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INTRODUCTION

Security Hawk is all in one high-tech digital video surveillance system. Security Hawk has all the rich features of a powerful digital video management system and more.

These include:

1. MPEG-4 based video compression.
2. Supports both NTSC and PAL standards.
3. Up to 16 video inputs (4 cards).
4. Remote access and transmission capabilities (TCP/IP, LAN/WAN, Internet).
5. Software based motion detection.
6. Playback with sophisticated search functions by camera, events, and time/date.
7. Video recording, motion and event triggered recording Planer.
8. Post alarm recording.
9. Events logging.
10. Complete Users administration with different access levels.
11. Record, playback, and transmit simultaneously.
12. Easy to use graphic interface.
13. External Alarm communication.

User Administration

User Administration module is used to manage the flexible access privileges needs of the organization. You can create new users with appropriate rights although system creates the default user with the name “Guest” and password “Guest” at the time of installation.



Fig.1.0

Click Start→ Programs→Security Hawk→User Admin to create a new user or manage existing users. Administrator Login window (Fig 1.0) will pop up. Initially there is no password for administrator (but user could change the password through “Change Administrator Password” option) click OK button to enter to the Administration module. Administration Tool window shows the existing users list with there current privileges and options to Add/Edit/Remove Users (Fig. 1.1).

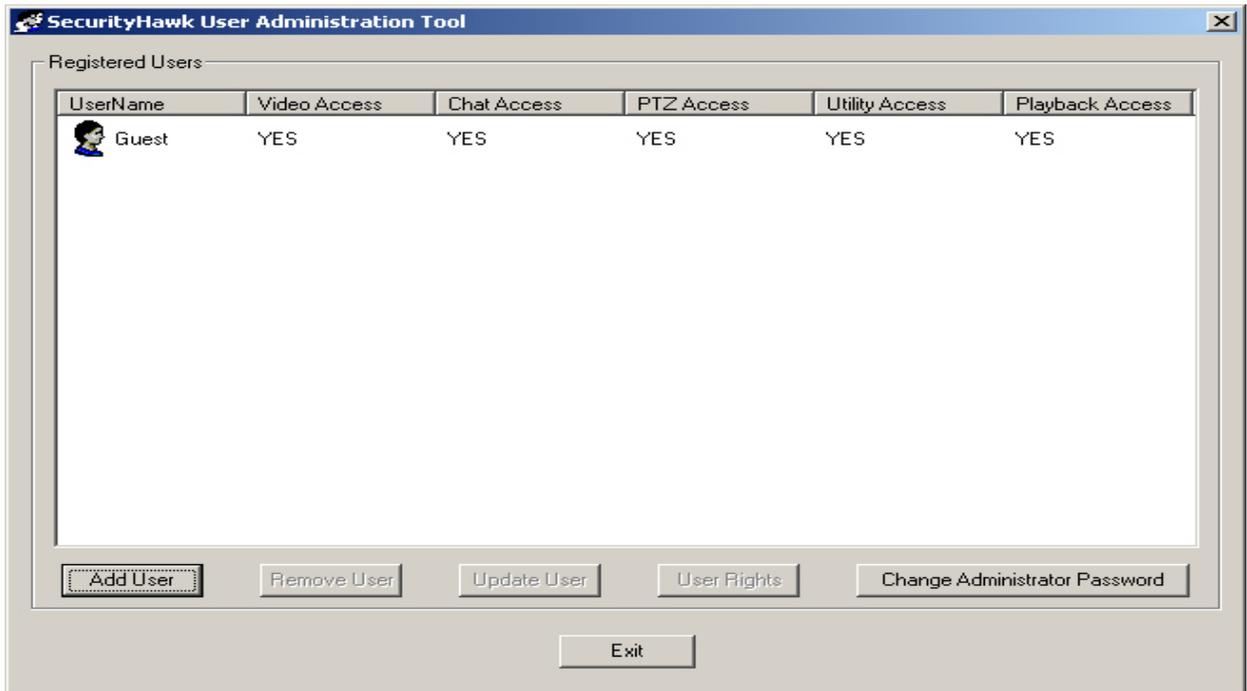


Fig. 1.1

Create New User

By clicking Add User button Add user window (Fig 1.2) will appear. Administrator can enter the user name and the password for new user. User Rights window is further segmented into Video Access, PTZ Control and other functions access privileges. It is important to note that these access rights to the user will not only apply for Security Hawk (server side) but System access through remote station as well.

The screenshot shows a dialog box titled "Add/Update User". It features three text input fields for "UserName:", "Password", and "Confirm Password". Below these is a "User Rights" section. The "Video Access" checkbox is selected, and it contains sub-options for "Camera 1", "Camera 2", "Camera 3", "Camera 4", and "Select All Cameras". The "PTZ Access" checkbox is also selected, with a "PTZ Control Priority Level" input field below it. Other unchecked options include "Utility Access", "Chat Access", "HouseKeeping", "Playback Access", "Allow Minimize", "Motion Detection", "Planner Access", and "Allow Exit". "Apply" and "Cancel" buttons are at the bottom.

Fig. 1.2

Video Access

Selecting camera(s) for will give viewing and recoding rights to the user.

PTZ Control

Select PTZ Access check box to provide PTZ option to the user. You can assign Priority level for the user and user will avoid low priority user instruction when more then one user try to PAN TILT and ZOOM the same camera.

Utility Access

If Administrator checks the utility access option for the created user, it will allow the user to configure the following options;

- ❖ Camera Setting
- ❖ House Keeping
- ❖ Recorder Setting
- ❖ Color Setting
- ❖ Option Setting

Play Back Access

By granting the play back right user will have access to Playback module and will be able to search & view the recorded videos.

Planner Access

Planner access option will give user the right to add/change/remove recording plan (s) on the Security Hawk Server.

Chat Access

Chat access will allow the user to communicate with server and different remote stations, other wise this feature of the Security Hawk will not be available to user.

Allow Minimize/Allow Exit

Security is serious business so it is very important to figure out weather user should be allowed to minimize the security server and may get involved in some other activities on the same machine, same is the case with exit option.

Motion Detection Access

Motion Detection Access will allow user to use Motion module. The details about the motion module will be explained later in the Motion Module.

House Keeping

This privilege allows user to use the House Keeping Module of the Security Server designed to maintain the stored videos database.

Update User

To update the existing user rights, first select the existing user and then update user button will be available for the required operations.

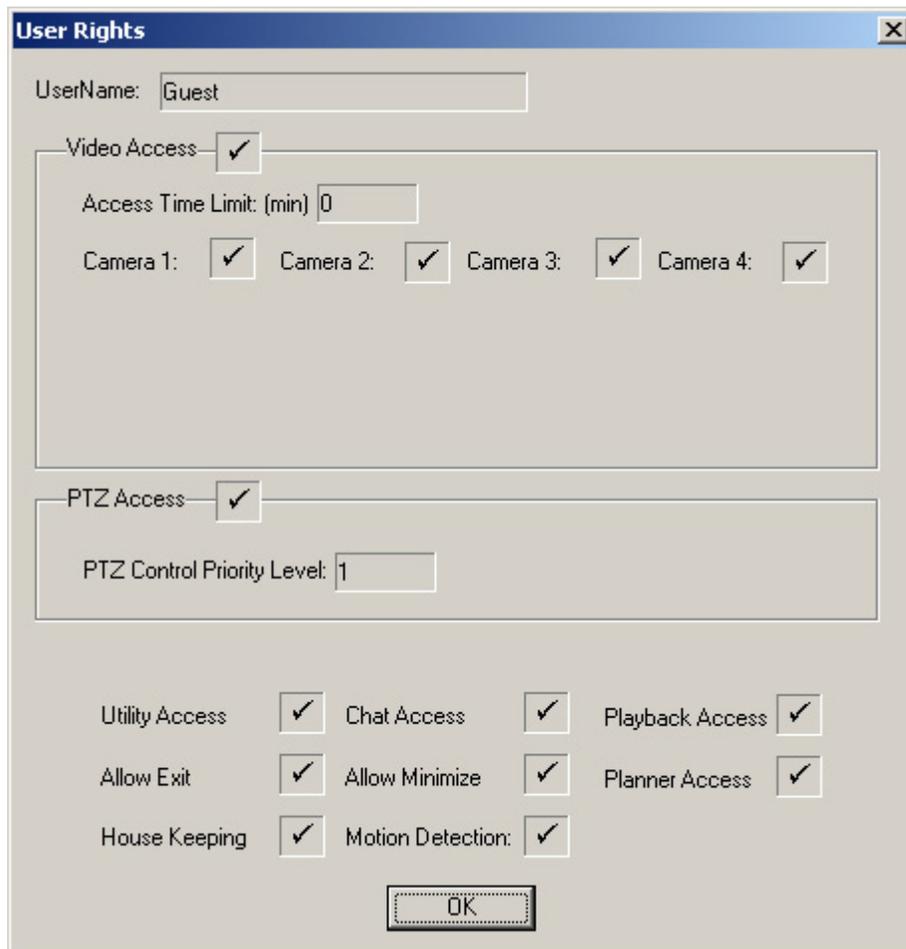
Administrator could grant new access rights or revoke the existing rights for the user.

Remove User

If you want to permanently remove the user from the list then this option allows you to remove existing user, select the user and press the Remove Button to delete the selected user from the existing users list.

User Rights

This button will show the rights already granted to existing user (see Fig 1.3)



The screenshot shows a dialog box titled "User Rights" with a close button (X) in the top right corner. The "UserName:" field contains "Guest". The dialog is divided into several sections:

- Video Access:** A checked checkbox. Below it, "Access Time Limit: (min)" is set to "0".
- Camera Access:** Four checked checkboxes labeled "Camera 1:", "Camera 2:", "Camera 3:", and "Camera 4:".
- PTZ Access:** A checked checkbox. Below it, "PTZ Control Priority Level:" is set to "1".
- Utility Access:** A checked checkbox.
- Chat Access:** A checked checkbox.
- Playback Access:** A checked checkbox.
- Allow Exit:** A checked checkbox.
- Allow Minimize:** A checked checkbox.
- Planner Access:** A checked checkbox.
- House Keeping:** A checked checkbox.
- Motion Detection:** A checked checkbox.

An "OK" button is located at the bottom center of the dialog.

Change Administrator Password

By default Administrator has no password but you can change the Administrator password by using change administrator password window (see Fig 1.4).



Fig 1.4

Main Screen

Main screen (see Fig 2.0) appears after successful Logon.



Fig 2.0

The main screen is divided into following sections to provide user-friendlier interface to the user.

Display Area

The CCTV camera (s) video is displayed in the video display area, and view of this area can be switched into one camera (single view), four cameras (quad view), seven-one view and 8 cameras (8-View).

Display Control

Security Hawk has a unique graphical user interface designed for easy display control. Display panel has camera control buttons, display area view options buttons and

sequencer option button. You can switch between cameras by clicking any camera button to display it in the video display area. Display Area View Option buttons are for:

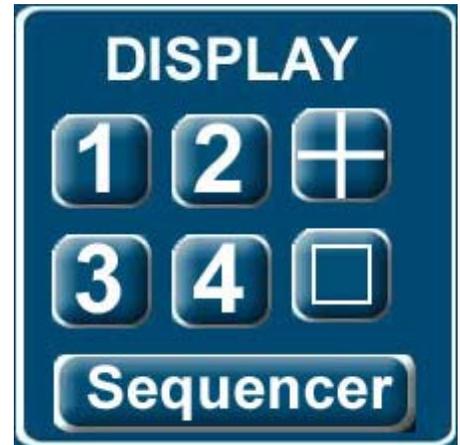
Quad View

As described by its name will split user screen into four portions giving 4 camera view these camera could be set dynamically by user keeping in view his own priority.

Single View

Single View Button will be used to select single camera

View on the screen, User could also manually switch between the cameras by clicking specific camera button.



Sequencer

Sequencer is used to switch automatically between all selected cameras in single view after a specified time interval. User in Utility Panel could set up cameras and time interval by selecting.

Utility —————> Option Setting —————> Sequencer

Click Controls

Click controls are important display features. Click controls are used as a shortcut to switch between different modes of display.

Double Click

User could instantly switch to single mode for a specific camera by a Double click, and could restore the previous mode by repeating the same.

Right Click

Right click will open the popup menu that provides an option to switch Video standard for specific camera between PAL and NTSC and you can select the option to switch the display area to full screen mode. Full screen option will hide all control panels and only camera video will be displayed on full screen.

Recorder Control

Security Hawk provides three types of recording i.e. motion or alarm recording, planned recording and instant recording. You can set the recording frame rate for each type of recording. Recording is saved on specified hard disk(s). User can view any or all cameras during recording and can playback the recorded videos at the same time. You can record one or more cameras, selected group or all cameras at the same time.



Fig 2.2

Motion Detection / Alarm Recording

Alarm / Motion based recording is triggered when system detects some event in user marked area (motion sensitive area) or any external alarm (optional) can trigger the recording. System starts recording automatically till the period defined by the user and could send

- ❖ Alarm on Remote Station.
- ❖ Automatic E-Mail to preset address.
- ❖ Automatic Telephone call to preset telephone number.
- ❖ Activate some External Device.

Orange color of camera button in recorder panel shows that Motion/Alarm based recording is active.

Planned Recording

Planned recording is an extra ordinary feature of the system. User could fully automate his environment recording needs by giving a recording timetable for camera (s). User can save multiple plans for some specific date, day, and weekend or every day depending on his requirements. Green color of camera button in recorder panel shows that planned recording is active.

Instant Recording

This is user-activated recording and if user wants to record the activity of the camera (s) while viewing, he could initiate instant recording by just clicking the recording panel camera button panel and by clicking the same camera button user could stop recording.

A Red color button represents instant recording. “All Button” could initiate instant recording for all cameras simultaneously.

Function Control

Utility Panel



Fig 3.0

Utility Panel provides options to customize different system settings to manage the software for his specific needs.

Camera Setting

User can change the camera name and can also Activate or Deactivate the camera by checking or each camera un-checking the box (see Fig 3.1)

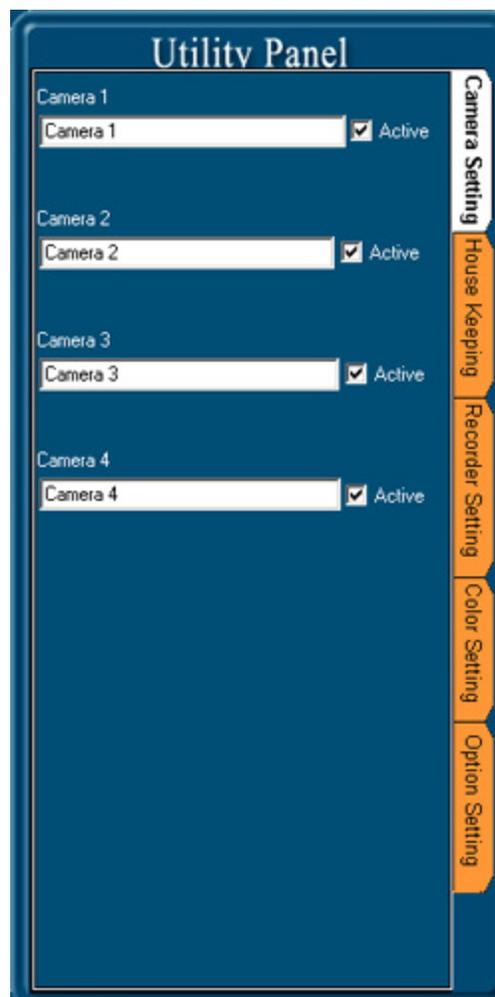


Fig 3.1

House Keeping

House Keeping tab acts as the data managing utility for the security system(see Fig 3.3). User could manage recorded videos by taking the backup on remote (mapped) or local storage drive (s) or he can delete unwanted videos files.

System provides powerful search options to search and manage the video data. The action to be performed could be selected from option list

- ❖ Move to
- ❖ Copy to
- ❖ Delete

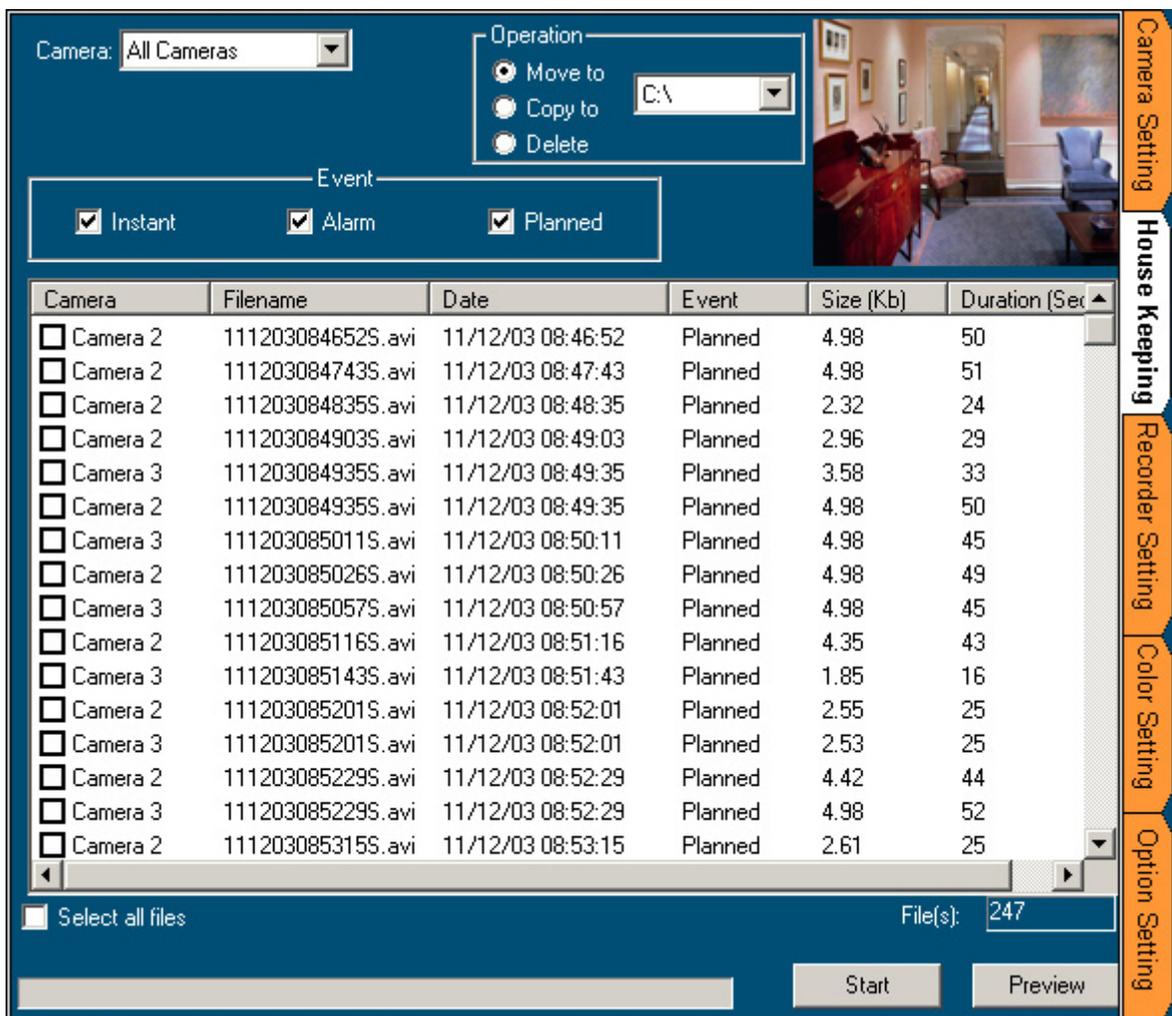


Fig 3.3

By selecting the required video (s) user can preview before performing any operation such as move, copy or delete. After confirmation through preview required operation can be started.

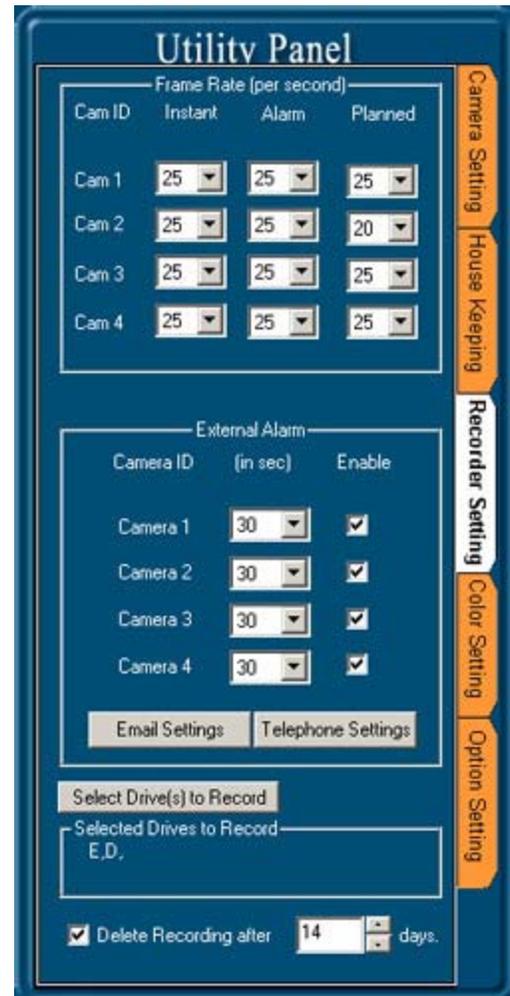
Recorder Setting

Recorder Setting utility (see Fig 3.4) deals with the recording management of the cameras. Recorder setting tab is used to customize the following system settings;

- ❖ Frame Rate
- ❖ External Alarm
- ❖ E-Mail Setting
- ❖ Telephone Setting
- ❖ Hard Disk Management
- ❖ Self House Keeping

Frame Rate

Frame Rate option deals with the resolutions standard of the video. NTSC standard has frame rate of 30 frames per second where PAL standard has 25 frames per second at its maximum. Higher frame rate will result in higher resolution and quality of the recorded video but higher frame rate will occupy more space on hard disk. It is up to the user to set the required frame rate for different cameras according to his needs. User has the flexibility to set different frame rates for specific recording type for each camera. We recommend higher frame rate for motion and instant recording types and low frame rate for planned recording.



External Alarm

This option (see Fig 3.4) is effective only for the PRO versions of C-Digital security systems as they enable the system to communicate with external devices. User could activate external alarm on a specific camera. If this option is enabled for the specific camera, then system will activate the alarm device when any motion is detected. Time duration of alarm could be set also.

E-Mail Settings

E-Mail setting option (see Fig 3.5) will be used if user wants to send E-Mail on motion detection. This option will send E-Mail automatically to the given E-mail address if Internet is available. In “Send To” dialog you can set the E-mail address on which you want to receive the notification. User has to mention his SMTP Account and Server in from and SMTP Server dialog respectively.

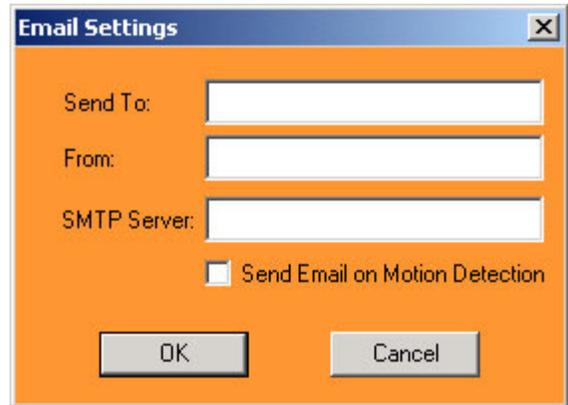


Fig 3.5

Telephone Settings

By activating telephone settings option (see Fig 3.6) system will call the given number on motion detection, provided that number is available to dial and system is connected to a telephone line through modem.

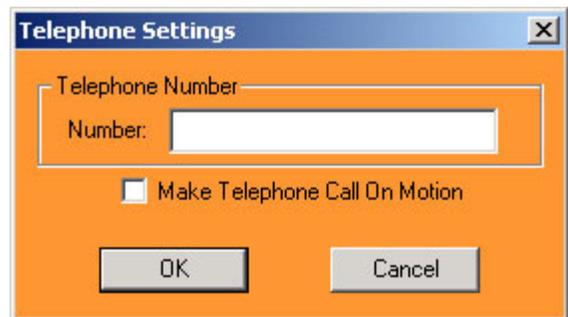


Fig 3.6

Hard Disk Management

By pressing “Select Drive(s) to record” button (see Fig 3.7) you can select/deselect drives (see Fig Missing) to manage the video storage on the hard disk (s). By default Security Hawk will reserve the hard drive with the largest available space. We encourage the use of 20 GB or larger hard drive for recording. We recommend that you should use disk other than operating system disk for video recording.



Fig 3.7

System will store the videos on selected drives. User could also select mapped (Remote) drive (s) by using the operating system map drive utility.

Self-Housekeeping

Self-housekeeping cleans up all video files including alarm files. You can select the number of days in the option box given at the bottom of Recorder Panel (see Fig 4.3). The system will retain recorded files for the specified days and will delete all other files. You can set start time when self-housekeeping to perform.

Option Setting

Option Setting module (see Fig 3.8) provides options to the user to customize the system regarding;

- ❖ Operation Setting.
- ❖ Recording.
- ❖ Sequencer.
- ❖ Sequencer Quad.

Operation Setting Section

If you want to display the video images to be displayed during system logoff state then mark “Continue Display” and you want the recording to continue then mark “Continue Recording” box.

Recording Section

Recording section of option setting sets two important features;

1. Resolution
2. Mode (Recording)

User could set the resolution standard as:

- ❖ Super
- ❖ High
- ❖ Medium
- ❖ Low

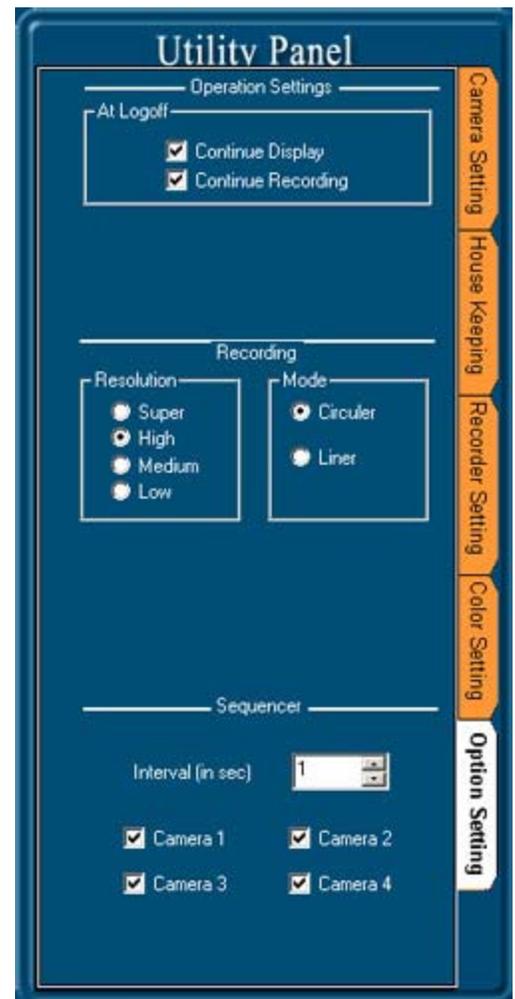


Fig 3.8

These settings provide an option to the user to set recorded video quality at different resolution levels. Higher the resolution level higher the quality of the video but higher resolution will need more space on hard disk. We recommend medium resolution settings for general environments.

Recording mode deals with how system will manage video files on the hard disk.

Linear Recording Mode

It will automatically stop recording when all the selected hard drives run out of space. System will generate a hard disk full message and will stop recording.

Circular Recording Mode

In this mode a system will delete automatically all oldest files once all selected hard drives run out of space. The deletion process will gradually recover free space and when it reaches the "File retention limit value" set in Recorder Panel it will stop deletion.

Sequencer Section

Sequencer section (see Fig 3.9) in option setting sets properties for "Sequencer" button of the display panel. In sequencer setting user could select the cameras to switch between and also could set interval or dwell time for the selected cameras.

Color Setting

Color setting tab (see Fig 3.11) provides option to the user to enhance the image quality through software. This color setting is an added layer to the setting of camera itself. User could control brightness, contrast, hue and saturation. Default setting is also available to set the default value for all variables to a standard value.

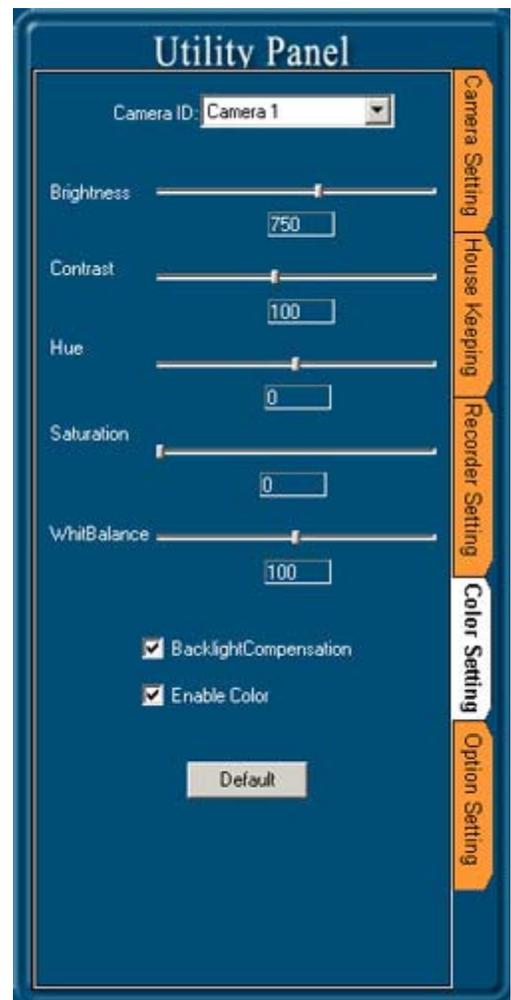


Fig 3.11

Playback



Fig 4.0

Security Hawk provides powerful Playback engine designed to cater the user needs to playback the recorded video. Playback engine has efficient searching options and user can search videos by server, camera, recording type or by event.

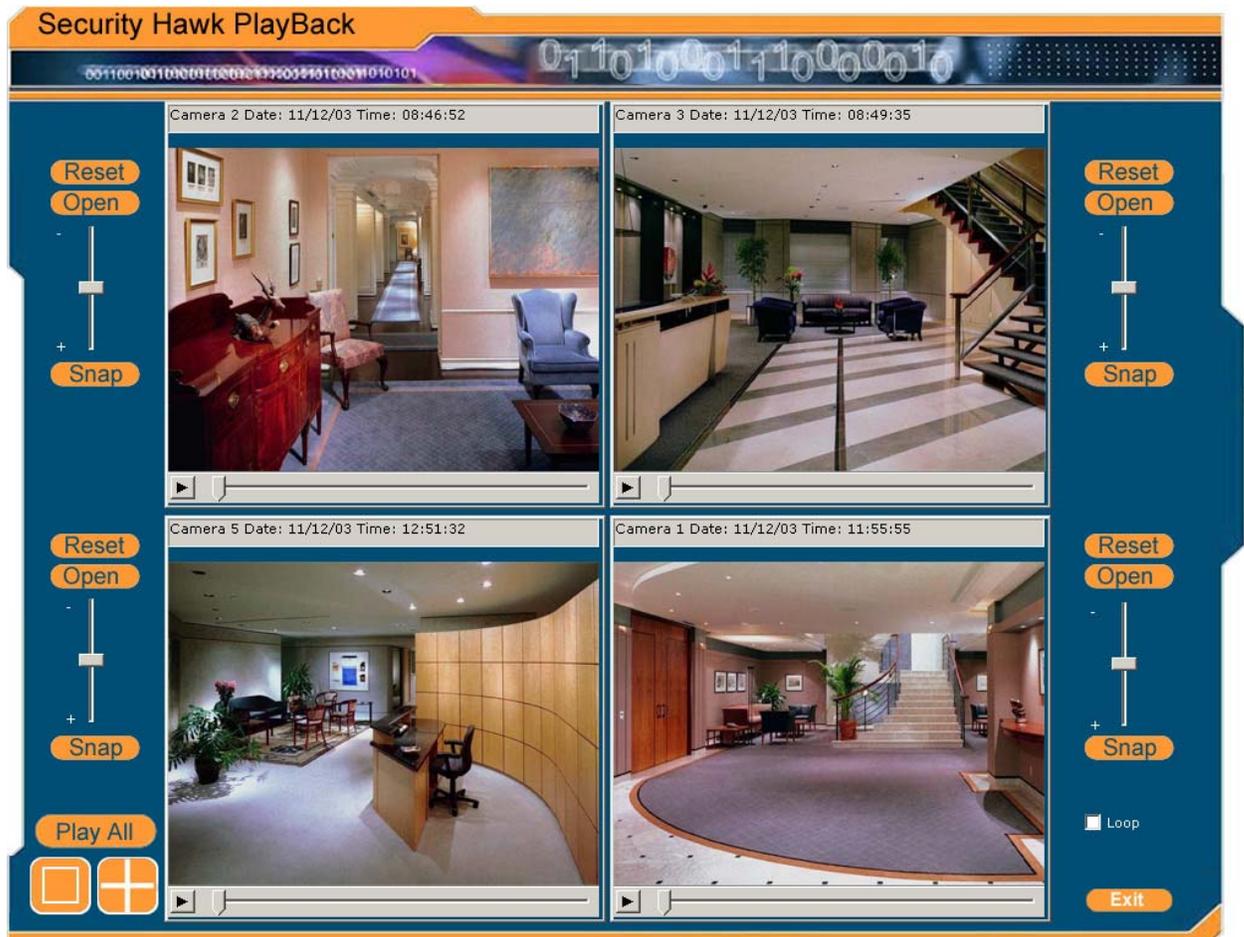


Fig (4.1)

By clicking playback button (see Fig 4.1) user will get playback engine main screen (see Fig 8.0). To search the recorded video double click in specific window, it will open search window (see Fig 8.1) on the screen. User can also open the search window by using “Open” button. After searching & selecting, the required video will appear in the playback engine window and user can play the video by clicking “Play” icon of relevant

video. User could take the snap shot of needed frame by clicking snap button. This will trigger snap window (see Fig 4.2) to view the snap. User has to click “Show” button to

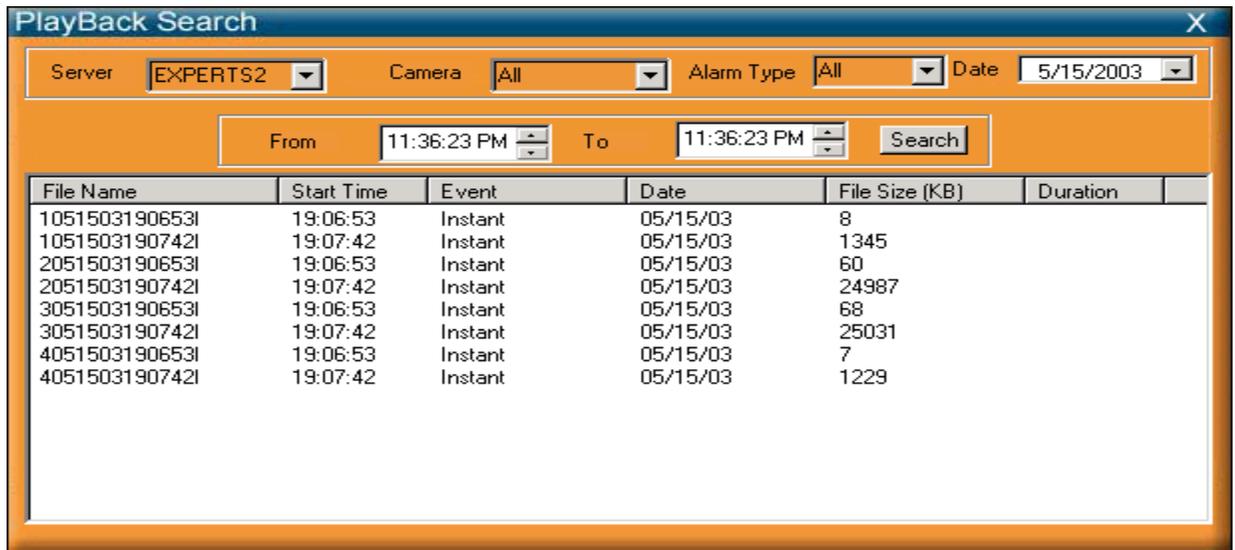


Fig 4.2

view the snap shot. User could zoom the picture by using

- ❖ Standard zoom option
- ❖ User defined zoom option

Standard zoom will zoom the whole picture where as by selecting user defined zoom option user could select a specific area to zoom in or out. User could save the picture on the external storage device in any standard picture format.



Fig 4.3

Planner



Fig 5.0

Planner (see Fig 5.0) is a powerful tool for building multiple recording schedules for planned and alarm based recording. You can Click Planer button on the functional bar (see Fig 5.0) to open the Planer (see Fig 5.1). In the planer window graphical bars represent each camera plan. Green bar represents planned recording and red bar represents alarm recording.

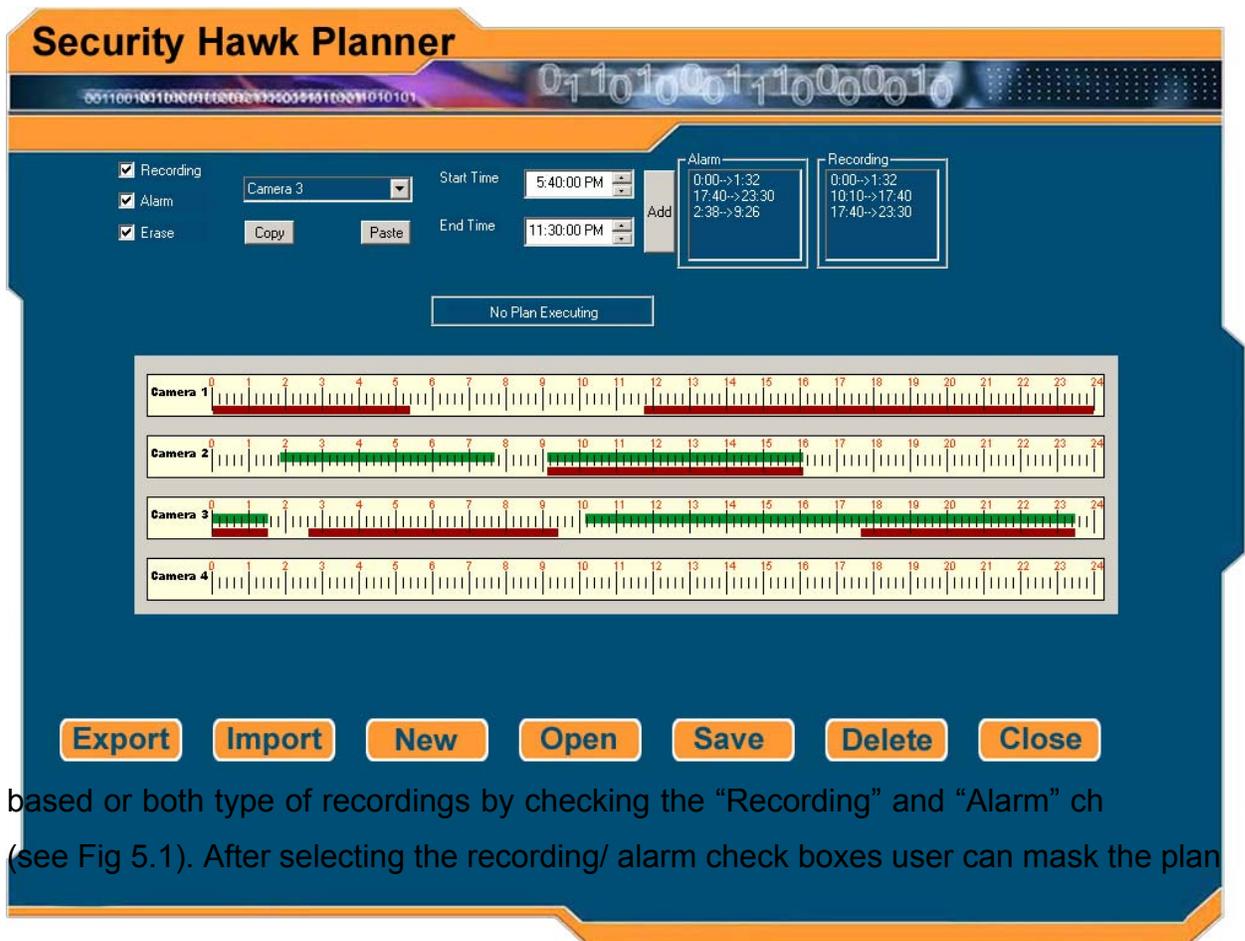


Fig 5.1

based or both type of recordings by checking the “Recording” and “Alarm” ch (see Fig 5.1). After selecting the recording/ alarm check boxes user can mask the plan

- ❖ Specific Date

- This plan will run on the specific date. Of the calendar year
- ❖ Specific Day
 - This plan will run on specific day of every week like Friday, Sunday
- ❖ Week Day
 - This plan will run on all days except weekends i.e. from Monday to Friday.
- ❖ Weekend
 - This plan will run only on weekends i.e. Saturday and Sunday.
- ❖ Every Day
 - This plan will run every day.

If some camera has multiple plans saved then system will pick highest priority plan and hierarchy is defined in same order as listed above. Top listed plan has higher priority then the other list below it.

User could edit the existing plan. To edit the existing plan click “Open” button on planer window (see Fig 5.1). This will open the “open” window (see Fig 5.3) and user could get already saved plan for date, day, weekday, weekend and everyday. After selecting the required plan click “Ok” button to load the plan into planer window. Once the plan is loaded in to planer window, user can edit the plan or delete the plan by pressing “Delete” button. Close button allows user to exit the planner.

Planer provides Export/Import facility to save the plan (s) with implementing it and load quickly when needed. The Export feature can be used to backup an existing plan on some removable disk and reload in the event of system crash. User could reload these plans by importing them

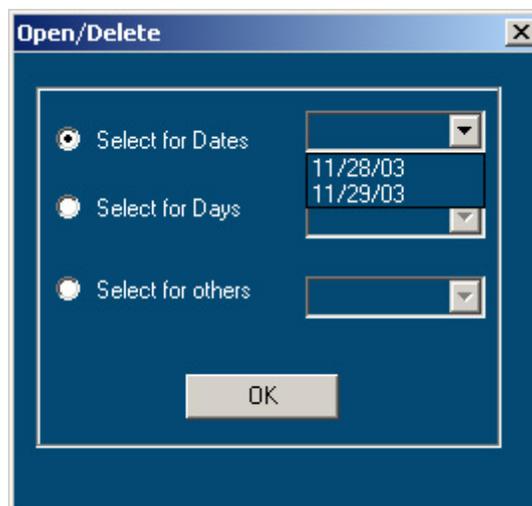


Fig 5.3

Motion



Fig 6.0

Motion detection is very powerful feature of the system and by carefully using this feature you cannot only eliminate false recording but can also manage storage devices very efficiently. By Click “Motion” button (see Fig 6.0) on functional bar motion setting window (motion panel) will popup (see Fig 6.1) in the right top corner above Recorder

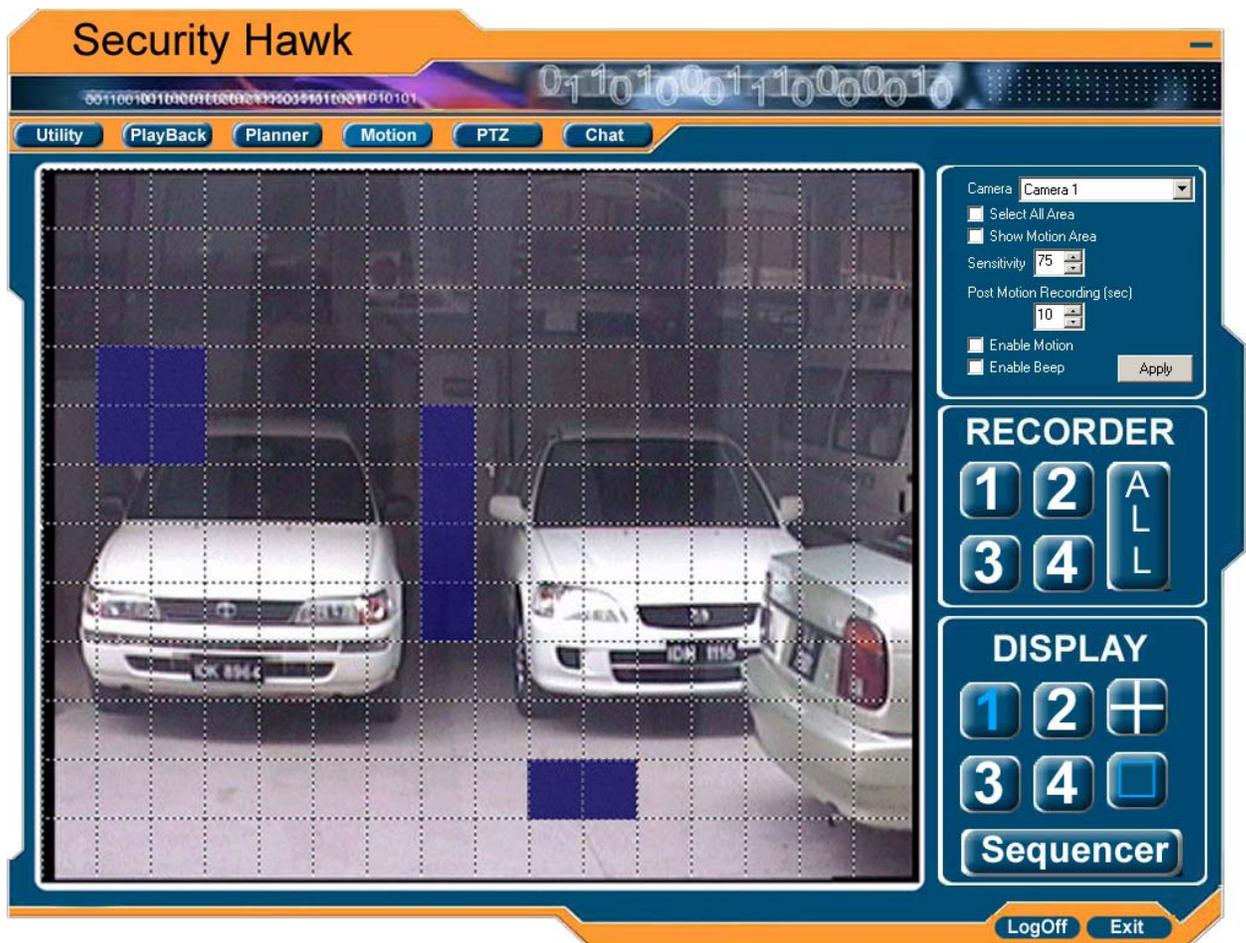


Fig 6.1

Panel as well as a grid will be available at camera display area (see Fig 6.1)

To set up motion properties for the specific camera user have to select the camera ID from motion panel camera list. When user selects the camera, video display area will show the selected camera view with grid. User can identify the area (s) by clicking the

boxes on the grid. You can (see Fig 6.1) which shows the screen with identified motion sensitive spots

You can set Motion sensitivity level (see Fig 6.2) according to your needs. Higher sensitivity level means system may detect the slightest motion even sometimes a blur of light or even video noise generated by camera can activate the motion based recording or alarm. It is recommended to set the sensitivity level between 70 -80 for proper motion recognition.

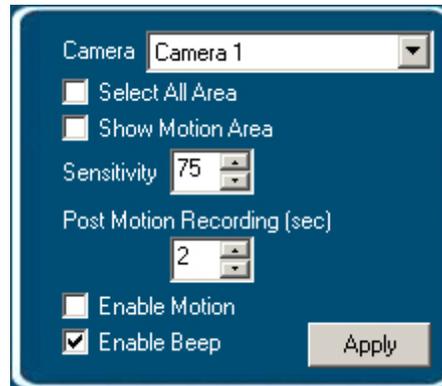


Fig 6.2

User could also provide the post motion recording time. System will continue recording for specified time after the motion detection and will stop automatically if there is no other motion. Show motion area option is there for the user friendliness and if motion occurs in marked area system will show the motioned area. User could activate system beep on motion detection by selecting "Enable Beep" option on motion panel.

One important thing to note in motion or alarm based setting is that system should have plan for relevant camera on relevant time should be marked with alarm recording bar otherwise system will not start recording.

Chat

Fig 7.0

Chat function of the security system allows user to communicate with remote station users. To activate the chat click “Chat” button (see Fig 7.0) on the functional bar. When chat is initiated (see Fig 7.1) for the first time user will need to add all the remote stations available online. It is necessary for both the server and remote station to appear online for communication. User can send some data files, emoticons to other online users. User can add or delete the other online users.



Fig 7.1

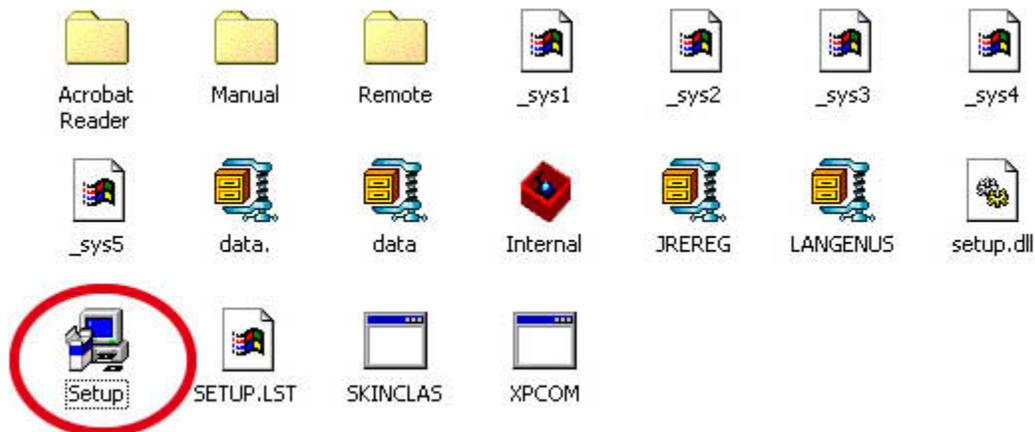
INSTALLATION PROCEDURES

Take the advantage of Security Hawk installation program.

1. Insert your Security Hawk card(s) into the computer system
2. Switch on your computer.



3. The Microsoft Windows will find a new device on the system and will ask you to install the driver. Please click “**Cancel**” to close all dialog boxes.

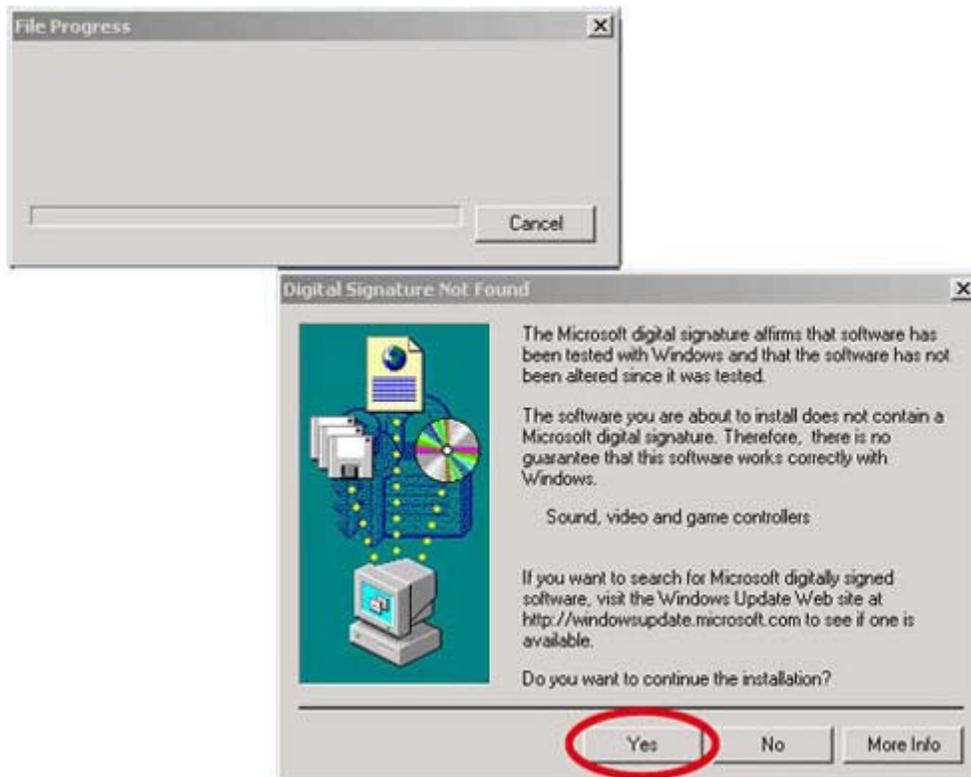


4. Please insert the Security Hawk Installation CD into your CD drive.
5. Double click the icon “My Computer” on the screen.
6. Double click the icon “Security Hawk Installation CD” in your CD ROM.

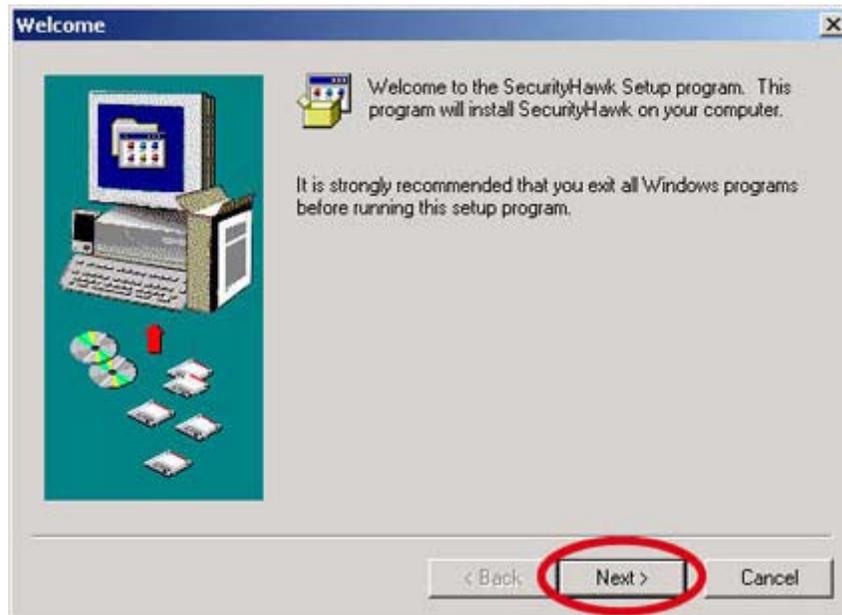
7. Double click " Setup.exe".
8. The window will start installing the software into your computer system.



9. After the completion of Setup Wizard a window will show a message to warn you that the software does not contain a Microsoft digital signature. Please click "Yes"



to continue the installation.

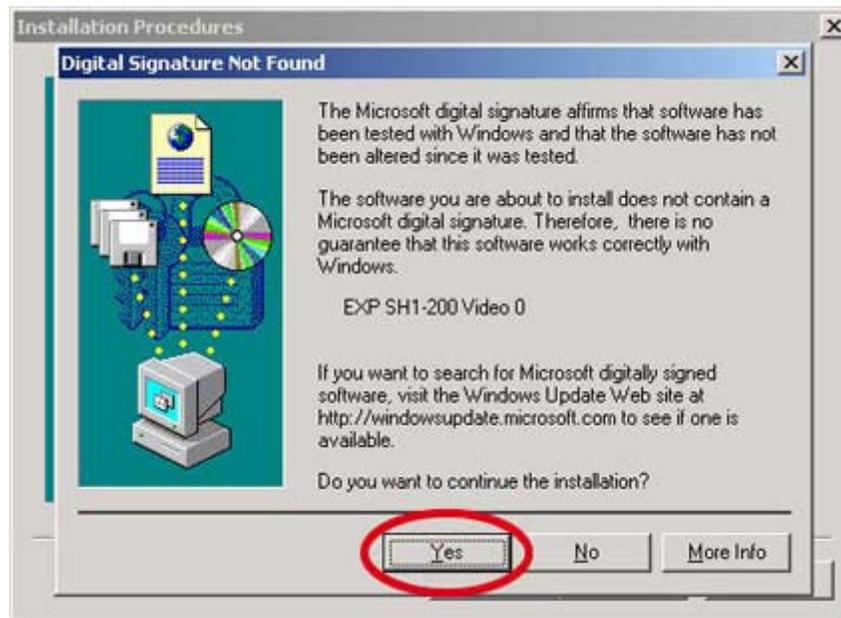


10. The window will then show a welcome message please click “**Next**” to start installation.



11. Next window will show a current configuration of software please click “**Next**”

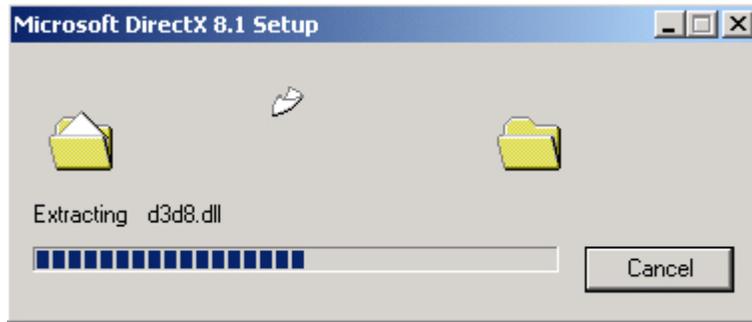
12. Windows will show a message to warn you that the software does not contain a Microsoft digital signature. Please click “Yes” to continue the installation



13. To complete Security Hawk installation successfully please click the “**Finish**” button.



14. Security Hawk will install DirectX 8.1.

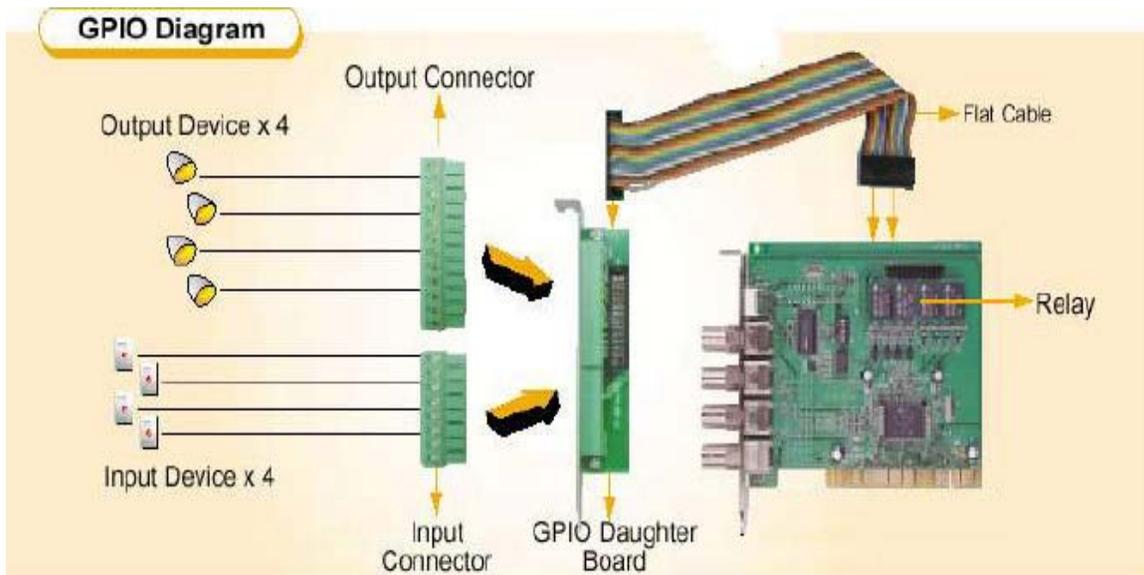


15. Security Hawk will Restart your machine if needed.



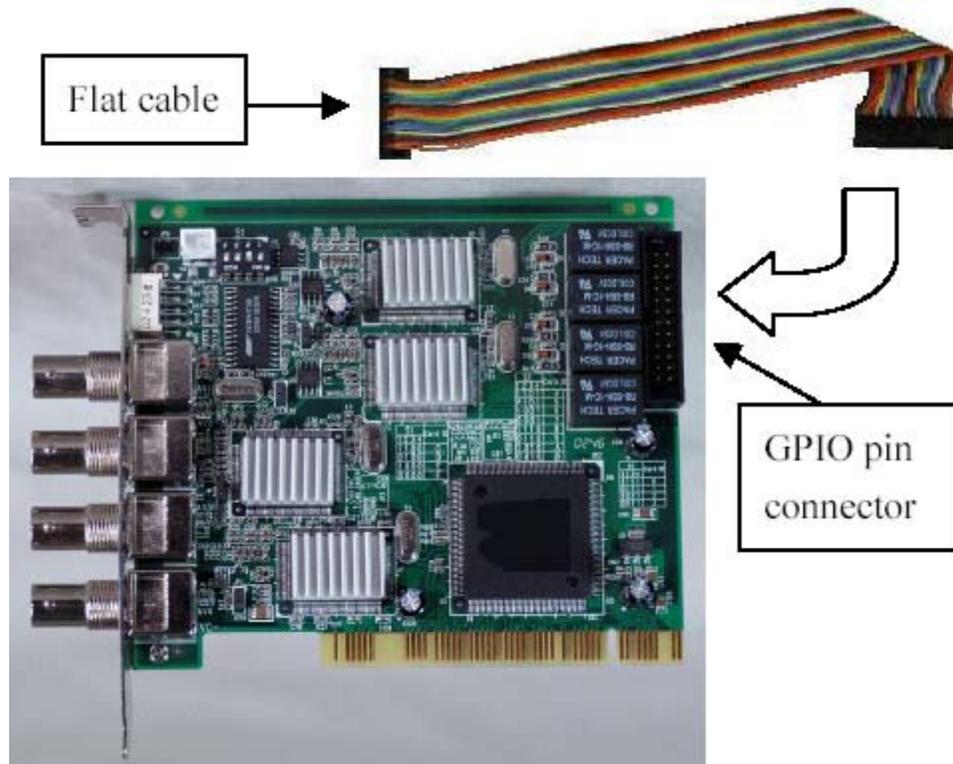
General Purpose Input Output (GPIO) Connections

Please note that this section ONLY applies to Security Hawk Pro and Digital eye Pro. The GPIO module contains a flat cable, a GPIO daughter board, an input connector and an output connector. The GPIO module allows users to connector four input devices and four output devices.

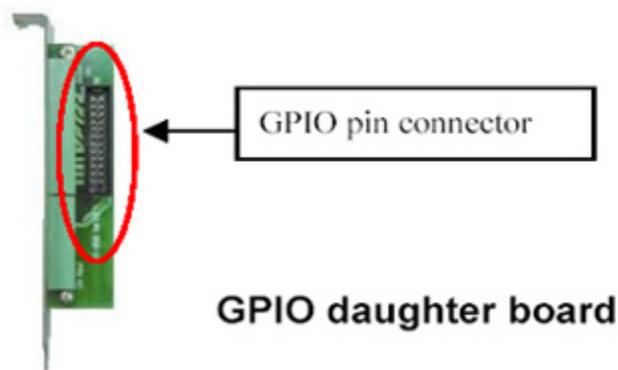


Connections to GPIO daughter board

Connect the flat cable to the GPIO pin connector on Security Hawk Pro and Digital eye Pro.



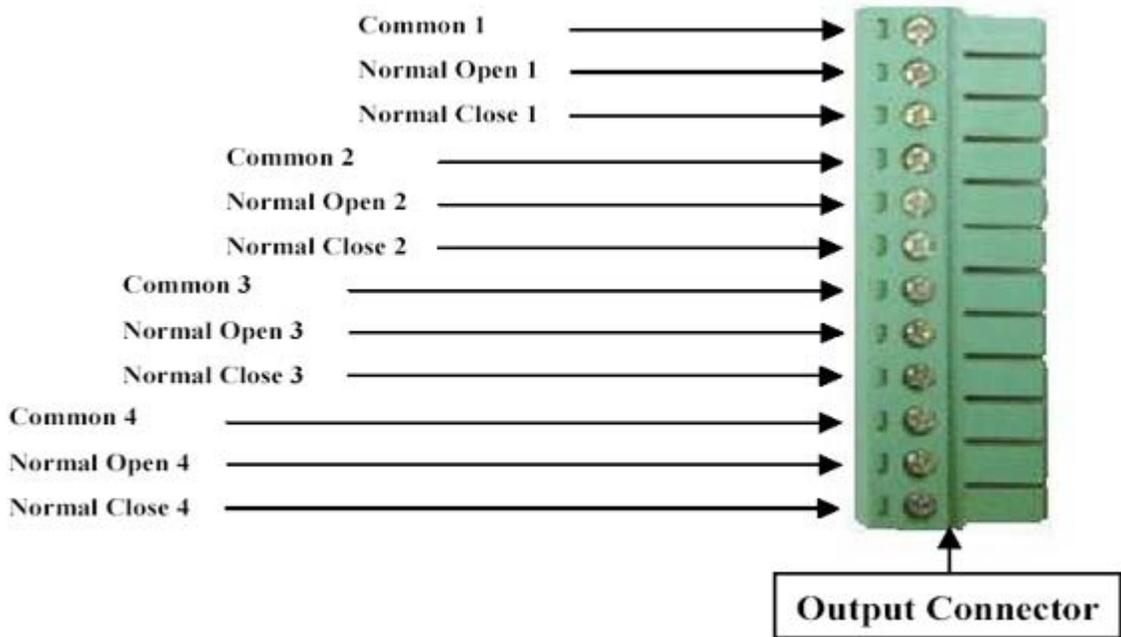
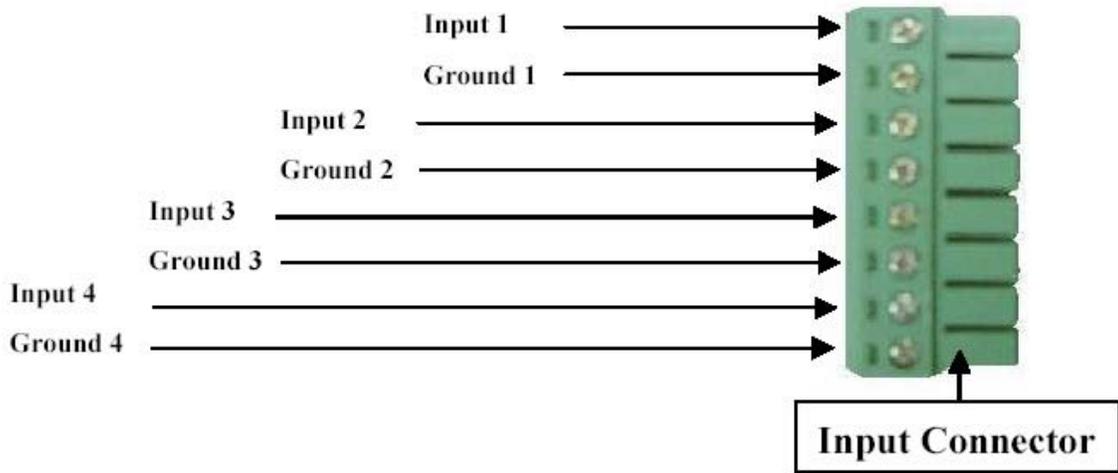
Connect the other end of the flat cable to the GPIO pin connector on the GPIO daughter board.



Use the screw to secure the GPIO daughter board on your computer case.

Connections for Input/Output devices

An input connector and an output connector are provided for connections to the external devices.



Specification for General Inputs

The general inputs can take DC voltage from 0-24V. Voltage above 24V is not recommended.

	Voltage Range
Logic 0	< 0.5V
Logic 1	0.5V – 24V

Specification for General Outputs

Relay Contact Ratings

Contact Form	1 FORM C (SPDT)
Contact Capacity	coil = 0.36W
Resistive Load	1A/125 VAC
(cos è = 1)	2A/24 VDC
Inductive Load	0.3A/30 VDC
(cos è = 0.4 L/R = 7 msec)	
Rated Carring Current	2A
Max. allowable voltage	AC 120V. DC 60V
Max allowable current	2A
Max allowable power	48W
Contact Material	Ag Alloy

Relay Coil Specification

Coil voltage	Nominal Voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ohm)	Power Consumption (W)
5V	5V	66.7	75	about 0.36W

Relay Coil Specification (Continue)

Pull-in Voltage (VDC)	Drop-out voltage (VDC)	Max-Allowable Voltage (VDC)
75% max. 3.75V	10% min. 0.5V	110% 5.5V

After connecting your external device, you can therefore plug the connector into the GPIO board.

System Requirements

Software

Operating System Windows 2000, Win XP.
Direct X 8.1 (provided with the Security Hawk Pro)

Hardware

CPU Pentium IV (2.4 GHZ)or Higher
VGA Memory 64 MB Recommended
RAM 256 MB or Higher

Configuration

Screen Area 1024 by 768
Colors High Color (16 bit)