

FC CE0681①

Edition

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Trademarks

All product names used in this manual are the properties of their respective owners and are acknowledged.

Safety and battery use

- Read and follow any warnings in this manual.
- Read the regulatory compliance notice on page 19
- When not in use, remove any batteries and store them in a cool dry place.
- Do not use the camera in temperatures below -10 or exceeding 55 degrees Celsius
- Don't dispose of used batteries with household waste. Return the batteries to your dealer or to a special disposal service.
- Any servicing must only be done by qualified personnel.
- Do not set up or use the receiver or camera in a wet or damp environment.
- Save these instructions for future reference.

About this manual

This manual is designed to assist users with setting up and operating #ACT-202TX /#ACT-204RX 2.4Ghz wireless security camera system.

Information in this document has been carefully checked for accuracy; however, no guarantee is given as to the correctness of the contents. The information contained in this document is subject to change without notice.

Table of contents



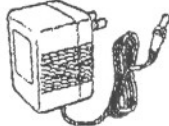
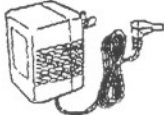





1—GETTING STARTED.....	1
CHECKING THE PACKING LIST	1
IDENTIFYING PARTS	3
Camera.....	3
Receiver.....	4
2—SETTING UP.....	5
PRE-SETUP TESTING	5
MAKING CONNECTIONS	6
Receiver setup	6
Connecting the AC adapter to the camera	7
Connecting the battery to the camera	7
MOUNTING OPTIONS	8
Ceiling installation.....	8
Wall installation.....	9
Hidden installation.....	12
ADJUSTING THE CAMERA ANGLE.....	14
3—OPERATION.....	15
OPERATING RESTRICTIONS	15
MATCHING CHANNELS	16
STANDARD ALWAYS-ON OPERATION	16
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APPENDIX.....	19
CLEANING	19
TROUBLESHOOTING.....	19
TECHNICAL SPECIFICATIONS.....	21
Camera	21
Receiver	21
FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT	22
WARRANTY	23

1—Getting started

Congratulations on your purchase of the remote camera. Use this camera to monitor locations wirelessly, as a stand-alone solution

Checking the packing list

Carefully unpack the projector and check that the following items are included:

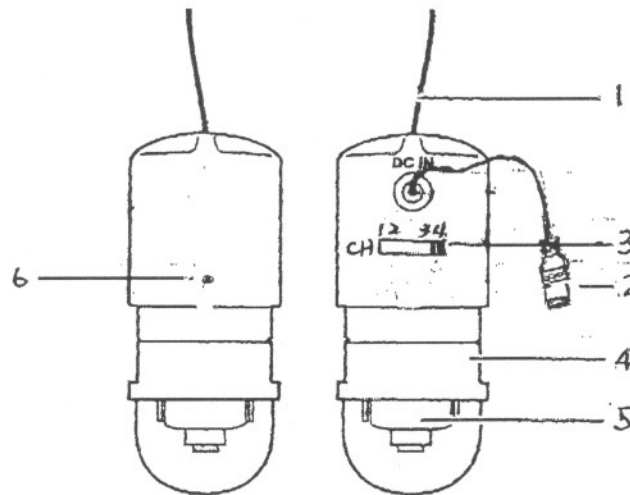
		
Receiver	Camera with dome cover	Receiver AC adapter
		
Camera AC adapter	9V-battery adapter	A/V cable
		
Wall mounts	Hidden mounts	Ceiling mounts and foam spacers

IDENTIFYING PARTS

Identifying parts

Refer to the following sections to identify components of the camera and receiver.

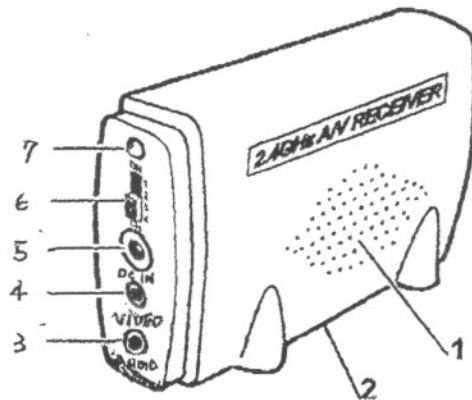
Camera



Item	Description	See page
1.	Antenna	—
2.	DC IN jack	6
3.	CH 1-4 channel switch	15
4.	Dome cover	4
5.	Camera (under dome cover)	13
6.	Microphone (for ACT-202TVBA & ACT-202TVCA)	—

1—GETTING STARTED

Receiver



Item	Description	See page
1.	Speaker	—
2.	Socket mount	—
3.	Audio out jack	5
4.	Video out jack	5
5.	DC IN jack	5
6.	CH 1-4 channel switch	15
7.	ON power LED	15

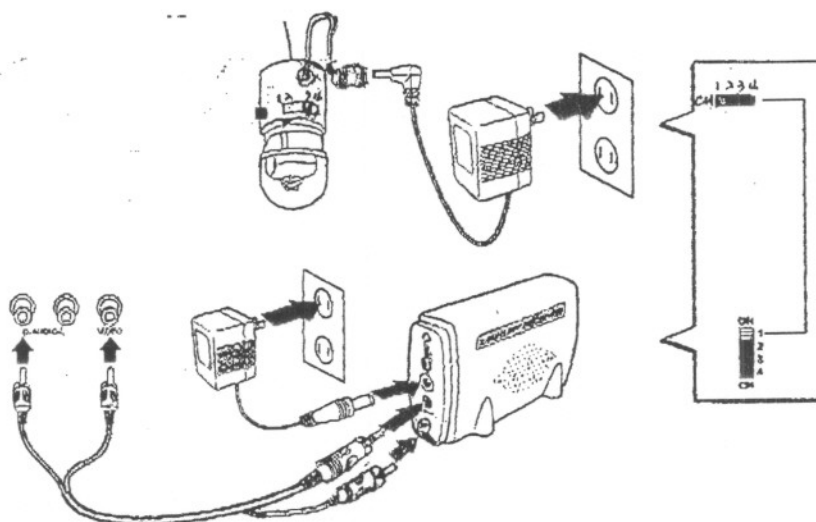
2—Setting up

This section explains the mounting options and setup of the wireless camera system. However, before installing the camera check that all the parts are working as described below

Pre-setup testing

For the pre-setup test do the following:

- Connect the A/V cable from the receiver to the monitor. Ensure the monitor is set for video playback.
- Connect the AC adapters.
- Match the channels on the receiver and camera.



- Check that video and sound are available on the monitor.

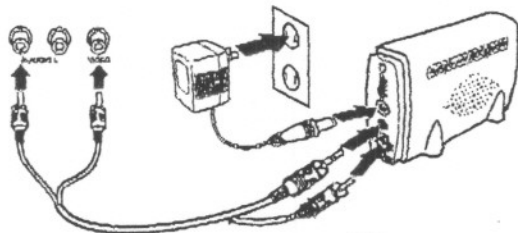
2—SETTING UP

- If some functions do not work, check the corresponding section in this manual before installing the camera.

Making connections

The receiver is designed to connect to different devices such as a TV, VCR, or digital video recorder (DVR).

Receiver setup

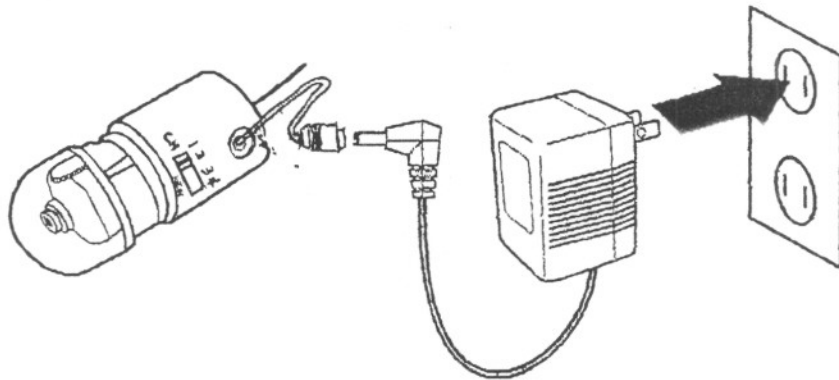


- Connect the AV cable to a TV monitor, VCR, DVR, or computer (need an A/V grabber).
- Connect the AC adapter to a power outlet.

MAKING CONNECTIONS

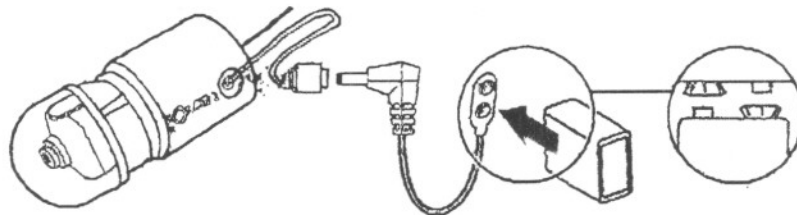
Connecting the AC adapter to the camera

Use only the supplied AC adapter.



Connecting the battery to the camera

Use a 9V battery.



2—SETTING UP

Mounting options

Using the supplied accessories, the camera can be mounted on a ceiling or wall. It can also be mounted in a hidden location such as in a container or behind a partition.

Important: The dome cover holds the camera housing together. When you remove the dome cover, take care that the camera housing does not separate.

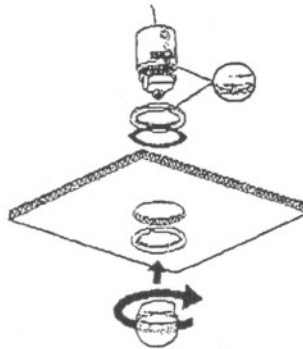
Ceiling installation

Before choosing a location for the ceiling installation, consider the following:

- You may need to install the camera from above, in which case two adjacent tiles need to be removed for the installation.
- You must hold the camera in position from above the ceiling tile while screwing the dome cover on.
- You may need to adjust the camera angle before replacing the adjacent tile.
- You need a power source for the camera.

Refer to the following for the ceiling installation.

1. Remove the dome cover from the camera.
2. Cut a 27-mm diameter hole in a ceiling tile with a circle cutter.
(Use a spade bit to drill a hole in a wood panel.)
3. Put the camera in from the top.



MOUNTING OPTIONS

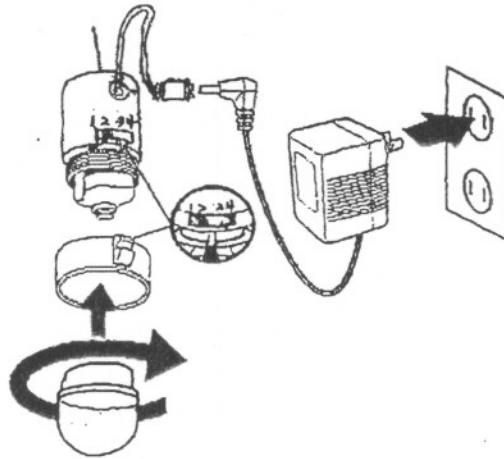
4. Use foam spacers to ensure the dome cover screws on securely. A thinner ceiling tile may require more than one foam ring; a thicker ceiling tile may require none at all.
5. Adjust the camera angle. (See "Adjusting the camera angle" on page 13)
6. Screw the dome cover onto the camera.

Wall installation

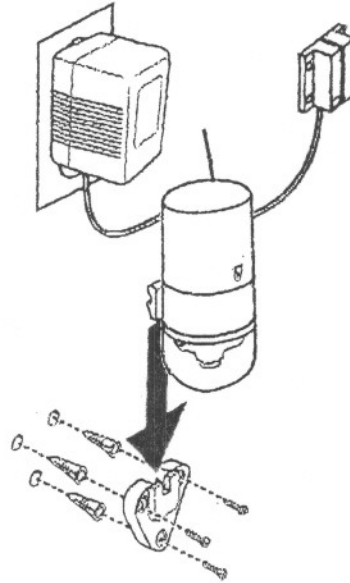
Before choosing a location for the wall installation, consider the following:

- You need a power source for the camera. Check that the cable length on the supplied AC adapter is long enough to reach your power source before drilling holes.
 - Does the location you choose to install the camera allow easy access to the camera? The camera dome must be removed and the camera taken out of the wall bracket to connect to **DC IN**.
 - The wall bracket is designed so that cables cannot be unplugged from the camera once installed. However, if you need to access the **DC IN** jacks often, consider fixing a block of wood behind the bracket so there is more space between the jacks and the wall.
1. Remove the dome cover from the camera.
 2. Put the wall mount ring on the camera.
The wall mount ring and camera are keyed to connect only one way.

2—SETTING UP



3. Replace the dome cover.
4. Plug the AC adapter into the camera. (See page 6 for using a battery to power the camera.)
5. Align the mounting bracket on the surface and mark the three holes with a sharpened pencil.

MOUNTING OPTIONS

7. For soft materials such as wood skip to step 9.
For concrete, brick, or stone surfaces, drill holes 23 mm deep with a 6-mm bit.
8. Put the wall plugs into the holes.
9. Screw the mounting bracket to the wall.
10. Slide the mounting ring into the mounting bracket until it clicks into place.

To remove the wall mount:

1. Remove the dome cover and take the camera out of the mounting ring.
2. To remove the mounting ring, press the catch on the wall bracket with a flat-tipped screwdriver and push the mounting ring upward.
3. Remove the three screws to remove the wall mount.

2—SETTING UP

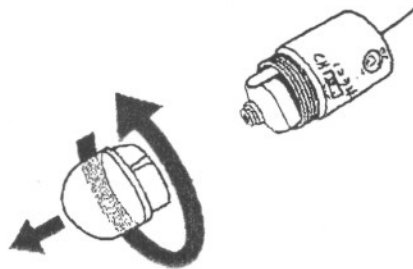
Hidden installation

The camera can be concealed in a variety of locations such as behind a thin partition or inside a suitcase.

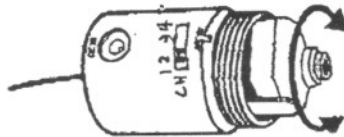
Note: Drill a 6.3mm diameter hole in the surface you want to mount the camera behind. To prevent the camera view from being obscured, the surface that the camera is behind must not exceed 3 mm in thickness.

The focus on the camera is factory adjusted to allow for viewing through the dome cover. When used without the dome cover, you must readjust the focus accordingly. Refer to the following to mount the camera in a hidden location.

1. Remove the dome cover.

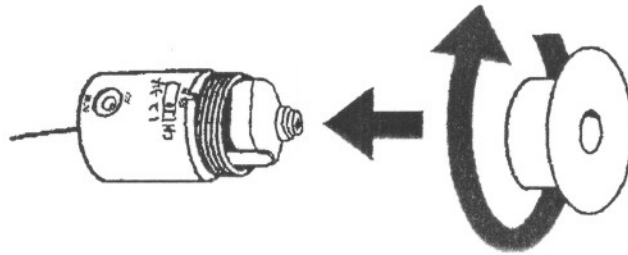


2. Adjust the focus by turning the lens.

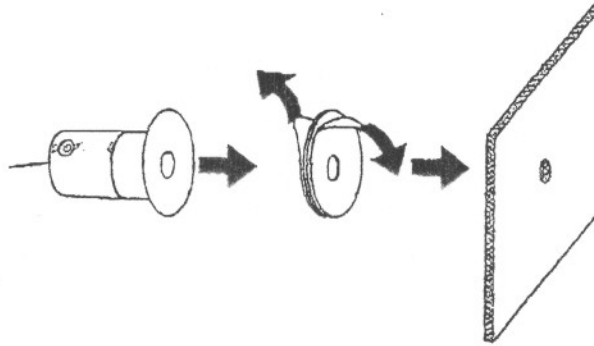


3. Screw the hidden mount onto the camera.

MOUNTING OPTIONS



4. Remove the backing paper from one side of the adhesive pad.



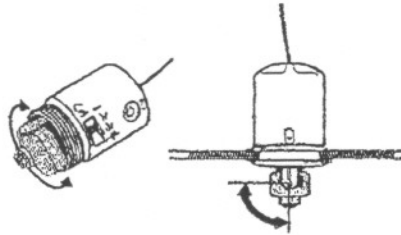
5. Align the holes and press the adhesive pad onto the mounting ring.
6. Remove the backing paper from the other side of the adhesive pad.
7. Align the holes and press the camera to the surface.

2—SETTING UP

Adjusting the camera angle

The camera can only be tilted in one direction 90 degrees and rotated 360 degrees. Adjust the camera gently. If it does not move easily, move it in the other direction.

Note: The focus on the camera is factory adjusted to allow for viewing through the dome cover. Only adjust the focus when using the camera without the dome cover.



3—Operation

The chapter describes the operation of the remote camera.

Operating restrictions

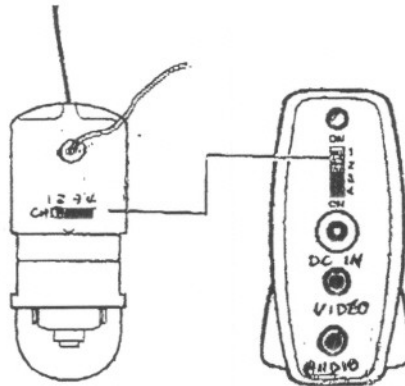
- Only use 9V batteries with the adapter.
- Avoid using the camera in humid locations. If condensation occurs, allow the camera to dry before operating.
- Do not use in temperatures below -10 degrees Celsius or above 55 degrees Celsius.
- Proximity to microwave ovens can cause interference and reduce the quality of the audio and video signals.
- Using two cameras in the same vicinity may result in sound and picture interference.

3—OPERATION

Matching channels

A camera and receiver together form a camera/receiver pair. Set a paired camera and receiver to the same channel. If you are using two or more camera/receiver pairs be sure that each pair is set to different channels or there will be interference.

Up to four cameras can be used with one receiver. Each camera must be set to a different channel. Video from each camera can then be viewed in turn by changing the channel on the receiver.



Standard always-on operation

Standard operation allows continuous audio and video signals from the camera to the receiver. The video is monitored on a screen but not recorded. Audio is monitored through the AV device that is connected to the receiver. (Or through the receiver speaker when the audio terminator is used.)

Appendix

This appendix describes cleaning and troubleshooting procedures. Also covered are technical specifications, FCC compliance, and warranty information.

Cleaning

The lens can be wiped with a soft optical cleaning cloth. The dome cover can be cleaned with glass cleaner.

Troubleshooting

There is no picture on the screen.	<ol style="list-style-type: none">1. Make sure power cables are plugged in properly and that the outlets have power.2. Ensure the battery on the camera is fresh3. Make sure that the receiver is plugged in.4. Check that the AV cables are properly connected.5. If using a television, make sure that the correct video channel is selected.6. Make sure that the camera and the receiver are on the same frequency channel.7. Ensure that the receiver is within the transmitting range of 300meters (in L-O-S).
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APPENDIX

The picture quality is poor.	<ol style="list-style-type: none"> 1. Ensure the battery on the camera is fresh. 2. Make sure that nothing is obstructing the camera. 3. Don't use the camera near a microwave oven. 4. Make sure there is sufficient light. 5. Don't use more than one camera in the same vicinity.
There is a picture but no sound.	<ol style="list-style-type: none"> 1. Check the volume on the receiver and the audio device. 2. Ensure the battery on the camera is fresh. 3. Check that the audio cable is properly plugged in to the receiver and the audio device. 4. Check that the audio terminator (if used) is securely plugged in.
There is sound but no picture.	<ol style="list-style-type: none"> 1. Ensure the battery on the camera is fresh. 2. Check that the video cable is properly connected to the receiver and the monitor. 3. Check the brightness on the display.
The alarm does not turn off or on. (for ACT-203TX)	<ol style="list-style-type: none"> 1. Make certain the sensor cable is plugged in and that the connection to the sensor is secure. 2. Check to see the NC NO switch is in the intended position. 3. If using the reed switch, make sure the contacts are close enough for the switch to operate properly 4. If using a different sensor, follow the manufacturer's troubleshooting steps.
Lines appear on the screen.	Make sure there is no microwave operating nearby.
The picture is ghosting.	Relocate the receiver to avoid obstacles such as trees or buildings.
The R/C cable does not initiate recording. (for ACT-203TX)	<ol style="list-style-type: none"> 1. Make certain the R/C cable is plugged in and that the connection to the sensor is secure. 2. Check to see the NC NO switch is in the intended position.

TECHNICAL SPECIFICATIONS

Technical Specifications**Camera**

Video input format:	NTSC or PAL <i>available</i>
Frequency:	2.4 ~ 2.4835 GHz
Channel:	4 selectable channels
Pixel array:	NTSC: 510H x 492V, PAL: 628H x 582V
RF output power:	FCC, EC-R&TTE compliant
Antenna:	Omni-directional antenna
A/V mod/demod. method:	FM
Power supply:	DC 6V ~ 9V 300mA
Current consumption:	<=100 mA
Lens:	5.6mm fixed f2.0 board (view angel 60 degrees)
Microphone:	Built-in highly sensitive microphone
Dimensions:	30 (diameter) x 70 mm (1.25 x 2.75 inches)
Weight:	45g
Operating temperature:	- 10°C ~ 55°C
Auto electronic exposure time:	PAL: 1/50s - 6.3us
Minimum illumination:	< 2 lux@f1.2
S/N ratio:	> 48 db
FPN:	< 0.03% Vpp
White balance:	Auto tracing
Transmitter output power:	1 mW, 10 mW

Receiver

Frequency:	2.4 ~ 2.4835 GHz
Channel:	4 selectable channels
Antennas:	Built-in directional antenna
A/V mod/demod. method:	FM
Video output:	1Vp-p/75 ohm

APPENDIX

Audio output:	0.8V/600 ohm
Audio bandwidth:	50 - 17000 Hz
Power supply:	DC 6V ~ 7.5V 300mA
Current consumption:	≤200mA
Dimensions (LxWxH):	119 x 41 x 74 mm (4.75 x 1.61 x 3 inches)
Weight:	102g
Operating temperature:	-10°C ~ 55°C
A/V output RCA jack:	Video: yellow jack Audio: red jack

**Federal Communications Commission (FCC)
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 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.

WARRANTY

- Unauthorized changes or modifications of this device could void the user's authority to operate the equipment.

Operation is subject to the following two conditions:

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

Warranty

The warrant is for one year from the date of purchase. Please retain the sales receipt as proof of purchase. During the one-year warranty period, the product is eligible for replacement in case of defects in material and workmanship. In such cases, the defective unit will be repaired or replaced by the manufacturer or an authorized distributor. However, this warranty does not cover damages caused by improper use or from unauthorized modifications by third parties. In addition, this warranty does not cover expendable materials and defects, which constitute as normal wear and tear.