

# EMI TEST REPORT

On Model Name: Cordless Bed monitor

Model Number : CBM-01

Trademark : RONDISH

FCC ID Number: WNGCBM-01

Prepared for RONDISH CO. LTD

According to FCC Part 15 (2007), Subpart B

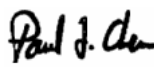
Test Report #: RON-0807-10018-FCC ID

Prepared by: Jawen Yin

Reviewed by: Ivan Wen

QC Manager: Paul Chen

Test Report Released by:



Paul Chen

October 7, 2008

Date

## List Attached Files

Exhibit Type	File Description	File Name
Test Report	Test Report	WNGCBM-01 _Test report.pdf
Operation Description	Technical Description	WNGCBM-01 _operation description.pdf
External Photos	External Photos	WNGCBM-01 _External Photos
Internal Photos	Internal Photos	WNGCBM-01 _Internal Photos
Block Diagram	Block Diagram	WNGCBM-01 _Block Diagram.pdf
Schematics	Circuit Diagram	WNGCBM-01 _Schematics.pdf
ID Label/Location	Label and Location	WNGCBM-01 _Label & Location.pdf
User Manual	User Manual	WNGCBM-01 _User Manual.pdf
Test setup photos	Test setup photos	WNGCBM-01 _Test Setup Photos

## Test Location

Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room.

Test Site Location: Guangdong Galanz Enterprise Co. Ltd

25 South Ronggui Rd., Shunde, Foshan,  
Guangdong, China

Tel : 86-757-23612785

Fax : 86-757-23612537

FCC Registration Number:580210

CNAS Number: L2244

## List of Test Instruments

Equipment	Manufacture	Model	Serial No.	Calibrated Untill
Spectrum Analyzer	R&S	FSP30	100755	2008-11-30
EMI Receiver	SCHAFFNER	SMR4503	11725	2009-07-08
LISN	ETS	1161	4825/2	2009-07-08
Double-ridged Wave guide horn	ETS	3115	6587	2010-08-02
Amplifier	Agilent	83017A	MY39500438	2009-07-11
Biconilog Antenna	ETS	3142C	00042672	2008-09-28
Semi-anechoic Chamber	ETS	N/A	N/A	2009-05-24

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### **Statement of Measurement Uncertainty**

The data and results referenced in the document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.

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## Administrative Data

Test Sample: Cordless Bed Monitor  
Model Number: CBM-01  
Model Tested: CBM-01  
Brand name: RONDISH  
Date Tested: 2008, Aug. 21  
Applicant: RONDISH CO. LTD  
UNIT G & H, 4/F, BLOCK 1, KWAI TAK IND. CTR,  
15-33 KWAI TAK ST., KWAI CHUNG, N.T. HONG KONG  
Telephone : + 0852 -25431955  
Fax : + 0852 -25417411  
Manufacturer : RONDISH CO. LTD

## EUT Description

RONDISH CO. LTD Model number CBM-01 (referred to as the EUT in this test report) is a Cordless Bed monitor, Technical Specification as below:

### Specification:

Receiver Frequency: 433.92MHz±0.5

Power Supply: 9Vdc

Dimensions: 110x77x 28mm.

### Ports descriptions:

RJ11:

Alternatively, this monitor can be operated with a standard wired pad having a cable with four pin RJ11 plug via the four pin RJ11 socket

Power Port:

Through 9Vdc regulated ac Mains adaptor.

Detailed refer to user manual.

*EMC Test Report #: RON-0807-10018-FCC ID*

*Prepared for RONDISH CO. LTD*

*Prepared by ECMG Worldwide Certification Solution Inc*

*Page 1 of 21*

## Test Summary

The Electromagnetic Compatibility requirements on CBM-01 for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment Under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Test Summary			
Reference FCC Part 15 (2007), Subpart B			
Specification	Description	Test Results	Remark
FCC Part 15, Class B , ANSI C63.4 2003	Conducted Emission Test	Pass	Attachment 1
FCC Part 15, Class B , ANSI C63.4 2003	Radiated Emission Test	Pass	Attachment 2

## EUT Exercise Software

The device is not programmable and does not use software.

## Equipment Modification

Any modifications installed previous to testing by RONDISH CO. LTD will be incorporated in each production model sold or leased in United States.

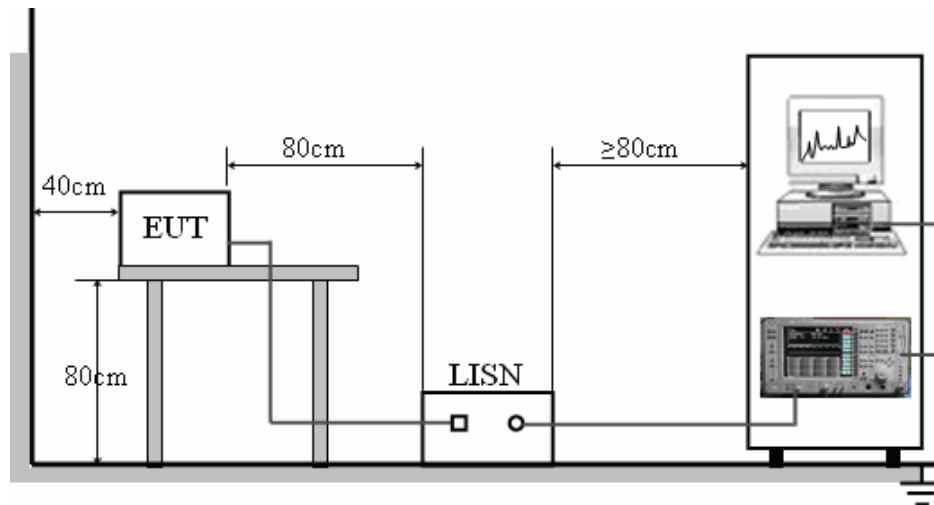
There were no modifications installed by ECMG Worldwide Certification Solution Inc (China) test personnel.

## Test System Details

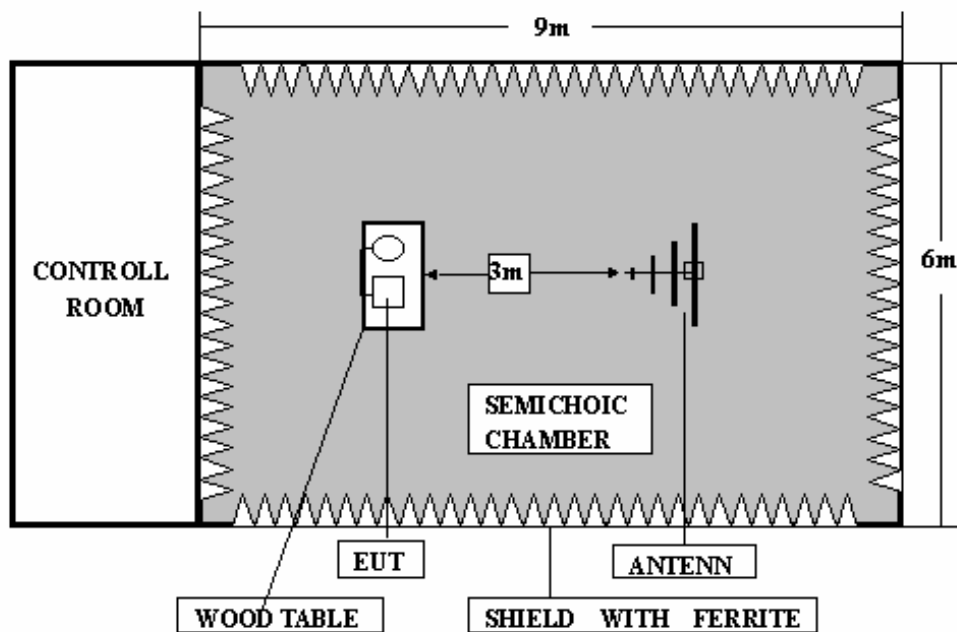
EUT					
<b>Model Number:</b>	CBM-01				
<b>Model Tested:</b>	CBM-01				
<b>Trademark:</b>	RONDISH				
<b>Serial Number:</b>	Engineering Sample				
<b>Input Voltage:</b>	9.0V dc				
<b>Description:</b>	Cordless Bed monitor				
<b>Manufacturer:</b>	RONDISH CO. LTD				
Support Equipment					
Description	Model Number	Serial Number	Manufacturer		
AC-DC Adaptor	PDU3509-30	N/A	N/A		
Cable Description					
Description	From	To	Length (Meters)	Shielded (Y/N)	Ferrite (Y/N)
Adaptor Cables	EUT	Plug	1.6	N	N



## Configuration of Tested System



Conducted Emission Test set up



Radiated Emission Measurement set-up

## EUT Sample Photos



Front View of EUT



Back View of EUT

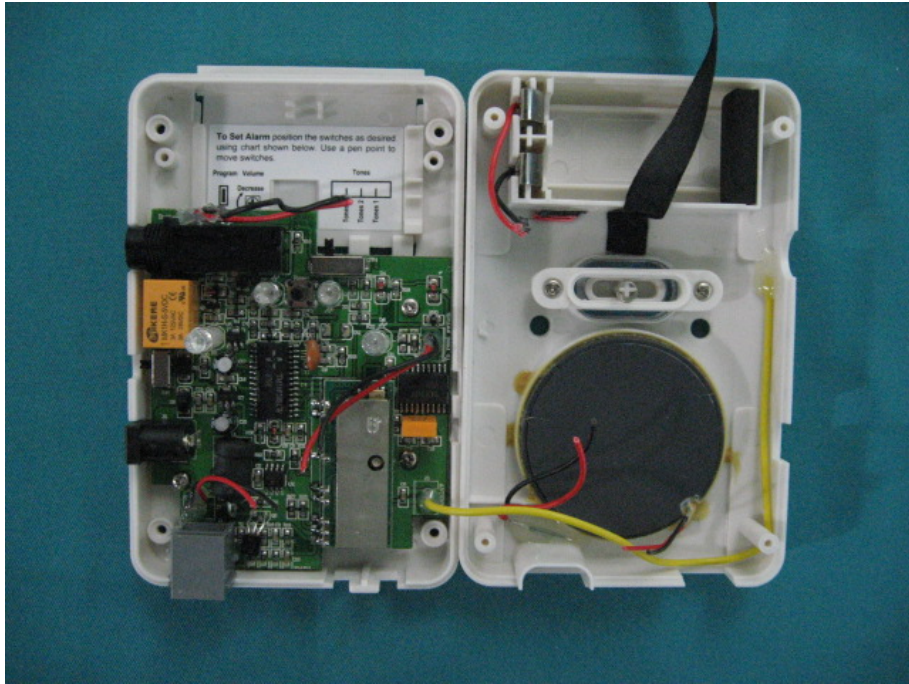


Side View of EUT

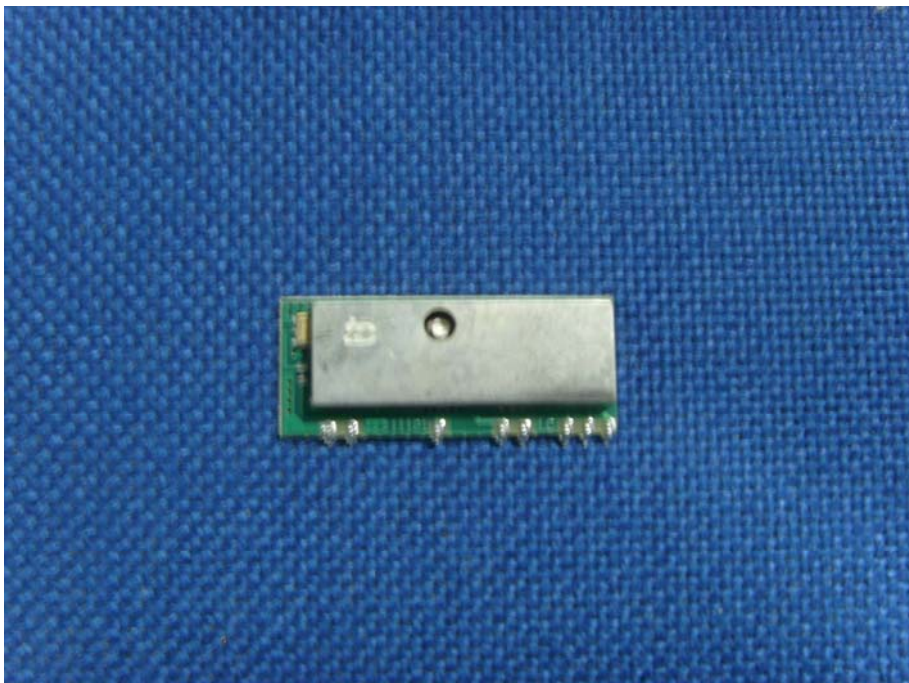


Top View of EUT

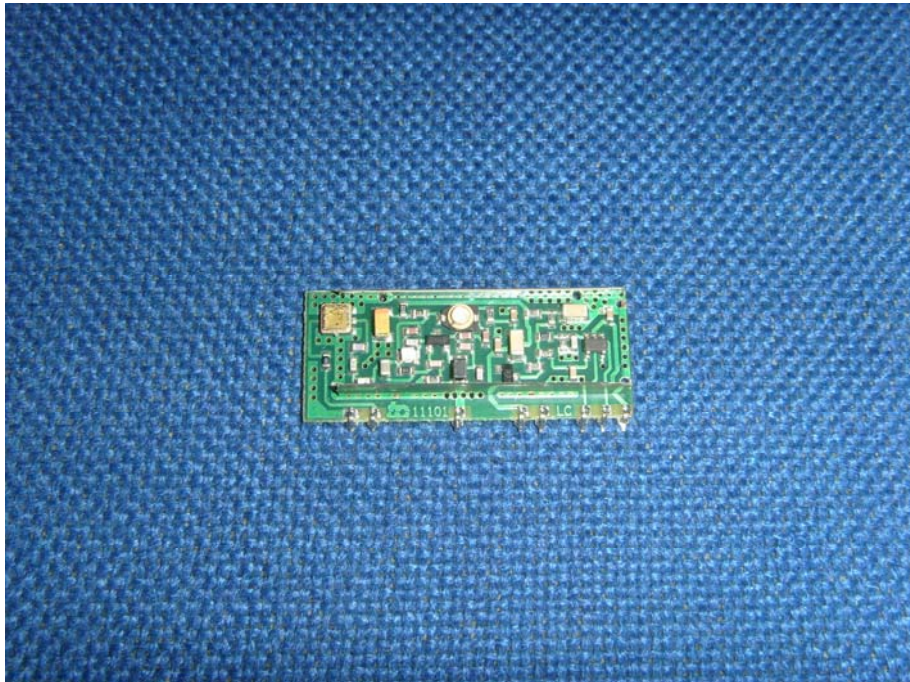




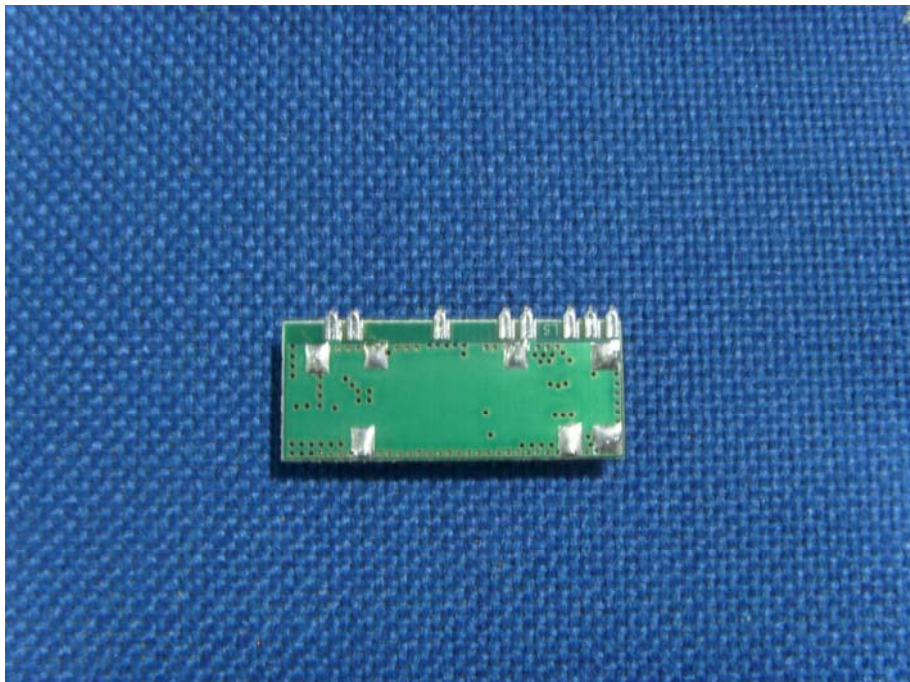
Uncovered View#1



Uncovered View#2



Uncovered View#3

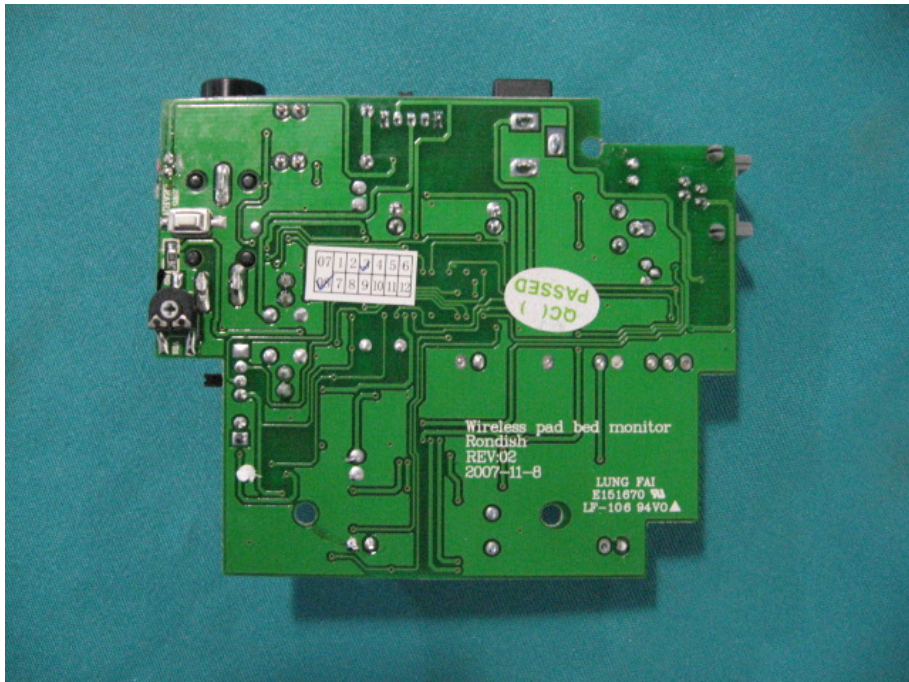


Uncovered View#4





Main Board View #1



Main Board View #2



Adaptor View

## ATTACHMENT 1 – AC Power Lines Conducted Emission Test

<b>CLIENT:</b>	RONDISH CO. LTD	<b>TEST STANDARD:</b>	FCC Part 15.107
<b>MODEL TESTED:</b>	CBM-01	<b>PRODUCT:</b>	Cordless Bed monitor
<b>SERIAL NO.:</b>	Engineering Sample	<b>EUT DESIGNATION:</b>	Receiver
<b>TEMPERATURE:</b>	21°C	<b>HUMIDITY:</b>	55%RH
<b>ATM PRESSURE:</b>	101.8 kPa	<b>GROUNDING:</b>	No Grounding
<b>TESTED BY:</b>	Jawen Yin	<b>DATE OF TEST:</b>	2008, Aug. 21
<b>SETUP METHOD:</b>	ANSI C63.4: 2003		
<b>ANTENNA REQUIREMENT:</b>	The EUT was set up according to the guideline of ANSI C63.4: 2003 for conducted emissions. The measurement was using a AMN on each line and an EMI receiver peak scan was made at the frequency measurement range. The six highest significant peaks were then marked, and these signals were then quasi-peaked and averaged. The frequency range investigated was from 150KHz to 30MHz.		
<b>TESTED RANGE:</b>	150kHz to 30MHz		
<b>TEST VOLTAGE:</b>	120VAC / 60Hz		
<b>RESULTS:</b>	<p>The EUT meets the requirements of test reference for Conducted Emissions on line N by 11.5 dB of Quasi-Peak.</p> <p>The test results relate only to the equipment under test provided by client.</p>		
<b>CHANGES OR MODIFICATIONS:</b>	There were no modifications installed by ECMG Worldwide Certification Solution Inc (China) test personnel.		
<b>M. UNCERTAINTY:</b>	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp $\pm 2.6$ dB		

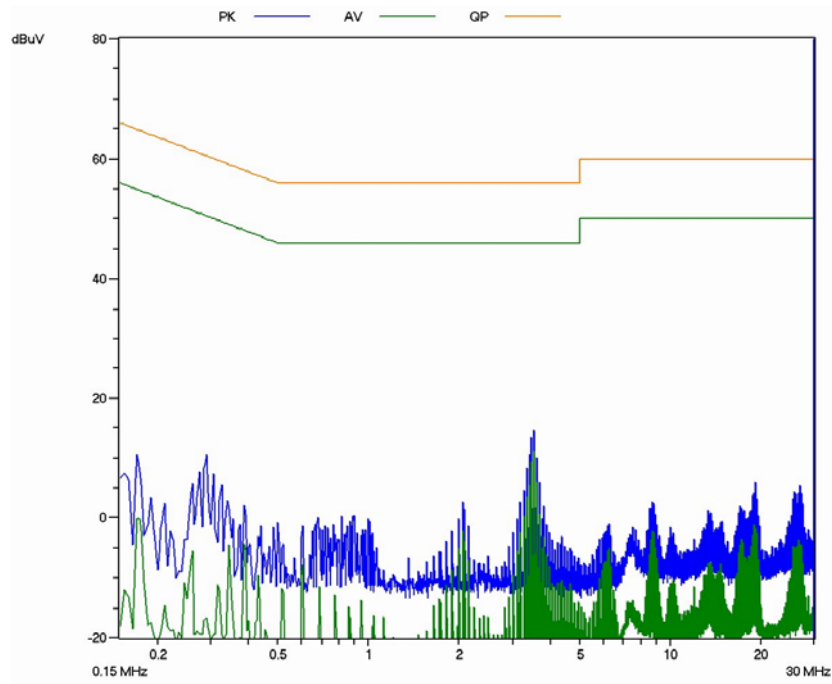


### 15.107 Conducted limit:

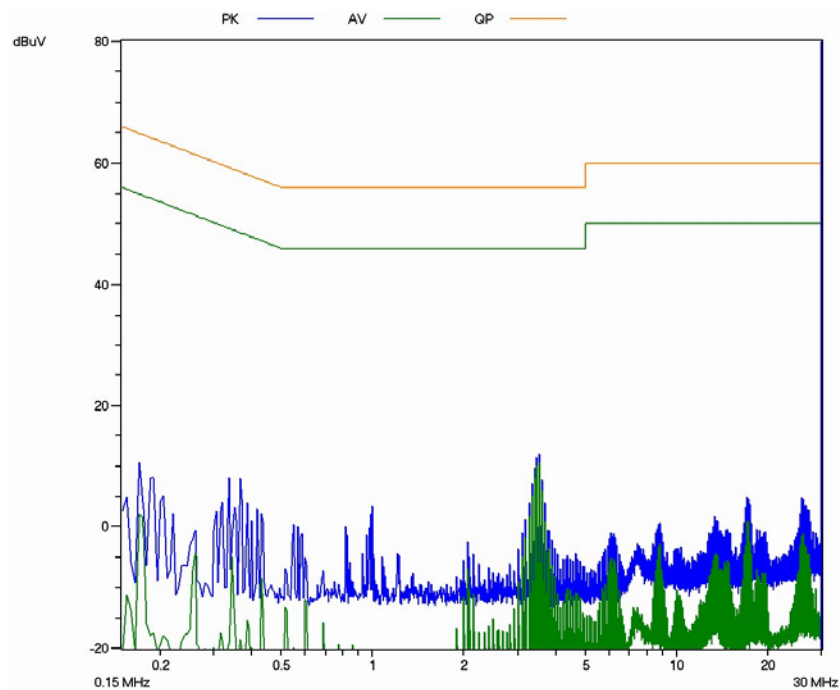
Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$  H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

1) The lower limit shall apply at the transition frequencies.  
2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz



**Line L Conducted Emission Graph**



**Line N Conducted Emission Graph**

## Test Data:

Line	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV)	Margin (dB)
L	0.190	25.0	64.0	-39.0	21.0	54.0	-33.0
L	0.254	20.5	61.6	-41.1	20.5	51.6	-31.1
L	1.590	15.6	56.0	-40.4	13.6	46.0	-32.4
N	0.190	21.2	64.0	-42.8	12.1	54.0	-41.9
N	0.254	41.5	61.6	-11.5	19.8	51.6	-31.8
N	1.650	39.2	56.0	-19.2	12.7	46.0	-33.3

1) All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.  
2) "QP" means "Quasi-Peak" values, "AV" means "Average" values.

## ATTACHMENT 2 - RADIATED EMISSION TEST RESULTS

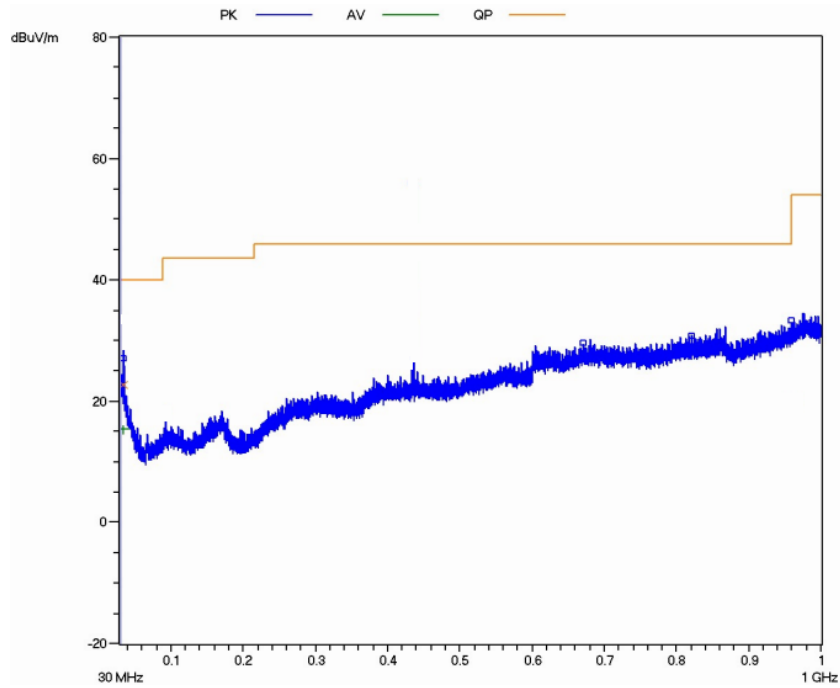
<b>CLIENT:</b>	RONDISH CO. LTD	<b>TEST STANDARD:</b>	FCC Part 15.109
<b>MODEL NUMBERS:</b>	CBM-01	<b>PRODUCT:</b>	Cordless Bed monitor
<b>EUT MODEL:</b>	CBM-01	<b>EUT DESIGNATION:</b>	Receiver
<b>TEMPERATURE:</b>	21°C	<b>HUMIDITY:</b>	55%RH
<b>ATM PRESSURE:</b>	101.6 kPa	<b>GROUNDING:</b>	No Grounding
<b>TESTED BY:</b>	Jawen Yin	<b>DATE OF TEST:</b>	2008, Aug. 21
<b>TEST REFERENCE:</b>	ANSI C63.4: 2003		
<b>TEST PROCEDURE:</b>	<p>The EUT was set up according to the guidelines of ANSI C63.4: 2003 for radiated emissions. An EMI receiver peak scan was made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination was then performed and the significant peaks marked. These peaks were then quasi-peaked in the frequency range of 30 MHz to 1GHz at an Anechoic chamber. measurement are based on Peak value and Average value detector above 1GHz.,the bandwidth of Test Receiver was set at 1MHz .The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor are given as follows:</p> <p>FS= RA + AF + CF - AG</p> <p>Where: FS = Field Strength</p> <p>RA = Receiver Amplitude</p> <p>AF = Antenna Factor</p> <p>CF = Cable Attenuation Factor</p> <p>AG = Amplifier Gain</p>		
<b>TESTED RANGE:</b>	30MHz to 5,000MHz		
<b>TEST VOLTAGE:</b>	120VAC / 60Hz		
<b>RESULTS:</b>	<p>The EUT meets the requirements of test reference for Radiated Emissions</p> <p>The test results relate only to the equipment under test provided by client.</p>		
<b>CHANGES OR MODIFICATIONS:</b>	There were no modifications installed by ECMG Worldwide Certification Solution Inc. (China) test personnel.		
<b>M. UNCERTAINTY:</b>	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp $\pm 2.6$ dB		

### 15.109 Limits of Radiated Emission:

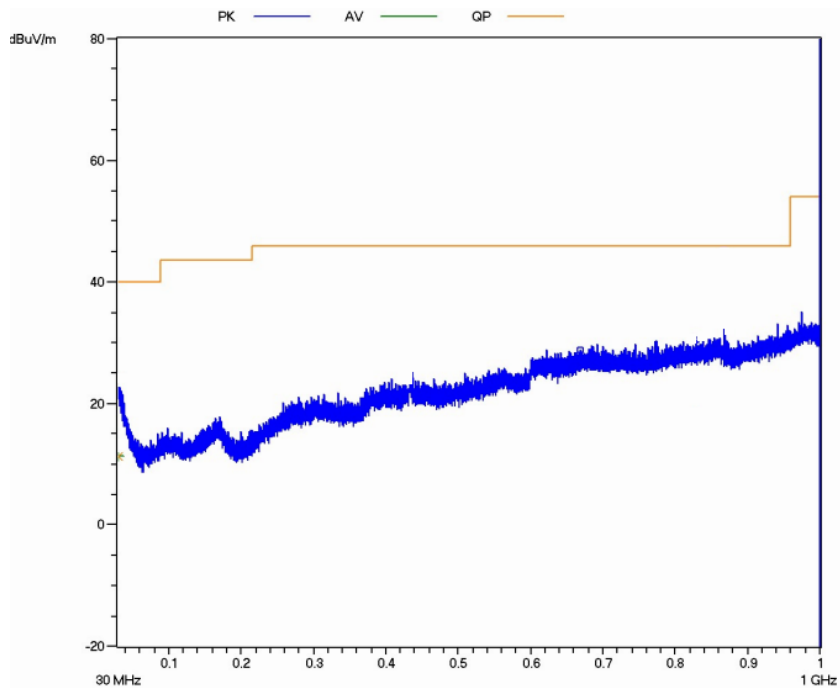
The field strength of radiated emissions at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength ( $\mu$ V/m)	Field Strength (dB $\mu$ V/m)
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

1) Emission Level dB ( $\mu$ V/m) = 20 log Emission Level ( $\mu$ V/m)  
2) The tighter limit applies at the band edges.  
3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.



**Radiated Emission Plot-Horizontal (below 1GHz)**



**Radiated Emission Plot-Vertical (below 1GHz)**



## Test Data:

### Below 1 GHz:

Frequency [MHz]	Antenna Polarization [V/H]	Corrected Reading [dB $\mu$ V/m]	Delta, QP [dB]	3 Meters Limits [dB $\mu$ V/m]
155.922	H	22.3	-21.2	43.5
858.096	H	31.8	-14.2	46.0
912.525	H	30.1	-15.9	46.0
77.973	V	17.6	-22.4	40.0
155.940	V	20.3	-23.2	43.5
432.384	V	14.5	-6.4	46.0

1) All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30ms sweep time. A video filter was not used.  
 2) Quasi-peaked in the frequency range of 30 MHz to 1GHz ,All other frequency are more than 20dB below the limit.

### Above 1 GHz:

Frequency [MHz]	Antenna Polarization [V/H]	Corrected Reading [dB $\mu$ V/m]	Delta [dB]	3 Meters Limits [dB $\mu$ V/m]	Remark
1102.010	H	42.0	-12.0	54	AV
1404.525	H	40.0	-14.0	54	
2621.585	H	41.0	-13.0	54	
1102.010	V	43.0	-11.0	54	
2404.525	V	34.4	-19.6	54	
3621.585	V	34.3	-19.7	54	
1102.010	H	45.9	-28.1	74	PK
2404.525	H	55.8	-18.2	74	
2621.585	H	53.5	-20.5	74	
1102.010	V	51.2	-22.8	74	
2404.525	V	56.0	-18.0	74	
3621.585	V	57.2	-16.8	74	

1) The limits shown are based on Peak value and Average value detector above 1GHz.,the bandwidth of Test Receiver was set at 1MHz above 1GHz.  
 2) The emission levels that are 20dB below the official limit are not reported.

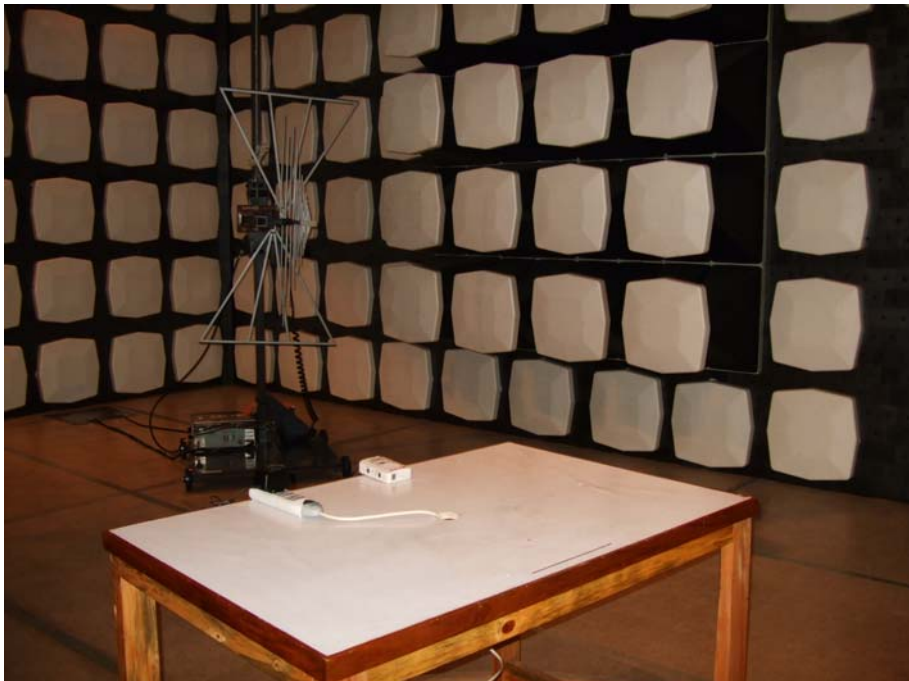


## ATTACHMENT 3 – Test Setup Photos

### 1) Conducted Emission Test Set up Photo



### 2) Radiated Emission Test Set up Photo-below 1GHz



### 3) Radiated Emission Test set up Photo-above 1GHz

