

The Wiremold Company

**Application
For
Certification
(FCC ID: O73-AUDMTM1S)**

Digital Music Kit

**Model: AUDMTM1S
Additional Model: AUDMBK1S, AUDMWH1S**

2.4GHz Transceiver

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-11]

Prepared and Checked by:

Approved by:

Sign on file

Chris Chen
Engineer

Billy Li
Team Leader
Date: 6 June, 2012

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
- 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 copy or distribute this report. 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 referenced from 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.
- For Terms And Conditions of the services, it can be provided upon request.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

TRF No.: FCC 15C_TXb
FCC ID: O73-AUDMTM1S
Report No.: SZ12030584-5

INTERTEK TESTING SERVICES

LIST OF EXHIBITS

INTRODUCTION

<i>EXHIBIT 1:</i>	General Description
<i>EXHIBIT 2:</i>	System Test Configuration
<i>EXHIBIT 3:</i>	Emission Results
<i>EXHIBIT 4:</i>	Equipment Photographs
<i>EXHIBIT 5:</i>	Product Labelling
<i>EXHIBIT 6:</i>	Technical Specifications
<i>EXHIBIT 7:</i>	Instruction Manual
<i>EXHIBIT 8:</i>	Miscellaneous Information
<i>EXHIBIT 9:</i>	Confidentiality Request
<i>EXHIBIT 10:</i>	Test Equipment List

INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

The Wiremold Company - Model: AUDMTM1S
Additional Model: AUDMBK1S, AUDMWH1S

FCC ID: 073-AUDMTM1S

6 June, 2012

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

Equipment Type: DXX - Part 15 Low Power Communication Device Transmitter

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

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 ☒

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-1-11 Edition] provision.

Report prepared by:

Billy Li
Intertek Testing Services Shenzhen Ltd.
Kejiyuan Branch
6F, Block D, Huahan Building, Langshan Road,
Nanshan District, Shenzhen, P. R. China
Phone: (86 755) 8601 6288
Fax: (86 755) 8601 6751

INTERTEK TESTING SERVICES

Table of Contents

1.0 General Description	6
1.1 Product Description	6
1.2 Related Submittal(s) Grants	6
1.3 Test Methodology	7
1.4 Test Facility	7
2.0 System Test Configuration	9
2.1 Justification	9
2.2 EUT Exercising Software	9
2.3 Special Accessories	9
2.4 Equipment Modification	10
2.5 Measurement Uncertainty	10
2.6 Support Equipment List and Description	10
3.0 Emission Results	12
3.1 Radiated Test Results	13
3.1.1 Field Strength Calculation	13
3.1.2 Radiated Emission Configuration Photograph	14
3.1.3 Radiated Emissions	14
3.1.4 Transmitter Spurious Emissions (Radiated)	16
3.2 Conducted Emission at Mains Terminal	20
3.2.1 Conducted Emissions Configuration Photograph	20
3.2.2 Conducted Emissions	20
4.0 Equipment Photographs	24
5.0 Product Labelling	26
6.0 Technical Specifications	28
7.0 Instruction Manual	30
8.0 Miscellaneous Information	32
8.1 Bandedge Plot	33
8.2 Emissions Test Procedures	35
9.0 Confidentiality Request	38
10.0 Test Equipment List	40

INTERTEK TESTING SERVICES

List of attached file

Exhibit type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
Test Report	Bandedge Plot	bandedge.pdf
Test Report	20dB BW Plot	bw.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Confidentiality Letter	request.pdf
Cover Letter	Letter of Agency	agency.pdf
Cover Letter	Certification Agreement	agreement.pdf

INTERTEK TESTING SERVICES

EXHIBIT 1

GENERAL DESCRIPTION

INTERTEK TESTING SERVICES

1.0 **General Description**

1.1 Product Description

The Equipment under Test (EUT) is a Satellite Speaker for Digital Music Kit model: AUDMTM1S operating at 2.4GHz band. The EUT was powered by AC 120V/60Hz.

Antenna Type: Integral antenna

Type of modulation: 8FSK

The Model: AUDMBK1S, AUDMWH1S are the same as the Model: AUDMTM1S in hardware aspect. The difference in model number serves as marketing strategy.

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

1.2 Related Submittal(s) Grants

This is an application for certification of a transceiver for the Digital Music Kit which is Satellite speaker, and there has a Control Speaker which associated with this EUT, has FCC ID: O73-AUDMTM1C and has been filed at the same time.

INTERTEK TESTING SERVICES

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009). Radiated emission measurement was performed in Semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the 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 part 2 of CFR 47.

1.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: 242492).

INTERTEK TESTING SERVICES

EXHIBIT 2

SYSTEM TEST CONFIGURATION

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 (2009).

The EUT was powered by AC 120V/60Hz during the test and only the worst data was reported in this report.

For maximizing emissions below 30 MHz, the EUT was rotated through 360°, the centre of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emission at and above 30 MHz, 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 report in Exhibit 3.0.

The rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on a turn table, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:
During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

2.3 Special Accessories

No special accessories used.

INTERTEK TESTING SERVICES

2.4 Equipment Modification

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

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

2.5 Measurement Uncertainty

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

2.6 Support Equipment List and Description

Description	Manufacturer	Model No.
Control Speaker	Wiremold	AUDMTM1C
iPhone	Apple	L100403
iPod	Apple	A1136
iTouch	Apple	A1367
Apple Dock connector to USB cable	XinNengDa	shielded, Length 28.5cm
Audio Line	NAN GUDI	shielded, Length 25cm

INTERTEK TESTING SERVICES

EXHIBIT 3

EMISSION RESULTS

INTERTEK TESTING SERVICES

3.0 Emission Results

Data is included worst-case configuration (the configuration which resulted in the highest emission levels).

INTERTEK TESTING SERVICES

3.1 **Radiated Test Results**

A sample calculation, configuration photographs and data tables of the emissions are included.

3.1.1 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 (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

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

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

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:

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

Assume a receiver reading of 62.0 dB μ 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. The net field strength for comparison to the appropriate emission limit is 42 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

RA = 62.0 dB μ V
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
AV = -10 dB
FS = 62 + 7.4 + 1.6 - 29 = 42 dB μ V/m

Level in μ V/m = Common Antilogarithm [(42 dB μ V/m)/20] = 125.9 μ V/m

INTERTEK TESTING SERVICES

3.1.2 Radiated Emission Configuration Photograph

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

3.1.3 Radiated Emissions

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.

Worst Case Radiated Emission
at
97.880 MHz

Judgement: Passed by 8.9 dB

TEST PERSONNEL:

Sign on file

Chris Chen, Engineer
Typed/Printed Name

6 June, 2012
Date

INTERTEK TESTING SERVICES

Applicant: The Wiremold Company

Date of Test: 6 June, 2012

Model: AUDMTM1S

Sample: 1/1

Worst Case Operating Mode: Transmit

Table 1

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	97.880	45.8	20.0	8.8	34.6	43.5	-8.9
Horizontal	178.895	33.2	20.0	11.9	25.1	43.5	-18.4
Horizontal	331.670	32.1	20.0	13.5	25.6	46.0	-20.4
Vertical	55.220	40.7	20.0	9.0	29.7	40.0	-10.3
Vertical	98.385	39.5	20.0	8.8	28.3	43.5	-15.2
Vertical	333.125	32.0	20.0	13.9	25.9	46.0	-20.1

NOTES: 1. Quasi-Peak detector is used except for others 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 value in the margin column shows emission below limit.

4. All emissions are below the QP limit.

INTERTEK TESTING SERVICES

3.1.4 Transmitter Spurious Emissions (Radiated)

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.

Worst Case Radiated Emission
at
4812.000 MHz

Judgement: Passed by 8.0 dB

TEST PERSONNEL:

Sign on file

Chris Chen, Engineer
Typed/Printed Name

6 June, 2012
Date

INTERTEK TESTING SERVICES

Applicant: The Wiremold Company
Model: AUDMTM1S
Sample: 1/1
Worst Case Operating Mode: Transmit

Date of Test: 6 June, 2012

Table 2

Radiated Emissions

(2406.000MHz)

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	2406.000	92.7	36.7	28.5	84.5	114.0	-29.5
Vertical	4812.000	55.3	36.7	34.6	53.2	74.0	-20.8

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	2406.000	87.4	36.7	28.5	79.2	94.0	-14.8
Vertical	4812.000	48.1	36.7	34.6	46.0	54.0	-8.0

- Notes:
1. Peak detector Data unless otherwise stated. Above 1000 MHz, RBW=1MHz, VBW=3MHz is used for Peak measurement, RBW=1MHz, VBW=10Hz is used for Average measurement.
 2. All measurements were made at 3 meter. 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 is used for the emission over 1000MHz.

Test Engineer: Chris Chen

TRF No.: FCC 15C_TXb
FCC ID: O73-AUDMTM1S
Report No.: SZ12030584-5

INTERTEK TESTING SERVICES

Applicant: The Wiremold Company
Model: AUDMTM1S
Sample: 1/1
Worst Case Operating Mode: Transmit

Date of Test: 6 June, 2012

Table 3

Radiated Emissions

(2438.000MHz)

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	2438.000	92.3	36.7	28.5	84.1	114.0	-29.9
Vertical	4876.000	54.8	36.7	34.8	52.9	74.0	-21.1

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	2438.000	87.7	36.7	28.5	79.5	94.0	-14.5
Vertical	4876.000	47.6	36.7	34.8	45.7	54.0	-8.3

- Notes:
1. Peak detector Data unless otherwise stated. Above 1000 MHz, RBW=1MHz, VBW=3MHz is used for Peak measurement, RBW=1MHz, VBW=10Hz is used for Average measurement.
 2. All measurements were made at 3 meter. 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 is used for the emission over 1000MHz.

Test Engineer: Chris Chen

TRF No.: FCC 15C_TXb
FCC ID: O73-AUDMTM1S
Report No.: SZ12030584-5

INTERTEK TESTING SERVICES

Applicant: The Wiremold Company

Date of Test: 6 June, 2012

Model: AUDMTM1S

Sample: 1/1

Worst Case Operating Mode: Transmit

Table 4

Radiated Emissions

(2474.000MHz)

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	2474.000	91.5	36.7	28.6	83.4	114.0	-30.6
Vertical	4948.000	53.5	36.7	35.0	51.8	74.0	-22.2

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	2474.000	87.0	36.7	28.6	78.9	94.0	-15.1
Vertical	4948.000	46.5	36.7	35.0	44.8	54.0	-9.2

- Notes:
1. Peak detector Data unless otherwise stated. Above 1000 MHz, RBW=1MHz, VBW=3MHz is used for Peak measurement, RBW=1MHz, VBW=10Hz is used for Average measurement.
 2. All measurements were made at 3 meter. 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 is used for the emission over 1000MHz.

Test Engineer: Chris Chen

INTERTEK TESTING SERVICES

3.2 Conducted Emission at Mains Terminal

3.2.1 Conducted Emissions Configuration Photograph

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

3.2.2 Conducted Emissions

Worst Case Neutral-Conducted Configuration
at
0.509 MHz

Judgement: Passed by 13.4 dB margin

TEST PERSONNEL:

Sign on file

Chris Chen, Engineer
Typed/Printed Name

6 June, 2012
Date

INTERTEK TESTING SERVICES

Applicant: The Wiremold Company

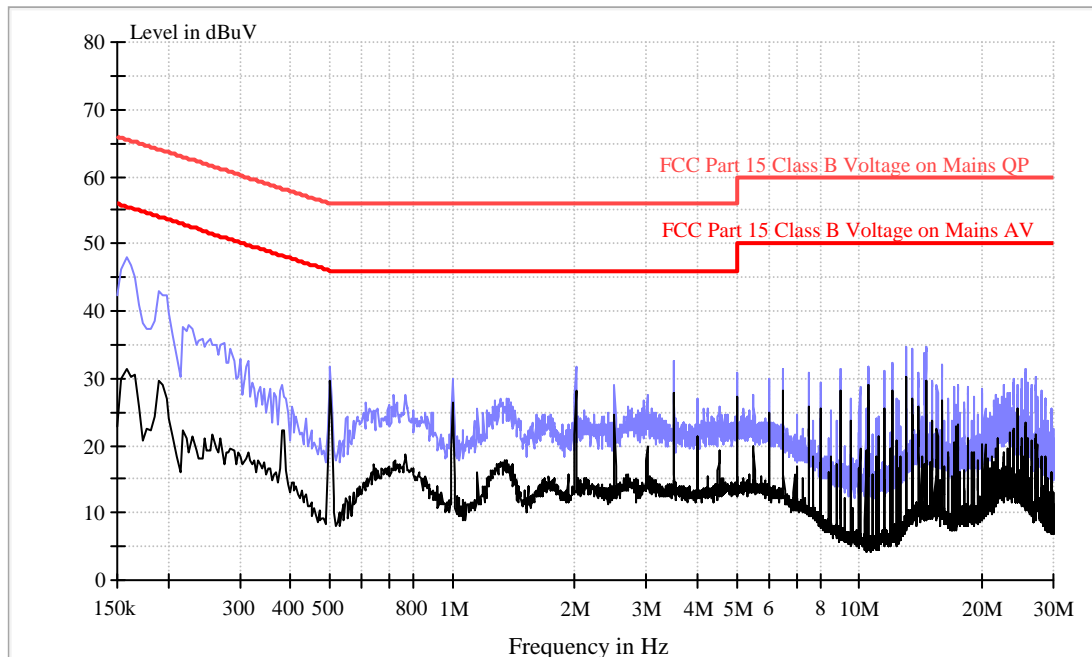
Date of Test: 6 June, 2012

Model: AUDMTM1S

Sample: 1/1

Worst Case Operating Mode: Transmit (2438MHz)

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.162	44.7	L1	10.2	20.4	65.1
0.506	30.2	L1	9.8	25.8	56.0
2.058	30.5	L1	9.6	25.5	56.0
3.506	33.1	L1	9.4	22.9	56.0
14.583	32.8	L1	9.3	27.2	60.0
16.054	34.2	L1	9.1	25.8	60.0

Result Table AV

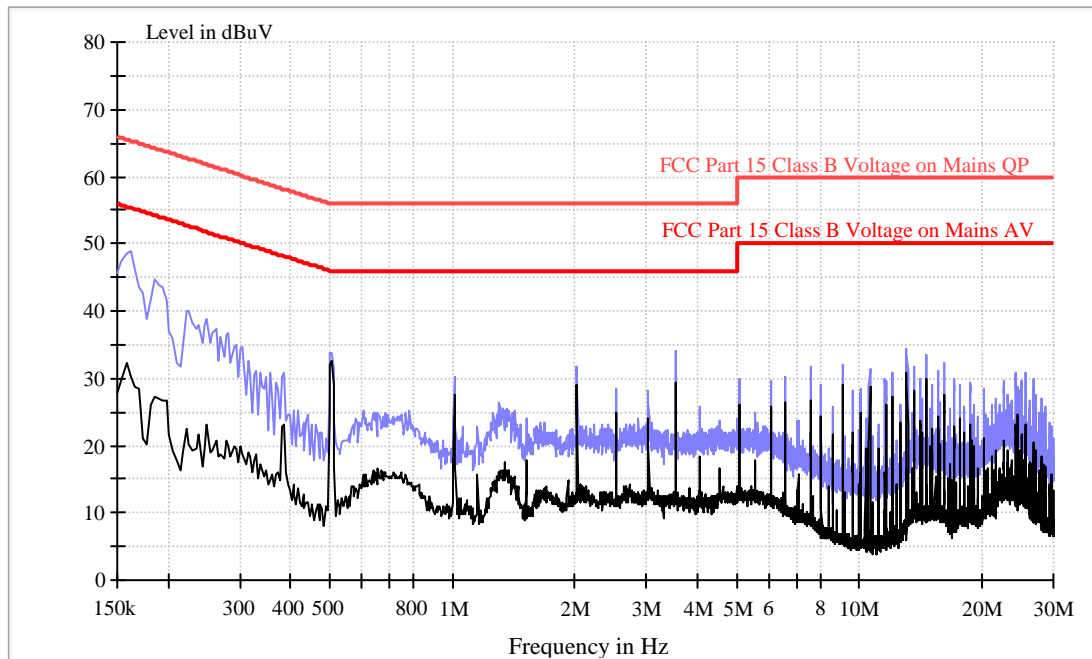
Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.162	31.7	L1	10.2	23.4	55.1
0.506	29.8	L1	9.8	16.2	46.0
2.058	28.4	L1	9.6	17.6	46.0
3.506	28.5	L1	9.4	17.5	46.0
14.583	30.5	L1	9.3	19.5	50.0
16.054	30.1	L1	9.1	19.9	50.0

INTERTEK TESTING SERVICES

Applicant: The Wiremold Company
Model: AUDMTM1S
Sample: 1/1
Worst Case Operating Mode: Transmit (2438MHz)

Date of Test: 6 June, 2012

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.162	46.8	N	10.2	18.3	65.1
0.509	33.1	N	9.8	22.9	56.0
2.056	30.5	N	9.6	25.5	56.0
3.568	32.6	N	9.4	23.4	56.0
14.125	33.5	N	9.3	26.5	60.0
16.523	32.5	N	9.2	27.5	60.0

Result Table AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.162	32.3	N	10.2	22.8	55.1
0.509	32.6	N	9.8	13.4	46.0
2.056	29.2	N	9.6	16.8	46.0
3.568	29.1	N	9.4	16.9	46.0
14.125	30.9	N	9.7	19.1	50.0
16.523	31.2	N	9.2	18.8	50.0

TRF No.: FCC 15C_TXb
FCC ID: O73-AUDMTM1S
Report No.: SZ12030584-5

INTERTEK TESTING SERVICES

EXHIBIT 4

EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

4.0 Equipment Photographs

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

EXHIBIT 5
PRODUCT LABELLING

INTERTEK TESTING SERVICES

5.0 **Product Labelling**

For electronic filing, the FCC ID label artwork and the label location are 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 schematics of the tested EUT 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.

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

INTERTEK TESTING SERVICES

EXHIBIT 8

MISCELLANEOUS INFORMATION

INTERTEK TESTING SERVICES

8.0 **Miscellaneous Information**

This miscellaneous information includes details of the measured bandedge and the test procedure.

INTERTEK TESTING SERVICES

8.1 Bandedge Plot

For electronic filing, the plot shows the fundamental emission when modulated is saved with filename: be.pdf. From the plot, the field strength of any emissions outside of the specified frequency band are attenuated to the general radiated emission limits in section 15.209. It fulfils the requirement of 15.249(d).

Peak Measurement

Bandedge compliance is determined by applying marker-delta method, i.e (Bandedge Plot).

(i) Lower channel 2406.000MHz:

Peak Resultant field strength = Fundamental emissions (peak value) – delta
from the bandedge plot

$$\begin{aligned} &= 84.50 \text{ dB}\mu\text{v/m} - 33.74 \text{ dB} \\ &= 50.76 \text{ dB}\mu\text{v/m} \end{aligned}$$

Average Resultant field strength = Fundamental emissions (Average value) –
delta from the bandedge plot

$$\begin{aligned} &= 79.2 \text{ dB}\mu\text{v/m} - 33.74 \text{ dB} \\ &= 45.46 \text{ dB}\mu\text{v/m} \end{aligned}$$

(ii) Upper channel 2474.000MHz:

Peak Resultant field strength = Fundamental emissions (peak value) – delta
from the bandedge plot

$$\begin{aligned} &= 83.40 \text{ dB}\mu\text{v/m} - 26.95 \text{ dB} \\ &= 56.45 \text{ dB}\mu\text{v/m} \end{aligned}$$

Average Resultant field strength = Fundamental emissions (Average value) –
delta from the bandedge plot

$$\begin{aligned} &= 78.90 \text{ dB}\mu\text{v/m} - 26.95 \text{ dB} \\ &= 51.95 \text{ dB}\mu\text{v/m} \end{aligned}$$

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).

INTERTEK TESTING SERVICES

8.1 Bandedge Plot (cont'd)

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 excepted variations in temperature and supply voltage were considered.

Figure 8.1 Bandwidth

INTERTEK TESTING SERVICES

8.2 Emissions Test Procedures

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

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2009.

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 axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions above 1GHz is in peak mode and Quasi-Peak mode is used below 1GHz.

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.

INTERTEK TESTING SERVICES

8.2 Emissions Test Procedures (cont'd)

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 are made as described in ANSI C63.4 - 2009.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz. 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 restricted 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, but those measurements taken at a closer distance are so marked.

INTERTEK TESTING SERVICES

EXHIBIT 9

CONFIDENTIALITY REQUEST

INTERTEK TESTING SERVICES

9.0 **Confidentiality Request**

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

EXHIBIT 10
TEST EQUIPMENT LIST

INTERTEK TESTING SERVICES

10.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	02-Jul-11	02-Jan-13
SZ185-01	EMI Receiver	R&S	ESCI	100547	11-Mar-12	11-Mar-13
SZ061-08	Horn Antenna	ETS	3115	00092346	15-Oct-11	15-Oct-12
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	11-Mar-12	11-Mar-13
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	11-Mar-12	11-Mar-13
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	11-Mar-12	11-Mar-13
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	03-Mar-12	03-Mar-13
SZ062-02	RF Cable	RADIAL	RG 213U	--	17-Mar-12	17-Sep-12
SZ062-06	RF Cable	RADIAL	0.04-26.5GHz	--	01-Nov-11	01-Nov-12
SZ062-12	RF Cable	RADIAL	0.04-26.5GHz	--	25-Feb-12	25-Aug-12
SZ067-04	Notch Filter	Micro-Tronics	BRM5070 2-02	--	15-Jul-11	15-Jul-12
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	05-Nov-11	05-Nov-12
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	05-Nov-11	05-Nov-12
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	05-Nov-11	05-Nov-12
SZ188-03	Shielding Room	ETS	RFD-100	4100	16-Sep-10	16-Sep-13