



Declaration of Conformity



Type of equipment: CCTV CAMERA
Brand Name /Trade Mark: SAMSUNG
Type designation /model: SCD-1020RP
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 55022:2006+A1:2007	Limits and methods of measurement of radio disturbance characteristics of information technology equipment
EN 50130-4:1995 +A1:1998 +A2:2003	Product family standard: Immunity requirements for components of fire, intruder and social alarm systems
EN 61000-4-2:2009	Electrostatic discharge immunity test
EN 61000-4-3:2006	Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4:2004	Electrical fast transient/burst immunity test
EN 61000-4-5:2006	Surge immunity test
EN 61000-4-6:2007	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
/ September 08, 2011

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

Cheol Kyo Kim
SAMSUNG TECHWIN Co.,LTD

EMC TEST REPORT

Test report No: EMC-CE-2716
Type of Equipment: CCTV CAMERA
Model Name: SCD-1020RP
Applicant: Samsung Techwin Co., Ltd.
#42 Seongju-Dong, Changwon-Shi,
Kyungsangnam-Do, Korea
Manufacturer#1: Samsung Techwin Co., Ltd.
#42 Seongju-Dong, Changwon-Shi,
Kyungsangnam-Do, Korea
Manufacturer#2: TIANJIN SAMSUNG TECHWIN
OPTO-ELECTRONIC CO., LTD
No.11 Weiliu Road. Micro-Electronic Industrial
Park Jingang Road Tianjin 300385, China
Test standards: EN 55022:2006+A1:2007, Class A
EN 50130-4:1995+A1:1998+A2:2003
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: 2011. 08. 23

Date of testing: 2011. 08. 26 ~ 08. 31

Issued date: 2011. 09. 08

Tested by:

SUNG, KI-MUN

Approved by:

YEOM, HAN-SEOK

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1. Applicant information

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Manufacturer#2: TIANJIN SAMSUNG TECHWIN OPTO-ELECTRONIC CO., LTD
Address: No.11 Weiliu Road, Micro-Electronic Industrial Park
Jingang Road Tianjin 300385, China

2. Laboratory information

Address

EMC compliance Ltd.

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Telephone Number: 82 31 336 9919

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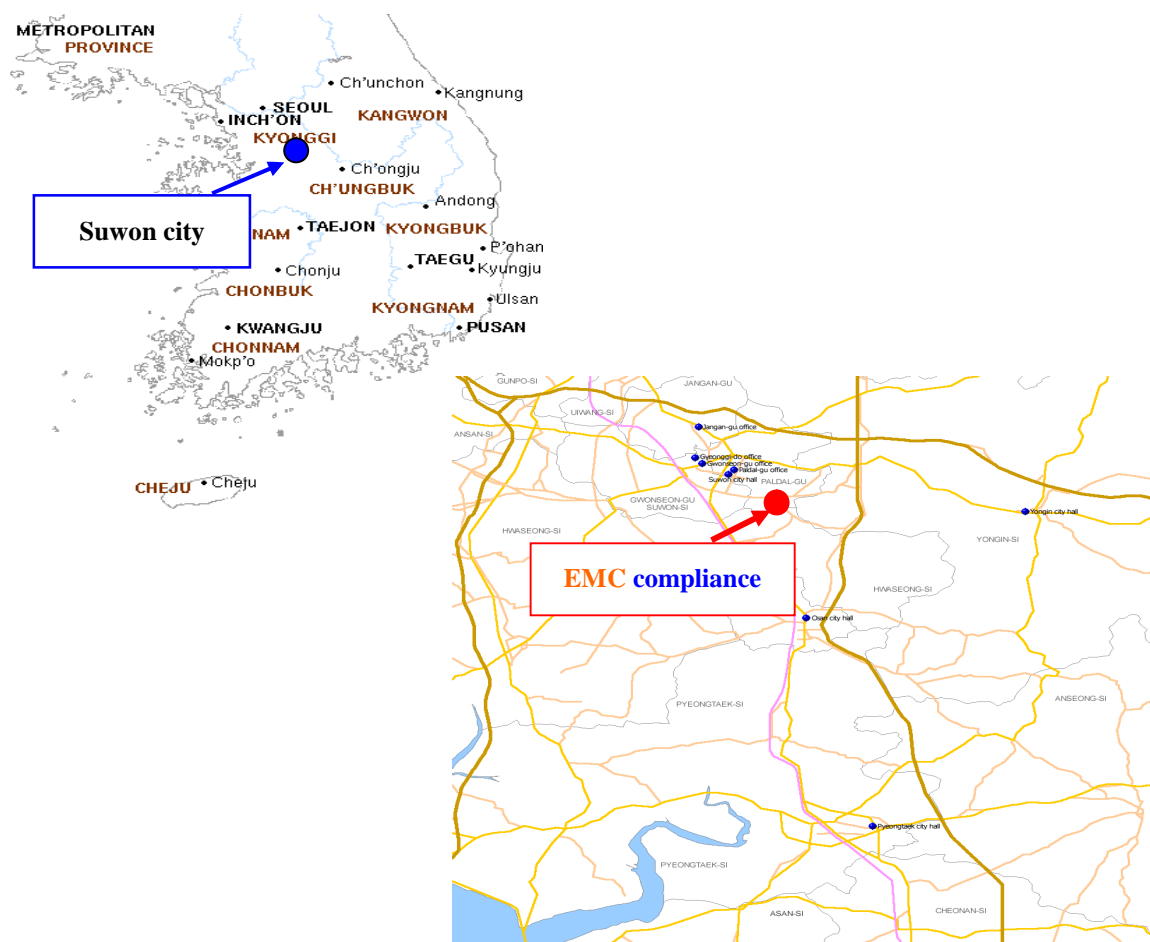
FCC CAB.: KR0040

VCCI Registration No.: R-3327, G-198, C-3706, T-1849

Industry Canada Registration No.: 8035A

KOLAS NO.: 231

SITE MAP



3. Test system configuration

3.1 Operation environment

	Temperature	Humidity	Pressure
Chamber(10 m)	: 23 °C	54 % R.H.	-
Shielded room(ESD)	: 25 °C	47 % R.H.	100.0 kPa

Test site

These testing items were performed following locations;

Shielded Room : ESD, EFT/Burst, Surge, CS

Chamber (10 m) : Radiated Emission

Fully anechoic chamber (3 m) : RS

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.

Radiated Emission measurement : ($k = 2$, 95 %)

30 MHz ~ 300 MHz: 3 m: + 4.29 [dB], - 4.31 [dB]

10 m: + 4.28 [dB], - 4.30 [dB]

300 MHz ~ 1 000 MHz: 3 m: + 4.57 [dB], - 4.57 [dB]

10 m: + 4.42 [dB], - 4.44 [dB]

Radio Frequency Electromagnetic Fields : ($k = 2$, 95 %)

± 1.82 [dB]

4. Description of E.U.T.

4.1 General information

Video	SCD-1020R(N)	SCD-1020RP
Imaging Device	1/4" CMOS	
Total Pixels	680(H) x 512(V)	680(H) x 512(V)
Effective Pixels	720(H) x 480(V)	720(H) x 576(V)
Scanning System	2 : 1 Interlace	
Synchronization	Internal	
Frequency	H : 15.734KHz / V : 59.94Hz	H : 15.625KHz / V : 50Hz
Horizontal Resolution	520 TV Lines	
Min. Illumination	0Lux (IR LED on)	
S / N Ratio	46dB (AGC off, Weight on)	
Video Output	CVBS : 1.0 Vp-p / 75Ω composite	
Lens Type		
Focal Length (Zoom Ratio)	3.6mm	
Max. Aperture Ratio	2	
Angular Field of View	79°(H) x 58°(V) x 101°(D)	
Min. Object Distance	200mm	
Lens Type	Fixed	
Mount Type	Board Type	
Pan / Tilt		
Pan Range	0° ~ 352°	
Tilt Range	0° ~ 75°	
Operational		
On Screen Display	None	
Camera Title	None	
Day & Night	Auto	
Backlight Compensation	None	
Contrast Enhancement	None	
Digital Noise Reduction	Auto	
Digital Image Stabilization	None	
Motion Detection	None	
Privacy Masking	None	
Sens-up (Frame Integration)	None	
Gain Control	Auto	
White Balance	Auto (3,200K° ~ 6,500K°)	
Shutter Mode	Auto (Rolling Shutter)	
Digital Zoom	None	
Reverse	None	
Communication	None	
Protocol	None	
IR Distance	10m (IR LED 12 EA)	
Environmental		
Operating Temperature / Humidity	-10°C ~ 50°C / 20% ~ 80% RH	
Electrical		
Input Voltage	12V DC ±10%	
Power Consumption	2.2W	
Mechanical		
Color / Material	Ivory / Plastic (Dome Cover : Clear)	
Dimension (WxHxD)	Φ102 x H 71.7mm	
Weight	160g	

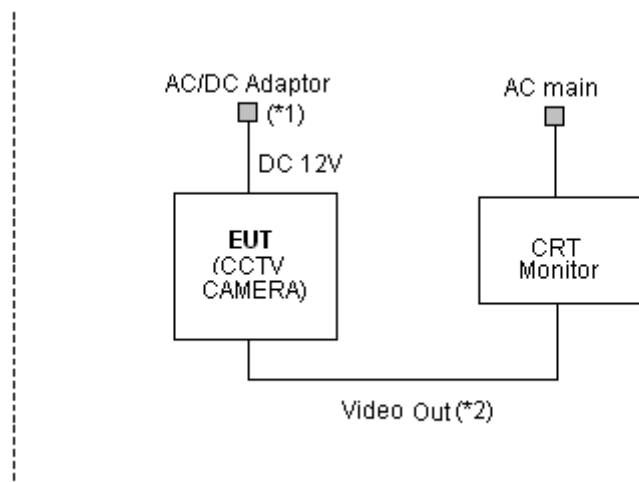
4.2 Product description

Type of product	CCTV CAMERA
Model name (Basic)	SCD-1020RP
Model name (Variant)	N/A
Difference	-
Trade name	-
Serial no	Engineering Sample
Testing voltage	DC 12 V
Product rating	DC 12 V
Internal clock frequency	27 MHz
Note	* AC/DC Adaptor was not provided by the manufacturer.

4.3 Auxiliary equipments

Type	Model / Part #	Serial number	Manufacturer
CRT Monitor	GCM-1014SA-D	26090901003	Honeywell
AC/DC Adaptor (DC 12V)	DAD12050DKA	-	Dream Electronic

4.4 Test configuration



Note	Start		End		Cable		
	Name	I/O port	Name	I/O port	Length (m)	Spec.	Cable
1	EUT (CCTV CAMERA)	Power	AC/DC Adaptor	Power	1.6	Non-Shield	-
2		Video Out	CRT Monitor	Video In	3.0	Shield	-

4.5 Operating conditions

The EUT was configured as normal intended use.

Test mode	Normal operation
1	Video Monitoring Test 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	EN 55022:2006+A1:2007, Class A	N/A
Radiated emission DC 12 V	EN 55022:2006+A1:2007, Class A	Complied
Harmonics current	EN 61000-3-2:2006+A2:2009	N/A
Voltage fluctuations and flickers	EN 61000-3-3:2008	N/A

5.3 Summary of immunity test results

Items	Application	Test method	Test result
Electrostatic discharge	Enclosure	EN 61000-4-2:2009	Complied
Radiated RF immunity	Enclosure	EN 61000-4-3:2006	Complied
Electric Fast Transient/BURST	DC 12 V Signal	EN 61000-4-4:2004	Complied
Surge	DC 12 V	EN 61000-4-5:2006	Complied
Conducted RF immunity	DC 12 V Signal	EN 61000-4-6:2007	Complied
Magnetic field immunity	Enclosure	EN 61000-4-8:2010	N/A
Voltage dip/interruption	DC 12 V	EN 61000-4-11:2004	N/A
Voltage variation	DC 12 V	EN 50130-4:1995+A1:1998+A2:2003	N/A

5.4 Performance criteria

The variety and the diversity of the apparatus within the scope of this document makes it difficult to define precise criteria for the evaluation of the immunity test results.

If as a result of the application of the tests defined in this standard, the apparatus becomes dangerous or unsafe then the apparatus shall be deemed to have failed the test. A functional description and a definition of performance by the manufacture and noted in the test report, based on the following criteria:

Electrostatic discharge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing which could be interpreted by associated equipment as a change,

Radiated electromagnetic fields

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing which could be interpreted by associated equipment as a change, and no such

Flickering of indicators occurs at a field strength of 3 V/m. For components of CCTV systems, where the picture is allowed at 10 V/m, providing.

- (a) there is no permanent damage or change to EUT (e.g. no corruption of memory or changes to programmable setting etc.)
- (b) at 3 V/m, any deterioration of the picture is so minor that the system could still be used; and
- (c) there is no observable deterioration of the picture at 1 V/m.

Fast transient burst / slow high energy voltage surge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as

Conducted RF immunity

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing

That there is no residual is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as

a change, and no such flickering of indicators oeuvres at $U = 130 \text{ dB}(\mu V)$.

For component of CCTV systems, where the status is monitored by observing the TV picture, then deterioration of the picture is allowed at $U = 140 \text{ dB}(\mu V)$, providing:

- (a) there is no permanent damage or change to the EUT (e.g. no corruption of memory or changes to programmable settings etc.):
- (b) at $U = 130 \text{ dB}(\mu V)$, any deterioration of the picture is so minor that the system could still be used; and
- (c) there in no observable deterioration of the picture at $U = 120 \text{ dB}(\mu V)$.

Voltage dip/interruption / Voltage variation

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the conditioning is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change. The EUT shall meet the acceptance criteria for the functional test, after the conditioning.

6. Test results

6.1 Radiated Emission

Test specification	EN 55022:2006+A1:2007 Sections 6, Class A		
Test mode	Video Monitoring Test mode.		
Date	2011. 08. 29		
Testing voltage	DC 12 V		
Test facility	10 m Chamber		
Temperature (°C)	23 °C	Humidity (% R.H.)	54 % R.H.
Remarks	Complied Minimum limit margin is 15.5 dB at 211.548 MHz.		

6.1.1 Limits of radiated emission measurement

Frequency [MHz]	Class A (dB(μ V/m)) @ 10 m	Class B (dB(μ V/m)) @ 10 m
30-230	40	30
230-1 000	47	37

6.1.2 Measurement procedure

The test was done at a 10 m chamber with a quasi-peak detector. EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. Cables were folded back and forth forming a bundle 0.3 m to 0.4 m long and were hanged at a 0.4 m height to the ground plane. Cables connected to EUT were fixed to cause maximum emission. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

6.1.3 Used equipments

Equipment	Model no.	Serial no.	Makers	Next cal. date	Used
Test Receiver	ESCI	100001	R&S	12.07.11	<input checked="" type="checkbox"/>
Bi-Log Antenna	VULB 9168	375	SCHWARZBECK	11.11.30	<input checked="" type="checkbox"/>
Amplifier	310N	284608	SONOMA INSTRUMENT	12.07.11	<input checked="" type="checkbox"/>
3 dB Attenuator	8491A	16861	HP	12.07.11	<input checked="" type="checkbox"/>
Antenna Mast	AM4.0	079/3440509	MATURO	-	<input checked="" type="checkbox"/>
Turn Table	CO2000-SOFT	-	MATURO	-	<input checked="" type="checkbox"/>

6.1.4 Sample calculation

The field strength is calculated adding the antenna Factor, cable loss and, Antenna pad adding, subtracting the amplifier gain from the measured reading.

The sample calculation is as follow:

$$\text{Result} = \text{M.R} + \text{C.F}(\text{A.F} + \text{C.L} + 3 \text{ dB Att} - \text{A.G})$$

M.R = Meter Reading

C.F = Correction Factor

A.F = Antenna Factor

C.L = Cable Loss

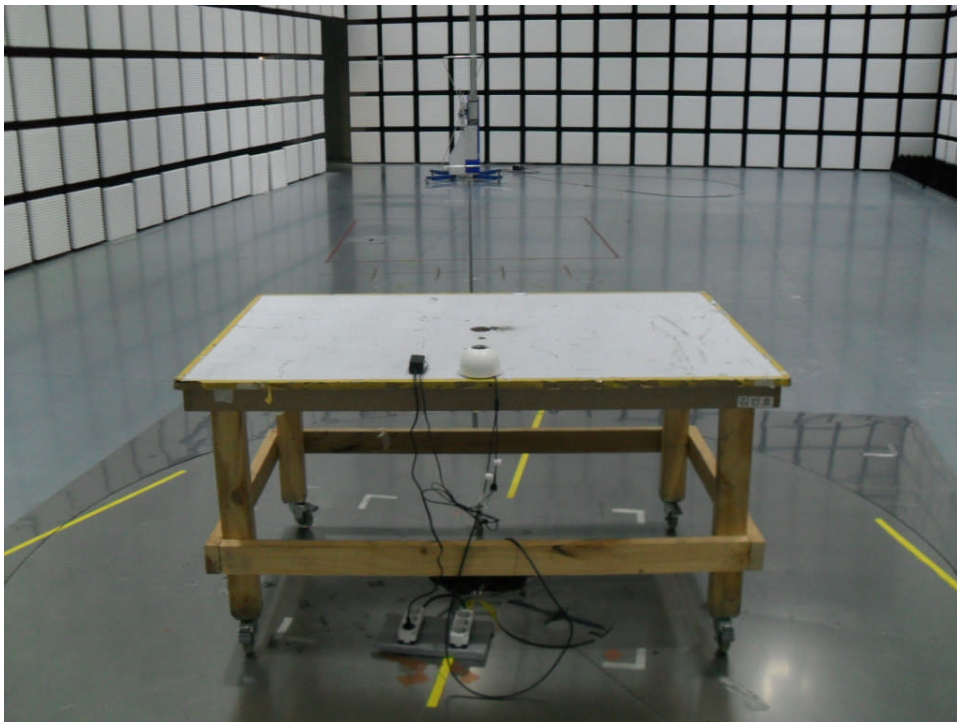
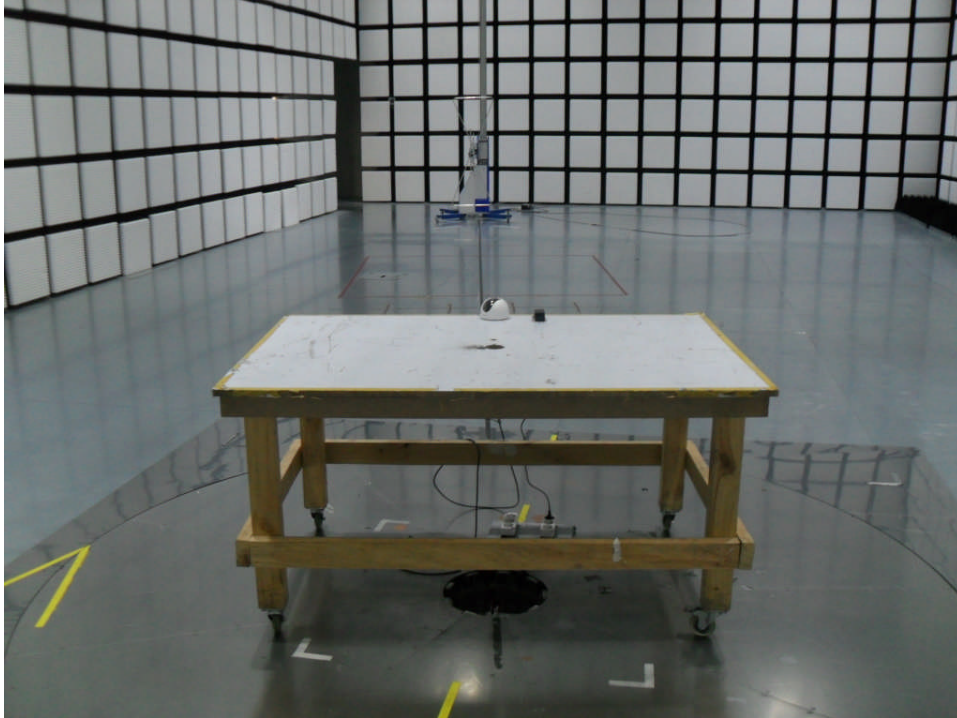
A.G= Amplifier Gain

3 dB Att = 3 dB Attenuator

If M.R is 30 dB, A.F 12 dB, C.L 5 dB, 3 dB, A.G 35 dB

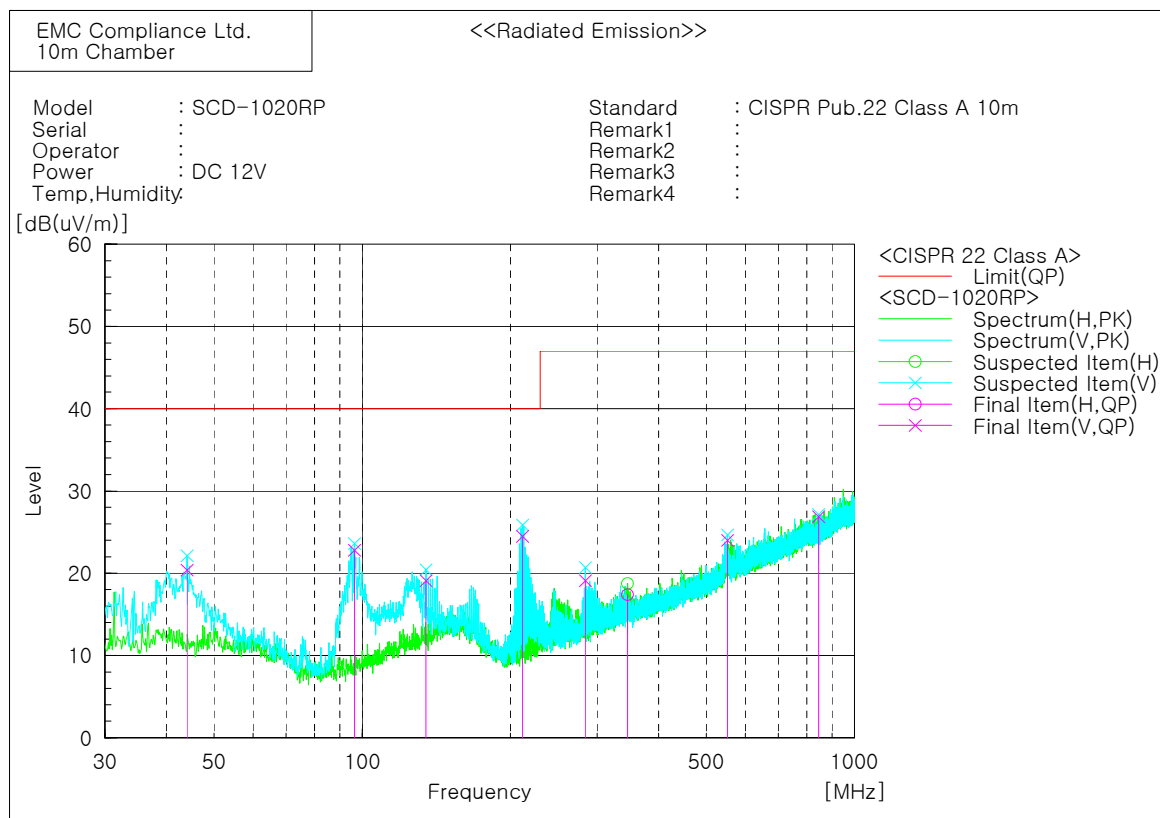
The result is $30 + 12 + 5 + 3 - 35 = 15 \text{ dB}(\mu\text{V/m})$

6.1.5 Photographs of test setup



6.1.6 Radiated emission measurement result

* Graph and Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	44.050	V	34.8	-14.4	20.4	40.0	19.6	100.0	131.9
2	96.490	V	40.2	-17.4	22.8	40.0	17.2	298.0	115.2
3	134.765	V	32.8	-13.7	19.1	40.0	20.9	298.0	262.8
4	211.548	V	40.2	-15.7	24.5	40.0	15.5	100.0	238.3
5	283.879	V	31.5	-12.4	19.1	47.0	27.9	100.0	238.3
6	345.846	H	27.8	-10.4	17.4	47.0	29.6	302.0	77.1
7	551.985	V	29.3	-5.3	24.0	47.0	23.0	100.0	176.0
8	845.085	V	26.8	0.1	26.9	47.0	20.1	298.0	30.7

6.2 Electrostatic Discharge

Test specification	EN 61000-4-2:2009				
Test level	Contact: ± 2 kV, ± 4 kV, ± 6 kV Air: ± 2 kV, ± 4 kV, ± 8 kV VCP: ± 2 kV, ± 4 kV, ± 6 kV				
Discharge impedance	330 Ω / 150 pF				
Date	2011. 08. 26				
Testing voltage	DC 12 V				
Number of discharge (Each polarity)	10				
Interval between discharges	1 s				
Temperature(°C)	25 °C	Humidity (% R.H.)	47 % R.H.	Pressure (kPa)	100.0 kPa
Remarks	Complied - There was no change of operation status during above testing.				

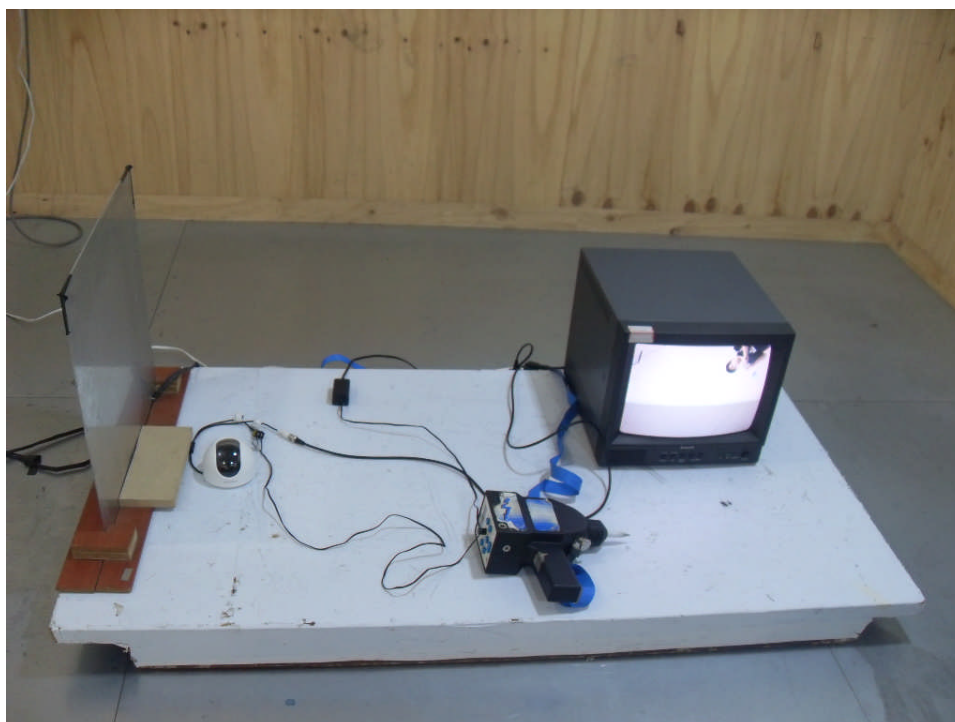
6.2.1 Measurement procedure

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 k Ω 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	PESD 1600	H011 309	HAEFELY	12.07.18	<input checked="" type="checkbox"/>
VCP	-	-	-	-	<input checked="" type="checkbox"/>

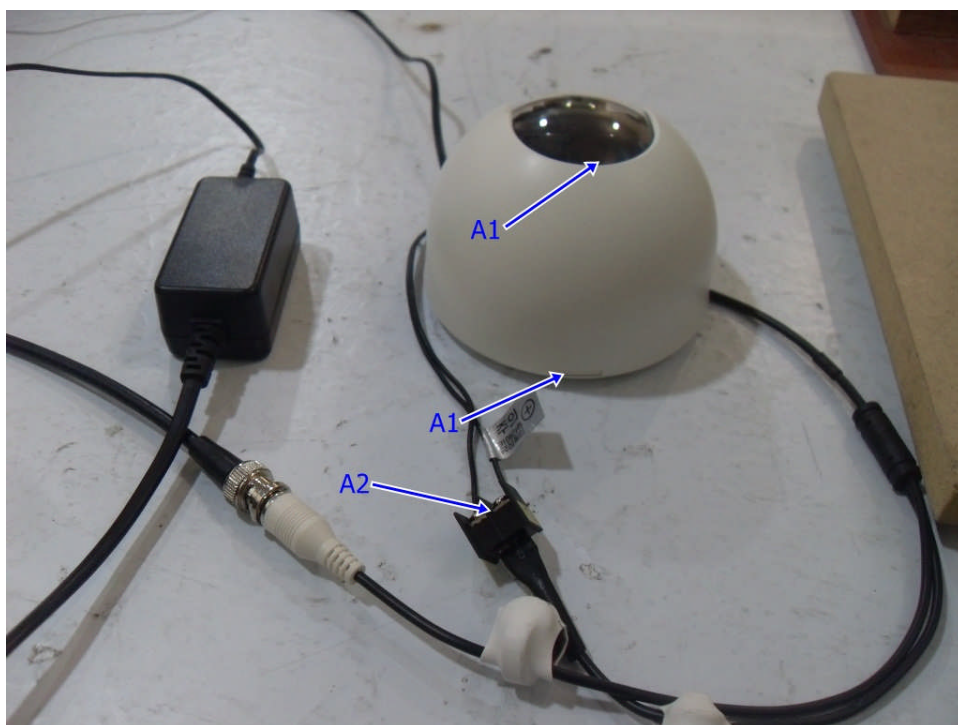
6.2.3 Photographs of test setup



6.2.4 Measurement result

Electrostatic Discharge (Test Point)

Air discharge	→
Contact discharge	→



Contact discharge

Location(EUT)		Applied level (\pm)	Result
C1	Video Out	± 2 kV, ± 4 kV, ± 6 kV	Complied
	VCP (All 4 sides)	± 2 kV, ± 4 kV, ± 6 kV	Complied

Air discharge

Location(EUT)		Applied level (\pm)	Result
A1	Case	± 2 kV, ± 4 kV, ± 8 kV	Complied
A2	Power Port	± 2 kV, ± 4 kV, ± 8 kV	Complied

6.3 Radio Frequency Electromagnetic Fields

Test specification	EN 61000-4-3:2006				
Tested frequency	80 MHz ~ 1 GHz, 1 GHz ~ 2 GHz log 1 % step				
Test level & Modulation	1, 3, 10 V/m, 80 % Amplitude Modulation (1 kHz) 1, 3, 10 V/m, Pulse Modulation (1 Hz (0.5 s ON: 0.5 s OFF))				
Distance	3 m from EUT to tip of antenna				
Dwell time	3 s				
Step size	log 1 % step				
Testing voltage	DC 12 V				
Date	2011. 08. 30				
Temperature(°C)	27 °C	Humidity (% R.H.)	44 % R.H.	Pressure (kPa)	100.2 kPa
Remarks	Complied - There was no change of operation status during above testing. (3 V/m(Horizontal, Vertical): 10 V/m(Vertical)) - During the test, EUT appeared rolling bar, after this test, EUT was operated normally. (10 V/m(Horizontal): 80 MHz ~ 86 MHz, 98 MHz ~ 106 MHz)				

6.3.1 Measurement procedure

The test was performed at 3 m full anechoic chamber.

For floor standing equipment, the EUT was standing on the floor.

For tabletop equipment, the EUT was located on a wooden table 0.8 above the floor.

The EUT was tested all sides, horizontal and vertical polarization.

6.3.2 Used equipments

Equipment	Model no.	Serial no.	Makers	Next Cal. date	Used
Power meter	PM2002	302852	AR	12.04.11	<input checked="" type="checkbox"/>
Power sensor	PH2000	303224	AR	12.04.11	<input checked="" type="checkbox"/>
Power sensor	PH2000	303222	AR	12.04.11	<input checked="" type="checkbox"/>
Directional coupler	DC6180	303976	AR	12.04.11	<input checked="" type="checkbox"/>
Directional coupler	DC7144M1	320279	AR	12.02.23	<input checked="" type="checkbox"/>
Signal generator	E4421B	GB40052295	AGILENT	11.10.25	<input checked="" type="checkbox"/>
Amplifier	150W1000M2	303843	AR	12.04.11	<input checked="" type="checkbox"/>
Amplifier	60S1G3M2	320444	AR	12.04.11	<input checked="" type="checkbox"/>
Broadband Ant.	LPDA-0803	130269	ETS	-	<input checked="" type="checkbox"/>
Field monitor	SI-300	-	TDK	-	<input checked="" type="checkbox"/>
Antenna master	-	-	ETS	-	<input checked="" type="checkbox"/>

6.3.3 Photographs of test setup



6.3.4 Measurement result

Location(EUT)	Antenna polarization	Result
Front side	Horizontal	Complied
	Vertical	Complied
Rear side	Horizontal	Complied
	Vertical	Complied
Left side	Horizontal	Complied
	Vertical	Complied
Right side	Horizontal	Complied
	Vertical	Complied

6.4 Electric Fast Transient/BURST

Test specification	EN 61000-4-4:2004				
Coupling	DC 12 V Signal: Clamp				
Test level	DC 12 V : ± 1 kV Signal: ± 1 kV				
Repetition frequency	5 kHz, Tr/Th = 5 / 50 ns				
Coupling time	60 s				
Testing voltage	DC 12 V				
Date	2011. 08. 31				
Temperature(°C)	27°C	Humidity (% R.H.)	46 % R.H.	Pressure (kPa)	100.3 kPa
Remarks	Complied - There was no change of operation status during above testing.				

6.4.1 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 0.1 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.

6.4.2 Used equipments

Equipment	Model No.	Serial No.	Makers	Next Cal. date	Used
Generator	UCS 500 M6	V0545100858	EM TEST	12.02.09	<input checked="" type="checkbox"/>
Capacitive Coupling Clamp	-	-	EM TEST	-	<input checked="" type="checkbox"/>

6.4.3 Photographs of test setup



6.4.4 Measurement result

* DC Line

EFT coupling point	(+)	(-)	Result
DC 12 V	+ 1 kV	- 1 kV	Complied

* Signal

EFT coupling point	(+)	(-)	Result
Video Out	+ 1 kV	- 1 kV	Complied

6.5 Surge

Test specification	EN 61000-4-5:2006				
Coupling	DC 12 V : CDN				
Test level	DC 12 V : ± 0.5 kV, ± 1 kV				
Surge pulse shape	Tr/Th = 1.2 / 50 μ s				
Coupling Impedance	40 Ω				
Number of surge / Coupling time	5 / 1 min				
Testing voltage	DC 12 V				
Date	2011. 08. 31				
Temperature(°C)	27 °C	Humidity (% R.H)	46 % R.H	Pressure(kPa)	100.3 kPa
Remarks	Complied - There was no change of operation status during above testing.				

6.5.1 Measurement procedure

A ground reference plane was located on the floor. SURGE generator was connected to reference ground plane via low impedance connection. For floor standing equipment & table top equipment, EUT was placed on a wooden table.

6.5.2 Used equipments

Equipment	Model No.	Serial No.	Makers	Next Cal. Date	Used
Generator	UCS 500 M6	V0545100858	EM TEST	12.02.09	<input checked="" type="checkbox"/>
CDN	CNV 508	1001-10	EM TEST	-	<input checked="" type="checkbox"/>

6.5.3 Photographs of test setup



6.5.4 Measurement result

* DC Line

Coupling point	(+)	(-)	Result
DC 12 V	+ 0.5 kV, + 1 kV	- 0.5 kV, - 1 kV	Complied

6.6 Conducted Immunity

Test specification	EN 61000-4-6:2007				
Tested frequency	0.15 MHz ~ 100 MHz log 1 % step				
Test level & Modulation	1, 3, 10 V, 80 % Amplitude Modulation (1 kHz) 1, 3, 10 V, Pulse Modulation (1 Hz (0.5 s ON: 0.5 s OFF))				
Coupling method	DC 12 V: CDN(M2) Signal: CDN(S1/75)				
Testing voltage	DC 12 V				
Date	2011. 08. 31				
Temperature(°C)	26 °C	Humidity (% R.H)	46 % R.H	Pressure(kPa)	100.3 kPa
Remarks	<p>Complied DC 12 V</p> <p>- There was no change of operation status during above testing.(1 V)</p> <p>- During the test, EUT appeared rolling bar, after this test, EUT was operated normally. (10 V: 0.2 MHz ~ 4.3 MHz, 3 V: 0.9 MHz ~ 4.3 MHz)</p> <p>Signal</p> <p>- There was no change of operation status during above testing.(1 V)</p> <p>- During the test, EUT appeared rolling bar, after this test, EUT was operated normally. (10 V: 0.2 MHz ~ 9.5 MHz, 3 V: 0.2 MHz ~ 5.2 MHz)</p>				

6.6.1 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 0.15 MHz to 100 MHz. This frequency range was Modulated with 1 kHz sine wave at 80 %.

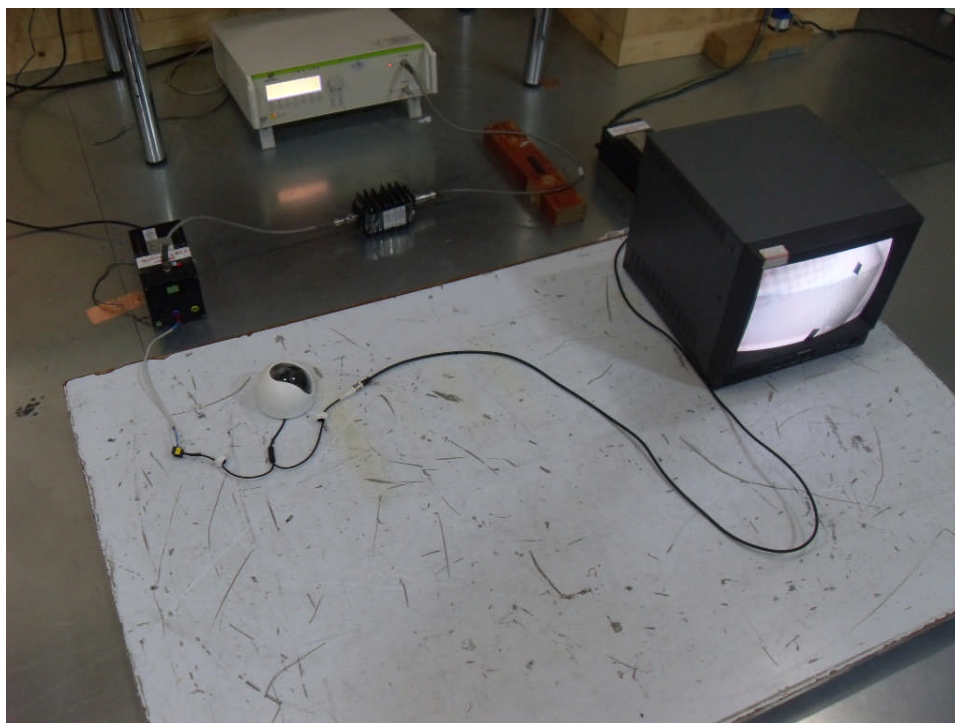
The signal generators provided the modulated frequency at a 1 % step size.

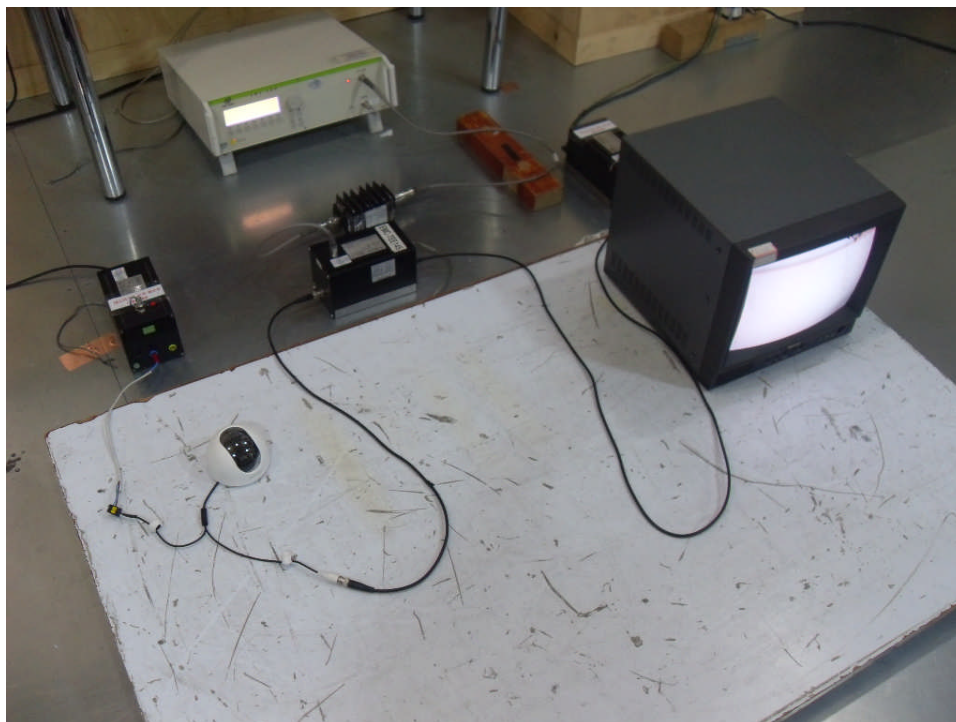
The power and all network cable, I/O cables longer than 3 m length were tested.

6.6.2 Used equipments

Equipment	Model no.	Serial no.	Makers	Next Cal. date	Used
CS generator	CWS 500 C S1	V0635101750	EM TEST	11.10.13	<input checked="" type="checkbox"/>
CDN	CDN M2/M3	0906-12	EM TEST	11.10.13	<input checked="" type="checkbox"/>
CDN	CDN M3-32A	0506-29	EM TEST	12.02.11	<input checked="" type="checkbox"/>
CDN	CDN S1/75	0410-28	EM TEST	12.05.17	<input checked="" type="checkbox"/>
Attenuator	73-6-34	MU918	MCE/WEINSC HEL	11.10.13	<input checked="" type="checkbox"/>
EM Clamp	KEMZ 801	17643	Schaffner	12.04.25	<input type="checkbox"/>
Current probe	MD720	W1345167/M6/0068	Schaffner	-	<input type="checkbox"/>

6.6.3 Photographs of test setup





6.6.4 Measurement result

* DC Line

Coupling point	Coupling method	Result
DC 12 V	CDN	Complied

* Signal

Coupling point	Coupling method	Result
Video Out	CDN(S1/75)	Complied

7. E.U.T. photographs

Front View



Rear View



Left View



Right View



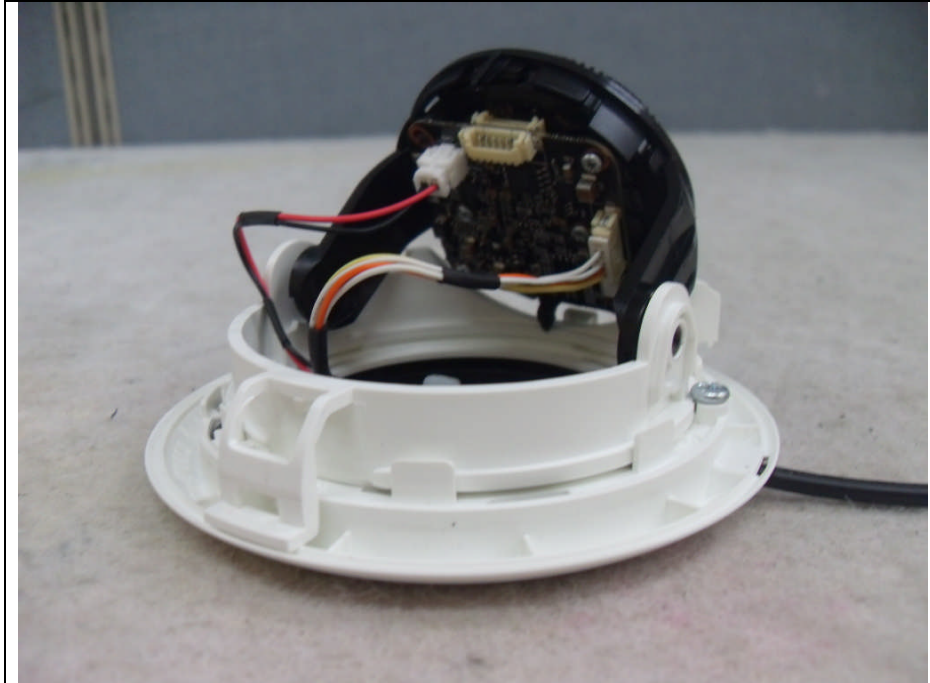
Top View



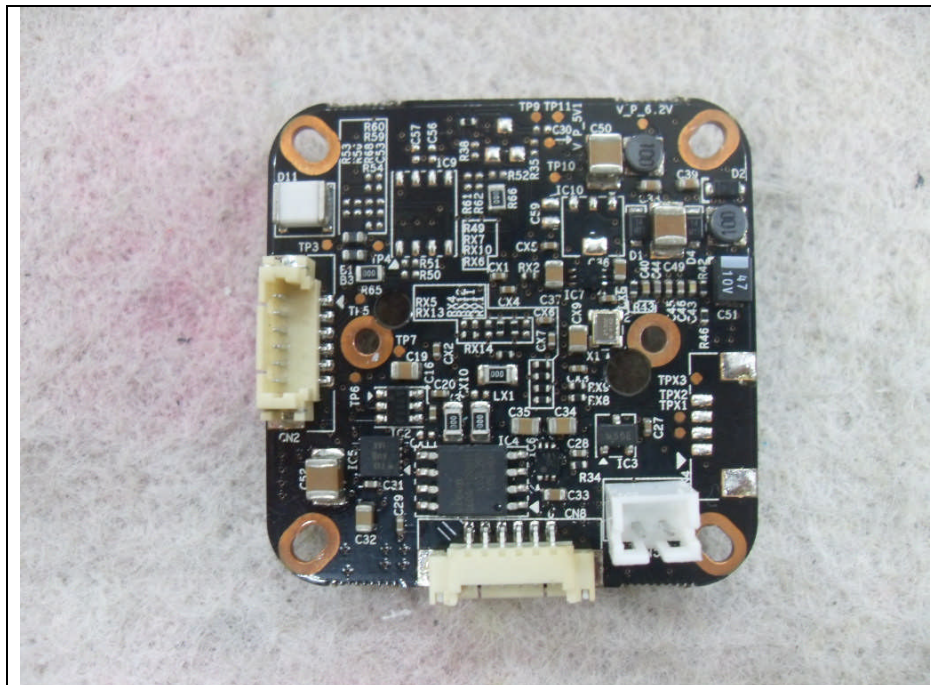
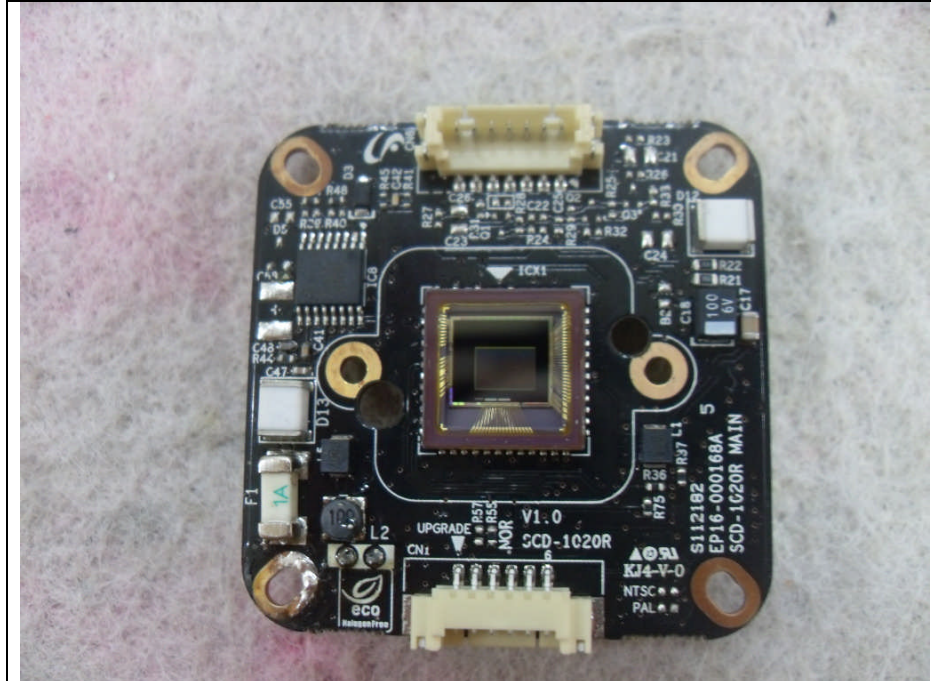
Bottom View



Inside



CCD Board



LED Board

