



MOST TECHNOLOGY SERVICE CO., LTD.  
Tel: (86) 755-86170306 Fax: (86) 755-86170310  
Http:// www. szmost. com Email: szmost@szmost. com

**Test Report**

Product Name: Car Alarm System

FCC ID: V34-HIH2300  
MODEL NO. : 2300A, 2300B, 2300C

Applicant:

**SHENZHEN HIH ELECTRONIC TECHNOLOGY CO., LTD.**  
**A7 building, Automobile Electronic Pioneer Park ZhangQi Road, Guanlan Shenzhen**  
**Guangdong China**

**Date Received: 2/22/2008**

**Date Tested: 2/22/2008**

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Cover Sheet



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#### TABLE OF CONTENTS

**APPLICANT:** SHENZHEN HIH ELECTRONIC TECHNOLOGY CO., LTD.

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#### TEST REPORT CONTAINING:

PAGE 1.....TEST EQUIPMENT LIST  
PAGE 2.....TEST PROCEDURE  
PAGE 3.....RADIATION INTERFERENCE TEST DATA  
PAGE 4-5.....OCCUPIED BANDWIDTH AND PLOTS  
PAGE 6-7.....DUTY CYCLE PLOTS

#### EXHIBIT INCLUDED:

PAGE 1.....BLOCK DIAGRAM  
PAGE 2.....SCHEMATIC  
PAGE 3.....USERS MANUAL  
PAGE 4.....LABEL SAMPLE  
PAGE 5.....LABEL LOCATION  
PAGE 6.....EXTERNAL PHOTOGRAPHS  
PAGE 7.....INTERNAL PHOTOGRAPHS  
PAGE 8.....OPERATIONAL DESCRIPTION  
PAGE 9.....TEST SET UP PHOTOGRAPHS

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TABLE OF CONTENTS



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## EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Apr 06,2007	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Apr 06,2007	1 Year
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101202	Apr 06,2007	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr 06,2007	1 Year
Bilog Antenna	Sunol	JB3	A121206	Apr 06,2007	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr 06,2007	1 Year
Cable	Resenberger	N/A	NO.1	Apr 06,2007	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Apr 06,2007	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Apr 06,2007	1 Year
Single Phase Power Line Filter	Kikusui	LIN40MA-PC R-L	LM002352	Apr 06,2007	1 Year
AC Power Source	Kikusui	AC40MA	LM003232	Apr 06,2007	1 Year
Test analyzer	Kikusui	KHA1000	LM003720	Apr 06,2007	1 Year
ESD Tester	Kikusui	KES4021	LM003537	Apr 08,2007	1 Year
Signal Generator	IFR	2032	203002/100	Apr 08,2007	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
Dual Directional Coupler	A&R	DC6080	301508	Apr 06,2007	1 Year
Power Head	A&R	PH2000	301193	Apr 06,2007	1 Year
Power Meter	A&R	PM2002	302799	Apr 06,2007	1 Year
Field Monitor	A&R	FM5004	300329	Apr 06,2007	1 Year
Field Probe	A&R	FP5000	300221	Apr 06,2007	1 Year
EMCPRO System	EM Test	UCS-500-M4	V064810202 6	Apr 06,2007	1 Year
EMCPRO System	EM Test	UCS-500-M4	V064810202 6	Apr 06,2007	1 Year

Remark:

Test Firm Name: Most Technology Service Co., Ltd.

Test Firm Address:

No. 5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China

FCC Registered Test Site Number: 490827

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## TEST PROCEDURE

**GENERAL:** This report shall NOT be reproduced except in full without the written approval of MOST TECHNOLOGY SERVICE CO., LTD. The EUT was transmitting a test signal during the testing.

**POWER LINE CONDUCTED INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a 50 uH LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25°C with a humidity of 58%.

**RADIATION INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25°C with a humidity of 58%.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS  
33 20 dBuV + 10.36 dB + 0.9 dB = 31.26 dBuV/m @ 3m

**ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:** The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings were converted to average readings based on the duration of "ON" time.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.

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**FCC ID:** V34-HIH2300

**NAME OF TEST:** RADIATION INTERFERENCE

**RULES PART NUMBER:** 15.231

**REQUIREMENTS:**

Fundamental Frequency MHz	Field Strength of Fundamental dBuV	Field Strength of Harmonics and Spurious Emissions (dBuV/m @ 3m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	71.48 to 81.94	51.48 to 61.94
470 and above	81.94	61.94

THE LIMIT FOR AVERAGE FIELD STRENGTH dBuV/m FOR THE FUNDAMENTAL FREQUENCY= 80.14 dBuV/m. NO FUNDAMENTAL IS ALLOWED IN THE RESTRICTED BANDS.

THE LIMIT FOR AVERAGE FIELD STRENGTH dBuV/m FOR THE HARMONICS AND SPURIOUS FREQUENCIES = 60.14 dBuV/m. SPURIOUS IN THE RESTRICTED BANDS MUST BE LESS THAN 54dBuV/m OR 15.209

Fundamental Radiation Interference Data:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart C Limit (dBuV/m)
		Avg	QP	Peak	
433.92MHz					
91.73	Vertical	--	36.30	38.30	43.5
433.92	Vertical	--	76.30	79.10	80.14
867.84	Vertical	--	--	55.10	60.14
1301.80	Vertical	--	--	53.05	60.14
91.15	Horizontal	--	32.50	35.00	43.5
433.92	Horizontal	--	75.10	78.60	80.14
867.84	Horizontal	--	--	54.10	60.14
1301.80	Horizontal	--	--	53.10	60.14

SAMPLE CALCULATION OF LIMIT @ 303 MHz:

(470 - 260)Mhz = 210 MHz  
(12500 - 3750)uV/m = 8750 uV/m  
8750uV/m/210MHz = 41.67 uV/m/MHz  
(303-260)MHz = 43 MHz  
43 MHz \* 41.67 uV/m/MHz = 1791.81 uV/m  
(1791.81 + 3750)uV/m = 5541.81 uV/m limit @ 303 MHz

TEST RESULTS: The unit DOES meet the FCC requirements.

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**APPLICANT:** SHENZHEN HIH ELECTRONIC TECHNOLOGY CO., LTD.

**FCC ID:** V34-HIH2300

**NAME OF TEST:** Occupied Bandwidth

**RULES PART NUMBER:** 15.231(C)

**REQUIREMENTS:** The bandwidth of the emission shall be nowider than .25% of the center frequency for devices operating between 70 and 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

$$433.92 \text{ MHz} * 0.0025 = 1.0848 \text{ MHz}$$
$$1.0848 \text{ MHz}/2 = +/- 542.40 \text{ KHz}$$

**METHOD OF MEASUREMENT:** METHOD OF MEASUREMENT: A small sample of the transmitter output was fed into the spectrum analyzer and the plot in next page was generated. The vertical scale is set to 10 dB per division: the horizontal scale is set to 6 MHz per division.

**TEST RESULTS:** The unit DOES meet the FCC requirements.

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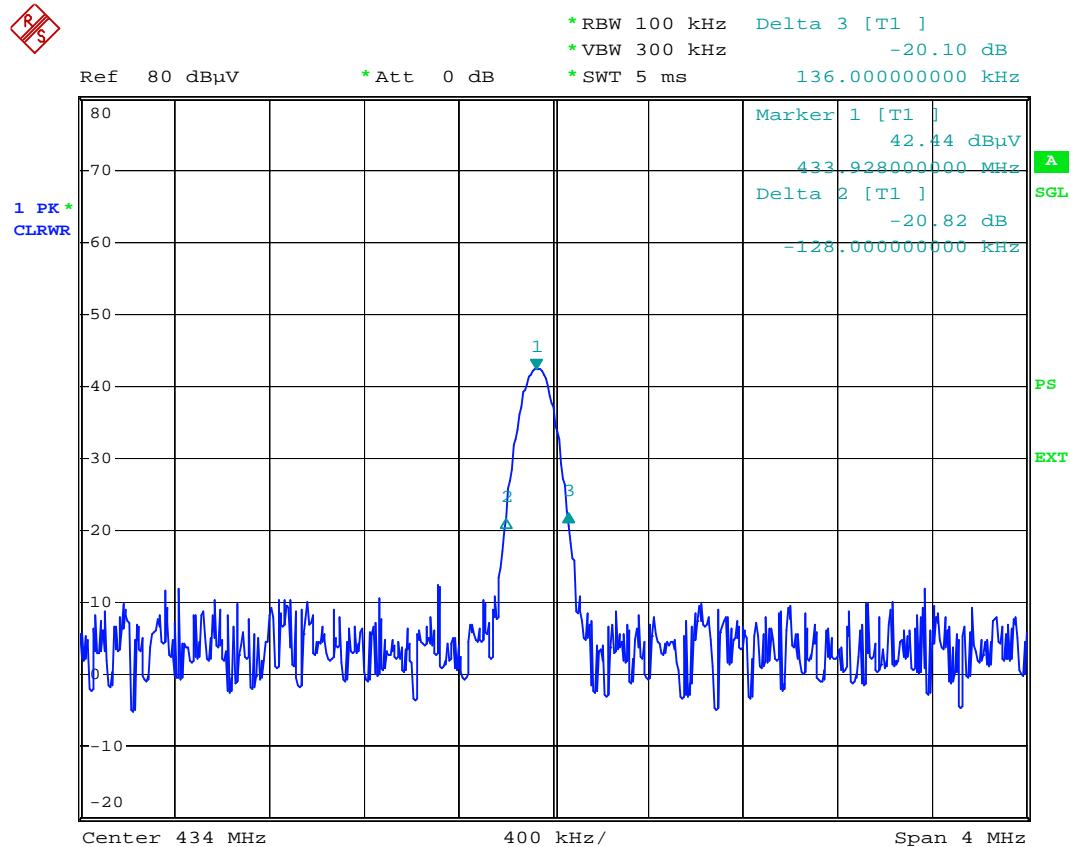
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Date: 22.FEB.2008 16:27:36

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**NAME OF TEST:** DUTY CYCLE

**RULES PART NUMBER:** 15.231

This device transmits manually. When push the switch, the device will not transmit. when take off the switch, the transmission will transmit immediately and cease after 288ms.

TEST RESULTS: The unit DOES meet the FCC requirements.

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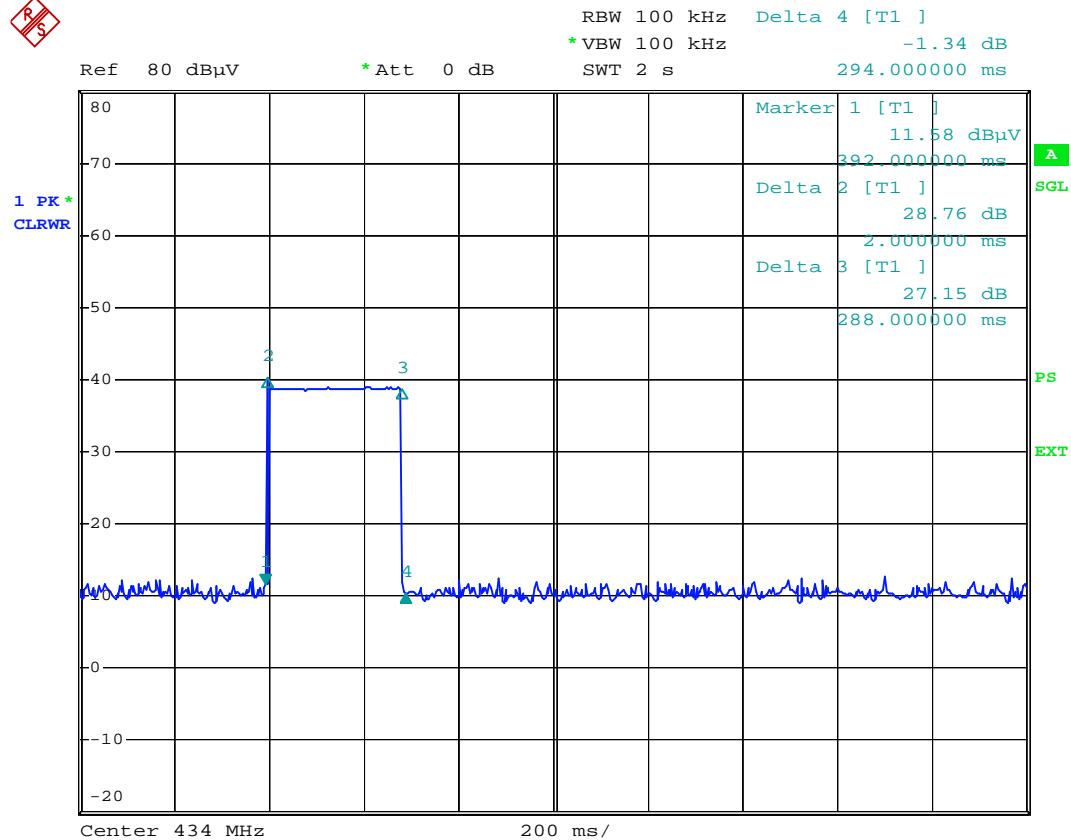
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Date: 22.FEB.2008 16:37:17

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