FCC 47 CFR PART 15 SUBPART B

CERTIFICATION TEST REPORT

FOR

7 INCH TABLET PC GSM/GPRS1900 + 802.11bgn + BT3.0+HS

MODEL NUMBER: GT-P3108

FCC ID: A3LGTP3108

REPORT NUMBER: 12I14352-4

ISSUE DATE: APRIL 25, 2012

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

Prepared by
COMPLIANCE CERTIFICATION SERVICES (UL CCS)
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
	04-25-12	Initial	T. LEE

TABLE OF CONTENTS

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:	7 INCH TABLET PC GSM/GPRS1900 + 802.11bgn + BT3.0+HS
MODEL:	GT-P3108
SERIAL NUMBER:	02004
DATE TESTED:	APRIL 21-25, 2012

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 CCS By:

TIM LEE
STAFF ENGINEER
UL CCS

Tested By:

CHIN PANG
EMC TECHNICIAN
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003.

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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

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 7 Inch tablet PC GSM/GPRS1900 + 802.11bgn + BT3.0+HS.

GENERAL INFORMATION

Power Requirements, AC adapter	Input: 100-240 V / 50-60 Hz, 0.35 A Output: 5 V, 2 A
Maximum frequency generated or used by the EUT	26 MHz (oscillator), 1.2 GHz (processor)

5.2. EUT SUBASSEMBLIES

Description	Model Number	Serial Number
Tablet PC	GT-P3108	02004
AC Adapter (illustrated as AC Adapter 1 in setup diagram)	ETA-P11XBE	03046

5.3. PRELIMINARY TEST CONFIGURATIONS

The following configurations were investigated during preliminary testing:

EUT Configuration	Description
Configuration 1	The EUT standalone, configured with a headset.
Configuration 2	The EUT was connected to the AC mains with an AC adapter and configured with a headset.
Configuration 3	The EUT, configured with a headset, was connected to a USB port of a notebook PC with a minimum set of peripherals.

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5.4. MODE(S) OF OPERATION

Mode	Description
Active	The EUT played Music.
Charge Mode	The batteries of the EUT were being charged while in Configuration 2.
USB Mode	While in Configuration 3 the EUT playing music while charging from the laptop.

5.5. MODIFICATIONS

No modifications were made during testing.

5.6. DETAILS OF TESTED SYSTEM

SUPPORT EQUIPMENT & PERIPHERALS

CONFIGURATIONS 1 and 2

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Headset	Samsung	EHS64AVFWE	N/A	N/A

CONFIGURATION 3

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Notebook PC	Lenovo	Type 2537-C84	R8-1EHNE	DoC
AC Adapter	Lenovo	42T4418	11S42T4430ZGW	DoC
USB Printer	HP	7850	MY56K1304B	DoC
AC Adapter	HP	0957-2084	571480654	DoC
USB Mouse	Ativa	7890-104	M0170513	DoC
Headset	Samsung	EHS64AVFWE	N/A	N/A

I/O CABLES

CONFIGURATION 1

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	Audio	1	Mini-Jack	Unshielded	1.2 m	Volume control attached

CONFIGURATION 2

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC Power	1	USB	Shielded	1.0 m	NA
2	Audio	1	Mini-Jack	Unshielded	1.2 m	NA

CONFIGURATION 3

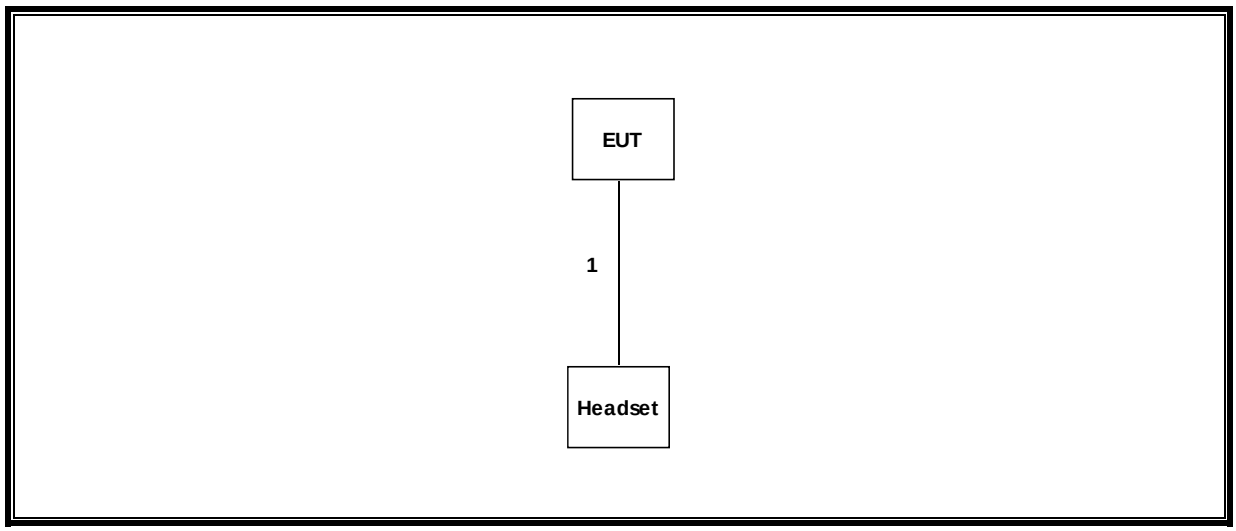
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC Power	1	2-Prong	Unshielded	1.0 m	NA
2	AC Power	1	2-Prong	Unshielded	2.0 m	NA
3	DC Power	1	Mini-Jack	Unshielded	1.5m	Ferrite at Laptop end
4	DC Power	1	Bananna	Unshielded	2.0 m	NA
5	USB	1	USB-A	Shielded	2.0 m	NA
6	USB	1	USB	Shielded	1.0 m	NA
7	Audio	1	Mini-Jack	Unshielded	1.2m	NA
8	USB	1	USB-A	Shielded	1,5m	NA

TEST SETUP

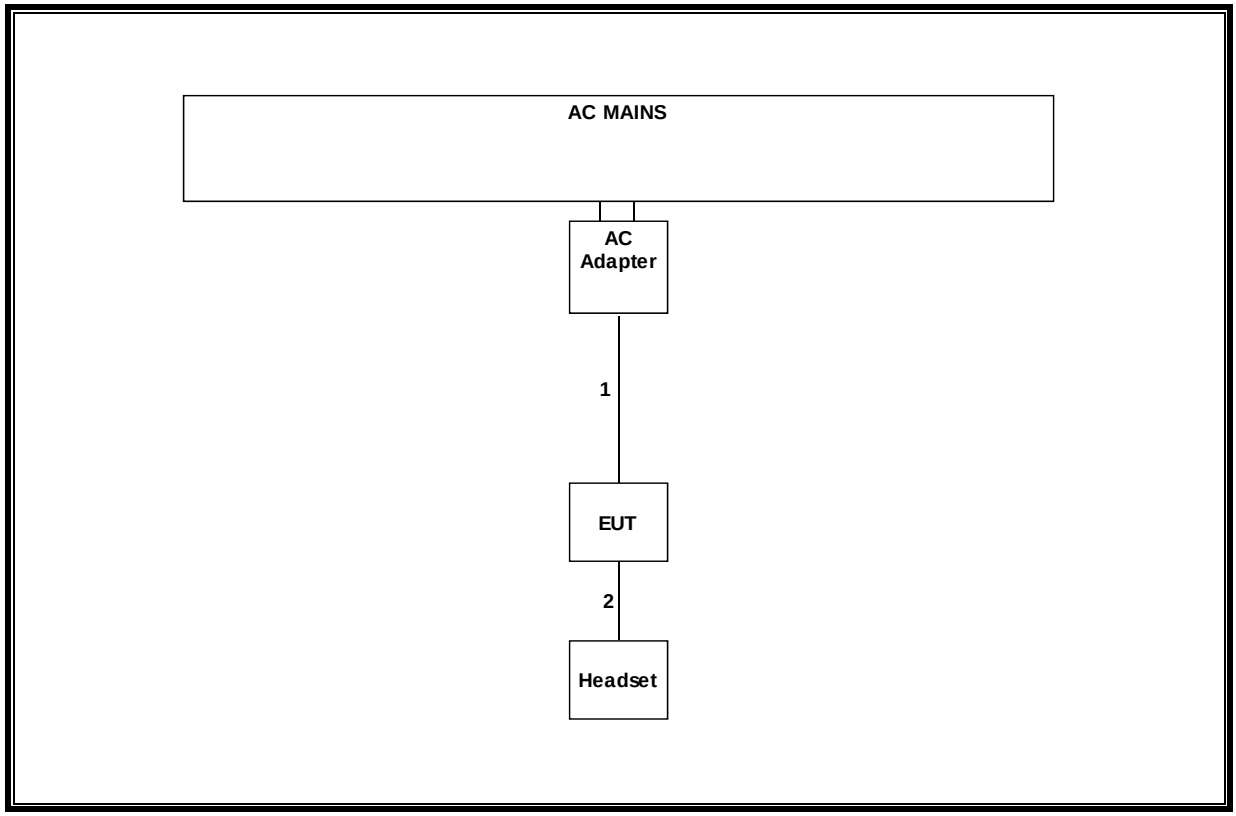
The EUT was installed in a typical configuration per the following diagrams. Test software exercised the EUT.

TEST SETUP DIAGRAM

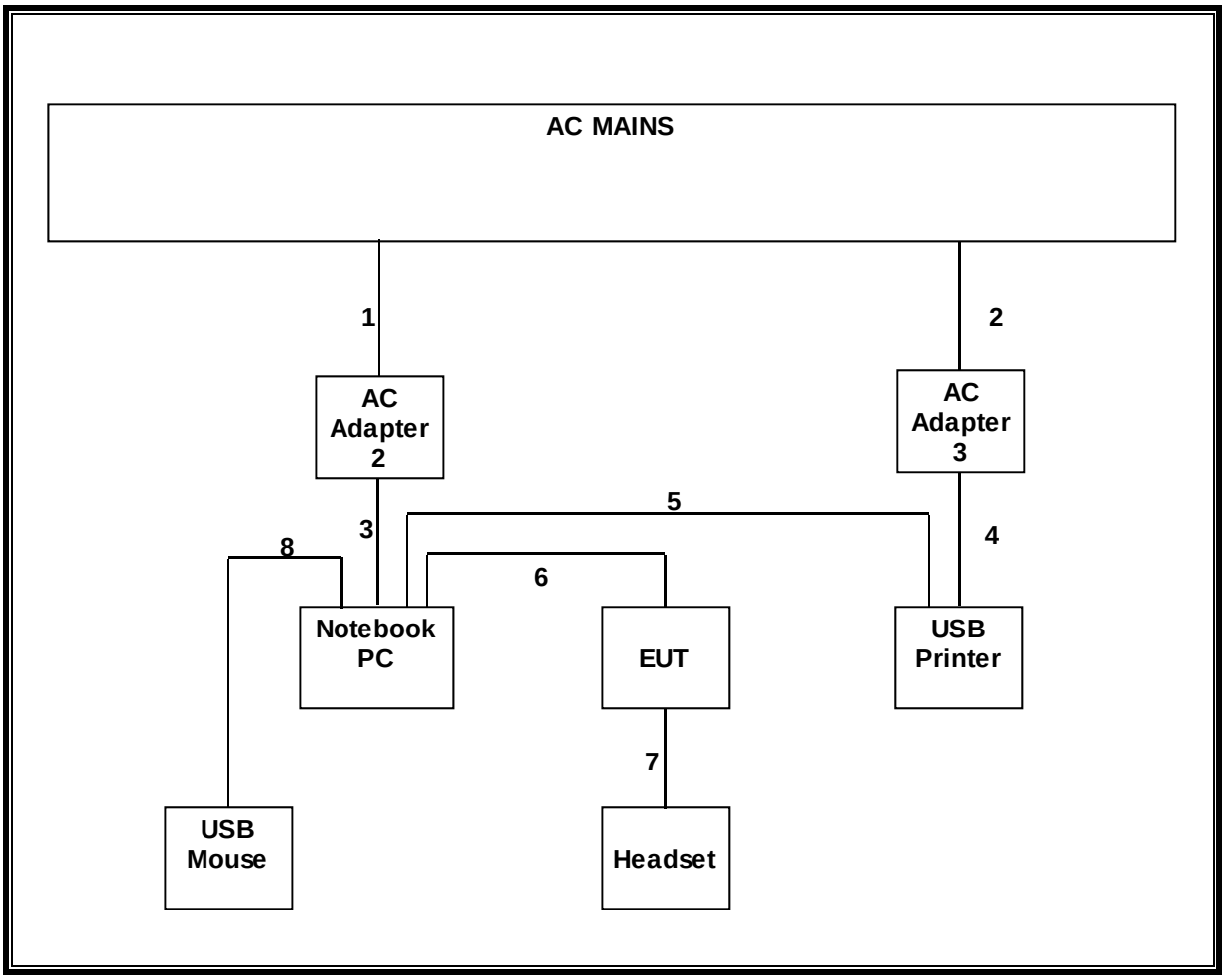
CONFIGURATION 1



CONFIGURATION 2



CONFIGURATION 3



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**	**Serial Number**	**Cal Due**
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	8/15/2012
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	7/16/2012
Preamplifier, 1300 Hz	Agilent / HP	8447D	C00580	11/11/2012
Antenna, Horn, 18 GHz	EMCO	3115	C00783	6/29/2012
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	7/12/2012
EMI Test Receiver, 9 kHz-7	R & S	ESCI 7	1000741	7/6/2012
LISN, 30 MHz	FCC	50/250-25-2	C00626	12/13/2012
LISN, 30 MHz	Solar	8012-50-R-24-BNC	N02481	C.N.R.

7. APPLICABLE LIMITS AND TEST RESULTS

7.1. RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.4

The highest clock frequency generated or used in the EUT is 1200 MHz; therefore the frequency range was investigated from 30 MHz to 6000 MHz.

LIMIT

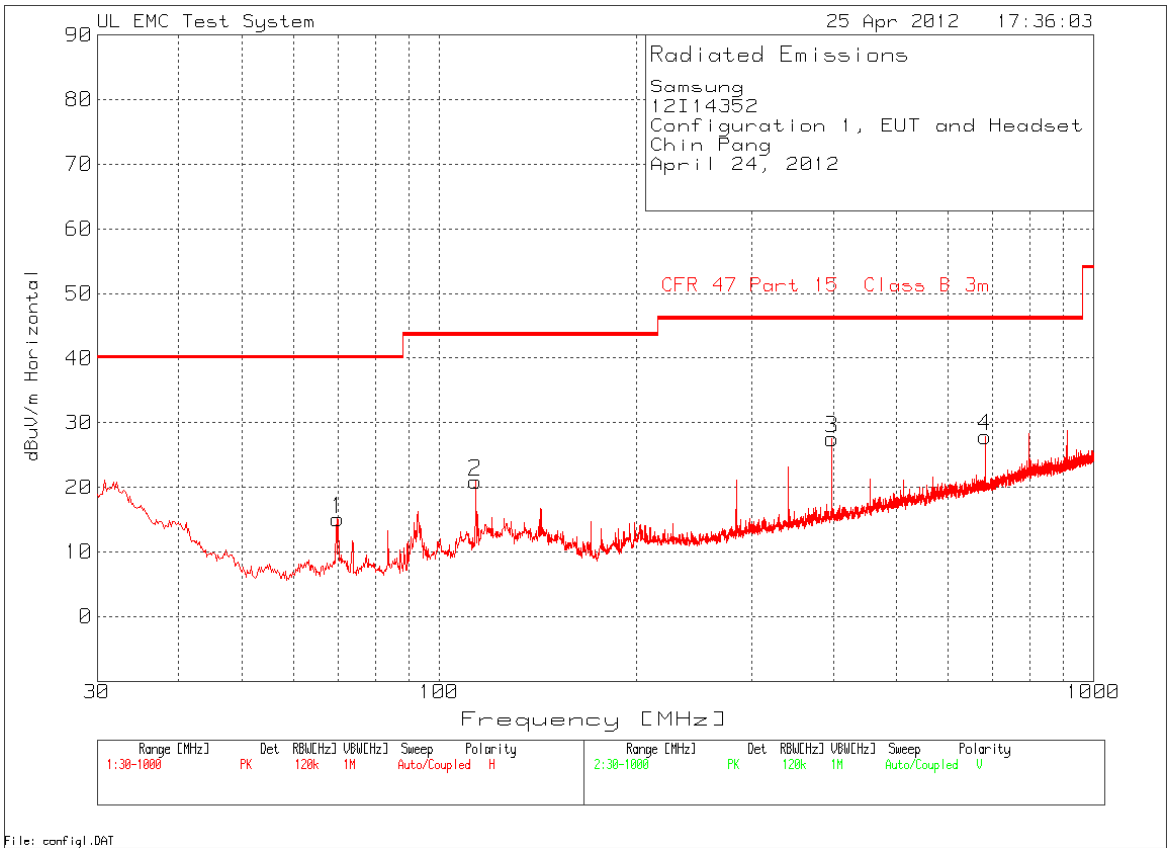
§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dBµV/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.	

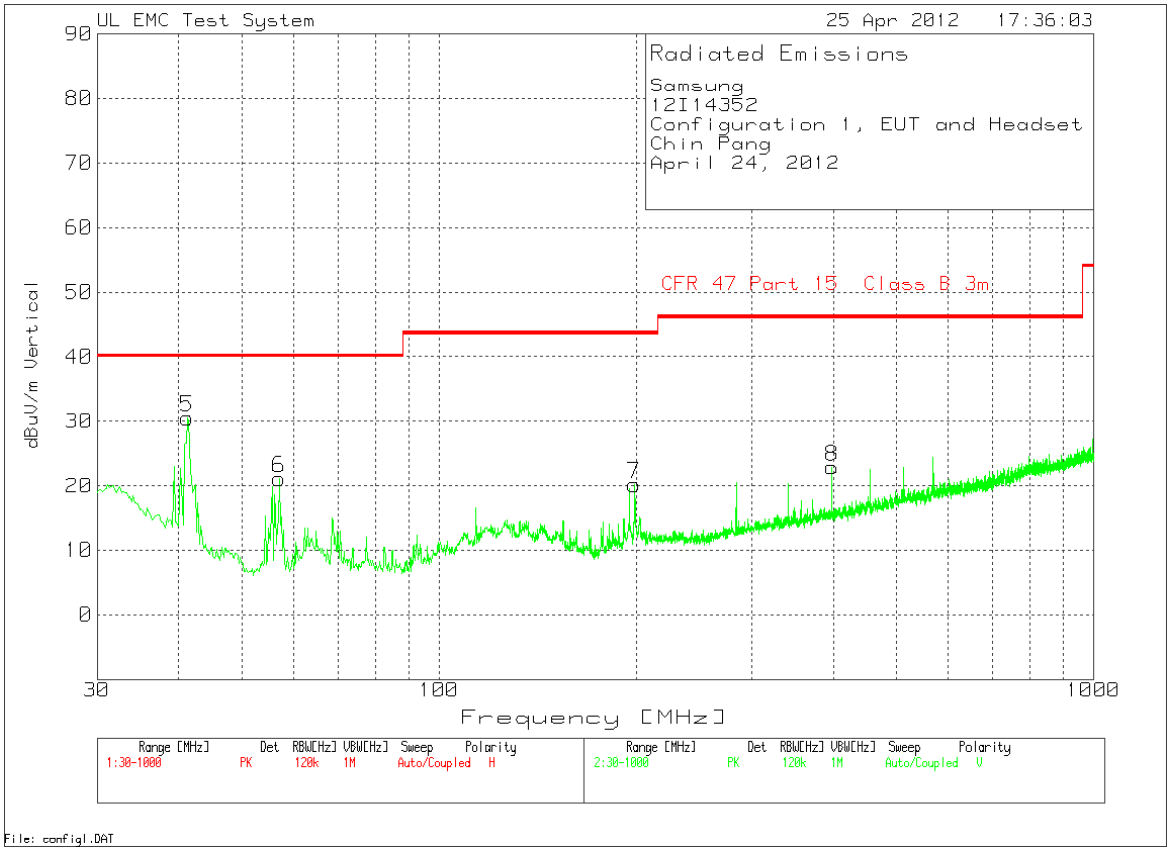
RESULTS

RADIATED EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION) – CONFIGURATION 1

HORIZONTAL PLOT



VERTICAL PLOT

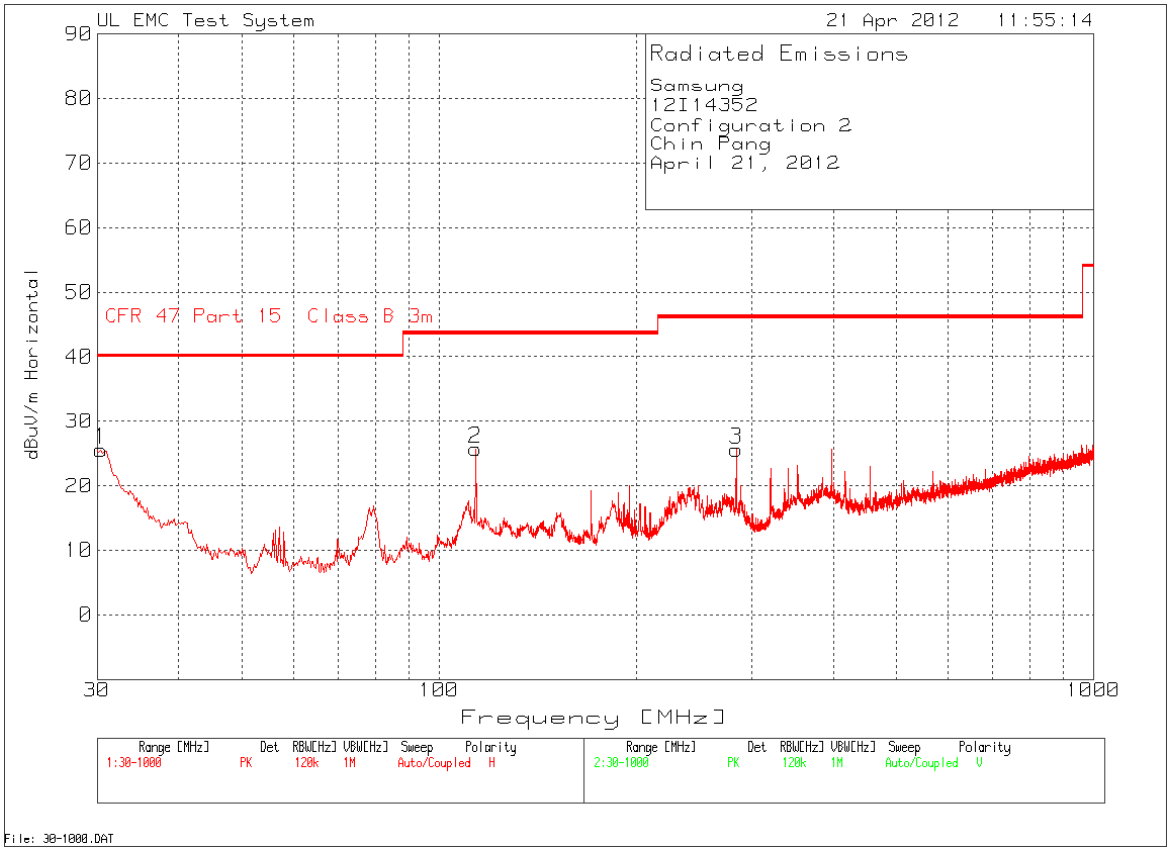


HORIZONTAL AND VERTICAL DATA

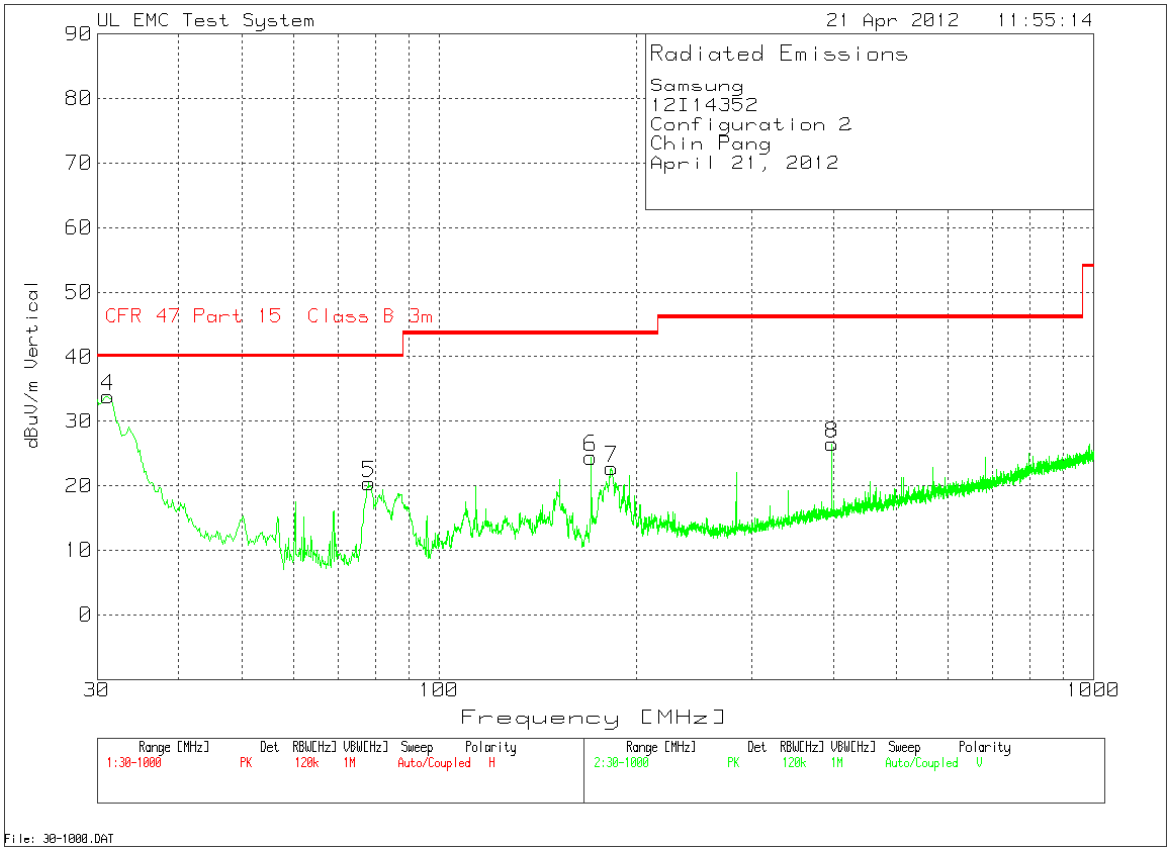
Samsung								
12I14352								
Configuration 1, EUT and Headset								
Chin Pang								
April 24, 2012								
Range 1 30 - 1000MHz								
Frequenc	Reading	Detector	Amp Gain[dI	Ant gain[dB]	dBuV/m	Part 15B 3	Margin	Polarity
69.9321	35.64	PK	-28.8	8.3	15.14	40	-24.86	Horz
113.741	36.72	PK	-28.4	12.6	20.92	43.5	-22.58	Horz
398.1115	39.43	PK	-26.9	15	27.53	46	-18.47	Horz
682.6759	35.03	PK	-26.3	19.1	27.83	46	-18.17	Horz
Range 2 30 - 1000MHz								
Frequenc	Reading	Detector	Amp Gain[dI	Ant gain[dB]	dBuV/m	Part 15B 3	Margin	Polarity
41.243	46.42	PK	-29.2	13.3	30.52	40	-9.48	Vert
56.9444	42.24	PK	-29	7.9	21.14	40	-18.86	Vert
198.8389	35.86	PK	-27.6	11.9	20.16	43.5	-23.34	Vert
398.1115	34.77	PK	-26.9	15	22.87	46	-23.13	Vert

CONFIGURATION 2

HORIZONTAL PLOT



VERTICAL PLOT

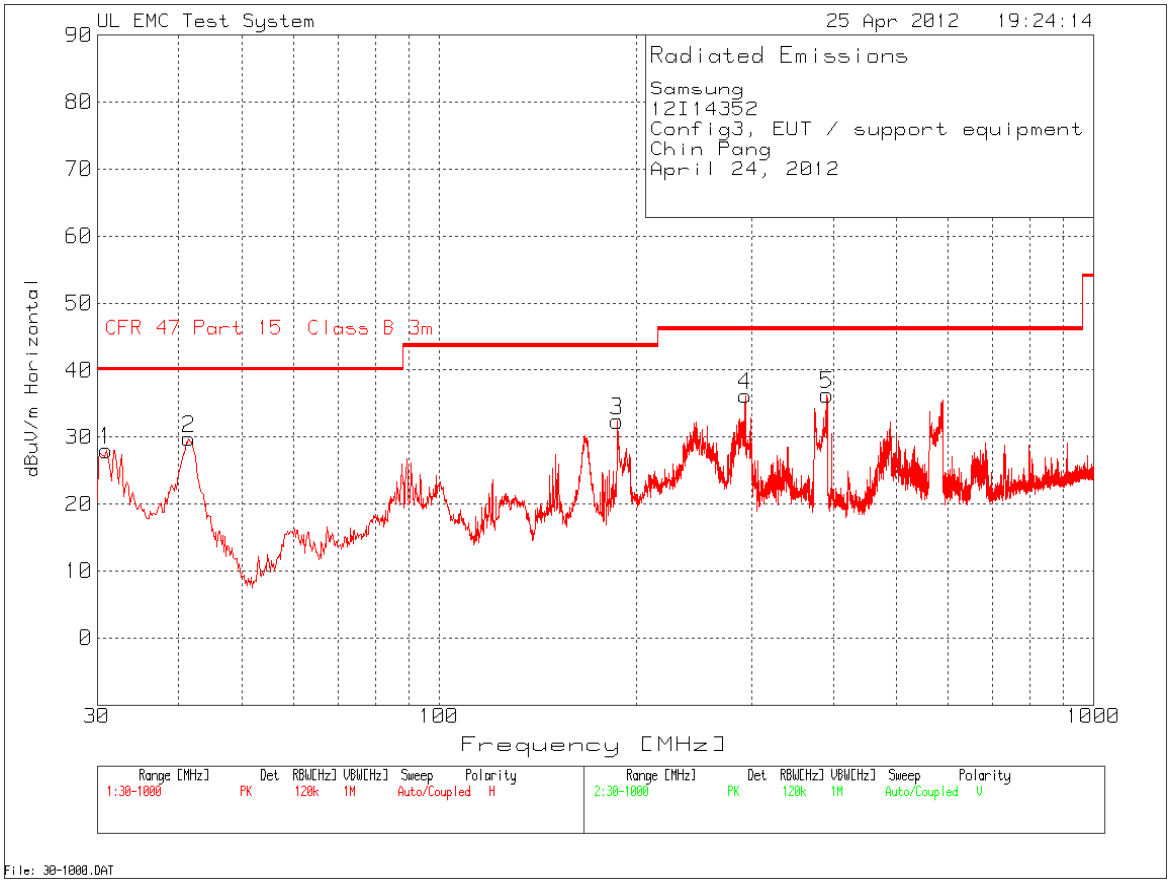


HORIZONTAL AND VERTICAL DATA

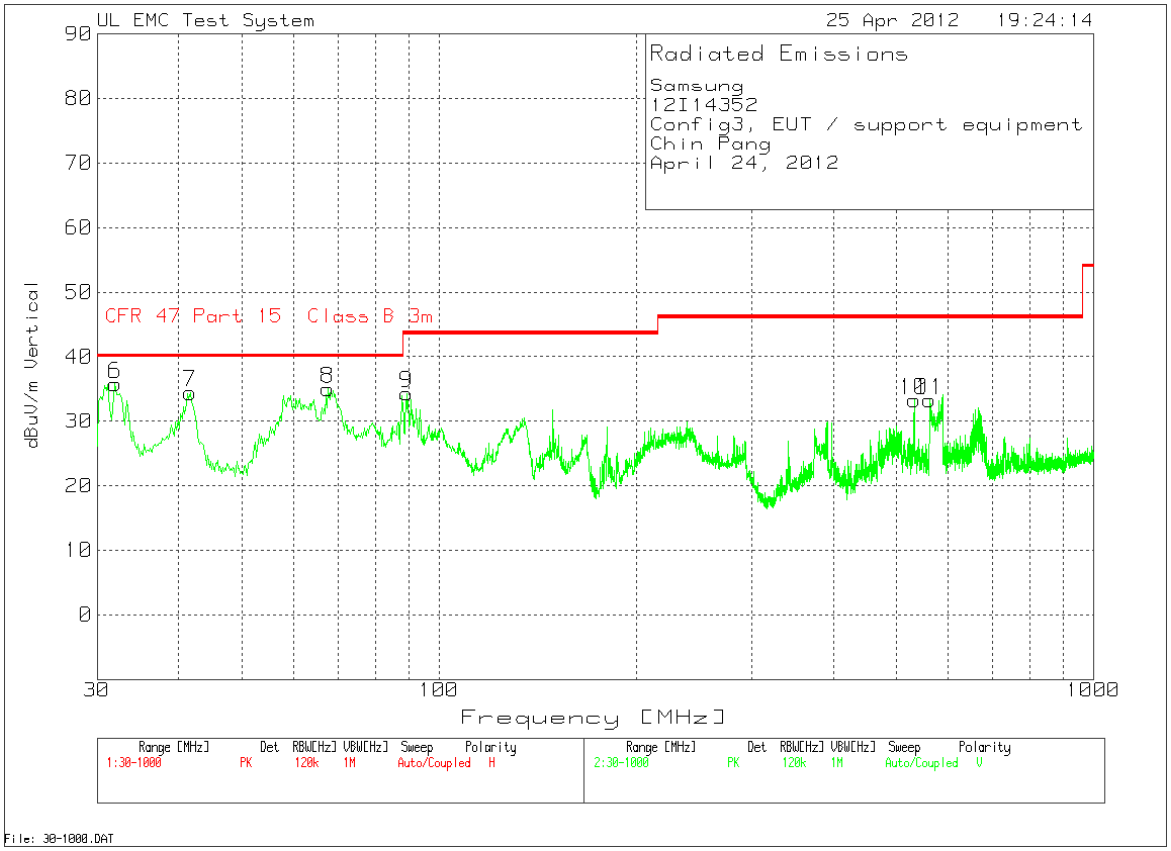
Samsung									
12I14352									
EUT and AC Adapter									
Chin Pang									
April 21, 2012									
Range 1 30 - 1000MHz									
Test Frequ	Meter Rea	Detector	25MHz-1G	T130 Bilog	dBuV/m	CFR 47 Par	Margin	Height [cn	Polarity
30.3877	34.64	PK	-29.3	20.2	25.54	40	-14.46	200	Horz
113.741	41.54	PK	-28.4	12.6	25.74	43.5	-17.76	300	Horz
284.5184	39.73	PK	-26.9	12.8	25.63	46	-20.37	100	Horz
Range 2 30 - 1000MHz									
Test Frequ	Meter Rea	Detector	25MHz-1G	T130 Bilog	dBuV/m	CFR 47 Par	Margin	Height [cn	Polarity
31.1631	43.35	PK	-29.3	19.8	33.85	40	-6.15	100	Vert
78.0735	41.56	PK	-28.8	7.7	20.46	40	-19.54	100	Vert
170.5376	42.13	PK	-27.8	10.1	24.43	43.5	-19.07	100	Vert
183.3313	39.43	PK	-27.7	11	22.73	43.5	-20.77	100	Vert
398.1115	38.39	PK	-26.9	15	26.49	46	-19.51	100	Vert

CONFIGURATION 3

HORIZONTAL PLOT



VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

Samsung								
12I14352								
Config3, EUT / support equipment								
Chin Pang								
April 24, 2012								
Range 1 30 - 1000MHz								
Frequency	Reading	Detector	Amp Gain [	Ant gain [dB	dBuV/m	Part 15B 3m	Margin	Polarity
30.9692	37.42	PK	-29.3	19.9	28.02	40	-11.98	Horz
41.4369	45.76	PK	-29.2	13.2	29.76	40	-10.24	Horz
187.2082	49	PK	-27.7	11.1	32.4	43.5	-11.1	Horz
293.6291	50.02	PK	-26.9	13.1	36.22	46	-9.78	Horz
391.5208	48.33	PK	-26.9	14.9	36.33	46	-9.67	Horz
Range 2 30 - 1000MHz								
Frequency	Reading	Detector	Amp Gain [	Ant gain [dB	dBuV/m	Part 15B 3m	Margin	Polarity
31.9384	45.6	PK	-29.3	19.5	35.8	40	-4.2	Vert
41.6307	50.53	PK	-29.2	13.1	34.43	40	-5.57	Vert
67.6059	55.72	PK	-28.9	8.2	35.02	40	-4.98	Vert
89.1227	55.53	PK	-28.7	7.5	34.33	43.5	-9.17	Vert
531.8645	42.77	PK	-26.8	17.3	33.27	46	-12.73	Vert
561.5228	42.28	PK	-26.7	17.7	33.28	46	-12.72	Vert

RADIATED EMISSIONS ABOVE 1000 MHz – WORST-CASE

CONFIGURATION 3:

HORIZONTAL AND VERTICAL DATA

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber-B

Company: Samsung
Project #: 12I14352
Date: 4/24/2012
Test Engineer: Chin Pang
Configuration: EUT and Support equipment
Mode: Normal

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T59; S/N: 3245 @3m	T145 Agilent 3008A0056			FCC Class B

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.330	3.0	56.0	35.6	25.3	3.0	-35.8	0.0	0.0	48.6	28.2	74	54	-25.4	-25.8	V
1.600	3.0	57.3	36.5	26.6	3.3	-35.6	0.0	0.0	51.6	30.8	74	54	-22.4	-23.2	V
2.490	3.0	53.6	34.7	28.8	4.4	-35.2	0.0	0.0	51.5	32.6	74	54	-22.5	-21.4	V
1.330	3.0	55.7	36.6	25.3	3.0	-35.8	0.0	0.0	48.3	29.2	74	54	-25.7	-24.8	H
1.600	3.0	55.0	36.3	26.6	3.3	-35.6	0.0	0.0	49.3	30.6	74	54	-24.7	-23.4	H
2.490	3.0	52.6	34.5	28.8	4.4	-35.2	0.0	0.0	50.5	32.4	74	54	-23.5	-21.6	H

Rev. 07.08.11
Note; No other emissions were detected above the system noise floor.

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

7.2. AC MAINS LINE CONDUCTED EMISSIONS

TEST PROCEDURE

ANSI C63.4

LIMIT

§15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

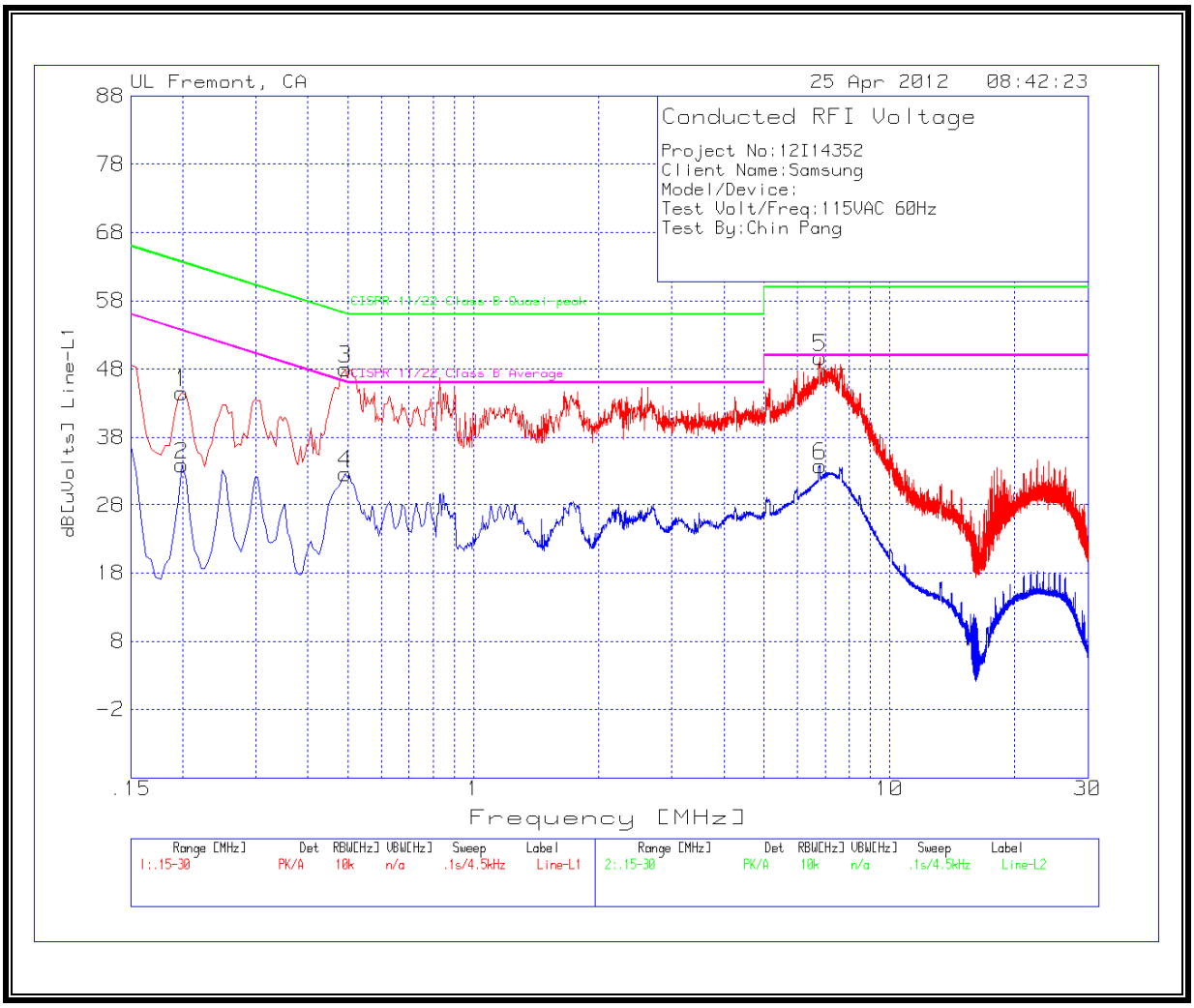
Frequency range	Limits (dBμV)	
(MHz)	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Notes: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

RESULTS – CONFIGURATION 2

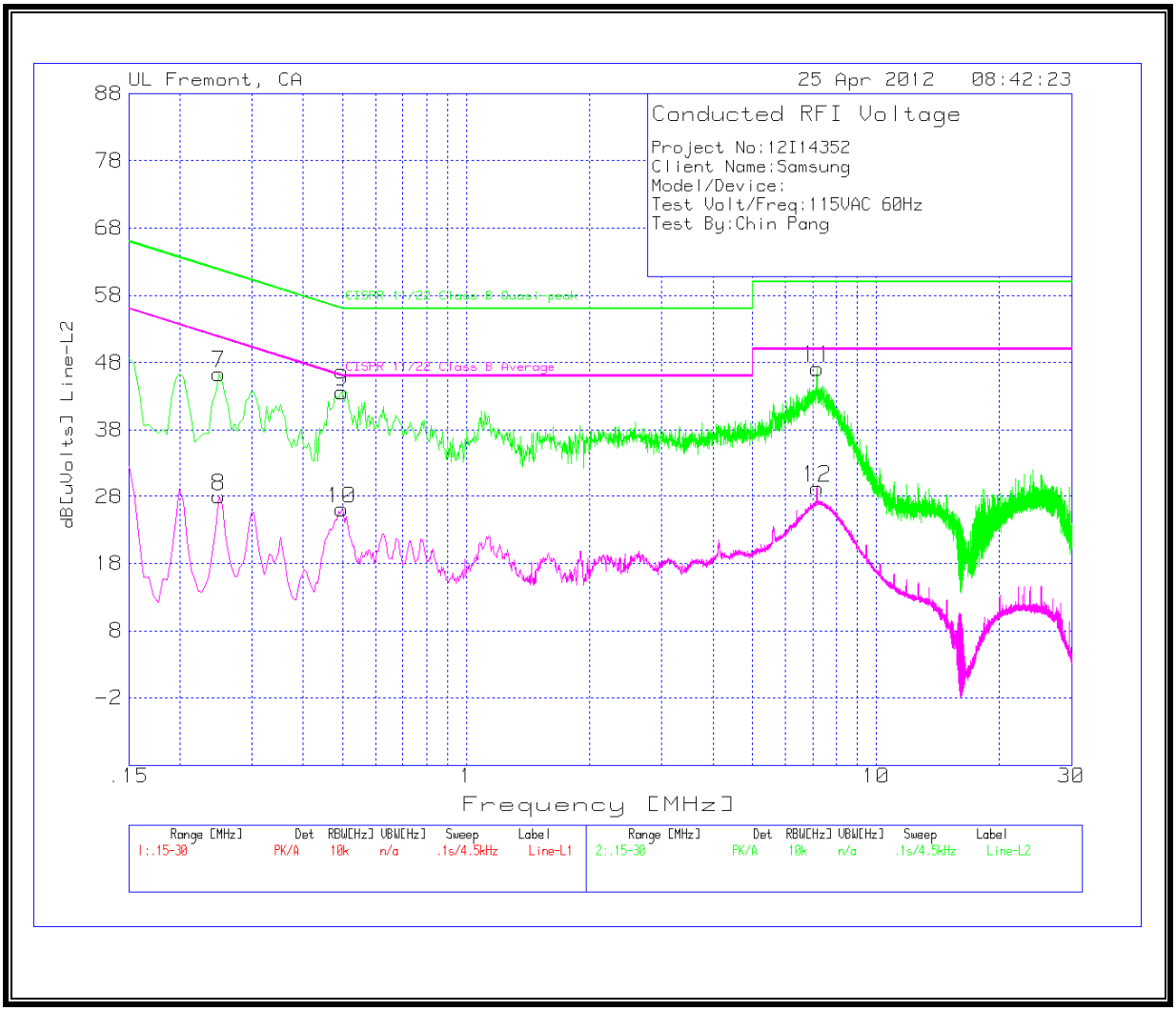
6 WORST EMISSIONS

Project No:12I14352								
Client Name:Samsung								
Model/Device:								
Test Volt/Freq:115VAC 60Hz								
Test By:Chin Pang								
Line-L1 .15 - 30MHz								
Frequency	Reading	Detector	cableless loss [dB]	dB[uVolts]	CISPR B Qp	Margin	CISPR B Avg	Margin
0.1995	44.46	PK	0.1	44.56	63.6	-19.04	-	-
0.1995	33.82	Av	0.1	33.92	-	-	53.6	-19.68
0.492	47.98	PK	0.1	48.08	56.1	-8.02	-	-
0.492	32.54	Av	0.1	32.64	-	-	46.1	-13.46
6.819	49.55	PK	0.2	49.75	60	-10.25	-	-
6.819	33.67	Av	0.2	33.87	-	-	50	-16.13
Line-L2 .15 - 30MHz								
Frequency	Reading	Detector	cableless loss [dB]	dB[uVolts]	CISPR B Qp	Margin	CISPR B Avg	Margin
0.249	46.22	PK	0.1	46.32	61.8	-15.48	-	-
0.249	27.9	Av	0.1	28	-	-	51.8	-23.8
0.4965	43.59	PK	0.1	43.69	56.1	-12.41	-	-
0.4965	26.01	Av	0.1	26.11	-	-	46.1	-19.99
7.1745	46.95	PK	0.2	47.15	60	-12.85	-	-
7.1745	29.18	Av	0.2	29.38	-	-	50	-20.62

LINE 1 RESULTS



LINE 2 RESULTS

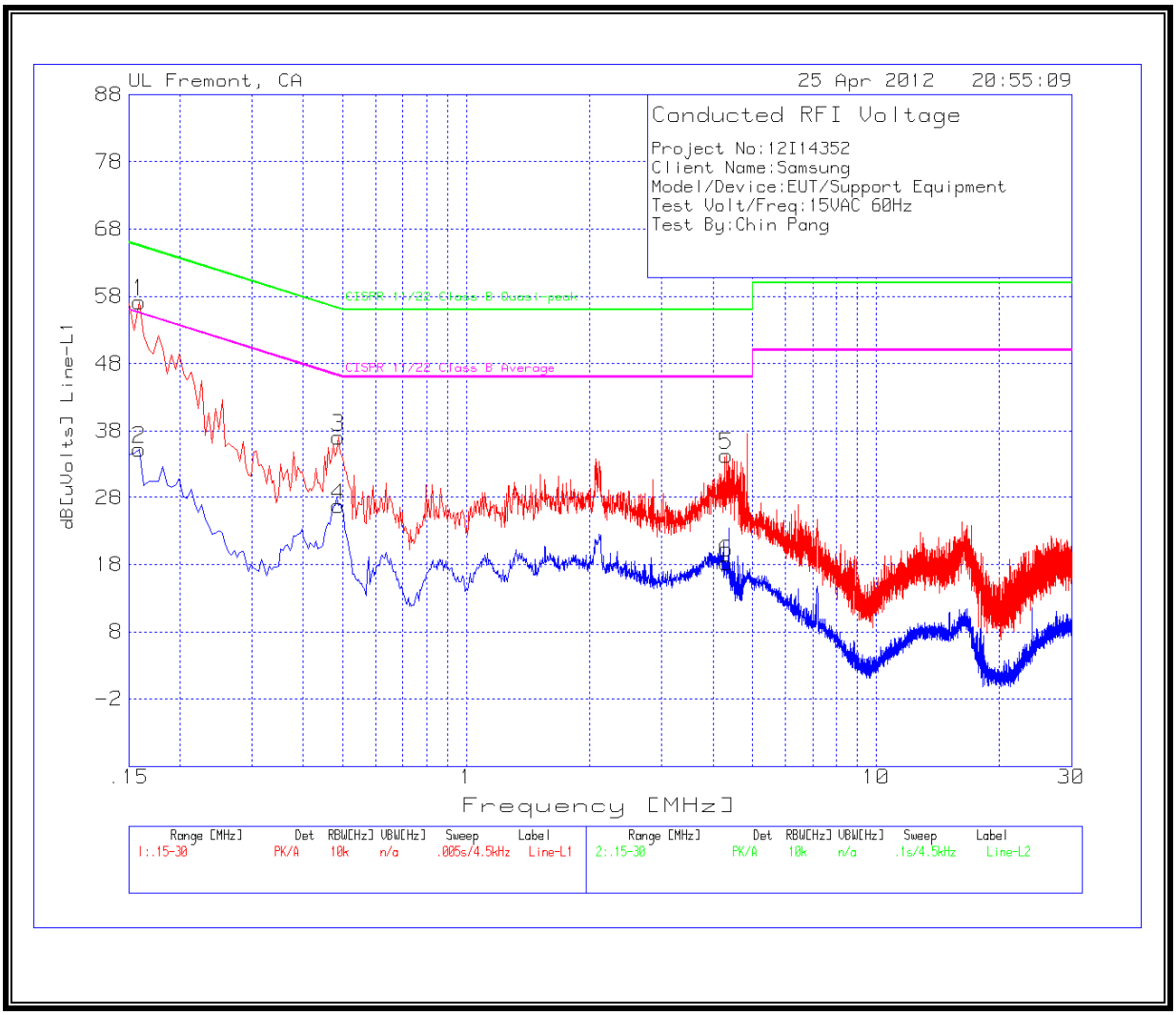


RESULTS – CONFIGURATION 3

6 WORST EMISSIONS

Project No:12I14352								
Client Name:Samsung								
Model/Device:EUT/Support Equipment								
Test Volt/Freq:15VAC 60Hz								
Test By:Chin Pang								
Line-L1 .15 - 30MHz								
Frequency	Reading	Detector	Cable loss	dB[uVolts]	CISPR B Qp	Margin	CISPR B Avg	Margin
0.159	57.04	PK	0.1	57.14	65.5	-8.36	-	-
0.159	35.16	Av	0.1	35.26	-	-	55.5	-20.24
0.4875	36.99	PK	0.1	37.09	56.2	-19.11	-	-
0.4875	26.67	Av	0.1	26.77	-	-	46.2	-19.43
4.3215	34.18	PK	0.2	34.38	56	-21.62	-	-
4.3215	18	Av	0.2	18.2	-	-	46	-27.8
Line-L2 .15 - 30MHz								
Frequency	Reading	Detector	Cable loss	dB[uVolts]	CISPR B Qp	Margin	CISPR B Avg	Margin
0.15	59	PK	0.1	59.1	66	-6.9	-	-
0.15	35.36	Av	0.1	35.46	-	-	56	-20.54
0.474	37.46	PK	0.1	37.56	56.4	-18.84	-	-
0.474	26.88	Av	0.1	26.98	-	-	46.4	-19.42
4.4745	34.3	PK	0.2	34.5	56	-21.5	-	-
4.4745	17.49	Av	0.2	17.69	-	-	46	-28.31

LINE 1 RESULTS



LINE 2 RESULTS