EXHIBIT G

FCC PART 18
EMI MEASUREMENT AND TEST REPORT

For

Panasonic Home Appliances Microwave Oven (Shanghai) Co., Ltd.

898 Long Dong Road, Pu Dong Shanghai, China

FCC ID: ACLAP9Y21

This Report Concerns:	Equipment Type:
☒ Original Report	Microwave Oven

Test Engineer:	Fisher He Fisher·he
Report Number:	RSH110420001
Test Date:	2011-04-16 to 2011-04-22
Report Date:	2011-04-26
Reviewed By:	David Li-BACL Engineer
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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *Panasonic Home Appliances Microwave Oven (Shanghai) Co., Ltd.*'s model: *NN-SA661S* or the "EUT" as referred to in this report is a *Microwave Oven* which measures approximately 310mm H x 525mm W x 401mm D, rated input voltage: AC 120 V/60 Hz.

Sample No. *NN-SA661S*, Output rating: 1200W (By IEC 705), operating frequency: 2450MHz, and Magnetron: 2M261－M39; Employed mode: Turntable; Door seal Type: Choke

*Note: model NN-SA661S or the EUT was selected for testing from models NN-SA631B, NN-SA631W, NN-SA651S, NN-SD681S, NN-SN651B, NN-SN651W, NN-SN661S, NN-SN671S. All the models are electrically identical, except the only difference between them are the models and enclosure colour. It is explained in the attached declaration letter of Appendix A.

** All measurement and test data in this report was gathered from production sample serial number: PP5001. The EUT was received on 2010-04-11.*

Objective

The following test report is prepared on behalf of *Panasonic Home Appliances Microwave Oven (Shanghai) Co.,Ltd.* in accordance with Part 2, Subpart J, and Part 18, Subparts A, B and C of the Federal Communication Commissions rules and regulations.

The objective of the manufacturer is to determine compliance with FCC Part 18 limits.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with MP-5, FCC Methods of Measurements of Radio Noise Emissions from ISM Equipment, February 1986. All measurements were performed at Bay Area Compliance Laboratory Corporation. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The test site used by BACL to collect test data is located in the Room 5040, Huilongwan Plaza, No. 1, Shawan Road, Jinniu District, Chengdu, Sichuan, China

Test site at BACL has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on July 31, 2009. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003 and FCC MP-5.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 560332. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

OPERATING CONDITION/TEST CONFIGURATION

Justification

The EUT was provided for tests as a stand-alone device. It was prepared for testing in accordance with the manufacturer's instructions. The EUT was operated at maximum (continuous) RF output power. The loads consisted of water in a glass beaker in the amounts specified in the test procedure.

Equipment Modifications

No modifications were made to the unit tested.

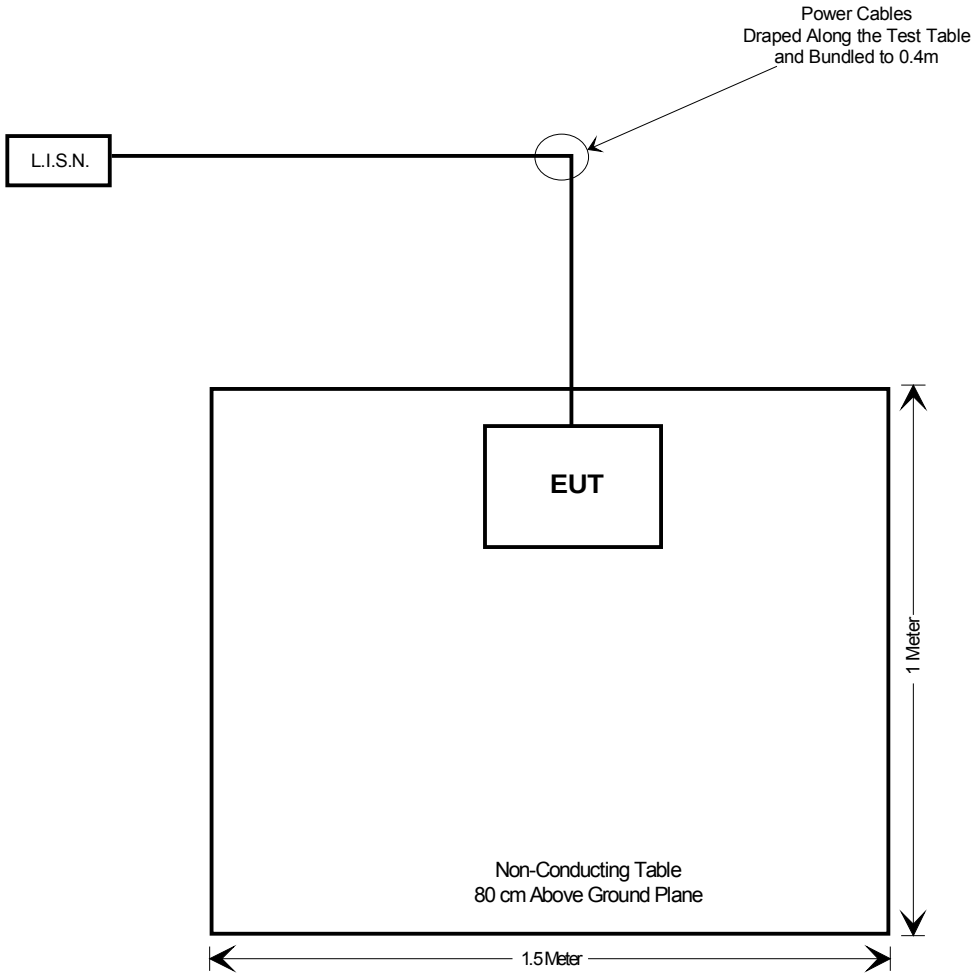
External Cable List and Details

Cable Description	Length (m)	From/Port	To
AC Power Cable	1.2	L.I.S.N.	EUT

Configuration of Test Setup

EUT

Block Diagram of Test Setup



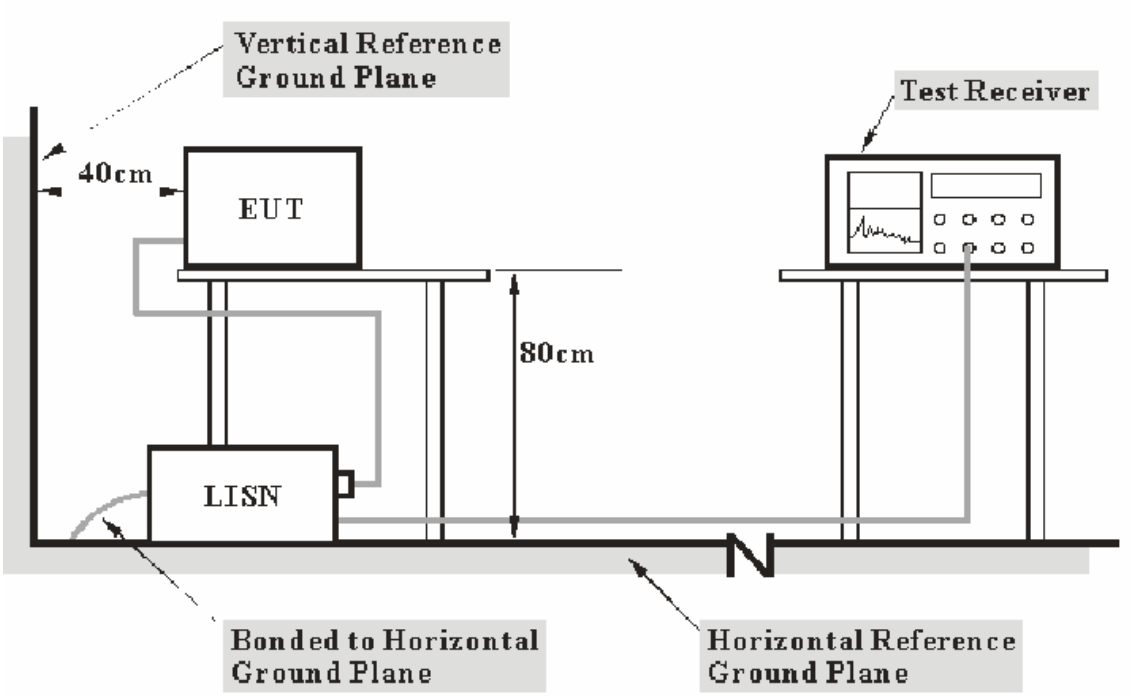
CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and L.I.S.N.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Chengdu) is +2.4 dB.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per MP-5: 1986 measurement procedure. Specification used was with the FCC Part 18.

The EUT was connected to a 120 VAC/ 60Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IF B/W***
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the EUT power cord was connected to the outlet of the L.I.S.N.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model Number	Serial Number	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	10028	2011-09-27
SOLAR	L.I.S.N.	9252-50-R-24-BNC	984412	2011-12-20
Rohde & Schwarz	L.I.S.N.	ENV216	100081	2011-11-12
Rohde & Schwarz	Pulse Limiter	ESH3Z2	DE25985	2011-10-12

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Chengdu) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Environment Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0 KPa

The testing was performed by Fisher He.

Test Results

According to the recorded data in following table, the EUT complied with the FCC Part 18.307, with the worst margin reading of:

6.95 dB at **21.37 MHz** in the **Line** conductor mode

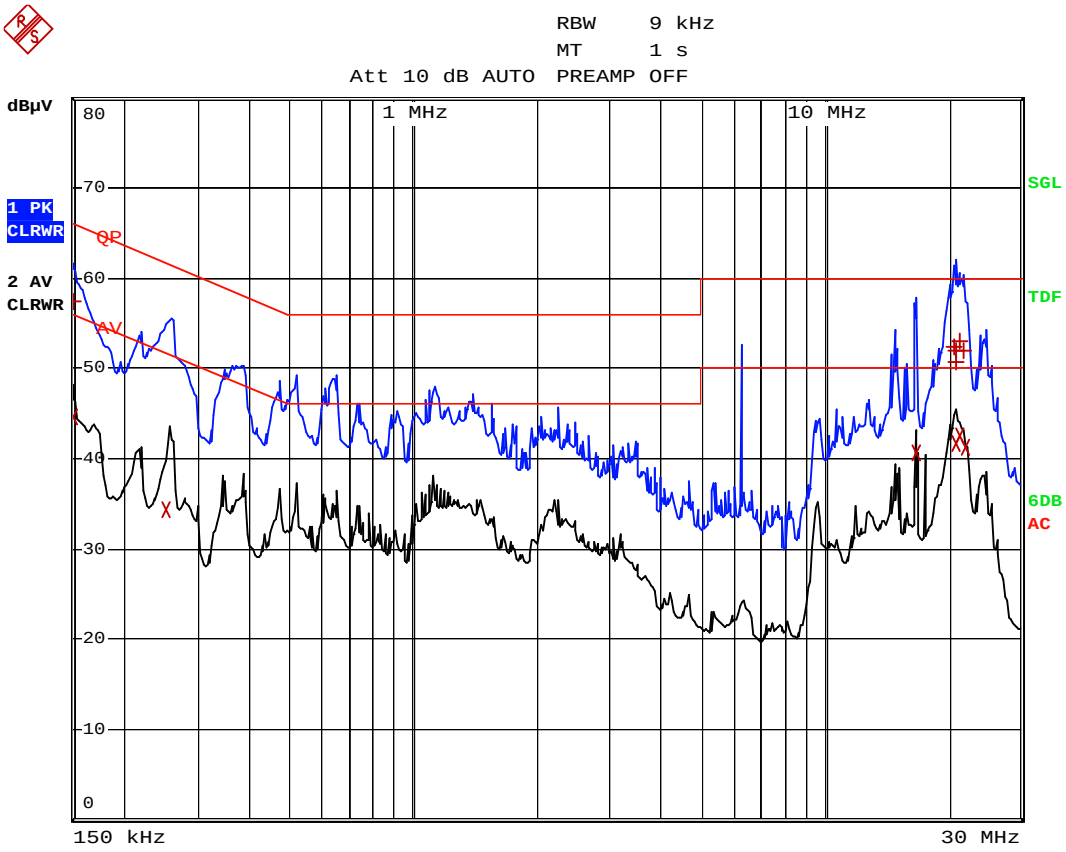
8.84 dB at **22.19 MHz** in the **Neutral** conductor mode

Conducted Emissions Test Data & Plots

Test mode: operating mode

Line Conducted Emissions				FCC Part 18	
Frequency (MHz)	**Amplitude (dBμV)**	**Detector (QP/Ave/Peak)**	**(Line/Neutral)**	**Limit (dBμV)**	**Margin (dB)**
21.37	53.05	QP	Line	60.00	6.95
21.26	42.50	AV	Line	50.00	7.50
20.73	52.35	QP	Line	60.00	7.65
21.90	51.98	QP	Line	60.00	8.02
20.81	51.93	QP	Line	60.00	8.07
20.91	41.73	AV	Line	50.00	8.27
0.15	57.39	QP	Line	66.00	8.61
22.16	41.28	AV	Line	50.00	8.72
22.19	41.16	AV	Neutral	50.00	8.84
20.91	50.60	QP	Line	60.00	9.40
16.77	40.55	AV	Line	50.00	9.45
0.15	45.86	AV	Neutral	56.00	10.14
19.97	39.14	AV	Neutral	50.00	10.86
0.15	54.95	QP	Neutral	66.00	11.05
0.19	43.12	AV	Neutral	54.21	11.09
0.28	39.33	AV	Neutral	50.76	11.43
0.15	44.56	AV	Line	56.00	11.44
19.16	35.02	AV	Neutral	50.00	14.98
18.17	43.38	QP	Neutral	60.00	16.62
0.25	34.39	AV	Line	51.63	17.24
19.16	42.45	QP	Neutral	60.00	17.55
18.13	40.84	QP	Neutral	60.00	19.16
17.01	39.00	QP	Neutral	60.00	21.00
7.13	27.22	QP	Neutral	60.00	32.78

120 V/60 Hz, Line



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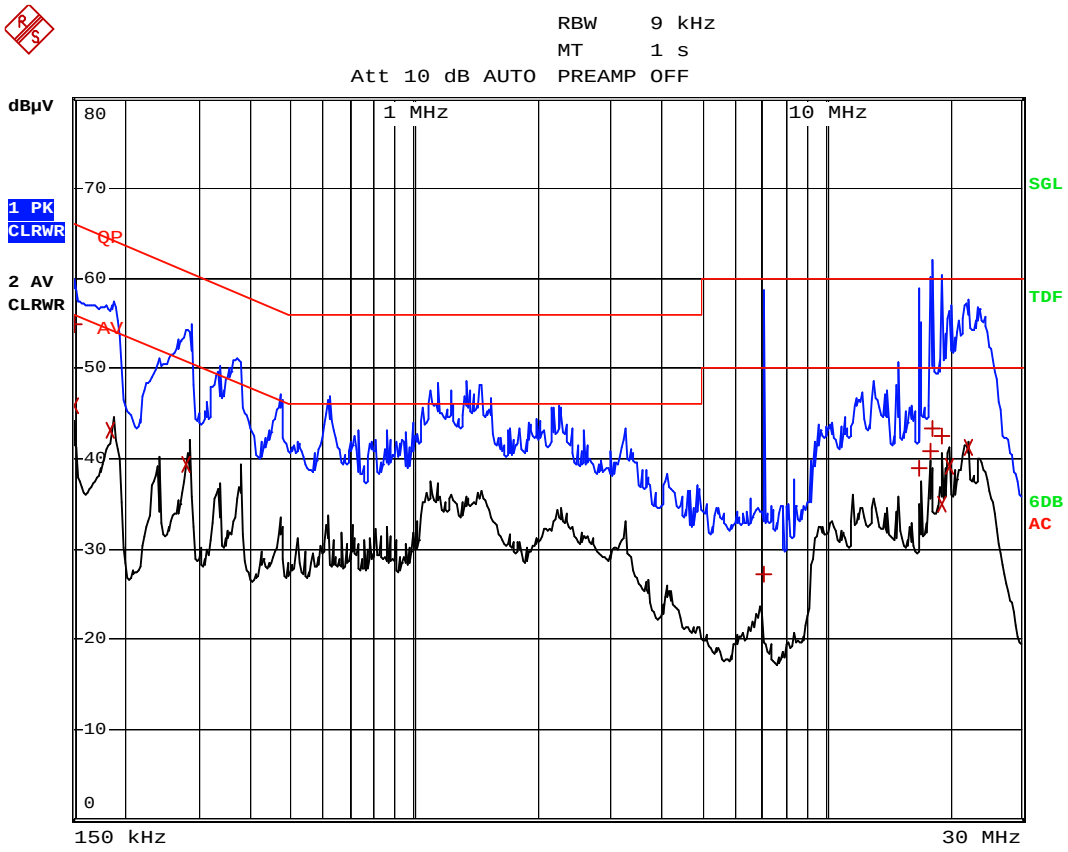
120 V/60 Hz, Neutral



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RADIATION HAZARD MEASUREMENT

Test Environment Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.2 KPa

Test Equipment List and Details

Manufacturer	Description	Model Number	Serial Number	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	10028	2011-09-27
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-04
HP	Preamplifier	8449B	3008A00277	2011-09-11
Ainuo	Digital Power Analyzer	8732B	028706117	2011-12-23
HY	AC Power Source	9020117	GY053(1)	2011-08-21
Holaday	Leakage Meter	HI-1710	05/2731	2011-06-02
Holaday	Microwave Probe	HI-2623	N/A	2011-06-02

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Chengdu) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Radiation Hazard Measurement

Radiation leakage was measured in the as-received condition with the oven door closed using a microwave leakage meter.

A 275ml water load was placed in the center of the oven and the oven was operated at maximum output power.

☒ There was no microwave leakage exceeding a power level of 0.20mW/cm2 observed at any point 5cm or more from the external surface of the oven.

A maximum of 1.0mW/cm2 is allowed in accordance with the applicable Federal Standards. Hence, microwave leakage in the as-received condition with the oven door closed was below the maximum allowed.

Input Power

Input power and current was measured using a power analyzer. A 1000ml water load was placed in the center of the oven and the oven was operated at maximum output power. A 1000ml water load was chosen for its compatibility with the procedure commonly used by manufacturers to determine their input rating.

Input Voltage (Vac/Hz)	Input Current (Amps)	Measured Input Power (Watts)	Rated Input Power (Watts)
120/60	12.6	1469	1480

☒ Based on the measured input power, the EUT was found to be operating within the intended specifications.

Load for Microwave Ovens

For all measurements, the energy developed by the oven was absorbed by a dummy load consisting of a quantity of tap water in a beaker. If the oven was provided with a shelf or other utensil support, this support was in its initial normal position. For ovens rated at 1000 watts or less power output, the beaker contained quantities of water as listed in the following subparagraphs. For ovens rated at more than 1000watts output, each quantity was increased by 50% for each 500watts or fraction thereof in excess of 1000watts. Additional beakers were used if necessary.

● Load for power output measurement: 1000 milliliters of water in the beaker located in the center of the oven.

● Load for frequency measurement: 1000 milliliters of water in the beaker located in the center of the oven.

● Load for measurement of radiation on second and third harmonic: Two loads, one of 700 and the other of 300 milliliters, of water are used. Each load is tested both with the beaker located in the center of the oven and with it in the right front corner.

The RF output power is rated at 1200 watts

Load used for power output measurement = 1200 milliliters of water

Load used for frequency measurement = 1200 milliliters of water

Load used for harmonic measurement = 840 & 360 milliliters of water

Load used for radiation leakage measurement = 275 milliliters of water per CFR 21 Part 1030

RF Output Power Measurement

The Caloric Method was used to determine maximum RF output power. The initial temperature of the water load was measured. The water load was placed in the center of the oven. The oven was operated at maximum output power for 200 seconds, the temperature of the water was re-measured.

Quality of Water (ml)	Starting Temperature (ºC)	Final Temperature (ºC)	Elapsed Time (s)
1200	12	52.8	200

Power = (4.2 joules/calorie) (volume in milliliters) (temperature rise)/ (time is seconds)

Power = 4.2 joules/calorie x 1200 x (52.8-12) / 200

Power = 1028.16 watts

☐ The measurement output power was found to be less than 500watts. Therefore, in accordance with Section 18.305 of Subpart-C, the measured out-of-band emissions were compared to the limit of 25μV/meter at a 300-meter measurement distance.

☒ The measured output power was found to exceed 500watts. Therefore, in accordance with Section 18.305 of Subpart-C, the measured out-of-band emissions were compared with the limit calculated as following:

LFS = 25*SQRT (Power Output/500)

LFS = 25*SQRT (1028.16/500)

LFS ≈ 35.85

Where: LFS is the maximum allowable field strength for out-of-band emissions in μV/meter at a 300-meter measurement distance. Power Output is the measured output power in watts.

Manufacturer	Model	LFS	dBμV/m@300m	dBμV/m@3m
Panasonic Home Appliances Microwave Oven (Shanghai) Co., Ltd..	NN-SA661S	35.85	31.09	71.09

Operating Frequency Measurement

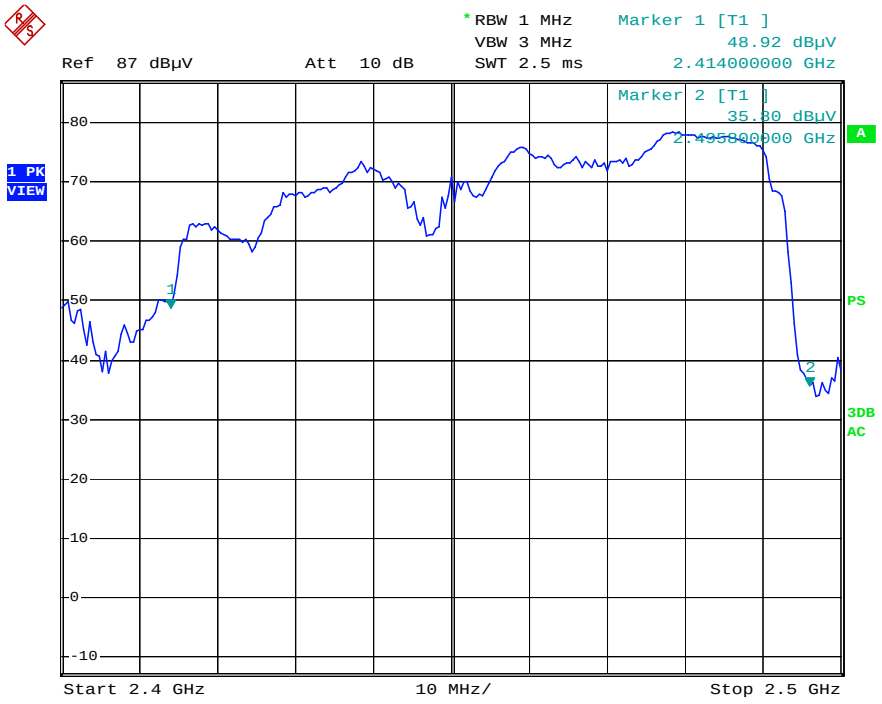
Variation in Operating Frequency with Time

The operating frequency was measured using a spectrum analyzer. Starting with the EUT at room temperature, a 1200ml water load was placed in the center of the oven and the oven was operated at maximum output power. The fundamental operating frequency was monitored until the water load was reduced to 20 percent of the original load.

The results of this test are as follows:

Manufacturer	Model	Minimum Frequency (MHz)	Maximum Frequency (MHz)
Panasonic Home Appliances Microwave Oven (Shanghai) Co.,Ltd.	NN-SA661S	2401.4	2495.8

Refer to data pages for details of the variation in operating frequency with time measurement.



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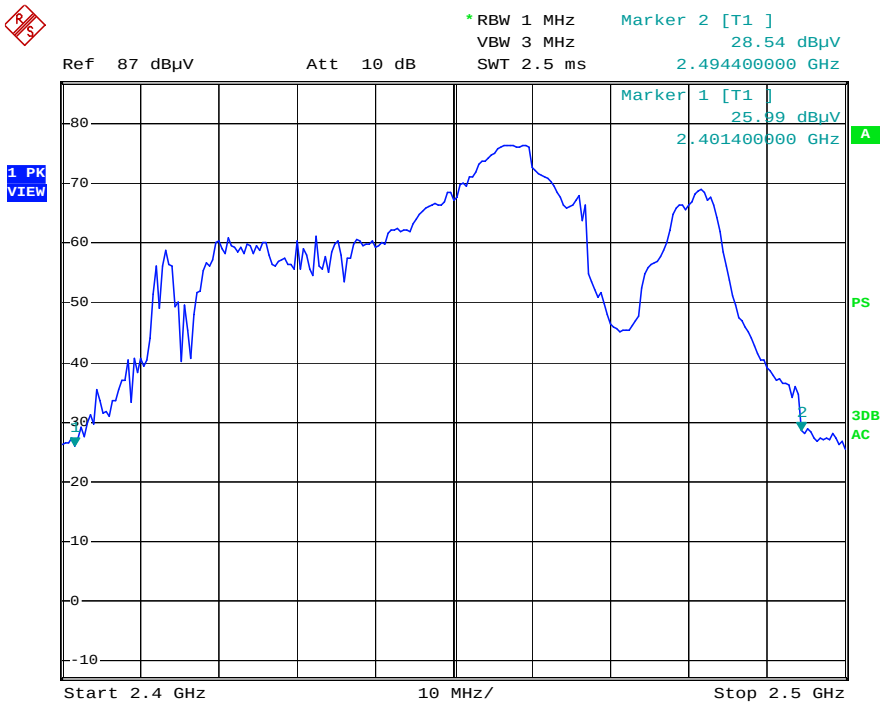

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Variation in Operating Frequency with Line Voltage

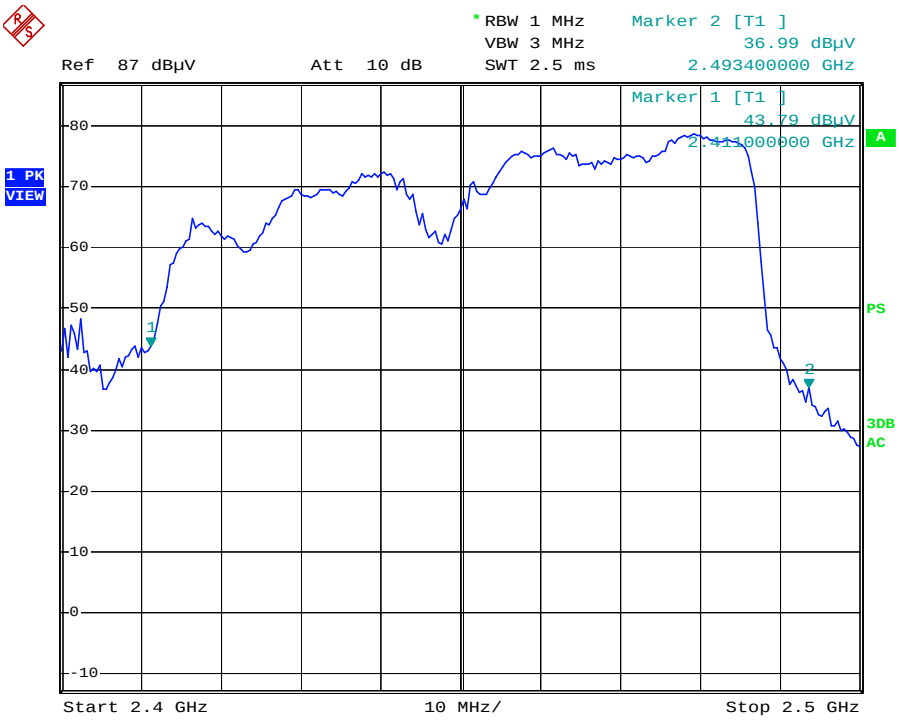
The EUT was operated / warmed by at least 10 minutes of use with a 1200ml water load at room temperature at the beginning of the test. Then the operating frequency was monitored as the input voltage was varied between 80 and 125 percent of the nominal rating.

The results of this test are as follows:

Line voltage varied from 96Vac to 150Vac.

Manufacturer	Model	Minimum Frequency (MHz)	Maximum Frequency (MHz)
Panasonic Home Appliances Microwave Oven (Shanghai) Co., Ltd..	NN-SA661S	2410.4	2493.4

Please refer to following pages for details of the variation in operating frequency with line voltage measurement.



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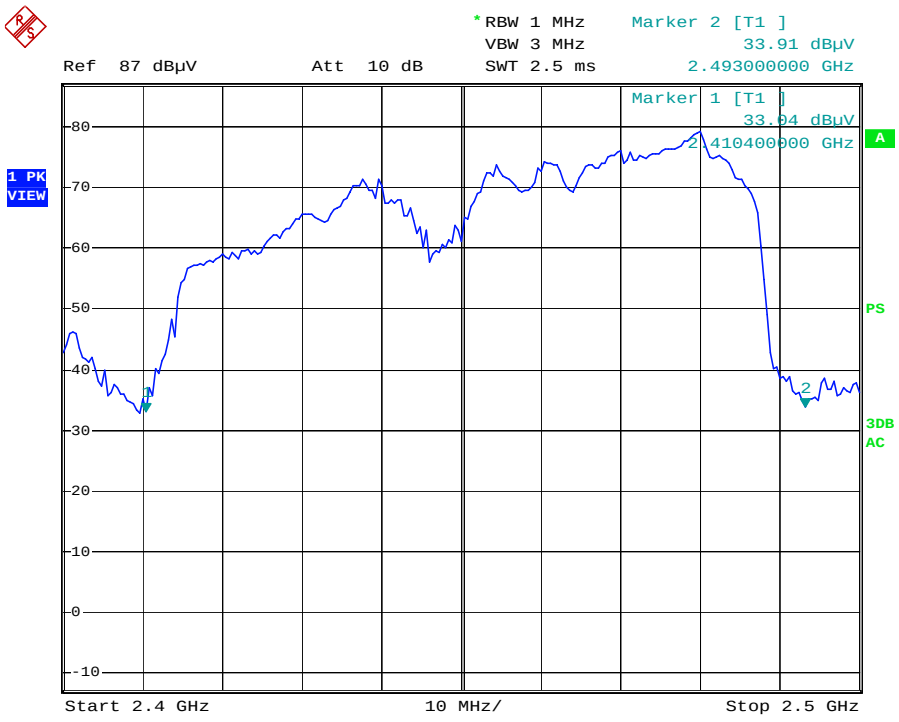

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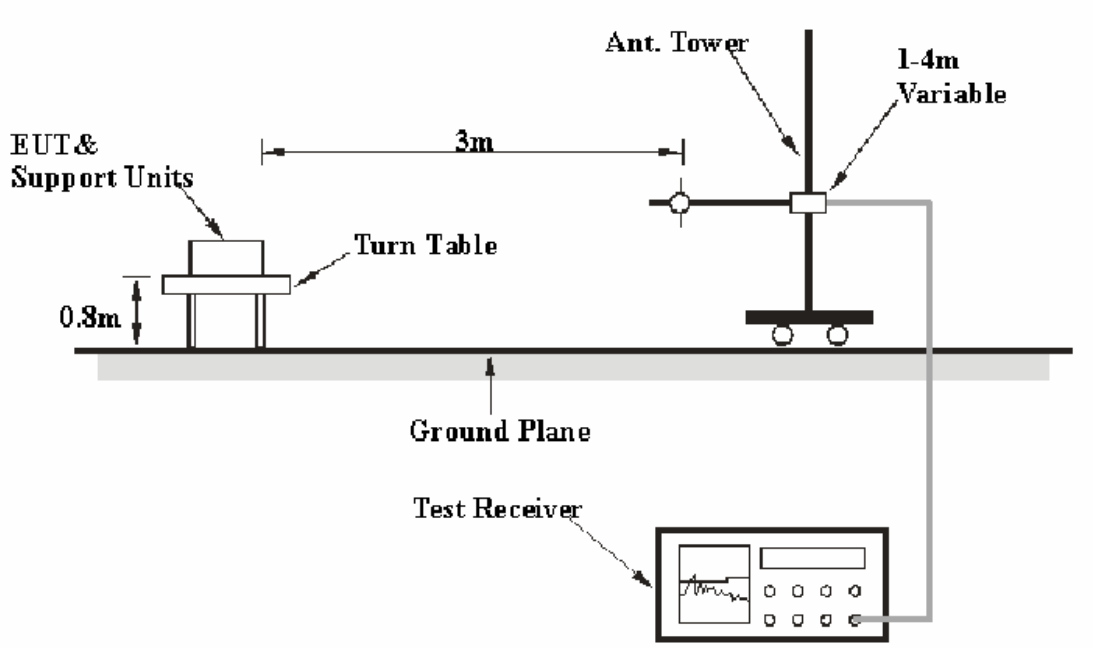
RADIATED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMI. The factors contributing to uncertainties are EMI Test Receiver, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, the Treatment of Uncertainty in EMI Measurements, the best estimate of the uncertainty of a radiation emissions measurement at BACL is ±4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3 meters chamber A test site, using the setup accordance with the FCC MP - 5. The specification used was the FCC part 18 limits.

The EUT was connected to 120 VAC/60 Hz power source.

EMI Test Receiver Setup

According to FCC Rules, the frequency range to be tested from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver is set with the following configurations:

Frequency Range	***RBW***	***Video B/W***	***Detector***
30 MHz – 1000 MHz	100 kHz	300 kHz	QP
Above 1GHz	1MHz	1MHz	AV

Test Procedure

For the radiated emissions test, the EUT power cord was connected to the AC floor outlet. Maximizing procedure was performed on the six (6) highest emissions to ensure that the EUT complied with all installation combinations.

The EUT was in the normal operating mode during the final qualification test to represent the worst results.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz and average detection mode above 1GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model Number	Serial Number	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	10028	2011-09-27
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-04
HP	Preamplifier	8449B	3008A00277	2011-09-11
HP	Amplifier	8447E	1937A01046	2011-11-15
HP	Spectrum analyzer	HP8562A	3204A07083	2011-08-21
Sunol Sciences	Broadband Antenna	JB3	A040904-2	2011-08-14

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Chengdu) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Environment Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0 KPa

The testing was performed by Fisher He.

Test Results

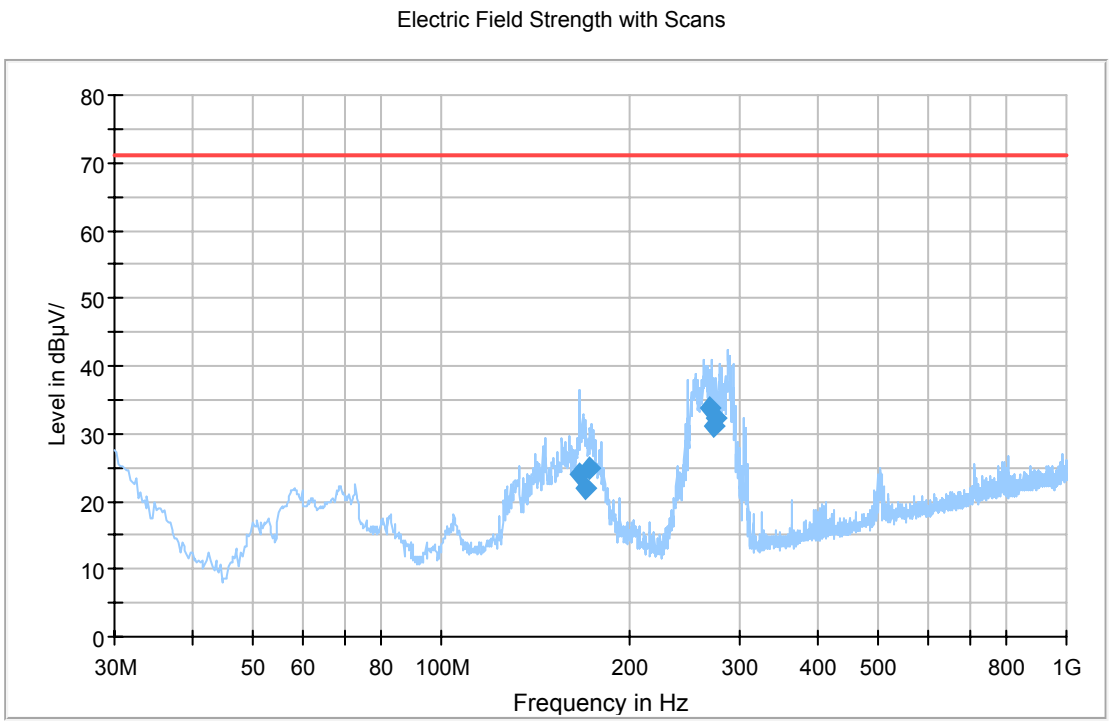
According to the data in the following table, the EUT complied with the FCC Part 18, with the worst margin reading of:

37.29 dB at **269.2 MHz** in the **Vertical** polarization, 30 MHz to 1 GHz

13.89 dB at **6942 MHz** in the **Horizontal** polarization, 1 GHz to 25 GHz

Test Data

30 MHz to 1 GHz



Frequency (MHz)	Corrected Amplitude (dBuV/m)	Turntable position (Degree)	Antenna Height (cm)	Polar (H / V)	Limit (dBuV/m)	Margin (dB)
269.20	33.8	0.0	194.0	V	71.09	37.29
274.97	32.4	22.0	194.0	V	71.09	38.69
273.42	31.2	0.0	218.0	V	71.09	39.89
172.46	24.8	118.0	194.0	H	71.09	46.29
166.43	24.1	118.0	150.0	H	71.09	46.99
170.26	21.9	118.0	372.0	H	71.09	49.19

1 GHz to 25 GHz

Indicated		Table	Antenna		Correction Factor			Corrected Ampl.	FCC PART 18	
Frequency (MHz)	Reading (dBuV/m)	Angle Degree	Height (Meter)	Polar (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Corr. Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
6942	50.0	10	1.3	H	35.6	5.2	33.6	57.2	71.09	13.89
6942	48.9	335	1.2	V	35.6	5.2	33.6	56.1	71.09	14.99
4947	51.7	100.00	1.5	H	31.5	4.3	33.7	53.8	71.09	17.29
4947	48.4	350	1.0	V	31.5	4.3	33.7	50.5	71.09	20.59
2450*	92.5	90	1.3	V	26.9	2.9	34.0	88.3	-	-
2450*	94.8	180	1.1	H	26.9	2.9	34.0	90.6	-	-

* Fundamental frequency

Note: The emission level of 4th harmonic to 10th harmonic have not been detected, so there is no record about it.

******END OF REPORT******