

EU Declaration of Conformity

SAMSUNG



We hereby declare that the product

Type of equipment : CCTV CAMERA
Brand Name / Trade Mark : SAMSUNG
Model number : HCP-6320P
Variant Model : -

satisfies all the technical regulations applicable to the product within the scope of Council Directives 2014/30/EU

EN 55022:2010 : Limits and methods of measurement of radio disturbance characteristics of information technology equipment
EN 50581:2012 : Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
EN 50130-4:2011+A1:2014 : 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+A2:2010 : Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4:2012 : Electrical fast transient/burst immunity test
EN 61000-4-5:2014 : Surge immunity test
EN 61000-4-6:2014 : Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-11:2004 : Voltage dips, short interruptions and voltage variations immunity tests

All essential testing suites have been carried out.

Manufacturer : Tianjin Samsung Techwin Opto-Electronic Co., Ltd.
Manufacturer address : No. 11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Telephone / Fax : 82-02-729-2900 / 82-02-729-2904 (www.hanwhatechwin.com)
Applicant : Hanwha Techwin Co., Ltd.
Applicant address : 1204, Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea

This declaration is issued under the sole responsibility of the manufacturer and his authorised representative.

Authorized signatory

Name / Title : Jei Soon, Kang / Principal Research Engineer
Date of issue : Oct. 24, 2016



EMC TEST REPORT For CE

Test Report No. : KES-E1-16T0532
Date of Issue : Oct, 24, 2016
Product name : CCTV CAMERA
Model/Type No. : HCP-6320P
Variant Model : -
Applicant : Hanwha Techwin Co., Ltd.
Applicant Address : 1204, Changwon-daero, Seongsan-gu, Changwon-si,
Gyeongsangnam-do, Korea
Manufacturer : Tianjin Samsung Techwin Opto-Electronic Co., Ltd.
Manufacturer Address : No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA,
Tianjin, 300385, People's Republic of China
Date of Receipt : Sep, 12, 2016
Test date : Oct, 10, 2016 – Oct. 14, 2016
Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

Jin Bae, Lee
EMC Test Engineer

Reviewed by

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Test report No.:
KES-E1-16T0532
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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Oct. 24, 2016	KES-E1-16T0532	Issued

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1.0 General Product Description

Main Specifications of E.U.T are:

Model		HCP-6320	HCP-6320H
Video	Imaging Device	1/2.8" 2.38M CMOS	
	Total Pixels	1952(H) x 1116(V), 2.18M	
	Effective Pixels	1944(H) x 1104(V), 2.14M	
	Scanning System	Progressive	
	Min. Illumination	Color : 0.3 Lux (1/30sec, F1.6, 50IRE) , 0.005 Lux(2sec, F1.6, 50IRE) B/W : 0.03 Lux (1/30sec, F1.6, 50IRE), 0.0005 Lux(2sec, F1.6, 50IRE) Color : 0.2 Lux (1/30sec, F1.6, 30IRE), 0.003 Lux(2sec, F1.6, 30IRE) B/W : 0.01 Lux (1/30sec, F1.6, 30IRE), 0.0001 Lux(2sec, F1.6, 30IRE)	
	S / N Ratio	50dB	
	Video Out	BNC (AHD)	
Lens	Focal Length (Zoom Ratio)	4.44 ~ 142.6mm(Optical 32X)	
	Max. Aperture Ratio	F1.6 (Wide) / F4.4 (Tele)	
	Angular Field of View	H : 62.8°(Wide) ~ 2.23°(Tele) / V : 36.80°(Wide) ~ 1.26°(Tele)	
	Min. Object Distance	Wide 1.5m ,Tele 2m	Wide 1.4m ,Tele 1.9m
	Focus Control	Auto / Manual / One Push	
	Lens Type	DC Auto Iris	
	Mount Type	Board-in type	
Pan/Tilt/Rotate	Pan Range	360° Endless	
	Pan Speed	Preset : 700°/sec, Manual : 0.024°/sec ~200°/sec	
	Tilt Range	210°(-15° ~195°)	
	Tilt Speed	Preset : 700°/sec, Manual : 0.024°/sec ~200°/sec	
	Preset	255ea	
	Preset Accuracy	±0.2°	
	Azimuth	Yes (E/W/S/N/NE/SE/NW/SW OSD)	
Electrical	Input Voltage / Current	AC24V±10%	
	Power Consumption	20W	24W Max(Heater Off), 65W Max(Heater On, AC24V)
Mechanical	Color / Material	Ivory / Plastic	Ivory / Plastic+Metal
	Dimension (WxHxD)	H218 x Ø152 mm	H293.6 x Ø223.4 mm
	Weight	1.7Kg	3.3Kg



1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage ☐ 220 Vac ☐ 230 Vac ☐ 240 Vac ☒ 24 Vac ☐ PoE
Frequency ☒ 50 Hz ☐ 60 Hz ☐ Hz

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
CCTV CAMERA	HCP-6320P	-	Tianjin Samsung Techwin Opto-Electronic Co.,Ltd	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
MONITOR	SMT-2233	ZC6U67VH500194D	Weihai Daewoo Electronics Co., Ltd.	-
DVR	-	-	-	-
AC-DC ADAPTOR	ADP-4812	-	TIANJIN E&P ELECTRONICS Inc.	-
MOUSE	MSU0846	0910020101081E	MONEUAL	-

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
CCTV CAMERA (E.U.T)	BNC	DVR	BNC	3.0	S
DVR	HDMI	MONITOR	HDMI	1.6	S
	USB	MOUSE	USB	1.4	U

* Unshielded=U, Shielded=S

1.7 E.U.T Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

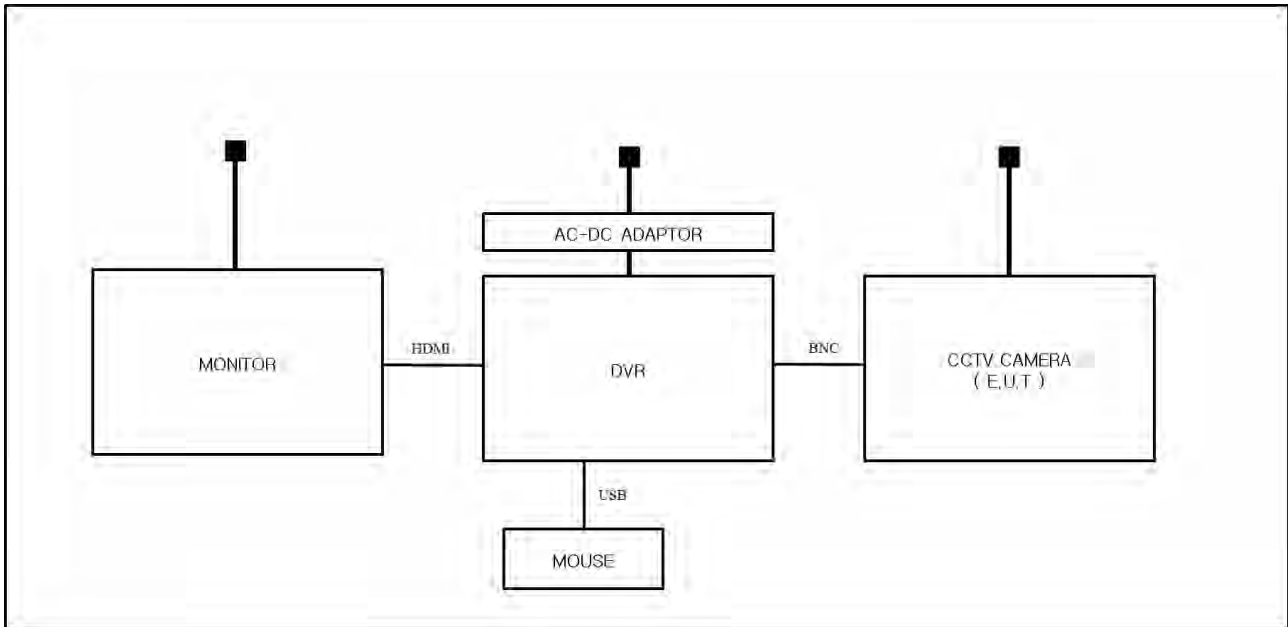
E.U.T Test operating S/W		
Name	Version	Manufacture Company
WebViewer	-	Hanwha Techwin Co., Ltd.

Normal operating
Monitoring

- Input power condition during the measurements was 24 v (ac).

1.8 Configuration

■ AC Main
□ DC Main









1.9 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

1.10 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

1.11 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	
JAPAN	VCCI	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	 R-4308, C-4798, T-2311, G-914
KOREA	MSIP	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
Canada	IC	3 & 10 meter Open Area Test Sites and one conducted site	 4769B-1
Europe	CE	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	
International	KOLAS	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ EMC – Directive 2014/30/EU

☐ EN 61000-6-3: 2011

☐ EN 61000-6-1: 2007

☐ EN 61000-6-4: 2007 +A1: 2011

☐ EN 61000-6-2: 2005

☐ EN 55011: 2007 +A1: 2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1: 2006 +A2: 2011

☐ EN 55014-2: 1997 +A2: 2008

☐ EN 55015: 2013

☐ EN 61547: 2009

☒ EN 55022: 2010

☒ Class A

☐ Class B

☐ EN 55024: 2010 +A1: 2015

☒ EN 50130-4: 2011 +A1: 2014

☐ EN 61000-3-2: 2014

☐ EN 61000-3-3: 2013

☐ EN 61326-1: 2013



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-
- | | | |
|--|----------------------------------|----------------------------------|
| <input type="checkbox"/> VCCI V-3 / 2015.04 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> AS/NZS CISPR22:2009 +A1:2010 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> 47 CFR Part 15, Subpart B | | |
| <input type="checkbox"/> CISPR 22: 2009 +A1: 2010 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2009 | | |
| <input type="checkbox"/> IC Regulation ICES-003 : 2016 | | |
| <input type="checkbox"/> CAN/CSA CISPR 22-10 | <input type="checkbox"/> Class A | <input type="checkbox"/> Class B |
| <input type="checkbox"/> ANSI C63.4-2014 | | |
|
<input type="checkbox"/> RE- Directive 2014/53/EU | | |
|
<input type="checkbox"/> EN 301 489-1 V1.9.2 | | |
| <input type="checkbox"/> Equipment for fixed use | | |
| <input type="checkbox"/> Equipment for vehicular use | | |
| <input type="checkbox"/> Equipment for portable use | | |
|
<input type="checkbox"/> EN 301 489-3 V1.6.1 | | |
|
<input type="checkbox"/> EN 301 489-17 V2.2.1 | | |
|
<input type="checkbox"/> EN 60945: 2002 | | |

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2.1 Conducted Emissions at Mains Power Ports

Test Date
Oct, 10, 2016Test Location
Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test Receiver	ESR3	R & S	101783	05, 03, 2017
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101137	02, 04, 2017
<input checked="" type="checkbox"/>	LISN	ENV216	R & S	101786	05, 02, 2017
<input checked="" type="checkbox"/>	Electro wave Shieldroom	-	AONE SHIELD	-	-
<input checked="" type="checkbox"/>	EMI Test S/W	EMC32	R&S	9.12.00	-

Test Conditions

Temperature: 20,5 °C
Relative Humidity: 43,6 %Frequency Range of Measurement
150 kHz to 30 MHzInstrument Settings
IF Band Width: 9 kHz

Test Results

The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.2 Conducted Emissions at Telecommunication Ports

Test Date

N/A

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input type="checkbox"/>	EMI Test Receiver	ESR3	R&S	101783	05, 03, 2017
<input type="checkbox"/>	LISN	ENV216	R&S	101137	02, 04, 2017
<input type="checkbox"/>	LISN	ENV216	R&S	101786	05, 02, 2017
<input type="checkbox"/>	8-Wire ISN CAT3	CAT3 8158	Schwarzbeck Mess	8158-0019	04, 01, 2017
<input type="checkbox"/>	8-Wire ISN CAT5	CAT5 8158	Schwarzbeck Mess	8158-0030	04, 01, 2017
<input type="checkbox"/>	8-Wire ISN CAT6	NTFM 8158	Schwarzbeck Mess	8158-0029	08, 11, 2017
<input type="checkbox"/>	Electro wave Shieldroom	-	SEMITEC	-	-
<input type="checkbox"/>	EMI Test S/W	EMC32	R&S	9.12.00	-

Test Conditions

Temperature: °C

Relative Humidity: %

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☐ PASS
☐ NOT PASS
☒ NOT APPLICABLE

Remarks

N/A : None, Telecommunication Port. Test is not applicable.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date
Oct, 11, 2016

Test Location
☐ Open Area Test Site #1 ☒ Open Area Test Site #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI TEST Receiver	ESR3	R&S	101781	05, 03, 2017
<input checked="" type="checkbox"/>	Trilog-Broadband ANT	VULB 9163	Schwarzbeck	9163-713	05, 15, 2017
<input checked="" type="checkbox"/>	Open Area Test Site	-	KES	-	-
<input checked="" type="checkbox"/>	Antenna Mast	-	DAEIL EMC	-	-
<input checked="" type="checkbox"/>	Turn Table	-	DAEIL EMC	-	-
<input checked="" type="checkbox"/>	EMI Test S/W	-	-	-	-

Test Conditions
Temperature: 18,4 °C
Relative Humidity: 58,0 %

Frequency Range of Measurement
30 MHz to 1 GHz

Instrument Settings
IF Band Width: 120 kHz

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date
Oct, 10, 2016

Test Location
Semi Anchoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test Receiver	ESU26	R&S	100552	04, 24, 2017
<input checked="" type="checkbox"/>	Broadband Coaxial Preamplifier	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10, 14, 2017
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 07, 2017
<input checked="" type="checkbox"/>	Semi Anchoic Chamber #2	-	SEMITEC	-	-
<input checked="" type="checkbox"/>	Antenna Mast	-	AUDIX	-	-
<input checked="" type="checkbox"/>	Turn Table	-	AUDIX	-	-
<input checked="" type="checkbox"/>	EMI Test S/W	e3	AUDIX	8.083b	-

Test Conditions
Temperature: 20,5 °C
Relative Humidity: 43,6 %

Frequency Range of Measurement
1 GHz to 6 GHz

Instrument Settings
IF Band Width: 1 MHz

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.



2.5 Harmonic Current Emissions

Test Date
N/A

Test Location
Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input type="checkbox"/>	AC Source	ACS 500 N	EM TEST	V1024106760	08, 08, 2017
<input type="checkbox"/>	Digital Power Analyzer	DPA 500 N	EM TEST	V1024106759	08, 08, 2017
<input type="checkbox"/>	EMI Test S/W	dpa.control	EM TEST AG	5.4.8.0	-

Test Conditions
Temperature: °C
Relative Humidity: %

Classification of Equipment for Harmonic Current Emissions

- ☐ Class A
- ☐ Class B
- ☐ Class C(Below 25 W)
- ☐ Class C(Above 25 W)
- ☐ Class D

Test Results
The requirements are:

- ☐ PASS
- ☐ NOT PASS
- ☒ NOT APPLICABLE

Remarks
N/A : Because the E.U.T power is less than 75 W, limits are not specified.



2.6 Voltage Fluctuations and Flicker

Test Date

N/A

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input type="checkbox"/>	AC Source	ACS 500 N	EM test	V1024106760	08, 08, 2017
<input type="checkbox"/>	Digital Power Analyzer	DPA 500 N	EM test	V1024106759	08, 08, 2017
<input type="checkbox"/>	EMI Test S/W	dpa.control	EM TEST AG	5.4.8.0	-

Test Conditions

Temperature: °C

Relative Humidity: %

Test Results

The requirements are:

- ☐ PASS
☐ NOT PASS
☒ NOT APPLICABLE

Remarks

N/A : Because the E.U.T power and 24 v (ac) limit are not specified.

3.0 Criteria for compliance

Criteria for compliance was based on the following guidelines:

EN 50130-4: 2011 +A1: 2014 Alarm systems-Part 4: Electromagnetic compatibility Product family standard: Immunity requirements for components of fire, intruder and social alarm systems

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 that is no residual change in the EUT or any change in outputs, 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 a change.

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 $U = 130 \text{ dB}\mu\text{V}$.

For component of CCTV systems, where the status is monitored by observing the TV picture,
then deterioration of the picture is allowed at $U = 140 \text{ dB}\mu\text{V}$, 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 $U = 130 \text{ dB}\mu\text{V}$, 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 $U = 120 \text{ dB}\mu\text{V}$.

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.

3.1 Electrostatic Discharge

Reference Standard
EN 61000-4-2: 2009

Test Date
Oct, 13, 2016

Test Location
EMS-ESD: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	ESD SIMULATOR	ESS-2000	Noise Ken	ESS05X4620	02, 24, 2017
<input checked="" type="checkbox"/>	HCP	-	Noise Ken	-	-
<input checked="" type="checkbox"/>	VCP	-	Noise Ken	-	-
<input checked="" type="checkbox"/>	EMS Test S/W	N/A	N/A	N/A	-

Test Conditions

Temperature: 20,4 °C
Relative Humidity: 45,1 %
Atmospheric Pressure: 100,4 kPa

Test Specifications

Discharge Factor: ≥ 1 s

Discharge Impedance: 330 ohm / 150 pF

Kind of Discharge: Air, Contact (direct and indirect)

Polarity: Positive and Negative

Number of Discharge: **10 at all locations for Air discharge**
10 at all locations for Contact discharge

Discharge Voltage:	Contact <input type="checkbox"/> 2 kV <input type="checkbox"/> 4 kV <input checked="" type="checkbox"/> 6 kV <input type="checkbox"/> 8 kV <input type="checkbox"/> 15 kV	Air <input checked="" type="checkbox"/> 2 kV <input checked="" type="checkbox"/> 4 kV <input type="checkbox"/> 6 kV <input checked="" type="checkbox"/> 8 kV <input type="checkbox"/> 15 kV	HCP <input type="checkbox"/> 2 kV <input type="checkbox"/> 4 kV <input checked="" type="checkbox"/> 6 kV <input type="checkbox"/> 8 kV <input type="checkbox"/> 15 kV	VCP <input type="checkbox"/> 2 kV <input type="checkbox"/> 4 kV <input checked="" type="checkbox"/> 6 kV <input type="checkbox"/> 8 kV <input type="checkbox"/> 15 kV
--------------------	---	---	---	---

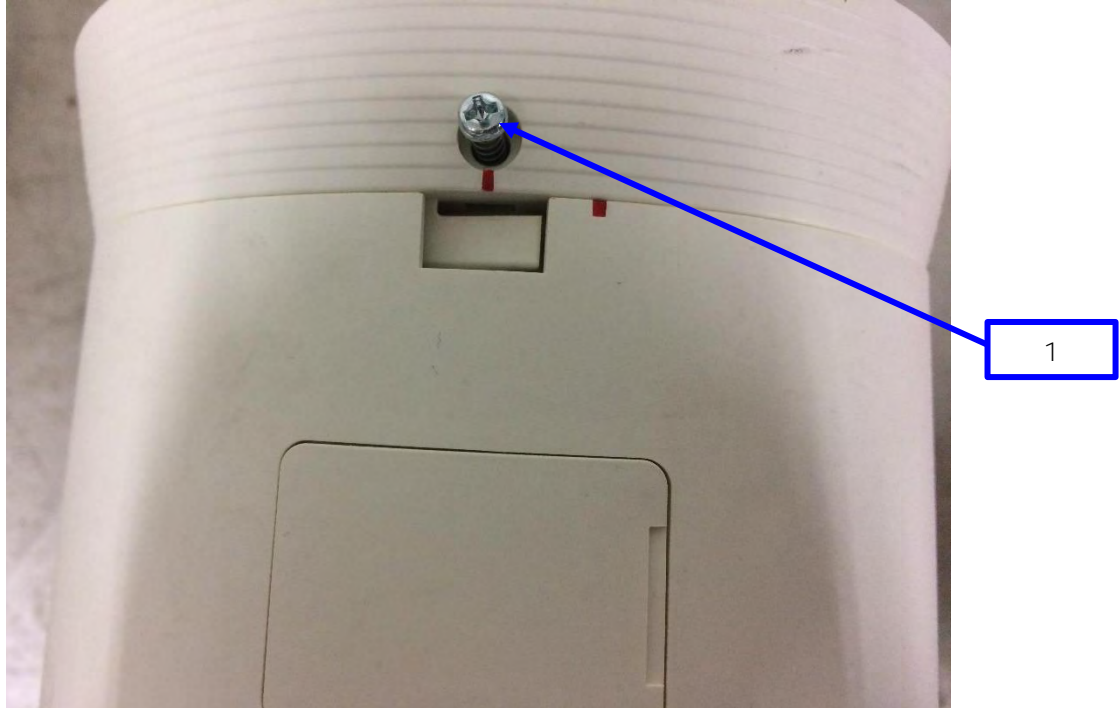
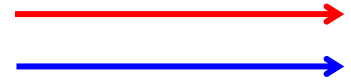
Notes: HCP: Horizontal coupling plane
VCP: Vertical coupling plane

Required Performance Criteria: ☒ Complied

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Location of Discharge:

Air
Contact



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Test Data**Indirect Discharge**

No.	Test Point	Discharge Method	Observations	Remarks
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

Direct Discharge

No.	Test Point	Discharge Method	Observations	Remarks
1	Screws	Contact Discharge	Complied	-

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.2 Radiated Electric Field Immunity

Reference Standard
EN 61000-4-3: 2006 +A2: 2010

Test Date
Oct, 12, 2016

Test Location
EMS-RS: ☐ Semi Anechoic Chamber #1 ☒ Semi Anechoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	SIGNAL GENERATOR	SMB 100A	Rohde & Schwarz	108252	08, 08, 2017
<input checked="" type="checkbox"/>	BROADBAND AMPLIFIER	BBA100	Rohde & Schwarz	101239	08, 08, 2017
<input checked="" type="checkbox"/>	BROADBAND AMPLIFIER	100S1G6M1	AR	579931	08, 08, 2017
<input checked="" type="checkbox"/>	POWER METER	NRP2	Rohde & Schwarz	103475	08, 08, 2017
<input checked="" type="checkbox"/>	AVG POWER SENSOR	NRP-Z91	Rohde & Schwarz	102526	08, 08, 2017
<input checked="" type="checkbox"/>	AVG POWER SENSOR	NRP-Z91	Rohde & Schwarz	102527	08, 08, 2017
<input checked="" type="checkbox"/>	Stacked Log.-Per. Antenna	STLP 9128 D	Schwarzbeck	9128D038	-
<input checked="" type="checkbox"/>	DIRECTIONAL COUPLER	KYDC-D1070-DX40	Kytelecom Co., Ltd.	KY150001	08, 08, 2017
<input checked="" type="checkbox"/>	Semi Anechoic Chamber #2	-	SEMITEC	-	-
<input checked="" type="checkbox"/>	EMS Test S/W	EMC32	R&S	9.12.00	-

Test Conditions

Temperature: 21,8 °C
Relative Humidity: 44,4 %
Atmospheric Pressure: 100,2 kPa

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Test Specifications

Antenna Polarization: Horizontal & vertical unless indicated otherwise

Antenna Distance: ☒ 3 m

Field Strength: ☐ 1 V/m ☐ 3 V/m
☒ 10 V/m

Frequency Range: ☐ 80 MHz to 1 GHz ☐ 1,4 GHz to 2,7 GHz
☒ 80 MHz to 2,7 GHz

Modulation: ☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)

Frequency step: ☒ 1 % step

Dwell Time: ☐ 1 s ☒ 3 s

of Sides Radiated: ☒ 4

Required Performance Criteria: ☒ Complied

Test Data

Side Exposed	Observations	
	Horizontal	Vertical
Front	Complied	Complied
Right	Complied	Complied
Back	Complied	Complied
Left	Complied	Complied

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.3 Electrical Fast Transients/Bursts

Reference Standard
EN 61000-4-4: 2012

Test Date
Oct, 14, 2016

Test Location
EMS-EFT: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	Ultra Compact Simulator	UCS 500 N5	EM TEST	V0936105120	06, 27, 2017
<input checked="" type="checkbox"/>	Capacitive Coupling Clamp	HFK	EM TEST	070925	06, 27, 2017
<input checked="" type="checkbox"/>	Motor Variac	MV2616	EM TEST	V0936105123	06, 27, 2017
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST AG	5.0.9.0	-

Test Conditions

Temperature: 19,5 °C
Relative Humidity: 49,0 %
Atmospheric Pressure: 100,7 kPa

Test Specifications

Pulse Amplitude & Polarity: (AC Power Lines)	<input type="checkbox"/> ± 1.0 kV <input type="checkbox"/> ± 4.0 kV	<input checked="" type="checkbox"/> ± 2.0 kV
Pulse Amplitude & Polarity: (Other supply / Signal Lines)	<input type="checkbox"/> ± 0.5 kV	<input checked="" type="checkbox"/> ± 1.0 kV <input type="checkbox"/> ± 2.0 kV
Burst Period:	<input checked="" type="checkbox"/> 300 ms	<input type="checkbox"/> 2 s
Repetition Rate:	<input type="checkbox"/> 5 kHz	<input checked="" type="checkbox"/> 100 kHz
Duration of Test Voltage:	<input checked="" type="checkbox"/> ≥ 1 min	
Required Performance Criteria:	<input checked="" type="checkbox"/> Complied	



Test Data

☒ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
L – N	Complied	Complied

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	Observations	
	(+) Burst (kV)	(-) Burst (kV)
BNC	Complied	Complied

Note: “Blank” = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.4 Surge Transients

Reference Standard
EN 61000-4-5: 2014

Test Date
Oct, 14, 2016

Test Location
EMS-Surge: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	Ultra Compact Simulator	UCS 500 N5	EM TEST	V0936105120	06, 27, 2017
<input checked="" type="checkbox"/>	Motor Variac	MV2616	EM TEST	V0936105123	06, 27, 2017
<input checked="" type="checkbox"/>	CDN	CNV 508T5	EM TEST	P1549168422	04, 27, 2017
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST AG	5.0.9.0	-

Test Conditions

Temperature: 19,5 °C
Relative Humidity: 49,0 %
Atmospheric Pressure: 100,7 kPa

Test Specifications

AC Power Lines
Source Impedance: 12 ohm for common mode and 2 ohm for differential mode

Surge Amplitude :
Common Mode
☐ (0,5 / 1,0 / 2,0) kV
Differential Mode
☒ (0,5 / 1,0) kV

Number of Surges: ☒ 5 surges per angle

Angle: ☒ 0°, 90°, 180°, 270° (input a.c. power port)

Polarity: ☒ Positive & Negative

Repetition Rate: ☒ 1 surge per min ☐ 1 surge per 30 sec.

Required Performance Criteria: ☒ Complied

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Other supply / Signal Lines

Source Impedance: 42 ohm for common mode

Surge Amplitude: Common Mode
☒ (0,5 / 1,0) kVNumber of Surges: ☒ 5 SurgesPolarity: ☒ Positive & NegativeRepetition Rate: ☒ 1 surge per min ☐ 1 surge per 30 sec.Required Performance Criteria: ☒ Complied

Test Data

☒ Line to Line – Differential Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
L - N	Complied	Complied

☒ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
-	-	-

Signal Lines

☒ Line to Earth – Common Mode

Mode of Application	Observations	
	(+) Surge (kV)	(-) Surge (kV)
BNC	Complied	Complied

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.5 Conducted Disturbance

Reference Standard

EN 61000-4-6: 2014

Test Date

Oct, 13, 2016

Test Location

EMS-CS: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	Continuous Wave Generator	CWS 500N1	EM TEST	V0936105119	08, 08, 2017
<input checked="" type="checkbox"/>	6 dB Attenuator	ATT6	EM TEST	1208-34	08, 08, 2017
<input checked="" type="checkbox"/>	CDN	CDN-M2/M3N	EM TEST	0909-06	08, 08, 2017
<input checked="" type="checkbox"/>	EM Injection Clamp	EM 101	Liithi	35943	02, 04, 2017
<input checked="" type="checkbox"/>	EMS Test S/W	icd.control	EM TEST AG	5.3.7	-

Test Conditions

Temperature: 20,4 °C
Relative Humidity: 45,1 %
Atmospheric Pressure: 100,4 kPa

Test Specifications

Frequency range: ☒ 150 kHz to 100 MHz ☐ 10 kHz to 30 MHz
☐ 150 kHz to 230 MHz ☐ 10 kHz to 100 MHz

Voltage Level: ☐ 1 Vrms ☐ 3 Vrms
☒ 10 Vrms

Modulation: ☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)

Frequency step: ☒ 1 % step

Dwell Time: ☐ 1 s ☒ 3 s

Required Performance Criteria: ☒ Complied



Test Data

☒ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
L – N	CDN (<input checked="" type="checkbox"/> M2, <input type="checkbox"/> M3)	Complied

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observations
-	CDN (<input type="checkbox"/> M2, <input type="checkbox"/> M3)	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observations
BNC	EM Injection Clamp	Complied

Notes: CDN = Coupling Decoupling Network
"blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.



3.6 Voltage Dips and Short Interruptions

Reference Standard
EN 61000-4-11: 2004

Test Date
Oct, 14, 2016

Test Location
EMS-Voltage dip: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	Ultra Compact Simulator	UCS 500 N5	EM TEST	V0936105120	06, 27, 2017
<input checked="" type="checkbox"/>	Motor Variac	MV2616	EM TEST	V0936105123	06, 27, 2017
<input checked="" type="checkbox"/>	EMS Test S/W	iec.control	EM TEST AG	5.0.9.0	-

Test Conditions
Temperature: 19,5 °C
Relative Humidity: 49,0 %
Atmospheric Pressure: 100,7 kPa

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Test Specifications & Observations/Remarks

(Test Voltage : AC 24 V, 50 Hz)

<u>Test Level</u>	<u>Duration [in period/ms (50 Hz)]</u>	<u>Results</u>
<input checked="" type="checkbox"/> 20 % dip	<input checked="" type="checkbox"/> 250 /5000	<u>Complied</u>
<input checked="" type="checkbox"/> 30 % dip	<input checked="" type="checkbox"/> 25 /500	<u>Complied</u>
<input checked="" type="checkbox"/> 60 % dip	<input checked="" type="checkbox"/> 10 /200	<u>Complied</u>
<input checked="" type="checkbox"/> 100 % dip	<input checked="" type="checkbox"/> 250 /5000	<u>Complied</u>

- Voltage variations

<input checked="" type="checkbox"/> Unom + 10 %	<input checked="" type="checkbox"/> 26.4 V (ac)	<u>Complied</u>
<input checked="" type="checkbox"/> Unom - 15 %	<input checked="" type="checkbox"/> 20.4 V (ac)	<u>Complied</u>

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria
☐ NOT APPLICABLE

Remarks

PASS Required Performance Criteria.

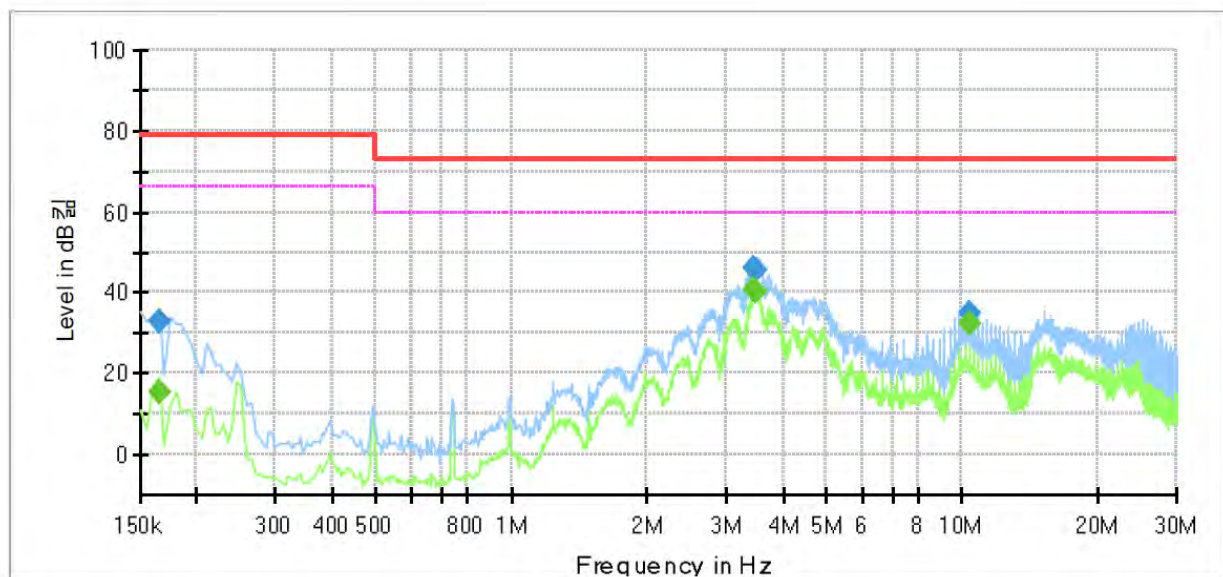
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

Common Information

Test Description: Conducted Emission
Model No.: HCP-6320P
Mode: H
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	15.35	66.00	50.65	1000.0	9.000	L1	9.7
0.165000	33.06	---	79.00	45.94	1000.0	9.000	L1	9.7
3.455000	---	40.91	60.00	19.09	1000.0	9.000	L1	10.1
3.455000	46.22	---	73.00	26.78	1000.0	9.000	L1	10.1
3.495000	---	40.05	60.00	19.95	1000.0	9.000	L1	10.1
3.495000	45.59	---	73.00	27.41	1000.0	9.000	L1	10.1
10.375000	---	32.49	60.00	27.51	1000.0	9.000	L1	9.9
10.375000	34.87	---	73.00	38.13	1000.0	9.000	L1	9.9

◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

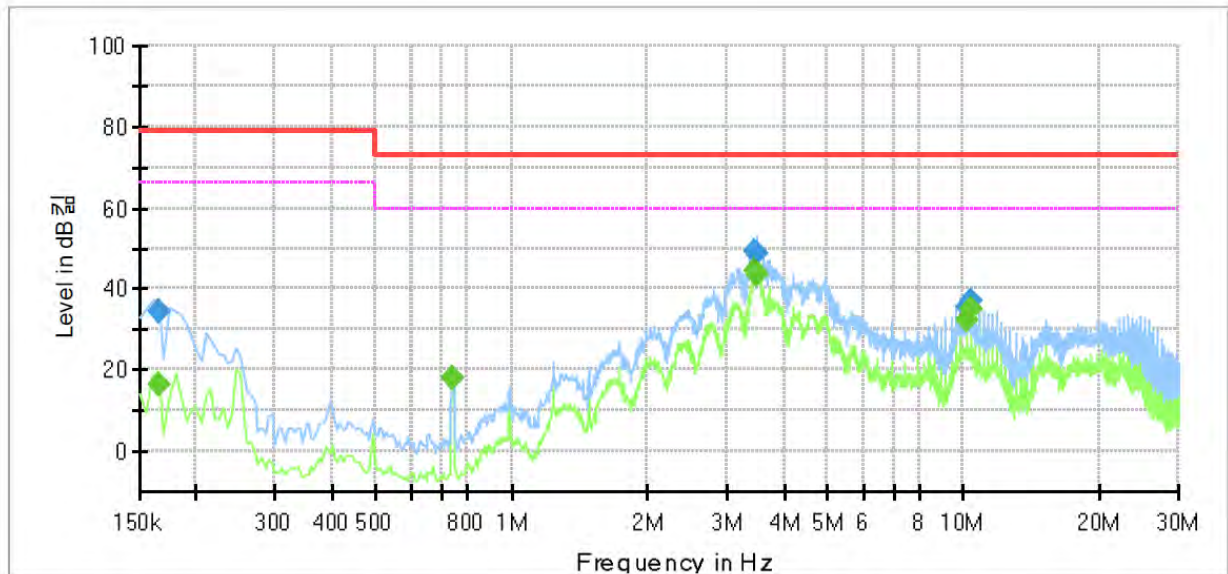
Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR+ Cable Loss)

[NEUTRAL]

Common Information

Test Description: Conducted Emission
Model No.: HCP-6320P
Mode: N
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	16.53	66.00	49.47	1000.0	9.000	N	9.7
0.165000	34.68	---	79.00	44.32	1000.0	9.000	N	9.7
0.740000	---	17.87	60.00	42.13	1000.0	9.000	N	9.8
0.740000	17.83	---	73.00	55.17	1000.0	9.000	N	9.8
3.460000	---	44.24	60.00	15.76	1000.0	9.000	N	10.0
3.460000	49.43	---	73.00	23.57	1000.0	9.000	N	10.0
3.475000	---	43.23	60.00	16.77	1000.0	9.000	N	10.0
3.475000	48.48	---	73.00	24.52	1000.0	9.000	N	10.0
10.125000	---	32.55	60.00	27.45	1000.0	9.000	N	9.9
10.125000	35.60	---	73.00	37.40	1000.0	9.000	N	9.9
10.375000	---	34.98	60.00	25.02	1000.0	9.000	N	9.9
10.375000	37.14	---	73.00	35.86	1000.0	9.000	N	9.9

◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR+ Cable Loss)



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Conducted Emissions at Telecommunication Ports

[10 Mbps]

N/A

◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (ISN FACTOR+ Cable Loss)

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[100 Mbps]

N/A

◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (ISN FACTOR+ Cable Loss)

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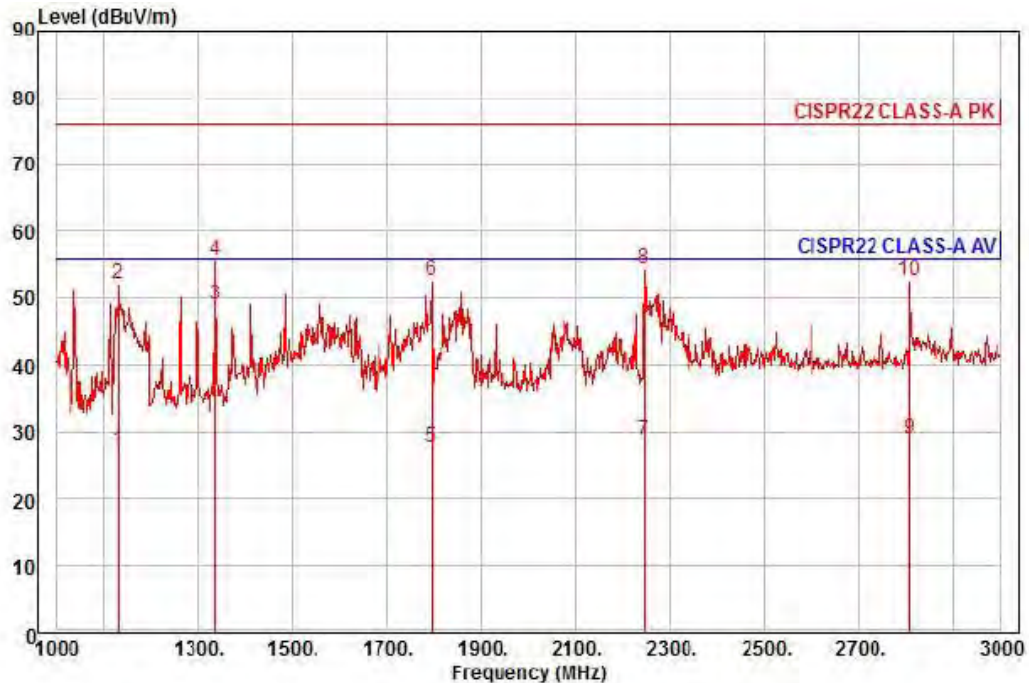
Radiated Electric Field Emissions(Below 1 GHz)

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
51.33	9.20	V	1.18	13.78	2.11	25.09	40.00	14.91
149.28	8.57	V	1.23	8.17	3.56	20.30	40.00	19.70
149.33	23.20	H	3.86	8.18	3.56	34.94	40.00	5.06
297.00	25.02	H	3.91	13.32	5.13	43.47	47.00	3.53
446.45	17.30	H	4.00	16.35	6.75	40.40	47.00	6.60
742.71	13.99	H	3.72	20.17	8.96	43.12	47.00	3.88
742.98	7.32	V	1.00	20.17	8.96	36.45	47.00	10.55
817.69	7.24	V	1.00	21.04	9.48	37.76	47.00	9.24

* H : Horizontal, V : Vertical

◆ Calculation Corrected Amplitude [dB μ V] = Amplitude[dBuV] + Correction Factor [dB]
Corrected Amplitude : The Final Value, Amplitude : Reading Value,
Correction Factor : ANT FACTOR + Cable loss

Radiated Electric Field Emissions(Above 1 GHz)



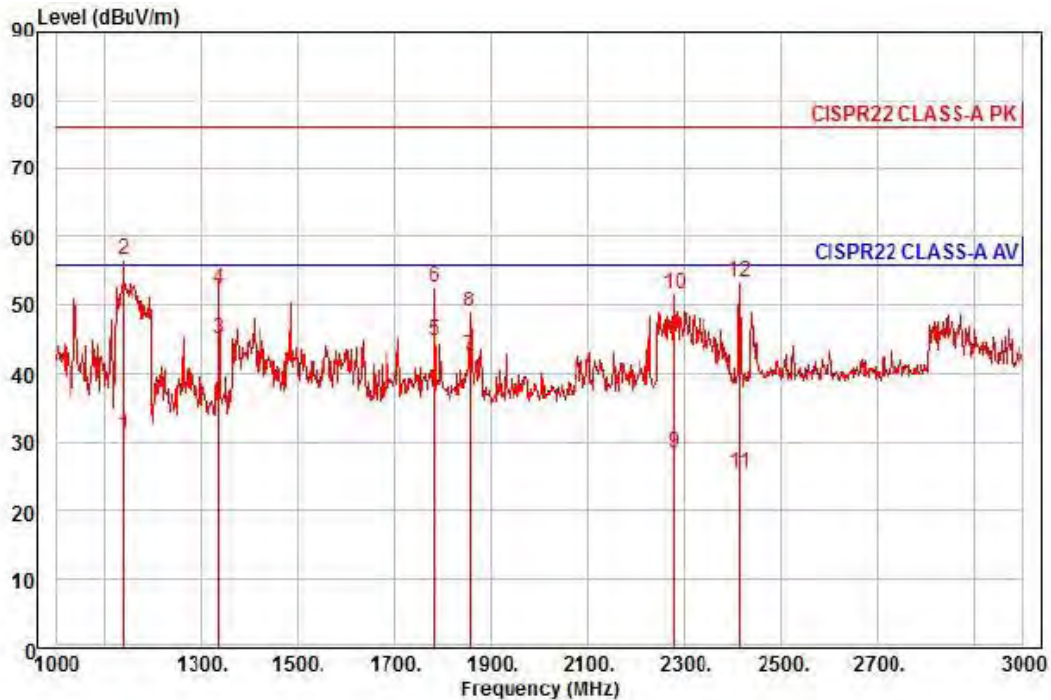
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : HCP-6320P
Mode :
Memo : 1 ~ 3 GHz

	Read	Ant	Cable	Preamp	TPos	Limit	Over		
Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1130.00	35.74	24.43	6.91	39.78	346	56.00	-28.70	horizontal Average
2	1130.00	60.64	24.43	6.91	39.78	346	76.00	-23.80	horizontal Peak
3 pp	1336.00	55.51	25.24	7.54	39.28	36	56.00	-6.99	horizontal Average
4 pk	1336.00	62.24	25.24	7.54	39.28	36	76.00	-20.26	horizontal Peak
5	1794.00	31.27	27.06	8.81	39.31	16	56.00	-28.17	horizontal Average
6	1794.00	56.20	27.06	8.81	39.31	16	76.00	-23.24	horizontal Peak
7	2246.00	29.78	28.43	9.92	39.42	50	56.00	-27.24	horizontal Average
8	2246.00	55.50	28.43	9.92	39.42	50	76.00	-21.52	horizontal Peak
9	2808.00	27.74	29.86	11.25	39.89	56	56.00	-27.04	horizontal Average
10	2808.00	51.51	29.86	11.25	39.89	56	76.00	-23.27	horizontal Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



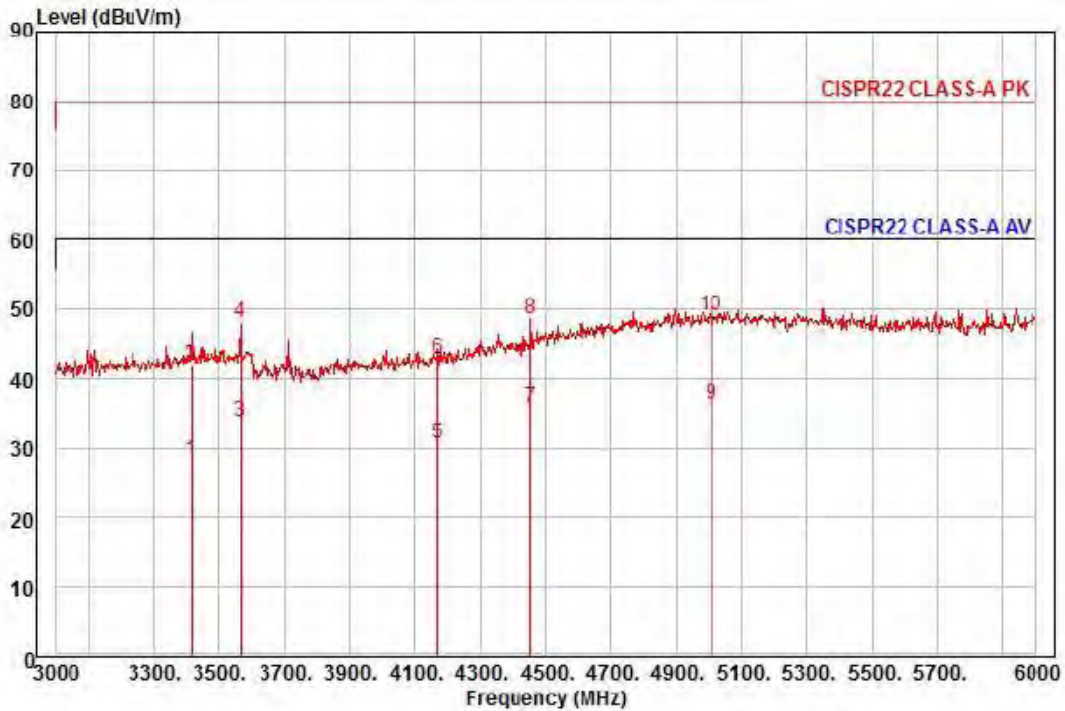
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : HCP-6320P
Mode :
Memo : 1 ~ 3 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1138.00	39.40	24.45	6.93	39.76	9	56.00	-24.97	vertical	Average
2 pk	1138.00	65.11	24.45	6.93	39.76	9	76.00	-19.26	vertical	Peak
3 pp	1336.00	51.55	25.24	7.54	39.28	333	56.00	-10.95	vertical	Average
4	1336.00	58.90	25.24	7.54	39.28	333	76.00	-23.60	vertical	Peak
5	1782.00	48.38	27.01	8.78	39.31	38	56.00	-11.14	vertical	Average
6	1782.00	56.28	27.01	8.78	39.31	38	76.00	-23.24	vertical	Peak
7	1856.00	45.68	27.31	8.97	39.34	230	56.00	-13.38	vertical	Average
8	1856.00	52.02	27.31	8.97	39.34	230	76.00	-27.04	vertical	Peak
9	2280.00	29.27	28.57	10.01	39.42	24	56.00	-27.57	vertical	Average
10	2280.00	52.55	28.57	10.01	39.42	24	76.00	-24.29	vertical	Peak
11	2414.00	25.63	28.89	10.35	39.44	3	56.00	-30.57	vertical	Average
12	2414.00	53.67	28.89	10.35	39.44	3	76.00	-22.53	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



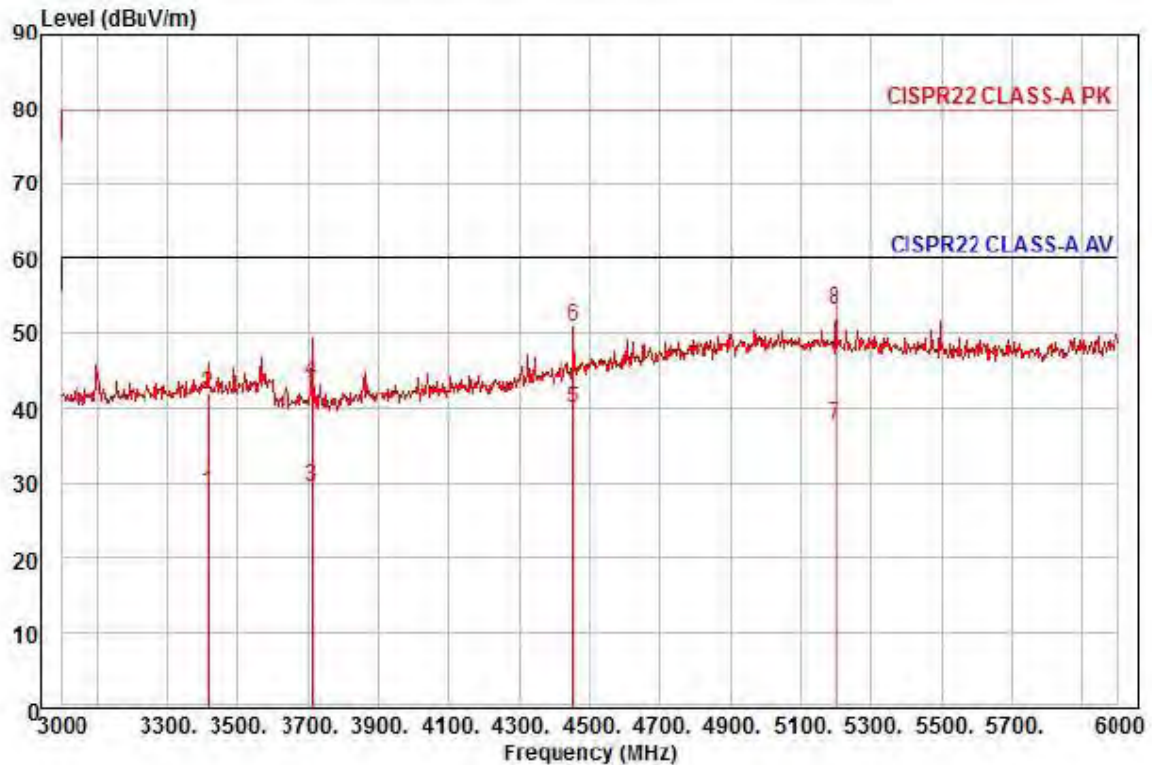
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : HCP-6320P
Mode :
Memo : 3 ~ 6 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3414.00	25.55	31.03	12.47	40.75	53	60.00	-31.70	horizontal	Average
2	3414.00	39.30	31.03	12.47	40.75	53	80.00	-37.95	horizontal	Peak
3	3564.00	30.71	31.28	12.74	40.86	47	60.00	-26.13	horizontal	Average
4	3564.00	45.01	31.28	12.74	40.86	47	80.00	-31.83	horizontal	Peak
5	4167.00	24.61	32.96	13.88	40.72	258	60.00	-29.27	horizontal	Average
6	4167.00	36.89	32.96	13.88	40.72	258	80.00	-36.99	horizontal	Peak
7	4455.00	27.64	34.61	14.38	40.76	22	60.00	-24.13	horizontal	Average
8	4455.00	40.26	34.61	14.38	40.76	22	80.00	-31.51	horizontal	Peak
9 pp	5007.00	23.59	37.71	15.33	40.28	319	60.00	-23.65	horizontal	Average
10 pk	5007.00	36.17	37.71	15.33	40.28	319	80.00	-31.07	horizontal	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamplifier Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamplifier Factor : Preamplifier Factor



Site : chamber

Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical

: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto

Project :

Model : HCP-6320P

Mode :

Memo : 3 ~ 6 GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3414.00	25.86	31.03	12.47	40.75	339	60.00	-31.39	vertical	Average
2	3414.00	39.23	31.03	12.47	40.75	339	80.00	-38.02	vertical	Peak
3	3711.00	25.79	31.52	13.01	40.80	51	60.00	-30.48	vertical	Average
4	3711.00	40.01	31.52	13.01	40.80	51	80.00	-36.26	vertical	Peak
5 pp	4455.00	31.63	34.61	14.38	40.76	135	60.00	-20.14	vertical	Average
6	4455.00	42.71	34.61	14.38	40.76	135	80.00	-29.06	vertical	Peak
7	5199.00	25.40	37.32	15.71	40.60	0	60.00	-22.17	vertical	Average
8 pk	5199.00	40.70	37.32	15.71	40.60	0	80.00	-26.87	vertical	Peak

◆ Calculation

Over Limit [dB] = (Read Level[dBuV] + Ant Factor[dB/m] + Cable Loss [dB] - Preamp Factor [dB]) - Limit Line[dBuV]

Over Limit : Margin Value, Read Level : Reading Value, Ant Factor : Ant Factor,
Cable Loss : Cable loss, Preamp Factor : Preamp Factor



Harmonic Current Emissions and Voltage Fluctuations and Flicker

Average harmonic current results

Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	N/A			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

Harmonic currents less than 0.6% of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.

**KES Co., Ltd.**

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Test Data - Harmonics (continued)

Maximum harmonic current results				
Hn	I _{eff} [A]	% of Limit	Limit [A]	Result
1	N/A			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

Harmonic currents less than 0.6% of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.

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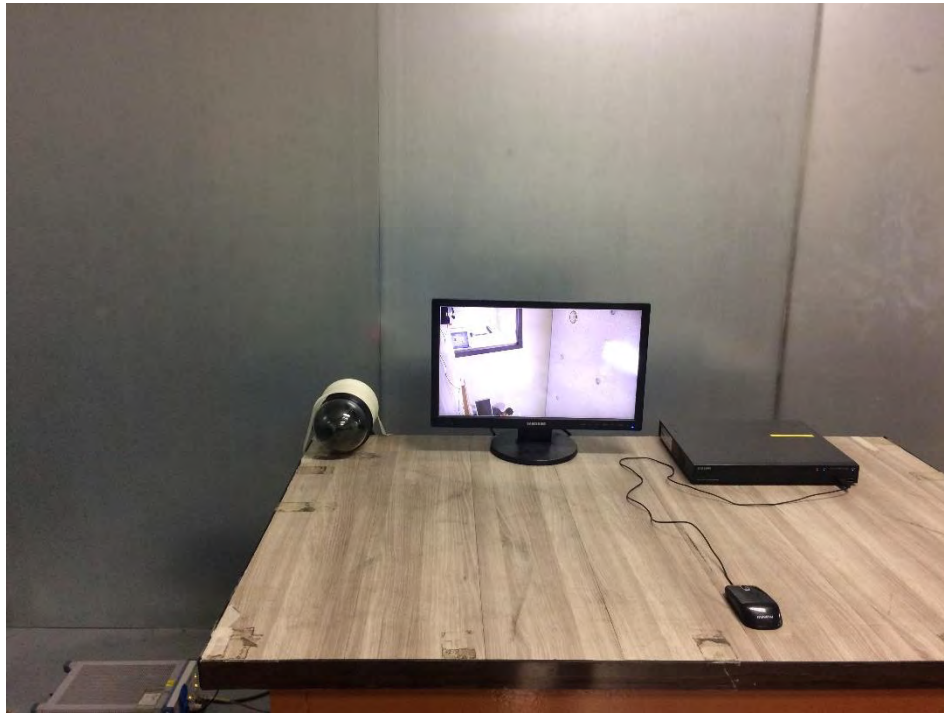
Test Data - Voltage Fluctuations

Maximum Flicker results

	EUT values	Limit	Result
Pst	N/A		
Plt			
dc [%]			
dmax [%]			
Tmax [s]			

Test Setup Photos and Configuration

Conducted Voltage Emissions



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Conducted Telecommunication Emissions

N/A

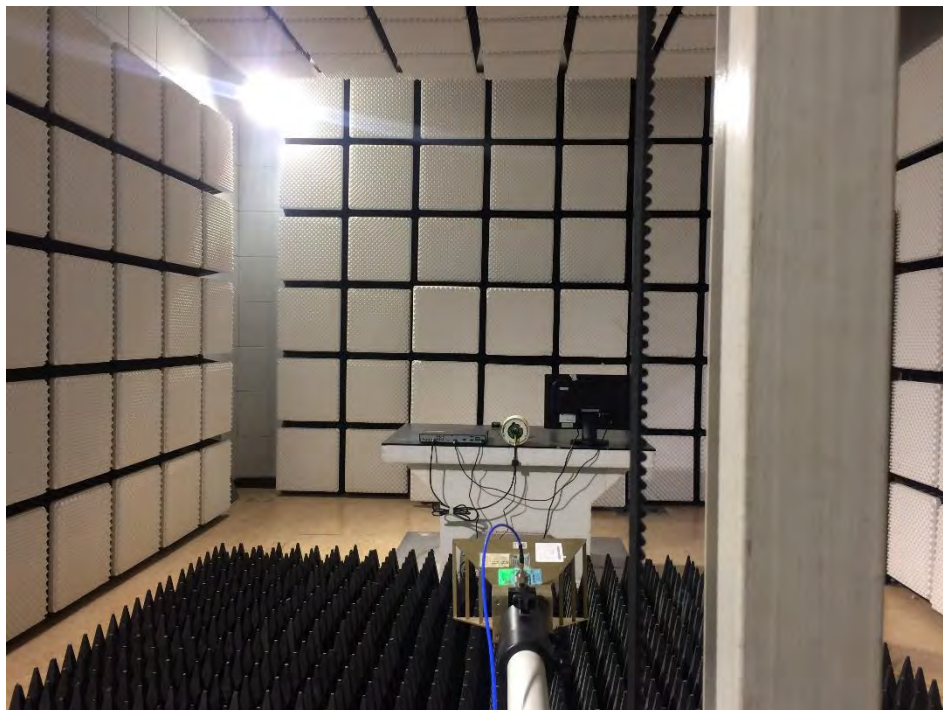
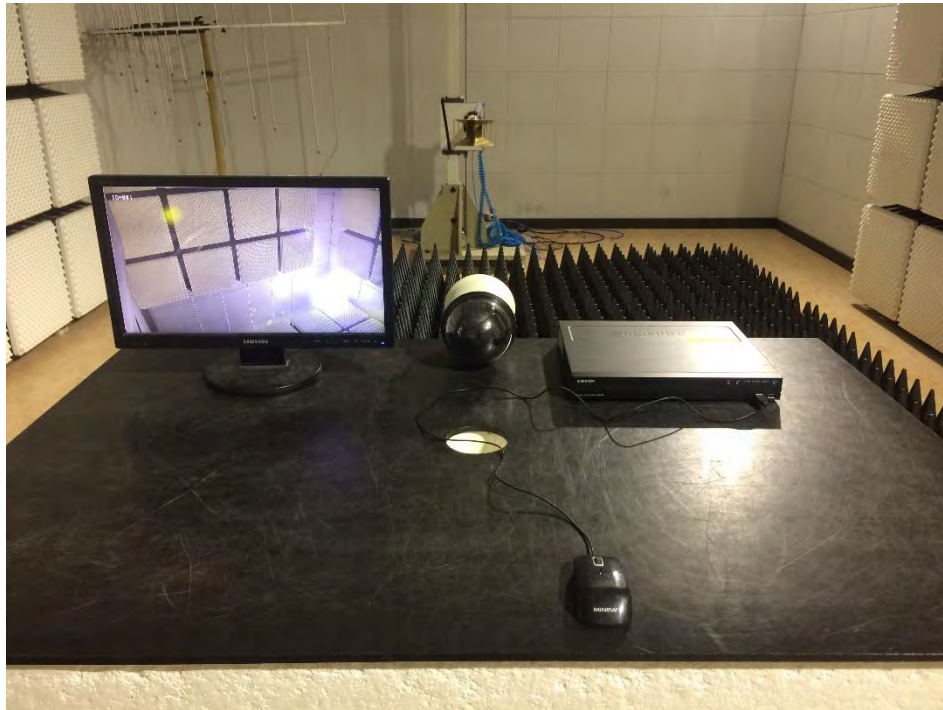
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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Harmonic Current Emissions and Voltage Fluctuations and Flicker

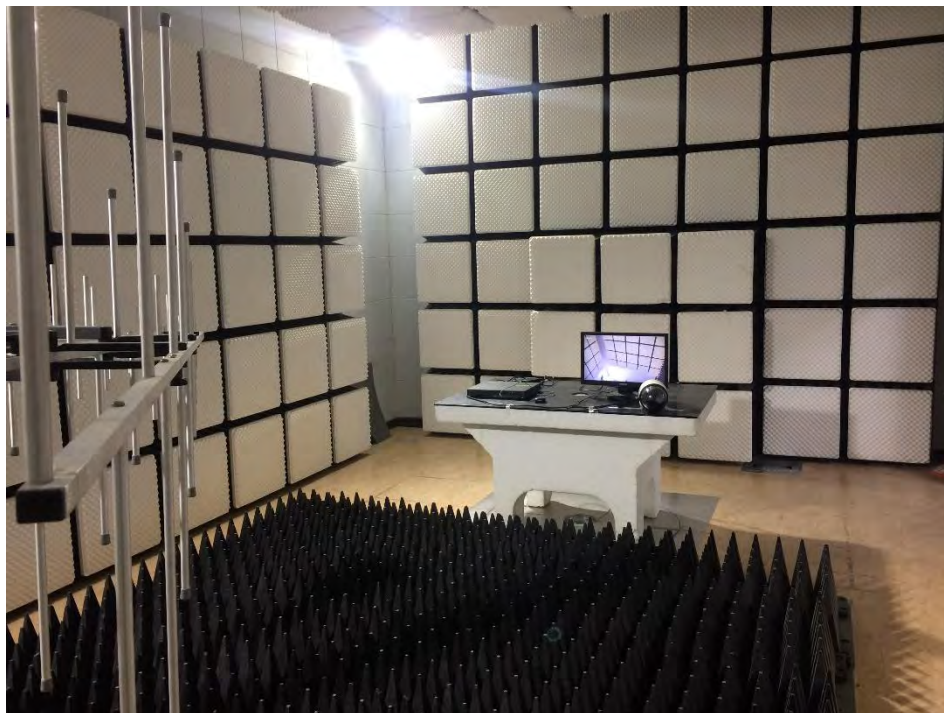
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Electrostatic Discharge



Radiated Electric Field Immunity



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Electrical Fast Transients/Bursts



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Surge Transients



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Conducted Disturbance



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Voltage Dips and Short Interruptions



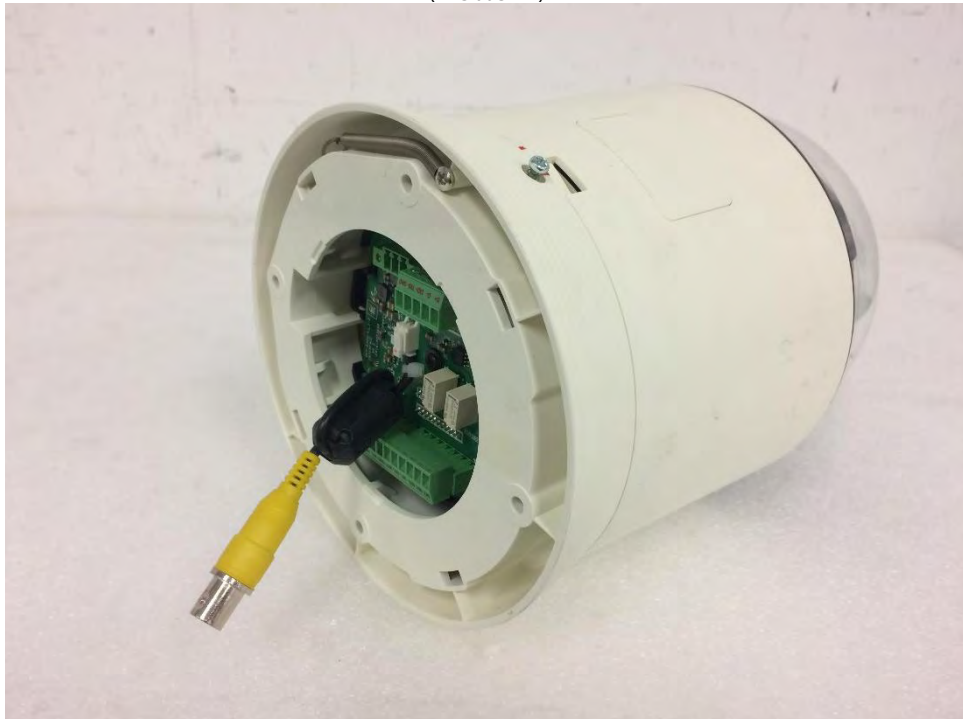
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EUT External Photographs

(Top)



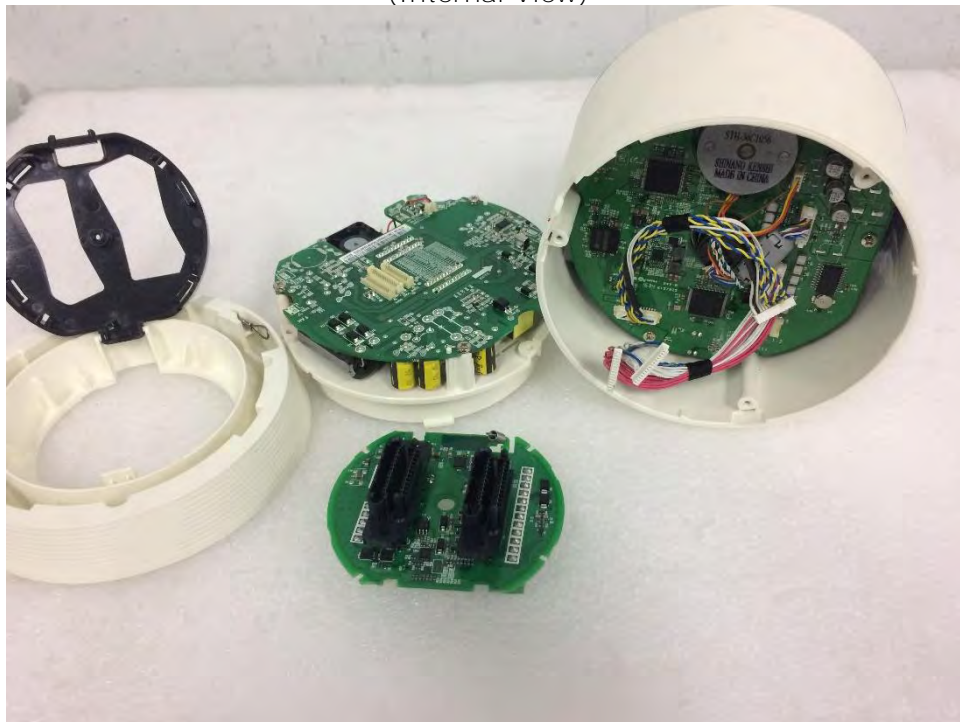
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EUT Internal Photographs

(Internal View)



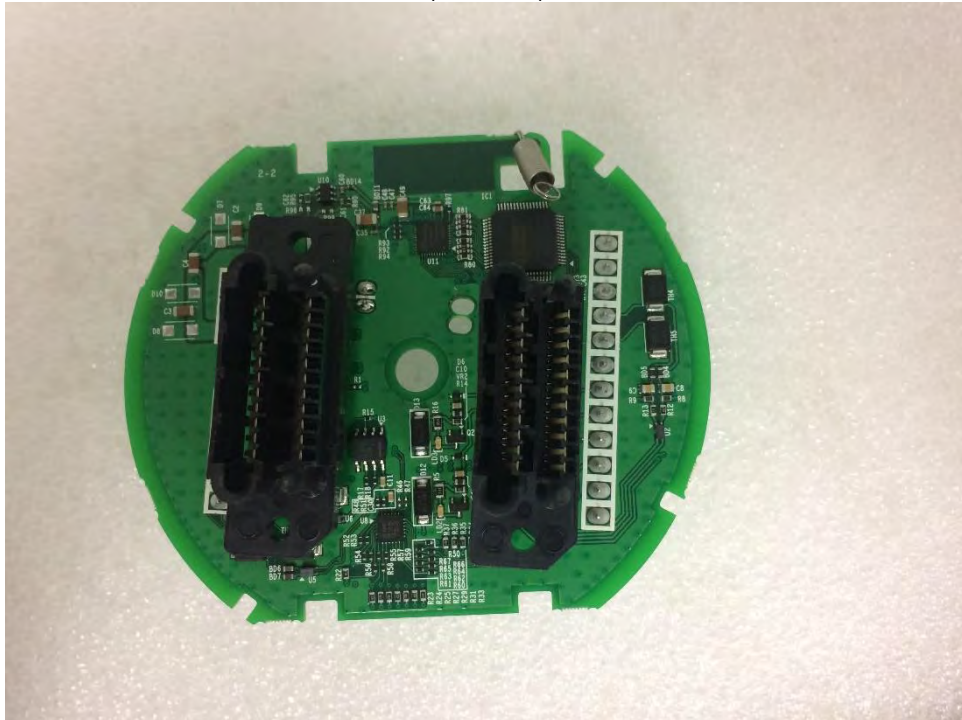
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EUT Internal View – board 1

(Top)



(Bottom)



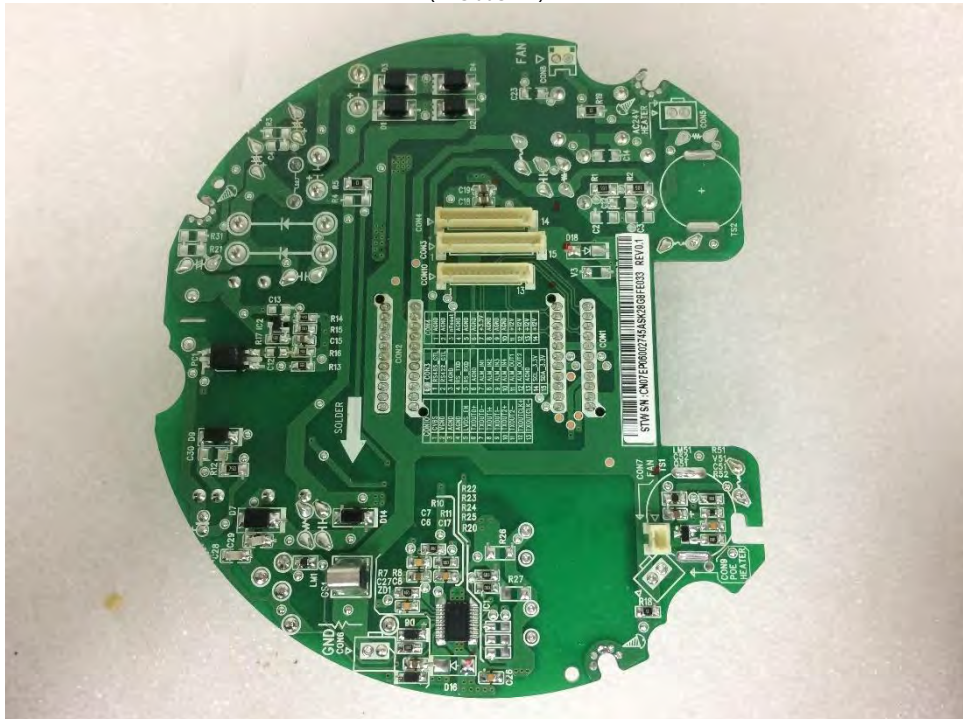
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EUT Internal View – board 2

(Top)



(Bottom)



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EUT Internal View – board 3

(Top)



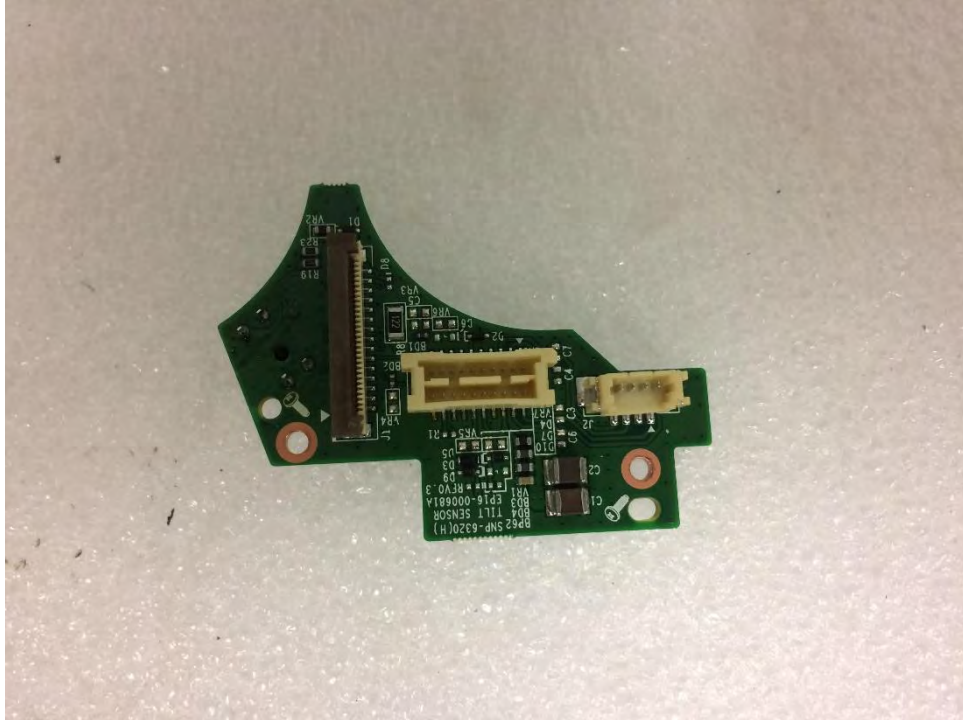
(Bottom)



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EUT Internal View – Board 4

(Top)



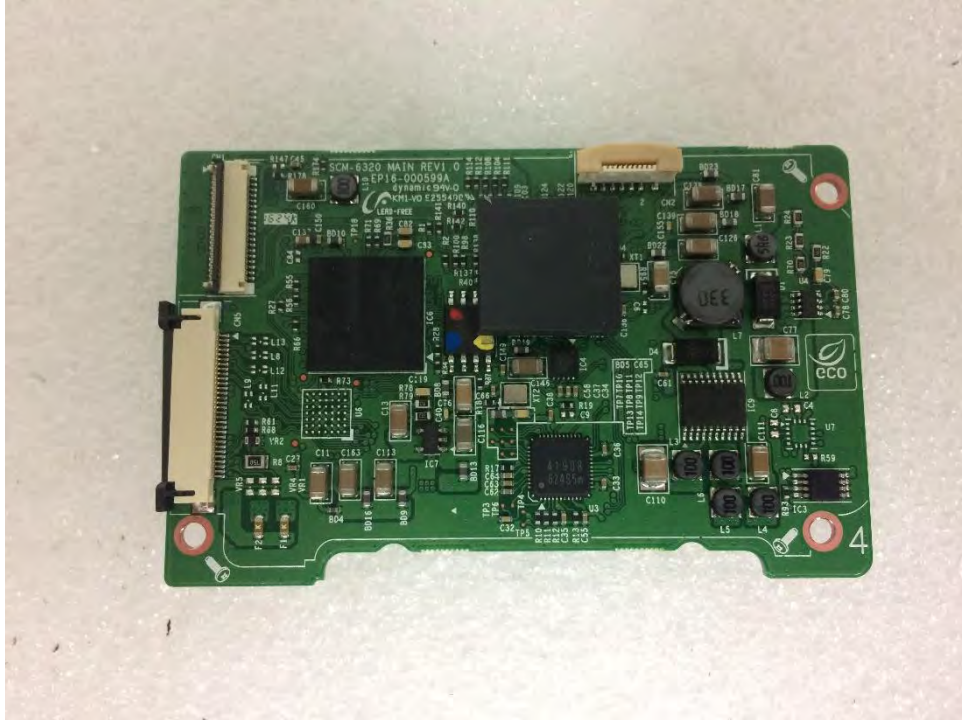
(Bottom)



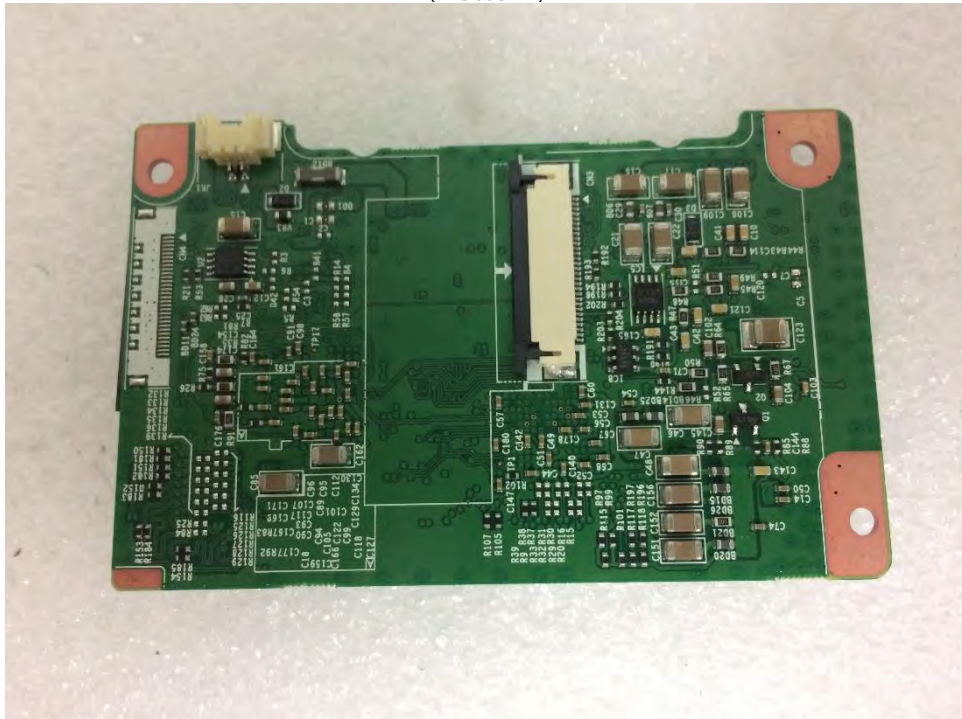
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EUT Internal View – Board 5

(Top)



(Bottom)



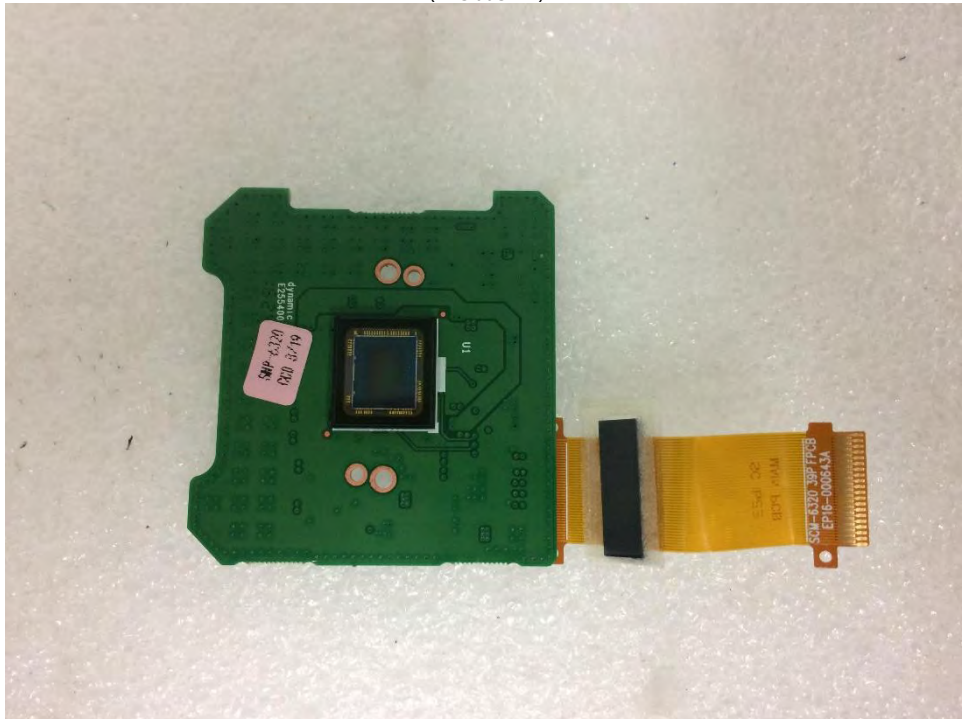
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EUT Internal View – Board 6

(Top)

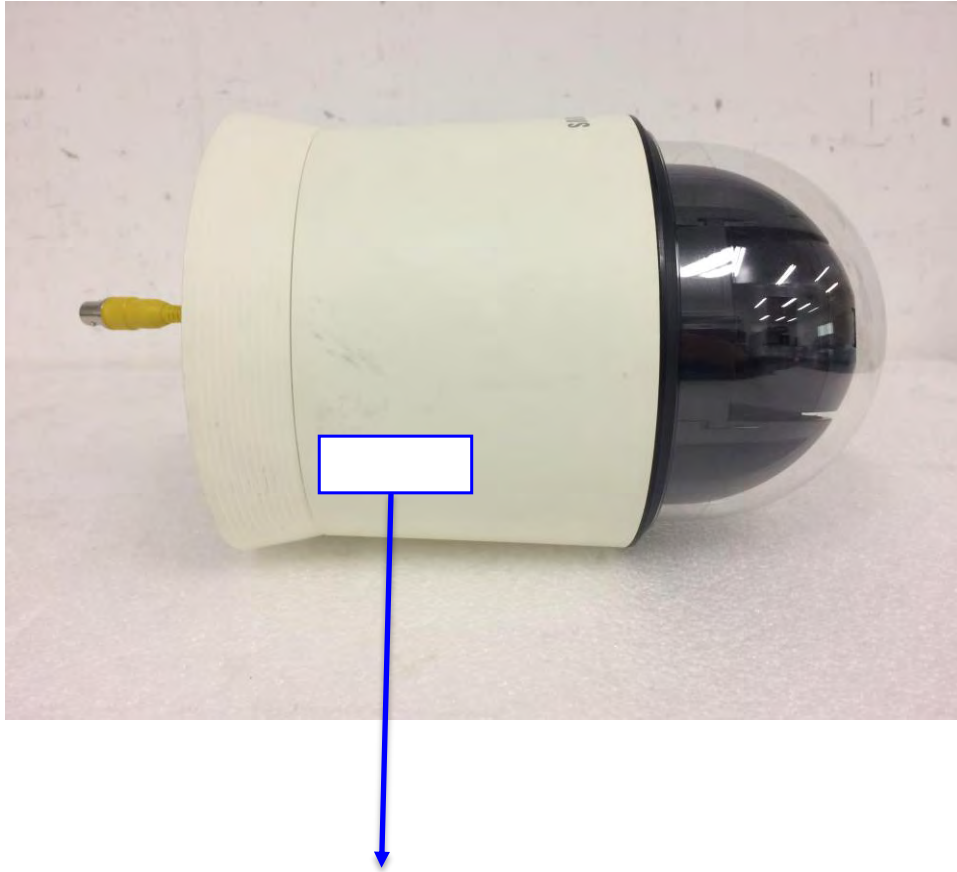


(Bottom)



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Label and Location



CCTV CAMERA

Model No : HCP-6320P

Manufacturer : Tianjin Samsung Techwin Opto-Electronic Co., Ltd.

Made in of China

