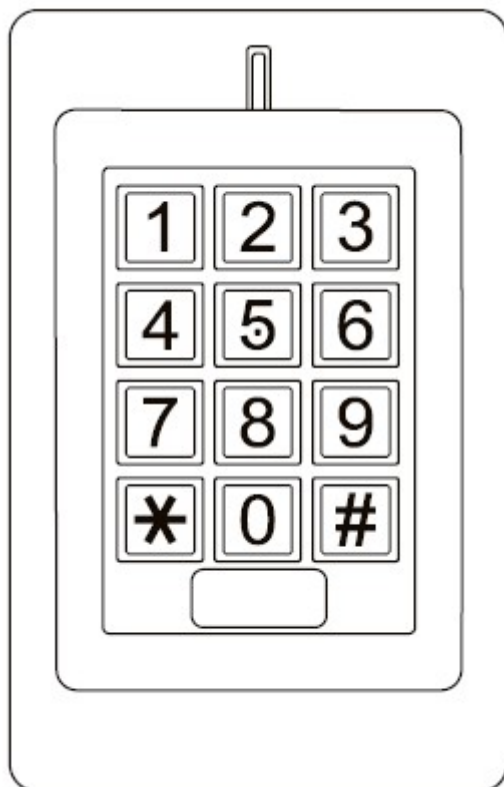


# SK1-H

Waterproof Access Control/Reader



User Manual

# INTRODUCTION

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The SK1-H is a single- entry multi-function Access Controller with integrated keypad and card reader. It is designed and manufactured to perform in a wide range of indoor, outdoor, and harsh environments.

The SK1 supports up to 1000 users in multiple access configurations (Card, **Card or PIN**, or Card + PIN). The built in card reader supports HID 125KHz frequency cards. The relay can operate in Pulse Mode (suitable for access control) or Toggle Mode (suitable for arming/disarming alarms, switching lights, machines....etc)

The SK1-H offers advanced programming features like: Duress PIN/card; Block enrollment; Wiegand 26~37 bits interface. These features make it an ideal choice for door access not only for small shops and domestic households but also for commercial and industrial applications such as factories, warehouses, laboratories, banks and prisons.

## Features

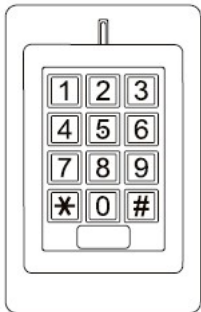
- Waterproof, meets IP66
- Vandal Resistant Metal Enclosure
- One Programmable Relay Output
- Stand Alone or Pass-Through Operation
- 1000 Users (Card/ **Card or PIN** /Card+PIN)
- 10 Panic Card/PIN Codes
- Latch Mode to hold door or gate open
- Wiegand 26~37 bits input & output
- Card Block enrollment
- Integrated Alarm Buzzer & Output
- Low power consumption (55mA)
- Anti-Tamper Alarm
- Backlit Keypad
- Multi-color LED status display
- 12-24V DC/ 12-18V AC Power input

## Specifications:

<b>User Capacity</b> Normal User Panic User	<b>1010</b> 1000 10	<b>Cards/PINS</b>
<b>Operating Voltage</b> Idle Current Active Current	<b>12~24V DC/ 12-18V AC</b> 55mA 80mA	
<b>Keypad</b> PIN length	<b>12 Key (3*4)</b> 4-6 digits	
<b>Proximity Card Reader</b> Radio Technology Read Range	<b>HID</b> 125KHz Industry Standard Proximity Card 3- 6cm	
<b>Wiring Connections</b>	Electric Lock, Exit Button, DOTL, External Alarm, Wiegand (in/out)	
<b>Relay</b> Adjustable Relay Output Time	<b>ONE (NO, NC, COM)</b> 1-99 Seconds (5 seconds default)	

Adjustable Alarm Output Time	0-3 minutes (1 minute default)
Lock Output Load	3 Amp Maximum
Alarm Output Load	3 Amp Maximum
<b>Wiegand Interface</b>	Wiegand 26-37 bit input/output
<b>Environment</b>	<b>Meets IP66</b>
Operating Temperature	-30°C ~60°C, or -22°F ~ 140°F
Operating Humidity	10% ~ 90% Non-Condensing
<b>Physical</b>	<b>Zinc-Alloy Enclosure</b>
Surface Finish	Powder Coat
Dimensions	L: 120* W: 76 * H: 25 (mm)
Unit Weight	600g
Shipping Weight	700g

## Carton Inventory



SK1-H Access Controller



Self Tapping Screws



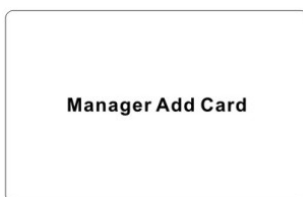
Wall Anchors



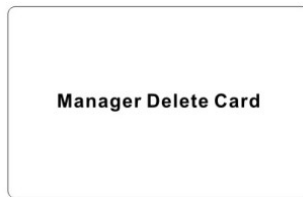
Screw Driver



Diode IN4004 (For relay circuit protection)



Manager Add Card



Manager Delete Card

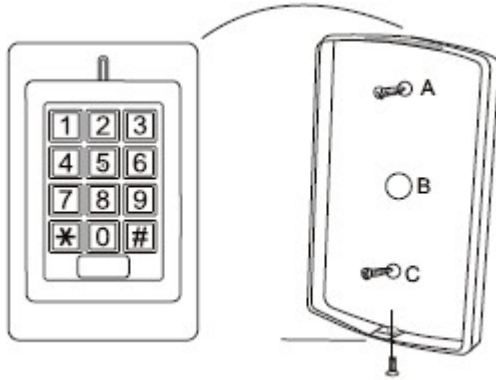
Manager Card

# INSTALLATION

## Install

- Remove the back cover from the unit
- Drill 2 holes(A,C) on the wall for the screws and one hole for the cable
- Knock the supplied rubber bungs to the screw holes(A,C)
- Fix the back cover firmly on the wall with 4 flat head screws
- Thread the cable through the cable hole(B)

- Attach the unit to the back cover.

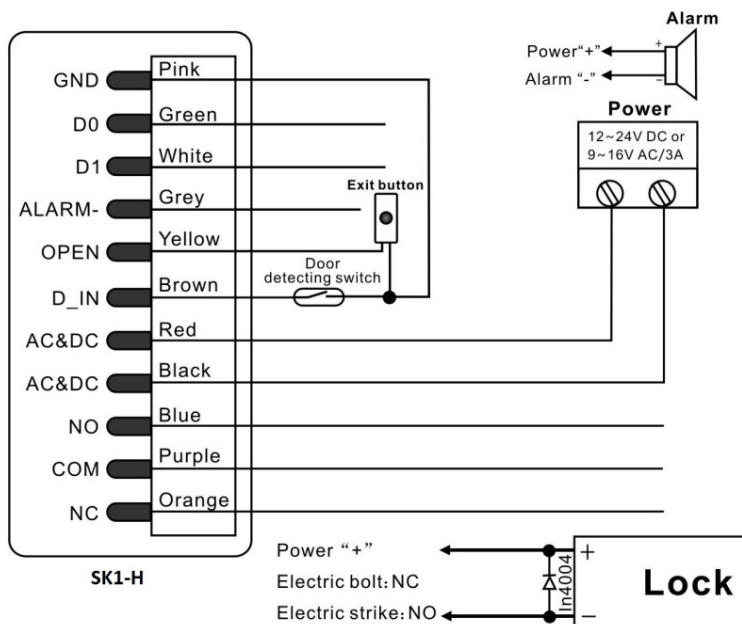


## Wiring

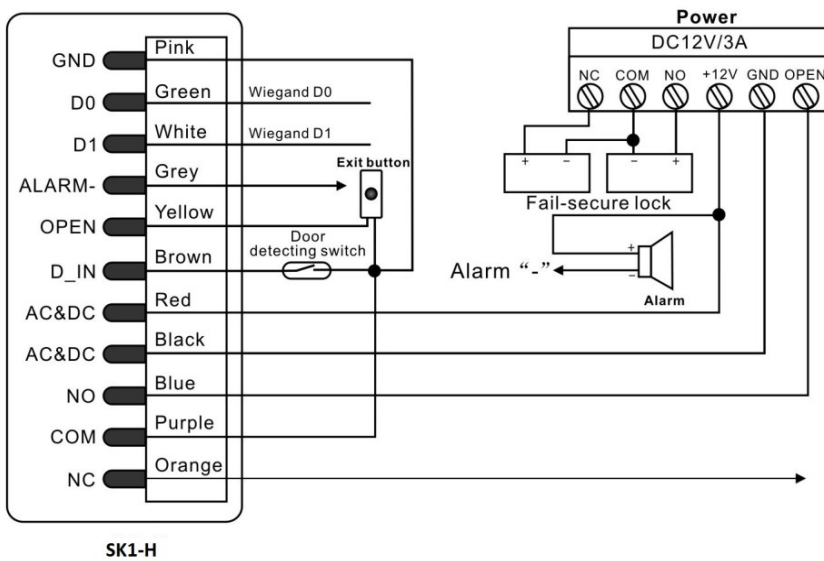
Wire Color	Function	Notes
<b>Basic Standalone Wiring</b>		
Red	AC&DC	12~24V DC/ 12-18V AC Regulated Power Input
Black	AC&DC	12~24V DC/ 12-18V AC Regulated Power Input
Pink	GND	Negative Pole
Blue	NO	Normally Open Relay output
Purple	COM	Common Connection for Relay output
Orange	NC	Normally closed Relay Output
Yellow	OPEN	Request to Exit Button
<b>Advanced Input and Output Features</b>		
Green	D0	Wiegand Input/Output Data 0
White	D1	Wiegand Input/Output Data 1
Grey	Alarm -	Alarm Negative
Brown	D_IN	Door status detecting

## Connection Diagram

### Common Power Supply



## Access Control Power Supply



### To Reset to Factory Default

To reset to factory default, power off, press  , hold it and power on, release it until hear two beeps and the LED shines in orange, then read any two HID cards, the LED will turn in red, means reset to factory default setting successfully. Of the two HID cards read, the first one is Manager Add Card, the second one is Manager Delete Card.

Remarks: Reset to factory default, the user's information is still retained.

### Anti Tamper Alarm

The SK1-H uses a LDR (light dependent resistor) as an anti tamper alarm. If the keypad is removed from the cover then the tamper alarm will operate.

### Sound and Light Indication

Operation Status	Red Light	Green Light	Yellow Light	Buzzer
Power on	Bright	-	-	Short Ring
Stand by	Bright	-	-	-
Press keypad	-	-	-	Short Ring
Operation successful	-	Bright	-	Short Ring
Operation failed	-	-	-	3 Short Rings
Enter into programming mode	Bright	-	-	Short Ring
In the programming mode	-	-	Bright	-
Exit from the programming mode	Bright	-	-	Short Ring
Open the door	-	Bright	-	Short Ring
Alarm	Bright	-	-	Alarm

# Standalone Operation

## 1.1 User Settings

To enter the programming mode	* Master code # 666666 is the default factory master code
To exit from the programming mode	*
<i>Note that to undertake the following programming the master user must be logged in</i>	
To change the master code	0 New code # New code # The master code is any 6 digits
<b>Setting the working mode:</b> Set valid card <b>or</b> PIN users Set valid card <b>and</b> PIN users Set valid card only users	3 0 # Entry by either card <b>or</b> PIN (default) 3 1 # Entry by card <b>and</b> PIN together 3 2 # Entry by card only
<b>To set a user in either card or PIN mode ( 3 0 # ) (Default setting)</b>	
To add a <b>PIN</b> user	1 User ID number # PIN # The ID number is any number between 1~1000. The PIN is any 4~6 digits between 0000~999999 with the exception of 1234 which is reserved. Users can be added continuously without exiting from programming mode as follows: 1 User ID no 1 # PIN # User ID no 2 # PIN #
To delete a <b>PIN</b> user	2 User ID number # Users can be deleted continuously without exiting programming mode
To change the <b>PIN</b> of a PIN user (This step must be done out of programming mode)	* ID number # Old PIN # New PIN # New PIN #
To add a <b>card</b> user (Method 1) This is the fastest way to add cards using ID number auto generation.	1 Read card # Cards can be added continuously without exiting programming mode
To add a <b>card</b> user (Method 2) This is the alternative way to add cards using User ID Allocation. In this method a User ID is allocated to a card. Only one user ID can be allocated to a single card.	1 ID number # Card #
To add <b>card</b> user (Method 3) Add a <b>series cards</b> users - <b>Block Enrollment</b>	5 ID number # The 1 <sup>st</sup> Card number # Card quantity # Note that cards must be consecutive, and card quantity is between 1~1000.

	Maximum 1,000 cards can be enrolled at a stretch within 1 minute.
To delete a <b>card</b> user by card Note users can be deleted continuously without exiting programming mode	2 Read Card #
To delete a <b>card</b> user by user ID This option can be used when a user has lost their card	2 User ID #
To delete a card user by Card number Users can be deleted continuously without exiting from programming mode	2 Card number #
<b>To set a card and PIN user in card and PIN mode ( 3 1 # )</b>	
To Add a <b>card</b> and <b>PIN</b> user (The PIN is any 4~6 digits between 0000&999999 with the exception of 1234 which is reserved.)	Add the card as for a card user Press * to <b>exit from the programming mode</b> Then allocate the card a PIN as follows: * Read card 1234 # PIN # PIN #
To change a <b>PIN</b> in card and PIN mode (Method 1) Note that this is done outside programming mode so the user can undertake this themselves	* Read Card Old PIN # New PIN # New PIN #
To change a <b>PIN</b> in card and PIN mode (Method 2) Note that this is done outside programming mode so the user can undertake this themselves	* ID number # Old PIN # New PIN # New PIN #
To delete a <b>Card and PIN</b> user just delete the card	2 User ID #
<b>To set a card user in card mode ( 3 2 # )</b>	
To add and delete a <b>card</b> user	The operating is the same as adding and deleting a card user in 3 0 #
<b>To delete All users</b>	
To delete <b>All users</b> Note that this is a <b>dangerous</b> option so use with care	2 0000 #

<b>To unlock the door</b>	
For a <b>PIN</b> user	Enter the PIN then press #

For a card User	Read card
For a card and PIN user	Read card then enter PIN #

## 1.2 Master Cards Using

Using Master Card to add and delete card users	
Add a User Card	<ol style="list-style-type: none"> <li>1. (Read Master Add Card)</li> <li>2. (Read User Card) <i>Repeat Step 2 for additional user cards</i></li> <li>3. (Read Master Add Card)</li> </ol>
Delete a User Card	<ol style="list-style-type: none"> <li>1. (Read Master Delete Card)</li> <li>2. (Read User Card) <i>Repeat Step 2 for additional user cards</i></li> <li>3. (Read Master Delete Card)</li> </ol>

## 1.3 Relay Setting (Pulse mode, Toggle mode)

<i>Pulse mode (factory default)</i>				
Pulse mode - door relay time setting	<table border="1"> <tr> <td>4</td> <td>1~99</td> <td>#</td> </tr> </table> <p>The door relay time is between 1~99 seconds, the factory default setting is 5 seconds.</p>	4	1~99	#
4	1~99	#		
<i>Toggle mode (Latch mode)</i>				
Toggle mode	<table border="1"> <tr> <td>4</td> <td>0</td> <td>#</td> </tr> </table>	4	0	#
4	0	#		

## 1.4 Door Detecting, Alarm, Sound and Light Settings

<b>Door Open Detection</b>				
<p><i>Door Open Too Long (DOTL) warning.</i> When used with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened normally, but not closed after 1 minute, the inside buzzer will beep automatically to remind people to close the door and continue for 1 minute before switching off automatically.</p> <p><i>Door Forced Open warning.</i> When used with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened by force, or if the door is opened after 20 seconds of the electro-mechanical lock not closed properly, the inside buzzer and alarm output will both operate. The Alarm Output time is adjustable between 0~3 minutes with the default being 1 minute.</p>				
To disable door open detection (Factory default)	<table border="1"> <tr> <td>6</td> <td>0</td> <td>#</td> </tr> </table>	6	0	#
6	0	#		
To enable door open detection	<table border="1"> <tr> <td>6</td> <td>1</td> <td>#</td> </tr> </table>	6	1	#
6	1	#		
<p><b>Keypad Lockout &amp; Alarm Output options.</b> If there are 10 invalid cards or 10 incorrect PIN numbers in a 10 minute period either the keypad will lockout for 10 minutes or the alarm will operate for 10 minutes, depending on the option selected below.</p>				
Normal status: No keypad	<table border="1"> <tr> <td>7</td> <td>0</td> <td>#</td> </tr> </table> (factory default)	7	0	#
7	0	#		



lockout or alarm (factory default)	
Keypad Lockout	7 1 #
Alarm Output	7 2 #
<b>Light and Sound Setting</b>	
To set keypad backlight	7 4 # To disable keypad backlight
	7 5 # To enable the keypad backlight (factory default)
To set LED	7 6 # To disable the red LED
	7 7 # To enable the red LED (factory default)
To set keypad tone	7 8 # To disable the keypad tone
	7 9 # To enable the keypad tone (factory default)
<b>Alarm output time</b>	
To set the alarm output time (0~3 minutes) Factory default is 1 minute	9 0~3 #
<b>To remove the alarm</b>	
To reset the Door Forced Open warning	Read valid card or Master Code #
To reset the Door Open Too Long warning	Close the door or Read valid card or Master Code #

## 1.5. Panic User Setting

There are 10 groups Panic PIN/card available. When people are under duress to open the door, they can use the panic PIN or card, and under the situation, the door will open, at the same time, the output alarm operates.

### *To set Panic PIN User*

To add a PIN user      8 user ID number # PIN #  
(The ID number is any number between 1001~1010.)

To delete a PIN user      2 user ID number #

### *To set Panic card user*

To add a card user      8 user ID number # card #  
(The ID number is any number between 1001~1010.)

To delete a card user      2 user ID number #

Note:

- ① User ID number must be any 4digits between 1001~1010
- ② Panic PIN/card must be unique, should be distinguished from common PIN and card  
(When the Panic PIN/card is the same with common PIN and card, they will become invalid in Duress, and worked as common user function)

# Wiegand Mode

## Wiegand Format Setting

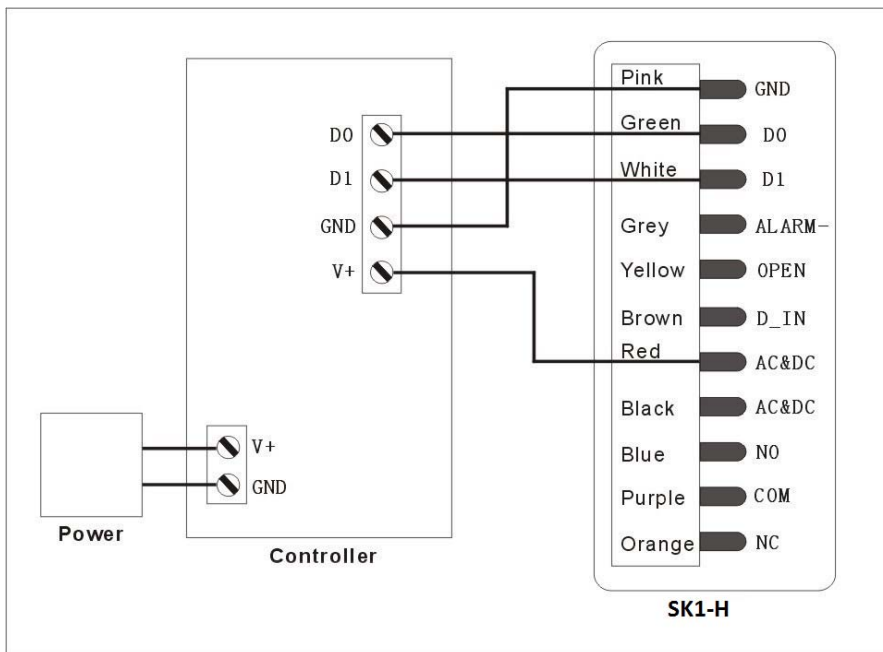
SK1-H supports Wiegand 26~37, both input and output. It can be used as a reader or controller.

To Set Wiegand format:    (Default setting: Wiegand 26)

## Pass through mode (SK1-H operating as a Wiegand Output Reader)

In this mode the SK1-H supports a Wiegand 26~37 bit output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26~37 bit input, then the SK1-H will be operated as a slave reader.

### Wiring Diagram



### Transmission Format:

#### Keypad Transmission

The Reader will transmit the PIN data when it receives the last key (#) press after PIN code.

Format: PIN Code (any 4~6 digits between 0000~999999)

Example: PIN code: 123456

Press 123456 #, then the output format will be: 0000123456

(Note: if press an invalid PIN (any 4~6 digits), the data will be also transmitted.)

#### Proximity Card Transmission

The Reader will transmit the card data when it reads the Card.

Format: Card Number

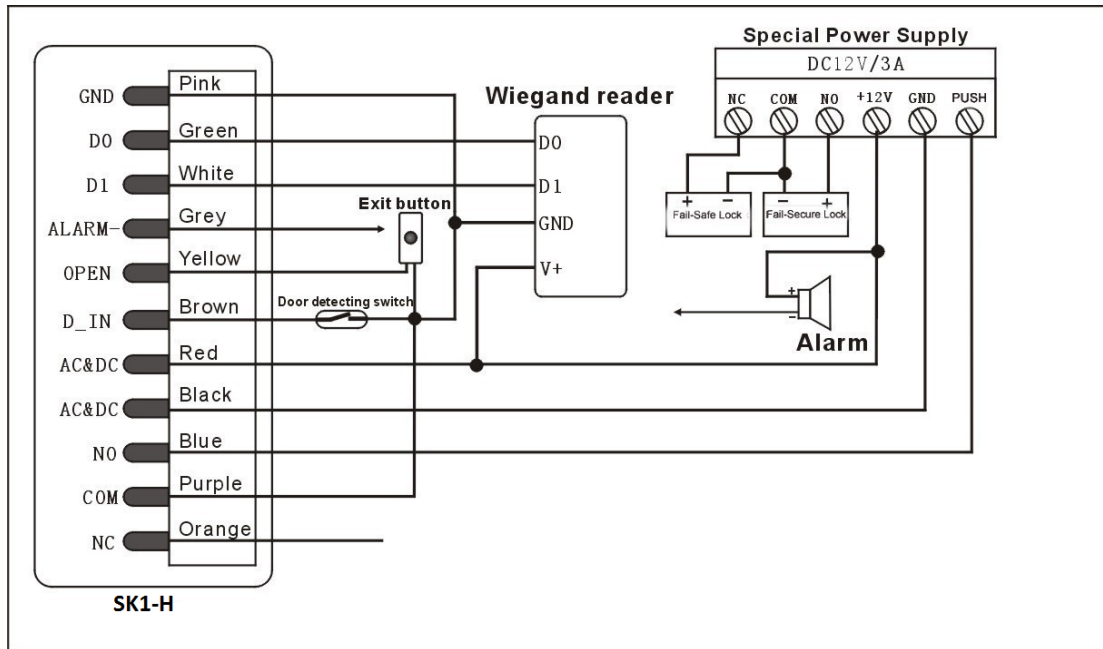
(Note: no matter the card is valid or invalid, the data will be transmitted)

## Controller Mode (SK1-H operating as a Controller)

SK1-H supports a Wiegand 26~37 bit input so an external Wiegand device with a 26~37 bit output can be

connected to the Wiegand input terminals on the SK1-H. Either an ID card reader (125 KHz) or an IC card reader (13.56MHz) can be connected to the SK1-H. Cards are required to be added at the external reader, except where an external HID reader is used, in this case cards can be added at either reader or controller.

### Wiring Diagram



## SK1-H- Simplified Instruction

Function Description	Operation
Enter the Programming Mode	<b>* (Master Code) #</b> <i>(666666 is the default factory master code)</i>
Change the Master Code	<b>0 ( New Master Code ) # ( Repeat New Master Code ) #</b> <i>(code: 6 digits)</i>
Add Card User	<b>1 (Read Card) #</b>
Add PIN User	<b>1 (User ID) # (PIN) #</b> <i>The ID number is any number between 1 ~ 1000. The PIN is any 4-6 digits between 0000 ~ 999999</i>
Delete User	<b>2 (Read Card) #</b> <b>2 (User ID) #</b>
Exit from the programming mode	*
<b>How to be granted access.</b>	
Card User	<b>Read card</b>
PIN User	<b>Enter (PIN) #</b>

### FCC STATEMENT:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

**Warning:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:  
Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.