

TEST REPORT

Report No.: HK09081010-1

Tai Nam Industrial Company Limited

Application
For
Certification
(Original Grant)
(FCC ID: SFSBWM0001A)

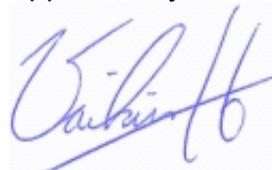
Transceiver

Prepared and Checked by:



Norton Yuen/sl
Lead Engineer

Approved by:



Ho Wai Kin, Ben
Senior Supervisor
Date: September 22, 2009

- The test report only allows to be revised within the retention period unless further standard or the requirement was noticed.
- This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

INTERTEK TESTING SERVICES

GENERAL INFORMATION

Tai Nam Industrial Company Limited
BRAND NAME: IDEAL LIFE, MODEL: BWM 0001

FCC ID: SFSBWM0001A

Grantee:	Tai Nam Industrial Company Limited
Grantee Address:	Units D-F, 26 th Floor, CDW Building, 338 Castle Peak Road, Tsuen Wan, Hong Kong.
Contact Person:	Mr. Patrick Ma
Tel:	0769-87736471
Fax:	0769-87736477
e-mail:	patricksk_ma@tainam.com.hk
Manufacturer:	N/A
Manufacturer Address:	N/A
Brand Name:	IDEAL LIFE
Model:	BWM 0001
Type of EUT:	Transceiver
Description of EUT:	Weight Scale
Serial Number:	N/A
FCC ID	SFSBWM0001A
Date of Sample Submitted:	August 25, 2009
Date of Test:	August 31, 2009
Report No.:	HK09081010-1
Report Date:	September 22, 2009
Environmental Conidtions:	Temperature: +10 to 40°C Humidity: 10 to 90%

INTERTEK TESTING SERVICES

SUMMARY OF TEST RESULT

Tai Nam Industrial Company Limited
BRAND NAME: IDEAL LIFE, MODEL: BWM 0001

FCC ID: SFSBWM0001A

TEST SPECIFICATION	REFERENCE	RESULTS
Maximum Peak Output Power	15.247(b), (c)	N/A
Hopping Channel Carrier Frequencies Separation	15.247(e)	N/A
20dB Bandwidth of the Hopping Channel	15.247(a)	N/A
Number of Hopping Frequencies	15.247(e)	N/A
Average Time of Occupancy of Hopping Frequency	15.247(e)	N/A
Antennae Conducted Spurious Emissions	15.247(d)	N/A
Radiated Spurious Emissions	15.247(d)	N/A
RF Exposure Compliance	15.247(i)	N/A
Transmitter Power Line Conducted Emissions	15.207	N/A
Transmitter Field Strength	15.227	N/A
Transmitter Field Strength	15.229	N/A
Transmitter Field Strength, Bandwidth and Timing Requirement	15.231(a)	N/A
Transmitter Field Strength, Bandwidth and Timing Requirement	15.231(e)	N/A
Transmitter Field Strength and Bandwidth Requirement	15.239	N/A
Transmitter Field Strength and Bandwidth Requirement	15.249	Pass
Transmitter Field Strength and Bandwidth Requirement	15.235	N/A
Receiver / Digital Device Radiated Emissions	15.109	N/A
Digital Device Conducted Emissions	15.107	N/A

- Note: 1. 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.
2. Pursuant to FCC part 15 Section 15.215(c), the 20 dB 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

Table of Contents

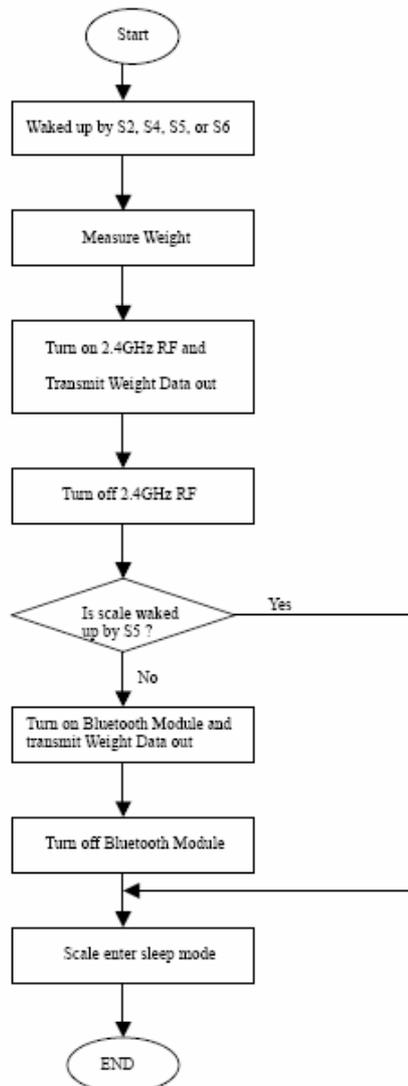
1.0	<u>General Description</u>	1
1.1	Product Description	2
1.2	Related Submittal(s) Grants.....	2
1.3	Test Methodology.....	2
1.4	Test Facility	2
2.0	<u>System Test Configuration</u>	3
2.1	Justification	3
2.2	EUT Exercising Software.....	3
2.3	Special Accessories	3
2.4	Equipment Modification	3
2.5	Measurement Uncertainty.....	3
2.6	Support Equipment List and Description	4
3.0	<u>Emission Results</u>	4
3.1	Field Strength Calculation.....	4
3.2	Radiated Emission Configuration Photograph.....	5
3.3	Radiated Emission Data	5
4.0	<u>Equipment Photographs</u>	10
5.0	<u>Product Labelling</u>	10
6.0	<u>Technical Specifications</u>	10
7.0	<u>Instruction Manual</u>	10
8.0	<u>Miscellaneous Information</u>	10
8.1	Measured Bandwidth.....	11
8.2	Discussion Pulse Desensitivity	11
8.3	Calculation of Average Factor.....	11
8.4	Emissions Test Procedures	12
9.0	<u>Equipment List</u>	13

INTERTEK TESTING SERVICES

1.0 General Description

1.1 Product Description

The EUT is a body weight scale operating at 2.402 GHz – 2.480 GHz. It is powered by 4 x 1.5 V “AA” size batteries. The EUT measures user’s body weight and sent out the readings by two means: 2.402 GHz Single Channel RF Transmitter and Bluetooth® Transceiver. If the user is not pre-registered as P1 and P2 in the scale, the body weight data is sent through the 2.402 GHz Single Channel RF Transmitter. If the user is a pre-registered user P1 and P2 of the scale, these body weight data would be sent out through Bluetooth technology. The 2.402 GHz Single Channel RF transmitter and Bluetooth transmitter would never transmit at the same instance. Please refer to the following operating flow chart:



Antenna Type: Internal, Integral

INTERTEK TESTING SERVICES

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

1.2 Related Submittal(s) Grants

This application including two portions, Bluetooth, and 2.402GHz Transmitter.

The receiver for the transmitter portion (with FCC ID: TS8ILP0001) has been authorized by Certification procedure.

1.3 Test Methodology

Radiated emission measurement was performed according to the procedures in ANSI C63.4 (2003). All radiated measurements were performed in an Open Area Test Site. Preliminary scans were performed in the Open Area Test Site 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 placed on file with the FCC.

INTERTEK TESTING SERVICES

2.0 System Test Configuration

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003).

The device was powered by 4 x 1.5V "AA" size batteries.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The unit was operated standalone and placed in the center of the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a plastic stand if necessary and placed on the wooden turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered up, it transmits the RF signal continuously.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Equipment Modification

Any modifications installed previous to testing by Tai Nam Industrial Company Limited will be incorporated in each production model sold/leased in the United States.

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

2.5 Measurement Uncertainty

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

INTERTEK TESTING SERVICES

2.6 Support Equipment List and Description

Bluetooth Test Mode Engineering Board.

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.

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), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

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

where FS = Field Strength in dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB
 AG = Amplifier Gain in dB
 AV = Average Factor 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 dB μ V/m
 RR = RA - AG - AV in dB μ V
 LF = CF + AF in dB

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 52.0 \text{ dB}\mu\text{V/m}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$AV = 5.0 \text{ dB}$$

$$FS = RR + LF$$

$$FS = 18 + 9 = 27 \text{ dB}\mu\text{V/m}$$

$$RR = 18.0 \text{ dB}\mu\text{V}$$

$$LF = 9.0 \text{ dB}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(27 \text{ dB}\mu\text{V/m})/20] = 22.4 \mu\text{V/m}$$

INTERTEK TESTING SERVICES

3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 2399.700 MHz

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

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 2.7 dB

INTERTEK TESTING SERVICES

Applicant: Tai Nam Industrial Company Limited

Date of Test: August 31, 2009

Model: BWM 0001

Worst-Case Operating Mode: Transmitting (RF Portion)

Table 1

Radiated Emissions Pursuant to FCC Part 15 Section 15.249 Requirement

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2401.875	83.6	33	29.4	80.0	12.0	68.0	94.0	-26.0
V	4803.750	55.6	33	34.9	57.5	12.0	45.5	54.0	-8.5
H	7205.625	55.0	33	37.9	59.9	12.0	47.9	54.0	-6.1
H	9607.500	49.2	33	40.4	56.6	12.0	44.6	54.0	-9.4
H	12009.375	47.6	33	40.5	55.1	12.0	43.1	54.0	-10.9

Polarization	Frequency (MHz)	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	2401.875	83.6	33	29.4	80.0	114.0	-34.0
V	4803.750	55.6	33	34.9	57.5	74.0	-16.5
H	7205.625	55.0	33	37.9	59.9	74.0	-14.1
H	9607.500	49.2	33	40.4	56.6	74.0	-17.4
H	12009.375	47.6	33	40.5	55.1	74.0	-18.9

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 sign in the column shows value below limit.

4. Horn antenna is used for the emission over 1000MHz.

INTERTEK TESTING SERVICES

Applicant: Tai Nam Industrial Company Limited
 Model: BWM 0001
 Worst-Case Operating Mode: Bluetooth

Date of Test: August 31, 2009

Table 2

Radiated Emissions Pursuant to FCC Part 15 Section 15.249 Requirement

Channel 00

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2402.000	84.6	33	29.4	81.0	43.9	37.1	94.0	-56.9
V	4804.000	54.7	33	34.9	56.6	43.9	12.7	54.0	-41.3
V	7206.000	57.6	33	37.9	62.5	43.9	18.6	54.0	-35.4
V	9608.000	44.6	33	40.4	52.0	43.9	8.1	54.0	-45.9
V	12010.000	45.3	33	40.5	52.8	43.9	8.9	54.0	-45.1
V	14412.000	47.0	33	40.0	54.0	43.9	10.1	54.0	-43.9

Polarization	Frequency (MHz)	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	84.6	33	29.4	81.0	114.0	-33.0
V	4804.000	54.7	33	34.9	56.6	74.0	-17.4
V	7206.000	57.6	33	37.9	62.5	74.0	-11.5
V	9608.000	44.6	33	40.4	52.0	74.0	-22.0
V	12010.000	45.3	33	40.5	52.8	74.0	-21.2
V	14412.000	47.0	33	40.0	54.0	74.0	-20.0

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.

INTERTEK TESTING SERVICES

Applicant: Tai Nam Industrial Company Limited
 Model: BWM 0001
 Worst-Case Operating Mode: Bluetooth

Date of Test: August 31, 2009

Table 3

Radiated Emissions Pursuant to FCC Part 15 Section 15.249 Requirement

Channel 38

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)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2440.000	85.2	33	29.4	81.6	43.9	37.7	94.0	-56.3
V	4880.000	54.9	33	34.9	56.8	43.9	12.9	54.0	-41.1
V	7320.000	57.4	33	37.9	62.3	43.9	18.4	54.0	-35.6
V	9760.000	44.9	33	40.4	52.3	43.9	8.4	54.0	-45.6
V	12200.000	45.3	33	40.5	52.8	43.9	8.9	54.0	-45.1
V	14640.000	48.7	33	38.4	54.1	43.9	10.2	54.0	-43.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2440.000	85.2	33	29.4	81.6	114.0	-32.4
V	4880.000	54.9	33	34.9	56.8	74.0	-17.2
V	7320.000	57.4	33	37.9	62.3	74.0	-11.7
V	9760.000	44.9	33	40.4	52.3	74.0	-21.7
V	12200.000	45.3	33	40.5	52.8	74.0	-21.2
V	14640.000	48.7	33	38.4	54.1	74.0	-19.9

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 sign in the column shows value below limit.

4. Horn antenna is used for the emission over 1000MHz.

INTERTEK TESTING SERVICES

Applicant: Tai Nam Industrial Company Limited
 Model: BWM 0001
 Worst-Case Operating Mode: Bluetooth

Date of Test: August 31, 2009

Table 4

Radiated Emissions Pursuant to FCC Part 15 Section 15.249 Requirement

Channel 78

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
H	2480.000	85.4	33	29.4	81.8	43.9	37.9	94.0	-56.1
V	4960.000	55.1	33	34.9	57.0	43.9	13.1	54.0	-40.9
V	7440.000	57.3	33	37.9	62.2	43.9	18.3	54.0	-35.7
V	9920.000	45.2	33	40.4	52.6	43.9	8.7	54.0	-45.3
V	12400.000	44.8	33	40.5	52.3	43.9	8.4	54.0	-45.6
V	14880.000	48.8	33	38.4	54.2	43.9	10.3	54.0	-43.7

Polarization	Frequency (MHz)	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	85.4	33	29.4	81.8	114.0	-32.2
V	4960.000	55.1	33	34.9	57.0	74.0	-17.0
V	7440.000	57.3	33	37.9	62.2	74.0	-11.8
V	9920.000	45.2	33	40.4	52.6	74.0	-21.4
V	12400.000	44.8	33	40.5	52.3	74.0	-21.7
V	14880.000	48.8	33	38.4	54.2	74.0	-19.8

- NOTES: 1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.

INTERTEK TESTING SERVICES

4.0 **Equipment Photographs**

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

5.0 **Product Labelling**

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

6.0 **Technical Specifications**

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

7.0 **Instruction Manual**

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

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

8.0 **Miscellaneous Information**

The miscellaneous information includes details of the test procedure and measured bandwidth.

8.1 Measured Bandedge

From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz - 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 50dB below the level of the fundamental or to the general radiated emissions limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).

Bandedge compliance is determined by applying marker-delta method.

INTERTEK TESTING SERVICES

Peak Measurement

RF Portion:

Out-band emission level (lower bandedge): 80.0-31.71 = 48.29 (dB μ V/m)

Out-band emission level (upper bandedge): 80.0-50.53 = 29.47 (dB μ V/m)

Bluetooth Mode:

Out-band emission level (lower bandedge): 81.0-9.73 = 71.27 (dB μ V/m)

Out-band emission level (upper bandedge): 81.8-27.36 = 54.44 (dB μ V/m)

Average Measurement

RF Portion:

Out-band emission level (lower bandedge): 80.0-12-31.71 = 32.69 (dB μ V/m)

Out-band emission level (upper bandedge): 80.0-12-50.53 = 17.47 (dB μ V/m)

Bluetooth Mode:

Out-band emission level (lower bandedge): 81.0-43.9-9.73 = 27.37 (dB μ V/m)

Out-band emission level (upper bandedge): 81.8-43.9-27.36 = 10.54 (dB μ V/m)

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74dB μ V/m (Peak Limit) and 54dB μ V/m (Average Limit).

8.2 Discussion Pulse Desensitvity

Pulse desnesitvity is not applicable for this device. The effective period (Teff) is approximately 1.94ms for a digital "1" bit which illustrated on technical specification, with a resolution bandwidth (3dB) of 3MHz, so the pulse densensitivity factor is 0dB.

8.3 Calculation of Average Factor

The duty cycle is simply the on-time divided by the period (RF Portion):

The duration of one cycle = 1.94ms x 13

Effective period of the cycle = 100ms

DC = 0.2522

Therefore, the averaging factor is found by $20\log 0.2522 = -12.0\text{dB}$.

Average Factor (Bluetooth Portion)

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-

INTERTEK TESTING SERVICES

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 x (0.625 x 2)ms = 98.75ms.

Therefore,

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

8.4 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Hong Kong Ltd. in the measurements of transmitter operating under the Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2003. A typical or an unmodulated CW signal at the operating frequency of the EUT has been supplied to the EUT for all measurements. Such a signal is supplied by a signal generator and an antenna in close proximity to the EUT. The signal level is sufficient to stabilize the local oscillator of the EUT.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements were made as described in ANSI C63.4 - 2003.

INTERTEK TESTING SERVICES

The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.

9.0 **Equipment List**

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Biconical Antenna	Log Periodic Antenna
Registration No.	EW-0014	EW-0954	EW-0446
Manufacturer	R&S	EMCO	EMCO
Model No.	ESVS30	3104C	3146
Calibration Date	Jun. 01, 2009	Sep. 30, 2008	Oct. 02, 2008
Calibration Due Date	Jun. 01, 2010	Mar. 30, 2010	Apr. 02, 2010

Equipment	Spectrum Analyzer	Double Ridged Guide Antenna
Registration No.	EW-2188	EW-1015
Manufacturer	AGILENTTECH	EMCO
Model No.	E4407B	3115
Calibration Date	Dec. 18, 2008	Jul. 28, 2008
Calibration Due Date	Dec. 18, 2009	Jan. 28, 2010