

APPLICATION FOR VERIFICATION  
On Behalf of  
Carewell Electric Technology (Zhongshan) Co., Ltd.

REMOTE CONTROL  
Model No.: AC8.3.T

FCC ID: 2AAZPAC83T

Prepared for : Carewell Electric Technology (Zhongshan) Co., Ltd.  
Address : Torch Development Zone, No.2, Ouya Road, Zhongshan,  
Guangdong, China

Prepared by : Accurate Technology Co., Ltd.  
Address : F1, Bldg. A&D, Changyuan New Material Port, Keyuan  
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Report No. : ATE20152511  
Date of Test : Dec 01-03,2015  
Date of Report : Dec 04,2015

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## Test Report Declaration

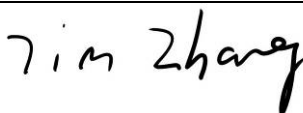

Applicant : Carewell Electric Technology (Zhongshan) Co., Ltd.  
Manufacturer : Carewell Electric Technology(Zhongshan)Co.,Ltd.  
EUT Description : REMOTE CONTROL  
(A) MODEL NO.: AC8.3.T  
(B) SERIAL NO.: N/A  
(C) POWER SUPPLY: AC 120V/60Hz

Measurement Procedure Used:

### **FCC Rules and Regulations Part 15 Subpart B ANSI C63.4: 2014**

The device described above is tested by Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Accurate Technology Co., Ltd.

Date of Test :	Dec 01-Dec 03,2015
Date of Report :	Dec 04,2015
Prepared by :	 (Tim.zhang, Engineer)
Approved & Authorized Signer :	 (Sean Liu, Manager)

## 1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Power Line Conducted Emission	FCC Part 15 Subpart B	Pass
Radiated Emission	FCC Part 15 Subpart B	Pass

## 2. GENERAL INFORMATION

### 2.1.Product of Device (EUT)

EUT	: REMOTE CONTROL
Model Number	: AC8.3.T
Power Supply	: AC 120V/60Hz
Modulation:	: ASK
Receiver Frequency	: 315MHz RX
Applicant	: Carewell Electric Technology (Zhongshan) Co., Ltd.
Address	: Torch Development Zone, No.2, Ouya Road, Zhongshan, Guangdong, China
Manufacturer	: Carewell Electric Technology(Zhongshan)Co.,Ltd.
Address	: Torch Development Zone, No.2, Ouya Road, Zhongshan, Guangdong, China
Date of sample received	: Dec 01, 2015
Date of Test	: Dec 01-03,2015

### 2.2.Accessory and Auxiliary Equipment

NA

## 2.3. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen, May 10, 2004

Listed by FCC

The Registration Number is 253065

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-1

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee for Laboratories

The Certificate Registration Number is L3193

Name of Firm : Accurate Technology Co., Ltd.

Site Location : F1, Bldg. A&D, Changyuan New Material Port, Keyuan Rd., Science & Industry Park, Nanshan District, Shenzhen 518057, P.R. China

## 2.4. Measurement Uncertainty

Conducted emission expanded uncertainty :  $U=2.23\text{dB}$ ,  $k=2$

Power disturbance expanded uncertainty :  $U=2.92\text{dB}$ ,  $k=2$

Radiated emission expanded uncertainty :  $U=3.08\text{dB}$ ,  $k=2$   
(9kHz-30MHz)

Radiated emission expanded uncertainty :  $U=4.42\text{dB}$ ,  $k=2$   
(30MHz-1000MHz)

Radiated emission expanded uncertainty :  $U=4.06\text{dB}$ ,  $k=2$   
(Above 1GHz)

### 3. MEASURING DEVICE AND TEST EQUIPMENT

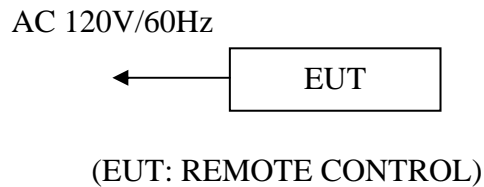
**Table 1: List of Test and Measurement Equipment**

Kind of equipment	Manufacturer	Type	S/N	Calibrated date	Calibrated until
EMI Test REMOTE CONTROL	Rohde&Schwarz	ESCS30	100307	Jan. 11, 2015	Jan. 10, 2016
EMI Test REMOTE CONTROL	Rohde&Schwarz	ESPI3	101526/003	Jan. 11, 2015	Jan. 10, 2016
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2015	Jan. 10, 2016
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 11, 2015	Jan. 10, 2016
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2015	Jan. 14, 2016
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2015	Jan. 14, 2016
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2015	Jan. 14, 2016
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 15, 2015	Jan. 14, 2016
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 11, 2015	Jan. 10, 2016
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 11, 2015	Jan. 10, 2016

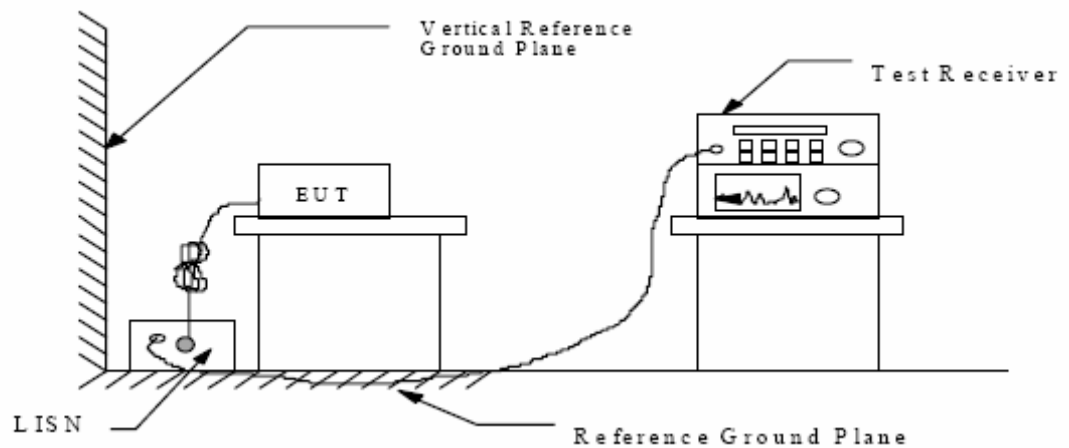
## 4. POWER LINE CONDUCTED MEASUREMENT

### 4.1. Block Diagram of Test Setup

#### 4.1.1. Block diagram of connection between the EUT and simulators



#### 4.1.2. Shielding Room Test Setup Diagram



(EUT: REMOTE CONTROL)

### 4.2. The Emission Limit

#### 4.2.1. Conducted Emission Measurement Limits According to Section 15.107(a)

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

\* Decreases with the logarithm of the frequency.



### 4.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

#### 4.3.1.REMOTE CONTROL (EUT)

Model Number: AC8.3.T

Serial Number: N/A

Manufacturer: Carewell Electric Technology (Zhongshan) Co., Ltd.

### 4.4. Operating Condition of EUT

4.4.1.Setup the EUT and simulator as shown as Section 4.1

4.4.2.Turn on the power of all equipment.

4.4.3.Let the EUT work in test mode and measure it.

### 4.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2014 on Conducted Emission Measurement.

The bandwidth of test REMOTE CONTROL (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

## 4.6. Power Line Conducted Emission Measurement Results

**PASS.**

Test Mode: RX								
<b>MEASUREMENT RESULT: "TB0106-6_fin"</b>								
2015-12-2 15:28								
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE	
0.150000	62.80	10.3	66	3.2	QP	L1	GND	
0.168000	61.80	10.5	65	3.3	QP	L1	GND	
1.020000	40.20	11.6	56	15.8	QP	L1	GND	
<b>MEASUREMENT RESULT: "TB0106-6_fin2"</b>								
2015-12-2 15:28								
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE	
0.150000	42.10	10.3	56	13.9	AV	L1	GND	
2.193500	16.70	11.7	46	29.3	AV	L1	GND	
19.158500	35.60	11.9	50	14.4	AV	L1	GND	
<b>MEASUREMENT RESULT: "TB0106-7_fin"</b>								
2015-12-2 15:31								
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE	
0.150000	61.70	10.3	66	4.3	QP	N	GND	
0.166000	62.40	10.4	65	2.8	QP	N	GND	
18.884000	46.30	11.9	60	13.7	QP	N	GND	
<b>MEASUREMENT RESULT: "TB0106-7_fin2"</b>								
2015-12-2 15:31								
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE	
0.166000	39.60	10.4	55	15.6	AV	N	GND	
2.225000	17.00	11.7	46	29.0	AV	N	GND	
19.239500	40.00	11.9	50	10.0	AV	N	GND	

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are shown in the following pages.

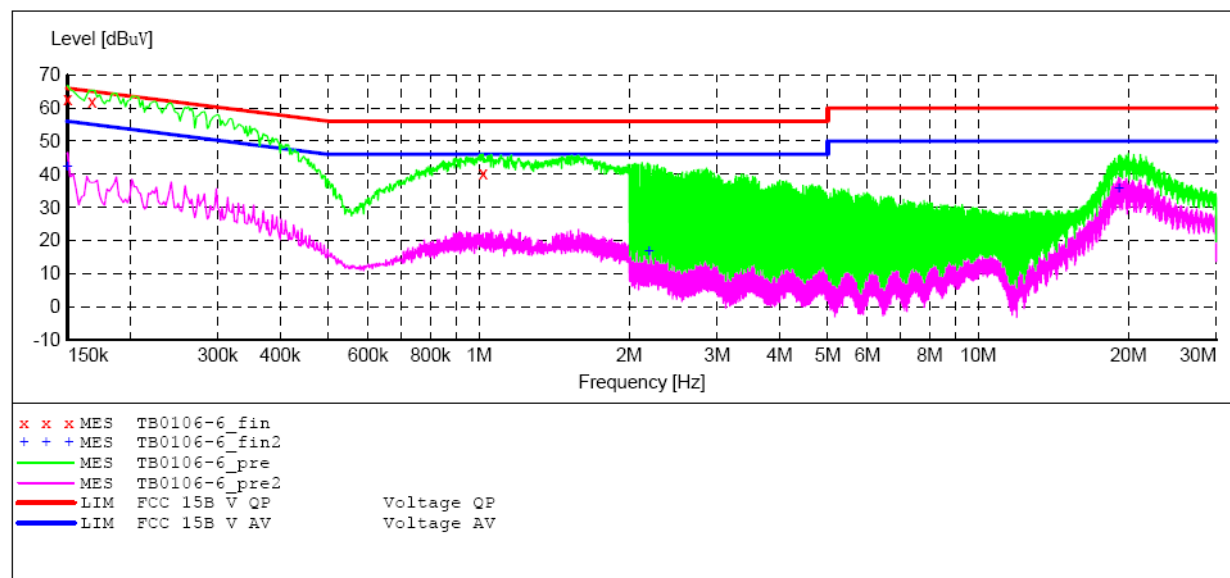
## ACCURATE TECHNOLOGY CO.,LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: REMOTE CONTROL M/N:AC8.3.T  
 Manufacturer: CAREWELL  
 Operating Condition: RX  
 Test Site: 1#Shielding Room  
 Operator: Ricky  
 Test Specification: L 120V/60Hz  
 Comment:  
 Report NO.:ATE20152511

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-Z5)  
 Average



### MEASUREMENT RESULT: "TB0106-6\_fin"

2015-12-2 15:28

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	62.80	10.3	66	3.2	QP	L1	GND
0.168000	61.80	10.5	65	3.3	QP	L1	GND
1.020000	40.20	11.6	56	15.8	QP	L1	GND

### MEASUREMENT RESULT: "TB0106-6\_fin2"

2015-12-2 15:28

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	42.10	10.3	56	13.9	AV	L1	GND
2.193500	16.70	11.7	46	29.3	AV	L1	GND
19.158500	35.60	11.9	50	14.4	AV	L1	GND

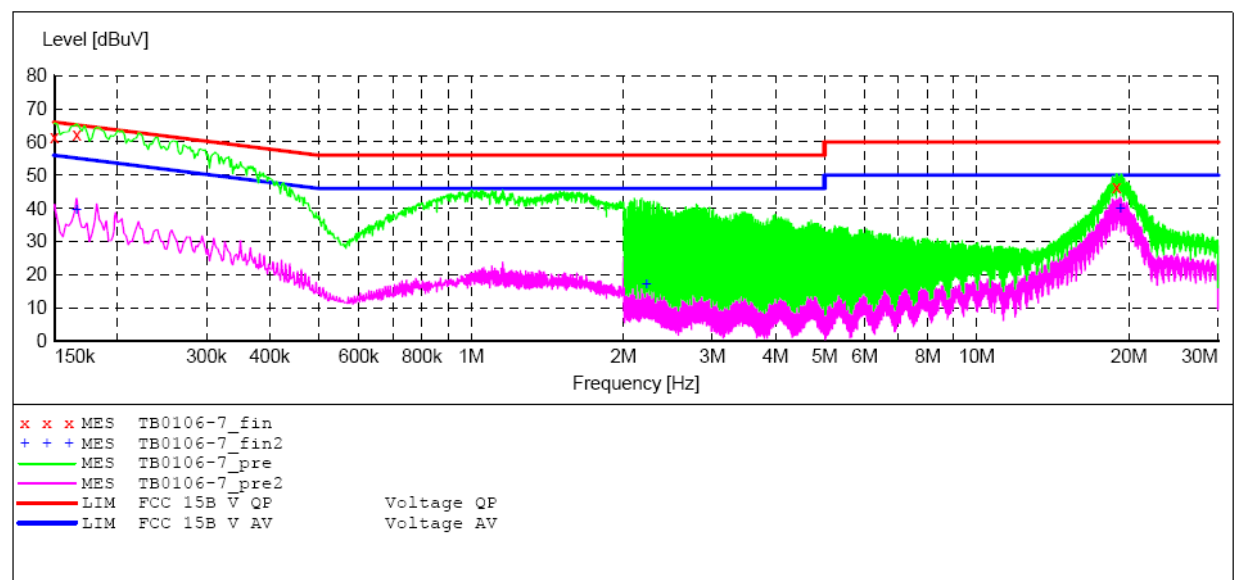
## ACCURATE TECHNOLOGY CO.,LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: REMOTE CONTROL M/N:AC8.3.T  
 Manufacturer: CAREWELL  
 Operating Condition: RX  
 Test Site: 1#Shielding Room  
 Operator: Ricky  
 Test Specification: N 120V/60Hz  
 Comment:  
 Report NO.:ATE20152511

#### SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-Z5)  
 Average



#### MEASUREMENT RESULT: "TB0106-7\_fin"

2015-12-2 15:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	61.70	10.3	66	4.3	QP	N	GND
0.166000	62.40	10.4	65	2.8	QP	N	GND
18.884000	46.30	11.9	60	13.7	QP	N	GND

#### MEASUREMENT RESULT: "TB0106-7\_fin2"

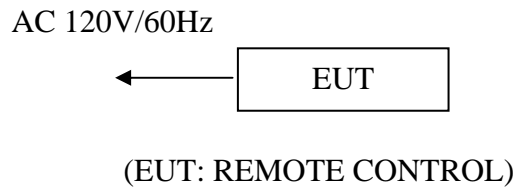
2015-12-2 15:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.166000	39.60	10.4	55	15.6	AV	N	GND
2.225000	17.00	11.7	46	29.0	AV	N	GND
19.239500	40.00	11.9	50	10.0	AV	N	GND

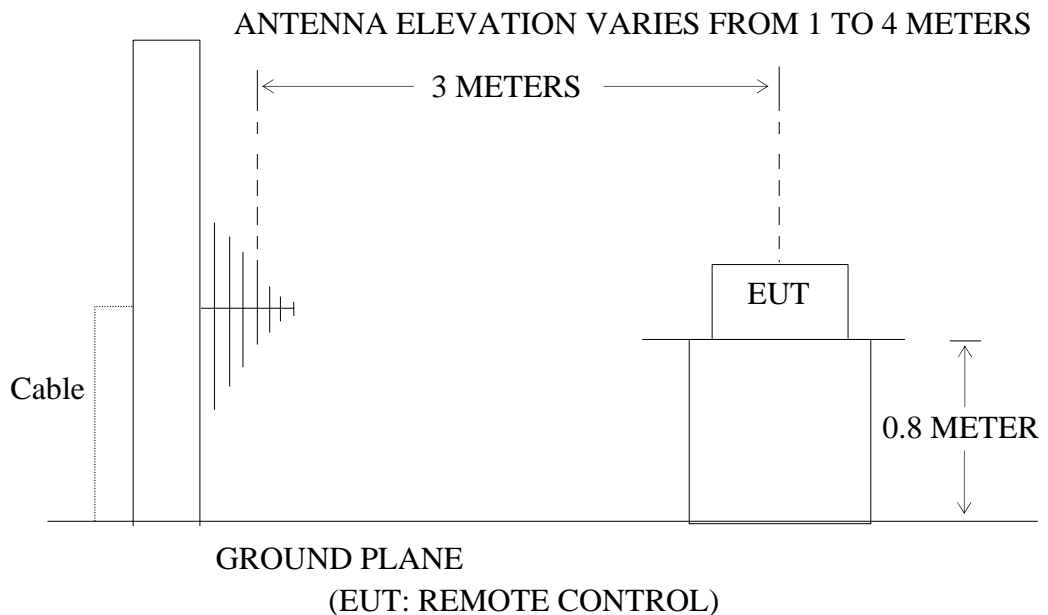
## 5. RADIATED EMISSION MEASUREMENT

### 5.1. Block Diagram of Test Setup

#### 5.1.1. Block diagram of connection between the EUT and simulators



#### 5.1.2. Semi-Anechoic Chamber Test Setup Diagram



## 5.2.The Emission Limit For Section 15.109 (a)

### 5.2.1.Radiation Emission Measurement Limits According to Section 15.109 (a).

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V/m})$
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
960-1000	3	500	54.0
Remark: (1) Emission level $\text{dB}(\mu\text{V}) = 20 \log$ Emission level $\mu\text{V/m}$ . (2)The smaller limit shall apply at the cross point between two frequency bands. (3)Distance is the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system.			

## 5.3.EUT Configuration on Measurement

The following equipment is installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 5.3.1.REMOTE CONTROL

Model Number: AC8.3.T

Serial Number: N/A

Manufacturer: Carewell Electric Technology (Zhongshan) Co., Ltd.

## 5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 4.2.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in test mode (Rx) and measure it.

## 5.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2014 on radiated emission measurement.

The bandwidth of the EMI test REMOTE CONTROL (R&S ESCS30) is set at

120kHz from 30MHz to 1000MHz.

The frequency range from 30MHz to 2000MHz is checked.

## 5.6.Radiated Emission Noise Measurement Result

**PASS.**

Model Number: AC8.3.T								
Test mode: RX								
Horizontal	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	154.2786	54.63	-15.11	39.52	43.50	-3.98	QP
	2	291.2906	53.03	-9.53	43.50	46.00	-2.50	QP
	3	381.2485	50.31	-7.32	42.99	46.00	-3.01	QP
Vertical	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	63.4401	50.88	-15.18	35.70	40.00	-4.30	QP
	2	154.2786	50.90	-15.11	35.79	43.50	-7.71	QP
	3	383.9318	47.40	-7.30	40.10	46.00	-5.90	QP
Above 1G								
Horizontal	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	1079.393	42.02	-12.80	29.22	74.00	-44.78	peak
	2	1413.232	41.82	-11.77	30.05	74.00	-43.95	peak
	3	1881.422	41.94	-9.62	32.32	74.00	-41.68	peak
Vertical	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	1013.988	41.80	-12.66	29.14	74.00	-44.86	peak
	2	1238.520	41.38	-12.45	28.93	74.00	-45.07	peak
	3	1823.529	42.82	-9.76	33.06	74.00	-40.94	peak



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

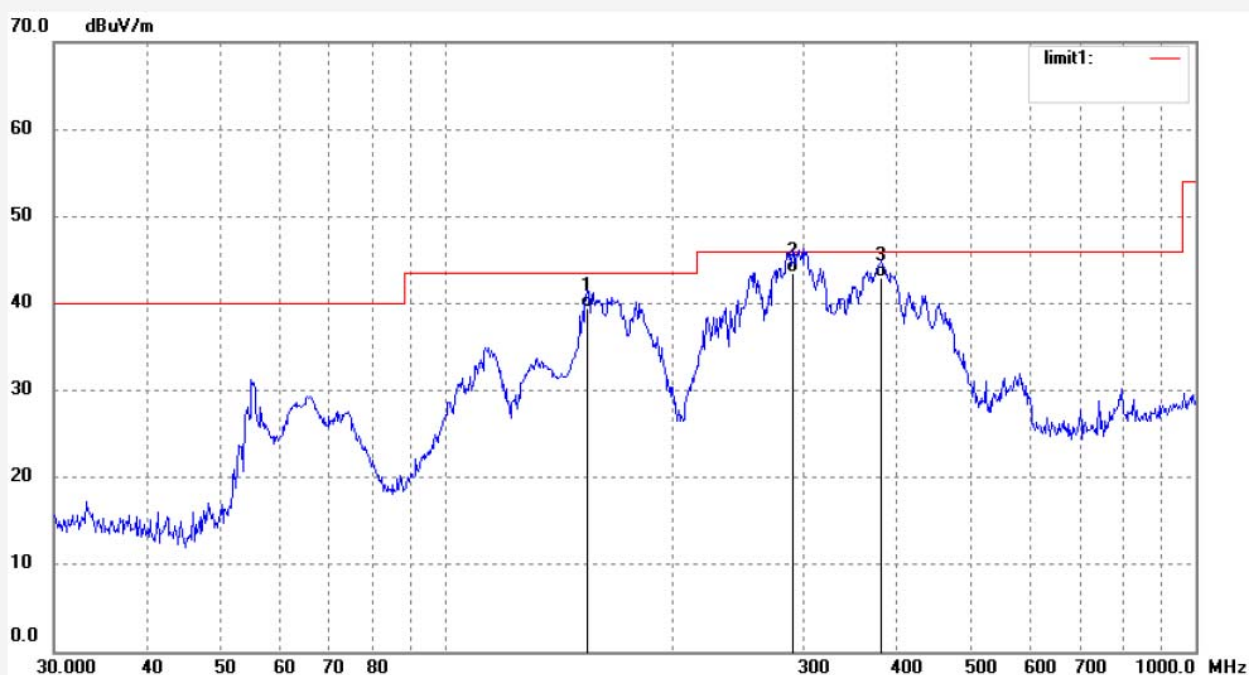
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: CAREWELL #11  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: REMOTE CONTROL  
Mode: RX  
Model: AC8.3.T  
Manufacturer: CAREWELL

Polarization: Horizontal  
Power Source: AC 120V/60Hz  
Date: 15/12/03/  
Time: 13/48/27  
Engineer Signature:Ricky  
Distance: 3m

Note: Report NO.:ATE20152511



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	154.2786	54.63	-15.11	39.52	43.50	-3.98	QP			
2	291.2906	53.03	-9.53	43.50	46.00	-2.50	QP			
3	381.2485	50.31	-7.32	42.99	46.00	-3.01	QP			





## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

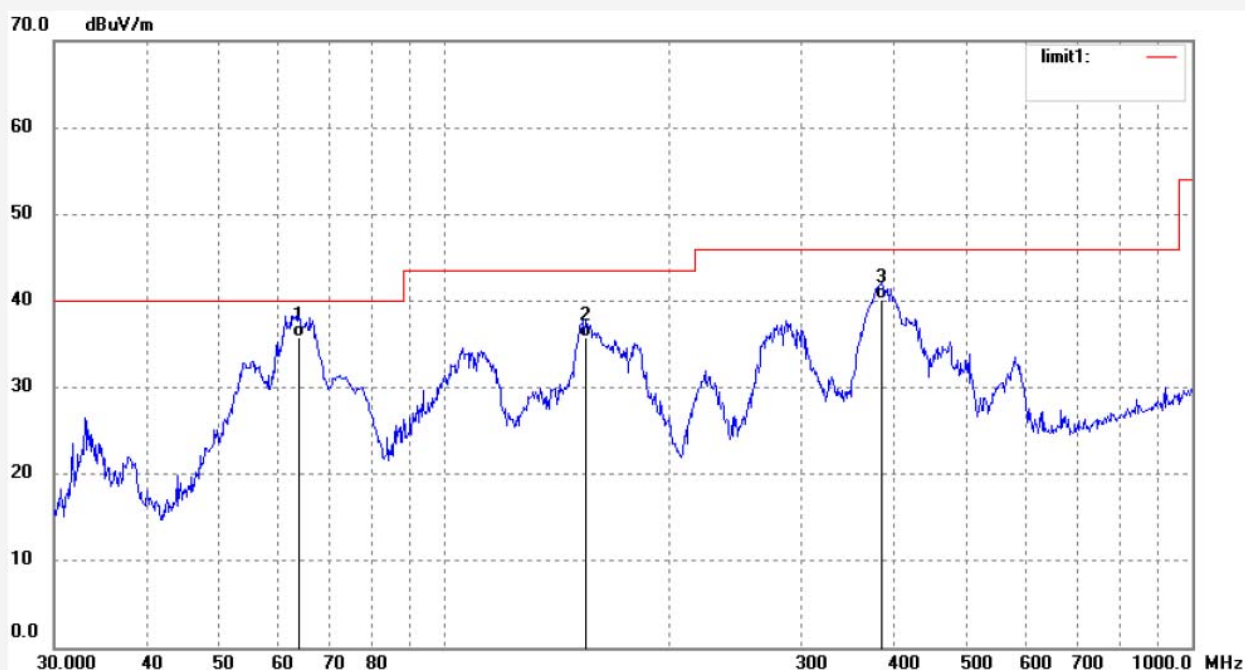
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: CAREWELL #10  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: REMOTE CONTROL  
Mode: RX  
Model: AC8.3.T  
Manufacturer: CAREWELL

Polarization: Vertical  
Power Source: AC 120V/60Hz  
Date: 15/12/03/  
Time: 13/46/09  
Engineer Signature:Ricky  
Distance: 3m

Note: Report NO.:ATE20152511



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	63.4401	50.88	-15.18	35.70	40.00	-4.30	QP			
2	154.2786	50.90	-15.11	35.79	43.50	-7.71	QP			
3	383.9318	47.40	-7.30	40.10	46.00	-5.90	QP			



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

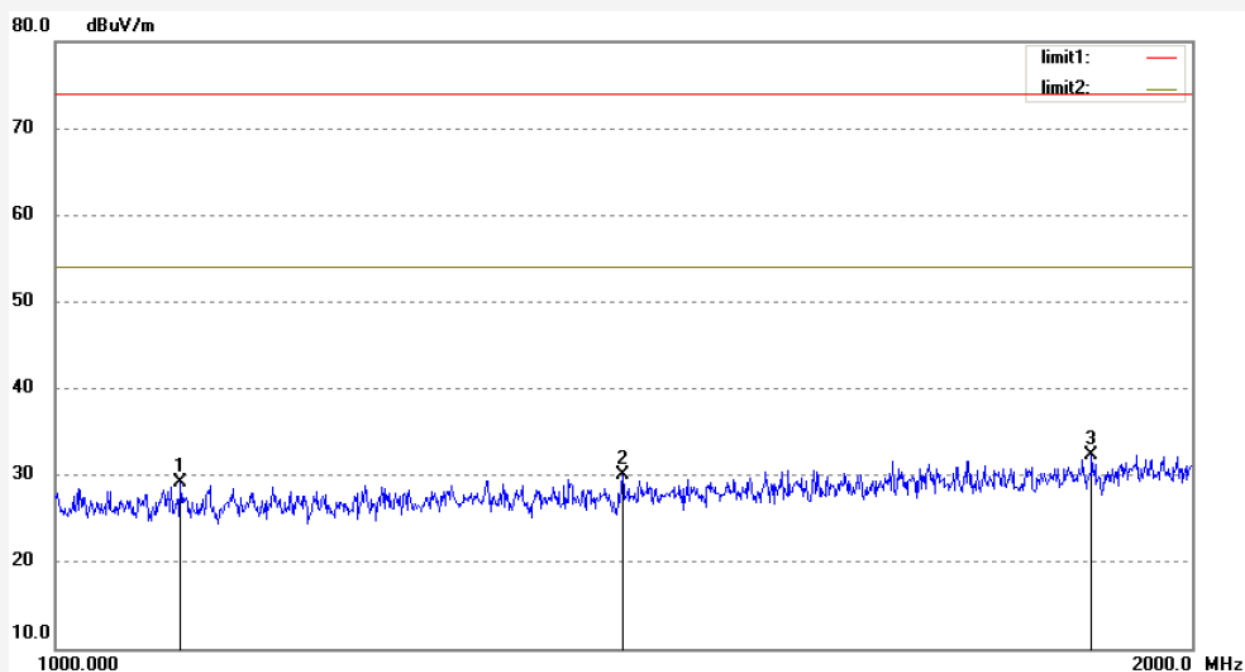
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: RICKY2015 #25  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: REMOTE CONTROL  
Mode: RX  
Model: AC8.3.T  
Manufacturer: CAREWELL

Polarization: Horizontal  
Power Source: AC 120V/60Hz  
Date: 15/12/03/  
Time: 10/00/40  
Engineer Signature:  
Distance: 3m

Note: Report NO.:ATE20152511



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1079.393	42.02	-12.80	29.22	74.00	-44.78	peak			
2	1413.232	41.82	-11.77	30.05	74.00	-43.95	peak			
3	1881.422	41.94	-9.62	32.32	74.00	-41.68	peak			



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

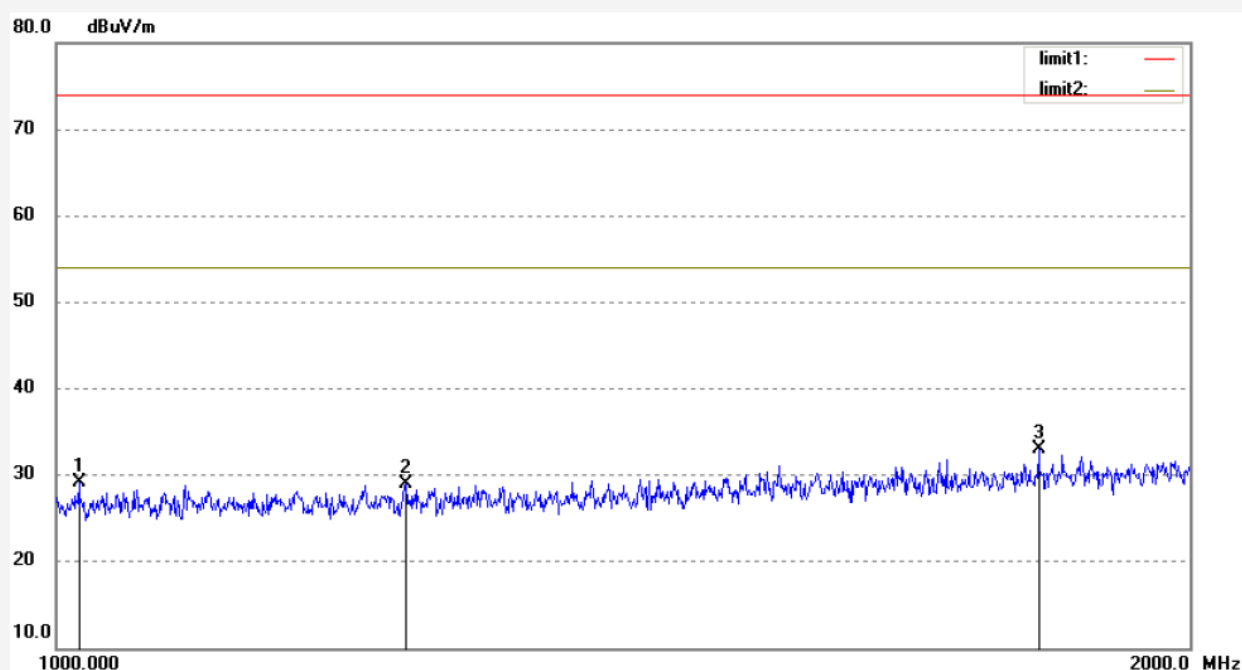
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: RICKY2015 #26  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: REMOTE CONTROL  
Mode: RX  
Model: AC8.3.T  
Manufacturer: CAREWELL

Polarization: Vertical  
Power Source: AC 120V/60Hz  
Date: 15/12/03/  
Time: 10/01/12  
Engineer Signature:  
Distance: 3m

Note: Report NO.:ATE20152511



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1013.988	41.80	-12.66	29.14	74.00	-44.86	peak			
2	1238.520	41.38	-12.45	28.93	74.00	-45.07	peak			
3	1823.529	42.82	-9.76	33.06	74.00	-40.94	peak			