



February 28, 2008

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Dear Harry Lie:

Enclosed you will find your file copy of a Part 15 Certification (FCC ID: OYMHB6110).

For your reference, TCB will normally take another 15 to 20 days for reviewing the report. Approval will then be granted when no query is sorted.

Please contact me if you have any questions regarding the enclosed material.

Sincerely,

A handwritten signature in black ink, appearing to read "Ken Sit".

Sit Kim Wai, Ken
Supervisor

Enclosure



Philips Consumer Electronics B.V.

Application
For
Certification

Bluetooth Headset

(FCC ID: OYMHB6110)

07303801
KS/ ac
February 28, 2008

- The test report only allows to be revised within three years from its original issued date unless further standard or the requirement was noticed.
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Intertek Testing Services Hong Kong Ltd.

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INTERTEK TESTING SERVICES

LIST OF EXHIBITS

INTRODUCTION

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INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

Philips Consumer Electronics B.V.

Model: SHB6110/00, SHB6110/05, SHB6110/10, SHB6110/37, SHB6112/00, SHB6112/05, SHB6112/10, SHB6112/37, SHB6111/00-H, SHB6111/05-H, SHB6111/10-H, SHB6111/37-H

FCC ID: OYMHB6110

This report concerns (check one:) Original Grant X Class II Change

Equipment Type : DXT - Pt 15 Low Pwr Transceiver, Rx Verified

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes No X

If yes, defer until :
date

Company Name agrees to notify the Commission
by:

date

of the intended date of announcement of the product so that the grant can be issued
on that date.

Transition Rules Request per 15.37 ? Yes No X

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [09-20-07
Edition] Provision.

Report prepared by:

Sit Kim Wai, Ken
Intertek Testing Services Hong Kong Ltd.
2/F., Garment Centre,
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Kowloon, Hong Kong.
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INTERTEK TESTING SERVICES

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List of attached file

Exhibit type	File Description	filename
Test Report	Test Report	report.pdf
Operational Description	Technical Description	descri.pdf
Test Setup Photos	Radiated & Conducted Emission for Headset	config photos.pdf
Test Report	Emission Plot	emission.pdf
Test Report	Conducted Emission Test Result	conduct.pdf
External Photos	External Photo	external photos.pdf
Internal Photos	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location Info	Label Artwork and Location	label.pdf
Users Manual	User Manual	manual.pdf
Cover Letter	Letter of Agency	letter of agency.pdf
Cover Letter	Confidentiality Request	request.pdf

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EXHIBIT 1 GENERAL DESCRIPTION

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1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a Bluetooth Stereo Headset. Bluetooth module operates from 2402MHz to 2480MHz. After pairing and connecting the headset with the mobile phone, the user could listen to the music and control the music wirelessly which is played from the mobile, and the bluetooth headset can make and receive call from the mobile. The headset battery is internal battery and rechargeable using the 5VDC 500mA supplied power adaptor through the USB connector.

The antenna used in headset is integral, and the tested sample is a prototype.

The Model: SHB6110/05, SHB6110/10, SHB6110/37, SHB6112/00, SHB6112/05, SHB6112/10, SHB6112/37, SHB6111/00-H, SHB6111/05-H, SHB6111/10-H and SHB6111/37-H are the same as the Model: SHB6110/00 in hardware aspect. The difference in model number serves as marketing strategy.

The circuit description is saved with filename: descri.pdf

INTERTEK TESTING SERVICES

1.2 Related Submittal(s) Grants

This is an Application for Certification of a DXT - Part 15 Low Power Transceiver, RX Verified. One Transmitter is included in this application.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

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EXHIBIT 2 SYSTEM TEST CONFIGURATION

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2.0 System Test Configuration

2.1 Justification

For emissions testing, the equipment under test (EUT) was setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst case emissions. The EUT was powered by an AC adaptor 100-240VAC to 5.0VDC 500mA. Two types of save-rating adaptor were considered.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. The signal was maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization were varied during the search for maximum signal level. The antenna height was varied from 1 to 4 meters. Radiated emissions were taken at three meters unless the signal level was too low for measurement at that distance. If necessary, a pre-amplifier was used and/or the test was conducted at a closer distance.

Measurements of the radiated signal level of the fundamental frequency component of the emission was performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Analyzer resolution was 100 kHz or greater for frequencies below 1000 MHz. The resolution was 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value were not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which was greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever was lower.

Determination of pulse desensitization was made according to *Hewlett Packard Application Note 150-2, Spectrum Analysis... Pulsed RF*. The effective period (τ_{eff}) was 625 μs for Bluetooth. With the resolution bandwidth 1MHz and spectrum analyzer IF bandwidth 3 dB, the pulse desensitization factor was 0 dB.

2.2 EUT Exercising Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

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2.3 Details of EUT and Description of Peripherals

Details of EUT:

AC adaptor (provided with the unit) were used to power the device. Its description is listed below.

- (1) An AC adaptor, 2-pin (100-240VAC to 5.0VDC 500mA, Model: CM-1AD05005/00) (Supplied by Client)
- (2) An AC adaptor, 3-pin (100-240VAC to 5.0VDC 500mA, Model: CM-1AD05005/05) (Supplied by Client)

Description of Peripherals:

- (1) Mobile Phone, Model: Nokia 5300, IMEI: 352772015773193 (Supplied by Intertek)
- (2) 1 x USB cable with 1.2 meter long (Supplied by Client)

Radiated Emission Test: (Supplied by Intertek)

- (1) HP Computer, Model: D530S, S/N: CNG4110FN, DoC Product
- (2) HP Keyboard, Model: SK-2502, S/N: M981135799, FCC ID: GYUR41SK
- (3) Philips Monitor, Model: 150B4CG, S/N: CX000409301774, DoC Product
- (4) HP Mouse, Model: M-S34, S/N: LZC84609205, FCC ID: DZL211029
- (5) HP Printer, Model: C2642A, S/N: SG6121702C, FCC ID: B94C2642X
- (6) Hayes Modem, Model: 6800CN, S/N: A00900153317, FCC ID: BFJ9D907-00038

Conducted Emission Test: (Supplied by Intertek)

- (1) HP Notebook, Model: NX6320, S/N: CNU6370FWN, DoC Product
- (2) LogiTech Mouse, Model: M-UV94, S/N: LZ639AB, DoC Product
- (3) HP Printer, Model: C6431D, S/N: CN23B 680ZP, DoC Product
- (4) Genius Modem, Model: GM56EX, S/N: ZT5505000355, DoC Product

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2.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty test has been considered.

2.5 Equipment Modification

Any modifications installed previous to testing by Philips Consumer Electronics B.V. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Commercial & Electrical Division, Intertek Testing Services Hong Kong Ltd.

All the items listed under section 2.0 of this report are confirmed by:

Confirmed by:

*Sit Kim Wai, Ken
Supervisor
Intertek Testing Services
Agent for Philips Consumer Electronics B.V.*



Signature

February 28, 2008 Date

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EXHIBIT 3 EMISSION RESULTS

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3.0 Emission Results

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

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3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

where FS = Field Strength in $\text{dB}\mu\text{V/m}$
 RA = Receiver Amplitude (including preamplifier) in $\text{dB}\mu\text{V}$
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB
 AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:-

$$FS = RR + LF$$

where FS = Field Strength in $\text{dB}\mu\text{V/m}$
 $RR = RA - AG$ in $\text{dB}\mu\text{V}$
 $LF = CF + AF$ in dB

Assume a receiver reading of $52.0 \text{ dB}\mu\text{V}$ is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of $32 \text{ dB}\mu\text{V/m}$. This value in $\text{dB}\mu\text{V/m}$ was converted to its corresponding level in $\mu\text{V/m}$.

$RA = 52.0 \text{ dB}\mu\text{V}$	
$AF = 7.4 \text{ dB}$	$RR = 23.0 \text{ dB}\mu\text{V}$
$CF = 1.6 \text{ dB}$	$LF = 9.0 \text{ dB}$
$AG = 29.0 \text{ dB}$	
$FS = RR + LF$	
$FS = 23 + 9 = 32 \text{ dB}\mu\text{V/m}$	

Level in $\mu\text{V/m}$ = Common Antilogarithm $[(32 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$

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3.2 Radiated Emission Configuration Photograph - Headset

Worst Case Radiated Emission

at 4882.000 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: config photos.pdf

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3.3 Radiated Emission Data - Headset

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 12.9 dB margin compare with the peak limit

TEST PERSONNEL:



Tester Signature

Melvin Nip, Lead Engineer
Typed/Printed Name

February 28, 2008
Date

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 0 (Standalone)

Table 1, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2402.000	100.2	33	29.4	96.6	114.0	-17.4
H	*4804.000	56.1	33	34.9	58.0	74.0	-16.0
H	7206.000	45.2	33	37.9	50.1	74.0	-23.9
H	9608.000	43.7	33	40.4	51.1	74.0	-22.9
H	*12010.000	43.4	33	40.5	50.9	74.0	-23.1

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2402.000	100.2	33	29.4	43.9	52.7	94.0	-41.3
H	*4804.000	56.1	33	34.9	43.9	14.1	54.0	-39.9
H	7206.000	45.2	33	37.9	43.9	6.2	54.0	-47.8
H	9608.000	43.7	33	40.4	43.9	7.2	54.0	-46.8
H	*12010.000	43.4	33	40.5	43.9	7.0	54.0	-47.0

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 39 (Standalone)

Table 2, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2441.000	100.0	33	29.4	96.4	114.0	-17.6
H	*4882.000	56.7	33	34.9	58.6	74.0	-15.4
H	*7323.000	45.5	33	37.9	50.4	74.0	-23.6
H	9764.000	44.3	33	40.4	51.7	74.0	-22.3
H	*12205.000	43.5	33	40.5	51.0	74.0	-23.0

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2441.000	100.0	33	29.4	43.9	52.5	94.0	-41.5
H	*4882.000	56.7	33	34.9	43.9	14.7	54.0	-39.3
H	*7323.000	45.5	33	37.9	43.9	6.5	54.0	-47.5
H	9764.000	44.3	33	40.4	43.9	7.8	54.0	-46.2
H	*12205.000	43.5	33	40.5	43.9	7.1	54.0	-46.9

- NOTES:
1. Peak detector is used for the emission measurement.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna is used for the emission over 1000MHz.
 5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 78 (Standalone)

Table 3, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	100.1	33	29.4	96.5	114.0	-17.5
H	*4960.000	56.4	33	34.9	58.3	74.0	-15.7
H	*7440.000	45.9	33	37.9	50.8	74.0	-23.2
H	9920.000	43.8	33	40.4	51.2	74.0	-22.8
H	*12400.000	42.8	33	40.5	50.3	74.0	-23.7

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	100.1	33	29.4	43.9	52.6	94.0	-41.4
H	*4960.000	56.4	33	34.9	43.9	14.4	54.0	-39.6
H	*7440.000	45.9	33	37.9	43.9	6.9	54.0	-47.1
H	9920.000	43.8	33	40.4	43.9	7.3	54.0	-46.7
H	*12400.000	42.8	33	40.5	43.9	6.4	54.0	-47.6

- NOTES:
1. Peak detector is used for the emission measurement.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna is used for the emission over 1000MHz.
 5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
 Model: SHB6110/00
 Mode : TX-Channel 0 (Charging by USB)

Table 4, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	2402.000	98.0	33	29.4	94.4	114.0	-19.6
H	*4804.000	58.3	33	34.9	60.2	74.0	-13.8
H	7206.000	44.5	33	37.9	49.4	74.0	-24.6
H	9608.000	44.6	33	40.4	52.0	74.0	-22.0
H	*12010.000	43.6	33	40.5	51.1	74.0	-22.9

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	2402.000	98.0	33	29.4	43.9	50.5	94.0	-43.5
H	*4804.000	58.3	33	34.9	43.9	16.3	54.0	-37.7
H	7206.000	44.5	33	37.9	43.9	5.5	54.0	-48.5
H	9608.000	44.6	33	40.4	43.9	8.1	54.0	-45.9
H	*12010.000	43.6	33	40.5	43.9	7.2	54.0	-46.8

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
 Model: SHB6110/00
 Mode : TX-Channel 39 (Charging by USB)

Table 5, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	2441.000	97.9	33	29.4	94.3	114.0	-19.7
H	*4882.000	59.1	33	34.9	61.0	74.0	-13.0
H	*7323.000	44.4	33	37.9	49.3	74.0	-24.7
H	9764.000	43.7	33	40.4	51.1	74.0	-22.9
H	*12205.000	43.9	33	40.5	51.4	74.0	-22.6

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	2441.000	97.9	33	29.4	43.9	50.4	94.0	-43.6
H	*4882.000	59.1	33	34.9	43.9	17.1	54.0	-36.9
H	*7323.000	44.4	33	37.9	43.9	5.4	54.0	-48.6
H	9764.000	43.7	33	40.4	43.9	7.2	54.0	-46.8
H	*12205.000	43.9	33	40.5	43.9	7.5	54.0	-46.5

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 78 (Charging by USB)

Table 6, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	97.8	33	29.4	94.2	114.0	-19.8
H	*4960.000	58.9	33	34.9	60.8	74.0	-13.2
H	*7440.000	44.3	33	37.9	49.2	74.0	-24.8
H	9920.000	44.3	33	40.4	51.7	74.0	-22.3
H	*12400.000	44.1	33	40.5	51.6	74.0	-22.4

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	97.8	33	29.4	43.9	50.3	94.0	-43.7
H	*4960.000	58.9	33	34.9	43.9	16.9	54.0	-37.1
H	*7440.000	44.3	33	37.9	43.9	5.3	54.0	-48.7
H	9920.000	44.3	33	40.4	43.9	7.8	54.0	-46.2
H	*12400.000	44.1	33	40.5	43.9	7.7	54.0	-46.3

- NOTES:
1. Peak detector is used for the emission measurement.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna is used for the emission over 1000MHz.
 5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
 Model: SHB6110/00
 Mode : TX-Channel 0 (Charging by adaptor, 2-pin)

Table 7, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	2402.000	98.2	33	29.4	94.6	114.0	-19.4
H	*4804.000	58.7	33	34.9	60.6	74.0	-13.4
H	7206.000	44.7	33	37.9	49.6	74.0	-24.4
H	9608.000	44.8	33	40.4	52.2	74.0	-21.8
H	*12010.000	43.9	33	40.5	51.4	74.0	-22.6

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	2402.000	98.2	33	29.4	43.9	50.7	94.0	-43.3
H	*4804.000	58.7	33	34.9	43.9	16.7	54.0	-37.3
H	7206.000	44.7	33	37.9	43.9	5.7	54.0	-48.3
H	9608.000	44.8	33	40.4	43.9	8.3	54.0	-45.7
H	*12010.000	43.9	33	40.5	43.9	7.5	54.0	-46.5

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 39 (Charging by adaptor, 2-pin)

Table 8, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2441.000	97.7	33	29.4	94.1	114.0	-19.9
H	*4882.000	59.2	33	34.9	61.1	74.0	-12.9
H	*7323.000	44.4	33	37.9	49.3	74.0	-24.7
H	9764.000	44.2	33	40.4	51.6	74.0	-22.4
H	*12205.000	43.5	33	40.5	51.0	74.0	-23.0

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2441.000	97.7	33	29.4	43.9	50.2	94.0	-43.8
H	*4882.000	59.2	33	34.9	43.9	17.2	54.0	-36.8
H	*7323.000	44.4	33	37.9	43.9	5.4	54.0	-48.6
H	9764.000	44.2	33	40.4	43.9	7.7	54.0	-46.3
H	*12205.000	43.5	33	40.5	43.9	7.1	54.0	-46.9

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 79 (Charging by adaptor, 2-pin)

Table 9, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	97.9	33	29.4	94.3	114.0	-19.7
H	*4960.000	58.8	33	34.9	60.7	74.0	-13.3
H	*7440.000	44.4	33	37.9	49.3	74.0	-24.7
H	9920.000	43.9	33	40.4	51.3	74.0	-22.7
H	*12400.000	44.1	33	40.5	51.6	74.0	-22.4

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	97.9	33	29.4	43.9	50.4	94.0	-43.6
H	*4960.000	58.8	33	34.9	43.9	16.8	54.0	-37.2
H	*7440.000	44.4	33	37.9	43.9	5.4	54.0	-48.6
H	9920.000	43.9	33	40.4	43.9	7.4	54.0	-46.6
H	*12400.000	44.1	33	40.5	43.9	7.7	54.0	-46.3

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 0 (Charging by adaptor, 3-pin)

Table 10, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2402.000	97.9	33	29.4	94.3	114.0	-19.7
H	*4804.000	58.4	33	34.9	60.3	74.0	-13.7
H	7206.000	44.4	33	37.9	49.3	74.0	-24.7
H	9608.000	44.3	33	40.4	51.7	74.0	-22.3
H	*12010.000	44.3	33	40.5	51.8	74.0	-22.2

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2402.000	97.9	33	29.4	43.9	50.4	94.0	-43.6
H	*4804.000	58.4	33	34.9	43.9	16.4	54.0	-37.6
H	7206.000	44.4	33	37.9	43.9	5.4	54.0	-48.6
H	9608.000	44.3	33	40.4	43.9	7.8	54.0	-46.2
H	*12010.000	44.3	33	40.5	43.9	7.9	54.0	-46.1

- NOTES:
1. Peak detector is used for the emission measurement.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna is used for the emission over 1000MHz.
 5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
 Model: SHB6110/00
 Mode : TX-Channel 39 (Charging by adaptor, 3-pin)

Table 11, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	2441.000	98.0	33	29.4	94.4	114.0	-19.6
H	*4882.000	59.1	33	34.9	61.0	74.0	-13.0
H	*7323.000	44.6	33	37.9	49.5	74.0	-24.5
H	9764.000	44.2	33	40.4	51.6	74.0	-22.4
H	*12205.000	43.9	33	40.5	51.4	74.0	-22.6

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	2441.000	98.0	33	29.4	43.9	50.5	94.0	-43.5
H	*4882.000	59.1	33	34.9	43.9	17.1	54.0	-36.9
H	*7323.000	44.6	33	37.9	43.9	5.6	54.0	-48.4
H	9764.000	44.2	33	40.4	43.9	7.7	54.0	-46.3
H	*12205.000	43.9	33	40.5	43.9	7.5	54.0	-46.5

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00
Mode : TX-Channel 79 (Charging by adaptor, 3-pin)

Table 12, Headset

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	97.9	33	29.4	94.3	114.0	-19.7
H	*4960.000	58.7	33	34.9	60.6	74.0	-13.4
H	*7440.000	44.4	33	37.9	49.3	74.0	-24.7
H	9920.000	44.2	33	40.4	51.6	74.0	-22.4
H	*12400.000	43.8	33	40.5	51.3	74.0	-22.7

Polarization	Frequency	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	97.9	33	29.4	43.9	50.4	94.0	-43.6
H	*4960.000	58.7	33	34.9	43.9	16.7	54.0	-37.3
H	*7440.000	44.4	33	37.9	43.9	5.4	54.0	-48.6
H	9920.000	44.2	33	40.4	43.9	7.7	54.0	-46.3
H	*12400.000	43.8	33	40.5	43.9	7.4	54.0	-46.6

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- * Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Melvin Nip

INTERTEK TESTING SERVICES

3.4 Radiated Emission on the Bandedge

From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz and 2483.5MHz). In case of the fundamental emissions are within two standard bandwidths from the bandedge, the delta measurement technique is used for determining bandedge compliance. Standard bandwidth is the bandwidth specified by ANSI C63.4 (2003) for frequency being measured.

Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).

Please refer to the following plots for radiated emission on the bandedge:

Plot B1A*: Headset - Low Channel Emissions

Plot B1B: Headset - High Channel Emissions

For electronic filing, the above plots are saved with filename: emission.pdf

Peak Resultant:

* Bandedge compliance is determined by applying marker-delta method, i.e.

Resultant field strength = Fundamental emissions - delta from the plot

$$= 96.6\text{dB}\mu\text{V/m} - 39.09\text{dB}$$

$$= 57.51\text{dB}\mu\text{V/m}$$

Average Resultant:

* Bandedge compliance is determined by applying marker-delta method, i.e.

Resultant field strength = Fundamental emissions - delta from the plot

$$= 52.7\text{dB}\mu\text{V/m} - 39.09\text{dB}$$

$$= 13.61\text{dB}\mu\text{V/m}$$

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 54dB μ V/m.

Pursuant to FCC Part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

INTERTEK TESTING SERVICES

3.5 Line Conducted Configuration Photograph - Headset

Worst Case Line-Conducted Configuration

at 4.005 MHz

For electronic filing, the worst case line conducted configuration photographs are saved with filename: config photos.pdf

INTERTEK TESTING SERVICES

3.6 Line Conducted Emission Data

The data on the following pages list the significant emission frequencies, the limit, and the margin of compliance.

Judgement : Passed by 9.8 dB margin

For electronic filing, the conducted emission test result is saved with filename: conduct.pdf

TEST PERSONNEL:



Tester Signature

Melvin Nip, Lead Engineer

Typed/Printed Name

February 28, 2008

Date

INTERTEK TESTING SERVICES

Company: Philips Consumer Electronics B.V. Date of Test: January 18-February 20, 2008
Model: SHB6110/00

3.7 Transmitter Duty Cycle Calculation , FCC Rule 15.35(b, c)

Based on the Bluetooth Specification Version 2.1 + EDR, transmitter ON time is independent of the packet type (DH1, DH3 and DH5) and packet length (single-slot and multi-slot). The maximum transmitter ON time for the Bluetooth is 625 μ s.

Each TX and RX time slot is 625 μ s in length. A TDD scheme is used where master and slave alternately transmit. For one period for a pseudo-random hopping through all 79 RF channels, it takes: $79 \times (0.625 \times 2)\text{ms} = 98.75\text{ms}$.

Therefore,

$$\begin{aligned}\text{Average Factor (AF) of Bluetooth in dB} &= 20 \log_{10} (0.625/98.75) \text{ dB} \\ &= 20 \log_{10} (0.00633) \text{ dB} \\ &= -43.9\text{dB}\end{aligned}$$

INTERTEK TESTING SERVICES

EXHIBIT 4 EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

4.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf

INTERTEK TESTING SERVICES

EXHIBIT 5 PRODUCT LABELLING

INTERTEK TESTING SERVICES

5.0 **Product Labelling**

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf

INTERTEK TESTING SERVICES

EXHIBIT 6 TECHNICAL SPECIFICATIONS

INTERTEK TESTING SERVICES

6.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

INTERTEK TESTING SERVICES

EXHIBIT 7 INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

7.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf

The required FCC Information to the User is stated on P.5 of the Instruction Manual.

This manual will be provided to the end-user with each unit sold/leased in the United States.

INTERTEK TESTING SERVICES

EXHIBIT 8 LETTER OF AGENCY

INTERTEK TESTING SERVICES

8.0 Letter of Agency

For electronic filing, a letter of agency is saved with filename: letter of agency.pdf

INTERTEK TESTING SERVICES

EXHIBIT 9 CONFIDENTIALITY REQUEST

INTERTEK TESTING SERVICES

9.0 Confidentiality Request

For electronic filing, a preliminary copy of the Confidentiality Request is saved with filename: request.pdf