VC451 *SOLAR-POWERED* PIR *CAMERA* KIT
Installation and Operating Manual

What you get

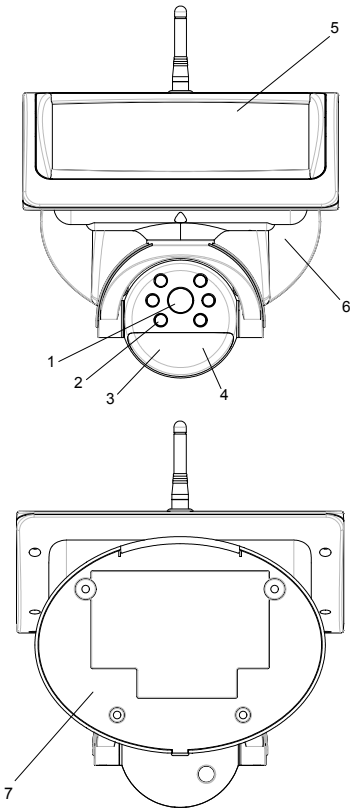The components included in the C451Solar-powered PIR Camera Kit:

- 1 x PIR Camera with Solar Panel (VC451)
- 1 x Remote Control (SR103)
- 1 x 6V 1.2A Rechargeable Battery
- 1 x 9V Alkaline Battery
- 1 x 3V CR2032 Lithium Battery
- 1 x Waterproof Rubber Plug
- Fixing Pack and Operating Instruction

Product Layout

PIR Camera with Solar Panel (VC451)

1	Lens
2	Infrared LED
3	PIR Motion Sensor
4	Status LED
5	Solar Panel
6	Front Cover
7	Back plate

Remote Control (SR103)

🔒	Arm
🔓	Disarm
◉	Camera on
OFF	Camera off

Introduction

The 2.4GHz Solar-powered Color PIR Camera Kit is a truly wireless camera, receiving all of its required energy from the sun. With no wires to run, this camera installs easily, providing security and convenience in a simple, economical manner. Its solar panel collects daylight and maintains a charge to the battery of the camera during daylight hours. A negligible amount of energy is released by the rechargeable battery to operate the camera during nighttime.

When the camera's PIR motion sensor detects motion, images and voices are transmitted. Upon receiving these signals, the optional wireless receiver (VR111) will activate the VCR/DVR to start recording, so you'll know who visits or breaks in your property while you are away.

Caution

Pay attention to the following before you install:
1. Sufficient daylight: Solar panel requires constant charge during daylight hours. Please mount the camera at the location that can receive sufficient daylight exposure.

Mount the PIR Camera at 2m height above the ground.

2. Detecting sensitivity: A passive infrared sensor operates by detecting the objective movement and heat. When the temperature of the
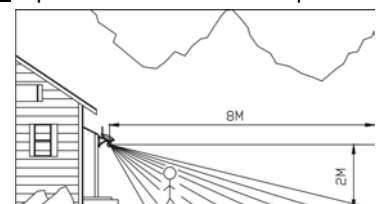
moving object and its surrounding area are close in value, it may reduce PIR's sensitivity. The motion detector's infrared beams radiate outward like the slat of a wooden fence. Prior to mounting, keep in mind that the motion sensor is more sensitive to the motion that crosses these "slats", and less sensitive to the motion that moves directly towards the sensor.

SENSOR
LESS SENSITIVE

SENSOR
MORE SENSITIVE

SENSITIVITY TO MOTION
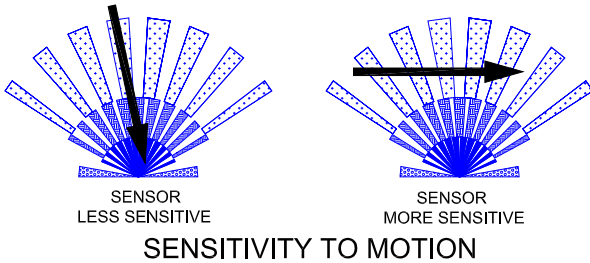
The passive infrared sensor has a detection coverage of 80 degree at 8m away.

3. Keep a light source during nighttime: The camera cannot work in total darkness. Please bear in mind the camera's viewing area must be illuminated with a suitable light source during nighttime.

Setting
Learning the ID code

1. Undo and remove the fixing screw from the bottom edge of the front cover.   Carefully pull the front cover away from the back plate.
2. By using either 6V/1.2Ah or 7.5V DC/300mA as its power sources, the PIR Camera will start warming up and the Status LED will be on steadily.
3. Press and hold the learn switch (SW1) on the rear of front cover for more than 3 seconds until the Status LED on the PIR Camera flashes. The PIR Camera enters the ID code learn mode and the Status LED will flash once per second. The user has a 30-second to emit the ID code of remote control (SR103) to the PIR Camera.
4. Set the 4-position slide switch to 'A' position on the remote control by pressing the **OFF** button for more than 5 seconds, enabling it to emit the ID code to the PIR Camera.
5. The Status LED on the PIR Camera will be on again after changing from flashing to illuminating for 3 seconds then off. The ID code has been learnt successfully.
6. If failure to learn the ID code within 30 seconds, the Status LED will flash three times rapidly before reverting to warm up period and the Status LED will be on steadily.

Learn Switch   Channel Switch

Connector

Reset Switch

Solar Power Jack   DC Adaptor Jack
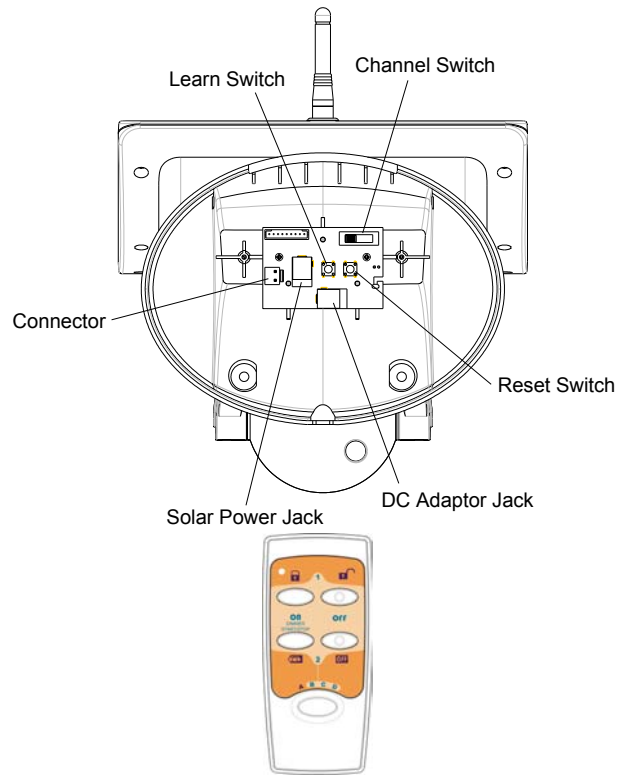
Cleaning out the ID code

1. Under any mode, press and hold the learn switch (SW1) on the rear of front cover for 3 seconds until the Status LED flashes. Release the switch and the Status LED will flash once every second.
2. Press the learn switch again until the Status LED is off. The PIR Camera will revert to the last mode. The ID code has been cleaned out entirely.

Status LED indication

The indication of Status LED on the PIR Camera may help you judge if the ID code has been learnt properly.

| Status	LED indication
Enter ID code learn mode	LED flashes once per second
Fail to learn the ID code under ID code learn mode	LED flashes 3 times rapidly before exit
ID codes have been learnt	LED flashes after entering ID code learn mode. After pressing the **OFF** button on the remote control for 5 seconds, the PIR Camera will exit the present learn mode and revert to the last mode
Up to 12 ID codes have been learnt	LED flashes once per second after entering ID code learn mode. After pressing the **OFF** button on the remote control, the Status LED of PIR Camera flashes three time rapidly before exit the present learn mode and revert to the last mode

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Installation

Step 1: Install the camera

1. Use the fixing template provided to mark the position of the four fixing holes. Drill four 5mm-diameter holes.
2. Mount back plate by inserting two screws into fixing holes on the top edge of back plate.
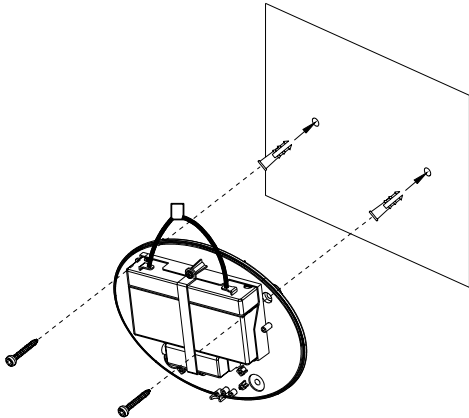
3. Adjust the "Channel switch" (SW3) to set up a channel. And remember which channel you selected.
4. Plug the power connector of the rechargeable battery to the connector located on the rear of front cover.
5. If fitted, plug the solar panel connecting wire or DC adaptor to the solar power jack or DC adaptor jack located on the rear of front cover.
6. Secure the front cover to the back plate by inserting screws into two fixing holes on the bottom edge of front cover and back plate. And then insert the waterproof rubber plug into the hole at the bottom of front cover.
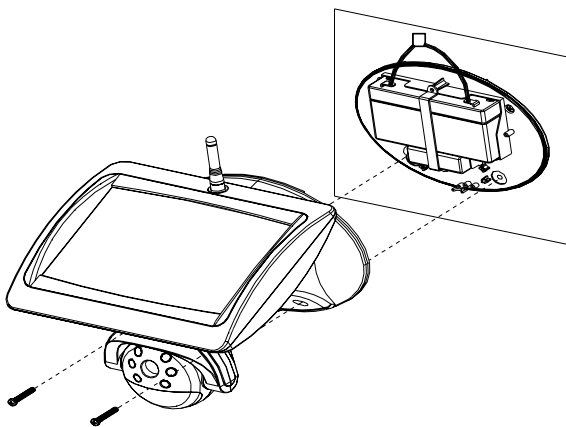
Step 2: Install Remote Control

1. Remove the battery cover. Fit the 3V Lithium battery in the compartment provided with +v terminal facing upwardly.
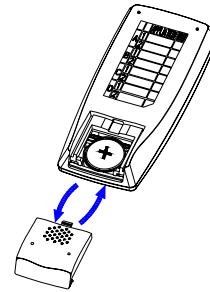

2. By pressing any key, the red LED will illuminate, which implies that the battery has been inserted properly.

3. Replace the battery cover.

4. To work with the PIR Camera, it is a must to set the 4-position slide switch to "A" position on the remote control. "A" position is situated in the orange background of plate, simply follow its orange track for operating ▢ (Arm), ▢(Disarm), ▢(Camera on) and OFF (Camera off).

The buttons' functions are listed hereunder:

Button	Function
4-position slide switch -- A,B,C,D	A : controllable to PIR Camera (VC451) B,C & D: controllable to On/Off receiver (AN121, B410N), Dimmer Receiver (AD121, B410D).
Learn	Pressing the OFF button for about 5 seconds until the Status LED is off will emit the ID code to the PIR Camera.
Camera On ▢	When the PIR Camera is connected to a 6V/1.2Ah, press the ▢ button for one second on the remote control will enable the operation of image and voice signal on the PIR Camera but will disable recording signal. Fail to press the OFF button within 1 minute will disable the operation of image and voice signal on the PIR Camera.
	If a 7.5V DC/300mA is in use, the image and voice signal on the PIR Camera will be always transmitted, the ▢ button will not work for this instance.
Camera Off OFF	When the PIR Camera is connected to a 6V/1.2Ah, press the OFF button for one second will disable the operation of image and voice signal and send a stop recording signal to the wireless receiver (VR111).
	When a 7.5V DC/300mA is in use, press

	the **OFF** button for one second will emit a stop recording signal to the wireless receiver (VR111).
Arm 🔒	When the PIR Camera is connected to a 6V/1.2Ah, press the 🔒 button for one second will enter arm mode. When PIR is triggered, the wireless receiver (VR111) will be acknowledged with one beep at the same time. If a 7.5V DC/300mA is in use, press the 🔒 button for one second, the TV screen or monitor connected to the wireless receiver (VR111) will temporarily shut down and then stay on.
Disarm 🔓	When the PIR Camera is connected to a 6V/1.2Ah, press the 🔓 button for one second will enter disarm mode and the wireless receiver (VR111) will be acknowledged with one beep simultaneously. If you will be active within the protected area, set the PIR Camera to disarm mode so as to avoid unnecessary activation. If using a 7.5V DC/300mA, press the 🔓 button on the remote control for one second, the TV screen or monitor connected to the wireless receiver (VR111) will temporarily shut down and then stay on.

Step 3: Install the Solar Panel (option)

1. Using the fixing template to mark the position of two fixing holes. Drill two holes with 25mm in depth and 5mm in width by inserting the plastic wall plugs supplied.

2. Loosen the screws from the strain relief located on the base of solar panel.

Solar Power Out

3. Route the solar connecting wire though two strain relief and fix them in place with screws respectively, leaving 20cm length of connecting wire for further connection.

4. Plug one end of the jacks with 20cm length of connecting wire to the 'solar power out' of rear side of the solar panel.

5. Plug the other end of the jack to the Camera's solar power jack.

6. Fix the base of solar panel to the plastic wall plugs using two screws provided.
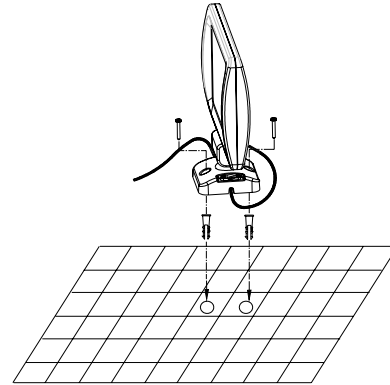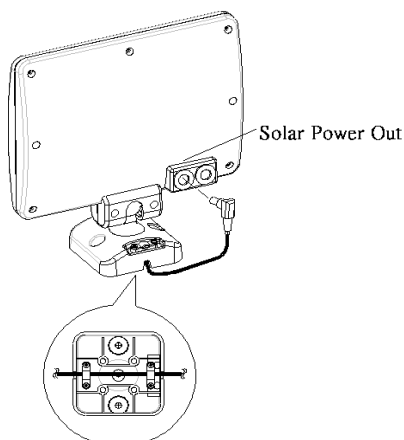

Step 4: Expand the Solar Panel (option)

1. Using the fixing template to mark the position of two fixing holes. Drill two holes with 25mm in depth and 5mm in width by inserting the plastic wall plugs supplied.

2. Loosen the screws from the strain relief located on the base of solar panel.

3. Route the solar connecting wire though two strain relief and fix them in place with screws respectively, leaving 20cm length of connecting wire for further connection.

4. Plug one end of the jacks with 20cm length of connecting wire to the 'solar power out' of rear side of the solar panel.

5. Plug the other end of the jack to the 'solar power in' of the rear side of the first solar panel. Fix its solar connecting wire to the strain relief of the base of solar panel, using the screws provided.

2nd.   1st.
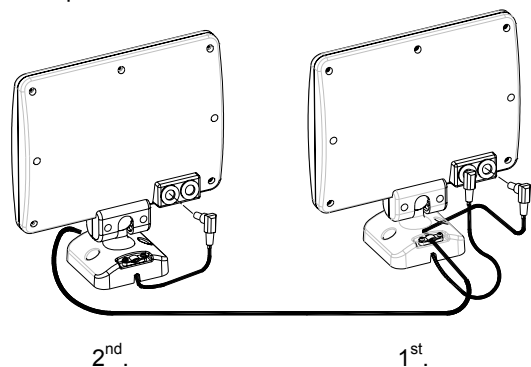
6. Fix the base of solar panel to the plastic wall plugs using two screws provided.

Operating Instruction

1. A 9 volt battery can be used only if the battery level of 6V 1.2Ah drops and solar panel cannot be charged.
2. The solar panel and DC power adaptor cannot be implemented at the same time.
3. The PIR Camera is equipped with voltage auto switching function:

   a. Power saving mode

   When the PIR Camera is connected to a 6V/1.2Ah rechargeable battery, it will warm up for about 1 minute and its Status LED will illuminate steadily. The triggered signal of 2.4GMz may control the VCR/DVR to record or stop recording through wireless receiver (VR111). Once the PIR Camera is triggered, it will send a start recording signal for about 30 seconds. After 30-second is expired, it will emit a stop recording signal to the wireless receiver (VR111). During 30-second countdown, if the PIR Camera has been triggered again, the countdown will be extended for another 30 seconds.

   b. Ordinary mode

   When the PIR Camera is connected to a 7.5V DC/300mA DC adaptor, it will warm up for about one minute and its Status LED will be on steadily.

   The 2.4GMz will always emit radio signal in spite of the PIR Camera being triggered or not. The triggered signal of 2.4GMz may control the VCR/DVR to record or stop recording through wireless receiver (VR111). Once the PIR Camera is triggered, it will send a start recording signal for about 30 seconds. After 30-second is expired, it will emit a stop recording signal to the wireless receiver (VR111). During 30-second countdown, if the PIR Camera is triggered again, the countdown will be extended for another 30 seconds.

Troubleshooting

| Status	Possible Cause	Recommendation
VC451 PIR Camera		
Status LED during warm up not on	a. Reverse polarity b. Low battery	a. Relocate battery polarity b. Insert a 9V battery and have it charged to a 6V rechargeable battery
Ambiguous image under observation	a. radio channel interference b. Distance between Receiving and Transmission too far or radio signal has been blocked	a. Adjust channel to avoid radio interference. Ensure channel is the same as set in the wireless receiver (VR111) b. Reposition the PIR Camera or the wireless receiver (VR111)
SR103 Remote Control		
No reaction by pressing any button on the remote control	a. Reverse polarity b. depleted battery	a. Refit the battery with correct polarity b. Replace a new battery
No reaction to PIR Camera by pressing button on the remote control	a. ID code learning has not been undertaken b. Incorrect ID code learning process	a. Follow ID code learning process indicated on the operating instruction b. Redo ID code learning process according to the operating instruction

Specifications

VC451		SR103	
Picture Type	Color CMOS	Battery Type	CR2032 3V x 1
TV System	PAL/NTSC	Transmitting Range	70 meters min. (in an open space)
Sensitivity	3Lux@F1.2	Transmitting Frequency	315MHz or 433MHz
Lens Angle	56° Diagonal		
Lens	6.0mm F2.0		
Camera Angle	Left & Right 80°± 5°, Down 50°		
Microphone	Build in		
Transmitting Frequency	2400~2483MHz (for 4 channels)		
Receiving Frequency	315MHz or 433MHz		
Battery	1 x 9V back up battery, 1x 6V rechargeable solar battery		
Power Supply Source	Solar Panel (110*160mm)		
Channel Switch	4 positions for 1~4 selection		
PIR Warm up time	About 1 minute		
PIR Detect ion Distance/Angle	8M/80° (under 28°C 85% RH)		

CE FC
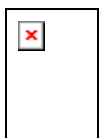
Mobile of end product

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.

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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Important Note:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Warning:
Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

When replacing old appliances with new once, the retailer is legally obligated to take back your old appliance for disposal at least for free of charg