



National Testing And Inspection  
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## EMC TEST REPORT

Model Name: Multi-functional Back-up  
Charger for Cell Phone

Model Number: MR-BACUP-T10  
Prepared for Hangzhou Meiri Technologies  
Co.,Ltd.

According to FCC Part 15 Class B

FCC ID: VR6-MRTECH07001

*Test Report #:* 2007-0739

*Test Report Released By:* Lingjiaoping 2007.11.30  
*Manager* *Date*

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## Remarks

This report detail the result of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product .

This report may only be reproduced and distributed in full . If the product in this report is used in any configuration other than that detailed in this report, the manufacturer must ensure the new system complies with all relevant standards.

Any mention of TIRT EMC Services or testing done by TIRT EMC Services in connection with distribution or use of the product described in this report must be approved by TIRT EMC Services in writing.

## Administrative Data

Test Sample:	Multi-functional Back-up Charger for Cell Phone
Model Number:	MR-BACUP-T10
Brand Name:	N/A
Serial Number:	N/A
Applicant:	Hangzhou Meiri Technologies Co.,Ltd.
Address:	404Room Fangyuan Building, No.149 Yugu Road, Hangzhou China
Type of Deriver	N/A
Remark	N/A

## 1. Test Result

The Electromagnetic Compatibility requirements on MR-BACUP-T10 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.

Emission Tests				
Specifications	Description	Test Results	Test Point	Remark
ANSI C63.4 1992	Conducted Emission	Passed by 16.4 dB of QP	AC Input Port	Attachment 1
ANSI C63.4 1992	Radiated Emission	Passed by 2.4dB of QP	Enclosure	Attachment 2

## 2. Test Site

### 2.1 Test Location

Tests performed at EMC Compliance Management Group (China) in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

No.7B Jiuxianqiao Beilu, Chaoyang district, Beijing 100015 P.R. China

Tel: +86-10-64358401, 64333958

Fax: +86-10-64333398

<http://www.tirt.gov.cn>

E-mail: [emc@tirt.gov.cn](mailto:emc@tirt.gov.cn)



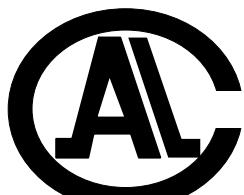
FCC Registration Number: **98114**



Nemko Registration Number: **ELA180**



(2003)量认(国)字(H2149)  
CMA Registration Number: **H2149**



(2003)国认监认字 (007)

*CNACL Registration Number: 007*

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## 2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Equipment	Type	Manufacture	S/N	Calibrated until
Test receiver (9k-30M)	ESH3	R/S	4220007	2008.09.06
EMI Test receiver (9kHz~2.9GHz)	8542E	HP	4210025	2008.02.18
Artificial mains network	ESH3-Z5	R/S	4220007	2008.11.01
Biconical Log periodic antenna(26~2000MHz)	3142B	EMCO/USA	9908-1410	2008.06.23
Auto-turntable/Auto-antenna tower/controller	1005/6	EMCO/USA	---	---
Anechoic Chamber	RFSD-F/A-100	ETS/EMCO	1812	2008.03.13
Shield Room	RFD-100	ETS/EMCO	1815	2008.03.13
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### **3. Description of the tested samples**

The EUT(Equipment under Test) is an adapter .

#### **3.1 Rating and Physical Characteristics**

Rated Voltage of AC : AC100-240V; 50/60Hz;80mA  
adapter

Rated Output voltage  
of AC adapter : DC5V

Rated Output current  
of AC adapter : 500mA

Protection class : II

#### **3.2 Sources of Interference**

#### **3.3 Noise Suppression Parts**

#### **3.4 Safety Mark**

All the models do not bear any safety mark. This report does not give any evidence on the safety aspect of this equipment.

#### **3.5 Submitted Documents**

## 4. Measurement Conditions

Room temperature : 25°C

TestSite temperature : 28°C

Relative Humidity : 47%

Atmospheric pressure : 100-106k Pa

### 4.1 Modes of Operation

The basic operation mode is Continuously print mode.

### 4.2 Test System Details

EUT				
Model Number: Trademark: Description: Manufacturer:	N/A			
Support Equipment				
Description	Model Number	FCC ID # or Serial Number	Manufacturer	Cable Description
resistance	10 Ω	-----	-----	-----
PC	PM1800	-----	DELL	USB
display	151S	-----	SUNSONG	VGA
keyboard	Pk-1411	-----	DELL	PS2
mouse	Pm-15	-----	DELL	USB
Cable Description				
From	To	Length (Meters)	Shielded (Y/N)	Ferrite Loaded (Y/N)
EUT	resistance	0.3	N	N

### 4.3 Abbreviations

PASS	means 'complied with requirement'
FAIL	means 'not complied with requirement'
N/A	means 'not applicable'
EUT	means 'equipment under test'

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## **ATTACHMENT 1 - CONDUCTED EMISSION TEST RESULTS**

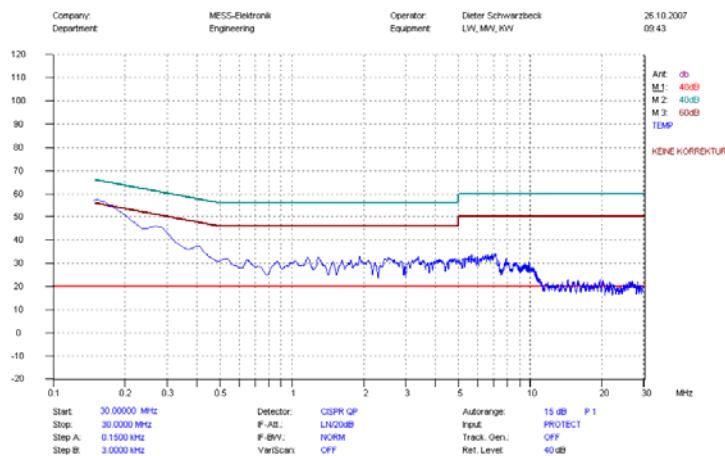
CLIENT:	HANGZHOU MEIRI TECHNOLOGIES CO.,LTD.	TEST REFERENCE:	FCC Part 15 Class B
EUT MODEL:	MR-BACUP-T10	PRODUCT:	MULTI-FUNCTIONAL BACK-UP CHARGER FOR CELL PHONE
SERIAL NO.:	None	EUT DESIGNATION:	Home or Office
TEMPERATURE:	25°C	HUMIDITY:	47%RH
ATM PRESSURE:	100-106 kPa	GROUNDING:	no
TESTED BY:	Zhang dejing	DATE OF TEST:	Nov 5, 2007
SETUP METHOD:	ANSI C63.4 - 1992, CISPR 16-1:1993		
TEST PROCEDURE:	a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface. b. Connect EUT to the power mains through a line impedance stabilization network(LISN) c. The LISN provides 50ohm coupling impedance for the measuring instrument d. Both sides of AC line were checked for maximum conducted interference. e. The frequency range from 150KHz to 30MHz was searched. f. Set the test-receiver system to Peak Detect Function and Specified bandwidth. g. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.		
TESTED RANGE:	150kHz to 30MHz		
TEST VOLTAGE:	110VAC/60Hz		
RESULTS:	The EUT meets the requirements of test reference for Conducted Emissions on line L by 16.4 dB of Quasi-Peak detector on charg mode. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by National Testing and Inspection Center for TV & Radio Product (TIRT) test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp $\pm 2.6$ dB		

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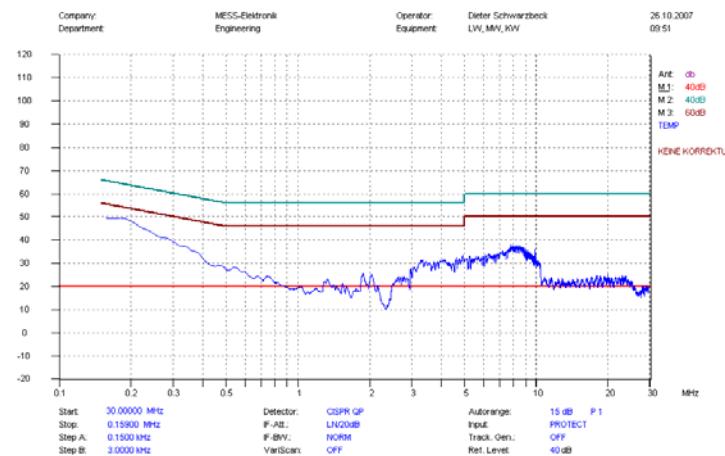
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**Figure 1: Test Curve of Mains Terminal Continuous Disturbance Voltage**



*Line L conducted emission graph*



*Line N conducted emission graph*

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Line L (Hot Lead)					
Signal	Frequency (MHz)	QP Level (dBuV)	AV Level (dBuV)	QP Limits (dBuV)	Margin (dB)
<b>1</b>	<b>0.15</b>	<b>49.6</b>	<b>20.2</b>	<b>66.0</b>	<b>16.4</b>
2	1.34	22.7	23.5	56.0	33.3
3	1.90	25.0	24.6	56.0	31.0
4	7.92	37.5	25.8	60.0	22.5
5	12.96	23.2	24.6	60.0	36.8
6	14.32	22.2	25.3	60.0	37.8
Line N (Neutral Lead)					
Signal	Frequency (MHz)	QP Level (dBuV)	AV Level (dBuV)	QP Limits (dBuV)	Margin (dB)
<b>1</b>	<b>0.15</b>	<b>49.4</b>	<b>20.5</b>	<b>66.0</b>	<b>16.6</b>
2	1.34	21.7	24.6	56.0	34.3
3	1.90	24.6	23.4	56.0	31.4
4	7.92	34.8	25.7	60.0	25.2
5	12.96	21.5	24.7	60.0	38.5
6	14.32	21.8	24.9	60.0	38.2

Note: All readings are using a bandwidth of 150 kHz, with a 30 ms sweep time. A video filter was not used.

*Model: MR-BACUP-T10*



*Maximized Conducted Emission Test Set-up*

TESTED BY: Zhang Dejing

REVIEWED BY: Wu Xiao

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## ATTACHMENT 2 - RADIATED EMISSION TEST RESULTS

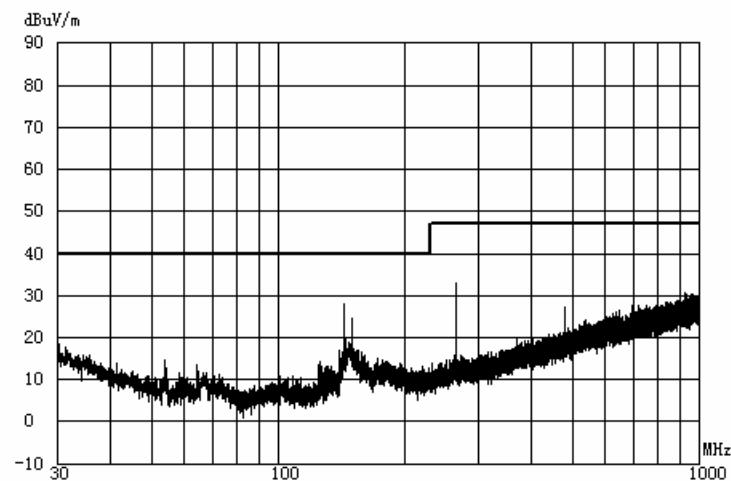
CLIENT:	HANGZHOU MEIRI TECHNOLOGIES CO.,LTD.	TEST REFERENCE:	FCC Part 15 Class B
EUT MODEL:	MR-BACUP-T10	PRODUCT:	MULTI-FUNCTIONAL BACK-UP CHARGER FOR CELL PHONE
SERIAL NO.:	None	EUT DESIGNATION:	Home or Office
TEMPERATURE:	25°C	HUMIDITY:	47%RH
ATM PRESSURE:	100-106 kPa	GROUNDING:	no
TESTED BY:	Zhang dejing	DATE OF TEST:	Nov 5, 2007
SETUP METHOD:	ANSI C63.4: 1992, CISPR 16-1:1993		
TEST PROCEDURE:	<p>a. The EUT was placed on a rotatable table with 0.8 meters above ground.</p> <p>b. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.</p> <p>c. The antenna was varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna were set to make measurement.</p> <p>d. For each suspected emission the EUT was arranged to its worst case and then change the antenna tower height (from 1M to 4M) and turn table (from 0 degree to 360 degree) to find the maximum reading.</p> <p>e. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise , the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.</p> <p>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>		
TESTED RANGE:	30MHz to 1,000MHz		
TEST VOLTAGE:	110VAC / 60Hz		
RESULTS:	The EUT meets the requirements of test reference for Radiated Emissions horizontal polarization by 2.4dB at 30.0 MHz on charg mode. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by National Testing and Inspection Center for TV & Radio Product (TIRT) test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp $\pm 2.6$ dB		
REMARK:	EUT is operated in charg mode.		

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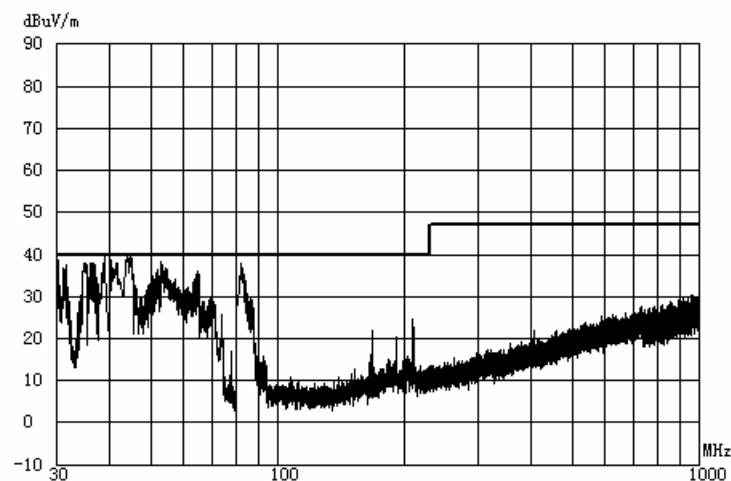
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**Figure2: Test data and limits of Radiated disturbance  
(30~1000MHz)**



*Horizontal radiated emission Plot (Peak, Max hold mode)*



*Vertical radiated emission Plot (Peak, Max hold mode)*

30MHz – 1GHz						
Horizontal						
Signal	Frequency (MHz)	QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	160.00	41.0	43.5	2.5	120	100
2	240.00	42.1	46.5	4.4	120	100
3	498.00	45.8	46.5	3.7	120	100
4	571.00	35.9	46.5	10.6	120	100
5	580.00	36.8	46.5	9.7	120	100
6	679.00	38.9	46.5	7.6	120	100
Vertical						
Signal	Frequency (MHz)	QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	30.00	37.6	40.0	2.4	180	100
2	45.00	37.4	40.0	2.6	180	100
3	81.00	36.9	43.5	6.6	180	100
4	178.96	20.2	43.5	23.3	120	100
5	198.20	20.0	43.5	23.5	120	100
6	204.33	25.4	43.5	18.1	120	100
Set-up/Configuration: ANSI C63.4:1992						
Comments: None						
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.						

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National Testing And Inspection Center For Radio & TV Products

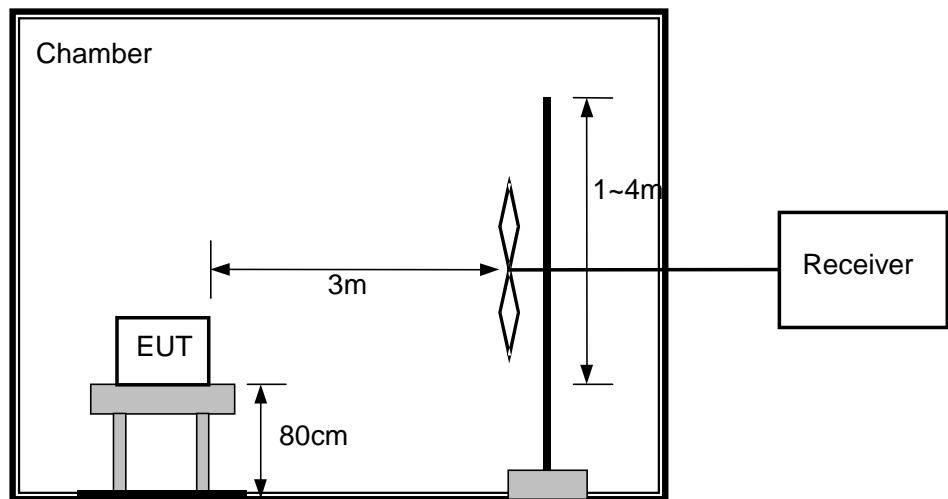
CLIENT:	HANGZHOU MEIRI TECHNOLOGIES CO.,LTD.	TEST REFERENCE:	FCC Part 15 Class B
EUT MODEL:	MR-BACUP-T10	PRODUCT:	MULTI-FUNCTIONAL BACK-UP CHARGER FOR CELL PHONE
SERIAL NO.:	None	EUT DESIGNATION:	Home or Office
TEMPERATURE:	25°C	HUMIDITY:	47%RH
ATM PRESSURE:	100-106 kPa	GROUNDING:	no
TESTED BY:	Zhang dejing	DATE OF TEST:	Nov 5, 2007
SETUP METHOD:	ANSI C63.4: 1992, CISPR 16-1:1993		
TEST PROCEDURE:	<p>a. The EUT was placed on a rotatable table with 0.8 meters above ground.</p> <p>b. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.</p> <p>c. The antenna was varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna were set to make measurement.</p> <p>d. For each suspected emission the EUT was arranged to its worst case and then change the antenna tower height (from 1M to 4M) and turn table (from 0 degree to 360 degree) to find the maximum reading.</p> <p>e. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise , the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.</p> <p>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>		
TESTED RANGE:	30MHz to 1,000MHz		
TEST VOLTAGE:	110VAC / 60Hz		
RESULTS:	The EUT meets the requirements of test reference for Radiated Emissions horizontal polarization by 3.5dB at 160.0 MHz on data reading and writing mode. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by National Testing and Inspection Center for TV & Radio Product (TIRT) test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp $\pm 2.6$ dB		
REMARK:	EUT is operated in data reading and writing.		

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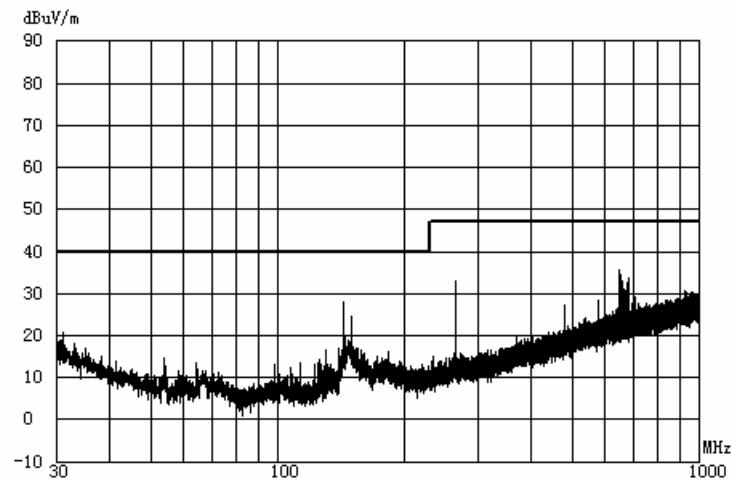
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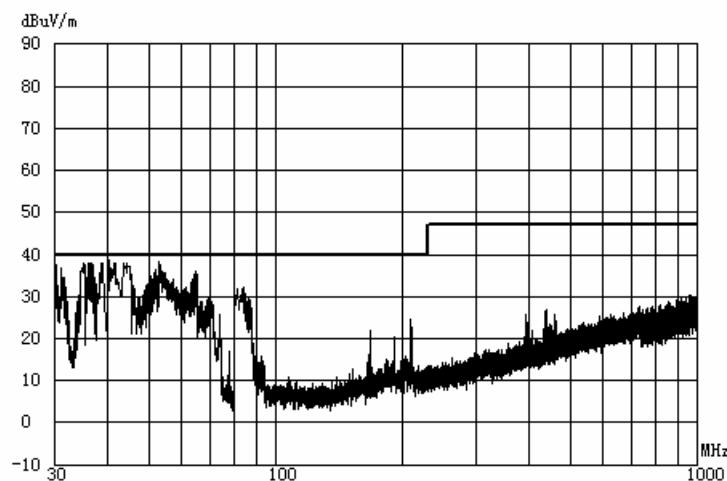
## TEST SETUP



**Figure3: Test data and limits of Radiated disturbance  
(30~1000MHz)**



*Horizontal radiated emission Plot (Peak, Max hold mode)*



*Vertical radiated emission Plot (Peak, Max hold mode)*

30MHz – 1GHz						
Horizontal						
Signal	Frequency (MHz)	QP Level dB(uV/m)	3Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	160.00	40.1	43.5	3.5	120	100
2	240.00	38.1	46.5	8.4	120	100
3	498.00	34.8	46.5	11.7	120	100
4	571.00	35.9	46.5	10.6	120	100
5	580.00	36.8	46.5	9.7	120	100
6	679.00	38.9	46.5	7.6	120	100
Vertical						
Signal	Frequency (MHz)	QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	30.00	34.3	40.0	5.7	180	100
2	45.00	35.6	40.0	4.4	180	100
3	81.00	34.6	43.5	8.9	180	100
4	178.96	21.3	43.5	22.2	180	100
5	198.20	20.6	43.5	22.9	180	100
6	204.33	26.5	43.5	17.0	180	100
Set-up/Configuration: ANSI C63.4:1992						
Comments: None						
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.						

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Prepared for Hangzhou Meiri Technologies Co.,Ltd.

National Testing And Inspection Center For Radio & TV Products

*Model: MR-BACUP-T10*



*Maximized Radiated Emission Test Set-up – Horizontal Polarization(charg mode)*

TESTED BY: \_\_\_\_\_

Zhang Dejing

REVIEWED BY: \_\_\_\_\_

Wu xiao

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National Testing And Inspection Center For Radio & TV Products

## 5. Photographs of the EUT



*Front View*



*Rear View*

*The end*

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