RADIATED EMISSIONS TEST REPORT 1 – 26 GHz

I. GENERAL INFORMATION

Requirement:	Federal Communications Commission Class 2 Permissive Change Application
Test Requirements:	15.205, 15.207, 15.209, 15.247
Applicant:	Sonos Inc. 506 Chapala Santa Barbara, CA 93101

Product ID: FCC ID: SBVZP000 (Sonos Zone Player)
Date of Original Grant: 19 October 200

II. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

The SBVZP000 is an 802.11g-only wireless music system containing internet connection and. audio amplification circuitry

RF Specifications

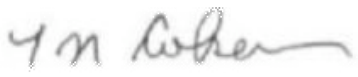
RF Frequency Band	2412-2462 MHz
RF Channels	1, 6, and 11 only (limited by firmware)
Modulation Type	802.11g OFDM only (limited by firmware)
Transmitter Output Power	+19.3 dBm maximum (0.086 watt)
Antenna to be added:	1.05 dBi omni antenna

III. TEST LOCATION

All emissions tests were performed at:

Compliance Certification Services
571F Monterey Road
Morgan Hill, CA 95037

Testing performed 28 July 2004.



T.N. Cokenias 31 December 2004
Agent for Sonos Inc.

TEST PROCEDURES

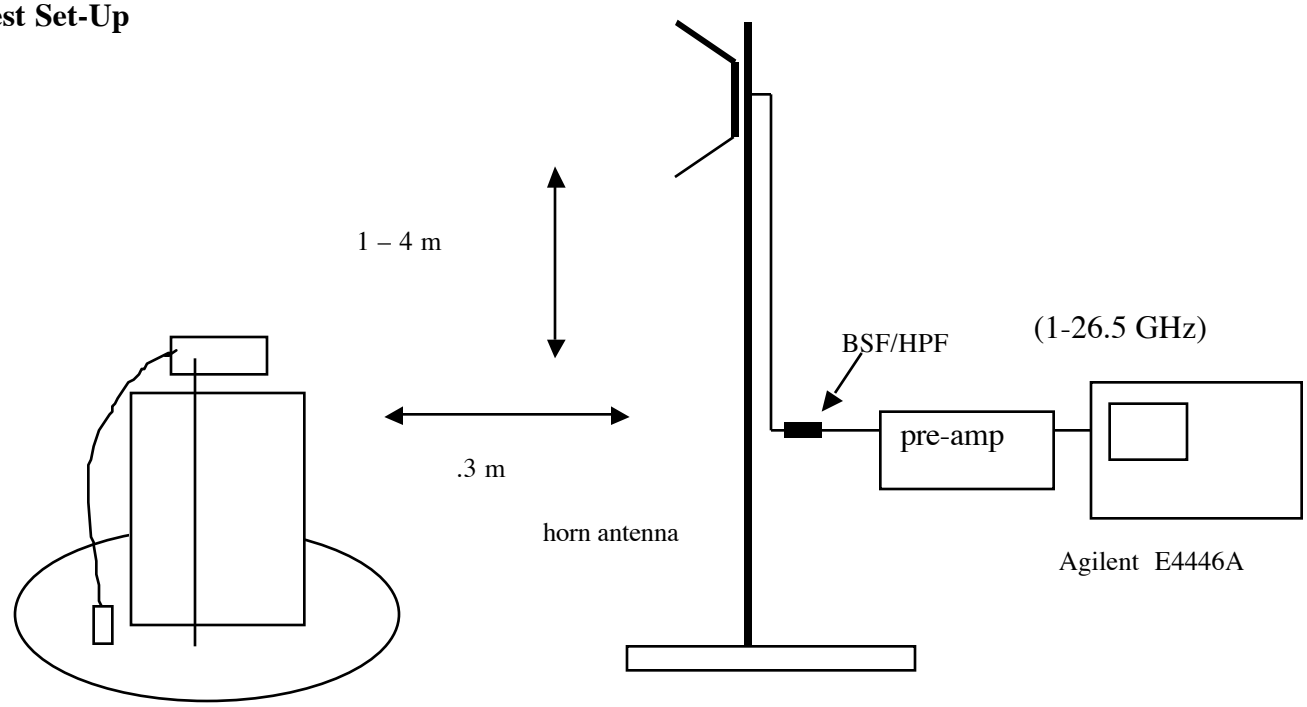
Radiated emissions testing per the methods of ANSI C63.4.

Measurement Equipment Used:

Agilent E4446A spectrum analyzer
EMCO 3115 horn antenna, 1-18 GHz
ARA MWH-1826/B horn antenna, 18-26.5 GH
Miteq 924321 pre-amplifier, 1-26 GHz
Band stop filter 2.4-2.5 GHz

Radiated Emissions Above 1 GHz
Test Requirement: 15.205, 15.209, 15.247

Test Set-Up



Test Procedures, 1- 26 GHz:

1. The EUT was placed on a wooden table resting on a turntable on the Site A 10m open area test site. The search antenna was placed 3m from the EUT. The EUT antenna was mounted vertically as per normal installation.

2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205.

3. Radiated emissions were investigated for a LOW channel, a MID channel, and HIGH channel. Emissions were investigated to the 10^{th} harmonic.

4. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

Testing was performed at 3 different frequencies

Channel	**Frequency, MHz**
1 (Low)	2412
6 (Mid)	2437
11 (High)	2462

Radiated emissions were performed at each frequency for the follwing antenna:.

Antenna Type	**Deployment**	**Gain**	**Antenna Mfr.**	**Model**
Omni monopole	Point to Multipoint	1.05 dBi max	Super Pilot Ent.	ZP

Test Results: PASS. Worst case results are presented. Refer to data below.

02/28/04 **High Frequency Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: HITESH SOLANKI
Project #: 04U2886
Company: SONOS
EUT Descrip.: MUSIC PLAYER
EUT M/N: SONOS
Test Target:
Mode Oper: 802.11g

Test Equipment:

EMCO Horn 1-18GHz	Spectrum Analyzer	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz
T60; S/N: 2238 @3m		T63 Miteq 646456		

Hi Frequency Cables

☑ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
LOW CHANNEL HARMONICS															
4.824	9.8	61.9	41.7	33.1	2.3	-35.3	0.0	1.0	62.9	42.8	74.0	54.0	-11.1	-11.2	V
7.236	9.8	43.4	31.5	36.1	2.9	-34.6	0.0	1.0	48.8	36.9	74.0	54.0	-25.2	-17.1	V
4.824	9.8	51.4	33.9	33.1	2.3	-35.3	0.0	1.0	52.4	35.0	74.0	54.0	-21.6	-19.0	H
7.236	9.8	43.8	31.3	36.1	2.9	-34.6	0.0	1.0	49.2	36.7	74.0	54.0	-24.8	-17.3	H
MID CHANNEL HARMONICS															
4.874	9.8	50.8	34.3	33.1	2.3	-35.3	0.0	1.0	51.9	35.4	74.0	54.0	-22.1	-18.6	H
7.311	9.8	44.0	31.2	36.2	3.0	-34.6	0.0	1.0	49.6	36.8	74.0	54.0	-24.4	-17.2	H
4.874	9.8	50.7	35.8	33.1	2.3	-35.3	0.0	1.0	51.8	36.9	74.0	54.0	-22.2	-17.1	V
7.311	9.8	42.4	30.6	36.2	3.0	-34.6	0.0	1.0	48.0	36.1	74.0	54.0	-26.0	-17.9	V
HIGH CHANNEL HARMONICS															
4.924	9.8	51.5	37.0	33.2	2.3	-35.3	0.0	1.0	52.6	38.1	74.0	54.0	-21.4	-15.9	V
7.386	9.8	45.6	31.8	36.3	3.0	-34.5	0.0	1.0	51.4	37.5	74.0	54.0	-22.6	-16.5	V
4.924	9.8	50.6	34.3	33.2	2.3	-35.3	0.0	1.0	51.8	35.4	74.0	54.0	-22.2	-18.6	H
7.386	9.8	42.4	30.7	36.3	3.0	-34.5	0.0	1.0	48.2	36.4	74.0	54.0	-25.8	-17.6	H