Test Report No. 7191020377-EEC11/08
dated 03 Jan 2012

PSB Singapore

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FORMAL REPORT ON TESTING IN ACCORDANCE WITH
47 CFR FCC Parts 15B & C & E: 2011
OF A
HOME THEATER AUDIO SYSTEM
[Model : SU-HTB550 & SU-HTB350]
[FCC ID : ACJ-11AT1201]

TEST FACILITY	TÜV SÜD PSB Pte Ltd, Electrical & Electronics Centre (EEC), Product Services, No. 1 Science Park Drive, Singapore 118221
FCC REG. NO.	99142 (3m and 10m Semi-Anechoic Chamber, Science Park)
IND. CANADA REG. NO.	2932I-1 (3m and 10m Semi-Anechoic Chamber, Science Park)
PREPARED FOR	Panasonic AVC Networks (S) Pte Ltd 202, Bedok South Avenue 1, Singapore 469332 Tel : (+65) 6240 1891 Fax : (+65) 6245 8804
QUOTATION NUMBER	219140675
JOB NUMBER	7191020377
TEST PERIOD	14 Nov 2011 – 03 Jan 2012

PREPARED BY	**APPROVED BY**
Quek Keng Huat Associate Engineer	Lim Cher Hwee Assistance Vice President

TÜV SÜD PSB

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LA-2007-0380-A
LA-2007-0381-F
LA-2007-0382-B
LA-2007-0383-G
LA-2007-0384-G
LA-2007-0385-E
LA-2007-0386-C
LA-2010-0464-D

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests/Calibrations marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.

Laboratory:
TÜV SÜD PSB Pte. Ltd.
No.1 Science Park Drive
Singapore 118221

Phone : +65-6885 1333
Fax : +65-6776 8670
E-mail: testing@tuv-sud-psb.sg
www.tuv-sud-psb.sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223

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TEST SUMMARY

The product was tested in accordance with the customer's specifications.

Test Results Summary

Test Standard	Description	Pass / Fail
47 CFR FCC Part 15: 2011		
15.247(b)(3), 15.407(a)	Maximum Conducted Output Power	Pass
1.1310	Maximum Permissible Exposure	Pass

TEST SUMMARY

Notes

1. Three channels as listed below, which respectively represent the lower, middle and upper channels of the Equipment Under Test (EUT) were chosen and tested. For each channel, the EUT was configured to operate in the test mode.

Transmit Channel	Frequency (GHz)
Lower Band (5150GHz – 5250GHz)	
Channel 0	5.180
Channel 2	5.220
Channel 3	5.240
Upper Band (5725GHz – 5825GHz)	
Channel 4	5.745
Channel 6	5.785
Channel 8	5.825

2. The EUT is a Class B device when in non-transmitting state and meets the 47 CFR FCC Part15B Class B requirements.

3. All test measurement procedures are according to ANSI C63.4: 2003.

4. The maximum measured RF power of the Equipment Under Test (SU-HTB550) is 15.0dBm.

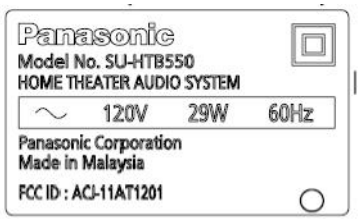
5. The EUT was tested in continuous transmission mode; ie 0dB duty cycle.

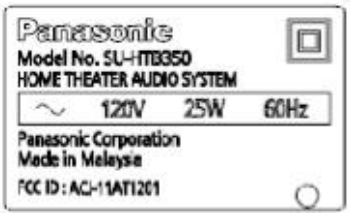
6. Panasonic AVC Networks Singapore Pte Ltd declared that the models **SC-HTB550, SC-HTB450, SC-HTB350 & SC-HTB351** are using the same RF module and identical in term of components, circuitry design, PCB layouts and mechanical structures. The model **SC-HTB550** is the worst case model among the declared models in view of RF and EMC performance. Shall the model **SC-HTB550** passes the RF and EMC test, the declared models **SC-HTB450, SC-HTB350 & SC-HTB351** are deemed to meet the same requirements. See below tables for the differences:

	Basic model	Similar model	Similar model	Similar model	Similar model
	SC-HTB550 US	SC-HTB550 Canada	SC-HTB450 Canada	SC-HTB350 US	SC-HTB351 US
Main Unit	SU-HTB550	SU-HTB550	SU-HTB450	SU-HTB350	SU-HTB350
HDMI Input	Yes (2X)	Yes (2X)	Yes (2X)	No	No
HDMI Output	Yes	Yes	Yes	No	No
Analog Input	No	No	No	Yes (Stereo)	Yes (Stereo)
Function Indicator	8 LEDS	8 LEDS	8 LEDS	7 LEDS	7 LEDS
Active Subwoofer	SB-HWA550	SB-HWA550	SB-HWA450	SB-HWA350	SB-HWA350
Wooden Box	Glossy	Glossy	Matt	Matt	Matt
Front Speaker	SB-HTB550	SB-HTB550	SB-HTB350	SB-HTB350	SB-HTB350
Metal Mesh	Anodizing	Anodizing	ED Coating	ED Coating	ED Coating

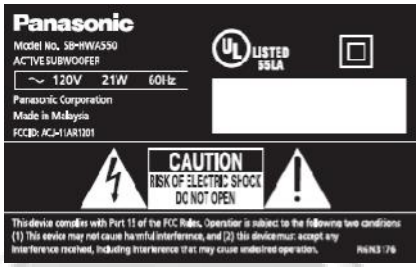
Notes (Continued)

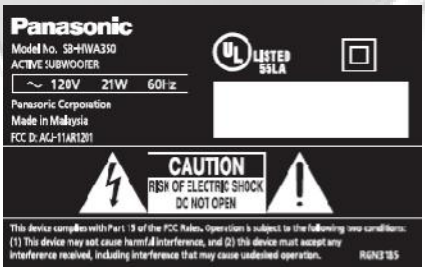
MAIN UNIT NAME PLATE



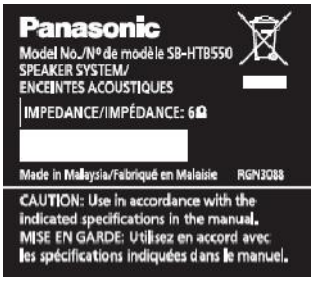


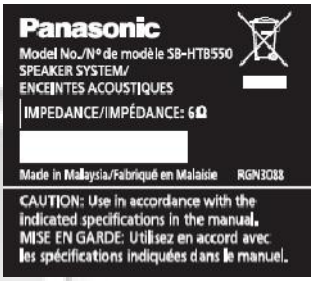
ACTIVE SUBWOOFER NAME PLATE

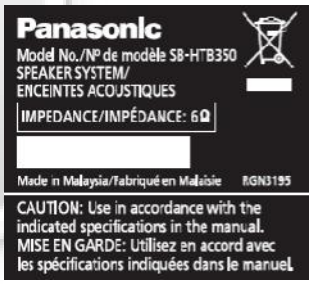


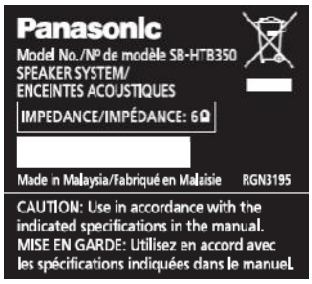


SPEAKER NAME PLATE









Modifications

No modifications were made.

PRODUCT DESCRIPTION

Description	:	The Equipment Under Test (EUT) is a **HOME THEATER AUDIO SYSTEM.**
Applicatnt	:	Panasonic AVC Networks (S) Pte Ltd 202, Bedok South Avenue 1, Singapore 469332
Manufacturer	:	Panasonic Corporation 1006, Oaza Kadoma, Kadoma-City, Osaka 571 8501, Japan
Factor(ies)	:	Panasonic AVC Networks Johor Malaysia Sdn Bhd IE, PLO 460, Jalan Bandar, 81700 Pasir Gudang, Johor, Malaysia
Model Number	:	SU-HTB550 & SU-HTB350
FCC ID	:	ACJ-11AT1201
Serial Number	:	Nil
Microprocessor	:	Avnera AV7621
Operating / Transmitting Frequency	:	5.180GHz (lower channel) to 5.825GHz (upper channel) 9 channels.
Clock / Oscillator Frequency	:	16MHz
Modulation	:	π/4 DQPSK / OFDM
Antenna Gain	:	2.0 dBi
Port / Connectors	:	2xHDMI Input 1xHDMI Output 2xOptical In
Rated Input Power	:	120V 60Hz
Accessories	:	1. Remote Control with Battery 2. AC Cord 3. OI Book 4. Easy Setup Guide

SUPPORTING DESCRIPTION DESCRIPTION

Equipment Description (Including Brand Name)	Model, Serial & FCC ID Number	Cable Description (List Length, Type & Purpose)
Panasonic Speaker System	M/N: SB-HTB550 S/N: TN1JA001008 FCC ID: DoC	2.00m unshielded speaker cable
Lenovo Laptop	M/N: R400 S/N: L3-ALB2G 09/03 FCC ID: DoC	1.80m unshielded power cable
Lenovo AC Adapter (Laptop)	M/N: PA-1650-161 S/N: 11S92P1158Z1 FCC ID: DoC	2.00m unshielded power cable
Avena TX Module Jig	M/N: AVTF123-01A S/N: Nil FCC ID: DoC	1.00m unshielded USB cable
Avena RX Module Jig	M/N: AVTF123-02A S/N: Nil FCC ID: DoC	1.00m unshielded USB cable
Antel Electronics Co., Ltd. AC Adapter (Avena Jig)	M/N: SF-789 S/N: Nil FCC ID: DoC	1.00m unshielded power cable
JVC DVD Player	M/N: XV-N680 S/N: 124R1026 FCC ID: DoC	1.00m unshielded power cable 1.00m unshielded HDMI cable

EUT OPERATING CONDITIONS

47 CFR FCC Part 15
1. Maximum Conducted Output Power **2. Maximum Permissible Exposure**
The EUT was exercised by operating in maximum continuous transmission in test mode, i.e transmitting at lower, middle and upper channels respectively at one time.

MAXIMUM CONDUCTED OUTPUT POWER TEST

47 CFR FCC Parts 15.247(b)(3) and 15.407(a) Maximum Conducted Output Power Limits

The EUT shows compliance to the requirement of 15.247(b)(3) for band 5.725GHz – 5.850GHz, which states the maximum peak power of the EUT employing digital modulation shall not exceed 1W (30dBm).

The EUT shows compliance to the requirements of 15.407(a), which states the maximum conducted output power of the EUT shall not exceed the lesser of the following:

Frequency Range (GHz)	Limit Values
5.15 – 5.25	50mW or 4dBm + 10logB*
5.725 – 5.825	1000mW or 17dBm + 10logB*
* whichever is the lower limit and B refers to the 26dB emission bandwidth in MHz.	

47 CFR FCC Parts 15.247(b)(3) and 15.407(a) Maximum Conducted Output Power Test Instrumentation

Instrument	Model	S/No	Cal Due Date
Boonton RF Power Meter	4532	72901	24 Mar 2012
Boonton Power Sensor	56218-S/1	1417	24 Mar 2012

47 CFR FCC Parts 15.247(b)(3) and 15.407(a) Maximum Conducted Output Power Test Setup

1. The EUT and supporting equipment were set up as shown in the setup photo.
2. The power supply for the EUT was connected to a filtered mains.
3. The RF antenna connector was connected to the power meter via a low-loss coaxial cable.
4. All other supporting equipment were powered separately from another filtered mains.

47 CFR FCC Parts 15.247(b)(3) and 15.407(a) Maximum Conducted Output Power Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition. The EUT was then configured to operate in the test mode at Channel 0 (5.180GHz).
2. The maximum peak power of the transmitting frequency was detected and recorded.
3. The Equivalent Isotropic Radiated Power (EIRP) of the EUT was computed by adding its antenna gain to the measured maximum conducted output power.
4. The steps 2 to 3 were repeated with the transmitting frequency was set to Channel 2 (5.220GHz), Channel 3 (5.240GHz), Channel 4 (5.745GHz), Channel 6 (5.785GHz) and Channel 8 (5.825GHz) respectively.

Maximum Conducted Output Power Test Setup

MAXIMUM CONDUCTED OUTPUT POWER TEST

47 CFR FCC Parts 15.247(b)(3) and 15.407(a) Maximum Conducted Output Power Results

Test Input Power	110V 60Hz	Temperature	23°C
Antenna Gain	2.0 dBi	Relative Humidity	60%
Model	SU-HTB550	Atmospheric Pressure	1030mbar
Antenna	0	Tested By	Chelmin Li

Channel	Channel Frequency (GHz)	Maximum Peak Power (mW)	Maximum EIRP (mW)	Limit (mW)
0	5.180	27.143	43.019	50
2	5.220	26.891	42.620	50
3	5.240	27.051	42.873	50
4	5.745	31.230	49.497	1000
6	5.785	21.200	33.600	1000
8	5.825	18.261	28.942	1000

Test Input Power	110V 60Hz	Temperature	23°C
Antenna Gain	2.0 dBi	Relative Humidity	60%
Model	SU-HTB550	Atmospheric Pressure	1030mbar
Antenna	1	Tested By	Chelmin Li

Channel	Channel Frequency (GHz)	Maximum Peak Power (mW)	Maximum EIRP (mW)	Limit (mW)
0	5.180	20.680	32.776	50
2	5.220	27.733	43.954	50
3	5.240	28.051	44.458	50
4	5.745	31.001	49.134	1000
6	5.785	20.123	31.893	1000
8	5.825	18.004	28.535	1000

MAXIMUM PERMISSIBLE EXPOSURE (MPE) TEST

47 CFR FCC Part 1.1310 Maximum Permissible Exposure (MPE) Limits

The EUT shows compliance to the requirements of this section, which states the MPE limits for general population / uncontrolled exposure are as shown below:

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (min)
0.3 - 1.34	614	1.63	100 Note 2	30
1.34 - 30	824 / f	2.19 / f	$180 / f^2$ Note 2	30
30 - 300	27.5	0.073	0.2	30
300 - 1500	-	-	f / 1500	30
1500 - 100000	-	-	1.0	30
Notes				
1. f = frequency in MHz				
2. Plane wave equivalent power density				

47 CFR FCC Part 1.1310 Maximum Permissible Exposure Computation

The power density at 20cm distance was computed from the following formula:

$S = (30GP) / (377d^2)$

where S = Power density in W/m^2
P = 0.03123 W
d = Test distance at 0.2m
G = Numerical isotropic gain, 1.59 (2.0dBi)

Substituting the relevant parameters into the formula:

$S = [(30GP) / 377d^2]$
$= 0.0988\ W/m^2$
$= 0.0099\ mW/cm^2$

∴ The power density of the EUT at 20cm distance is 0.0099 mW/cm^2 based on the above computation and found to be lower thant the power density limit of 1.0mW/cm^2.

Please note that this Report is issued under the following terms :

1. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment. Unless otherwise stated in this report, no tests were conducted to determine long term effects of using the specific product/equipment.

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5. Unless otherwise stated, the tests were carried out in TÜV SÜD PSB Pte Ltd, No.1 Science Park Drive Singapore 118221.

July 2011

ANNEX B

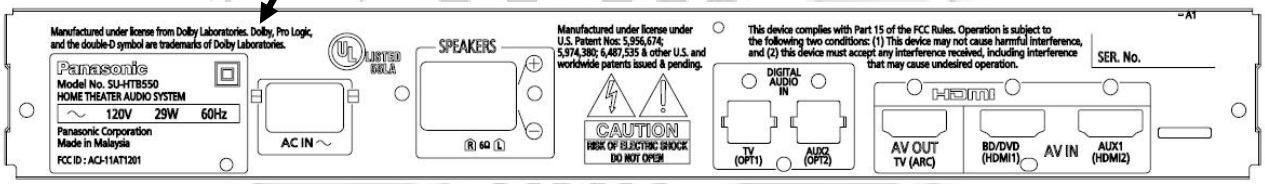
FCC LABEL & POSITION

FCC LABEL & POSITION — ANNEX B

Labelling requirements per Section 2.925 & 15.19

The label shown will be permanently affixed at a conspicuous location on the device and be readily visible to the user at the time of purchase.

Sample Label



Physical Location of FCC Label on EUT

ANNEX C

USER MANUAL
TECHNICAL DESCRIPTION
BLOCK & CIRCUIT DIAGRAMS

(Please refer to manufacturer for details)