FCC EVALUATION REPORT FOR

CERTIFICATION

Test Report No.	E12WD-084		
Date of test	July 18, 2012 ~ July 31, 2012	Date of Issuing	August 01, 2012

Applicant	DAS Co.,Ltd.		
Address	445-842 309-3, Yangno-ri, Bibong-myeon, Hwaseong-si, Gyeonggi-do, Korea		
Manufacturer	DAS Co.,Ltd.		
Address	445-842 309-3, Yangno-ri, Bibong-myeon, Hwaseong-si, Gyeonggi-do, Korea		
Name of contact	Park, Hyon / Manager		
Telephone No.	+82-31-356-3541	Fax No.	+82-31-356-3572

Type of Equipment	Motion Sensor		
Model Name	MSENS-GY	Serial Number	MS-120917
Multi Model Name	N/A	Brand Name	N/A

The device bearing the brand name and FCC is specified about has been shown to comply with the applicable, Technical standard as indicated in the measurement report and was tested in accordance with measurement procedures specified in **ANSI (C63.4: 2009)**

The equipment complies with the regulation; ***FCC Part 15 Subpart B (Class B)***

This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

Tested by: Seonmi

Seon-Mi, Mun / Engineer
StandardBank / EMC Testing Team

Reviewed by:

Chang-Woo, Kim / Assistant Manager
StandardBank / EMC Testing Team

Head Office & EMC Testing Dept: #507,508, Dongyoung Central Tower, 847-2 Kumjung-Dong, Gunpo-Si, Kyunggi-Do, Korea 435-050
Tel: (82)31-393-9394 Fax:(82)31-393-9392

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1. VERIFICATION OF COMPLIANCE

DEVICE TYPE	CLASS B DEVICE
E.U.T. DESCRIPTION	Motion Sensor
MEASUREMENT PROCEDURES	ANSI C63.4: 2009
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Declaration Of Conformity (FCC ID : O75) O75MSENS-GY
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15, SECTION 15.107, 15.109
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	None
FINAL TEST WAS CONDUCTED ON	3 m Full Chamber

-. The above equipment was tested by StandardBank Co., Ltd. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. GENERAL INFORMATION

2.1 Product Description

The DAS Co.,Ltd. Model MSENS-GY (referred to as the EUT in this report) is a Motion Sensor. Product specification described herein was obtained from product data sheet or user's manual.

Chassis Type	Plastic
LIST OF EACH OSC. Or CRY. FREQ.(FREQ.>=1 MHz	- 32.768 kHz
Numer of Layer	Main Board : 2 layers
Power Requirement	DC 10 V ~ 30 V
Exteranal Connector	- RS485

2.2 Family model descriptions

	Model Name	Model Differences
Basic Model	MSENS-GY	-

2.3 Related Submittal(s) / Grant(s)

-. Original submittal only

2.4 Test System Details

The model numbers for all the equipments that were used in the tested system is:

DESCRIPTION	MODEL NAME	MANUFACTURE NO.	MANUFACTURE	Remark
Motion Sensor.	MSENS-GY	MS-120917	DAS Co.,Ltd.	EUT
RS485 to USB Convertor	LCC-Coms-485usb	N/A	Litecom Co.,Ltd.	-
Notebook Computer	CQ43	5CB13675W7	HP	-
AC/DC Power	PPP009L-E	WBGST0A1R1BM44	HP	-
-	-	-	-	-

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2009. Radiated testing was performed at a distance of meters from EUT to the antenna.

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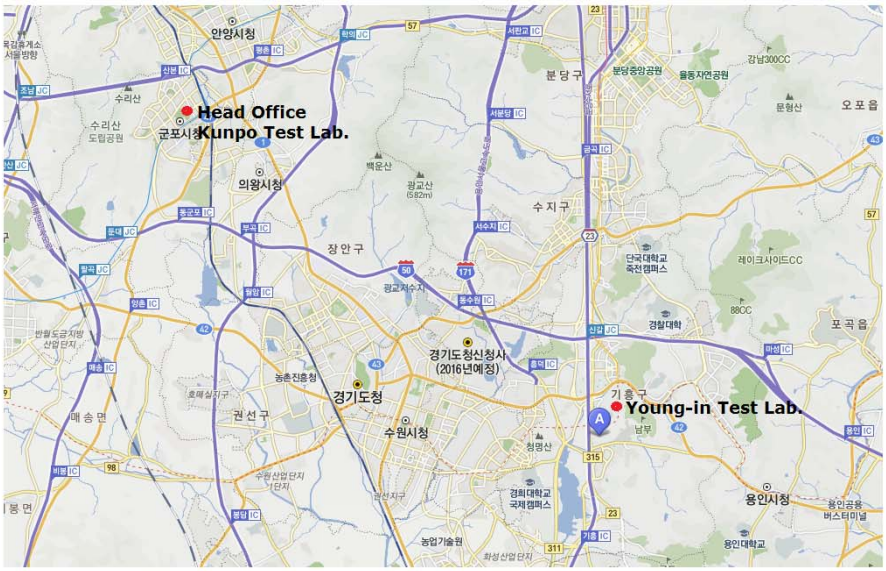
2.6 Test Facility

Information of Test Laboratory.

FCC E-Failing : Registration Number:323115

Name	:	Standard Bank Co.,Ltd.
Address Kunpo Test Lab Young-in Test Lab.	: :	#507,508 Dongyoung Central Tower, 847-2 Keumjeong-dong, Kunpo City, Kyunggi-Do, Korea. #390 Bora-dong, Giheung-gu, Young-in city, Kyunggi-Do, Korea
Radiated Emission(OATS)	:	#390 Bora-dong, Giheung-gu, Young-in city, Kyunggi-Do, Korea
Tel/Fax	:	+82-31-393-9394 / +82-31-393-9392

Web site : http://www.standardbank.co.kr E-mail : telecom@standardbank.co.kr



We , Standard Bank Co.,Ltd. are an independent EMC and RF and Safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025:

CARAT and KCC (Korea Communications Commission) according to the requirement of ISO 17025.

TUV-SUD CARAT Recognition of Agent’ s Testing (July 13, 2012), Certificate ID-No. : ROK1013C

KCC Designation No. : KR0144 (September 17, 2009)

VCCI member No. : 3096 (October 27, 2009), Registration No. : R-3136 / C-3479

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3. SYSTEM TEST CONFIGURATION

3.1 Mode of operation during the test

-. The EUT was operated with data transfer continuously during the test.

3.2 Cable Description

Ports Name	Shielded	Ferrite Bead	Metal Shell	Length (m)	Connected to
DC IN	Unshielded	N/A	N/A	1.5	DC OUT
RS485	Unshielded	N/A	N/A	1.5	USB

3.3 Equipment Modifications

- None.

3.4 Configuration of Test System

Line Conducted Test : The power of EUT was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power lines Conducted Emission test was performed by using the procedure in ANSI C63.4: 2009 7.2.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary radiated emission test was conducted using the procedure in ANSI C63.4: 2009 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 10 meters open area test site.

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4. PRELIMINARY TEST

4.1 Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The worse operating condition (Please check one only)
Standby	X
Data Transfer	O

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The worse operating condition (Please check one only)
Standby	X
Data Transfer	O

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5. FINAL RESULT OF MEASURMENT

Preliminary test was done in normal mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

EUT	MSENS-GY	Test Date	July.18, 2012
Humidity Level	55 %R.H.	Temperature	25 ºC

Type of Test	Class B
Limits apply to	FCC CFR 47, PART 15, SUBPART B, SECTION 15.107(a)
Detector	CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)
Result	Pass

Frequency (MHz)	Line	Quasi Peak (dBuV)		Margin (dB)	Average (dBuV)		Margin (dB)
		Emission level	Q.P Limits		Emission level	A.V. Limits	
0.150	N	50.00	66.00	16.00	25.39	56.00	30.61
0.213	L	49.29	63.09	13.80	34.42	53.09	18.67
1.194	N	41.35	56.00	14.65	34.18	46.00	11.82
3.152	N	32.19	56.00	23.81	18.59	46.00	27.41
5.829	N	32.63	60.00	27.37	21.51	50.00	28.49
13.875	N	30.57	60.00	29.43	22.71	50.00	27.29
16.926	N	35.16	60.00	24.84	28.69	50.00	21.31

Note : This device was used only DC Power.So, this test connect Notebook adapter.

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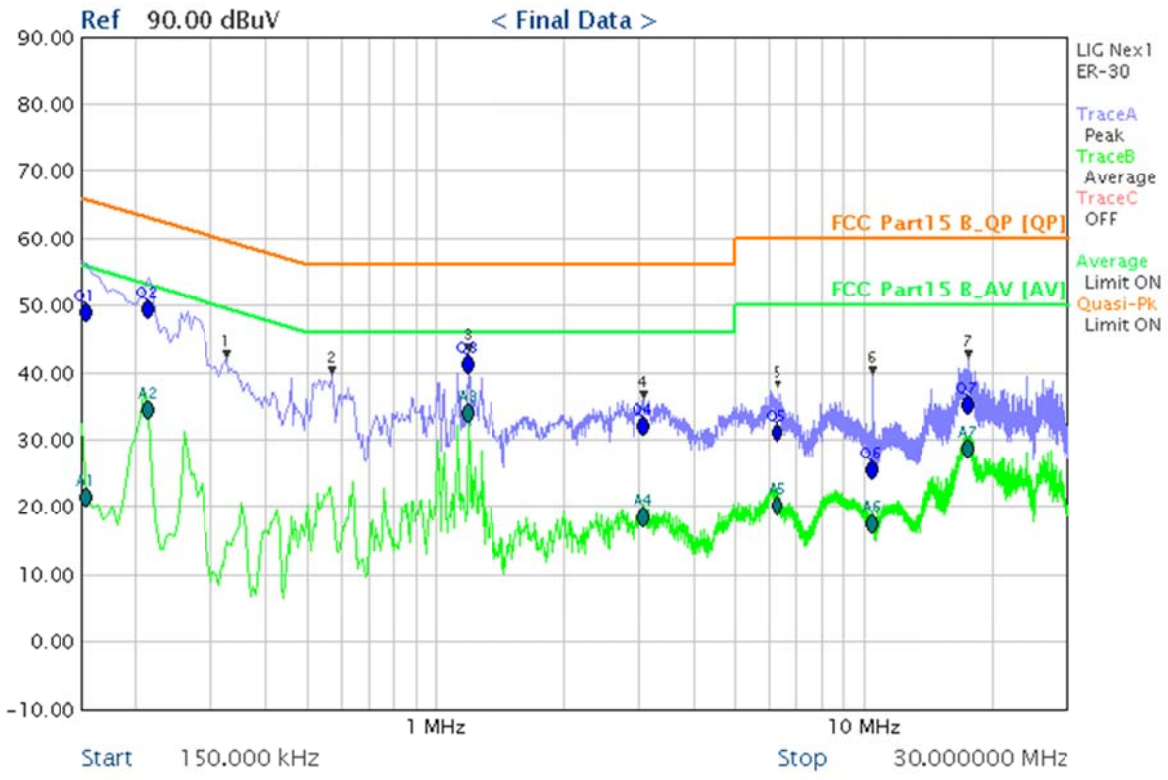
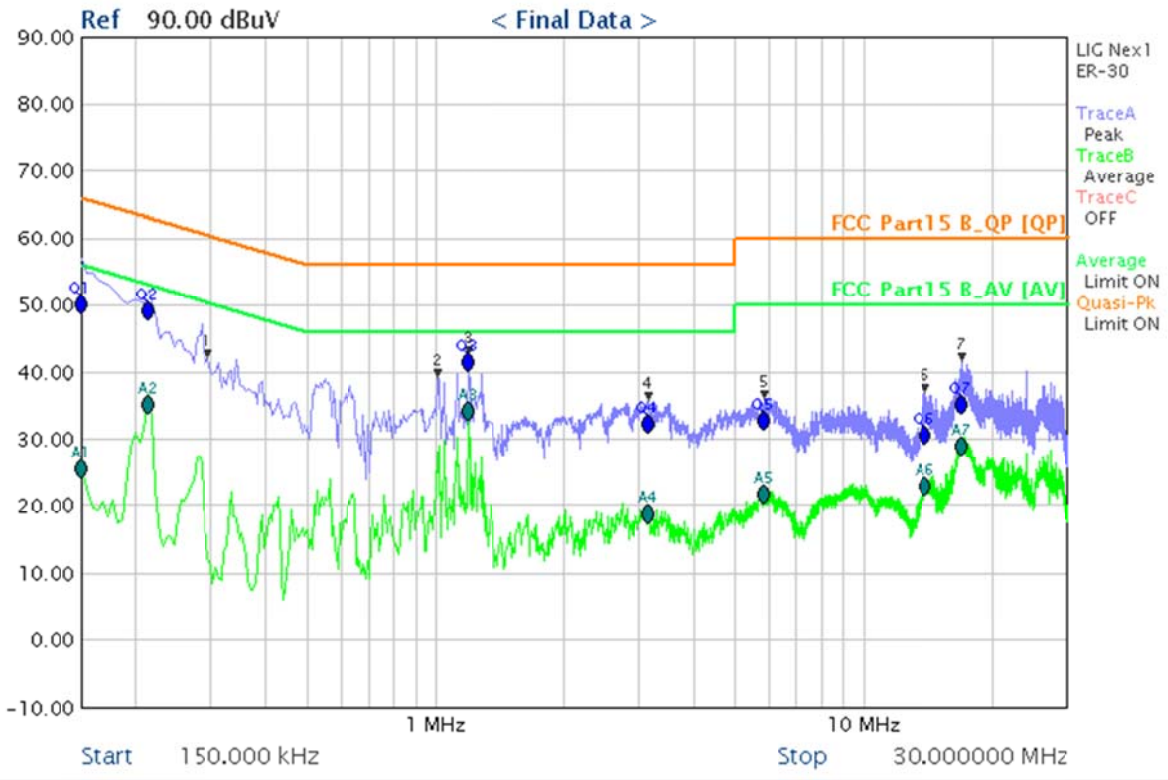


LIVE LINE



NEUTRAL LINE

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5.2 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

EUT	MSENS-GY	Test Date	July. 31, 2012
Humidity Level	52 %R.H.	Temperature	22.5 ºC

Type of Test	Class B
Distance	3 Meter
Limits apply to	FCC CFR 47, PART 15, SUBPART B, SECTION 15.109(a)
Detector	CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)/ above 1GHz : 1 MHz
Result	PASS

Frequency (MHz)	Reading (dBuV)	Ant. Pol. (H/V)	Ant. Pos. (m)	Ant. Factor (dB/m)	Cable Loss	Limits (dBuV/m)	Emission Level(dBuV/m)	Margin (dB)
119.52	9.65	V	1.20	11.66	2.20	40.00	23.51	16.49
144.39	7.12	V	1.30	12.83	2.40	43.50	22.35	21.15
216.16	10.66	H	3.40	10.31	3.03	43.50	24.00	19.50
264.24	10.19	H	3.20	12.18	3.36	46.00	25.73	20.27
347.01	10.01	H	3.10	14.36	3.88	46.00	28.25	17.75
623.62	5.39	H	3.00	19.92	5.15	46.00	30.46	15.54
693.40	4.42	V	1.10	20.71	5.46	46.00	30.59	15.41

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6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+	Meter reading	(dBuV)
+	Cable Loss	(dB)
+	Antenna Factor (Loss)	(dB/meter)
=	Corrected Reading	(dBuV/meter)
-	Specification Limit	(dBuV/meter)
=	dB Relative to Spec	(+/- dB)

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7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MODEL	MFR.	SER. NO.	Last Cal.	USE
1	EMI Test Receiver	ESVS10	ROHDE&SCHWARZ	840241-015	2012-01-30	□
2	Spectrum Analyzer	NS-30	LIG NEX1	N6052036	2012-01-30	□
3	Antenna Master	N/A	Daeil	N/A	N/A	■
4	Position Controller	N/A	Daeil	N/A	N/A	■
5	Turn Table	N/A	Daeil	N/A	N/A	■
6	EMI Test Receiver	ER-30	LIG NEX1	L0908A007	2011-09-09	■
7	AMN	LN2-16	EMCIS	LN10032	2011-11-03	■
8	AMN	LN2-16	EMCIS	LN10033	2011-11-03	■
9	Transient Limiter	TL-B930M	EMCIS	A-008	2012-01-30	■
10	EMI Test Receiver	ER-265	LIG NEX1	L0811B009	2012-04-10	■
11	TRILOG ANTENNA	VULD 9160	SCHWARZBECK	3292	2011-04-28	■
12	Horn-ANT.	BBHA9120D	SCHWARZBECK	BBHA9120D 839	2010-12-24	□
13	ISN	ENY41	SCHWARZBECK	100026	2011-11-22	□
14	ISN	ISN T8-Cat6	TESEQ	30939	2012-04-27	□
15	Horn-ANT.	SAS-571	A.H System, Inc.	1559	2012-05-08	□
16	Bi-Log ANTENNA	VULB9163	SCHWARZBECK	417	2012-03-19	■

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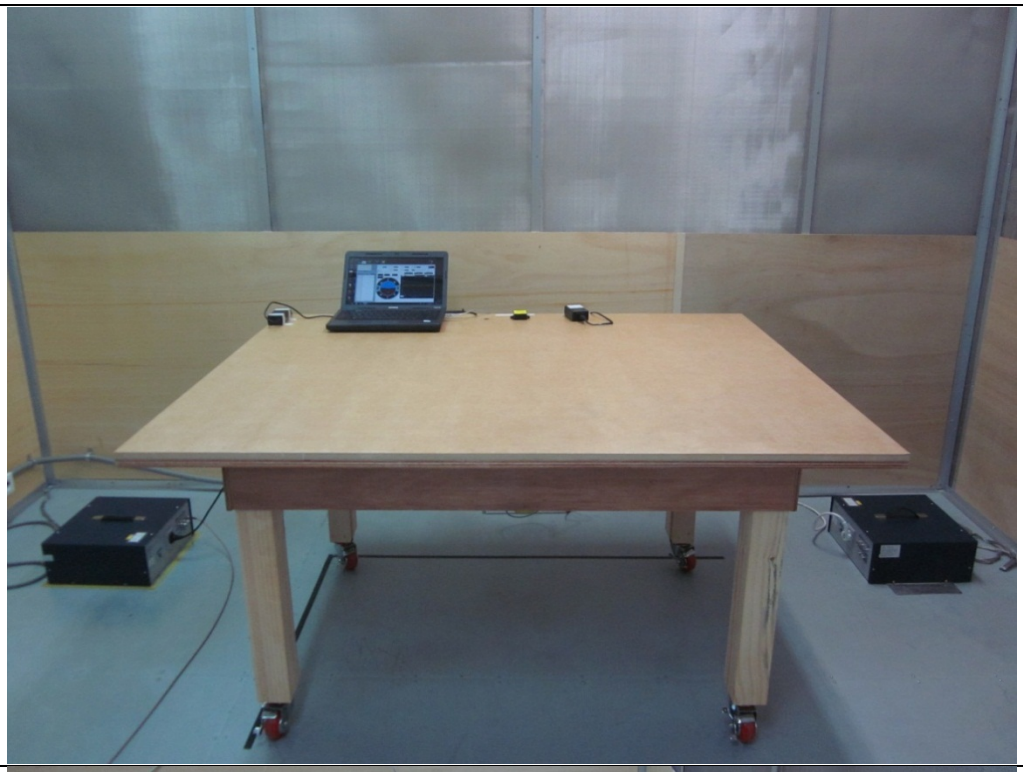
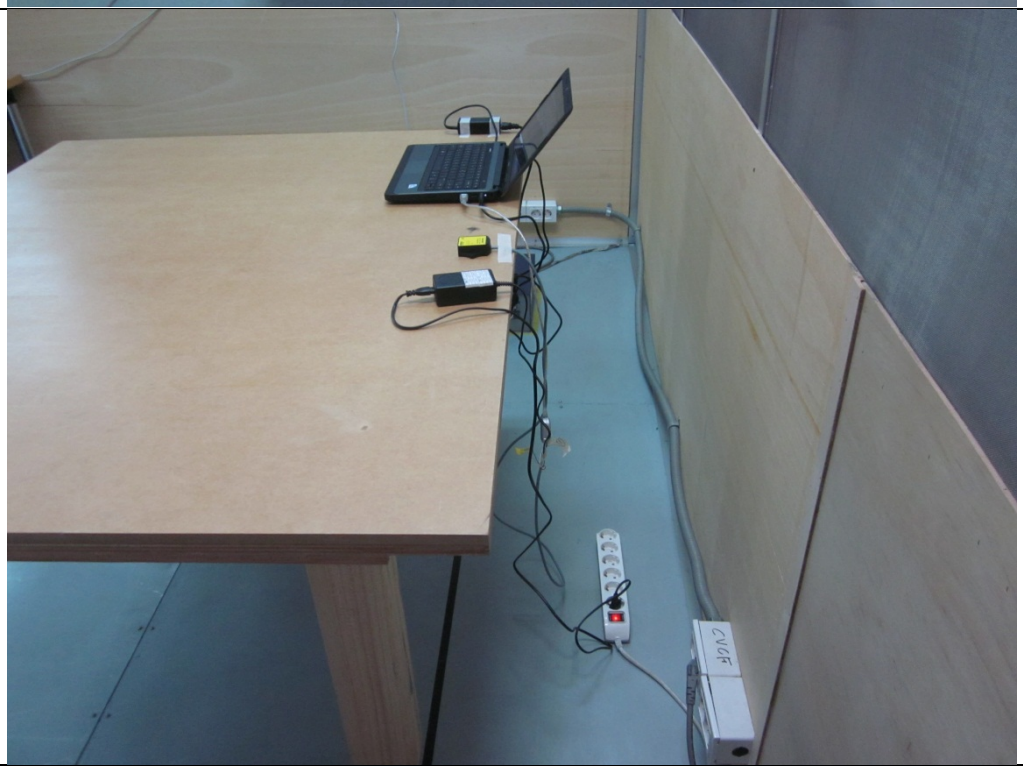
1. TEST SET-UP PHOTOS (CONDUCTED EMISSION)





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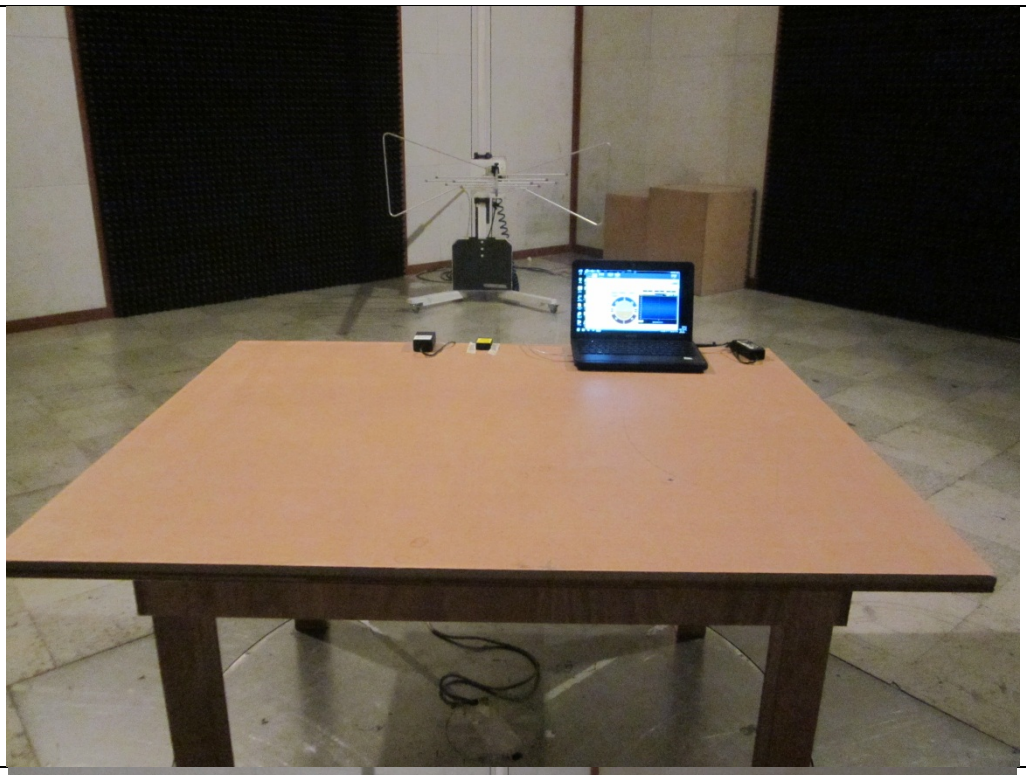
2. TEST SET-UP PHOTOS (RADIATED EMISSION)



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3. IDENTIFICATION LABEL

SUGGESTED LABEL FORMAT FOR EQUIPMENT SUBJECT TO VERIFICATION

MAY 1995

All devices subject to verification are required to have an identification label pursuant to Section 2.954 of the Rules. Additional labeling requirements may be specified in the particular sections of the FCC rules governing the specific class of equipment.

Under NO circumstances shall verified equipment be labeled with a FCC Identifier (FCC ID), or in any manner which implies that such equipment has been approved by the FCC.

Model No. 123
Company name or trade name
Country of origin *

The label showing the equipment identification data may be combined with a label showing other information (serial numbers, other governments requirements, etc.), if desired. Compliance statements, when required, may be shown on the same label or a separate label. See the "Check-sheet" for additional information concerning compliance statements.

* Country of origin - U.S. Customs and the Federal Trade Commission regulations require all equipment produced in foreign countries to be marked with the country of origin. Questions concerning marking of equipment with the country of origin should be directed to these agencies.

PROPOSED FCC LABEL (Part 15 sec. 15.19)

The label included following statement will be attached on product or the compliance statement can be observed in a prominent location in the instruction manual.

Model name: MSENS-GY
FCC ID : O75MSENS-GY Made In Korea

This device complies with Part 15 of the FCC Rules. Operation is 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 operations.

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4. PHOTOGRAPHS OF EUT

Front

Rear

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Internal Photo

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5. INFORMATION TO THE USER IN USER'S MANUAL

The instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

INFORMATION TO THE USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

-. Reorient or relocate the receiving antenna.

-. Increase the separation between the equipment and receiver.

-. Connect the equipment into an outlet on a circuit different from that to which the receiver
is connected.

-. Consult the dealer or an experienced radio/TV technician for help.

WARNING

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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