



SimpliSafe, Inc.

Application
For
Certification
(FCC ID: U9K-KR1)

433MHz Transmitter with USB Connector (Keychain Remote)

HK08110909-2
KS/ ac
November 24, 2008

- The test report only allows to be revised within the retention period unless further standard or the requirement was noticed.
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LIST OF EXHIBITS

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MEASUREMENT/TECHNICAL REPORT

SimpliSafe, Inc. - Model: KR1
FCC ID: U9K-KR1

This report concerns (check one:)		Original Grant <input checked="" type="checkbox"/>	Class II Change <input type="checkbox"/>
Equipment Type : <u>JBP - Pt 15 Class B Computer Peripheral</u>			
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
		If yes, defer until : _____ date	
Company Name agrees to notify the Commission by:		_____	
		date	
of the intended date of announcement of the product so that the grant can be issued on that date.			
Transition Rules Request per 15.37 ?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If no, assumed Part 15, Subpart B for un-intentional radiator - the new 47 CFR [10-01-07 Edition] Provision.			
Report prepared by:	Sit Kim Wai, Ken Intertek Testing Services Hong Kong Ltd. 2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. Phone : 852-2173-8538 Fax: 852-2741-1693		

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List of attached file

Exhibit type	File Description	filename
Test Report	Test Report	report.pdf
Test Setup Photos	Radiated & Conducted Emission	config photos.pdf
Test Report	Conducted Emission Test Result	conduct.pdf
External Photos	External Photo	external photos.pdf
Internal Photos	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
ID Label/Location Info	Label Artwork and Location	label.pdf
ID Label/Location	Label Location Justification	justification.pdf
Users Manual	User Manual	manual.pdf
Cover Letter	Letter of Agency	letter of agency.pdf

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EXHIBIT 1 GENERAL DESCRIPTION

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1.0 General Description

1.1 Product Description

The Keychain Remote can be used to program the alarm system settings. It has a USB connector, which can be inserted into a computer to run a software program that allows the user to adjust settings, such as the PIN used with the alarm system. These settings are stored on an EEPROM in the Keychain Remote. After these settings have been set, they can be programmed into the SimpliSafe the Base station by inserting the Keychain Remote into the USB style connector on the top of the Base station. This connector allows the Base station to retrieve the settings from the keychain remote EEPROM.

Tested sample is a prototype.

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1.2 Related Submittal(s) Grants

This is an Application for Certification of a JBP – Part 15 Class B Computing Device Peripheral.

The 433MHz transmitter is housed in the keychain remote, which is subject to certification and has been filed at the same time.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data and conducted data are located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

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**EXHIBIT 2
SYSTEM TEST CONFIGURATION**

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2.0 System Test Configuration

2.1 Justification

For emissions testing, the equipment under test (EUT) was setup to normal mode to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by 1 x CR1623 Size 3.0VDC Lithium Battery.

For the measurements, the EUT is attached to a plastic stand if necessary and placed on the wooden turntable.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement was performed from the frequency 30MHz to 1000MHz.

2.2 EUT Exercising Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

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2.3 Details of EUT and Description of Peripherals

Details of EUT:

An AC adaptor and/or a battery (provided with the unit) were used to power the device. Their description are listed below.

- (1) Operated Battery: 1 x CR1623 Size 3.0VDC Lithium Battery (Supplied by Client)

Description of Peripherals:

For Radiated Emission: (Supplied by Intertek)

- (1) HP Notebook, Model: NX6320, S/N: CNU6370FWN, DoC Product
- (2) HP Printer, Model: C2642A, S/N: SG6121702C, FCC ID: B94C2642X
- (3) Hayes Modem, Model: 6800CN, S/N: A00900153317, FCC ID: BFJ9D907-00038

For Conducted Emission: (Supplied by Intertek)

- (1) HP Notebook, Model: NX6320, S/N: CNU6370FWN, DoC Product
- (2) HP Printer, Model: C6431D, S/N: CN23B 680ZP, DoC Product
- (3) Genius Modem, Model: GM56EX, S/N: ZT5505000355, DoC Product
- (4) HP Notebook adaptor (110-240VAC to 18.5VDC 6.5A, Model: Series PPP017L PA-1121-12HC) (Supplied by Intertek)

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2.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty test has been considered.

Uncertainty and Compliance - Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

2.5 Equipment Modification

Any modifications installed previous to testing by SimpliSafe, Inc. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Commercial & Electrical Division, Intertek Testing Services Hong Kong Ltd.

All the items listed under section 2.0 of this report are confirmed by:

Confirmed by:

*Sit Kim Wai, Ken
Assistant Manager
Intertek Testing Services
Agent for SimpliSafe, Inc.*



Signature

November 24, 2008 Date

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**EXHIBIT 3
EMISSION RESULTS**

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3.0 Emission Results

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

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3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

where FS = Field Strength in dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB
 AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:-

$$FS = RR + LF$$

where FS = Field Strength in dB μ V/m
 RR = RA - AG in dB μ V
 LF = CF + AF in dB

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

RA = 52.0 dB μ V
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dB μ V/m

RR = 23.0 dB μ V
LF = 9.0 dB

Level in μ V/m = Common Antilogarithm [(32 dB μ V/m)/20] = 39.8 μ V/m

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3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission

at 816.084 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: config photos.pdf

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3.3 Radiated Emission Data

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 2.9 dB margin

TEST PERSONNEL:



Tester Signature

Melvin Nip, Senior Lead Engineer
Typed/Printed Name

November 24, 2008
Date

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Company: SimpliSafe, Inc.
Model: KR1
Mode : PC Data Transferring

Date of Test: November 21, 2008

Table 1

Radiated Emissions Pursuant to FCC 15.109 Emission Requirement

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	48.006	38.9	16	11.0	33.9	40.0	-6.1
V	96.008	37.2	16	12.0	33.2	43.5	-10.3
H	144.010	35.5	16	14.0	33.5	43.5	-10.0
H	192.021	34.2	16	16.0	34.2	43.5	-9.3
H	240.028	31.6	16	19.0	34.6	46.0	-11.4
H	288.031	29.6	16	22.0	35.6	46.0	-10.4
H	336.039	27.8	16	24.0	35.8	46.0	-10.2
H	384.041	31.4	16	24.0	39.4	46.0	-6.6
H	432.048	29.6	16	25.0	38.6	46.0	-7.4
H	528.096	28.4	16	27.0	39.4	46.0	-6.6
H	624.110	25.4	16	29.0	38.4	46.0	-7.6
H	672.105	27.6	16	29.0	40.6	46.0	-5.4
H	720.124	27.0	16	30.0	41.0	46.0	-5.0
H	768.129	27.0	16	31.0	42.0	46.0	-4.0
H	816.084	28.1	16	31.0	43.1	46.0	-2.9
H	864.096	25.2	16	31.0	40.2	46.0	-5.8

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.

Test Engineer: Melvin Nip

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3.4 Line Conducted Configuration Photograph

Worst Case Line-Conducted Configuration

at 0.465 MHz

For electronic filing, the worst case line conducted configuration photographs are saved with filename: config photos.pdf

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3.5 Line Conducted Emission Data

The data on the following pages list the significant emission frequencies, the limit, and the margin of compliance.

Judgement : Passed by 13.5 dB margin

For electronic filing, the conducted emission test result is saved with filename: conduct.pdf

TEST PERSONNEL:



Tester Signature

Melvin Nip, Senior Lead Engineer
Typed/Printed Name

November 24, 2008
Date

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**EXHIBIT 4
EQUIPMENT PHOTOGRAPHS**

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4.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf

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**EXHIBIT 5
PRODUCT LABELLING**

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5.0 Product Labelling

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf

For electronic filing, the label location justification letter is save as filename: justification.pdf

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**EXHIBIT 6
TECHNICAL SPECIFICATIONS**

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6.0 Technical Specifications

For electronic filing, the block diagram and is saved with filename: block.pdf

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**EXHIBIT 7
INSTRUCTION MANUAL**

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7.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf

This manual will be provided to the end-user with each unit sold/leased in the United States.

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**EXHIBIT 8
LETTER OF AGENCY**

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8.0 Letter of Agency

For electronic filing, a preliminary copy of the Letter of Agency is saved as filename:
letter of agency.pdf