



Declaration of Conformity



Type of equipment: CAMERA HOUSING
Brand Name /Trade Mark: SAMSUNG TECHWIN CO., LTD.
Type designation /model: SCX-FH200B
Variant Model Name: SHB-4200
Applicant: SAMSUNG TECHWIN CO., LTD.

In accordance with the following Directives:

2004/108/EC The Electromagnetic Compatibility Directive

Including amendments by the CE Marking Directive 93/68/EEC

The following harmonized European standards or technical specifications have been applied:

EN 55014-1:2006	Electromagnetic compatibility Requirements for household appliances, electric tools and similar apparatus - part 1: Emission test
EN 55014-2:1997+A1:2001	Electromagnetic compatibility Requirements for household appliances, electric tools and similar apparatus - part2: Immunity test
EN 55014-1:2006	Disturbance power
EN 61000-4-2:1995 +A1:1998 +A2:2001	Electrostatic discharge immunity test
EN 61000-4-4:2004	Electrical fast transient/burst immunity test
EN 61000-4-6:1996+A1:2001	Immunity to conducted disturbances, induced by radio-frequency fields

The CE Marking on the products and/or their packaging signifies that SAMSUNG TECHWIN CO., LTD. holds the reference technical file available to the European Union authorities.

Place and date of issue: #42 Seongju-Dong, Changwon-Shi, Kyungsangnam-Do, Korea
/ April 08, 2010

Authorized Signatory: Name : Jei Soon, Kang
Title : Principal Research Engineer
Signature :


SAMSUNG TECHWIN CO., LTD

EMC TEST REPORT

Test report No: EMC-CE-2063
Type of Equipment : CAMERA HOUSING
Model Name: SCX-FH200B
Variant Model Name: SHB-4200
Applicant: SAMSUNG TECHWIN CO., LTD.
#42 Seongju-Dong, Changwon-Shi,
Kyungsangnam-Do, Korea
Manufacturer: NINGBO KEVIS INC
#10-5 Laoshanlu, Dagang IND Zone, Beilun,
Ningbo, Zhejiang, China

Test standards :

EN 55014-1:2006, EN 55014-2:1997+A1:2001

Testing Laboratory: EMC Compliance Ltd.

Test result : Complied

This product complies with the requirements of the EMC Directive 2004/108/ EC.

The results in this report apply only to the sample tested.

This test report shall not be reproduced, except in full, without the written approval of EMC compliance Laboratory.

Date of receipt: 2010. 04. 01

Date of testing: 2010. 04. 01 ~ 04. 02

Issued date: 2010. 04. 08

Tested by:

BAEK, JEONG-SOO

Approved by:

CHUNG, MIN-SEOK

Contents

1. Applicant information	3
2. Laboratory information.....	4
3. Test system configuration.....	5
3.1 Operation environment.....	5
3.2 Measurement Uncertainty	5
4. Description of E.U.T.....	6
4.1 General information.....	6
4.2 Product description.....	7
4.3 Auxiliary equipments	7
4.4 Test configuration.....	8
4.5 Operating conditions.....	8
5. Summary of test results	9
5.1 Modification to the E.U.T.	9
5.2 Summary of EMI emission test results	9
5.3 Summary of immunity test results	9
5.4 Classification of apparatus	10
6. Test results.....	13
6.1 Disturbance power.....	13
6.2 Electrostatic Discharge test result.....	17
6.3 Electric Fast Transient/BURST	21
6.4 Conducted Immunity	23
7. E.U.T. photographs.....	25

1. Applicant information

Applicant: SAMSUNG TECHWIN CO., LTD.

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Contact name: **Kang Je Soon**

Manufacturer: NINGBO KEVIS INC

Address: #10-5 Laoshanlu, Dagang IND Zone, Beilun,
Ningbo, Zhejiang, China

2. Laboratory information

Address

EMC compliance Ltd.

480-5 Sin-dong, Yeongtong-gu, Suwon-city, Gyeonggi-do, 443-390, Korea

Telephone Number: 82 31 336 9919

Facsimile Number: 82 31 336 4767

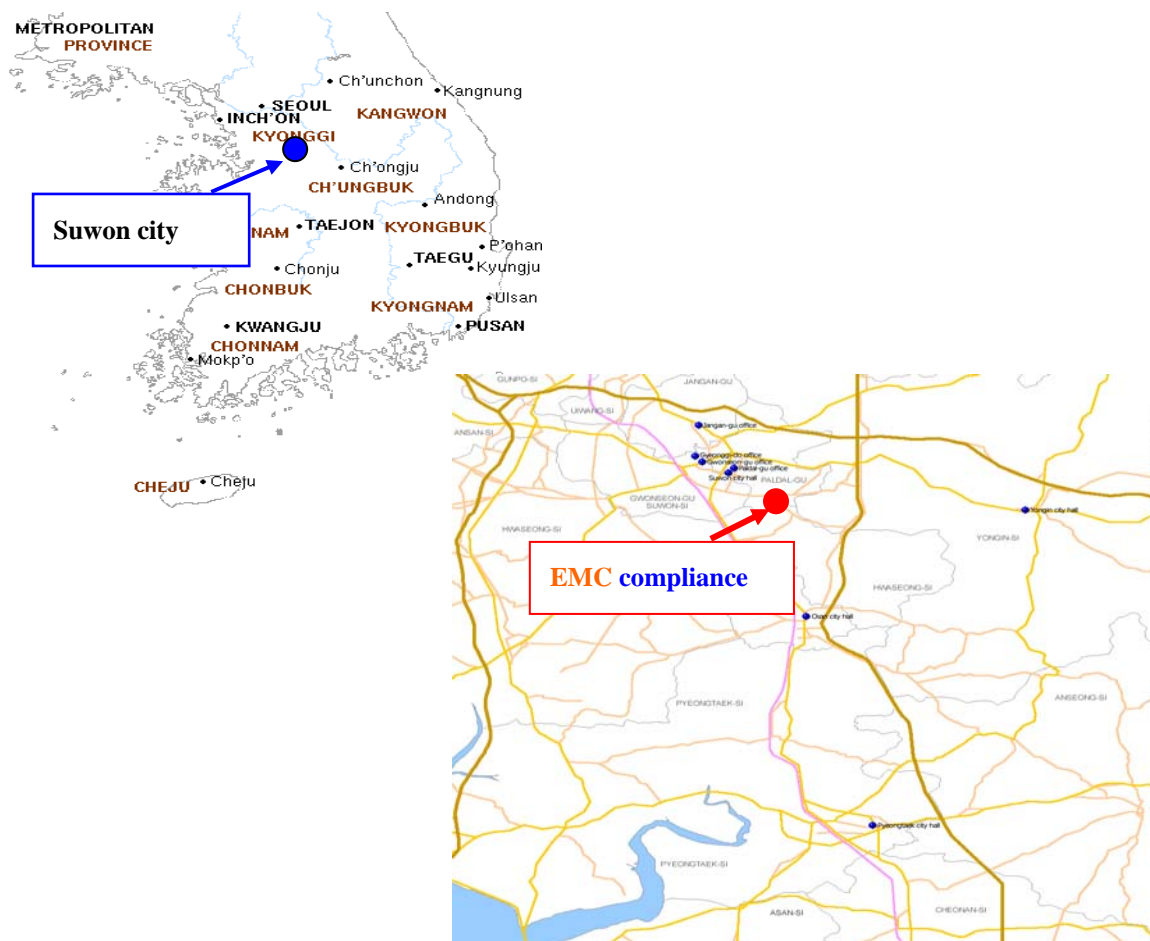
FCC CAB.: KR0040

VCCI Registration No. : C-1713, R-2710

Industry Canada Registration No. : 8035

KOLAS NO.: 231

SITE MAP



3. Test system configuration

3.1 Operation environment

	Temperature	Humidity	Pressure
Shielded room(ESD) :	23 °C	29 % R.H.	100.6 kPa

Test site

These testing items were performed following locations;

Shielded Room : ESD, EFT/Burst, CS

Semi anechoic chamber (3 m) : Disturbance power

3.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC.

The factors contributing to uncertainties are test receiver, cable loss, antenna factor calibration, Antenna directivity, antenna factor variation with height, antenna phase center variation, antenna frequency interpolation, measurement distance variation, site imperfection, mismatch, and system repeatability. Based on CISPR 16-4-2, the measurement uncertainty level with a 95 % confidence level was applied.

Disturbance power Electromagnetic Fields: ($k = 2$, 95 %)

± 3.734 [dB(pW)]

4. Description of E.U.T.

4.1 General information

Purpose : Outdoor Housing
Product Name : CAMERA HOUSING
Features : Dustproof, Sealed
Material : Body – Aluminium AL A6063.
Front, Rear – ABS Incombustible

Use Condition : -15°C ~ +45 °C

Weight : 1.0kg

Dimension

- Outside : 148mm(W) x 107mm(H) x 421mm(D)

- Inside : 84mm(W) x 78mm(H) x 319mm(D)

Color

- Pantone Cool Gray 1C

Accessories

- Housing

: ¼"-20 Unc Screw (x3), Spring Washer (x1), Flat Washer (x1)

PG13.5 Cable Gland (x1), Wrench(x1), Wrench Screw (x2)

- Bracket

: ¼"-20 Unc Screw (x2), Spring Washer (x2), Flat Washer (x2)

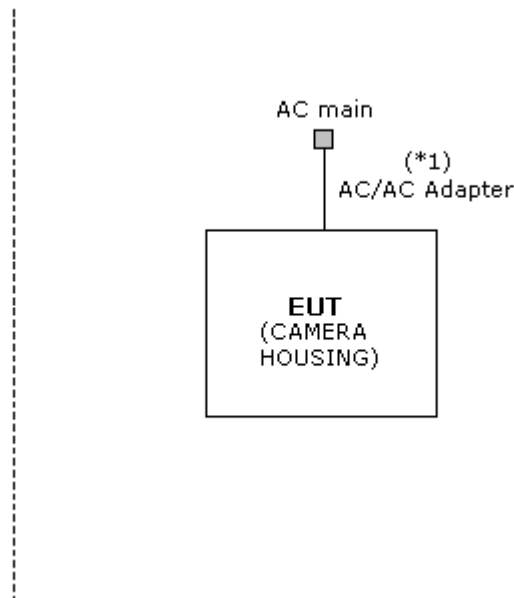
4.2 Product description

Type of product	CAMERA HOUSING
Model name (Basic)	SCX-FH200B
Model name (Variant)	SHB-4200
Difference	HEATER Difference(SCX-FH200B: O, SHB-4200: X)
Serial no	Engineering Sample
Trade name	-
Testing Voltage	AC 24 V
Product rating	AC 24 V
Note	-

4.3 Auxiliary equipments

Type	Model / Part #	Serial number	Manufacturer
AC/AC Adapter	DOWN	-	TAIYOUNG

4.4 Test configuration



Note	Start		End		Cable	
	Name	I/O port	Name	I/O port	Length (m)	Spec.
1	EUT (CAMERA HOUSING)	Power	AC/AC Adapter	Power	1.5	Non-Shield

4.5 Operating conditions

The EUT was configured as normal intended use.

Test mode	Normal operating
1	Operating mode

5. Summary of test results

5.1 Modification to the E.U.T.

None

5.2 Summary of EMI emission test results

Application	Test method	Test result
Conducted emission - AC main port	EN 55014-1:2006	N/A
Disturbance power	EN 55014-1:2006	Complied
Discontinuous interference	EN 55014-1:2006	N/A
Harmonics current	EN 61000-3-2: 2006	N/A
Voltage fluctuations and flickers	EN 61000-3-3:1995+A1+A2:2005	N/A

5.3 Summary of immunity test results

*** This EUT is Category II**

Items	Application	Test method	Test result
Electrostatic discharge	Enclosure	EN 61000-4-2:1995+A1+1998+A2:2001	Complied
Radiated RF immunity	Enclosure	EN 61000-4-3:2006	N/A
Fast transient	AC main	EN 61000-4-4:2004	Complied
Surge	AC main	EN 61000-4-5:1995+A1:2001	N/A
Conducted RF immunity	AC main	EN 61000-4-6:1996+A1:2001	Complied
Magnetic field immunity	Enclosure	EN 61000-4-8:1993+A1:2001	N/A
Voltage dip/interruption	AC main	EN 61000-4-11:2004	N/A
Voltage Harmonics & Inter Harmonics	AC main	EN 61000-4-13:2002	N/A

5.4 Classification of apparatus

The apparatus covered by this standard is subdivided into categories.

For each category. Specific requirements are formulated.

Category I: apparatus containing no electronic control circuitry, for example motor operated appliance, toys, heating appliances and similar electric apparatus

(such as UV and IR radiators) Electric circuits consisting of passive components.

(such as radio interference suppression capacitors or inductors, mains transformers and mains frequency rectifiers) are not considered to be electronic control circuitry

Category II: mains powered motor operated appliance, tools, heating appliances and similar electric apparatus (for example – UV radiators, IR radiators and microwave ovens) containing electronic control circuitry with no internal clock frequency or oscillator frequency higher than 15 MHz.

Category III: battery powered apparatus (with built-in batteries or external batteries), which in normal use is not connected to the mains, containing an electronic control circuitry with no internal clock or oscillator frequency higher than 15 MHz

This category includes apparatus provided with rechargeable batteries which can be charged by connecting the apparatus to the mains power. However, this apparatus shall also be tested as an apparatus in category II while it is connected to the mains network.

Category IV: all other apparatus covered by the scope of this standard

5.5 Application of tests for the different categories of apparatus

Category I

category I apparatus is deemed to fulfill the relevant immunity requirements without testing

Category II

Category II apparatus shall fulfill the following requirements;

- Electrostatic discharge with performance criterion B
- Fast transients with performance criterion B
- Injected currents up to 230 MHz with performance criterion A
- Surge with performance criterion B
- Voltage dips and interruptions with performance criterion C

Category III

Category III apparatus shall fulfill the following requirements;

- Electrostatic discharge with performance criterion B
- Fast transients with performance criterion B
- Injected currents up to 230 MHz with performance criterion A

Category IV

Category II apparatus shall fulfill the following requirements;

- Electrostatic discharge with performance criterion B
- Fast transients with performance criterion B
- Injected currents up to 80 MHz with performance criterion A
- Radiofrequency EM fields with performance criterion A
- Surge with performance criterion B
- Voltage dips and interruptions with performance criterion C

5.6 Performance criteria

The performance of the EUT during the immunity testing has been classified from A to C, based on the following criteria.

Criteria A:

The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacture, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacture, then either of these may be derived from the product description documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criteria B:

The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss or performance) specified by the manufacture, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacture, then either of these may be derived from the description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criteria C:

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

6. Test results

6.1 Disturbance power

Test specification	EN 55014-1:2006 Sections 4		
Test mode	Operating mode		
Date	2010. 04. 01		
Testing voltage	AC 24 V		
Test facility	Semi anechoic chamber		
Temperature (°C)	23 °C	Humidity (% R.H.)	29 % R.H.
Remarks	Complied		

6.1.1 Measurement procedure

The appliance to be tested is placed on a non-metallic table at least 0.8 m from other metallic objects and the lead to be measured on is stretched in a straight line for a distance sufficient to accommodate the absorbing clamp, and to permit the necessary measuring adjustment of position for tuning.

The clamp is placed around the lead so as to measure a quantity proportional to the disturbance power on the lead. The absorbing clamp is positioned for maximum indication at each test frequency; the clamp shall be moved along the lead until the maximum value is found between a position adjacent to the appliance and a distance of about a half-wavelength from it. EUT during the test are noted in the following test records.

6.1.2 Used equipments

Equipment	Model	Serial No.	Makers	Next Cal. Date	Used
Test receiver	ESVD	841729/010	R&S	10.08.17	<input checked="" type="checkbox"/>
Absorbing clamp	AMZ-41	16622	Schaffner	11.03.13	<input checked="" type="checkbox"/>
6 dB Attenuator	8491A	16861	HP	11.01.09	<input checked="" type="checkbox"/>

6.1.3 Photographs of test setup



6.1.4. Disturbance power Electromagnetic Fields

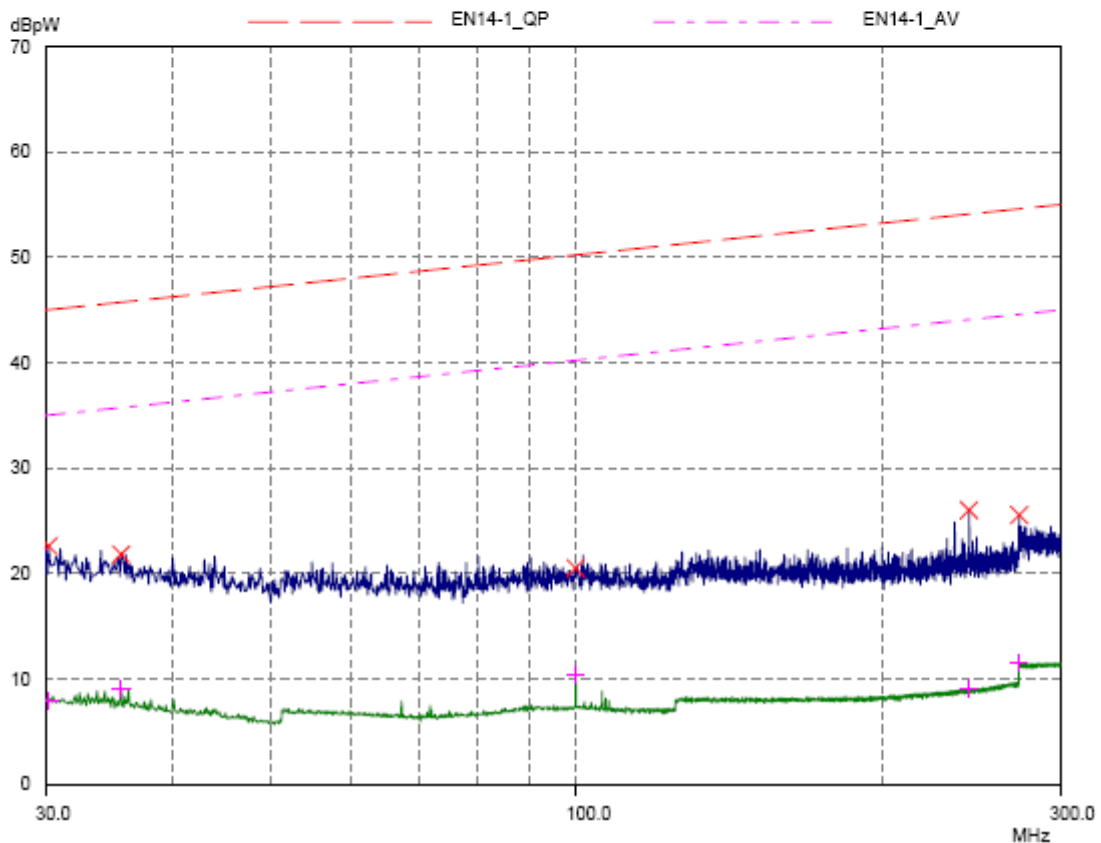
EUT: SCX-FH200B
 Manuf: NINGBO KEVIS INC
 Op Cond:
 Operator:
 Test Spec: Disturbance Power
 Comment: INPUT AC24V

Result File: fh200bdp.dat : SAMSUNG TECHWIN SCX-FH200B disturbance power

Scan Settings			Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge	
30MHz	300MHz	100kHz	120kHz	PK+AV	10msec	Auto	ON	60dB	

Transducer	No.	Start	Stop	Name
	22	30MHz	300MHz	CLAMPATTCABLE

Prescan Measurement: Detectors: X PK / + AV
 Meas Time: see scan settings
 Peaks: 8
 Acc Margin: 25 dB



* Disturbance power measurement result

Frequency [MHz]	QP READING (dB(pW))	ATT (6dB)	Correction Factor		QP Limits (dB(pW))	QP Result (dB(pW))	QP Margin (dB)	AV READING (dB(pW))	AV Limits (dB(pW))	AV Result (dB(pW))	AV Margin (dB)
			CLAMP	Cable							
30.20	9.2	6	4.34	1.02	45.12	20.56	24.56	0.1	35.12	11.46	23.66
35.60	9.5	6	3.78	1.09	45.30	20.37	24.93	0.2	35.30	11.07	24.23
99.90	11.6	6	1.81	1.52	46.19	20.93	25.26	0.3	36.19	9.63	26.56
244.10	12.4	6	1.26	2.20	48.93	21.85	27.08	0.1	38.93	9.55	29.38
273.40	14.1	6	1.54	2.37	49.69	24.01	25.68	0.2	39.69	10.11	29.58

6.2 Electrostatic Discharge test result

Test specification	EN 61000-4-2:1995+A1+1998+A2:2001, Criteria : B				
Test level	Contact: ± 2, 4 kV Air: ± 2, 4, 8 kV HCP / VCP: ± 2, 4 kV				
Discharge impedance	330 Ω/ 150 pF				
Date	2010. 04. 01				
Testing voltage	AC 24 V				
Number of discharge	20 (10 with positive and 10 with negative)				
Interval between discharges	: ≥ 1 s				
Temperature(°C)	23 °C	Humidity (% R.H.)	29 % R.H.	Pressure (kPa)	100.6 kPa
Remarks	Complied - A: There was no change of operation status during above testing.				

6.2.1 Measurement procedure

A ground reference plane was located on the floor, and connected to earth via a low Impedance connection. The return cable of the ESD generator was connected to the reference plane. In case of floor standing equipment, EUT was placed on the reference plane on 0.1 m of insulating Support. In case of table top equipment, EUT was placed on a wooden table 0.8 m above the reference grounded floor. A horizontal coupling plane (HCP) was placed on the table, and Connected to the reference plane via a 470 kΩ resistor located in each end (0.5 mm insulating support between EUT and HCP). In both cases a vertical coupling plane(VCP) OF 0.5 X 0.5 m was located 0.1 m from the EUT's sides. The VCP was connected to the reference plane in the same matter as the HCP.

6.2.2 Used equipments

Equipment	Model No.	Serial No.	Makers	Next Cal. Date	Used
ESD Tester	NSG 437	182	TESEQ	10.05.14	<input checked="" type="checkbox"/>
HCP	-	-	-	-	<input checked="" type="checkbox"/>
VCP	-	-	-	-	<input checked="" type="checkbox"/>

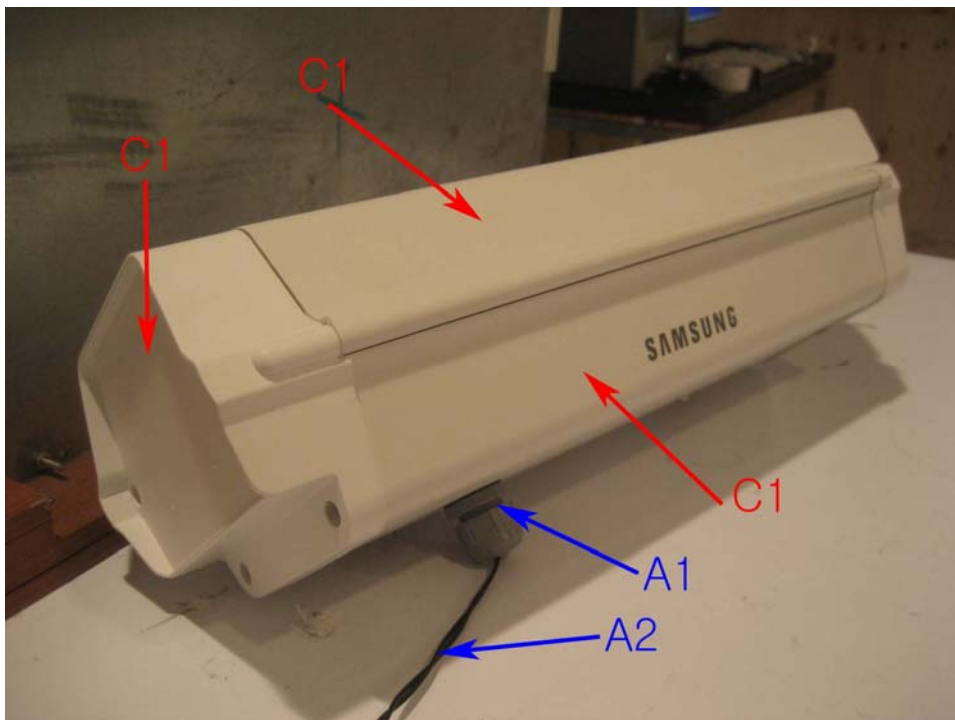
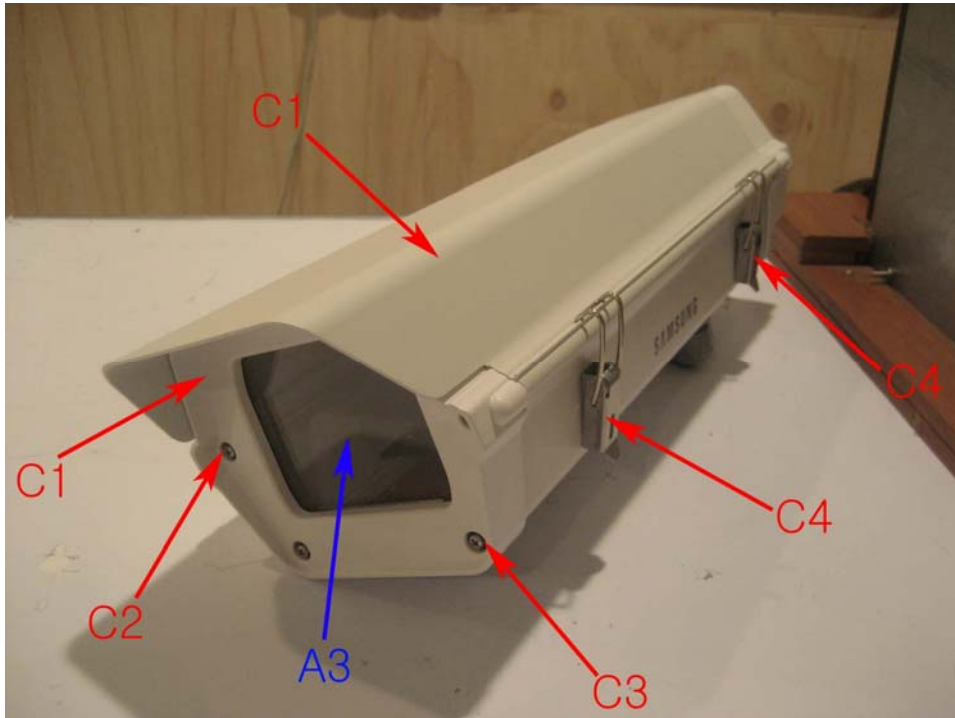
6.2.3 Photographs of test setup



6.2.4 Measurement result

Electrostatic Discharge (Test Point)

Air discharge	→
Contact discharge	→



Contact discharge

Location(EUT)		Applied level (±)	Result (criterion)
C1	Enclosure	± 2, 4 kV	A
C2	Screw#1	± 2, 4 kV	A
C3	Screw#2	± 2, 4 kV	A
C4	Lock	± 2, 4 kV	A
	HCP (All 4 sides)	± 2, 4 kV	A
	VCP (All 4 sides)	± 2, 4 kV	A

Air discharge

Location(EUT)		Applied level (±)	Result (criterion)
A1	Cable Hole	± 2, 4, 8 kV	A
A2	Cable	± 2, 4, 8 kV	A
A3	Lens	± 2, 4, 8 kV	A

6.3 Electric Fast Transient/BURST

Test specification	EN 61000-4-4:2004, Criteria : B				
Coupling	AC main				
Test level	AC Power: ± 1 kV Peak				
Repetition frequency	5 kHz, Tr/Th = 5 / 50 ns				
Coupling time	60 s				
Testing voltage	AC 24 V				
Date	2010. 04. 02				
Temperature(°C)	22 °C	Humidity (% R.H.)	28 % R.H.	Pressure(kPa)	100.6 kPa
Remarks	Complied - A: There was no change of operation status during above testing.				

6.3.1 Measurement procedure

A ground reference plane was located on the floor. EFT generator was connected to reference ground plane via low impedance connection. For floor standing equipment, EUT was placed on a 0.8 m wooden table. For tabletop equipment, EUT was placed on a 0.1 m above the ground reference plane. Test generator and coupling/decoupling network was placed on, and bounded to, the ground reference plane.

When using the coupling clamp, the minimum distance between the coupling plates and all other conductive surfaces, except the ground reference plane beneath the coupling clamp, Shall be 0.5 m.

6.3.2 Used equipments

Equipment	Model No.	Serial No.	Makers	Next Cal. date	Used
Generator	UCS 500 M6	V0545100858	EM TEST	11.02.02	<input checked="" type="checkbox"/>
Capacitive Coupling Clamp	-	-	EM TEST	-	<input type="checkbox"/>

6.3.3 Photographs of test setup



6.3.4 Measurement result

EFT coupling point	(+)	(-)	Result (Criterion)
Live +Neutral	+ 0.5 kV	- 0.5 kV	A

6.4 Conducted Immunity

Test specification	EN 61000-4-6:1996+A1:2001, Criteria : A				
Tested frequency	150 kHz ~ 230 MHz log 1 % step				
Test level & Modulation	3 V, 80 % Amplitude Modulation (1 kHz)				
Coupling method	AC main : M2				
Testing voltage	AC 24 V				
Date	2010. 04. 02				
Temperature(°C)	22 °C	Humidity (% R.H)	28 % R.H	Pressure(kPa)	100.6 kPa
Remarks	Complied - A: There was no change of operation status during above testing.				

6.4.1 Measurement procedure

A ground reference plane was located on the floor.

The test was performed on a ground reference plane on a 0.1 m wooden table.

This test were performed using CDN for mains, clamp for signal and injection probe.

The frequency range was swept from 150 kHz to 230 MHz. This frequency range was Modulated with 1 kHz sine wave at 80 %.

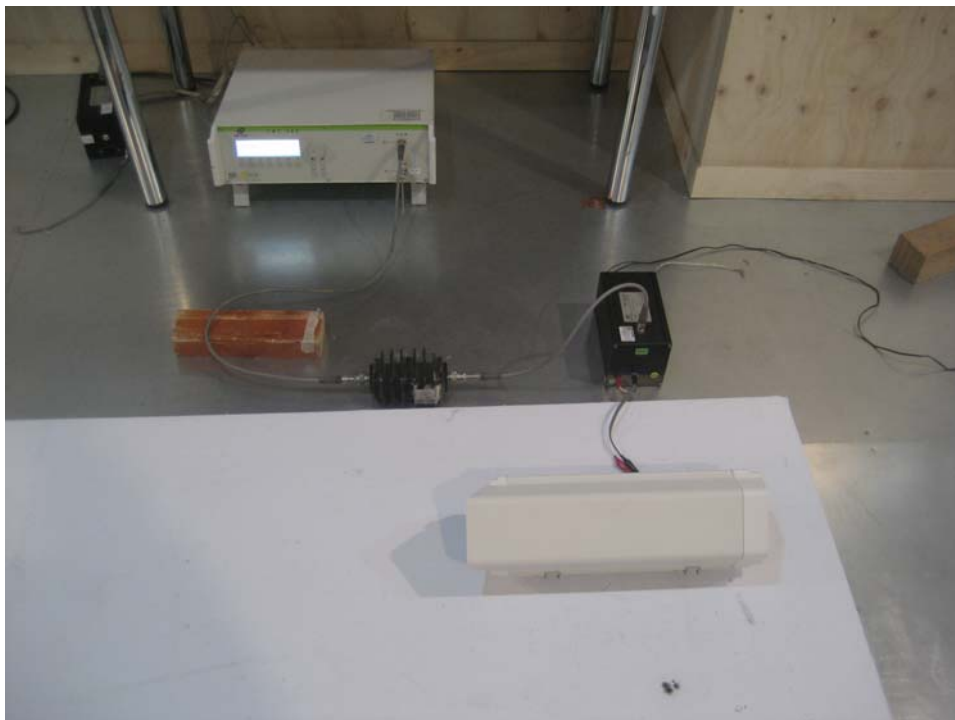
The signal generators provided the modulated frequency at a 1 % step size.

The power and all network cable, I/O cables longer than 3 m length were tested.

6.4.2 Used equipments

Equipment	Model no.	Serial no.	Makers	Next Cal. date	Used
CS generator	CWS 500 C S1	V0635101750	EM TEST	10.10.16	<input checked="" type="checkbox"/>
CDN	CDN M2/M3	0906-12	EM TEST	10.10.16	<input checked="" type="checkbox"/>
CDN	CDN M3-32A	0506-29	EM TEST	11.02.10	<input checked="" type="checkbox"/>
Attenuator	73-6-34	MU918	MCE/WEINSCHEL	11.02.09	<input checked="" type="checkbox"/>
EM Clamp	KEMZ 801	17643	Schaffner	10.04.08	<input type="checkbox"/>
Current probe	MD720	W1345167/M6/ 0068	Schaffner	-	<input type="checkbox"/>

6.4.3 Photographs of test setup



6.4.4 Measurement result

Coupling point	Coupling method	Result (Criterion)
Power	CDN (M2)	A

7. E.U.T. photographs

Front View



Rear View



Inside



Main Board

