

Volume

3

YANG'S SCIENTIFIC RESEARCH INSTITUTE, LLC.

HomeSeer Webcam Home Security System

User Guide

HOMESEER WEBCAM PERSONAL HOME SECURITY SYSTEMS

User Guide

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Introduction

*HomeSeer applies **Physical Linguistic Vision Technology** to monitoring the security of a home, a working and any places with a PC and a webcam.*

The unique vision processing and understanding platform invented by the chief scientist of Yang's Scientific Research Institute, called Physical Linguistics Vision Technology, constitutes the backbone of HomeSeer software package for webcam based home security system used in Windows operating systems. HomeSeer targets the market of visual home security via webcams such as monitoring activity of an vacant home, a working place and the perimeters of a building.

This document addresses the operations of the demo program of HomeSeer package. HomeSeer was first released in September 2005 and had been maintained and revised since then by Yang's Scientific Research Institute, LLC.(Yang's Scientific).

There are two kinds of commercial packages associated with HomeSeer software package. The first one is for the ender users and will be licensed to the ender users via a license fee per machine method. The second one is a developer's package to help computer programmers develop their own applications such as home security systems over the Internet and wireless networks.

Version 1.0.0.1 can record digital video in MPEG4 format based on criteria chosen by the users. The webcam used by HomeSeer can be a cheap and low-end product, the working condition is not critical to this version. The user can choose the HomeSeer to automatically achieve a video clip whenever one or more of the following criteria satisfied: recode regardless of motion objects, recode when any motion of objects detected, record only when the following motion patterns are detected: from left to right, from right to left, from top down, from bottom up, etc. HomeSeer gives the user more flexibility to setting the recoding criteria and also provide the developers with more efficient object tracking and recording facilities.

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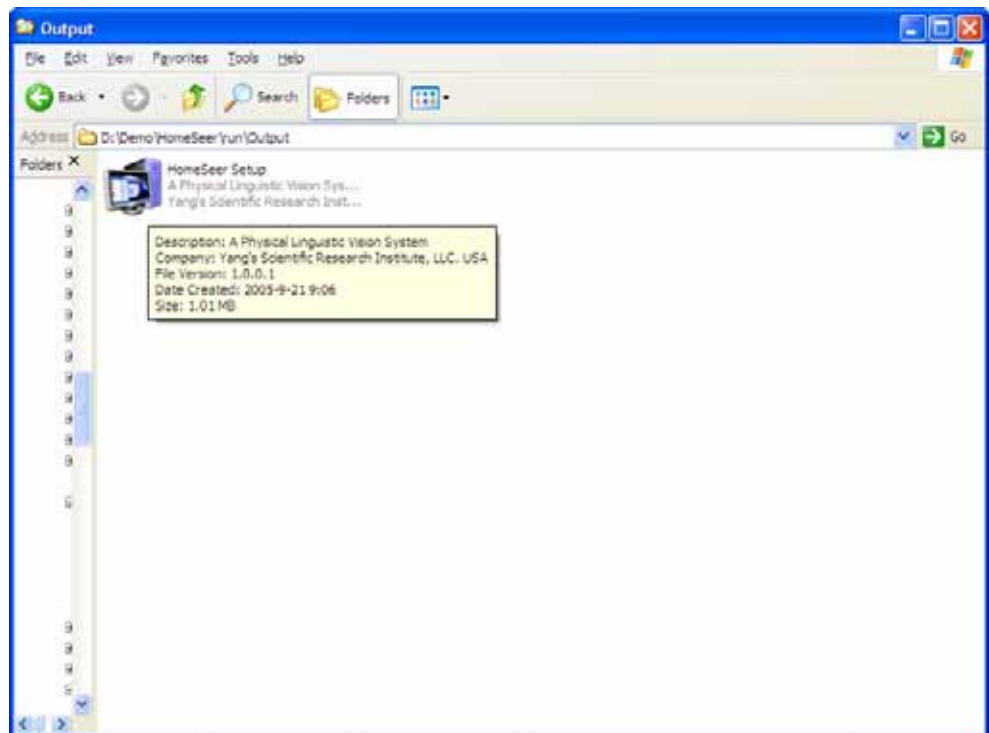
Getting Started

This chapter shows how to install HomeSeer into your computer with windows operating system.

To install HomeSeer into your computer, please follow the following steps. If you downloaded HomeSeer Setup from YangSky's Website, you should go to the download directory. If you install the developer's package from a CD, you should find the installer at the root directory of the installer CD.

Step 1: Begin to install

Double click the HomeSeer Setup icon.



Step 2:

You will see the following interface of the installer.

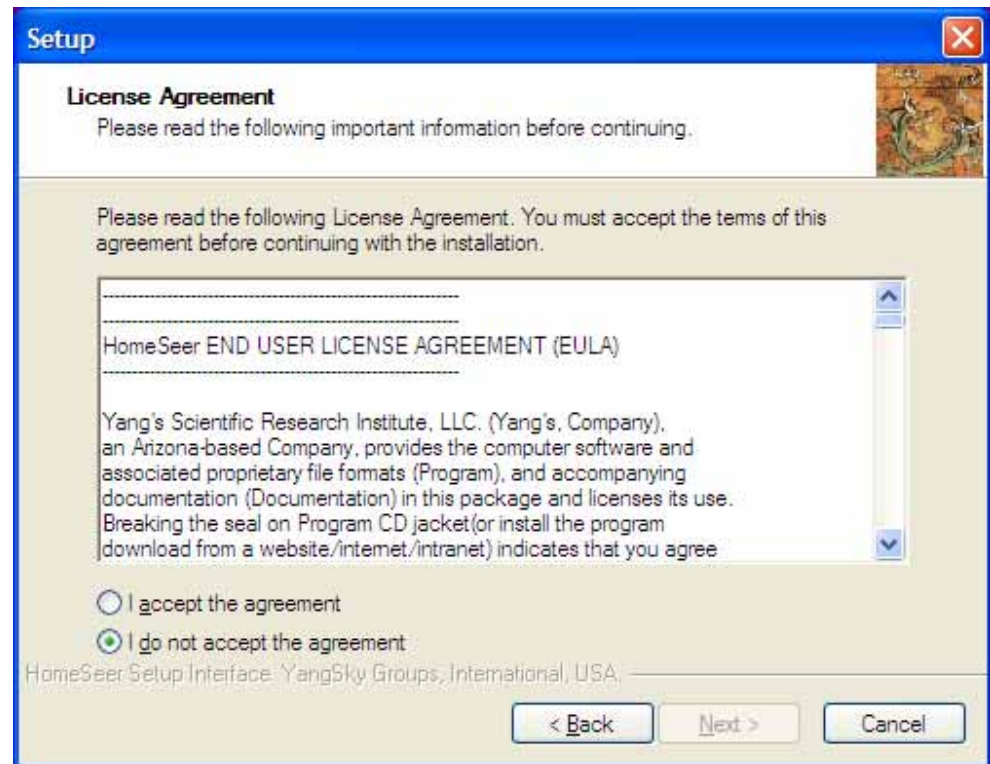


Click Next....

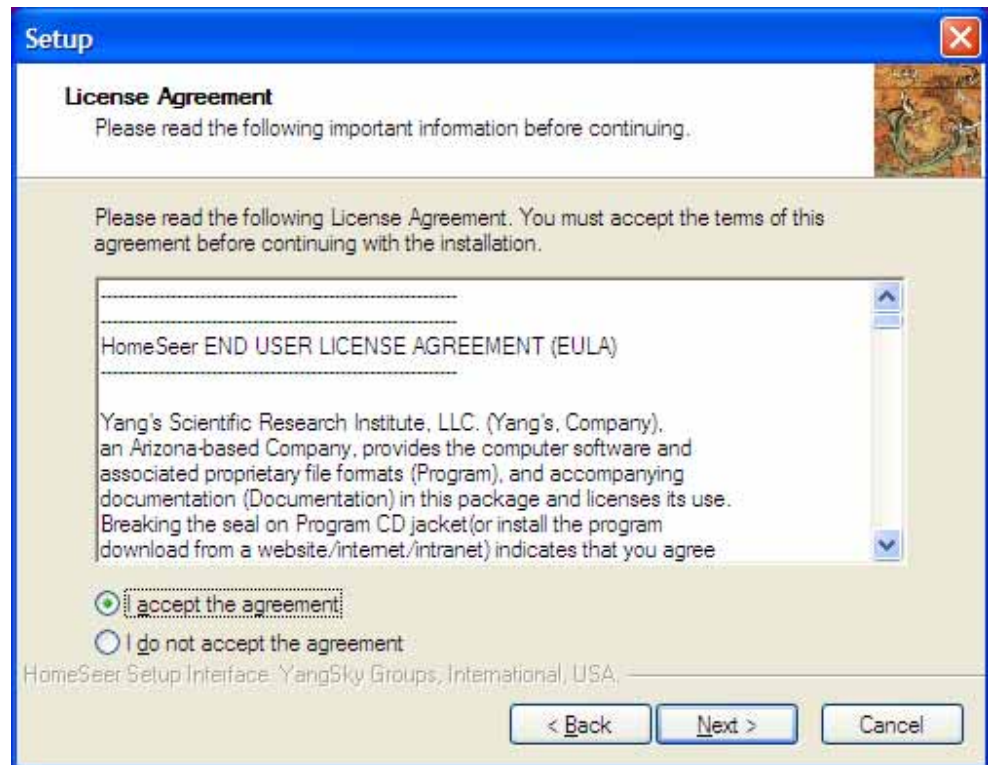


Step 3:

On this page, select the first radio button and then...

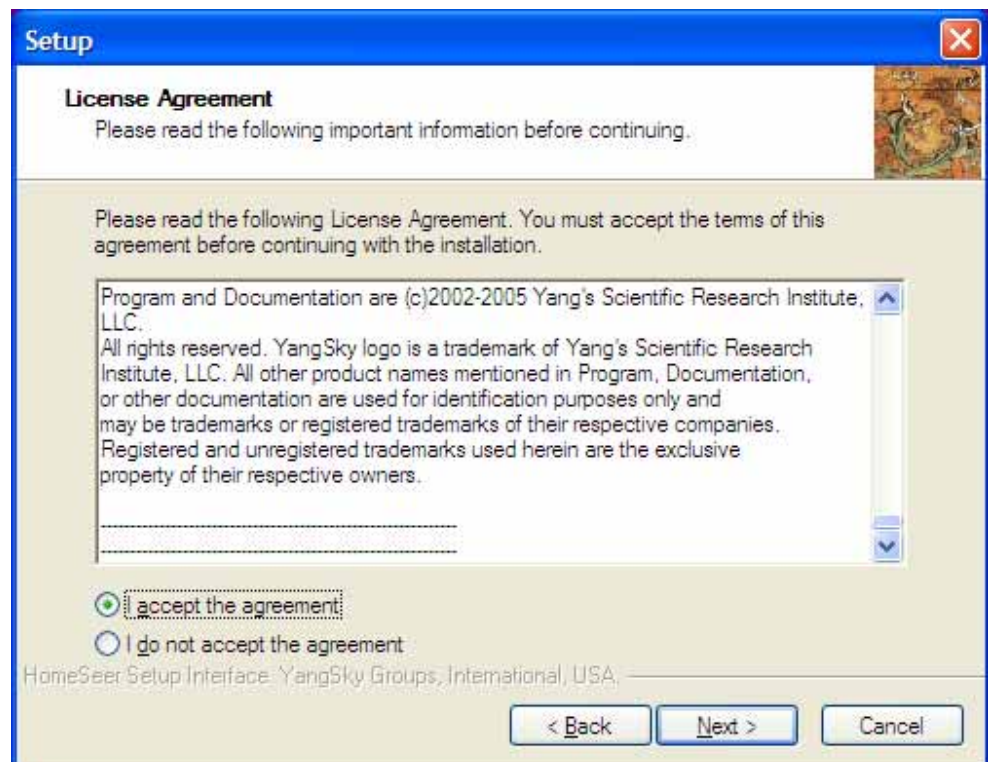


Click Next...

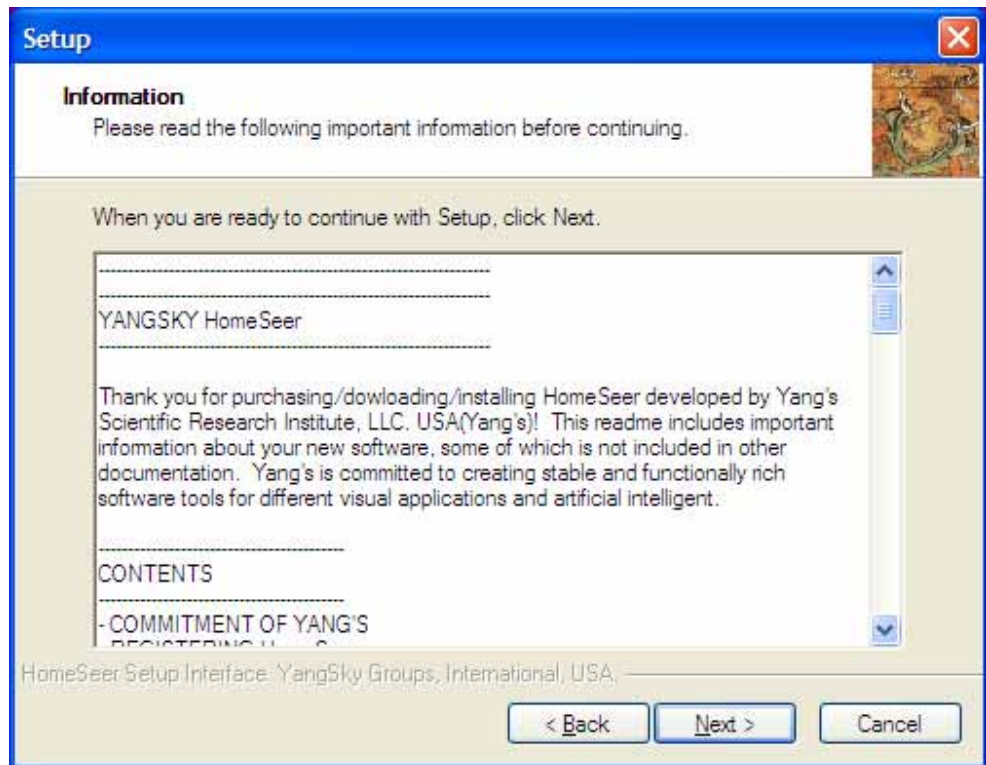


Step 4:

Read through the important information...

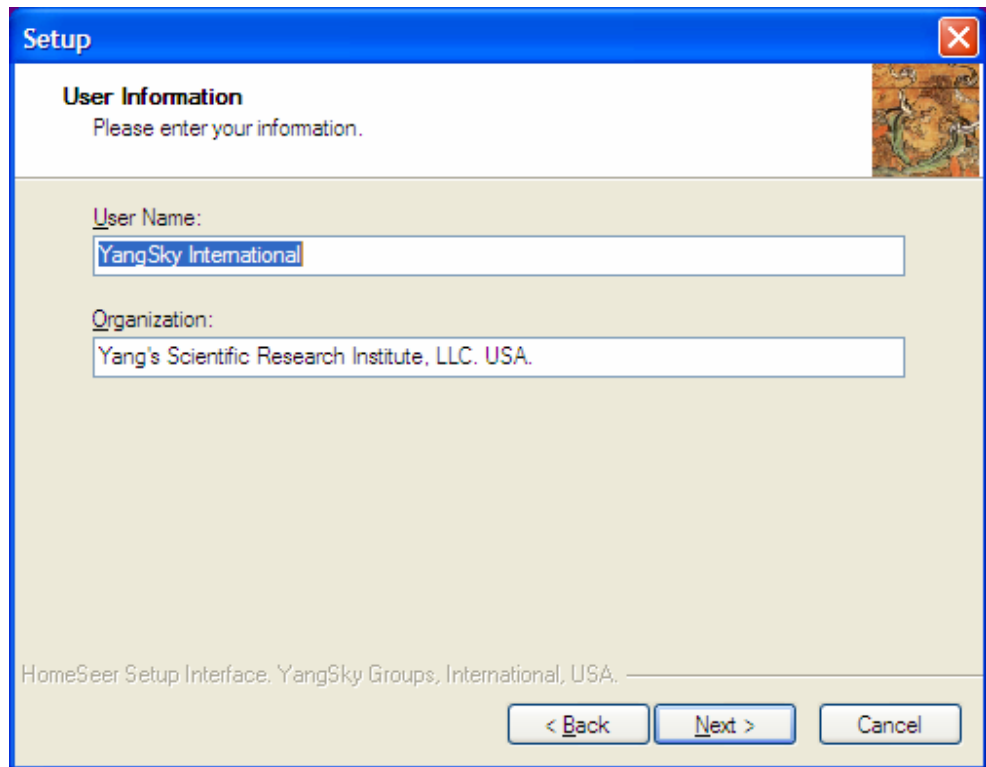


then click Next...



Step 5:

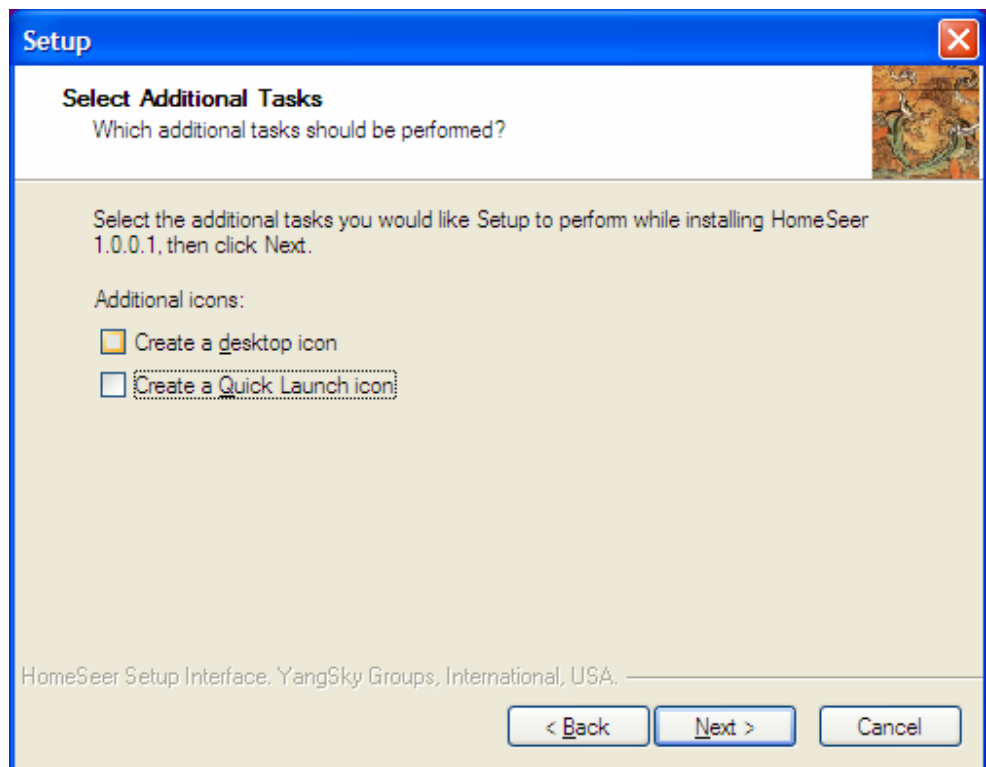
Enter the information and then click Next



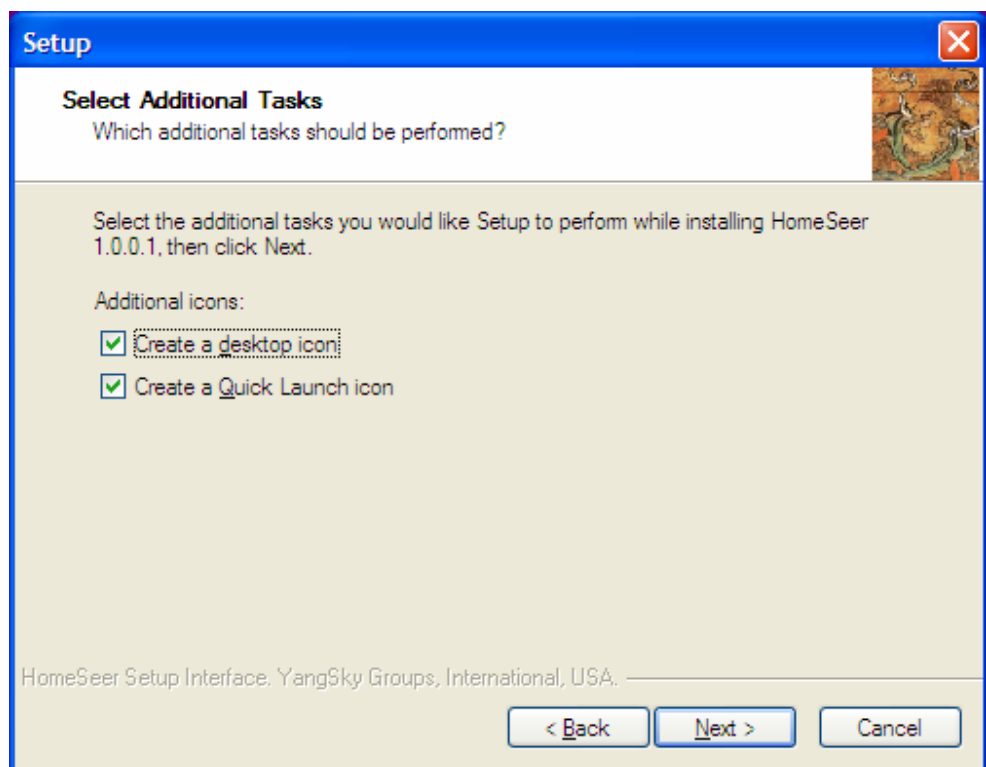
The image shows a Windows-style dialog box titled "Setup" with a blue border and a close button in the top right corner. The dialog is titled "User Information" and contains the instruction "Please enter your information." Below this, there are two text input fields. The first is labeled "User Name:" and contains the text "YangSky International". The second is labeled "Organization:" and contains the text "Yang's Scientific Research Institute, LLC. USA.". At the bottom of the dialog, there is a footer that reads "HomeSeer Setup Interface. YangSky Groups, International, USA." and three buttons: "< Back", "Next >", and "Cancel".

Step 6:

Check both choices to make quick launch links to the HomeSeer such that you can easily to locate it from time to time

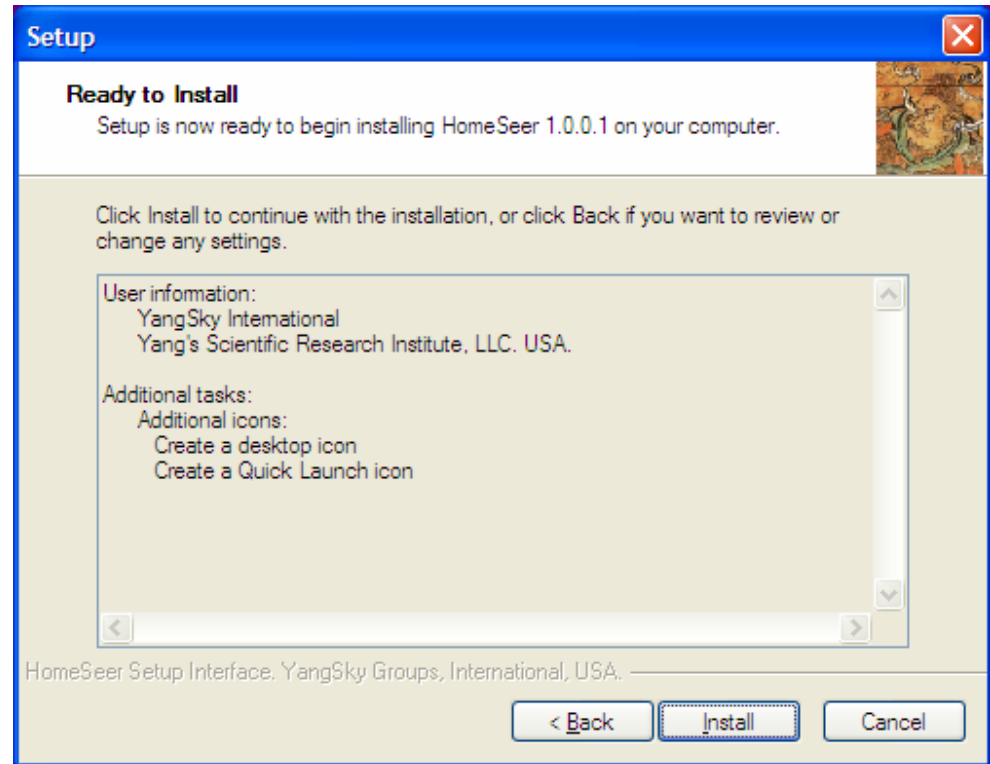


Click Next...

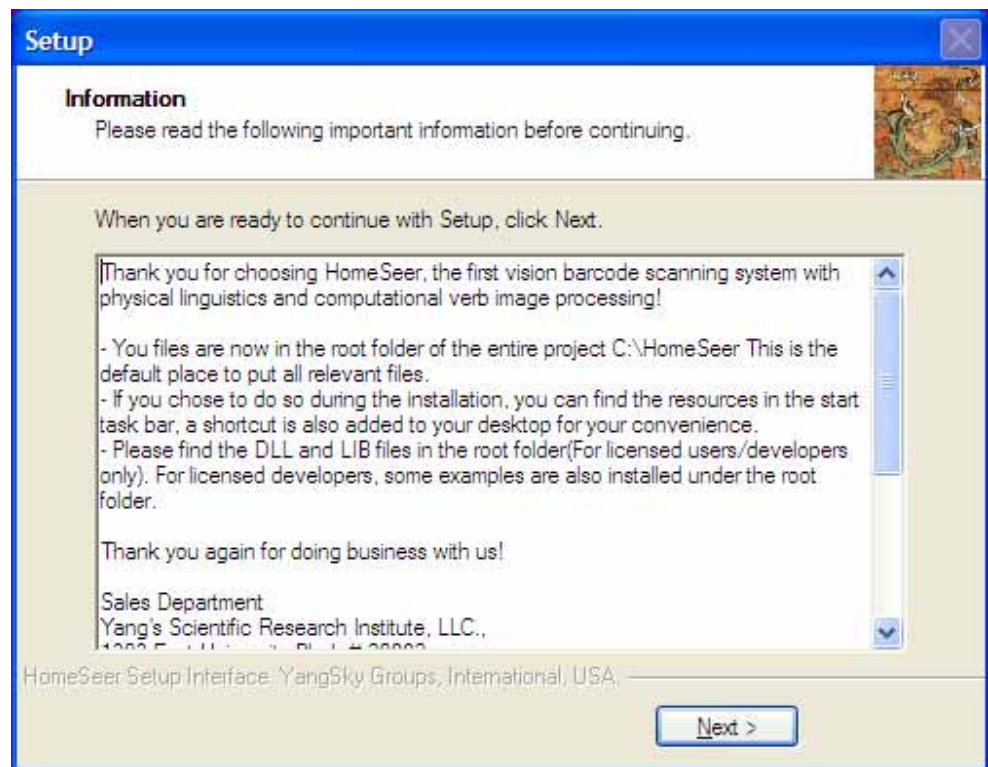


Step 7:

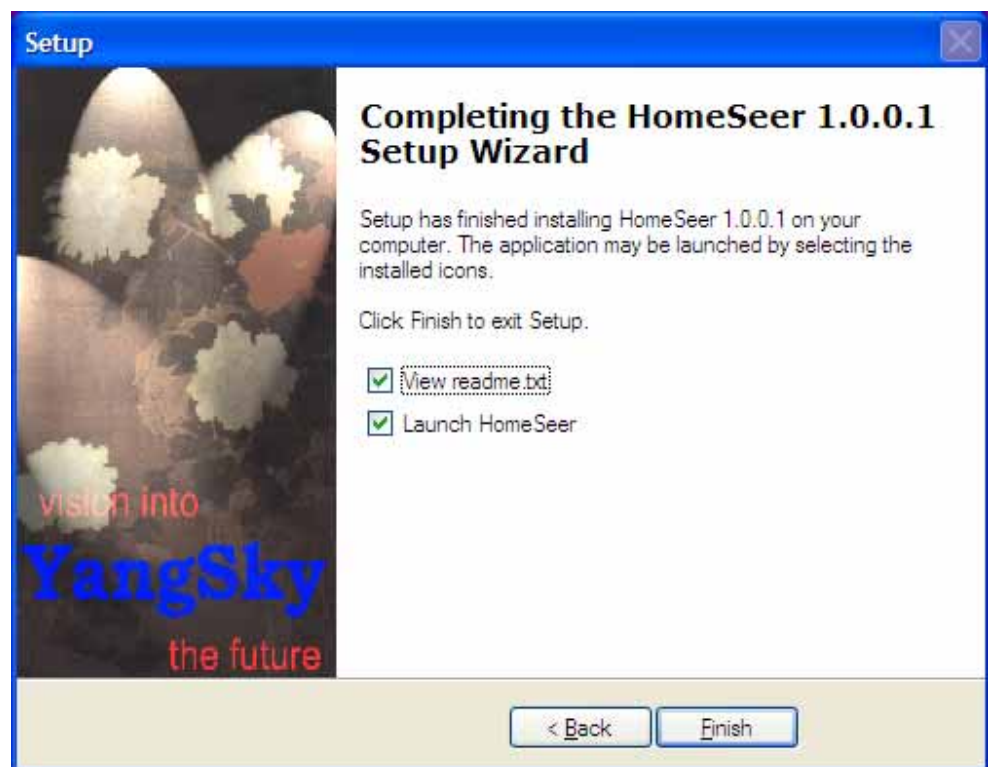
Click **Install** to install these tasks, you can change options by clicking **Back**.



What you see next

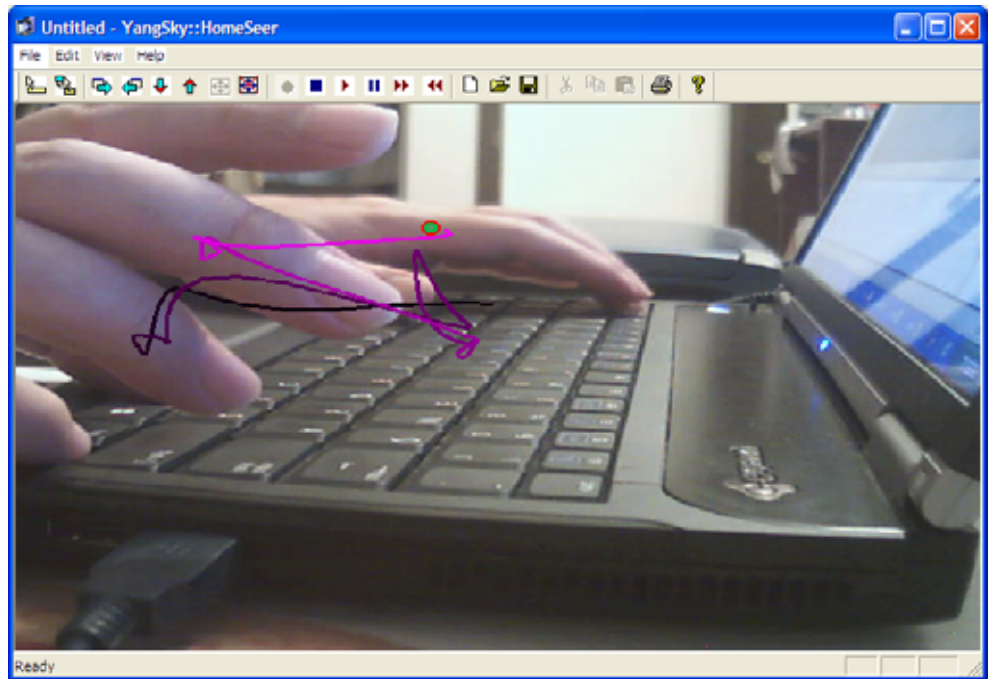


Click **Next** then we have



Click **Finish** to launch the HomeSeer as follows.

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Home Security Systems Using Webcams

This chapter shows how to build your own home security systems by using webcams and HomeSeer software package.

To build a home security system by using a webcam and HomeSeer, you need to have at least one webcam connecting to the USB ports of your computer. HomeSeer will work to its optimal potential when the settings of the computer, the lighting condition, the choice of the webcam are optimal.

Choosing Webcams

We recommend the user to use webcams with good optical systems. To reduce cost, many webcams use cheap plastic lens, their optical resolutions are low. A rule of thumb is to choose a webcam with a big glass lens. The webcam to the left is better than that to the right because the left one has a much bigger glass lens than the plastic lens installed in the right hand side webcam. HomeSeer can support cheap and low-end webcams under typical working conditions.



Webcam with better lens

Webcam with small lens

Choosing Computers

HomeSeer uses the advanced image processing technology called physical linguistic technologies. Although HomeSeer has been optimized to take less computing resources, the image-processing nature of webcam video stream makes a trade-off between the performance of mouse controlled by using webcam and the speed of computer that is directly related to the price of the computer. Since HomeSeer uses a USB webcam, the bandwidth of your USB port can affect the responding speed of the HomeSeer. For example, a slow computer with a narrow USB bandwidth can not follow the fast motion of a user.

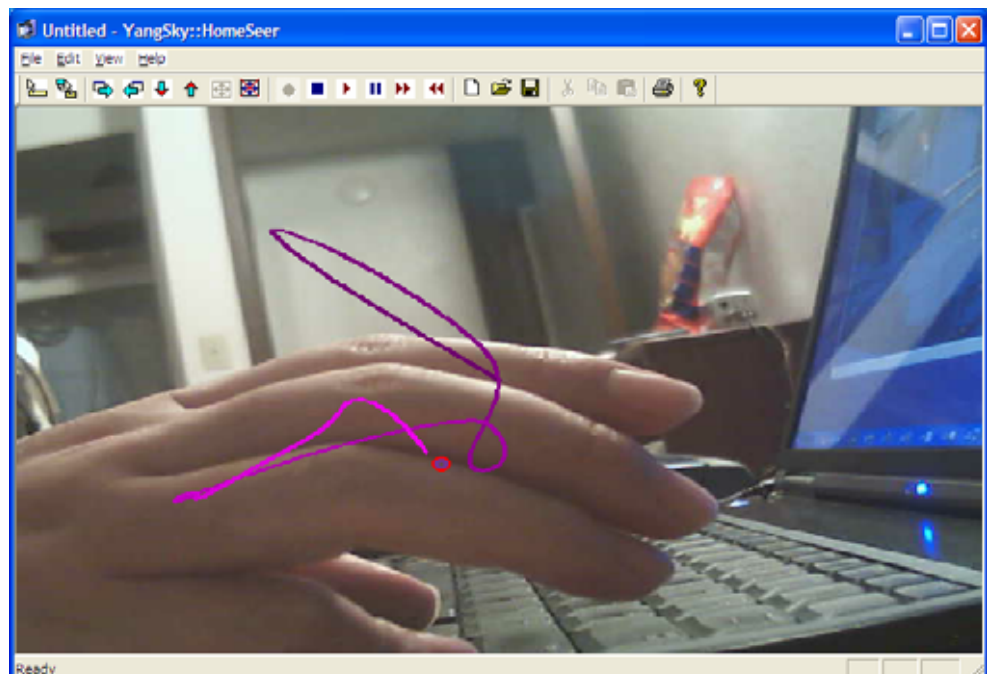
Working Conditions of Webcams

HomeSeer needs to work under a range of conditions. The thumb of rule for the proper working conditions of HomeSeer are:

- A good lightening condition.
- Broad view.
- Not much blocking of view objects.

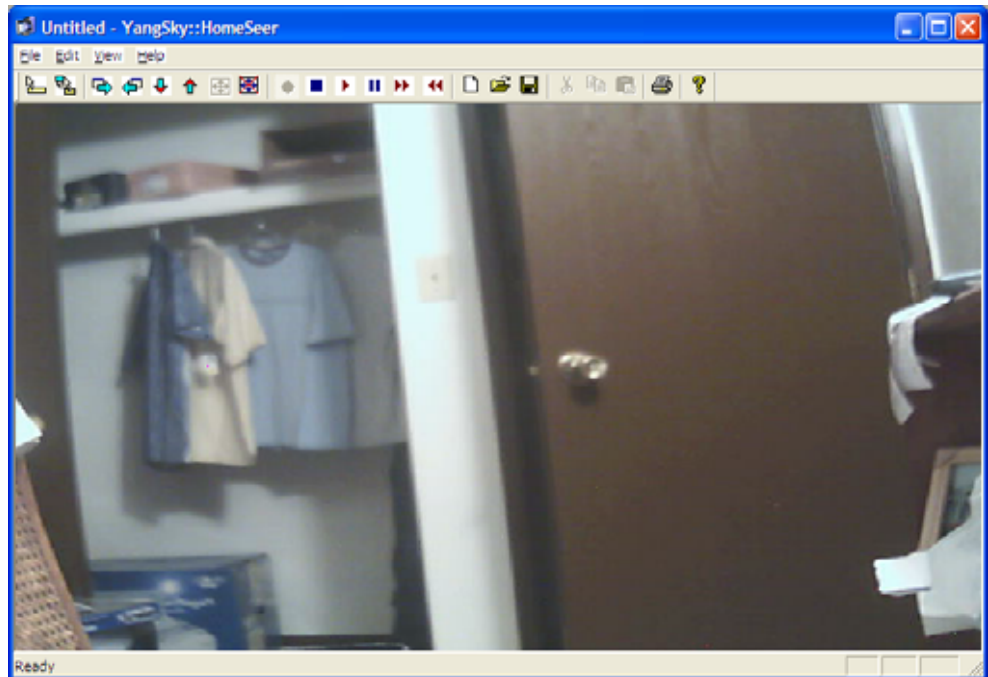
The following are snapshots taken under good working conditions.

Case 1: Tracing the motion of hand and recode under any motions.

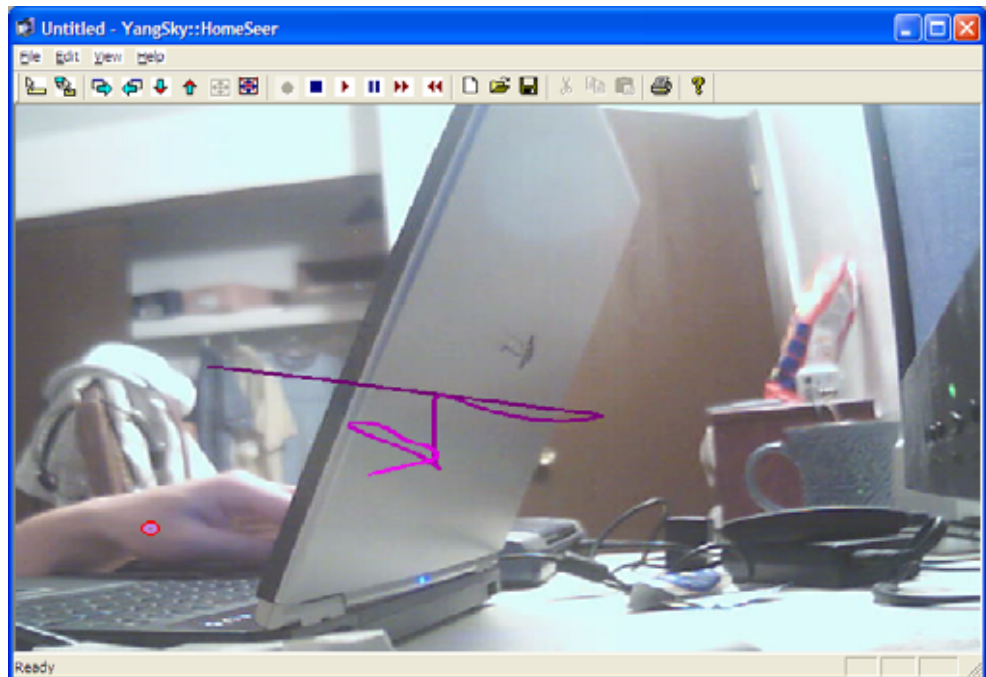


Case 2: Stare directly at the door to expect any door opening and record the suspected motion such as entering the room.

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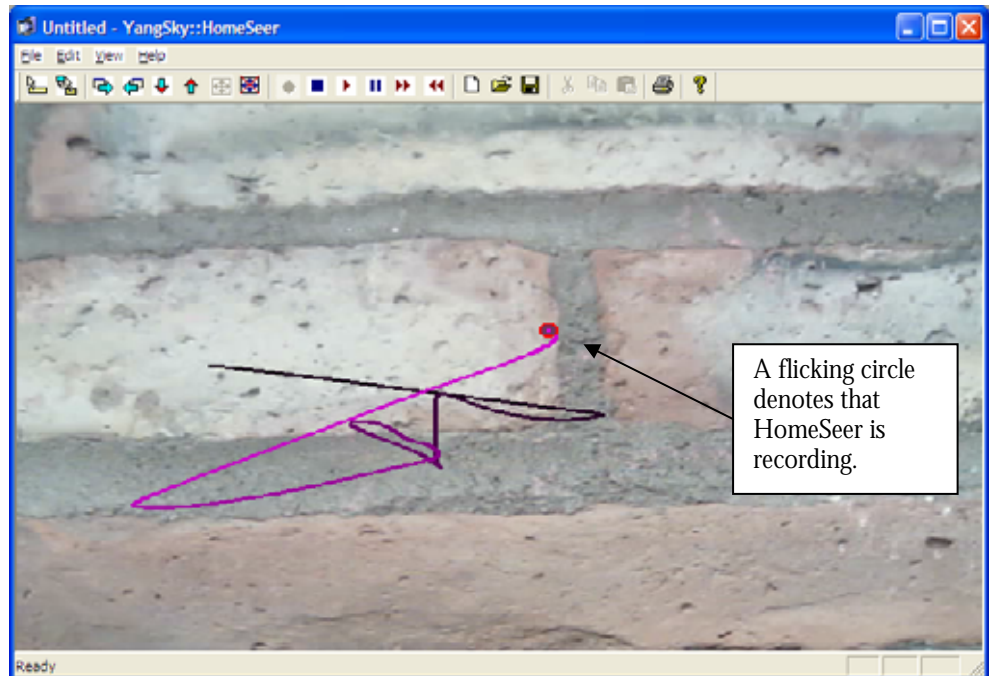


The following case is not a good working condition because the view is too narrow. Most of the motion of the door and the object entering the room will be blocked by the screen of the laptop computer.

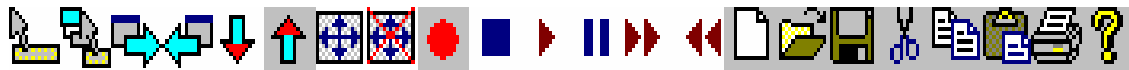


The HomeSeer Interface


HomeSeer has a very simple control interface as follows:

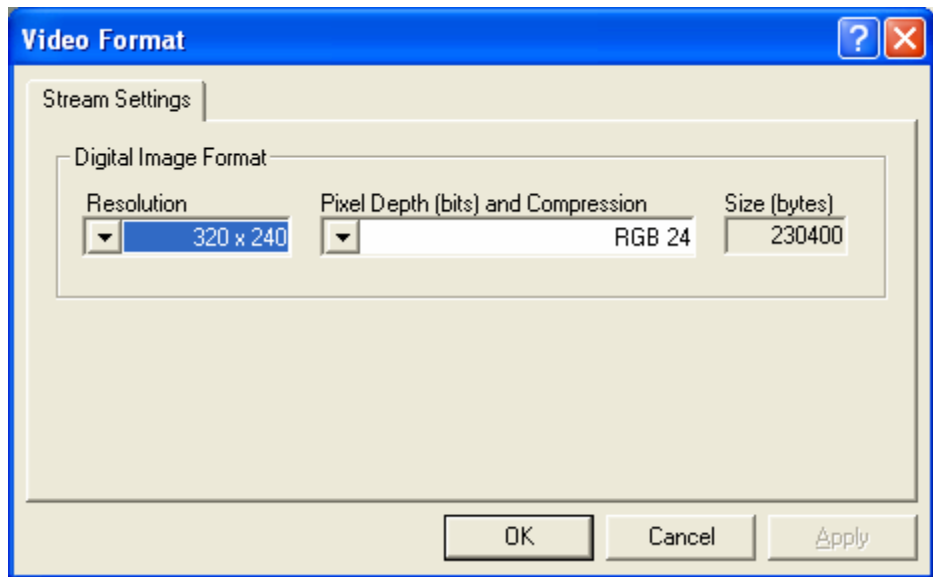


All the commands can be initiated from the toolbar as follows.

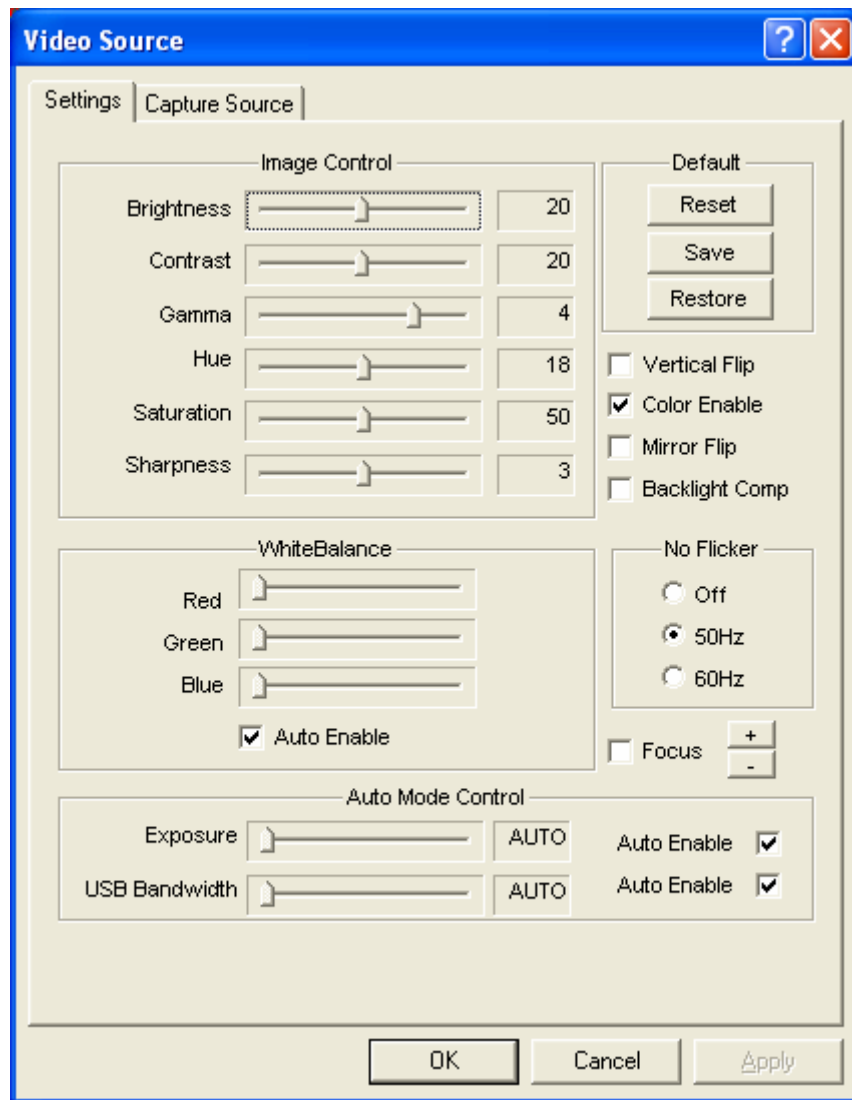


Webcam Controls

The Camera Format  toolbar controller can be used to change the video size of the webcam, one example interface is as follows, your webcam may have different interface.





The Camera Parameters  toolbar controller can be used to change the video controlling parameters for the webcam.





Motion Alarm Detecting Settings


HomeSeer can issue alarms based on different motion patterns of the objects.

The **Left to Right Motion Alarm**.  toolbar controller enables HomeSeer to issue a detecting alarm whenever a left to right motion should be detected.

The **Right to Left Motion Alarm**  toolbar controller enables HomeSeer to issue a detecting alarm whenever a right to left motion should be detected.

The **Bottom Up**.  toolbar controller enables HomeSeer to issue a detecting alarm whenever a bottom up motion should be detected.



The **Top Down**  toolbar controller enables HomeSeer to issue a detecting alarm whenever a top down motion should be detected.



The **All Motion**  toolbar controller enables HomeSeer to issue a detecting alarm whenever any motions should be detected.


The **None Motion**  toolbar controller disables HomeSeer to issue a detecting alarm whenever any motions should be detected.


Video Recording and Replay


HomeSeer had the recording and playing facilities for digital videos.


The **Record**  toolbar controller enables the recording action. Only when this button being pressed that all the actions that in charge of triggering a recording action can be enabled. This button disables .

The **Stop**  toolbar controller disables the recording actions. This button disables .

The **Play**  toolbar controller plays the video achieves in the hard driver.

The **Pause**  toolbar controller pauses the video achieves that are playing from the hard driver.



The **Fast Forward**  toolbar controller search the video achieve from the fast forward direction.

The **Fast Backward**  toolbar controller search the video achieve from the fast backward direction.

How to Construct Your Personal Home Security Systems Using HomeSeer

Evoke HomeSeer software and adjust your Webcam video camera to the region that you are interested in.

If you want to monitor ***all motions*** in a region, you can push the following two toolbar buttons in sequence:

1. Record 
2. All Motion 

If you want to monitor motions *from left to right* in a region, you can push the following two toolbar buttons in sequence:

1. Record 
2. Left to Right Motion Alarm 

If you want to monitor motions *from right to left* in a region, you can push the following two toolbar buttons in sequence:

1. Record 
2. Right to Left Motion Alarm 

If you want to monitor motions *from bottom up* in a region, you can push the following two toolbar buttons in sequence:

1. Record 
2. Bottom Up 

If you want to monitor motions *from top down* in a region, you can push the following two toolbar buttons in sequence:

1. Record 
2. Top Down 

Troubleshooting

This chapter shows how to resolve some common issues that one might come across when using HomeSeer software to construct a home secure system.

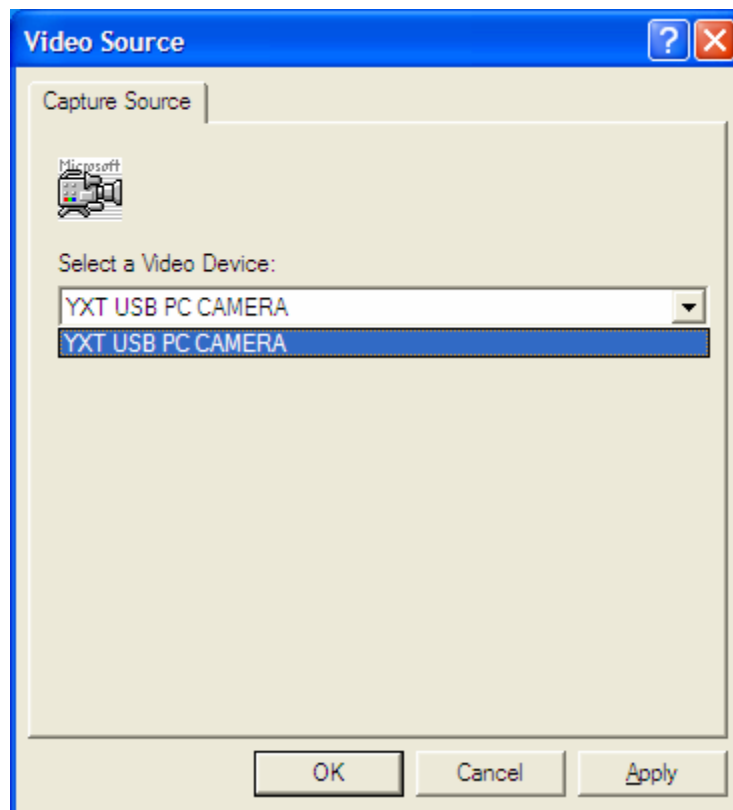
To explore the full ability of the HomeSeer, the working conditions of the entire system including your PC, the webcam and HomeSeer should be considered comprehensively. The quality of captured image frame will have critical influence to the final readings. The following are some tips for operating HomeSeer.

- Hold you webcam with a stable support.
- Clear any object blocking the view of the webcam,

In case that you have some problems, the followings should be useful tips.

Webcams Are Busy

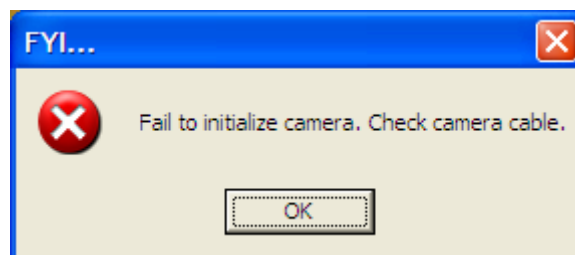
After you start the HomeSeer, if you see the following “Video Source” dialogue interface, it is most likely that your webcams are used by some other applications such as Internet chat software or video conference software, etc. ***To solve this problem, you need to either choose an available webcam from the list, or release the webcam from other software.***



No Webcam Can Be Used

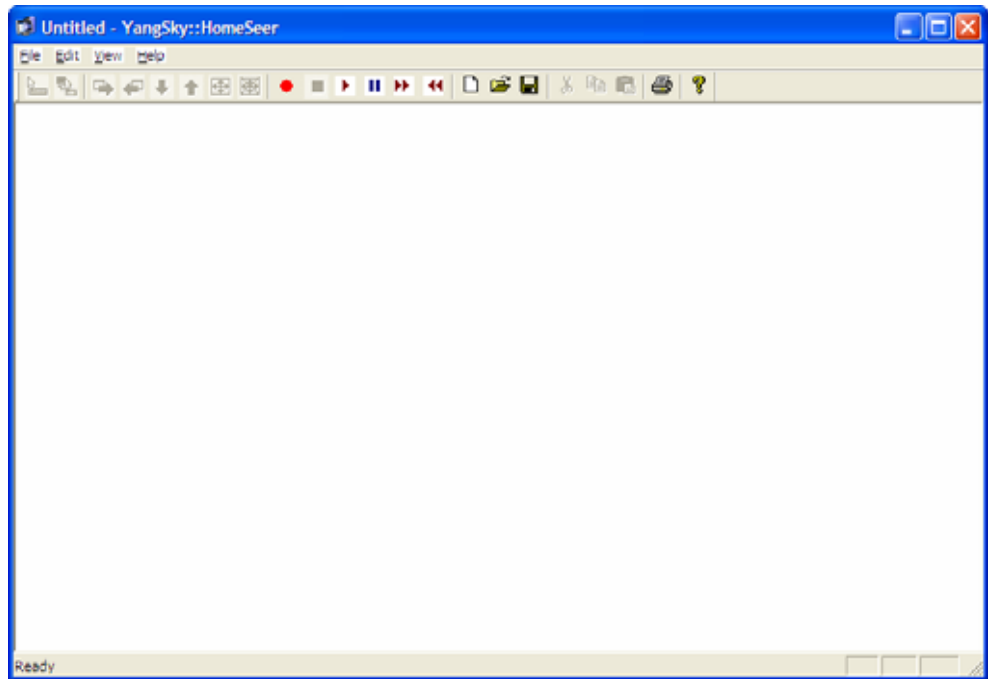
The following dialogue interface tells that HomeSeer failed to initialize a webcam. To solve this problem, be sure to

- Check whether any webcam connected to USB ports of your computer.
- Check whether webcams are used by other software.
- Check whether webcams function well or not.



After click OK, you will get the following empty interface and the HomeSeer will do nothing.

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FQAs

This chapter includes the FQAs concerning all issues of HomeSeer.

To run HomeSeer you don't need to be an expert of either image processing or webcam, it is as simple as using your webcam for teleconference. However, since a computer with a webcam is not as that simple as we first thought in many occasions, some tips are listed in this chapter you ease your experience with HomeSeer.

Where Can I Get the Demo of HomeSeer?

You can download HomeSeer from

<http://www.yangsky.us/demos/homeseer/homeseer.htm>

Or from the links in

<http://www.yangsky.us/demos/demos.htm>

As shown below, a quick link called **Home Monitoring System** is available at <http://www.yangsky.us/> at the left navigation bar.



How to Know the Price of HomeSeer?

HomeSeer software family has the following two kinds of products:

- ***End users package.*** It is for end users and is licensed to the end user just like many other software do, namely; a license fee will be charged for each installation.
- ***Developers package.*** It is for program developers such as a software company or an equipment manufacture. It provides program modules for the developers to program their own products.

Please send your request of price to sales@yangsky.com

What is the Difference Between the Demo and the Commercial Versions of HomeSeer?

The demo version of HomeSeer is only to demonstrate the way of monitoring different kinds of motion patterns in the monitoring regions. However, it doesn't have any data ports available to the end user. The commercial version of HomeSeer provides rich data ports to interface with different applications for the end-users.

Where Can I Get the Supports for HomeSeer?

See Chapter 5.

I Want to Develop a Software for my Applications, What Should I Do?

You need the developers' package for HomeSeer. The developers' HomeSeer package can help you to prototype your next vision home security monitoring system quickly and can also provide a specified solution for your current project. The developer's HomeSeer package was written in C-language.

Currently HomeSeer only supports USB webcams, are you going to support firewire video cameras or TCP/IP cameras?

HomeSeer will be developed for both personal and industrial markets. For personal market, HomeSeer will mainly support USB webcams. For the industrial markets firewire video cameras and TCP/IP cameras will be supported though currently only USB cameras are supported.



Support and Ordering Information

This chapter includes the supporting and ordering information for HomeSeer.

To order HomeSeer or to gain support for HomeSeer is simply a few clicks away.

How to Order

Send your check or money order to

Sales Department, Yang's Scientific Research Institute, 1303 East University Blvd.
#20882, Arizona 85719-0521, USA.

Please make your check or money order payable to ***Yang's Scientific Research Institute.***

For prices of HomeSeer and related products, please send an email to sales@yangsky.com.

Support Information

For ender users, please refer to FQA sections of this User Guide for the most common problems. If you can not find the solution from FQA sections, please send an email to sales@yangsky.com or send a ticket via <http://www.yangsky.us/support/>.

Demos

The demos of HomeSeer can be found at the following link:

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<http://www.yangsky.us/demos/HomeSeer/HomeSeer.htm>

Or click

<http://www.yangsky.us/demos/demos.htm>

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