

DECLARATION OF CONFORMITY

We; Hanwha Techwin Company Limited
DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE PRODUCT;

Report No: KES-E1-15T0343
Type of equipment: ANALOG CAMERA
Model Name: SCO-6083RP
Applicant: Hanwha Techwin Company Limited
Address: 1204,Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do,Korea
Manufacturer : Tianjin Samsung Electronics Co.,Ltd.
Address: No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Test standards : AS/NZS CISPR22:2009+A1:2010
Classification: C-Tick

The above equipment was tested by EMC compliance Testing Laboratory for with the requirements of C-tick Rules and Regulations. The results of testing in this report apply to the product / system which was tested only.

December. 17. 2015
(Date of issue)

(Name and signature of authorized person)



AS/NZS EMI Test Report

Test Report No. : KES-E1-15T0343
Date of Issue : 12. 17. 2015
Description of Product : ANALOG CAMERA
Model No. : SCO-6083RP
Variant Model : -
Applicant : Hanwha Techwin Company Limited
Address : 1204, Changwon-daero, Seongsan-gu, Chang-won-si, Gyeongsangnam-do, Korea
Manufacturer : Tianjin Samsung Electronics Co., Ltd.
Address : No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Applicable Regulation : AS/NZS CISPR22:2009 + A1:2010

Date of Receipt : 12. 03. 2015
Test Date : 12. 09. 2015 ~ 12. 10. 2015

Tested by:

Hyo Jin, Kim
Test Engineer

Reviewed by:

Dong Hun, Jang
Technical Manager



Testing Laboratories for Safety and RF Compliance
C-3701 40, Simin-daero 365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450

Testing Laboratories for EMC Compliance
473-29, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea
Tel : +82-31-883-5092 / Fax: +82-31-883-5169



KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (2) of (38)

Revision history

Revision	Date of issue	Test report No.	Description
-	12. 17. 2015	KES-E1-15T0343	Initial

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



TABLE OF CONTENTS

1	General Information	4
2	Test standards and results	9
3	Test Performed	10
3.1	Conducted Emission Measurements	10
3.2	Radiated Emission Measurements	16
4	Test Setup Photographs	28
4.1	Conducted Emission	28
4.2	Radiated Emission	30
5	External Photographs	32
6	Internal Photographs	33



1. General Information

1.1 Introduction

The EMI Test Report for CE Declaration of Conformity is prepared on behalf of named applicant in accordance with the EMC Directive(2004/108/EC) of the European Economic Community. The test results reported in this document relate only to the item that was tested.

All radiated emission, conducted emission measurements required by the EMC Directive were performed manually at KES Co., Ltd. (here in after called KES), 473-29, Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Korea

The radiated emission measurements performed on 10 meter, Open Area Test Site, test range maintained by KES. Complete ANSI63.4;2009 description and site attenuation measurement data records are maintained at the test facility and have been placed on file with the Federal Communications Commission.

The KES EMC test facilities in and Yeoju-si are designated testing laboratory according to ISO/IEC 17025 by Radio Research Agency(RRA), Korea Communication Commission.

**KES Co., Ltd.**

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (5) of (38)

1.2 Product Description for Equipment Under Test (EUT)

Hanwha Techwin Company Limited, ANALOG CAMERA, Model No: SCO-6083RP or the "E.U.T". as referred to in this report is base model.

Main Specifications of EUT are:

SCO-6083R	
Video	
Imaging Device	1/2.9" 2M CMOS
Total Pixels	2,000(H) x 1,121(V) 2.24M pixels
Effective Pixels	1,984(H) x 1,105(V) 2.19M pixels
Scanning System	Progressive Scan
Horizontal Resolution	900TVL
Min. Illumination	Color : 0.05Lux (F1.2, 50IRE) B/W : 0Lux(IR LED on)
S / N Ratio	52dB (AGC off, Weight on)
Video Output	BNC(AHD, CVBS Selectable)
Resolution	1920 x 1080
Max. Framerate	30fps @1080p, 30fps@ 720p
Lens Type	
Focal Length (Zoom Ratio)	2.8 ~ 12mm (4.3x) varifocal
Max. Aperture Ratio	F1.4
Angular Field of View	H : 103.8 ° (Wide) ~ 32.4 ° (Tele) / V : 53.7 ° (Wide) ~ 18.4 ° (Tele) D : 121.9 ° (Wide) ~ 37.1 ° (Tele)
Min. Object Distance	0.5m (1.64ft)
Focus Control	Manual
Lens Type	DC Auto Iris
Mount Type	Board-in type
Operational	
IR LED	
Viewable length	30m (98.43ft)
Camera Title	Off / On (Displayed 15 characters)
Day & Night	Auto (ICR) / Color / B/W
Backlight Compensation	Off / User BLC / HLC
Wide Dynamic Range	D-WDR
Digital Noise Reduction	SSNR4 (Off / On)
Defog	AUTO / MANUAL / OFF
Motion Detection	Off / On(4 zones)
Privacy Masking	Off / On (4zones rectangle)
Gain Control	Off / Low / Middle / High
White Balance	ATW / Outdoor / Indoor / Manual / AWC (1,800K ~ 10,500K°)
Electronic Shutter Speed	1sec~ 1/12,000sec
Reverse	Off / H-Rev / V-Rev / HV-Rev
Profile	Basic, Day & Night, Backlight, Indoor, User
Alarm	(MD) output 1
Remote control interface	Coaxial
Protocol	Coax : Pelco-C (Coaxitron)
Video Transmission Distance	500m
Environmental	
Operating Temperature / Humidity	-30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH * Start up should be done at above -10°C
Ingress Protection	IP66
Vandal Resistance	IK10
Electrical	
Input Voltage/Current	Dual (24VAC±10% & 12VDC±10%)
Mechanical	
Color / Material	Dark Gray / Aluminum

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



1.3 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
ANALOG CAMERA	SCO-6083RP	-	Tianjin Samsung Electronics Co.,Ltd.	EUT

1.4 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Monitor	M1950DM	206KCRN81246	LG Electronics Inc.	-
AC/DC Adapter	PA-1650-64	OE9FA612314104362	LITE-ON TECHNOLOGY CORPORATION	-
Alarm Jig	-	-	-	-

1.5 External I/O Cabling

- AC/DC POWER Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
ANALOG CAMERA (EUT)	Alarm Out	Alarm Jig	Alarm Out	3.0	Unshielded
	BNC	Monitor	BNC	3.0	shielded

1.6 Special Accessories

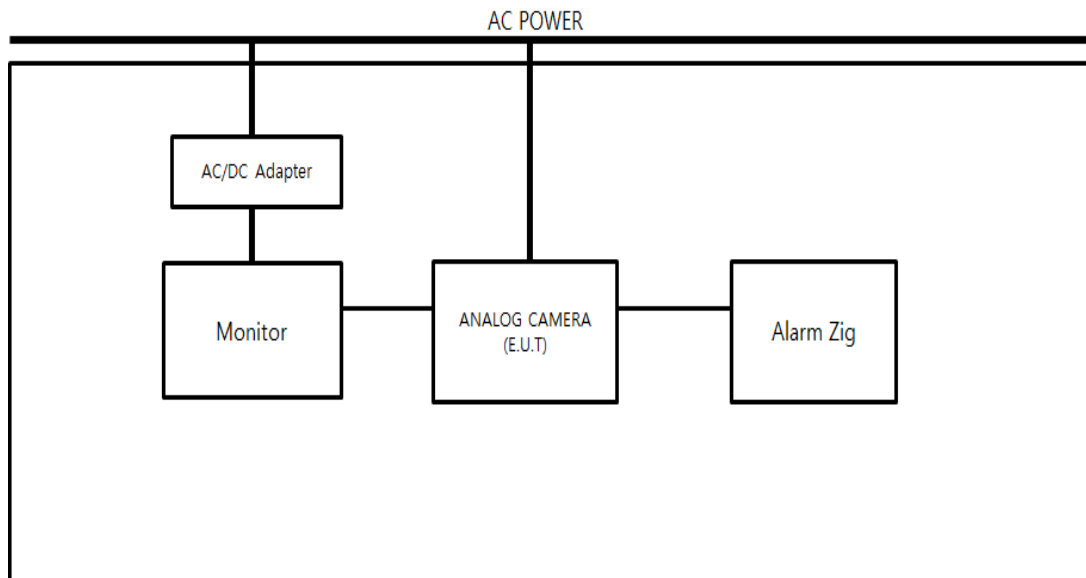
As shown in section 1.8, all interface cables used for compliance testing are shielded as normally supplied or by use respective component manufacturers.

1.7 EUT Modifications

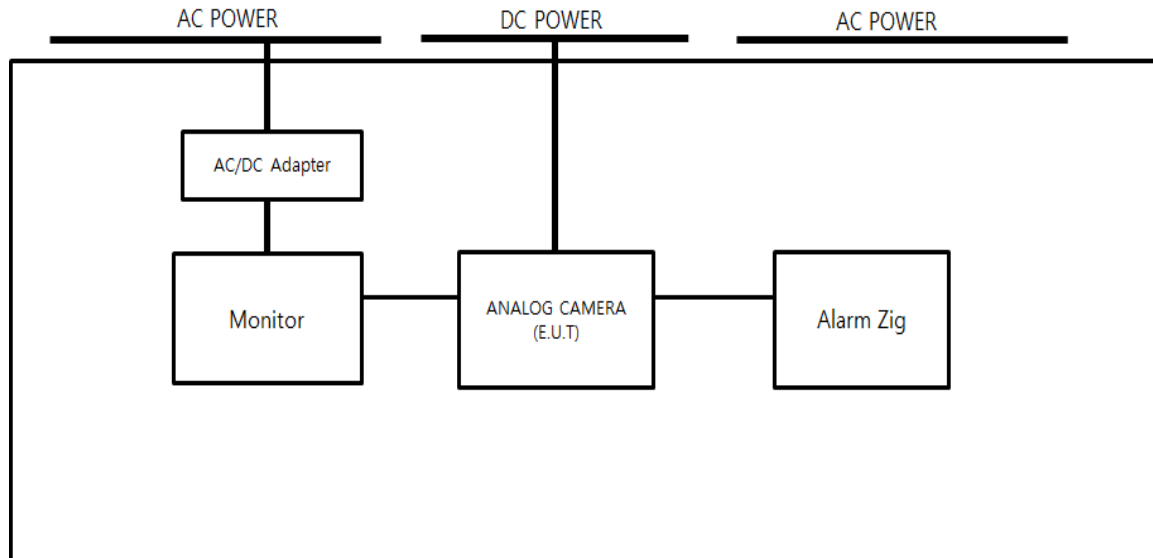
No modifications were made to the EUT in order to achieve and maintain compliance to the standards described in this report.

1.8 Configuration of Test System

- AC POWER Mode



- DC POWER Mode



1.9 Operating condition

- Input power condition during the measurements was 24 V (ac), 12 V (dc)
- Monitor Check



2. Test standards and results

Specifications	Description	Test Point	Remark
CISPR22, Class A	Conducted Emission	AC Input Port	C
CISPR22, Class A	Radiated Emission	Enclosure	C

Note : C=Complies N/C=Not Complies N/T=Not Tested N/A=Not Applicable



3. Test Performed

3.1 Conducted Emission Measurements

3.1.1 Test Description

The power line conducted emission measurements were performed in a shielded enclosure. The EUT was placed on a wooden table, 80 centimeters height above the floor. Power was fed to the EUT through a 50 ohm/ 50 micro henry Line Impedance Stabilization Network (LISN). The ground plane that was electrically bonded to the shield room ground system and all power lines entering the shield room were filtered.

3.1.2 Test Equipments

Description	Manufacturer	Model Number	Serial Number	Cal. Due
EMI Test Receiver	R&S	ESR3	101783	05. 06. 2016
LISN	R&S	ENV216	101137	02. 10. 2016
LISN	R&S	ENV216	101786	05. 06. 2016
Electro wave Shieldroom	SEMITEC	-	-	-

3.1.3 Test Environments

Ambient Temperatures : see the data

Relative Humidity : see the data

3.1.4 Test Limits

Frequency (MHz)	CISPR Publication 22			
	Class B		Class A	
	QP	AV	QP	AV
0.15 to 0.50	66 to 56	56 to 46	79	66
0.50 to 5.00	56	46	73	60
5.00 to 30.00	60	50	73	60

- Telecommunication

Frequency (MHz)	CISPR 22(Voltage)			
	Class B (dB μ V)		Class A (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.50	84.0 to 74.0	74.0 to 64.0	97.0 to 87.0	84.0 to 74.0
0.50 to 30.00	74.0	64.0	87.0	74.0

Frequency (MHz)	CISPR 22(Current)			
	Class B (dB μ A)		Class A (dB μ A)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.50	40.0 to 30.0	30.0 to 20.0	53.0 to 43.0	40.0 to 30.0
0.50 to 30.00	30.0	20.0	43.0	30.0

3.1.5 Test Procedure

The conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The analyzer's 6 dB bandwidth was set to 9 kHz. The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

The conducted emission test was performed with the EUT exercise program loaded, and the emissions were scanned between 150 kHz to 30 MHz on the HOT side and NEUTRAL side, herein referred to as H and N, respectively.

3.1.6 Test Results

According to the data in section 2.1.7, the EUT complied with the CISPR22 standards.



3.1.7 Test Data

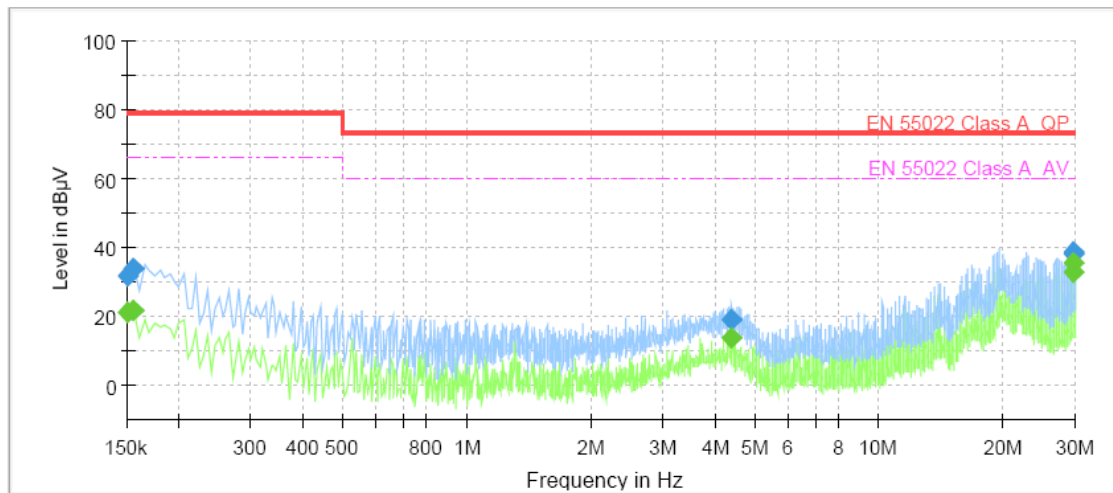
Temperature: 19.4 °C Humidity: 40.1 % R.H. Test Date: 12. 09. 2015 Tested by: Hyo Jin, Kim

- AC POWER Mode

Polarization: HOT

Common Information

Test Description: Conducted Emission
Model No.: SCO-6083R
Mode: AC
Operator Name: KES



Final Result

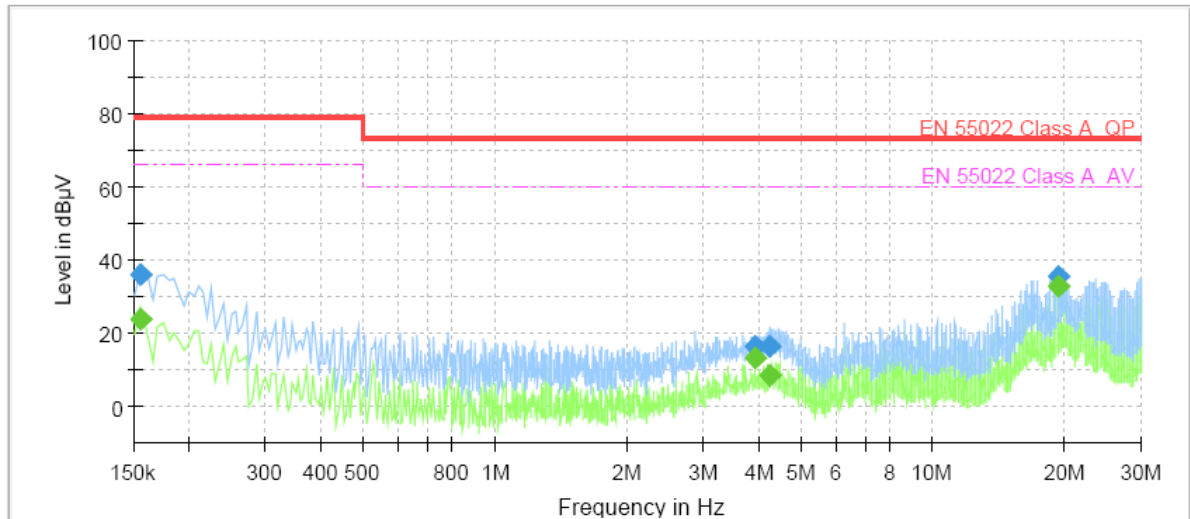
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	21.03	66.00	44.97	1000.0	9.000	L1	9.7
0.150000	31.92	---	79.00	47.08	1000.0	9.000	L1	9.7
0.155000	---	21.98	66.00	44.02	1000.0	9.000	L1	9.7
0.155000	33.96	---	79.00	45.04	1000.0	9.000	L1	9.7
4.410000	---	13.95	60.00	46.05	1000.0	9.000	L1	9.8
4.410000	19.11	---	73.00	53.89	1000.0	9.000	L1	9.8
29.625000	---	32.68	60.00	27.32	1000.0	9.000	L1	10.0
29.625000	37.96	---	73.00	35.04	1000.0	9.000	L1	10.0
29.630000	---	35.64	60.00	24.36	1000.0	9.000	L1	10.0
29.630000	38.72	---	73.00	34.28	1000.0	9.000	L1	10.0



Polarization: NEUTRAL

Common Information

Test Description: Conducted Emission
Model No.: SCO-6083R
Mode: AC
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	23.94	66.00	42.06	1000.0	9.000	N	9.6
0.155000	36.21	---	79.00	42.79	1000.0	9.000	N	9.6
3.935000	---	13.04	60.00	46.96	1000.0	9.000	N	9.8
3.935000	16.64	---	73.00	56.36	1000.0	9.000	N	9.8
4.240000	---	8.59	60.00	51.41	1000.0	9.000	N	9.8
4.240000	16.35	---	73.00	56.65	1000.0	9.000	N	9.8
19.410000	---	32.64	60.00	27.36	1000.0	9.000	N	10.0
19.410000	35.49	---	73.00	37.51	1000.0	9.000	N	10.0



KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (14) of (38)

- Telecommunication

Temperature: °C Humidity: % R.H. Test Date: Tested by:

[10 Mbps]

N/A

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



[100 Mbps]

N/A

3.2 Radiated Emission Measurements

3.2.1 Test Description

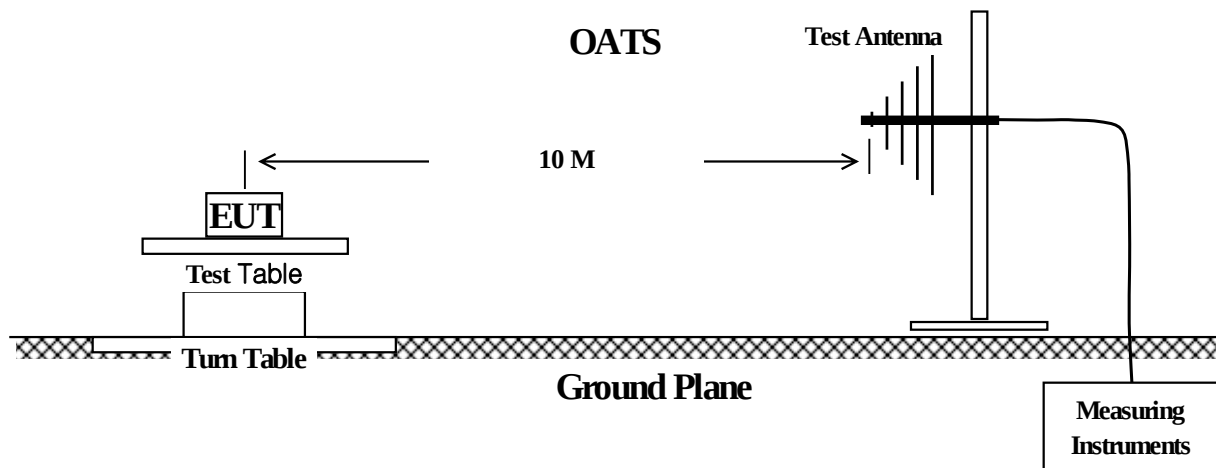
The radiated emissions measurements were performed on the ten-meter, open-field test site. The EUT was placed on a nonconductive turntable approximately 0.8 meters above the ground plane.

The frequency spectrum from 30 MHz to 1 000 MHz and 1 000 MHz to 6 000 MHz was scanned and maximum emission levels at each frequency recorded.

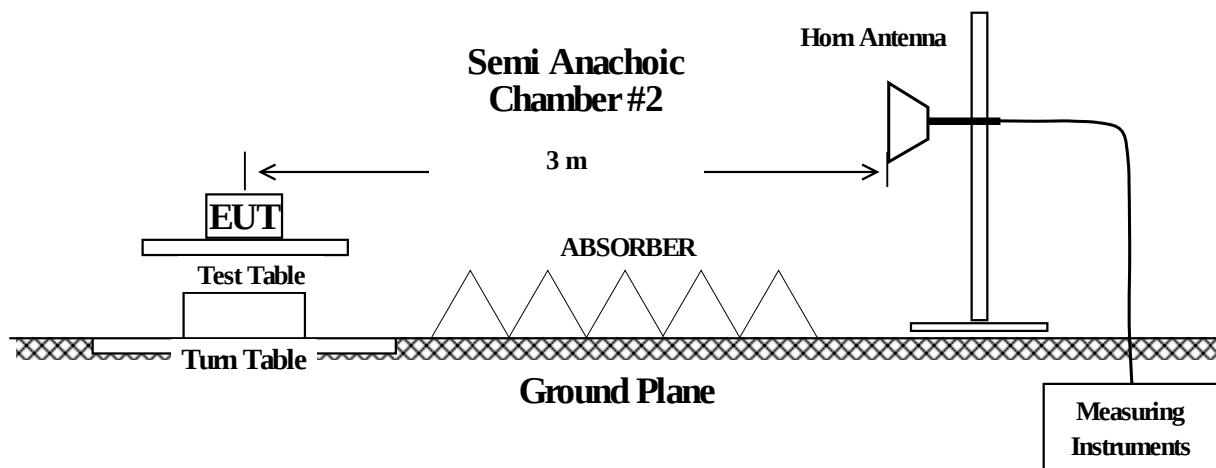
The system was rotated 360°, and the antenna was varied in the height between 1.0 and 4.0 meters in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

- above 1 GHz : Antenna height is fixed to 1.0 m

* Below 1 GHz



* Above 1 GHz



**KES Co., Ltd.**

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (17) of (38)

3.2.2 Test Equipments

Description	Manufacturer	Model Number	Serial Number	Cal. Due
EMI TEST Receiver	R & S	ESR3	101781	05. 06. 2016
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9163	9163-713	05. 15. 2017
OATS	KES	-	-	-
Antenna Mast	DAEIL EMC	-	-	-
Turn Table	DAEIL EMC	-	-	-
EMI TEST Receiver	R & S	ESU26	100552	05. 06. 2016
BroadbandCoaxial Prempplier	A-H-SYSTEM,INC	SAS-571	781	05. 07. 2017
DOUBLE RIDGED HORN ANTENNA	Schwarzbeck Mess - Elektronik	BBV 9718	9718-246	10. 23. 2015
Semi Anachoic Chamber #2	SEMITEC	-	-	-
Antenna Mast	AUDIX	-	-	-
Turn Table	AUDIX	-	-	-

3.2.3 Test Environments

Temperatures : see the data

Humidity : see the data

3.2.4 Test Limits*** Below 1 GHz**

Frequency (MHz)	CISPR Publication 22	
	Class B	Class A
	Quasi-peak dB(uV/m)	Quasi-peak dB(uV/m)
0,15 to 30	Under consideration	Under consideration
30 to 230	30	40
230 to 1 000	37	47

*** Above 1 GHz**

Frequency (MHz)	CISPR Publication 22			
	Class B @ 3 m (dB μ V/m)		Class A @ 3 m (dB μ V/m)	
	PK	AV	PK	AV
1 000 to 3 000	70	50	76	56
3 000 to 6 000	74	54	80	60

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

3.2.5 Test Procedure

Before final measurements of radiated emission were made on the OATS, the EUT was scanned in semi-anechoic chamber in order to determine its emission spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emission in amplitude, direction and frequency. This process was repeated during final radiated emission measurements on the OATS range, at each frequency, in order to ensure that maximum emissions amplitudes were attained.

The radiated emission test was performed with EUT exercise program loaded, and the emissions were scanned between 30 MHz to 1 000 MHz and 1 000 MHz to 6 000 MHz using the spectrum analyzer. The spectrum analyzer's 6 dB bandwidth was set to 120 kHz(1 MHz), and the analyzer was operated in the CISPR quasi-peak (Peak) detection mode.

Measurements were taken using both HORIZONTAL and VERTICAL antenna polarization, herein referred to as H and V, respectively.

Field Strength Calculation

The Field Strength (FS) is calculated by adding the Antenna Factor (AF) and Cable Factor (CF) and Amplifier Gain(AG) from the Measured Reading (MR). The basic equation with a sample calculation is as follows:

$$\text{* Below 1 GHz : FS(dB}\mu\text{V/m)} = \text{MR(dB}\mu\text{V)} + [\text{AF(dB/m)} + \text{CF(dB)}]$$

$$\text{* Above 1 GHz : FS(dB}\mu\text{V/m)} = \text{MR(dB}\mu\text{V)} + [\text{AF(dB/m)} + \text{CF(dB)}] - \text{AG}$$



3.2.6 Test Results

According to the data in section 3.2.7, the EUT complied with the CISPR22 standards.

3.2.7 Test Data

* Below 1 GHz

Temperature: 6.6 °C Humidity: 84.0 % R.H. Test Date: 12. 10. 2015 Tested by: Hyo Jin, Kim

- AC POWER Mode

Frequency (MHz)	Amplitude (dB μ V/m)	Antenna		Correction Factor		Corrected Amplitude (dB μ V/m)	Applicable Limit (dB μ V/m)	Margin (dB)
		Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)			
123.12	12.10	V	1.00	9.38	2.87	24.35	40.00	15.65
133.79	13.27	H	4.00	8.41	3.00	24.68	40.00	15.32
154.16	12.23	V	1.00	8.35	3.24	23.82	40.00	16.18
224.01	14.80	H	3.10	11.83	4.08	30.71	40.00	9.29
446.13	14.30	H	2.86	16.35	6.15	36.80	47.00	10.20
519.85	12.25	H	2.70	17.54	6.74	36.53	47.00	10.47

- DC POWER Mode

Frequency (MHz)	Amplitude (dB μ V/m)	Antenna		Correction Factor		Corrected Amplitude (dB μ V/m)	Applicable Limit (dB μ V/m)	Margin (dB)
		Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)			
127.97	12.26	V	1.00	8.94	2.93	24.13	40.00	15.87
134.76	13.31	H	4.00	8.32	3.01	24.64	40.00	15.36
155.13	11.97	V	1.00	8.38	3.25	23.60	40.00	16.40
224.01	17.00	H	3.21	11.83	4.08	32.91	40.00	7.09
446.13	14.09	H	2.89	16.35	6.15	36.59	47.00	10.41
519.85	15.20	H	2.73	17.54	6.74	39.48	47.00	7.52



KES Co., Ltd.

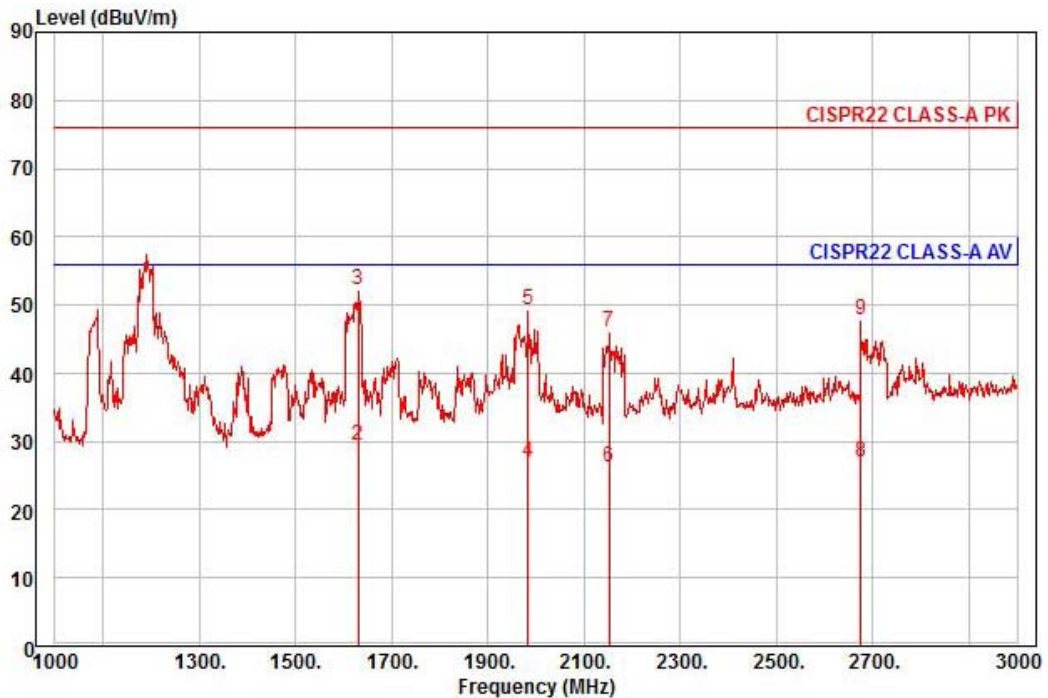
C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (20) of (38)

* Above 1 GHz

Temperature: 18.9 °C Humidity: 43.1 % R.H. Test Date: 12. 10. 2015 Tested by: Hyo Jin, Kim

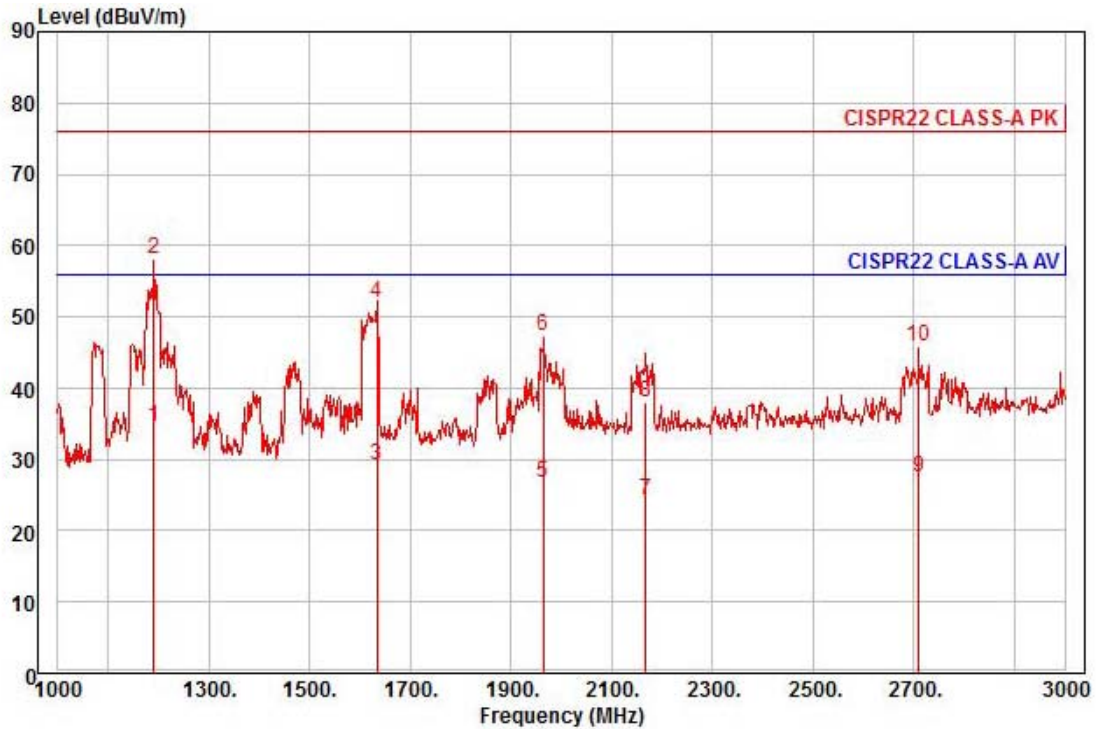
- AC POWER Mode



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 24 V (ac)_CE
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	1190.00	0.00	24.66	6.60	40.03	0	76.00	-84.77	horizontal	Peak
2 av	1630.00	34.93	26.41	7.86	39.81	28	56.00	-26.61	horizontal	Average
3 pp	1630.00	57.82	26.41	7.86	39.81	28	76.00	-23.72	horizontal	Peak
4	1984.00	30.00	27.82	8.87	39.64	335	56.00	-28.95	horizontal	Average
5	1984.00	52.30	27.82	8.87	39.64	335	76.00	-26.65	horizontal	Peak
6	2152.00	28.38	28.25	9.34	39.72	346	56.00	-29.75	horizontal	Average
7	2152.00	48.22	28.25	9.34	39.72	346	76.00	-29.91	horizontal	Peak
8	2676.00	26.64	29.54	10.80	40.02	16	56.00	-29.04	horizontal	Average
9	2676.00	47.45	29.54	10.80	40.02	16	76.00	-28.23	horizontal	Peak

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 24 V (ac)_CE
Memo : (1 - 3) GHz

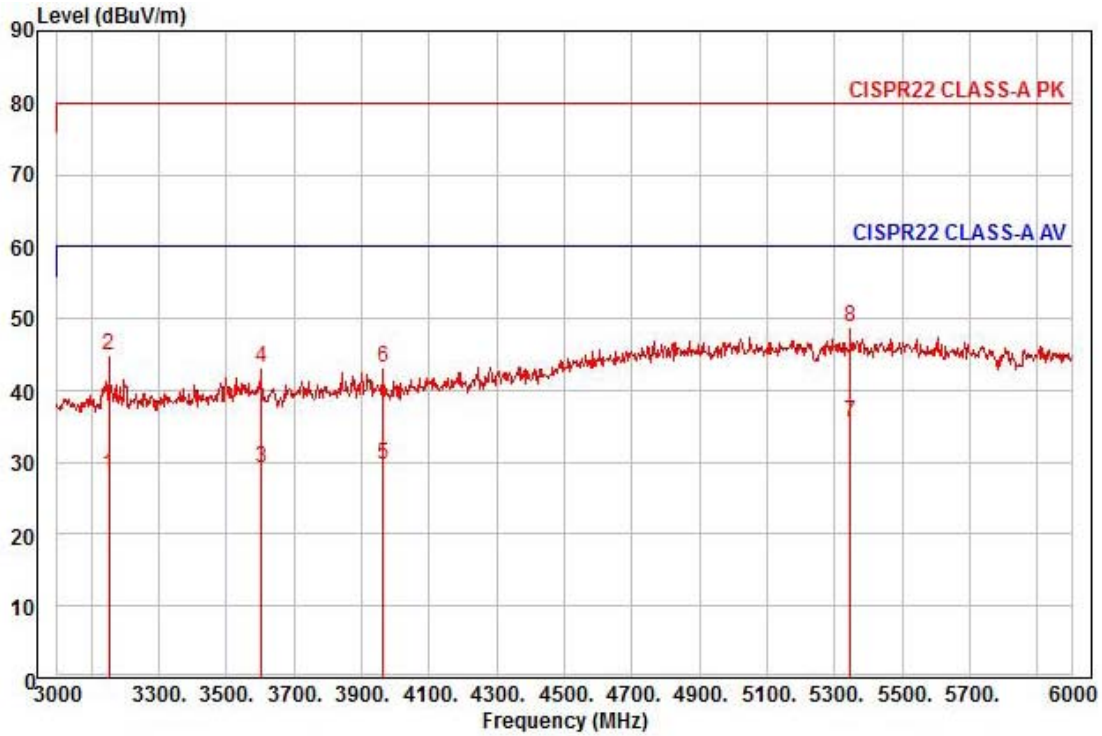
		Read	Ant	Cable	Preamp	TPos	Limit	Over		
	Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1 av	1190.00	43.44	24.66	6.60	40.03	0	56.00	-21.33	vertical	Average
2 pp	1190.00	66.89	24.66	6.60	40.03	0	76.00	-17.88	vertical	Peak
3	1634.00	34.70	26.43	7.87	39.81	359	56.00	-26.81	vertical	Average
4	1634.00	57.53	26.43	7.87	39.81	359	76.00	-23.98	vertical	Peak
5	1964.00	29.93	27.74	8.82	39.65	348	56.00	-29.16	vertical	Average
6	1964.00	50.40	27.74	8.82	39.65	348	76.00	-28.69	vertical	Peak
7	2168.00	26.30	28.29	9.39	39.73	286	56.00	-31.75	vertical	Average
8	2168.00	40.08	28.29	9.39	39.73	286	76.00	-37.97	vertical	Peak
9	2710.00	26.98	29.62	10.89	40.04	357	56.00	-28.55	vertical	Average
10	2710.00	45.30	29.62	10.89	40.04	357	76.00	-30.23	vertical	Peak



KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (22) of (38)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 24 V (ac)_CE
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	3153.00	25.86	30.59	11.90	40.24	306	60.00	-31.89	horizontal	Average
2	3153.00	42.61	30.59	11.90	40.24	306	80.00	-35.14	horizontal	Peak
3	3603.00	25.70	31.34	12.50	40.33	7	60.00	-30.79	horizontal	Average
4	3603.00	39.68	31.34	12.50	40.33	7	80.00	-36.81	horizontal	Peak
5	3963.00	25.13	31.95	12.98	40.40	315	60.00	-30.34	horizontal	Average
6	3963.00	38.69	31.95	12.98	40.40	315	80.00	-36.78	horizontal	Peak
7 pp	5346.00	23.43	37.02	15.50	40.36	309	60.00	-24.41	horizontal	Average
8 pk	5346.00	36.54	37.02	15.50	40.36	309	80.00	-31.30	horizontal	Peak

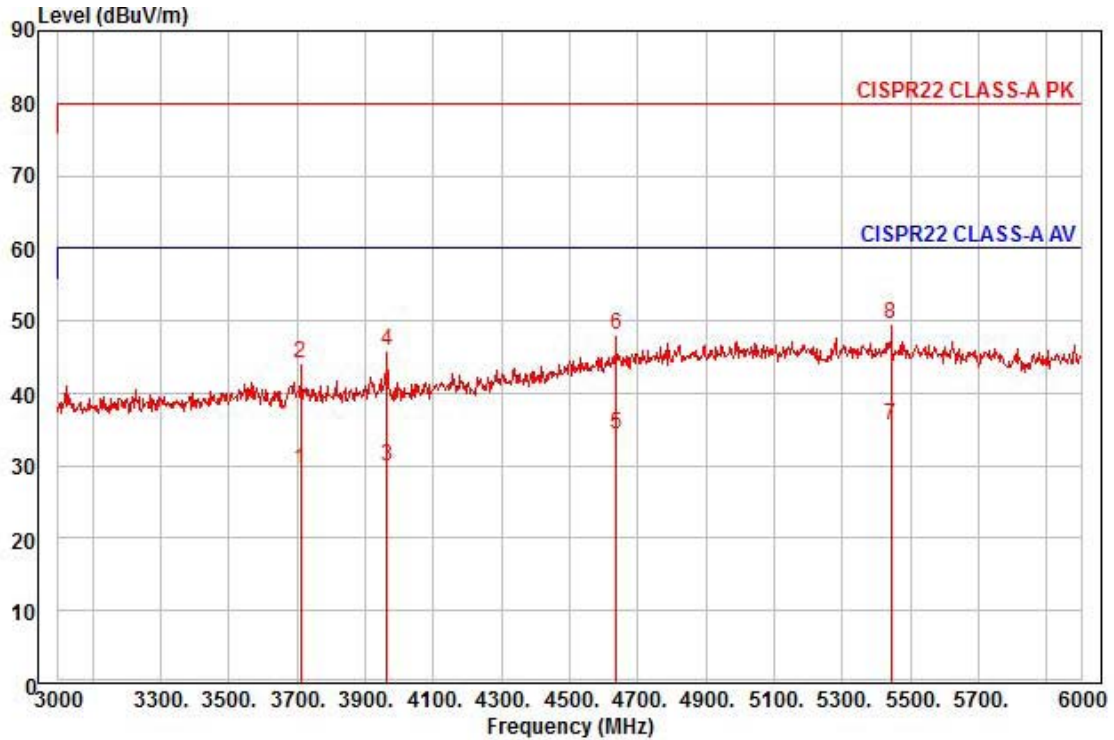
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (23) of (38)



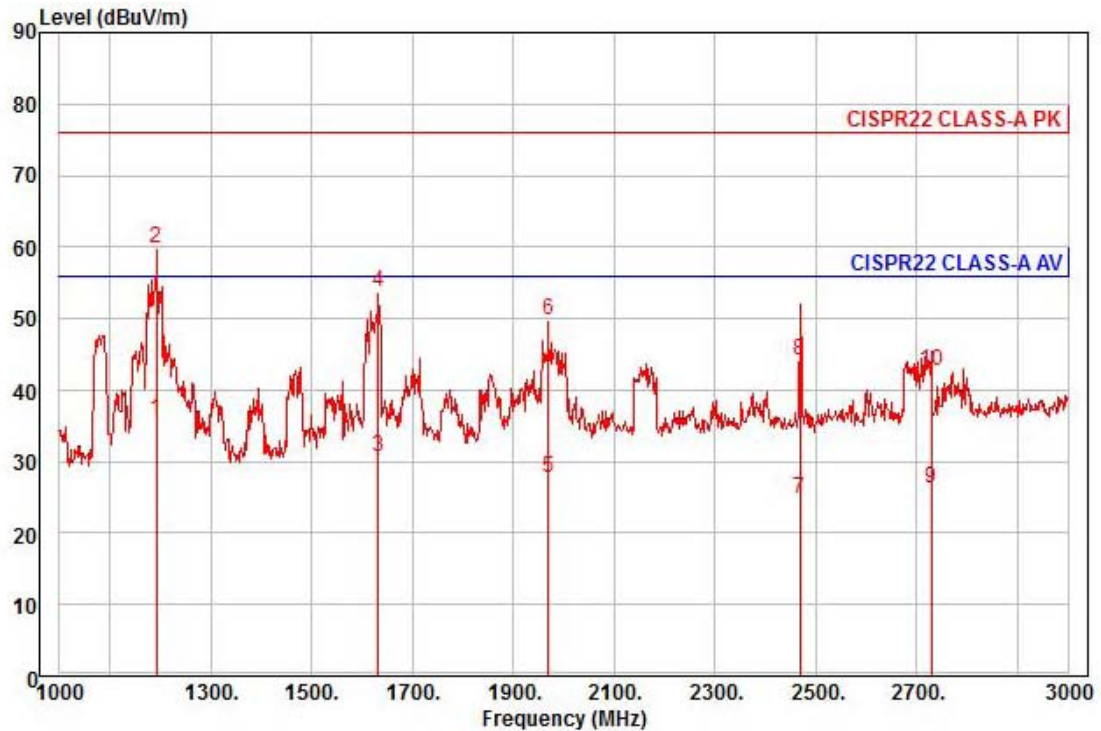
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 24 V (ac)_CE
Memo : (3 - 6) GHz

	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	3711.00	25.68	31.52	12.65	40.35	330	60.00	-30.50	vertical	Average
2	3711.00	40.28	31.52	12.65	40.35	330	80.00	-35.90	vertical	Peak
3	3963.00	25.45	31.95	12.98	40.40	338	60.00	-30.02	vertical	Average
4	3963.00	41.33	31.95	12.98	40.40	338	80.00	-34.14	vertical	Peak
5	4638.00	24.88	35.65	14.20	40.41	0	60.00	-25.68	vertical	Average
6	4638.00	38.71	35.65	14.20	40.41	0	80.00	-31.85	vertical	Peak
7 pp	5442.00	23.48	36.83	15.67	40.35	151	60.00	-24.37	vertical	Average
8 pk	5442.00	37.33	36.83	15.67	40.35	151	80.00	-30.52	vertical	Peak

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

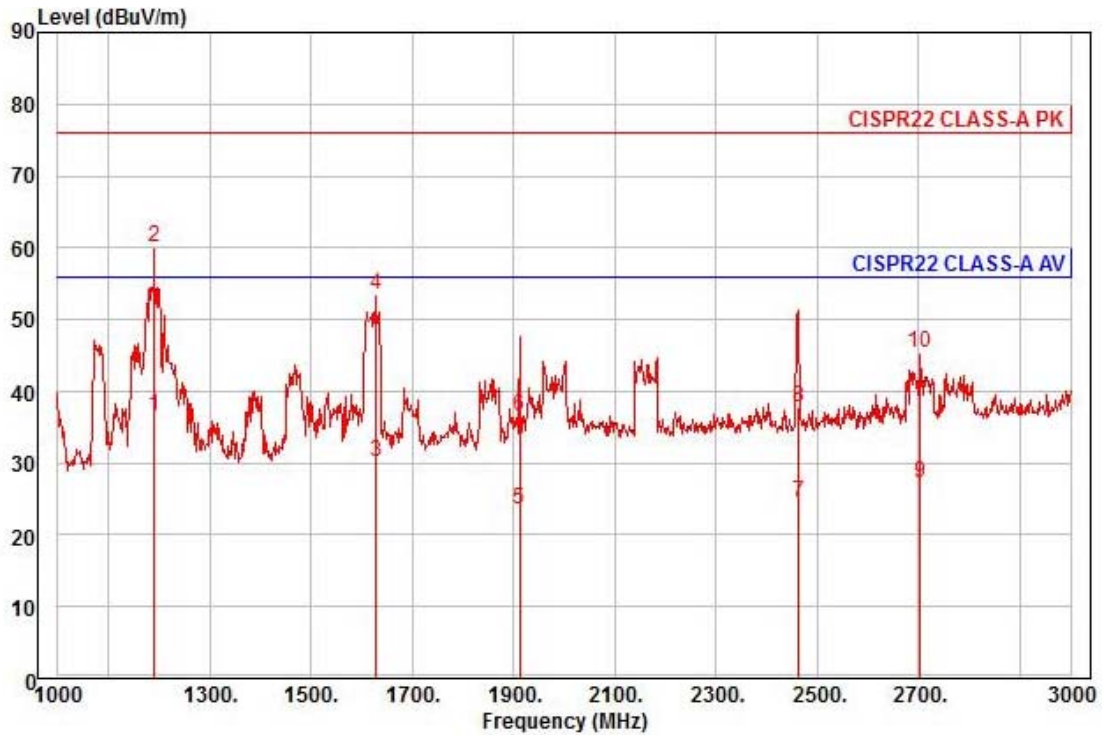


- DC POWER Mode



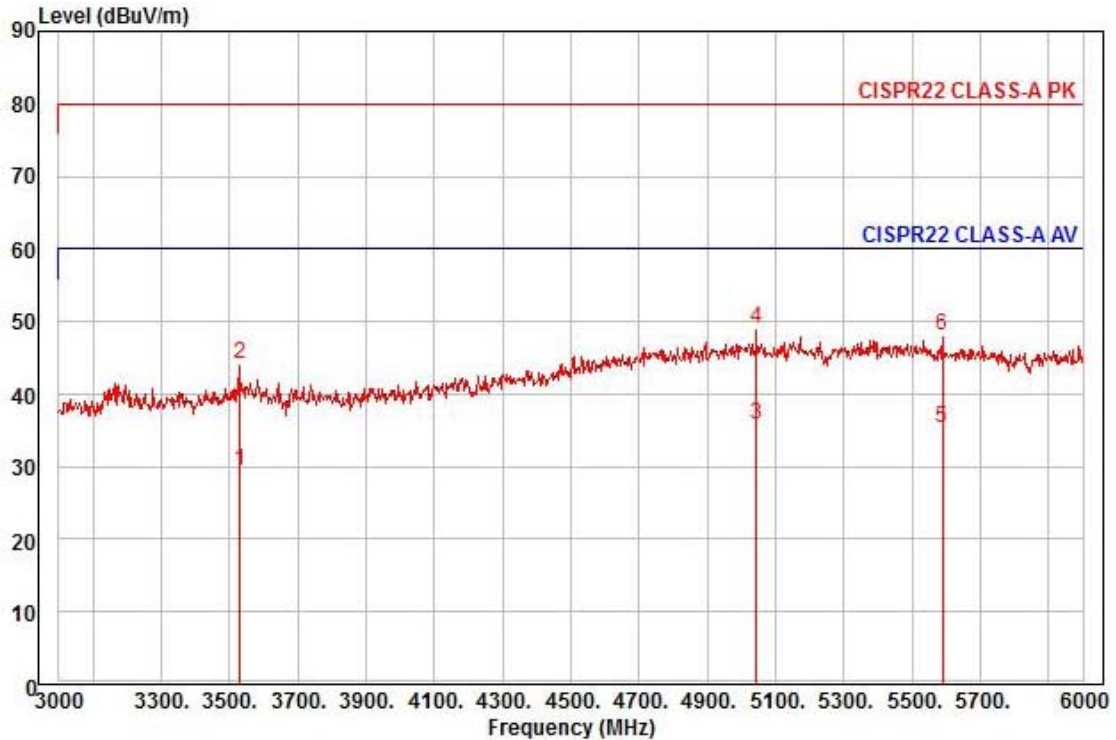
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 12 V (dc)_CE
Memo : (1 - 3) GHz

		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	av	1192.00	44.54	24.67	6.60	40.03	47	56.00	-20.22	horizontal Average
2	pp	1192.00	68.58	24.67	6.60	40.03	47	76.00	-16.18	horizontal Peak
3		1632.00	36.13	26.42	7.86	39.81	22	56.00	-25.40	horizontal Average
4		1632.00	59.30	26.42	7.86	39.81	22	76.00	-22.23	horizontal Peak
5		1970.00	30.86	27.76	8.83	39.64	24	56.00	-28.19	horizontal Average
6		1970.00	52.95	27.76	8.83	39.64	24	76.00	-26.10	horizontal Peak
7		2468.00	25.32	29.03	10.22	39.90	36	56.00	-31.33	horizontal Average
8		2468.00	44.81	29.03	10.22	39.90	36	76.00	-31.84	horizontal Peak
9		2730.00	25.75	29.67	10.95	40.05	16	56.00	-29.68	horizontal Average
10		2730.00	42.03	29.67	10.95	40.05	16	76.00	-33.40	horizontal Peak



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 12 V (dc)_CE
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	av	1190.00	45.29	24.66	6.60	40.03	0	56.00	-19.48	vertical	Average
2	pp	1190.00	68.96	24.66	6.60	40.03	0	76.00	-15.81	vertical	Peak
3		1628.00	35.64	26.40	7.85	39.81	11	56.00	-25.92	vertical	Average
4		1628.00	59.04	26.40	7.85	39.81	11	76.00	-22.52	vertical	Peak
5		1912.00	27.02	27.53	8.67	39.67	206	56.00	-32.45	vertical	Average
6		1912.00	40.08	27.53	8.67	39.67	206	76.00	-39.39	vertical	Peak
7		2464.00	25.31	29.02	10.21	39.90	66	56.00	-31.36	vertical	Average
8		2464.00	38.46	29.02	10.21	39.90	66	76.00	-38.21	vertical	Peak
9		2704.00	26.67	29.60	10.88	40.04	356	56.00	-28.89	vertical	Average
10		2704.00	44.92	29.60	10.88	40.04	356	76.00	-30.64	vertical	Peak



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 12 V (dc)_CE
Memo : (3 - 6) GHz

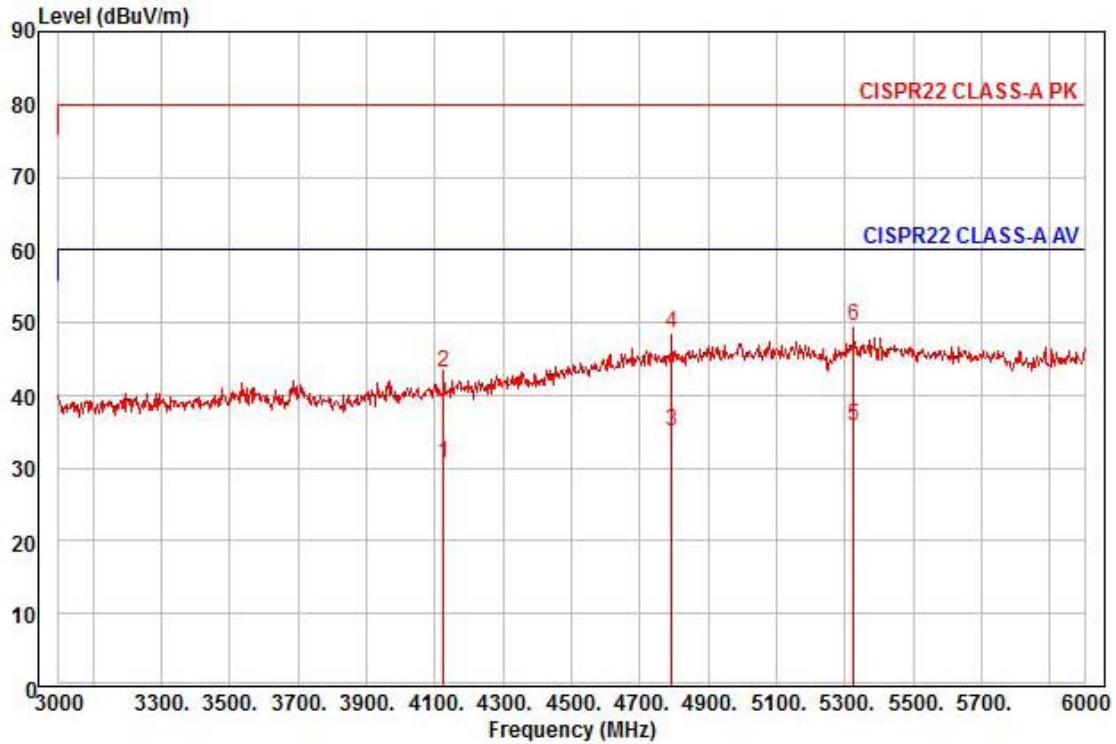
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3531.00	26.05	31.22	12.41	40.32	324	60.00	-30.64	horizontal	Average
2	3531.00	40.71	31.22	12.41	40.32	324	80.00	-35.98	horizontal	Peak
3 pp	5043.00	23.63	37.63	14.95	40.40	347	60.00	-24.19	horizontal	Average
4 pk	5043.00	36.91	37.63	14.95	40.40	347	80.00	-30.91	horizontal	Peak
5	5589.00	23.23	36.53	15.94	40.33	312	60.00	-24.63	horizontal	Average
6	5589.00	35.88	36.53	15.94	40.33	312	80.00	-31.98	horizontal	Peak



KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-15T0343
Page (27) of (38)



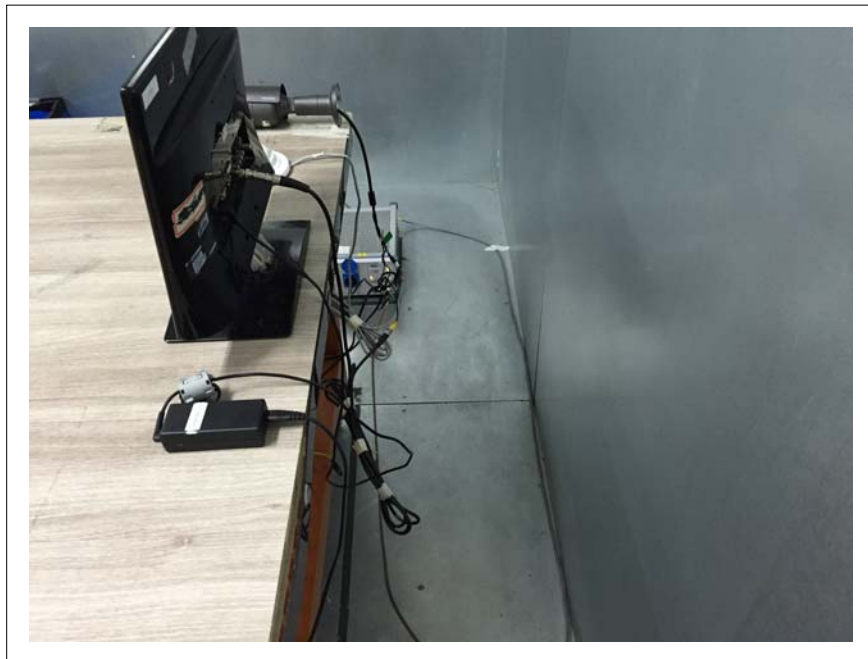
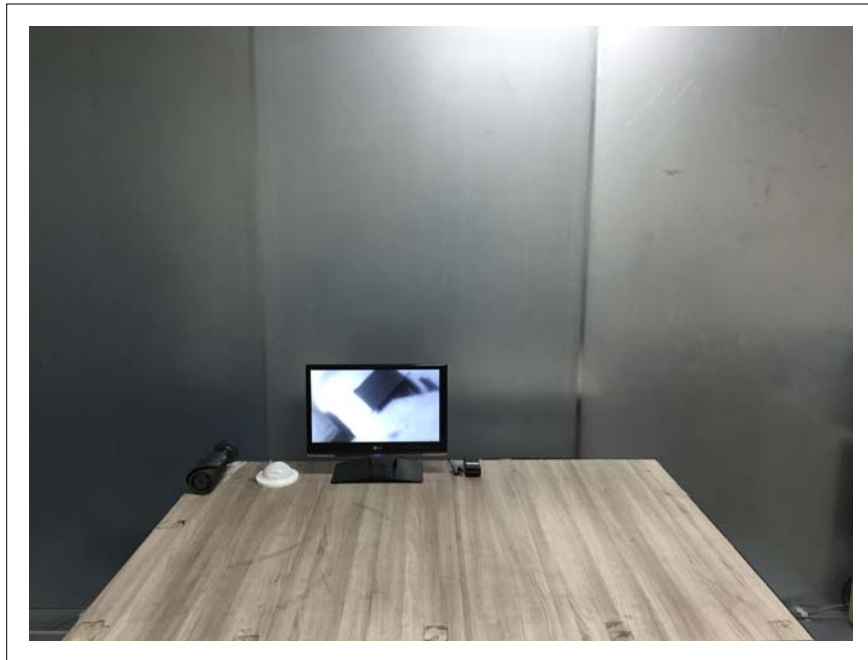
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCO-6083R
Mode : 12 V (dc)_CE
Memo : (3 - 6) GHz

	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	4125.00	24.98	32.72	13.26	40.41	342	60.00	-29.45	vertical	Average
2	4125.00	37.65	32.72	13.26	40.41	342	80.00	-36.78	vertical	Peak
3	4794.00	24.37	36.54	14.49	40.41	184	60.00	-25.01	vertical	Average
4	4794.00	37.86	36.54	14.49	40.41	184	80.00	-31.52	vertical	Peak
5 pp	5325.00	23.68	37.06	15.46	40.36	153	60.00	-24.16	vertical	Average
6 pk	5325.00	37.35	37.06	15.46	40.36	153	80.00	-30.49	vertical	Peak

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

4. Test Setup Photographs

4.1 Conducted Emission





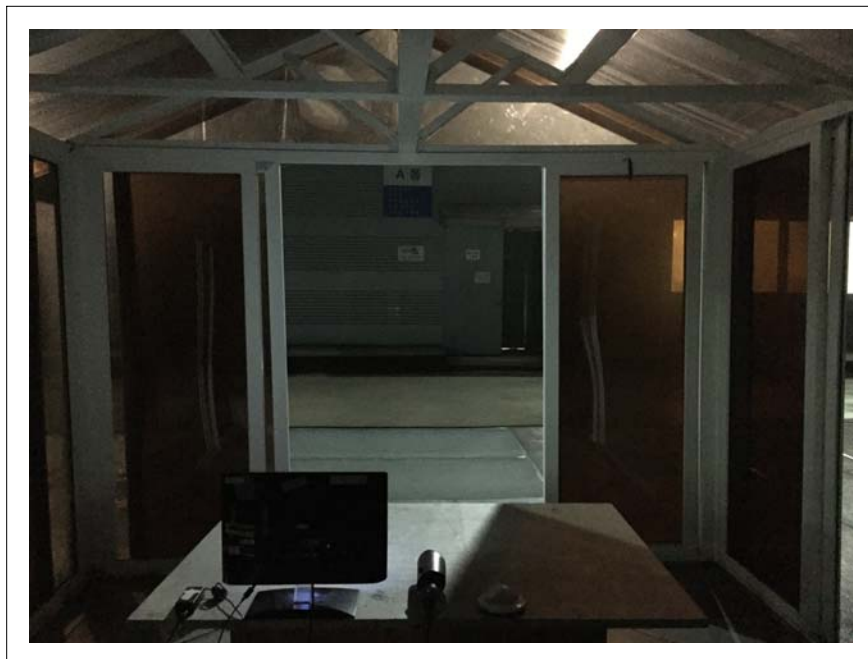
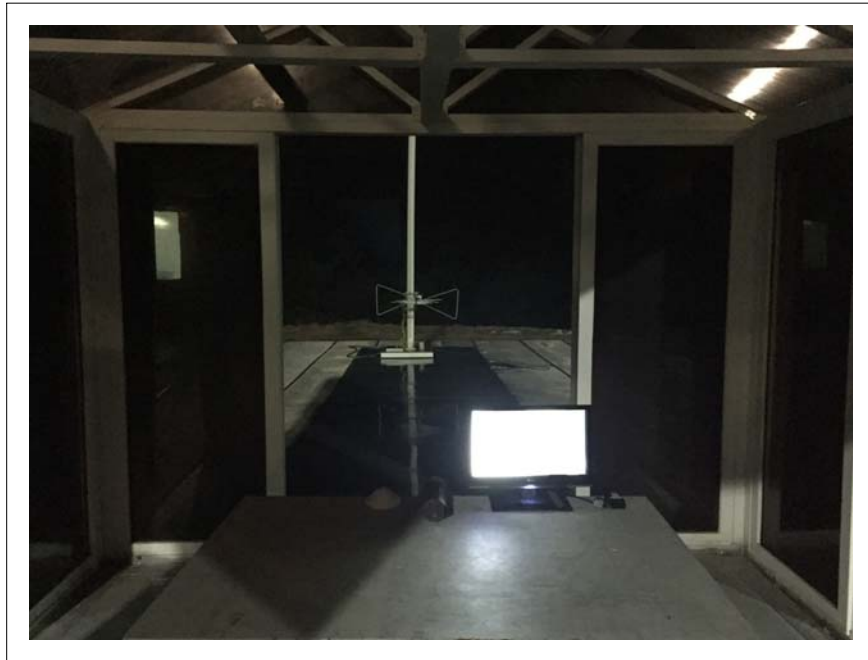
- **Telecommunication Emission**

N/A

N/A

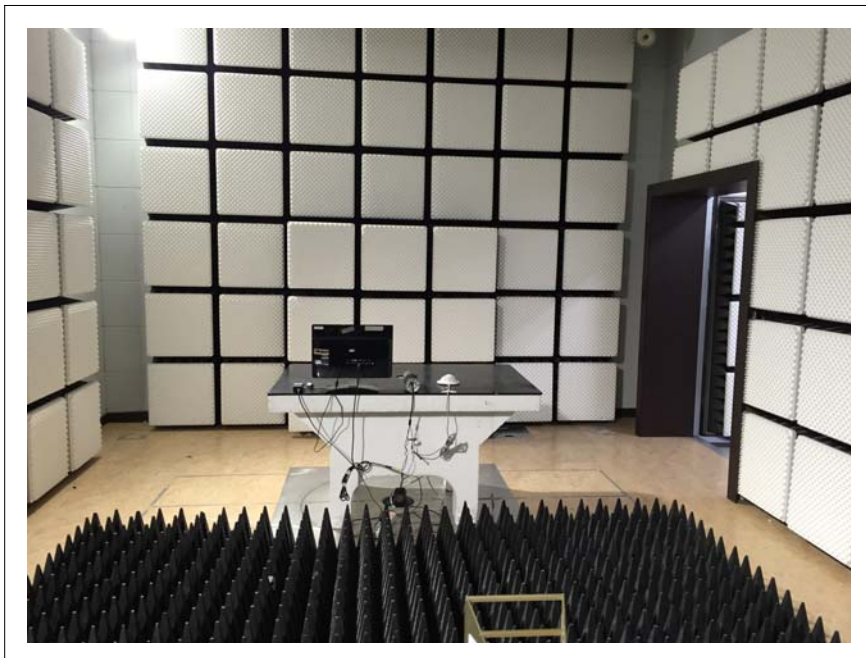
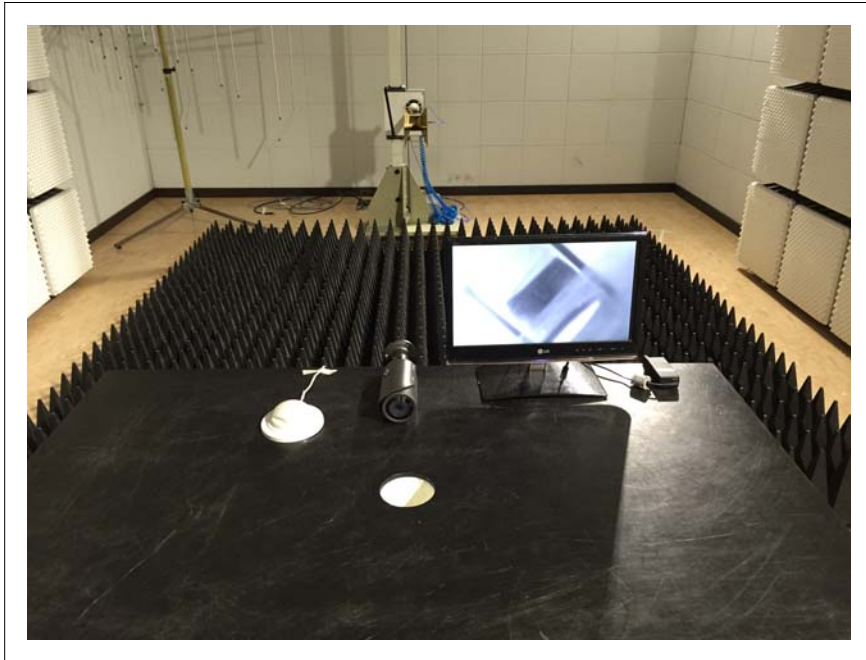
4.2 Radiated Emission

* Below 1 GHz



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

* Above 1 GHz

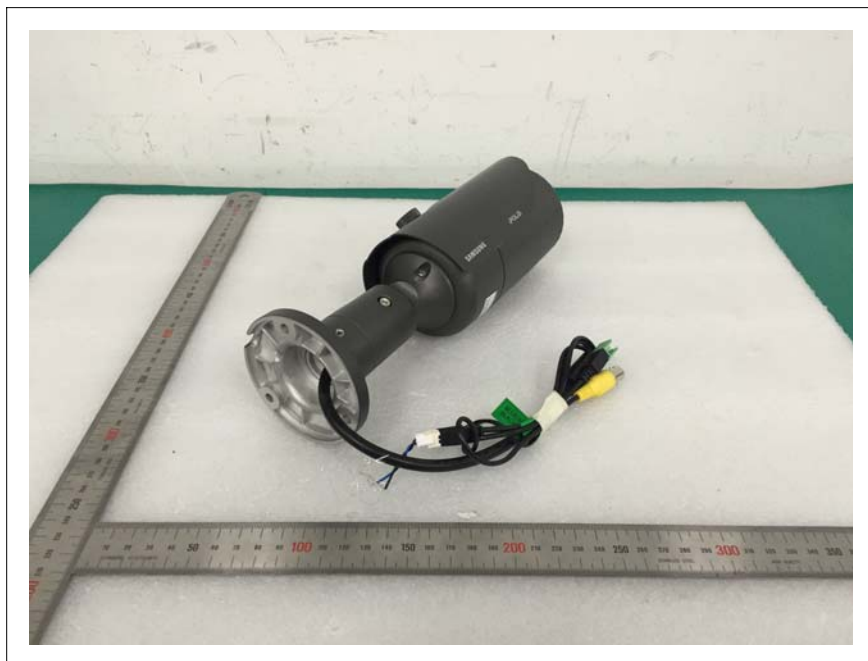


This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

5. External Photographs



[FRONT VIEW]



[REAR VIEW]

This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

6. Internal Photographs

E.U.T: Internal View



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

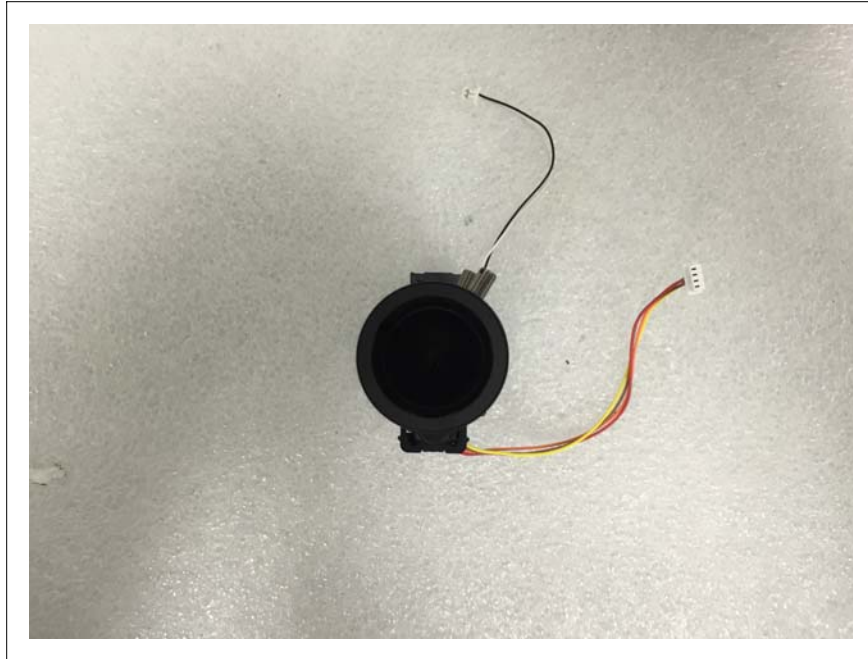
E.U.T: Internal View(Top) - IR Board



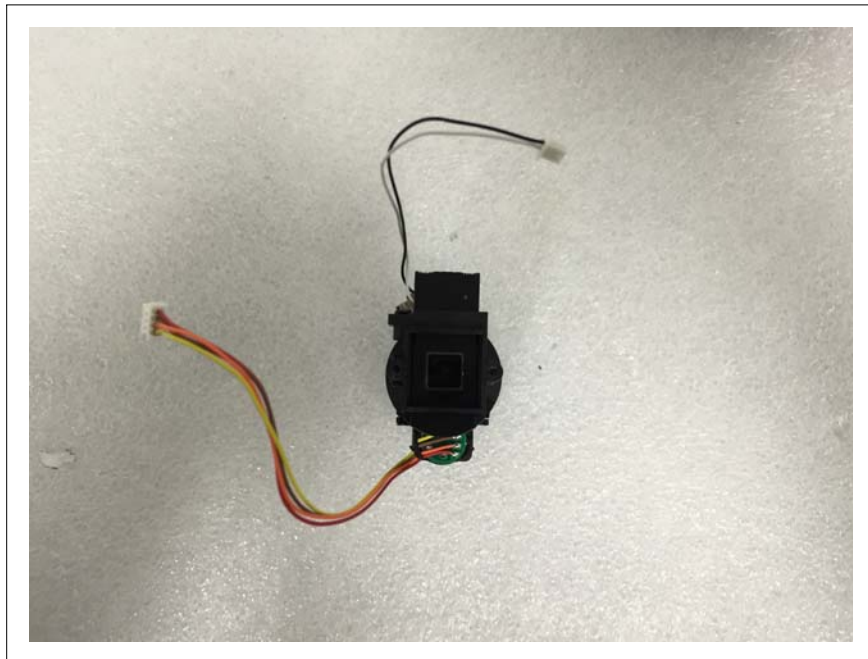
E.U.T: Internal View(Bottom) - IR Board



E.U.T: Internal View(Top) - Lens Module



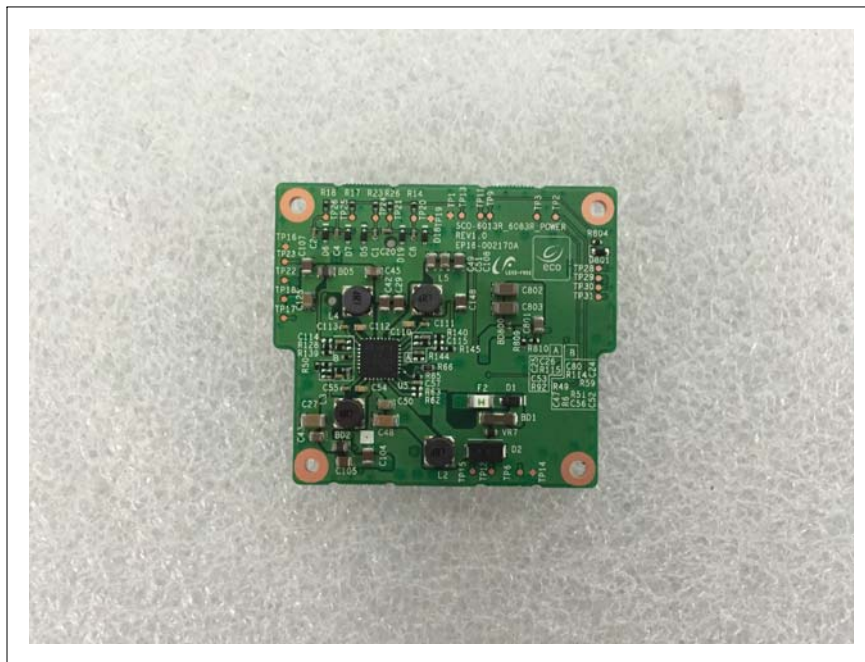
E.U.T: Internal View(Bottom) - Lens Module



E.U.T: Internal View(Top) - Main Board

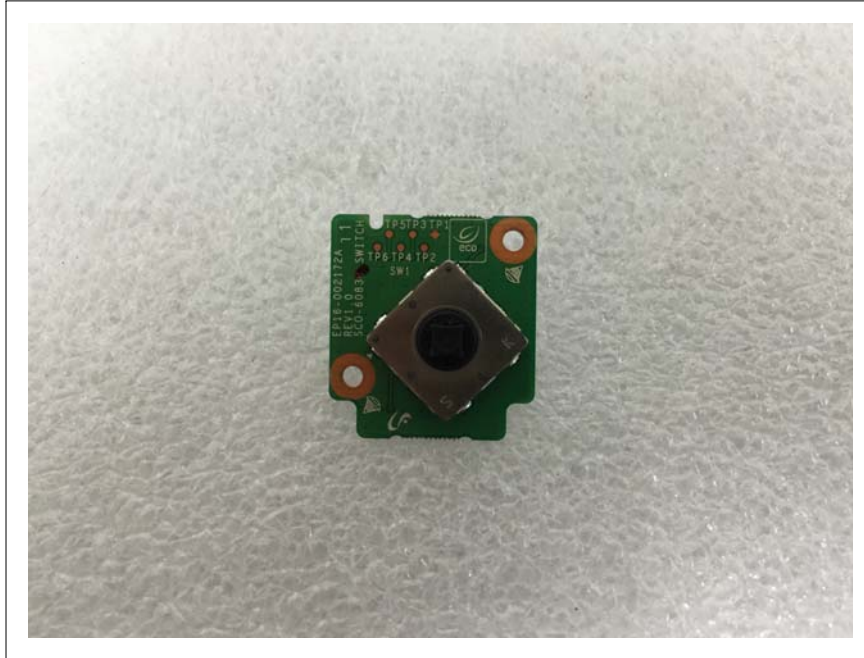


E.U.T: Internal View(Bottom) - Main Board



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

E.U.T: Internal View(Top) - Button Board

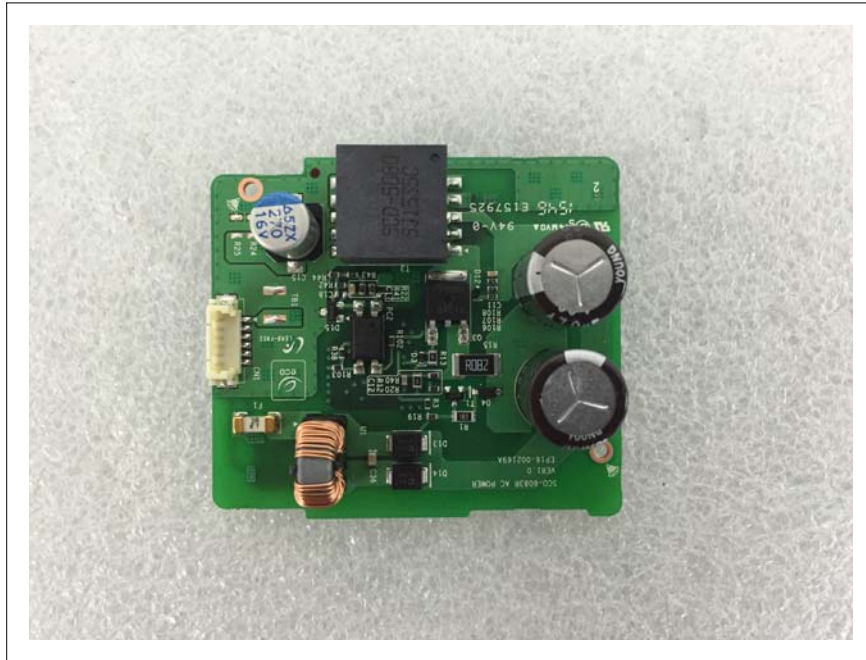


E.U.T: Internal View(Bottom) - Button Board

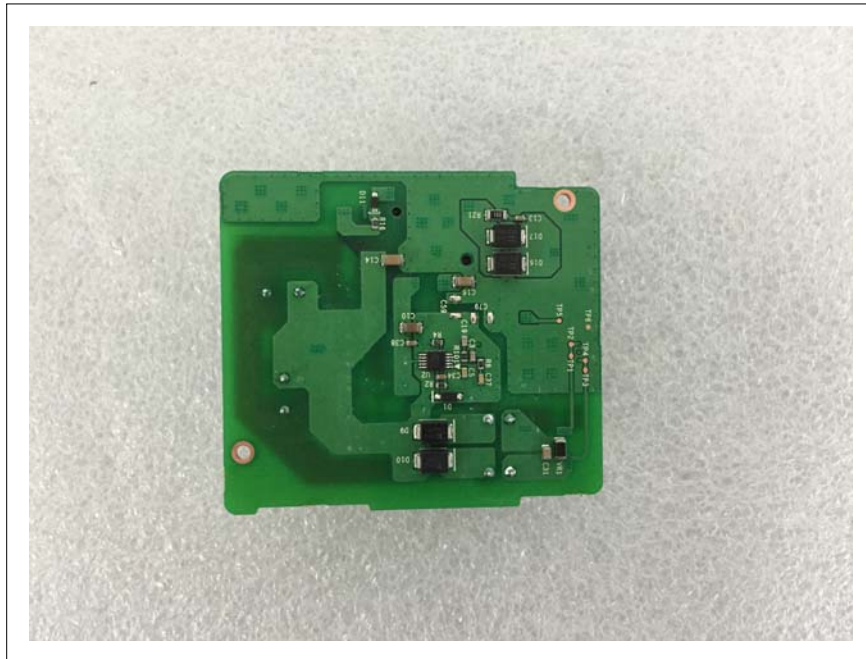


This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

E.U.T: Internal View(Top) - Power Board



E.U.T: Internal View(Bottom) - Power Board



This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.