



**FCC CFR47 PART 15 SUBPART B
VERIFICATION TEST REPORT**

FOR

850/1900 GSM/GPRS, EDGE Rx only Phone with Bluetooth and WLAN Transceiver.

MODEL NUMBER: GT-C6712

REPORT NUMBER: 11I13692-4

ISSUE DATE: FEBRUARY 23, 2011

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

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	02/28/2011	Initial Issue	T. Chan

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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: 850/1900 GSM/GPRS, EDGE RX ONLY PHONE WITH
BLUETOOTH AND WLAN TRANSCEIVER

MODEL: GT-C6712

SERIAL NUMBER: F1 032 A (Radiated Unit)

DATE TESTED: FEBRUARY 22-23. 2011

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART B	Pass

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

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

Approved & Released For UL CCS By:

Tested By:



THU CHAN
ENGINEERING MANAGER
UL CCS



CHIN PANG
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2009.

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:

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

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 an 850/1900 GSM/GPRS, EDGE Rx only Phone with Bluetooth and WLAN transceiver.

The radio module is manufactured by Samsung.

5.2. GENERAL INFORMATION

Power Requirements	100-240 VAC / 50-60 Hz
List of frequencies generated or used by the EUT	26MHz

5.3. MODE(s) OF OPERATION

Mode	Description
Charging Mode	EUT with AC Adapter and Earphone
Normal	EUT with Laptop, Printer, USB Mouse and earphone

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed in the host support equipment during testing was C6712.02, rev 0.1.

5.5. MODIFICATIONS

No modifications were made during testing.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Dell	PP18L	36778905757	DoC
AC Adpter	Dell	PA-12	CN-0DF263-71615-66C-2F83	DoC
Mouse	Dell	M-UK-DEL3	OYH958	DoC
Earphone	Samsung	NA	NA	NA

I/O CABLES (EUT with AC Adapter)

I/O CABLE LIST						
Cable No.	Port	# of Identica Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2m	NA
2	DC	1	DC	Un-shielded	2m	NA
3	Jack	1	Earphone	Un-shielded	1.8m	NA

I/O CABLES (EUT with Support Equipment)

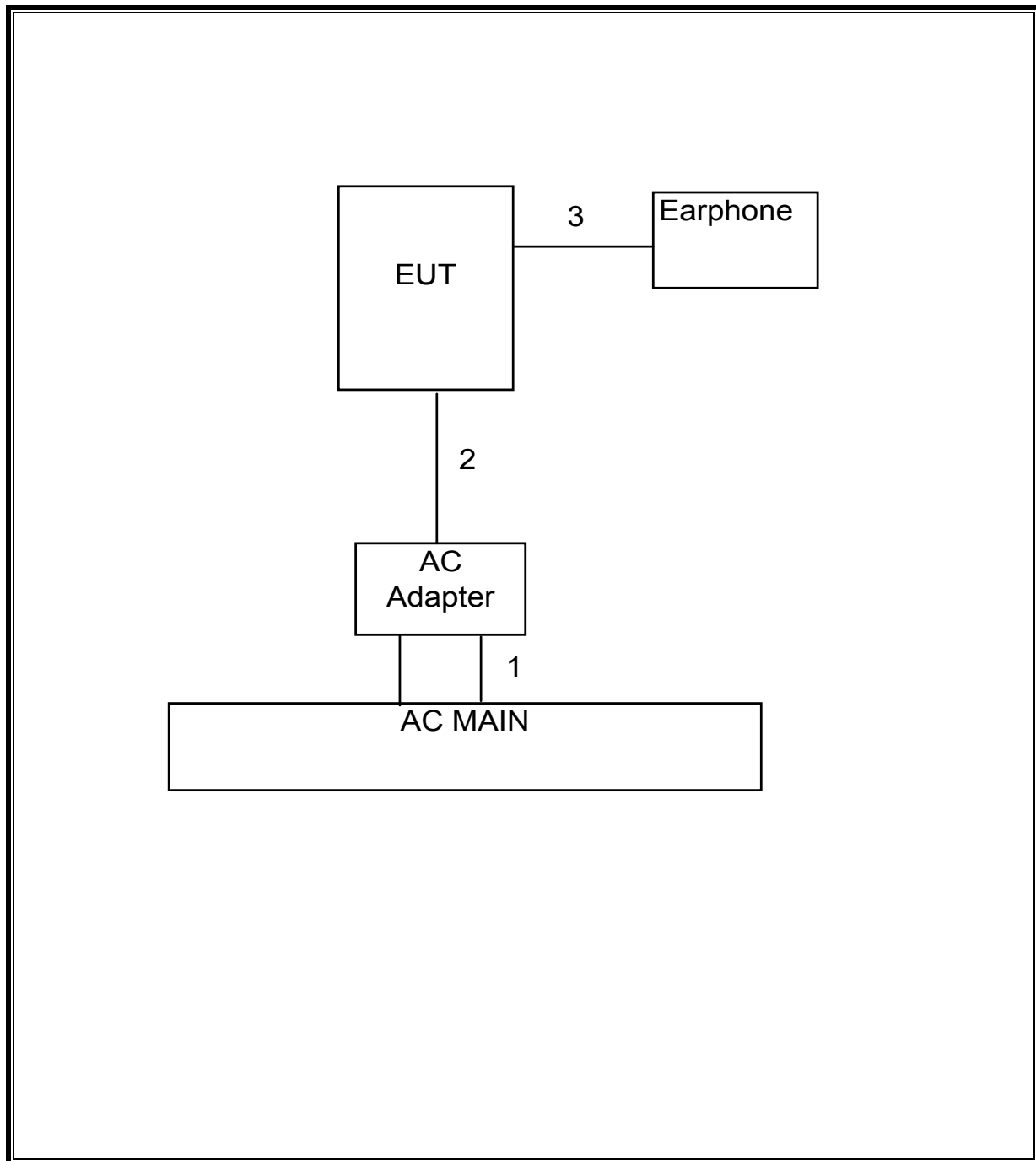
I/O CABLE LIST						
Cable No.	Port	# of Identica Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	2	US 115V	Un-shielded	2m	NA
2	DC	1	DC	Un-shielded	2m	NA
3	USB	1	Mobile phone	Un-shielded	0.8m	NA
4	Jack	1	Earphone	Un-shielded	2m	NA
5	USB	1	Mouse	Un-shielded	2m	NA
6	USB	1	Printer	Un-shielded	2m	NA

TEST SETUP

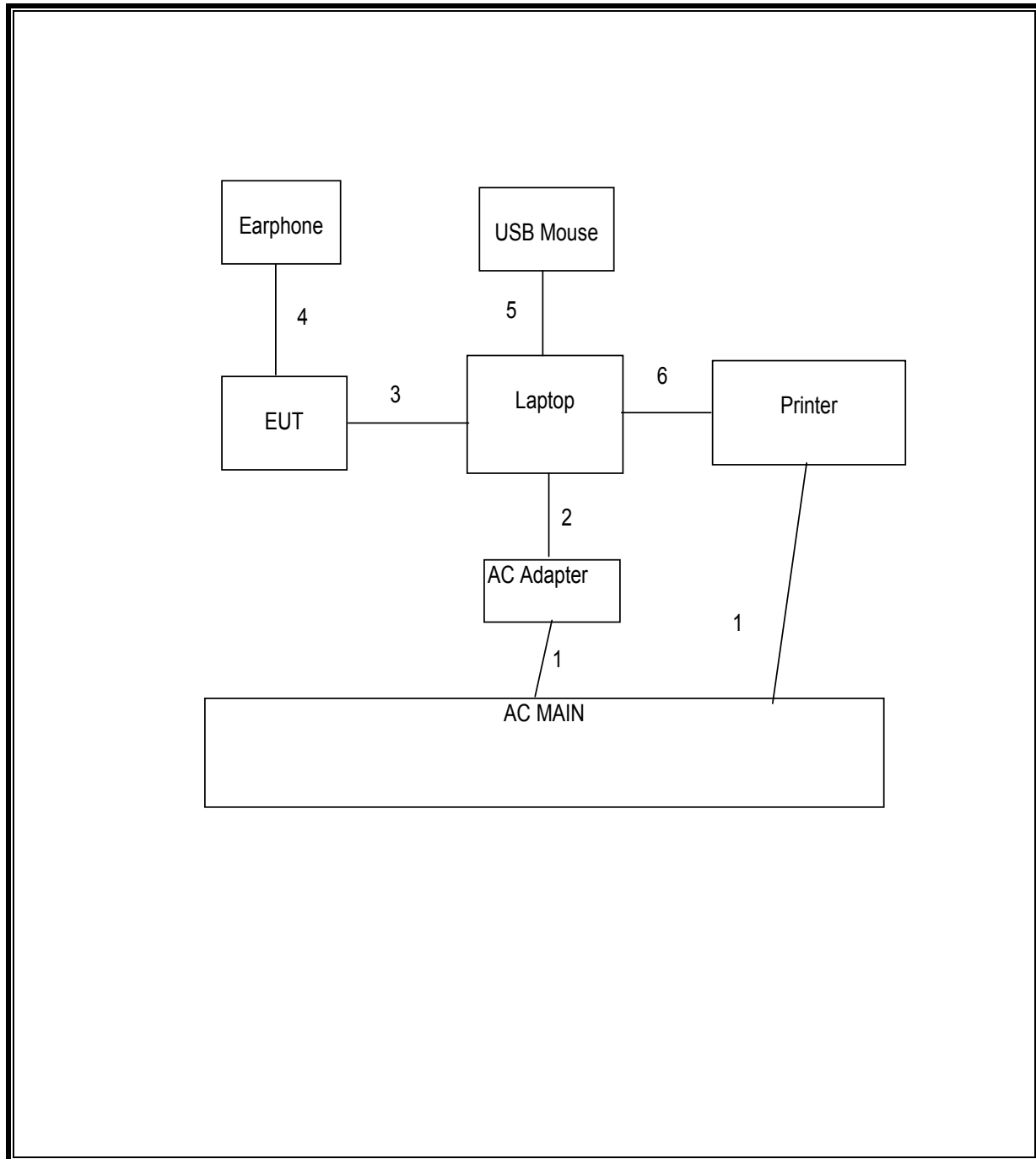
The EUT is a stand alone device.

SETUP DIAGRAM FOR TESTS

EUT WITH AC ADAPTER



EUT WITH SUPPORT EQUIPMENT



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
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11-10-11
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	05-06-11
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07-12-11
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06-29-11
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01-27-12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07-14-11
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08-30-11

7. RADIATED EMISSION TEST RESULTS

7.1. LIMITS AND PROCEDURE

TEST PROCEDURE

ANSI C63.4

The highest clock frequency generated or used in the EUT is 26MHz, therefore the frequency range was investigated from 30 MHz to 1 GHz.

LIMIT

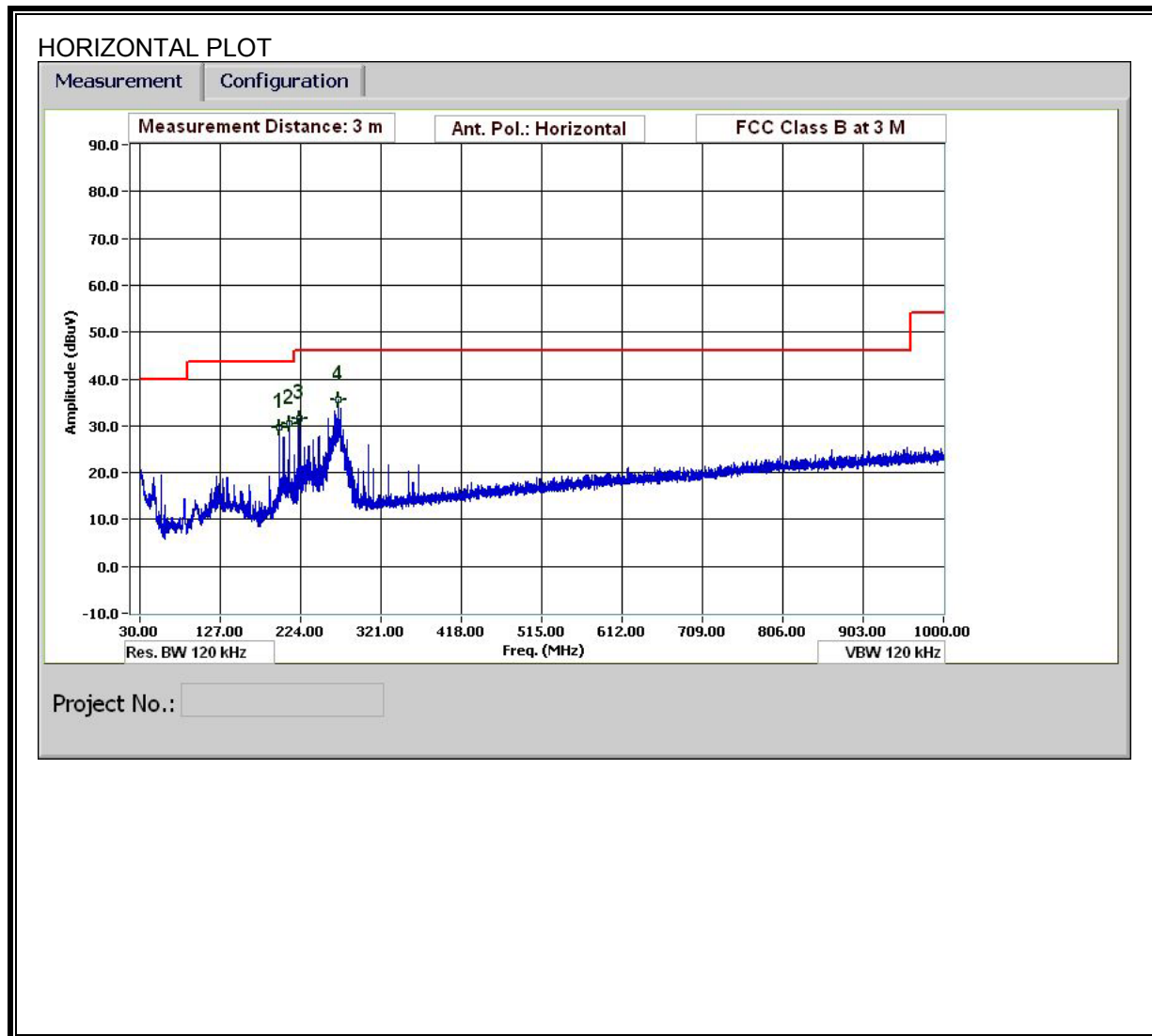
§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54
Note: The lower limit shall apply at the transition frequency.	

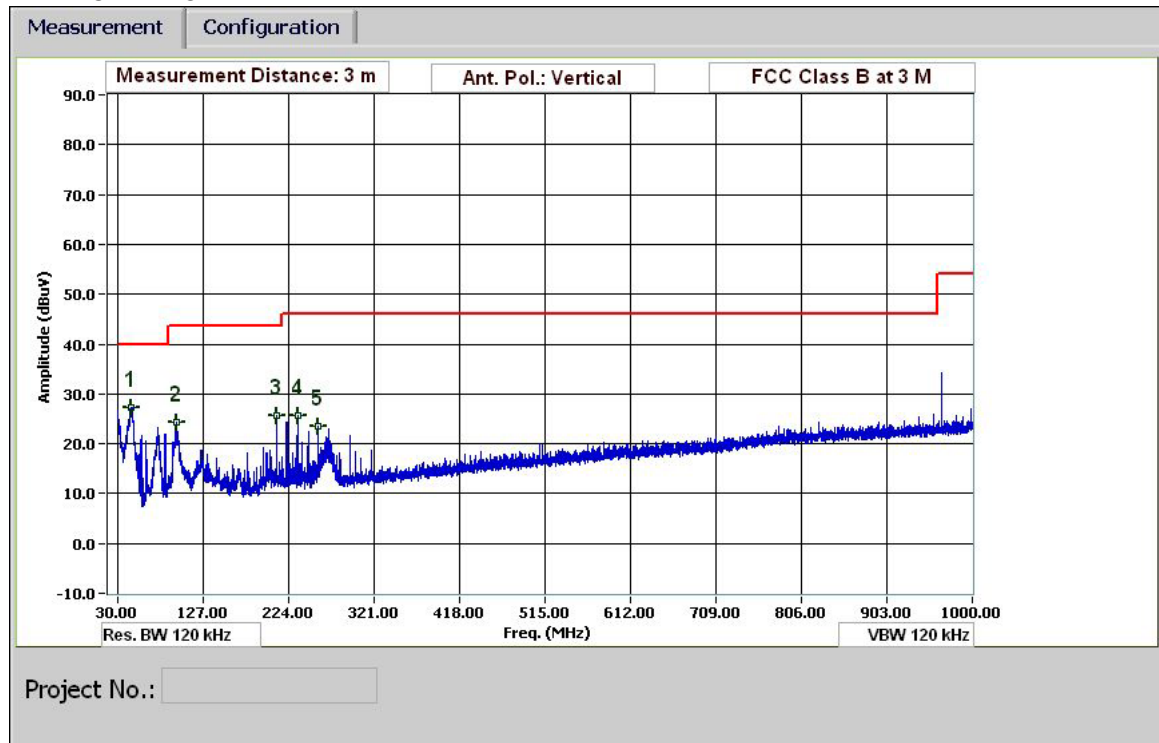
RESULTS

7.2. TX SPURIOUS EMISSION 30 TO 1000 MHz

EUT WITH AC ADAPTER



VERTICAL PLOT



DATA

30-1000MHz Frequency Measurement

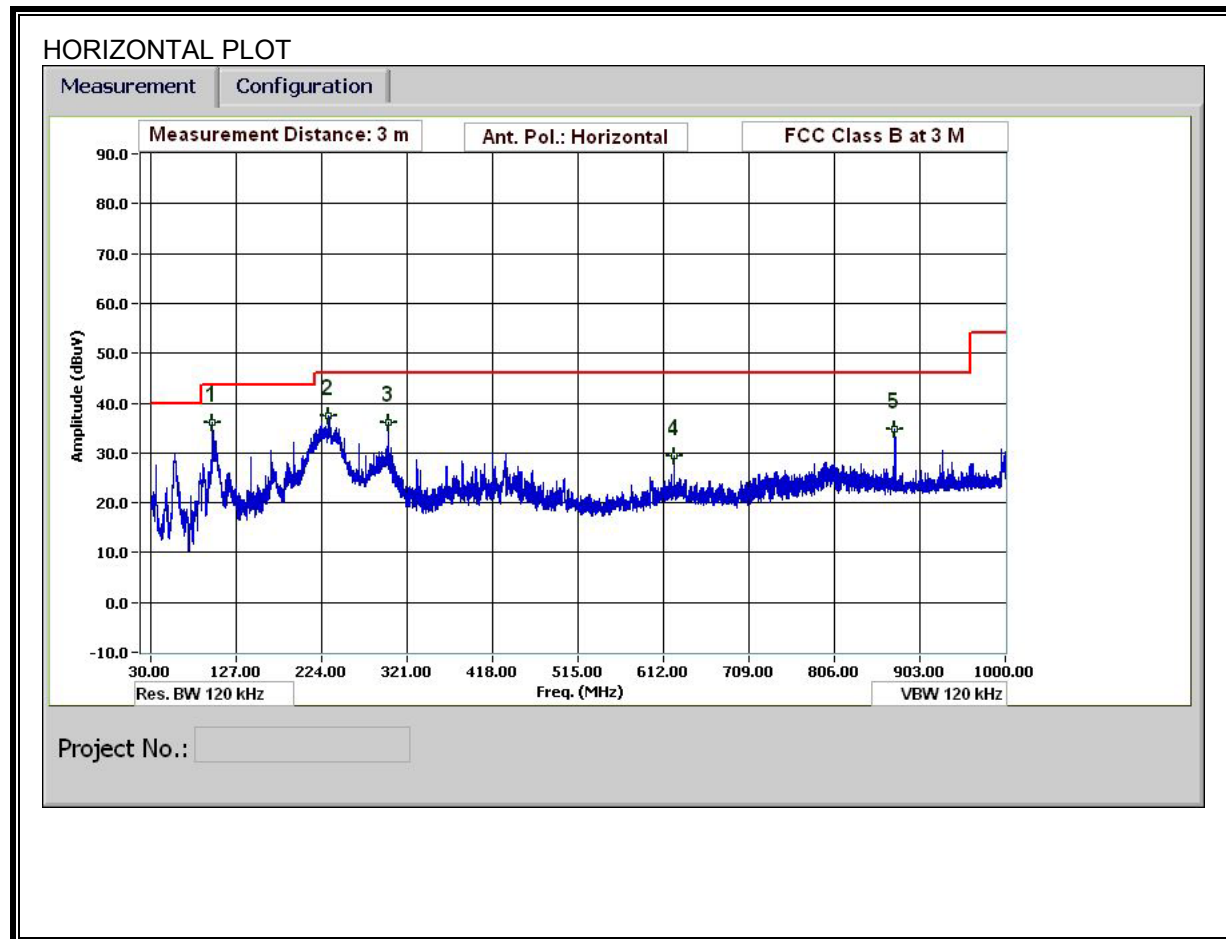
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Chin Pang
Date: 02-23-11
Project #: 11I13692
Company: Samsung
Configuration: EUT with AC Adapter and earphone
Test Target: FCC 15B
Mode Oper: Charging mode

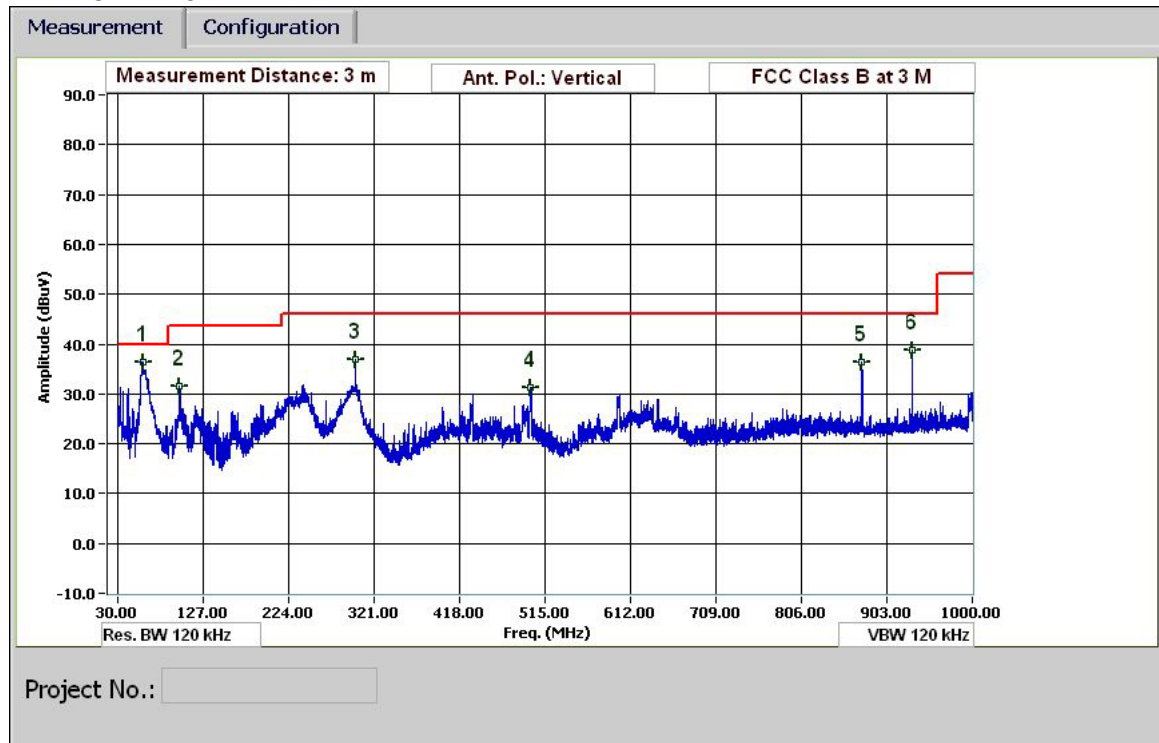
f Measurement Frequency Amp Preamp Gain Margin Margin vs. Limit
Dist Distance to Antenna D Corr Distance Correct to 3 meters
Read Analyzer Reading Filter Filter Insert Loss
AF Antenna Factor Corr. Calculated Field Strength
CL Cable Loss Limit Field Strength Limit

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Pad dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
horiz													
197.887	3.0	45.4	11.8	1.3	28.9	0.0	0.0	29.6	43.5	-13.9	H	P	
210.247	3.0	46.2	12.0	1.3	28.9	0.0	0.0	30.6	43.5	-12.9	H	P	
221.768	3.0	47.2	11.9	1.4	28.9	0.0	0.0	31.6	46.0	-14.4	H	P	
270.13	3.0	50.4	12.4	1.5	28.8	0.0	0.0	35.5	46.0	-10.5	H	P	
45.001	3.0	45.3	11.1	0.6	29.6	0.0	0.0	27.3	40.0	-12.7	V	P	
97.083	3.0	43.7	9.3	0.9	29.5	0.0	0.0	24.4	43.5	-19.1	V	P	
210.127	3.0	41.1	12.0	1.3	28.9	0.0	0.0	25.5	43.5	-18.0	V	P	
234.008	3.0	41.4	11.9	1.4	28.8	0.0	0.0	25.8	46.0	-20.2	V	P	
257.769	3.0	38.7	12.0	1.5	28.8	0.0	0.0	23.4	46.0	-22.6	V	P	

EUT WITH SUPPORT EQUIPMENT



VERTICAL PLOT



DATA

30-1000MHz Frequency Measurement

Compliance Certification Services, Fremont 5m Chamber

Test Engr: Chin Pang
Date: 02-23-11
Project #: 11I13692
Company: Samsung
Test Target: FCC 15B
Mode Oper: Normal

f Measurement Frequency Amp Preamp Gain Margin Margin vs. Limit
Dist Distance to Antenna D Corr Distance Correct to 3 meters
Read Analyzer Reading Filter Filter Insert Loss
AF Antenna Factor Corr. Calculated Field Strength
CL Cable Loss Limit Field Strength Limit

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Pad dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
58.441	3.0	57.6	7.9	0.7	29.6	0.0	0.0	36.5	40.0	-3.5	V	P	
100.323	3.0	49.9	10.1	0.9	29.5	0.0	0.0	31.4	43.5	-12.1	V	P	
299.411	3.0	50.8	13.3	1.6	28.8	0.0	0.0	36.9	46.0	-9.1	V	P	
497.779	3.0	42.0	16.8	2.1	29.7	0.0	0.0	31.2	46.0	-14.8	V	P	
874.955	3.0	40.9	21.4	3.0	28.7	0.0	0.0	36.5	46.0	-9.5	V	P	
932.197	3.0	42.4	21.9	3.1	28.5	0.0	0.0	38.9	46.0	-7.1	V	P	
100.443	3.0	54.6	10.2	0.9	29.5	0.0	0.0	36.1	43.5	-7.4	H	P	
232.328	3.0	53.0	11.9	1.4	28.8	0.0	0.0	37.4	46.0	-8.6	H	P	
299.291	3.0	50.0	13.3	1.6	28.8	0.0	0.0	36.1	46.0	-9.9	H	P	
624.024	3.0	38.1	18.5	2.4	29.6	0.0	0.0	29.4	46.0	-16.6	H	P	
874.955	3.0	39.2	21.4	3.0	28.7	0.0	0.0	34.8	46.0	-11.2	H	P	

8. AC MAINS LINE CONDUCTED EMISSIONS

LIMITS

§15.207 (a)
IC RSS-GEN, Section 7.2.2

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50
* Decreases with the logarithm of the frequency.		

TEST PROCEDURE

ANSI C63.4

RESULTS

No non-compliance noted:

6 WORST EMISSIONS

Charging Mode

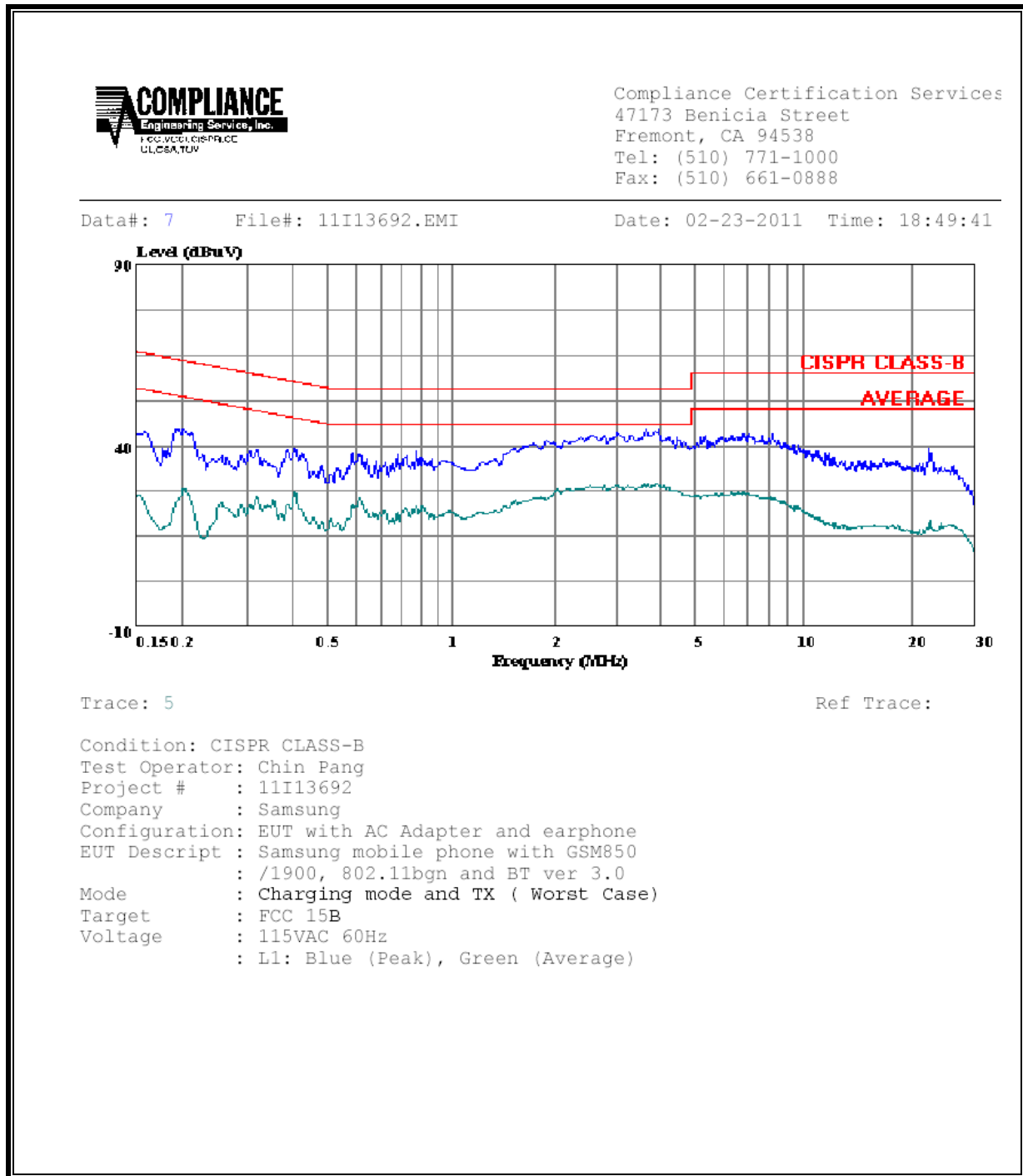
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.20	44.72	--	28.07	0.00	63.45	53.45	-18.73	-25.38	L1
0.41	38.85	--	27.10	0.00	57.73	47.73	-18.88	-20.63	L1
4.01	44.41	--	29.49	0.00	56.00	46.00	-11.59	-16.51	L1
0.20	42.27	--	23.76	0.00	63.45	53.45	-21.18	-29.69	L2
0.41	38.74	--	18.26	0.00	57.73	47.73	-18.99	-29.47	L2
3.80	40.85	--	23.80	0.00	56.00	46.00	-15.15	-22.20	L2
6 Worst Data									

Normal mode

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.17	52.26	--	44.10	0.00	65.06	55.06	-12.80	-10.96	L1
0.22	48.00	--	41.10	0.00	62.71	52.71	-14.71	-11.61	L1
3.94	40.26	--	26.64	0.00	56.00	46.00	-15.74	-19.36	L1
0.17	54.53	--	45.35	0.00	65.06	55.06	-10.53	-9.71	L2
0.22	46.96	--	40.67	0.00	62.71	52.71	-15.75	-12.04	L2
3.94	41.87	--	28.41	0.00	56.00	46.00	-14.13	-17.59	L2
6 Worst Data									

EUT with AC Adapter (Charging mode)

LINE 1 RESULTS



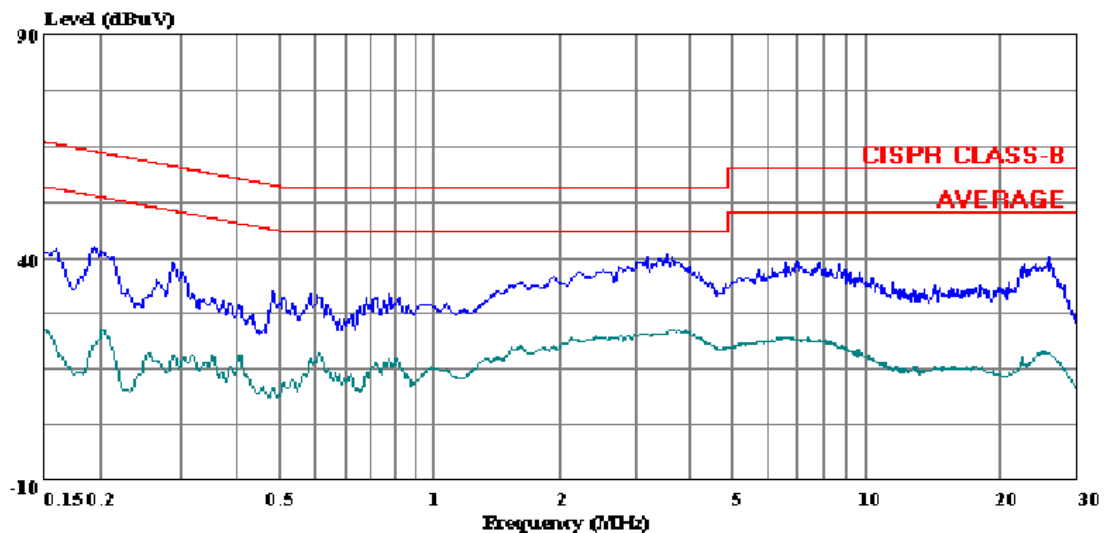
LINE 2 RESULTS



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 14 File#: 11I13692.EMI

Date: 02-23-2011 Time: 18:55:29



Trace: 12

Ref Trace:

Condition: CISPR CLASS-B
Test Operator: Chin Pang
Project # : 11I13692
Company : Samsung
Configuration: EUT with AC Adapter and earphone
EUT Descript : Samsung mobile phone with GSM850
: /1900, 802.11bgn and BT ver 3.0
Mode : Charging mode and TX (worst Case)
Target : FCC 15B
Voltage : 115VAC 60Hz
: L2: Blue (Peak), Green (Average)

EUT with Support Equipment

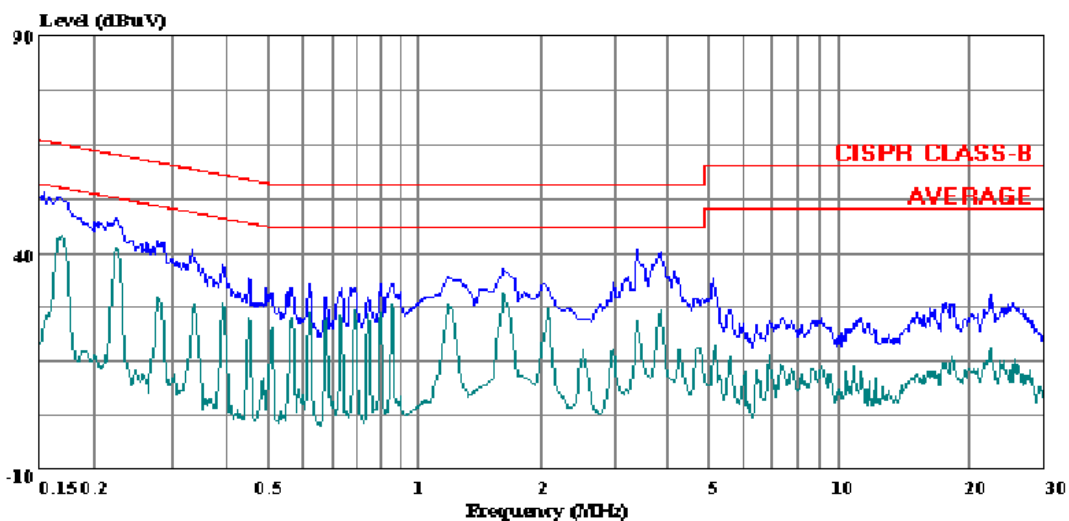
LINE 1 RESULTS



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Fremont, CA 94538
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Data#: 21 File#: 11I13692.EMI

Date: 02-23-2011 Time: 19:14:23



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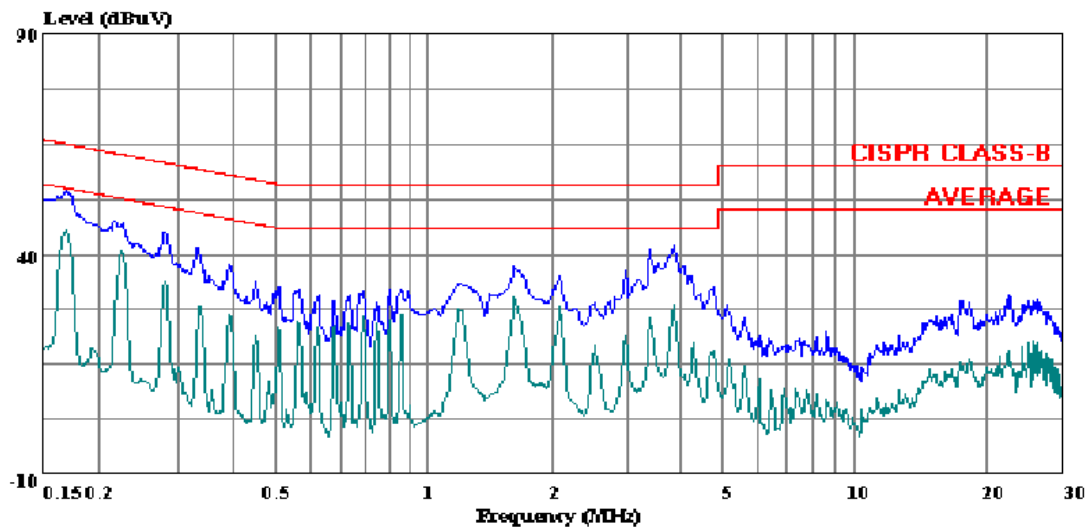
Condition: CISPR CLASS-B
Test Operator: Chin Pang
Project # : 11I13692
Company : Samsung
Configuration: EUT with Support Equipment
EUT Descript : Samsung mobile phone with GSM850
 : /1900, 802.11bgn and BT ver 3.0
Mode : Charging
Target : FCC 15B
Voltage : 115VAC 60Hz
 : L1: Blue (Peak), Green (Average)

LINE 2 RESULTS



Compliance Certification Service:
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 28 File#: 11I13692.EMI Date: 02-23-2011 Time: 19:20:18



Trace: 26

Ref Trace:

Condition: CISPR CLASS-B
Test Operator: Chin Pang
Project # : 11I13692
Company : Samsung
Configuration: EUT with Support Equipment
EUT Descript : Samsung mobile phone with GSM850
: /1900, 802.11bgn and BT ver 3.0
Mode : Charging
Target : FCC 15B
Voltage : 115VAC 60Hz
: L2: Blue (Peak), Green (Average)