

User Manual

SAMSUNG TECHWIN

SAMSUNG SMARTCAM

User Manual

SNH-E6110BN



Samsung SmartCam

User Manual

Copyright

©2014 Samsung Techwin Co., Ltd. All rights reserved.

Trademark

 **SAMSUNG TECHWIN** is the registered logo of Samsung Techwin Co., Ltd. The name of this product is the registered trademark of Samsung Techwin Co., Ltd. Other trademarks mentioned in this manual are the registered trademark of their respective company.

Restriction

Samsung Techwin Co., Ltd shall reserve the copyright of this document. Under no circumstances, this document shall be reproduced, distributed or changed, partially or wholly, without formal authorization of Samsung Techwin.

Disclaimer

Samsung Techwin makes the best to verify the integrity and correctness of the contents in this document, but no formal guarantee shall be provided. Use of this document and the subsequent results shall be entirely on the user's own responsibility. Samsung Techwin reserves the right to change the contents of this document without prior notice.

SPECIFY SERVICE INSTRUCTIONS AND WARRANTY TERMS

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 NOTE:

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT.

SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

Operational Description

The operational description shall fulfil the requirements of Rule Part 2.1033(b)(4). The rule part requires, "A brief description of the circuit functions of the device along with a statement describing how the device operates. This statement should contain a description of the ground system and antenna, if any, used with the device".

The above requirement has been further interpreted by the FCC to mean that the description shall:

- be an operational or technical description of how the device operates, is modulated and meets requirements;
- describe the EUT completely. What is it (in plain English as well as technical terms)? Give a clear, concise functional description of device operation.
- always describe the signal, such as modulation type, pulse repetition rate, signal type and information being sent. Describe all modulation types and all data rates.

Instructions & Warranty

The manufacturer is not responsible for any loss or radio/TV interference caused by unauthorized modification of the product.

Such modification will void the warranty of the product as well as the user's right of use.

WARNING

- The product must be assembled and installed by an adult.
- Before using, read all instructions on this manual thoroughly and follow operational instructions, warnings on this manual and printed on the product.
- To avoid entangled power cord, do not place it around the baby bed or other infant furniture. Keep this product and its power cord out of children's reach.

- Especially, the power cord should be installed carefully while keeping it out of children's reach.
- Never use the product near bath tub, sink, washing machine and in wet basement to avoid moisture.
- The product is designed for indoor use.
- The product is not designed for medical monitoring, and requires a grown-up's protective supervision on its use.
- To avoid overheating of the product, do not expose the product to direct sunlight; do not install or use near a heat source such as heater, radiator, cooking devices (ex: electric stove or oven) and other warming devices (ex: audio amplifier, TV, etc.).
- Make sure to keep ventilated while using the product.
Avoid pillar or furniture that may block ventilation, when installing the product.
- Make sure to use the power adaptor provided. If used with unidentified adaptor, it may damage the product. The power adaptor must be used with regular household electric supply.
- Avoid sharp, pointed objects around the adaptor's cable, not to damage the cable.
- Be warned and never hold the cable's stripped part when connecting / disconnecting the adaptor to/from the wall outlet.
- To avoid entangled cable lines, avoid using cable extension for adaptor's power cord.
- The product's servicing is allowed only to authorized Samsung Techwin's service personnel.
- When using the product for children's care, be careful to keep the product out of children's reach.
- The product partially contains component which might cause respiration difficulty. Accessories and small parts of the product should be stored keeping out of children's reach.
- The product is not designed to replace responsibility of human supervision on children.
- The product is not equipped with device of immediate notification to adult with accidental/sudden children's move; it requires periodic checks and human supervision.
- This appliance and its antenna must not be collocated or operation in conjunction with any other antenna or transmitter. A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

Contents

GETTING STARTED

Features	4
What's Included	5
Part names and functions	6

INSTALLATION & NETWORK CONNECTION

Installation	8
Network Connection and Settings.....	9

MONITORING

Registration	10
Live Video	13
Setup	15
Event Alarm	21
Information	22

APPENDIX

Specifications	24
Troubleshooting	27

GETTING STARTED

01

Features4

What's Included

Part names and functions

Power Supply
Network connection

Features

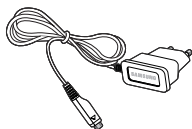
- **Easy to install**
 - Simply visit the home page (www.samsungsmartcam.com) and download and install the program without a separate installer program.
 - **Remote monitoring**
 - Whenever and wherever if you are in the Internet enabled environment, remote monitoring is ready for you.
 - PC, laptop or smart phone can be used for monitoring.
 - **Real-time alarm**
 - When a motion and sound are detected, your smartphone will generate real time alarms.
 - **Cloud Storage**
 - Users can automatically upload event photos to their Picasa accounts.
 - Anytime anywhere you can enjoy the video and images stored in the cloud storage.
 - **Two-way Audio**
 - With the built-in speakers and microphone, you can make Two-way communications.
However, it is available only with the smart phone. (Not applicable to the PC or laptop computer.)
- 5 • **SNS (Social Networking Service) Alarm supported**
 - Provide event alerts through Picasa.
 - Share your photos with your friends.
- 6 • **IR LED**
 - 7 - At low illumination levels, you can use an IR LED for monitoring purposes.
 - 7

What's Included

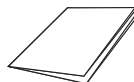
Check for components when opening the product package.



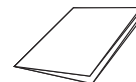
Camera



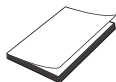
Power Adaptor



Quick Start Guide



Warranty Card

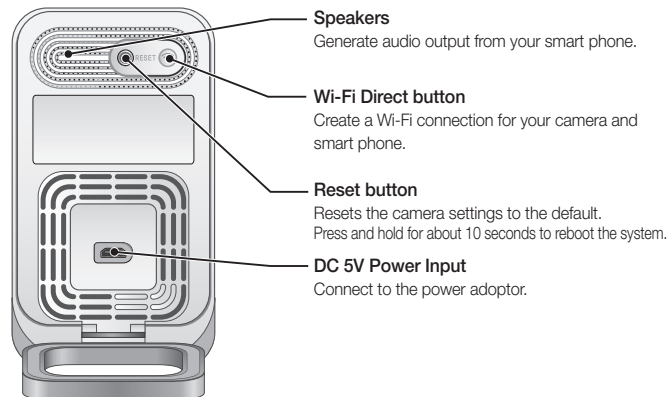
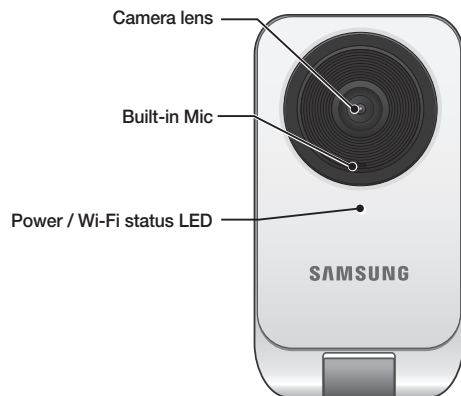


GPL Licence



- Please save the packaging. You will need the serial number later to register the camera.

Part names and functions

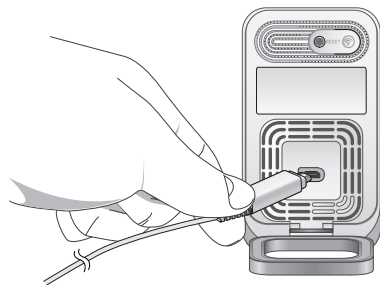


Power Supply

Plug-in the camera power adapter to the wall outlet and connect the camera as shown.



- Make sure to use the provided power adaptor. If you use an adaptor other than the power supply adaptor provided in our package, the product may not operate properly.
- It will take about 1min for the camera to boot-up completely.
- When the boot-up is complete, the power LED color will change from red to blue.



Network connection

Connect the provided network cable to the camera's network terminal.

For further details on network configuration, refer to "**Network Connection and Settings**". (Page 9)

LED status

LED indicator shows operational status with colors.

Refer to table below for detailed meaning of the LED indicator.

Color	Status
Red	Booting up
Red Blinking	Booting completed / Establishing network connection
Blue Blinking	Connecting to the network.
Blue	Local connection established
Green	Connection to server completed / Normal operation
Magenta	Updating firmware

INSTALLATION & NETWORK CONNECTION

Installation 8

- Precautions 8
- Adjusting the Angle 8

Network Connection and Settings 9

- Precautions 9
- Connecting using Wi-Fi WPS feature 9

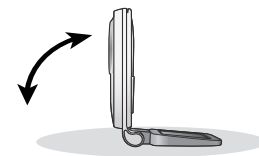
Installation

Precautions

1. Install the camera in a place where the Wi-Fi signal can be reached and without interference.
2. Keep it away from humidity such as around the humidifier.
3. Keep it away from direct sunlight, strong light or dust; install it in a place with clear view.
4. Do not install it in a place where there are a lot of obstacles.
5. Keep the lens clean at all times.
Wipe off the dust with a soft cloth.

Adjusting the Angle

1. Adjust the camera's shooting angle as appropriate.



Network Connection and Settings

Precautions

- The wireless network access may fail, depending on the communications environment.
- For details about the network settings and password, contact your network administrator or service provider.
- For a specific Internet service requiring user authentication, you may not access the service. If this is the case, contact the service provider.
- Do not access the unauthorized network.
- The farther the distance from the Wireless Access Point, the longer time the network connection may take.
- If you fail to access the selected wireless network, try a different Wireless Access Point to make access.
- For more information about the router or the wireless connection, refer to the documentation of the router or contact the router manufacturer.
- If the camera is connected to a multiple-Wireless Access Point network environment, some video packets may be lost, depending on the network traffic load.
- According to the network policy (blocking UDP) of the service provider, the video transmission can be limited to 7 minutes.
For more details, refer to the descriptions on page 15, <Relay Mode>.
- In addition to the above two situations, you may encounter a network delay or interruption due to the network conditions.
- Some hubs can have compatibility issues.

Connecting using Wi-Fi WPS feature

What is WPS?

WPS enables to make connection between the camera and the Wireless Access Point with a simple click of the button.

1. When you apply the power, the power status LED is lit red, and it will change to red blinking when the booting is completed.
2. Press the WPS button on the camera for 5sec.



3. Register and select the camera according to guide of mobile guide.
4. Set your wireless network environment using the guideline <Network> on page 17.



- Registration is available only on the mobile camera.
- Using the camera's Wi-Fi Direct function, you can easily make a Wi-Fi connection from your mobile phone.
- If you fail to connect to the Internet service, contact the service provider for details.

MONITORING

03

Registration	10	Network	17
Web browser requirements	10	Time	18
Starting SmartCam	10	Alarm & Notification	19
		Alarm Schedule	21
Live Video	13	Event Alarm	21
Monitoring options	14		
Setup	15	Information	22
Basic Info	15	My Account	22
		Support	23

Registration

Registration is available only on the mobile camera.

Web browser requirements

Windows	Mac
Windows XP, 7 supported	Mac OSX 10.7 Lion or higher is supported
- Internet Explorer 8 or higher (The 64-bit is not supported.)	- Safari
- Firefox	- Firefox
- Chrome	- Chrome

Starting SmartCam

1. From your PC, launch your web browser.
2. Go to <http://www.samsungsmartcam.com>.
3. Select preferred language.
4. Click <Sign up> or <Starting SmartCam>.



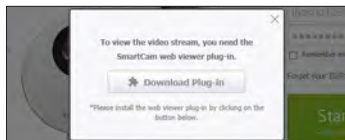
❖ Plug in installation

You need to install your plug in view the video in your camera.



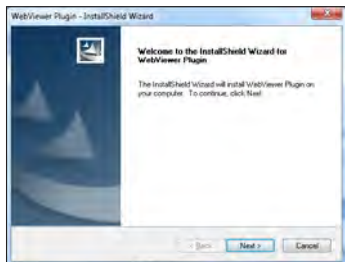
- If you login or click **<Starting SmartCam>** in a PC where the plug in is not installed, the installation message window will pop up.
- When you install the plug in, the web browser will be terminated and you need to launch it again.

- 1) Click **<Download Plug-in>**, run the setup file.

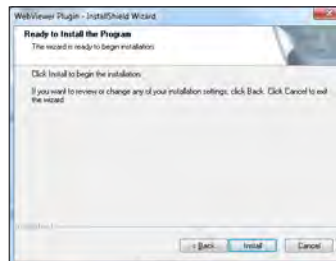


For Windows

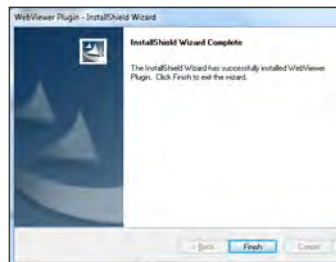
- 2) Click **<Next>**.



- 3) Click **<Install>** to begin the installation.

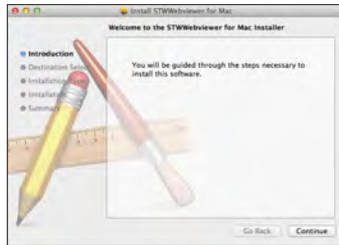


- 4) Installation has completed.



For Mac

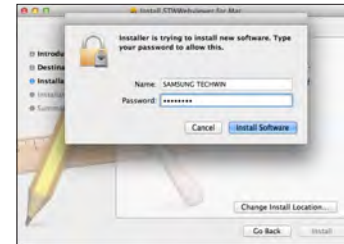
- 2) Click <Continue>.



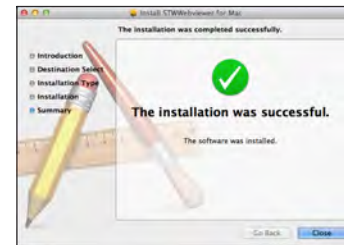
- 3) Click <Install>.



- 4) Enter MAC PC password and click <Install Software>.



- 5) Installation has completed.



5. Enter the requested information, and click <Sign Up>.



- ID : Using alphabetical characters and numbers, make a combination using 8 to 14 letters.
- Password : Create password between 8 to 14 alphanumeric character.
- Confirm Password : Please enter the password again for confirmation.
- Name : Enter the user name.
- E-mail : Please make sure you enter correct email address as you will have to use the email address to receive temporary ID/password when you lost your user ID or password.

Live Video

1. Select a camera from the camera list at the upper left hand of the screen.



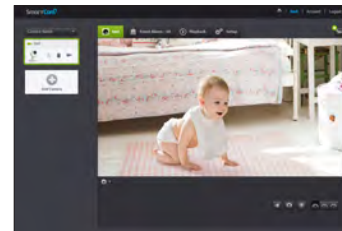
- The gray icon indicates the camera is inactive so you cannot monitor it right now.

2. Enter the camera password and click <Apply>.

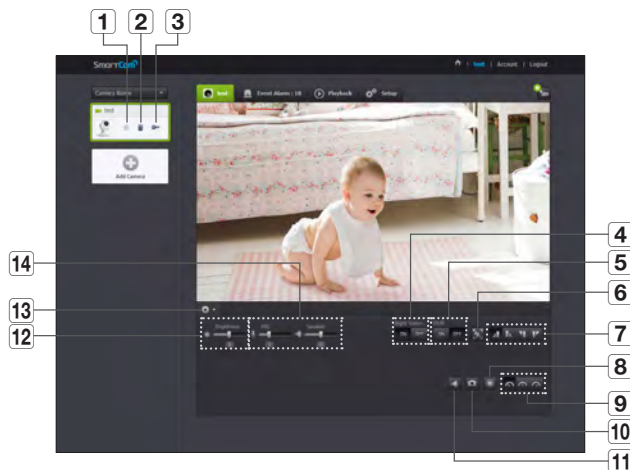


- Check on <Remember> to access your camera without entering the password next time.
- If you want to change the Camera password, please refer to <Basic Info> on page 15.

3. Live video will be displayed on the screen.



Monitoring options



Item	Description
1 Default Camera	Set the default camera to monitor in the camera list.
2 Delete Camera	Delete the registered camera.
3 Cancel remembering camera password	Cancel remembering the camera password.
4 Night Vision	If Night Vision is set <ON>, it will automatically switch to black and white mode in the dark condition and then the IR lamp will automatically operate. If Night Vision is set <OFF>, it does not switch to night vision mode and it will operate in color mode.

Item	Description
5 WDR	A dark spot will be brighter and a bright spot will be darker to compensate for the backlight.
6 Motion zone setting	It detects motion within the range set by a user.
7 Flip	You can flip over the video image.
8 Manual recording	A user can directly save videos in their SD card. 30 minute long video is saved. - If there is an ongoing event now or overwrite to SD card is not checked, and there is storage space of 10% remaining, you cannot perform manual recording.
9 Network Speed	Set the network speed (low/mid/high). If the bandwidth provided by your internet service provider is smaller than the recommended value, then the video might get fuzzy or temporary disconnections or delays in the live video may be caused.
10 Capture Image	Live video is saved as one image.
11 Sound	When enabled, you can hear what's happening around the camera. Some internet service providers do not support audio outputs in relay mode.
12 Brightness	You can adjust the brightness of the screen image.
13 Hide/unhide detailed menu	Click on the [🔍] icon to unhide or hide detailed setting menu.
14 Audio	Adjust the volume of the built-in microphone and speaker of the camera as appropriate. If you set the mic setting to '0', you will not hear the live audio, and it will not be recorded in your SD card. Note that the Two-way audio transfer function is available only with the smart phone application.

❖ Network Speed

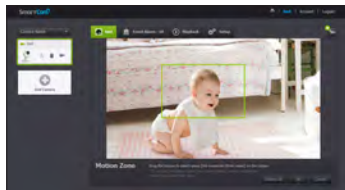
Profile Name	Resolution	Frame rate	Recommended bandwidth
Low Speed Network	VGA	20 fps	0.7Mbps
Mid Speed Network	HD(720P)	15 fps	1Mbps
High Speed Network	Full HD(1080P)	30 fps	2.8Mbps



- What is relay mode?
If the network condition is unstable, the camera cannot make a normal connection (P2P), so it will set up a connection in relay mode. In this case, you will see the video for the first seven minutes only.
- Relay mode is added feature where the video from the camera is transmitted to Samsung server then retransmitted to the user's computer.
- If you have trouble connection to the camera, visit "<http://www.samsungsmartcam.com>", go to support page, and refer to "Troubleshooting" on it.
- It is recommended to use one browser at one time.
- The Night Vision video produces a different visibility according to the distance between camera and subject.

❖ Motion detection area setting

- 1) Click the  icon.
- 2) Drag it to the screen to set the detection area.



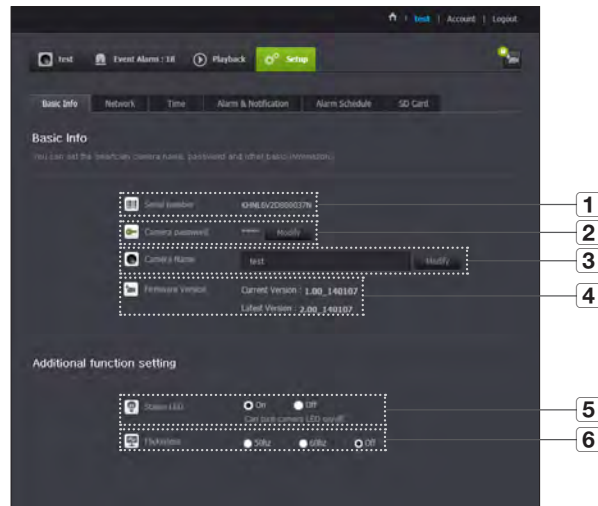
- 3) Click on **<OK>**.
If you want to delete the set area, click on **<Delete All>**.



- The **<Motion Detection>** function needs to be activated in order to use the motion zone function.

Setup

Basic Info



Item	Description
1 Serial number	You can confirm the serial number.
2 Camera password	Click the <Modify>, you can change the Camera password. Enter the current camera password, and type a new Camera password.
3 Camera Name	Click the <Modify>, you can change the camera name.
4 Firmware Version	You can check the current version and the latest version of your camera S/W.
5 Status LED	You can turn on/off the LED in your camera.
6 Flickerless	You can reduce the occurrence of screen shaking due to the frequency mismatches with the neighboring lighting.

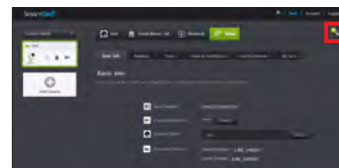


- If you change the camera password, you will be logged out and return to the camera password input page.
- Keep the camera password in a safe place as it is used for viewing the live screen of the camera or for changing the display settings.

❖ Firmware update

If the currently used S/W is not of the latest version, update it.
If you are using the latest version, then the firmware will not be activated.

- 1) Click <Firmware>.



- 2) Click the < > icon to update the firmware.



- 3) When the firmware update is finished, the camera will reboot.



- If you want to update the firmware, it is recommended to use a wired network connection.
- If the power goes off during updates, it may not operate properly.
- The duration of the firmware update depends on the size of the firmware file and the network connection speed.

Network

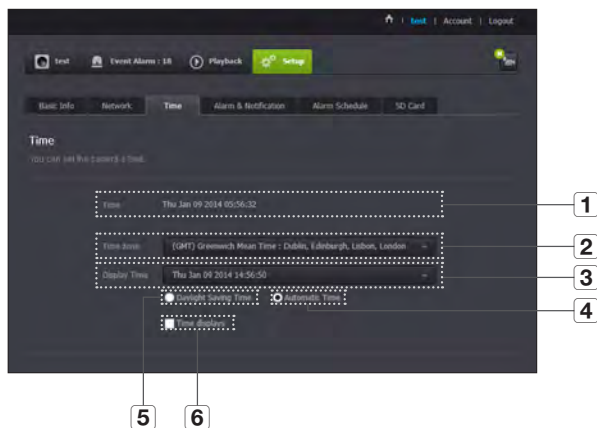


Item	Description
1 Wireless On/ Wireless Off	You can select to activate or deactivate the wireless network connection.
2 AP (Access Point) list	You will see a list of APs (Access Point) available. Select a desired one from the list of APs (Access Point).
3 AP (Access Point) password	If you select a secured AP (Access Point), you must enter the password before you can access the network. For the password, contact your network administrator.
4 Hidden SSID	If your SSID is hidden, select the type of security you have. Enter the name of the SSID and the password.



- If you select a non-secured AP (Access Point), you just can access the network without providing a specific password.
- If you entered a wrong password, you cannot access the network whatsoever.
- When the wireless network settings are completed, remove the LAN cable. If you do not remove the LAN cable, the wireless network will not be available.

Time

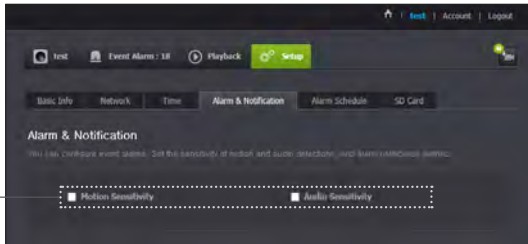


- The time will synchronize with the NTP(Network Time Protocol) server automatically.
- For this, Internet connection is required.
- You need to set the timezone correctly to obtain the exact time setting.
- The time displayed without Internet connection may not be accurate.

Item	Description
1 Time	Confirm the camera's time.
2 Time Zone	Select your region.
3 Display Time	Select the time format displayed in time setting.
4 Automatic Time	It sets camera's time automatically.
5 Daylight Saving Time	Check this option if you live in a country or region where DST(Daylight Saving Time) is applied.
6 Time to show	Live screen displays the time.

Alarm & Notification

Camera has ability to send event notifications when motion or audio is detected.



Item	Description
1 Alarm notification	You can set motion or audio alerts. Sensitivity level can also be set. The higher the sensitivity, the more accurate motion and audio events can be detected. When an event occurs, if you want to send alerts to Picasa/Gmail, first log into your google account.



- In the following case, it may fail to derive the proper results for basic events and motion detection.
 - The object color or brightness is similar to the background.
 - Multiple movements continue occurring at random due to a scene change or other reasons.
 - A fixed object continues moving in the same position.
 - An object hides other objects behind.
 - Two or more objects overlap or one object divides in multiple portions.
 - A moving object comes close to the camera.

<Picasa> Notification

Automatically uploads a image to your private Picasa account.

1. Select the Google.
2. Enter your Gmail address and password.
3. Click <Save>.
4. Check <Use> of Picasa.



- If your Google email ID and password are saved, check the use of Picasa only.
- Refer to the policy of Picasa for the maximum number of uploaded images.

<Gmail> Notification

The event alarm is sent through Gmail.

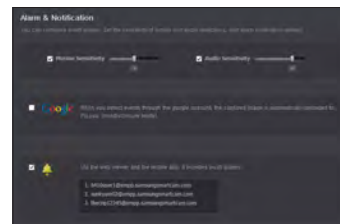
1. Select the Google.
2. Enter your Gmail address and password.
3. Click <Save>.
4. Select <Use> of "Send alarms".
5. Enter your email address to receive the notification e-mail and click <Add>. Now, the receiver full email address will be shown in the List Box. If you want to register more than one email address, you can just repeat the same procedure.



- If your Google email ID/password are saved, only check "Send alarms".
- If the email address for the recipient entered is incorrect, event alerts will not be sent.
- Even if you entered a correct google account ID, if the ID/password confirmation pop up window appears, click on <Go to the google page.> and check the google account.

Push alarm Notification

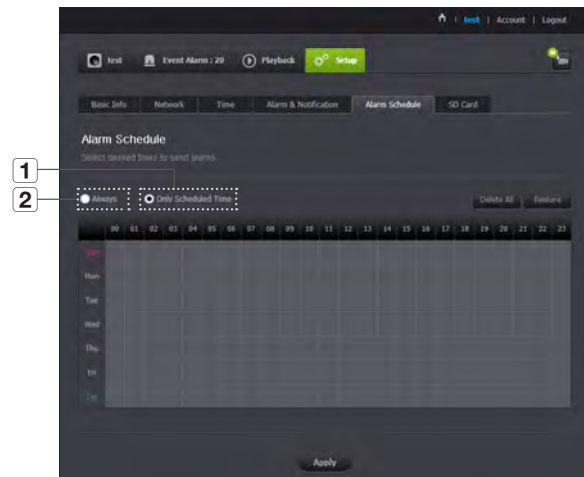
The push alarm is provided through the web viewer and mobile app in which the camera is registered.



- If you activated Use, then image links uploaded into Picasa will be sent to the friends listed in real time.
- Push alert list shows the list of IDs of users who registered cameras. When an alarm occurs, the web site will send push alerts to each smart phone.

Alarm Schedule

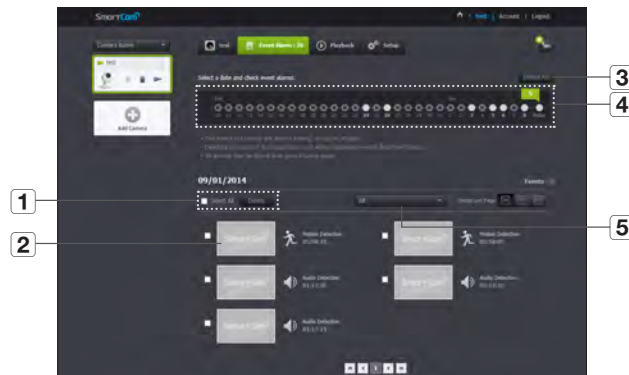
Alarms will only operate for the times selected by the user.



Item	Description
1 Only Scheduled Time	Alarm function will only operate for the time/day designated by the user.
2 Always	Alarm function always operates.

Event Alarm

You can check the event alarm that occurred.



Item	Description
1 Delete by dates	Delete all the event alarms on the date.
2 Image displays	Select and click on the desired event. You can view an image. ■ Image is displayed only if Picasa is activated.
3 Delete All	Delete all the event alarms for thirty days.
4 Display Events	Displays the number of events occurred in the 30 day list.
5 Arrange by types	Arrange the event list by event types.

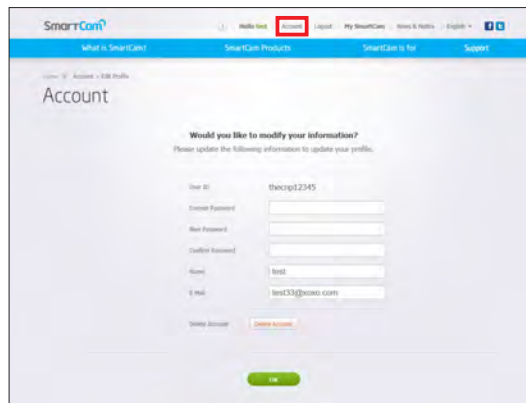


- Even if you delete an event in the event notification page, the Picasa event will not be deleted.

Information



My Account



- If you want to change the member information, click on <Account>. Select the item (password, or email address) and enter your information.

Support

You can download the Samsung SmartCam mobile app and user guide.



APPENDIX

04

Specifications

Specifications
Product Appearance

Troubleshooting

Specifications

Specifications

Item	Description
OS	Linux
Resolution	1920x1080, 1280x720, 640x360
Max. Framerate	1080p@30fps
Video Compression Format	H.264, MJPEG
Streaming Capability	Multiple Streaming (Up to 5 Profiles)
Angular Field of View (D/V/H)	77.6° / 42.7° / 69.7°
Low Light Performance	15Lux(Color)
WDR	N/A
Day & Night	N/A
Night vision	N/A
Digital Zoom	4X
Flip / Mirror	Support
Motion Detection	Support
Audio Detection	Support

24

24

26

27

Item	Description
Audio I/O	N/A
Audio Compression Format	G.711, G726
Audio Communication	2-Way Audio (Built-in Microphone & Speaker), Half Duplex
Memory Slot	N/A
Recording & Playback	Smartphone Recording
Ethernet	N/A
Wireless	Wi-Fi 802.11 b/g/n (2.4G Single-band)
WiFi Direct	Support (Push button)
Security	SSL (AES 256bit)
Max. User Access	5 users at Unicast Mode
Operating Temperature / Humidity	0°C ~ +40°C (+32°F ~ +104°F) / Less than 90% RH
Ingress Protection	Indoor
Input Voltage / Current	5V DC / 1A
Power Consumption	Max. 5W
Indication	1 LED (Power, Status, Link)
Color	White
Dimension (WxHxD)	51 x 93.2 x 19.5
Weight	85g

Product Appearance

Troubleshooting

If you encounter a problem with your system, see the table below to solve the problem as quickly and easily as possible. Please follow the instruction below:

Problem	Action
I forgot my user ID/ password.	- Move to "Log-in page → Forgot your ID/Password?", and enter the registered e-mail address to which we will send you the user ID and/or a new password. - It can be spammed out depending on the policy of the email server. - After logged in, it is advisable to change the temporary password provided.
Camera is not connected to the wireless hub.	- If the camera's wireless internet indication LED goes off too often, then it means that the camera installation location is not optimal for the wireless internet environment, so in this case, locate the camera close to the wireless hub and try to connect again. - Check the password for the wireless hub and try again.
After logged in, I failed to register the camera.	- Check that the serial number entered matches the label on the back of the camera. - Enter the correct password for the camera registered again and try to register the camera again. - Check the camera LED to see if it is green. If not, then check the network connection. - If you are still unable to register the camera after this, then reset the camera to factory settings and begin again. - (If you want to reset to factory settings, press and hold the initialize button on the back for 10 sec. Once initialized to factory settings, the camera will be restarted.)

Problem	Action
The capture images in the camera will not be uploaded to Picasa.	- Move to Setup → Alarm & Notification and adjust the sensitivity as necessary. - From the Alarm & Notification setup, configure the Picasa notification settings. (See page 19 of the manual) - Picasa has different service policies according to the country. The policy for your country may prohibit uploading to Picasa. Please first check the Picasa policy for your country. - According to the Picasa policy, it may limit the uploading size. Check the allowable free space of your Picasa account, and if insufficient, delete the exiting images.
The video from the camera is temporarily lost.	- The video from the camera can be delayed according to a network delay. Please check if the camera is installed in a place of proper wireless Internet communications.
No sound is output from the video.	- Click the Voice icon in the video playback page, or check if the voice is turned On in your smart phone app. - Some internet service providers do not support audio outputs in relay mode.
I forgot my Camera password.	- You must create a new camera password. - Press the initialization button on the back of the product for more than 10 seconds to reset to factory settings. - After factory initialization, when you access the camera, you can reset the password for the camera.
I want to change my password and/or email address.	- After logging in, click on the <Account>. Select the item (password, or email address) and enter your information.
Camera will be connected in a relay mode.	- Check the UPnP setting of the router. - Using a network upload speed of 500Kbps or higher is recommended. - Depending on the policy of your service provider, you can access in relay mode.



Samsung Techwin cares for the environment at all product manufacturing stages, and is taking measures to provide customers with more environmentally friendly products. The Eco mark represents Samsung Techwin's devotion to creating environmentally friendly products, and indicates that the product satisfies the EU RoHS Directive.



Correct Disposal of This Product

(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.



SALES NETWORK

SAMSUNG TECHWIN CO., LTD.

Samsung Techwin R&D Center, 6, Pangyo-ro 319beon-gil, Bundang-gu, Songnam-si, Gyeonggi-do 463-400, Korea

TEL : +82-70-7147-8740~60 FAX : +82-31-8018-3745

SAMSUNG TECHWIN AMERICA Inc.

100 Challenger Rd. Suite 700 Ridgefield Park, NJ 07660

Toll Free : 1-877-349-3149

www.samsungsv.com

SAMSUNG TECHWIN EUROPE LTD.

Samsung House, 1000 Hillswood Drive, Hillswood Business Park Chertsey,
Surrey, UNITED KINGDOM KT16 0PS

TEL : +44-1932-45-5300 FAX : +44-1932-45-5325
