

EMC TEST REPORT

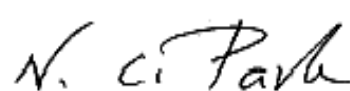
Project No.	LBE080214	Issue No.	1
Applicant	Name of organization	Samsung Electronics Co., Ltd.	
	Address	416 Maetan 3-Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do 443-742 Korea	
	Date of application	January 18, 2008	
EUT	Type of device	Class B personal computers and peripherals	
	Equipment authorization	☐ Declaration of Conformity ☒ Certification ☐ Verification	
	FCC ID	A3LSCX4828FN	
	Kind of product	Laser Printer	
	Model No.	SCX-4828FN	
		Variant Model No.	SCX-4824FN
Manufacturer		Samsung Electronics Co., Ltd. 259, Gongdan-Dong, Gumi-City, Gyeong-Buk, 730-030, Korea Place:M259 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		January 29,2008 ~ February 4, 2008	
Issue date		February 16, 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 : Kyeong Dong Kim 		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.			
 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			

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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	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
	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
Laser Printer	SCX-4828FN	-	Samsung	A3LSCX4828FN
Note PC	NP-P29	674E93AYC00024 E	Samsung	DoC
AC Adapter	AD-9019	CNBA4400130ASE 382CI0712	Dongguan Samsung Electro-Mechanics	For Note PC
USB Mouse	MS201U	69G1107	Monterey	DoC
Headset	-	-	Labtec	-
Telephone	SP-F209K	KKAY413543T	Yontae	-
USB Memory	TMFMP-C2161-79E	-	ThumbDrive	DoC

3.2 EUT operating mode

To achieve compliance applied standard and/or specification, the following mode(s) were considered and tested fully except radiated emission testing for configuration 2.

Operating Mode 1	Standby
Operating Mode 2	Copying
Operating Mode 3	Scan to USB
Operating Mode 4	USB Printing
Operating Mode 5	FAX Tx
Operating Mode 6	FAX Rx
Operating Mode 7	LAN Printing

3.3 Details of Sampling

Customer selected, two units.

- Unit 1 : SSE080094-1 (SMPS manufacturer : Samsung Electro-Mechanics)
- Unit 2 : SSE080094-2 (SMPS manufacturer : Sungho Electronics)

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	1.3	No	For EUT
USB	1.8	Yes	From Note PC to the EUT From Note PC to USB Mouse
Ethernet	2.0	No	Between EUT to HUB
Headset	1.2	No	From headset to Note PC
Power	1.2	No	For Note PC
TEL	2.0	No	From EUT to K/P system
TEL	2.0	No	From EUT to Telephone

3.5 EUT Description

The following features describe EUT represented by this report:

Item	Specification	Remarks
memory	128MB (Max 384MB)	-
Resolution	Up to 1 200 dpi effective output (Printer) Up to 1 200 * 600 dpi (Optical, Scanner) Up to 4 800 * 4 800 dpi (Enhanced, Scanner) Up to 600 * 300 dpi (Copier, Text)	-
Copy/Print Speed	Up to 28 ppm(A4), 29 ppm(Letter) for Simplex Printing Up to 28 cpm(A4), 29 cpm(Letter) for Copier	-
Display	16 characters * 2 lines	-
Copy Quality mode	text, text/photo, Magazine, Photo	-
Paper Handling	Paper Tray(standard) : 250 Sheets MP Tray : 1 sheet for paper 2nd Tray : 250 sheets	-
Power Rating	110~127 VAC, 7A, 50/60 Hz	-
Power Consumption	Operation : 450 WH Standby : Less than 60 WH Power save mode : Less than 12 WH Power off mode : 0 W	-
Interfaces	Fax 33.6kbps Tx/Rx (Tel line) Ethernet 10/100 Base TX(embedded type) High Speed USB 2.0	-
OS compatibility	Windows 2000 / XP / 2003 / Vista Linux Mac OS 10.3~10.5, Universal Mac	-
Modes of Operation	Copying, USB Printing, Network Printing, FAX, SCAN to USB, Standby	-
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	MAC	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. The mode of operation utilized for testing was selected to best simulate typical EUT use, and two different SMPS boards were used for testing to show compliance with relevant standard.

- **Configuration 1 : SMPS Board manufactured by Samsung Electro-Mechanics**
- **Configuration 2 : SMPS Board manufactured by Sungho Electronics**

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

- **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	± 2.8 dB
Radiated disturbance	Horizontal	± 5.1 dB
	Vertical	± 5.1 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	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	79	66
0,50 to 30	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	Limits dB(μV)	
	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

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	2007-06-01	12
Artificial mains network	ENV216	R&S	100117	2007-09-03	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	Feb 1, 2008 ~ Feb 4,2008	Test engineer		Kyeong Dong Kim	
Climate condition	Ambient temperature	24.0 ℃	Relative humidity		32 %
	Atmospheric pressure	102.0 kPa			
Test place	Shielded Room #1				

4.1.3 Photograph of Test Setup



Front

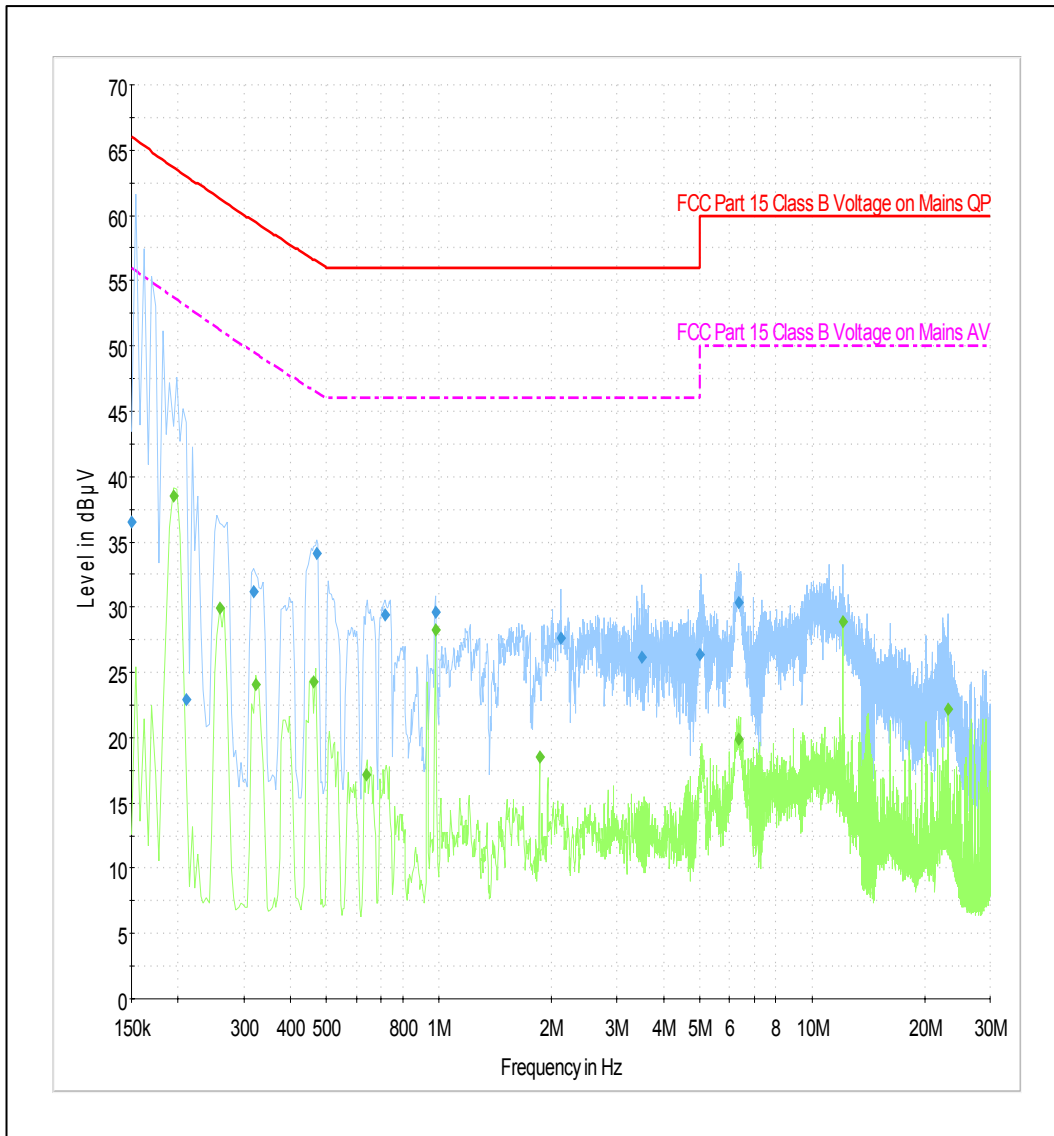


Rear

4.1.4 Test results

- 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]
0.150	N	9.0	9.6	36.5	29.5	66.0
0.211	N	9.0	9.6	22.9	40.1	63.0
0.319	N	9.0	9.6	31.2	28.4	59.6
0.471	N	9.0	9.6	34.2	22.3	56.5
0.719	N	9.0	9.6	29.4	26.6	56.0
0.979	L1	9.0	9.7	29.6	26.4	56.0
2.121	L1	9.0	9.7	27.6	28.4	56.0
3.493	L1	9.0	9.8	26.2	29.8	56.0
4.993	L1	9.0	9.8	26.4	29.6	56.0
6.368	N	9.0	9.9	30.3	29.7	60.0

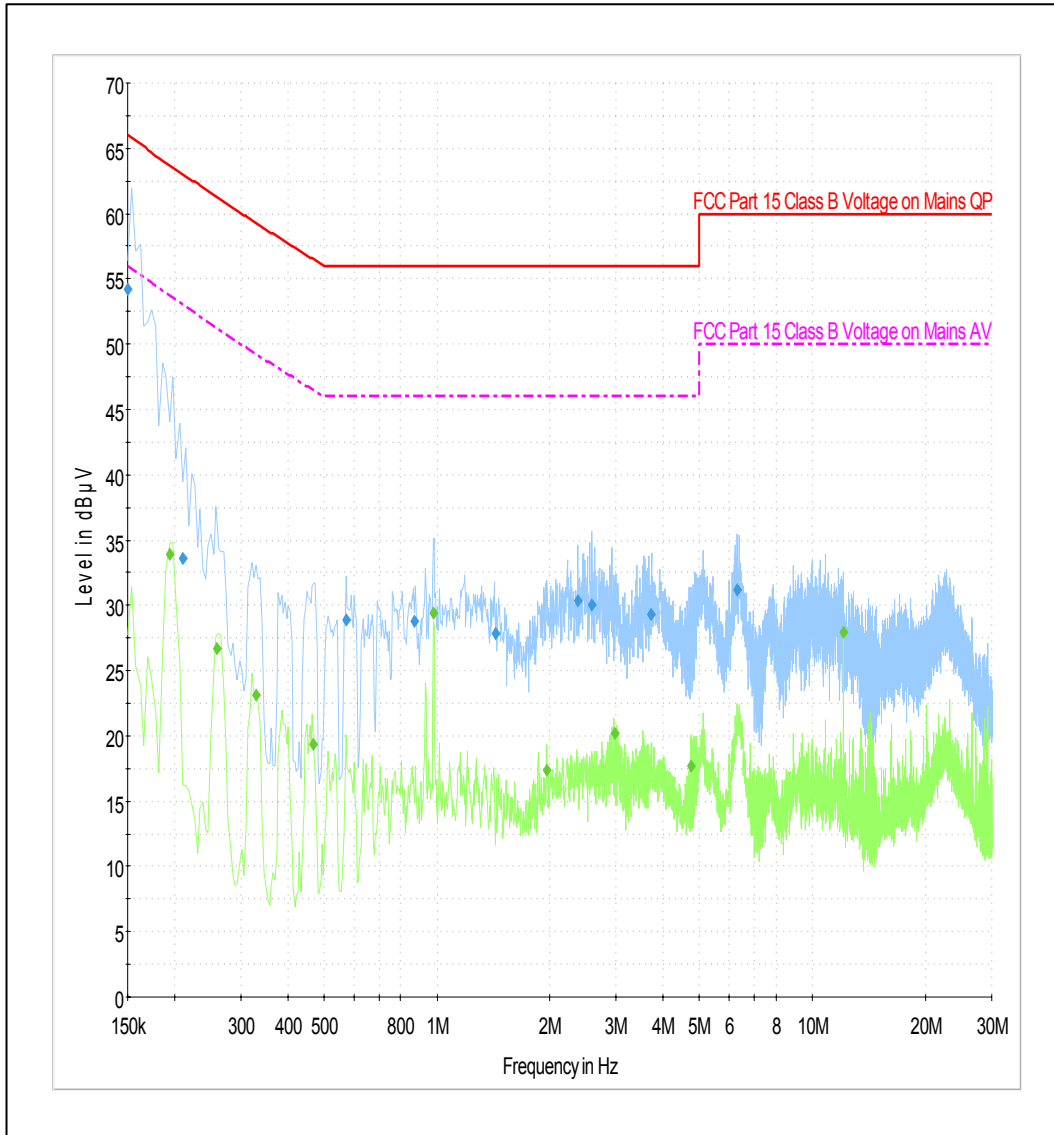
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	N	9.0	9.6	38.5	15.2	53.7
0.259	N	9.0	9.6	29.9	21.3	51.2
0.323	N	9.0	9.6	24.0	25.4	49.4
0.463	N	9.0	9.6	24.3	22.3	46.6
0.639	N	9.0	9.6	17.1	28.9	46.0
0.979	L1	9.0	9.7	28.3	17.7	46.0
1.861	L1	9.0	9.7	18.5	27.5	46.0
6.365	N	9.0	9.9	19.9	30.1	50.0
12.097	L1	9.0	10.0	28.9	21.1	50.0
23.129	L1	9.0	10.3	22.2	27.8	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 1 : Copying 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]
0.150	L1	9.0	9.6	54.2	11.8	66.0
0.211	N	9.0	9.6	33.6	29.5	63.0
0.575	L1	9.0	9.6	28.9	27.1	56.0
0.871	L1	9.0	9.7	28.7	27.3	56.0
1.428	N	9.0	9.7	27.8	28.2	56.0
2.369	L1	9.0	9.7	30.3	25.7	56.0
2.589	L1	9.0	9.7	30.0	26.0	56.0
3.717	L1	9.0	9.8	29.3	26.7	56.0
6.289	L1	9.0	9.9	31.1	28.9	60.0

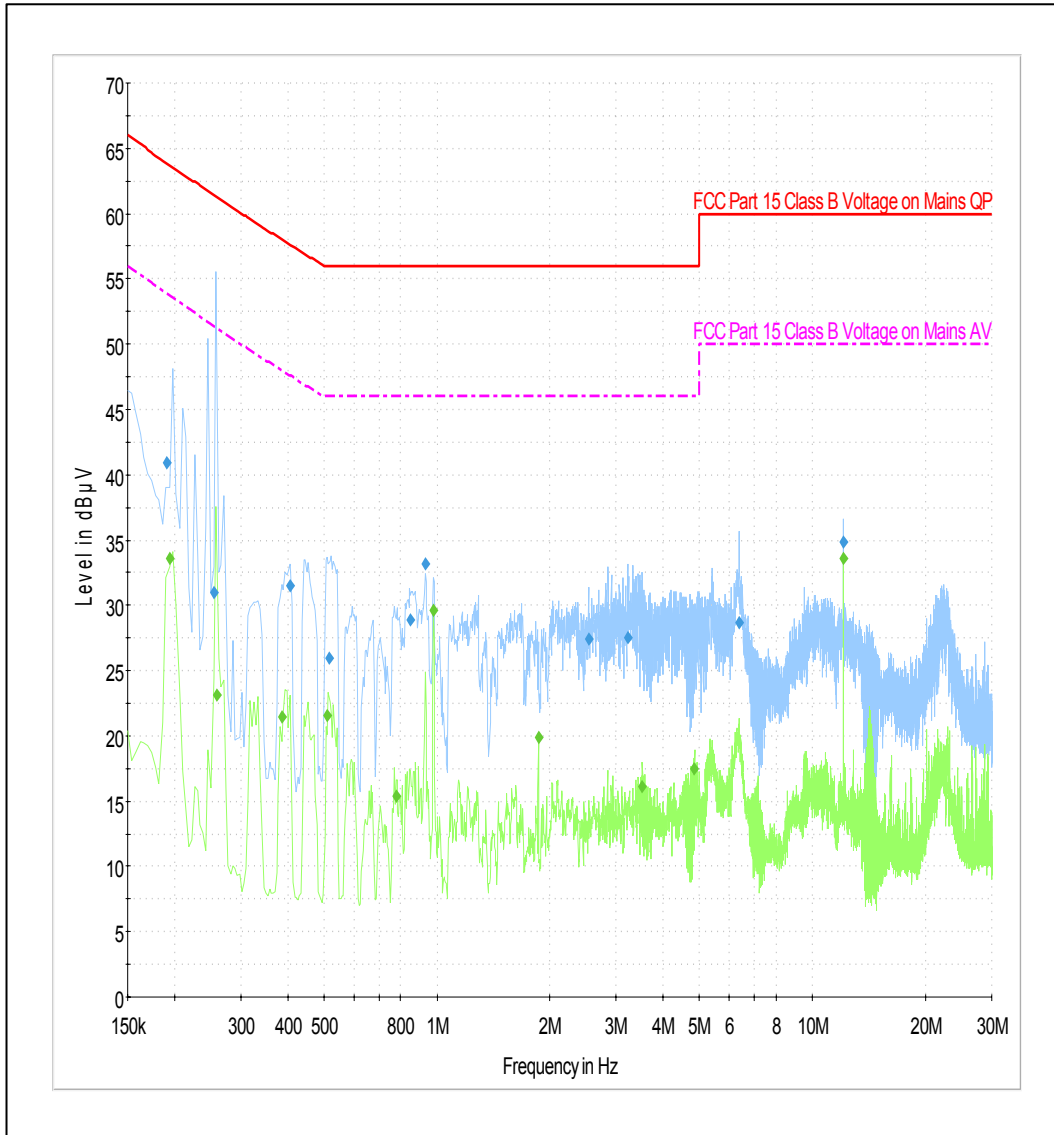
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	N	9.0	9.6	33.9	19.8	53.7
0.259	N	9.0	9.6	26.7	24.5	51.2
0.330	N	9.0	9.6	23.1	26.1	49.2
0.467	N	9.0	9.6	19.3	27.2	46.5
0.979	N	9.0	9.7	29.4	16.6	46.0
1.957	L1	9.0	9.7	17.4	28.6	46.0
2.972	L1	9.0	9.7	20.2	25.8	46.0
4.757	N	9.0	9.8	17.7	28.3	46.0
12.097	L1	9.0	10.0	28.0	22.0	50.0

Note) Level (Qausi-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 : Scan to USB 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]
0.191	L1	9.0	9.6	40.9	23.0	63.9
0.255	L1	9.0	9.6	31.0	30.4	61.4
0.407	N	9.0	9.6	31.5	26.1	57.6
0.515	L1	9.0	9.6	26.0	30.0	56.0
0.851	N	9.0	9.7	28.9	27.1	56.0
0.931	N	9.0	9.7	33.2	22.8	56.0
2.533	L1	9.0	9.7	27.4	28.6	56.0
3.224	L1	9.0	9.8	27.5	28.5	56.0
6.361	N	9.0	9.9	28.7	31.3	60.0
12.097	L1	9.0	10.0	34.9	25.1	60.0

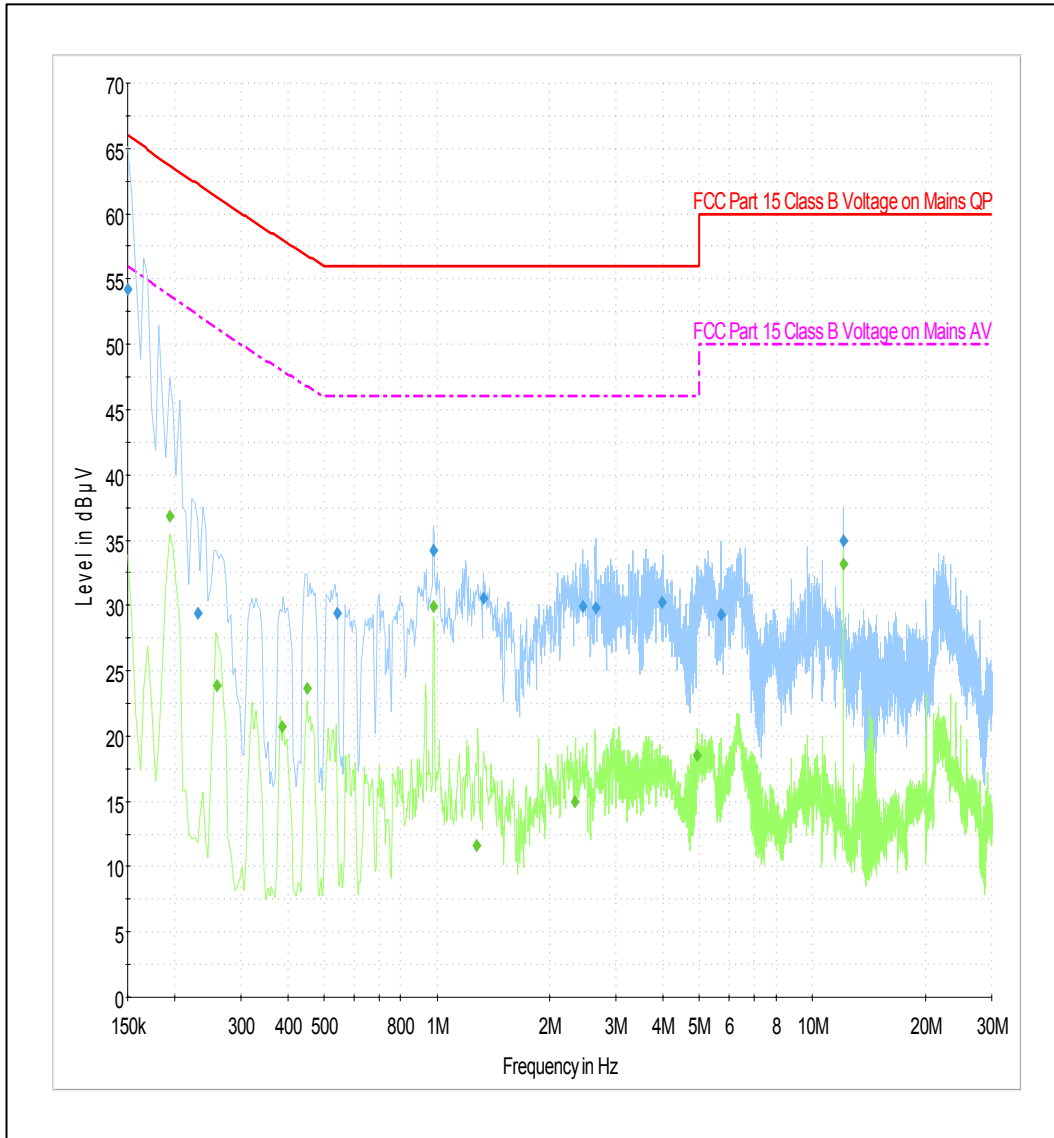
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	N	9.0	9.6	33.6	20.1	53.7
0.259	L1	9.0	9.6	23.2	28.1	51.2
0.387	N	9.0	9.6	21.5	26.5	48.0
0.511	N	9.0	9.6	21.5	24.5	46.0
0.778	L1	9.0	9.7	15.4	30.6	46.0
0.979	L1	9.0	9.7	29.6	16.4	46.0
1.861	L1	9.0	9.7	19.9	26.1	46.0
3.521	L1	9.0	9.8	16.2	29.8	46.0
4.849	L1	9.0	9.8	17.5	28.5	46.0
12.097	L1	9.0	10.0	33.6	16.4	50.0

Note) Level (Qausi-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

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	54.3	11.7	66.0
0.231	N	9.0	9.6	29.4	32.8	62.2
0.542	N	9.0	9.6	29.4	26.6	56.0
0.979	L1	9.0	9.7	34.2	21.8	56.0
1.333	L1	9.0	9.7	30.6	25.4	56.0
2.449	L1	9.0	9.7	30.0	26.0	56.0
2.649	L1	9.0	9.7	29.8	26.2	56.0
3.981	L1	9.0	9.8	30.2	25.8	56.0
5.713	L1	9.0	9.8	29.3	30.7	60.0
12.097	L1	9.0	10.0	34.9	25.1	60.0

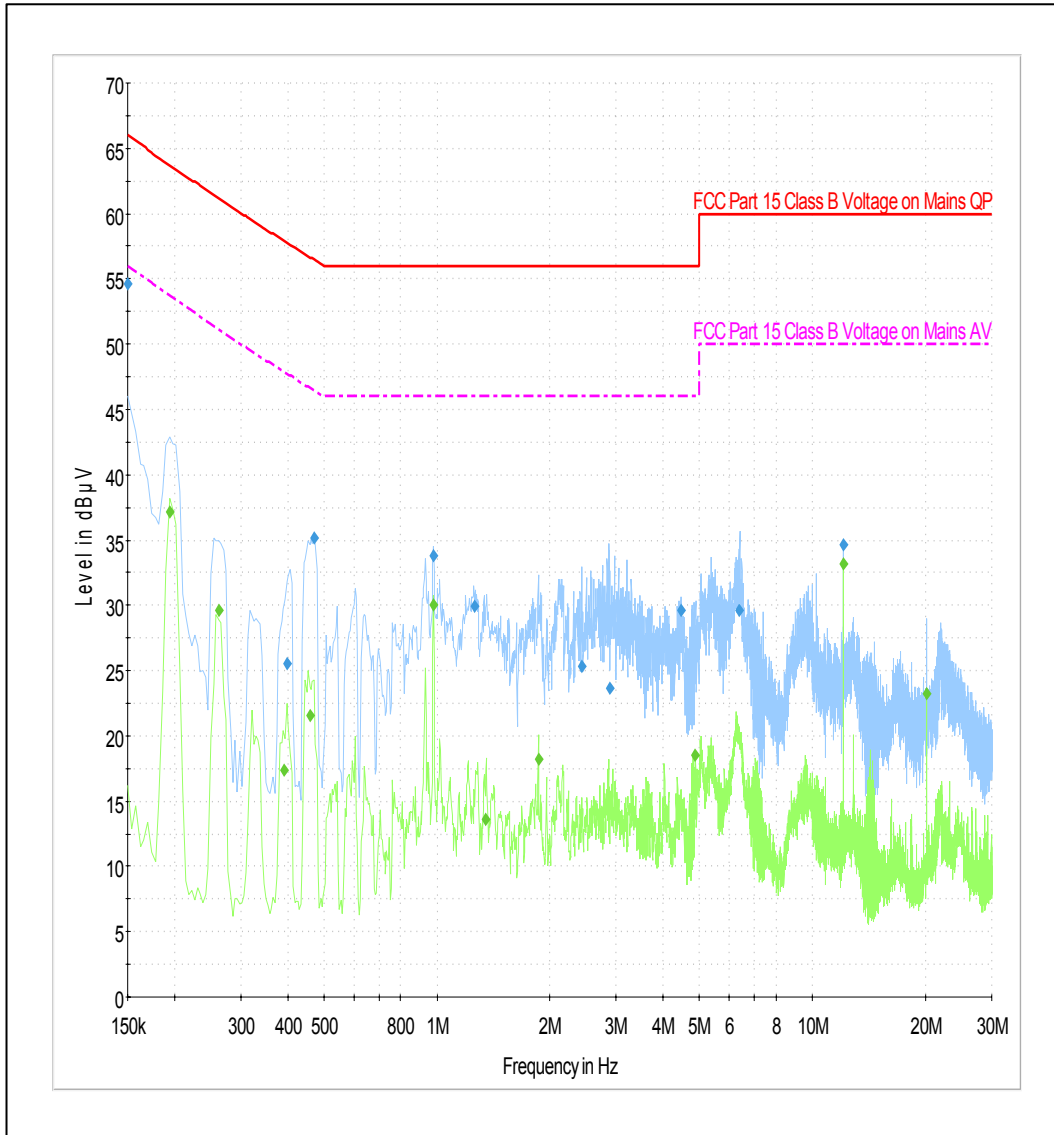
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	N	9.0	9.6	36.8	16.8	53.7
0.259	L1	9.0	9.6	23.9	27.3	51.2
0.387	L1	9.0	9.6	20.7	27.3	48.0
0.451	N	9.0	9.6	23.6	23.2	46.8
0.979	L1	9.0	9.7	29.9	16.1	46.0
1.277	L1	9.0	9.7	11.6	34.4	46.0
2.333	L1	9.0	9.7	14.9	31.1	46.0
4.933	L1	9.0	9.8	18.5	27.5	46.0
12.097	L1	9.0	10.0	33.1	16.9	50.0

Note) Level (Qausi-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 : FAX Tx 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]
0.150	N	9.0	9.6	54.6	11.4	66.0
0.399	N	9.0	9.6	25.6	32.2	57.8
0.470	L1	9.0	9.6	35.2	21.3	56.5
0.979	L1	9.0	9.7	33.8	22.2	56.0
1.257	L1	9.0	9.7	29.9	26.1	56.0
2.429	N	9.0	9.7	25.3	30.7	56.0
2.877	N	9.0	9.7	23.6	32.4	56.0
4.473	L1	9.0	9.8	29.6	26.4	56.0
6.393	L1	9.0	9.9	29.6	30.4	60.0
12.097	L1	9.0	10	34.7	25.3	60.0

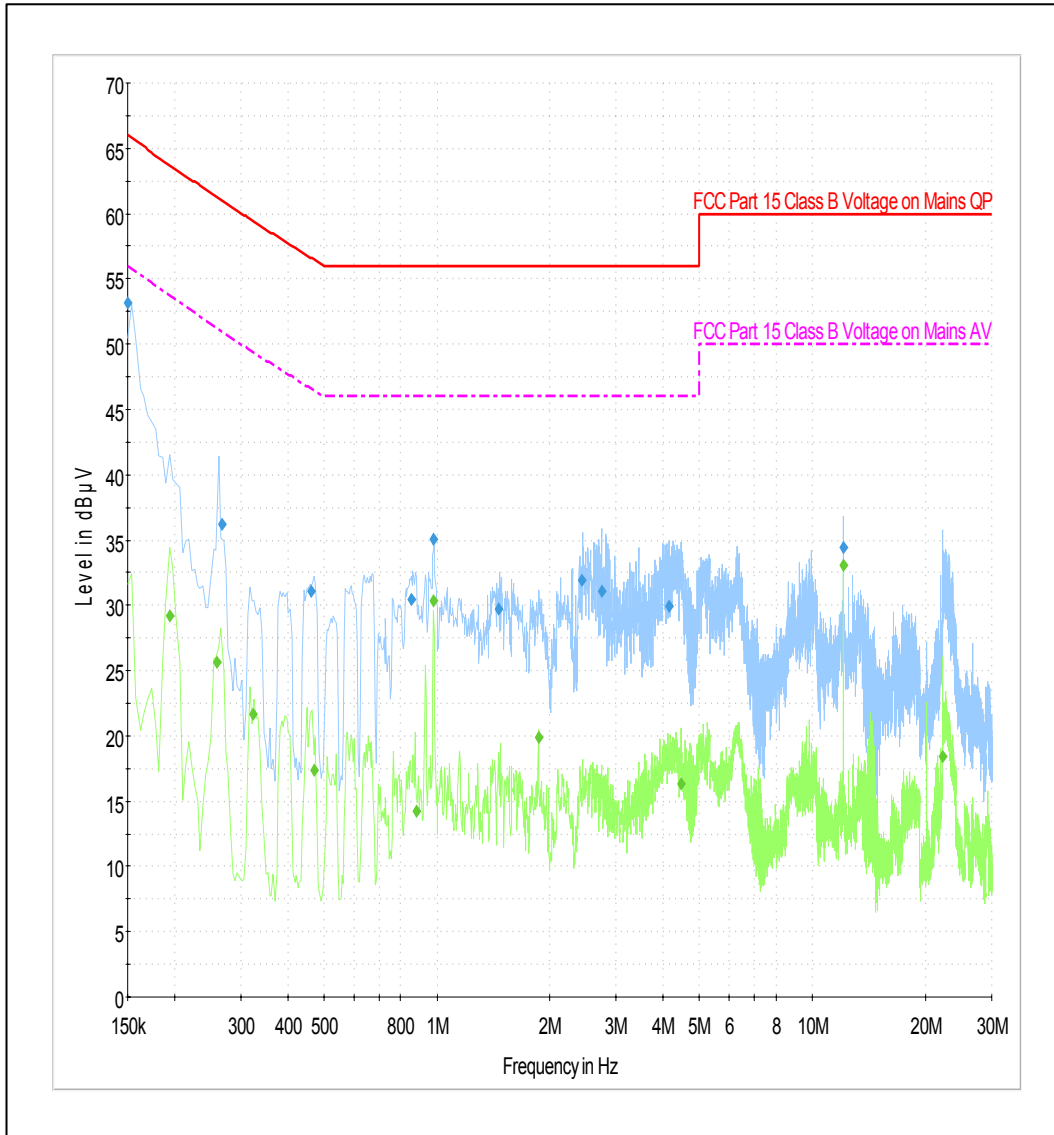
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	N	9.0	9.6	37.2	16.5	53.7
0.263	N	9.0	9.6	29.6	21.5	51.1
0.391	N	9.0	9.6	17.4	30.5	47.9
0.459	L1	9.0	9.6	21.5	25.1	46.7
0.979	L1	9.0	9.7	30.1	15.9	46.0
1.349	N	9.0	9.7	13.6	32.4	46.0
1.861	L1	9.0	9.7	18.2	27.8	46.0
4.877	L1	9.0	9.8	18.5	27.5	46.0
12.097	L1	9.0	10.0	33.2	16.8	50.0
20.161	L1	9.0	10.2	23.2	26.8	50.0

Note) Level (Qausi-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 : FAX Rx 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]
0.150	L1	9.0	9.6	53.1	12.9	66.0
0.267	N	9.0	9.6	36.2	24.8	61.0
0.463	L1	9.0	9.6	31.1	25.5	56.6
0.855	L1	9.0	9.7	30.5	25.5	56.0
0.979	L1	9.0	9.7	35.1	20.9	56.0
1.461	N	9.0	9.7	29.7	26.3	56.0
2.429	L1	9.0	9.7	31.9	24.1	56.0
2.745	L1	9.0	9.7	31.0	25.0	56.0
4.141	L1	9.0	9.8	30.0	26.0	56.0
12.097	L1	9.0	10	34.4	25.6	60.0

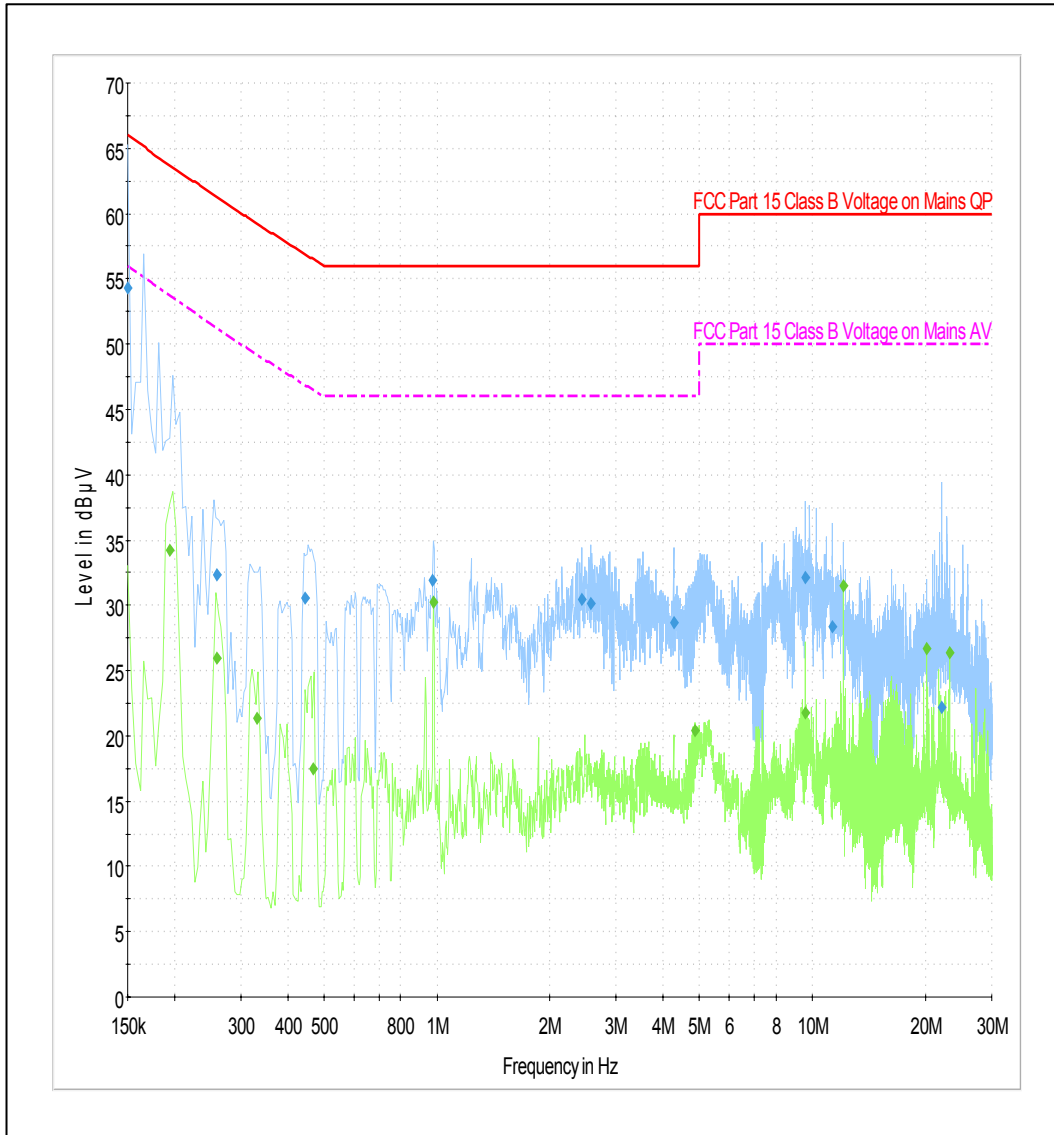
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	L1	9.0	9.6	38.5	24.4	53.7
0.259	L1	9.0	9.6	29.9	25.6	51.2
0.323	N	9.0	9.6	24.0	27.8	49.4
0.471	L1	9.0	9.6	24.3	29.1	46.5
0.882	L1	9.0	9.7	17.1	31.7	46.0
0.979	L1	9.0	9.7	28.3	15.7	46.0
1.861	L1	9.0	9.7	18.5	26.1	46.0
4.469	L1	9.0	9.8	19.9	29.7	46.0
12.097	L1	9.0	10.0	28.9	17.0	50.0
22.149	L1	9.0	10.2	22.2	31.6	50.0

Note) Level (Qausi-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 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]
0.150	L1	9.0	9.6	54.3	11.7	66.0
0.259	L1	9.0	9.6	32.3	29.0	61.3
0.447	N	9.0	9.6	30.6	26.3	56.9
0.975	L1	9.0	9.7	31.9	24.1	56.0
2.425	L1	9.0	9.7	30.4	25.6	56.0
2.561	L1	9.0	9.7	30.1	25.9	56.0
4.272	L1	9.0	9.8	28.7	27.3	56.0
9.545	L1	9.0	9.9	32.2	27.8	60.0
11.289	L1	9.0	10.0	28.4	31.6	60.0
22.073	N	9.0	10.3	22.2	37.8	60.0

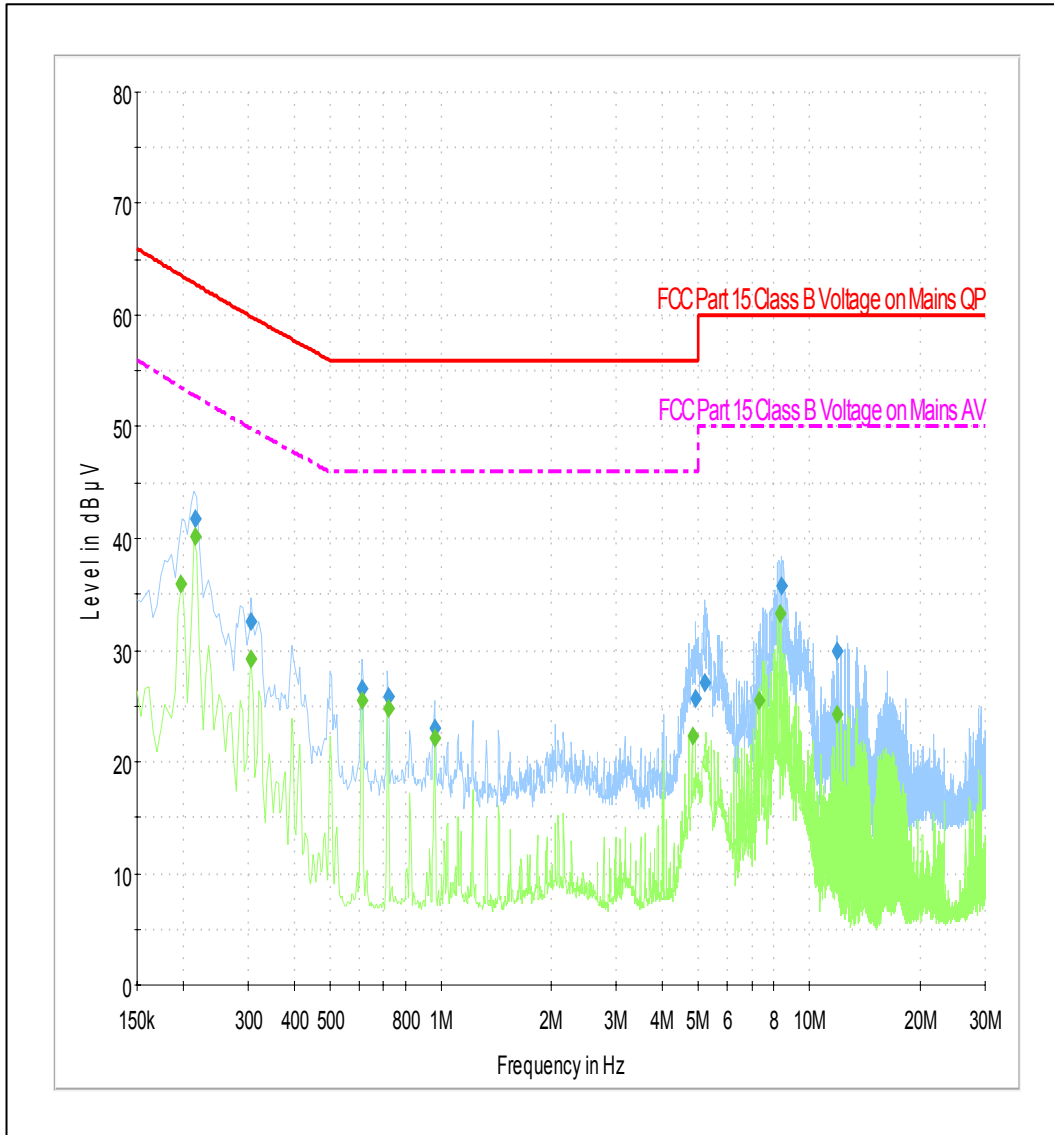
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	N	9.0	9.6	34.2	19.5	53.7
0.259	N	9.0	9.6	26.0	25.3	51.2
0.331	N	9.0	9.6	21.3	27.9	49.2
0.467	N	9.0	9.6	17.5	29.0	46.5
0.979	L1	9.0	9.7	30.3	15.7	46.0
4.869	L1	9.0	9.8	20.4	25.6	46.0
9.545	L1	9.0	9.9	21.7	28.3	50.0
12.097	L1	9.0	10.0	31.5	18.5	50.0
20.161	L1	9.0	10.2	26.7	23.3	50.0
23.129	L1	9.0	10.3	26.4	23.6	50.0

Note) Level (Qausi-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]
0.216	L1	9.0	9.6	41.7	21.1	62.8
0.306	L1	9.0	9.6	32.5	27.4	59.9
0.611	L1	9.0	9.6	26.5	29.5	56.0
0.719	L1	9.0	9.7	25.9	30.1	56.0
0.963	L1	9.0	9.7	23.1	32.9	56.0
4.924	L1	9.0	9.8	25.7	30.3	56.0
5.199	L1	9.0	9.8	27.0	33.0	60.0
8.401	L1	9.0	9.9	35.7	24.3	60.0
11.893	N	9.0	10.0	30.0	30.0	60.0

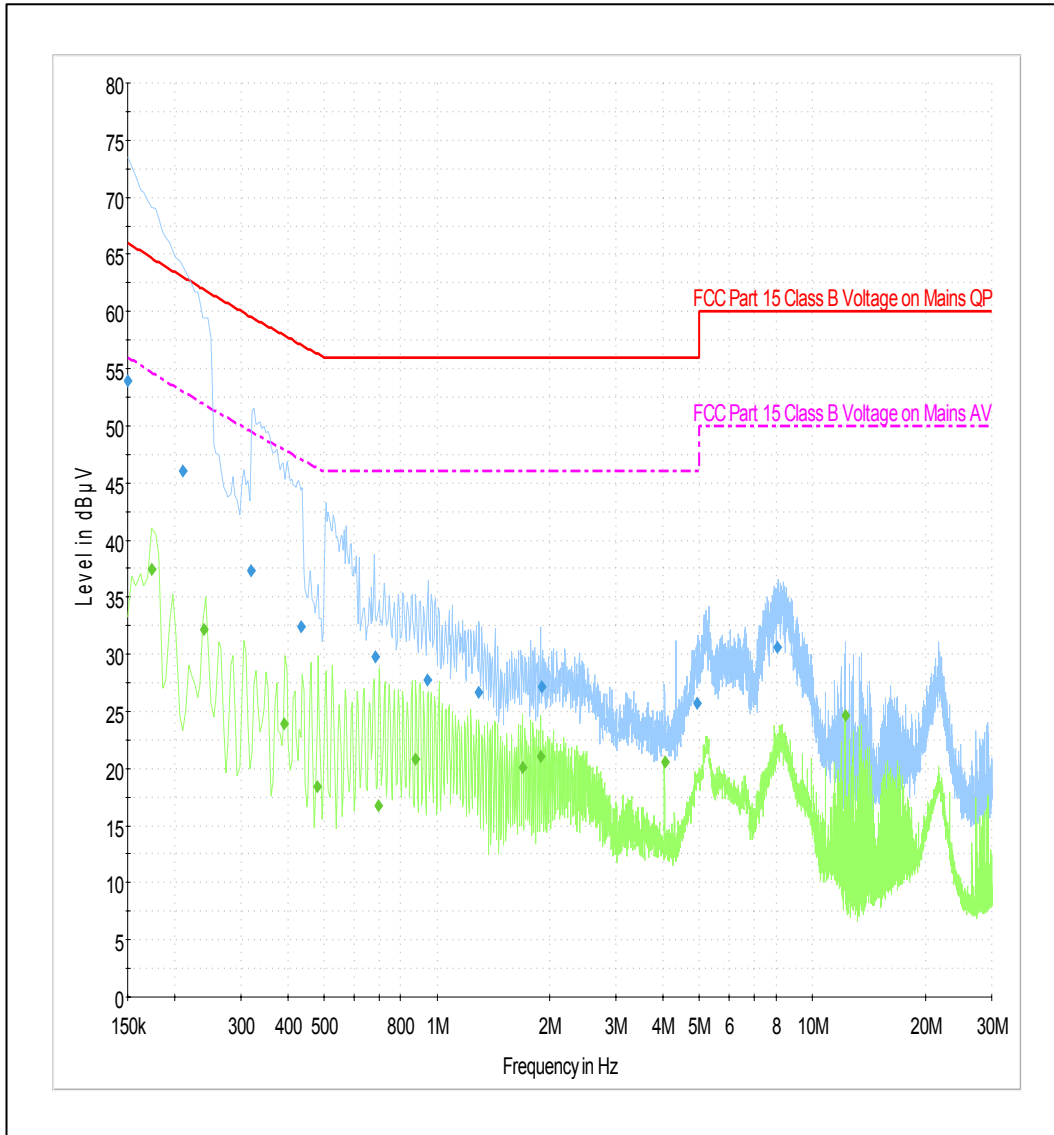
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.198	L1	9.0	9.6	35.9	17.6	53.5
0.216	L1	9.0	9.6	40.1	12.7	52.8
0.306	L1	9.0	9.6	29.3	20.6	49.9
0.611	L1	9.0	9.6	25.5	20.5	46.0
0.719	L1	9.0	9.7	24.9	21.1	46.0
0.964	L1	9.0	9.7	22.1	23.9	46.0
4.816	L1	9.0	9.8	22.3	23.7	46.0
7.279	L1	9.0	9.9	25.5	24.5	50.0
8.302	L1	9.0	9.9	33.2	16.8	50.0
11.894	N	9.0	10.0	24.3	25.7	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 2 : Copying 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]
0.150	L1	9.0	9.6	54.0	12.0	66.0
0.211	L1	9.0	9.6	46.1	16.9	63.0
0.319	L1	9.0	9.6	37.3	22.3	59.6
0.436	L1	9.0	9.6	32.5	24.6	57.1
0.685	L1	9.0	9.7	29.8	26.2	56.0
0.942	L1	9.0	9.7	27.7	28.3	56.0
1.288	N	9.0	9.7	26.7	29.3	56.0
1.895	N	9.0	9.7	27.1	28.9	56.0
4.938	N	9.0	9.8	25.7	30.3	56.0
8.076	N	9.0	9.9	30.6	29.4	60.0

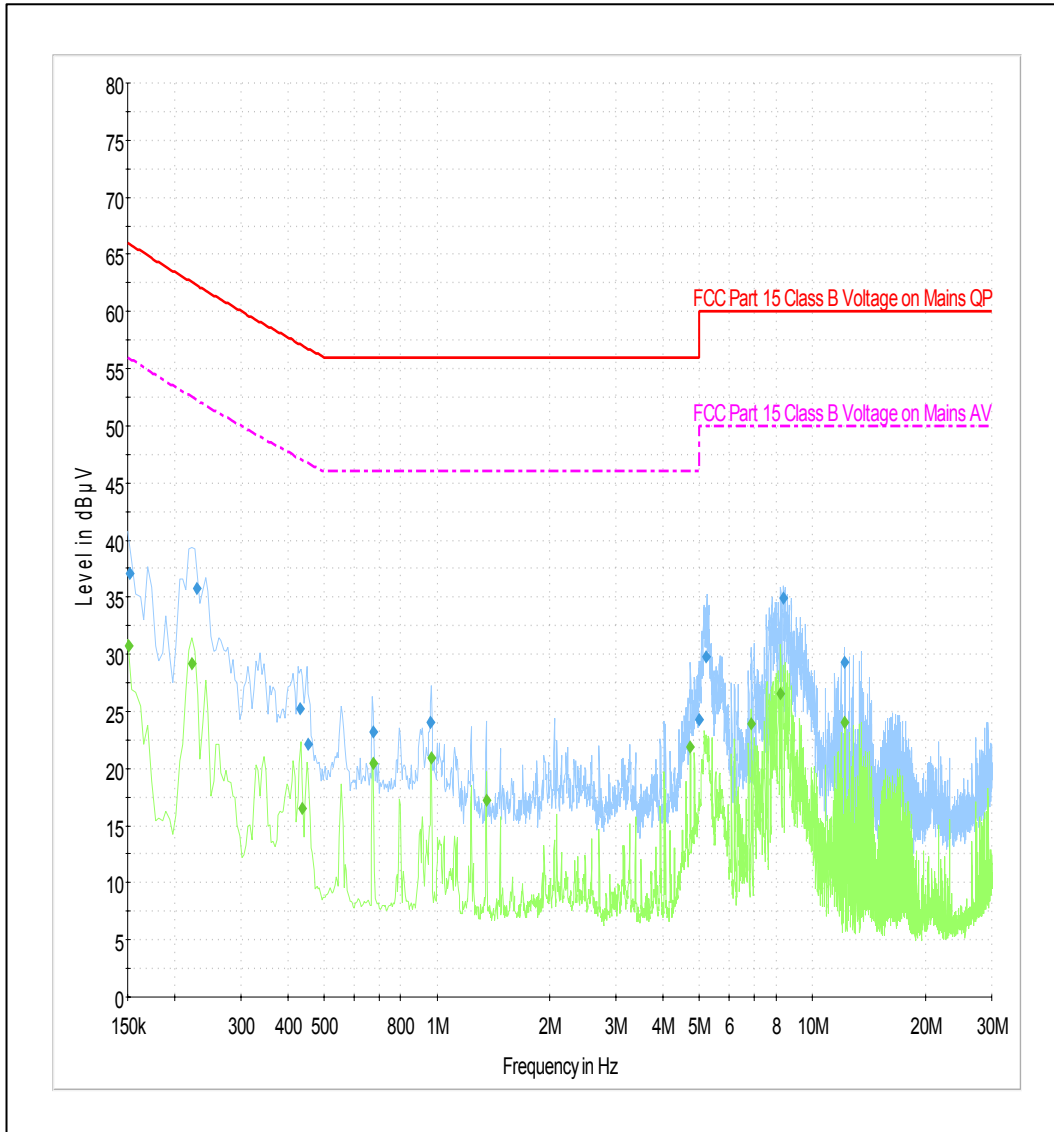
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.174	L1	9.0	9.6	37.4	17.3	54.7
0.240	L1	9.0	9.6	32.1	19.7	51.9
0.393	L1	9.0	9.6	23.9	23.9	47.9
0.479	N	9.0	9.6	18.4	28.0	46.3
0.697	N	9.0	9.6	16.7	29.3	46.0
0.874	L1	9.0	9.7	20.8	25.2	46.0
1.693	N	9.0	9.7	20.0	26.0	46.0
1.891	N	9.0	9.7	21.1	24.9	46.0
4.033	N	9.0	9.8	20.6	25.4	46.0
12.198	L1	9.0	10	24.7	25.3	50.0

Note) Level (Qausi-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 : Scan to USB 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	37.1	28.8	65.9
0.230	L1	9.0	9.6	35.7	26.6	62.3
0.432	L1	9.0	9.6	25.3	31.9	57.1
0.454	N	9.0	9.6	22.1	34.6	56.8
0.676	L1	9.0	9.7	23.1	32.9	56.0
0.963	L1	9.0	9.7	24.0	32.0	56.0
4.995	L1	9.0	9.8	24.3	31.7	56.0
5.217	L1	9.0	9.8	29.8	30.2	60.0
8.331	L1	9.0	9.9	34.9	25.1	60.0
12.137	L1	9.0	10.0	29.3	30.7	60.0

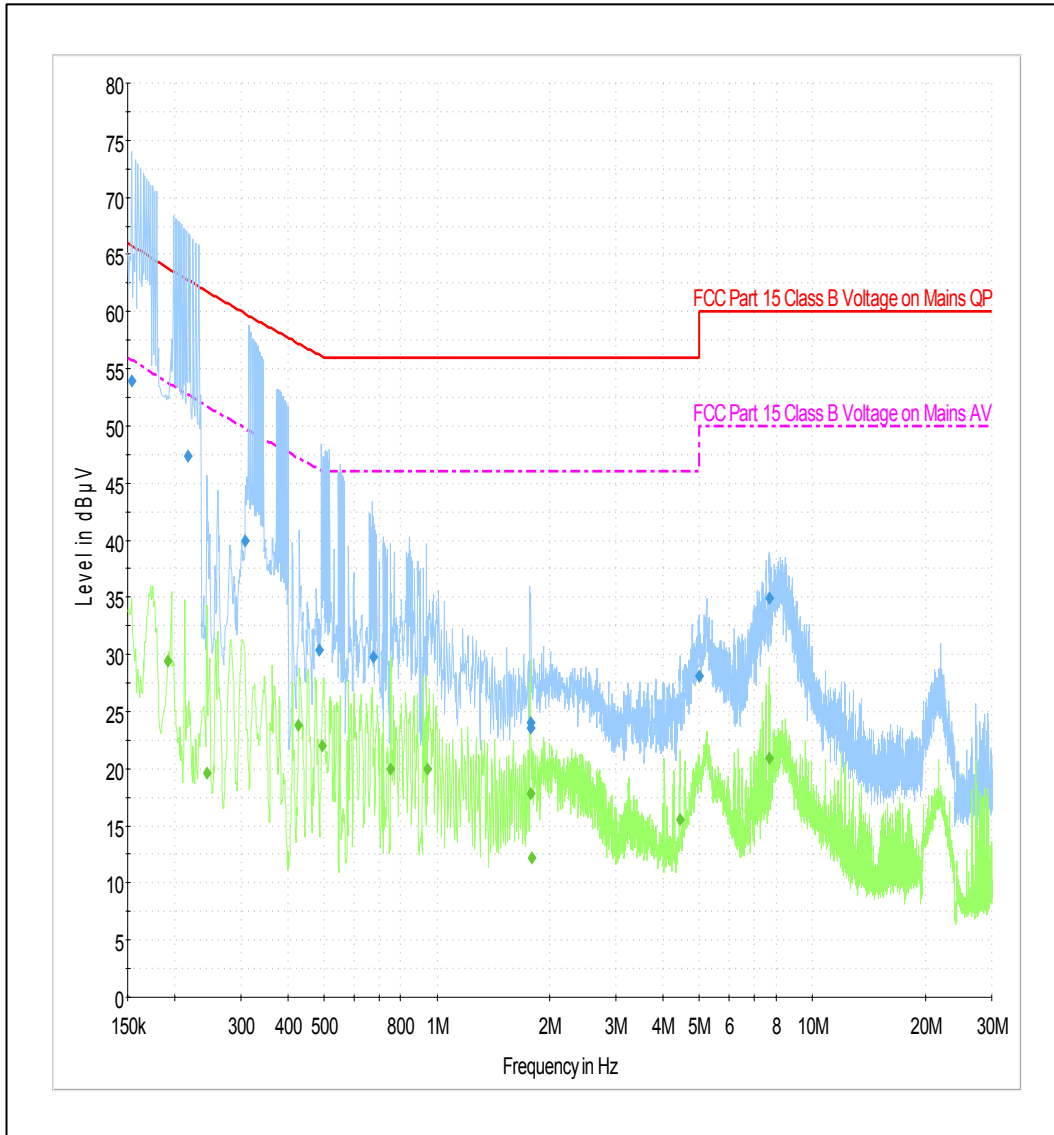
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.151	L1	9.0	9.6	30.7	25.2	55.9
0.223	L1	9.0	9.6	29.2	23.3	52.5
0.437	L1	9.0	9.6	16.5	30.5	47.0
0.676	L1	9.0	9.7	20.5	25.5	46.0
0.964	N	9.0	9.7	21.0	25.0	46.0
1.352	N	9.0	9.7	17.3	28.7	46.0
4.725	L1	9.0	9.8	21.9	24.1	46.0
6.873	L1	9.0	9.9	23.9	26.1	50.0
8.226	L1	9.0	9.9	26.6	23.4	50.0
12.137	L1	9.0	10.0	24.0	26.0	50.0

Note) Level (Qausi-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 : USB 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]
0.154	L1	9.0	9.6	53.9	11.8	65.8
0.218	L1	9.0	9.6	47.4	15.4	62.7
0.308	L1	9.0	9.6	39.9	19.9	59.8
0.487	L1	9.0	9.6	30.4	25.8	56.2
0.678	L1	9.0	9.7	29.8	26.2	56.0
1.771	L1	9.0	9.7	24.1	31.9	56.0
1.774	L1	9.0	9.7	23.6	32.4	56.0
5.000	L1	9.0	9.8	28.1	27.9	56.0
7.687	L1	9.0	9.9	34.9	25.1	60.0

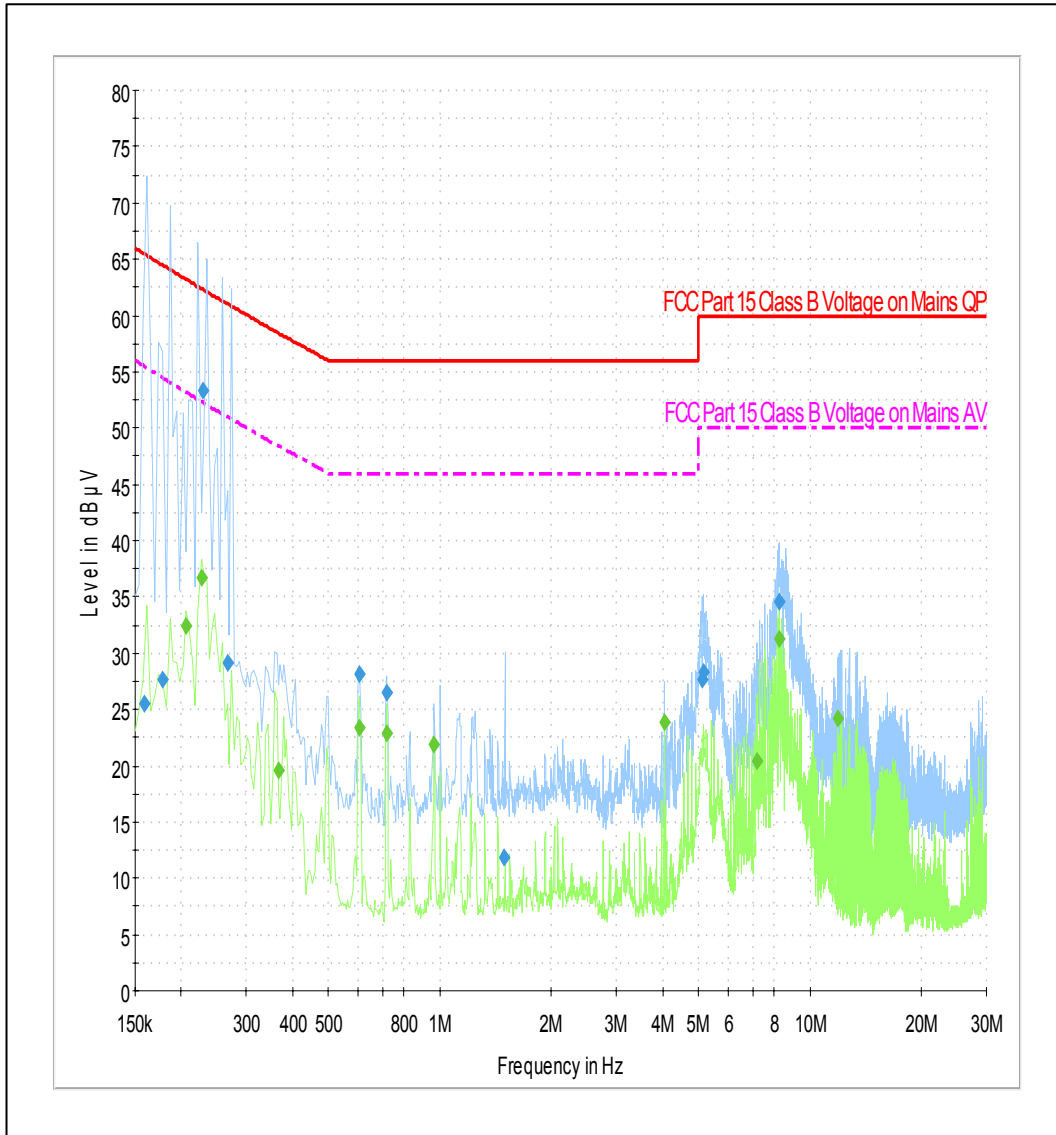
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.192	N	9.0	9.6	29.4	24.4	53.8
0.244	N	9.0	9.6	19.6	32.2	51.7
0.428	L1	9.0	9.6	23.8	23.4	47.2
0.494	L1	9.0	9.6	22.0	24.1	46.1
0.751	N	9.0	9.6	20.0	26.0	46.0
0.943	L1	9.0	9.7	20.0	26.0	46.0
1.776	L1	9.0	9.7	17.8	28.2	46.0
1.782	L1	9.0	9.7	12.2	33.8	46.0
4.423	L1	9.0	9.8	15.5	30.5	46.0
7.672	L1	9.0	9.9	20.9	29.1	50.0

Note) Level (Qausi-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 : FAX Tx 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]
0.159	N	9.0	9.6	25.5	40.0	65.5
0.179	N	9.0	9.6	27.7	36.7	64.5
0.230	N	9.0	9.6	53.4	8.9	62.3
0.267	N	9.0	9.6	29.1	31.9	61.0
0.607	L1	9.0	9.6	28.2	27.8	56.0
0.719	L1	9.0	9.7	26.5	29.5	56.0
1.497	L1	9.0	9.7	11.9	44.1	56.0
5.117	L1	9.0	9.8	27.7	32.3	60.0
5.153	N	9.0	9.8	28.3	31.7	60.0
8.229	L1	9.0	9.9	34.6	25.4	60.0

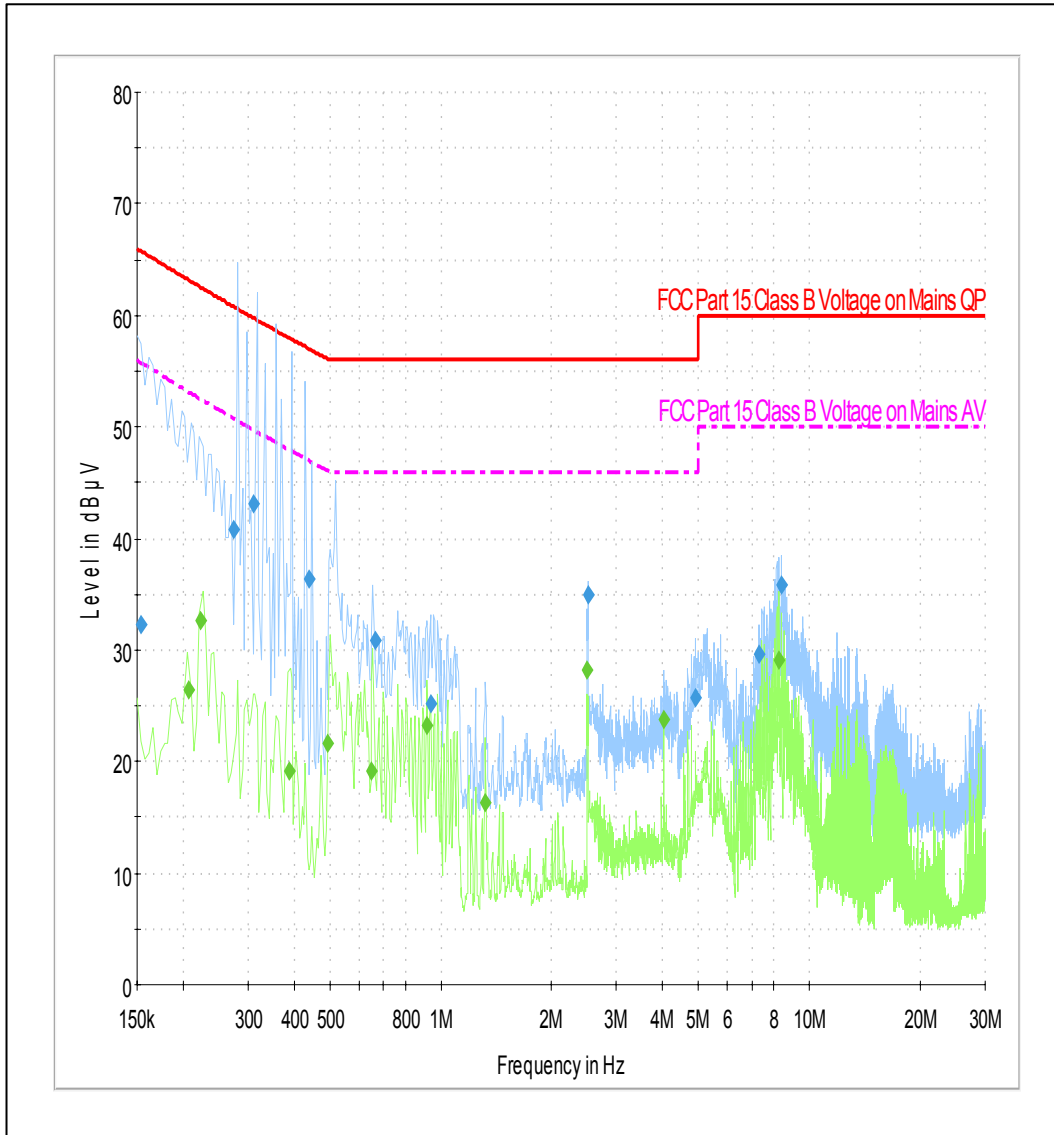
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.207	L1	9.0	9.6	32.5	20.7	53.2
0.227	L1	9.0	9.6	36.7	15.7	52.4
0.366	N	9.0	9.6	19.6	28.8	48.4
0.607	L1	9.0	9.6	23.3	22.7	46.0
0.719	L1	9.0	9.7	22.9	23.1	46.0
0.963	L1	9.0	9.7	21.9	24.1	46.0
4.033	N	9.0	9.8	23.9	22.1	46.0
7.204	L1	9.0	9.9	20.4	29.6	50.0
8.273	N	9.0	9.9	31.3	18.7	50.0
11.893	L1	9.0	10.0	24.2	25.8	50.0

Note) Level (Qausi-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 : FAX Rx 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]
0.154	L1	9.0	9.6	32.2	33.6	65.8
0.275	L1	9.0	9.6	40.7	20.0	60.8
0.311	L1	9.0	9.6	43.1	16.7	59.8
0.439	L1	9.0	9.6	36.3	20.7	57.0
0.662	L1	9.0	9.7	30.8	25.2	56.0
0.939	L1	9.0	9.7	25.2	30.8	56.0
2.513	N	9.0	9.7	34.9	21.1	56.0
4.909	N	9.0	9.8	25.8	30.2	56.0
7.277	L1	9.0	9.9	29.7	30.3	60.0
8.373	L1	9.0	9.9	35.9	24.1	60.0

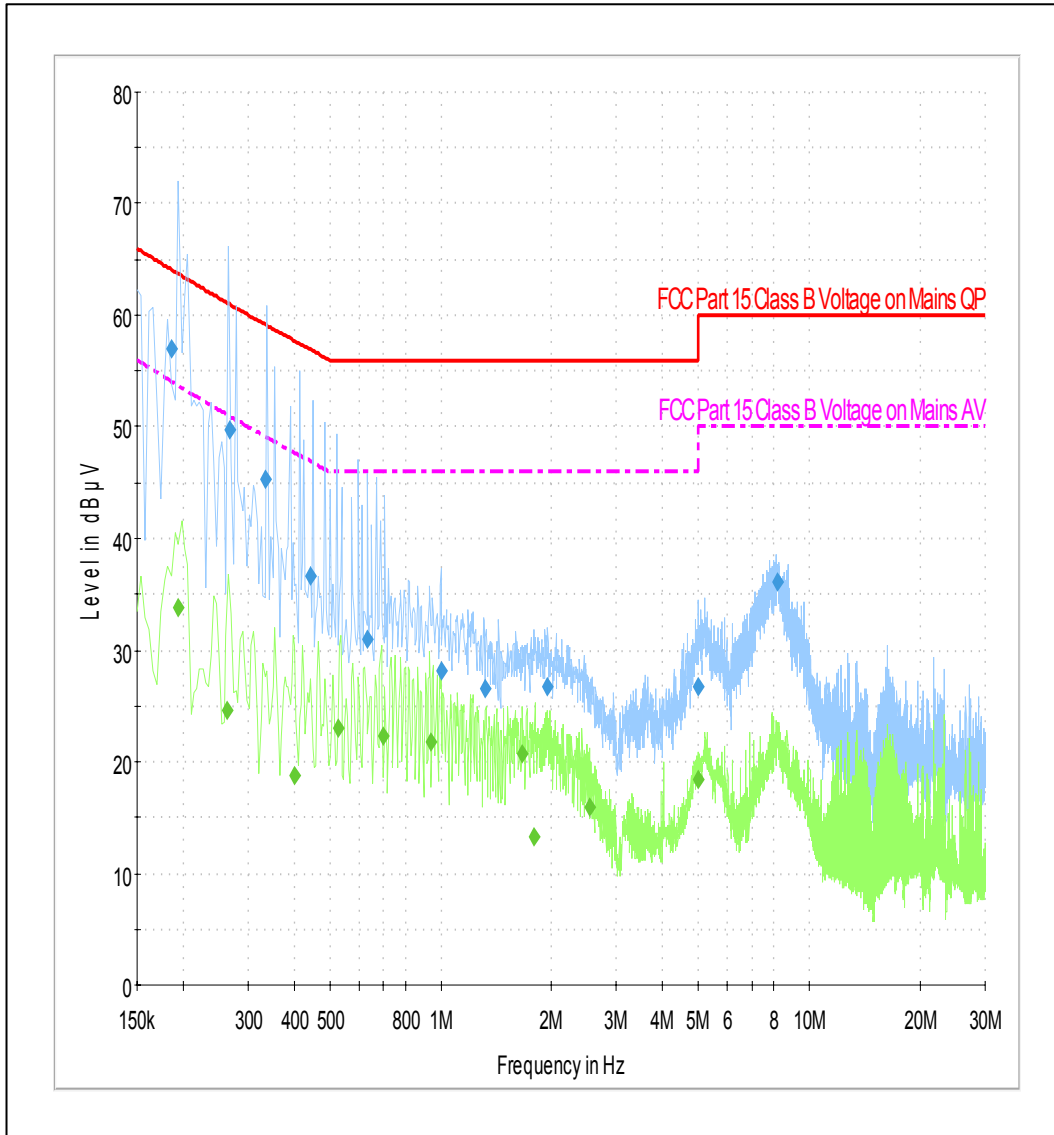
Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.207	N	9.0	9.6	26.4	26.8	53.2
0.223	N	9.0	9.6	32.7	19.8	52.5
0.387	L1	9.0	9.6	19.1	28.9	48.0
0.495	L1	9.0	9.6	21.6	24.5	46.1
0.651	L1	9.0	9.7	19.2	26.8	46.0
0.919	L1	9.0	9.7	23.2	22.8	46.0
1.321	N	9.0	9.7	16.3	29.7	46.0
2.489	N	9.0	9.7	28.2	17.8	46.0
4.033	N	9.0	9.8	23.8	22.2	46.0
8.273	L1	9.0	9.9	29	21	50.0

Note) Level (Qausi-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 : 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]
0.187	N	9.0	9.6	57.0	7.0	64.1
0.267	N	9.0	9.6	49.7	11.3	61.0
0.335	N	9.0	9.6	45.4	13.8	59.2
0.443	N	9.0	9.6	36.6	20.4	56.9
0.635	N	9.0	9.6	30.9	25.1	56.0
1.008	L1	9.0	9.7	28.1	27.9	56.0
1.317	L1	9.0	9.7	26.6	29.4	56.0
1.945	N	9.0	9.7	26.7	29.3	56.0
4.977	L1	9.0	9.8	26.7	29.3	56.0
8.164	L1	9.0	9.9	36.0	24.0	60.0

Frequency [MHz]	Line	Bandwidth [kHz]	Factor [dB]	Average [dBuV]	Margin [dB]	Limit [dBuV]
0.195	L1	9.0	9.6	33.8	19.9	53.7
0.263	N	9.0	9.6	24.6	26.5	51.1
0.403	N	9.0	9.6	18.8	28.8	47.7
0.527	L1	9.0	9.6	23.1	22.9	46.0
0.698	L1	9.0	9.7	22.4	23.6	46.0
0.942	L1	9.0	9.7	21.7	24.3	46.0
1.661	L1	9.0	9.7	20.6	25.4	46.0
1.797	L1	9.0	9.7	13.3	32.7	46.0
2.540	L1	9.0	9.7	15.9	30.1	46.0
4.981	L1	9.0	9.8	18.5	27.5	46.0

Note) Level (Qausi-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 instrumentations used in the Radiated disturbance test were as follows:

Test instrumentation	Model name	Manufacturer	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Bi-con Antenna	CBL6112D	Schaffner	22602	2006-06-26	24
Bi-con Antenna	CBL6112D	Schaffner	22601	2007-04-02	24
Horn Antenna	BBHA9120B	Schwarzbeck	336	2007-03-15	24
EMI Receiver	ESIB-26	R&S	100289	2007-03-22	12
EMI Receiver	ESIB-26	R&S	100287	2007-04-10	12
Amplifier	310N	Agilent	186467	2007-03-17	12
Amplifier	310N	Agilent	251673	2007-03-17	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

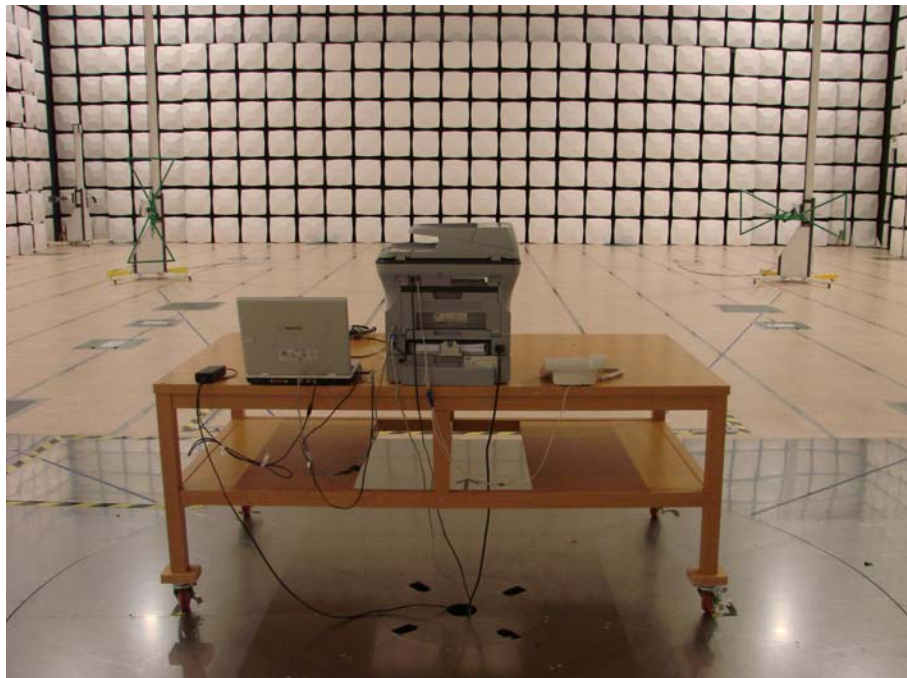
4.2.2 Temperature and humidity condition

Test date	Jan 29, 2008 ~ Jan 31, 2008	Test engineer		Kyeong Dong Kim	
Climate condition	Ambient temperature	25.1 °C	Relative humidity		33 %
	Atmospheric pressure	101.9 kPa			
Test place	Semi-Anechoic Chamber				

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



Front

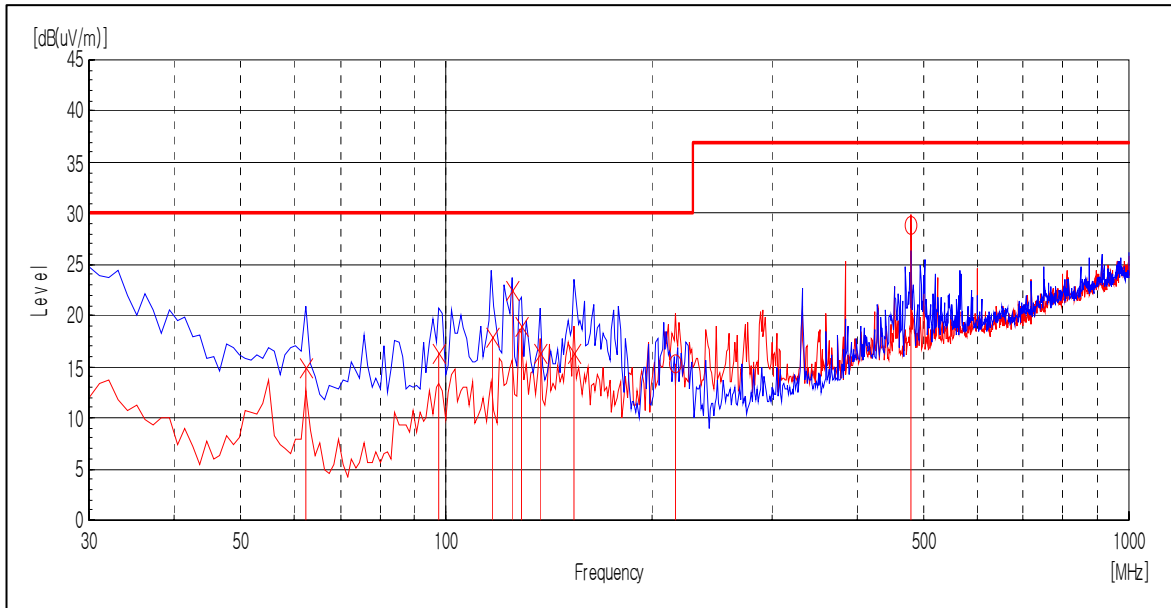


Rear

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]
62.31	V	40.0	-25.0	15.0	30	15.0	198	223
97.74	V	36.0	-19.6	16.4	30	13.6	253	47
116.91	V	35.9	-17.9	18.0	30	12.0	102	357
125.00	V	40.5	-18.0	22.5	30	7.5	100	212
129.00	V	37.0	-18.1	18.9	30	11.1	155	73
137.34	V	34.6	-18.2	16.4	30	13.6	133	67
154.01	V	35.6	-19.2	16.4	30	13.6	150	39
216.53	H	35.2	-19.9	15.3	30	14.7	289	320
479.98	H	38.0	-9.2	28.8	37	8.2	158	125

Note) Receiving antenna polarization : Horizontal and/or Vertical

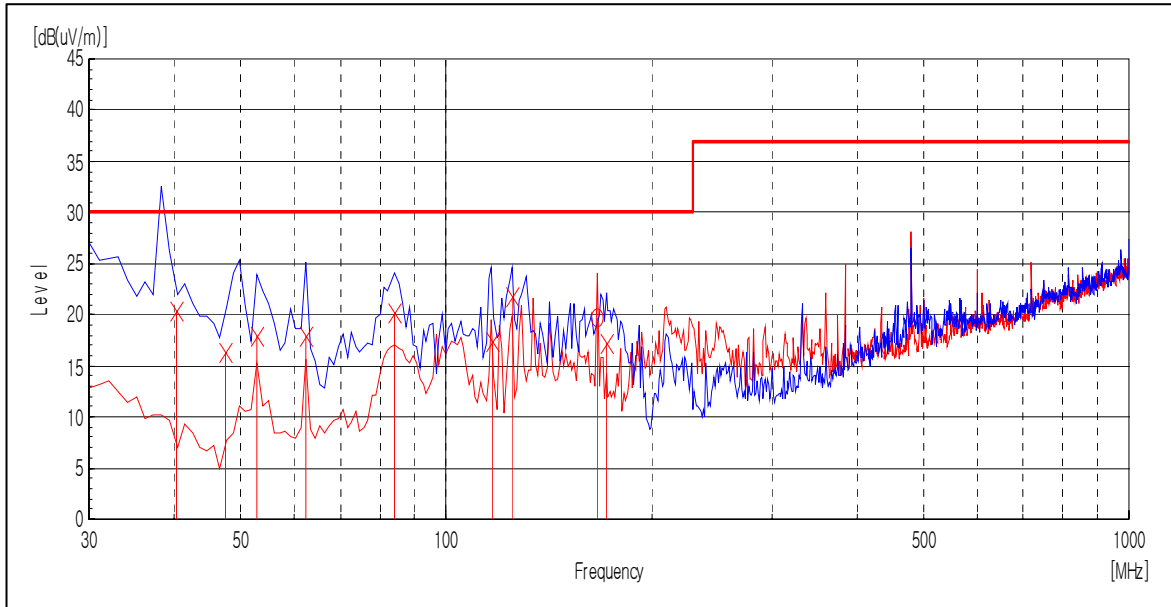
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : Copying 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]
40.27	V	39.0	-18.6	20.4	30	9.6	250	348
47.60	V	38.6	-22.3	16.3	30	13.7	350	284
52.93	V	42.1	-24.2	17.9	30	12.1	158	348
62.24	V	42.9	-25.0	17.9	30	12.1	150	228
84.19	V	42.3	-22.1	20.2	30	9.8	145	213
116.94	V	35.3	-17.9	17.4	30	12.6	150	89
125.00	V	40.1	-18.0	22.1	30	7.9	150	256
166.51	H	38.9	-19.2	19.7	30	10.3	356	359
171.72	V	36.7	-19.5	17.2	30	12.8	189	333

Note) Receiving antenna polarization : Horizontal and/or Vertical

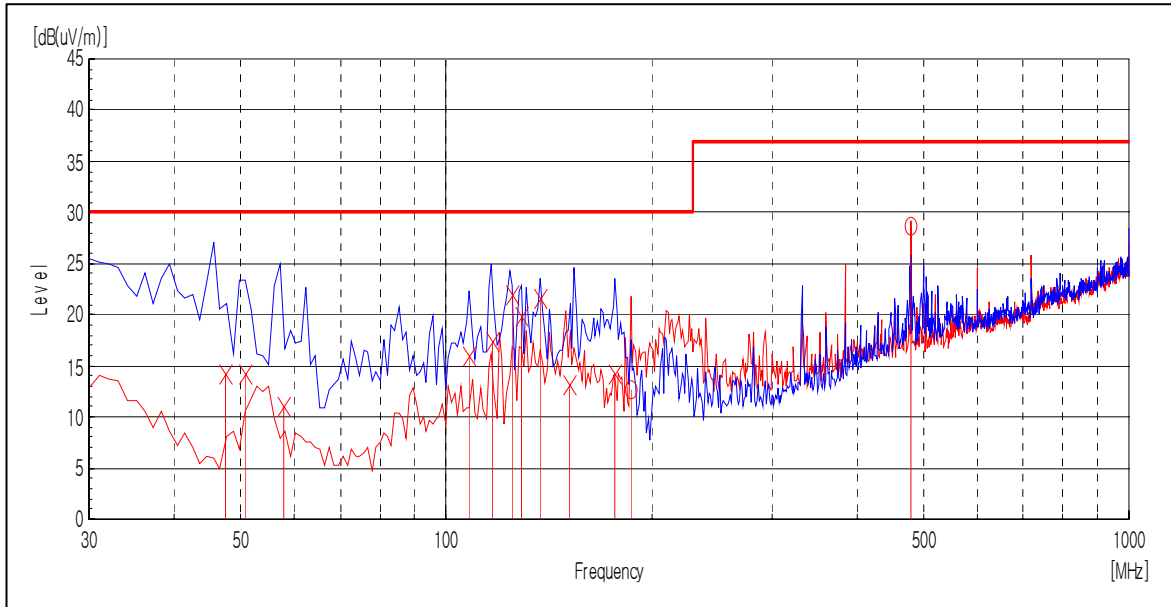
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : Scan to USB 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]
47.61	V	36.6	-22.3	14.3	30	15.7	150	261
50.84	V	37.8	-23.6	14.2	30	15.8	150	290
57.88	V	36.0	-25.0	11.0	30	19.0	150	289
108.16	V	34.3	-18.3	16.0	30	14.0	150	256
116.93	V	35.3	-17.9	17.4	30	12.6	250	45
124.97	V	40.0	-18.0	22.0	30	8.0	150	241
129.00	V	37.9	-18.1	19.8	30	10.2	155	50
137.10	V	39.8	-18.2	21.6	30	8.4	150	52
151.50	V	32.4	-19.2	13.2	30	16.8	150	123
176.356	V	33.6	-19.4	14.2	30	15.8	150	63
186.735	H	32.8	-20.2	12.6	30	17.4	350	189
479.998	H	37.8	-9.2	28.6	37	8.4	150	198

Note) Receiving antenna polarization : Horizontal and/or Vertical

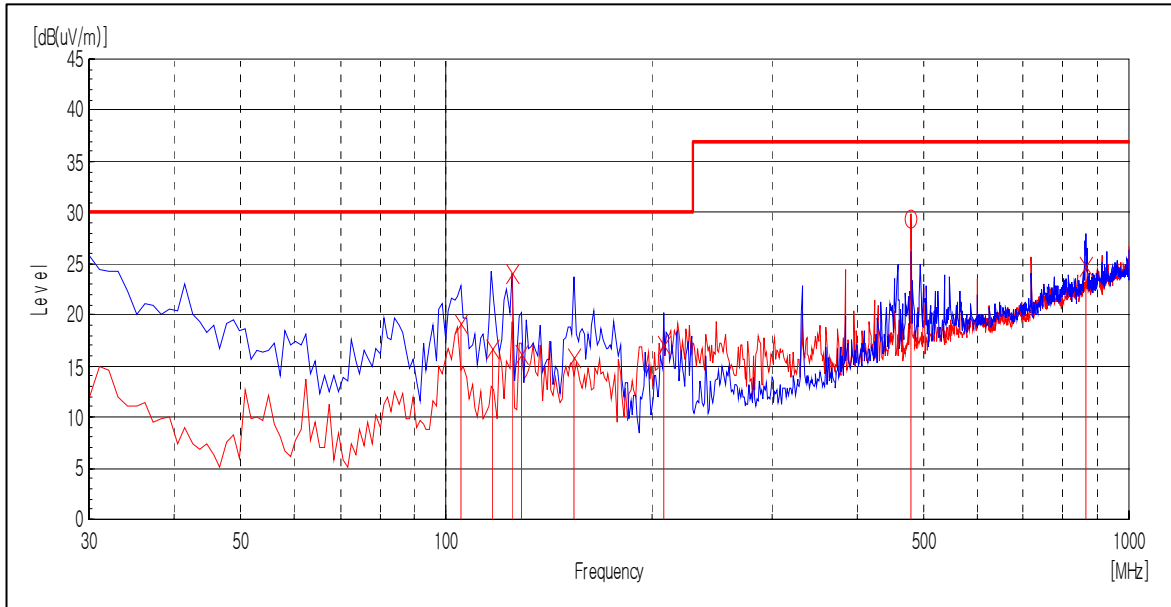
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : 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]
105.03	V	37.8	-18.6	19.2	30	10.8	112	348
116.94	V	34.7	-17.9	16.8	30	13.2	173	106
125.00	V	42.0	-18.0	24.0	30	6.0	100	39
129.00	V	34.2	-18.1	16.1	30	13.9	178	42
154.01	V	35.0	-19.2	15.8	30	14.2	123	21
208.20	V	36.8	-19.7	17.1	30	12.9	165	21
480.18	H	38.5	-9.2	29.3	37	7.7	268	136
864.73	V	28.0	-3.3	24.7	37	12.3	145	285

Note) Receiving antenna polarization : Horizontal and/or Vertical

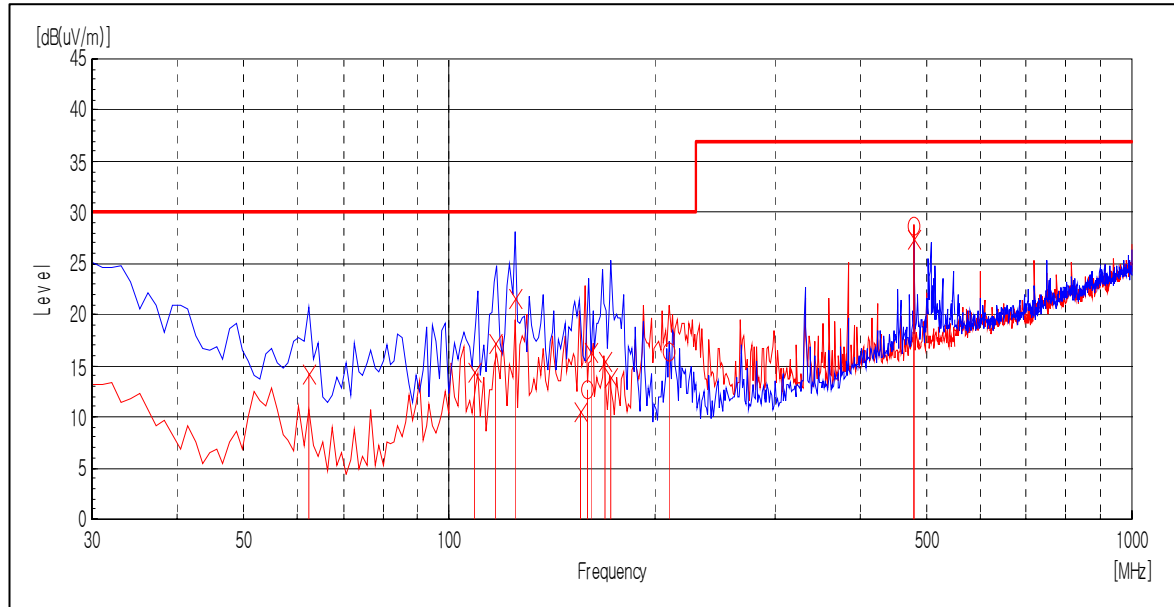
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : FAX TX 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]
62.31	V	39.3	-25.0	14.3	30	15.7	301	174
108.78	V	32.7	-18.3	14.4	30	15.6	150	351
116.95	V	35.2	-17.9	17.3	30	12.7	150	307
124.99	V	39.7	-18.0	21.7	30	8.3	150	257
155.69	V	29.7	-19.2	10.5	30	19.5	150	233
159.26	H	31.7	-19.1	12.6	30	17.4	250	351
161.27	V	35.5	-19.2	16.3	30	13.7	150	312
169.33	V	34.9	-19.5	15.4	30	14.6	150	325
172.30	V	33.4	-19.5	13.9	30	16.1	150	325
210.28	H	36.3	-20.0	16.3	30	13.7	250	350
480.02	H	37.8	-9.2	28.6	37	8.4	150	135
480.18	V	36.6	-9.1	27.5	37	9.5	269	155

Note) Receiving antenna polarization : Horizontal and/or Vertical

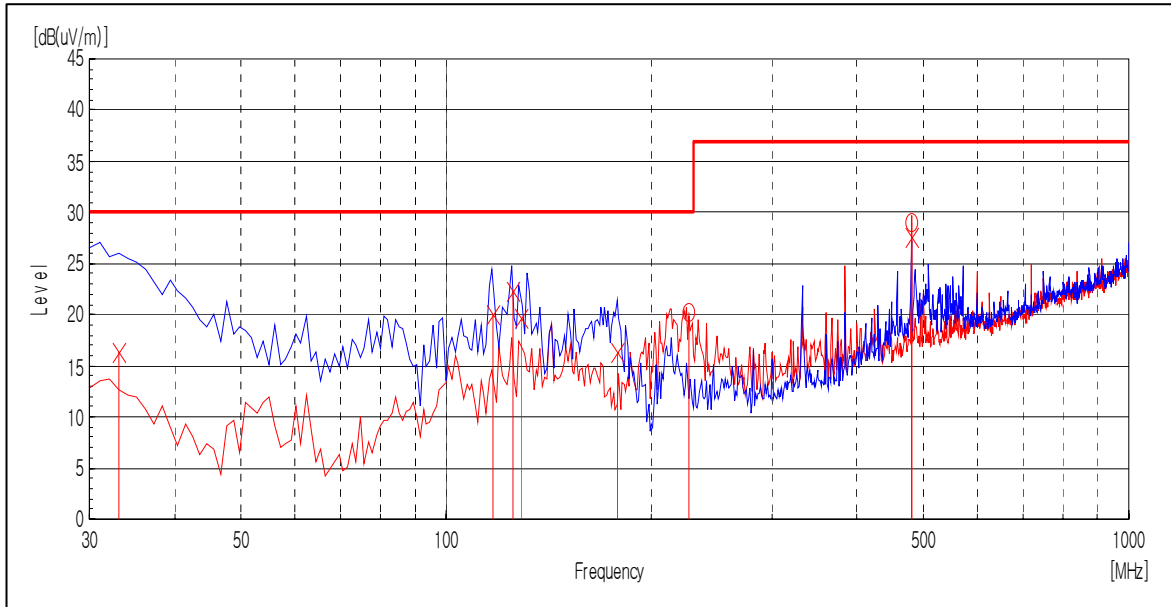
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : FAX RX 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]
33.13	V	31.4	-15.0	16.4	30	13.6	105	4
116.91	V	37.9	-17.9	20.0	30	10.0	150	61
125.01	V	40.4	-18.0	22.4	30	7.6	150	355
128.63	V	37.8	-18.1	19.7	30	10.3	150	92
177.98	V	35.8	-19.5	16.3	30	13.7	178	338
226.99	H	39.2	-19.0	20.2	30	9.8	250	5
480.01	H	38.3	-9.2	29.1	37	7.9	150	200
480.18	V	36.7	-9.1	27.6	37	9.4	302	148

Note) Receiving antenna polarization : Horizontal and/or Vertical

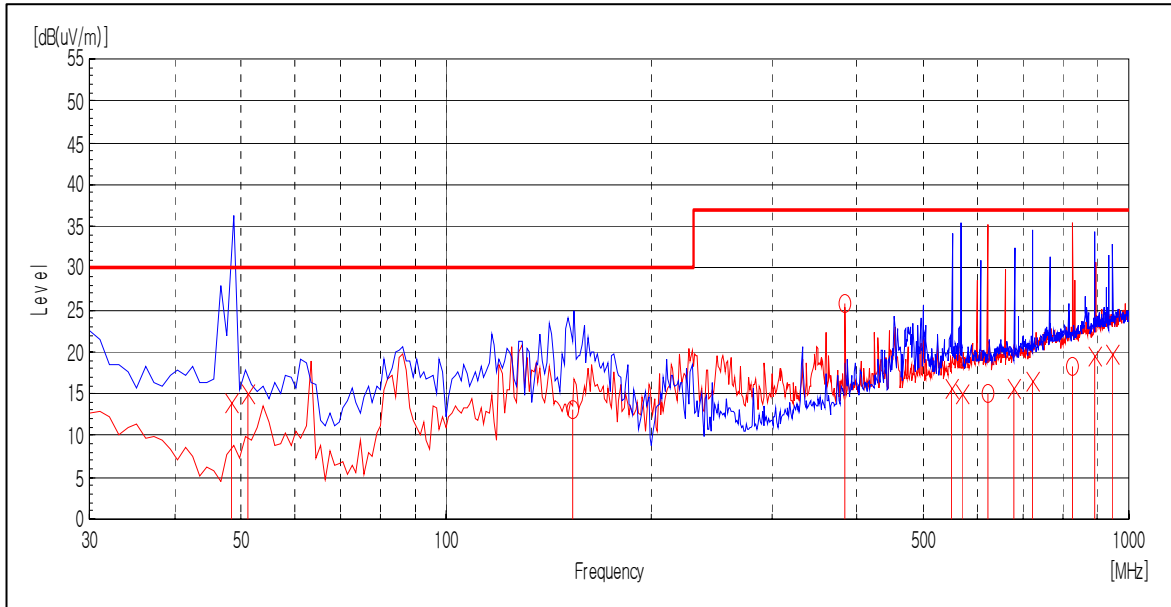
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 1 : 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]
48.45	V	36.7	-22.7	14.0	30	16.0	350	71
51.11	V	38.7	-23.7	15.0	30	15.0	248	0
153.19	H	31.9	-18.9	13.0	30	17.0	399	149
383.96	H	37.5	-11.8	25.7	37	11.3	197	60
550.67	V	22.8	-7.1	15.7	37	21.3	250	264
569.16	V	22.4	-7.4	15.0	37	22.0	345	0
620.88	H	22.1	-7.1	15.0	37	22.0	350	0
678.52	V	22.3	-6.5	15.8	37	21.2	150	219
721.55	V	22.2	-5.7	16.5	37	20.5	255	136
827.28	H	22.7	-4.4	18.3	37	18.7	350	0
891.11	V	22.6	-3.0	19.6	37	17.4	143	153
947.83	V	21.5	-1.8	19.7	37	17.3	251	13

Note) Receiving antenna polarization : Horizontal and/or Vertical

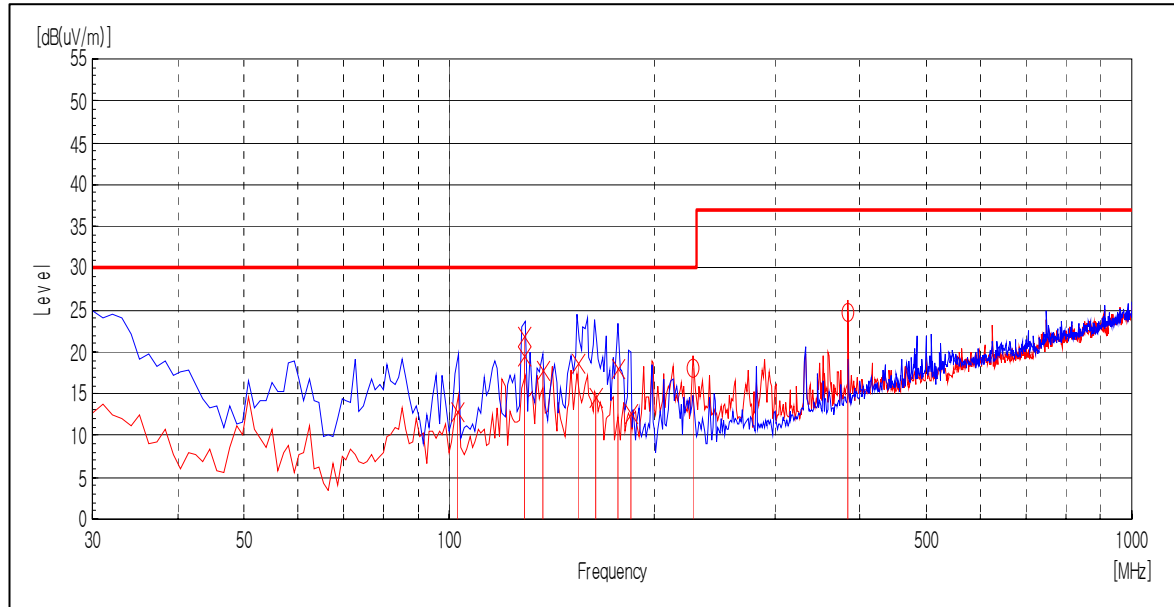
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

Margin QP(Qausi-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]
102.56	V	31.7	-18.9	12.8	30	17.2	133	0
128.57	V	37.7	-18.1	19.6	30	10.4	158	0
128.67	V	40.0	-18.1	21.9	30	8.1	250	24
137.15	V	36.0	-18.2	17.8	30	12.2	178	57
154.41	V	37.9	-19.2	18.7	30	11.3	201	24
163.72	V	33.9	-19.3	14.6	30	15.4	399	10
176.32	V	37.4	-19.4	18.0	30	12.0	325	336
184.35	V	32.8	-20.2	12.6	30	17.4	102	15
227.51	H	37.0	-18.9	18.1	30	11.9	152	0
383.96	H	36.6	-11.8	24.8	37	12.2	254	0

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(Qausi-Peak) = Limit – Level QP

- Configuration 2 : Copying 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]
40.38	V	33.1	-18.7	14.4	30	15.6	255	178
60.06	V	40.1	-25.0	15.1	30	14.9	189	264
116.39	V	35.4	-17.9	17.5	30	12.5	102	98
128.62	V	38.6	-18.1	20.5	30	9.5	130	116
134.64	V	32.2	-18.2	14.0	30	16.0	145	60
141.10	V	37.2	-18.3	18.9	30	11.1	250	59
158.55	V	40.4	-19.2	21.2	30	8.8	350	0
169.33	V	38.2	-19.5	18.7	30	11.3	103	12
176.43	V	38.3	-19.4	18.9	30	11.1	100	12
212.89	H	36.7	-20.0	16.7	30	13.3	175	0.3
383.97	H	38.0	-11.8	26.2	37	10.8	225	87.2

Note) Receiving antenna polarization : Horizontal and/or Vertical

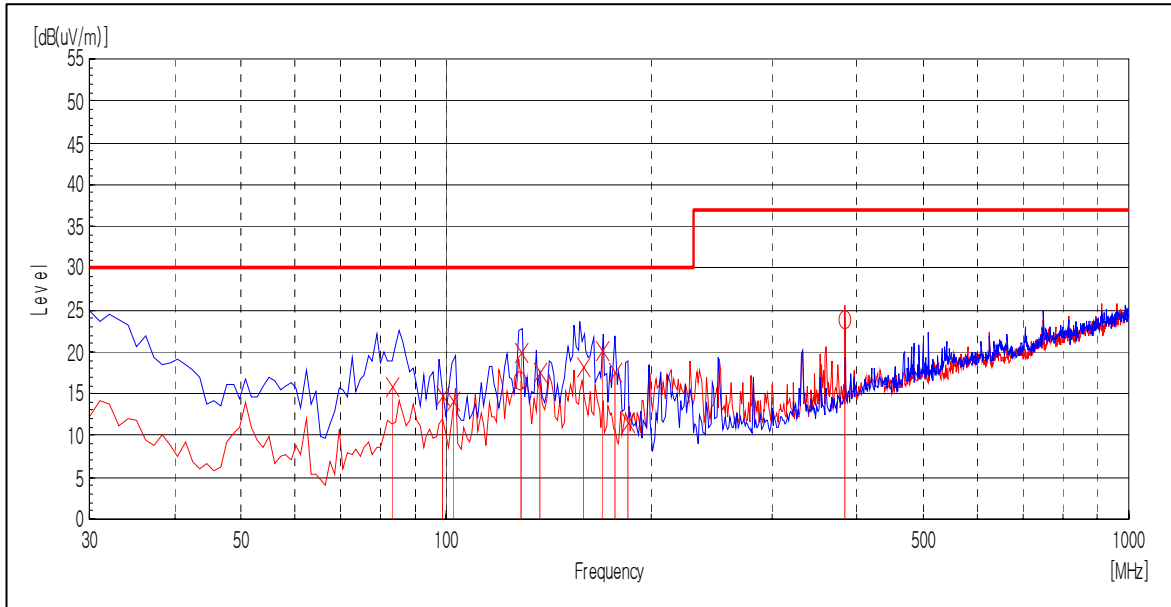
Test Distance : 10m, Antenna Height : 1 to 4 meters

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

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

- Configuration 2 : 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]
83.24	V	38.4	-22.4	16.0	30	14.0	135	0
98.61	V	34.1	-19.4	14.7	30	15.3	168	23
102.51	V	33.2	-18.9	14.3	30	15.7	150	43
128.25	H	33.6	-17.1	16.5	30	13.5	355	0
128.55	V	38.2	-18.1	20.1	30	9.9	102	81
137.05	V	35.8	-18.2	17.6	30	12.4	105	74
159.04	V	37.4	-19.2	18.2	30	11.8	100	0
169.31	V	39.6	-19.5	20.1	30	9.9	100	353
176.37	V	37.0	-19.4	17.6	30	12.4	132	43
184.18	V	31.8	-20.2	11.6	30	18.4	259	16
383.97	H	35.6	-11.8	23.8	37	13.2	149	33

Note) Receiving antenna polarization : Horizontal and/or Vertical

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

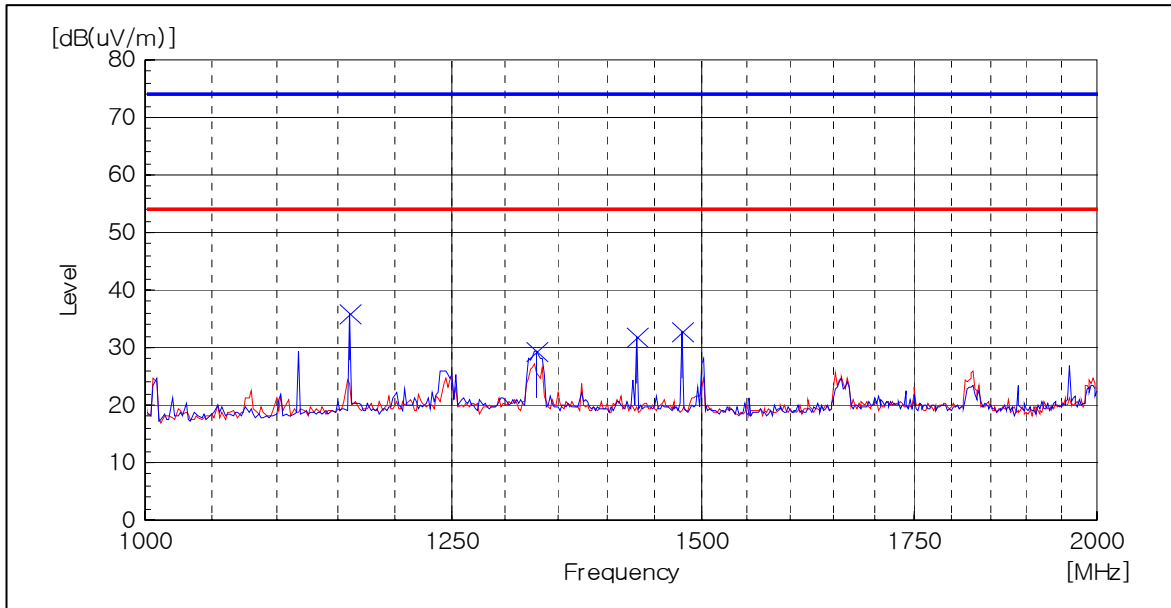
Level QP(Quasi-Peak) = Reading QP + Factor(Antenna Factor + Cable Loss - Amp. Gain)

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

4.2.5 Test results (1 GHz ~ 2 GHz)

- Configuration 1 : USB Printing

Test Graph and Results



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]
1160.32	V	47.7	-11.8	35.9	74	18.1	200	337
1330.66	V	40.5	-11.0	29.5	74	24.5	100	127
1430.86	V	42.5	-10.6	31.9	74	22.1	100	68
1478.96	V	43.0	-10.3	32.7	74	21.3	100	11

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

Note2) Receiving antenna polarization : Horizontal and/or Vertical

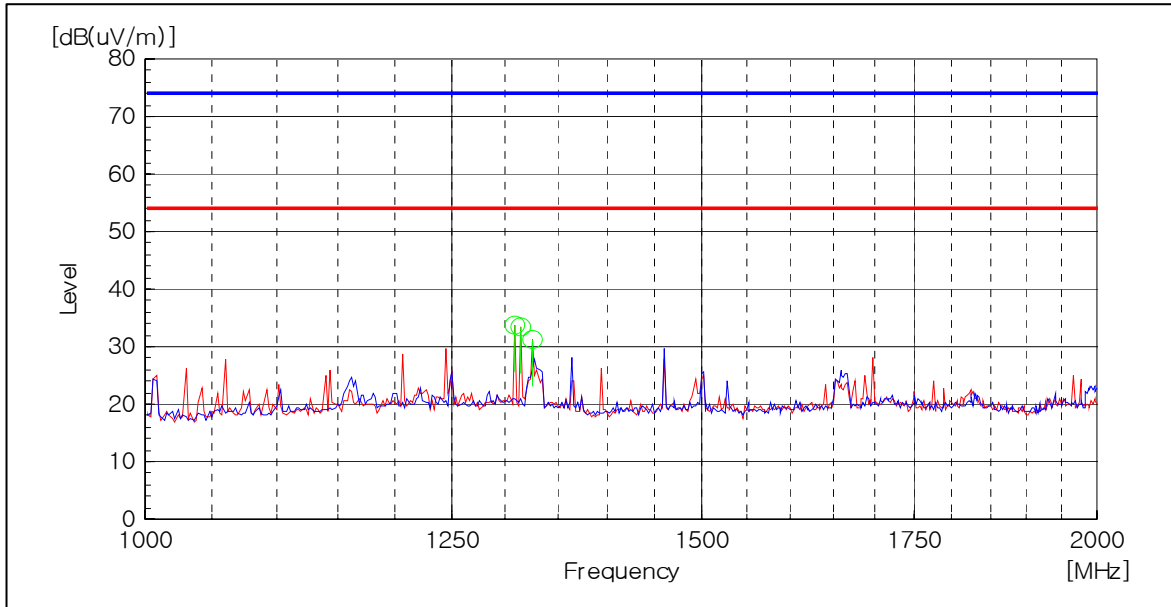
Test Distance : 3m, Antenna Height : 1 to 2 meters

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

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

- Configuration 2 : USB Printing

Test Graph and Results



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]
All emissions are less than 20dB against Average limit.								

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

Note2) Receiving antenna polarization : Horizontal and/or 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



Internal View 1
(Samsung Electro-Mechanics SMP board)



Internal View 2
(Sungho Electronics SMP board)



Label Location

 USOC Jack Type:RJ11C Samsung Electronics Co., Ltd. Suwon, Korea, 443-742 Place:M259	Model:	SCX-4828FN	FCC ID: A3LSCX4828FN
	Volts:	AC 110-127V	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. Complies with Part 68, FCC Rules. FCC Certification No.: US: A3LFA05BSCX4828FN This product complies with 21 CFR Chapter 1, subchapter J. 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. IC: 649E-SCX4828FN
	Hertz:	50/60Hz	
	Amps:	7A	
	Ringer Equivalence:	0.5B	
	Manufactured:		
	 51Y7 US E149091 I.T.E.		
Serial No.			Fabriqu� au Korea MADE IN KOREA REV.00

 USOC Jack Type:RJ11C Samsung Electronics Co., Ltd. Suwon, Korea, 443-742 Place:M264	Model:	SCX-4828FN	FCC ID: A3LSCX4828FN
	Volts:	AC 110-127V	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. Complies with Part 68, FCC Rules. FCC Certification No.: US: A3LFA05BSCX4828FN This product complies with 21 CFR Chapter 1, subchapter J. This Class B digital apparatus complies with Canadian ICES-003 Cet appareil num�rique de la classe B est Conforme � la norme NMB-003 du Canada. IC: 649E-SCX4828FN
	Hertz:	50/60Hz	
	Amps:	7A	
	Ringer Equivalence:	0.5B	
	Manufactured:		
	 51Y7 US E149091 I.T.E.		
Serial No.			Fabriqu� au Chine MADE IN CHINA REV.00

 USOC Jack Type:RJ11C Samsung Electronics Co., Ltd. Suwon, Korea, 443-742 Place:M098	Model:	SCX-4828FN	FCC ID: A3LSCX4828FN
	Volts:	AC 110-127V	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. Complies with Part 68, FCC Rules. FCC Certification No.: US: A3LFA05BSCX4828FN This product complies with 21 CFR Chapter 1, subchapter J. This Class B digital apparatus complies with Canadian ICES-003 Cet appareil num�rique de la classe B est Conforme � la norme NMB-003 du Canada. IC: 649E-SCX4828FN
	Hertz:	50/60Hz	
	Amps:	7A	
	Ringer Equivalence:	0.5B	
	Manufactured:		
	 51Y7 US E149091 I.T.E.		
Serial No.			Fabriqu� au Chine MADE IN CHINA REV.00

Rating Label

Note) Rating labels for variant models are same as above except model name if applicable.