

**ESTECH Co., Ltd.**Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea**Electromagnetic
Interference
Test Report****Test Report for FCC**

FCC ID : TKWF5M

Report Number		ESTF151201-007			
Applicant	Company name	Suprema Inc.			
	Address	16F Parkview Office Tower, Jeongja-dong, Bundang-gu, Seongnam, Gyeonggi, 463-863 Korea			
	Telephone	82-31-783-4505			
Product	Product name	Face-Station			
	Model No.	FSM	Manufacturer	Suprema Inc.	
	Serial No.	NONE	Country of origin	KOREA	
Test date	2011-12-28 ~ 2011-12-29		Date of issue	26-Jan-12	
Testing location	ESTECH Co., Ltd. 58-1 OSan-Ri Kanam-Myon, Yeosu-Gun, KyungKi-Do, Korea				
Standard	FCC PART 15 (2010), ANSI C 63.4 2003				
Test item	<input checked="" type="checkbox"/> Conducted Emission	<input type="checkbox"/> Class A	<input checked="" type="checkbox"/> Class B	Test result	OK
	<input checked="" type="checkbox"/> Radiated Emission	<input type="checkbox"/> Class A	<input checked="" type="checkbox"/> Class B	Test result	OK
Measurement facility registration number	94696				
Tested by	Engineer S.B.LEE				
Reviewed by	Engineering Manager J.M.Yang				
Abbreviation	OK, Pass = Complied, Fail = Failed, N/A = not applicable				
<p>* Note</p> <p>- This test report is not permitted to copy partly without our permission</p> <p>- This test result is dependent on only equipment to be used</p> <p>- This test result based on a single evaluation of one sample of the above mentioned</p>					

Contents

1. Laboratory Information	3
2. Description of EUT	4
3. Test Standards	5
4. Measurement condition	6
5. Measurement of radiated emission	8
5.1 Measurement equipment	8
5.2 Environmental conditions	8
5.3 Test data	9
6. Measurement of conducted emission	10
6.1 Measurement equipment	10
6.2 Environmental conditions	10
6.3 Test data	11
7. Photographs of test setup	12
8. Photographs of EUT	14

Appendix 1. Special diagram



1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report. ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.

ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co., Ltd.

Head Office : Rm 1015, World Venture Center II, 426-5, Gasan-dong, Geumcheon-gu, Seoul, Korea
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

1.3 Official Qualification(s)

KCC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication

KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements

FCC : Filed Laboratory at Federal Communications Commission

VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE



ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

2. Description of EUT

2.1 Summary of Equipment Under Test

Product	: Face-Station
Model Number	: FSM
Serial Number	: NONE
Manufacturer	: Suprema Inc.
Country of origin	: KOREA
Rating	: Input : (100 – 240) Va.c., 1.0 A (50 – 60) Hz EUT input : 12 Vd.c., 2.5 A
Receipt Date	: 21-Dec-11
X-tal list(s) or Frequencies generated	: X-tal list(s) -12 MHz, 27 MHz, 48 MHz, 32.768 kHz, 25 MHz, 24.576 MHz and the highest frequency in the EUT is 667 MHz

2.2 General descriptions of EUT

System Specifications

- CPU : Main B/D CPU - ARM11 667MHz X 1ea
- DSP 1GHz X 1ea
- Memory : Main B/D - Flash : Nand SLC 512MByte, SDRAM(mDDR) : 256MByte
- DISPLAY : 4.3inch LCD X 1ea
- INPUT : 저항막 방식 Touch Screen X 1ea + 5 Keypad (F1~F4, CALL)
- CAMERA : VGA CMOS Camera X 2ea
- I/O Port : Wiegand In/Out (S/W 설정을 통해 Input 또는 Output으로 사용가능) X 1ch
Switch Input X 4ch
RS-485 X 2ch
RS-232(Share with RS-485) X 1ch
Relay(1A@30Vdc) X 2ch
Ethernet(10/100M) X 1ch
- Sound Out: System Sound용 Speaker X 2ea
- RF CARD : Mifare
- Power Input : 12Vdc Adaptor or POE Input

3. Test Standards

Test Standard : FCC PART 15 (2010)

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.4 (2003)

This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain devices that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment. These methods apply to the measurement of individual units or systems comprised of multiple units.



ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

4. Measurement Condition

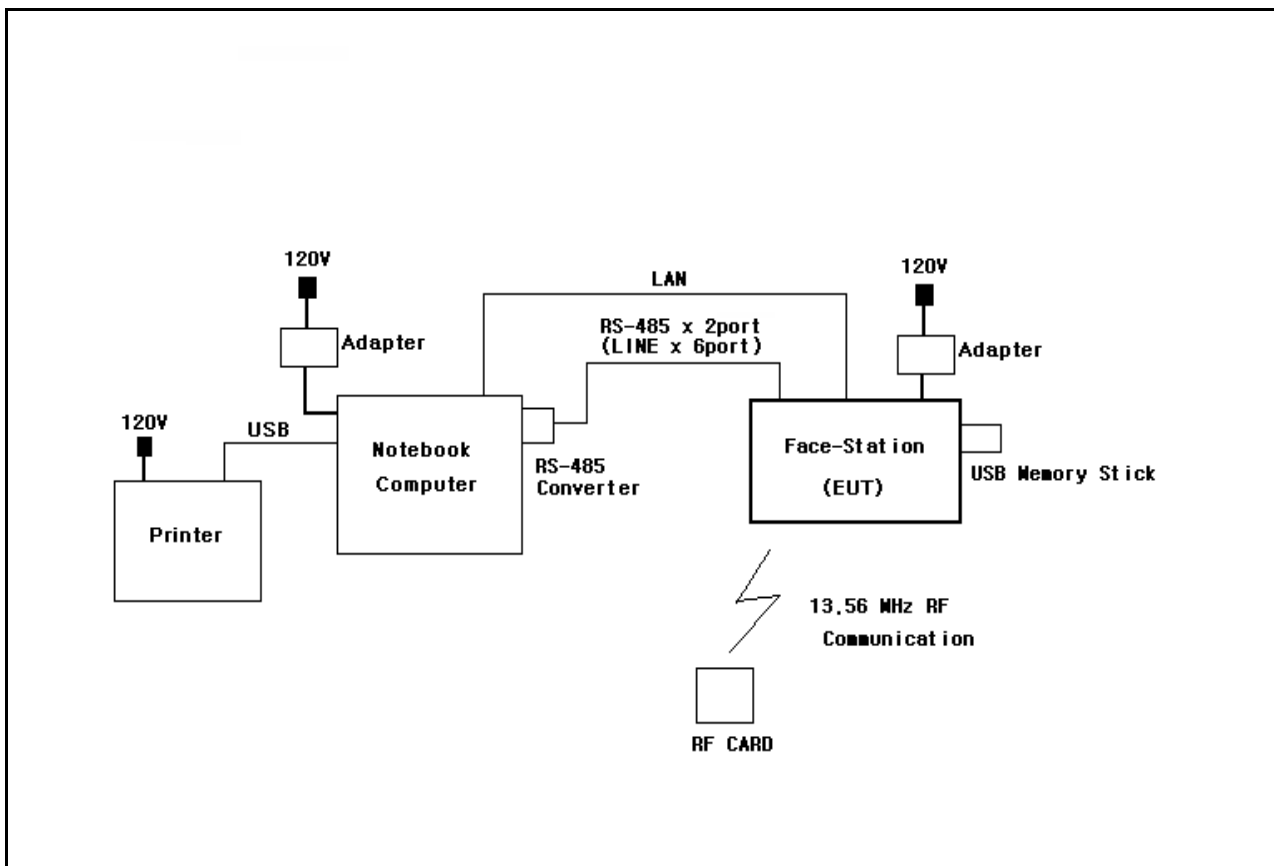
<Adapter Mode>

4.1 EUT Operation.

- The EUT was in the following operation mode during all testing

1. Check to normal mode operation.
2. The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected highest level of emission.
3. Install scanning program in the Notebook Computer.
4. Execute scanning mode continuously and check normal operating.

4.2 Configuration and Peripherals





ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

4. Measurement Condition

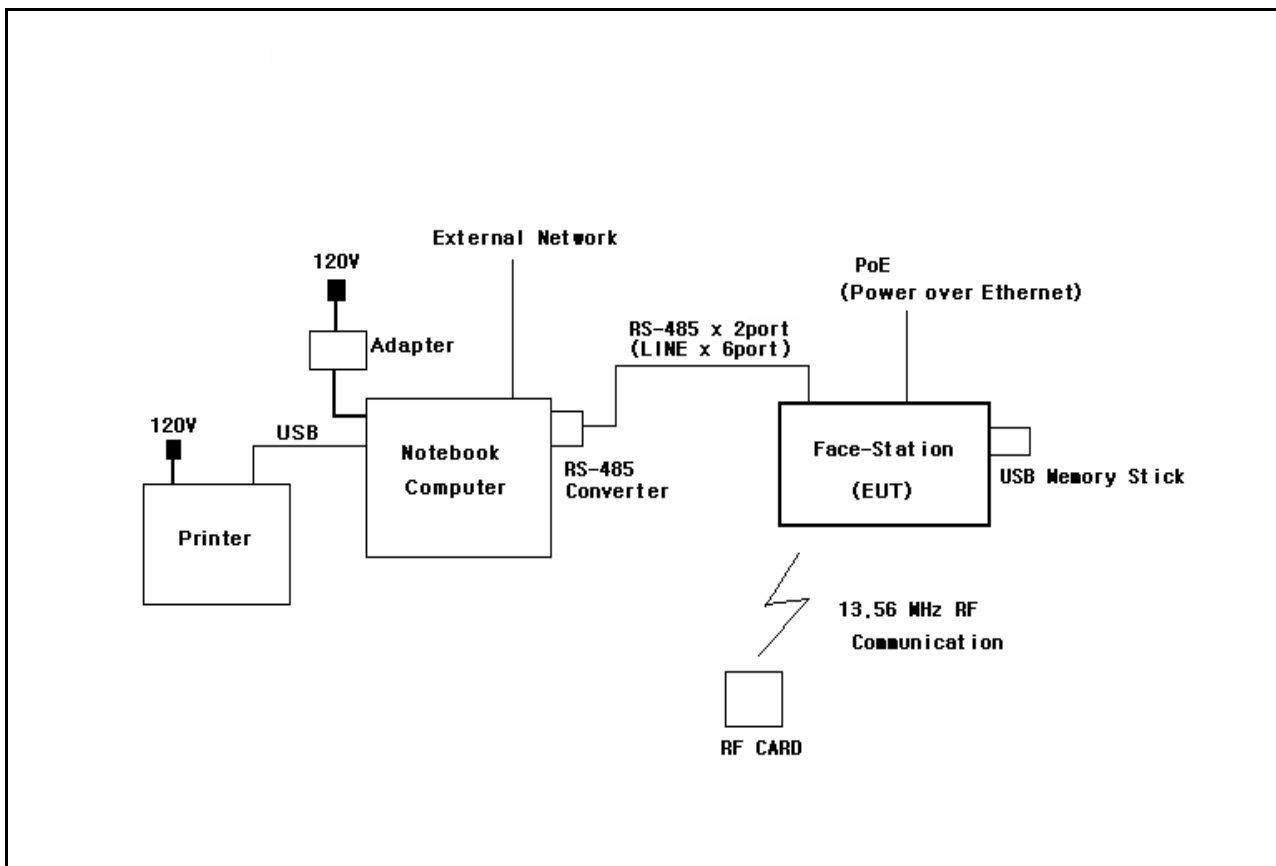
<PoE Mode>

4.1 EUT Operation.

- The EUT was in the following operation mode during all testing

1. Check to normal mode operation.
2. The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected highest level of emission.
3. Install scanning program in the Notebook Computer.
4. Execute scanning mode continuously and check normal operating.

4.2 Configuration and Peripherals



4.3 EUT and Support equipment <Adapter Mode>

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Face-Station	FSM	NONE	Suprema Inc.	EUT
Adapter	JPW128KA1200N06	NONE	BridgePower Corp.	
RS-485 Converter	CS-428	CA62910267	SystemBase	
Notebook Computer	GW687AV	CNU0295RBD	HEWLETT-PACKARD COMPANY	
Adapter	PPP009D	WBGSV0ADDZ306N	DELTA ELECTRONICS (JIANGSU), LTD.	
RF CARD	NONE	NONE	Suprema Inc.	
USB Memory Stick	NONE	NONE	imation	
Printer	K10299	NONE	CANON VITENAM CO.,LTD.	

4.4 Cable Connecting <Adapter Mode>

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Face-Station	Power	Adapter	-	2	Unshielded	
Face-Station	USB	USB Memory Stick	USB	-	-	
Face-Station	LAN	Notebook Computer	LAN	3	Unshielded	
Face-Station	RS-485 x 2port	RS-485 Converter	RS-485 x 2port	3	Unshielded	
Face-Station	LINE (RS-232)	-	-	3	Unshielded	Termination
Face-Station	LINE (Switch)	-	-	3	Unshielded	Termination
Face-Station	LINE (Videophone)	-	-	3	Unshielded	Termination
Face-Station	LINE (Relay x 2port)	-	-	3	Unshielded	Termination
Face-Station	LINE (Wiegand)	-	-	3	Unshielded	Termination
Face-Station	LINE (Debug)	-	-	3	Unshielded	Termination
Face-Station	13.56 MHz RF Signal	RS CARD	13.56 MHz RF Signal	-	-	
Notebook Computer	Serial	RS-485 Converter	Serial	-	-	
Notebook Computer	USB	Printer	USB	2	Shielded	
Notebook Computer	Power	Adapter	Power	2	Shielded	

4.3 EUT and Support equipment <PoE Mode>

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Face-Station	FSM	NONE	Suprema Inc.	EUT
RS-485 Converter	CS-428	CA62910267	SystemBase	
Notebook Computer	GW687AV	CNU0295RBD	HEWLETT-PACKARD COMPANY	
Adapter	PPP009D	WBGSV0ADDZ306N	DELTA ELECTRONICS (JIANGSU), LTD.	
RF CARD	NONE	NONE	Suprema Inc.	
USB Memory Stick	NONE	NONE	imation	
Printer	K10299	NONE	CANON VITENAM CO.,LTD.	

4.4 Cable Connecting <PoE Mode>

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Face-Station	PoE (Power over Thernet)	PoE Switch hub	PoE (Power over Thernet)	20	Unshielded	
Face-Station	USB	USB Memory Stick	USB	-	-	
Face-Station	RS-485 x 2port	RS-485 Converter	RS-485 x 2port	3	Unshielded	
Face-Station	LINE (RS-232)	-	-	3	Unshielded	Termination
Face-Station	LINE (Switch)	-	-	3	Unshielded	Termination
Face-Station	LINE (Videophone)	-	-	3	Unshielded	Termination
Face-Station	LINE (Relay x 2port)	-	-	3	Unshielded	Termination
Face-Station	LINE (Wiegand)	-	-	3	Unshielded	Termination
Face-Station	LINE (Debug)	-	-	3	Unshielded	Termination
Face-Station	13.56 MHz RF Signal	RS CARD	13.56 MHz RF Signal	-	-	
Notebook Computer	Serial	RS-485 Converter	Serial	-	-	
Notebook Computer	LAN	External Network	LAN	20	Unshielded	
Notebook Computer	USB	Printer	USB	2	Shielded	
Notebook Computer	Power	Adapter	Power	2	Shielded	

5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC PART 15 (2010). The test setup was made according to ANSI C 63.4 (2003) on an open test site, which allows a 3 m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8 m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESVS10	Rohde & Schwarz	838562/002	27-Jan-12
Test Receiver	ESPI7	Rohde & Schwarz	100185	6-May-12
LogBicon Antenna	VULB 9160	Schwarzbeck	3106	14-Apr-12
Pre Amplifier	8447F	HP	2944A03711	11-Jan-12
Pre Amplifier	8449B	HP	3008A00581	27-Jan-12
Turn Table	2081-1.2M	EMCO	NONE	-
Antenna Mast	2070-1	EMCO	0005-2205	-
ANT Mast Controller	2090	EMCO	9612-1202	-
Horn Antenna	BBHA 9120 D	Schwarzbeck	469	6-Sep-12

5.2 Environmental Condition

Test Place : Open site(3 m)

Adapter Mode

Temperature (°C) : 1 °C

Humidity (% R.H.) : 75 % R.H.

PoE Mode

Temperature (°C) : 2 °C

Humidity (%) : 68 % R.H.

5.3 Test data (Below 1 GHz) <Adapter Mode>

Test Date : 28-Dec-11

Measurement Distance : 3 m

Frequency (MHz)	Reading (dB μ V)	Position (V/H)	Height (m)	Correction Factor		Result Value(Quasi-peak)		
				Ant Factor (dB)	Cable (dB)	Limit (dB μ V/m)	Result (dB μ V/m)	Margin (dB)
38.22	43.70	V	1.0	10.71	-26.03	40.00	28.38	11.62
63.25	44.50	V	1.0	10.70	-24.99	40.00	30.21	9.79
108.25	43.40	V	1.0	9.68	-24.39	43.50	28.69	14.81
120.00	44.00	H	3.0	10.87	-24.19	43.50	30.68	12.82
144.20	41.90	V	1.0	12.52	-24.31	43.50	30.12	13.38
166.28	42.40	H	2.7	12.30	-23.52	43.50	31.18	12.32
232.77	41.90	V	1.0	11.31	-23.01	46.00	30.20	15.80
250.00	48.20	H	2.0	11.57	-22.95	46.00	36.82	9.18
271.26	46.20	H	1.8	13.07	-23.01	46.00	36.26	9.74
312.02	44.70	H	1.5	14.16	-23.59	46.00	35.27	10.73
375.02	46.50	H	1.3	15.48	-23.60	46.00	38.38	7.62
415.04	38.20	H	1.0	16.61	-23.65	46.00	31.16	14.84
456.00	39.50	H	1.0	17.85	-24.11	46.00	33.24	12.76
500.01	43.50	V	1.0	18.23	-24.05	46.00	37.68	8.32
Remark	H : Horizontal, V : Vertical *Reading = receiver reading + Amplifier Gain *CL = Cable Loss-Amplifier Gain *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection							

5.3 Test data (Below 1 GHz) <PoE Mode>

Test Date : 28-Dec-11

Measurement Distance : 3 m

Frequency (MHz)	Reading (dB μ V)	Position (V/H)	Height (m)	Correction Factor		Result Value(Quasi-peak)		
				Ant Factor (dB)	Cable (dB)	Limit (dB μ V/m)	Result (dB μ V/m)	Margin (dB)
32.27	46.70	H	4.0	10.49	-25.88	40.00	31.31	8.69
63.14	43.40	H	4.0	10.72	-25.01	40.00	29.11	10.89
108.83	38.00	V	1.0	9.74	-24.39	43.50	23.34	20.16
120.01	45.00	H	3.0	10.87	-24.19	43.50	31.68	11.82
150.69	42.20	H	2.9	12.62	-23.84	43.50	30.98	12.52
168.00	38.40	H	2.7	12.17	-23.49	43.50	27.08	16.42
222.87	38.80	H	2.6	11.05	-23.22	46.00	26.63	19.37
233.41	37.70	H	2.4	11.32	-23.00	46.00	26.02	19.98
250.00	45.10	H	2.0	11.57	-22.95	46.00	33.72	12.28
271.27	46.40	H	1.7	13.07	-23.01	46.00	36.46	9.54
352.64	46.40	H	1.4	15.28	-22.77	46.00	38.91	7.09
456.03	40.80	V	1.0	17.85	-24.11	46.00	34.54	11.46
500.00	42.30	H	1.0	18.23	-24.05	46.00	36.48	9.52
Remark	H : Horizontal, V : Vertical *Reading = receiver reading + Amplifier Gain *CL = Cable Loss-Amplifier Gain *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection							

**ESTECH Co., Ltd.**Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea**Electromagnetic
Interference
Test Report****5.3 Test data (Above 1 GHz) <Adapter Mode>**

Test Date : 28-Dec-11

Measurement Distance : 3 m

Frequency (MHz)	Reading (dB μ V)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dB μ V/m)	Result (dB μ V/m)	Margin (dB)
Peak(RBW:1 MHz VBW:1 MHz)								
984.16	47.42	H	1.0	25.14	-20.52	74.00	52.04	21.96
984.16	50.71	V	1.0	25.14	-20.52	74.00	55.33	18.67
1000.20	52.73	H	1.1	24.28	-28.71	74.00	48.30	25.70
1000.20	52.76	V	1.1	24.28	-28.71	74.00	48.33	25.67
1103.90	47.80	H	1.3	24.47	-28.31	74.00	43.96	30.04
1103.90	47.64	V	1.0	24.47	-28.31	74.00	43.80	30.20
2638.20	59.61	H	1.1	27.63	-24.31	74.00	62.93	11.07
2638.20	58.20	V	1.0	27.63	-24.31	74.00	61.52	12.48
Average(RBW:1 MHz VBW:10 Hz)								
984.16	34.26	H	1.0	25.14	-20.52	54.00	38.88	15.12
984.16	35.46	V	1.0	25.14	-20.52	54.00	40.08	13.92
1000.20	43.43	H	1.1	24.28	-28.71	54.00	39.00	15.00
1000.20	48.82	V	1.1	24.28	-28.71	54.00	44.39	9.61
1103.90	34.75	H	1.3	24.47	-28.31	54.00	30.91	23.09
1103.90	34.13	V	1.0	24.47	-28.31	54.00	30.29	23.71
2638.20	46.12	H	1.1	27.63	-24.31	54.00	49.44	4.56
2638.20	47.39	V	1.0	27.63	-24.31	54.00	50.71	3.29
Remark	<p>H : Horizontal, V : Vertical *Reading = receiver reading + Amplifier Gain *CL = Cable Loss-Amplifier Gain *The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 10 Hz for average detection at frequency above 1 GHz.</p> <p>*Application method of the highest frequency is in the following *Highest frequency of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. *Highest frequency of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. *Highest frequency of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. *Highest frequency of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz,</p>							

**ESTECH Co., Ltd.**Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea**Electromagnetic
Interference
Test Report****5.3 Test data (Above 1 GHz) <PoE Mode>**

Test Date : 29-Dec-11

Measurement Distance : 3 m

Frequency (MHz)	Reading (dB μ V)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dB μ V/m)	Result (dB μ V/m)	Margin (dB)
Peak(RBW:1 MHz VBW:1 MHz)								
1000.00	52.42	H	1.1	25.16	-20.14	74.00	57.44	16.56
1000.00	51.11	V	1.4	25.16	-20.14	74.00	56.13	17.87
1056.00	50.91	H	1.0	24.38	-28.50	74.00	46.79	27.21
1056.00	48.48	V	1.5	24.38	-28.50	74.00	44.36	29.64
2640.40	58.72	H	1.2	27.64	-24.31	74.00	62.05	11.95
2640.40	59.94	V	1.0	27.64	-24.31	74.00	63.27	10.73
Average(RBW:1 MHz VBW:10 Hz)								
1000.00	40.43	H	1.1	25.16	-20.14	54.00	45.45	8.55
1000.00	42.59	V	1.4	25.16	-20.14	54.00	47.61	6.39
1056.00	36.72	H	1.0	24.38	-28.50	54.00	32.60	21.40
1056.00	35.48	V	1.5	24.38	-28.50	54.00	31.36	22.64
2640.40	46.19	H	1.2	27.64	-24.31	54.00	49.52	4.48
2640.40	47.14	V	1.0	27.64	-24.31	54.00	50.47	3.53
Remark	<p>H : Horizontal, V : Vertical *Reading = receiver reading + Amplifier Gain *CL = Cable Loss-Amplifier Gain *The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 10 Hz for average detection at frequency above 1 GHz.</p> <p>*Application method of the highest frequency is in the following *Highest frequency of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. *Highest frequency of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. *Highest frequency of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. *Highest frequency of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz,</p>							

6. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 MHz to 30 MHz was measured in accordance to FCC PART 15 (2010). The test setup was made according to ANSI C 63.4 (2003) in a shielded room. The EUT was placed on a non-conductive table at least 0.8 m above the ground plan. A grounded vertical reference plane was positioned in a distance of 0.4 m from the EUT. The distance from the EUT to other metal surfaces was at least 0.8 m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0 m. The test receiver with Quasi Peak detector complies with CISPR 16.

6.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESHS 30	Rohde & Schwarz	828765/002	16-Dec-12
LISN	ESH2-Z5	POLARAD	872461/048	11-Jan-12
LISN	ESH3-Z5	Rohde & Schwarz	836679/025	27-Sep-12
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	21-Mar-12

6.2 Environmental Condition

Test Place : Shielded Room
 Temperature (°C) : 23 °C
 Humidity (% R.H.) : 46 % R.H.

**ESTECH Co., Ltd.**Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea**Electromagnetic
Interference
Test Report**

6.3 Test data

Test Date : 28-Dec-11

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dB μ V)	Reading (dB μ V)	Result (dB μ V)	Limit (dB μ V)	Reading (dB μ V)	Result (dB)
0.18	0.17	0.36	N	64.49	26.55	27.08	54.49		
0.19	0.10	0.36	H	64.04	41.86	42.32	54.04		
0.24	0.10	0.36	H	62.10	25.45	25.91	52.10		
0.26	0.10	0.36	H	61.43	39.19	39.66	51.43		
0.32	0.11	0.36	H	59.71	31.75	32.22	49.71		
0.39	0.11	0.37	H	58.06	28.82	29.30	48.06		
0.52	0.12	0.37	H	56.00	33.82	34.31	46.00		
0.65	0.13	0.37	H	56.00	35.23	35.73	46.00		
1.31	0.22	0.46	N	56.00	23.37	24.05	46.00		
4.57	0.30	0.41	N	56.00	24.93	25.64	46.00		
4.65	0.22	0.41	H	56.00	28.74	29.38	46.00		
4.84	0.31	0.41	N	56.00	24.88	25.60	46.00		
9.22	0.30	0.46	H	60.00	41.42	42.18	50.00		
13.42	0.39	0.54	H	60.00	40.20	41.13	50.00		
13.74	0.40	0.54	H	60.00	42.28	43.22	50.00		
15.24	0.44	0.55	H	60.00	42.57	43.56	50.00		
17.73	0.53	0.59	H	60.00	41.80	42.93	50.00		
18.46	0.56	0.61	H	60.00	41.05	42.22	50.00		
Remark	H : Hot Line, N : Neutral Line *Correction Factor = Lisn + Cable *Result = Correction Factor + Reading								



ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

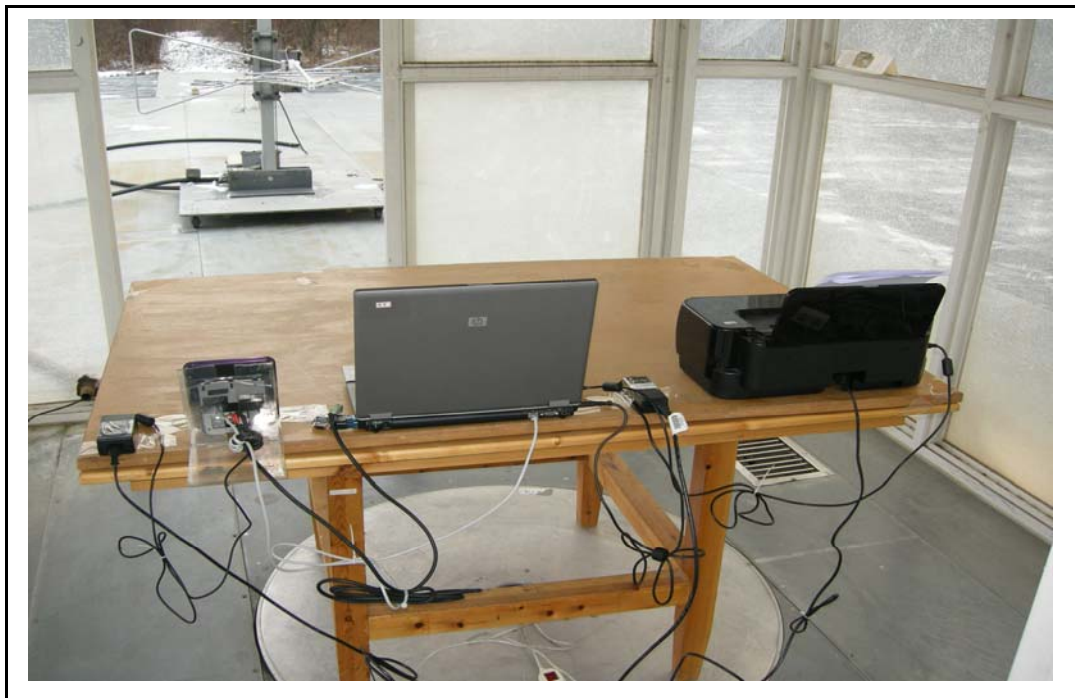
7. Photographs of test setup <Adapter Mode>

7.1 Setup for Radiated Test : 30 MHz ~ 1000 MHz

[Front]



[Rear]





ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

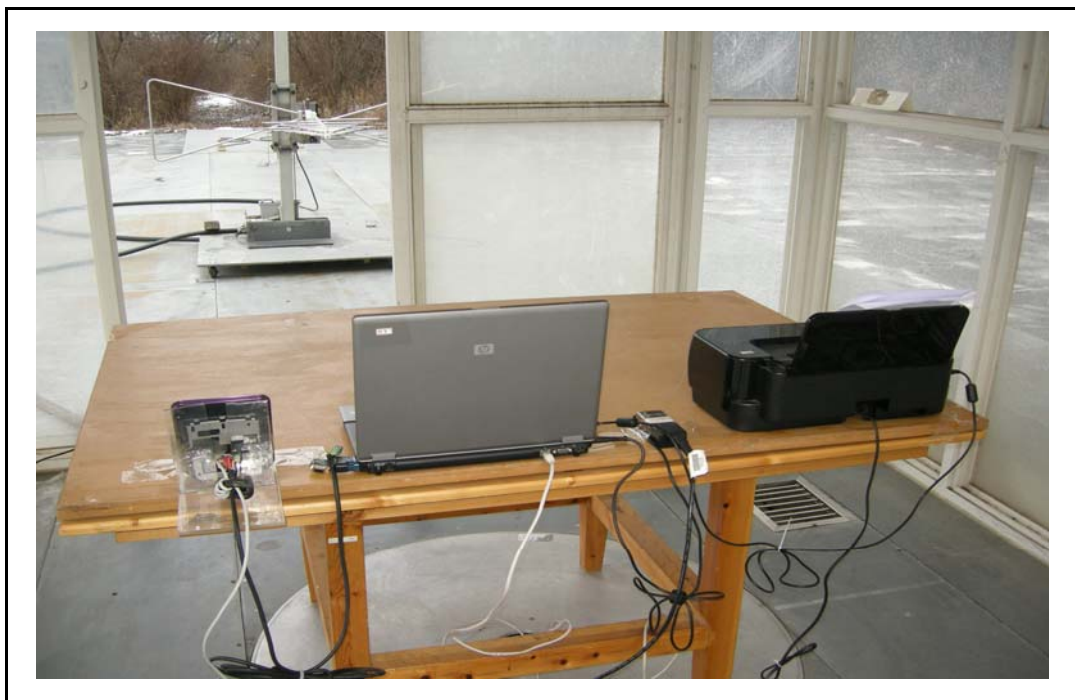
7. Photographs of test setup <PoE Mode>

7.1 Setup for Radiated Test : 30 MHz ~ 1000 MHz

[Front]



[Rear]





ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



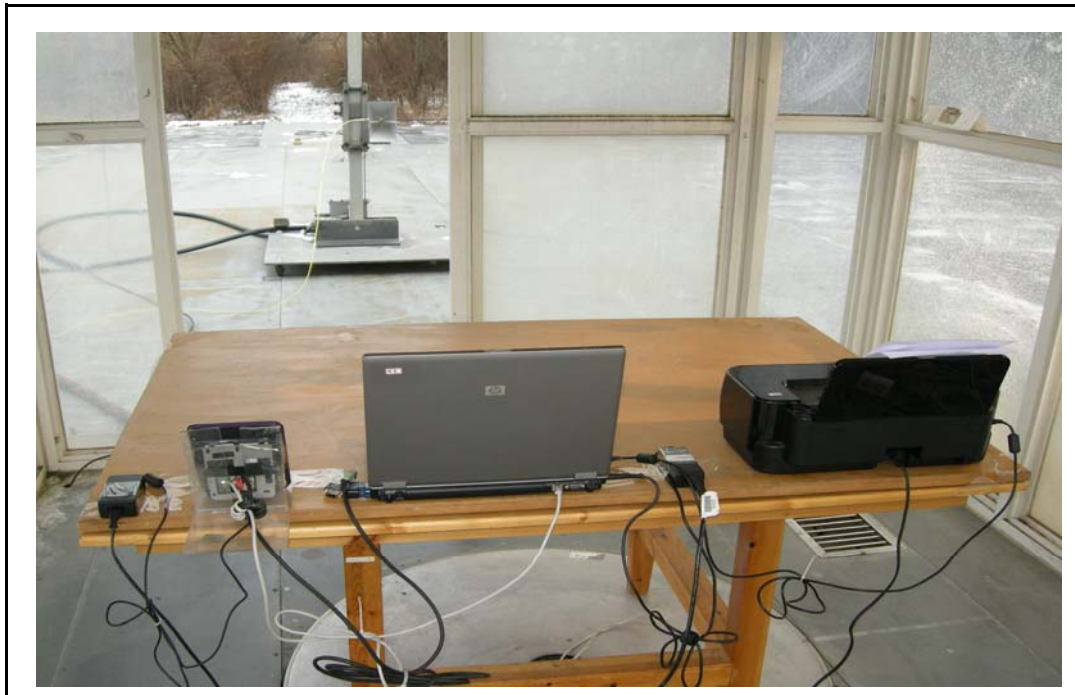
**Electromagnetic
Interference
Test Report**

7.2 Setup for Radiated Test : Above 1 GHz <Adapter Mode>

[Front]



[Rear]





ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



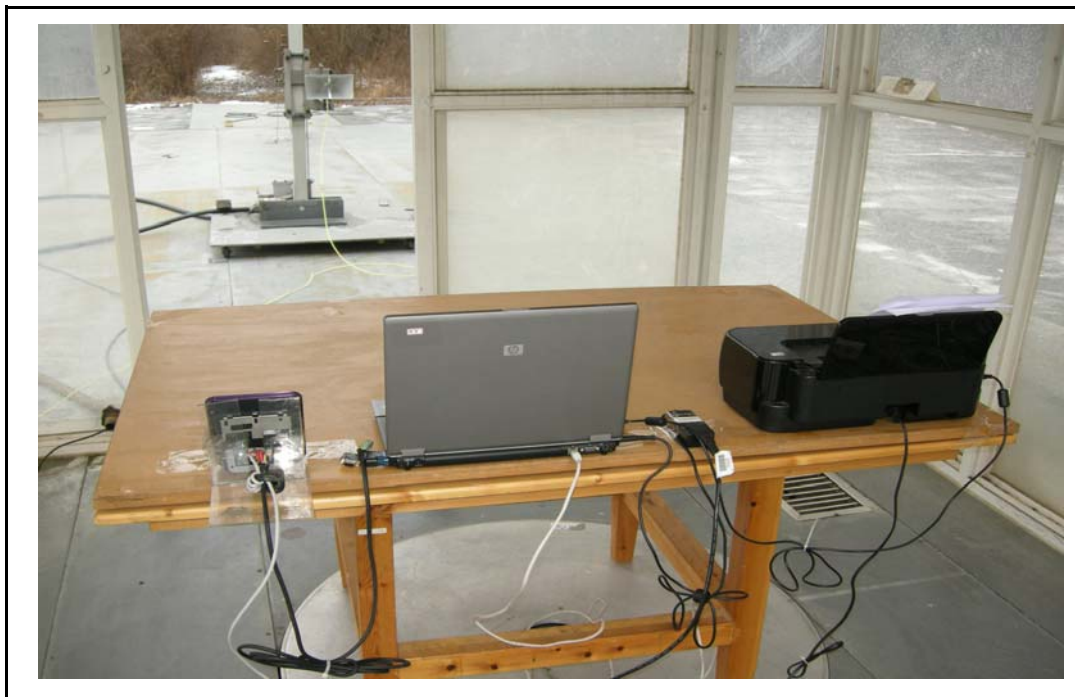
**Electromagnetic
Interference
Test Report**

7.2 Setup for Radiated Test : Above 1 GHz <PoE Mode>

[Front]



[Rear]





ESTECH Co., Ltd.

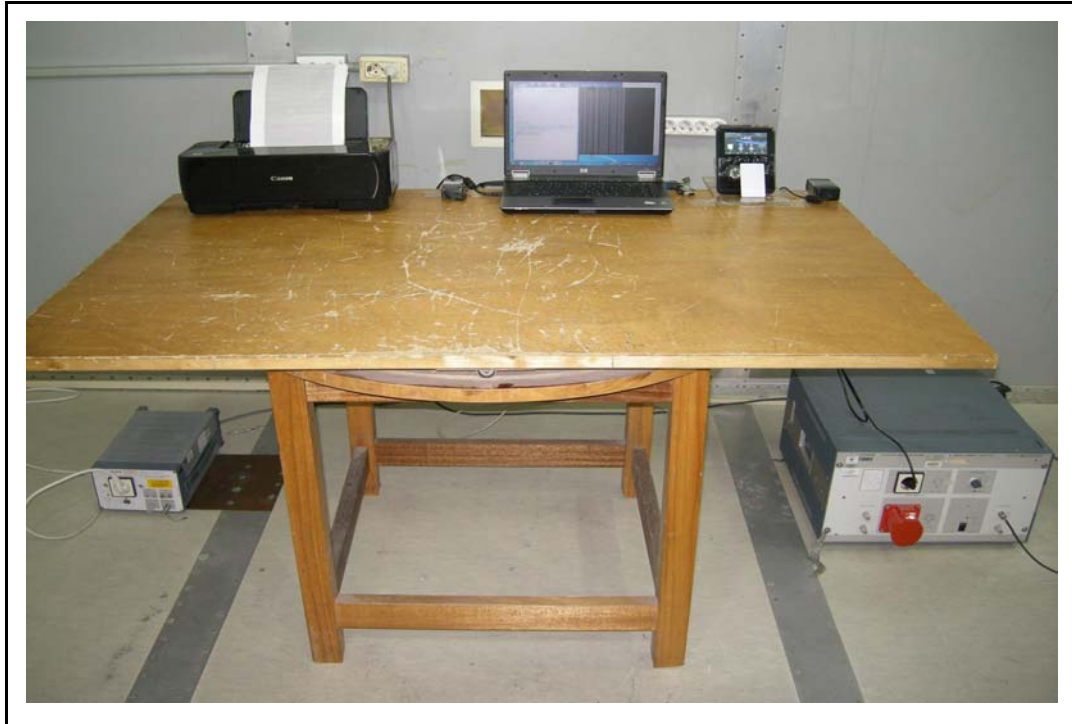
Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



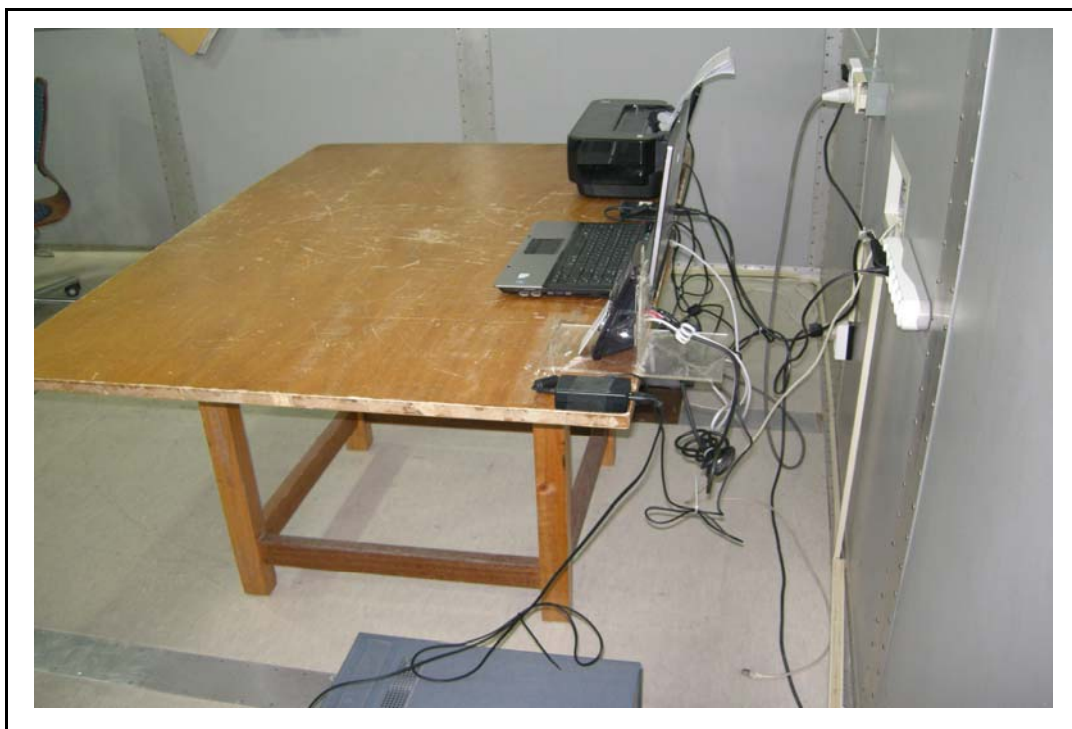
**Electromagnetic
Interference
Test Report**

7.3 Setup for Conducted Test : 0.15 MHz ~ 30 MHz

[Front]



[Rear]





ESTECH Co., Ltd.

Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

8. Photographs of EUT

[Front]



[Rear]



Appendix 1. Special diagram

*HOT

ES TECH

28 Dec 2011 19:23

HOT

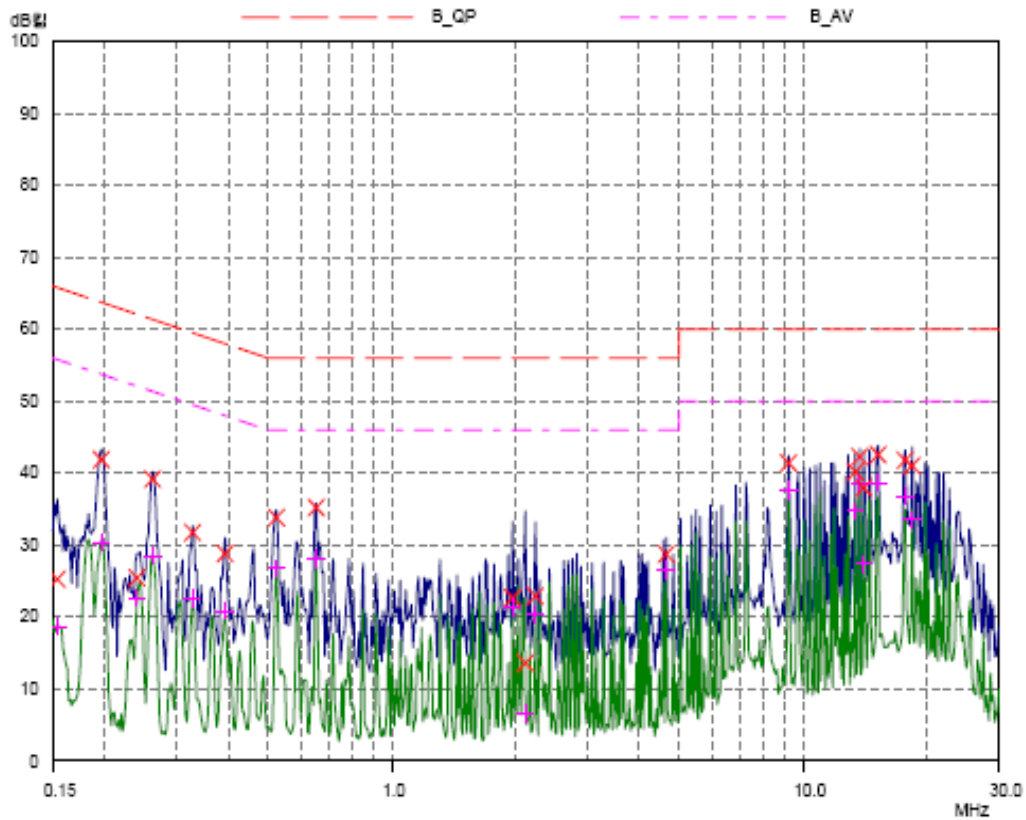
EUT: FSM
Manuf:
Op Cond: 120 V
Operator: S.B.Lee / Engineer
Test Spec: CLASS B
Comment:

Result File: 120107_h.dat : ESTF151201-007

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	10msec	Auto	OFF	60dB

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 0 dB



*NEUTRAL

ES TECH
NEUTRAL

28 Dec 2011 19:30

EUT: FSM
Manuf:
Op Cond: 230 V
Operator: S.B.Lee / Engineer
Test Spec: CLASS B
Comment:

Result File: 120107_n.dat : ESTF151201-007

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	10msec	Auto	OFF	60dB

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 0 dB

