RadioShack Corporation

Application
For
Certification

2.4GHz Digital Wireless Headphone

(FCC ID: AAO3301253R)

05205162
TC/el
November 30, 2005

Intertek Testing Services Hong Kong Ltd.
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LIST OF EXHIBITS

MEASUREMENT/TECHNICAL REPORT

RadioShack Corporation - MODEL: 33-1253

FCC ID: AAO3301253R

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

Equipment Type: DSS-Part 15 Spread Spectrum Transmitter

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 [10-01-04 Edition] provision.

Report prepared by:

Alfred Lo
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2/F., Garment Center,
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Kowloon, Hong Kong.
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Table of Contents

List of Attached File

Exhibit Type	File Description	Filename
Test Report	Test Report	report.pdf
Test Report	Maximum Output Power Plot	hmaxop.pdf
Test Report	20dB Bandwidth Plot	h20dB.pdf
Test Report	Minimum Number of Hopping Frequencies	hchno.pdf
Test Report	Minimum Hopping Channel Carrier Frequency Separation	hfsepa.pdf
Test Report	Average Channel Occupancy Time	havetime.pdf
Test Report	Out Band Antenna Conducted Emission Plot	hobantcon.pdf
Test Report	Duty Cycle Calculation and Measurement	hdcc.pdf
Test Report	Conducted Emission Test Result	conduct.pdf
Test Setup Photo	Radiated Emission for Base	config photos.doc
Test Setup Photo	Radiated Emission for Headphone	config photos.doc
Test Setup Photo	Conducted Emission	config photos.doc
External Photo	External Photo	external photos.doc
Internal Photo	Internal Photo	internal photos.doc
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
User Manual	FCC Information	FCC information.pdf
RF Exposure Info	RF Safety	RF exposure info.pdf
Operation Description	Technical Description	descri1.pdf, descri2.pdf, descri3.pdf

EXHIBIT 1

SUMMARY OF TEST RESULTS

1.0 **Summary of Test**

RadioShack Corporation - MODEL: 33-1253

FCC ID: AAO3301253R

TEST	REFERENCE	RESULTS
Max. Output Power	15.247(b)	Pass
Min. No. of Hopping Frequencies	15.247(a)(1)	Pass
Min. Hopping Channel Carrier Frequency Separation	15.247(a)(1)	Pass
Average Time of Occupancy	15.247(a)(1)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Radiated Emission from Digital Part	15.109	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses a permanently attached antenna which, in accordance to Section 15.203, is considered sufficient to comply with the provisions of this section.

EXHIBIT 2

GENERAL DESCRIPTION

2.0 **General Description**

2.1 Product Description

The 33-1253 is a 2.4GHz Frequency Hopping Spread Spectrum wireless headphone system. It operates at frequency range of 2404.322MHz to 2476.350MHz with 18 physical hopping frequencies. The transmitter and receiver are powered by rechargeable NiMH battery (Model: GP35AAAH2B6) which can charging the battery by a AC/DC adaptor (Model: U045030D12).

The headphone unit consists of a on/off switch and volume control knob. The associated transmitter unit is used to transmit the audio signal to headphone unit. The audio signal will be transmitted continuously once the audio signal connected via a 3.5mm line in jack.

The circuit description, specification of transceiver IC, and frequency hopping algorithm are saved with filename: descri1.pdf, descri2.pdf and descri3.pdf respectively.

The antennas used in headphone is integral, and the test sample is a prototype.

2.2 Related Submittal(s) Grants

The Certification procedure of transmitter for this transceiver (with FCC ID: AAO3301253T) is being processed as the same time of this application.

2.3 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. All other measurements were made in accordance with the procedures in 47 CFR Part 2.

2.4 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.

EXHIBIT 3

SYSTEM TEST CONFIGURATION

3.0 **System Test Configuration**

3.1 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 were manipulated to produce worst case emissions. The headphone was powered by a fully charged battery.

For the measurements, the EUT is attached to a plastic stand if necessary and placed on the wooden turntable.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Detector function is in peak mode. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100kHz or greater for frequencies below 1000MHz. The resolution is 1MHz or greater for frequencies above 1000MHz.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9kHz to 25GHz.

3.2 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.

3.3 Support Equipment List and Description

The FCC ID's for all equipment, plus descriptions of all accessories used in the tested system are:

HARDWARE:

The unit was operated standalone. An AC adaptor and a battery (provided with the unit) were used to power the device. Their description are listed below:

(1) An AC adaptor (120VAC to 4.5VDC 300mA, Model: U045030D12);
(2) A “Ni-MH” type rechargeable battery (3.6V 600mAh, Model: GP35AAAH2B6)

CABLES:

Not applicable.

OTHERS:

Not applicable.

3.4 Measurement Uncertainty

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

3.5 Equipment Modification

Any modifications installed previous to testing by RadioShack Corporation will be incorporated in each production model sold/leased in the United States.

No modifications were installed by ETL Division, Intertek Testing Services Hong Kong Ltd.

All the items listed under section 3.0 of this report are confirmed by:

Confirmed by:

Alfred Lo
EMC Specialist
Intertek Testing Services Hong Kong Ltd.
Agent for RadioShack Corporation

Signature

November 30, 2005 Date

EXHIBIT 4

MEASUREMENT RESULTS

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.0 **Measurement Results**

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(1):

☐ The antenna power of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

☒ The antenna port of the EUT was connected to the input of a spectrum analyzer. The analyzer was set for RBW>20dB bandwidth and power was read directly in dBm. External attenuation and cable loss were compensated for using the OFFSET function of the analyzer.

For antennas with gains of 6dBi or less, maximum allowed transmitter output is 0.125 watt (+21dBm).

(Headphone) Maximum Antenna Gain = 0dBi			
Frequency (MHz)		Output in dBm	Output in mWatt
Low Channel:	2404.322	0.76	1.19
Middle Channel:	2440.310	0.25	1.06
High Channel:	2476.350	1.06	1.28

Cable loss : 0.5 dB External Attenuation : N/A dB

Cable loss, external attenuation: ☒ included in OFFSET function
☐ added to SA raw reading

dBm max. output level = 1.06 dBm (21dBm or less)

Please refer to the attached plots for details:

Plot H1A: Low Channel Output Power
Plot H1B: Middle Channel Output Power
Plot H1C: High Channel Output Power

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

For RF Safety, the information is saved with filename: RF exposure info.pdf.

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.2 Maximum 20dB RF Bandwidth, FCC Rule 15.247(a)(1)(ii):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was chosen so that the display was a result of the hopping channel modulation. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 20dB lower than PEAK level. The 20dB bandwidth was determined from where the channel output spectrum intersected the display line.

Headphone	
Frequency (MHz)	20dB Bandwidth (kHz)
2476.350	2254

Refer to the following plots for 20dB bandwidth sharp:

Plot H2A: Low Channel 20dB RF Bandwidth
Plot H2B: Middle Channel 20dB RF Bandwidth
Plot H2C: High Channel 20dB RF Bandwidth

For electronic filing, the above plots are saved with filename: h20dB.pdf.

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.3 Minimum Number of Hopping Frequencies, FCC Rule 15.247(a)(1)(ii):

The RF passband of the EUT was divided into 5 approximately equal bands. With the analyzer set to MAX HOLD readings were taken for 2-3 minutes in each band. The channel peaks so recorded were added together, and the total number compared to the minimum number of channels required in the regulation.

Headphone	
No. of Hopping Channels:	18

Minimum Requirements: at least 15 non-overlapping channels for 2400-2483.5MHz.

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

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.4 Minimum Hopping Channel Carrier Frequency Separation, FCC Ref: 15.247(a)(1):

Using the DELTA MARKER function of the analyzer, the frequency separation between two adjacent channels was measured and compared against the limit.

☐ 25kHz ☒ 20dB bandwidth of hopping channel: 2254kHz

Headphone	
Channel Separation:	4000kHz

Plot H4: Channel 10 and Channel 11

Requirement: The frequency separation is more than 20dB bandwidth of hopping channel.

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

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.5 Average Channel Occupancy Time, FCC Ref: 15.247(a)(1)(ii):

The spectrum analyzer center frequency was set to one of the known hopping channels. The SWEEP was set to 0.5ms for headphone, the SPAN was set to ZERO SPAN, and the TRIGGER was set to VIDEO. The time duration of the transmission so captured was measured with the MARKER DELTA function.

The SWEEP was then set to the time required by the regulation (20 seconds for 902-928MHz devices, if the 20dB bandwidth is less than 250kHz, 10 seconds for 902-928MHz if the 20dB bandwidth is or greater than 250kHz, "0.4 seconds × Number of hopping channels employed" seconds for 2400-2483.5MHz, 30 seconds for 5725-5850MHz). The analyzer was set to SINGLE SWEEP, the total ON time was added and compared against the limit (0.4 seconds).

Average 0.4 seconds maximum occupancy in 7.2 seconds (0.4 sec. × 18) for 2400-2483.5MHz.

Headphone (Worst-case: Operation)	
Average Occupancy Time = 164μs × 138	22.632ms

Refer to attached spectrum analyzer plots H5A-C.

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

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.6 Out of Band Conducted Emissions, FCC Rule 15.247(d):

In any 100kHz bandwidth outside the EUT passband, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20dB below that of the maximum in-band 100kHz emission, or else shall meet the general limits for radiated emissions at frequencies outside the passband, whichever results in lower attenuation.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

Refer to the following plots for out of band conducted emissions data:

Plot H6A1 - H6A2: Low Channel Emissions
Plot H6B1 - H6B2: Middle Channel Emissions
Plot H6C1 - H6C2: High Channel Emissions
Plot H6D1 - H6D2: Modulation Products Emissions*

The plots showed the 2nd harmonic and modulation products at the band edges of 2400MHz and 2483.5MHz. In addition, all spurious emission and up to the tenth harmonic was measured and they were found to be at least 20dB below the highest level of the desired power in the passband.

*These 2 plots are shown the worst-case which has been already considered between enable and disable the hopping function of the EUT.

For electronic filing, the above plots are saved with filenames: hobantcon.pdf.

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.7 Out of Band Radiated Emissions (for emissions in 4.6 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

☒ Not required, all emissions more than 20dB below fundamental.
☐ See attached data sheet.

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.8 Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

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. All measurements were performed with peak detection unless otherwise specified.

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

4.9 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD + AV

where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD + AV

Example

Assume a receiver reading of 62.0dBμV is obtained. The antenna factor of 7.4dB and cable factor of 1.6dB is added. The amplifier gain of 29dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0dB, and the resultant average factor was -10dB. The net field strength for comparison to the appropriate emission limit is 32dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0dBμV
AF = 7.4dB
CF = 1.6dB
AG = 29.0dB
PD = 0dB
AV = -10dB
FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32dBμV/m

Level in mV/m = Common Antilogarithm [(32dBμV/m)/20] = 39.8μV/m

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.10 Radiated Emission Configuration Photograph - Headphone

Worst Case Radiated Emission
at
4879.650MHz

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

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.11 Radiated Emission Data - Headphone

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

Judgement: Passed by 9.7dB margin compare with the peak limit.

TEST PERSONNEL:

Tester Signature

Terry C. H. Chan, Assistant Engineer
Typed/Printed Name

November 30, 2005
Date

Company: RadioShack Corporation
Model: 33-1253
Mode : TX-Channel 1

Date of Test: September 29, 2005

Table 1

Headphone
Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m-Peak (dBμV/m)	Average Factor (-dB)	Calculated at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
H	*4807.432	59.9	34	34.0	59.9	49.7	10.2	54	-43.8
H	*12018.580	43.6	34	40.2	49.8	49.7	0.1	54	-53.9

NOTES:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Harmonic 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 harmonic 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 used for the emission over 1000MHz.
5. All emissions below the peak limit.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000MHz and average limit for frequencies over 1000MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Test Engineer: Terry C. H. Chan

Company: RadioShack Corporation
Model: 33-1253
Mode : TX-Channel 10

Date of Test: September 29, 2005

Table 2

Headphone
Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m-Peak (dBμV/m)	Average Factor (-dB)	Calculated at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	*4879.650	64.3	34	34.0	64.3	49.7	14.6	54	-39.4
H	*7321.036	50.5	34	37.0	53.5	49.7	3.8	54	-50.2
H	*12201.073	44.0	34	40.2	50.2	49.7	0.5	54	-53.5

NOTES:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Harmonic 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 harmonic 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 used for the emission over 1000MHz.
5. All emissions below the peak limit.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000MHz and average limit for frequencies over 1000MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function and the worst-case of 9.7dB margin at 4879.650MHz.

Test Engineer: Terry C. H. Chan

Company: RadioShack Corporation
Model: 33-1253
Mode : TX-Channel 18

Date of Test: September 29, 2005

Table 3

Headphone
Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m-Peak (dBμV/m)	Average Factor (-dB)	Calculated at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	**2475.752	102.6	34	34.0	102.6	49.7	52.9	--	--
H	*4951.664	59.4	34	34.0	59.4	49.7	9.7	54	-44.3
H	*7428.416	50.1	34	37.0	53.1	49.7	3.4	54	-50.6
H	*12380.996	43.8	34	40.2	50.0	49.7	0.3	54	-53.7

NOTES:
1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Harmonic 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 harmonic 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 used for the emission over 1000MHz.

5. All emissions below the peak limit.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

** Fundamental emission was measured for determining band-edge compliance of using delta measurement technique.

Test Engineer: Terry C. H. Chan

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.12 AC Line Conducted Emission, FCC Rule 15.207:

☐ Not required; battery operation only.

☒ Test data attached.

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.13 Line Conducted Configuration Photograph

Worst Case Line-Conducted Configuration

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

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.14 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 more than 20dB margin.

For electronic filing, the worst case line conducted emission data are saved with filename: conduct.pdf.

TEST PERSONNEL:

Tester Signature

Terry C. H. Chan, Assistant Engineer
Typed/Printed Name

November 30, 2005
Date

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.15 Radiated Emissions from Digital Section of Transceiver (Transmitter), FCC Ref: 15.109:

☐ Not required - No digital part.

☒ Test results are attached.

☐ Included in the separated DOC report.

Company: RadioShack Corporation
Model: 33-1253
Mode: Charging

Date of Test: September 29, 2005

Table 4

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m-Peak (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	38.496	34.4	16	11.2	29.6	40	-10.4
V	45.841	34.9	16	11.9	30.8	40	-9.2
V	55.674	26.2	16	11.0	21.2	40	-18.8
V	59.496	37.4	16	11.0	32.4	40	-7.6
V	63.625	36.9	16	9.9	30.8	40	-9.2
V	69.704	36.7	16	8.5	29.2	40	-10.8

NOTES:
1. Quasi-peak detector is used for the emission below or equal to 1000 MHz.
2. All measurements were made at 3 meters. Harmonic 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 harmonic 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.

Test Engineer: Terry C. H. Chan

Company: RadioShack Corporation Date of Test: September 29, 2005
Model: 33-1253

4.16 Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The transmitter ON time was determined from the resultant time-amplitude display:

Headphone:

Duty cycle (DC) = Maximum ON time in 100ms/100ms
= (0.164 x 2)ms/100ms for operation

Duty cycle correction, dB = 20* log (DC)
= 20* log (0.00328)
= -49.7dB

X	See attached spectrum analyzer chart (s) for transmitter timing Headphone: Plot H7
	See transmitter timing diagram provided by manufacturer
	Not applicable, duty cycle was not used.

For electronic filing, the above plots are saved with filenames: hdcc.pdf.

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

5.0 **Equipment Photographs**

For electronic filing, the photographs are saved with filename: external photos.doc and internal photos.doc.

EXHIBIT 6

PRODUCT LABELLING

6.0 **Product Labelling**

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

EXHIBIT 7

TECHNICAL SPECIFICATIONS

7.0 **Technical Specifications**

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

EXHIBIT 8

INSTRUCTION MANUAL

8.0 **Instruction Manual**

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

Please note that the required FCC Information to the User is saved with filename: FCC information.pdf.

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