

EMC TEST REPORT

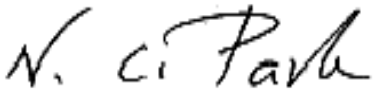
Project No.	LBE092450	Issue No.	1
Applicant	Name of organization	Samsung Electronics Co., Ltd.	
	Address	416 Maetan 3-Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do 443-742 Korea	
	Date of application	August 07, 2009	
EUT	Type of device	Class B digital devices, peripherals	
	Equipment authorization	☐ Declaration of Conformity ☒ Certification ☐ Verification	
	FCC ID	A3LML2525W	
	Kind of product	Mono Laser PRINTER	
	Model No.	ML-2525W	
		Variant Model No.	-
	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 Shin Heung Digital Electronics Co., Ltd. 98, Samsung Road, Weihai Hi-Tech IDZ, Shandong Province, P.R. China	
Applied Standards		FCC Part 15, Subpart B / ANSI C63.4-2003	
Test Period		August 10, 2009 ~ August 19, 2009	
Issue date		August 28, 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 : Sung Jin Sim 		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. The test results in this report only apply to the tested sample. This report must not be reproduced, except in full, without written permission from SEC EMC Laboratory.			
 416 Maetan 3-Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 443-742 Korea Tel: 82 31 277 7752, Fax: 82 31 277 7753			

Table of contents

1. Summary of test results

1.1 Emission

2. General Information

2.1 Test facility

2.2 Accreditation and listing

3. Test configuration

3.1 Test Peripherals

3.2 EUT operating mode

3.3 Details of Sampling

3.4 Used cable description

3.5 EUT Description

3.6 Clock Frequencies

3.7 Test configuration and condition

3.8 Measurement uncertainty

4. Result of individual tests

4.1 Conducted disturbance

4.2 Radiated disturbance

Appendix – EUT photography

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
	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	Remarks
Printer	ML-2525W	–	SAMSUNG	–
PC	PP18L	27182225373	DELL	DoC
AC Adapter	LA65NS1-00	CN-0YD637-71615-83C-0E60	DELL	DoC
USB mouse	MOARUO	0740007944	Primax Electronics	DoC
Headset	MH21	–	COZY	–

3.2 EUT operating mode

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

Operating Mode 1	Stand-by
Operating Mode 2	USB Printing
Operating Mode 3	Network Printing
Operating Mode 4	Wireless Network Printing

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	-
LAN	2.0	No	-
USB	1.8	Yes	From EUT to PC

3.5 EUT Description

The following features describe EUT represented by this report:

Item	Specification and Description
Processor	CHORUS3
Standard System memory	64MB DDR2 SDRAM
Resolution	Optical 600x600dpi (1 200 dpi support)
Copy Quality mode	Not Available
Paper Handling	Paper Tray(standard) 250 Sheets
Power Rating	110 ~ 127 VAC, 5.5 A, 50/60 Hz
Power Consumption	Stand by mode : 60 Watts Printing simplex : Average operation mode : 360 Watts
Printer Language	PCL5e, PCL6, Epson/IBM
Interfaces	High Speed USB 2.0, Ethernet 10/100 Base TX 802.11 b/g Wireless LAN
OS compatibility	Windows 2000 / XP / VISTA / 2003 / 2008 Linux Mac OS X 10.3~10.6
Modes of Operation	USB Printing, Network Printing, Wireless Network Printing
Intended Class for Emissions	Class B

3.6 Clock Frequencies

Kind of Clocks	Frequency[MHz]	Kind of Clocks	Frequency[MHz]
Main source clock	12	Video clock	12
CPU internal clock	360	SDRAM clock	166

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. The mode of operation utilized for testing was selected to best simulate typical EUT use.

The EUT was measured all testing with toner cartridge.

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	Model name	Manufacturer	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Measuring receiver	ESCI	R&S	100370	2009-05-07	12
Artificial mains network	ENV216	R&S	100456	2008-09-12	12
Artificial mains network	ESH3-Z5	R&S	100261	2009-04-03	12
Test software	EMC32	R&S	Ver 4.40.	N/A	N/A

4.1.2 Temperature and humidity condition

Test date	August 14, 2009 ~ August 19, 2009	Test engineer	Sung Jin Sim
Test place	Shielded Room #1		

4.1.3 Photograph of Test Setup



Front



Rear

4.1.4 Test results (mains port)

- Configuration 1 : Standby Mode

Hardware Setup: Voltage with ENV 2-Line-LISN - [EMI conducted]

Subrange 1

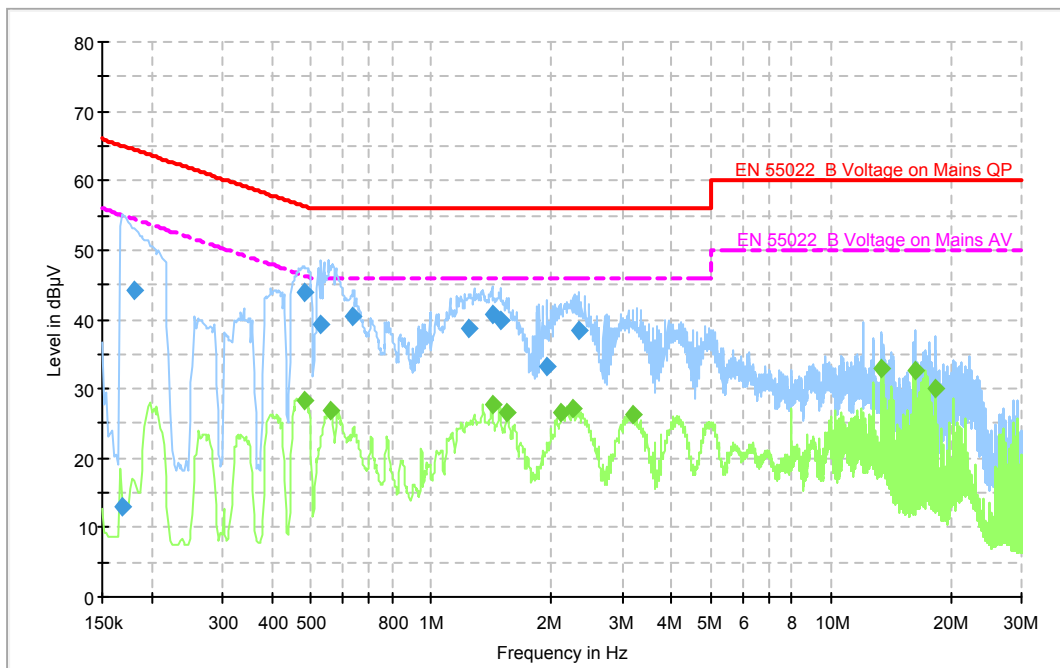
Frequency Range: 150kHz - 30MHz
Receiver: ESCI 3
Transducer: ENV216 / Receiver-2-Line-LISN ENV216

Scan Setup: EN55022_B_ENV 2-Line-LISN fin [EMI conducted]

Hardware Setup: Voltage with ENV 2-Line-LISN
Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150kHz - 30MHz	Quasi Peak; Average	9kHz	15s	ESCI 3

Test Graph



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 (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.168	12.9	L1	9.3	52.2	65.1
0.180	44.2	L1	9.3	20.3	64.5
0.482	43.8	L1	9.4	12.5	56.3
0.530	39.4	L1	9.4	16.6	56.0
0.638	40.6	N	9.5	15.4	56.0
1.244	38.8	N	9.5	17.2	56.0
1.420	40.7	L1	9.5	15.3	56.0
1.492	39.8	N	9.5	16.2	56.0
1.948	33.3	L1	9.5	22.7	56.0
2.344	38.3	L1	9.5	17.7	56.0

Average final measurement results table

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.482	28.2	N	9.4	18.1	46.3
0.560	26.9	L1	9.4	19.1	46.0
1.420	27.6	L1	9.5	18.4	46.0
1.548	26.7	L1	9.5	19.3	46.0
2.116	26.5	L1	9.5	19.5	46.0
2.252	27.2	N	9.5	18.8	46.0
3.200	26.1	L1	9.5	19.9	46.0
13.420	32.9	N	9.7	17.1	50.0
16.228	32.7	N	9.7	17.3	50.0
18.244	29.9	L1	9.6	20.1	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)

- Configuration 1 : USB Printing Mode

Hardware Setup: Voltage with ENV 2-Line-LISN - [EMI conducted]

Subrange 1

Frequency Range: 150kHz - 30MHz

Receiver: ESCI 3

Transducer: ENV216 / Receiver-2-Line-LISN ENV216

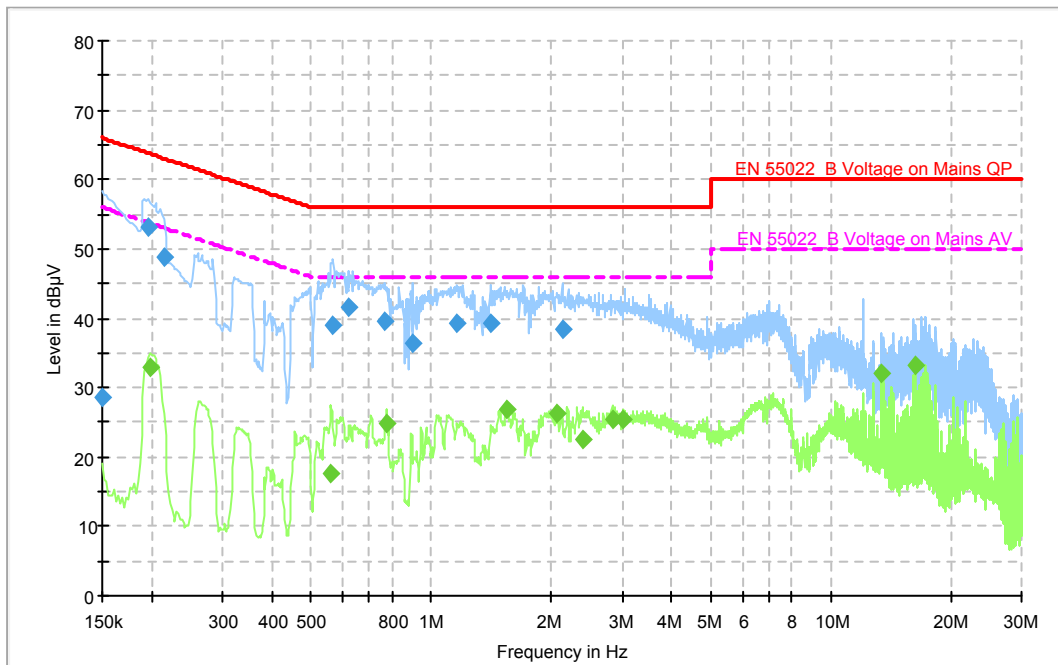
Scan Setup: EN55022_B_ENV 2-Line-LISN fin [EMI conducted]

Hardware Setup: Voltage with ENV 2-Line-LISN

Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150kHz - 30MHz	Quasi Peak; Average	9kHz	15s	ESCI 3

Test Graph



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 (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	28.5	L1	9.3	37.5	66.0
0.196	53.2	N	9.3	10.6	63.8
0.214	48.9	L1	9.3	14.2	63.0
0.568	38.9	N	9.4	17.1	56.0
0.620	41.7	N	9.5	14.3	56.0
0.762	39.6	N	9.5	16.4	56.0
0.900	36.4	N	9.5	19.6	56.0
1.160	39.4	N	9.5	16.6	56.0
1.408	39.4	N	9.5	16.6	56.0
2.124	38.3	L1	9.5	17.7	56.0

Average final measurement results table

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.198	33.0	L1	9.3	20.7	53.7
0.560	17.6	N	9.4	28.4	46.0
0.772	25.0	N	9.5	21.0	46.0
1.544	26.7	N	9.5	19.3	46.0
2.060	26.2	N	9.5	19.8	46.0
2.388	22.5	L1	9.5	23.5	46.0
2.832	25.3	L1	9.5	20.7	46.0
3.032	25.6	L1	9.5	20.4	46.0
13.420	32.2	N	9.7	17.8	50.0
16.228	33.3	L1	9.6	16.7	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)

- Configuration 1 : Network (100 M Full Duplex) Printing Mode

Hardware Setup: Voltage with ENV 2-Line-LISN - [EMI conducted]

Subrange 1

Frequency Range: 150kHz - 30MHz

Receiver: ESCI 3

Transducer: ENV216 / Receiver-2-Line-LISN ENV216

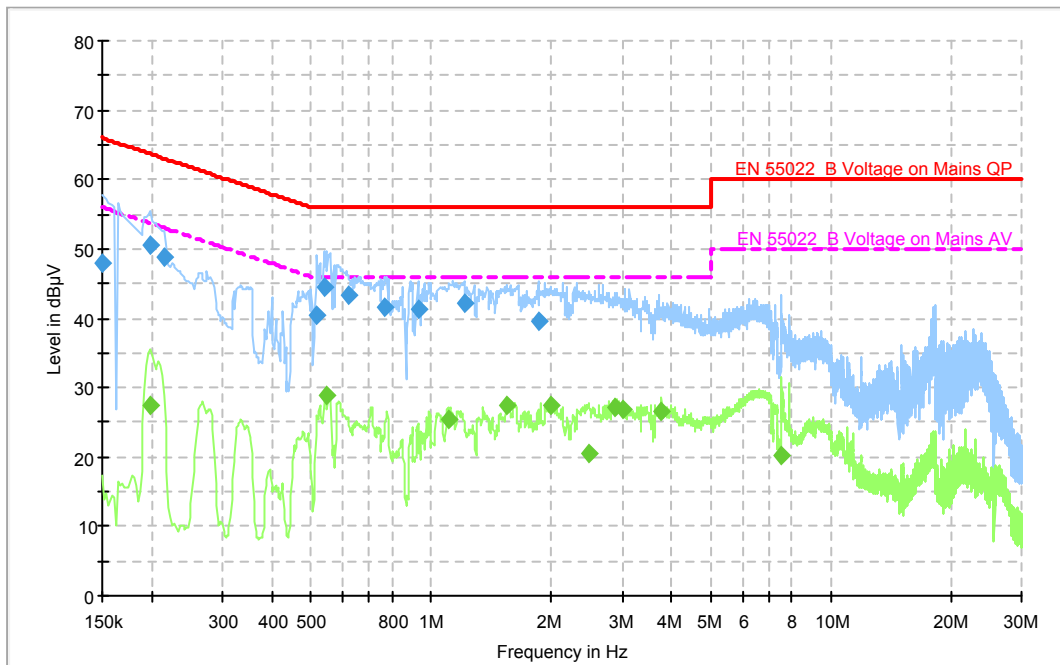
Scan Setup: EN55022_B_ENV 2-Line-LISN fin [EMI conducted]

Hardware Setup: Voltage with ENV 2-Line-LISN

Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150kHz - 30MHz	Quasi Peak; Average	9kHz	15s	ESCI 3

Test Graph



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 (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	48.1	N	9.3	17.9	66.0
0.198	50.7	L1	9.3	13.0	63.7
0.214	48.8	N	9.3	14.3	63.0
0.516	40.6	N	9.4	15.4	56.0
0.538	44.5	L1	9.4	11.5	56.0
0.618	43.2	N	9.5	12.8	56.0
0.764	41.6	N	9.5	14.4	56.0
0.924	41.4	N	9.5	14.6	56.0
1.208	42.1	L1	9.5	13.9	56.0
1.848	39.5	N	9.5	16.5	56.0

Average final measurement results table

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.198	27.5	N	9.3	26.2	53.7
0.546	28.9	N	9.4	17.1	46.0
1.100	25.4	N	9.5	20.6	46.0
1.552	27.3	L1	9.5	18.7	46.0
1.992	27.4	N	9.5	18.6	46.0
2.476	20.4	N	9.5	25.6	46.0
2.892	27.1	N	9.5	18.9	46.0
3.028	26.9	N	9.5	19.1	46.0
3.776	26.7	N	9.5	19.3	46.0
7.484	20.3	N	9.6	29.7	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)

- Configuration 1 : Wireless Network Printing Mode

Hardware Setup: Voltage with ENV 2-Line-LISN - [EMI conducted]

Subrange 1

Frequency Range: 150kHz - 30MHz

Receiver: ESCI 3

Transducer: ENV216 / Receiver-2-Line-LISN ENV216

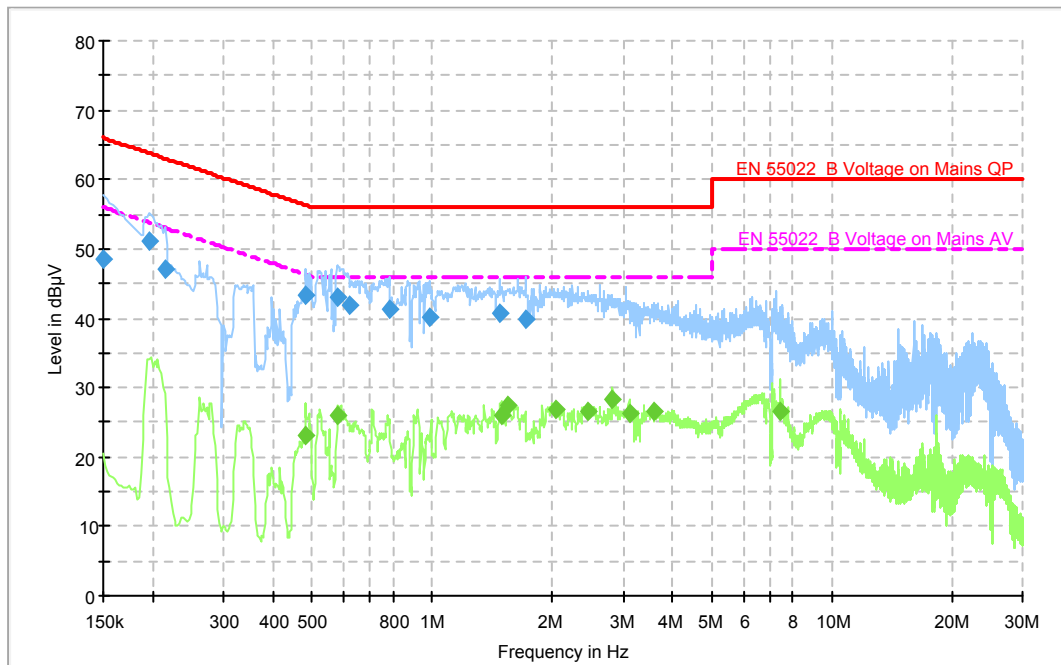
Scan Setup: EN55022_B_ENV 2-Line-LISN fin [EMI conducted]

Hardware Setup: Voltage with ENV 2-Line-LISN

Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150kHz - 30MHz	Quasi Peak; Average	9kHz	15s	ESCI 3

Test Graph



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 (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	48.5	L1	9.3	17.5	66.0
0.196	51.3	N	9.3	12.5	63.8
0.214	47.2	N	9.3	15.8	63.0
0.482	43.4	N	9.4	12.9	56.3
0.576	42.9	N	9.5	13.1	56.0
0.618	41.9	L1	9.5	14.1	56.0
0.780	41.3	L1	9.5	14.7	56.0
0.984	40.0	N	9.5	16.0	56.0
1.476	40.7	N	9.5	15.3	56.0
1.708	39.9	L1	9.5	16.1	56.0

Average final measurement results table

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.482	23.1	N	9.4	23.2	46.3
0.582	25.9	N	9.5	20.1	46.0
1.488	26.1	N	9.5	19.9	46.0
1.548	27.4	N	9.5	18.6	46.0
2.048	27.0	L1	9.5	19.0	46.0
2.460	26.6	N	9.5	19.4	46.0
2.828	28.2	L1	9.5	17.8	46.0
3.108	26.2	N	9.5	19.8	46.0
3.604	26.5	N	9.5	19.5	46.0
7.408	26.4	L1	9.5	23.6	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 ($L - 20\text{dB}$), 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($\mu\text{V}/\text{m}$)	
		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 3m for the following antenna and turntable arrangements:

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

Antenna height was adjusted to 108cm to be parallel from EUT to antenna centre.

Measurements within 20dB 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.

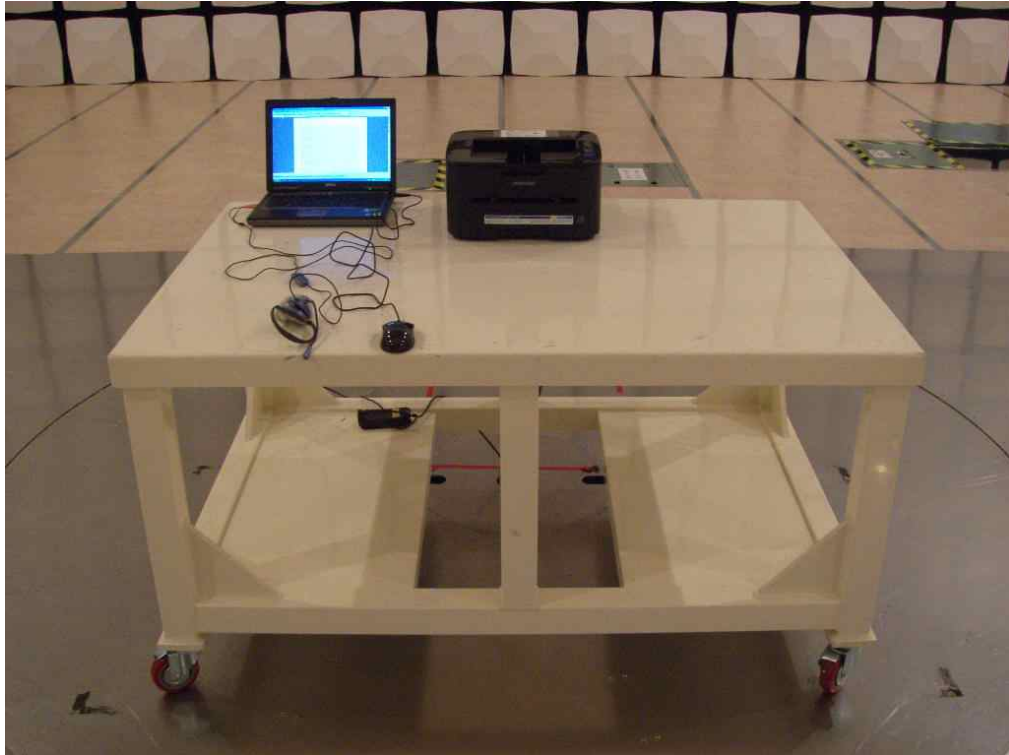
4.2.1 Test instrumentation

Test instrumentation	Model name	Manufacturer	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Bi-con Antenna	CBL6112D	Schaffner	22602	2008-04-15	24
Bi-con Antenna	CBL6112D	Schaffner	22604	2008-04-15	24
Horn Antenna	HF907	R&S	100016	2009-04-27	24
EMI Receiver	ESIB-26	R&S	100287	2008-08-26	12
EMI Receiver	ESIB-26	R&S	100289	2008-08-27	12
Amplifier	310N	Agilent	185861	2009-01-28	12
Amplifier	310N	Agilent	251676	2009-01-28	12
Amplifier	SCU_F018_G 35_ASF42	R&S	10001	2008-09-08	12
Antenna Mast	MA4000	INN CO	-	N/A	N/A
Antenna Mast	MA4000	INN CO	-	N/A	N/A
Antenna Mast	MA2000	INN CO	-	N/A	N/A
Mast Controller	CO2000	INN CO	-	N/A	N/A
Test software	EP5/RE	TOYO	VER 3.1.20	N/A	N/A
RF Selector	NS4900	TOYO	-	N/A	N/A

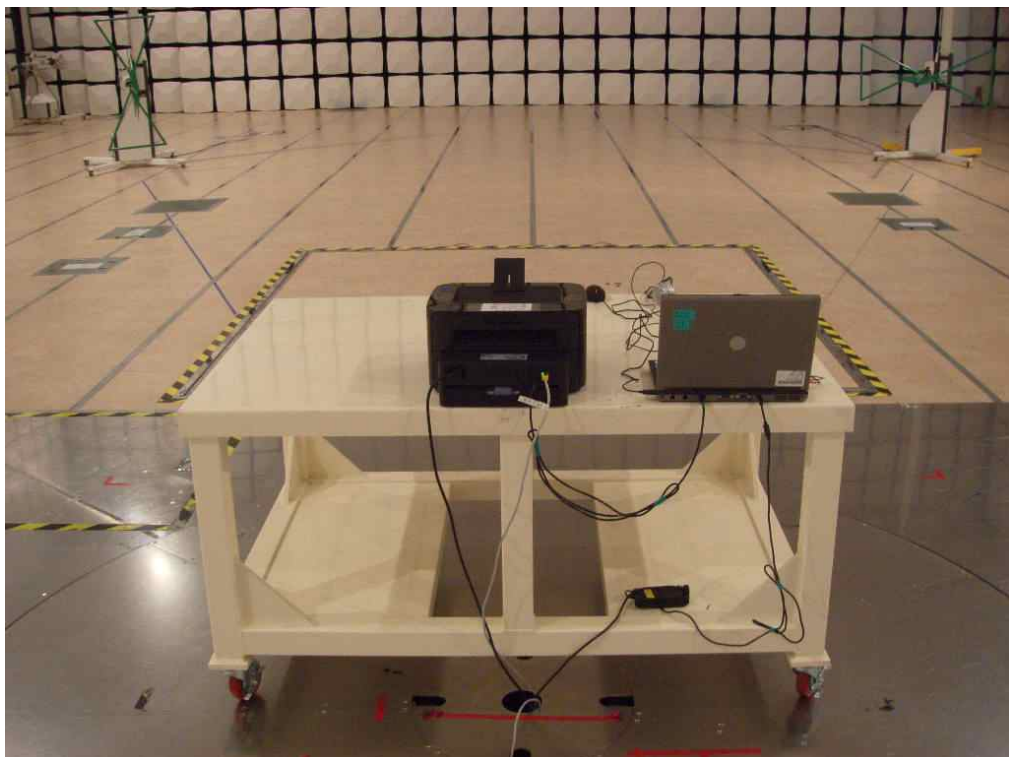
4.2.2 Temperature and humidity condition

Test date	July 03, 2009 ~ July 10, 2009	Test engineer	Sung Jin Sim
Test place	10 m Semi-Anechoic Chamber & 3 m Anechoic Chamber		

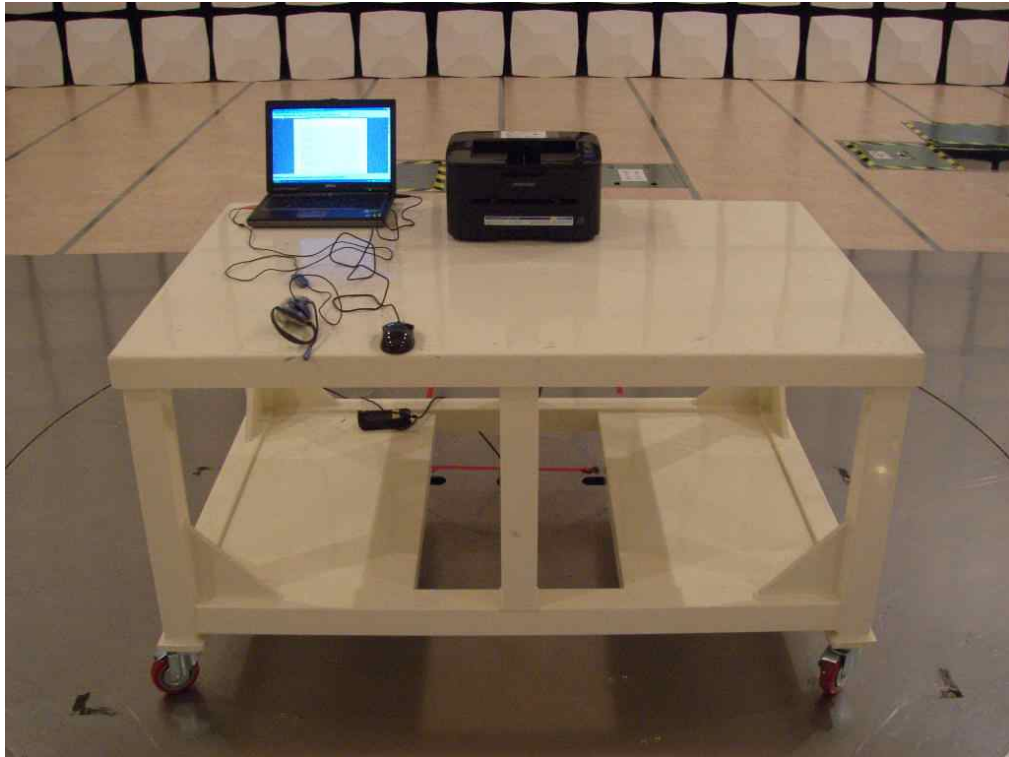
4.2.3 Photograph of Test Setup



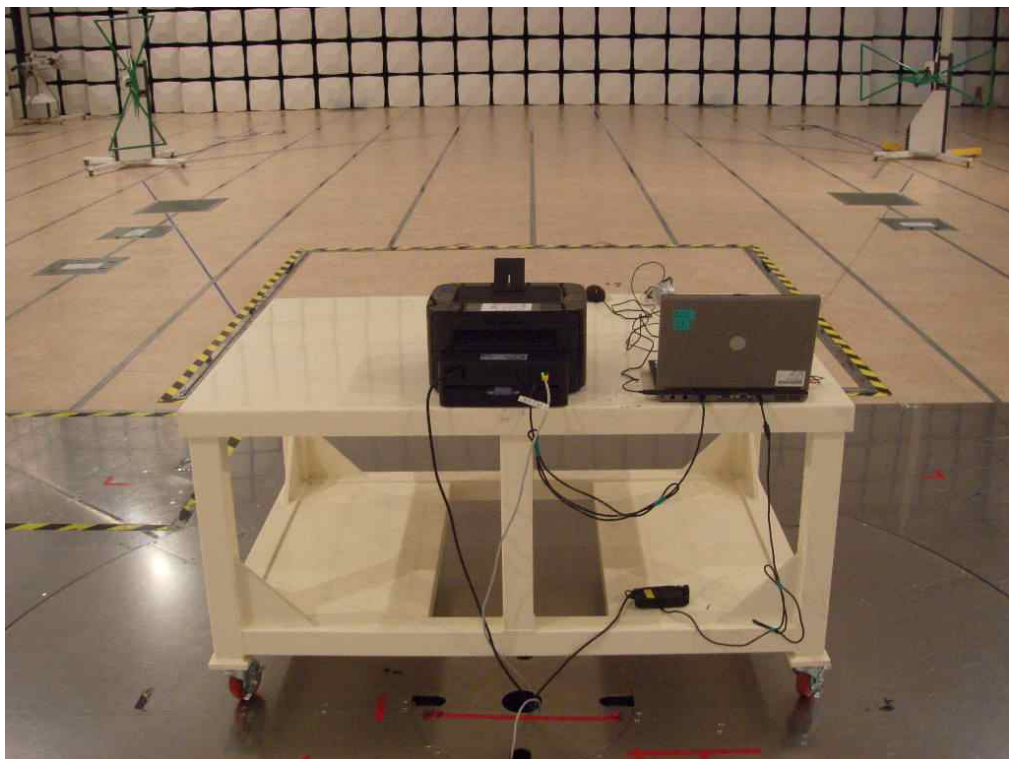
Front (30 MHz to 1 GHz)



Rear (30 MHz to 1 GHz)



Front (1 GHz to 2 GHz)



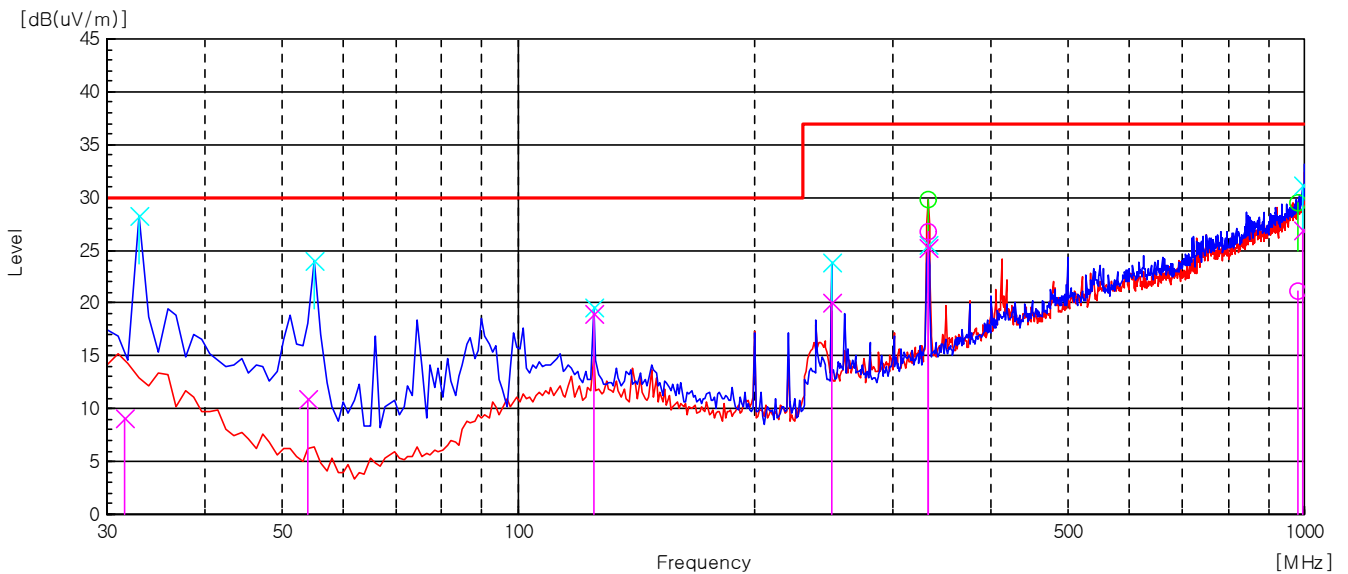
Rear (1 GHz to 2 GHz)

4.2.4 Test results

4.2.4.1 30 MHz to 1GHz test results

- Configuration 1 : Stand-by Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(μ V)]	Factor [dB(1/m)]	Level QP [dB(μ V /m)]	Limit [dB(μ V /m)]	Margin QP [dB]	Height [cm]	Angle [deg]
31.608	V	23.1	-14	9.1	30	20.9	151	270.6
53.921	V	35.2	-24.2	110	30	19.0	350	41.6
124.994	V	36.2	-17.2	19.0	30	11.0	151	270.6
250.232	V	35.5	-15.4	20.1	37	16.9	151	218.3
332.168	H	40.2	-13.4	26.8	37	10.2	250	313.9
332.177	V	38.1	-12.9	25.2	37	11.8	350	270.6
983.507	H	21.6	-0.5	21.1	37	15.9	246	122.3
996.426	V	26.9	0	26.9	37	10.1	151	288.7

Note) Receiving antenna polarization : Horizontal and/or Vertical

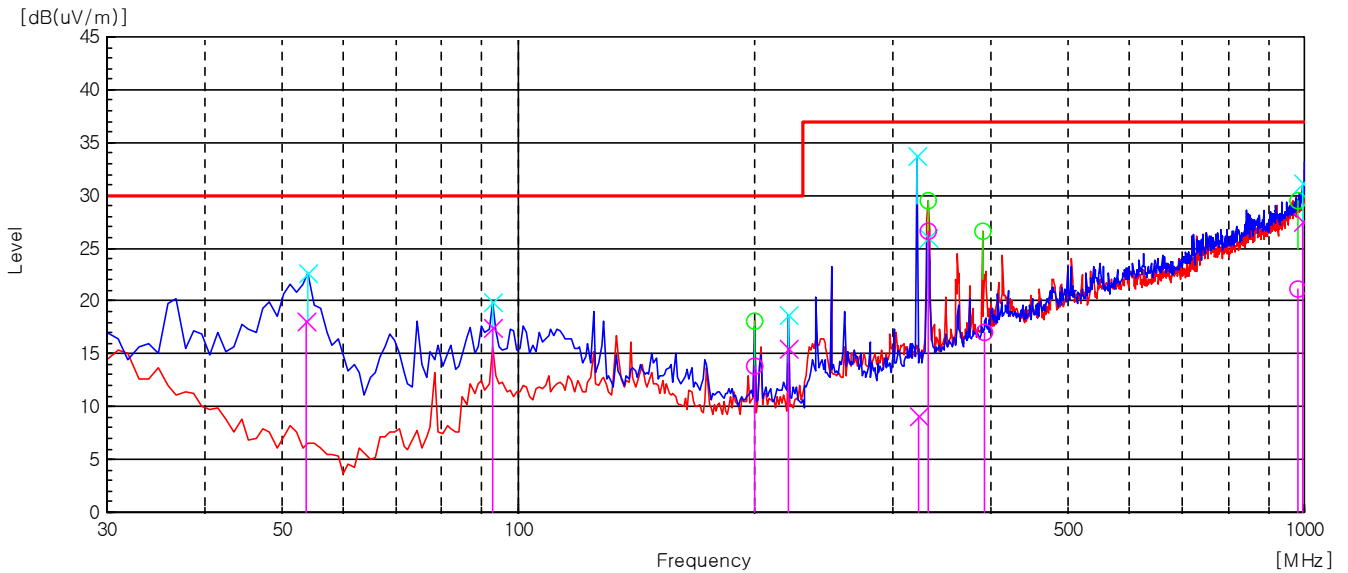
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : USB Printing Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(μ V)]	Factor [dB(1/m)]	Level QP [dB(μ V /m)]	Limit [dB(μ V /m)]	Margin QP [dB]	Height [cm]	Angle [deg]
53.834	V	42.2	-24.1	18.1	30	11.9	151	348.7
92.703	V	37.8	-20.3	17.5	30	12.5	151	36.0
200.004	H	33.7	-19.8	13.9	30	16.1	349	243.8
220.289	V	34.6	-19.1	15.5	30	14.5	150	228.1
323.803	V	22.3	-13.2	9.1	37	27.9	351	358.8
331.820	H	40.0	-13.4	26.6	37	10.4	248	255.2
391.717	H	28.3	-11.2	17.1	37	19.9	144	358.7
980.055	H	21.7	-0.5	21.2	37	15.8	251	121.2
995.526	V	27.5	0	27.5	37	9.5	151	287.7

Note) Receiving antenna polarization : Horizontal and/or Vertical

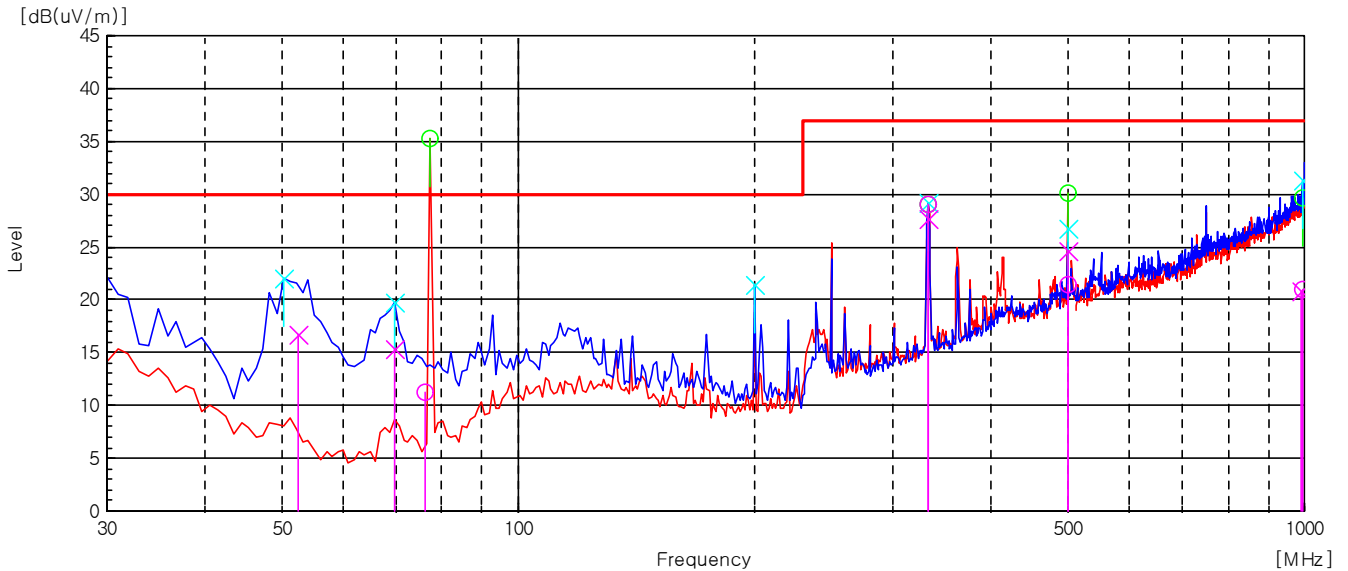
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : Network Printing Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(μ V)]	Factor [dB(1/m)]	Level QP [dB(μ V /m)]	Limit [dB(μ V /m)]	Margin QP [dB]	Height [cm]	Angle [deg]
52.414	V	40.5	-23.8	16.7	30	13.3	350	0.8
69.603	V	39.8	-24.4	15.4	30	14.6	149	271
76.167	H	35.6	-24.3	11.3	30	18.7	249	77.8
331.820	H	42.4	-13.4	29.0	37	8.0	243	61.1
331.839	V	40.5	-12.9	27.6	37	9.4	150	352.1
499.998	H	30.2	-8.8	21.4	37	15.6	146	126.8
500.409	V	32.7	-8.1	24.6	37	12.4	350	350.3
991.516	V	21.0	-0.1	20.9	37	16.1	350	341.1
994.783	H	21.2	-0.3	20.9	37	16.1	353	351.5

Note) Receiving antenna polarization : Horizontal and/or Vertical

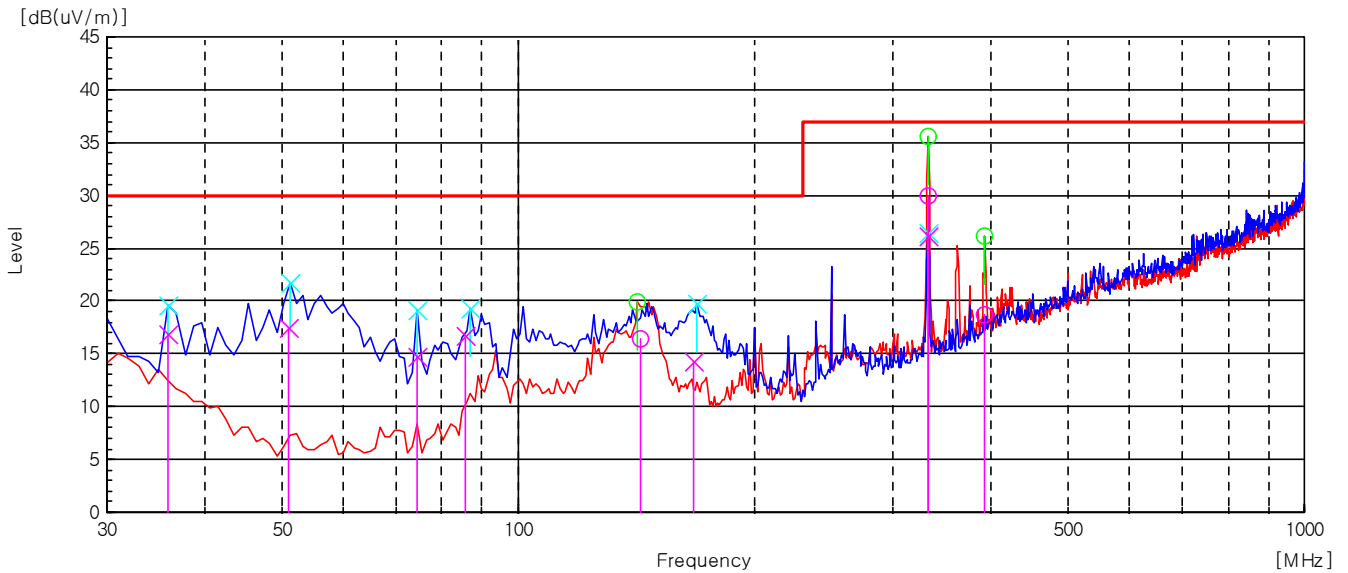
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : Wireless Network Printing Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(μ V)]	Factor [dB(1/m)]	Level QP [dB(μ V /m)]	Limit [dB(μ V /m)]	Margin QP [dB]	Height [cm]	Angle [deg]
35.796	V	33.0	-16.2	16.8	30	13.2	250	315.4
51.110	V	40.8	-23.3	17.5	30	12.5	249	8.5
74.433	V	38.7	-23.9	14.8	30	15.2	151	253.6
85.527	V	38.7	-22.0	16.7	30	13.3	152	42.1
143.096	H	35.1	-18.6	16.5	30	13.5	356	44.1
167.496	V	33.5	-19.3	14.2	30	15.8	249	0.9
331.685	H	43.4	-13.4	30.0	37	7.0	251	314.9
331.878	V	39.0	-12.9	26.1	37	10.9	152	354.3
391.911	H	30.0	-11.2	18.8	37	18.2	245	33.9

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

4.2.4.2 1 GHz to 2 GHz test results

- Configuration 1 : Stand-by Mode

Test Results

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]
1328.657	V	58.6	-6.9	51.7	74	22.3	108	344.8
1328.657	H	52.0	-6.9	45.1	74	28.9	108	3.8
1593.186	H	51.4	-4.4	47.0	74	27.0	108	246.5
1597.194	V	56.9	-4.4	52.5	74	21.5	108	40.1
1665.331	V	52.8	-4.1	48.7	74	25.3	108	353.2

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]
1332.926	V	26.0	-6.9	19.1	54	34.9	108	292.5
1333.286	H	23.4	-6.9	16.5	54	37.5	108	185.7
1591.883	H	15.0	-4.4	10.6	54	43.4	108	312.9
1595.170	V	25.7	-4.4	21.3	54	32.7	108	174.1
1663.507	V	18.3	-4.1	14.2	54	39.8	108	358.8

Note1) Representative operating modes were selected by customer and 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)

- Configuration 1 : USB Printing Mode

Test Results

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]
1328.657	V	56.8	-7.0	49.8	74	24.2	108	2.4
1328.657	H	52.0	-7.0	45.0	74	29.0	108	62.4
1597.194	V	53.8	-4.2	49.6	74	24.4	108	62.4
1661.323	V	55.7	-3.8	51.9	74	22.1	108	141.2

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]
1328.958	V	29.7	-7.0	22.7	54	31.3	108	11.9
1328.837	H	29.1	-7.0	22.1	54	31.9	108	28.8
1595.410	V	29.7	-4.2	25.5	54	28.5	108	111.9
1662.866	V	20.5	-3.8	16.7	54	37.3	108	109.9

Note1) Representative operating modes were selected by customer and 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)

- Configuration 1 : Network Printing Mode

Test Results

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]
1328.657	V	57.7	-7.0	50.7	74	23.3	108	359.5
1593.186	H	52.2	-4.2	48.0	74	26.0	108	6.3
1597.194	V	54.9	-4.2	50.7	74	23.3	108	94.2
1997.996	V	50.5	-1.6	48.9	74	25.1	108	331.2

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]
1330.120	V	30.3	-7.0	23.3	54	30.7	108	300.9
1595.090	H	19.8	-4.2	15.6	54	38.4	108	253.3
1597.815	V	31.2	-4.2	27.0	54	27.0	108	72.3
1994.489	V	25.5	-1.6	23.9	54	30.1	108	355.1

Note1) Representative operating modes were selected by customer and 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)

- Configuration 1 : Wireless Network Printing Mode

Test Results

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]
1328.657	V	58.9	-7.0	51.9	74	22.1	108	3.3
1589.178	V	54.5	-4.3	50.2	74	23.8	108	347.3
1993.988	V	52.3	-1.6	50.7	74	23.3	108	300.1

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]
1329.078	V	28.2	-7.0	21.2	54	32.8	108	7.4
1598.617	V	19.4	-4.2	15.2	54	38.8	108	113.9
1996.453	V	26.0	-1.6	24.4	54	29.6	108	346.7

Note1) Representative operating modes were selected by customer and 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 & Label location



Inside View – Front



Inside View – Rear



Inside View – Left



Inside View – Right



Project No. : LBE092450



Laser PRINTER : ML-2525W

Samsung Electronics Co., Ltd.
Suwon, Korea, 443-742
Place: M259

Model: ML-2525W
Volts: AC 110-127V
Hertz: 50/60 Hz
Amps: 5.5A
Manufactured:

51Y7
E149091
I.T.E.

FCC ID : A3LML2525W (Printer)
FCC ID : A3LSWL-2900U (WLAN)
This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
i) This device may not cause harmful interference, and
ii) This device must accept any interference received,
including interference that may cause undesired operation.
Canadian Certification Number(RSS-210): 649E-SWL2900U (WLAN)

This Class B digital apparatus complies with Canadian ICES-003
Cet appareil numérique de la classe B est
Conforme à la norme NMB-003 du Canada.
This product complies with 21 CFR Chapter 1, subchapter J.

Serial No.

Fabrique au Korea
MADE IN KOREA REV.00

Samsung Electronics Co., Ltd.
Suwon, Korea, 443-742
Place: M264

Model: ML-2525W
Volts: AC 110-127V
Hertz: 50/60 Hz
Amps: 5.5A
Manufactured:

51Y7
E149091
I.T.E.

FCC ID : A3LML2525W (Printer)
FCC ID : A3LSWL-2900U (WLAN)
This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
i) This device may not cause harmful interference, and
ii) This device must accept any interference received,
including interference that may cause undesired operation.
Canadian Certification Number(RSS-210): 649E-SWL2900U (WLAN)

This Class B digital apparatus complies with Canadian ICES-003
Cet appareil numérique de la classe B est
Conforme à la norme NMB-003 du Canada.
This product complies with 21 CFR Chapter 1, subchapter J.

Serial No.

Fabrique au Chine
MADE IN CHINA REV.00

Label