User's Manual

brite-View
vision accomplished

plugCAM

The Powerline Home Network Camera

BVC-500C

Available on the iPhone App Store

Google play

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1. IMPORTANT INFORMATION

1.1 Important Safety Notes

The plugCAM is intended for connection to the AC power line. For installation instructions, refer to the Installation section. The following precautions should be taken when using this product.

- Please read all instructions before installing and operating this product.
- Please keep all instructions for later reference.
- Please follow all warnings and instructions marked on the product.
- **For safety reason, when device is being powered on, this product should NOT be installed in any electric socket which makes the surface with venting holes on the product to face downward (facing the floor).**
- **Unplug the Powerline device from the wall outlet before cleaning. Use a dry cloth for cleaning. DO NOT use liquid cleaners or aerosol cleaners.**
- **DO NOT** operate this product near water.
- This product should **never** be placed near or over a radiator, or heat register.
- This product relies on the building's electrical installation for short-circuit (over current) protection.
- **DO NOT** allow anything to rest on the product interconnect plug. **DO NOT** locates this product where people may walk on the cords.
- Because this product sends data over the power line, it is recommended that you plug directly into a power outlet. Do not plug the device into a UPS or power strip with surge protection. The product has its own power filter for protection against surges.
- **Only** a qualified technician should service this product. Opening or removing covers may result in exposure to dangerous voltage points or other risks.
- Unplug the product from the wall outlet and refer the product to qualified service personnel for the following conditions:

    - When the interconnect cords are damaged or frayed.
    - If liquid has been spilled into the product.
    - If the product has been exposed to rain or water.
    - If the product does not operate normally when the operating instructions are followed.
    - If the product exhibits a distinct change in performance.

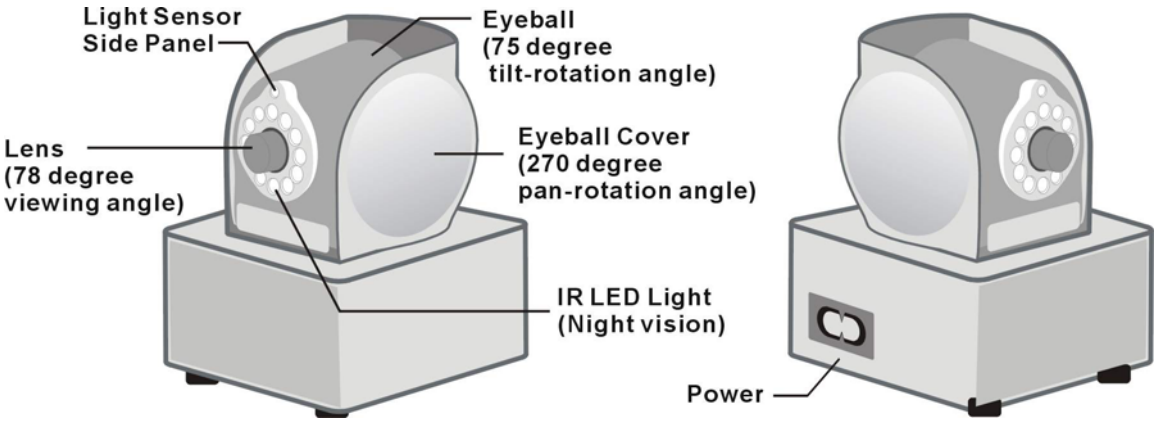
2. INTRODUCTION

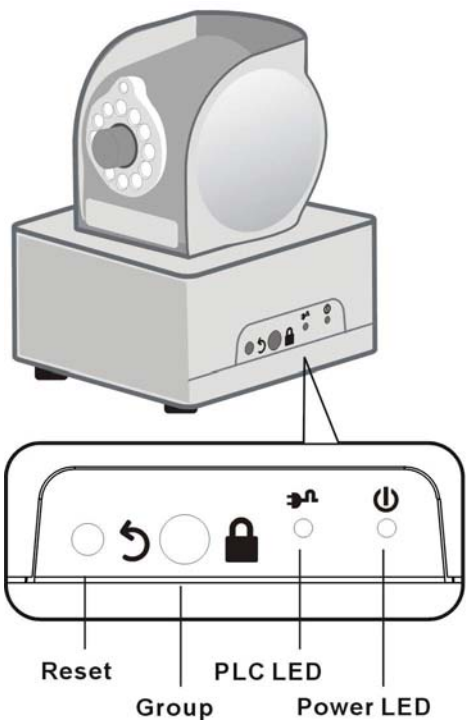
The plugCAM home monitoring solution is the first of its kind using HomePlug AV-compliant powerline communications (PLC) technology. The advanced Plug and Play Technology automatically configures and connects the plugCAM Camera to the plugCAM App. After the initial setup, you can begin viewing the area selected for monitoring right from your smartphone, anytime, anywhere using the smartphone's 3G, 4G, LTE or Wi-Fi connections.

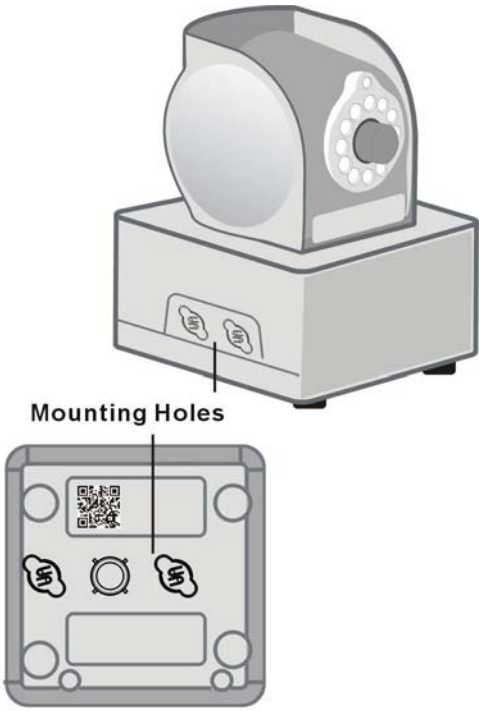
2.1 Package Content

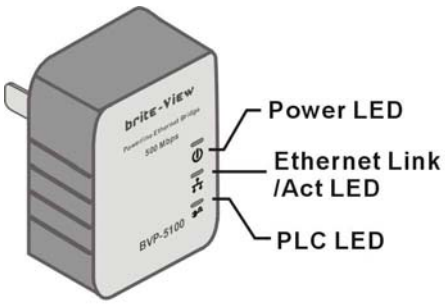
2.2 LEDs Light Indicator Definition

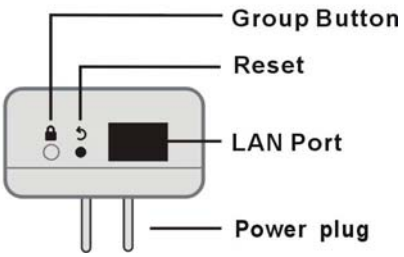
Before starting, please take few minutes to familiarize yourself with plugCAM.


Light Sensor
Side Panel
Eyeball
(75 degree
tilt-rotation angle)
Lens
(78 degree
viewing angle)
Eyeball Cover
(270 degree
pan-rotation angle)
IR LED Light
(Night vision)
Power


Reset
Group
PLC LED
Power LED


Mounting Holes

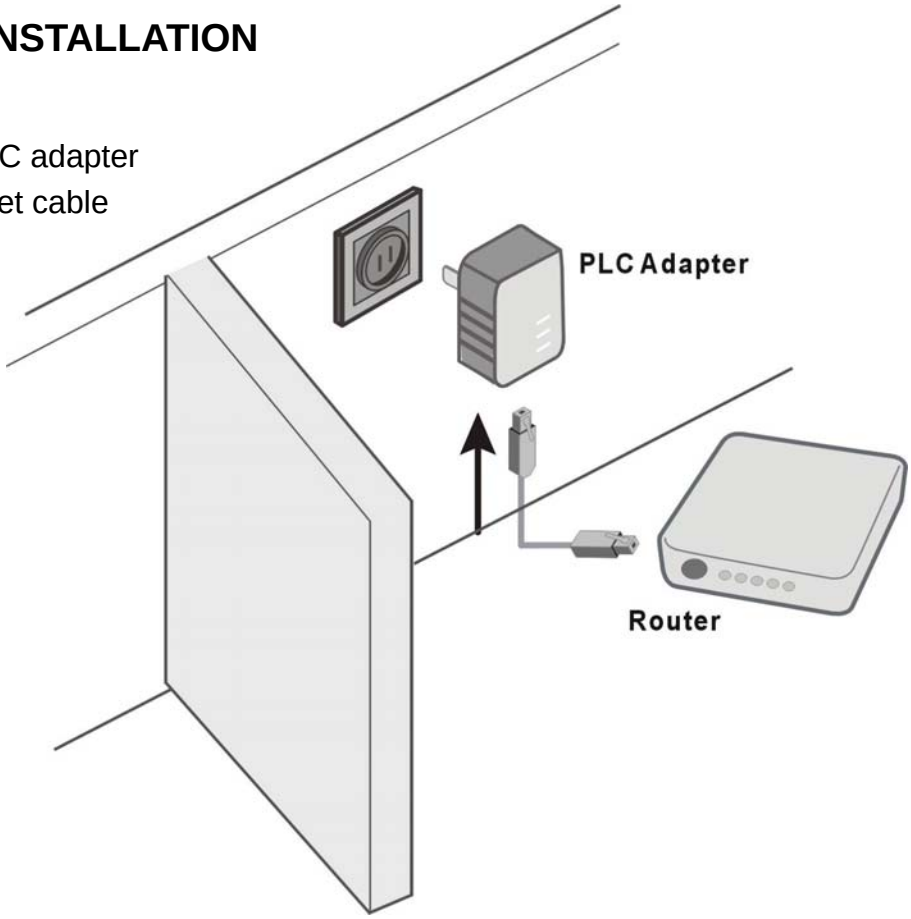

brite-view
BVP-5100
Power LED
Ethernet Link
/Act LED
PLC LED


Group Button
Reset
LAN Port
Power plug

Item Name	Description
Eyeball Cover	Can rotate horizontally 135 degree to the right and to the left
Eyeball	Can rotate 0 to 75 degree, pointing the lens from horizontal to nearly vertical
Lens	Lens with IR reflection coating
IR Light LED	For night vision
Power LED	ON: Power on and ready Blinking: 1. During "**Pairing Procedure" (creating an encrypted PLC network)**. The device is creating or being joined into the same encrypted network and will last 2 minutes until it is been succeeded or canceled. OFF: Power off.
PLC Act/Link LED	OFF: No PLC device is detected nor connected. ON: PLC device is detected. Blinking: 1. **Fast**: PLC UDP data transfer rate is higher than 60Mbps. 2. **Normal**: PLC UDP data transfer rate is between 10Mbps to 60Mbps. 3. **Slow**: PLC UDP data transfer rate is slower than 10Mbps.
Group Button	Press 1 to 3 seconds to enter into "**Pairing Procedure" (creating an encrypted PLC network)**. While it's under "**Pairing Procedure**", press and hold for 2 to 3 seconds to stop the procedure. Press and hold for 10 seconds to remove current encrypted network and generate a new one.
Reset Button	Press and hold for over 1 second to reset factory default
Figure-8 AC connector socket	AC Power cord

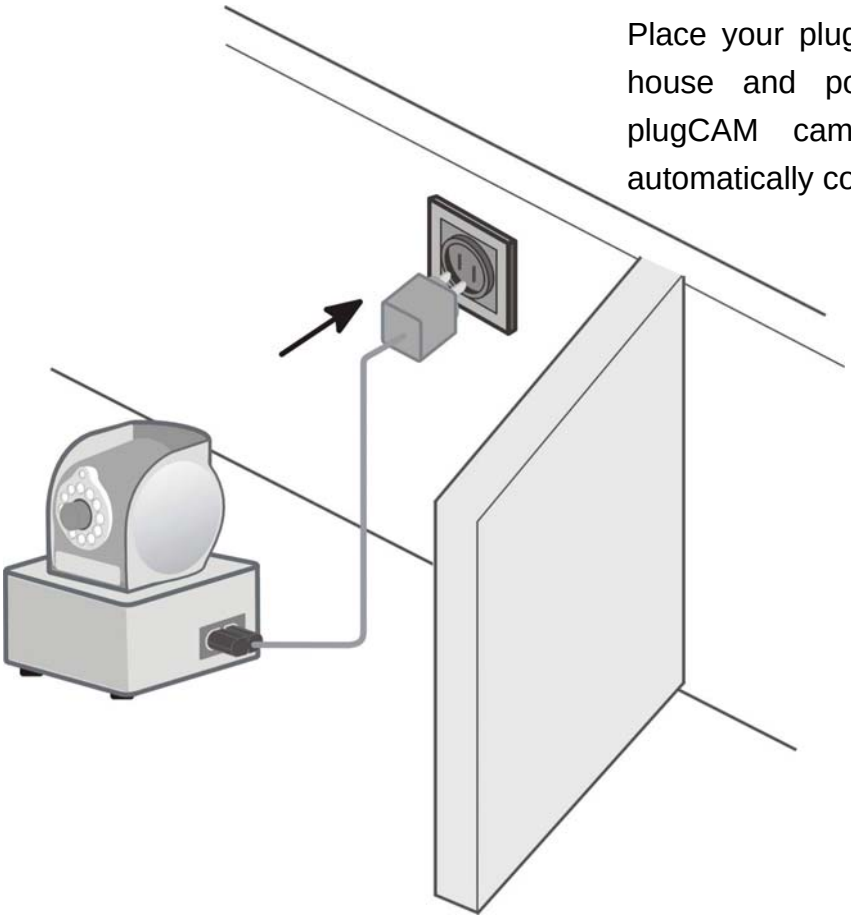
3. HARDWARE INSTALLATION

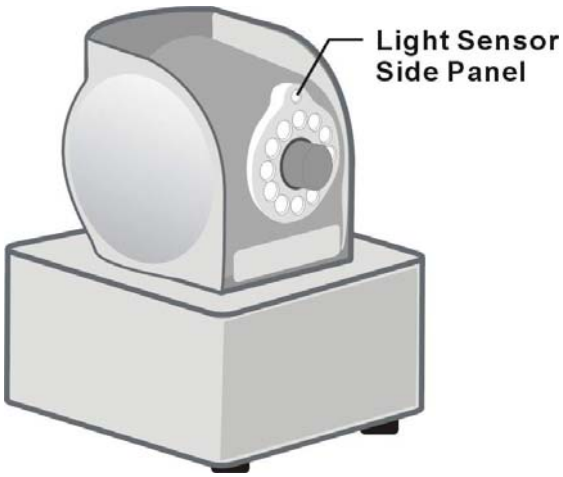
STEP 1: Connect PLC adapter and router with Ethernet cable



STEP 2:

Place your plugCAM camera anywhere in the house and power on camera. Then, the plugCAM camera and PLC adapter will automatically connected.

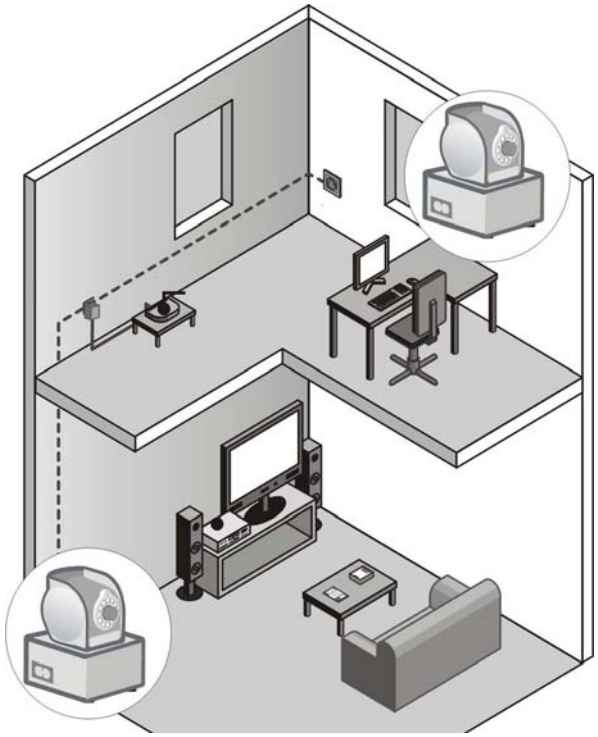




While the camera is being accessed (**please see chapter “ Getting Started “ to learn how to connect to your camera**), you may check if the camera IR LED lights are working properly by covering the light sensor above lens and see if IR LED bulbs turn red.

3.1 Multiple Room Application

One PLC adapter can work with up to 7 cameras. You can place additional cameras anywhere in the house. Simply plug additional camera into wall outlet, then PLC adapter will automatically detect and connect to new camera. If existing PLC adapter has established private encryption network, you can press “Group” button on PLC adapter and new camera, then new camera will join to its encryption network.

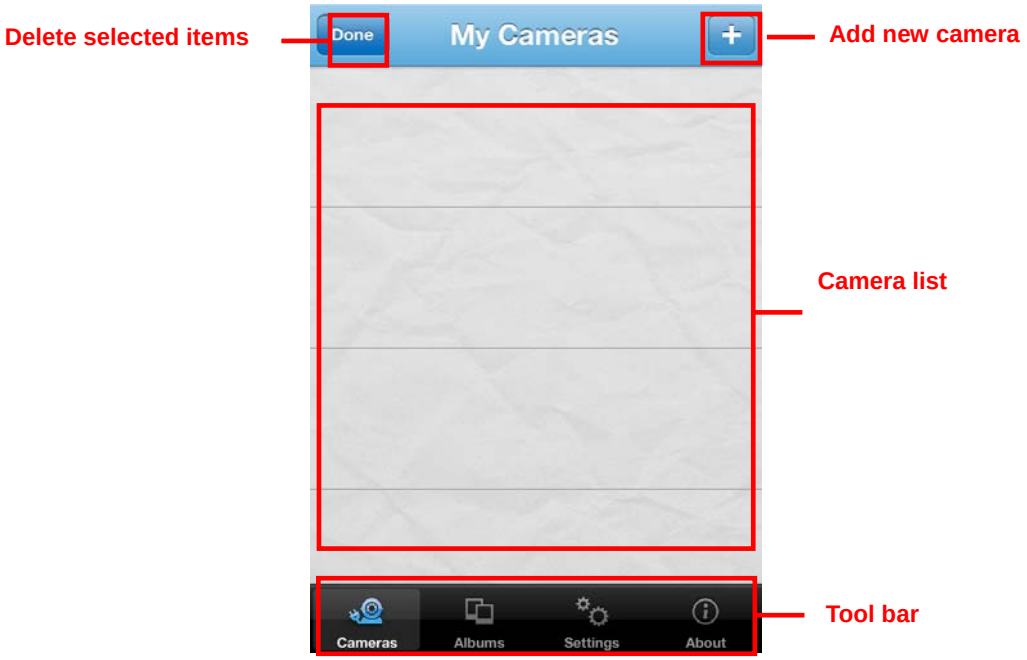


4. PLUGCAM APP INSTALLATION

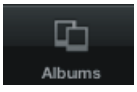
Free “plugCAM” App
You can search the free “plugCAM” App on Apple store or Google Play

4.1 Interface Overview

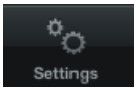
Main Screen



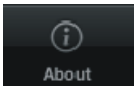
Show camera list, delete or add new camera.



Show album list, view and delete pictures from individual camera



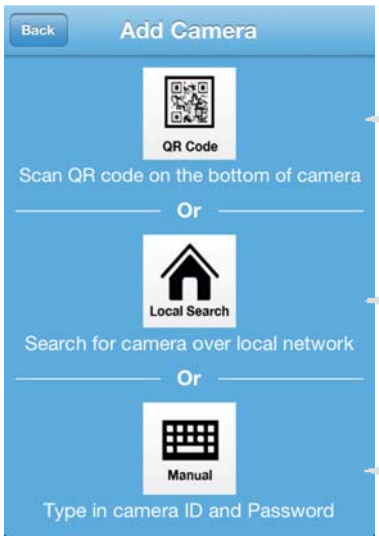
Change App settings



Show App and plugCAM information

4.2 Add Camera

- To add camera onto your smartphone, there 3 options to add camera, “**QR Code Scan**”, “**Local Search**” and “**Manual**”.



QR Code Scan:
QR Code scan is only available for the first time setup. Once you activate camera with new password, QR code will be invalid. If you want to add camera by scanning QR code on the bottom of camera again, please make sure that your camera has been reset to the factory setting.

Local Search:
Local search is only available while your mobile device and plugCAM camera are under the same network

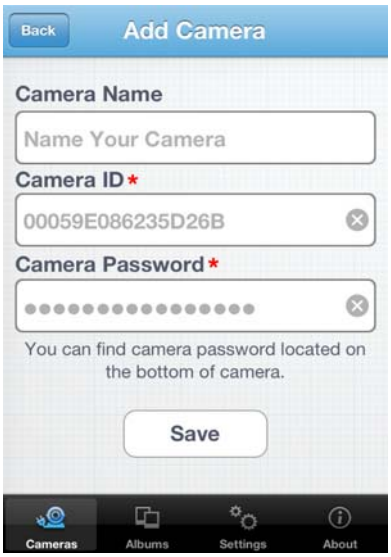
Manual:
You can add camera anytime onto your mobile device as long as you have camera ID and Password

P.S. Each plugCAM PLC adapter can support up to 7 plugCAMs.

4.2.1 QR Code Scan

1. Tap on

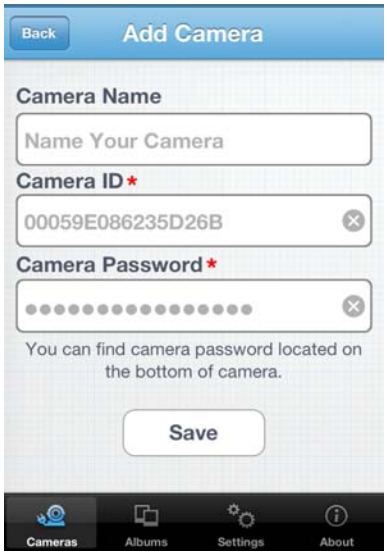
to start QR code scan.
2. Scan the QR code that is located on the bottom of plugCAM.
3. “**Save**” to camera list



4.2.2 Local Search

1. Make sure your camera and mobile device are under the same network, then tap on

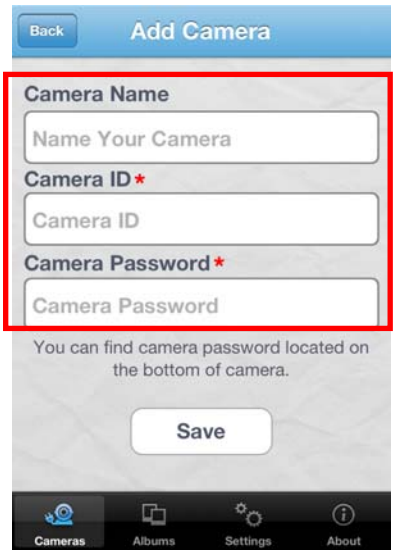
to search new camera. Once new camera is found, you can select the camera you want to add.
2. Enter camera password
3. “**Save**” to camera list



4.2.3 Add Manually

1. Tap on

2. Type Camera ID and Password
3. “**Save**” to camera list

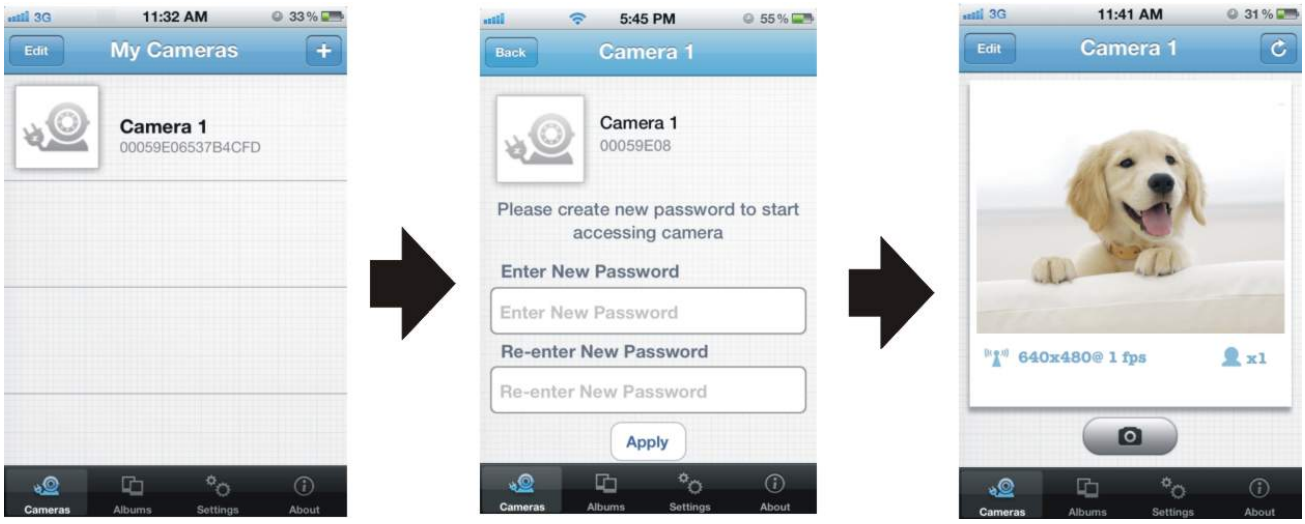


4.2.4 Activate Your Camera

Step 1: Connect to the camera with the default password.

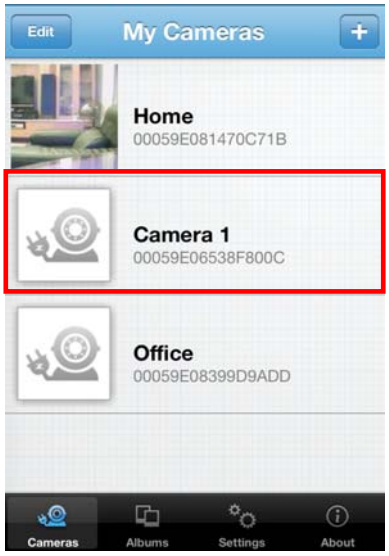
Step 2: You will need to create new password and press apply button on the screen before accessing your camera.

PS: For the safety purpose, you will be asked to create new password when you connect to camera with the default password.

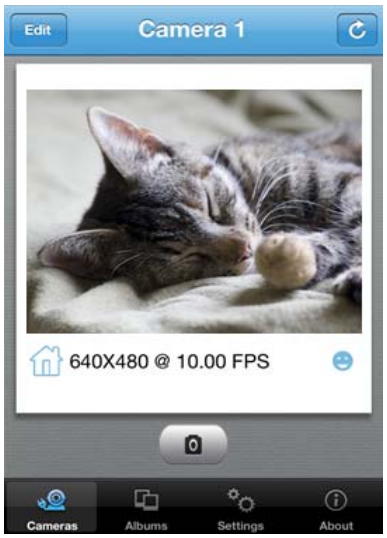


4.3 View Images

1. Select a camera from the camera list



2. If ID and Password are all correct, plugCAM App will start loading camera image



3. If the camera is offline, please check if you have installed the camera properly

4.3.1 Take a Snapshot

1. While accessing the camera, you can tap the icon to take a quick shot.
2. The pictures will be saved to album.

4.3.2 Reload Camera

Tap to reload the camera image

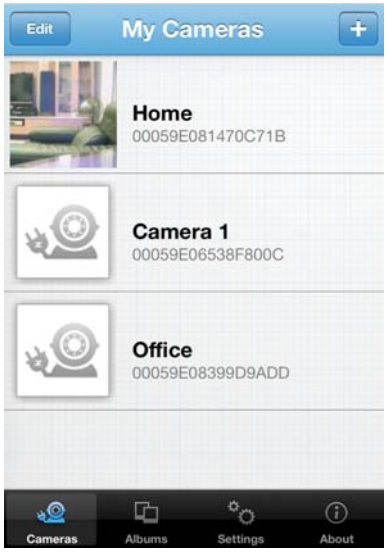
4.4 Cameras

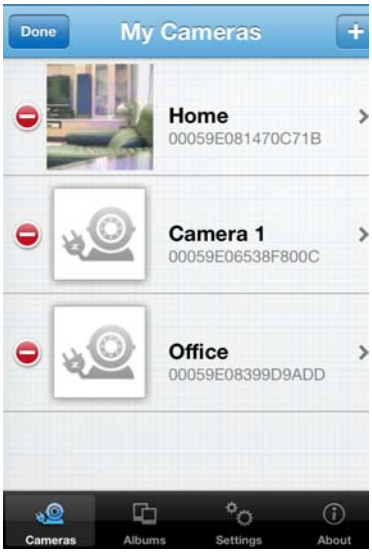
4.4.1 Delete Camera

1. Tap

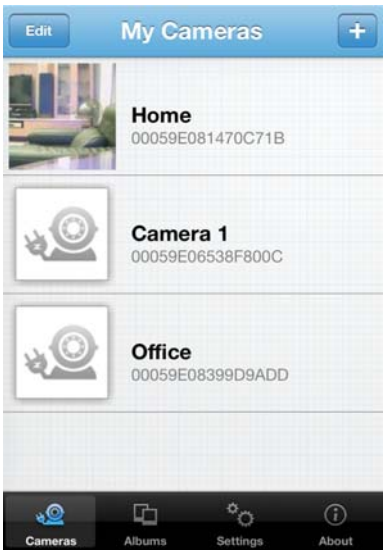
to show camera list, Tap

to delete camera





4.4.2 Camera Setting



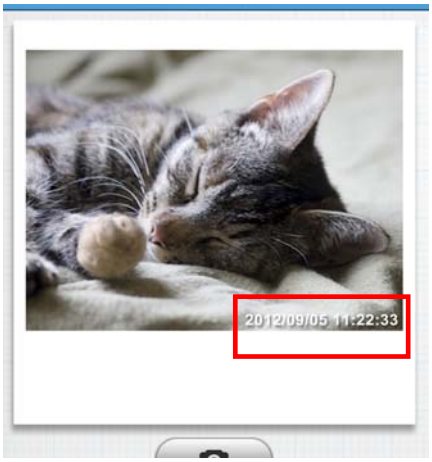
1. Select a camera
2. Tap Edit to enter the camera settings
3. After make changes, please tap on Apply to save each change.

View Mode	Indoor Outdoor
Video Resolution	High (640x480) Medium (320x240) Low (160x120)
Video Quality	Best Better Fine
Video Frequency	50Hz 60Hz

Arrange Image	Normal Flip Vertical Flip Horizontal Rotate Left Rotate Right

4.4.3 Time & Date

1. The default setting is Off, tap “**On**” to turn on time & date information
2. Tap “Done” to confirm, then time & date will show up on the viewing screen

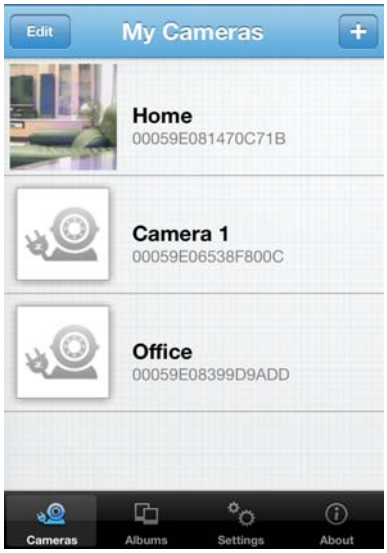


4.5 Albums

4.5.1 View Albums

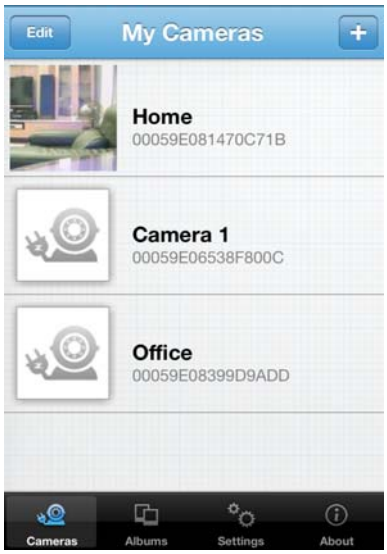
Tap

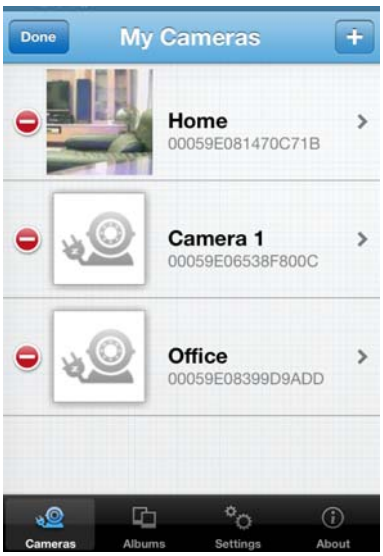
to start

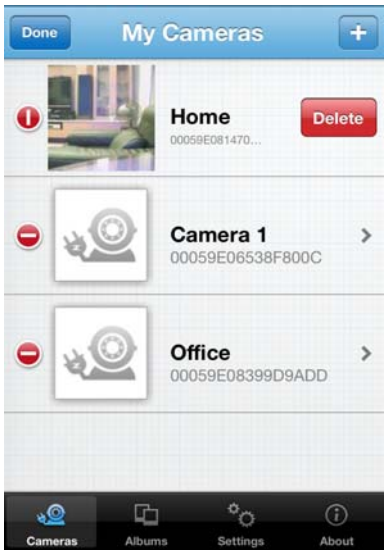


4.5.2 Delete Albums

1. “**Edit**” > “**Delete**” > “**Done**” to confirm

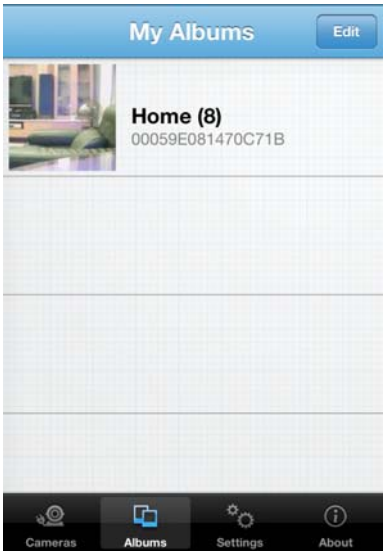






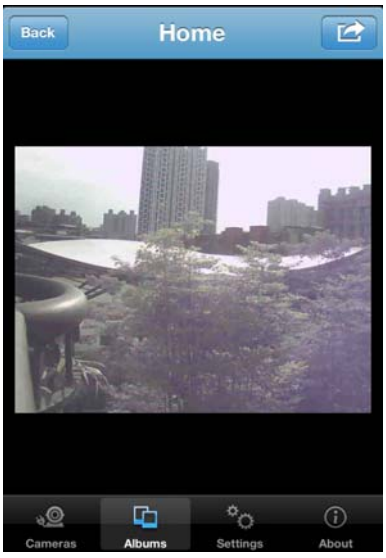
4.5.3 View & Delete, Email Pictures

1. Select an album
2. Tap on the picture you want to see for larger view



3. Tap on to **Delete**, **Email**, and **Save** picture

If your don't want to do any change, just press "**Cancel** " to go back



4.6 App Settings

Tap

to start

4.6.1 Passcode lock

Default setting is “Off”.
Turn on “Passcode Lock” can help prevent others connect to your plugCAM without your permission.
You must enter correct passcode every time when starting the plugCAM program after turning on this function.

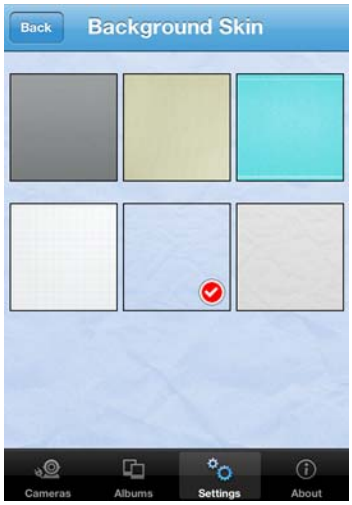
Turn on Passcode

1. Tap on the Passcode Lock
2. Enter passcode and confirm it again

Turn off Passcode

1. Tap on the passcode lock
2. Enter passcode again to turn off passcode lock

4.6.2 Background Skin



1. Tap on Background skin
2. Default is gray. Choose a color for your background

4.7 About

Tap

to start

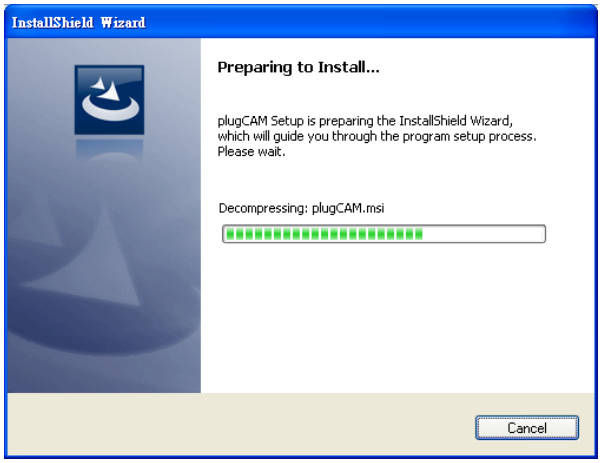
Show Software Version & Product Information

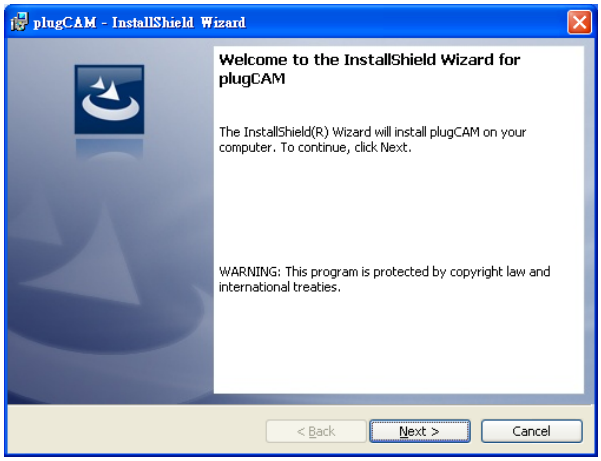
5. PC SOFTWARE INSTRUCTION

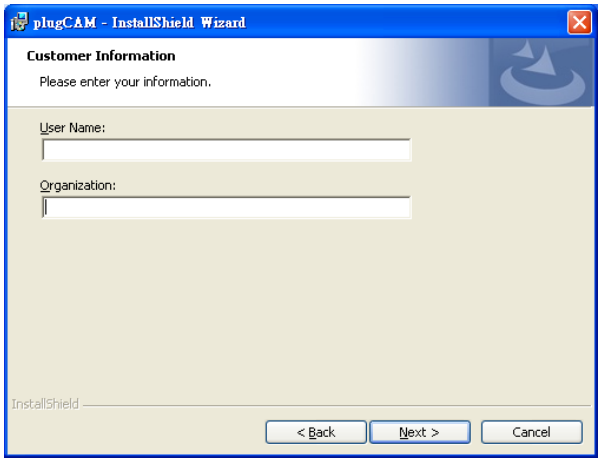
5.1 PC Software Installation

Insert the software CD to your CD-R device or download from the official website to start the installation.

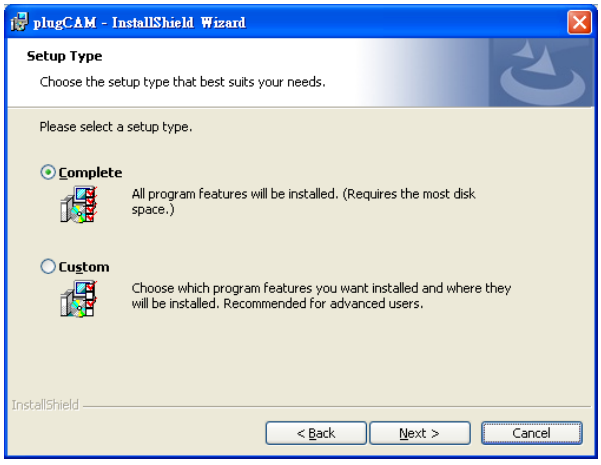
1. Double click to start installation
2. Set-up will start automatically
3. Click " **Next >** " to enter PC information

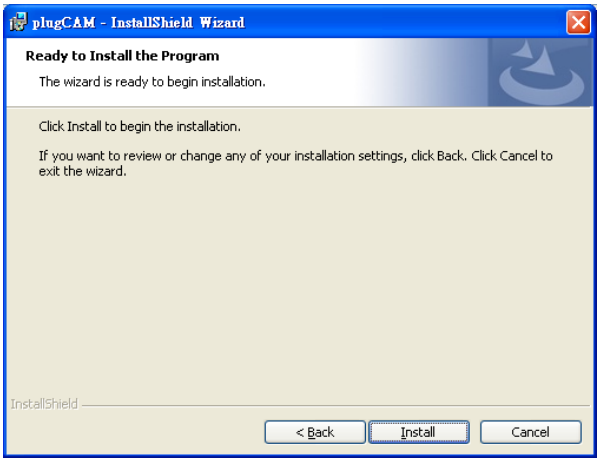






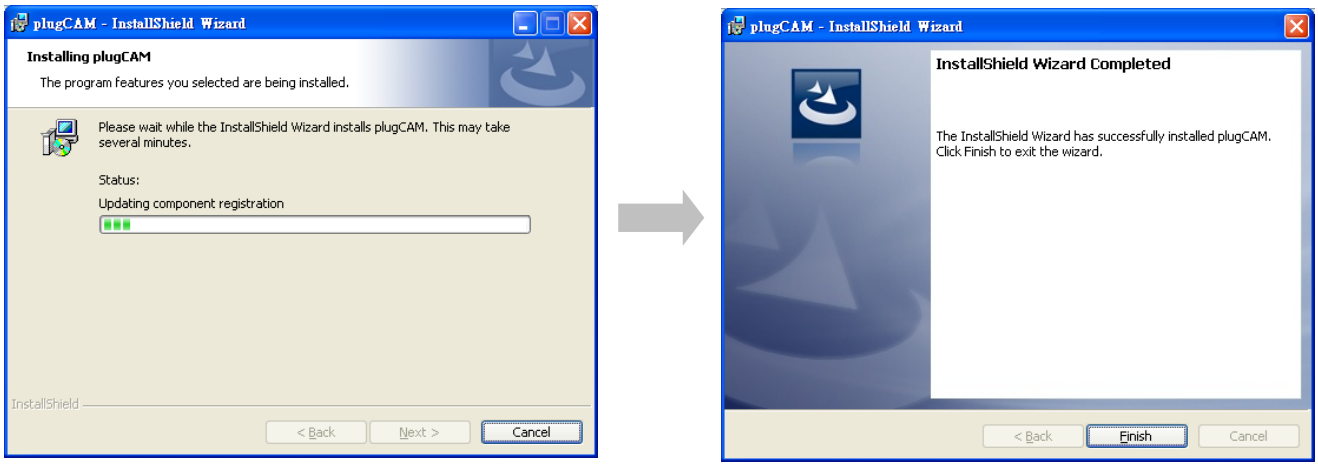
4. Choose set-up type and click " **Next >** " to enter installation procedure



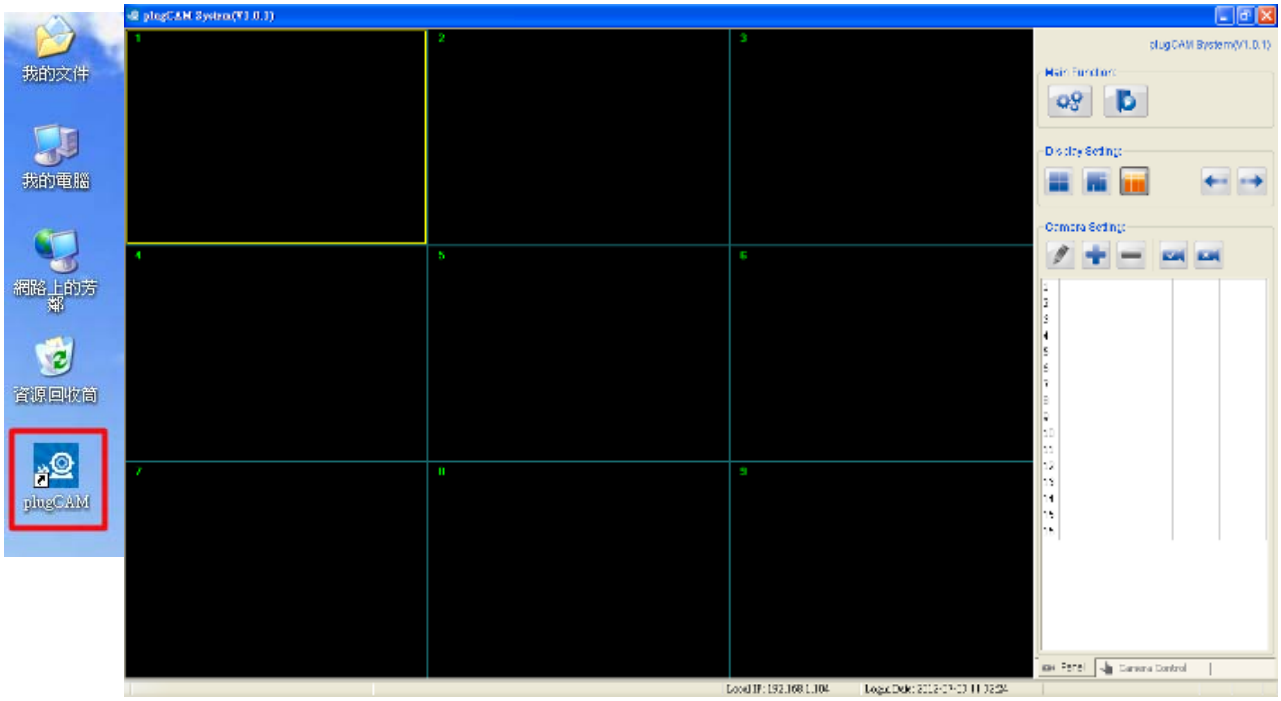


5. Procedure complete automatically

6. You can see the plugCAM program and the icon after installation successfully



Shortcut on desktop



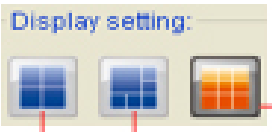
5.2 Function Introduction

Main Function

Playback video recording

Set snapshot and video recording path

Display Setting

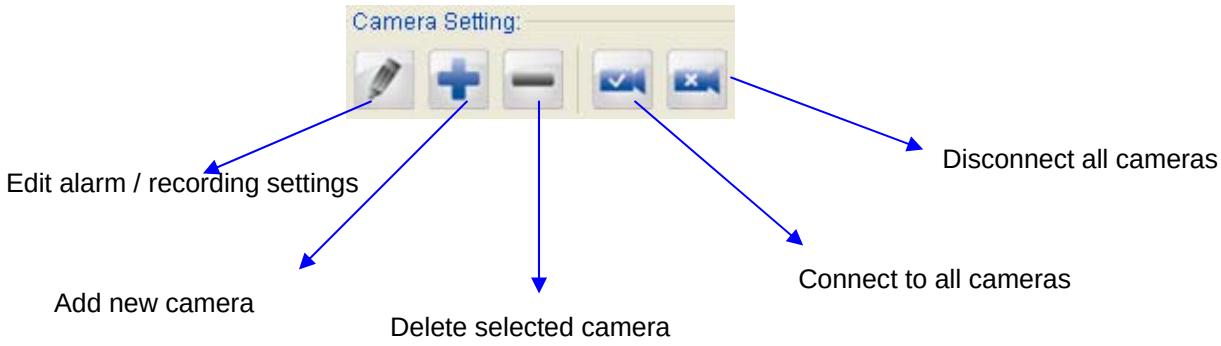


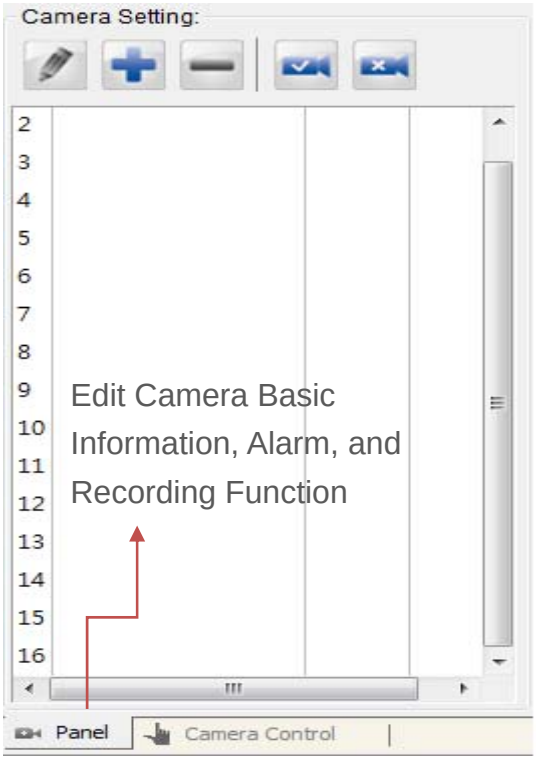
9 channels (default)

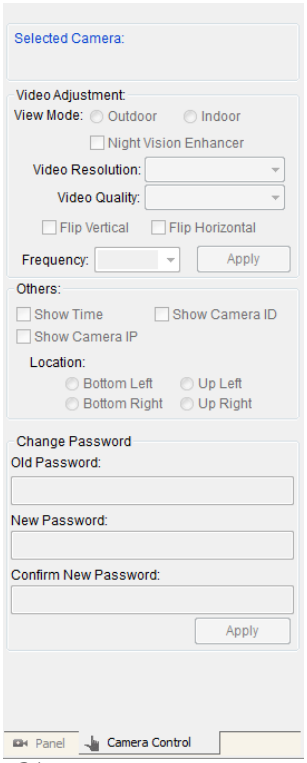
6 channels

4 channels

Camera Settings





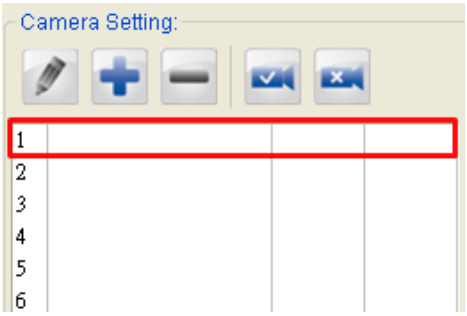


Display Channel

5.3 Search Camera in Local Network

1. Select an empty channel

2. Click to add in a new plugCAM device



3. Click search to find plugCAM in the same network, wait for plugCAM ID shows up, and then type in password, press " **Save** ".

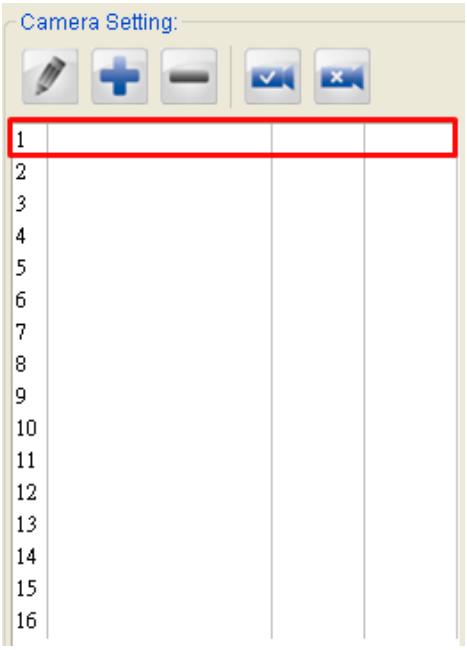
4. Click selected channel to connect to camera
5. plugCAM image will show on the display channel

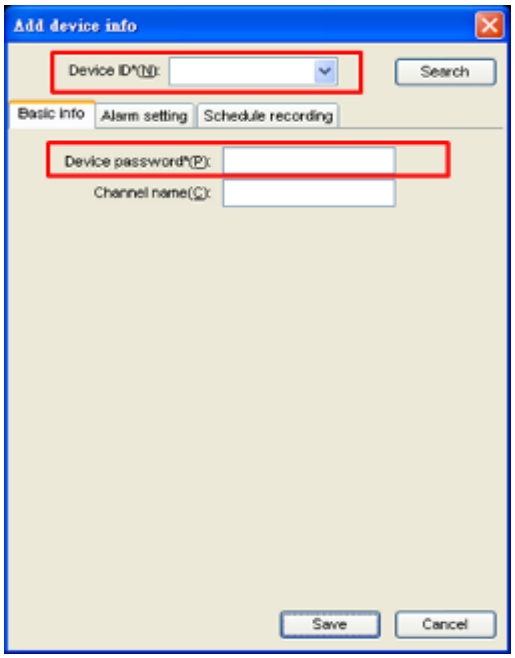
5.4 Add Camera Manually

1. Select an empty channel

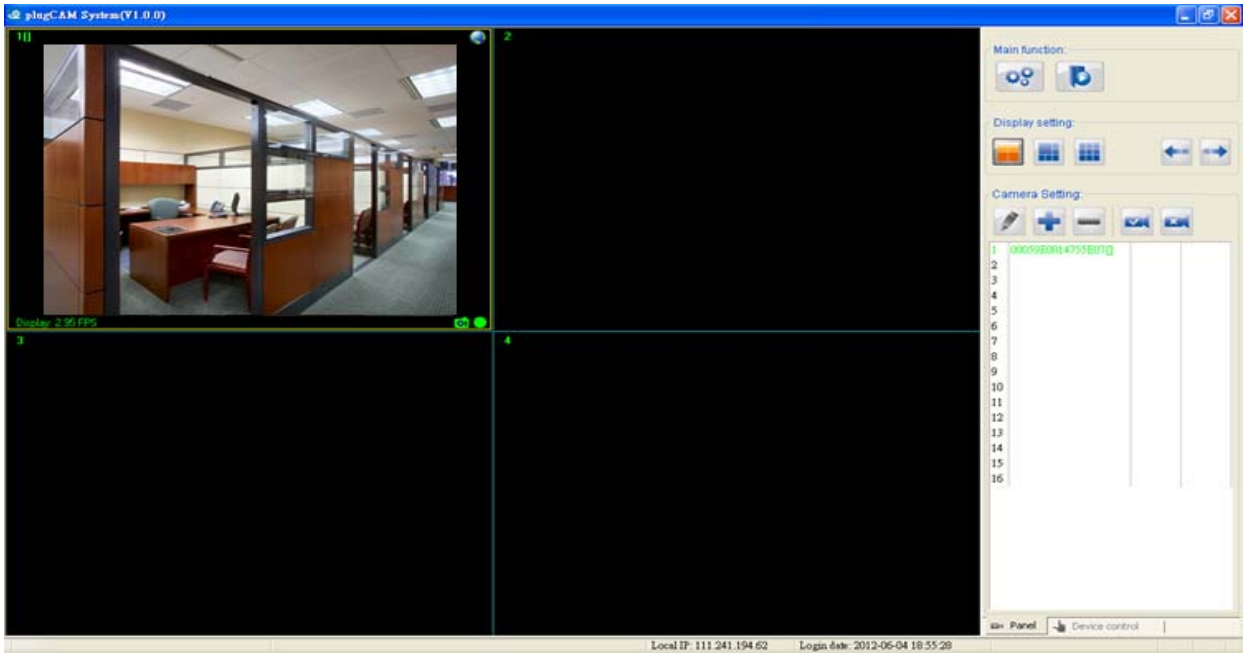
2. Click to add in a new plugCAM device

3. Type in ID and password, press “**Save**”.





4. Click selected channel to connect to camera.
5. plugCAM image will show on the display channel



5.5 Edit Camera Basic Information, Alarm, and Recording Function

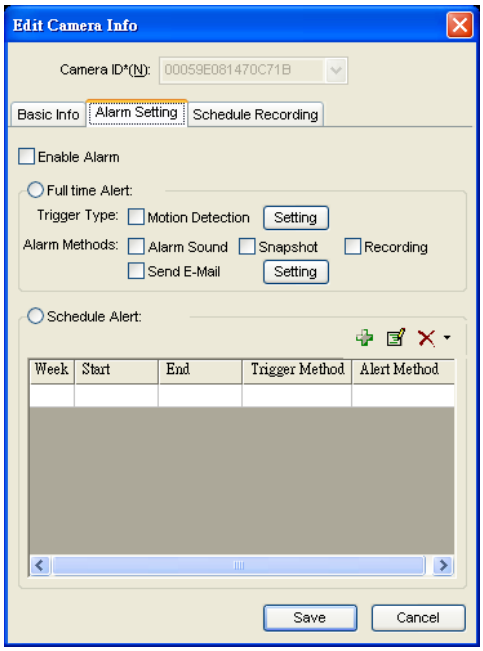
Click for setting up basic info, recording, motion detection, and email alert…etc

5.5.1 Basic Information

Change password and name of selected plugCAM

5.5.2 Alarm Setting

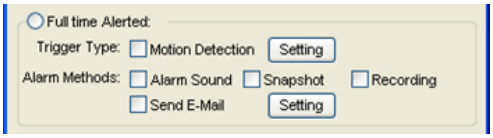
Enable alarm: choose ◯ Full time Alert: or ◯ Schedule Alert:



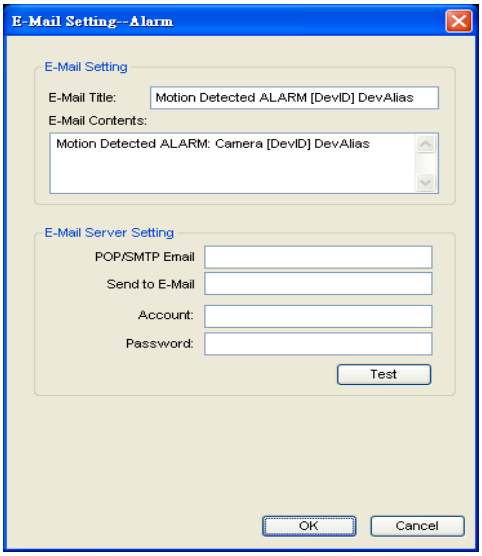
5.5.3 Full-time Alert

If you want to set Full-time Alert, you may adjust the sensitivity by clicking the setting button of **Motion Detection**

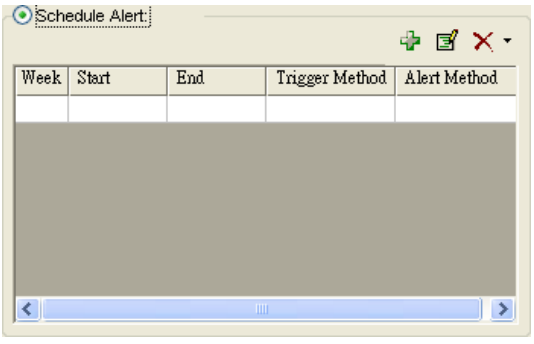
Then set **Alarm Methods**: Alarm sound, Snapshot, Recording, Send E-mail

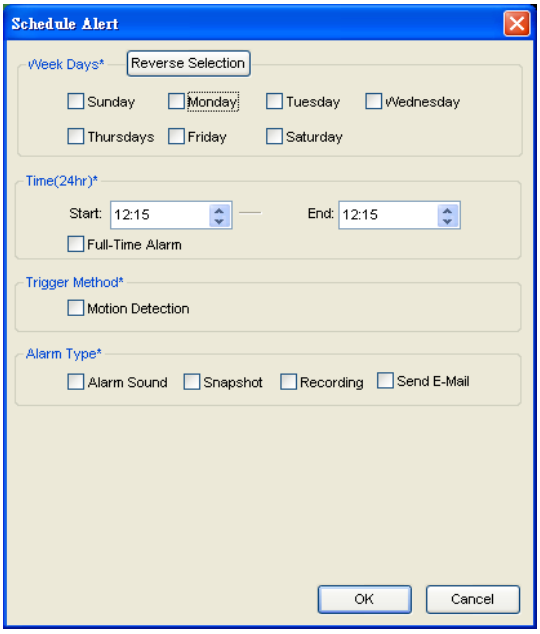


Clicking the **Setting** button to enter E-mail address



If you want to set **Schedule Alert**, click for further settings.



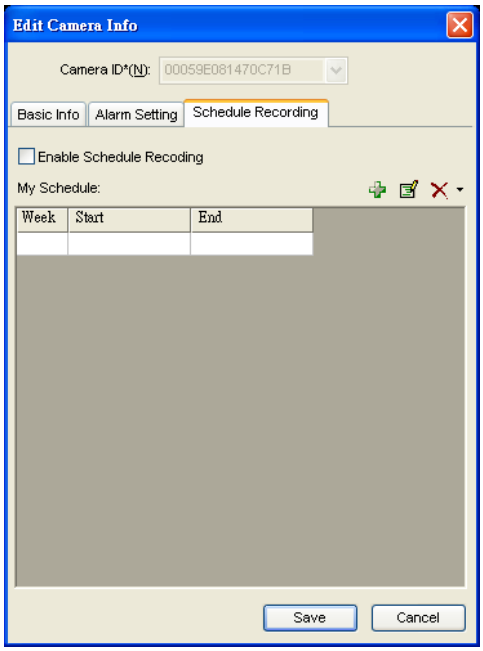


add duration

edit selected duration

delete selected duration

5.5.4 Schedule Recording

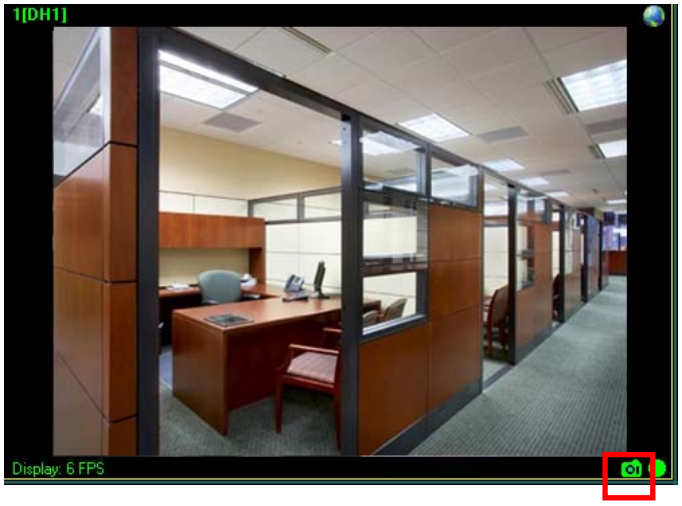


to add duration

to edit selected duration

to delete selected duration

5.5.4.1 Take Snapshot



1. Click the snapshot button to take snapshot from the camera
2. You can see the picture you take immediately; you can also open the file folder to delete snapshots.
3. Press SnapShot again to take another picture

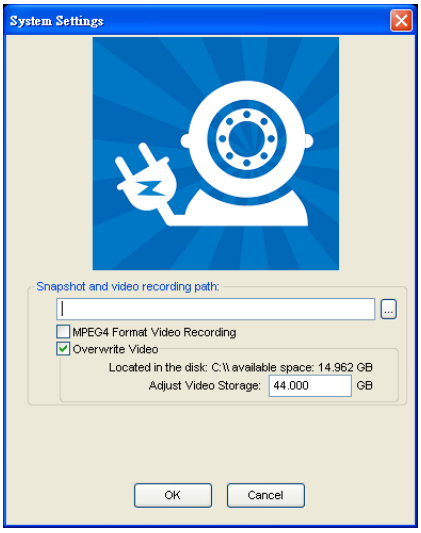
5.5.4.2 Recording Video

Press the **record button** to start recording.

Turning red means that camera is under

To stop recording, click again and the button will be back to green.

5.5.4.3 Set Snapshot and Video Recording Path

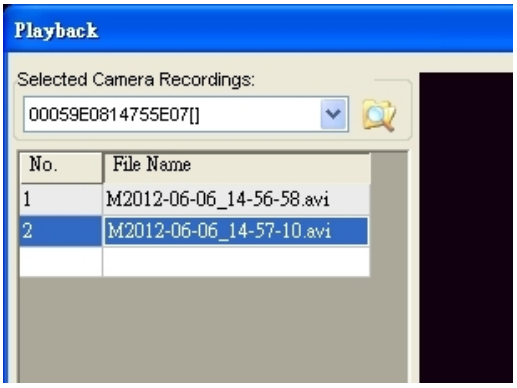


Click to choose a folder that you want to save pictures and videos

Start MPEG4 Format Video Recording to activate MPEG 4 recording.

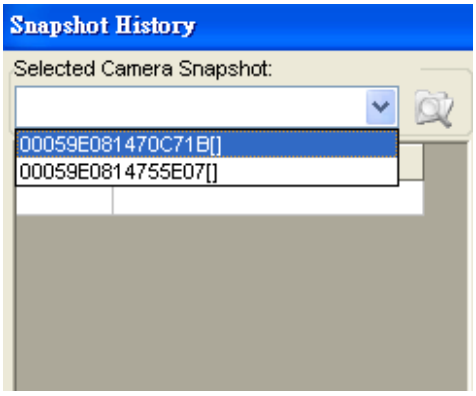
Click to show history of video or snapshot

5.5.4.4 Playback Saved Videos



1. Click on ‘Playback’, then choose a camera to see its record
2. After you choose a camera, you will see the recorded video list; pick one to review

5.5.4.5 Show Snapshot History



1. Click on “Snapshot History”, then choose a camera to see its record
2. After you choose a camera, you will see the recorded snapshot list; pick one to review

5.6 plugCAM Software Disclaimer

This plugCAM product integrated with PC Software may support recording function and alert function. Notwithstanding, brite-View Corporation does not represent or warrant the accuracy or reliability of any of the function, content, setting or setup contained on, distributed through, or linked, downloaded or accessed from any of the services or functions provided by the plugCAM product. Customers hereby acknowledge that any usage or reliance upon the plugCAM product shall be at customers' sole risk. brite-View Corporation hereby reserves the right, in its sole discretion and without any prior notice or obligation, to make improvements to, or correct any error or bugs in any portion of the plugCAM product

6. ENCRYPTED PLC NETWORK

6.1 Creating a Private Encrypted Network

Both the plugCAM and the Powerline bridge are compliant HomePlug AV specification. Every 'HomePlug AV' compliant PLC device that has the same default network name, "**HomePlug AV**", is capable of communicating with other "HomePlug AV" devices. This is so called the **"Public Network**". Two or more powerline devices under the same network can communicate with one another.

If you have a pair of powerline device, either one in the pair can be "device A" or "device B". By pressing the GROUP button more than 10 seconds; it will generate a random network group (different from HomePlug AV). Users can take the following two steps to change the public network group to the private network group to protect their data while transmitting over the powerline. Users also can create more than one private network groups by pressing GROUP button directly without software installation required.

*NOTE: Put the devices side by side will be more convenient during the setting procedure. After network group is set, the devices can be deployed anywhere at home.

Step I: Clear Group Attribute

Clear the original network group of device B by pressing its GROUP button more than 10 seconds until all LED lights simultaneously turns off and on once. At this moment, its network group name has been changed to a random name. It means that this device is (**1) ready to be assigned another network name** or **(2) to be used as a seed device so other PLC devices can join to a private network group.**

Step II: Join to Other Network Group

1. Press GROUP button of device A for 2 to 3 seconds (make sure POWER LED starts blinking).
2. Press GROUP button of device B for 2 to 3 seconds (make sure POWER LED starts blinking).

The device B which has cleared its group attribute will join to the device A which has not. This step makes device A and B are under the same encrypted network. Additional device C can be added into device A's logical network by taking same steps, thus all of the device A, B, and C in the same encrypted network group. User can assign as many powerline devices into the logical network group as described in the SPECIFICATION section.

*NOTE: It does not matter which device's button is pressed first, but please press the second device's GROUP button **within two minutes** after pressing first device's GROUP button. After 10 seconds, device will start communicating with device A.

6.2 Remove Device from an Existing Network Group

If you would like to remove powerline device from an existing network group, you can generate a new

group name (referring to Step I) to stop communication with an existing network group.

6.3 Create Additional Private Network

If you want to create additional private network for your powerline devices that co-existence with your existing powerline private network group, please repeat the **Step 1** & **2** to generate new private network group for selected powerline devices.

P.S. Users can press the RESET button to reset the network name back to its factory default.

7. ENHANCE PLC PERFORMANCE

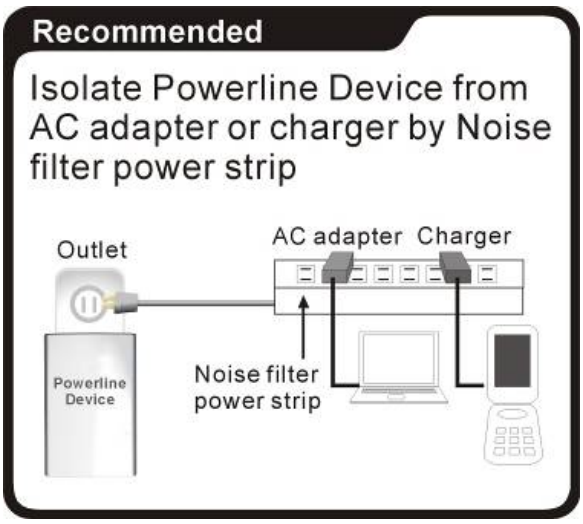
While Powerline device delivers data over the existing electrical wiring in the house, the actual performance may be affected by electrical noises or the length of the wiring. To improve PLC performance, please refer to below recommendations while placing the Powerline device.

AC Outlets Connection

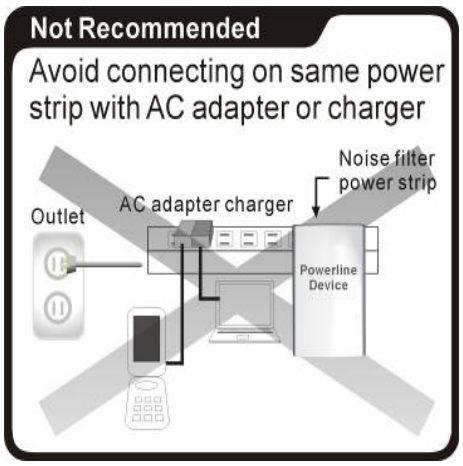
- Avoid connecting PLC device to an uninterruptible power supply (UPS) or backup power supply device. For best results, connect the adaptors directly to a wall outlet is recommended.
- Avoid connecting high-power consuming appliances to the same wall outlet.

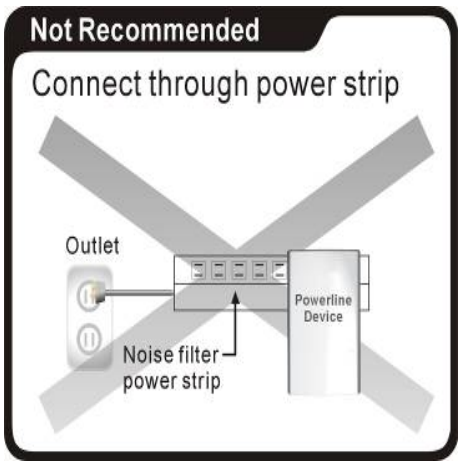
  See the following illustration:

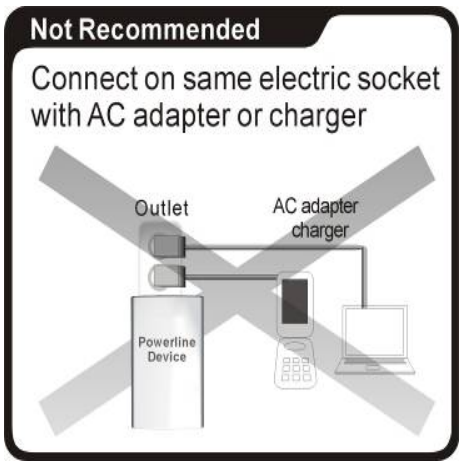
For better performance, the following connection is recommended.



The following connections are **NOT** recommended.







Connection via Power Strip

If user intends to connect the PLC device via power strip, please follow below reference for better performance:

- Make sure the power strip does not support a noise filter or a surge protector.

Electrical Interference

Some household appliances may produce noise emission. If noise emission is spread over the electrical wiring, it will affect PLC performance in the house. For the best results, we recommend to connect an electrical noise filter with the appliances such as:

- Battery chargers (including cell phone chargers)
- Hair dryers
- Power drills
- Halogen light
- Vacuum cleaner
- Lights or lamps with touch-sensitivity feature supported

Electrical Wiring

The PLC device delivers data over the existing electrical wiring in the house. Actual PLC data transfer rate might vary including the transmission distance between two PLC adapters.

Special Care for Business Installation

Due to several uncertainties that might degrade Powerline performance or block its operation, we DO NOT recommend to install the Powerline devices into business environment. This device has NO GUARANTEE to operate in a business environment such as offices or factories.

- The transmission distance between two Powerline devices is limited by the noise in the electrical wiring.
- PLC communication is supported under the same power meter system. Business environment might include more than one power meter systems and it will cause communication lost among the Powerline devices.

8. SPECIFICATIONS

Electric	
AC Input	100 to 240V AC, 50/60Hz
Ethernet port	N/A
Power connector	Euro8 connector
Mounting	Screw inlets (side, bottom), Tripod mounting thread
Camera	
Sensor	(1) 1/4 -inch CMOS VGA sensor, (2) brightness sensor
Resolution	Up to 7 fps @ 640*480 in LAN Up to 20 fps @ 320*240 in LAN Up to 30 fps @ 160*120 in LAN
Video compression	MJPEG (Audio is not supported)
Lens	3.6mm, F2.0, View angel 78 degrees 4 Glass w/ IR coating
Eyeball Pan/Tilt	Manual mode
Eyeball adjustment angle	Pan: 0~ 270 degree, Tilt: 0 ~ 75 degree
IR distance	5 m (IR LED x 12)
IR mode	Turns on under dark & being accessed
Video Setting	Resolution, Brightness, Quality, Environment Flip and Mirror setting
Security	User-defined ID/Password protection, Public-key encryption
Networks	
Network protocols	TCP/IP, UPnP, DHCP client, Static IP, P2P
Board band router	With DHCP and UPnP enabled
P2P - NAT traversal technology	Proprietary UDP
PLC (Power Line Communication)	Built-in 500 Mbps PLC adaptor
Max PLC Camera in a home	7 (w/ a PLC Ethernet adapter)
PLC standard	HomePlug AV 1.1
PLC transmission distance	Up to 300 m
PLC transmission security	AES 128 bit
PLC freq. band	2 to 28 MHz, 30 to 50 MHz, 50 to 68 MHz
Mechanical and electronics	
Work Temperature	0° C ~ 40° C
Storage Temperature	-40° C ~ 60° C
Relative Humidity	Operating: 10~85% Non-Condensing Storage: 5~90% Non-Condensing