

*** USER'S MANUAL ***

FCC ID : Q8605001

The Federal Communication Commission 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 instruction, may cause harmful interference to radio communication. 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 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.**

Use only shielded cables to connect I/O devices to this equipment. You are cautioned that change or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

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 INTERFERECE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIREED OPERATION.

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

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Trademarks

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Dangers and Hazards

When using the Guardian Angel, refer to the following instructions:

- Read and follow all instructions and warnings provided.
- Save these instructions for future use.
- When servicing or replacement parts are required, ensure work is done by a qualified technician.
- Do not use this unit near water or in a wet or damp environment.

Any electrical equipment is hazardous if handled improperly. Ensure that you follow the preceding safety instructions to avoid harm to yourself and damage to the unit.

FEDERAL COMMUNICATIONS 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 and 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 try one or more off 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.

Caution:

To assure continued FCC compliance:

Any changes or modifications not expressly by the grantee of this device could void the user's authority to operate the equipment.

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Introduction

Thank you for selecting the Guardian Angel. This highly configurable wireless audio/video monitoring system enables you to set up a monitoring network quickly and easily without the need to install wires and cables.

Included in this wireless system are a full-colour CMOS camera/transmitter and a portable hand-held receiver with a colour TFT LCD display. The Receiver can be powered using the power adapters or an alkaline battery.

The standard RF transmission protocols and selectable operating channels makes this a very versatile unit which can be used in the home, office or when outside.

The Guardian Angel supports up to four separate transmitters operating on separate channels that you can switch between using a single handheld receiver.

Features

- Wireless audio and video monitoring for office security
- Lightweight receiver is equipped with a 2.5-inch colour TFT LCD screen and built-in speaker
- 2.4 GHz signal avoids interference from 900 MHz cordless phones
- Adjustable antenna transmits up to 300 feet (FCC - USA)
- Four-channel capability allows a single receiver to receive signals from up to four different transmitters
- Six infrared, night vision
- LCD saving mode (voice activation) extends battery life

Unpacking

Contact your dealer immediately if any of the following components are missing.

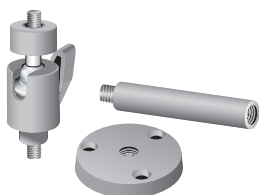


Video Monitor/Receiver



Camera/Transmitter

Your Guardian Angel includes either a tripod or a fixed mounting bracket (must be assembled).



Fixed Mounting Bracket
(components)



Tripod

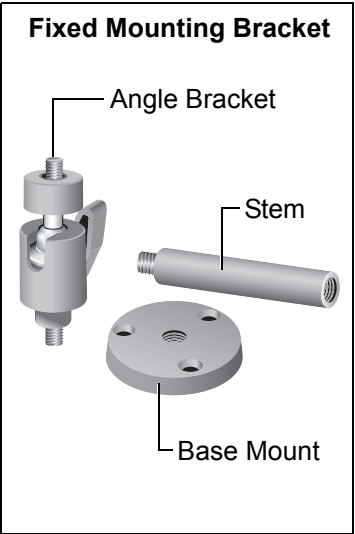
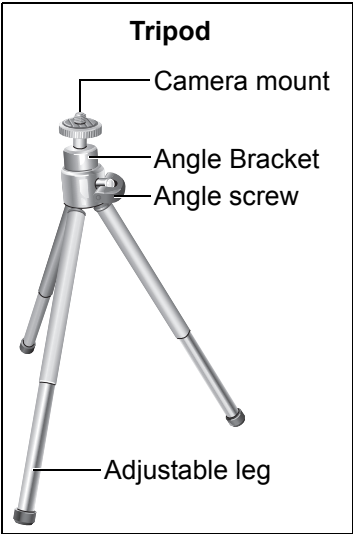
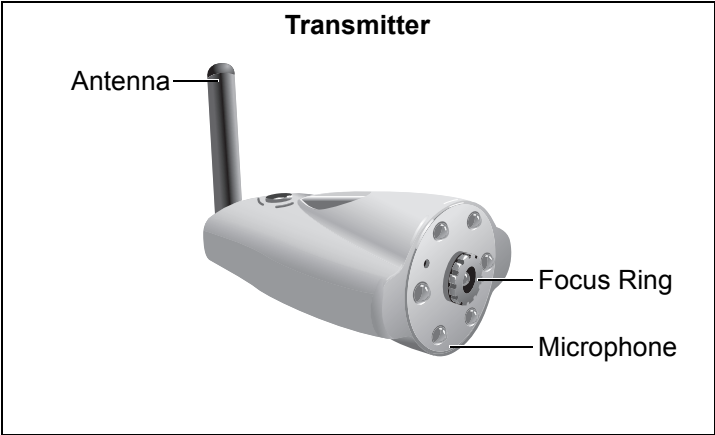


AC Power Adapters

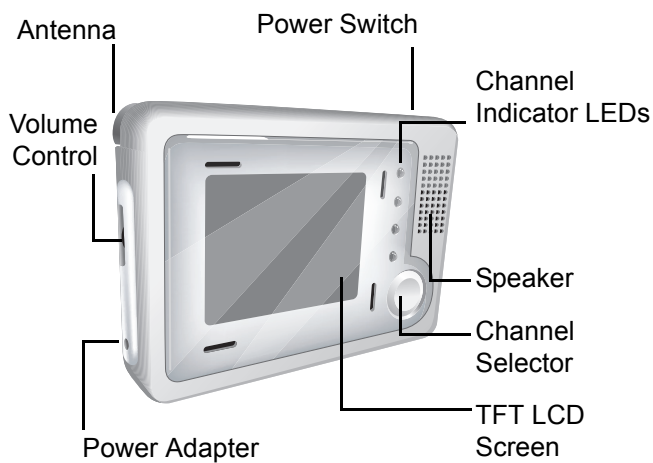


User Manual

Components



Receiver



Setting Up the GA-253

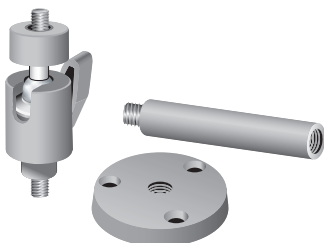
Setting Up the Camera/Transmitter

This chapter takes you through the steps required to set up the Guardian Angel. Depending on the model you purchased, your Guardian Angel will come equipped with either a fixed mounting bracket or a tripod. For instructions on setting up the tripod, see the next section, *Attaching the Camera to the Tripod* on page 6. For instructions on setting up the fixed mounting bracket, see *Setting Up the Fixed Mounting Bracket* on page 8.

Tripod



Fixed Mounting Bracket Components



Your Guardian Angel includes either a tripod or a fixed mounting bracket (must be assembled)

Setting Up the Tripod

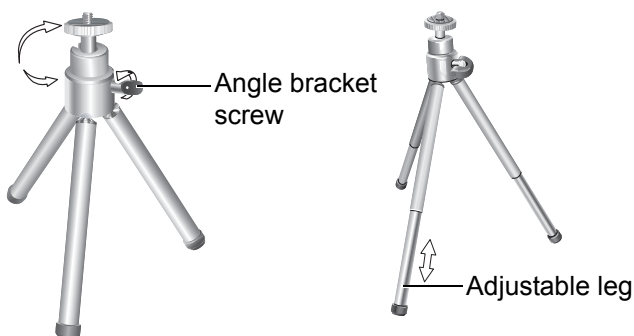
Attaching the Camera to the Tripod

1. Hold the camera firmly to avoid dropping it.
2. Screw the threaded top of the assembled angle bracket clockwise into the hole on the underside of the camera body.



Positioning the Tripod

The camera tripod is equipped with adjustable legs to allow positioning of the camera at a range of heights. Each of the three legs is individually adjustable to allow compensation for uneven surfaces. The camera mount angle bracket at the top of the tripod can be adjusted to a suitable angle by loosening the angle bracket screw, setting the angle, then tightening the screw.



Take the following points into consideration when planning a location for your camera:

- The camera should be positioned so that the view of the area to be monitored is unobstructed.
- The line of sight between the camera and the video monitor should be as clear as possible. Reducing the number of doors, walls and windows between the camera and the video monitor improves reception quality.
- You must ensure the area in which you wish to set up the camera has a power outlet.

When positioning the camera:

1. Make sure the camera is securely attached to the tripod.
2. Position the tripod in the desired location, adjusting the legs and angle as necessary.
3. Test the reception of the video monitor/receiver in locations where you plan to use the receiver. See the section *Adjusting Reception Quality* on page 19 for information on improving wireless transmission quality.

Setting Up the Fixed Mounting Bracket

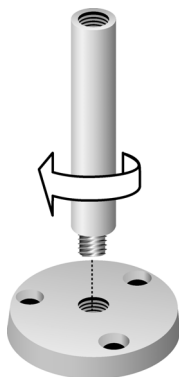
Assembling the Fixed Mounting Bracket

The fixed mounting bracket included consists of three parts:

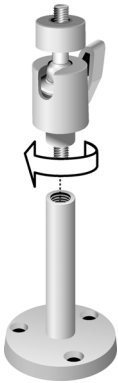
- Angle bracket
- Stem
- Base mount

Follow these steps to assemble the fixed mounting bracket:

1. Screw the threaded end of the stem clockwise into the base mount.

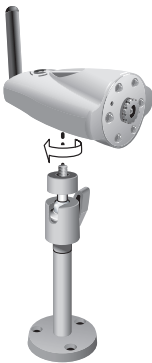


2. Screw the threaded end of the angle bracket clockwise into the top of the stem.



Attaching the Camera to the Angle Bracket

1. Hold the camera firmly to avoid dropping it.
2. Screw the threaded top of the assembled angle bracket clockwise into the hole on the underside of the camera body.



Attaching the Mounting Bracket to a Fixed Surface

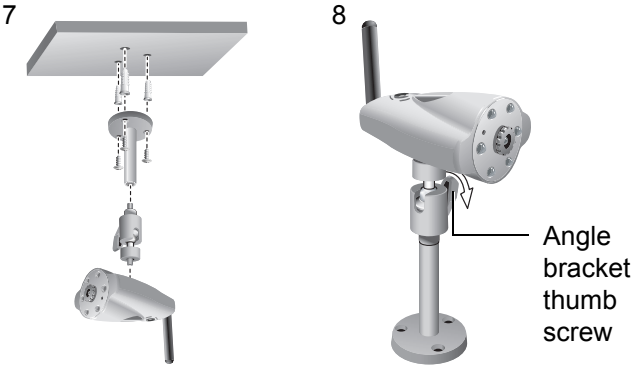
You may choose to attach the camera mount to a fixed surface such as a wall or ceiling; however, the following points should be taken into consideration when planning a location.

- The camera should be positioned so that the view of the area to be monitored is unobstructed.
- The line of sight between the camera and the video monitor should be as clear as possible. Reducing the number of doors, walls and windows between the camera and the video monitor improves reception quality.
- You must ensure the area in which you wish to set up the camera has a power outlet.

To mount the camera to a fixed surface:

1. Make sure the mounting assembly components are screwed together firmly.
2. Hold the base of the mount against the fixed surface and point the camera at the area to be monitored.
3. Have another person test reception of the video monitor/receiver in locations where you plan to use the receiver. See the section *Adjusting Reception Quality* on page 19 for information on improving wireless transmission quality. Determine the optimum camera placement before proceeding to the next step.
4. Using a sharpened pencil, mark the location of the three mounting bracket holes on the fixed surface (e.g. wall).
5. Drill three holes at the locations you marked.
6. Push the wall plugs into the holes.

7. Use a Phillips screwdriver to screw the base mount to the fixed surface.
8. Attach the camera to the angle bracket and make final adjustments to the camera angle. Tighten the angle bracket thumb screw.



Setting Up the Video Monitor/Receiver

The video monitor is designed for portability and convenience. It can be held in your hand and carried around, stored in a pocket, or placed at a comfortable viewing angle on a flat surface.

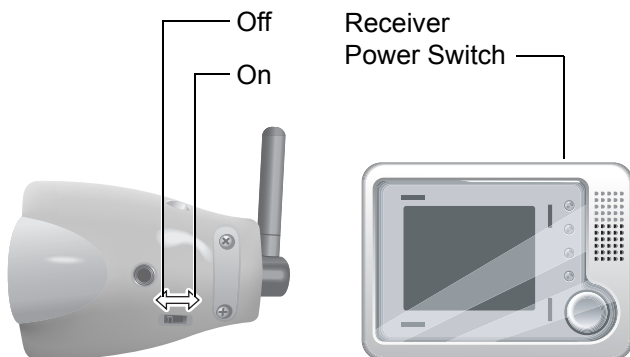


Using the Batteries and Adapters

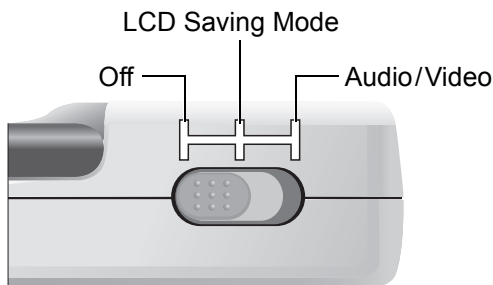
Turning the Power On

Both the camera/transmitter and the video monitor/receiver are powered using the included power adapters. The camera/transmitter can also be powered by three ordinary or rechargeable size AA batteries.

To turn the transmitter power on, slide the power switch in the direction of the arrow illustrated below:



The video camera/receiver power switch has three settings as illustrated:



Using Batteries

Using batteries provides convenient, cable-free power for the receiver. Normal operating times are as follows:

Component	LCD Saving	Audio and Video
Video Monitor/Receiver	6 hours	3 hours

Operating time can be extended when the receiver is in LCD saving mode. The receiver can also be plugged into an electrical outlet using the power adapter as explained in the following section.

When the batteries no longer contain enough charge to power the receiver, it will automatically shut down. There is no audible or video warning prior to shutdown.

Caution:

- Incorrectly replacing the batteries may result in explosion.
- Replace batteries with the same or equivalent type of battery.

Never force the pins of a power adapter into an electric outlet. Purchase a plug adapter if necessary.

Using the Power Adapters

The GA-253 comes with two identical chargers that can be used interchangeably between the camera/transmitter and the video monitor/receiver. Read the warning below before proceeding.

Warning:

- Do not use power adapters in outdoor locations.
- Do not place power adapters in areas where they may come in contact with liquids.
- Never force the pins of a power adapter into an electric outlet. Purchase a plug adapter if necessary.

Plugging In the Power Adapters

1. Plug the power adapter into an electrical outlet.
2. Plug the AC adapter connector into the power adapter port on the transmitter and receiver as shown in the following illustrations.

Transmitter



Receiver



Using the GA-253

This section explains how to set up and use the GA-253 as a wireless security system or as a wireless A/V entertainment hub.

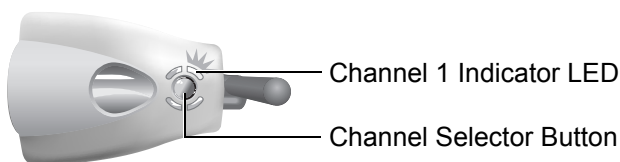
Using the GA-253 as a Wireless Audio/Video Security System

Setting Channels

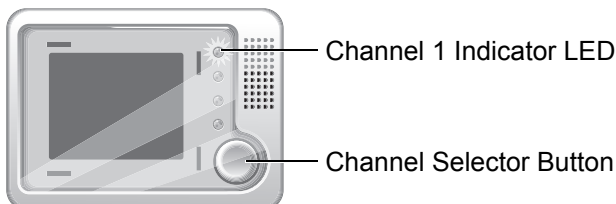
The GA-253 can transmit and receive audio and video signals on four distinct frequencies or channels. This enables you to monitor up to four different cameras using a single receiver, monitor a single camera with two receivers, or use any other combination of transmitters and receivers.

Setting Channels for Single Camera Use

1. Make sure the camera/transmitter and video monitor/receiver are powered on. See *Turning the Power On* on page 12.
2. Push the channel selector button on the camera to select a channel. The green channel indicator LED switches to the next channel (1, 2, 3 or 4) with each button press. Select channel 1.



3. Push the channel selector button on the video monitor. The green channel indicator LED switches to the next channel (1, 2, 3 or 4) with each button press. Select channel 1.



The camera and video monitor are now set to the same channel.

If the video or audio quality is poor, try setting the camera and video monitor to a different channel by following steps 2 and 3 above. Poor signal reception may be the result of interference from other nearby wireless devices. Changing the channel can help solve this problem. See the *Troubleshooting* section on page 21 for more information.

Setting Channels for Multiple Camera Use

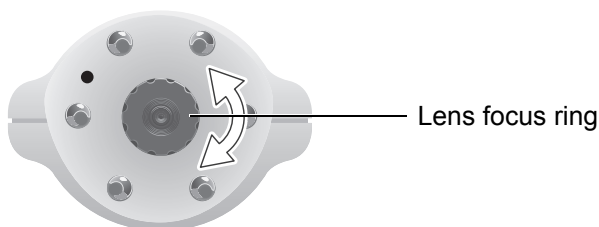
The GA-253 video monitor/receiver can receive audio and video signals from up to four separate cameras/transmitters. Additional GA-253 cameras/transmitters can be purchased from your dealer.

Follow the instructions below to set up channels for multiple transmitters.

1. Assemble and install each of the cameras as described in *Setting Up the Camera/Transmitter* on page 5. Make sure the cameras are turned on.
2. Set the channel of the first camera to channel 1 by pressing the channel selector button until the first channel indicator LED is lit.
3. Set the second camera to channel 2. If you have a third and fourth camera, set them to channels 3 and 4 respectively.
4. Turn on the video monitor/receiver.
5. Check the reception of each channel by pressing the channel selector button on the video monitor. If the audio or video signal of a channel is unclear, adjust the antenna angle of the camera corresponding to that channel. Refer to the *Troubleshooting* section on page 21 for more information.

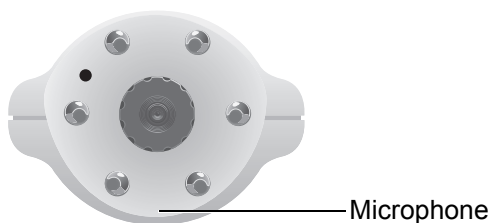
Adjusting the Focus

The GA-253 camera lens focus can be adjusted by turning it clockwise or anticlockwise as shown in the following figure. Adjust the lens focus ring so that the image on the video monitor screen is clear.



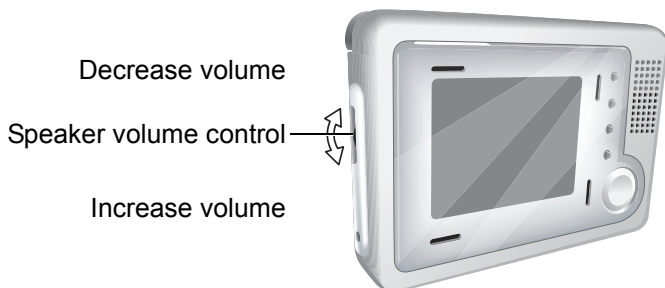
Adjusting the Volume

The GA-253 video camera has a high sensitive microphone built into the front of the body below the camera lens.



Sound picked up by the microphone is transmitted to the video monitor, where it is played through the built-in speaker.

The speaker volume can be adjusted by turning the volume control located on the side of the body as shown.



Adjusting Reception Quality

If video or audio quality is noisy or distorted, try setting the transmitter and receiver to a different channel. Poor signal reception may be the result of interference from other nearby wireless devices. Changing the channel can help solve this problem.

Adjusting the antenna direction often results in improved wireless transmission. Adjust the antennas on both the transmitter and receiver to achieve optimum results.

See the *Troubleshooting* section on page 21 for more information.

Specifications

General	
Frequency Range	2.400-2.4835 GHz
Transmission Range	up to 300 ft (~100 m)
Channel Selection	4 channels
Channel Space	19 MHz
Type	FM/FM
Power Supply	Input: 110 V or 220 V adaptors
	Output: DC 6 V, 0.5 A
Battery	AA Battery or Rechargeable Ni-Mh x 3
Operating Temperature	5°C ~ 40°C
Storage Temperature	-20°C ~ 60°C
Transmitter	
Camera	Colour CMOS sensor
Output Power	1 mW/10 mW
Night Vision	6 Infrared LED
Audio Input	High sensitive microphone
Dimensions	Approx. 80 x 45 x 23 mm
Weight	~160 g
Receiver	
Display Device	2.5-inch TFT LCD 480 x 240 pixels
Speaker	Dim: 10mm 0.2W
Dimensions	122 x 99 x 22 mm
Weight	~350 g

Troubleshooting

1. I can't turn the power on.
 - Ensure that you have connected the power adapters correctly (see *Using the Batteries and Adapters* on page 12) or, if you are using batteries, that they still have some power left.
2. An image doesn't appear on the video monitor/receiver.
 - Make sure the camera/transmitter and the video monitor/receiver are set to the same channel and that you have turned them both on. See *Setting Channels* on page 15.
3. How do I select a channel to avoid interference?
 - When using only one transmitter and receiver, make sure they are set to the same channel. If more than two receivers or transmitters are used within a short distance of each other, set the channels as far apart as possible, for example, Channel 1 and Channel 4. If possible, place the units farther apart from each other.
4. Why does signal fading occur?
 - Slight fading occurs due to weather, building structures, crowding of people and interference from other RF signals. Occasional fading is normal. To prevent fading, place the receiver in a clear location.

5. The audio/video reception is not clear.
 - The GA-253 uses the 2.4 GHz frequency range which is also used by microwave ovens, cordless phones and wireless LANs. If any two such devices are operating at the same time, interference occurs. While this situation is difficult to prevent, switching to different channels can help.
 - Because the 2.4 GHz frequency resonates with water, transmission is sensitive to weather conditions and moving people. Poor transmission quality can be improved by adjusting the location, angle or direction of the antennas.
6. The transmission distance is less than 300 feet (~100 meters).
 - Transmission distance is highly dependent on environment factors including weather and building structure. The steel framework in a reinforced concrete building will absorb RF signals and reduce the transmission range. Adjust the antennas on the receiver(s) and transmitter(s) to get optimal performance.