

VERIFICATION OF FCC PART 15 COMPLIANCE

*KES hereby verify that the subject product complies with all the
electromagnetic emission specified in the FCC Rule Part 15*

Product Description:	ANALOG CAMERA
Model/Brand Name:	SCV-6083RN
Variant Model:	-
FCC Rule Part(s):	FCC 47CFR Part 15 Subpart B Class A Part 15.107(b) & Part 15.109(b)
FCC Procedure:	Verification
Applicant Name:	Hanwha Techwin Company Limited
Applicant Address:	1204, Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do
Manufacturer Name:	Tianjin Samsung Electronics Co., Ltd.
Manufacturer Address:	No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Test Report Reference No.:	KES-E1-15T0346

ANALOG CAMERA, Model SCV-6083RN has been tested in accordance with the measurement procedures specified in FCC 47CFR Part 15 Subpart B class A and has been shown to be complied with the electromagnetic emission limits specified in FCC Rule Part 15 Subpart B class A. A testing of the sample product has been valid for the sample tested based on the reference test report, KES-E1-15T0346

Date of Issue: 12. 18. 2015

Dong Hun, Jang
Technical Manager
Signature:



KES.Co., Ltd.

C-3701, 40, Simin-daero 365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 431-716, Korea
Tel: +82-31-425-6200 // Fax: +82-31-424-0450



EMI Test Report for FCC

DoC / Verification

Test Report No. : KES-E1-15T0346
Date of Issue : 12. 18. 2015
Description of Product : ANALOG CAMERA
Model No. : SCV-6083RN
Variant Model : -
Applicant : Hanwha Techwin Company Limited
Applicant's Address : 1204, Changwo-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do
Manufacturer : Tianjin Samsung Electronics Co.,Ltd.
Manufacturer's Address : No.11 Weiliu Rd, Micro-Electronic Industrial
Park, TEDA, Tianjin, 300385, People's Republic of China
Standards : FCC Part 15 Subpart A
- Part 15.107(b) : Conducted Emission
- Part 15.109(b) : Radiated Emission
Date of Receipt : 12. 03. 2015
Test Date : 12. 15. 2015 ~ 12. 17. 2015
Test Results : ☒ Pass ☐ Fail

The test results relate only to the items tested.

Tested by:

Dae Hyun, 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, Gayeoro, Yeosu-si, Gyeonggi-do, 12658, Korea
Tel : +82-31-883-5092 / Fax: +82-31-883-5169



TABLE OF CONTENTS

1	General Information	3
1.1	Introduction	3
1.2	Geographic location	4
1.3	Laboratory Accreditations and Listings	5
1.4	Product Description	6
1.5	Equipment Under Test	7
1.6	Support Equipments	7
1.7	External I/O Cabling	7
1.8	Special Accessories	8
1.9	E.U.T Modifications	8
1.10	Configuration of Test System	8
1.11	Operating condition	9
1.12	Statements and User Information	9
2	Summary of tests	10
2.1	Conducted Emission Measurements	11
2.2	Radiated Emission Measurements	15
3	Product Labelling Requirements	28
3.1	FCC Statement	28
4	Test Setup Photographs	29
4.1	Conducted Emission	29
4.2	Radiated Emission	30
5	External Photographs	34
6	Internal Photographs	36
	Appendix A - Schematics/Block Diagram	40
	Appendix B - User's Manual	41



1. General Information

1.1 Introduction

The EMI Test Report of Information Technology Equipment is prepared on behalf of named applicant in accordance with the ANSI C63.4-2009. The test results reported in this document relate only to the item that was tested.

The detailed description of the measurement facility was found to be in compliance with the requirement of Section 2.948 of the FCC Rules. The Federal Communications Commission has the reports on file and is listed under Registration Number. The scope of the accreditation covers the FCC Method - 47 CFR Part 15 or 18 of the Commission's Rules.

All measurements contained in this report were conducted in accordance with ANSI C63.4-2009. The instrumentation utilized for the measurements conforms with CISPR16 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods. Some accessories are used to increase sensitivity and prevent overloading of the measuring instrument. Calibration checks are performed yearly on the instruments by a local calibration laboratories.

All radiated and conducted emission measurements are performed manually at KES Co., Ltd. (hereinafter referred to as "KES"), 473-29, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658 Korea

The radiated emission measurements required by the FCC Rules were performed on 3 meter or 10 meter, Open Area Test Site, test range maintained by KES. Complete ANSI 63.4-2009 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 power line conducted emission measurements were performed in a shielded enclosure also located at the same facility.

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

1.2 Geographic location



KES Office Latitude : 37°23'54.59"N, Longitude : 126°58'14.66"E



KES OATS Latitude : 37°13'58.03"N, Longitude : 127°37'21.95"E

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 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.	
KOREA	KCC	EMC (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site)	 KR0100
Canada	IC	3 & 10 meter Open Area Test Sites and one conducted site	 4769B-1
Europe	TUV_SUD	EMC EN 55011, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 55014-1, EN 61326 EN 50130-4, EN 55024, EN 55014-2 EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	

**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-E1-15T0346
Page (6) of (41)

1.4 Product Description

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

Main Specifications of EUT are

SCV-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	Ivory / 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.



1.5 Equipment Under Test

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

1.6 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	-	-	-	-

1.7 External I/O Cabling

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

1.8 Special Accessories

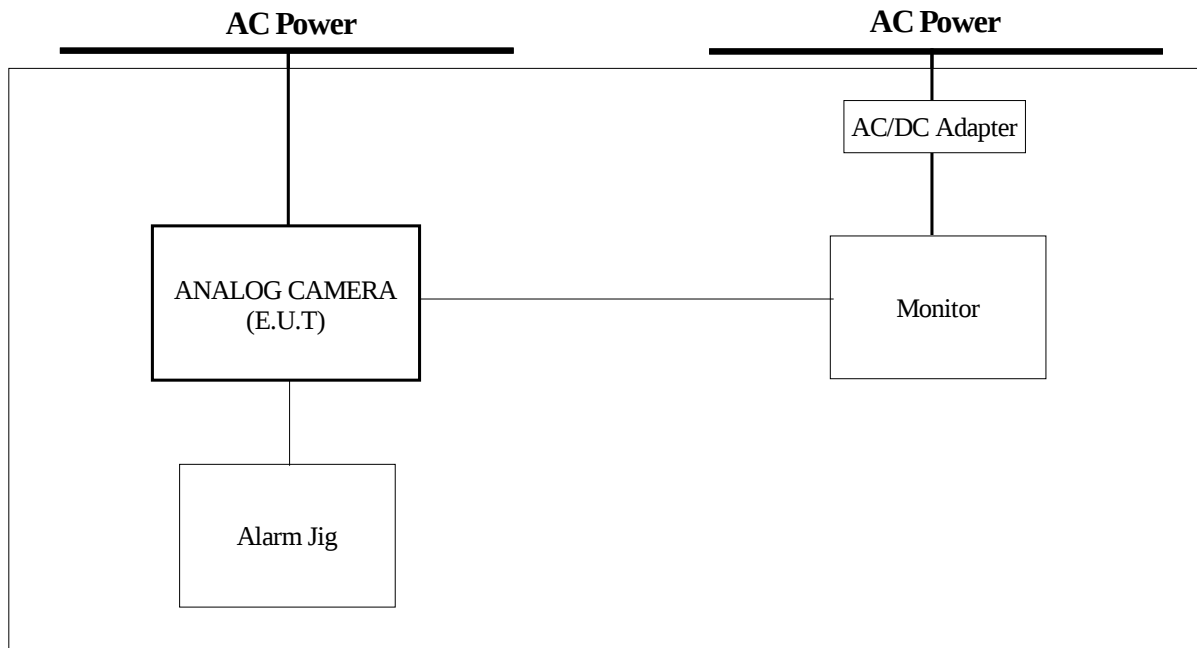
As shown in section 1.10, all interface cables used for compliance testing are shielded as normally supplied or by use respective component manufacturers.

1.9 E.U.T Modifications

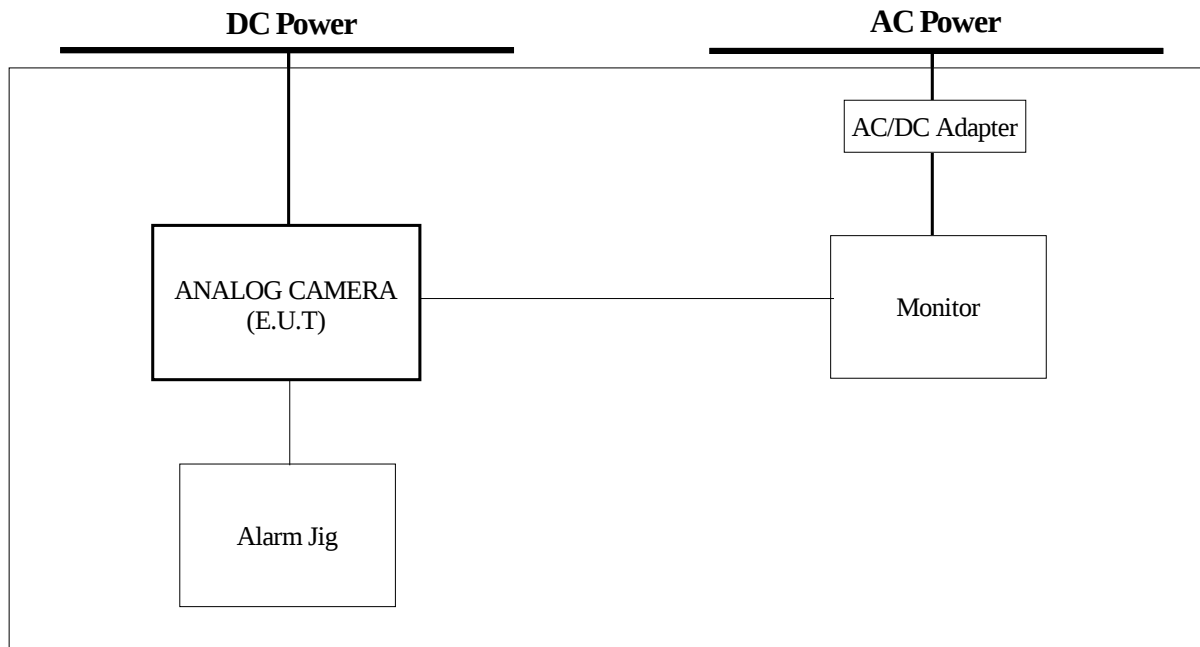
No modifications were made to the E.U.T in order to achieve and maintain compliance to the standards described in this report.

1.10 Configuration of Test System

- AC Mode



- DC Mode



1.11 Operating condition

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

1.12 Statements and User Information

■ Class A / □ Class B

**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-E1-15T0346
Page (10) of (41)

2. Summary of Tests

FCC Part Section(s)	Parameter	Test Condition	Status (note 1)
15.109(a)	Emission limits	Radiated	C
15.107(a)	Conducted limits	Conducted	C

Note 1 : C=Complies N/C=Not Complies N/T=Not Tested N/A=Not Applicable

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.



2.1 Conducted Emission Measurements

2.1.1 Test Methods

The power line conducted emission measurements were performed in a shielded enclosure, using the setup in accordance with ANSI C63.4-2009 conducted emission measurement procedure.

2.1.2 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	-	-	-

2.1.3 Test Environments

Ambient Temperatures	Relative Humidity
see the data	see the data

2.1.4 Test Limits

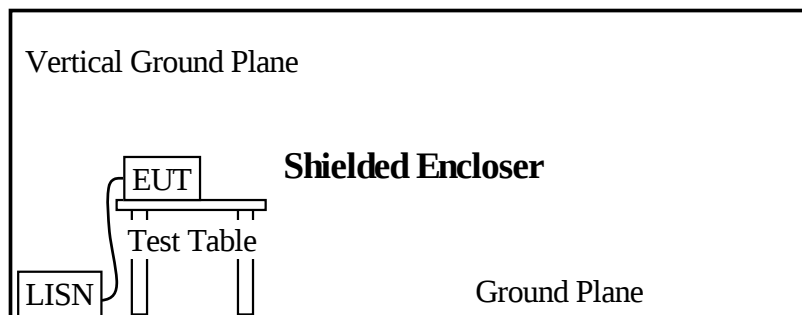
Frequency (MHz)	15.107 Conducted limits			
	Class B (dB μ V)		Class A (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.50	66.0 to 56.0	56.0 to 46.0	79.0	66.0
0.50 to 5.00	56.0	46.0	73.0	60.0
5.00 to 30.00	60.0	50.0	73.0	60.0

2.1.5 Test Procedure

Conducted emission levels were measured on each current-carrying line with the EMI TEST Receiver operating in the CISPR quasi-peak mode (or peak mode if applicable). The Receiver's 6 dB bandwidth was set to 9 kHz. The initial step in collecting conducted data is a EMI TEST Receiver 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 E.U.T 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.

2.1.6 Test Configuration



2.1.7 Test Results

According to the data in section 2.1.8, the E.U.T complied with the FCC Part 15.107



2.1.8 Test Data

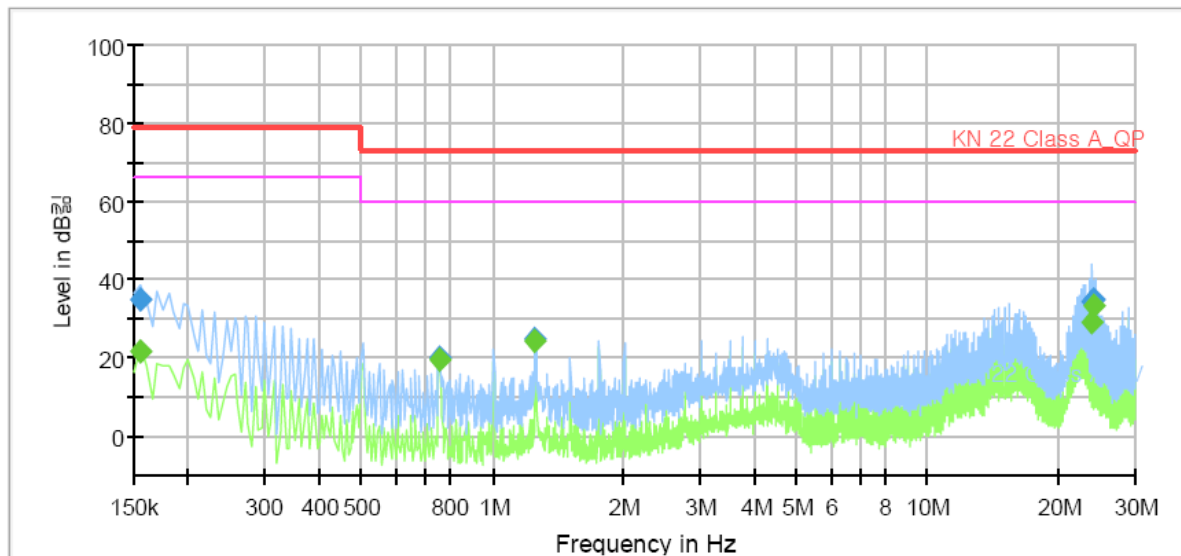
Temperature: 19.8 °C Humidity: 40.2 % R.H. Test Date: 12. 15. 2015 Tested by: Dae Hyun, Kim

- AC Mode

Polarization: HOT

Common Information

Test Description: Conducted Emission
Model No.: SCV-6083RN
Mode
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	21.86	66.00	44.14	1000.0	9.000	L1	9.7
0.155000	34.81	---	79.00	44.19	1000.0	9.000	L1	9.7
0.755000	---	19.58	60.00	40.42	1000.0	9.000	L1	9.7
0.755000	20.10	---	73.00	52.90	1000.0	9.000	L1	9.7
1.255000	---	24.51	60.00	35.49	1000.0	9.000	L1	9.7
1.255000	24.70	---	73.00	48.30	1000.0	9.000	L1	9.7
23.810000	---	29.39	60.00	30.61	1000.0	9.000	L1	10.1
23.810000	34.20	---	73.00	38.80	1000.0	9.000	L1	10.1
24.015000	---	33.28	60.00	26.72	1000.0	9.000	L1	10.1
24.015000	34.75	---	73.00	38.25	1000.0	9.000	L1	10.1

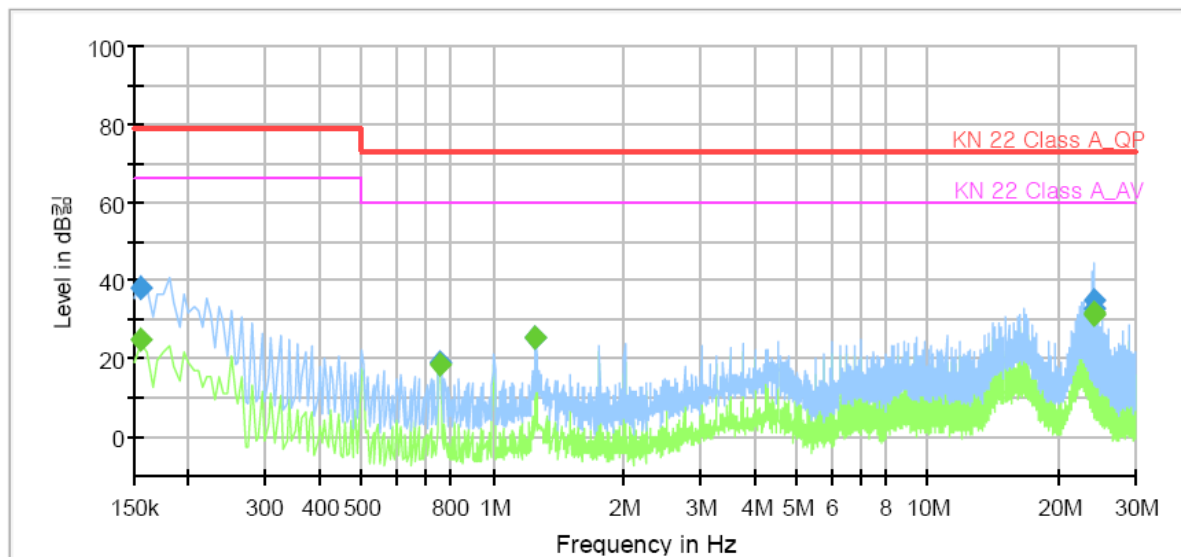
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



Polarization: NEUTRAL

Common Information

Test Description: Conducted Emission
Model No.: SCV-6083RN
Mode
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	24.70	66.00	41.30	1000.0	9.000	N	9.6
0.155000	37.99	---	79.00	41.01	1000.0	9.000	N	9.6
0.755000	---	18.74	60.00	41.26	1000.0	9.000	N	9.7
0.755000	19.18	---	73.00	53.82	1000.0	9.000	N	9.7
1.255000	---	25.44	60.00	34.56	1000.0	9.000	N	9.7
1.255000	25.59	---	73.00	47.41	1000.0	9.000	N	9.7
24.015000	---	31.57	60.00	28.43	1000.0	9.000	N	10.0
24.015000	32.87	---	73.00	40.13	1000.0	9.000	N	10.0
24.115000	---	31.42	60.00	28.58	1000.0	9.000	N	10.0
24.115000	34.90	---	73.00	38.10	1000.0	9.000	N	10.0



2.2 Radiated Emission Measurements

2.2.1 Test Methods

The radiated emission measurements were performed in a Open Area Test Site (OATS) and 3 m full chamber, using the setup in accordance with ANSI C63.4-2009 radiated emission measurement procedure.

2.2.2 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 Preamplifier	A-H-SYSTEM,INC	SAS-571	781	05. 07. 2017
Double Ridged Horn Antenna	Schwarzbeck Mess - Elektronik	BBV 718	9718-246	10. 23. 2016
Semi Anachoic Chamber #2	SEMITEC	-	-	-
Antenna Mast	AUDIX	-	-	-
Turn Table	AUDIX	-	-	-

2.2.3 Test Environments

Ambient Temperatures	Relative Humidity
see the data	see the data

2.2.4 Test Limits

Frequency (MHz)	15.109 Radiated emission limits			
	Class B @ 3 m		Class A @ 10 m	
	(dB μ V/m)	(μ V/m)	(dB μ V/m)	(μ V/m)
30 to 88	40.0	100	39.0	90
88 to 216	43.5	150	43.5	150
216 to 960	46.0	200	46.4	210
above 960	54.0	500	49.5	300

**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-E1-15T0346
Page (16) of (41)

Frequency (MHz)	15.109 Radiated emission limits			
	Class B @ 3 m (dB μ V/m)		Class A @ 3 m (dB μ V/m)	
	PK	AV	PK	AV
above 1 000	74	54	80	60

2.2.5 Test Procedure

Before final measurements of radiated emission were made at the OATS, the E.U.T 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 E.U.T's emission in amplitude, direction and frequency. This process was repeated during final radiated emission measurements at the OATS range, at each frequency, in order to ensure that maximum emissions amplitudes were attained.

The radiated emission test was performed with E.U.T exercise program loaded, and the emissions were scanned between 30 MHz to 1 000 MHz using a R&S ESVS10 EMI TEST Receiver and 1 000 MHz to 5 000 MHz using a spectrum analyzer. The EMI TEST Receiver's 6 dB bandwidth was set to 120 kHz and 1 MHz, and EMI TEST Receiver was operated in the CISPR quasi-peak detection mode. At each frequency, the E.U.T was rotated 360 degrees, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum emission levels. Measurements were taken using both HORIZONTAL and VERTICAL antenna polarization, herein referred to as H and V, respectively.

- above 1 GHz : Antenna height is fixed to 1.00 m

2.2.6 Field Strength Calculation

F.S = Field Strength

M.R = Meter Reading

A.F = Antenna Factor

C.L = Cable Loss

A.G= Amplifier Gain

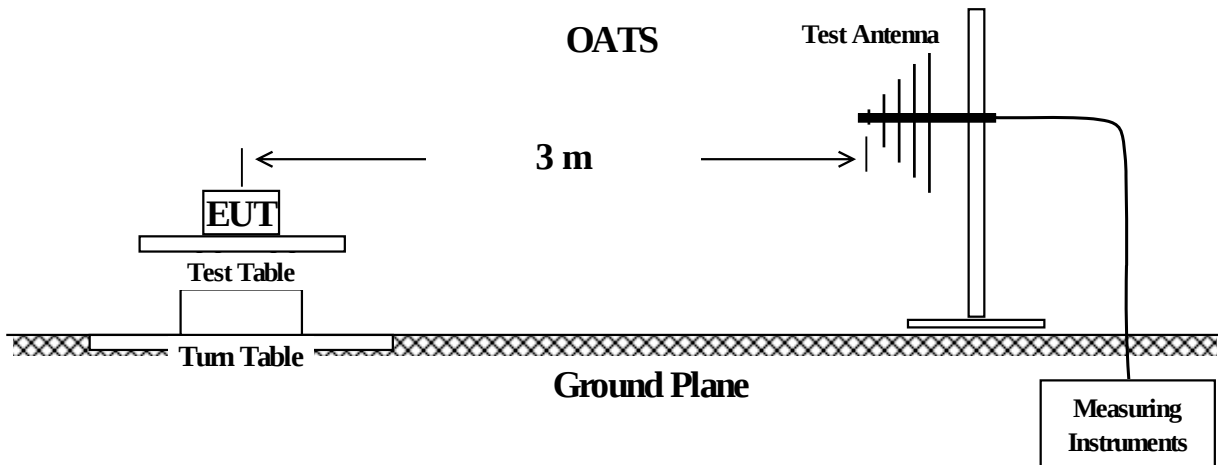
* Below 1 GHz : $F.S(dB\mu V/m) = M.R(dB\mu V) + [A.F(dB/m) + C.L(dB)]$

* Above 1 GHz : $F.S(dB\mu V/m) = M.R(dB\mu V) + [A.F(dB/m) + C.L(dB)] - A.G(dB)$

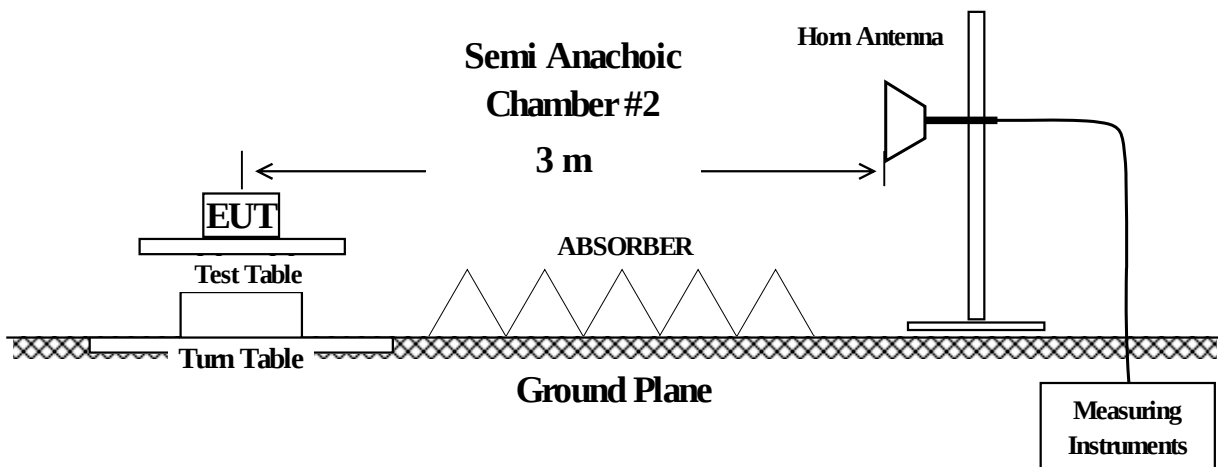
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

2.2.7 Test Configuration

* Below 1 GHz



* Above 1 GHz





2.2.8 Test Results

Below 1 GHz : According to the data in section 2.2.9, the E.U.T complied with the FCC 15.109 limits.

Above 1 GHz : According to the data in section 2.2.9, the E.U.T complied with the FCC 15.109 limits.

2.2.9 Test Data

* Below 1 GHz

Temperature: -9.7°C Humidity: 56.0 % R.H. Test Date: 12. 17. 2015 Tested by: Dae Hyun, Kim

- AC Mode

Frequency (MHz)	Amplitude (dB μ V)	Antenna		Correction Factor		Corrected Amplitude (dB μ V/m)	Applicable Limit (dB μ V/m)	Margin (dB)
		Polar. (H/V)	Height (m)	Ant. (dB/m)	Cable (dB)			
297.51	22.14	H	4.00	13.33	4.90	40.37	46.40	6.03
371.26	21.06	H	4.00	15.03	5.45	41.54	46.40	4.86
371.26	19.57	V	1.00	15.03	5.45	40.05	46.40	6.35
445.52	19.83	H	4.00	16.34	6.14	42.31	46.40	4.09
445.52	18.74	V	2.00	16.34	6.14	41.22	46.40	5.18
519.34	16.41	H	3.50	17.53	6.74	40.68	46.40	5.72
519.56	17.41	V	1.80	17.53	6.74	41.68	46.40	4.72

**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-E1-15T0346
Page (19) of (41)

- DC Mode

Frequency (MHz)	Amplitude (dB μ V)	Antenna		Correction Factor		Corrected Amplitude (dB μ V/m)	Applicable Limit (dB μ V/m)	Margin (dB)
		Polar. (H/V)	Height (m)	Ant. (dB/m)	Cable (dB)			
210.08	12.18	H	4.00	11.52	3.98	27.68	43.50	15.82
297.51	22.21	H	4.00	13.33	4.90	40.44	46.40	5.96
371.26	21.14	H	4.00	15.03	5.45	41.62	46.40	4.78
371.26	19.56	V	1.00	15.03	5.45	40.04	46.40	6.36
445.52	19.99	H	3.80	16.34	6.14	42.47	46.40	3.93
445.52	18.75	V	1.50	16.34	6.14	41.23	46.40	5.17
519.25	16.30	H	3.50	17.52	6.74	40.56	46.40	5.84
519.36	17.32	V	1.00	17.53	6.74	41.59	46.40	4.81

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-E1-15T0346
Page (20) of (41)

*** Above 1 GHz**

Temperature: 20.4 °C Humidity: 38.7 % R.H. Test Date: 12. 10. 2015 Tested by: Dae Hyun, Kim

- AC Mode

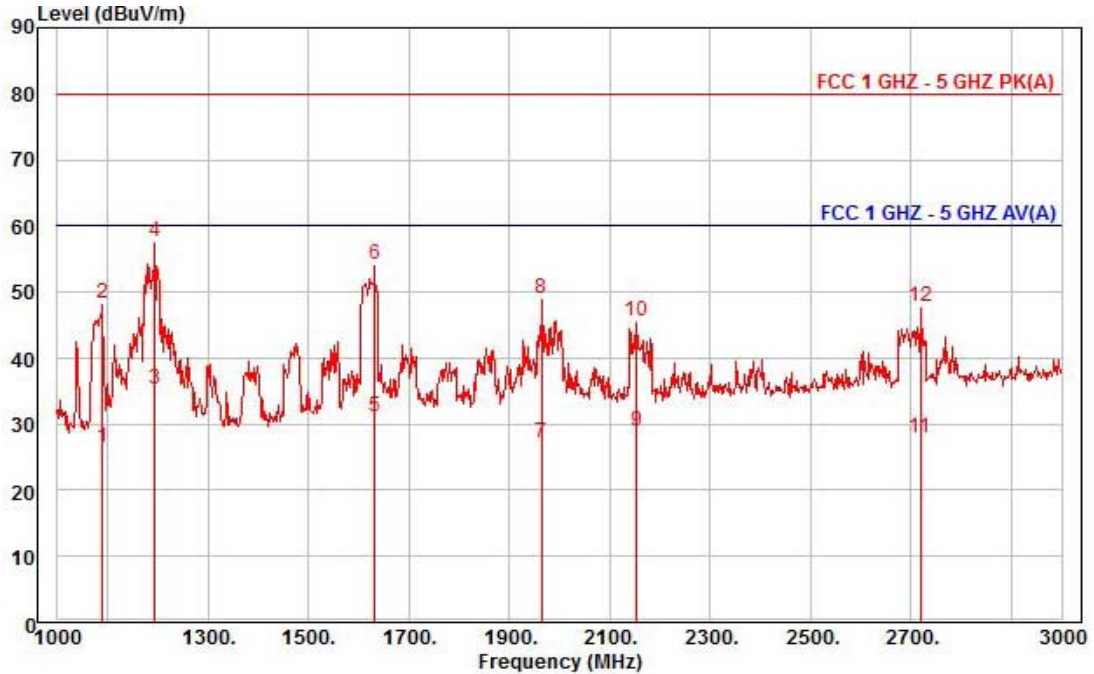
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



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-E1-15T0346
Page (21) of (41)



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : AC
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	1090.00	35.96	24.27	6.31	40.08	45	60.00	-33.54	horizontal	Average
2	1090.00	57.76	24.27	6.31	40.08	45	80.00	-31.74	horizontal	Peak
3 av	1194.00	44.07	24.68	6.61	40.02	17	60.00	-24.66	horizontal	Average
4 pp	1194.00	66.35	24.68	6.61	40.02	17	80.00	-22.38	horizontal	Peak
5	1632.00	36.56	26.42	7.86	39.81	31	60.00	-28.97	horizontal	Average
6	1632.00	59.71	26.42	7.86	39.81	31	80.00	-25.82	horizontal	Peak
7	1964.00	30.37	27.74	8.82	39.65	79	60.00	-32.72	horizontal	Average
8	1964.00	52.24	27.74	8.82	39.65	79	80.00	-30.85	horizontal	Peak
9	2154.00	30.97	28.26	9.35	39.72	359	60.00	-31.14	horizontal	Average
10	2154.00	47.74	28.26	9.35	39.72	359	80.00	-34.37	horizontal	Peak
11	2720.00	27.54	29.64	10.92	40.05	26	60.00	-31.95	horizontal	Average
12	2720.00	47.31	29.64	10.92	40.05	26	80.00	-32.18	horizontal	Peak

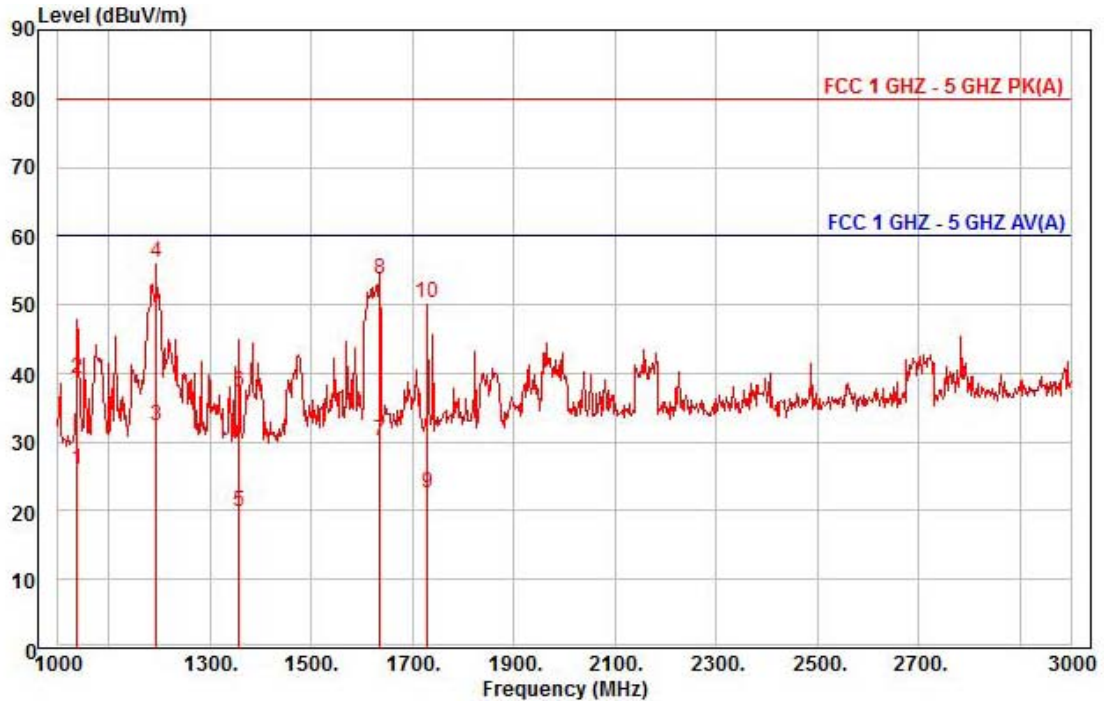
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



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-E1-15T0346
Page (22) of (41)



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : AC
Memo : 1 ~ 3 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	1038.00	36.00	24.06	6.16	40.10	258	60.00	-33.88	vertical	Average
2	1038.00	49.14	24.06	6.16	40.10	258	80.00	-40.74	vertical	Peak
3 av	1194.00	41.21	24.68	6.61	40.02	357	60.00	-27.52	vertical	Average
4 pp	1194.00	65.00	24.68	6.61	40.02	357	80.00	-23.73	vertical	Peak
5	1358.00	27.37	25.33	7.08	39.94	134	60.00	-40.16	vertical	Average
6	1358.00	44.74	25.33	7.08	39.94	134	80.00	-42.79	vertical	Peak
7	1636.00	35.59	26.43	7.88	39.81	24	60.00	-29.91	vertical	Average
8	1636.00	59.24	26.43	7.88	39.81	24	80.00	-26.26	vertical	Peak
9	1730.00	27.25	26.81	8.15	39.76	131	60.00	-37.55	vertical	Average
10	1730.00	55.00	26.81	8.15	39.76	131	80.00	-29.80	vertical	Peak

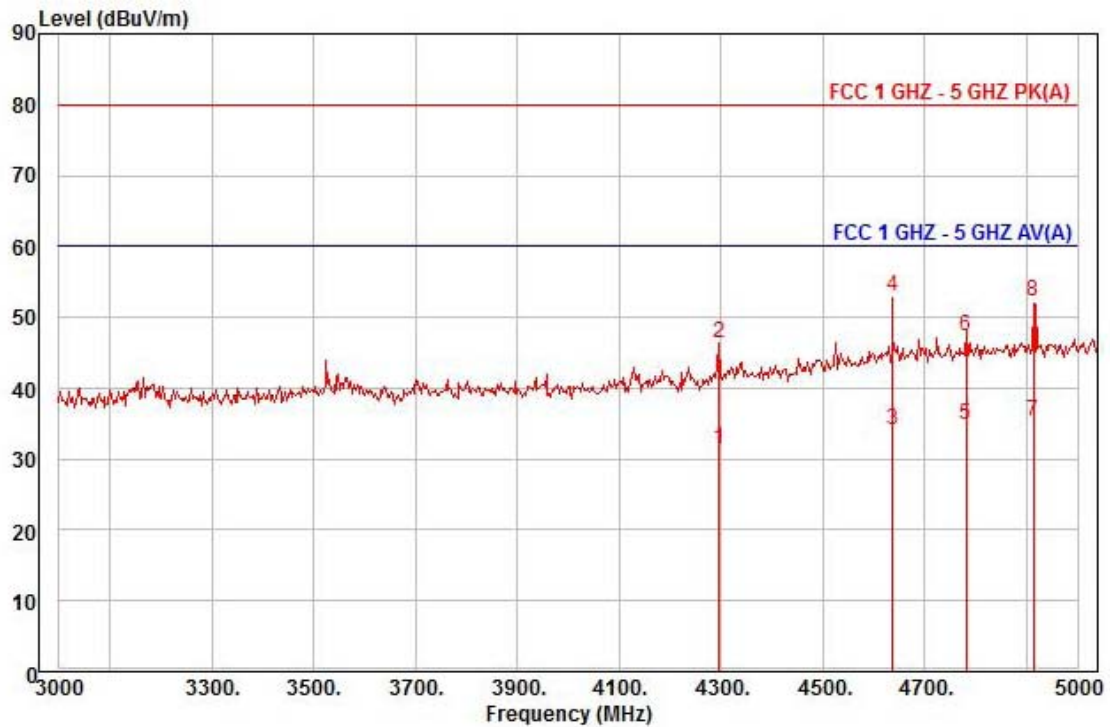
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



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-E1-15T0346
Page (23) of (41)



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : AC
Memo : 3 ~ 5 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	4296.00	24.49	33.70	13.57	40.41	90	60.00	-28.65	horizontal	Average
2	4296.00	39.56	33.70	13.57	40.41	90	80.00	-33.58	horizontal	Peak
3	4638.00	24.75	35.65	14.20	40.41	92	60.00	-25.81	horizontal	Average
4 pk	4638.00	43.65	35.65	14.20	40.41	92	80.00	-26.91	horizontal	Peak
5	4782.00	24.21	36.48	14.47	40.41	104	60.00	-25.25	horizontal	Average
6	4782.00	36.86	36.48	14.47	40.41	104	80.00	-32.60	horizontal	Peak
7 pp	4914.00	23.80	37.23	14.71	40.41	142	60.00	-24.67	horizontal	Average
8	4914.00	40.74	37.23	14.71	40.41	142	80.00	-27.73	horizontal	Peak

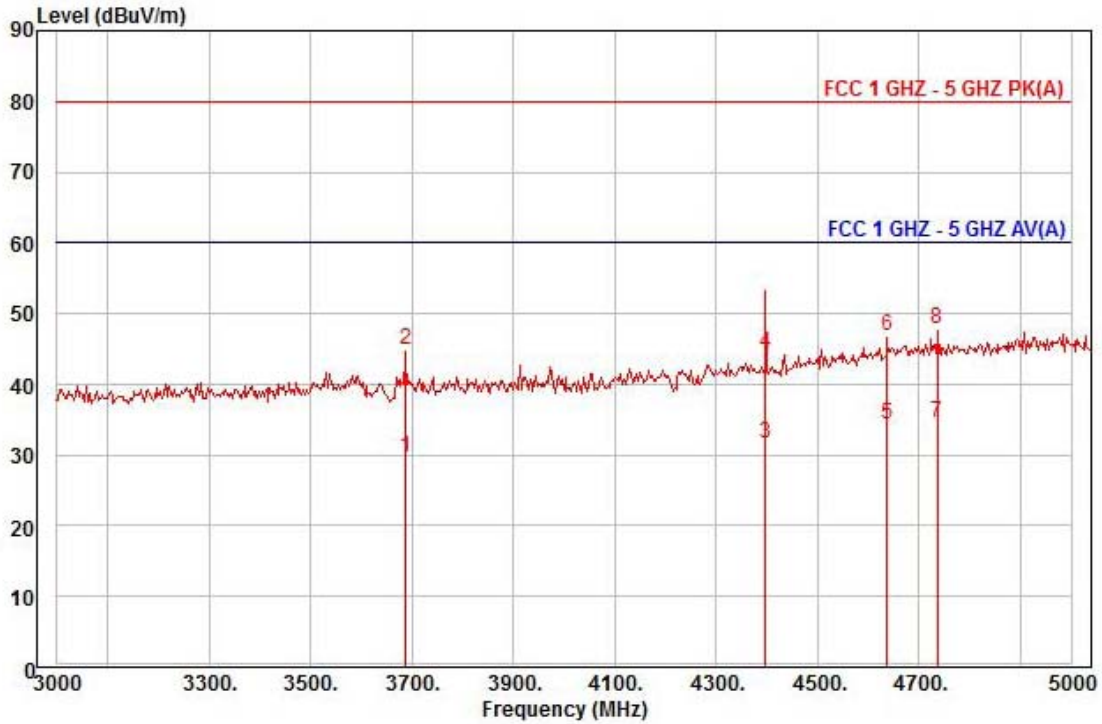
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



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-E1-15T0346
Page (24) of (41)



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : AC
Memo : 3 ~ 5 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	3687.00	26.03	31.48	12.61	40.35	4	60.00	-30.23	vertical	Average
2	3687.00	41.19	31.48	12.61	40.35	4	80.00	-35.07	vertical	Peak
3	4398.00	24.01	34.28	13.76	40.41	108	60.00	-28.36	vertical	Average
4	4398.00	36.74	34.28	13.76	40.41	108	80.00	-35.63	vertical	Peak
5	4638.00	24.82	35.65	14.20	40.41	65	60.00	-25.74	vertical	Average
6	4638.00	37.43	35.65	14.20	40.41	65	80.00	-33.13	vertical	Peak
7 pp	4737.00	24.49	36.22	14.39	40.41	51	60.00	-25.31	vertical	Average
8 pk	4737.00	37.72	36.22	14.39	40.41	51	80.00	-32.08	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.

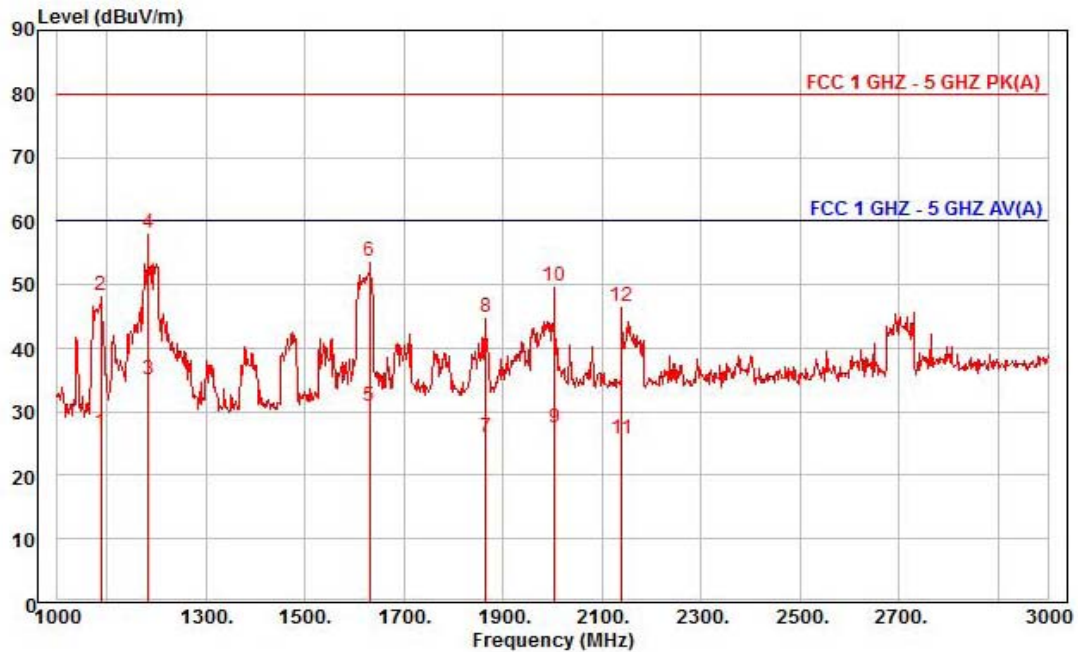


KES Co., Ltd.

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-E1-15T0346
Page (25) of (41)

- DC Mode



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : DC
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	1088.00	36.16	24.26	6.30	40.08	33	60.00	-33.36	horizontal	Average
2	1088.00	57.86	24.26	6.30	40.08	33	80.00	-31.66	horizontal	Peak
3 av	1184.00	43.95	24.64	6.58	40.03	57	60.00	-24.86	horizontal	Average
4 pp	1184.00	66.86	24.64	6.58	40.03	57	80.00	-21.95	horizontal	Peak
5	1630.00	36.47	26.41	7.86	39.81	25	60.00	-29.07	horizontal	Average
6	1630.00	59.34	26.41	7.86	39.81	25	80.00	-26.20	horizontal	Peak
7	1866.00	29.91	27.35	8.54	39.70	25	60.00	-33.90	horizontal	Average
8	1866.00	48.60	27.35	8.54	39.70	25	80.00	-35.21	horizontal	Peak
9	2004.00	30.26	27.89	8.93	39.63	54	60.00	-32.55	horizontal	Average
10	2004.00	52.59	27.89	8.93	39.63	54	80.00	-30.22	horizontal	Peak
11	2140.00	27.84	28.22	9.31	39.71	36	60.00	-34.34	horizontal	Average
12	2140.00	48.72	28.22	9.31	39.71	36	80.00	-33.46	horizontal	Peak

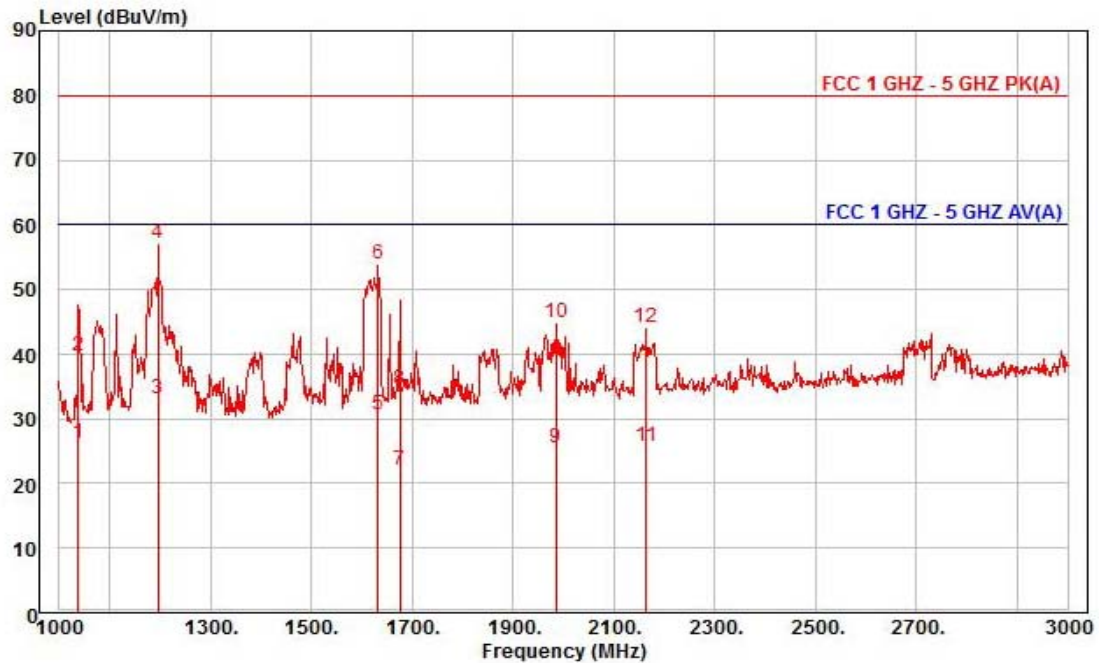
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



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-E1-15T0346
Page (26) of (41)



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : DC
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	1038.00	36.16	24.06	6.16	40.10	256	60.00	-33.72	vertical	Average
2	1038.00	49.56	24.06	6.16	40.10	256	80.00	-40.32	vertical	Peak
3 av	1196.00	41.80	24.69	6.61	40.02	347	60.00	-26.92	vertical	Average
4 pp	1196.00	65.83	24.69	6.61	40.02	347	80.00	-22.89	vertical	Peak
5	1632.00	36.28	26.42	7.86	39.81	17	60.00	-29.25	vertical	Average
6	1632.00	59.49	26.42	7.86	39.81	17	80.00	-26.04	vertical	Peak
7	1676.00	27.23	26.59	7.99	39.79	236	60.00	-37.98	vertical	Average
8	1676.00	39.78	26.59	7.99	39.79	236	80.00	-45.43	vertical	Peak
9	1986.00	28.38	27.82	8.88	39.64	291	60.00	-34.56	vertical	Average
10	1986.00	47.76	27.82	8.88	39.64	291	80.00	-35.18	vertical	Peak
11	2164.00	27.70	28.28	9.38	39.73	359	60.00	-34.37	vertical	Average
12	2164.00	46.18	28.28	9.38	39.73	359	80.00	-35.89	vertical	Peak

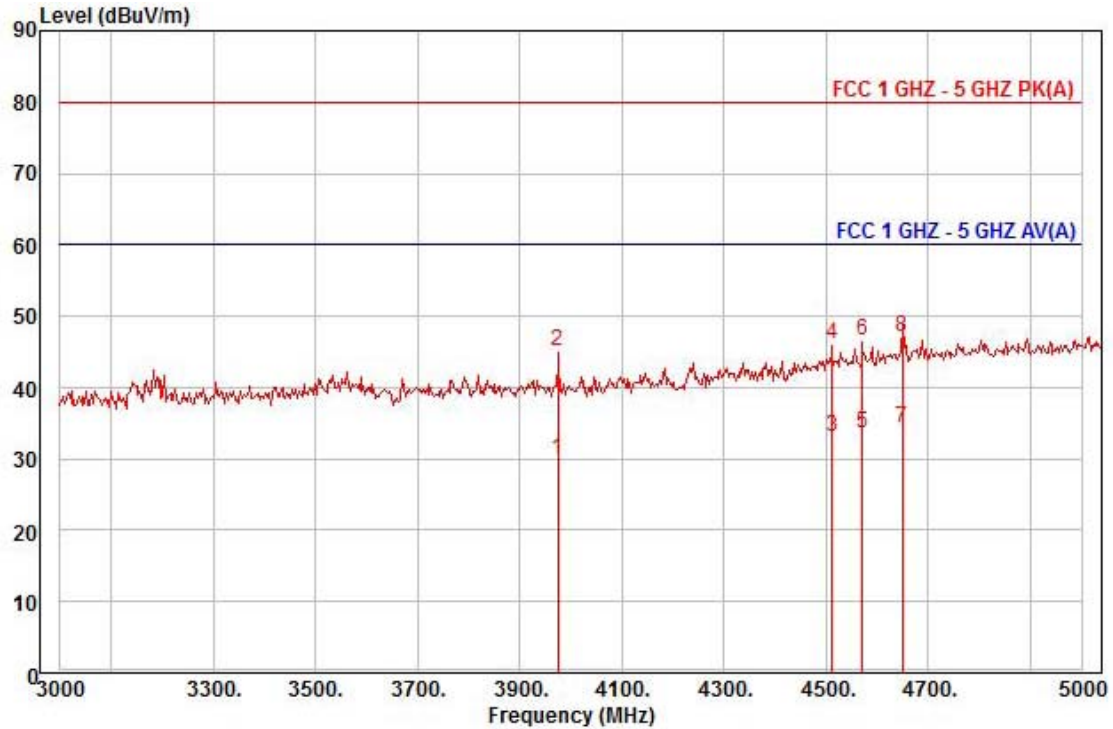
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



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-E1-15T0346
Page (27) of (41)



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : DC
Memo : 3 ~ 5 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	3975.00	25.28	31.97	13.00	40.40	14	60.00	-30.15	horizontal	Average
2	3975.00	40.63	31.97	13.00	40.40	14	80.00	-34.80	horizontal	Peak
3	4512.00	24.72	34.93	13.97	40.41	324	60.00	-26.79	horizontal	Average
4	4512.00	37.67	34.93	13.97	40.41	324	80.00	-33.84	horizontal	Peak
5	4572.00	24.55	35.28	14.08	40.41	315	60.00	-26.50	horizontal	Average
6	4572.00	37.67	35.28	14.08	40.41	315	80.00	-33.38	horizontal	Peak
7 pp	4650.00	24.68	35.72	14.23	40.41	318	60.00	-25.78	horizontal	Average
8 pk	4650.00	37.56	35.72	14.23	40.41	318	80.00	-32.90	horizontal	Peak

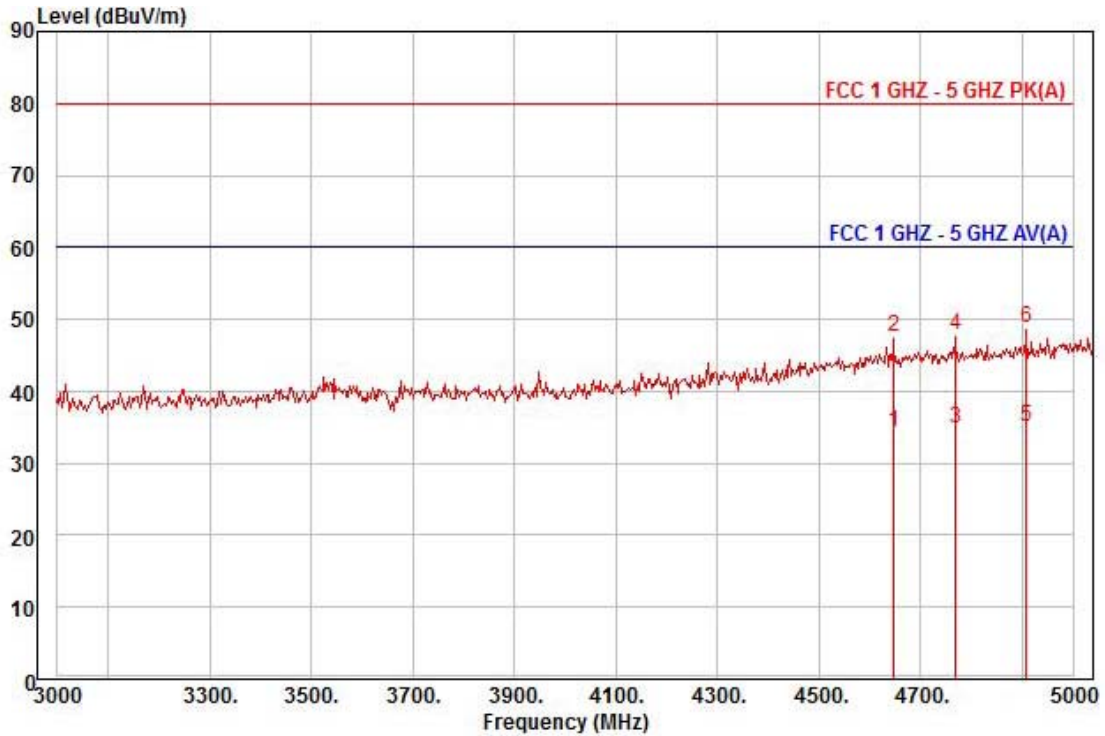
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.



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-E1-15T0346
Page (28) of (41)



Site : chamber
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project : ANALOG CAMERA
Model : SCV-6083RN
Mode : DC
Memo : 3 ~ 5 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	4647.00	24.72	35.70	14.22	40.41	82	60.00	-25.77	vertical	Average
2	4647.00	38.13	35.70	14.22	40.41	82	80.00	-32.36	vertical	Peak
3	4770.00	24.45	36.41	14.45	40.41	295	60.00	-25.10	vertical	Average
4	4770.00	37.34	36.41	14.45	40.41	295	80.00	-32.21	vertical	Peak
5 pp	4908.00	23.69	37.19	14.70	40.41	211	60.00	-24.83	vertical	Average
6 pk	4908.00	37.32	37.19	14.70	40.41	211	80.00	-31.20	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.



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-E1-15T0346
Page (29) of (41)

3. Product Labelling Requirements

3.1 FCC Statement

Product shall be labelled the following statement on the user's manual:

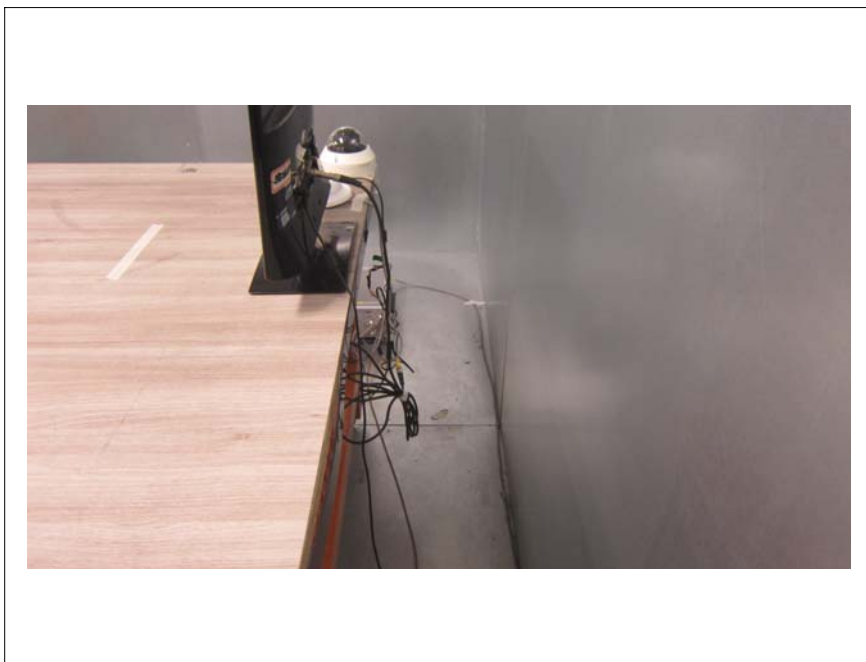
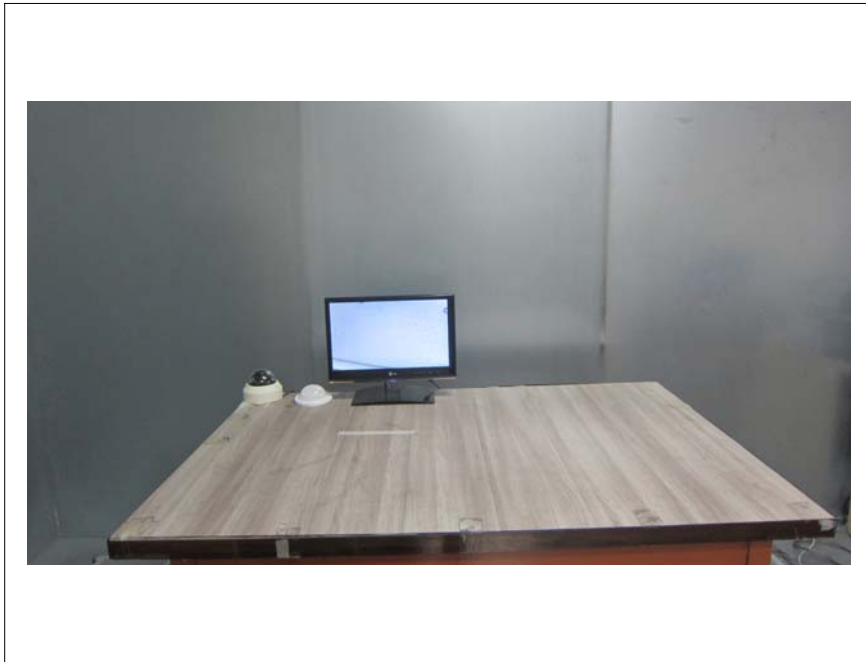
This device complies with part 15 of the FCC Rules. Operation in subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note : When the device is so small or for such use that it is not practicable to place the statement on it, the information shall be placed in prominent location in the instruction manual or pamphlet supplied to the user. However, the FCC identifier or unique identifier, as appropriate, must be displayed on the device.

4. Test Setup Photographs

4.1 Conducted Emission

- AC Mode

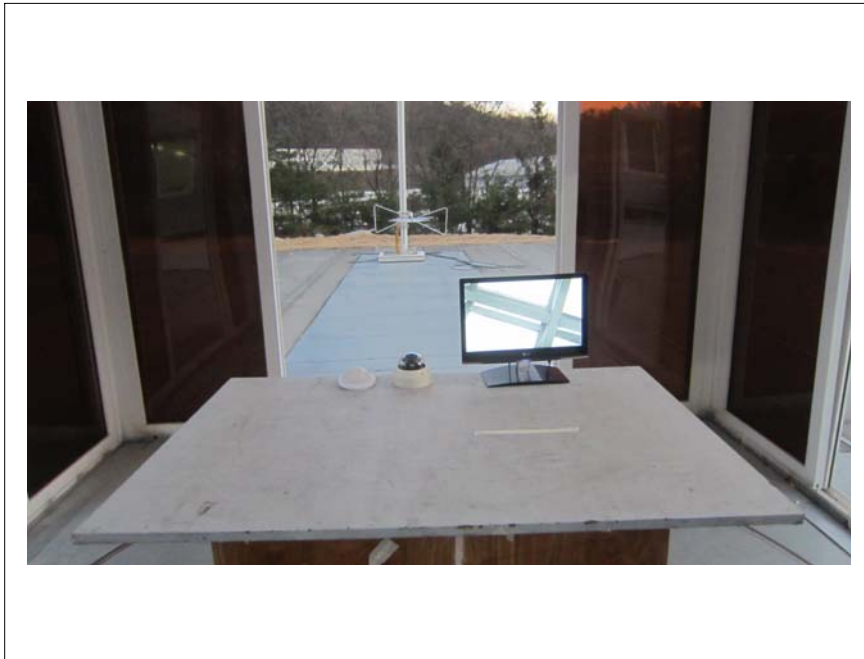


This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

4.2 Radiated Emission

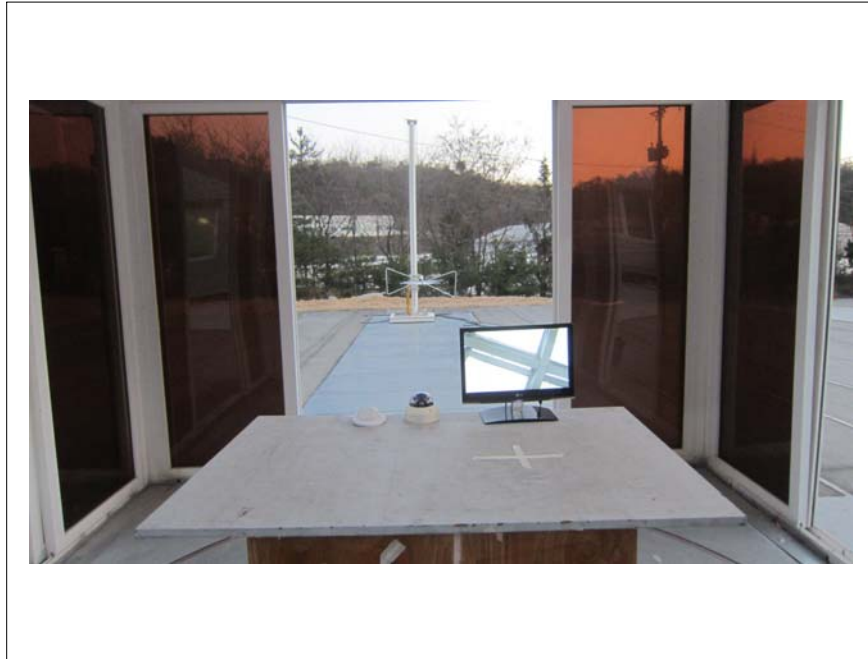
- Below 1 GHz

- AC Mode



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 Mode

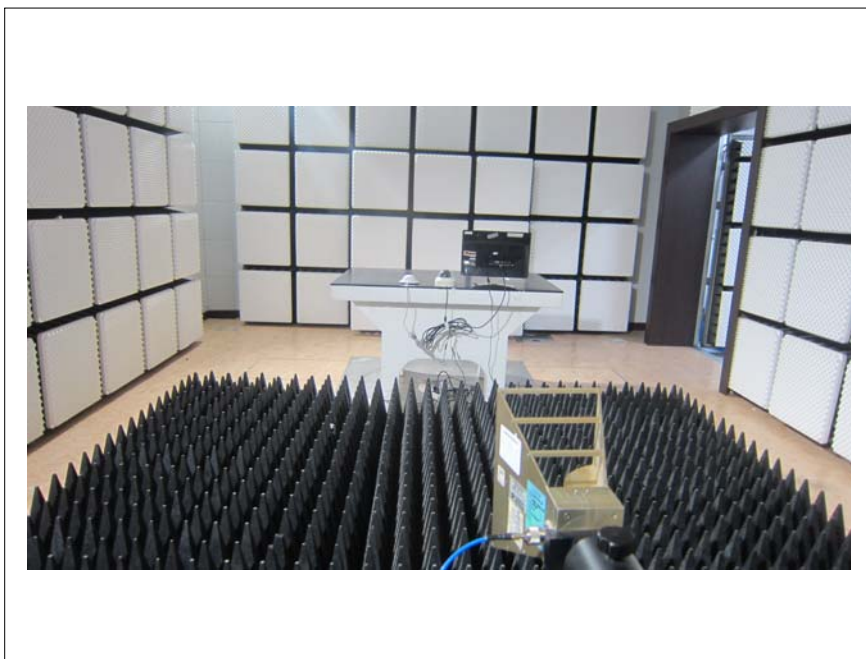


- Above 1 GHz
- AC Mode



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 Mode



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

5.1 E.U.T: Front View



5.2 E.U.T: Rear View



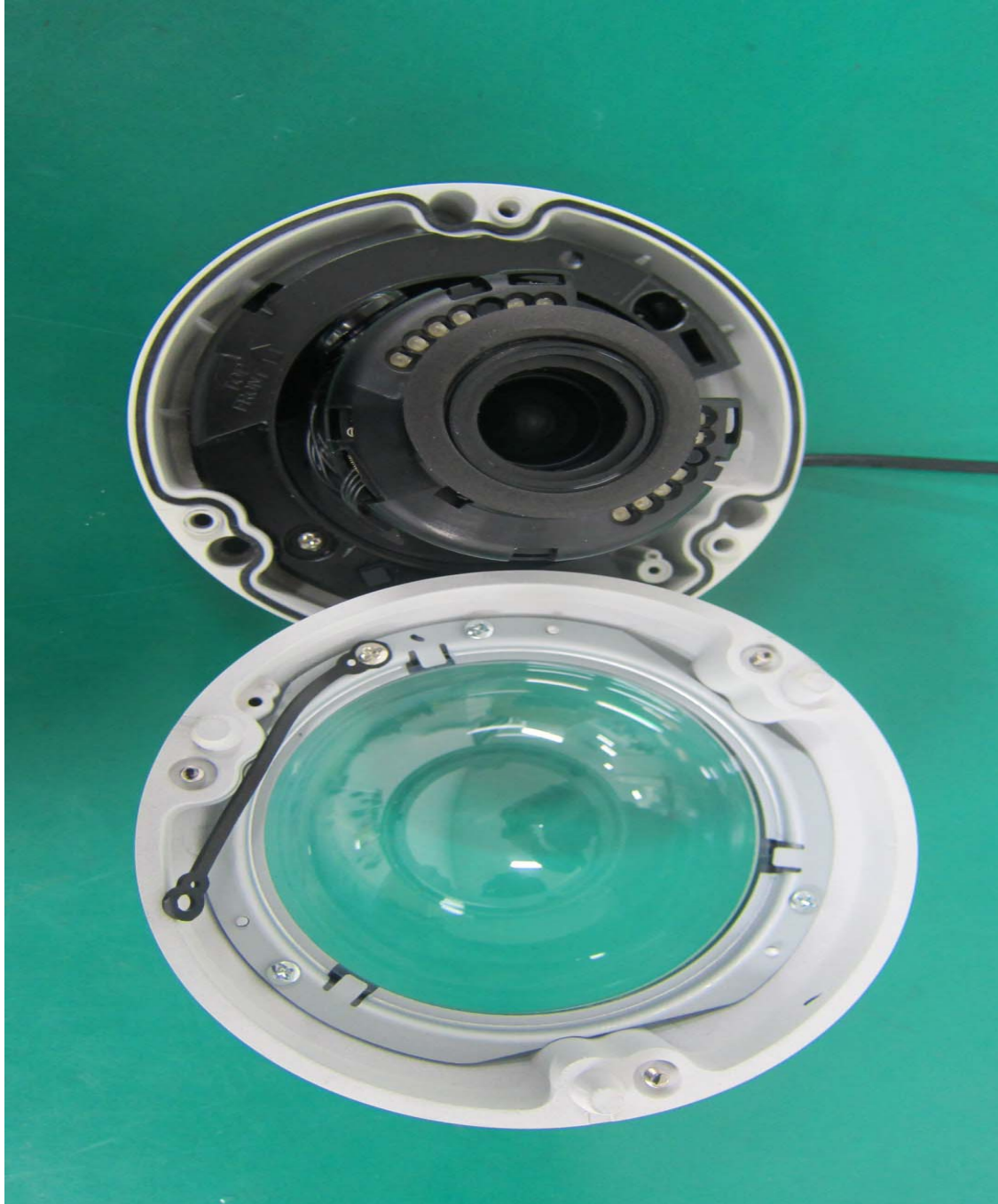
5.3 E.U.T: Label View (Location)



This device complies with part 15 of the FCC Rules. Operation in subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

6. Internal Photographs

6.1 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.

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



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



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



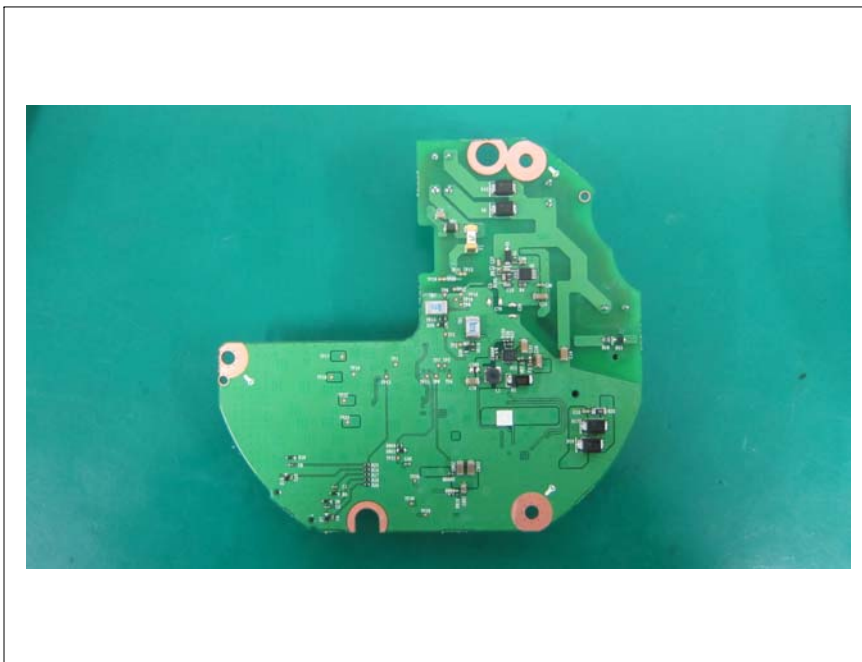
E.U.T: Internal View(Bottom) - Sub Board



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



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





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-E1-15T0346
Page (41) of (41)

Appendix A - Schematics/Block Diagram

Please see attached document(s).

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-E1-15T0346
Page (42) of (41)

Appendix B - User's Manual

Please see attached document(s).

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.