EMC TEST REPORT

Project No.	LBE093759	**Issue No.**	2
Applicant	**Name of organization**	**Samsung Electronics Co., Ltd.**	
	Address	416 Maetan 3-Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do 443-742 Korea	
	Date of application	December 2, 2009	
EUT	**Type of device**	Class B digital devices, peripherals	
	Equipment authorization	☐ Declaration of Conformity ☒ Certification ☐ Verification	
	FCC ID	**A3LCLP325W**	
	Kind of product	**COLOR LBP**	
	Model No.	**CLP-325W**	
		Variant Model No.	**CLP-320N,CLP-325N,CLP-320W**
	Manufacturer	**Samsung Electronics Co., Ltd.** 259, Gongdan-Dong, Gumi-City, Gyeongsangbuk-Do, Korea 730-030 **Samsung Electronics (Shandong) Digital Printing Co., Ltd.** 264209, Samsung Road, Weihai Hi-Tech. IDZ, Shandong Province, P.R.China	
Applied Standards		FCC Part 15, Subpart B / ANSI C63.4-2003	
Test Period		December 2, 2009 ~ December 15, 2009	
Issue date		December 17, 2009	

Test result : Complied

The equipment under test has found to be compliant with the applied standards.
(Refer to the attached test result for more detail.)

Tested by : Young Hun Cheong

Reviewed by : No Cheon Park

This report is the test result about the sphere accredited by KOLAS which signed the Mutual Recognition Arrangement of International Laboratory Accreditation Cooperation.
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SAMSUNG

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1. Summary of test results

1.1 Emission

The EUT has been tested according to the following specifications:

Applied	Test type	Applied standard	Result	Remarks
☒	Conducted Disturbance (Mains Port)	FCC Part 15 Subpart B	Complied	Meets Class B Limit
☒	Radiated Disturbance		Complied	Meets Class B Limit

2. General Information

2.1 Test facility

The SEC EMC Laboratory is located on Samsung Electronics Co., Ltd. at 416 Maetan 3-Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, South Korea.

All testing are performed in Semi-anechoic chambers conforming to the site attenuation Characteristics defined by ANSI C63.4, CISPR 22, 16-1 and 16-2. and Shielded rooms.

The SEC EMC Laboratory is operated as testing laboratory in accordance with the requirements of ISO/IEC 17025:2005.

2.2 Accreditation and listing

Laboratory Qualifications		Remarks
	KOLAS(Korea Laboratory Accreditation Scheme)	Accredited : 124
	UKAS(United Kingdom Accreditation Service)	Accredited : 4290
	Korea Communications Commission Radio Research Agency	Accredited : KR0004
	FCC(Federal Communications Commission)	Accredited : KR0004
	National Voluntary Laboratory Accreditation Program	Lab Code: 200623-0
	Norges Elektriske Materiellkontroll	Accredited : ELA 195
	VCCI (Voluntary Control Council for Interference by Information Technology Equipment)	C-2421,R-2224
	China Quality Certification Center	5-053, 5-054
	TUV Rhineland	H9354285
	GOST(GOSTSTANDART)	ROSTEST
	Elektrotechnicky Zkusebni Ustav	Reg. No.: 001
Industry Canada	IC(Industry Canada)	Assigned Code: 5871

3. Test Setup configuration

3.1 Test Peripherals

The cables used for these peripherals are either permanently attached by the peripheral manufacturer or coupled with an assigned cable as defined below.
The following is a listing of the EUT and peripherals utilized during the performance of EMC test:

Description	Model No.	Serial No.	Manufacturer	FCC ID and/or DoC
COLOR LBP	CLP-325W	-	Samsung	A3LCLP325W
Note book Computer	PP18L	27182225373	Dell	DoC
Adapter	LA65NS1-00	CN-0YD637-71615-83C-0A0A	Dongguang Lite Power	-
USB Mouse	M-UAE96	LZK61923406	LOGITECH INC.	DoC
Headset	COV140	-	COSY	DoC

3.2 EUT operating mode

To achieve compliance applied standard specification, the following mode(s) were made during compliance testing:

Operating Mode 1	Standby Mode
Operating Mode 2	USB Printing Mode
Operating Mode 3	Network Printing Mode
Operating Mode 4	Wireless Network Printing Mode

3.3 Details of Sampling

Customer selected, single unit.

3.4 Used cable description

The EUT is configured, installed, arranged and operated in a manner consistent with typical applications. Interface cables/loads/devices are connected to at least one of each type of interface port of the EUT, and where practical, each cable shall be terminated in a device typical of actual usage. The type(s) of interconnecting cables to be used and the interface port (of the EUT) to which these were connected;

Connected cable	Length [m]	Shielded [Y/N]	Note
Power	1.8	No	For EUT
USB	1.8	Yes	EUT to Notebook PC
Power	1.8	No	For Note PC
USB	0.4	Yes	EUT to USB Mouse
Headset	1.6	No	From PC to Headset
LAN	5.0	No	From EUT to hub

3.5 EUT Description

The following features describe EUT represented by this report:

Item	Specification and Description
Processor	JUPITER5(360Mhz)
Standard System memory	256MB DDR2
Resolution	Up to 2400X600dpi Class (Default 1200x600 dpi) Optical: 600x600 Dpi
Copy Quality mode	none
Paper Handling	Paper Tray(standard) 150 Sheets
Power Rating	110~127 VAC, 4.5A, 50/60 Hz
Power Consumption	Printing simplex : 350Watts
Printer Language	SPL-C,PCL-6
Interfaces	USB2.0
OS compatibility	Microsoft Windows: 2000/2003/XP(Include 64bit),Vista MacOS:10.3,10.4 Linux(Printer only)OS:Red Hat 8~9, Fedora Core 1~4 Mandrake 9.2~10.1 SuSE 8.2~9.2
Modes of Operation	USB Printing, Network, Wireless
Intended Class for Emissions	Class B

3.6 Clock Frequencies

Kind of Clocks	Frequency[MHz]	Kind of Clocks	Frequency[MHz]
Main Source	12	Video	12
CPU Internal	360	DDR RAM	166
USB Device	12		

3.7 Test configuration and condition

The system was configured for testing in typical fashion use. Cables were attached to each of the available I/O Ports. Where applicable, peripherals were attached to the I/O cables. All operating mode(s) selected were tested to show compliance with relevant standard. Power source for the EUT operating was supplied by CVCF made by the Voltech Corp.

- Test Voltage : AC 120 V, 60 Hz

3.8 Measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus: (According to CISPR 16-4 and UKAS Lab 34.)

3.8.1 Emission

Test type		Measurement uncertainty (C.L. 95 %, k = 2)
Conducted disturbance	Main terminal	3.50 dB
Radiated Disturbance	Horizontal	5.04 dB
	Vertical	5.03 dB

4. Results of individual test

4.1 Conducted disturbance

Both conducted lines are measured in Quasi-Peak and Average mode, including the worst-case data points for each tested configuration. The EUT measured in accordance with the methods described in standards.

Limits for conducted disturbance at the mains ports of class A ITE

Frequency range Limits MHz	Resolution Bandwidth	Limits dB(μV)	
		Quasi-peak	Average
0,15 to 0,50	9 kHz	79	66
0,50 to 30	9 kHz	73	60
NOTE The lower limit shall apply at the transition frequency			

Limits for conducted disturbance at the mains ports of class B ITE

Frequency range Limits MHz	Resolution Bandwidth	Limits dB(μV)	
		Quasi-peak	Average
0,15 to 0,50	9 kHz	66 to 56	56 to 46
0,50 to 5	9 kHz	56	46
5 to 30	9 kHz	60	50
NOTE 1 The lower limit shall apply at the transition frequency NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.			

4.1.1 Test instrumentation

Test instrumentation	Manufacturer	Model name	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Test Receiver	R&S	ESCI	100370	2009-05-07	12
Two-Line V-Network	R&S	ENV216	100456	2009-09-18	12
Two-Line V-Network	R&S	ESH3-Z5	100261	2009-04-03	12
Test software	EMC32	R&S	Ver 4.40.0	N/A	N/A

4.1.2 Temperature and humidity condition

Test date	December 15, 2009	**Test engineer**	Young Hun Cheong
Test place	Shielded Room #1		

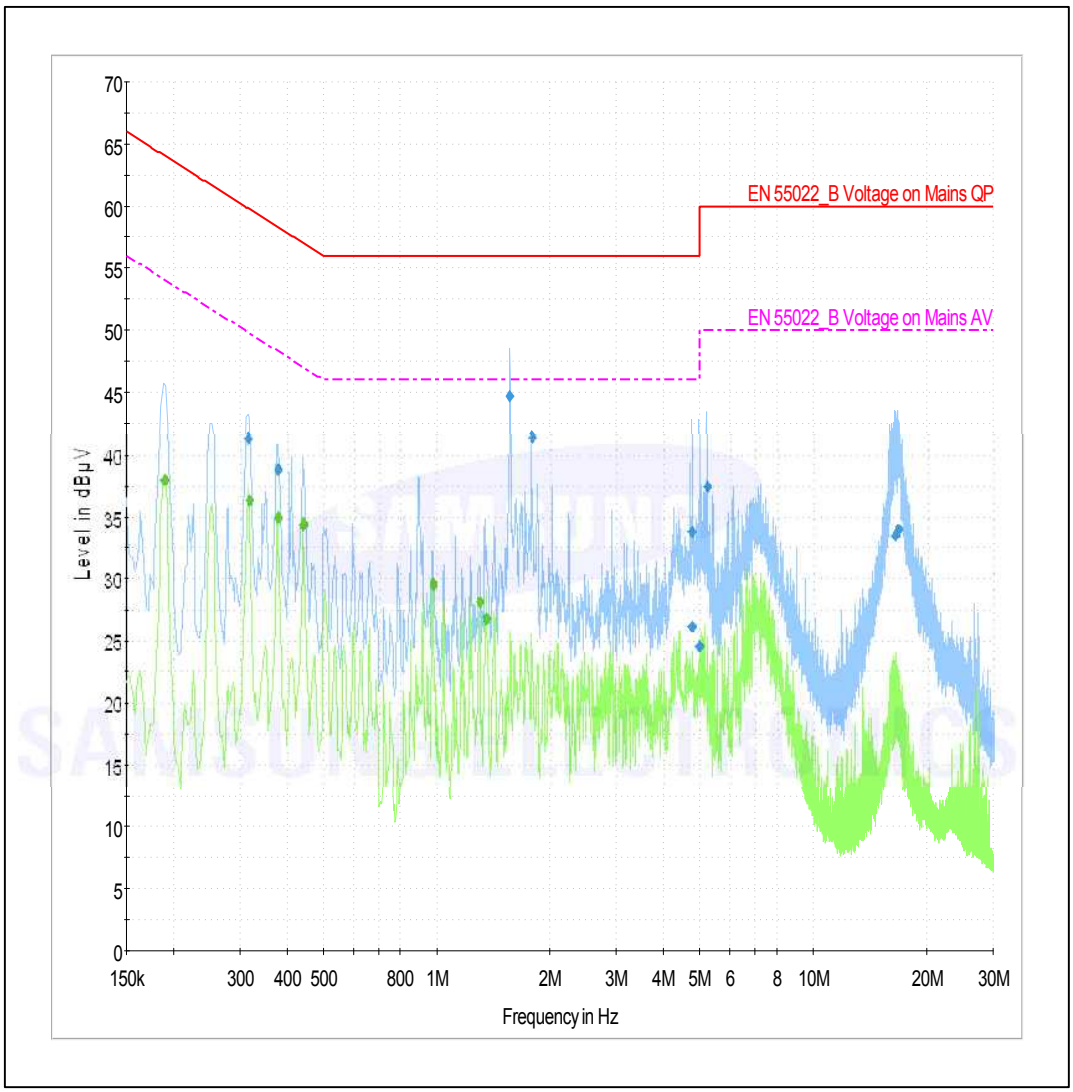
4.1.3 Photograph of Test Setup

Front

Rear

4.1.4 Test results (mains port)

- **Operating Mode : Standby Mode**



Note) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.315	41.4	9.0	N	9.4	18.4	59.8
0.379	38.9	9.0	L1	9.4	19.4	58.3
1.565	44.7	9.0	L1	9.6	11.3	56.0
1.786	41.4	9.0	N	9.6	14.6	56.0
4.743	26.2	9.0	N	9.6	29.8	56.0
4.745	33.8	9.0	N	9.6	22.2	56.0
4.970	24.6	9.0	N	9.6	31.4	56.0
5.191	37.4	9.0	N	9.6	22.6	60.0
16.409	33.5	9.0	L1	9.7	26.5	60.0
16.703	34.0	9.0	L1	9.7	26.0	60.0

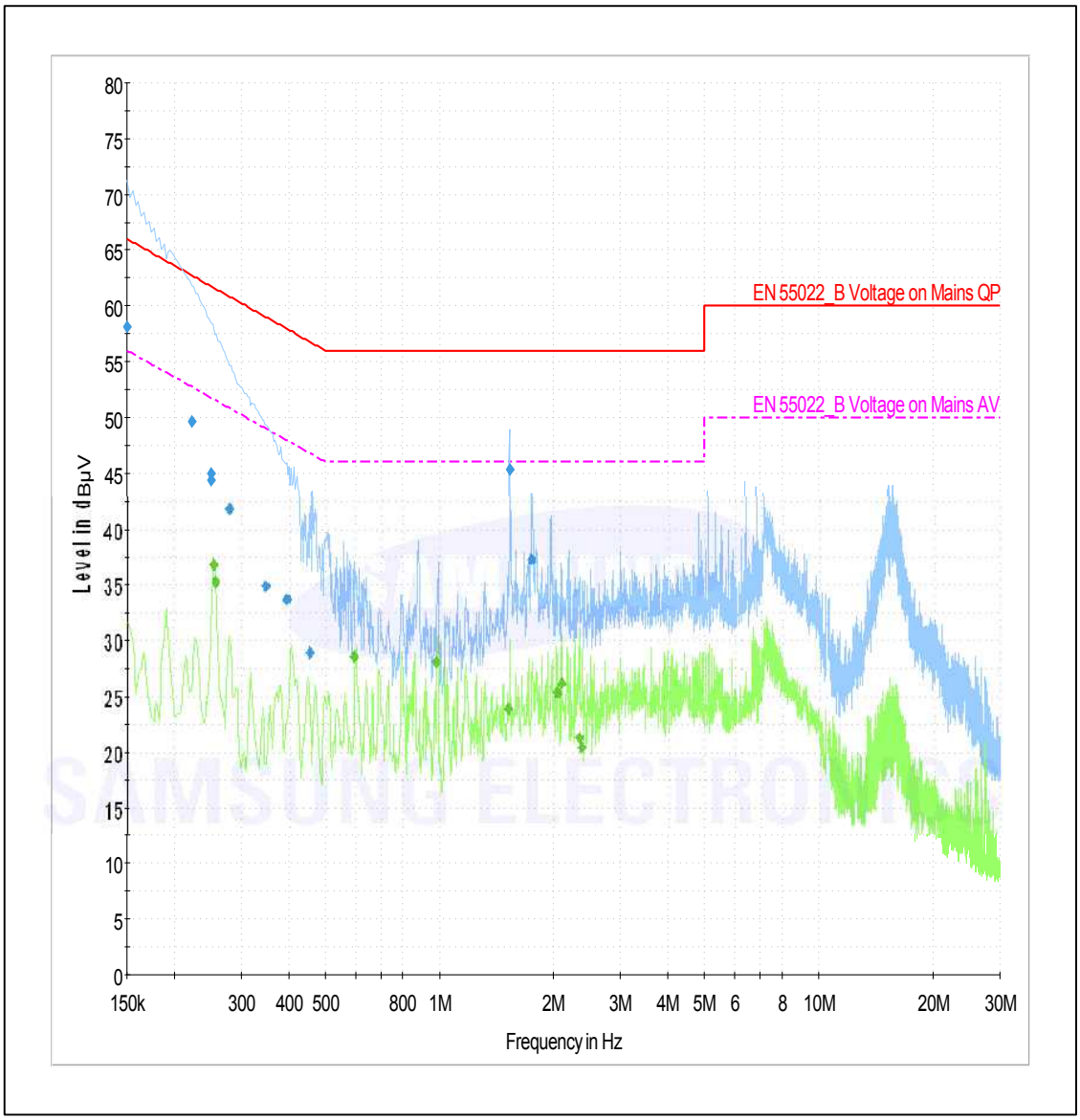
Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.190	38.0	9.0	N	9.3	16.0	54.0
0.317	36.4	9.0	N	9.4	13.4	49.8
0.379	34.9	9.0	N	9.4	13.4	48.3
0.440	34.3	9.0	N	9.4	12.8	47.1
0.441	34.3	9.0	N	9.4	12.7	47.0
0.442	34.5	9.0	N	9.4	12.5	47.0
0.977	29.5	9.0	N	9.6	16.5	46.0
0.979	29.6	9.0	N	9.6	16.4	46.0
1.294	28.2	9.0	N	9.6	17.8	46.0
1.354	26.8	9.0	N	9.6	19.2	46.0

Note) Level (Quasi-Peak and/or Average) = Meter Reading (Quasi-Peak and/or Average) + Factor (LISN Insertion Loss + Cable Loss)

Margin = Limit – Level (Quasi-Peak and/or Average)

- **Operating Mode : USB Printing Mode**



Note) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.150	58.1	9.0	N	9.4	7.9	66.0
0.222	49.6	9.0	N	9.4	13.1	62.7
0.250	45.0	9.0	N	9.4	16.8	61.8
0.251	44.3	9.0	L1	9.4	17.4	61.7
0.279	41.9	9.0	L1	9.4	18.9	60.8
0.348	35.0	9.0	L1	9.4	24.0	59.0
0.396	33.7	9.0	N	9.4	24.2	57.9
0.454	28.9	9.0	N	9.4	27.9	56.8
1.530	45.4	9.0	L1	9.6	10.6	56.0
1.747	37.3	9.0	N	9.6	18.7	56.0

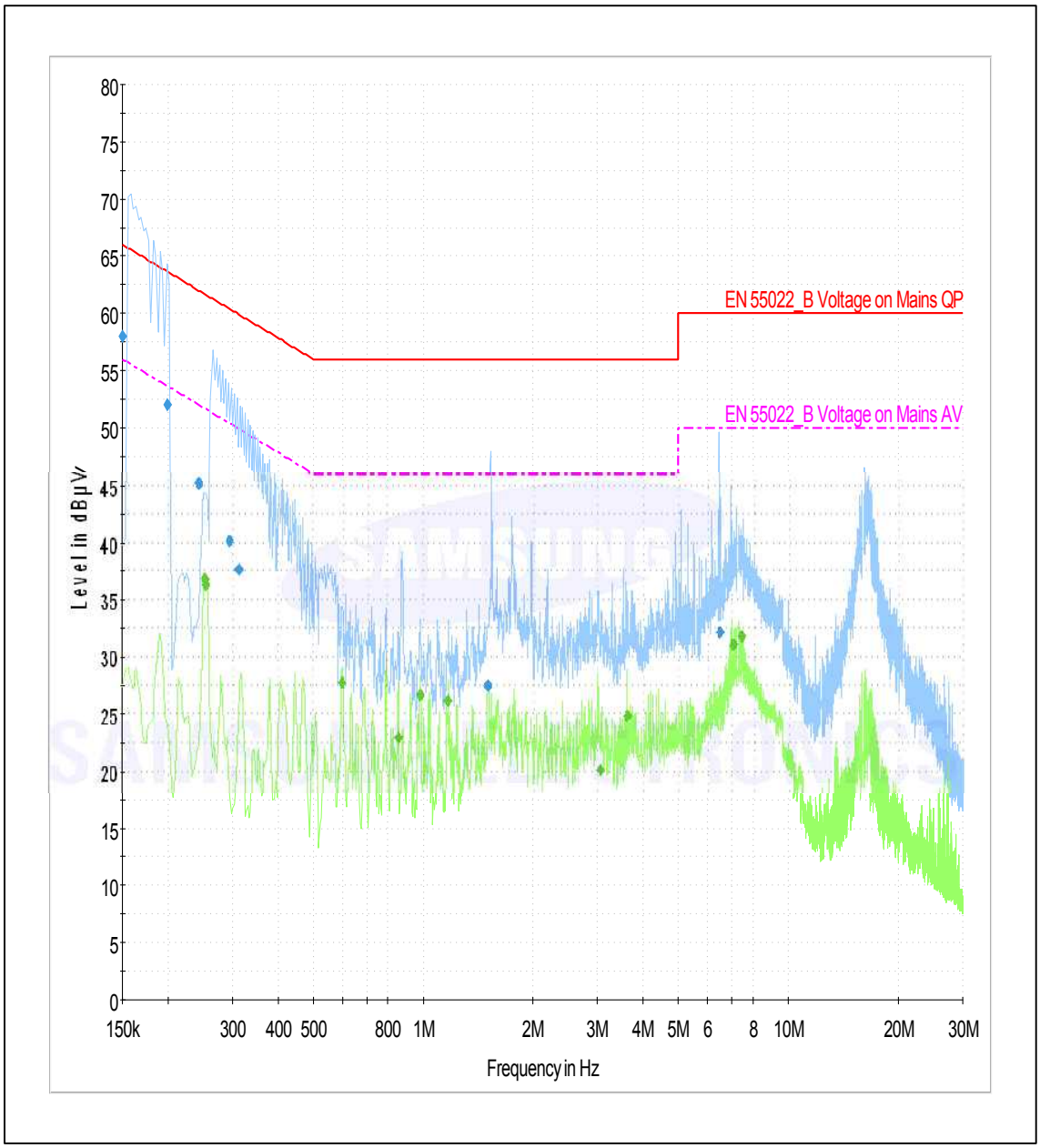
Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.253	36.8	9.0	N	9.4	14.9	51.7
0.256	35.3	9.0	N	9.4	16.3	51.6
0.596	28.5	9.0	N	9.5	17.5	46.0
0.980	28.1	9.0	L1	9.6	17.9	46.0
1.511	23.9	9.0	L1	9.6	22.1	46.0
2.030	25.4	9.0	L1	9.6	20.6	46.0
2.085	26.2	9.0	L1	9.6	19.8	46.0
2.324	21.2	9.0	L1	9.6	24.8	46.0
2.349	20.5	9.0	L1	9.6	25.5	46.0

Note) Level (Quasi-Peak and/or Average) = Meter Reading (Quasi-Peak and/or Average) +
Factor (LISN Insertion Loss + Cable Loss)

Margin = Limit – Level (Quasi-Peak and/or Average)

- **Operating Mode : Network Printing Mode**



Note) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.150	57.9	9.0	N	9.4	8.1	66.0
0.199	52.0	9.0	L1	9.3	11.7	63.7
0.242	45.2	9.0	L1	9.4	16.8	62.0
0.296	40.2	9.0	L1	9.4	20.2	60.4
0.312	37.7	9.0	L1	9.4	22.2	59.9
1.498	27.5	9.0	L1	9.6	28.5	56.0
6.444	32.1	9.0	N	9.6	27.9	60.0

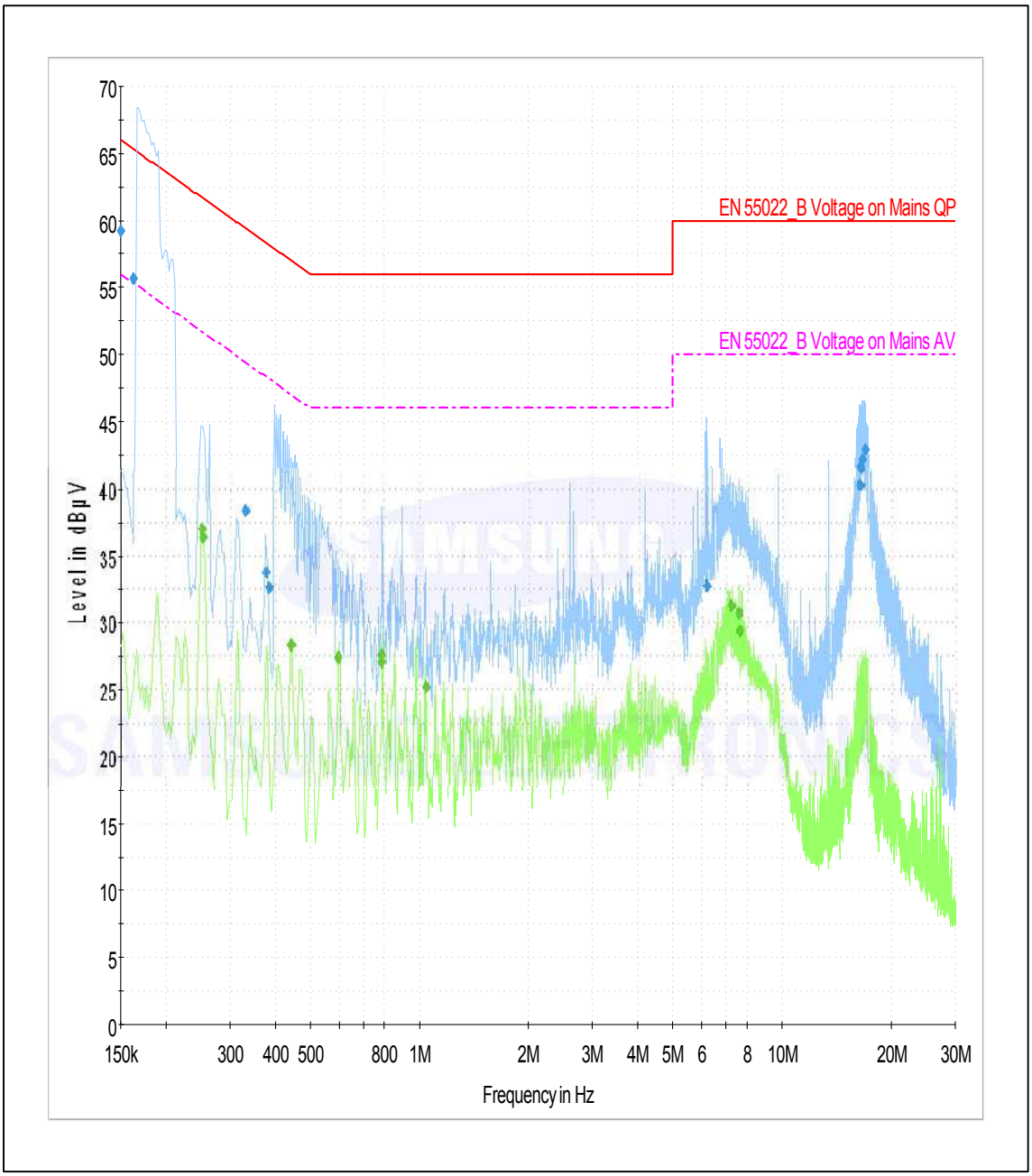
Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.252	36.9	9.0	N	9.4	14.8	51.7
0.253	36.3	9.0	N	9.4	15.4	51.7
0.599	27.8	9.0	N	9.5	18.2	46.0
0.852	22.9	9.0	L1	9.5	23.1	46.0
0.977	26.7	9.0	N	9.6	19.3	46.0
1.164	26.2	9.0	L1	9.6	19.8	46.0
3.045	20.1	9.0	N	9.6	25.9	46.0
3.598	24.9	9.0	L1	9.6	21.1	46.0
7.049	31.1	9.0	L1	9.6	18.9	50.0
7.372	31.8	9.0	L1	9.6	18.2	50.0

Note) Level (Quasi-Peak and/or Average) = Meter Reading (Quasi-Peak and/or Average) +
Factor (LISN Insertion Loss + Cable Loss)

Margin = Limit – Level (Quasi-Peak and/or Average)

- **Operating Mode : Wireless Network Printing Mode**



Note) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.150	59.3	9.0	N	9.4	6.7	66.0
0.162	55.7	9.0	N	9.4	9.7	65.4
0.331	38.4	9.0	L1	9.4	21.0	59.4
0.377	33.8	9.0	L1	9.4	24.6	58.4
0.385	32.6	9.0	L1	9.4	25.6	58.2
6.193	32.7	9.0	N	9.6	27.3	60.0
16.308	40.3	9.0	L1	9.7	19.7	60.0
16.376	41.7	9.0	L1	9.7	18.3	60.0
16.632	42.2	9.0	L1	9.7	17.8	60.0
16.913	42.9	9.0	L1	9.7	17.1	60.0

Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.252	37.0	9.0	N	9.4	14.7	51.7
0.253	36.4	9.0	N	9.4	15.3	51.7
0.442	28.3	9.0	N	9.4	18.7	47.0
0.595	27.4	9.0	N	9.5	18.6	46.0
0.784	27.0	9.0	N	9.5	19.0	46.0
0.786	27.6	9.0	L1	9.5	18.4	46.0
1.037	25.2	9.0	L1	9.6	20.8	46.0
7.226	31.3	9.0	L1	9.6	18.7	50.0
7.551	30.8	9.0	L1	9.6	19.2	50.0
7.616	29.4	9.0	L1	9.6	20.6	50.0

Note) Level (Quasi-Peak and/or Average) = Meter Reading (Quasi-Peak and/or Average) +
Factor (LISN Insertion Loss + Cable Loss)

Margin = Limit – Level (Quasi-Peak and/or Average)

4.2 Radiated disturbance

Of those disturbances above (*L* - 20dB), where *L* is the limit level in logarithmic units, record at least the disturbance levels and the frequencies of the six highest disturbances.
The following data lists the significant emission frequencies, measured levels, correction factors (for antenna and cables), orientation of table, polarization and height of antenna, the corrected reading, the limit, and the amount of margin. All measurements were taken utilizing quasi-peak detection unless stated otherwise.
Measurements were performed at an antenna to EUT distance of 10 meters and elevated between 1 and 4 meters. Both vertical and horizontal antenna polarizations were measured.

Limits for radiated disturbance of ITE at a measuring distance of 10 m

Frequency range Limits MHz	Resolution Bandwidth	Quasi-peak Limits dB dB(μV/m)	
		Class A	Class B
30 to 230	120 kHz	40	30
230 to 1000	120 kHz	47	37
NOTE 1 The lower limit shall apply at the transition frequency NOTE 2 Additional provisions may be required for cases where interference occurs.			

Peak measurements were made over the changeable frequency range 1GHz to 40GHz or 5th in accordance with internal maximum operating frequency at a measurement distance of 3 m for the following antenna and turntable arrangements:

Antenna Height (Cm)	Antenna Polarisation	Turntable position (degrees)
100	Horizontal, Vertical	Continuous

Limits for above 1GHz radiated disturbance of ITE at a measuring distance of 3 m

Class	Limits - dB(μV/m)	
	Peak	Average
A	80	60
B	74	54
Average limit 500 20 log 500 = 53.979 dB ≒ 54 dB		

Antenna height was adjusted to 100 cm to be parallel from EUT to antenna centre.
Measurements within 20 dB of the limit were then maximized by adjusting turntable position.
Final measurements were made using a average detector.

Results checked manually; and points close to the limit line were re-measured.

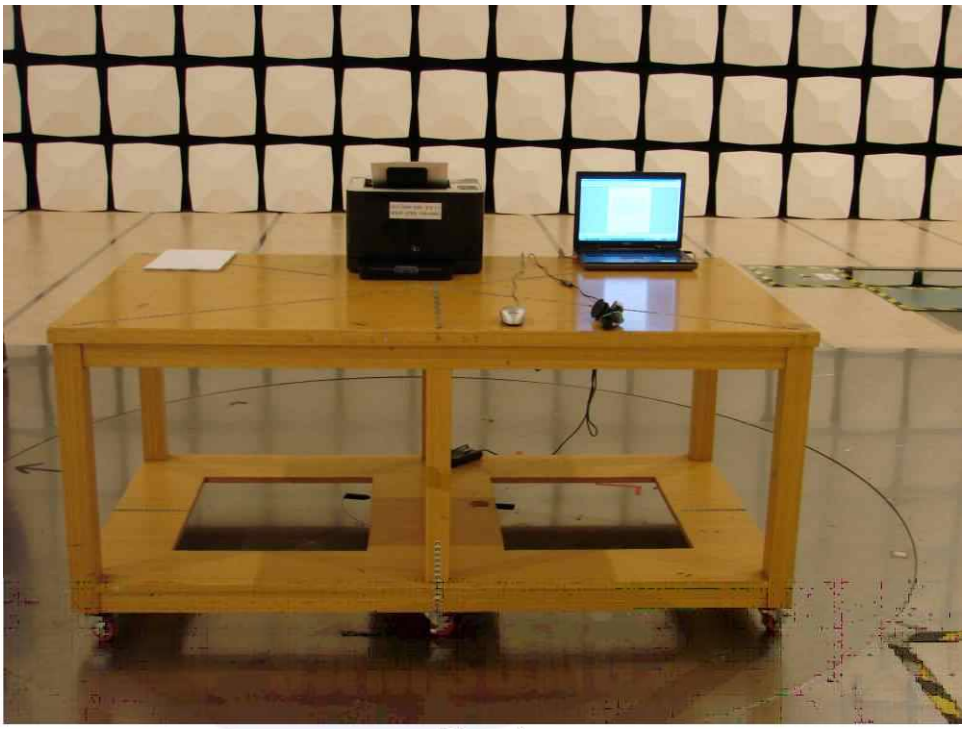
4.2.1 Test instrumentation

Test instrumentation	Manufacturer	Model name	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Bilog Antenna	Schaffner	CBL6112D	22602	2008-04-15	24
Bilog Antenna	Schaffner	CBL6112D	22604	2008-04-15	24
Horn Antenna	R&S	HF907	100016	2009-04-27	24
Test Receiver	R&S	ESIB-26	100287	2009-08-27	12
Test Receiver	R&S	ESIB-26	100147	2009-06-30	12
Amplifier	Sonoma	310N	185861	2009-01-28	12
Amplifier	Sonoma	310N	251676	2009-01-28	12
Amplifier	R&S	SCU_F018_G35_ASF42_CNN(F)	10001	2009-01-19	12
Antenna Mast	INN CO	MA4000	-	N/A	N/A
Antenna Mast	INN CO	MA4000	-	N/A	N/A
Mast Controller	INN CO	CO2000	-	N/A	N/A
Test software	TOYO	EP5/RE	VER 3.1.20	N/A	N/A
RF Selector	TOYO	NS4900	-	N/A	N/A

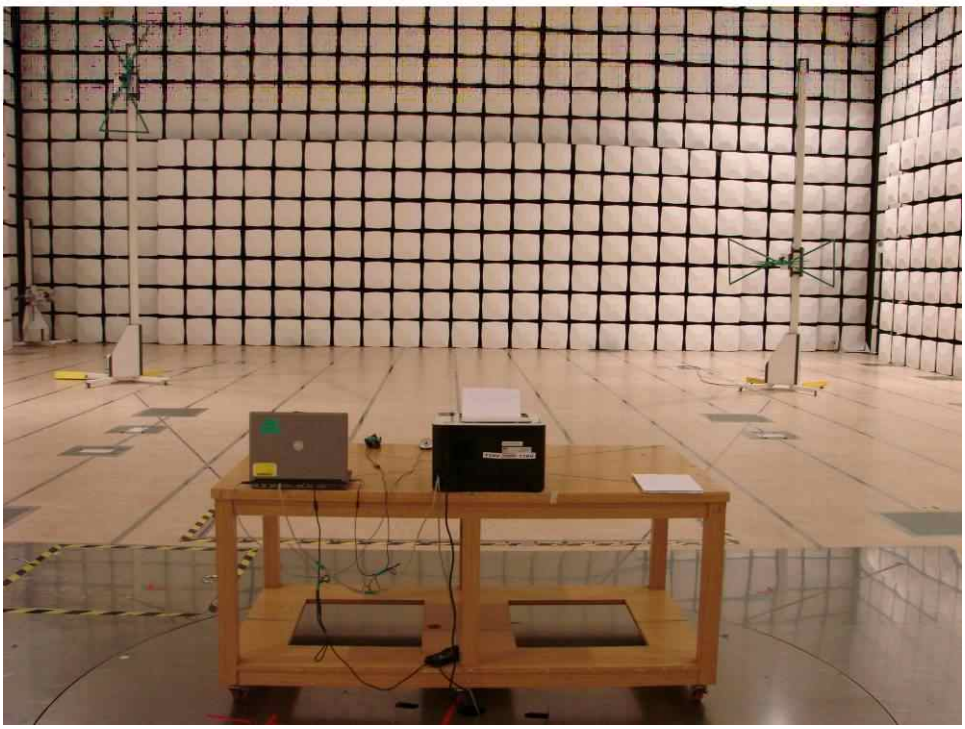
4.2.2 Temperature and humidity condition

Test date	December 2, 2009	**Test engineer**	Young Hun Cheong
Test place	10 m Semi-Anechoic Chamber		

4.2.3 Photograph of Test Setup



Front



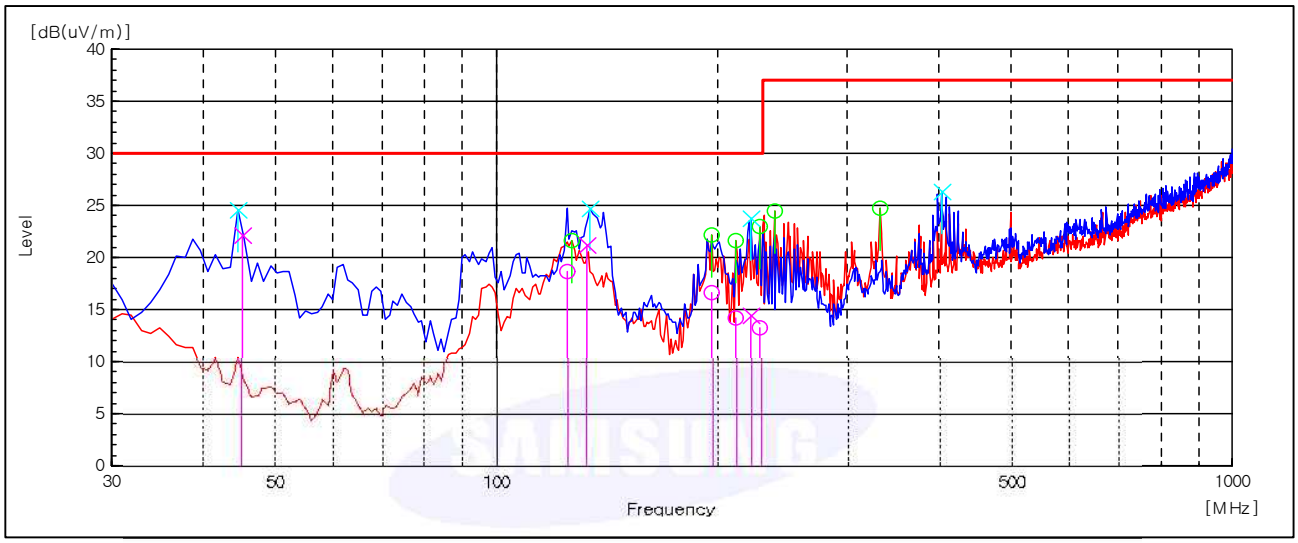
Rear

4.2.4 Test results

4.2.4.1 Below 1GHz results

- **Operating Mode : Standby Mode**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
45.267	V	43.1	-21.0	22.1	30.0	7.9	349.0	22.7
125.043	H	36.3	-17.6	18.7	30.0	11.3	350.0	10.0
132.886	V	38.7	-17.5	21.2	30.0	8.8	151.0	306.5
196.140	H	36.5	-19.9	16.6	30.0	13.4	346.0	55.3
211.595	H	34.0	-19.8	14.2	30.0	15.8	339.0	61.4
222.220	V	33.5	-19.0	14.5	30.0	15.5	150.0	76.2
228.016	H	32.1	-18.8	13.3	30.0	16.7	354.0	18.9

Note) Receiving antenna polarization : Horizontal and/or Vertical

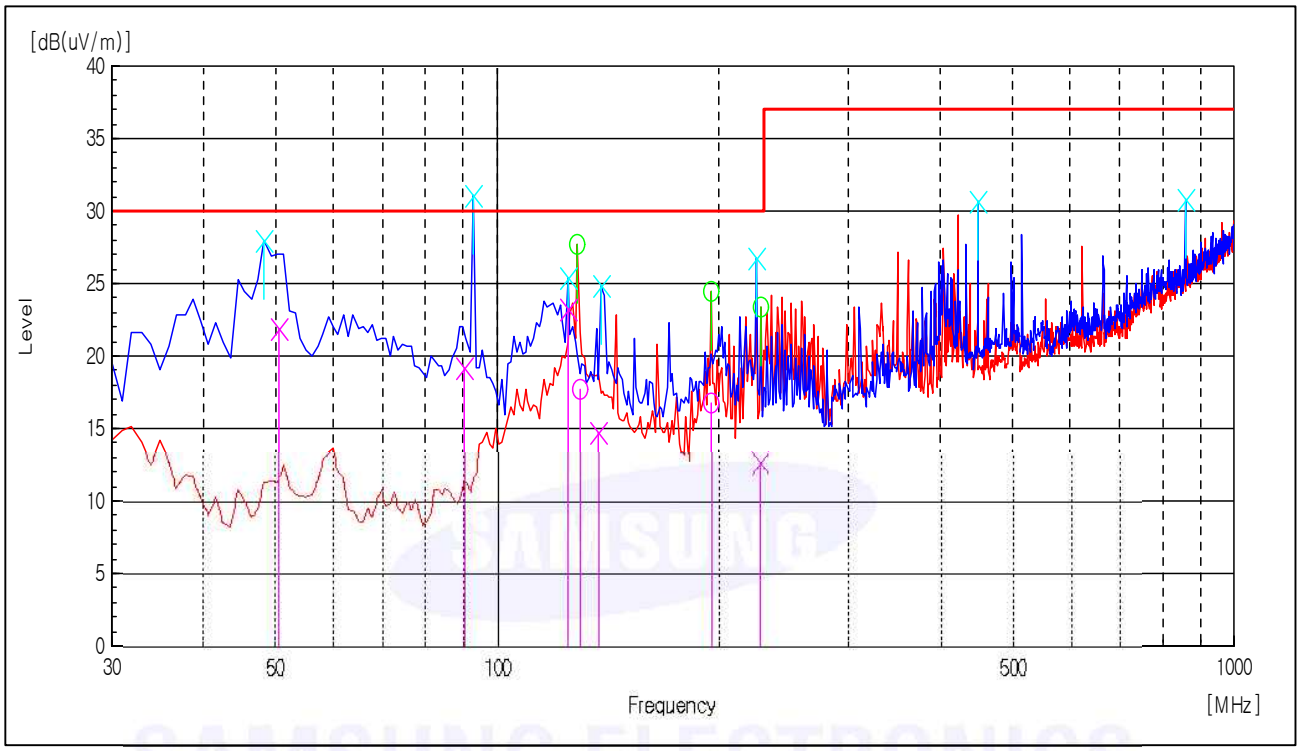
Test Distance : 10m, Antenna Height : 1 to 4 meters

Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)

Margin QP (Quasi-Peak) = Limit – Level QP

- **Operating Mode : USB Printing Mode**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
50.656	V	45.0	-23.2	21.8	30.0	8.2	152.0	8.8
90.405	V	39.9	-20.8	19.1	30.0	10.9	152.0	283.5
125.004	V	40.5	-17.2	23.3	30.0	6.7	152.0	72.0
137.349	V	32.5	-17.7	14.8	30.0	15.2	250.0	323.8
129.660	H	35.2	-17.6	17.6	30.0	12.4	349.0	17.0
227.374	V	31.5	-18.8	12.7	30.0	17.3	151.0	4.0
195.218	H	36.7	-20.0	16.7	30.0	13.3	256.0	254.7

Note) Receiving antenna polarization : Horizontal and/or Vertical

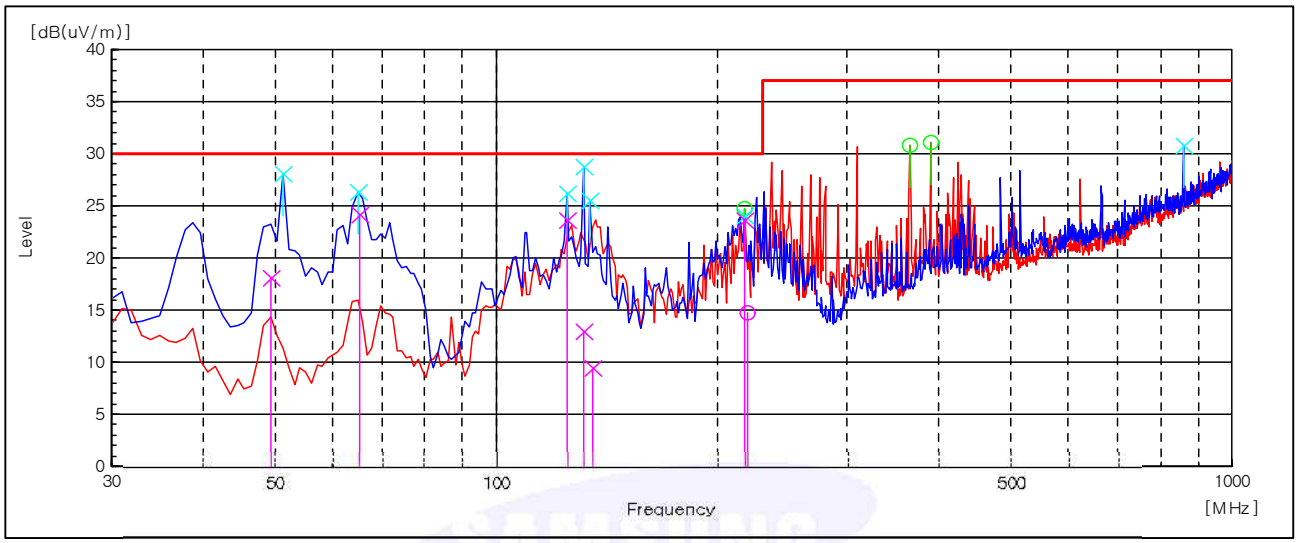
Test Distance : 10m, Antenna Height : 1 to 4 meters

Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)

Margin QP (Quasi-Peak) = Limit – Level QP

- **Operating Mode : Network Printing Mode**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
49.459	V	41.0	-22.8	18.2	30.0	11.8	151.0	324.0
65.358	V	48.8	-24.7	24.1	30.0	5.9	151.0	237.2
125.024	V	40.8	-17.2	23.6	30.0	6.4	250.0	5.0
131.273	V	30.4	-17.4	13.0	30.0	17.0	150.0	288.4
135.494	V	27.1	-17.6	9.5	30.0	20.5	250.0	123.5
217.318	V	43.0	-19.3	23.7	30.0	6.3	151.0	166.0
219.530	H	34.6	-19.8	14.8	30.0	15.2	354.0	45.8

Note) Receiving antenna polarization : Horizontal and/or Vertical

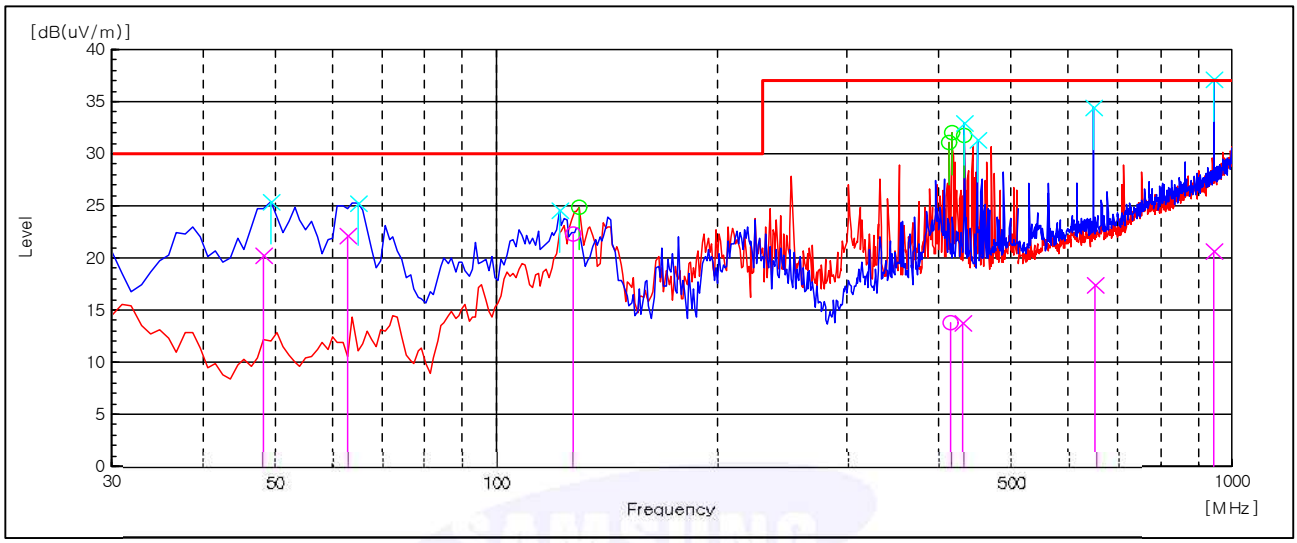
Test Distance : 10m, Antenna Height : 1 to 4 meters

Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)

Margin QP (Quasi-Peak) = Limit – Level QP

- **Operating Mode : Wireless Network Printing Mode**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
48.174	V	42.6	-22.3	20.3	30.0	9.7	150.0	239.3
62.847	V	47.0	-24.8	22.2	30.0	7.8	150.0	170.5
127.236	H	39.9	-17.6	22.3	30.0	7.7	353.0	351.7
414.426	H	23.8	-10.0	13.8	37.0	23.2	146.0	293.4
430.963	V	23.3	-9.5	13.8	37.0	23.2	252.0	18.2
650.571	V	23.1	-5.7	17.4	37.0	19.6	349.0	359.1
945.190	V	21.7	-1.0	20.7	37.0	16.3	349.0	316.4

Note) Receiving antenna polarization : Horizontal and/or Vertical

Test Distance : 10m, Antenna Height : 1 to 4 meters

Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)

Margin QP (Quasi-Peak) = Limit – Level QP

4.2.3.2 Above 1GHz results(1 ~ 2GHz)

- **Operating Mode : Standby Mode**

Peak Measurement

Frequency [MHz]	POL	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin PK [dB]	Height [cm]	Angle [deg]
1280.56	V	61.7	-7.5	54.2	74.0	19.8	100.0	2.2
1328.66	V	59.2	-6.9	52.3	74.0	21.7	100.0	359.6
1380.76	V	57.2	-6.3	50.9	74.0	23.1	100.0	312.9
1659.32	H	57.5	-4.1	53.4	74.0	20.6	100.0	110.9
1665.33	V	61.8	-4.1	57.7	74.0	16.3	100.0	58.3

Average Measurement

Frequency [MHz]	POL	Reading AV [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Limit [dB(uV/m)]	Margin AV [dB]	Height [cm]	Angle [deg]
1280.67	V	23.2	-7.5	15.7	54.0	38.3	100.0	1.7
1326.68	V	17.1	-7.0	10.1	54.0	43.9	100.0	359.2
1381.03	V	16.0	-6.3	9.7	54.0	44.3	100.0	313.5
1654.52	H	14.2	-4.2	10.0	54.0	44.0	100.0	111.4
1662.90	V	14.9	-4.1	10.8	54.0	43.2	100.0	58.8

Note1) Any emissions that do NOT exceed average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

Level P K(Peak) = Reading PK(Peak) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Level AV (Average) = Reading AV (Average) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Margin PK (Peak) = Limit – Level PK (Peak)

Margin AV (Average) = Limit – Level AV (Average)

- **Operating Mode : USB Printing Mode**

Peak Measurement

Frequency [MHz]	POL	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin PK [dB]	Height [cm]	Angle [deg]
1328.66	V	59.8	-6.9	52.9	74.0	21.1	100.0	355.7
1659.32	H	57.0	-4.1	52.9	74.0	21.1	100.0	127.0
1661.32	V	62.9	-4.1	58.8	74.0	15.2	100.0	58.7
1749.50	V	58.7	-3.8	54.9	74.0	19.1	100.0	0.7

Average Measurement

Frequency [MHz]	POL	Reading AV [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Limit [dB(uV/m)]	Margin AV [dB]	Height [cm]	Angle [deg]
1330.75	V	25.5	-6.9	18.6	54.0	35.4	100.0	355.1
1659.11	V	21.9	-4.1	17.8	54.0	36.2	100.0	59.2
1660.59	H	20.4	-4.1	16.3	54.0	37.7	100.0	127.5
1753.70	V	16.1	-3.8	12.3	54.0	41.7	100.0	1.0

Note1) Any emissions that do NOT exceed average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

Level P K(Peak) = Reading PK(Peak) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Level AV (Average) = Reading AV (Average) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Margin PK (Peak) = Limit – Level PK (Peak)

Margin AV (Average) = Limit – Level AV (Average)

- **Operating Mode : Network Printing Mode**

Peak Measurement

Frequency [MHz]	POL	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin PK [dB]	Height [cm]	Angle [deg]
1098.20	V	59.5	-8.3	51.2	74.0	22.8	100.0	122.2
1328.66	V	61.5	-6.9	54.6	74.0	19.4	100.0	1.1
1663.33	H	59.4	-4.1	55.3	74.0	18.7	100.0	111.0
1665.33	V	61.6	-4.1	57.5	74.0	16.5	100.0	27.4

Average Measurement

Frequency [MHz]	POL	Reading AV [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Limit [dB(uV/m)]	Margin AV [dB]	Height [cm]	Angle [deg]
1098.33	V	16.4	-8.3	8.1	54.0	45.9	100.0	121.6
1329.89	V	30.3	-6.9	23.4	54.0	30.6	100.0	1.6
1662.82	H	18.9	-4.1	14.8	54.0	39.2	100.0	110.4
1663.30	V	18.7	-4.1	14.6	54.0	39.4	100.0	27.8

Note1) Any emissions that do NOT exceed average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

Level P K(Peak) = Reading PK(Peak) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Level AV (Average) = Reading AV (Average) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Margin PK (Peak) = Limit – Level PK (Peak)

Margin AV (Average) = Limit – Level AV (Average)

- **Operating Mode : Wireless Network Printing Mode**

Peak Measurement

Frequency [MHz]	POL	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin PK [dB]	Height [cm]	Angle [deg]
1236.47	V	64.2	-7.9	56.3	74.0	17.7	100.0	359.6
1308.62	V	62.0	-7.2	54.8	74.0	19.2	100.0	233.1
1330.66	V	59.8	-6.9	52.9	74.0	21.1	100.0	185.7
1661.32	V	63.1	-4.1	59.0	74.0	15.0	100.0	264.6
1661.32	H	57.7	-4.1	53.6	74.0	20.4	100.0	124.1

Average Measurement

Frequency [MHz]	POL	Reading AV [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Limit [dB(uV/m)]	Margin AV [dB]	Height [cm]	Angle [deg]
1232.30	V	17.5	-7.9	9.6	54.0	44.4	100.0	0.3
1310.55	V	16.6	-7.2	9.4	54.0	44.6	100.0	232.6
1328.65	V	18.1	-6.9	11.2	54.0	42.8	100.0	186.4
1656.66	H	15.5	-4.2	11.3	54.0	42.7	100.0	124.6
1656.72	V	15.4	-4.2	11.2	54.0	42.8	100.0	264.2

Note1) Any emissions that do NOT exceed average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

Level P K(Peak) = Reading PK(Peak) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Level AV (Average) = Reading AV (Average) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

Margin PK (Peak) = Limit – Level PK (Peak)

Margin AV (Average) = Limit – Level AV (Average)

Appendix – EUT photography

Front View

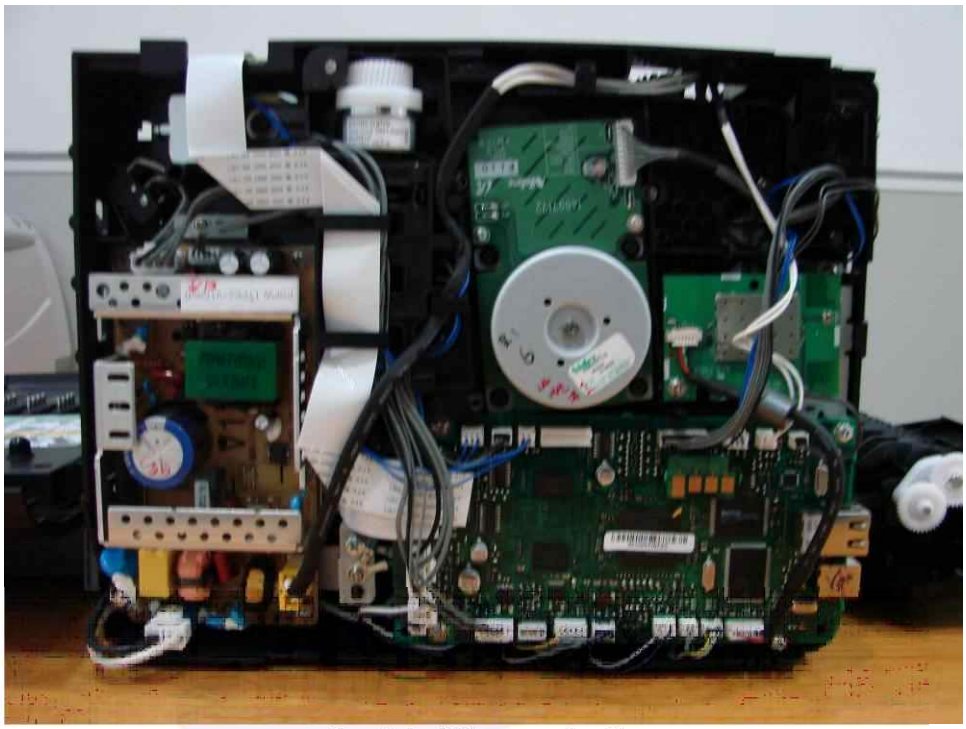
Rear View

Left View

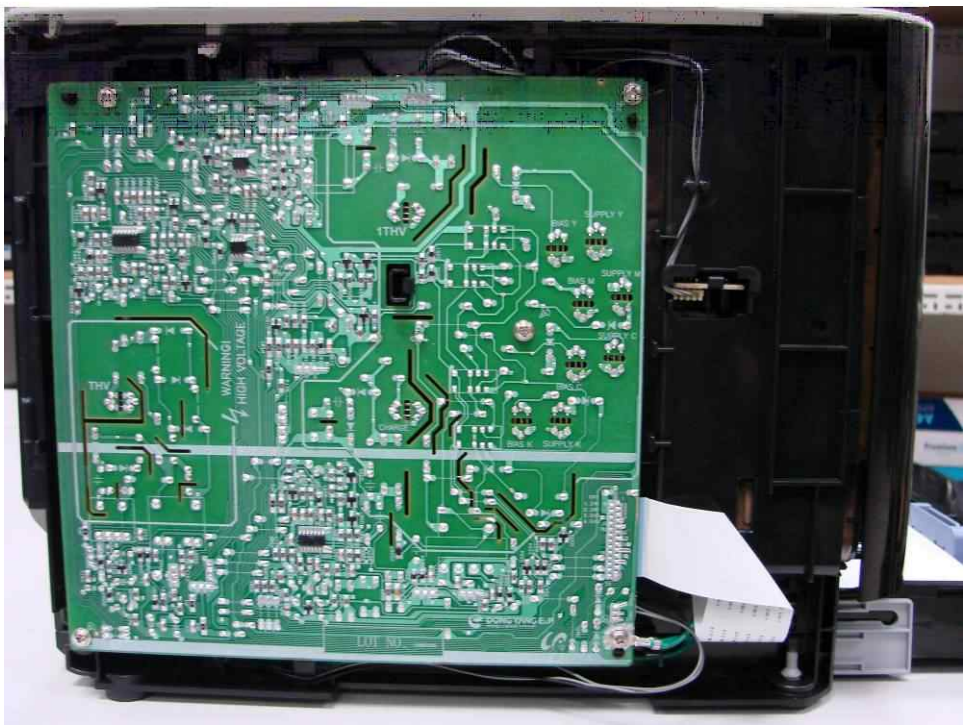
Right View

Inside View – Front

Inside View – Rear



Inside View – Left



Inside View – Right

Label Location

Label