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 42

# **TEST REPORT**

Test Report No. : EM/2011/70002

**Applicant : NUUO INC** 

Address : C block, 18 Sihyuan st., Taipei, Taiwan

**Manufacturer : NUUO INC** 

Address : C block, 18 Sihyuan st., Taipei, Taiwan

Equipment Under Test (EUT) :

Name : PC Based DVR

**Brand Name : NUUO** 

Model No. : SCB-7016S

#### Added Model(s) : SCB-7004S, SCB-7008S, SCB-6004S, SCB-6008S, SCB-6016S

#### Standards:

EN55022 : 2006+A1:2007 Class A

EN55024 : 1998+A1:2001+A2:2003	IEC61000-4-2 : 2008
IEC61000-4-3 : 2006+A1:2007+A2:2010	IEC61000-4-4 : 2004+A1:2010
IEC61000-4-6 : 2008	IEC61000-4-8 : 2009

In the configuration tested, the EUT complied with the standards specified above.

Date of Receipt : Jul. 01, 2011 Date of Test : Jul. 01 ~ 19 2011 Date of Issue : Jul. 27, 2011

#### Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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Test By:

Fuana

Wisely Huang(Engineer)

**Prepared By:** 

\_\_\_\_\_

Approved By

ay Ke Date Kay Ke(Clerk) Victor Wes Date

Date

Victor Wen(Assistant Manager)

 Jul. 27, 2011
 Jul. 27, 2011
 Jul. 27, 2011

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# Version

Version No.	Description	Date
00	Original report	Jul. 27, 2011
		CIP



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# **1.General Description**

## **1.1 General Description of EUT**

Name of EUT	:	PC Based DVR
Brand Name	:	NUUO
Model No.(s)	:	SCB-7016S
Added Model(s)	:	SCB-7004S, SCB-7008S, SCB-6004S, SCB-6008S,
		SCB-6016S
Variant Description	:	<ol> <li>Internal component difference : SCB-7004S/SCB-6004S→Remove U6, U7, U8 chipset SCB-7008S/SCB-6008S→Remove U7, U8 chipset</li> </ol>
		<ol> <li>Function difference : SCB-6004S/SCB-6008S/SCB-6016S→ Pic Locked part of the</li> </ol>
		function (screen resolution limit)

#### 1.2 Details of EUT

Power Supply	:	From PC			
Power Cord	:	N/A			
Modes/Function	:	Full I/O			
Highest Frequency	:	533MHz			

# **1.3 Description of Support Units**

PRODUCT MANUFACTURER		MODEL NO.	SERIAL NO.
PC	IBM D74		R880T28
Monitor	HP	L1706	CND7122SDX
Keyboard	Lenovo	KU-0225	41A5296
Mouse	Lenovo	LXB MO28UOA USB	45J48881
Printer	HP	DJ3820	CN34L181B1
MODEM	MODEM LEMEL 1456VQE-C		D89-M003-0
DVD player	Pioneer	DV-400V	GIKD015214LOS
Distributor	N/A	N/A	N/A
NOTEBOOK <sup>EMS</sup>	IBM	R61	L3A9050
USB Mouse <sup>EMS</sup>	HP	M-UAE96	390938-001
Printer <sup>EMS</sup>	HP	DJ3820	CN34L181B1

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#### **1.4 Operation Procedure**

- 1. Set down the EUT with support units and turn on the power of all equipment.
- 2. Pre-test the EUT in all modes by each mode, then figure the worst case out.
- 3. Execute the appropriate program(for ESD : burn in test, for others test items : hyper terminal) to exercise the EUT.
- 4. Monitor the EUT to determine if it works properly to meet the required performance criteria during immunity tests.

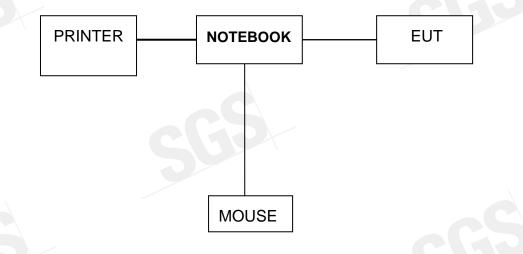
#### 1.5 The worst case of the EUT

EUT will be carried out in the worst case as followings: Model No. : SCB-7016S Mode : Full I/O

#### 1.6 Modification List

No modification by SGS Taiwan Electronics & Communication Laboratory.

#### **1.7 Configuration of Tested System**



#### 1.8 Cable List

Cable Type	Length	Shield
Video Cable	1.2m*2	Non-shielding
Video Cable	1m*18	Non-shielding
Audio Cable	1.2m*18	Non-shielding

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#### 1.9 Summary of Results

Emission								
Standard	Test Type	Result	Phase/Polar.	Frequency(MHz)	Margin(dB)			
	Conducted Emission	Pass	Line	3.6100	-24.97(QP)			
EN55022:2006 +A1:2007 Class A		Fa55	Neutral	3.6100	-23.66(QP)			
	Radiated Emission	Pass	Ver.	108.0100	-10.20(QP)			

Immunity (EN55024:1998+A1:2001+A2:2003)							
Standard	Test Type	Result	Performance Criteria	Test Judgment			
IEC 61000-4-2:2008	ESD test	PASS	Criterion B	Meets the requirements of Performance Criterion A			
IEC 61000-4-3:2006 +A1:2007+A2:2010	RS test	PASS	Criterion A	Meets the requirements of Performance Criterion A			
IEC61000-4-4:2004 +A1:2010	EFT Test	PASS	Criterion B	Meets the requirements of Performance Criterion A			
IEC61000-4-6:2008	CS Test	PASS	Criterion A	Meets the requirements of Performance Criterion A			
IEC61000-4-8:2009	PMF test	PASS	Criterion A	Meets the requirements of Performance Criterion A			



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# 2. Radio Disturbance

EN55022 : 2006+A1:2007 Class A

#### 2.1 Test Results

EN55022 Class A	Result
Conducted Emission	PASS
Radiated Emission	PASS

#### 2.2 Frequency Range

Conducted Emission : 150 kHz - 30 MHz Radiated Emission : 30 MHz - 1000 MHz

#### 2.3 Methods and Procedures

Standard	Date	Description
EN55022	2006+A1:2007 Class A	Limits and methods of measurement of radio interference characteristics of information technology equipment.

#### 2.4. Test of Conducted Emission

#### 2.4.1 Test Instruments

Description	Manufacturer	Model No.	Serial No.	Last Calibration	Next Calibration
		Δ.		Date	Date
EMI Test Receiver	ROHDE&SCHWARZ	ESCS 30	828985/004	Sep. 23, 2010	Sep. 22, 2011
Coaxial Cables	N/A	WK CE Cable	N/A	Nov. 27, 2010	Nov. 26, 2011
L.I.S.N	Rolf-Heine	NNB-2/16Z	99012	Mar. 31, 2011	Mar. 30, 2012
L.I.S.N	FCC	FCC-LISN-50/250-25-2-01	04034	Mar. 31, 2011	Mar. 30, 2012
Software	Farad	EZ-EMC-VER2A1.1(USB)	N/A	N/A	N/A

#### 2.4.2 Test Site

SGS Taiwan LTD. Electronics & Communication Laboratory No.134, Wu Kung Road. Wuku Industrial Zone, Taipei County 248, Taiwan (R.O.C.)

#### 2.4.3 EUT Operating Condition

Environment :

Temperature	Humidity				
24°C	59%RH				
Diagona refer to photo of CE testing out up					

Test setup : Please refer to photo of CE testing set-up

#### 2.4.4 Uncertainty of Conducted Emission

Expanded uncertainty (k=2) of Conducted Emission measurement is 1.82dB.

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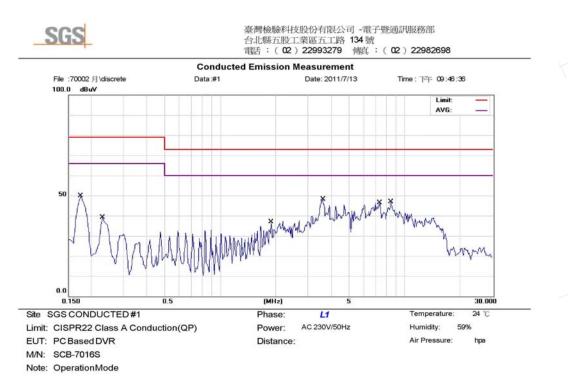
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#### 2.4.5 Measurement Data

L



No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1750	49.67	0.12	49.79	79.00	-29.21	QP	
2		0.2300	38.99	0.12	39.11	79.00	-39.89	QP	
3		1.8900	36.80	0.15	36.95	73.00	-36.05	QP	
4	*	3.6100	47.86	0.17	48.03	73.00	-24.97	QP	
5		7.3600	46.07	0.28	46.35	73.00	-26.65	QP	
6		8.5011	45.06	0.35	45.41	73.00	-27.59	QP	

\*:Maximum data x:Over limit l:over margin

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Engineer Signature:

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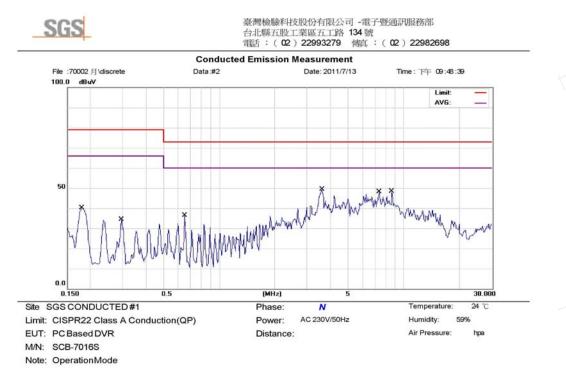
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Ν



No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1800	39.98	0.17	40.15	79.00	-38.85	QP	
2		0.2950	34.13	0.16	34.29	79.00	-44.71	QP	
3		0.6500	36.26	0.16	36.42	73.00	-36.58	QP	
4	*	3.6100	49.13	0.21	49.34	73.00	-23.66	QP	
5		7.3800	47.74	0.33	48.07	73.00	-24.93	QP	
6		8.6600	47.92	0.39	48.31	73.00	-24.69	QP	

\*:Maximum data x:Over limit !:over margin

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#### 2.5 Test of Radiated Emission

#### 2.5.1 Test Instruments

#### 10m Open Area Test Site

Manufacturer	Model No.	Serial No.	Last Calibration	Next Calibration				
			Date	Date				
N/A	OATS	N/A	Nov. 12, 2010	Nov. 11, 2011				
ROHDE&SCHWARZ	ESCI	100335	Feb. 01, 2011	Jan. 31, 2012				
HP	8447D	1937A02834	Nov. 27, 2010	Nov. 26, 2011				
SCHWAZBECK	VULB9160	9160-3224	Apr. 26, 2011	Apr. 25, 2012				
N/A	OS RE	N/A	Nov. 27, 2010	Nov. 26, 2011				
	Cable							
HD GmbH	MA 240	240/515	N/A	N/A				
HD GmbH	DT420	420/542	N/A	N/A				
HD GmbH	HD 100	100/589	N/A	N/A				
Software Farad EZ-EMC-VER2A1.1(USB)		N/A	N/A	N/A				
	Manufacturer N/A ROHDE&SCHWARZ HP SCHWAZBECK N/A HD GmbH HD GmbH HD GmbH	ManufacturerModel No.N/AOATSROHDE&SCHWARZESCIHP8447DSCHWAZBECKVULB9160N/AOS RE CableHD GmbHMA 240HD GmbHHD 420HD GmbHHD 100	ManufacturerModel No.Serial No.N/AOATSN/AROHDE&SCHWARZESCI100335HP8447D1937A02834SCHWAZBECKVULB91609160-3224N/AOS RE CableN/AHD GmbHMA 240240/515HD GmbHHD 100100/589	ManufacturerModel No.Serial No.Last Calibration DateN/AOATSN/ANov. 12, 2010ROHDE&SCHWARZESCI100335Feb. 01, 2011HP8447D1937A02834Nov. 27, 2010SCHWAZBECKVULB91609160-3224Apr. 26, 2011N/AOS REN/ANov. 27, 2010CableN/AHD GmbHMA 240240/515N/AHD GmbHHD 100100/589N/A				

#### 8\*4\*4 Chamber (Above 1G)

Description	Manufacturer	Model No.	Serial No.	Last Calibration	Next Calibration
		1		Date	Date
Spectrum Analyzer	R & S	FSP 40	1093.4495.40	May 04, 2011	May 03, 2012
RF-Amplifier	EM Electronics	EM30180	06031802	Nov. 27, 2010	Nov. 26, 2011
	Corporation				
Coaxial Cables	N/A	844 Microwave	N/A	Nov. 27, 2010	Nov. 26, 2011
		Cable			
Antenna Master	Chance Most	N/A	N/A	N/A	N/A
Turn Table	Chance Most	N/A	N/A	N/A	N/A
Controller	Chance Most	886	MF7802111	N/A	N/A
Horn Antenna	CHAMPRO	HA1-18GG	SN0805-HA02	Jul. 12, 2011	Jul. 11, 2012
3m Site VSWR	SGS	844 chamber	N/A	Sep. 01, 2010	Aug. 31, 2011
Software	Farad	EZ-EMC-VER2A1.1	N/A	N/A	N/A
		(USB)			

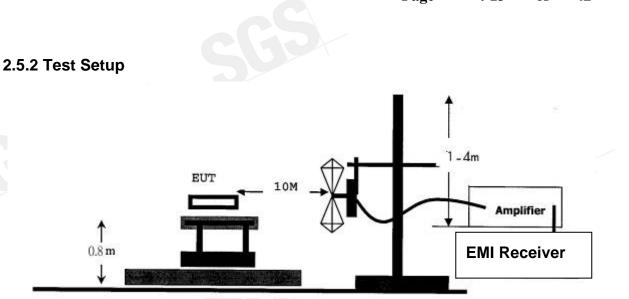
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#### 2.5.3 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on Measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to EN 55022:2006+A1:2007 on radiated measurement.

Radiated emissions were invested over the frequency range from 30MHz to 1 GHz using a receiver bandwidth of 120kHz. Radiated was performed at an antenna to EUT distance of 10 meters.

#### 2.5.4 Test Site

SGS Taiwan LTD. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley, Chia-Pau Tsuen, Linkou Hsiang, Taipei County 244, Taiwan (R.O.C.)

SGS Taiwan LTD. Electronics & Communication Laboratory No.134, Wu Kung Road. Wuku Industrial Zone, Taipei County 248, Taiwan (R.O.C.)

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## 2.5.5 EUT Operating Condition

Environment :

	Temperature	Humidity	
	23°C	61%RH	
Test setup	: Please refer to photo of	RE testing set-up	(

#### 2.5.6 Uncertainty of Radiated Emission

Expanded uncertainty (k=2) of radiated emission measurement is 3.1dB.(30-1000MHz) Expanded uncertainty (k=2) of radiated emission measurement is 5.64dB.(1-18GMHz)



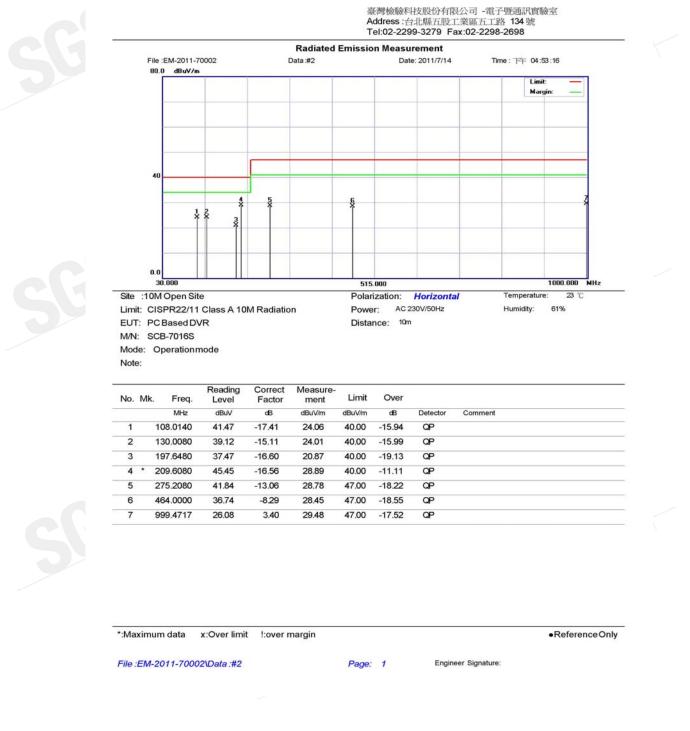
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# 2.5.7 Measurement Data Horizontal polarization



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#### Vertical polarization





No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		43.1460	38.94	-16.36	22.58	40.00	-17.42	QP	
2	*	108.0100	47.21	-17.41	29.80	40.00	-10.20	QP	
3		270.0050	40.53	-13.32	27.21	47.00	-19.79	QP	
4		431.9960	35.07	-9.05	26.02	47.00	-20.98	QP	
5		521.0500	35.51	-7.29	28.22	47.00	-18.78	QP	
6		998.0076	30.07	3.37	33.44	47.00	-13.56	QP	

\*:Maximum data x:Over limit l:over margin ReferenceOnly

File :EM-2011-70002\Data :#1

Page: 1

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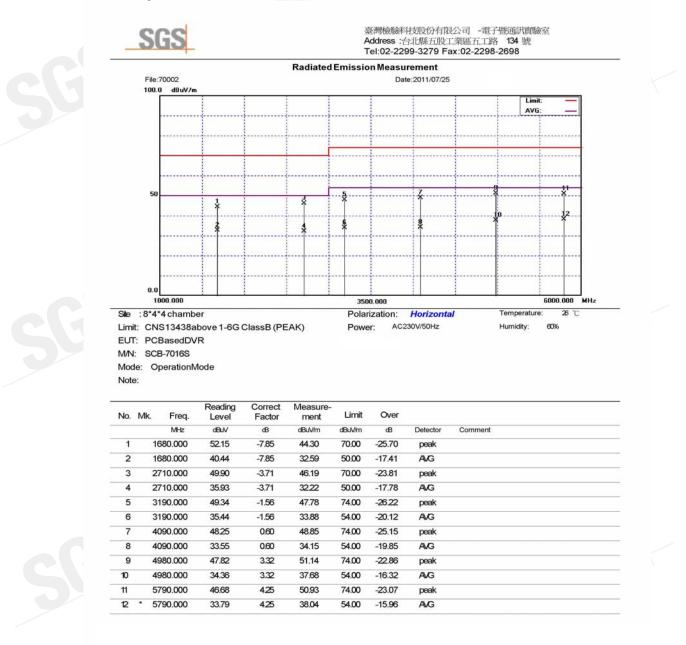
SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488 t (886-2) 2299-3279

Engineer Signature:



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#### Above 1G Horizontal polarization



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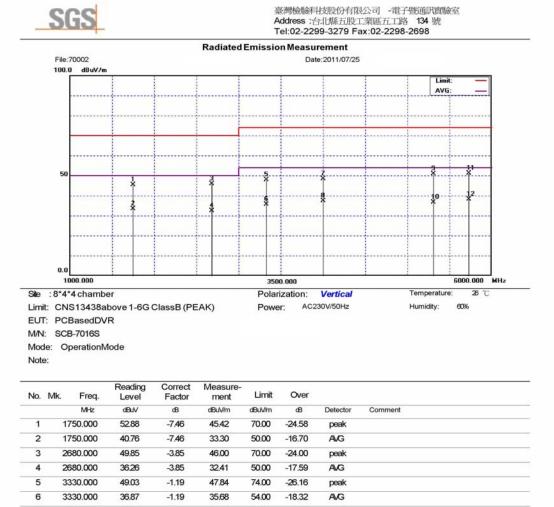
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#### Vertical polarization



48.33 74.00 7 4000.000 47.81 0.52 -25.67 peak 36.74 0.52 37.26 54.00 8 4000.000 -16.74 AVG 9 5310.000 47.02 3.79 50.81 74.00 -23.19 peak 10 5310.000 32.78 3.79 36.57 54.00 -17.43 AVG 11 5730.000 46.85 420 51.05 74.00 -22.95 peak 38.14 D 5730.000 33.94 420 5400 -15.86 AG

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**3. IMMUNITY** 

EN55024:1998+A1:2001+A2:2003

#### 3.1 Test Results

Test Standard	Performance Criteria	Result
IEC61000-4-2 : 2008	В	PASS
IEC61000-4-3 : 2006+A1:2007+A2:2010	Α	PASS
IEC61000-4-4 : 2004+A1:2010	В	PASS
IEC61000-4-6 : 2008	Α	PASS
IEC61000-4-8 : 2009	Α	PASS

#### 3.2 Performance Criteria Description

- Criterion A The apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.
- Criterion B The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.
- Criterion C Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls.

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### 3.3 Test of IEC61000-4-2

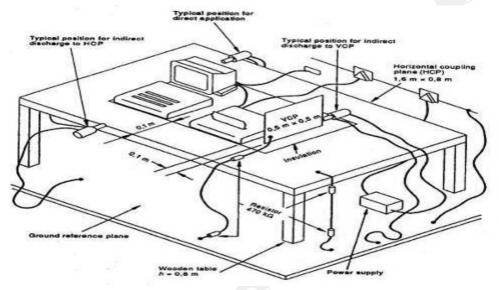
#### 3.3.1 Methods and Procedures

Standard	Date	Description
IEC61000-4-2	2008	Electrostatic Discharge (ESD)

#### 3.3.2 Test Instruments

Description	Manufacturer	Model No.	Serial No.	Last Calibration Date	Next Calibration Date
ESD Simulator	NoiseKen	ESS-100L/	ESS0635368	Jun. 28, 2011	Jun. 27, 2012
		TC-815R			
НСР	N/A	1.6 x 0.8 m	N/A	N/A	N/A
VCP	N/A	0.5 x 0.5 m	N/A	N/A	N/A
Ground Reference	N/A	6.5 x 3.5 m	N/A	N/A	N/A
Plane					

### 3.3.3 Test Setup



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#### 3.3.4 Test Procedure

Direct application of discharges to the EUT:

Contact discharge was applied only to conductive surfaces of the EUT. Air discharges were applied only to non-conductive surfaces of the EUT. During the test, it was performed with single discharges. For the single discharge time between successive single discharges will be keep longer 1 second. It was at least ten single discharges with positive and negative at the same selected point.

The selected point, which was performed with electrostatic discharge, was marked on the red label of the EUT.

Indirect application of discharges to the EUT:

Vertical Coupling Plane(VCP):

The coupling plane, of dimensions  $0.5m \times 0.5m$ , is placed parallel to, and positioned at a distance 0.1m from, the EUT, With the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

#### 3.3.5 Test Site

SGS Taiwan LTD. Electronics & Communication Laboratory No.134, Wu Kung Road. Wuku Industrial Zone, Taipei County 248, Taiwan (R.O.C.)

#### 3.3.6 EUT Operating Condition

Environment	:

	<u> </u>			
	Temperature	Humidity		
	25°C	43%RH		
et eatun	· Please refer to photo of ESD testing set-up			

Test setup

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<sup>:</sup> Please refer to photo of ESD testing set-up

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#### 3.3.7 Results of Electrostatic Discharge Test (ESD)

Basic Standard	: IEC61000-4-2
Discharge Impedance	: 330 ohm / 150 pF
Discharge Voltage	: Air Discharge: <u>+</u> 2, 4, 8 KV
	Contact Discharge: <u>+</u> 2, 4 kV
	HCP/VCP: <u>+</u> 2, 4 kV
Number of Discharge	: 25 times at each test point
Discharge Mode	: Single Discharge
Discharge Period	: 1 second
Note 1 : For contact dis	scharge, the EUT shall be exposed to at least 200
<u>discharges, 1</u>	00 each at negative and positive polarity. All tests
according to s	sec. 4.2.1 of EN55024 : 1998+A1:2001+A2:2003.

#### A. Observations :

Test points: 1. Case/screw/bracket.

Dire	ect Applica	ition	Test Res	sults
Discharge Level (kV)	Polarity (+/-)	Test Point	Contact Discharge	Air Discharge
2, 4, 8(Air)	+/-	N/A	N/A	N/A
2, 4(Cont.)	+/-	1	А	N/A

**<u>Remark:</u>** A : No degradation of performance or loss of function. N/A : Not Applicable.

#### B. Observations :

Test points: 1. Front side. 2. Rear side. 3. Left side. 4. Right side.

Indii	ect Applic	ation	Test Re	sults
Discharge	Polarity	Test Point	Horizontal Coupling	Vertical Coupling
Level (kV)	(+/-)			
$(\mathbf{RV})$	+/-	1 - 4	Δ	Δ

**<u>Remark:</u>** A : No degradation of performance or loss of function. N/A : Not Applicable.

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### 3.4 Test of IEC61000-4-3

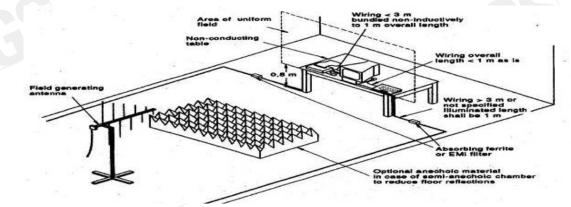
#### 3.4.1 Methods and Procedures

Standard	Date	Description
IEC61000-4-3	2006+A1:2007 +A2:2010	Radio-Frequency Electromagnetic Field Susceptibility Test, RS

#### 3.4.2 Test Instruments

Description	Manufacturer	Model No.	Serial No.	Last Calibration Date	Next Calibration Date
RS Test Site	Chance Most	8*4*4	N/A	Apr. 12, 2010	Apr. 11, 2011
		Chamber			
Signal Generator	Agilent	8648D	3847M00432	Jun. 28, 2011	Jun. 27, 2012
Power Amplifier(20-1000MHz)	OPHIR	5127FE	1050	N/A	N/A
Power Amplifier(800-2500MHz)	FRANKONIA	FLG-50B	1011	N/A	N/A
Power Amplifier	MILMEGA	AS0206-30	N/A	N/A	N/A
Relay Switching Unit	FRANKONIA	RSU-3203	113A3122	N/A	N/A
Remote RF Switch	Audix	r2S1216	2008040801	N/A	N/A
Turn Table	Chance Most	N/A	N/A	N/A	N/A
Antenna Tower	Chance Most	N/A	N/A	N/A	N/A
Controller	Chance Most	886	N/A	N/A	N/A
Log-Per Broad band Antenna	Schwarzbeck	VUSLP9111E	N/A	N/A	N/A
Strength Field Meter	Wandel & Goltermann	EMR-30	M-0006	Jun. 02, 2011	Jun. 01, 2012

#### 3.4.3 Test Setup



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#### 3.4.4 Test Procedure

The EUT and load, which are placed on a table that is 0.8 meter above ground, are placed with one coincident with the calibration plane such that the distance from antenna to the EUT was 3 meters.

Both horizontal and vertical polarization of the antenna and four sides of the EUT are set on measurement.

In order to judge the EUT performance, a CCD camera is used to monitor EUT screen.

#### 3.4.5 Test Site :

SGS Taiwan LTD. Electronics & Communication Laboratory No.134, Wu Kung Road. Wuku Industrial Zone, Taipei County 248, Taiwan (R.O.C.)

#### 3.4.6 EUT Operating Condition

Environment :

Temperature	Humidity
23°C	50%RH

Test setup

: Please refer to photo of RS testing set-up

#### 3.4.7 Results of Radiated Radio Frequency Electromagnetic (RS)

	A (
Test distance	: 3 m
Dwell Time	: 3 seconds
Frequency step	: 1 % of fundamental
Modulation	: 80% AM (1KHz)
Field strength	: 3 V/m
Frequency range	: 80 MHz - 1000 MHz
Basic Standard	: IEC61000-4-3

	No.	Frequency	Antenna	Observation	EUT
		(MHz)	Orientation		Orientation
		80 - 1000	Vertical/Horizontal	А	0 degree
2	2	80 - 1000	Vertical/Horizontal	A	90 degree
	3	80 - 1000	Vertical/Horizontal	A	180 degree
	4	80 - 1000	Vertical/Horizontal	A	270 degree

**Remark:** A : No degradation of performance or loss of function. N/A : Not Applicable.

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#### 3.5 Test of IEC61000-4-4

#### 3.5.1 Methods and Procedures

Standard	Date	Description
IEC61000-4-4	2004+A1:2010	Electrical fast transient/burst requirements

#### 3.5.2 Test Instruments

Description	Manufacturer	Model No.	Serial No.	Last Calibration Date	Next Calibration Date
EMS Multi-Tester	EMC Partner	TRANSIENT	648	Apr. 22, 2011	Apr. 21, 2012
		2000			
Clamp	EMC Partner	CN-EFT1000	469	N/A	N/A

#### 3.5.3 Test Site

SGS Taiwan LTD. Electronics & Communication Laboratory No.134, Wu Kung Road. Wuku Industrial Zone, Taipei County 248, Taiwan (R.O.C.)

#### 5.5.4 EUT Operating Condition

Environment :

Temperature	Humidity
24°C	52%RH

<u>Test setup</u> : Please refer to photo of EFT testing set-up

#### 3.5.5 Results of Electrical Fast Transient (EFT)

Basic Standard	: IEC61000-4-4
Test Voltage	: AC Input/Output : + 1 Kv
Signal/Comm.	: <u>+</u> 0.5 Kv
Polarity	: Positive/Negative
Impulse Frequency	: 5 kHz
Tr/Tn	: 5/50ns
Burst	: 15ms/300ms
Test Mode: 1. PC	link mode. 2. TV mode.

### Observations:

Test Point	Polarity	Test Level (Kv)	Results
L	+/-	1	N/A
N	+/-	1	N/A
L-N	+/-	1	N/A
Signal/Comm.	+/-	0.5	A

**<u>Remark:</u>** A : No degradation of performance or loss of function. N/A : Not Applicable.

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#### 3.6 Test of IEC61000-4-6

#### 3.6.1 Methods and Procedures

Standard	Date	Description
IEC61000-4-6	2008	Immunity to conducted disturbances,
		induced by radio-frequency fields.

#### **3.6.2 Test Instruments**

Description	Manufacturer	Model No.	Serial No.	Last Calibration	Next Calibration
-				Date	Date
CS Test Site	N/A	N/A	N/A	Apr. 09, 2010	Apr. 08, 2011
Signal Generator	ROHDE&SCHWARZ	SMY01	844146/016	Dec. 21, 2010	Dec. 20, 2011
RF Power Amplifier	Kalmus	116FC-CE	8380-1	N/A	N/A
6dB-PowerAttenuator	N/A	352-255-006	9731	N/A	N/A
Coaxial Cables	N/A	No. 15-17,	N/A	N/A	N/A
		21-23			
CDN (M2+M3)	FRANKONIA	M2+M3	A3011070	Mar. 10, 2011	Mar. 09, 2012
EM Injection Clamp	FCC	F-203I-23MM	479	Nov. 22, 2010	Nov. 21, 2011
	L	1	1		

#### 3.6.3 Test Site

SGS Taiwan LTD. Electronics & Communication Laboratory No.134, Wu Kung Road. Wuku Industrial Zone, Taipei County 248, Taiwan (R.O.C.)

#### 3.6.4 EUT Operating Condition

Environment :

Temperature	Humidity
24°C	52%RH

Test setup : Please refer to photo of CS testing set-up



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### 3.6.5 Results of Immunity to Conducted Disturbances (CS)

- Basic Standard Frequency range Field strength Modulation Frequency step Dwell Time Coupling Method
- : IEC61000-4-6 : 0.15 MHz - 80 MHz : 3 V/rms : 80% AM, 1 kHz Sinewave : 1 % of fundamental : 3 seconds : Clamp

## Test Mode: 1. PC link mode. 2. TV mode.

#### Observations:

Cable Description	Frequency (MHz)	Observation
AC input	0.15 - 80	N/A
Signal Ports		
Cable Description	Frequency (MHz)	Observation
Signal/Comm.	0.15 - 80	A

**<u>Remark</u>**: A : No degradation of performance or loss of function.

N/A : Not Applicable.

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### 3.7 Test of IEC61000-4-8

#### 3.7.1 Methods and Procedures

Standard	Date	Description
IEC61000-4-8	2009	Power Frequency Magnetic Field Immunity Test
7 2 Test Instrumen	to.	

#### 3.7.2 Test Instruments

Description	Manufacturer	Model No.	Serial No.	Last Calibration	Next Calibration
				Date	Date
AC clamp meter	DER EE	DE-3102	B0001252	Apr. 04, 2011	Apr. 03, 2012
PMF Antenna	EMC Partner	MF-1000	MF-1000-2 -07	N/A	N/A

#### 3.7.3 Test Site

SGS Taiwan LTD. Electronics & Communication Laboratory No.134, Wu Kung Road. Wuku Industrial Zone, Taipei County 248, Taiwan (R.O.C.)

#### 3.5.4 EUT Operating Condition

Environment :

Temperature	Humidity
26°C	53%RH

Test setup: Please refer to photo of PMF testing set-up

#### 3.7.5 Result of Immunity to power Frequency Magnetic

Basic Standard: IEC61000-4-8 : 2009 Power Frequency:50 Hz Magnetic Field: 1 A/m(r.m.s) Observation: A

#### Remark: A : No degradation of performance or loss of function.

N/A : Not Applicable.

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#### **APPENDIX - Constructional Details**

Photograph of Testing General Set-up	30-35	5
Photographs of Product	36-42	2

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# Photograph of Testing General Set-up CE Testing Set-up



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**RE Testing Set-up (Below 1G)** 





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#### **RE Testing Set-up (Above 1G)**





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#### **ESD Testing Set-up**



#### **RS Testing Set-up**



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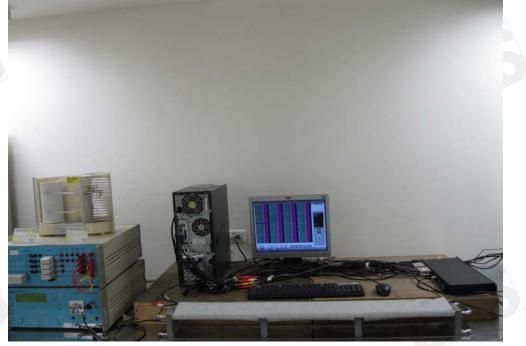
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### **EFT Testing Set-up (Clamp)**



#### **CS Testing Set-up (Clamp)**



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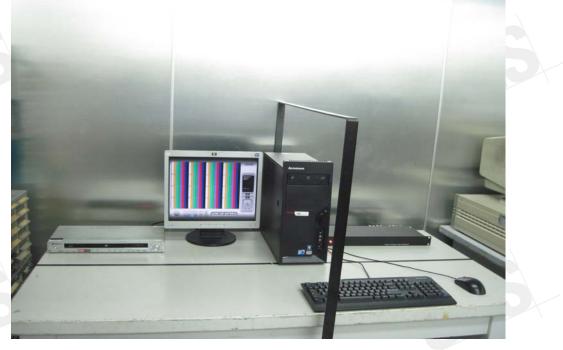
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#### **PMF Testing Set-up**



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# Photographs of Product

Model No. : SCB-7016S





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### Added Model(s) : SCB-7004S





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# Added Model(s) : SCB-7008S





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No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 S Taiwan Ltd. t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



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#### End of Report \*\* \*\*

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