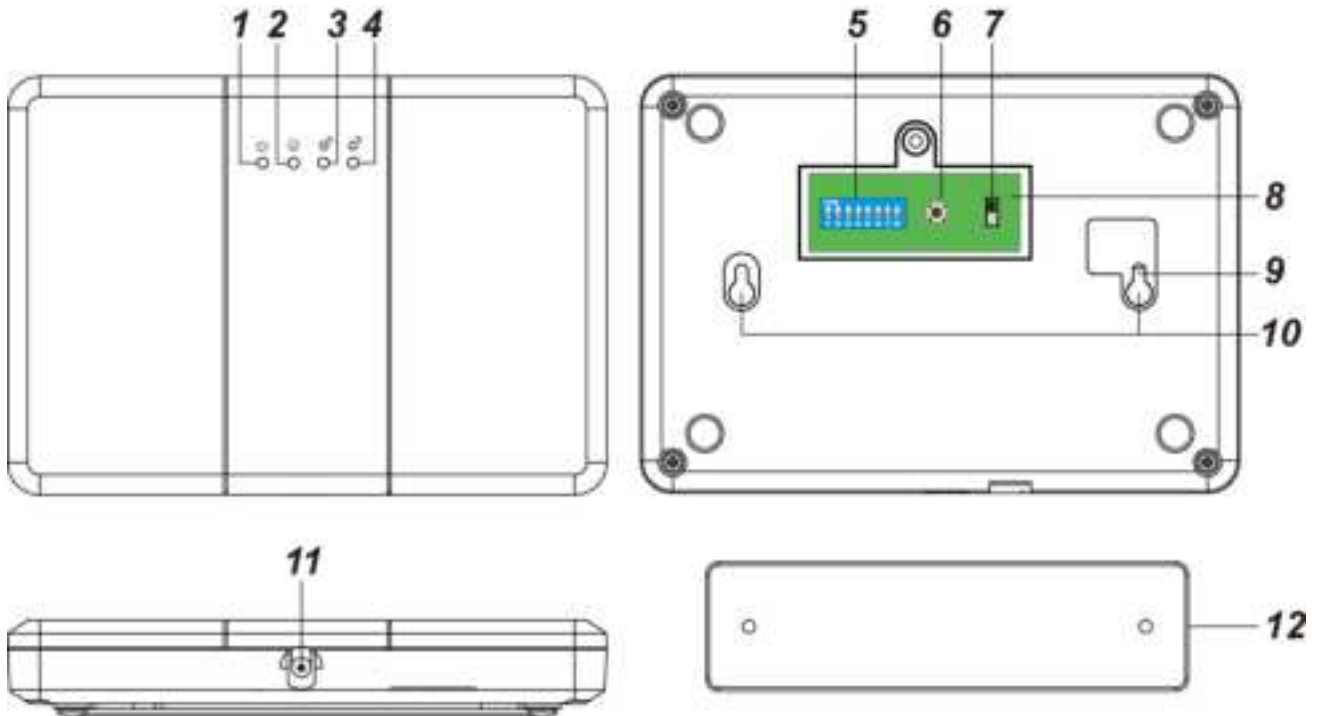


Repeater (RP-29-SF1-DS)

The Repeater is designed to increase the effectiveness and versatility of the alarm system. It is a device that makes your system more powerful by increasing the maximum possible distance between the Main Unit (Control Panel) and the Devices.

● *Identifying the Parts*



1 **Power LED (Green)**

On – Powered by a Power Adapter or Rechargeable Battery

Flash – Rechargeable Battery low on power

2 **Mode LED (Yellow)**

On – The Repeater is in Learning Mode (Panel) or Clear Mode

Flash (1 flash every second) – The Repeater is in Walk Test Mode

Slow Flash (1 flash every 2 seconds) – The Repeater is in Learning Mode (Device)

3 **Transmission: Receive LED (Blue)**

The Blue LED lights up when the Repeater receives a signal transmission

4 **Transmission: Transmit LED (Red)**

The Red LED lights up when the Repeater transmits a signal.

5 **Functional Switch Block**

6 **Test Button**

7 **Battery Switch**

8 **Removable Cover**

9 **Tamper Switch**

10 **Mounting Hole**

11 **DC power jack**

12 **Mounting Bracket**

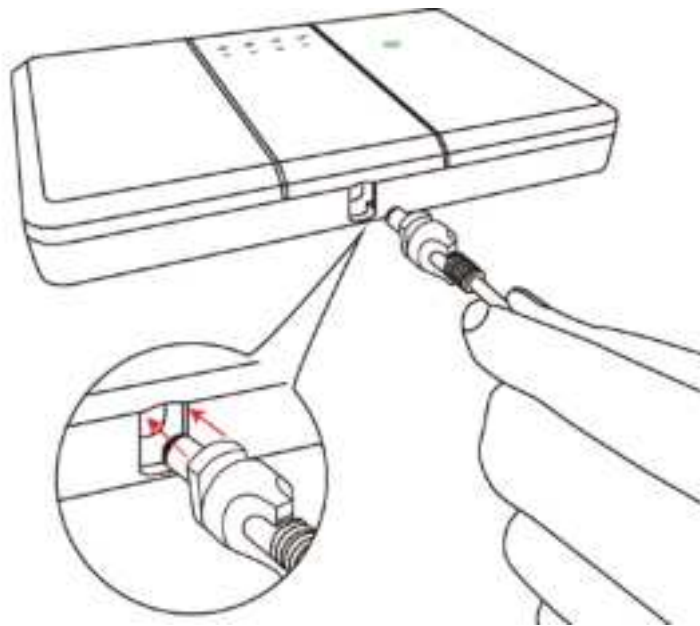
● **Power Supply**

A Power Adapter is required to connect to a wall power outlet. Be sure only to use an adapter with the appropriate AC voltage rating to prevent component damage. A DC 12V 1A output Power Adapter is generally used to power the Repeater.

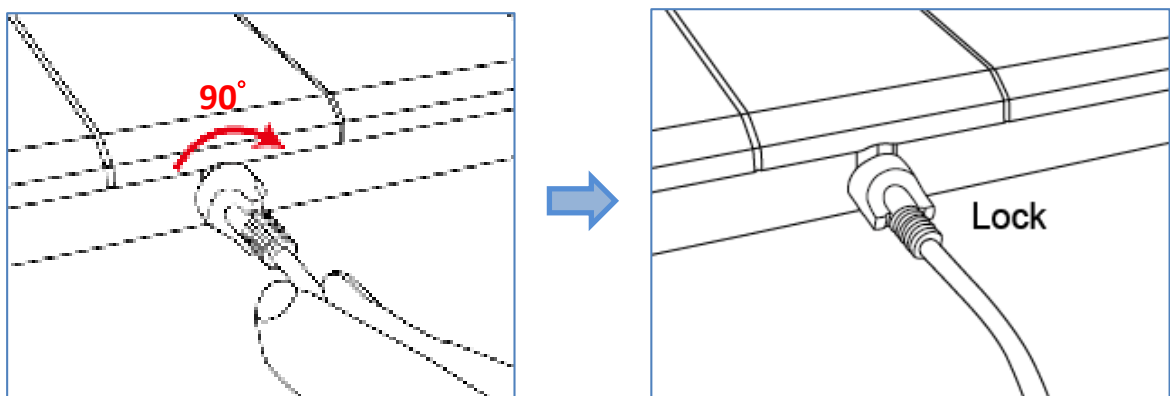
Power Adapter Application:

The DC power jack and plug provide twist-lock feature that can prevent accidental disconnection. To connect the Power Adapter:

Step 1 Align the arc parts of the plug with the arc parts on top/bottom of the DC jack slot, and fit the plug into the slot.



Step 2 Push the plug into place, and make a quarter turn clockwise to lock the plug.



<NOTE>

☞ Locked plug cannot be disconnected without twisting counterclockwise to unlock.

Step 3 Plug the Power Adapter to a wall power outlet.

Step 4 The Repeater will sound a Long beep and the Green LED will light up.

AC Failure/AC Restore:

The Repeater will send an AC Failure signal to the Control Panel when the Power Adapter is unplugged for 30-60 seconds. When the Power Adapter is plugged in again for 30-60 seconds, the Repeater will send an AC Restore signal to the Control Panel.

Rechargeable Battery:

In addition to the adapter, there is a rechargeable battery inside the Repeater, which serves as a back-up power in case of a power failure.

When the Power Adapter is plugged into the DC power jack, slide the Battery Switch to the ON position so the Power Adapter supplies power to the Repeater and at the same time recharges the battery. It takes approximately 72 hours to fully charge the battery.

When the Power Adapter is unplugged, the Repeater will be powered by the rechargeable battery.

The Repeater can detect the battery voltage. When the battery voltage is low, the Green LED will flash to indicate low battery status.

● Functional Switch Block

The Functional Switch Block determines which Mode the Repeater is in. A switch in the up position indicates the **ON** Mode. Likewise, a switch in the down position indicates the **OFF** Mode.



	Function	ON	OFF
DIP Switch 1	Learn Device	Learning mode (Device)	Normal Mode
DIP Switch 2	Range or Walk Test	Walk Test Mode	Normal Mode
DIP Switch 3	Factory Reset	Clear Mode	Normal Mode
DIP Switch 4	Learn into Control Panel	Learning mode (Panel)	Normal Mode
DIP Switch 6	One-way/Two-way Setting	Two-way	One-way
DIP Switch 8	Tamper Function	Disable	Normal Mode (Enabled)

DIP Switches 5 and 7 are reserved.

<NOTE>

- ☞ Please change DIP Switches 1-4 setting when the Repeater is powered, because the change for DIP Switches 1-4 is only valid when the Repeater is powered. For example, DIP Switch 3 is slid to On position when the Repeater is turned off. When the Repeater is turned on, it will NOT enter Clear Mode. However, if the DIP Switch 3 is slid to Off position first, followed by sliding to the On position when the Repeater is on, the Repeater will enter Clear Mode.
- ☞ Please set the DIP Switch 6 for One-way/Two-way device when the Repeater is off. After setting is complete, please power on the repeater and learn/re-learn it into the Panel for the setting to take effect.

- ☞ For DIP Switch 8 setting, please power off the repeater before changing DIP Switch setting. The new Dip Switch 8 settings will take effect when the repeater is re-powered on.

● ***Supervisory Signal***

- The Repeater is supervised by sending a periodic supervision signal to the Control Panel. When the Control Panel fails to receive a supervision signal within the preprogrammed period, a fault will be indicated by the Control Panel.

● ***One-way/Two-way setting***

- The Repeater can operate as either a one-way device or two-way device. When programmed as a two-way device, the Repeater can receive acknowledgement from the Control Panel to ensure successful transmission.
- The repeater will work as a **two-way** device when DIP Switch 6 is slid to **ON** position. It will work as a **one-way** device when DIP Switch 6 is slid to **OFF** position.
- Please set the DIP Switch 6 for One-way/Two-way device when the Repeater is off. After setting is complete, please power on the repeater and learn/re-learn it into the Panel for the setting to take effect.

● ***Learn into Control Panel***

Step 1 To learn the Repeater into the Control Panel, slide DIP Switch 4 to On position under Normal Mode. The Repeater will emit 1 long beep and the Yellow LED will turn on.

Step 2 Put the Control Panel into Learning Mode (please refer to the Control Panel manual).

Step 3 Press the Test button. The Repeater will transmit a Test Code to the Control Panel as the Red LED lights up and the Repeater emits 1 beep.

Step 4 If the Repeater receives an acknowledge signal from the Control Panel within 60 seconds, Learning is successful. The Blue LED will light up for 1 second as the Repeater emits 1 long beep.

If the Repeater fails to receive an acknowledge signal from the Control Panel within 60 seconds, learning has failed and is indicated by the Yellow LED flashing 3 times. Please repeat step 3-4 again.

Step 5 Slide DIP Switch 4 to Off position. The Repeater will emit 1 long beep and the Yellow LED will turn off as the Repeater returns to Normal Mode.

● ***Learn Device into Repeater***

Step 1 Under Normal Mode, slide DIP Switch 1 to On position. The Repeater will emit 1 long beep and the Yellow LED will flash slowly (1 flash every 2 seconds).

Step 2 Please refer to the device manuals on how to send learn code from the devices.

For PIR Camera, please press the test button once to send a learn code to the Repeater.

If the Repeater receives a learn code from a new device, it will emit 1 long beep and the Blue LED will light up for 1 second to indicate successful learning.

If the Repeater receives a learn code from a device already learnt into the Repeater, it will emit 2 beeps and the Blue LED will light up for 1 second.

A maximum of 60 devices can be learnt into a Repeater, and up to 8 PIR cameras are supported. If the user attempts to learn in a 61st device, the Repeater will emit 4 beeps.

<NOTE>

- ☞ If multiple repeaters are employed, please learn each device into the repeater that is closest to the device's operation area. Avoid learning a device into multiple repeaters.
- ☞ All the devices learnt into the Repeater must also be learnt into the Control Panel.

Step 3 When the learning is complete, slide DIP Switch 1 to the Off position. The Repeater will emit 1 long beep, the Yellow LED will turn off as the Repeater returns to Normal Mode.

● ***Walk Test Mode***

Learnt-in Control Panel or learnt-in devices can check for its signal range with the Repeater if the Repeater enters Walk Test Mode.

Step 1 Under Normal Mode, slide DIP Switch 2 to the On position. The Repeater will emit 1 long beep and the Yellow LED will flash (1 flash every second).

Step 2 When the Repeater receives signals from the Control Panel or the learnt-in devices, it will emit a long beep and the Blue LED will light up for 1 second. The signal is then retransmitted as the Red LED lights up for 1 second.

Step 3 To exit Walk Test Mode, slide DIP Switch 2 to the Off position. The Repeater will emit 1 long beep and the Yellow LED will turn off.

● ***Clear Mode (Factory Reset)***

Clear the previously programmed memory and reset the Repeater to Factory Default.

Step 1 Under Normal Mode, slide DIP Switch 3 to On position. The Repeater will emit 1 long beep and the Yellow LED will light up.

Step 2 Press and hold the Test button for 5 seconds. The Repeater will emit 1 long beep to indicate all learnt-in devices and Control Panel are cleared from the Repeater.

Step 3 To exit Clear Mode, slide DIP Switch 3 to Off position. The Repeater will emit 1 long beep and the Yellow LED will turn off.

<NOTE>

- ☞ Whenever the Repeater is removed from the Control Panel, it should be put to factory reset as well to clear its Control Panel memory.

● ***Operation***

If the Repeater receives a signal from the Control Panel (e.g., a command), the signal is retransmitted to the corresponding device(s) from the Repeater. The transmission LEDs will light up accordingly.

If the Repeater receives signal from a device (e.g., an alarm signal), the signal is retransmitted to the Control Panel from the Repeater. The transmission LEDs will light up accordingly.

<NOTE>

- ☞ If the Repeater emits 4 beeps after receiving a device signal, it indicates the Repeater may not have been learned into the Control Panel successfully. Please refer to step 4 of **Learn into Control Panel** section. Learning is successful only if the Repeater emits 1 long beep upon receiving an acknowledge signal from the Control Panel.

● ***Tamper Protection***

- The Tamper Switch is in normal operating position (Tamper Closed) when the Repeater is hooked onto the Wall Mounting Bracket. Tamper violation happens when the Repeater is removed from the hook where Tamper Switch is released (Tamper Opened).
- The tamper protection function can be **disabled** when DIP Switch 8 is slid to ON position. It is **enabled** when DIP Switch 8 is slid to OFF position. Change to Dip Switch 8 setting will become valid when the repeater is re-powered on.

● ***Deployment Guidelines***

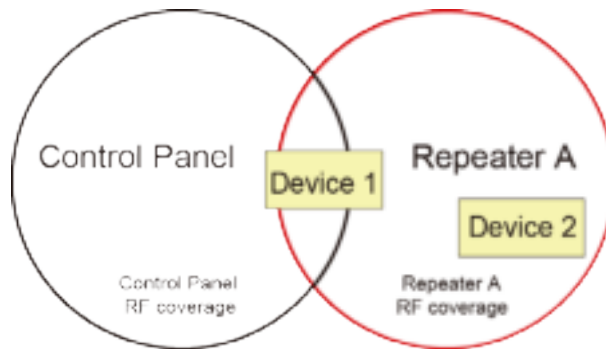
- All Devices and Repeaters must be learnt into the Control Panel for the panel to recognize them. Each device must be learnt into the Repeater that receives and relays its signal.
- If a device is within an acceptable range for Control Panel to receive its signal, it is strongly recommended to learn the device into the Control Panel directly instead of into the Repeater.
- When employing multiple repeaters, please learn each device into the closest repeater in its operation area. Avoid learning a device into multiple repeaters.
- Only link one layer of repeater(s). **Do Not** cascade repeaters to create a transmission relay.
- Maintain a distance between repeaters and the Control Panel to prevent cross signaling.

Single Repeater

In the example below when one repeater is used:

- Repeater A should be learned into the Control Panel.
- Device 2 should be learned into Repeater A for Repeater A to receive and relay its signals. Device 2 should also be learned into the Control Panel.
- For Device 1 that is within acceptable range for Control Panel to receive its signal, it is strongly recommended to learn Device1 into the Control Panel directly instead of into the Repeater

Example



Multiple Repeaters

In the Example 1 below when multiple repeaters are used:

- All Repeaters (A/B/C/D) and Devices (1/2/3/4) should be learned into the Control Panel.
- Devices (1/2/3/4) need to be learned into the respective repeaters in their operation areas.

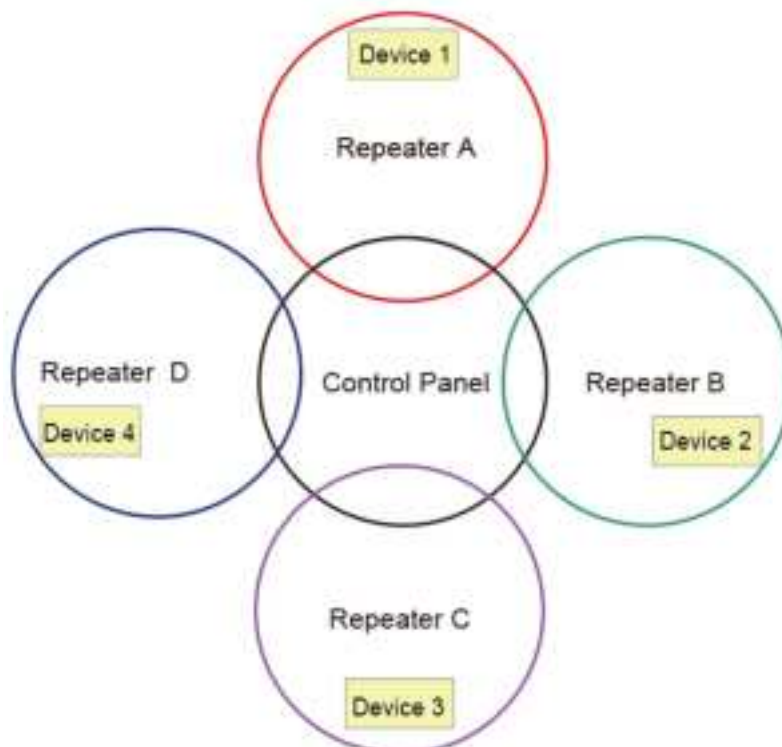
Device 1 into Repeater A,

Device 2 into Repeater B,

Device 3 into Repeater C

Device 4 into Repeater D

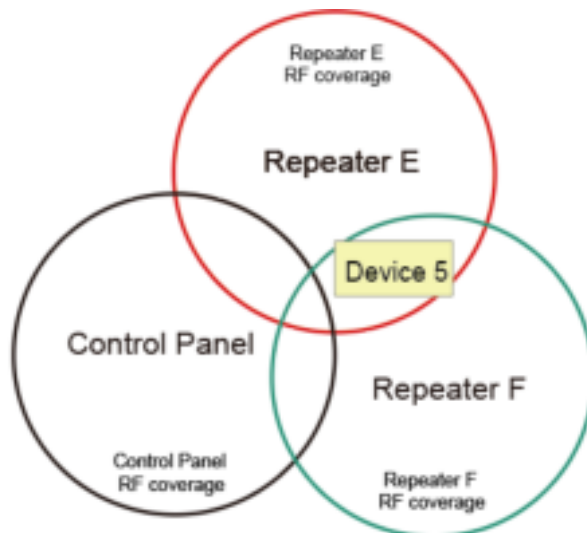
Example 1



In the Example 2 below, where the Device is located between the RF coverage areas of two Repeaters, please choose **one Repeater only** to learn the Device to prevent signal traffic. **Do Not** learn a device into more than one repeater.

- Repeater E and F should be learned into the Control Panel.
- Device 5 has to be learned into One Repeated Only (**either Repeater E only or Repeater F only**). Do NOT to learn Device 5 into both repeaters.
- Device 5 should also be learned into the Control Panel.

Example 2



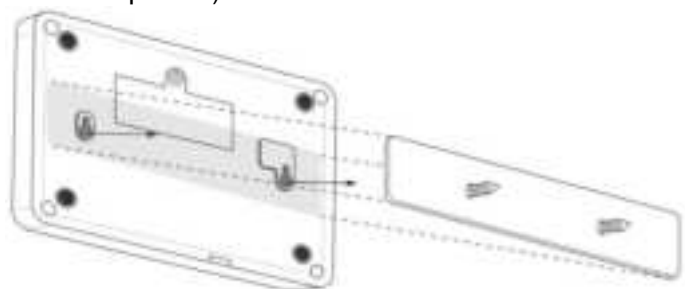
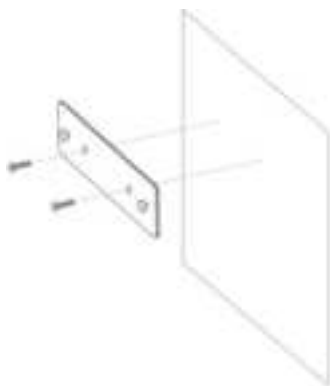
● How to mount the Repeater

The Repeater can be placed on the table, mounted on the wall or wherever desired. Follow the steps below to mount the Repeater:

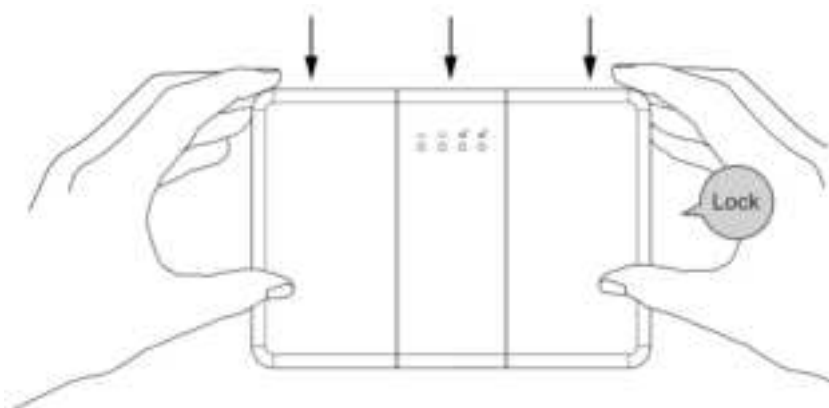
Step 1 Using the holes of the Mounting Bracket as a template, drill holes into the mounting surface.

Step 2 Insert the wall plugs if fixing into plaster or brick. Screw the Mounting Bracket to the wall.

Step 3 Hook the Repeater onto the Wall Mounting Bracket (with the Mounting Holes of the Repeater).



Step 4 Hold the Repeater and gently push it downwards as shown below.



Federal Communication Commission Interference Statement

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 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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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

- (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.