EMC TEST REPORT

Project No.	LBE20121714	**Issue No.**	0
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	March 13, 2012	
EUT	**Type of device**	Class B digital devices, peripherals	
	Equipment authorization	☐ Declaration of Conformity ☒ Certification ☐ Verification	
	FCC ID	**A3LCLX4195FW**	
	Kind of product	**Color Multi Function Printer**	
	Model No.	**CLX-4195FW**	
		Variant Model No.	**CLX-4195N, CLX-4195FN**
	Manufacturer	1) Samsung Electronics Co., Ltd. 259, Gongdan-Dong, Gumi-City, Gyeongsangbuk-Do, Korea 730-030 2) Samsung Electronics (Shandong) Digital Printing Co., Ltd. 264209, Samsung Road, Weihai Hi-Tech. IDZ, Shandong Province, P.R.China 3) Weihai Shin Heung Digital Electronics Co., Ltd. 98, Samsung Road, Weihai Hi-Tech. IDZ, Shandong Province, P.R.China 4) Intops : Intops (Weihai) Electronics Co., Ltd. Keji Road-268-1, Weihai Hi-Tech,Industries Development Zone , Shandong Province , CHINA	
Applied Standards		FCC Part 15, Subpart B / ANSI C63.4-2009 ICES-003 issue 4	
Test Period		March 13, 2012 ~ March 19, 2012	
Issue date		March 26, 2012	

Test result : **Complied**

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

Tested by : Young-Man Lee	**Reviewed by :** Tae Young Jang

SAMSUNG

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 Revision history

No.	Revised detailed information
Issue 0	There are no revisions and this version is basic test report.

1.2 Emission

The EUT has been tested according to the following specifications:

Applied	Test type	Applied standard	Result
☒	Conducted Disturbance (Mains Port)	FCC Part 15, Subpart B / ANSI C63.4-2009 ICES-003 issue 4	Complied
☒	Radiated Disturbance		Complied

2. General Information

2.1 Test facility

The CS & Environment Centre 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 CS & Environment Centre is operated as EMC testing laboratory in accordance with the requirements of ISO/IEC 17025:2005.

3. Test Setup configuration

3.1 Test Peripherals

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

Description	Model No.	Serial No.	Manufacturer	FCC ID DoC
Color Multi Function Printer	CLX-4195NA	-	Samsung	Certification
Note book Computer	Venice	-	Dell	DoC
Adapter	HP-OQ065B83	CN-0N2765-47890-441-0249	Dell	DoC
Telephone	SP-F209	-	Samsung	DoC
Headset	COV903	-	COSY	DoC
USB Mouse	SMH-210U	M2UWTAKQA46984V	S&J	DoC

3.2 EUT operating mode

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

Operating Mode 1	DADF Copy Mode
Operating Mode 2	Standby Mode
Operating Mode 3	USB 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
Power	1.8	No	For Note PC
USB	1.8	Yes	From Note PC to EUT
Ethernet	10.0	No	From EUT to HUB
TEL	10.0	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
Processor	CHORUS3N (533MHz)	-
Standard System memory	256MB DDR3 on all configurations (Default) 1GB(max) Customer Installable Option	-
Resolution	Effective 2400 x 600dpi	-
Speed	18/18PPM (Color/Mono)	-
Paper Handling	Paper Tray(standard) 250 Sheets Bypass Tray 1 Sheets	-
Power Rating	90VAC ~ 135VAC, 4A, 50/60 Hz	-
Power Consumption	Power save mode : 2 Watts Stand by mode : 48 Watts Printing simplex : 850 Watts	-
Printer Language	SPLC, PCL5Ce, PCL6C, PS3, PDF V1.7	-
Interfaces	USB2.0, Network(Gigabit), WI-FI	-
OS compatibility	Windows 95/98/2000/NT4.0/Win-ME/XP/Longhorn/XP 64bit/ Citrix MAC OS 8, 9, X 10.2, X 10.3 & Higher Unix/Linux	-
Modes of Operation	USB Printing, Network Printing, Copy, Scan	-
Intended Class for Emissions	Class B	-

3.6 Clock Frequencies

Kind of Clocks	Frequency [MHz]	Kind of Clocks	Frequency [MHz]
Main Source	12	Video	26.75
CPU Internal	533	DDR3	377
USB Device	12		

3.7 Test configuration and condition

Item	Model Name	P/N	Manufacturer
Board	KARS	REV 0.5	Samsung
SMPS	PSPN-Type3-V1	REV 0.9	DONG YANG E&P
	PSPN-Type3-V1	REV B	LITE ON
HVPS	HVPS	REV1.1	SYS HITEK SUNGHO DONG YANG E&P
Toner Cartridge	CLT-C504S,CLT-M504S, CLT-Y504S,CLT-K504S	-	Samsung
Memory	DDR3	-	Samsung,NANYA,ELPIDA

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.

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

Three different types of SMPS, Dongyang, LITE ON were applied during testing.

Each SMPS was installed for testing, tested and reported.

- Configuration 1 : Dongyang SMPS was applied.
- Configuration 2 : LITE ON SMPS was applied.

- 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	3.30 dB
Radiated Disturbance (30MHz ~ 1GHz)	Horizontal (30 ~ 300 MHz)	5.26 dB
	Horizontal (300 ~ 1000 MHz)	4.68 dB
	Vertical (30 ~ 300 MHz)	5.27 dB
	Vertical (300 ~ 1000 MHz)	4.76 dB
Radiated Disturbance (1GHz ~ 6GHz)	Horizontal	3.40 dB
	Vertical	3.12 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 B ITE

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

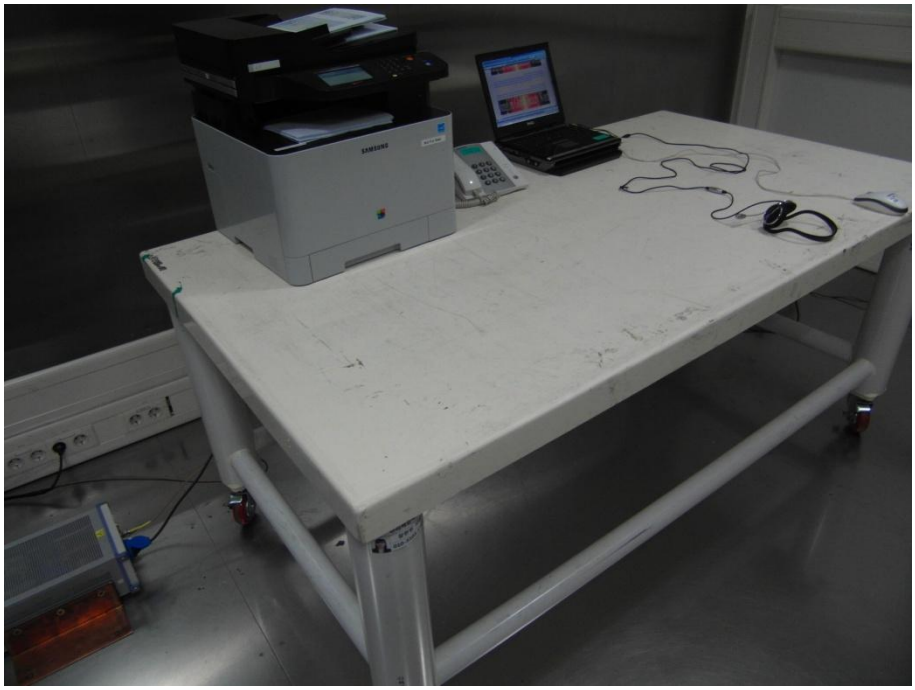
4.1.1 Test instrumentation

Test instrumentation	Manufacturer	Model name	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Test Receiver	R&S	ESIB 26	100287	2011-07-30	12
Two-Line V-Network	R&S	ENV216	100456	2011-09-28	12
Two-Line V-Network	R&S	ESH3-Z5	831887/004	2011-07-27	12
Test software	R&S	EMC32	Ver 5.20.2	-	-

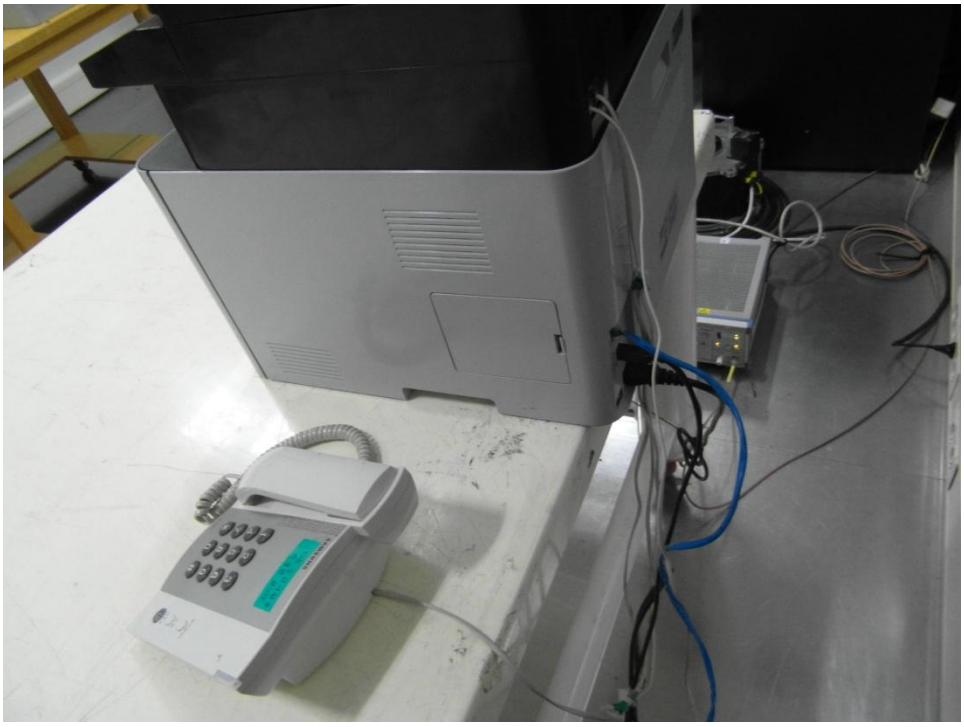
4.1.2 Temperature and humidity condition

Test date	March 19, 2012		Test engineer		Young-Man Lee	
Climate condition	Ambient temperature	24.6 ℃	Relative humidity	41 %	Atmospheric pressure	101.4 kPa
Test place	Shielded Room #1					

4.1.3 Photograph of Test Setup



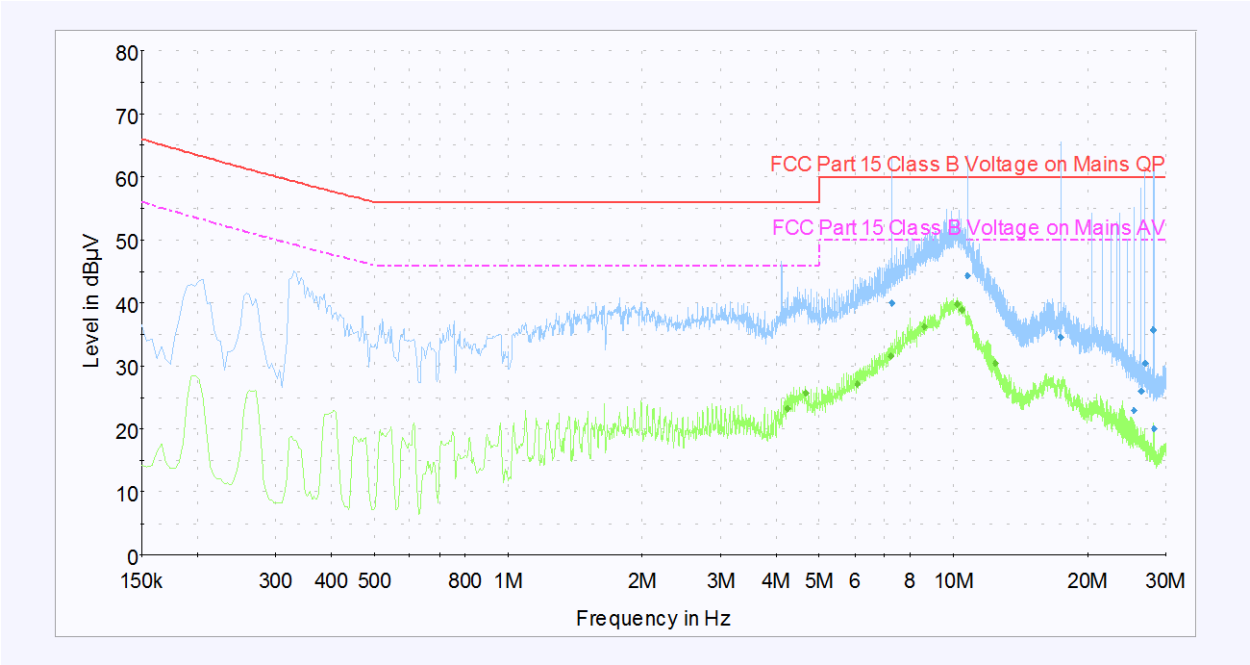
Front



Rear

4.1.4 Test results (mains port)

- **Configuration 1 : DADF Copy Mode (LITE ON SMPS)**



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

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
7.256	40.0	9.0	N	9.7	20.0	60.0
10.752	44.3	9.0	L1	9.8	15.7	60.0
17.416	34.6	9.0	L1	9.9	25.4	60.0
25.404	23.0	9.0	N	10.2	37.0	60.0
26.420	26.0	9.0	L1	10.0	34.0	60.0
27.000	30.4	9.0	N	10.3	29.6	60.0
28.048	35.7	9.0	L1	10.0	24.3	60.0
28.216	20.0	9.0	N	10.3	40.0	60.0

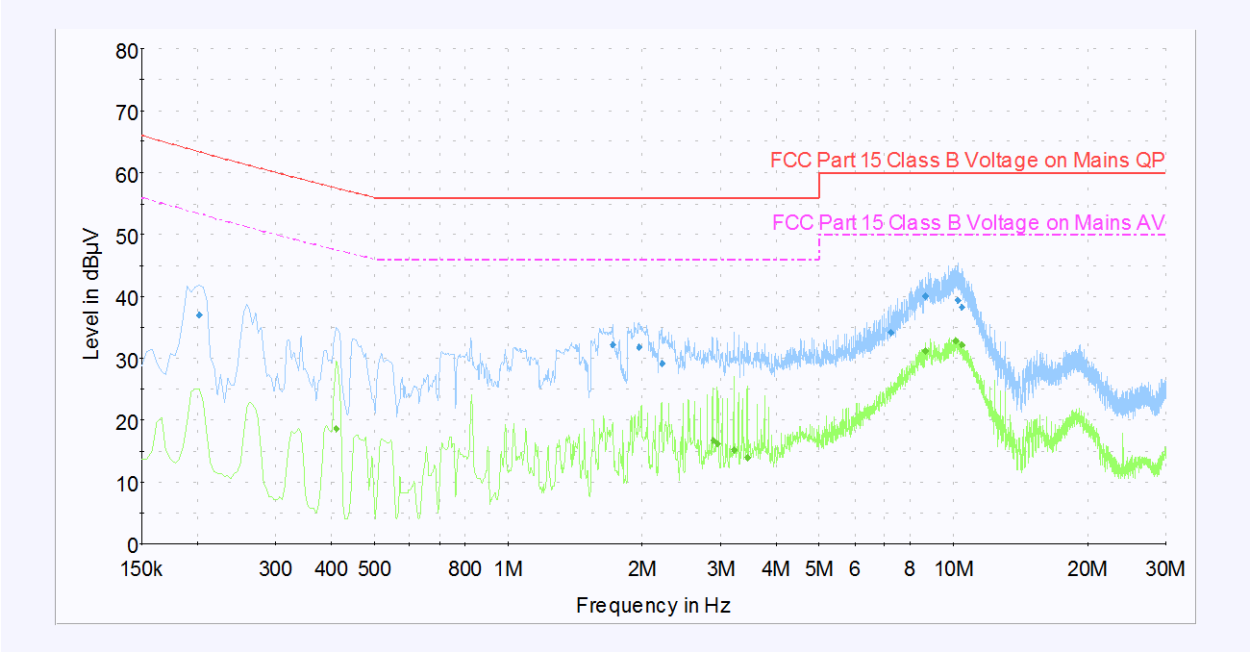
Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
4.240	23.1	9.0	N	9.7	22.9	46.0
4.648	25.7	9.0	N	9.7	20.3	46.0
6.088	27.1	9.0	N	9.7	22.9	50.0
7.248	31.6	9.0	N	9.7	18.4	50.0
8.616	36.2	9.0	N	9.8	13.8	50.0
10.180	39.7	9.0	L1	9.8	10.3	50.0
10.424	38.8	9.0	L1	9.8	11.2	50.0
12.424	30.4	9.0	L1	9.8	19.6	50.0
4.240	23.1	9.0	N	9.7	22.9	46.0
4.648	25.7	9.0	N	9.7	20.3	46.0

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

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

- **Configuration 1 : Standby Mode (LITE ON SMPS)**



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

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.202	36.9	9.0	N	9.7	26.5	63.4
1.712	32.1	9.0	L1	9.7	23.9	56.0
1.968	31.8	9.0	L1	9.7	24.2	56.0
2.212	29.2	9.0	L1	9.7	26.8	56.0
7.236	34.2	9.0	N	9.7	25.8	60.0
8.648	40.0	9.0	N	9.8	20.0	60.0
10.244	39.4	9.0	L1	9.8	20.6	60.0
10.436	38.2	9.0	L1	9.8	21.8	60.0

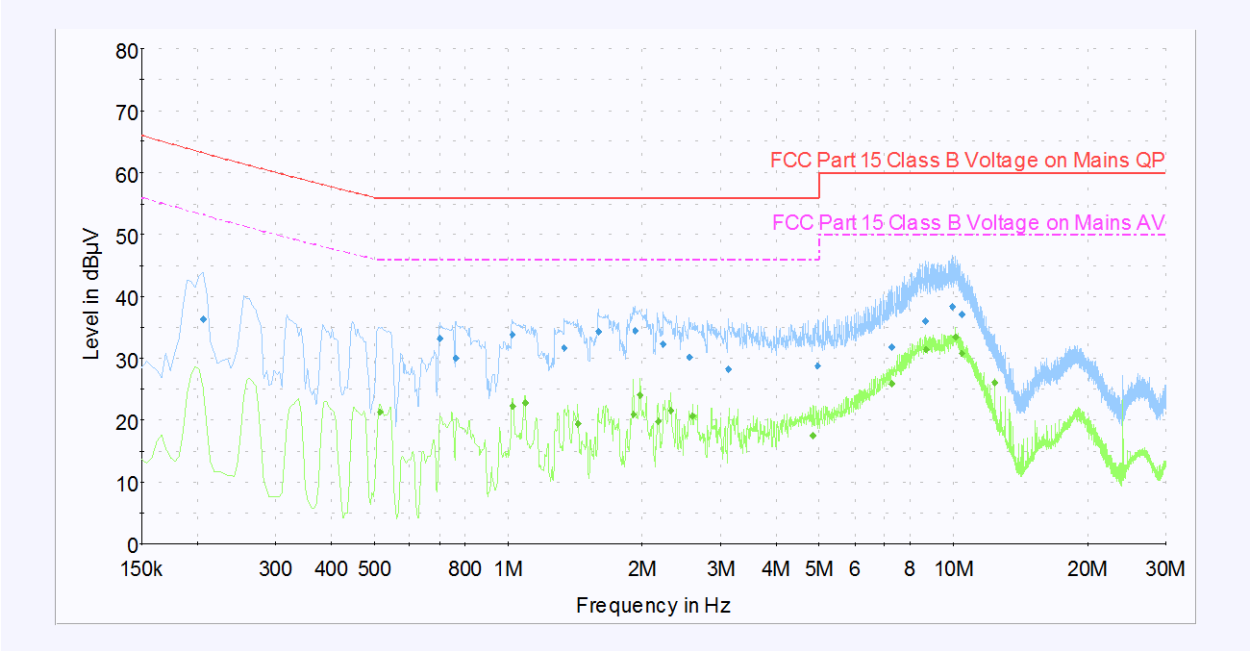
Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.410	18.6	9.0	L1	9.7	28.9	47.5
2.880	16.7	9.0	N	9.7	29.3	46.0
2.948	16.2	9.0	L1	9.7	29.8	46.0
3.208	15.2	9.0	N	9.7	30.8	46.0
3.440	13.9	9.0	L1	9.7	32.1	46.0
8.648	31.2	9.0	N	9.8	18.8	50.0
10.120	32.8	9.0	N	9.8	17.2	50.0
10.424	32.1	9.0	L1	9.8	17.9	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 1 : USB Printing Mode (LITE ON SMPS)**



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

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.206	36.3	9.0	N	9.7	26.9	63.2
0.702	33.2	9.0	L1	9.7	22.8	56.0
0.762	30.0	9.0	L1	9.7	26.0	56.0
1.020	33.8	9.0	L1	9.7	22.2	56.0
1.336	31.7	9.0	L1	9.7	24.3	56.0
1.592	34.2	9.0	L1	9.7	21.8	56.0
1.924	34.5	9.0	L1	9.7	21.5	56.0
2.228	32.2	9.0	L1	9.7	23.8	56.0
2.544	30.1	9.0	L1	9.7	25.9	56.0
3.116	28.3	9.0	L1	9.7	27.7	56.0
4.960	28.7	9.0	L1	9.7	27.3	56.0
7.252	31.8	9.0	L1	9.7	28.2	60.0
8.652	36.0	9.0	L1	9.8	24.0	60.0
9.924	38.3	9.0	L1	9.8	21.7	60.0
10.432	37.1	9.0	L1	9.8	22.9	60.0

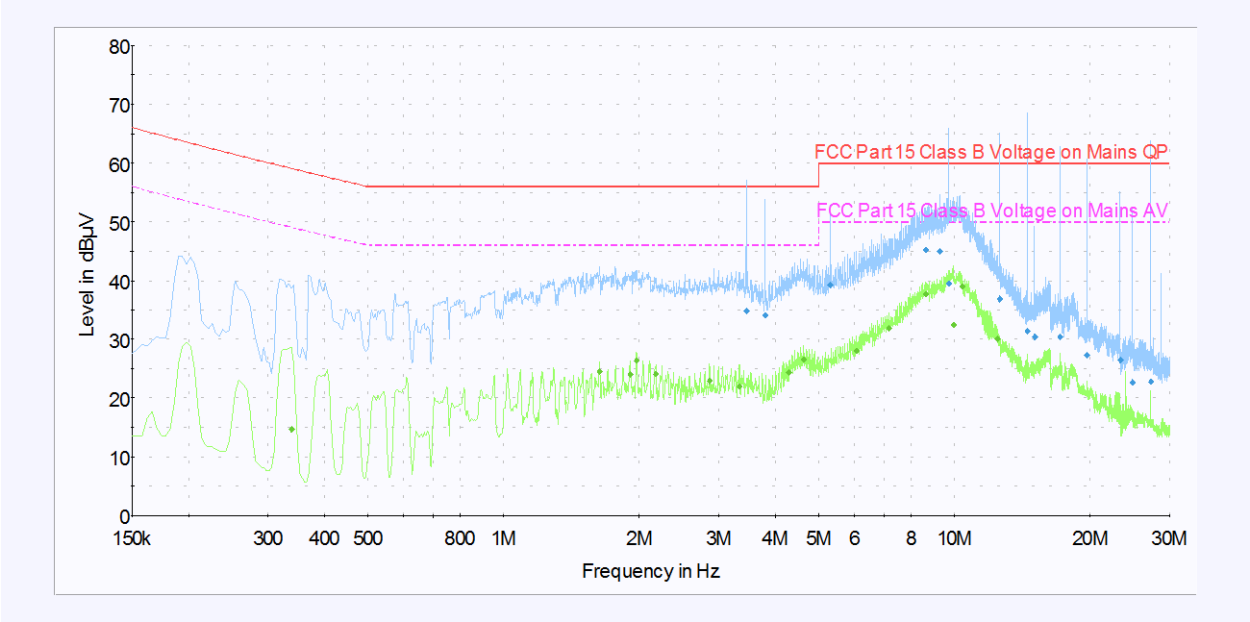
Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.514	21.2	9.0	L1	9.7	24.8	46.0
1.020	22.2	9.0	L1	9.7	23.8	46.0
1.088	22.7	9.0	L1	9.7	23.3	46.0
1.428	19.3	9.0	L1	9.7	26.7	46.0
1.908	20.9	9.0	L1	9.7	25.1	46.0
1.976	24.0	9.0	L1	9.7	22.0	46.0
2.168	19.7	9.0	L1	9.7	26.3	46.0
2.316	21.5	9.0	L1	9.7	24.5	46.0
2.592	20.6	9.0	L1	9.7	25.4	46.0
4.836	17.5	9.0	L1	9.7	28.5	46.0
7.252	25.8	9.0	L1	9.7	24.2	50.0
8.664	31.4	9.0	L1	9.8	18.6	50.0
10.100	33.4	9.0	L1	9.8	16.6	50.0
10.452	30.8	9.0	N	9.8	19.2	50.0
12.380	26.0	9.0	L1	9.8	24.0	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 : DADF Copy Mode (Dongyang SMPS)**



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

Test Results (Quasi-Peak and Average)

Quasi-peak final measurement results table

Frequency [MHz]	Quasi-Peak [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
3.456	34.8	9.0	N	9.7	21.2	56.0
3.804	34.1	9.0	L1	9.7	21.9	56.0
5.304	39.2	9.0	N	9.7	20.8	60.0
8.656	45.2	9.0	N	9.8	14.8	60.0
9.268	45.0	9.0	L1	9.8	15.0	60.0
9.724	39.4	9.0	L1	9.8	20.6	60.0
12.596	36.9	9.0	N	9.9	23.1	60.0
14.528	31.4	9.0	L1	9.9	28.6	60.0
15.060	30.4	9.0	N	10.0	29.6	60.0
17.192	30.4	9.0	N	10.0	29.6	60.0
19.624	27.3	9.0	N	10.1	32.7	60.0
23.328	26.5	9.0	N	10.2	33.5	60.0
24.828	22.6	9.0	N	10.2	37.4	60.0
27.244	22.8	9.0	N	10.3	37.2	60.0

Average final measurement results table

Frequency [MHz]	Average [dBuV]	Bandwidth [kHz]	Line	Factor [dB]	Margin [dB]	Limit [dBuV]
0.338	14.7	9.0	N	9.7	34.3	49.0
1.632	24.6	9.0	L1	9.7	21.4	46.0
1.908	24.0	9.0	L1	9.7	22.0	46.0
1.972	26.4	9.0	L1	9.7	19.6	46.0
2.180	24.0	9.0	L1	9.7	22.0	46.0
2.864	22.9	9.0	N	9.7	23.1	46.0
3.340	22.0	9.0	N	9.7	24.0	46.0
4.296	24.3	9.0	N	9.7	21.7	46.0
4.636	26.6	9.0	N	9.7	19.4	46.0
6.068	28.0	9.0	N	9.7	22.0	50.0
7.156	31.9	9.0	N	9.7	18.1	50.0
8.656	37.6	9.0	N	9.8	12.4	50.0
9.952	32.4	9.0	L1	9.8	17.6	50.0
10.420	39.0	9.0	N	9.8	11.0	50.0
12.460	30.0	9.0	L1	9.8	20.0	50.0

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

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

4.2 Radiated disturbance

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

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

Frequency range Limits MHz	Resolution Bandwidth	Quasi-peak Limits dBµV/m
		Class B
30 to 230	120 kHz	30
230 to 1 000	120 kHz	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 1 GHz to 40 GHz or 5th in accordance with internal maximum operating frequency at a measurement distance of 3 m for the following antenna and turntable arrangements:

Antenna Height (cm)	Antenna Polarisation	Turntable position (degrees)
100 ~ 400	Horizontal, Vertical	Continuous

Above 1 GHz, peak detector function mode is used with a resolution bandwidth of 1 MHz and a video bandwidth of 1 MHz.

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

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

Measurements within 20 dB of the limit were then maximized by adjusting turntable position. Final measurements were made using a average detector.

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

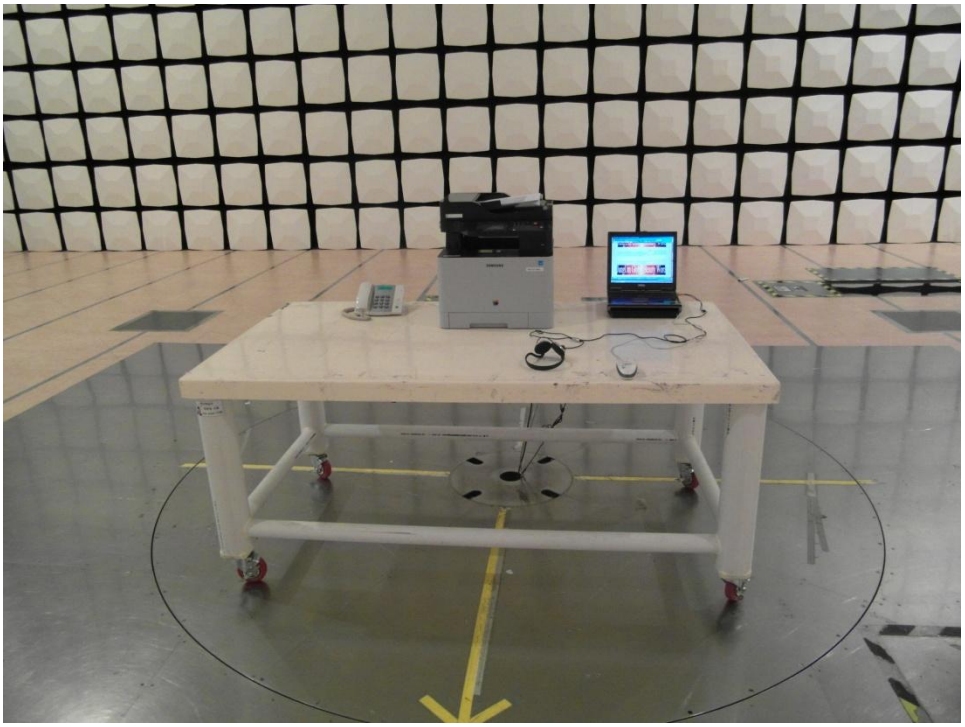
4.2.1 Test instrumentation

Test instrumentation	Manufacturer	Model name	Serial or Firmware (No./Ver.)	Calibration	
				Date	Interval (Month)
Bi-log Antenna	Schaffner	CBL6112D	22602	2010-04-21	24
Bi-log Antenna	Schaffner	CBL6112D	22604	2010-04-21	24
Horn Antenna	R&S	HF907	100016	2011-06-15	24
Test Receiver	R&S	ESCI	100369	2011-08-03	12
Test Receiver	R&S	ESCI	100370	2011-05-29	12
Test Receiver	R&S	ESIB 26	100288	2011-06-16	12
Amplifier	Sonoma	310N	185861	2011-04-07	12
Amplifier	Sonoma	310N	251676	2011-04-07	12
Preamplifier	R&S	SCU18	10001	2011-05-03	12
Antenna Mast	INN CO	MA4000	-	-	-
Antenna Mast	INN CO	MA4000	-	-	-
Mast Controller	INN CO	CO2000	-	-	-
Test software	TOYO	EP5/RE	VER 3.10.20	-	-
RF Selector	TOYO	NS4900	-	-	-

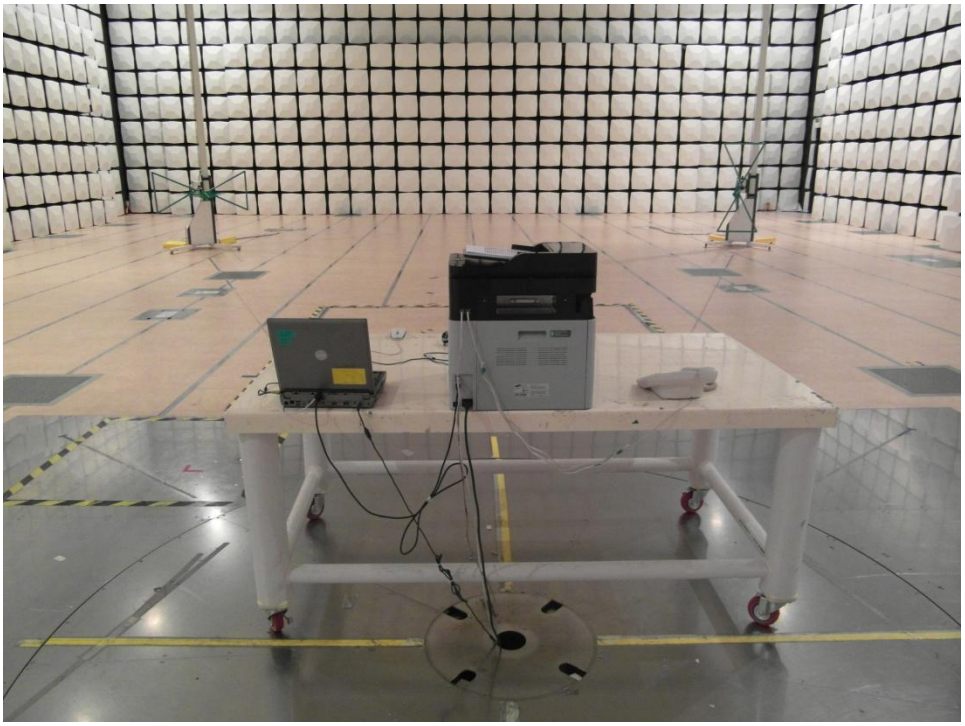
4.2.2 Temperature and humidity condition

Test date	March 13, 2012		**Test engineer**		Young-Man Lee	
Climate condition	**Ambient temperature**	21.3 ℃	**Relative humidity**	44 %	**Atmospheric pressure**	101.0 kPa
Test place	10m Semi-Anechoic Chamber #1					

4.2.3 Photograph of Test Setup(30 ~ 1 GHz)

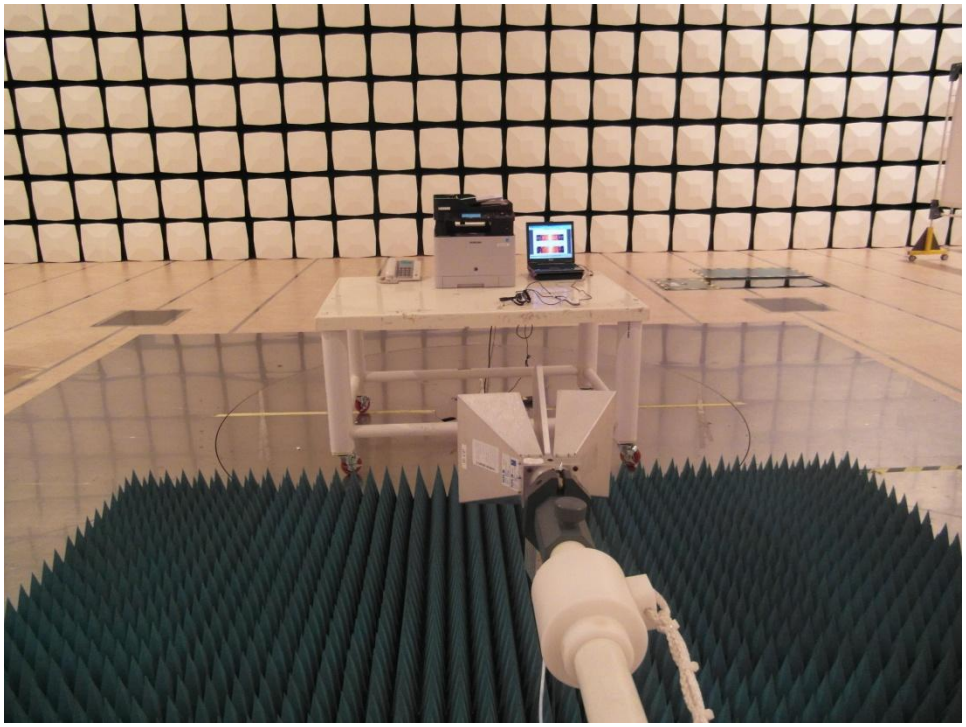


Front

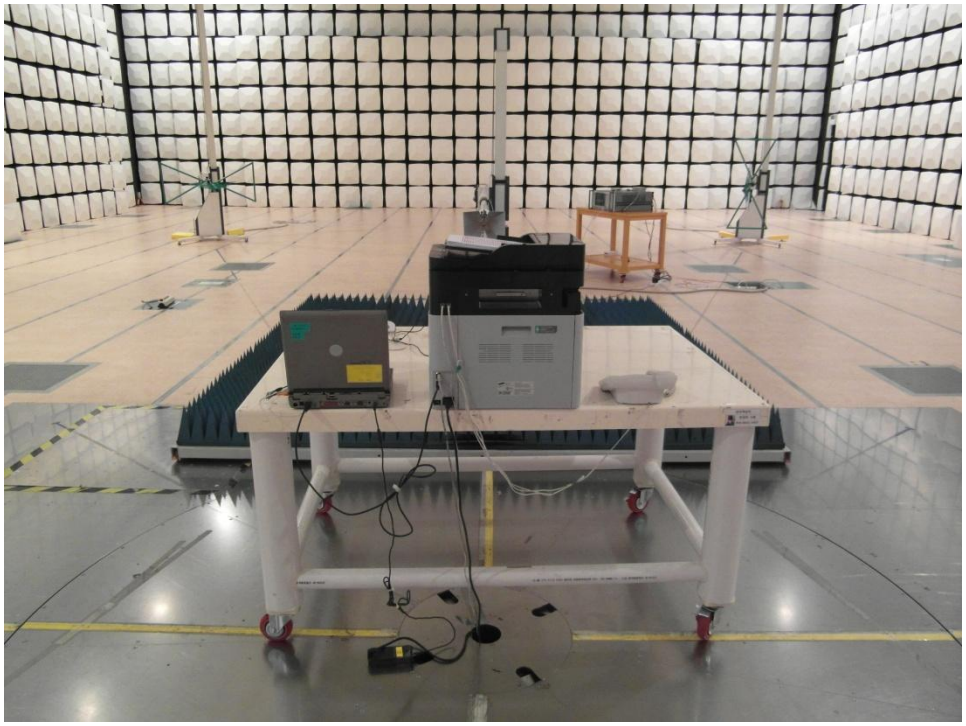


Rear

4.2.4 Photograph of Test Setup(1 ~ 5 GHz)



Front



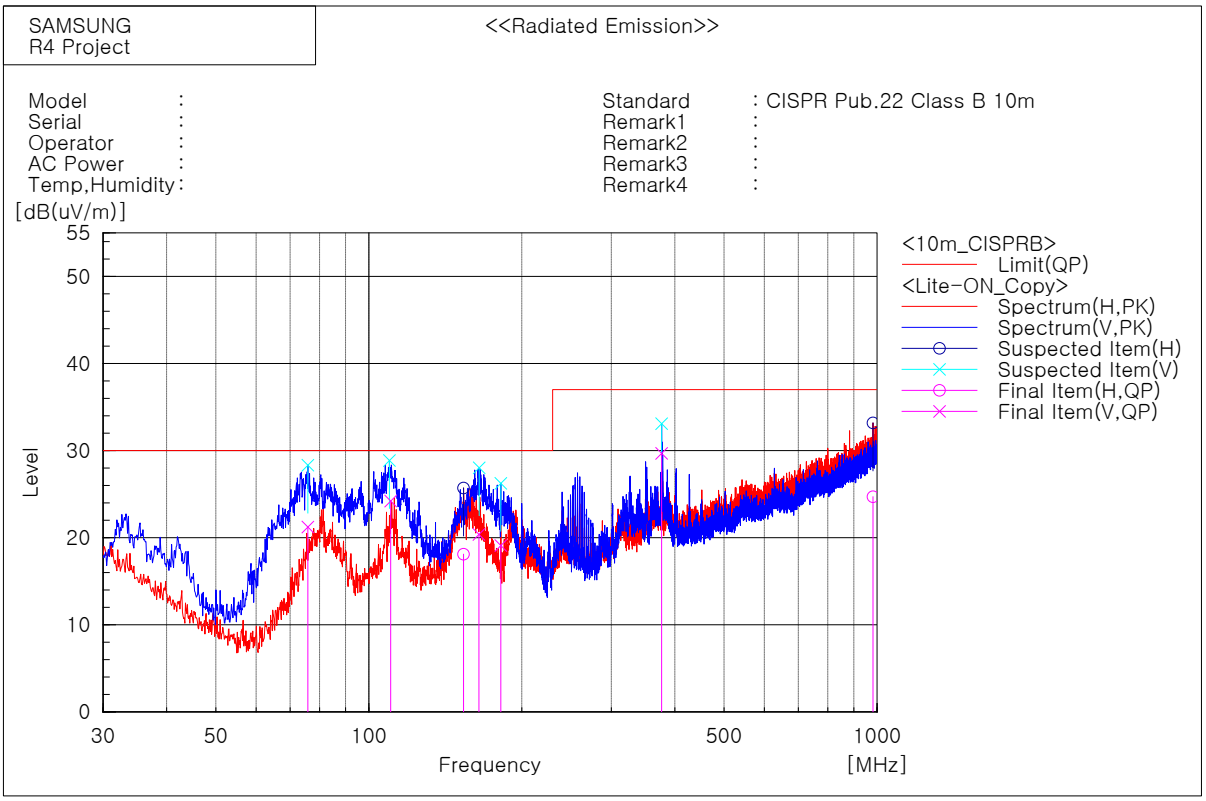
Rear

4.2.5 Test results

4.2.5.1 Below 1GHz results

- **Configuration 1 : DADF Copy Mode (LITE ON SMPS)**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
75.838	V	44.7	-23.5	21.2	30.0	8.8	201	301.8
110.404	V	41.8	-17.6	24.2	30.0	5.8	101	271.0
153.554	H	36.3	-18.2	18.1	30.0	11.9	400	211.9
164.680	V	39.3	-18.9	20.4	30.0	9.6	101	359.0
181.805	V	38.6	-19.5	19.1	30.0	10.9	133	350.9
376.665	V	41.0	-11.3	29.7	37.0	7.3	101	270.7
981.449	H	25.0	-0.3	24.7	37.0	12.3	378	223.6

Note) Receiving antenna polarization : Horizontal and/or Vertical

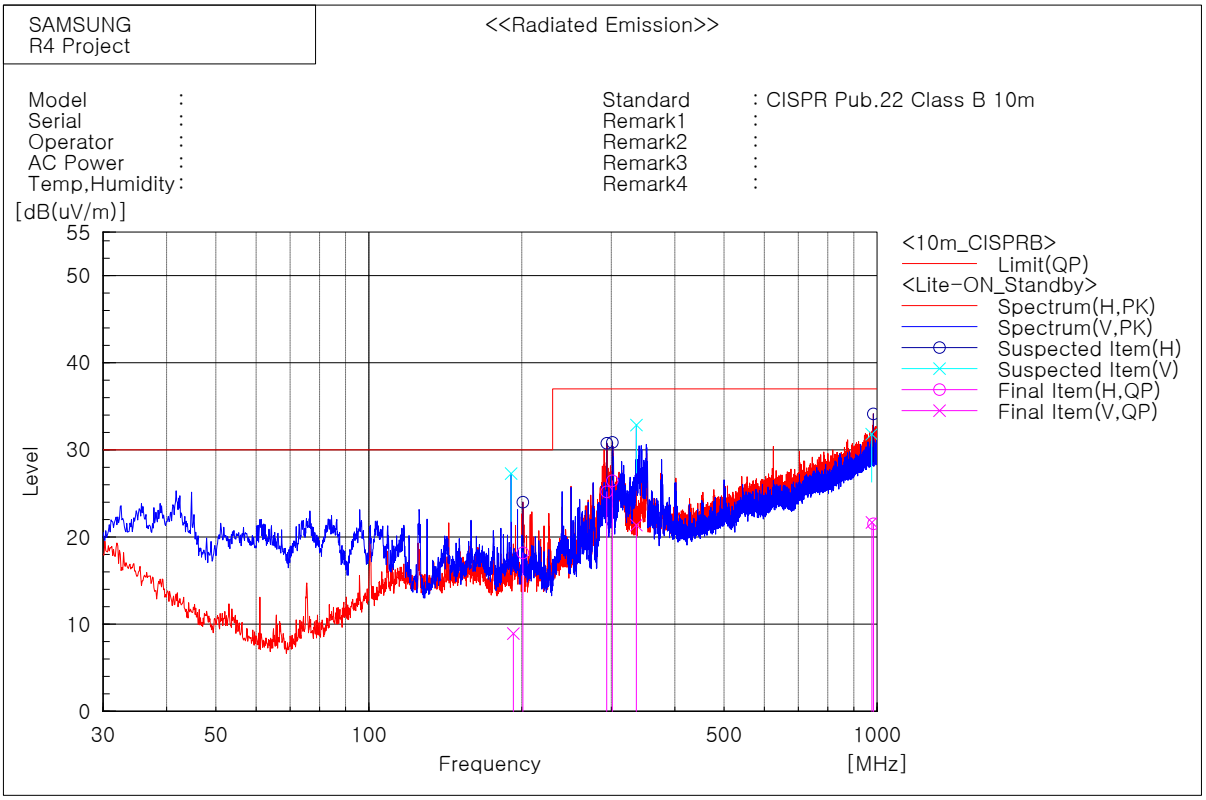
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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

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

- **Configuration 1 : Standby Mode (LITE ON SMPS)**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
192.463	V	28.6	-19.7	8.9	30.0	21.1	400	359.6
200.926	H	36.8	-18.6	18.2	30.0	11.8	399	359.6
293.751	H	39.3	-14.1	25.2	37.0	11.8	399	359.6
301.338	H	40.2	-13.8	26.4	37.0	10.6	399	359.6
336.002	V	34.1	-12.7	21.4	37.0	15.6	400	359.6
977.066	V	21.8	-0.1	21.7	37.0	15.3	400	359.6
983.917	H	21.8	-0.3	21.5	37.0	15.5	399	359.6

Note) Receiving antenna polarization : Horizontal and/or Vertical

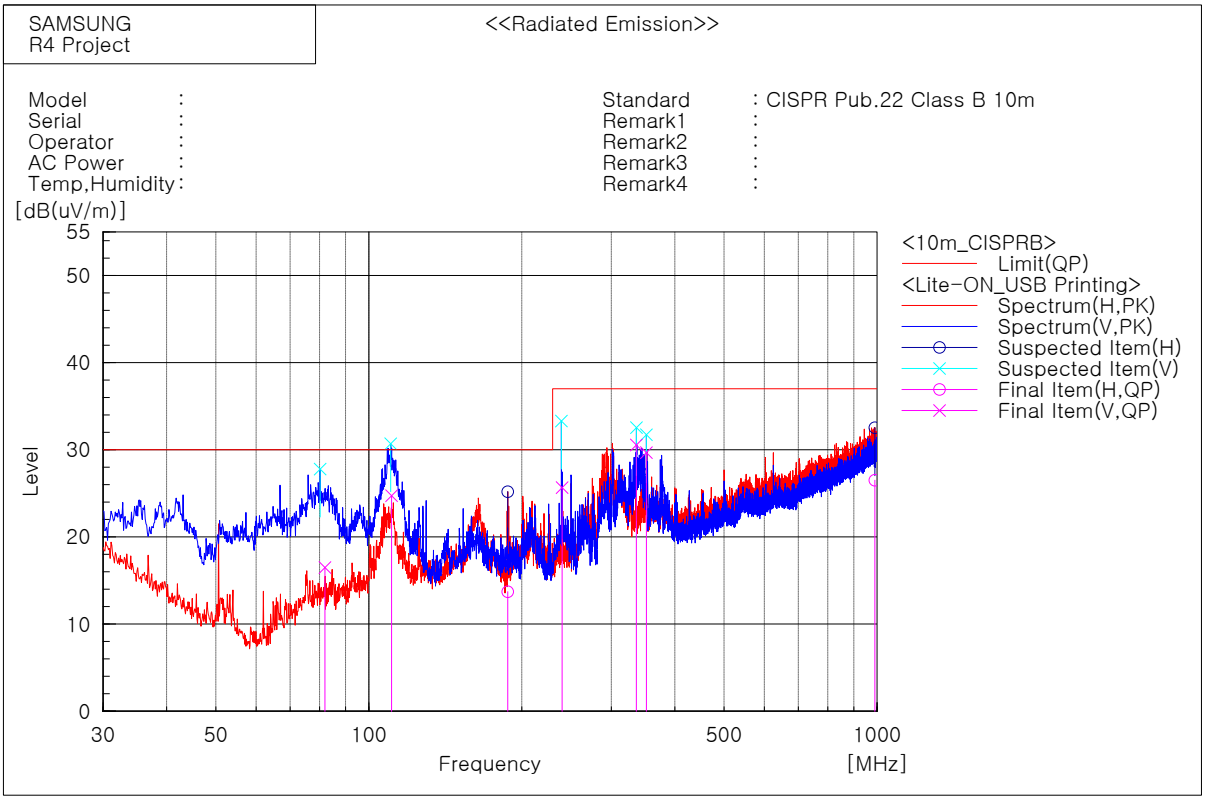
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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 (LITE ON SMPS)**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
81.935	V	38.7	-22.2	16.5	30.0	13.5	101	289.5
110.840	V	42.2	-17.5	24.7	30.0	5.3	101	352.6
187.625	H	32.8	-19.1	13.7	30.0	16.3	300	150.6
240.024	V	42.5	-16.8	25.7	37.0	11.3	101	357.4
336.019	V	43.3	-12.7	30.6	37.0	6.4	101	86.5
351.608	V	41.7	-12.0	29.7	37.0	7.3	101	86.5
989.936	H	26.6	-0.1	26.5	37.0	10.5	200	181.8

Note) Receiving antenna polarization : Horizontal and/or Vertical

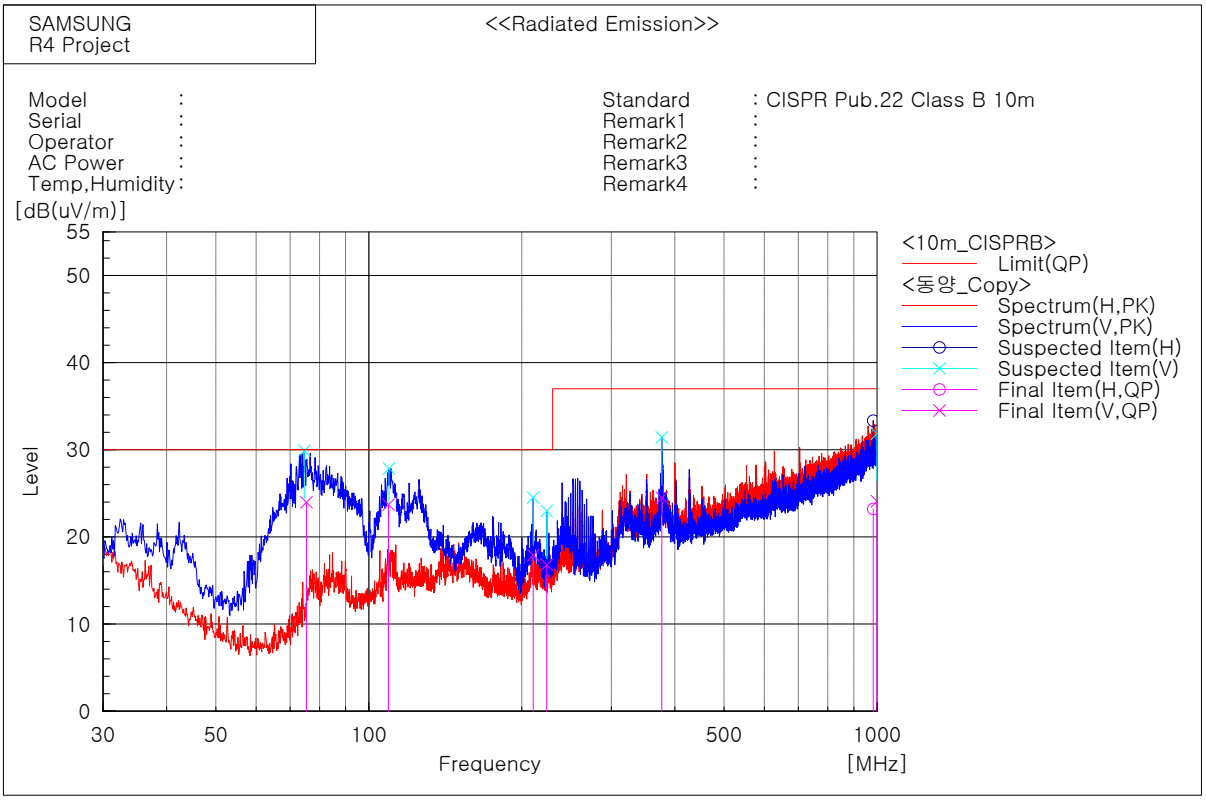
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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

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

- **Configuration 2 : DADF Copy Mode (Dongyang SMPS)**

Test Graph and Results



Frequency [MHz]	(P)	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
75.356	V	47.6	-23.6	24.0	30.0	6.0	101	288.1
109.308	V	41.3	-17.6	23.7	30.0	6.3	101	304.8
210.541	V	37.4	-19.5	17.9	30.0	12.1	187	68.7
223.879	V	35.4	-18.6	16.8	30.0	13.2	136	186.5
377.018	V	35.8	-11.3	24.5	37.0	12.5	155	268.6
982.782	H	23.5	-0.3	23.2	37.0	13.8	135	30.6
999.030	V	23.6	0.5	24.1	37.0	12.9	122	350.6

Note) Receiving antenna polarization : Horizontal and/or Vertical

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

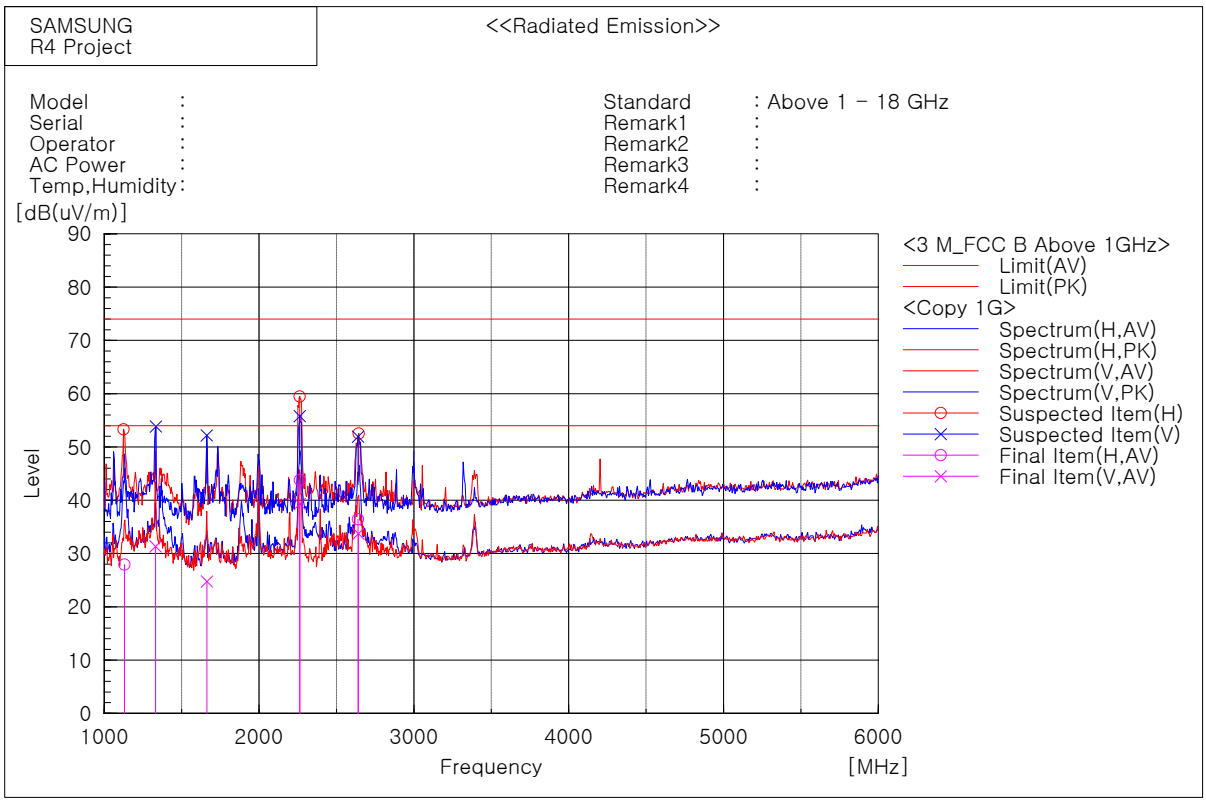
Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)

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

4.2.5.2 Above 1GHz results(1 ~ 5 GHz)

- **Configuration 1 : DADF Copy Mode (LITE ON SMPS)**

Test Graph and 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]
1124.249	H	63.9	-10.6	53.3	74.0	20.7	108	209.5
1332.665	V	63.5	-9.7	53.8	74.0	20.2	108	358.5
1661.323	V	61.1	-8.9	52.2	74.0	21.8	108	8.6
2262.525	H	64.9	-5.4	59.5	74.0	14.5	108	133.4
2262.525	V	61.2	-5.4	55.8	74.0	18.2	108	131.8
2639.279	V	55.4	-3.5	51.9	74.0	22.1	108	86.3
2643.287	H	56.1	-3.6	52.5	74.0	21.5	108	55.3

Average Measurement

Frequency [MHz]	POL	Reading AV [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Limit [dB(uV/m)]	Margin AV [dB]	Height [cm]	Angle [deg]
1129.880	H	38.5	-10.6	27.9	54.0	26.1	108	209.9
1330.280	V	41.1	-9.7	31.4	54.0	22.6	108	357.8
1663.147	V	33.7	-8.9	24.8	54.0	29.2	108	9.2
2262.545	V	44.7	-5.4	39.3	54.0	14.7	108	132.4
2263.066	H	49.2	-5.4	43.8	54.0	10.2	108	134.0
2639.459	H	39.9	-3.5	36.4	54.0	17.6	108	56.0
2640.942	V	37.2	-3.5	33.7	54.0	20.3	108	85.6

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

Note2) Receiving antenna polarization : Horizontal and Vertical

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

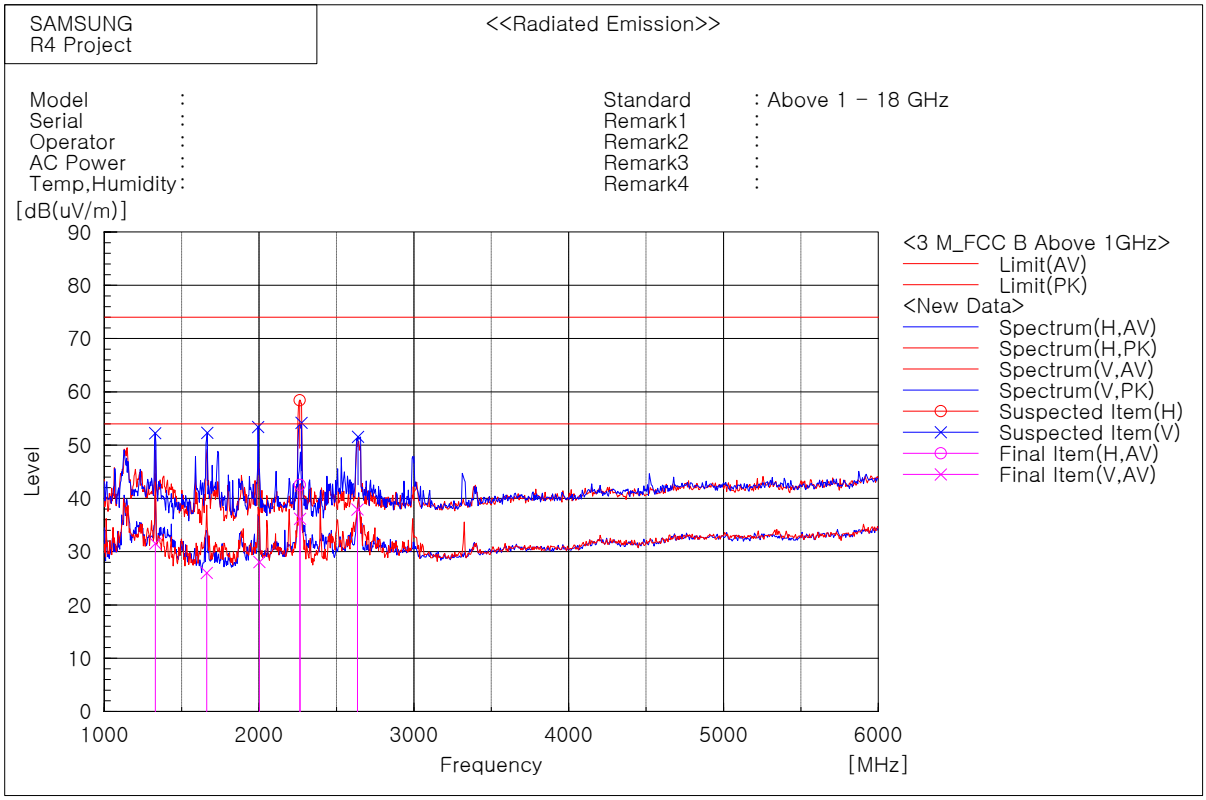
Level AV (Average) = Reading AV (Average) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

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

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

- **Configuration 1 : Standby Mode (LITE ON SMPS)**

Test Graph and 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	62.0	-9.7	52.3	74.0	21.7	108	124.7
1665.331	V	61.2	-8.9	52.3	74.0	21.7	108	3.0
1993.988	V	58.7	-5.3	53.4	74.0	20.6	108	337.6
2262.525	H	63.8	-5.4	58.4	74.0	15.6	108	117.5
2274.549	V	59.7	-5.5	54.2	74.0	19.8	108	137.5
2639.279	V	55.1	-3.5	51.6	74.0	22.4	108	97.1

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]
1330.160	V	41.3	-9.7	31.6	54.0	22.4	108	124.3
1661.503	V	34.9	-8.9	26.0	54.0	28.0	108	3.5
2001.944	V	33.4	-5.3	28.1	54.0	25.9	108	337.0
2263.267	H	47.9	-5.4	42.5	54.0	11.5	108	117.0
2264.749	V	41.6	-5.4	36.2	54.0	17.8	108	137.0
2635.892	V	41.4	-3.5	37.9	54.0	16.1	108	97.7

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

Note2) Receiving antenna polarization : Horizontal and Vertical

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

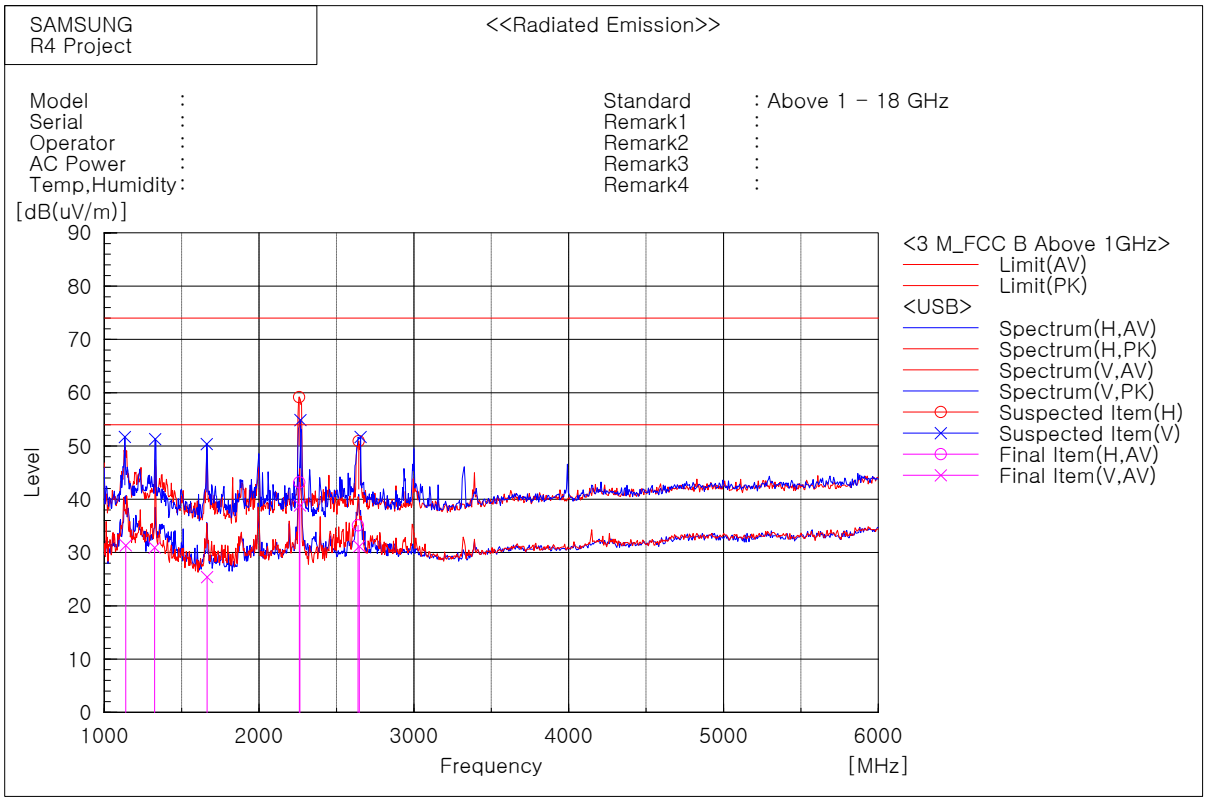
Level AV (Average) = Reading AV (Average) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

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

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

- **Configuration 1 : USB printing Mode (LITE ON SMPS)**

Test Graph and 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]
1132.265	V	62.2	-10.5	51.7	74.0	22.3	108	162.2
1328.657	V	61.0	-9.7	51.3	74.0	22.7	108	114.9
1661.323	V	59.3	-8.9	50.4	74.0	23.6	108	5.6
2258.517	H	64.5	-5.3	59.2	74.0	14.8	108	137.7
2266.533	V	60.3	-5.4	54.9	74.0	19.1	108	137.6
2643.287	H	54.5	-3.6	50.9	74.0	23.1	108	142.7
2655.311	V	55.3	-3.6	51.7	74.0	22.3	108	99.1

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]
1138.618	V	41.8	-10.5	31.3	54.0	22.7	108	161.6
1324.990	V	40.6	-9.7	30.9	54.0	23.1	108	114.4
1664.349	V	34.3	-8.9	25.4	54.0	28.6	108	6.2
2259.499	H	48.5	-5.3	43.2	54.0	10.8	108	137.2
2263.026	V	44.2	-5.4	38.8	54.0	15.2	108	137.2
2639.139	H	38.6	-3.5	35.1	54.0	18.9	108	142.0
2647.075	V	34.8	-3.6	31.2	54.0	22.8	108	99.7

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

Note2) Receiving antenna polarization : Horizontal and Vertical

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

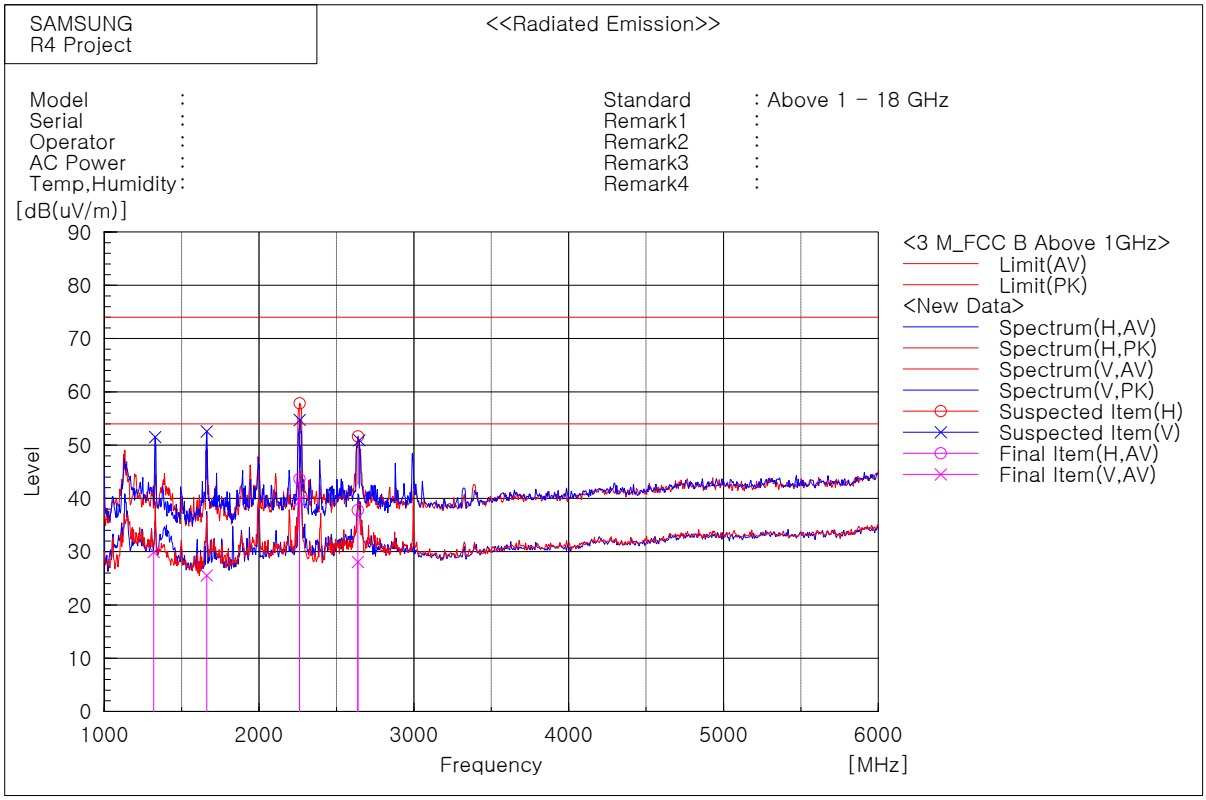
Level AV (Average) = Reading AV (Average) + Factor(Antenna Factor + Cable Loss - Amp. Gain)

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

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

- **Configuration 2 : DADF Copy Mode (Dongyang SMPS)**

Test Graph and 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	61.2	-9.7	51.5	74.0	22.5	108	137.7
1661.323	V	61.5	-8.9	52.6	74.0	21.4	108	1.5
2262.525	H	63.2	-5.4	57.8	74.0	16.2	108	137.3
2262.525	V	60.1	-5.4	54.7	74.0	19.3	108	134.8
2639.279	H	55.1	-3.5	51.6	74.0	22.4	108	142.2
2647.295	V	54.5	-3.6	50.9	74.0	23.1	108	42.1

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]
1318.898	V	39.7	-9.8	29.9	54.0	24.1	108	138.3
1662.225	V	34.5	-8.9	25.6	54.0	28.4	108	2.0
2260.982	V	44.8	-5.3	39.5	54.0	14.5	108	135.3
2261.102	H	48.9	-5.3	43.6	54.0	10.4	108	136.8
2637.696	V	31.6	-3.5	28.1	54.0	25.9	108	42.6
2637.736	H	41.3	-3.5	37.8	54.0	16.2	108	141.7

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

Note2) Receiving antenna polarization : Horizontal and Vertical

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

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

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

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

Appendix – EUT photography

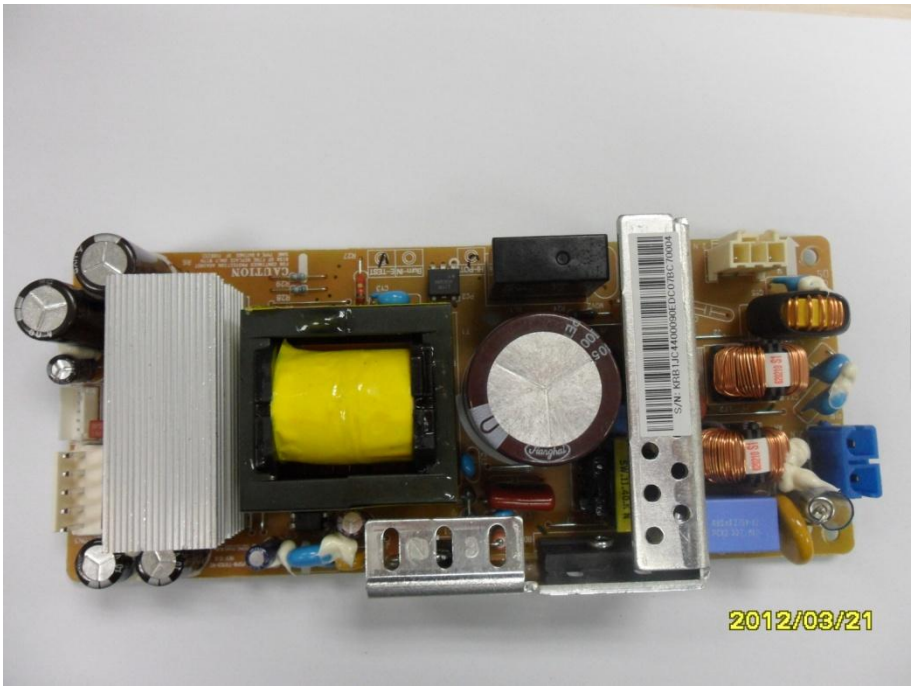
Front View

Rear View

TOP View

Bottom View

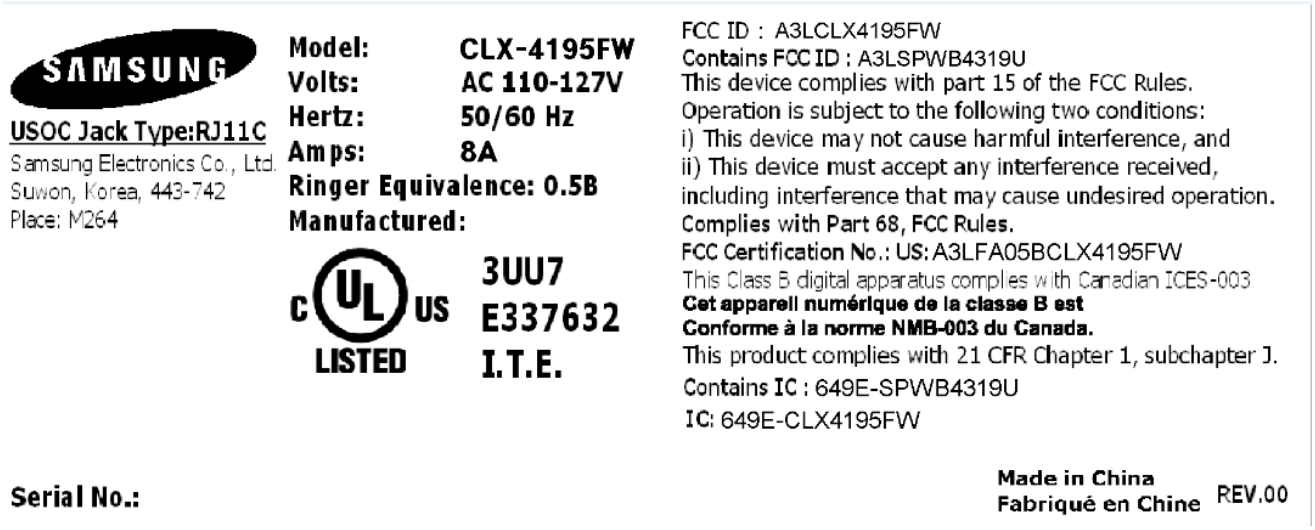
Inside View – Rear



SMPS(Dong yang)

SMPS(SUNG Ho)

Label Location



Label