



**CERTIFICATION TEST REPORT
FOR THE
IMMOBILIZER FOR AUTOMOTIVE, GG-03
FCC PART 15 SUBPART C
COMPLIANCE**

DATE OF ISSUE: SEPTEMBER 23, 1999

PREPARED FOR:

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P.O. No:
W.O. No: 71772

Report No: FC99-031

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Date of test: August 27, 1999

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ADMINISTRATIVE INFORMATION

DATE OF TEST: August 27, 1999

PURPOSE OF TEST: To demonstrate the compliance of the Immobilizer for Automotive, GG-03, with the requirements for FCC Part 15 Subpart C devices.

MANUFACTURER: Shenzhen Shidun Technology Co., LTD.
24/F.B Yongfu Guoqi Building
Shangbu South Road She
Shenzhen, China 518030

REPRESENTATIVE: John Lee

TEST LOCATION: CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92621

TEST PERSONNEL: Stu Yamamoto

TEST METHOD: ANSI C63.4 1992

FREQUENCY RANGE TESTED: 30 MHz – 6000 MHz

EQUIPMENT UNDER TEST: Immobilizer For Automotive
Manuf: Shenzhen Shidun Technology Co., LTD.
Model: GG-03
Serial: N/A
FCC ID: Pending

SUMMARY OF RESULTS

The Shenzhen Shidun Technology Co., LTD. Immobilizer for Automotive, GG-03, was tested in accordance with ANSI C63.4 1992 for compliance with Part 15 Subpart C.

As received, the above equipment was found to be fully compliant with the limits of Part 15 Subpart C. The results in this report apply only to the items tested, as identified herein.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

Car alarm.

MEASUREMENT UNCERTAINTY

Associated with data in this report is a ± 4 dB measurement uncertainty.

EUT OPERATING FREQUENCY

The EUT was operating at 338.5 MHz.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C. The relative humidity was between 20% and 75%.

PERIPHERAL DEVICES

The EUT was not tested with peripheral device(s).

REPORT OF MEASUREMENTS

The following tables report the highest worst case levels recorded during the tests performed on the Immobilizer for Automotive, GG-03. All readings taken are peak readings unless otherwise noted by a "Q" or "A". The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Fundamental Radiated Emission Levels

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
338.497	79.6	15.9	-27.8	4.5		72.2	76.8	-4.6	HA
338.497	85.6	15.9	-27.8	4.5		78.2	76.8	1.4	H
338.533	77.6	15.9	-27.8	4.5		70.2	76.8	-6.6	VA
338.533	83.6	15.9	-27.8	4.5		76.2	76.8	-0.6	V

Test Method: ANSI C63.4 1992
 Spec Limit : FCC Part 15.231
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
 V = Vertical Polarization
 N = No Polarization
 D = Dipole Reading
 Q = Quasi Peak Reading
 A = Average Reading

COMMENTS: The EUT is a hand held transmitter for use with an automobile alarm system. Transmitting frequency is approximately 338.5 MHz. Power to the EUT is supplied by an internal battery. The data below represents the worst case emissions of the EUT for all three-axis systems. Fundamental Frequency. Temperature: 27°C Humidity: 51% Pressure: 989mbar.

Table 2: Spurious Emission Levels - Less Than 1 GHz

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
677.166	52.5	22.2	-27.4	6.9		54.2	56.8	-2.6	VA
677.166	58.5	22.2	-27.4	6.9		60.2	56.8	3.4	V
677.328	54.5	22.2	-27.4	6.9		56.2	56.8	-0.6	HA
677.328	60.5	22.2	-27.4	6.9		62.2	56.8	5.4	H

Test Method: ANSI C63.4 1992
Spec Limit : FCC Part 15.231
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization
N = No Polarization
D = Dipole Reading
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: The EUT is a hand held transmitter for use with an automobile alarm system. Transmitting frequency is approximately 338.5 MHz. Power to the EUT is supplied by an internal battery. The data below represents the worst case emissions of the EUT for all three-axis systems. Spurious Emissions greater than 1 GHz. Frequency range scanned and maximized, 1-6 GHz. Temperature: 27°C Humidity: 51% Pressure: 989mbar.

Table 3: Six Highest Spurious Emission Levels - Greater Than 1 GHz

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
1015.215	65.5	23.6	-40.9	5.2		53.4	56.8	-3.4	VA
1015.611	61.8	23.6	-40.9	5.2		49.7	56.8	-7.1	HA
1353.265	58.3	24.9	-39.5	6.0		49.7	56.8	-7.1	HA
1692.642	54.9	25.5	-39.0	7.3		48.7	56.8	-8.1	V
2031.222	51.3	27.4	-39.0	7.8		47.5	56.8	-9.3	VA
3045.851	43.9	30.9	-37.3	9.7		47.2	56.8	-9.6	H

Test Method: ANSI C63.4 1992
 Spec Limit : FCC Part 15.231
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
 V = Vertical Polarization
 N = No Polarization
 D = Dipole Reading
 Q = Quasi Peak Reading
 A = Average Reading

COMMENTS: The EUT is a hand held transmitter for use with an automobile alarm system. Transmitting frequency is approximately 338.5 MHz. Power to the EUT is supplied by an internal battery. The data below represents the worst case emissions of the EUT for all three-axis systems. Spurious Emissions greater than 1 GHz. Frequency range scanned and maximized, 1-6 GHz. Temperature: 27°C Humidity: 51% Pressure: 989mbar.

TABLE A
LIST OF TEST EQUIPMENT

1. Spectrum Analyzer, Hewlett Packard, Model No. 8568A, S/N 2049A01287. Calibration date: October 14, 1998. Calibration due date: October 14, 1999.
2. Quasi-Peak Adapter, Hewlett Packard, Model No. 85650A, S/N 3303A01884. Calibration date: September 19, 1998. Calibration due date: September 19, 1999.
3. Preamp, Hewlett Packard, Model No. 8447D, S/N 1937A02548, 1937A02403. Calibration date: March 22, 1999. Calibration date due: March 22, 2000.
4. Biconical Antenna, A & H Systems, Model No. SAS-200/540, S/N 220. Calibration date: October 5, 1998. Calibration due date: October 5, 1999.
5. Log Periodic Antenna, A & H Systems, Model No. SAS-200/516, S/N 331. Calibration date: October 8, 1998. Calibration due date: October 8, 1999.
6. Horn Antenna, Emco, Model No. 3115, S/N 9603-4683. Calibration date: February 24, 1999. Calibration due date: February 24, 2000.
7. Spectrum Analyzer, Hewlett Packard, Model No. 8566B, S/N 2532A02509/2542A11184. Calibration due date: September 16, 1999.
8. Preamp, Hewlett Packard, Model No. 83017A, S/N 3123A00282. Calibration date: February 24, 1999. Calibration due date: February 24, 2000.
9. Brea emissions site. Calibration date: April 7, 1999. Calibration due date: April 7, 2000.

EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany Table 1 for fundamental radiated emissions and Tables 2-3 for radiated emissions. Additionally, a complete description of all the ports and I/O cables is included on the information sheets contained in Appendix A.

During radiated emissions testing, the EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters. This configuration is typical for radiated emissions testing of table top devices.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect the radiated emissions data for the Immobilizer for Automotive, GG-03. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. For frequencies above 1000 MHz, the horn antenna was used. All antennas were located at a distance of 3 meters from the edge of the EUT.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dB μ V, and a vertical scale of 10 dB per division.

TABLE B : ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	6 GHz	1 MHz

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in Tables 1, 2 and 3 indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the Immobilizer for Automotive, GG-03.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

When the frequencies exceed 1 GHz, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

TEST METHODS

The radiated emissions data of the Immobilizer for Automotive, GG-03, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the "Sample Calculations". The corrected data was then compared to the FCC Part 15, Subpart C emissions limits to determine compliance.

Preliminary and final measurements were taken in order to better ensure that all emissions from the EUT were found and maximized.

Radiated Emissions Testing

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode facing the antenna. The frequency range of 30 MHz - 88 MHz was then scanned with the biconical antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks, which were at or near the limit, were recorded. The frequency range of 100 - 300 MHz was scanned with the biconical antenna in the same manner, and the peaks recorded. Lastly, a scan of the FM band from 88 - 110 MHz was made, using a reduced resolution bandwidth and a reduced frequency span. The biconical antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300 - 1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 - 1000 MHz was again scanned. The horn antenna was used for frequencies above 1000 MHz. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

For the final radiated scan, the equipment was again positioned facing the antenna. A thorough scan of all frequencies was manually made using a small frequency span, rotating the turntable as needed. Comparison with the previously recorded measurements was then made.

Using the peak readings from both scans as a guide, the test engineer then maximized the readings with respect to the table rotation and antenna height. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

FCC Part 15.231(c) - Occupied Bandwidth Measurements

In accordance with Part 15.231(c), the fundamental frequency was no wider than 0.25% of the center frequency for a device operating above 70 MHz and below 900 MHz.

SAMPLE CALCULATIONS

The basic spectrum analyzer reading was converted using correction factors as shown in the emissions readings in Tables 1, 2 and 3. For radiated emissions in dB μ V/m, the spectrum analyzer reading in dB μ V was corrected by using the following formula:

$$\begin{aligned} & \text{Meter reading (dB}\mu\text{V)} \\ & + \text{Antenna Factor (dB)} \\ & + \text{Cable Loss (dB)} \\ & - \text{Distance Correction (dB)} \\ & - \text{Pre-amplifier Gain (dB)} \\ \\ & = \text{Corrected Reading (dB}\mu\text{V/m)} \end{aligned}$$

This reading was then compared to the applicable specification limit to determine compliance.

A typical data sheet will display the following in column format:

#	Freq MHz	Rdng dB μ V	Cable	Amp or Pream	Bicon	Horn	Log	Dist	Corr dB μ V/m	Spec	Margin	Polar
---	-------------	--------------------	-------	--------------------	-------	------	-----	------	----------------------	------	--------	-------

means reading number

Freq MHz is the frequency in MHz of the obtained reading.

Rdng dB μ V is the reading obtained on the spectrum analyzer in dB μ V.

Amp or Pream is short for the preamplifier factor or gain in dB.

Bicon is the biconical antenna factor in dB.

Log is the log periodic antenna factor in dB.

Horn is the horn antenna factor in dB.

Cable is the cable loss in dB of the coaxial cable on the OATS.

Dist is the distance factor (in dB). It is used when testing at a different test distance than the one stated in the spec.

Corr dB μ V/m is the corrected reading which is now in dB μ V/m (field strength).

Spec is the specification limit (dB) stated in the agency's regulations.

Margin is the closeness to the specified limit in dB; + is over and - is under the limit.

Polar is the Polarity of the antenna with respect to earth.

APPENDIX A
INFORMATION ABOUT THE EQUIPMENT UNDER TEST

INFORMATION ABOUT THE EQUIPMENT UNDER TEST	
Test Software/Firmware:	GG-03USA
CRT was displaying:	N/A
Power Supply Manufacturer:	N/A
Power Supply Part Number:	N/A
AC Line Filter Manufacturer:	N/A
AC Line Filter Part Number:	N/A
The EUT has no power cord.	

I/O PORTS		CRYSTAL OSCILLATORS	
Type	#	Type	Freq. In MHz
N/A		N/A	

PRINTED CIRCUIT BOARDS				
Function	Model & Rev	Clocks, MHz	Layers	Location
Auto Alarm	GG-03	4.0	2	

REQUIRED EUT CHANGES TO COMPLY:	
Modifications were made to the PCA during testing. The final value for R1 was 68k ohms and for R2 it was 680 ohms.	

CABLE INFORMATION

The EUT has no cables.

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View

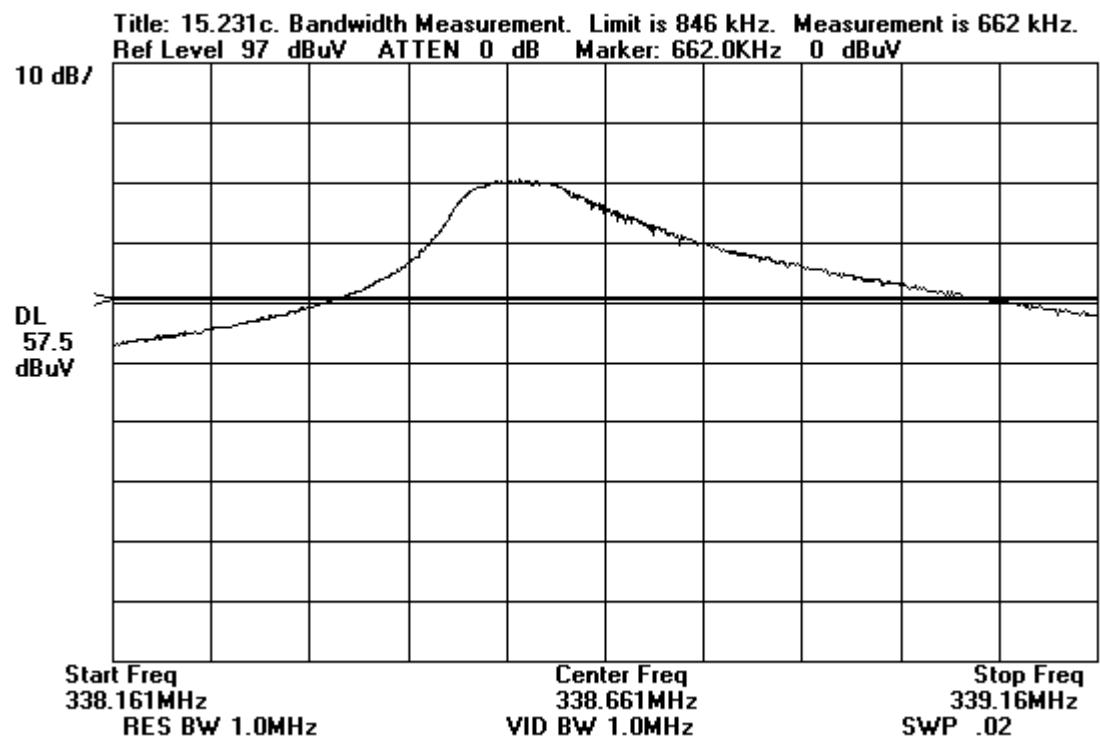
PHOTOGRAPH SHOWING RADIATED EMISSIONS



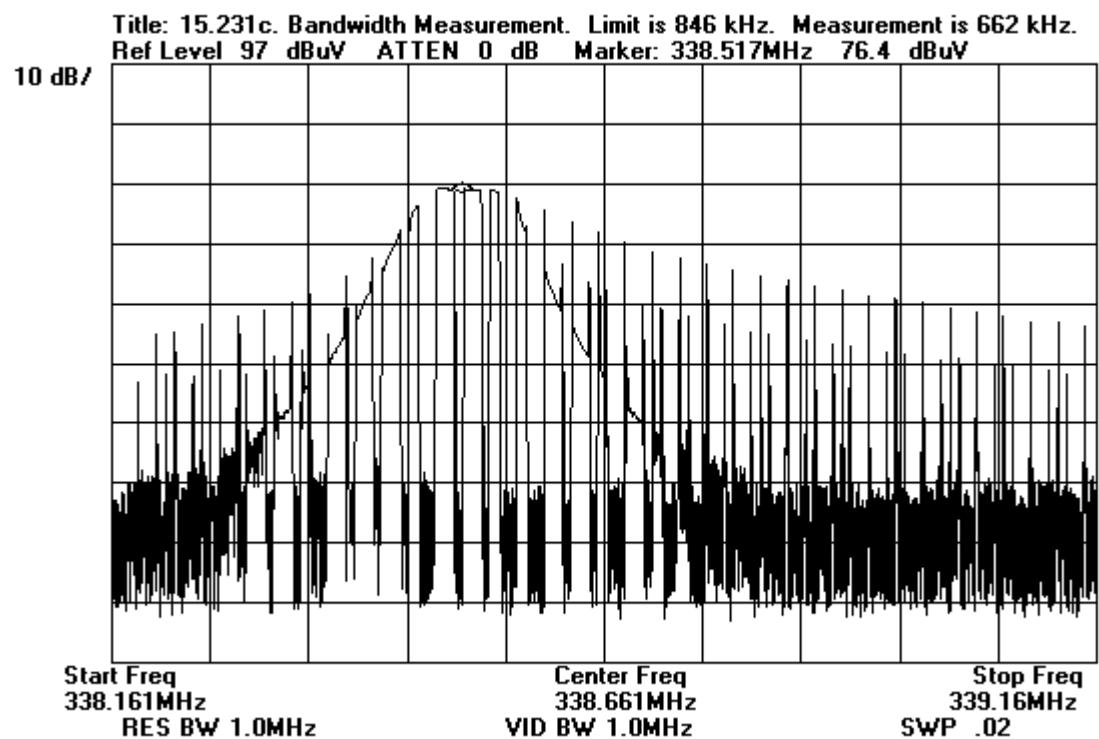
Radiated Emissions - Back View

APPENDIX B
MEASUREMENT DATA SHEETS

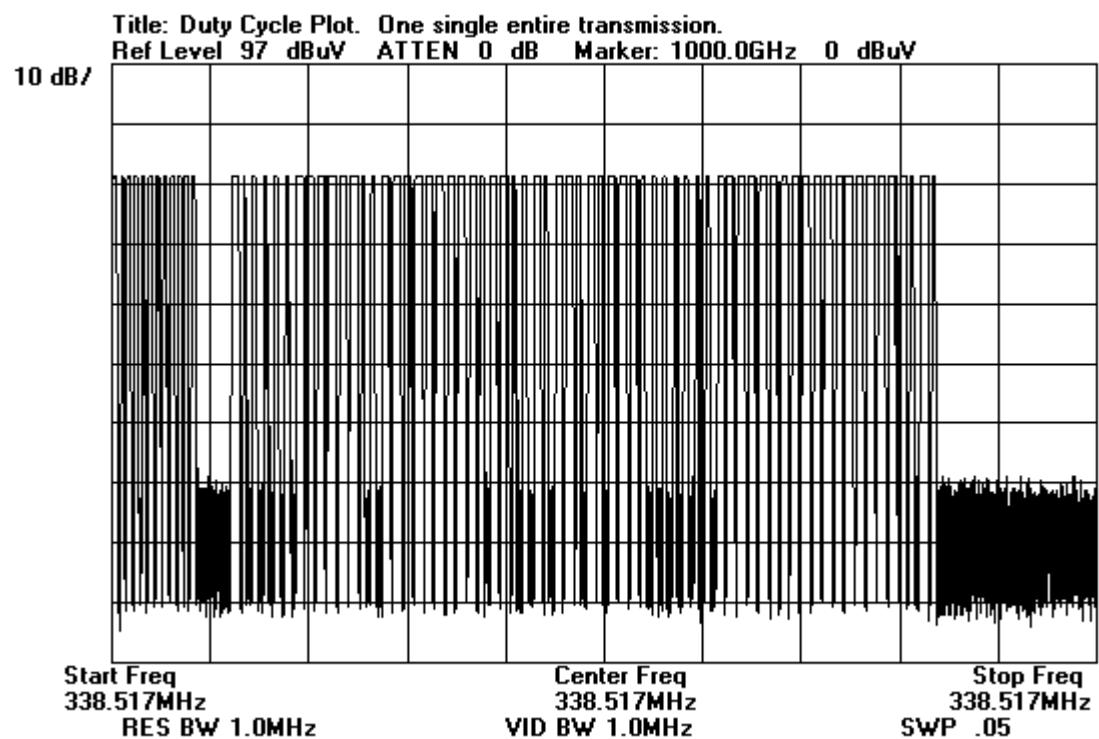
Occupied Bandwidth Plot



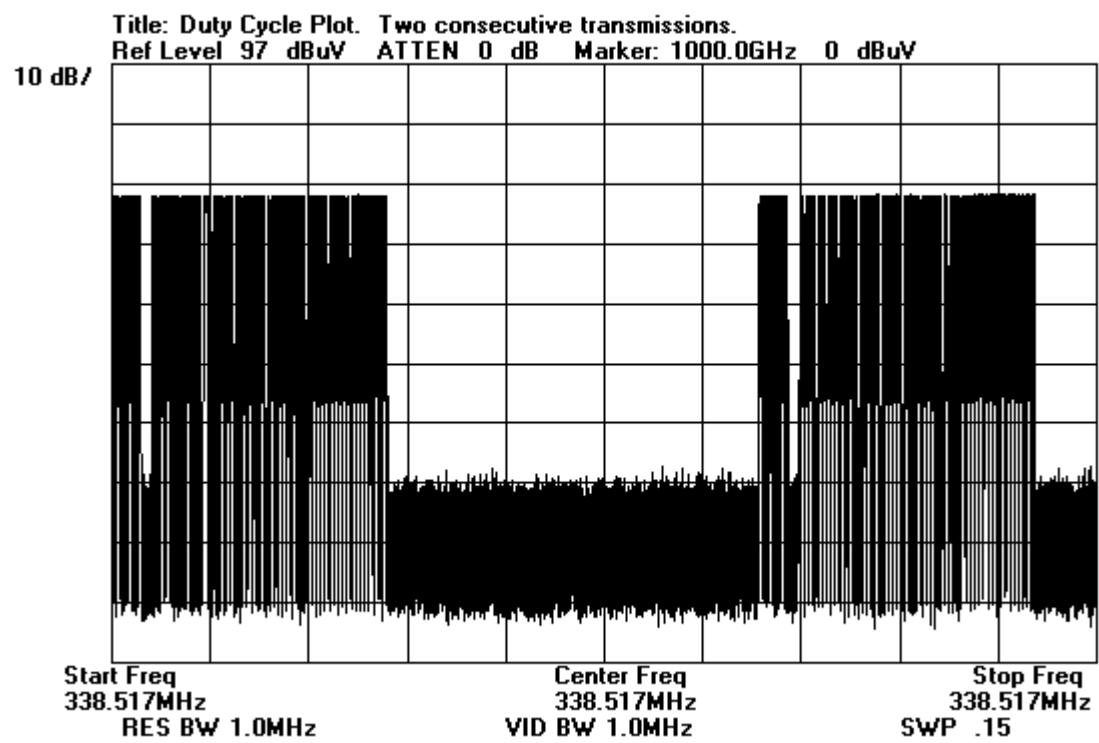
Occupied Bandwidth Plot



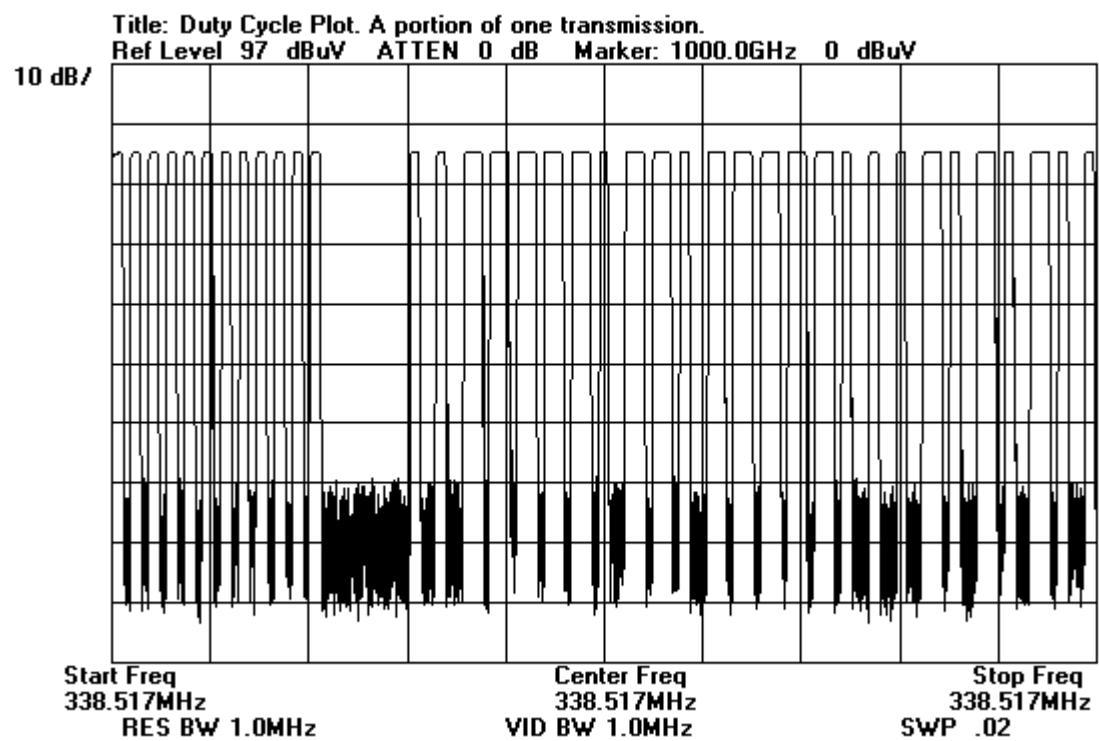
Duty Cycle Plot



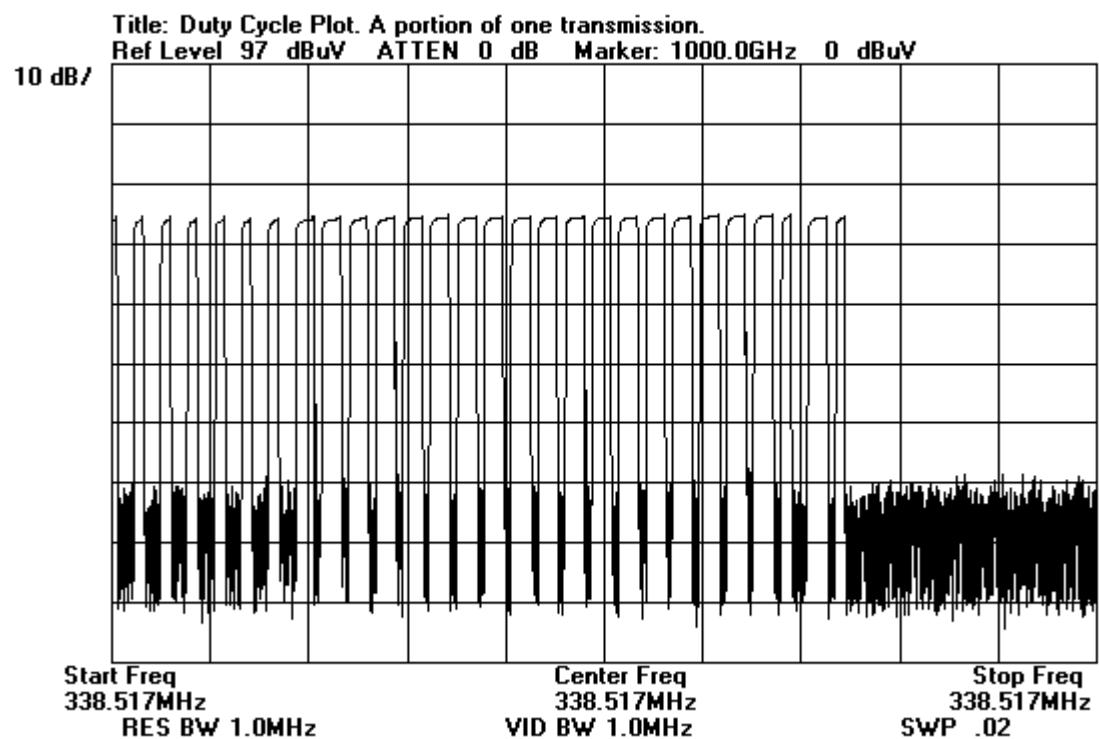
Duty Cycle Plot



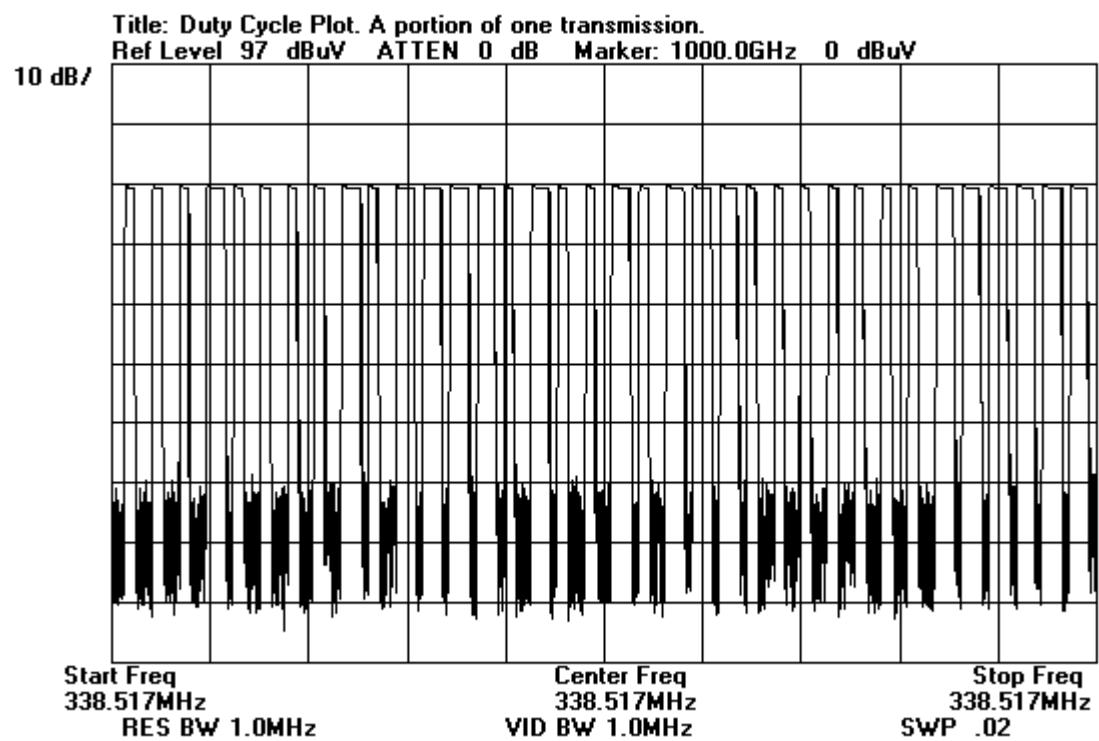
Duty Cycle Plot



Duty Cycle Plot



Duty Cycle Plot



Test Location: CKC LABORATORIES INC • 110 N. OLINDA PL. • BREA, CA 92823 • 714-993-6112

Customer: **John Lee**
Specification: **FCC 15.231b Fundamental**
Work Order #: **71772** Date: Fri Aug-27-1999
Test Type: **Maximized Emissions** Time: 15:07:33
Equipment: **Automobile Alarm Handheld Transmitter** Sequence#: 1
Manufacturer: Shidun
Model: Handheld Transmitter
S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Automobile Alarm	Shidun	Handheld Transmitter	
Handheld Transmitter*			

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is a hand held transmitter for use with an automobile alarm system. Transmitting frequency is approximately 338.5 MHz. Power to the EUT is supplied by an internal battery. The data below represents the worst case emissions of the EUT for all three-axis systems. Fundamental Frequency. Temperature: 27°C
Humidity: 51% Pressure: 989mbar.

Measurement Data:		Reading listed by margin.					Test Distance: 3 Meters				
#	Freq MHz	Rdng dB μ V	Bicon Pream dB	Log dB	Cable dB	Cable dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	338.497M	79.6	+0.0	+15.9	+3.9	+0.6	+0.0	72.2	76.8	-4.6	Horiz
	Ave		-27.8								correction factor for average reading is 6dB based on the 50% duty cycle
^	338.497M	85.6	+0.0	+15.9	+3.9	+0.6	+0.0	78.2	76.8	+1.4	Horiz
			-27.8								
3	338.533M	77.6	+0.0	+15.9	+3.9	+0.6	+0.0	70.2	76.8	-6.6	Vert
	Ave		-27.8								correction factor for average reading is 6dB based on the 50% duty cycle
^	338.533M	83.6	+0.0	+15.9	+3.9	+0.6	+0.0	76.2	76.8	-0.6	Vert
			-27.8								

Test Location: CKC LABORATORIES INC • 110 N. OLINDA PL. • BREA, CA 92823 • 714-993-6112

Customer: **John Lee**
Specification: **FCC 15.231b Spurious**
Work Order #: **71772** Date: Fri Aug-27-1999
Test Type: **Maximized Emissions** Time: 15:36:30
Equipment: **Automobile Alarm Handheld Transmitter** Sequence#: 2
Manufacturer: Shidun
Model: Handheld Transmitter
S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Automobile Alarm	Shidun	Handheld Transmitter	
Handheld Transmitter*			

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is a hand held transmitter for use with an automobile alarm system. Transmitting frequency is approximately 338.5 MHz. Power to the EUT is supplied by an internal battery. The data below represents the worst case emissions of the EUT for all three-axis systems. Spurious Emissions less than 1 GHz. Temperature: 27°C Humidity: 51% Pressure: 989mbar

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	Bicon dB	Log dB	Cable dB	Cable dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	677.328M	54.5	+0.0	+22.2	+5.9	+1.0	+0.0	56.2	56.8	-0.6	Horiz
	Ave		-27.4								correction factor for average reading is 6dB based on the 50% duty cycle
^	677.328M	60.5	+0.0	+22.2	+5.9	+1.0	+0.0	62.2	56.8	+5.4	Horiz
			-27.4								
3	677.166M	52.5	+0.0	+22.2	+5.9	+1.0	+0.0	54.2	56.8	-2.6	Vert
	Ave		-27.4								correction factor for average reading is 6dB based on the 50% duty cycle
^	677.166M	58.5	+0.0	+22.2	+5.9	+1.0	+0.0	60.2	56.8	+3.4	Vert
			-27.4								

Test Location: CKC LABORATORIES INC • 110 N. OLINDA PL. • BREA, CA 92823 • 714-993-6112

Customer: **John Lee**
 Specification: **FCC 15.231b Spurious**
 Work Order #: **71772** Date: Fri Aug-27-1999
 Test Type: **Maximized Emissions** Time: 16:28:31
 Equipment: **Automobile Alarm Handheld Transmitter** Sequence#: 3
 Manufacturer: Shidun
 Model: Handheld Transmitter
 S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Automobile Alarm	Shidun	Handheld Transmitter	
Handheld Transmitter*			

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is a hand held transmitter for use with an automobile alarm system. Transmitting frequency is approximately 338.5 MHz. Power to the EUT is supplied by an internal battery. The data below represents the worst case emissions of the EUT for all three-axis systems. Spurious Emissions greater than 1 GHz. Frequency range scanned and maximized, 1-6 GHz. Temperature: 27°C Humidity: 51% Pressure: 989mbar.

Measurement Data:			Reading listed by margin.										Test Distance: 3 Meters			
#	Freq MHz	Rdng dB μ V	Cable dB	Cable dB	26.5 dB	Horn dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar	Ant				
1	1015.215M Ave	65.5	+1.5	+3.7	-40.9	+23.6	+0.0	53.4	56.8	-3.4	Vert	correction factor for average reading is 6dB based on the 50% duty cycle				
^	1015.215M	71.5	+1.5	+3.7	-40.9	+23.6	+0.0	59.4	56.8	+2.6	Vert					
3	1353.265M Ave	58.3	+1.8	+4.2	-39.5	+24.9	+0.0	49.7	56.8	-7.1	Horiz	correction factor for average reading is 6dB based on the 50% duty cycle				
^	1353.265M	64.3	+1.8	+4.2	-39.5	+24.9	+0.0	55.7	56.8	-1.1	Horiz					
5	1015.611M Ave	61.8	+1.5	+3.7	-40.9	+23.6	+0.0	49.7	56.8	-7.1	Horiz	correction factor for average reading is 6dB based on the 50% duty cycle				
^	1015.611M	67.8	+1.5	+3.7	-40.9	+23.6	+0.0	55.7	56.8	-1.1	Horiz					
7	1692.490M	54.9	+2.4	+4.9	-39.0	+25.5	+0.0	48.7	56.8	-8.1	Horiz					
8	1692.642M	54.9	+2.4	+4.9	-39.0	+25.5	+0.0	48.7	56.8	-8.1	Vert					

9	2031.222M	51.3	+2.3	+5.5	-39.0	+27.4	+0.0	47.5	56.8	-9.3	Vert
Ave											correction factor for average reading is 6dB based on the 50% duty cycle
^	2031.222M	57.3	+2.3	+5.5	-39.0	+27.4	+0.0	53.5	56.8	-3.3	Vert
11	3045.851M	43.9	+2.9	+6.8	-37.3	+30.9	+0.0	47.2	56.8	-9.6	Horiz
12	1354.099M	55.7	+1.8	+4.2	-39.5	+24.9	+0.0	47.1	56.8	-9.7	Vert
Ave											correction factor for average reading is 6dB based on the 50% duty cycle
^	1354.099M	61.7	+1.8	+4.2	-39.5	+24.9	+0.0	53.1	56.8	-3.7	Vert
14	3045.886M	43.4	+2.9	+6.8	-37.3	+30.9	+0.0	46.7	56.8	-10.1	Vert
15	2369.051M	49.8	+2.4	+5.6	-39.1	+27.9	+0.0	46.6	56.8	-10.2	Horiz
16	2030.544M	49.6	+2.3	+5.5	-39.0	+27.4	+0.0	45.8	56.8	-11.0	Horiz
Ave											correction factor for average reading is 6dB based on the 50% duty cycle
^	2030.544M	55.6	+2.3	+5.5	-39.0	+27.4	+0.0	51.8	56.8	-5.0	Horiz
18	2707.514M	46.3	+2.6	+6.1	-38.9	+29.0	+0.0	45.1	56.8	-11.7	Vert
19	2707.778M	45.9	+2.6	+6.1	-38.9	+29.0	+0.0	44.7	56.8	-12.1	Horiz
20	2370.947M	46.5	+2.4	+5.6	-39.1	+28.0	+0.0	43.4	56.8	-13.4	Vert