

# TEST REPORT

FCC RULES Part 15 Subpart C §15.231

FCC ID : TMPCS-600

Report File No.	: <u>STROR-05-043</u>
Date of Issue	: <u>Oct. 11, 2005</u>
Kind of Product	: <u>Call Service</u>
Model Name	: <u>CS-600</u>
Manufacturer	: <u>Charmsori Electric Telecom Co., Ltd.</u>
Serial No.	: <u>-</u>
Test Result	: <u>Complied</u>

The results shown in this report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of company.

## VERIFICATION OF COMPLIANCE

Applicant : Charmsori Electric Telecom Co., Ltd.  
Kind of Product : Call Service  
Brand Name : Happy Call  
Model Name : CS-600  
Model Difference : -  
Report File No. : STROR-05-043  
Date of test : Oct. 04, 2005 ~ Oct. 11, 2005  
Receiver EUT : -

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
Part 15 Subpart C §15.231	Complied

The above equipment was tested by SGS Testing Korea Co., Ltd. for compliance with the requirements set forth in the FCC RULES Part 15 Subpart C §15.231. The results of testing in this report apply to the product system that was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:



Date

Oct. 11, 2005

Feel Jeong

Approved By



Date

Oct. 11, 2005

Albert Lim

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## 1. General Description of EUT

The CS-600 of Charmsori Electric Telecom Co., Ltd. is a wireless calling system branded "Happy Call". CS-600 adopted High-performance CPU(Central Processing Unit) of Pro -Chips Company.

Using Wireless Transmitter and Receiver, User can communicate each other without talking by face to face, so this device is useful at restaurants.

## 2. General Information of EUT

### Transmitter

Power Supply	DC 12 V(Alkaline)
Operating Frequency	311.000 MHz
Modulation	ASK
Operating Temperature	- 10 ~ +60
Frequency Generation	Resonator
Communication method	One-way
Size	60 mm(L) * 25 mm(H)
Antenna Type	Built-in on the PCB in the EUT

### **3. Test Procedure**

The test procedures are performed following the test stands ANSI C.63.4-2000, if applicable.

#### **3.1 Conducted Emission**

Testing was performed according ANSI C.63.4-2000 in a shielded room with peripherals placed on a table, 0.8 m high over a metal floor.

It was located more than required distance away from the shield room wall.

#### **3.2 Radiated Emission**

Testing was performed according ANSI C.63.4-2000 at open field test site. The EUT was placed in a 0.8 m high table along with the peripherals.

The turn table was separated from the antenna distance 3 meters. Cables were placed in a position to produce maximum emissions as determined by experimentation and operation mode was selected for maximum.

The frequencies and amplitudes of maximum emission were measured at vary azimuths, antenna heights and antenna polarities.

Reported are maximized emission levels.

## 4. Test Condition

### 4.1 Test Configuration

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the EUT and the supported equipments were installed to meet FCC requirement and operated in a manner, which tends to maximize its emission level in a typical application.

#### Conducted Emission Test

It need not to proceed conducted emission test, because the EUT is supplied from a DC battery.

#### Radiated Emission Test

Preliminary radiated emission tests were conducted using the procedure in ANSI C63.4-2000 clause 8.3.1.1. to determine the worst operating condition. Final radiated emission tests were measured at 3 meter open field test site. To complete the test configuration required by the FCC, the EUT was tested in all three orthogonal planes.

### 4.2 EUT Operation

EUT was tested according to the following operation modes provided by the specifications given by the manufacturer, and reported the worst emissions.

### 4.3 Peripherals / Support Equipment Used

Following peripheral devices and interface cables were connected during the measurement.

Type of Peripheral Equipment Used:

Description	Model Name	Serial NO	Manufacturer	FCC ID
-	-	-	-	-

## 5. Field Strength of Fundamental

### FCC Part 15, Subpart C, Section 15.231 (b)

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 50 %

Temperature: 27

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dBuV/m)	Detect Mode	Pol.	Ant. (dB/m)	Cable (dB)	Actual (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
310.856	44.74	Peak	H	15.91	1.84	62.49	75.38	12.89

\* Remark: To get a maximum emission level from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes.

Note :

1. A peak limit is 20 dB above the average limit.

## Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Test Receiver	Rohde & Schwarz	ESIB 26	Mar. 2006
Log-periodic	Rohde & Schwarz	UHALP9107	Jan. 2006

## 6. Spurious Emission FCC Part 15, Subpart C, Section 15.231 (b)

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 50 %

Temperature: 27

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dBuV/m)	Detect Mode	Pol.	Ant. (dB/m)	Cable (dB)	Actual (dBuV/m)	Limit (dBuV/m)	Margin (dB)
621.712	24.61	Peak	H	21.56	2.61	48.78	75.38	26.60
932.568	27.41	Peak	H	24.98	3.29	55.68	75.38	19.70
932.568	14.60	Average	H	24.98	3.29	42.87	55.38	12.51
1243.424	30.16	Peak	H	25.64	4.06	59.86	74.00	14.14
1243.424	18.13	Average	H	25.64	4.06	47.83	54.00	6.17

Remark: Other spurious frequencies were not found up to 4000 MHz

To get a maximum emission level from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes.

Notes :

1. H: Horizontal polarization, V: Vertical polarization
2. Emission Level = Reading + Antenna Factor + Cable Loss
3. A peak limit is 20dB above the average limit

### Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Test Receiver	Rohde & Schwarz	ESIB 26	Mar. 2006
Log-periodic Antenna	Rohde & Schwarz	UHALP9107	Jan. 2006
Horn Antenna	Schwarzbeck	BBHA9120D(0600)	Jul. 2006



## 7. Bandwidth of Operation Frequency FCC Part 15, Subpart C, Section 15.231(c)

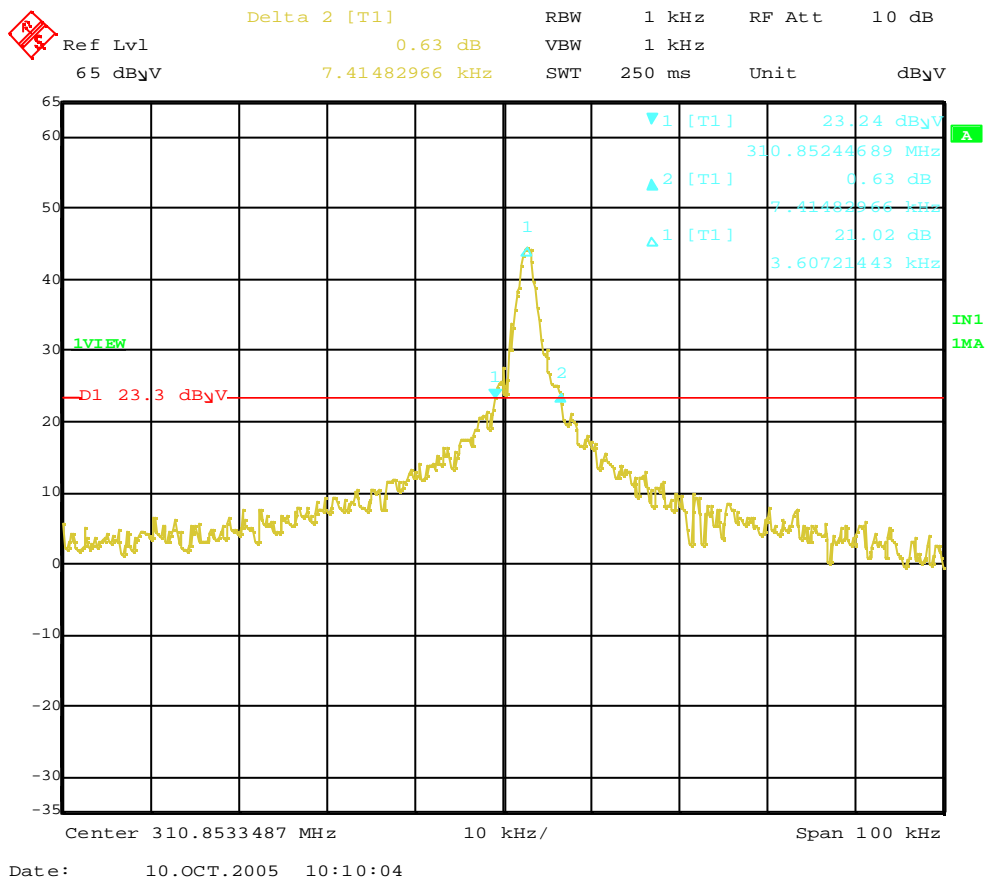
Humidity Level : 50 %

Temperature: 27

Limit of 20dB Bandwidth :  $311.000 \text{ MHz} \times 0.0025 = 777.5 \text{ kHz}$ 

Frequency (MHz)	Bandwidth of the emission. (kHz)	Limit (kHz)	Remark
311.000	7.41	777.5	The point 20dB down from the modulated carrier

The plot of test result is attached as below



### Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Test Receiver	Rohde & Schwarz	ESIB 26	Mar. 2006
Log-periodic Antenna	Rohde & Schwarz	UHALP9107	Jan. 2006

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## 8. Transmission Time FCC Part 15, Subpart C, Section 15.231(a) (1)

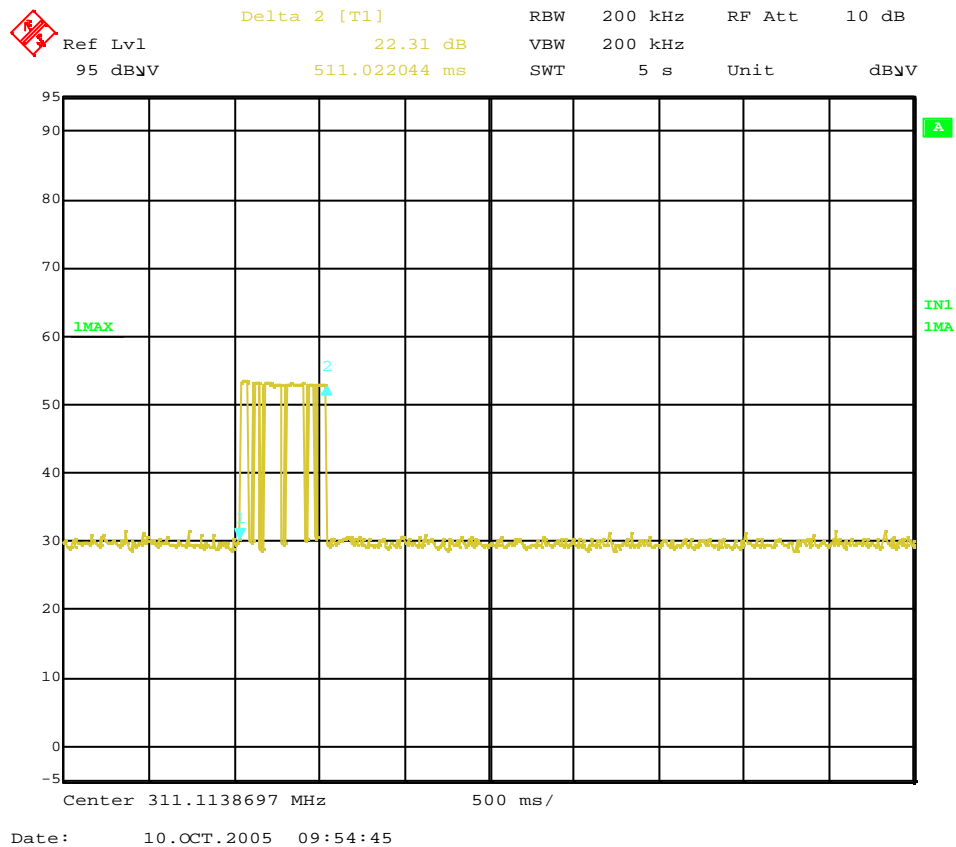
Humidity Level : 50 %

Temperature: 27

Limit of Transmission Time : A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

Frequency (MHz)	Transmission Time (sec)	Limit (sec)	Pass/Fail
311.000	0.511	5	Pass

The plot of test result is attached as below



### Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Test Receiver	Rohde & Schwarz	ESVS 10	Jun. 2006
Log-periodic Antenna	Rohde & Schwarz	UHALP9107	Jan. 2006

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**9. Attachment A – Photo of test set up**