FCC PART 15.107,109

EMI MEASUREMENT AND TEST REPORT

For

Changsha SunSky Electronic Design & Development Co.,Ltd.

Room1204, Kaihua Building, No.308 Laodongxi Rd., Changsha City, Hunan Province, China

FCC ID: WSVSUNVOTEB3X

Oct. 16, 2008

This Report Concerns: Original Report	Equipment Type： Voting System
Test Engineer:	Eric Li
Report No.:	F08100903A
Receive EUT Date/Test Date:	Oct.10,2008/ Oct.10-16,2008
Reviewed By:	Christina
Prepared By:	**Shenzhen BST Technology Co.,Ltd.** 3F,Weames Technology Building, No. 10 Kefa Road, Science Park, Nanshan District,Shenzhen,Guangdong,China Tel: 0755-26747751～3 Fax: 0755-26747751～3 ext.826

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1. GENERAL INFORMATION

1.1. Report information

1.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BST in any way guarantees the later performance of the product/equipment.

1.1.2.The sample/s mentioned in this report is/are supplied by Applicant, BST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BST, unless the applicant has authorized BST in writing to do so.

Test Facility -
The test site used to collect the radiated data is located on the address of Solid Industrial Co., Ltd. (FCC Registered Test Site Number: 759397) on 333 Bulong Highway Buji, Longgang Shenzhen, Guangdong, China
The Test Site is constructed and calibrated to meet the FCC requirements.

1.2. Measurement Uncertainty

Available upon request.

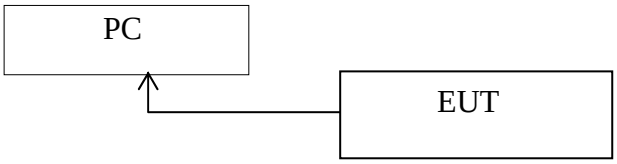
2. PRODUCT DESCRIPTION

2.1. EUT Description

Description	:	Voting System
Remarks	:	The EUT is a receiver
Applicant	:	Changsha SunSky Electronic Design & Development Co.,Ltd. Room1204, Kaihua Building, No.308 Laodongxi Rd., Changsha City, Hunan Province, China
Model Number	:	PVS-3000

Additonal	**Information**	
Frequency	:	-
Number of Channels	:	-
Power Supply	:	DC 3.3V (POWERED BY PC)
Maximum Range	:	N/A
Transmitter Antenna	:	-
Current Consumption		N/A

2.2. Block Diagram of EUT Configuration



2.3. Support Equipment List

N/A

2.4. Test Conditions

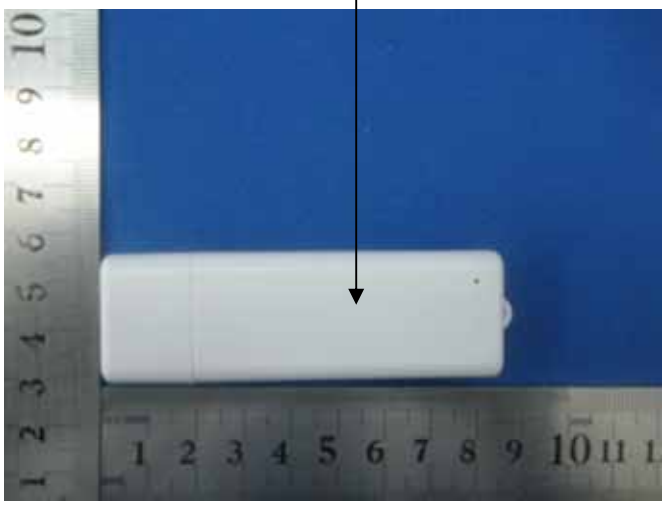
Temperature: 23~25℃
Relative Humidity: 55~63 %

3. FCC ID LABEL

FCC ID: WSVSUNVOTEB3X

Label Location on EUT

EUT Bottom View/ FCC ID Label Location



4. TEST RESULTS SUMMARY

FCC 15 Subpart C,Paragraph 15.249:2004

Test Standards	Test Items	Test Results
FCC Part 15,Paragraph 15.107	Conducted Test	Pass
FCC Part 15,Paragraph 15.109	Radiated Test	Pass

Remark: “N/A” means “Not applicable.”

Modifications

No modification was made.

5. TEST EQUIPMENT USED

Equipment/Facilities	Manufacturer	Model #	Serial no.	Date of Cal.	Cal. Interval
Cable	Resenberger	N/A	NO.1	Mar 10，2008	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10，2008	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10，2008	1 Year
LISN	Rohde＆Schwarz	ESH3-Z5	100305	Mar 10，2008	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10, 2008	1 Year
EMI Test Receiver	Rohde＆Schwarz	ESP13	100180	Oct.18,2007	1 Year
Spectrum Analyzer	Rohde＆Schwarz	FSP40	100273	Sep.10,2008	1 Year
3m Semi-Anechoic Chamber	Albatross Projects	9m×6m×6m	N/A	Feb.20,2008	1 Year
Signal Generator	FLUKE	PM5418 + Y/C	LO747012	Feb.20,2008	1 Year
Signal Generator	FLUKE	PM5418TX	LO738007	Feb.20,2008	1 Year
Loop Antenna	SCHWARZBECK	FMZB1516	113	Jan.30,2008	1 Year
Trilog-Super Broadband Antenna	SCHWARZBECK	VULB9161	9161-4079	Sep.22,2008	1 Year
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-564	Sep.22,2008	1 Year
Ultra Broadband Antenna	Rohde＆Schwarz	HL-562	100110	June.15,2008	1 Year
AMN	Rohde＆Schwarz	ESH3-Z5	100196	Oct.11,2008	1 Year
AMN	Rohde＆Schwarz	ESH3-Z5	100197	Oct.11,2008	1 Year
Pulse Limiter	Rohde＆Schwarz	ESH3-Z2	N/A	N/A	N/A
Power Meter	Rohde＆Schwarz	NRVD	100041	Feb.20,2008	1 Year
EMI Test Receiver	Rohde＆Schwarz	ESCS30	100003	Feb.20,2008	1 Year
Coaxial Cable with N-connectors	SCHWARZBECK	AK9515H	95549	Sep.22,2008	1 Year
Radio Communication Test Set	Rohde＆Schwarz	CMS 54	846621/024	Feb.20,2008	1 Year
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.20,2008	1 Year
Absorbing clamp	Rohde＆Schwarz	MDS-21	N/A	Oct.29,2007	1 Year

6. CONDUCTED POWER LINE TEST

6.1. Test Equipment

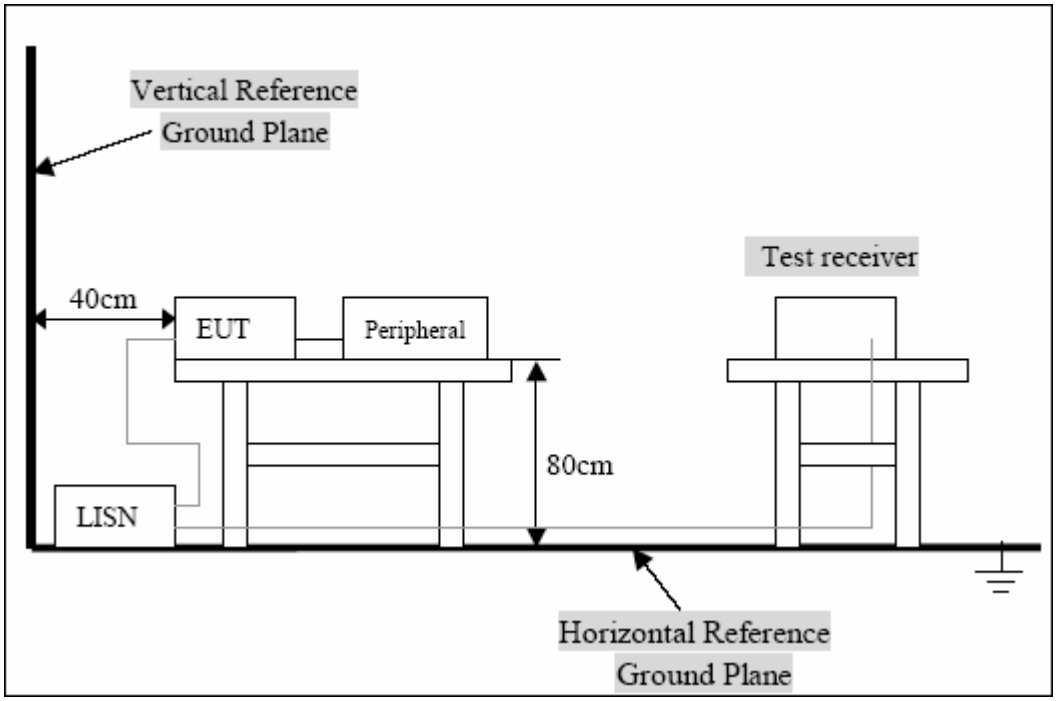
Please refer to section 4 this report.

6.2. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.).This provides a 50ohm/50uh coupling inpedance for the measuring equipment.The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uh coupling inpedance with 50ohm termination.

Both sides of A.C. Line are check for maximum conducted interference.In order to find the maximum emission,the relative positions of equipment and al of the interface cables must be changed according to ASIN C63.4:2003 on conducted measurement .Conducted emissions were invested over the frequency range from 0.15MHz to 30MH z using a receiver bandwidth of 9Khz.

6.3. Test Setup



For the actual test configuration,Please refer to the related items-Photos of testing

6.4. Configurating of the EUT

The EUT was configured according to ASIN C63.4:4-2003. Enable the signal transmitted from the external antenna from EUT to receiver. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.
Note:
Below 1GHZ, the channel low, middle, high were pre-tested, The channel low, worst case one, was chosen for conducted and radiated emission test.
Above 1GHZ,the channel low ,middle, high were tested individually.

A.EUT

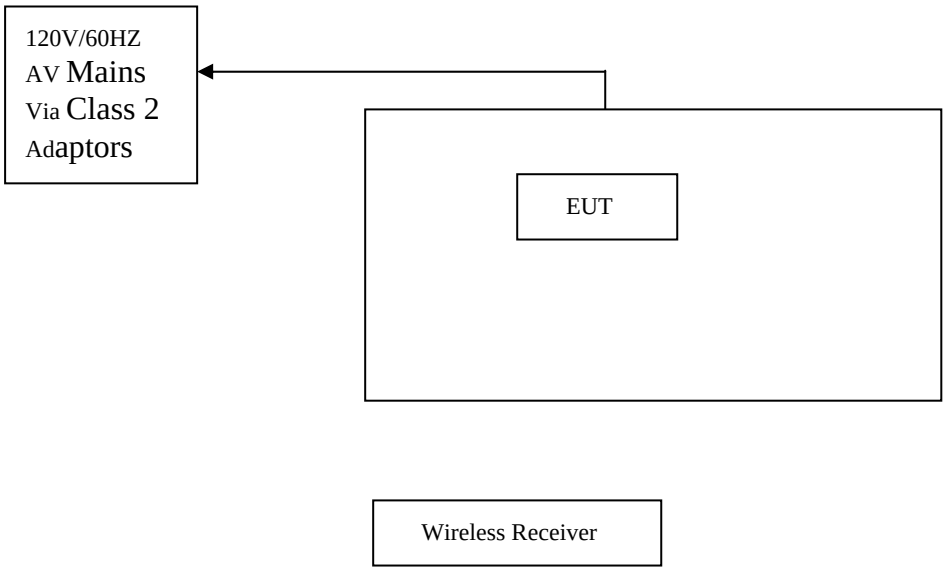
Device	Manufacturer	Model #	FCC ID
Voting System	Changsha SunSky Electronic Design & Development Co.,Ltd.	PVS-3000	WSVSUNVOTEB3X

B.Internal Devices

Device	Manufacturer	Model #	FCC ID
N/A			

6.5. EUT Operating Condition

Operating condition is according to ANSI C63.4-2003.
Setup the EUT and simulators as shown on follow.
Enable RF signal and confirm EUT active.
Modulate output capacity of EUT up to specification.



6.6. Conducted Power line Emission Limits

FCC Part 15 Paragraph 15.107 (dBuv)		
Frequency Range (MHZ)	Class A QP/AV	Class B QP/AV
0.15-0.5	79/66	65-56/56-46
0.5-5.0	73/60	56/46
5.0-3.0	73/60	60/50

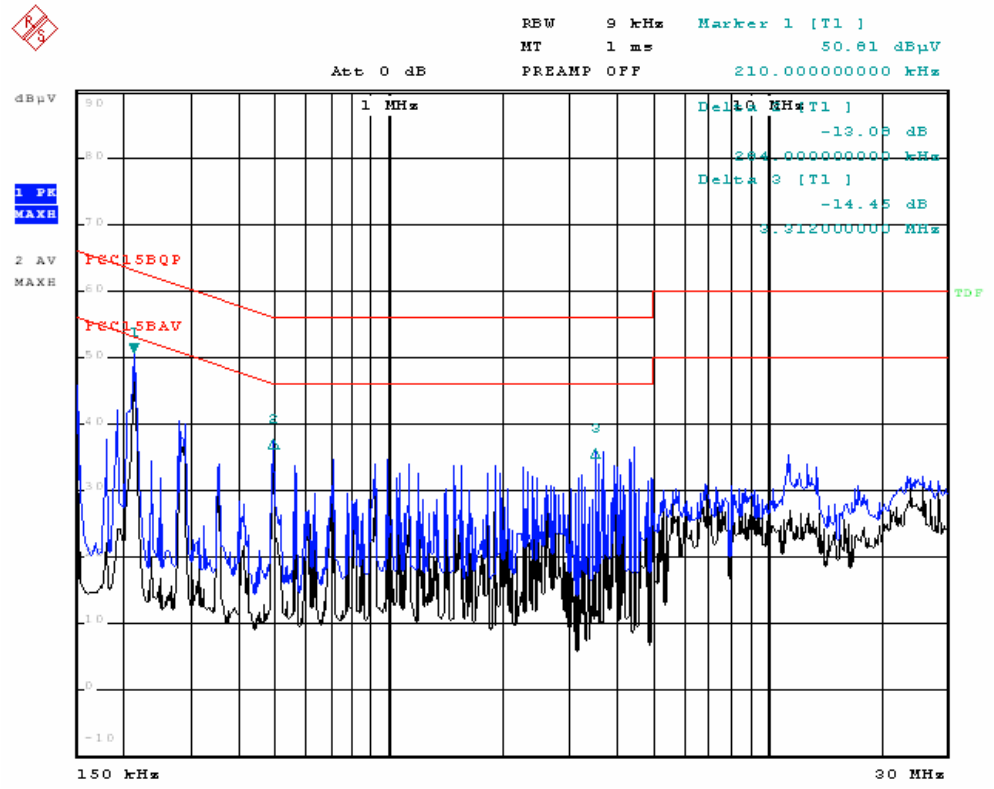
Note: In the above table, the tighter limit applies at the band edges.

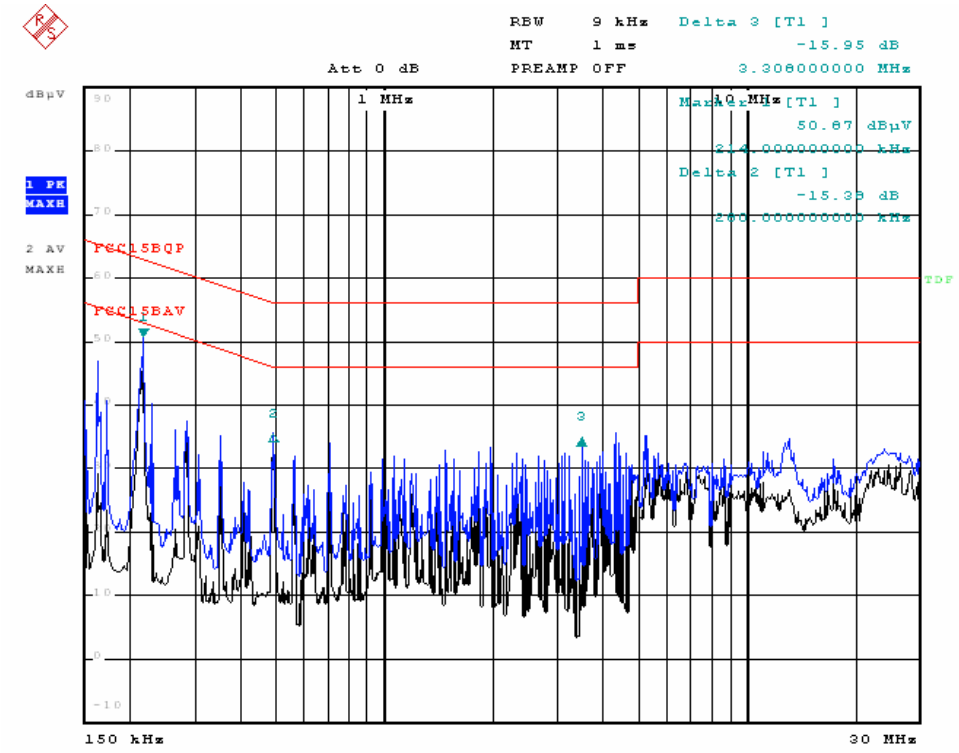
6.7. Conducted Power Line Test Result

Table Conducted Disturbance Test Data

Model No.: PVS-3000
Test Mode: 1

Line					Neutral				
Frequency (MHz)	Quasi-Peak		Average		Frequency (MHz)	Quasi-Peak		Average	
	Reading (dBμV)	Limit (dBμV)	Reading (dBμV)	Limit (dBμV)		Reading (dBμV)	Limit (dBμV)	Reading (dBμV)	Limit (dBμV)
0.210	50.81	65 ~ 56	46.78	56 ~ 46	0.214	50.87	65 ~ 56	47.02	56 ~ 46
3.522	36.36	56	18.27	46	3.522	34.92	56	14.51	46


RBW 9 kHz
MT 1 ms
Att 0 dB
PREAMP OFF
Marker 1 [T1]
50.61 dBµV
210.000000000 kHz
Delta 2 [T1]
-13.03 dB
Delta 3 [T1]
-14.45 dB
dBµV
1 MHz
1 PK MAXH
2 AV MAXH
FCC15BQP
FCC15BAV
TDF
150 kHz
30 MHz


RBW 9 kHz
MT 1 ms
Att 0 dB
PREAMP OFF
Delta 3 [T1]
-15.95 dB
3.306000000 MHz
Marker 1 [T1]
50.67 dBµV
Delta 2 [T1]
-15.35 dB
dBµV
1 MHz
1 PK MAXH
2 AV MAXH
FCC15BQP
FCC15BAV
TDF
150 kHz
30 MHz

7. RADIATED EMISSION TEST

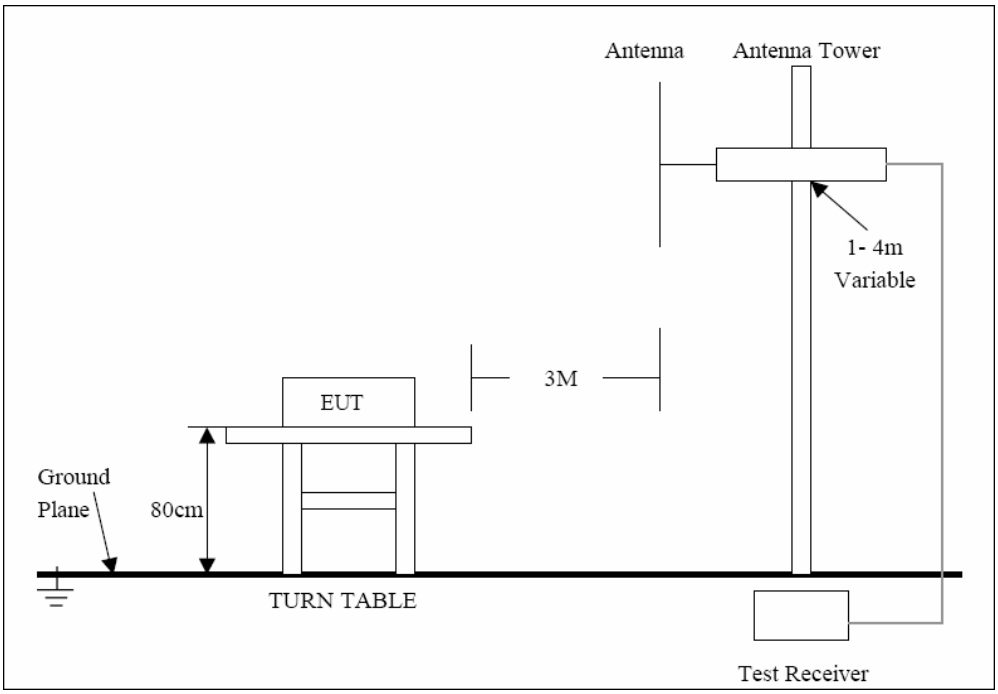
7.1. Test Equipment

Please refer to section 4 this report.

7.2. Test Procedure

1. The EUT was tested according C63.4-2003.The radiated test was performed at FCC Registration laboratory .
2. The EUT,peripherals were put on the turntable which table size od 1m×1.5m,table high 0.8m.All set up is according tl ANSI C63.4-2003.
3. The frequency spectrum from 30MHZ to 1 GHZ was investigated.All readings from 30MHZ to 1 GHZ are quasi-peak values with a resolution bandwidth of 120 KHZ. All readings are above 1GHZ ,prak values with a resolution bandwidth of 1 MHZ.Measurements were made at 3 merers.
4. The antenna high is varied from 1m to 4m high to find the maximum emission for each frequency.
5. Maximizing procedure was performed on the six(6)highest emissions to ensure EUT compliance is with all installation combinations.All data was recorded in the peak detection mode.Quasi-peak readings was performed only when an emission was found to be marginal (within -4 Db of specification limit),and are distinguished with a “QP”in the data table.
6. The antenna polarization:Vertical polarization and Horizontal polarization.

7.3. Radiated Test Setup



For the accrual test configuration,pleas refer to the related items-photos of Testing.

7.4. Confihuration of the EUT

Same as section 5.4 of this report

7.5. EUT Operating Condition

Same as section 5.5 of this report.

7.6. Radiated Emission Limit

All emission from a digital device,including any network of conductors and apparatus connected thereto,shall not exceed the level of field strength specified below :

Limit

Frequency (MHZ)	Distance (m)	Field Strength (dBuV/m)
30-88	3	40.0
88-*216	3	43.5
216-960	3	46.0
ABOVE 960	3	54.0

Note: (1) RF Voltage (DbUv)=20 log Voltage(Uv)

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

(3) The emission limit in this paragraph os based on measurement instrumentation employing an average detector.Measurement using instrumentation with a peak detector function,corresponding to 20dB above the maximum permitted average limit.

7.7. Radiated Emission Test Result

A. General Radiated Emission Data

Product:	Voting System	Test mode:	CH Low～CH High
Test Item:	Radiated Emission Data	Temperature:	25℃
Test Voltage:	DC3.3V	Humidity:	56%RH
Test Result:	PASS		

Freq. (MHz)	Emission(dBuV/m) Peak Detector	HORIZ/ VERT	Limits(dBuV/m) Peak/ACERAGE	Margin (Db)
168.225	22.1	VERT	43.5	21.4
168.225	30.6	HORIZ	43.5	12.9
335.550	38.2	VERT	46.0	7.8
335.550	38.6	HORIZ	46.0	7.4
502.875	39.2	VERT	46.0	6.8
502.875	39.1	HORIZ	46.0	6.9