FCC EMC TEST REPORT
FOR THE
INTERNATIONAL ELECTRONICS, INC.
FCCID JLFM1
CAR ALARM
RECEIVER

Prepared for:

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Submitted by:

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International Electronics, Inc.
FCC EMC Testing
At
Green Mountain Electromagnetics, Inc.
Middlebury, Vermont

Unit: SideKik 3000 Mini Receiver
Tested: November 24, 1999 (revised)
Received: 11/23/99

I. Applicable Standards:

The unit described in this report was measured for verification of compliance with the FCC Unintentional Radiator EMC standard, 47 CFR: Part 15, Subpart C.

Measurement procedures were in accordance with ANSI C63.4, "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (1992)."

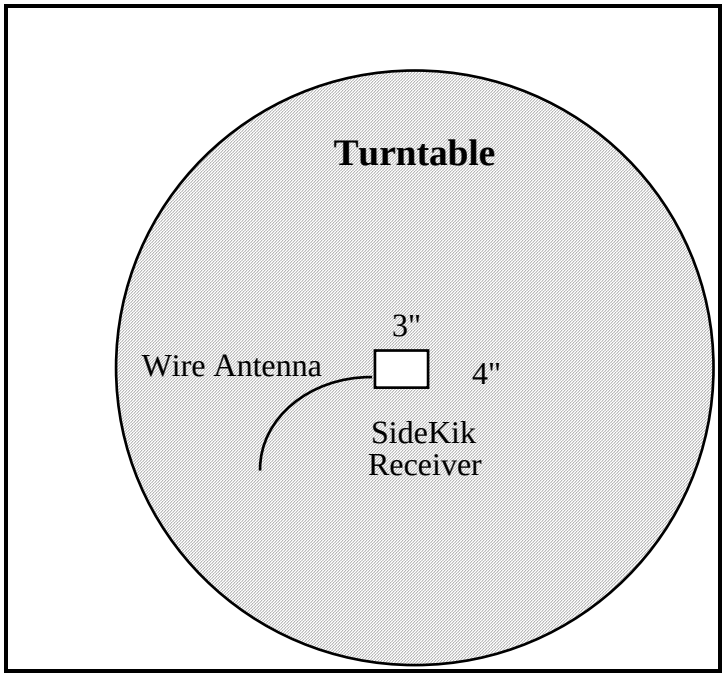
II. Units Tested:

The International Electronics, Inc. SideKik 3000 (SideKik) receiver is part of the SideKik automobile alarm and accessory control system. The SideKik consists of a plastic case containing the receiver electronics and a permanently attached external antenna. There is no provision for connecting the SideKik to an AC power source; consequently, a conducted emissions test was not performed. The table below describes the unit that was subjected to measurements determining compliance with applicable EMC standards:

Product	Manufacturer	Model	FCC ID
Automobile Alarm/Accessory Control System	International Electronics	SideKik 3000 Receiver	JLFM1

III. Equipment and Cable Configuration:

GME received the unit in satisfactory condition for testing, however the manufacturer is responsible for ensuring that the equipment under test (EUT) represents the product line. The EUT was arranged on a turntable as in the block diagram below. This EUT configuration produced the maximum radiated emissions. The EUT was subjected to final emissions tests while connected to all loads and operating in a continuous mode.



The temperature, humidity, and atmospheric pressure during unit testing were 21˚C, 50% RH and 100.1 kPa for radiated emissions. A signal generator and transmitting antenna tuned to the fundamental were used to provide a coherence signal to the receiver

IV. Measuring Equipment:

The table below describes the instrumentation used at Green Mountain Electromagnetics, Inc. (GME) to perform this testing:

Unit	Manufacturer	Model	Serial #	Last Cal.	Next Cal.
Spectrum Analyzer	Hewlett-Packard	8592	3624A00631	8/9/99	8/9/00

Broadband Amplifier	Mini-Circuits	ZJL-3G	D021699	2/20/99	2/20/00
Plotter	Hewlett-Packard	7440	2539A09149	n/a	n/a
Broadband E-field Antenna	Antenna Research Associates	LPB-2513/A	1125	9/25/99	9/25/00
Turntable	Antenna Research Associates	ART-1000	1004	n/a	n/a
Antenna Mast	Antenna Research Associates	AS-620	1004	n/a	n/a
Signal Generator	Hewlett-Packard	E4421B	US38220195	8/9/99	8/9/00

V. Unit of Measurement:

Measurements of radiated electric fields were made in units of dB referenced to 1 microvolt per meter (dBuV/m). Average data is not required as the unit is compliant with average limits in peak detection mode. Fields and deviations in the results table were corrected for the appropriate antenna factor, cable loss, amplifier gain and measurement distance X (per 47 CFR, C15.31). The following equations were employed:

(1) Field (dBuV/m) = Measured Value (dBuV) + Antenna Factor (dB) + Cable Loss (dB) - Amplifier Gain (dB).
(2) Pass/Fail Deviation (dB) = Field (dBuV/m) - Limit (dBuV/m) - 20 log(X/3 meters).

Sample calculation at 30 MHz:
32.0 dBuV/m field = 32.5 dBuV measured + 19 dB/m AF + 0.5 dB cable loss - 20.0 dB amp.
-8.0 dB deviation = 32.0 dBuV/m field - 40.0 dBuV/m limit - 20 log(3/3) dB distance.

Uncertainty:
The combined uncertainty for GME radiated emissions measurements is: u(y) = 1.946.

VI. Measurement Location:

The GME laboratory and Open Area Test Site (OATS) are located at 219 Blake Roy Road, Middlebury, VT. The OATS is a 3-meter site complete with antenna positioner, ground plane and motorized turntable. The OATS is constructed in accordance with ANSI C63.7-1992 and complies with the requirements for radiated emissions testing in ANSI C63.4-1992 and CISPR 16-1993. The electromagnetic laboratory is constructed in accordance with CE immunity standards and ANSI C63.4-1992 (conducted emissions). GME is internationally accredited by the American Association for Laboratory Accreditation (A2LA) and meets the quality requirements in EN 45001-1989 and ISO/IEC Guide 25-1990, "General Requirements for the Competence of Calibration and Testing Laboratories."

VII. Measurement Procedures:

1. Radiated Emissions in accordance with FCC Part 15.209 & 15.231.

Frequency range: 30 MHz to 88 MHz
Limit: 40 dBuV @ 3 meters
Frequency range: 88 MHz to 216 MHz
Limit: 43.5 dBuV @ 3 meters
Frequency range: 216 MHz to 960 MHz
Limit: 46 dBuV @ 3 meters
Frequency range: 960 MHz to 3.1 GHz
Limit: 54 dBuV @ 3 meters

a. Set up instrumentation at open area test site.
   i. Mount EUT on turntable and broadband antenna on antenna positioner.
   ii. Record temperature, humidity and atmospheric pressure.
   iii. Measurement distance is 3 meters and antenna scan height is varied from 1 to 4 meters.

b. Verify spectrum analyzer and antenna operation.
   i. Spectrum analyzer is connected to antenna.
   ii. Broadband amplifier is inserted between antenna and analyzer to ensure analyzer noise threshold is at least 6 dB below specification limit.

c. Set up, power and operate EUT as described in section III.

d. Perform preliminary evaluation of equipment in the near field.
   i. Vary antenna height, antenna polarization, and antenna orientation to EUT.
   ii. Repeat step d.i. while evaluating electromagnetic radiation from 30 to 3100 MHz.

e. Determine frequencies and equipment orientations that produce maximum radiation.

i. Identify processor, clock and beat frequencies, and harmonics.

f. Perform final evaluation of unit by recording spectrum analyzer data on the plotter.
   i. Ensure the EUT is producing the maximum radiation found in step e.
   ii. Collect data over the entire frequency range.

VIII. Summary of Results:

The International Electronics, Inc. Sidekick 3000 car alarm and accessory control system complies with FCC Part 15, Subpart C, emissions requirements. Section X contains a table comparing the unit emissions to the applicable limit from 30 MHz to 3.1 GHz as identified in measurement procedure VII-1 and in accordance with the equations identified in V.

Testing was performed by Kyle R. Kowalczyk, president, Green Mountain Electromagnetics and requested by:

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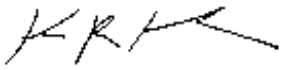

Kyle R. Kowalczyk
11/24/99

IX. Photograph of Measurement Setup:

A photograph of the equipment as it was tested is in the original report.

X. Radiated Emissions Data:

Freq	Pol	Detector	RBW	VBW	V meas	AF	Amp	Cable	Field	Dist	Limit	Dev
MHz	H/V		kHz	kHz	dBuV	dB 1/m	dB	dB	dBuV/m	dB	dBuV/m	dB
30	H	Peak	120	300	32.5	19.0	20.0	0.5	32.0	0.0	40.0	-8.0
30	V	Peak	120	300	32.5	19.0	20.0	0.5	32.0	0.0	40.0	-8.0
35	H	Peak	120	300	35.0	18.2	20.0	0.5	33.7	0.0	40.0	-6.3
35	V	Peak	120	300	32.5	18.2	20.0	0.5	31.2	0.0	40.0	-8.8
40	H	Peak	120	300	32.5	18.3	20.0	0.5	31.3	0.0	40.0	-8.7
40	V	Peak	120	300	35.0	18.3	20.0	0.5	33.8	0.0	40.0	-6.2
45	H	Peak	120	300	32.5	17.8	20.0	0.5	30.8	0.0	40.0	-9.2
45	V	Peak	120	300	35.5	17.8	20.0	0.5	33.8	0.0	40.0	-6.2
50	H	Peak	120	300	37.0	15.6	20.0	0.5	33.1	0.0	40.0	-6.9
50	V	Peak	120	300	38.0	15.6	20.0	0.5	34.1	0.0	40.0	-5.9
60	H	Peak	120	300	42.0	11.0	20.0	1.0	34.0	0.0	40.0	-6.0
60	V	Peak	120	300	41.0	11.0	20.0	1.0	33.0	0.0	40.0	-7.0
70	H	Peak	120	300	45.0	8.0	20.0	1.0	34.0	0.0	40.0	-6.0
70	V	Peak	120	300	39.0	8.0	20.0	1.0	28.0	0.0	40.0	-12.0
80	H	Peak	120	300	42.5	9.8	20.0	1.0	33.3	0.0	40.0	-6.7
80	V	Peak	120	300	37.0	9.8	20.0	1.0	27.8	0.0	40.0	-12.2
90	H	Peak	120	300	45.0	10.9	20.0	1.0	36.9	0.0	43.5	-6.6
90	V	Peak	120	300	43.0	10.9	20.0	1.0	34.9	0.0	43.5	-8.6
100	H	Peak	120	300	43.5	12.5	20.0	1.5	37.5	0.0	43.5	-6.0
100	V	Peak	120	300	43.0	12.5	20.0	1.5	37.0	0.0	43.5	-6.5
125	H	Peak	120	300	42.5	12.2	20.0	2.0	36.7	0.0	43.5	-6.8
125	V	Peak	120	300	42.0	12.2	20.0	2.0	36.2	0.0	43.5	-7.3
150	H	Peak	120	300	44.0	10.5	20.0	2.0	36.5	0.0	43.5	-7.0
150	V	Peak	120	300	43.0	10.5	20.0	2.0	35.5	0.0	43.5	-8.0
175	H	Peak	120	300	44.0	10.9	20.0	2.0	36.9	0.0	43.5	-6.6
175	V	Peak	120	300	35.0	10.9	20.0	2.0	27.9	0.0	43.5	-15.6
200	H	Peak	120	300	30.0	11.3	20.0	2.5	23.8	0.0	43.5	-19.7
200	V	Peak	120	300	34.0	11.3	20.0	2.5	27.8	0.0	43.5	-15.7
250	H	Peak	120	300	34.5	13.4	20.0	3.0	30.9	0.0	46.0	-15.1
250	V	Peak	120	300	32.5	13.4	20.0	3.0	28.9	0.0	46.0	-17.1
300	H	Peak	120	300	33.0	15.1	20.0	3.0	31.1	0.0	46.0	-14.9
300	H	Peak	120	300	32.0	15.1	20.0	3.0	30.1	0.0	46.0	-15.9
400	H	Peak	120	300	33.5	16.5	19.0	3.5	34.5	0.0	46.0	-11.5
400	V	Peak	120	300	32.5	16.5	19.0	3.5	33.5	0.0	46.0	-12.5
500	H	Peak	120	300	32.5	18.2	19.0	4.0	35.7	0.0	46.0	-10.3
500	V	Peak	120	300	32.5	18.2	19.0	4.0	35.7	0.0	46.0	-10.3
600	H	Peak	100	300	32.5	20.0	19.0	4.0	37.5	0.0	46.0	-8.5
600	V	Peak	100	300	32.5	20.0	19.0	4.0	37.5	0.0	46.0	-8.5
620	H	Peak	100	300	32.5	20.5	19.0	4.0	38.0	0.0	46.0	-8.0

620	V	Peak	100	300	32.5	20.5	19.0	4.0	38.0	0.0	46.0	-8.0
700	H	Peak	100	300	30.5	21.0	19.0	4.5	37.0	0.0	46.0	-9.0
700	V	Peak	100	300	30.5	21.0	19.0	4.5	37.0	0.0	46.0	-9.0
800	H	Peak	100	300	30.5	22.1	19.0	5.0	38.6	0.0	46.0	-7.4
800	V	Peak	100	300	30.5	22.1	19.0	5.0	38.6	0.0	46.0	-7.4
900	H	Peak	100	300	30.5	23.3	19.0	6.0	40.8	0.0	46.0	-5.2
900	V	Peak	100	300	30.5	23.3	19.0	6.0	40.8	0.0	46.0	-5.2
930	H	Peak	100	300	30.5	23.3	19.0	6.0	40.8	0.0	46.0	-5.2
930	V	Peak	100	300	30.5	23.3	19.0	6.0	40.8	0.0	46.0	-5.2
1000	H	Peak	1000	3000	32.5	24.2	18.0	7.0	45.7	0.0	54.0	-8.3
1000	V	Peak	1000	3000	32.5	24.2	18.0	7.0	45.7	0.0	54.0	-8.3
1240	H	Peak	1000	3000	32.5	25.7	17.0	4.0	45.2	0.0	61.9	-16.7
1240	V	Peak	1000	3000	32.5	25.7	17.0	4.0	45.2	0.0	61.9	-16.7
1550	H	Peak	1000	3000	32.5	26.5	16.0	4.0	47.0	0.0	61.9	-14.9
1550	V	Peak	1000	3000	32.5	26.5	16.0	4.0	47.0	0.0	61.9	-14.9
1860	H	Peak	1000	3000	32.5	27.3	16.0	4.0	47.8	0.0	61.9	-14.1
1860	V	Peak	1000	3000	32.5	27.3	16.0	4.0	47.8	0.0	61.9	-14.1
2170	H	Peak	1000	3000	32.5	28.1	15.0	5.0	50.6	0.0	61.9	-11.3
2170	V	Peak	1000	3000	32.5	28.1	15.0	5.0	50.6	0.0	61.9	-11.3
2480	H	Peak	1000	3000	32.5	28.9	14.0	5.0	52.4	0.0	61.9	-9.5
2480	V	Peak	1000	3000	32.5	28.9	14.0	5.0	52.4	0.0	61.9	-9.5
2790	H	Peak	1000	3000	32.5	29.8	13.0	6.0	55.3	0.0	61.9	-6.6
2790	V	Peak	1000	3000	32.5	29.8	13.0	6.0	55.3	0.0	61.9	-6.6
3100	H	Peak	1000	3000	32.5	30.6	12.0	6.0	57.1	0.0	61.9	-4.8
3100	V	Peak	1000	3000	32.5	30.6	12.0	6.0	57.1	0.0	61.9	-4.8