

EMC TEST REPORT

No. JSH007080377-003

Applicant : Pyramat LLC
16200-A Carmenita Rd., Cerritos, California,
90703, United States

Manufacturer : Xiamen Comfort Science and Technology Group
Co., Ltd.
No.18 Longshan South Road, Xiamen 361009,
China

Equipment : Sound Rocker Transmitter

Type/Model : FM Transmitter

SUMMARY

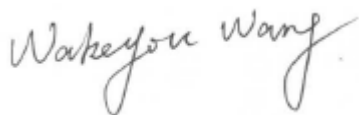
The equipment complies with the requirements according to the following standard(s):

47CFR Part 15 (2006): Radio Frequency Devices

ANSI C63.4 (2003): American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

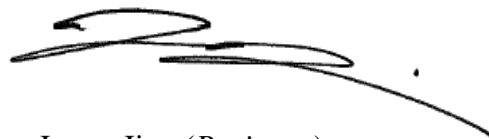
Date of issue: Oct 21, 2007

Tested by:



Wakeyou Wang (*Projector Engineer*)

Reviewed by:



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Description of Test Facility

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1. General Information

1.1 Applicant Information

Applicant: Pyramat LLC
16200-A Carmenita Rd., Cerritos, California,
90703, United States

Name of contact: Mr. Mike Hsia

Tel: 001-562-345-6058
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Manufacturer: Xiamen Comfort Science and Technology Group
Co., Ltd.
No.18 Longshan South Road, Xiamen 361009,
China

Sample received date : Sep 27, 2007
Date of test : Sep 27, 2007~ Oct 17, 2007

1.2 Identification of the EUT

Equipment: Sound Rocker Transmitter

Type/model: FM Transmitter

FCC ID: UJA0001B

1.3 Technical specification

Operation Frequency Band: 88MHz ~ 108MHz

Modulation: FM

Antenna Designation: Inter antennal, Non-User Replaceable (Fixed)

Gain of Antenna: 0.5dBi max.

Rating: Built-in Battery: DC 2*1.5V, 20mA

Description of EUT: The EUT is a transmitter to transmit audio signal to a sound rocker by wireless method. The audio signal generated by TV, DVD, VCR, satellite receiver and etc. is inputted into input terminal of EUT.

Channel Description:

There are 8 channels namely channel 1 to channel 8 which indicated by the LED light on the EUT. Here is the channel list:

| Channel | Central frequency (MHz) |
|---------|-------------------------|
| 1 | 106.5 |
| 2 | 106.7 |
| 3 | 106.9 |
| 4 | 107.1 |
| 5 | 107.3 |
| 6 | 107.5 |
| 7 | 107.7 |
| 8 | 107.9 |

We can see that the frequency band is less than 10MHz. As a result, the channel 1 and channel 8 were chosen to perform test as representative.

1.4 Mode of operation during the test / Test peripherals used

Within this test report, EUT was tested with modulation and tested under its rating voltage and frequency.

A iPod nano(2G) which was manufactured by “Apple Inc.” was used as test peripheral to generate 1kHz audio input signal.

2. Test Specification

2.1 Instrument list

| Equipment | Type | Manu. | Internal no. | Cal. Date | Due date |
|-------------------------|------------|-------------------|--------------|-----------|-----------|
| Test Receiver | ESIB 26 | R&S | EC 3045 | 2007-6-1 | 2008-5-31 |
| Ultra-broadband antenna | HL 562 | R&S | EC 3046-1 | 2007-6-1 | 2008-5-31 |
| Horn antenna | HF 906 | R&S | EC 3049 | 2007-6-1 | 2008-5-31 |
| Signal generator | SMR 20 | R&S | EC 3044-1 | 2007-8-22 | 2008-8-21 |
| Power meter | PM2002 | AR | EC3043-7 | 2007-1-23 | 2008-1-22 |
| Power sensor | PH2000 | AR | EC3043-8 | 2007-1-23 | 2008-1-22 |
| Semi-anechoic chamber | - | Albatross project | EC 3048 | 2007-6-1 | 2008-5-31 |
| Pre-amplifier | Pre-amp 18 | R&S | EC 3222 | 2007-6-1 | 2008-5-31 |
| Pre-amplifier | Pre-amp 40 | Beijing Radio 2 | - | 2007-3-4 | 2008-3-3 |
| Horn antenna | K638A | Beijing Radio 2 | - | 2007-3-4 | 2008-3-3 |
| A.M.N. | ESH2-Z5 | R&S | EC 3119 | 2007-1-23 | 2008-1-22 |
| Test Receiver | ESCS 30 | R&S | EC 2107 | 2007-1-23 | 2008-1-22 |

2.2 Test Standard

47CFR Part 15 (2006)

ANSI C63.4: 2003

2.3 Test Summary

This report applies to tested sample only. This report shall not be reproduced in part without written approval of Intertek Testing Service Shanghai Limited.

| TEST ITEM | FCC REFERANCE | RESULT |
|--|---------------|--------|
| Occupied bandwidth and frequency band range | 15.239(a) | Pass |
| Radiated emission within the permitted 200 kHz band | 15.239(b) | Pass |
| Radiated emission outside the permitted 200 kHz band | 15.239(c) | Pass |

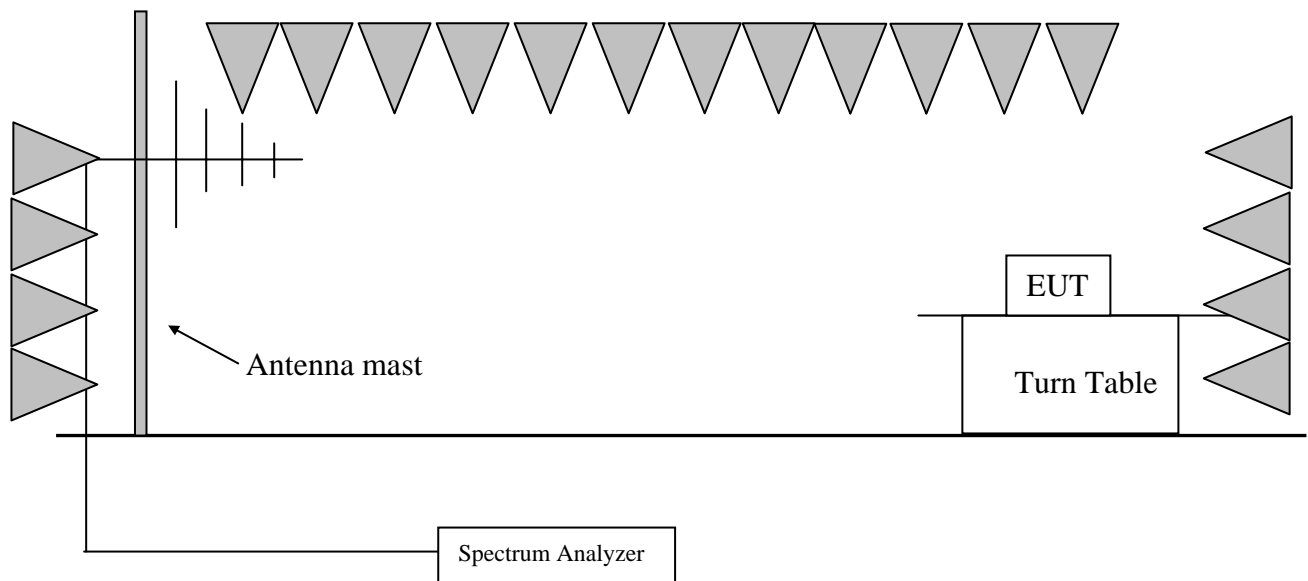
3. Occupied Bandwidth and frequency band range

Test result: PASS

3.1 Limit

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

3.2 Test Configuration



3.3 Test Procedure and test setup

The measurement was applied in a semi-anechoic chamber.

The EUT and simulators were placed on a 0.8m high wooden turntable above the horizontal metal ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna mast. The antenna moved up and down between from 1meter to 4 meters to find out the maximum emission level.

The occupied bandwidth per FCC §15.239(a) is measured using the ESIB 26 analyzer function with the resolutions bandwidth set at 10kHz, the video bandwidth set at 30kHz, and the SPAN>>RBW. The test was performed at 2 channels (lowest and highest channel).

3.4 Test Protocol

Temperature : 22°C
Relative Humidity : 43%

For occupied bandwidth

| Channel | Occupied Bandwidth (kHz) | Limit (kHz) | Margin (kHz) |
|------------|-----------------------------|----------------|-----------------|
| 1(lowest) | 81 | 200 | 119 |
| 8(highest) | 91 | 200 | 109 |

Remark: Margin = Limit - Bandwidth

For frequency band range

| Lowest frequency for Channel 1 (MHz) | Highest frequency for Channel 8 (MHz) | Limit (MHz) |
|---|--|----------------|
| 106.48 | 107.95 | 88 ~ 108 |

3.5 Measurement uncertainty

The measurement uncertainty is $\pm 100\text{Hz}$.

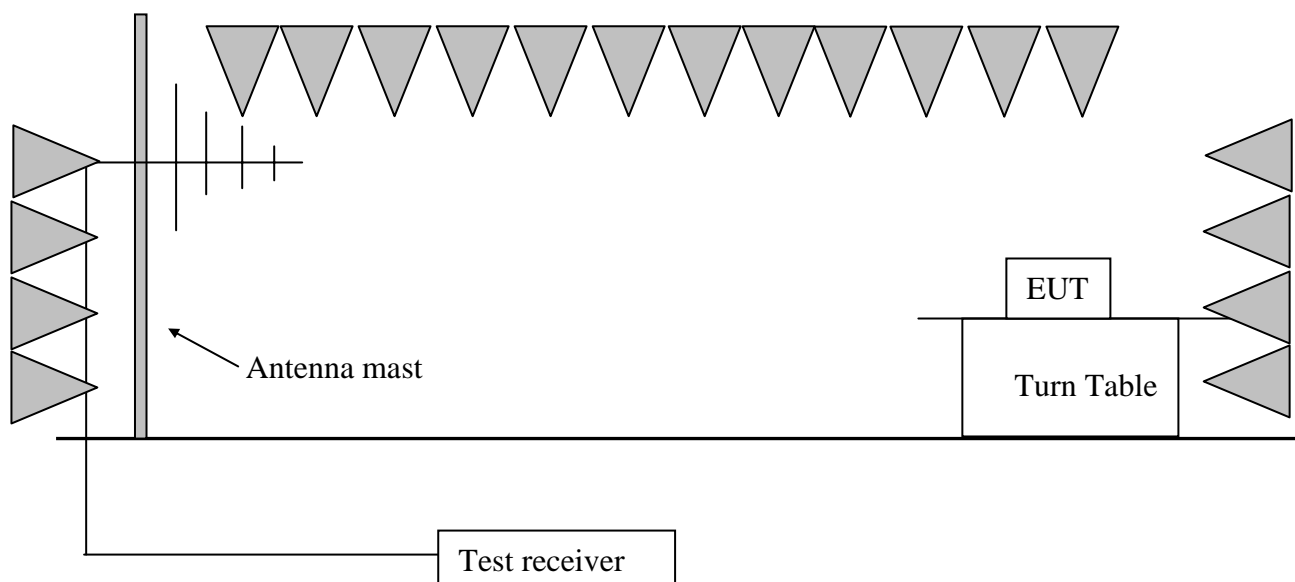
4. Radiated emission within the permitted 200 kHz band

Test result: **PASS**

4.1 Limit

| Frequency (MHz) | Field Strength (uV/m) | Field Strength (dBuV/m) | Measurement Distance (m) |
|--------------------|--------------------------|----------------------------|-----------------------------|
| 88 ~ 108 | 250.0 | 48 | 3 |

4.2 Test Configuration



4.3 Test Procedure and test setup

The measurement was applied in a semi-anechoic chamber. The EUT and simulators were placed on a 0.8m high wooden turntable above the horizontal metal ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna mast. The antenna moved up and down between from 1meter to 4 meters to find out the maximum emission level. The frequency from 30MHz to 1000MHz was checked and the detector bandwidth of the test receiver was set to 120kHz.

4.4 Test Protocol

Temperature : 22°C
Relative Humidity : 43%

| Channel | Antenna | Frequency (MHz) | Correct Factor (dB/m) | Corrected Reading (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|---------|---------|-----------------|-----------------------|----------------------------|----------------|-------------|
| 1 | H | 106.48 | 10.60 | 42.90 | 48.00 | 5.10 |
| 1 | V | 106.48 | 10.60 | 30.90 | 48.00 | 17.10 |
| 8 | H | 107.86 | 10.60 | 38.70 | 48.00 | 9.30 |
| 8 | V | 107.86 | 10.60 | 30.20 | 48.00 | 17.80 |

Remark: 1. Correct Factor = Antenna Factor + Cable Loss
2. Corrected Reading = Receiver Reading + Correct Factor
3. Margin = limit - Corrected Reading
4. Here the test was conducted with PK detector and the limit is AV limit. As a result, average reading is not necessary to be observed additionally.
5. For more details, please refer to the test data.

4.5 Measurement uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.

Measurement uncertainty of radiated emission is: $\pm 5.31\text{dB}$

The measurement uncertainty is given with a confidence of 95%, $k=2$.

The measurement uncertainty is traceable to internal procedure TI-036.

5. Radiated emission outside the permitted 200 kHz band

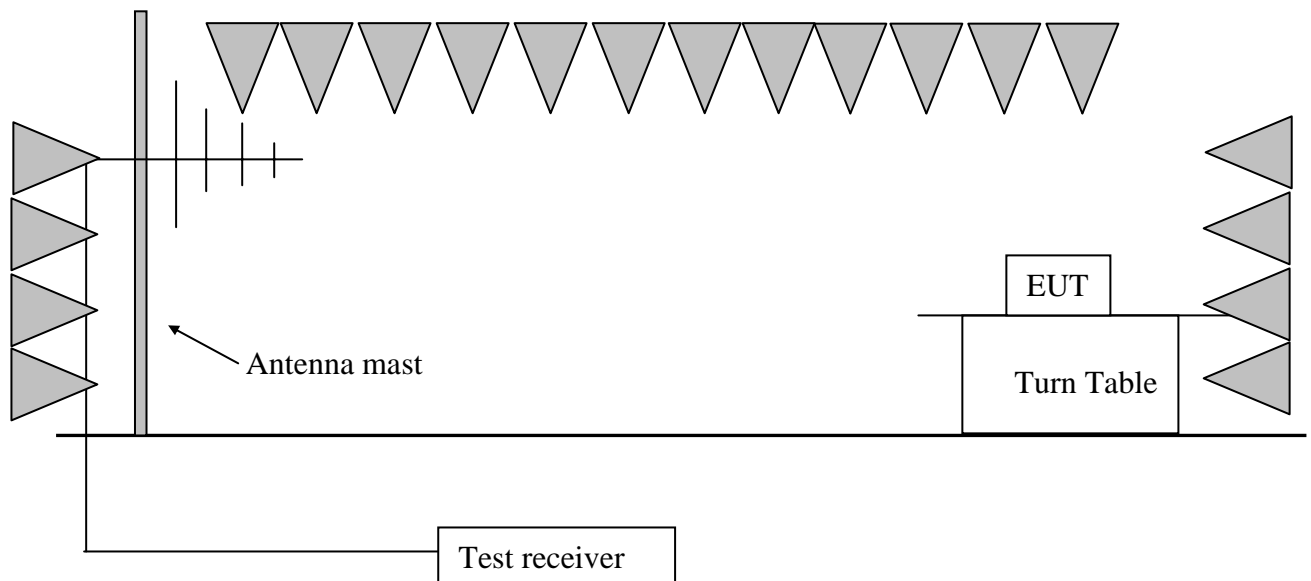
Test result: PASS

5.1 Limit

This radiated emission shall test through the 10th harmonic. It must comply with the radiated emission limits specified in §15.209(a) showed as below:

| Frequency (MHz) | Field Strength (dBuV/m) | Measurement Distance (m) |
|--------------------|----------------------------|-----------------------------|
| 30 - 88 | 40.0 | 3 |
| 88 - 216 | 43.5 | 3 |
| 216 - 960 | 46.0 | 3 |
| Above 960 | 54.0 | 3 |

5.2 Test Configuration



5.3 Test Procedure and test setup

The measurement was applied in a semi-anechoic chamber.

The EUT and simulators were placed on a 0.8m high wooden turntable above the horizontal metal ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna mast. The antenna moved up and down between from 1meter to 4 meters to find out the maximum emission level.

The frequency from 30MHz to 1000MHz was checked and the detector bandwidth of the test receiver was set to 120kHz; the frequency above 1GHz was checked and the detector bandwidth of the test receiver was set to 1MHz.

5.4 Test Protocol

Temperature : 22°C
Relative Humidity : 43%

For channel 1

| Channel | Antenna | Frequency (MHz) | Correct Factor (dB/m) | Corrected Reading (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|---------|---------|-----------------|-----------------------|----------------------------|----------------|-------------|
| 1 | H | 30.00 | 19.80 | 23.20 | 40.00 | 16.80 |
| 1 | V | 30.00 | 19.80 | 22.00 | 40.00 | 18.00 |
| 1 | H | 640.38 | 20.00 | 30.10 | 46.00 | 15.90 |
| 1 | V | 640.38 | * | * | * | * |
| 1 | H | 747.29 | 22.70 | 32.90 | 46.00 | 13.10 |
| 1 | V | 747.29 | * | * | * | * |
| 1 | H | 852.26 | 23.90 | 38.40 | 46.00 | 7.60 |
| 1 | V | 852.26 | * | * | * | * |
| 1 | H | 959.18 | 25.20 | 38.10 | 46.00 | 7.90 |
| 1 | V | 959.18 | 25.20 | 32.80 | 46.00 | 13.20 |

Remark: 1. Correct Factor = Antenna Factor + Cable Loss

2. Corrected Reading = Receiver Reading + Correct Factor

3. Margin = limit - Corrected Reading

4. For more details, please refer to the test data.

For channel 8

| Channel | Antenna | Frequency (MHz) | Correct Factor (dB/m) | Corrected Reading (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|---------|---------|-----------------|-----------------------|----------------------------|----------------|-------------|
| 8 | H | 214.67 | 9.80 | 26.00 | 43.50 | 17.50 |
| 8 | V | 214.67 | * | * | * | * |
| 8 | H | 648.16 | 20.00 | 33.50 | 46.00 | 12.50 |
| 8 | V | 648.16 | * | * | * | * |
| 8 | H | 757.01 | 22.70 | 34.80 | 46.00 | 11.20 |
| 8 | V | 757.01 | * | * | * | * |
| 8 | H | 863.93 | 24.10 | 36.70 | 46.00 | 9.30 |
| 8 | V | 863.93 | * | * | * | * |
| 8 | H | 972.79 | 25.50 | 36.50 | 54.00 | 17.50 |
| 8 | V | 972.79 | * | * | * | * |

Remark: 1. Correct Factor = Antenna Factor + Cable Loss

2. Corrected Reading = Receiver Reading + Correct Factor

3. Margin = limit - Corrected Reading

4. For more details, please refer to the test data.

5.5 Measurement uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.

Measurement uncertainty of radiated emission is: $\pm 5.31\text{dB}$

The measurement uncertainty is given with a confidence of 95%, $k=2$.

The measurement uncertainty is traceable to internal procedure TI-036.