SCode CMS Software
(Central Management System)


SCode CMS (**C**entral **M**anagement **S**ystem) station provides one of the strongest networking capabilities in the current DVR market. Through existing data network structures, it can integrate stand alone DVRs into large video surveillance networks. Its powerful network features offer efficient tools to cope with the limitations of available communication bandwidths. In combination with having the highest compression technology in the world ready available, makes it possible to design a strategy for achievement of the highest possible fps transmission speeds of video images through existing networks.

There are 7 kinds of stations in CMS (**C**entral **M**onitoring **S**ystem**)** System:

- ■ *SCode DVR Station* (DVR)
- ■ *SCode Hybrid NVR Station* (Hybrid NVR)
- ■ *SCode CMS Station* : Remote Monitoring Machine
- ■ *SCode Server Station* : Communication server
- ■ *SCode Central Server Station* : Central server
- ■ *SCode Viewer* : Remote viewing by IE browser
- ■ *SCode Mobile* : Remote viewing by mobile phone

Basic Network Structure
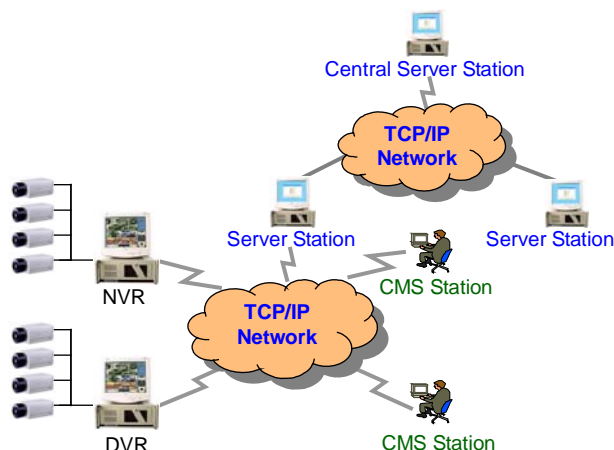
Technical Characteristic

Multi-server and Central-server Structure

The multi-server structure is an innovated design. Each **SCode Server Station** handles a regional network independently and can be linked to the **SCode Central Server Station** outwards. It provides stable network solutions for:

- ■ Local monitoring and simultaneous remote centralized control.
- ■ Allows for highly efficient DVR network layouts to save communication bandwidth resources.
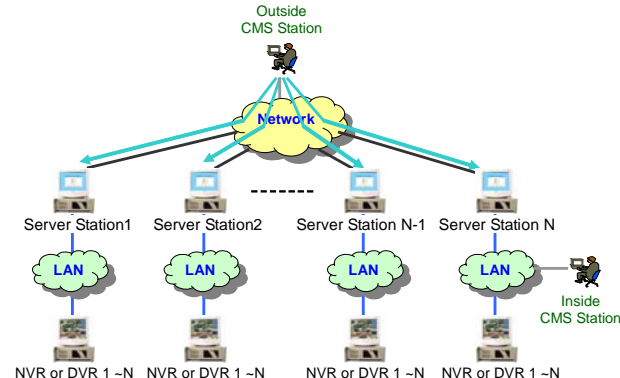


Multi-server structure
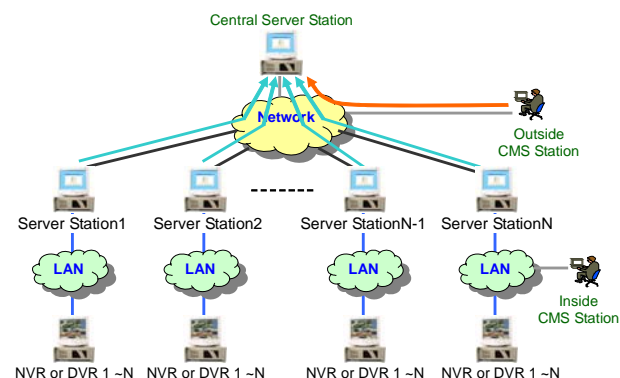
Central Server Structure

Communication Protocol

- ■ UDP/IP mixed with TCP/IP protocols is used to solve the huge image transmission data rate during multiple remote CMS Stations accessing the same camera. Under UDP/IP, only one image data will be sent out of DVR. DVR does not need to duplicate the same image data and send a copy to each accessing remote observer. This feature reduces bandwidth loading in a dramatic manner.
- ■ Due to the group broadcast protocol (UDP), remote CMS Stations will get different image receiving frame

rates depending on their own bandwidth. The highest bandwidth owner gets the better image frame rate when multiple remote observers are accessing the same camera.
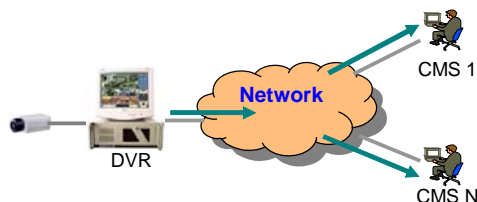

Multi-Point Control Capability

This allows remote CMS Stations to monitor and control different DVRs that are located in different Server Station networks.

■ One CMS Station can monitor and control multiple DVRs located in different networks, at the same time.
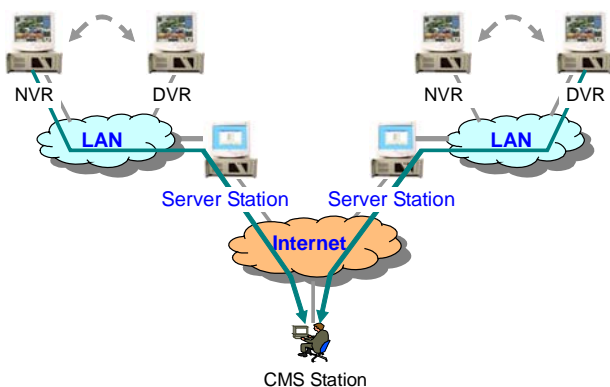
■ One DVR can be monitored and controlled by multiple remote CMS Stations from different networks, simultaneously.
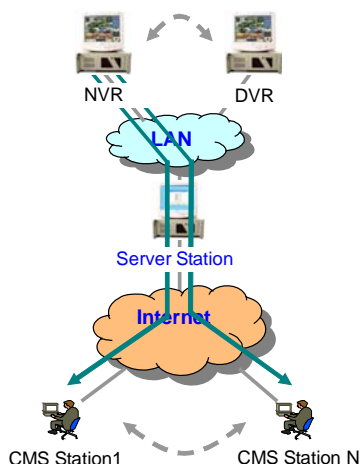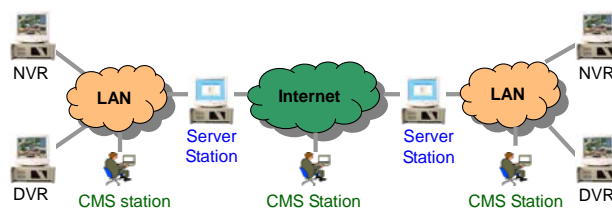

High Transparency in Network

Remote **SCode CMS** Stations can cross over to many different networks. DVRs can have physical or virtual IP's.

■ **CMS Stations** can be located behind NAT (router, Gateway, etc.)

■ **DVRs** located in a LAN are easy accessible from outside.

■ Both **DVR** and **CMS Station** may use a static IP or a floating IP.

System Features

Network Structure

■ **Unique Client-Server network structure**

One Server Station can manage lots of DVR machine. CMS Station can link with all DVRs immediately, simple by visiting a Server Station.

■ **Multi-Server network structure**

Using the multi-server network structure, one CMS Station can link to multiple Server Stations, simultaneously.

■ **Central-Server network structure**

All Server Stations can link to one Central Server Station for construction of large surveillance networks.

Communication Protocol

Use TCP/IP and UDP/IP protocol.

Network Transparency

■ **Cross NAT**

Can pass through the NAT devices.

■ **Cross different network**

Can access different DVR located in different network.

■ **Support Static/Floating IP**

DVR and Client can use static or floating IP.

■ **Support Physic/Virtual IP**

DVR and Client can use physic or virtual IP.

■ **Support Domain Name Access**

Server Station can be accessed by the domain name.

Image Transmission

Due to the high compression rate, it is possible for DVR to send 50 fps in 512 Kb bandwidth (In CIF resolution).

■ **Image compression**

Support H.264, MPEG4 and M-JPEG.

■ **Single-channel image transmission rate**

Allow to send 1 ~ 30 fps (PAL) or 1 ~ 30 fps (NTSC) per channel.

■ **System image transmission rate**

Max. image transmission frame of one **DVR** :
PAL=400 fps or NTSC = 480 fps (CIF resolution)

■ **Image resolution (pixel2)**

PAL   = 352x288, 704x288, 640x480, 720x480
NTSC = 352x240, 704x240, 640x480, 704x480

Remote Access

■ **Easy access the remote DVR**

Easy and fast operations for accessing remote DVRs, No complex settings of communication ports needed.

■ **Multi-point access capability**

DVRs allow to be accessed by multiple CMS Stations from different networks, simultaneously.

CMS Stations can access different DVRs in different Server Stations networks, simultaneously.

■ **Auto-link with Server Station**

DVR and CMS Station can link with an appointed Server Station after power on.

■ **Auto-link with Central Server Station**

Server Station can link to Central Server Station after power on.

■ **Auto re-link**

DVR and CMS Station can re-link to Server Station, when link is broken.

When link between Server Station and Central Server Station is broken, Server Station will re-link to Central Server Station automatically.
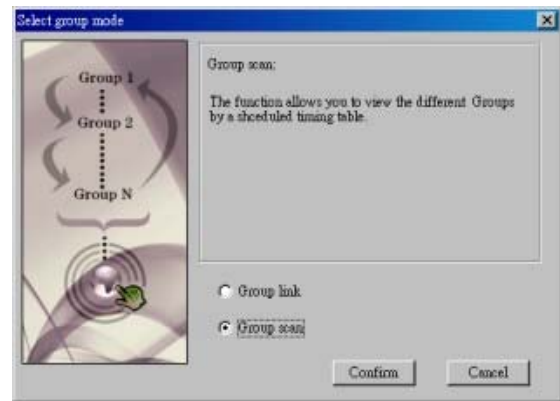

■ **Group link**

This function can allow the user directly to access the different cameras which are installed in different DVR machines located in different **Server Station**s by one-click.

■ **On-screen setup of Group link**

Allow the user to save the linking status while in monitoring the remote cameras. It can reduce the setting procedure of the group link.
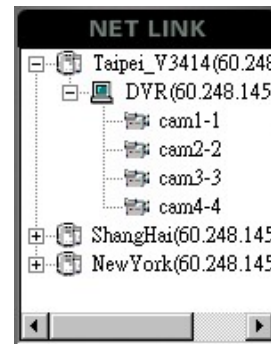

■ **Group scan**

Allow the user to view the different group links at a preset scheduled timing table.

■ **Auto update the linking status**

The linking status table will be automatically updated, if any change is happened in the security network.

■ **Monitor the current data flowing rate**

It offers the information of the receiving data rate to the user. It can help the administrator to arrange the communication bandwidth. It offer 2 kinds of this information : fps and Kb/s.

Image Monitoring

■ **64-channel video monitoring**

Allows to monitor 1 ~ 64 living videos from different DVRs located in different networks, simultaneously.

■ **Monitor window**

Provides 8 kind of split modes : 1, 4, 9, 16, 25, 36, 49, and 64 split windows.

■ **Access an appointed camera**

The user can access any appointed camera, one by one, till all the 64 channels are filled.

■ **Access all camera of one DVR machine**

The user can visit all cameras of one DVR machine at one-click.

■ **Auto speed up the transmission rate**

While one image window is enlarges, the system can increase this window's speed to a preset rate.

■ **Support non-DirectDraw VGA card**

Remote Audio Monitoring

Support audio monitoring and recording through network communications.

Remote Audio Broadcast

CMS Station can broadcast the voice to any or all remote DVRs.

Remote Alarm Sound Playback

CMS Stations can request remote DVRs to play an alarm sound that is stored in the remote DVR's sound bank.

Remote Voice Communication

The remoter CMS station user can talk with the DVR user by through the network.

Remote Control

■ **Adjust the transmitted frame speed**

CMS Stations can change the transmitted fps speed of each independent DVR camera.

■ **Adjust the transmitted image quality**

CMS Stations can change the transmitted image quality of each independent DVR camera.

■ **Adjust the camera signal**

CMS Stations can adjust the camera's video signal (brightness, saturation, contrast, and hue) remotely.

Remote PTZ Control

Users can control camera plates or speed domes of the DVR/NVR station, remotely.
Plate control : Auto, Pan, Tilt
Lens control : Zoom, Focus, Light
Speed control : Zoom, Pan Tilt
External control : Wiper, Heater, Fan, Lighter

Remote I/O Control

Users can remotely control the I/O controller of the DVR/NVR station.

Remote Data Retrieve

■ **Remote file download**
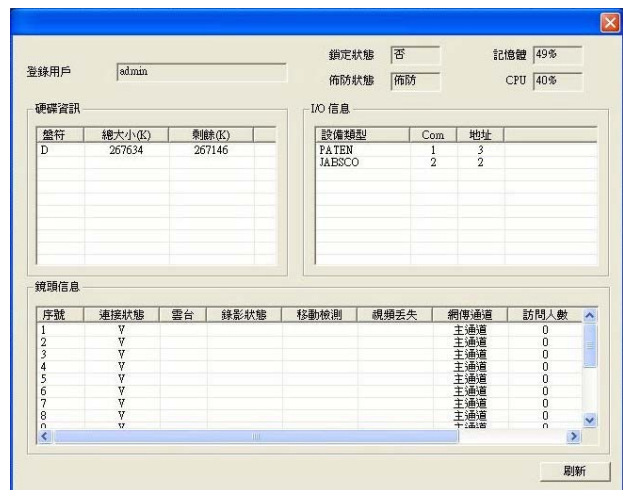
Downloads the video files from remote DVR.

■ **Remote information check**

Users can check the remote DVR history logs:
System operation history, System login history, Alarm log history.

■ **Remote device information check**

CMS Stations can retrieve camera device information from remote DVRs.

Remote Machine's Working Status Check

The remote CMS user can check the DVR machine's working status :
CPU using rate, Memory using rate, HDD using rate, Install states of the external I/O controller, working status of the cameras, login status.

Remote System Setup

■ **Remote user management**

Change the user setups of remote DVRs.

■ **Remote auto function setup**

Change the auto functions of remote DVRs.

■ **Remote recording schedule setup**

Manage recording schedules of remote DVRs.

■ **Remote alarm schedule setup**

Change alarm schedules of remote DVRs.

■ **Remote alarm setup**

Change alarm settings of remote DVRs.

Remote Alarm

If a DVR detects an alarm event, it can inform remote CMS Stations by:

■ **Live video alarm**

CMS Stations can automatically receive (Shown in a independently movable image window) and store the live video sent by a remote DVR.

■ **Audio alarm**

When CMS Stations receive a remote alarm from the remote DVR, it can play a preset alarm sound.
Each device can have an appointed alarm sound.

■ **LED alarm**

When CMS Stations receive a remote alarm, it can turn on an alarm LED to signal the user.

■ **Alarm log**

When CMS Stations receive a remote alarm, it will write this alarm event into an alarm log table.

Video Recording

Allow to record the incoming video while in monitoring.

Instant Playback

While in recording, the user can play the recording video film in an independent movable image window, without waiting the video film created.

Playback

When play the video film, it will be shown in a movable image window.

■ Allow to play the remote download video files and the video file recorded by CMS Station.

■ Allow to play the video film while in the remote video file downloading.

Snapshot

Take pictures from the incoming video while in monitoring.

System Record Check

Allow the user to check the below system records :

■ System operation history

■ System login history

■ Alarm log history

Password Protection

■ **User authorization**

The system administrator authorizes different users for different operation functions. It includes setup of local and remote operations.

■ **Local password protection**

Multi password protect modes avoid unauthorized access at the local site.

■ **Remote password protection**

If users want to access a remote DVR, the remote DVR will check their user name and password.

■ **Remote auto login**

If users want to access a remote DVR, the CMS Station can send the user name and password of the current CMS user to the remote DVR automatically. If the user name and password is right, the remote DVR will accept this access. If not, the CMS Station will request the user to do the login job manually.

Server Station Features

■ **Control the bandwidth**

Server Station can manage the communication bandwidth.

■ **Auto-execute Web Server**

Can run Web server program automatically, after Server Station executed。

■ **Auto-link to Central Server Station**

Can link to the Central Server Station automatically,

after Server Station executed。

■ **Auto re-link to Central Server Station**

Can link to the Central Server Station automatically, after the network is broken。

■ **Manage the linking user**

Server Station can view, manage, and limit the linking of the remote CMS Station, DVR machine, and Server.

■ **Check the linking history**

The user can check the linking records and print or export the records.

The user can also set the storage days of the history records.
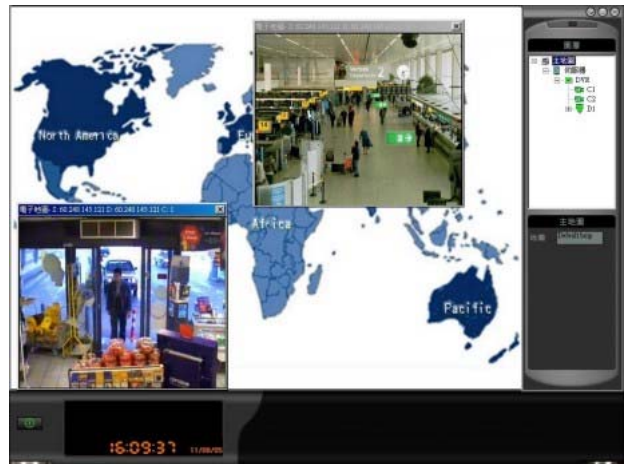
Remote eMAP

With the remote eMAP function, users can locate where the cameras are installed; check its working status and access the cameras from there.

■ **Multi-layer map**

It allows the user to build a multiple layer e-map (256 layers). The background map is a BMP format picture.

■ **Customized device icon**

The system allows to use custom device icons shown on the map.

■ **Access modes**

Users can access a device by clicking the icon on the map or by clicking the name from the tree table.

■ **Show working status**

The icon will change its symbol if the device changes its working status.
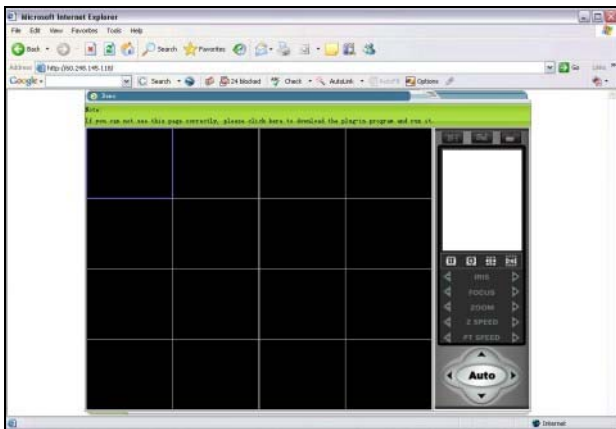
■ **Independent image window**

The user can view a camera's image by clicking its icon. And, an independent image window will pop up and show this camera's image.

CMS   eMAP
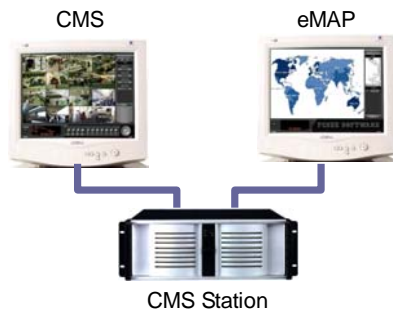
CMS Station

Dual-Monitor operation

Support Dual-Monitor Operation

It provides to use 2 monitors to operate the CMS Station program and eMAP at the same time.

Support IE Browser (SCode Viewer)

Users can access remote DVRs by IE browser.

- Allows to access Server Stations by IP address or domain name.
- Allows to view 16 cameras located in different DVRs
- Allows to access multiple-DVRs
- Allows to access multiple servers
- Allows to adjust transfer rate and image quality
- Remote password check
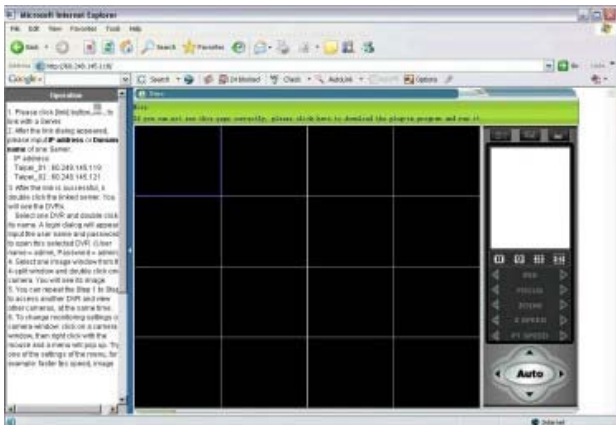
Support Web Page

It is possible to build IE Viewer into a Web page. In this way, remote users can view the camera's image through the internet.
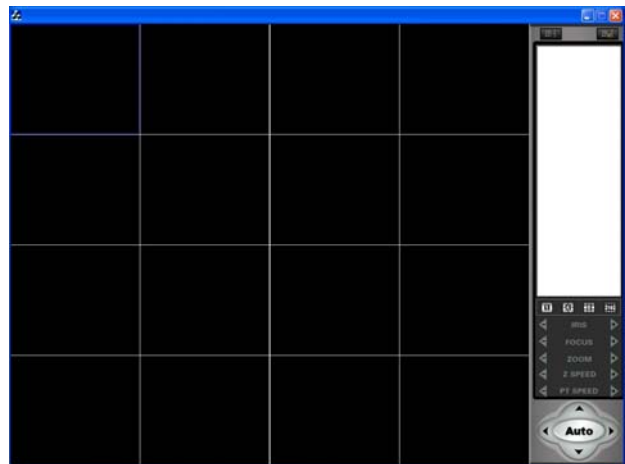
- **Provide OCX file**

■ **Pass the digital signature approval**

Support Remote View by Mobile phone (*SCode Mobile*)

- The user can monitor the video by using a mobile phone which support the Flash function.
- It does not need to install any software at the mobile phone.

Simple CMS Station

Provide a free simple version of CMS Station program to users

SCode Server Station's Features

- **Provide communication bandwidth management**
  Server Station can arrange the usage of the communication bandwidth.
- **Auto lunch Web server**
  If the user want to view the remote DVR by IE viewer, a Web server is necessary. Server Station can auto lunch a Web Server to reduce the executing trouble.
- **Auto link to a SCode Central Server Station**
  Server Station can link with Central Server Station automatically
- **Auto re-link**
  If the network gets trouble and terminate the

communication, Server Station can re-link to Central
Server Station automatically.

■ **User management**

Server Station can monitor and manage the linking
status and the allowed number of DVR and CMS
Station.

■ **View the history record of linking information**

The user can view, print and output the history of the
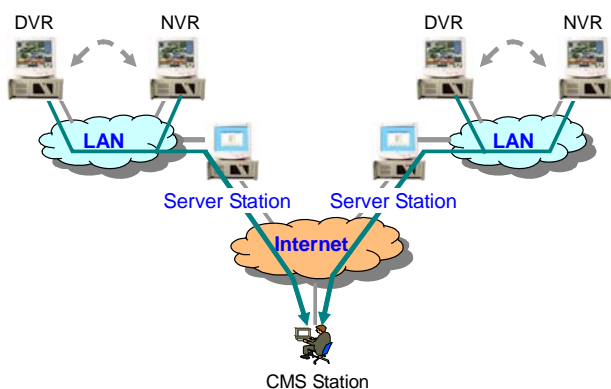linking record.

■ **Hide DVRs**

The SCode Server can hide some DVRs. These
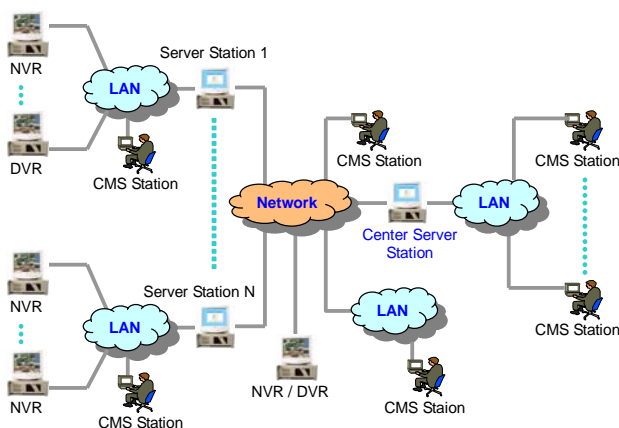hidden DVRs can only be saw by the authorized CMS
user.

■ **Linking control**

The SCode Server can be accessed the CMS
machines which have the authorized IP address.

Access Different series of NVR and DVR

Allows to integrate and monitor all kinds of SCode NVR
and SCode DVR, simultaneously.

Example

Operating System

■ Supports Win XP, Win 7-32bit.

■ Supports intel P3, P4, and x86 CPU.

■ Supports direct draw and non- direct draw VGA cards.