

EMC TEST REPORT


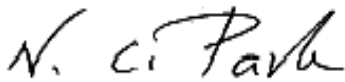

Project No.	LBE082431	Issue No.	1
Applicant	Name of organization	Samsung Electronics Co., Ltd.	
	Address	416 Maetan 3-Dong, Yeongtong-Gu, Suwon-City, Gyeonggi-Do, Korea 443-742	
	Date of application	July 09, 2008	
EUT	Type of device	Class B digital devices and peripherals	
	Equipment authorization	Cerification	
	FCC ID	A3LML2855ND	
	Kind of product	Printer	
	Model No.	ML-2855ND	
		Variant Model No.	None
Manufacturer	Samsung Electronics Co., Ltd. 259, Gongdan-Dong, Gumi-City, Gyeongsangbuk-Do, 730-030, Korea Samsung Electronics (Shandong) Digital Printing Co., Ltd. 264209, Samsung Road, Weihai Hi-Tech. IDZ, Shandong Province, P.R.China Weihai 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	July 23, 2008 ~ July 28, 2008		
Issue date	Aug 10, 2008		
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 : Ho Jin Choi 		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.			
			
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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
<input checked="" type="checkbox"/>	Conducted Disturbance	FCC Part 15 Subpart B	Complied	Meets Class B Limit
<input checked="" type="checkbox"/>	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
	Radio Research Laboratory	Accredited : KR0004
	FCC(Federal Communications Commission)	Accredited : KR0004
	National Voluntary Laboratory Accreditation Program	Lab Code: 200623-0
	Norges Elektriske Materiekkontroll	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 configuration

3.1 Test Peripherals

The following is a listing of the EUT and supporting peripherals utilized during testing.

Description	Model No.	Serial No.	Manufacturer	FCC ID and/or DoC
PRINTER	ML-2855ND	-	Samsung	A3LML2855ND
Notebook PC	PP18L	29359007709	DELL	DOC
AC Adapter	PD01X	CN-OHD026-486 43-83K-2196	DELL	DOC
USB Mouse	M-UAE98	LZ6158T08F2	Samsung	DOC
Head set	-	-	COSY	

3.2 EUT operating mode (selected)

Operating Mode 1	Standby Mode
Operating Mode 2	Duplex USB Printing
Operating Mode 3	Simplex 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
LAN	10.0	No	EUT to Hub
USB	1.8	Yes	EUT to Notebook PC
Power	1.8	No	For Note PC

3.5 EUT Description

Item	Specification	Remarks
Printing speed	Up to 28 ppm in A4 (30 ppm in Letter) Duplex: 14 ipm in A4 (14 ipm in Letter)	-
Resolution	Up to 1200 x 1200 dpi effective output	-
Warm-up time	20 seconds (Power ON)	-
First Print Out Time	8.5 seconds (From Ready)	-
Power rating	AC 110-127V, 6.4A, 50/60 Hz	-
Power consumption	Average Operating mode : less than 400 W Ready mode: less than 60 W Power Save mode: less than 8 W Power Off mode: less than 0.4 W	-
Noise Level	Standby mode: Less than 26 dB(A) Printing mode: Less than 50 dB(A)	-
Toner cartridge life	Standard Yield: Average cartridge yield 2,000 standard pages High Yield: Average cartridge yield 5,000 standard pages. Declared cartridge yield in accordance with ISO/IEC 19752.	-
Duty cycle	Max. Monthly Duty: 50,000 sheets	-
Weight	9.7 kg (including consumables)	-
External dimensions	W x D x H: 391 x 370 x 235 mm (15.4 x 14.6 x 9.3 inches)	-
Operating environment	Temperature : 10 to 32°C (50 to 90°F) Humidity : 20% to 80% RH	-
Printer Language	PCL6, IBM ProPrinter, EPSON, PostScript3, SPL	
Memory	Std. 64MB (Max. 192MB)	
LCD Display	16 characters x 2 lines	
Interface	USB: Hi-Speed USB 2.0 Wired Network: Ethernet 10/100 Base TX	
OS compatibility	Windows 2000/ 2003 Server/ XP/ Vista Various Linux OS Mac OS 8.6 ~ 9.2, 10.1 ~ 10.5	
Options	250-sheet cassette tray, 128MB DIMM(SAMSUNG approved only)	

3.6 Clock Frequencies

Kind of Clocks	Frequency[MHz]	Kind of Clocks	Frequency[MHz]
Main Source	12	Video	12
CPU Internal	400	SDRAM	100
USB Device	12	Network Device	25

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 for radiated disturbance below 1GHz and conducted disturbance. Radiated disturbance above 1GHz for operating mode that have minimum margin of radiated disturbance below 1GHz were tested and reported.

Power source for the EUT operation was supplied by CVCF made by the Voltech Corp.

Three different types of SMPS, Sungho, Samsung Electro-Mechanics and Suntronics were applied during testing.

Each SMPS was installed for testing, tested and reported.

- Configuration 1 : Sungho SMPS was applied.
- Configuration 2 : Samsung Electro-Mechanics SMPS was applied.

- **Testing Voltage : AC 115 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	Mains Port	± 3.40 dB
Radiated disturbance	Horizontal	± 4.34 dB
	Vertical	± 5.16 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 mains ports of class A

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 1: 1 μV is regarded as 0 dB.
 Note 2: If the average limit is met in the measurement with quasi-peak detector, the measurement with average detector at the same frequency is unnecessary.
 Note 3: The lower limit shall apply at the transition frequency.

Limits for conducted disturbance at the mains ports of class B

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: 1 μV is regarded as 0 dB.
 Note 2: The limits shall decrease linearly with the logarithm of the frequency in the range 150 - 500 kHz.
 Note 3: If the average limit is met in the measurement with quasi-peak detector, the measurement with average detector is unnecessary.
 Note 4: The lower limit shall apply at the transition frequency.

4.1.1 Test instrumentation

Test instrumentations used in the Conducted disturbance test were as follows:

Test instrumentation	Model name	Manufacturer	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Measuring receiver	ESCI	R&S	100368	2008-06-11	12
Artificial mains network	ENV216	R&S	100116	2007-09-13	12
Artificial mains network	ESH3-Z5	R&S	100262	2007-09-03	12
Test software	EMC32	R&S	Ver 4.40.0	N/A	N/A

4.1.2 Temperature and humidity condition

Test date	Jul 24, 2008 ~ Jul 28, 2008	Test engineer	Ho Jin Choi		
Climate condition	Ambient temperature	28.0 °C	Relative humidity	37%	
	Atmospheric pressure	100.8 kPa			
Test place	Shielded Room #1				

4.1.3 Photograph of Test Setup



Front

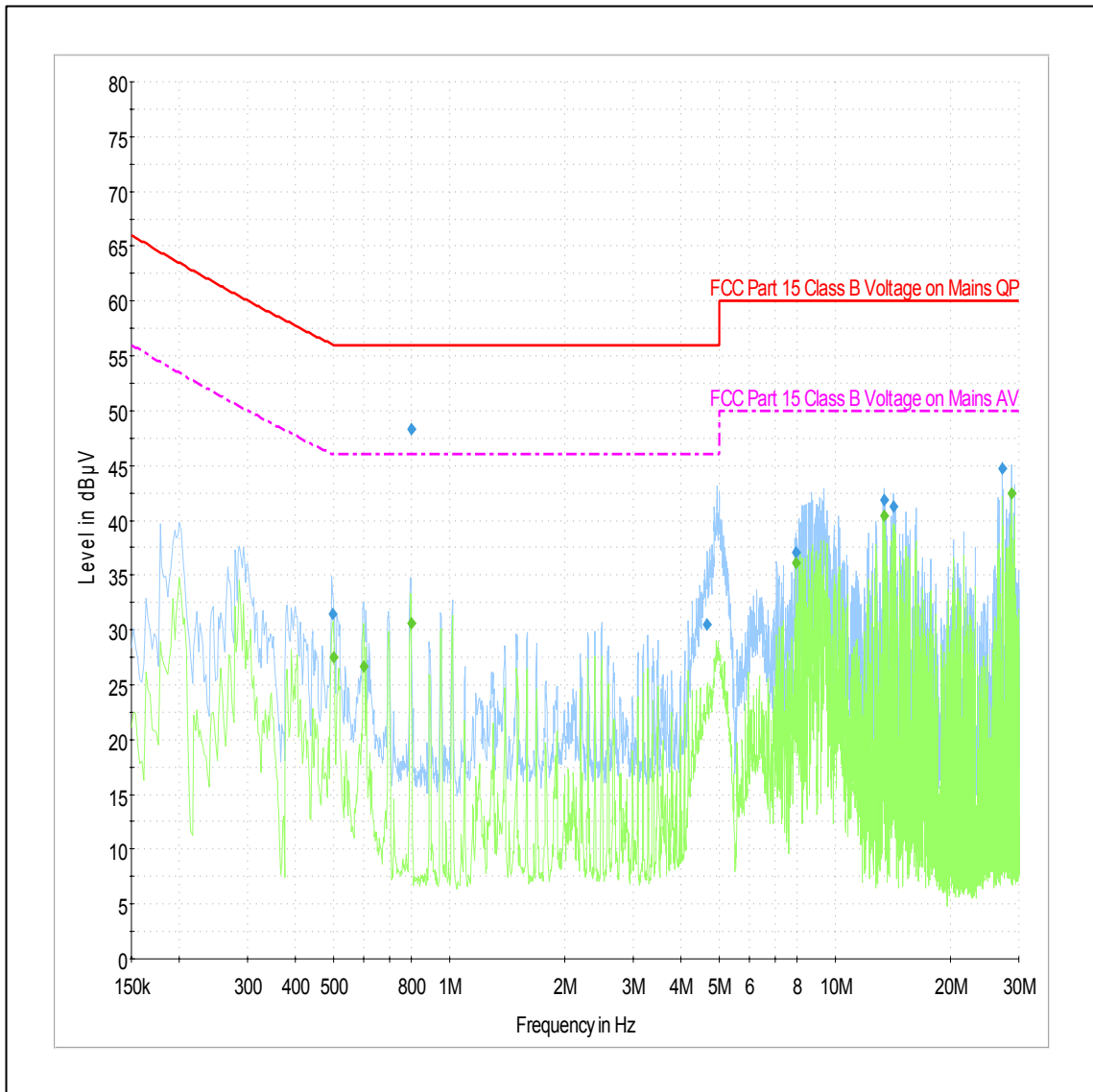


Rear

4.1.4 Test results (mains port)

- Configuration 1, Standby Mode

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)

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Quasi-Peak [dBuV]	Margin [dB]	Limit [dBuV]
0.498	L1	9.0	9.6	31.4	24.6	56.0
0.797	L1	9.0	9.7	48.4	7.6	56.0
4.670	L1	9.0	9.8	30.5	25.5	56.0
7.925	L1	9.0	9.9	37.1	22.9	60.0
13.420	L1	9.0	10.0	41.8	18.2	60.0
14.153	N	9.0	10.0	41.3	18.7	60.0
27.160	L1	9.0	10.4	44.7	15.3	60.0

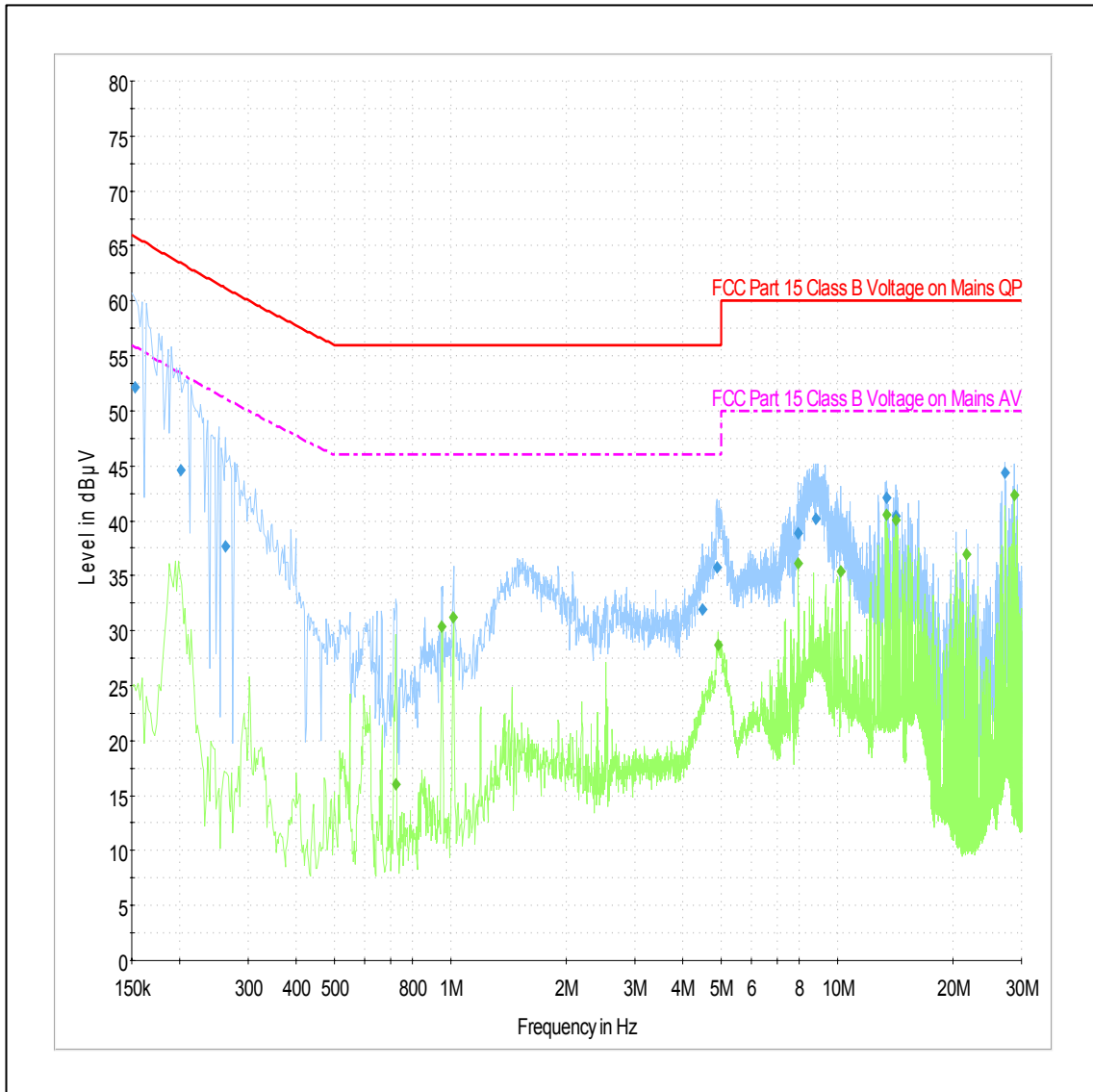
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.503	L1	9.0	9.6	27.5	18.5	46.0
0.599	L1	9.0	9.6	26.6	19.4	46.0
0.798	L1	9.0	9.7	30.6	15.4	46.0
7.924	L1	9.0	9.9	36.2	13.8	50.0
13.420	L1	9.0	10.0	40.5	9.5	50.0
28.688	L1	9.0	10.4	42.5	7.5	50.0

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, Simplex Network Printing Mode

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)

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Quasi-Peak [dBuV]	Margin [dB]	Limit [dBuV]
0.153	N	9.0	9.6	52.1	13.7	65.8
0.201	L1	9.0	9.6	44.6	18.8	63.4
0.263	L1	9.0	9.6	37.7	23.5	61.1
4.488	N	9.0	9.8	31.9	24.1	56.0
4.882	N	9.0	9.8	35.8	20.2	56.0
7.926	N	9.0	9.9	38.8	21.2	60.0
8.824	N	9.0	9.9	40.2	19.8	60.0
13.421	N	9.0	10.0	42.0	18.0	60.0
14.151	N	9.0	10.0	40.4	19.6	60.0
27.161	N	9.0	10.4	44.4	15.6	60.0

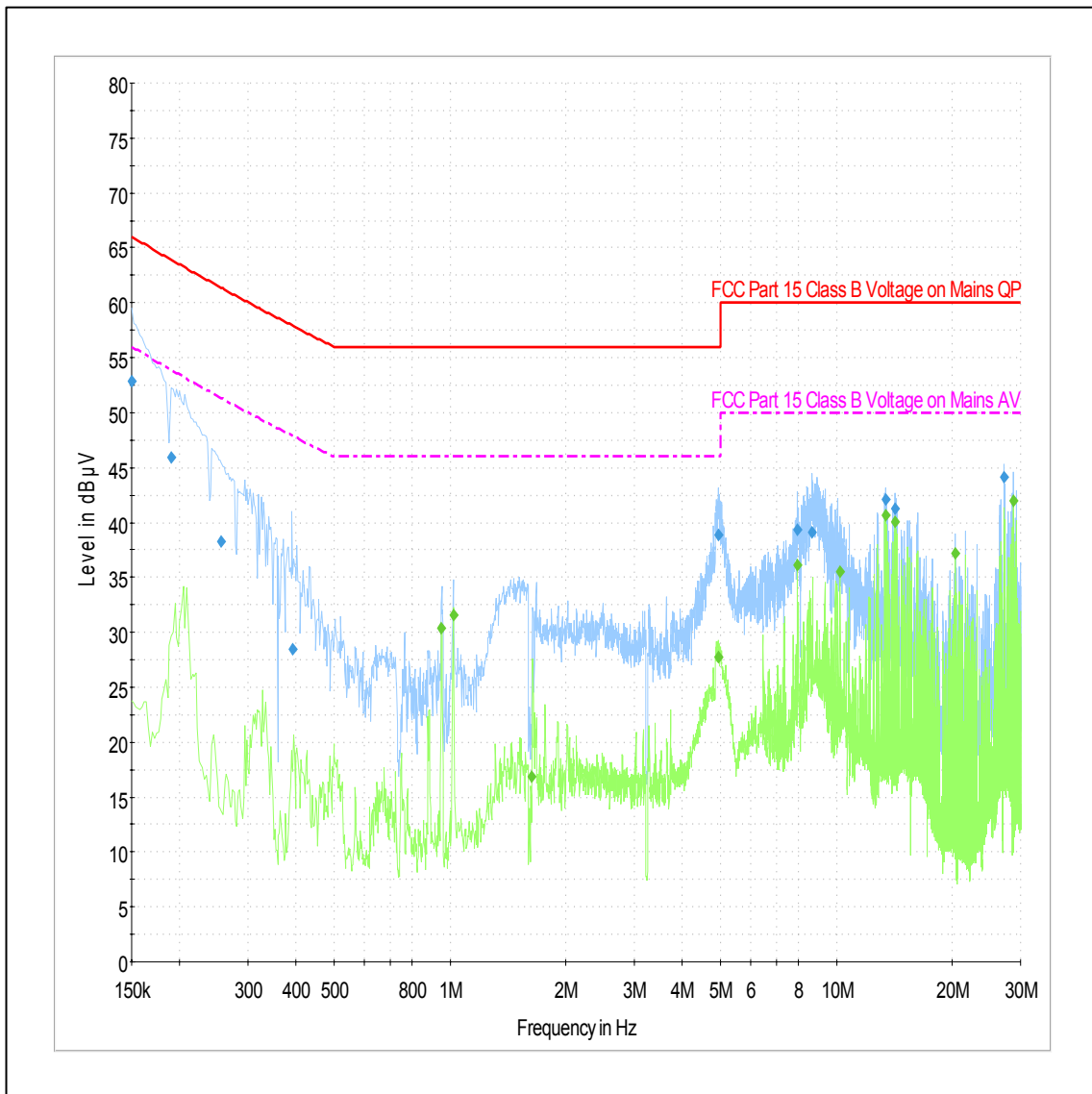
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.723	N	9.0	9.6	16.0	30.0	46.0
0.951	L1	9.0	9.7	30.4	15.6	46.0
1.019	L1	9.0	9.7	31.2	14.8	46.0
4.919	N	9.0	9.8	28.7	17.3	46.0
7.924	N	9.0	9.9	36.1	13.9	50.0
10.245	N	9.0	9.9	35.4	14.6	50.0
13.421	N	9.0	10.0	40.6	9.4	50.0
14.153	N	9.0	10.0	40.1	9.9	50.0
21.665	N	9.0	10.2	37.0	13.0	50.0
28.688	L1	9.0	10.4	42.3	7.7	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, Duplex USB Printing

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)

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Quasi-Peak [dBuV]	Margin [dB]	Limit [dBuV]
0.150	L1	9.0	9.6	52.9	13.1	66.0
0.190	L1	9.0	9.6	45.9	18.1	63.9
0.256	L1	9.0	9.6	38.2	23.1	61.4
0.392	N	9.0	9.6	28.4	29.5	57.9
4.957	L1	9.0	9.8	38.9	17.1	56.0
7.925	N	9.0	9.9	39.3	20.7	60.0
8.658	N	9.0	9.9	39.2	20.8	60.0
13.420	N	9.0	10.0	42.1	17.9	60.0
14.154	N	9.0	10.0	41.2	18.8	60.0
27.159	N	9.0	10.4	44.2	15.8	60.0

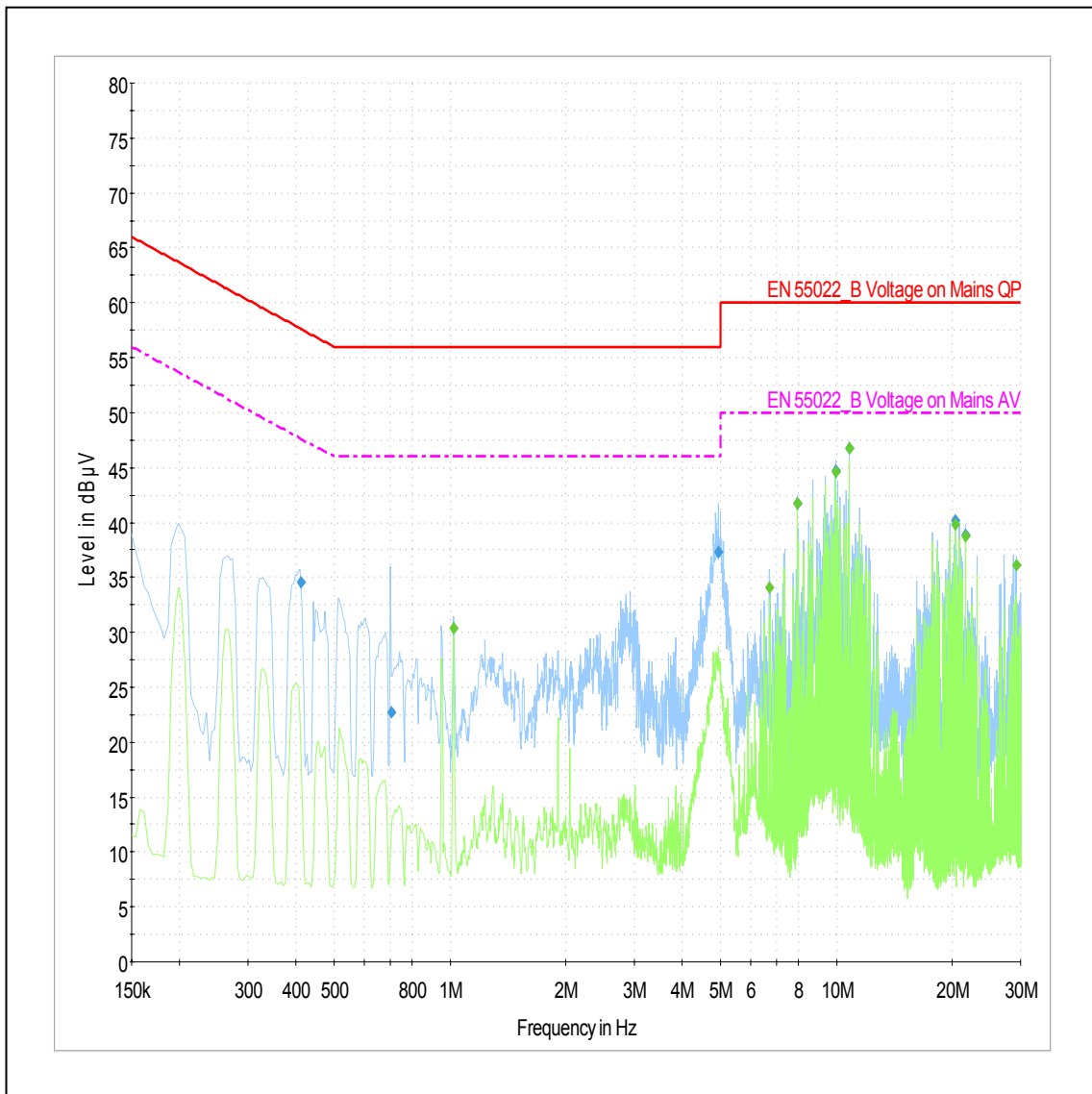
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.951	L1	9.0	9.7	30.4	15.6	46.0
1.020	L1	9.0	9.7	31.6	14.4	46.0
1.631	N	9.0	9.7	16.8	29.2	46.0
4.948	L1	9.0	9.8	27.7	18.3	46.0
7.925	N	9.0	9.9	36.1	13.9	50.0
10.245	N	9.0	9.9	35.5	14.5	50.0
13.420	N	9.0	10.0	40.6	9.4	50.0
14.153	N	9.0	10.0	40.1	9.9	50.0
20.260	N	9.0	10.2	37.2	12.8	50.0
28.688	N	9.0	10.4	42	8	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 2, Standby Mode

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)

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Quasi-Peak [dBuV]	Margin [dB]	Limit [dBuV]
0.412	L1	9.0	9.6	34.6	23.0	57.6
0.704	L1	9.0	9.7	22.7	33.3	56.0
4.950	L1	9.0	9.8	37.3	18.7	56.0
7.924	N	9.0	9.9	41.7	18.3	60.0
9.939	N	9.0	9.9	44.7	15.3	60.0
10.793	N	9.0	10.0	46.8	13.2	60.0
20.320	N	9.0	10.2	40.1	19.9	60.0
21.663	N	9.0	10.2	38.9	21.1	60.0

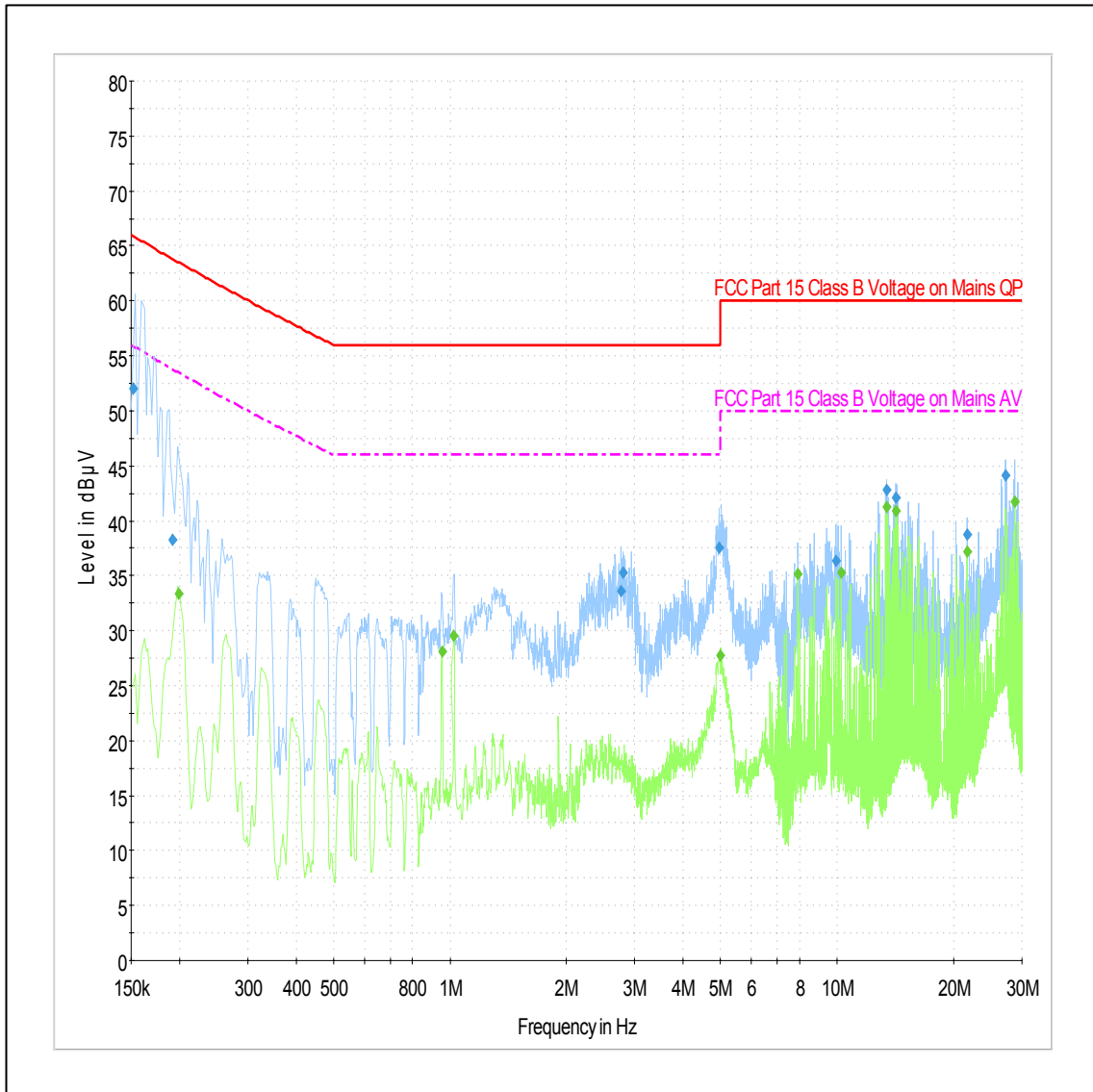
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
1.022	L1	9.0	9.7	30.3	15.7	46.0
6.702	N	9.0	9.9	34.1	15.9	50.0
7.924	N	9.0	9.9	41.7	8.3	50.0
9.939	N	9.0	9.9	44.6	5.4	50.0
10.794	N	9.0	10.0	46.8	3.2	50.0
20.320	N	9.0	10.2	39.8	10.2	50.0
21.663	N	9.0	10.2	38.7	11.3	50.0
29.235	L1	9.0	10.4	36.1	13.9	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 2, Simplex Network Printing Mode

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)

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Quasi-Peak [dBuV]	Margin [dB]	Limit [dBuV]
0.152	L1	9.0	9.6	52.0	13.8	65.9
0.192	L1	9.0	9.6	38.3	25.5	63.8
2.756	N	9.0	9.7	33.6	22.4	56.0
2.791	N	9.0	9.7	35.2	20.8	56.0
4.946	N	9.0	9.8	37.6	18.4	56.0
9.941	N	9.0	9.9	36.4	23.6	60.0
13.420	N	9.0	10.0	42.8	17.2	60.0
14.153	N	9.0	10.0	42.1	17.9	60.0
21.665	N	9.0	10.2	38.8	21.2	60.0
27.161	L1	9.0	10.4	44.1	15.9	60.0

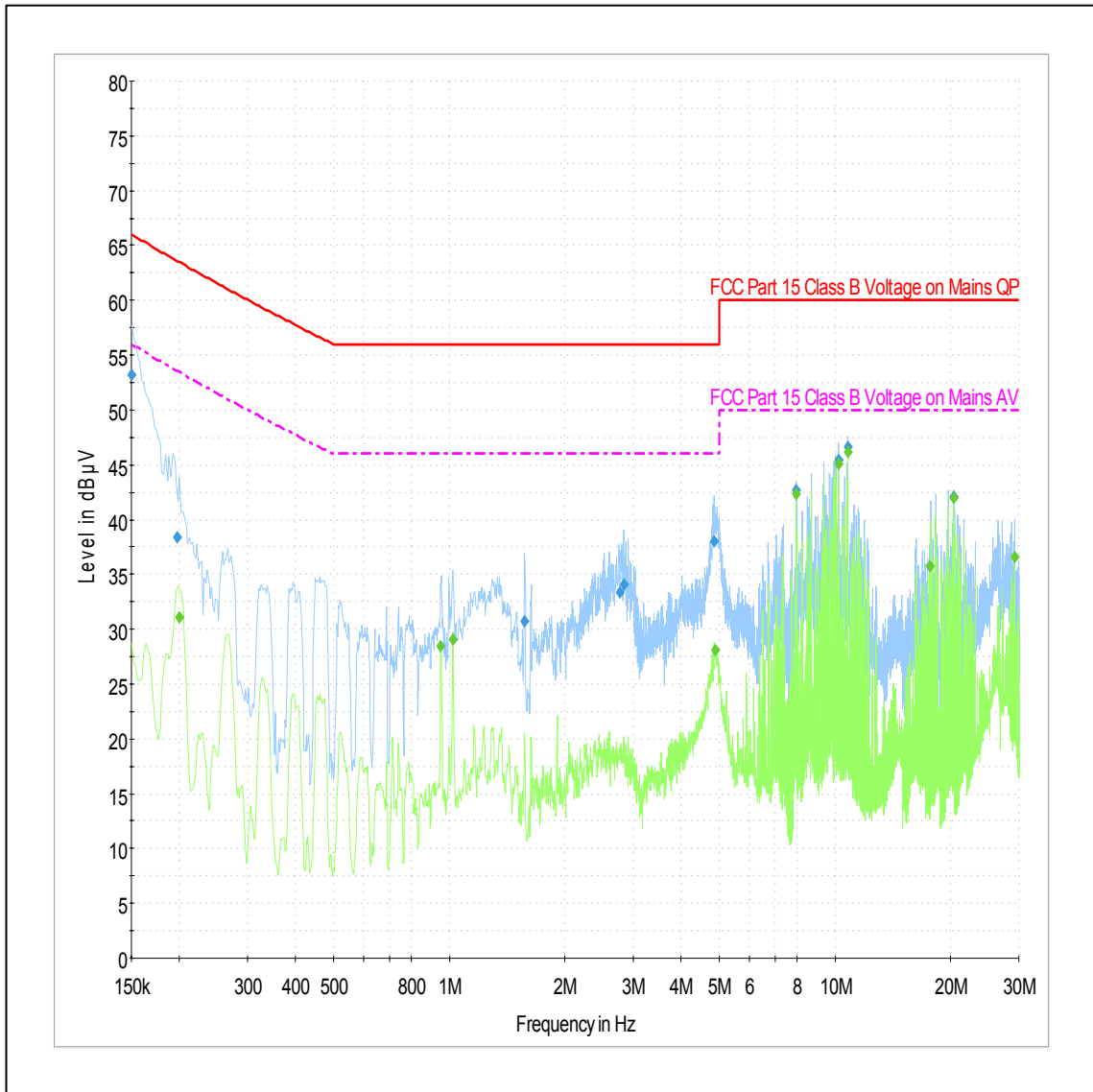
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.199	L1	9.0	9.6	33.4	20.1	53.5
0.953	L1	9.0	9.7	28.1	17.9	46.0
1.020	L1	9.0	9.7	29.5	16.5	46.0
4.976	L1	9.0	9.8	27.7	18.3	46.0
7.924	N	9.0	9.9	35.2	14.8	50.0
10.245	L1	9.0	9.9	35.3	14.7	50.0
13.421	N	9.0	10.0	41.3	8.7	50.0
14.153	N	9.0	10.0	40.8	9.2	50.0
21.665	N	9.0	10.2	37.2	12.8	50.0
28.688	L1	9.0	10.4	41.7	8.3	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 2, Duplex USB Printing

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)

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Quasi-Peak [dBuV]	Margin [dB]	Limit [dBuV]
0.150	L1	9.0	9.6	53.2	12.8	66.0
0.197	L1	9.0	9.6	38.4	25.2	63.6
1.565	N	9.0	9.7	30.7	25.3	56.0
2.764	N	9.0	9.7	33.3	22.7	56.0
2.837	N	9.0	9.7	34.1	21.9	56.0
4.871	L1	9.0	9.8	38.0	18.0	56.0
7.924	N	9.0	9.9	42.7	17.3	60.0
10.244	N	9.0	9.9	45.4	14.6	60.0
10.794	N	9.0	10.0	46.6	13.4	60.0
20.258	N	9.0	10.2	42.1	17.9	60.0

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.200	N	9.0	9.6	31.1	22.4	53.5
0.952	N	9.0	9.7	28.5	17.5	46.0
1.020	L1	9.0	9.7	29.1	16.9	46.0
4.880	N	9.0	9.8	28.2	17.8	46.0
7.924	N	9.0	9.9	42.3	7.7	50.0
10.244	L1	9.0	9.9	45.1	4.9	50.0
10.794	N	9.0	10.0	46.2	3.8	50.0
17.572	N	9.0	10.1	35.8	14.2	50.0
20.259	N	9.0	10.2	42.0	8.0	50.0
29.235	L1	9.0	10.4	36.6	13.4	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	Quasi-peak Limits dB dB($\mu\text{V}/\text{m}$)	
	Class A	Class B
30 to 230	40	30
230 to 1000	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.
Note 3: 1 $\mu\text{V}/\text{m}$ is regarded as 0 dB.

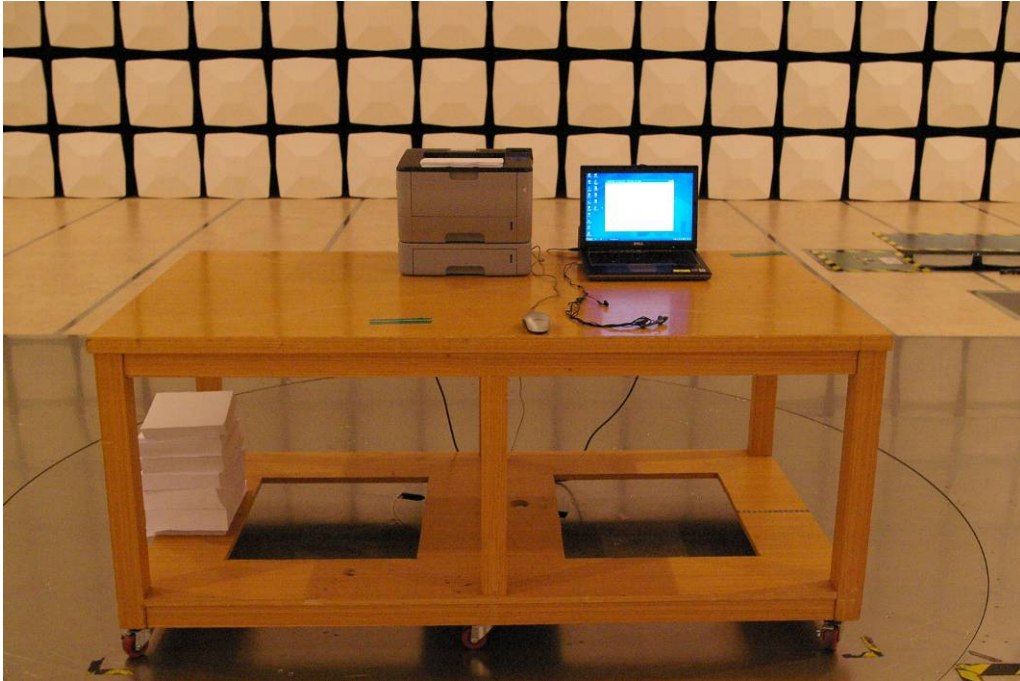
4.2.1 Test instrumentation

Test instrumentation	Model name	Manufacturer	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Bi-con Antenna	CBL6112D	Schaffner	22601	2007-04-02	24
Bi-con Antenna	CBL6112B	Schaffner	2804	2007-04-16	24
Horn Antenna	BBHA9120B	Schwarzbeck	338	2007-07-27	24
EMI Receiver	ESIB-26	R&S	100289	2008-04-25	12
EMI Receiver	ESIB-26	R&S	100287	2008-05-19	12
Amplifier	310N	Agilent	185861	2007-12-04	12
Amplifier	310N	Agilent	251676	2008-03-13	12
Amplifier	TPA0108-40	TOYO	0433	N/A	N/A
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

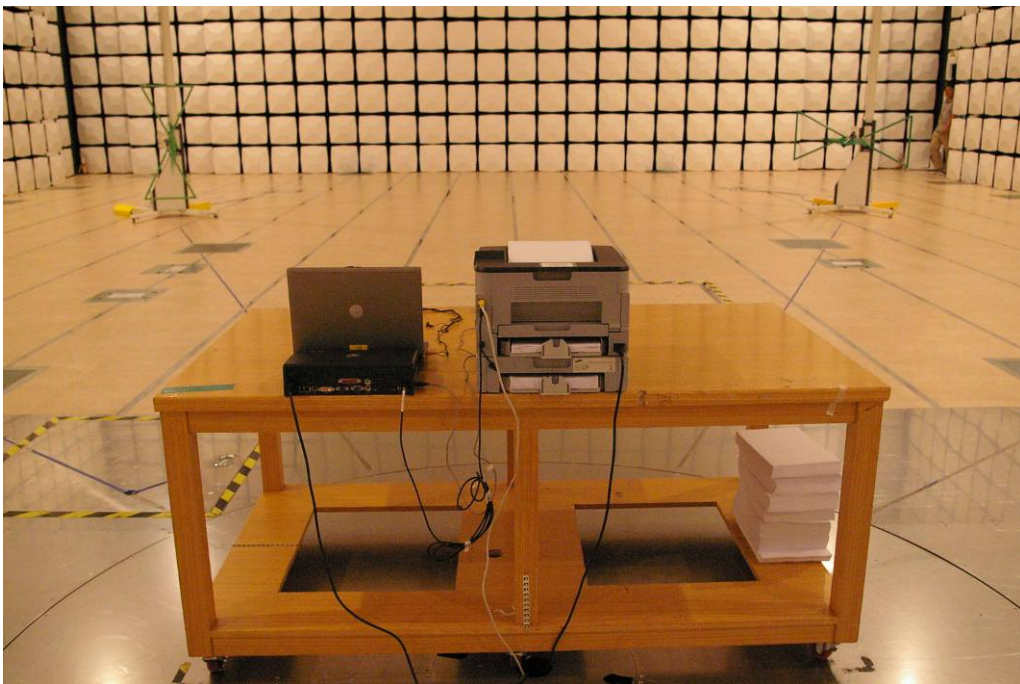
4.2.2 Temperature and humidity condition

Test date	Jul 23, 2008 ~ Jul 24, 2008	Test engineer		Ho Jin Choi	
Climate condition	Ambient temperature	23.5 °C	Relative humidity		47 %
	Atmospheric pressure	100.9 kPa			
Test place	Semi-Anechoic Chamber				

4.2.3 Photograph of Test setup (30 MHz ~ 1 GHz)



Front

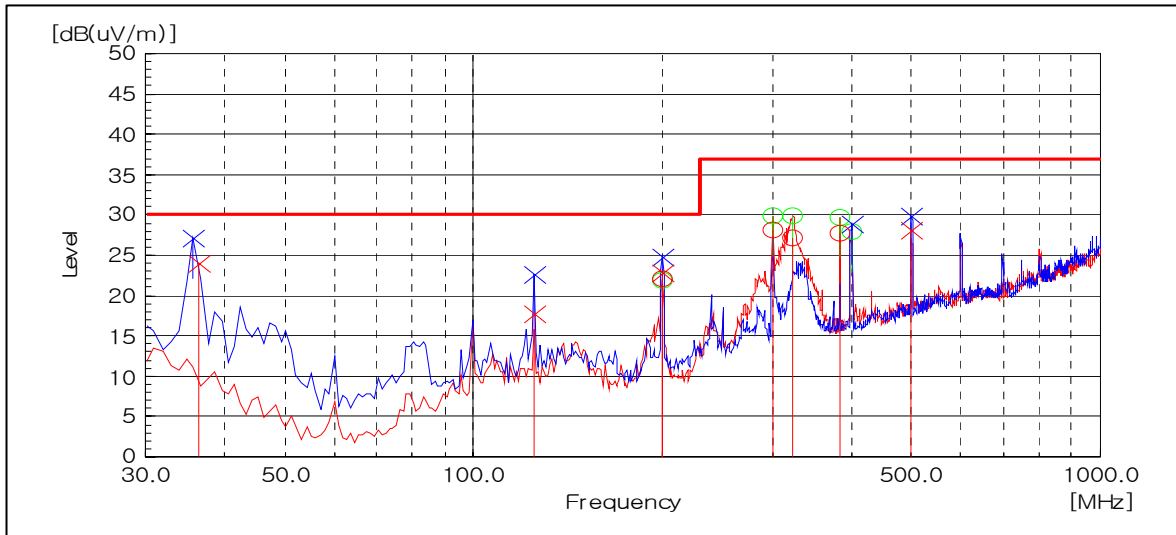


Rear

4.2.4 Test results (30 MHz ~ 1 GHz)

- Configuration 1, Standby Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
36.467	V	39.7	-15.7	24	30	6	132	97
200.004	V	40.8	-18	22.8	30	7.2	1.2	44.9
300.461	H	42.3	-14.1	28.2	37	8.8	255	308.6
323.643	H	40	-12.9	27.1	37	9.9	198	31.8
500.409	V	37.2	-9.1	28.1	37	8.9	255	56.8
384.497	H	39	-11.2	27.8	37	9.2	166	77
124.661	V	35.1	-17.4	17.7	30	12.3	165	176.2
200.004	H	41.6	-19.6	22	30	8	400	255.2

Note) Receiving antenna polarization : Horizontal and/or Vertical

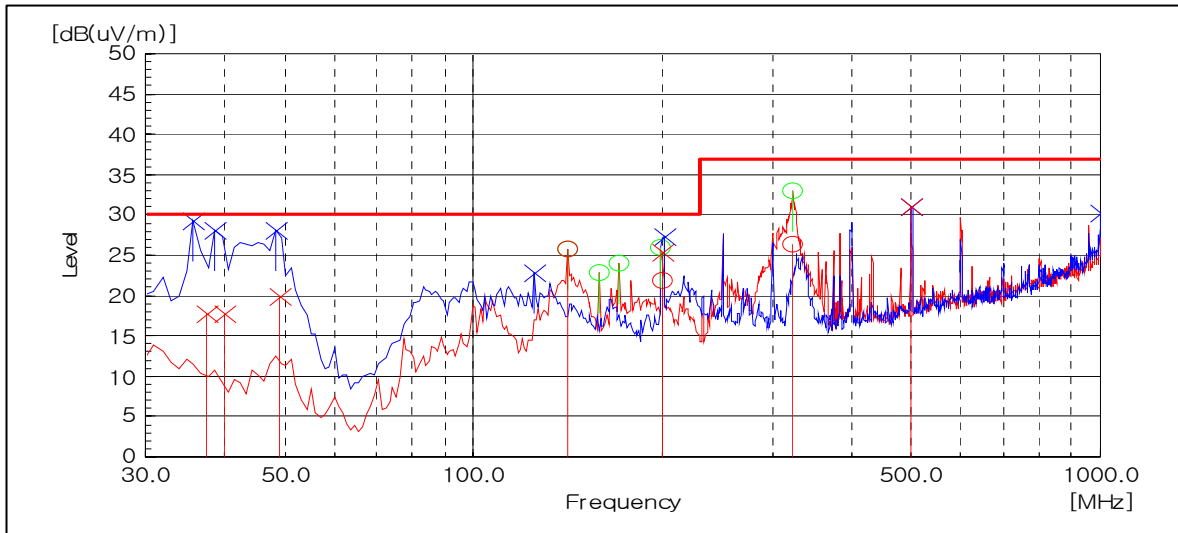
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

Configuration 1, Duplex USB Printing Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
37.539	V	33.9	-16.1	17.8	30	12.2	135	7.8
40.099	V	35.1	-17.3	17.8	30	12.2	378	17.3
49.223	V	42.1	-22.2	19.9	30	10.1	113	111.3
141.082	H	42.5	-16.8	25.7	30	4.3	200	358.3
199.516	H	41.4	-19.6	21.8	30	8.2	312	330.4
200.173	V	43.4	-18	25.4	30	4.6	100	5.2
323.474	H	39.4	-12.9	26.5	37	10.5	229	26.2
500.409	V	41.4	-10.3	31.1	37	5.9	300	56.6

Note) Receiving antenna polarization : Horizontal and/or Vertical

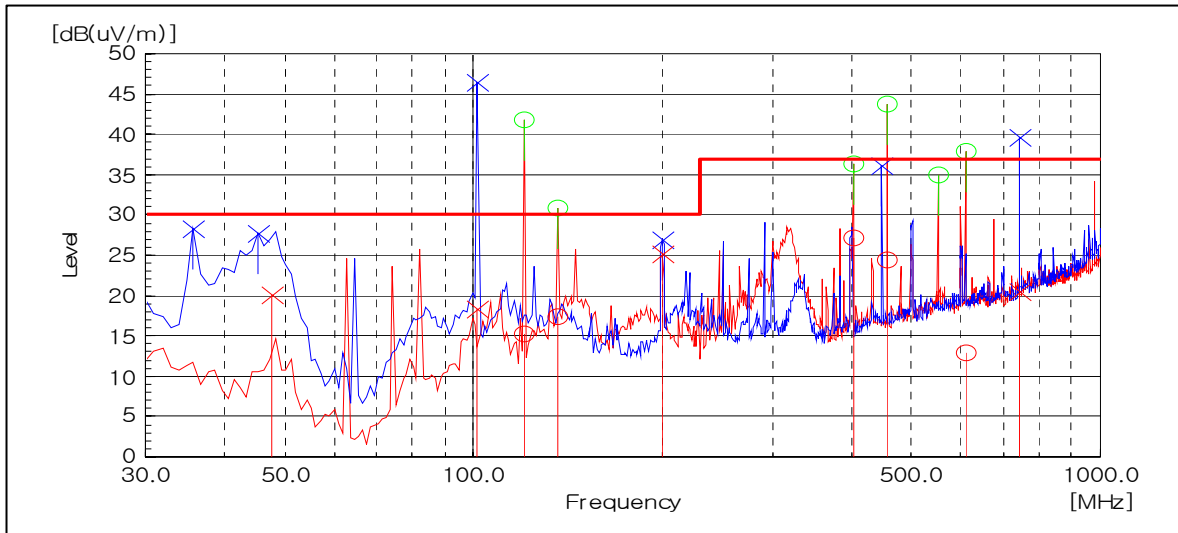
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

Configuration 1, Simplex Network Printing Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
47.865	V	41.8	-21.7	20.1	30	9.9	201	40.7
101.479	V	37.3	-18.9	18.4	30	11.6	189.6	253.6
120.798	H	32.2	-17	15.2	30	14.8	105	155.8
136.253	H	34.1	-16.7	17.4	30	12.6	177	0.3
200.154	V	43.2	-18	25.2	30	4.8	102	359.6
402.85	H	37.2	-10	27.2	37	9.8	359	0.3
457.908	H	33.6	-9.2	24.4	37	12.6	255	256.7
608.818	H	19.3	-6.5	12.8	37	24.2	199	242.7

Note) Receiving antenna polarization : Horizontal and/or Vertical

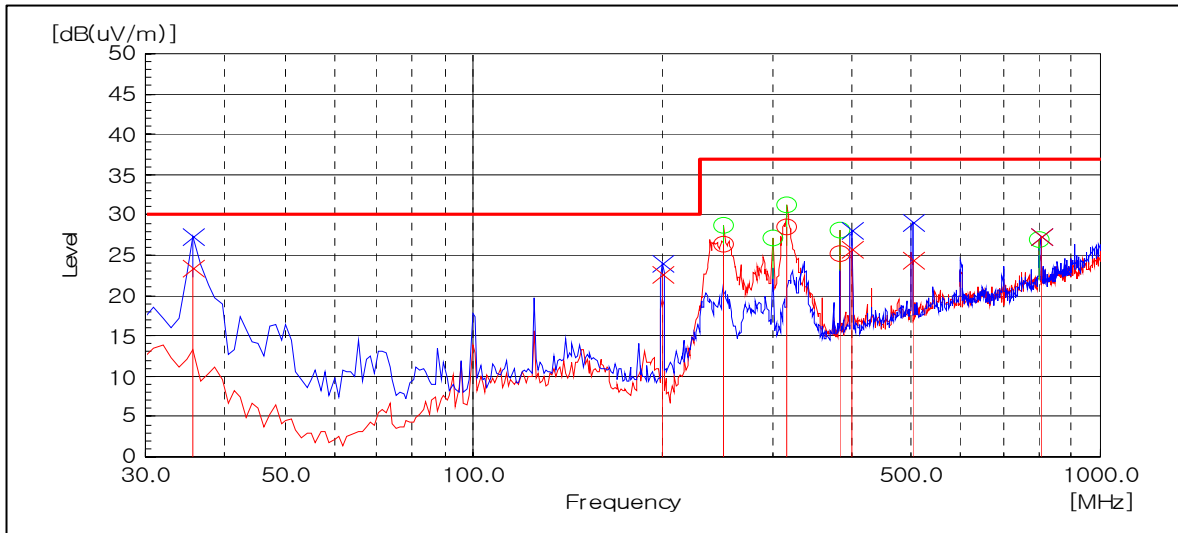
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 2, Standby Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
35.796	V	39	-15.5	23.5	30	6.5	1.2	180.5
200.004	V	40.6	-18	22.6	30	7.4	1.6	12.9
251.198	H	41.5	-15.1	26.4	37	10.6	266	175.4
316.882	H	42	-13.4	28.6	37	8.4	168	174.5
384.497	H	36.4	-11.2	25.2	37	11.8	199	125.6
400.918	V	36.7	-10.9	25.8	37	11.2	387	37.9
501.375	V	33.4	-9	24.4	37	12.6	355	57.2
802.453	V	33.6	-6.2	27.4	37	9.6	150	255

Note) Receiving antenna polarization : Horizontal and/or Vertical

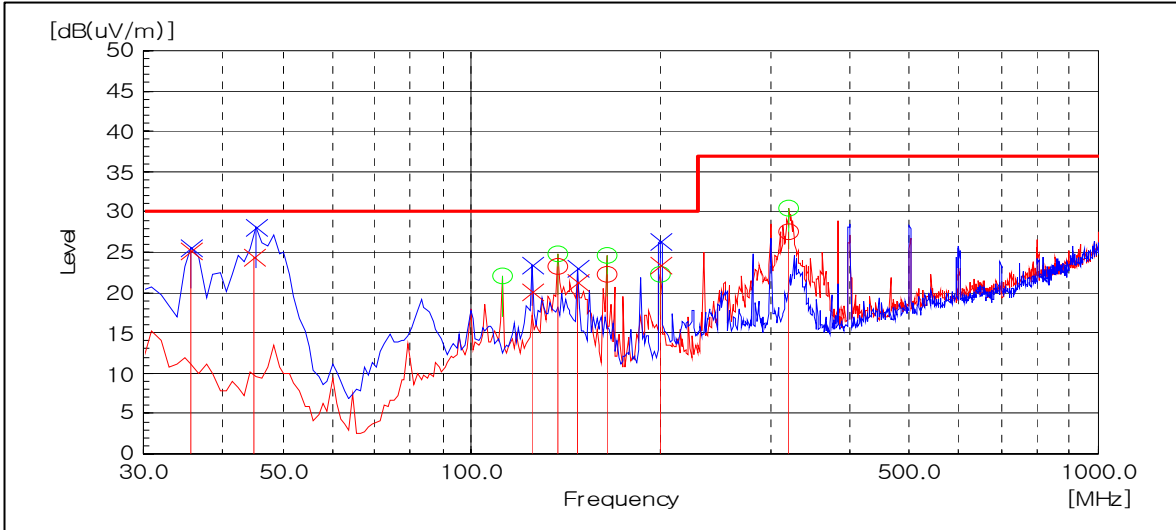
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 2, Duplex USB Printing Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
35.796	V	40.6	-15.5	25.1	30	4.9	133	22.6
45.033	V	44.8	-20.4	24.4	30	5.6	197	26.3
124.661	V	37.6	-17.4	20.2	30	9.8	102	83.9
137.218	H	39.8	-16.6	23.2	30	6.8	345	63
147.844	V	39.5	-18.3	21.2	30	8.8	225	244.2
164.265	H	40.8	-18.6	22.2	30	7.8	266	0.3
200.112	V	41.5	-18	23.5	30	6.5	198	26.3
321.711	H	40.6	-13	27.6	37	9.4	197	33.6

Note) Receiving antenna polarization : Horizontal and/or Vertical

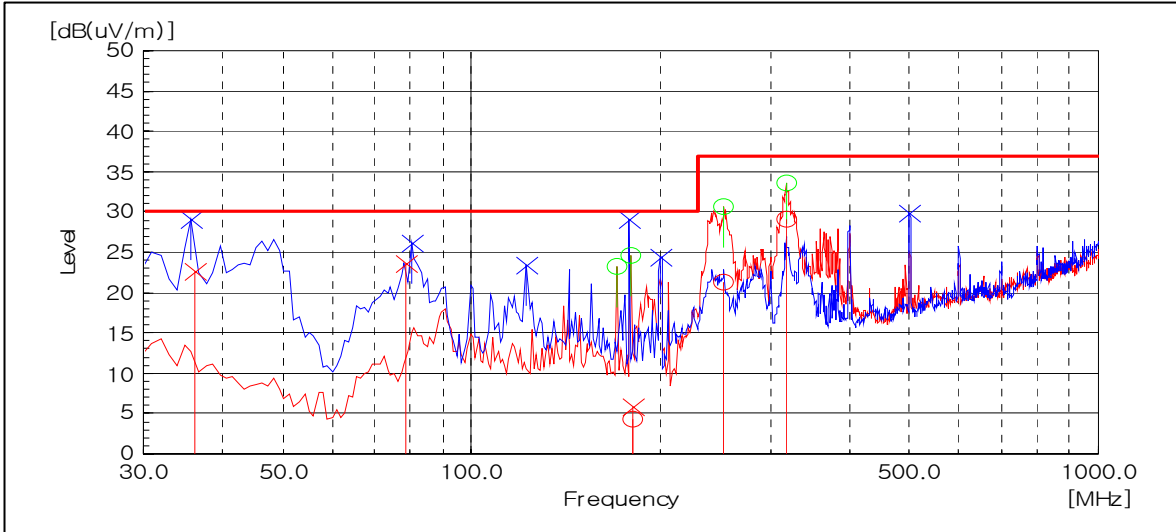
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 2, Simplex Network Printing Mode

Test Graph and Results



Frequency [MHz]	Pol.	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
36.19	V	38.2	-15.6	22.6	30	7.4	163	340
78.74	V	46.4	-22.8	23.6	30	6.4	250	1
122.73	V	42.1	-18.6	23.5	30	6.5	100	349
181.09	V	24.7	-18.8	5.9	30	24.1	129	357
181.23	H	23.3	-18.9	4.4	30	25.6	318	344
200.00	V	43.6	-19.1	24.5	30	5.5	100	348.8
252.53	H	36.2	-14.9	21.3	37	15.7	308	330.4
317.50	H	42.5	-13.4	29.1	37	7.9	189	30.4

Note) Receiving antenna polarization : Horizontal and/or Vertical

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

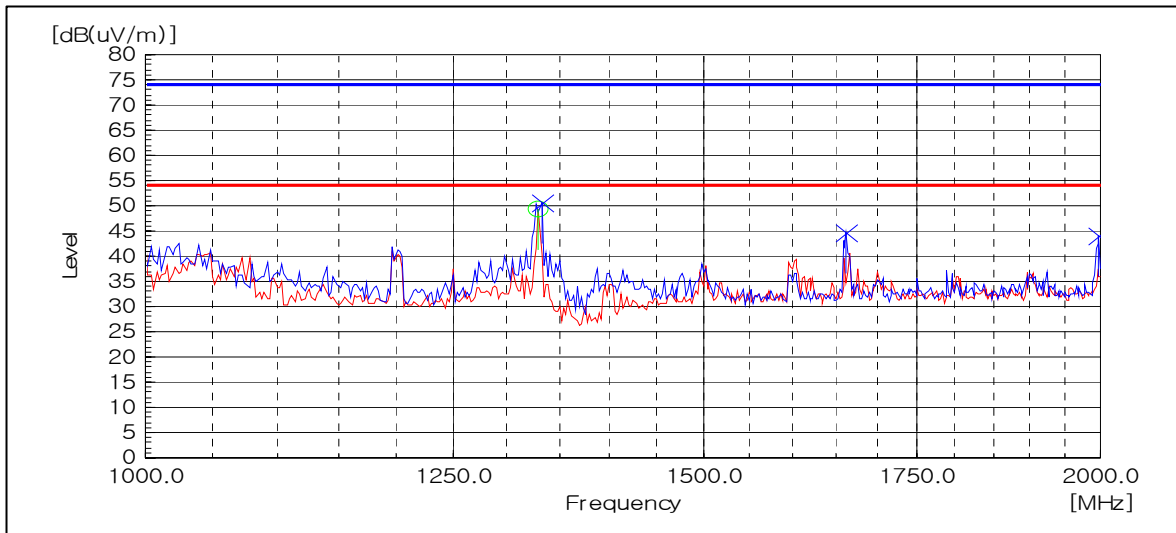
Level QP(Quasi-Peak) = Reading QP + Factor(Antenna Factor + Cable Loss - Amp. Gain)

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

4.2.5 Test results (1 GHz ~ 2 GHz)

- Configuration 1, Duplex USB Printing Mode

Test Graph and Results



Frequency [MHz]	(P)	Reading [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1332.665	V	61.7	-11.1	50.6	54	3.4	100	209.2
1330.661	H	60.5	-11.1	49.4	54	4.6	100	124.5
1663.327	V	54.2	-9.6	44.6	54	9.4	100	255.3
1997.996	V	51.9	-7.8	44.1	54	9.9	100	41

Note1) Representative operating mode having minimum margin below 1GHz were selected for radiated emission measurement above 1GHz, and any emissions that do NOT exceed Average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

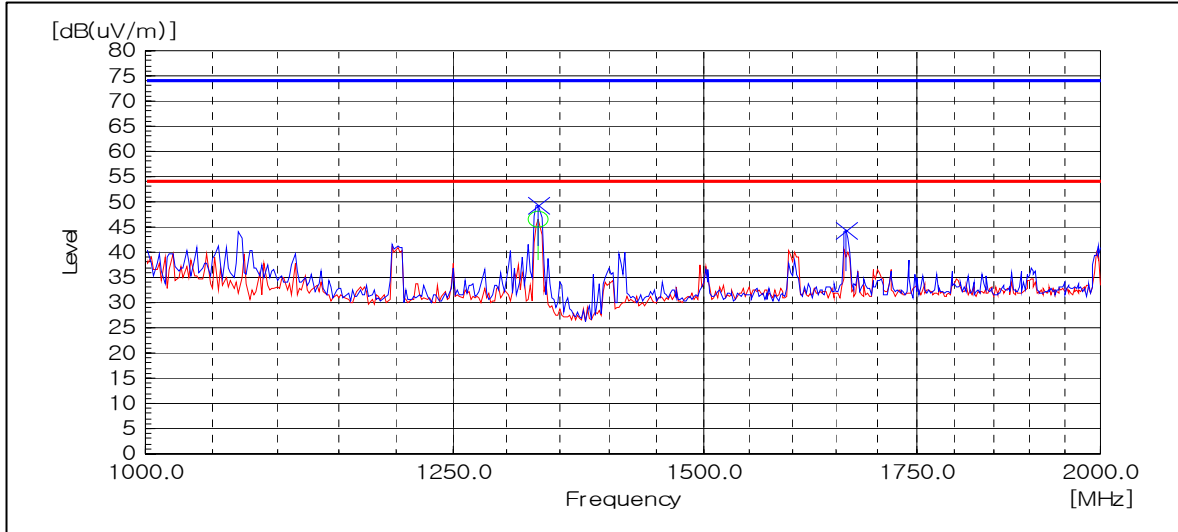
Test Distance : 3m, Antenna Height : 1 to 2 meters

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

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

- Configuration 1, Simplex Network Printing Mode

Test Graph and Results



- Peak Results

Frequency [MHz]	(P)	Reading [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1330.661	V	60.6	-11.1	49.5	54	4.5	100	196.7
1330.661	H	57.7	-11.1	46.6	54	7.4	100	282.5
1663.327	V	53.9	-9.6	44.3	54	9.7	100	234.4

Note1) Representative operating mode having minimum margin below 1GHz were selected for radiated emission measurement above 1GHz, and any emissions that do NOT exceed Average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

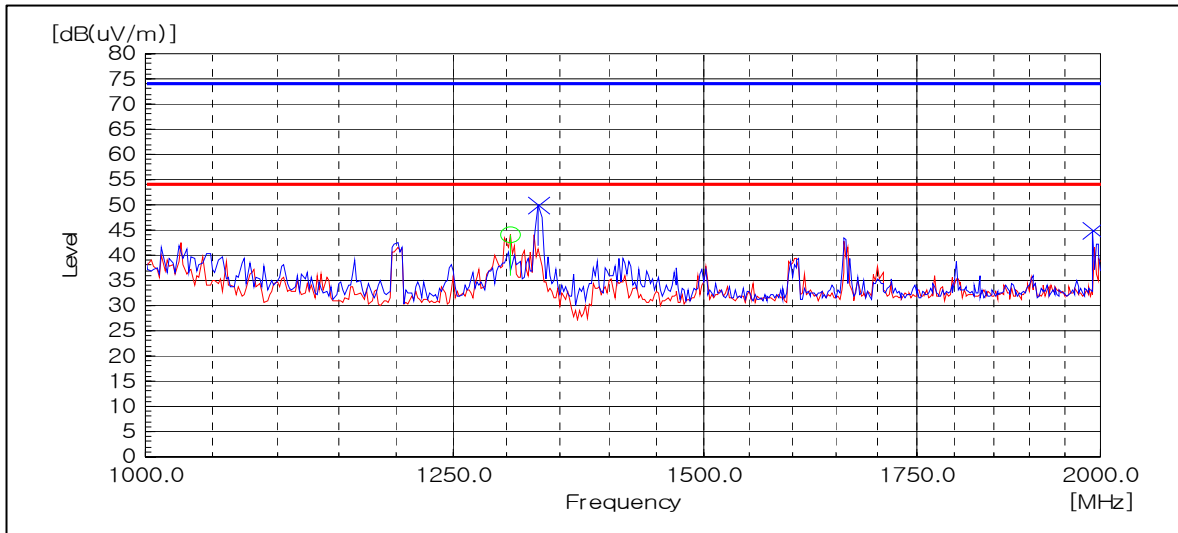
Test Distance : 3m, Antenna Height : 1 to 2 meters

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

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

- Configuration 1, Duplex USB Printing Mode

Test Graph and Results



Frequency [MHz]	(P)	Reading [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1989.98	V	52.7	-7.8	44.9	54	9.1	100	102.3
1330.661	V	61.2	-11.1	50.1	54	3.9	100	215.5
1302.605	H	55.4	-11.2	44.2	54	9.8	100	133.9

Note1) Representative operating mode having minimum margin below 1GHz were selected for radiated emission measurement above 1GHz, and any emissions that do NOT exceed Average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

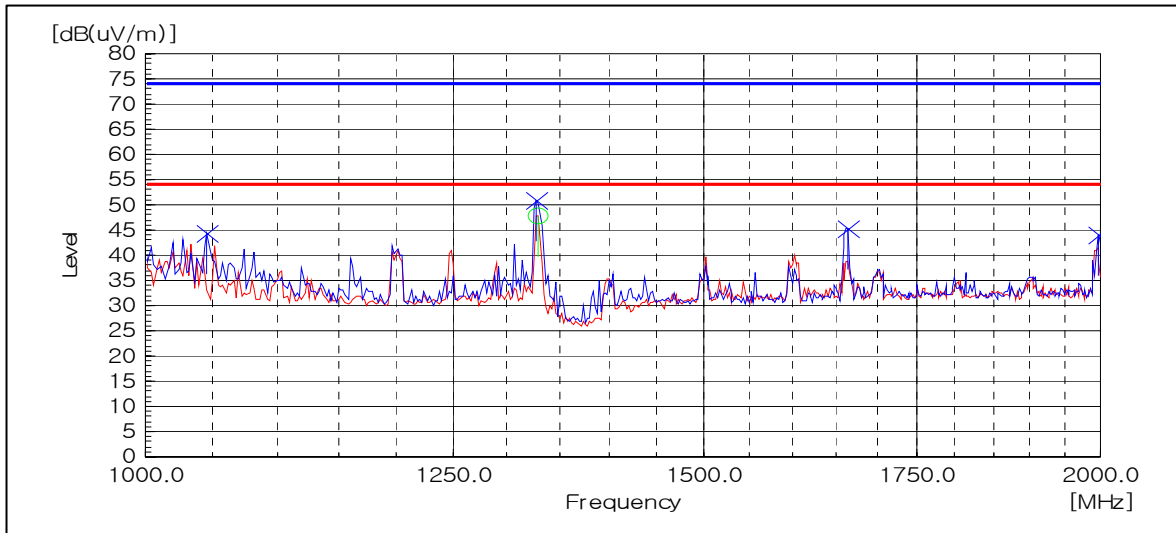
Test Distance : 3m, Antenna Height : 1 to 2 meters

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

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

- Configuration 1, Simplex Network Printing Mode

Test Graph and Results



- Peak Results

Frequency [MHz]	(P)	Reading [dB(uV)]	Factor [dB(1/m)]	Level PK [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1046.092	V	56.6	-12.2	44.4	54	9.6	100	117.6
1328.657	V	62	-11.1	50.9	54	3.1	100	243.4
1330.661	H	59	-11.1	47.9	54	6.1	100	131.3
1665.331	V	54.9	-9.5	45.4	54	8.6	100	117.6
1995.992	V	51.9	-7.8	44.1	54	9.9	100	40.4

Note1) Representative operating mode having minimum margin below 1GHz were selected for radiated emission measurement above 1GHz, and any emissions that do NOT exceed Average limit were not tested with average detector mode.

Note2) Receiving antenna polarization : Horizontal and Vertical

Test Distance : 3m, Antenna Height : 1 to 2 meters

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

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

Appendix – EUT photography



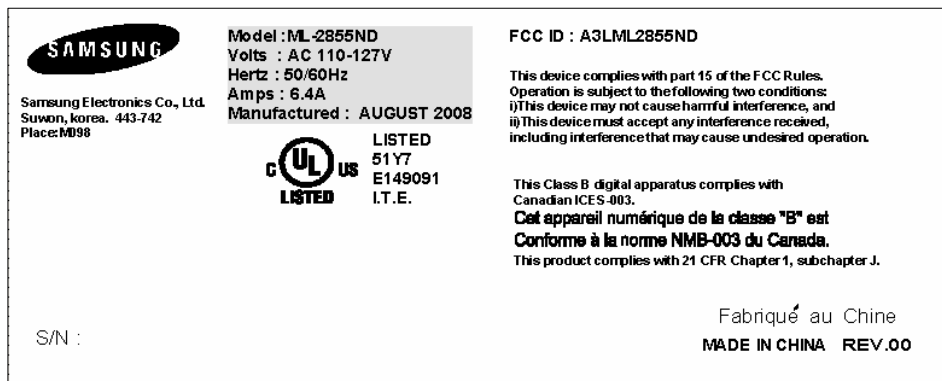
Front View



Rear View



Label Location



Rating Label(Shin Heung)



Project No. : LBE082431



Printer : ML-2855ND

	Model : ML-2855ND	FCC ID : A3LML2855ND
	Volts : AC 110-127V	
Samsung Electronics Co., Ltd. Suwon, Korea. 443-742 Place: M 264	Hertz : 50/60Hz	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.
	Amps : 6.4A	
	Manufactured :	
	LISTED	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.
	51 Y7 E149091 I.T.E.	
S/N :		Fabriqué au Chine MADE IN CHINA REV.00

Rating Label(Shandong)

	Model : ML-2855ND	FCC ID : A3LML2855ND
	Volts : AC 110-127V	
Samsung Electronics Co., Ltd. Suwon, Korea. 443-742 Place: M 259	Hertz : 50/60Hz	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.
	Amps : 6.4A	
	Manufactured :	
	LISTED	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.
	51 Y7 E149091 I.T.E.	
S/N :		Fabriqué au Korea MADE IN KOREA REV.00

Rating Label(SEC)