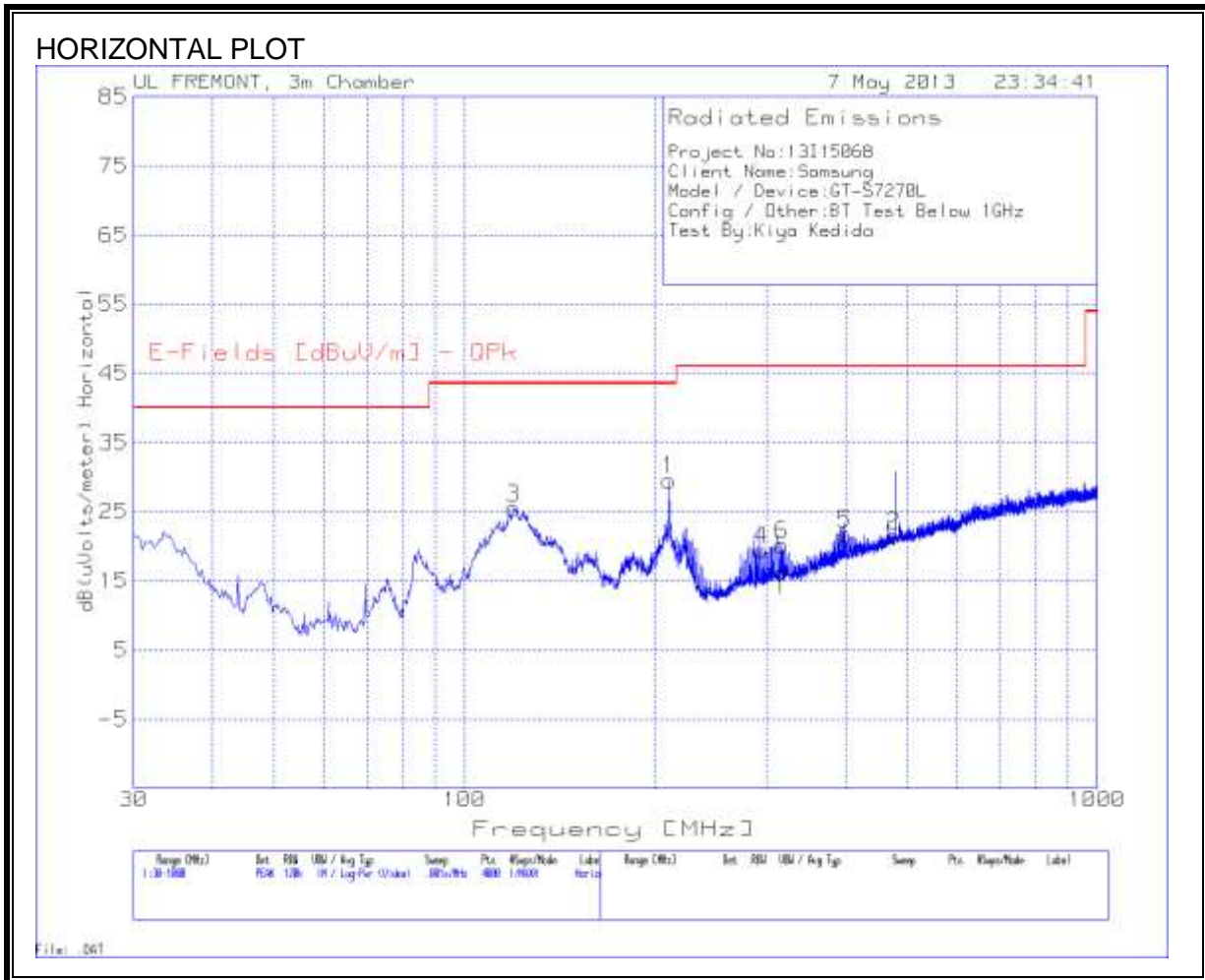
Vertical 10000 - 18000MHz

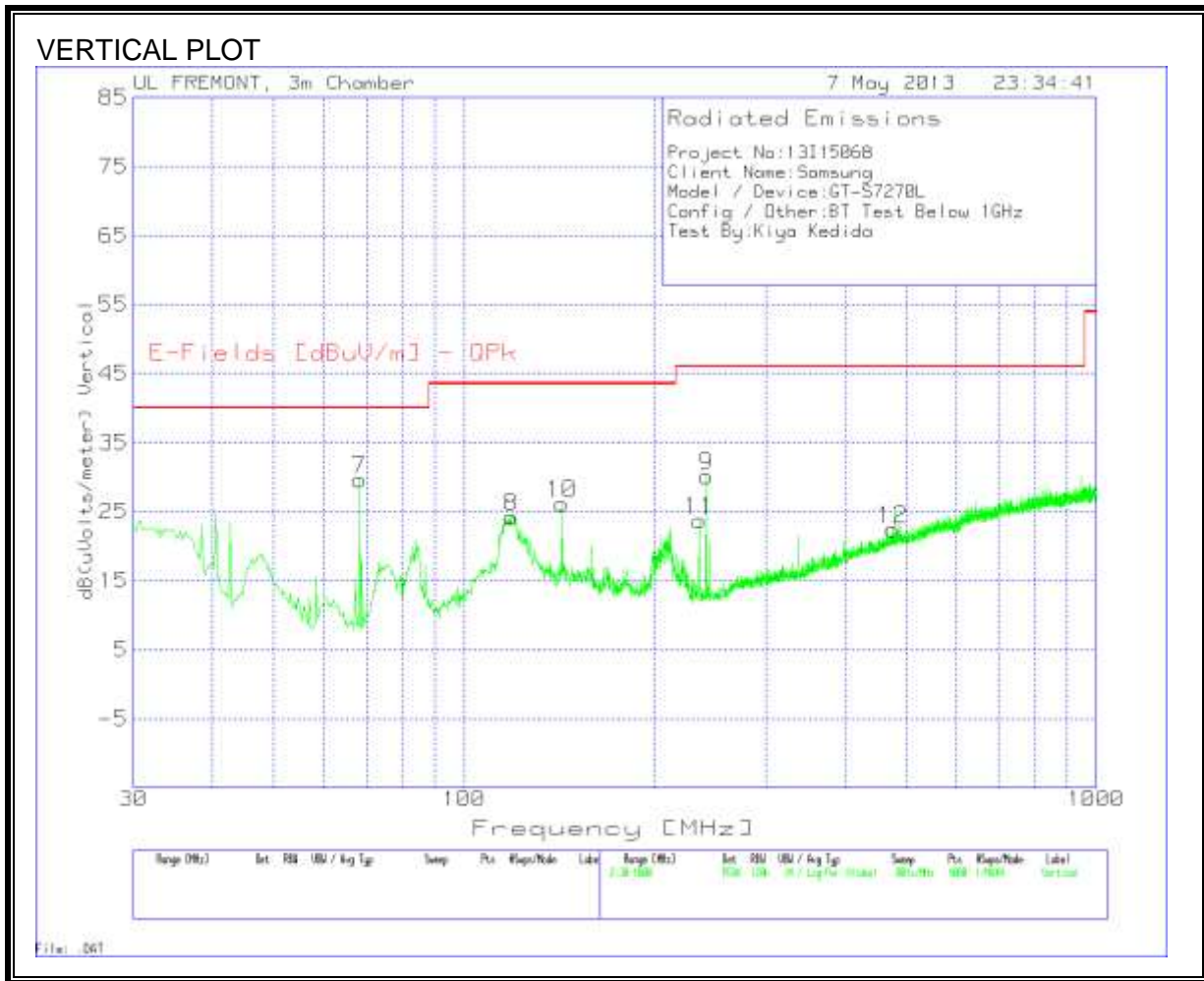
Marker No.	Test Frequency (MHz)	Meter Reading (MHz)	Detector	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
15	12238.881	27.08	PK	39	-35.3	11.6	0.7	43.08	53.97	-10.89	74	-30.92	200	Vert
16	13242.379	26.62	PK	39.1	-34.1	12.1	0.4	44.12	53.97	-9.85	74	-29.88	100	Vert
17	17092.454	27.42	PK	40.9	-34.2	14	0.4	48.52	53.97	-5.45	74	-25.48	200	Vert

PK - Peak detector

8.1. WORST-CASE BELOW 1 GHz

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





HORIZONTAL AND VERTICAL DATA

Project No: 13115068										
Client Name: Samsung										
Model / Device: GT-S7270L										
Config / Other: BT Test Below 1GHz										
Test By: Kiya Kedida										

Marker No.	Test Frequency	Meter Reading	Detector	T130 Ant Factor [dB/m]	T64 preamp/cable loss [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
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Horizontal 30 - 1000MHz

1	210.7694	45.47	PK	10.4	-26.3	29.57	43.52	-13.95	201	Horz
2	477.3195	28.63	PK	17.7	-24.8	21.53	46.02	-24.49	201	Horz
3	119.4154	38.71	PK	13.7	-26.9	25.51	43.52	-18.01	201	Horz
4	294.8539	32.03	PK	13.3	-25.9	19.43	46.02	-26.59	99	Horz
5	399.7777	31.42	PK	15.6	-25.2	21.82	46.02	-24.2	99	Horz
6	316.9048	31.99	PK	13.9	-25.7	20.19	46.02	-25.83	99	Horz

Vertical 30 - 1000MHz

Marker No.	Test Frequency	Meter Reading	Detector	T130 Ant Factor [dB/m]	T64 preamp/cable loss [dB]	dB(uV/s/meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
7	68.2863	48.85	PK	8.1	-27.3	29.65	40	-10.35	201	Vert
8	118.9308	37.44	PK	13.7	-26.9	24.24	43.52	-19.28	100	Vert
9	241.5438	44.79	PK	11.5	-26.1	30.19	46.02	-15.83	201	Vert
10	142.9203	39.86	PK	13	-26.7	26.16	43.52	-17.36	100	Vert
11	235.4859	38.17	PK	11.4	-25.8	23.77	46.02	-22.25	301	Vert
12	477.3195	29.56	PK	17.7	-24.8	22.46	46.02	-23.56	301	Vert

PK - Peak detector

QP - Quasi-Peak detector

Av - Average detector

9. 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.

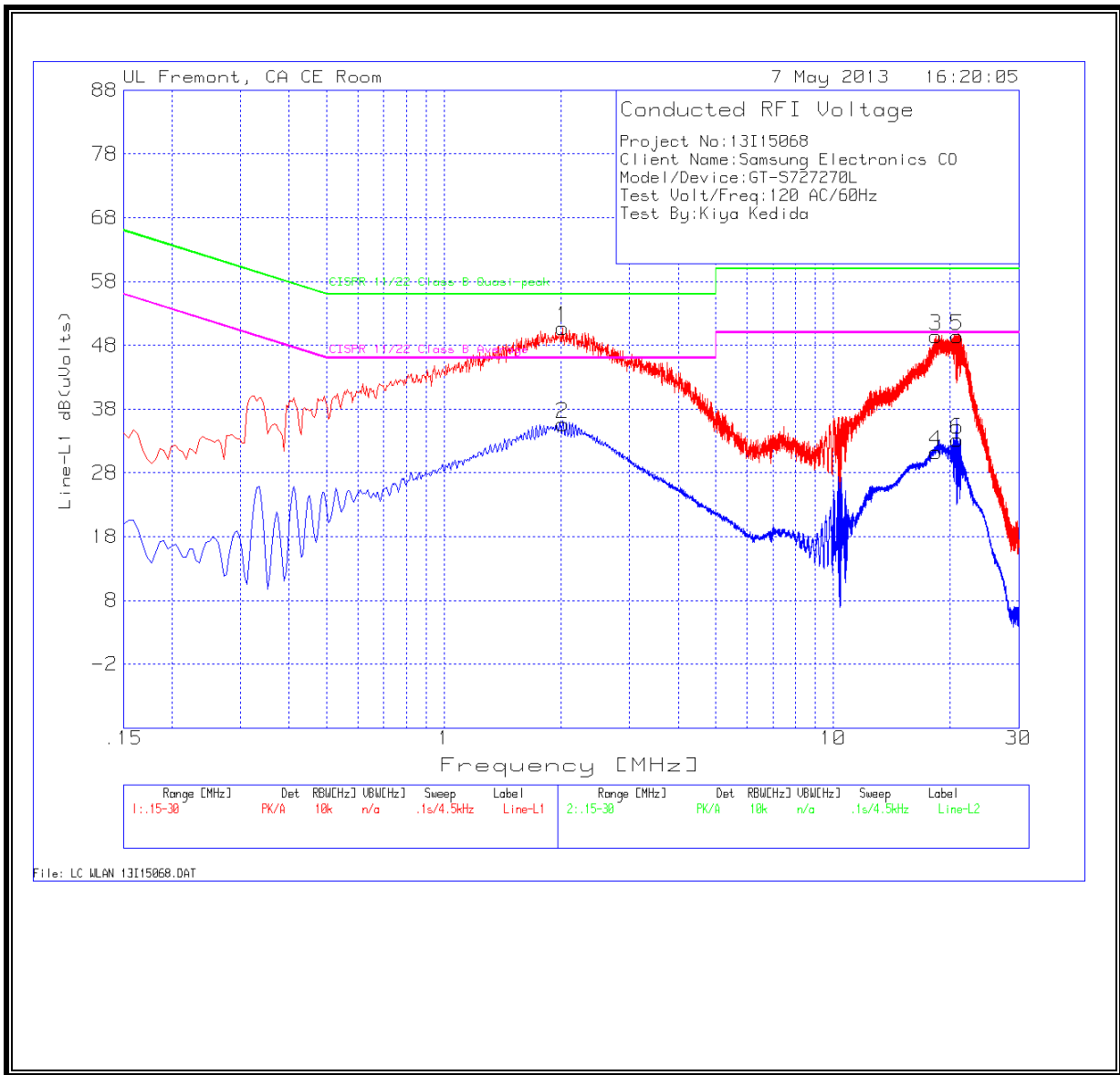
Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

6 WORST EMISSIONS

Project No:13I15068									
Client Name:Samsung									
Model/Device:GT-S7270L									
Test Volt/Freq:120V/60Hz									
Test By:Kiya Kedida									
Test Frequency	Meter Reading	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
Line-L1 .15 - 30MHz									
1.923	48.53	PK	0.1	0.1	48.73	56	-7.27	-	-
1.923	33.81	Av	0.1	0.1	34.01	-	-	46	-11.99
18.4425	49.25	PK	0.2	0.2	49.65	60	-10.35	-	-
18.4425	32.56	Av	0.2	0.2	32.96	-	-	50	-17.04
21.066	50.12	PK	0.3	0.2	50.62	60	-9.38	-	-
21.066	32.29	Av	0.3	0.2	32.79	-	-	50	-17.21
Line-L2 .15 - 30MHz									
Test Frequency	Meter Reading	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
1.905	46.64	PK	0.1	0.1	46.84	56	-9.16	-	-
1.905	28.94	Av	0.1	0.1	29.14	-	-	46	-16.86
2.2425	46.33	PK	0.1	0.1	46.53	56	-9.47	-	-
2.2425	28.27	Av	0.1	0.1	28.47	-	-	46	-17.53
2.751	44.58	PK	0.1	0.1	44.78	56	-11.22	-	-
2.751	26.03	Av	0.1	0.1	26.23	-	-	46	-19.77
PK - Peak detector									
QP - Quasi-Peak detector									
Av - Average detector									

LINE 1 RESULTS



LINE 2 RESULTS

