IP Surveillance Deployment Guide

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Introduction

ACTi provides you a series of guides for your project from proposal stage to maintainese stage. They work as below

[IP surveillance Prosposal Guide]: Making proposal to your customer

[IP Surveillance Deployment Guide]: Fullfill your project from proposal to practical to your customer.

[Tech Support and TroubleShooting Guide]: Find the root cause of your problem and solve it.

This **[IP Surveillance Proposal Guide]** contains step by step procedure for you to fulfill your project. We start with “Select your architecture type” and then “Build up each building block” in the architecture you selected. To familiarize you with the analog imaging knowledge and the IT knowledge, we also provide you the “IP Surveillance 101” at the appendix. You can look through it to have a brief idea about IP Surveillance.

In first part, “Select Architecture Type”, we will start to differentiate differentiate basic solution diagram for different applications. You can have the idea about what customer might want in his application and how it looks like. This Proposal guide will include solution proposals with channel 64 and below. For solution proposal will channel more than 64, please contact our sales representative for more information.

In Second Part, “Diagram Customization”, it is not possible for the solution diagram to fit exactly what your customer need. Thus, we have to customize the diagram into your customer’s solution diagram, which is your proposal.

We will not include everything in this guide. Please refer to

1. [IP Surveillance Proposal Guide] for how make a proposal to your customer.
2. [Tech Support and Troubleshooting guide] for how to define the problem, analyze the problem then solve the problem

Trademarks

Liability

Every care has been taken during writing this manual. Please inform your local office if you find any inaccuracies or omissions. We cannot be held responsible for any typographical or technical errors and reserve the right to make changes to the product and manuals without prior notice.

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Chapter 1. Select your Solution type

In this chapter, we will divide all deployments into two architecture type. One is “PureIP Architecture” and the other is “Hybrid IP solution”. The deployment instructions will be based on different architecture type. Please refer to each types introduction to select.

2-1 Pure IP Solution

In Pure IP solution, everything is transmitted and stored digitally. The images are transmitted via Ethernet Network instead of the coaxial cable. The images are stored into a hard drive instead of cassettes.

1. Imaging:

   The images are generated by IP camera or a video server connected to an analog

camera. All images are digitalized before transmitted via network.

2. Transmission:

   All the data is transmitted via Ethernet Network. There's no coaxial cabling to transmite the video clip. The network could be a LAN (Local Area Network) or a WAN (Wide Area Network) including Internet.

3. Monitor:

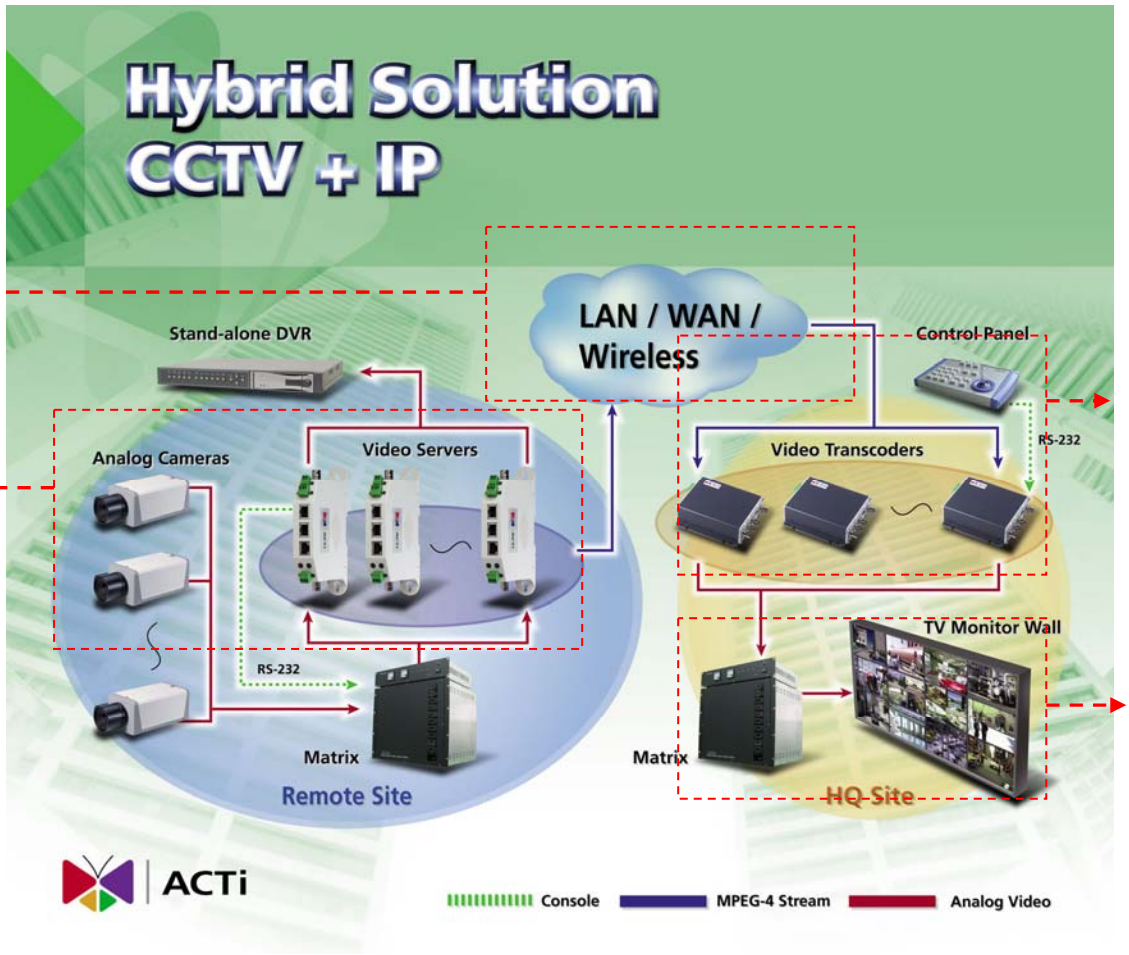
   Live images and recorded files are played onto PC monitor instead of Analog TV.

4. Storage:

   All the images, events are recorded into a PC with network connectivity to this network. The images stored can be playback and searched in the future.

2-2 Hybrid IP solution

Hybrid IP solution simply works as a connection extension solution for coaxial cable and RS-485/RS-232 connection.



1. Imaging:

Normally, the images are generated by a video server connected to an analog camera. All images are digitalized before transmitted via network.

2. Transmission:

   Most of the connection is done via coaxial cabling. This hybrid IP solution works only as an extension for certain cameras where coaxial cabling can’t reach.

3. Decode:

   Digitalized images are converted back to analog images here.

4. Monitor/Managment:

   All the monitor, management and storage are done via conventional DVR, VCRs and Matrixs. Please refer to respective manuals for details. .

Chapter 2. IP Surveillance Solution

This chapter we will tell you how to step by step deploy a IP surveillance solution.To start with, we divide an IP surveillance solution into several building blocks as below. You can refer to the below description about how each building block work.

We strongly recommend you to view Chapter 5, IP surveillance case study at the same time. Chapter 5 contains the detailed step by step selection and setting of a chain-retail shop project.

1. Imaging:

   In this block, images are produced by IP cameras or a video servers connected to analog cameras. The cameras requires different kind of mount, lenses and even

external lighting for different application.

2. Monitor:

   In this block, any PC with network connectivity to this network, can view 1CH live images via network.

3. Management:

   In this block, guards can use the management software preview mutli-channel images and mutli-channel recording by schedule, by event or continuously. Whenever there's an event, it can be programmed to trigger the alarm, sending out E-mails or files to FTP and start recording.

4. Storage:

   In this block, images are stored by a computer with a network connectivity to this network. The images can be saved continuously, by event or by schedule. These images can be later searched and played back in the future.

5. Network:

   In this block, data are transmitted between each building blocks. Sufficient network bandwidth and appropriate settings plays an important roles to ensure the performance of other blocks.

2-1 Network

Network

This block is very important because it stings up all other building blocks. All otther buiding blocks requires appropriate network setting and connection to make the system works. The network deployment and network settings are very flexible and subject to each system's design. Please go through below instruction to have an overview concept, then you can go back to this section if you have any problem about network setup.

You can also refer to support package TS-00029 at http://www.acti.com/support/support_package.asp to know more about LAN, WAN.

2-1-1 Network Consideration

This section tells you about what to consider when deploy an network.

2-1-1-1. Device network connectivity

Each device has to have a right setting for it to connect to the network.

2-1-1-2. Bandwidth

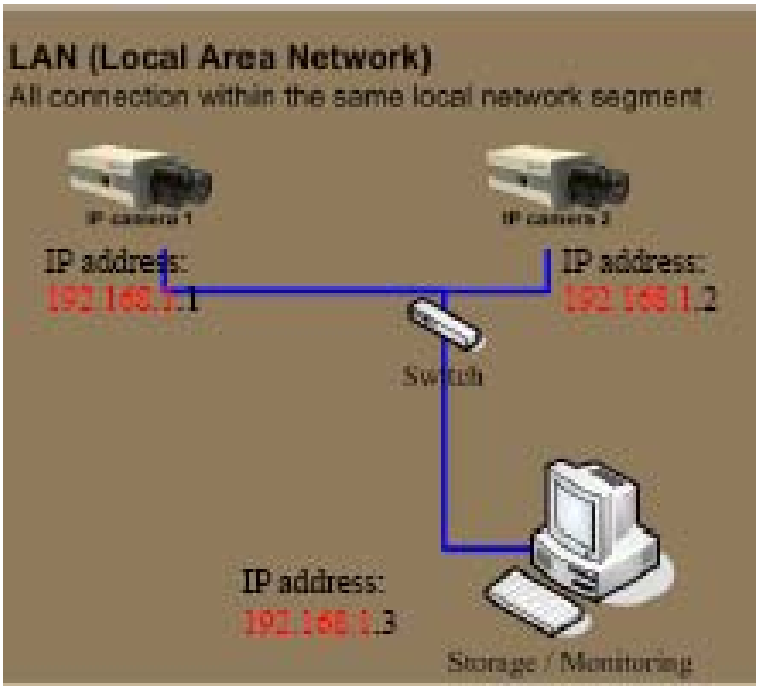
Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused.

2-1-1-3. Device to device connectivity

Even though each device is connected into internet, the network between two device might not be connected. This involves each device's setting and network equipments' setting.

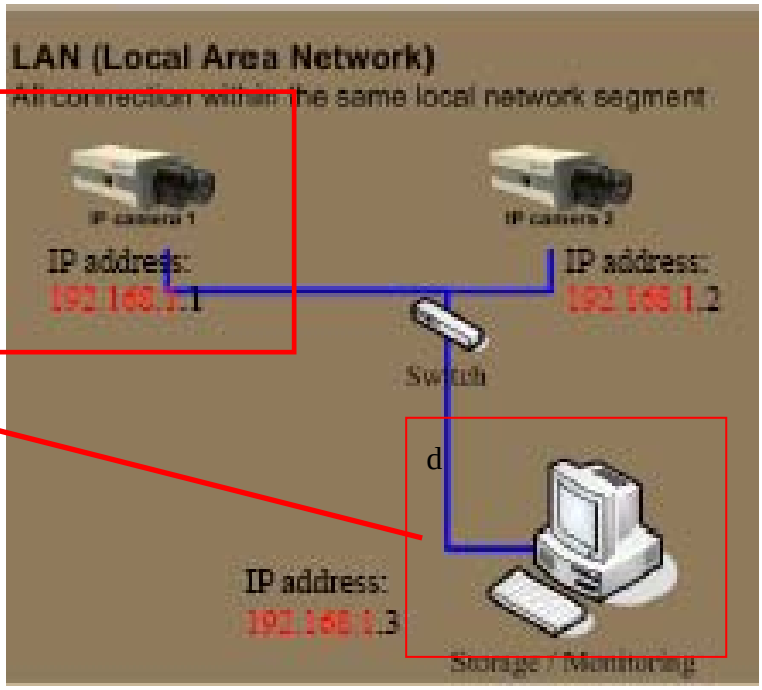
2-1-2 LAN network system

Below are what to check within a LAN environment.



2-1-2-1. Device network connectivity

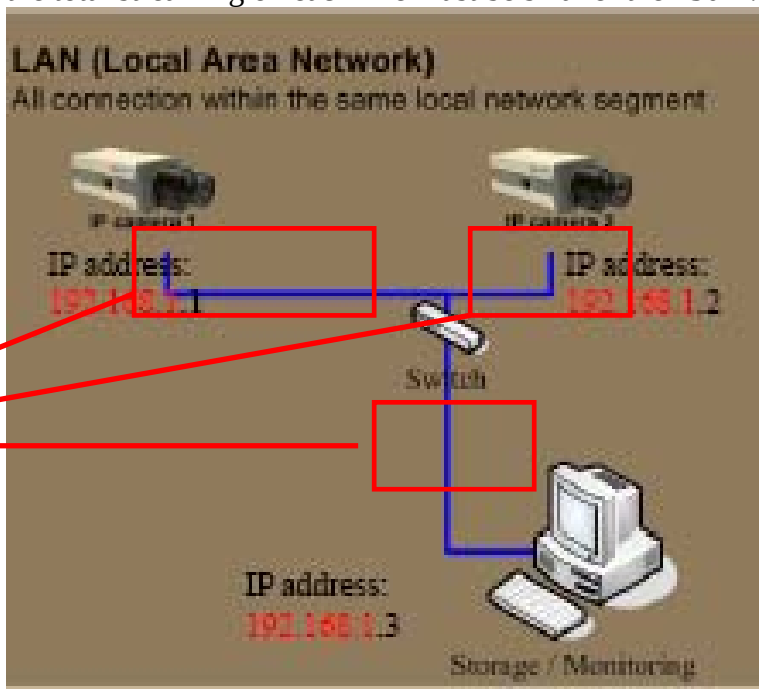
Each device should have the network setting withint the same local network segment.



Check device's
1. IP address

2-1-2-2. Bandwidth

Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused. Inside LAN, the bandwidth limitation of 100M connection per line is 30MB per second (100MB as theory). Thus, the total streaming on each line must be smaller then 30M.



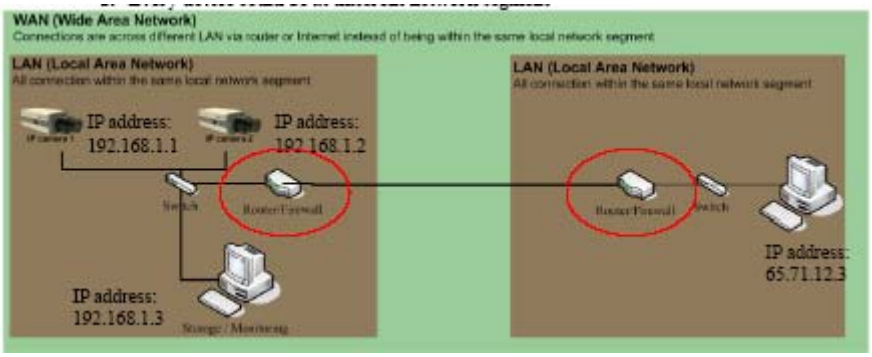
Each line's
bandwidth can't
exceed 100M

2-1-2-1. Device to device connectivity

There no need to worry about the device to device connectivity.

2-1-3 WAN network system (Via Routers)

Below are what to check within a WAN environment.

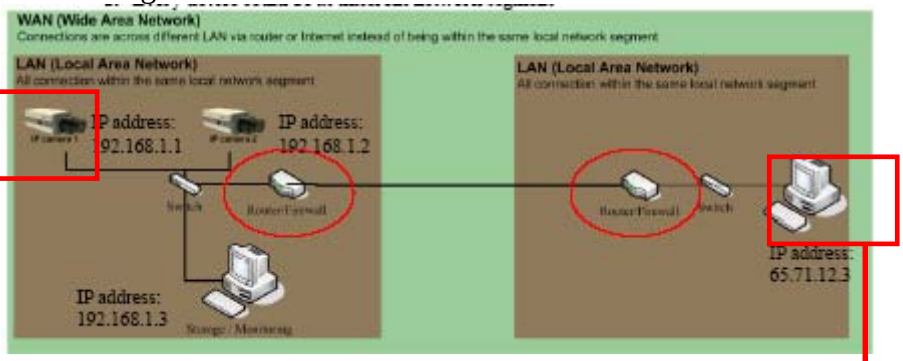


2-1-3-1. Device network connectivity

Each device should have the network setting withint the same local network segment.

Check devices'

7. IP address
8. Subnet setting



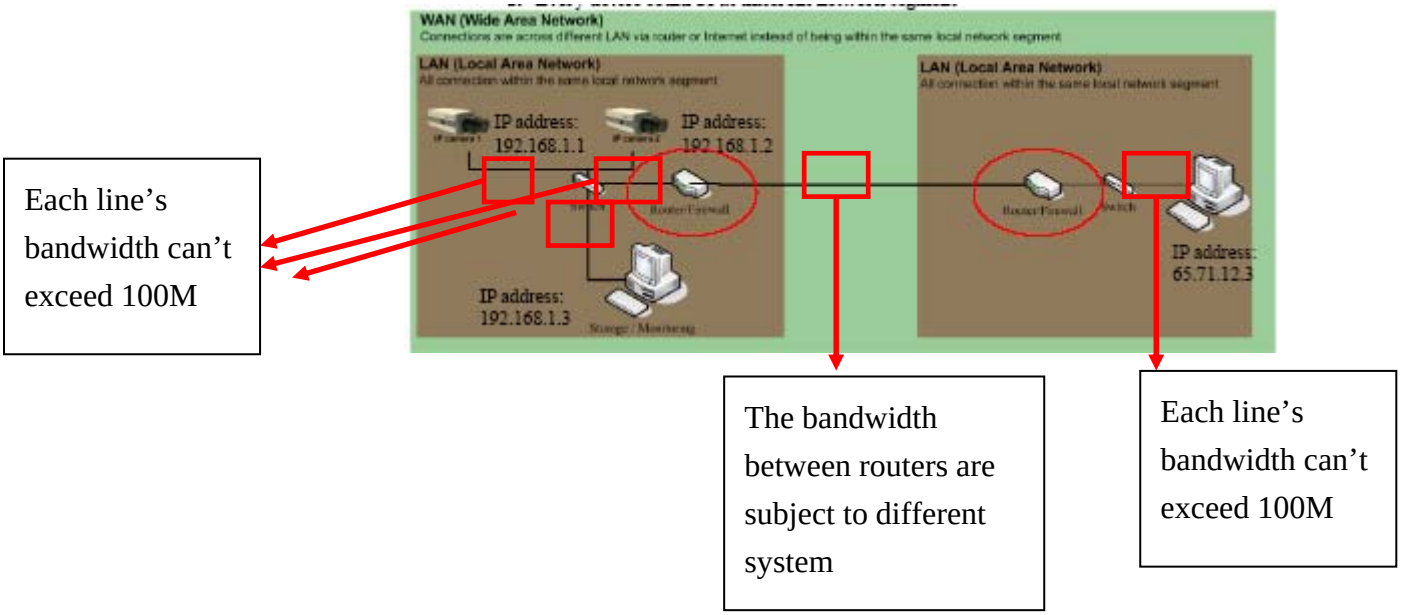
Check device's

7. IP address
8. Subnet setting

2-1-3-2. Bandwidth

Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused. Inside LAN, the bandwidth limitation of 100M connection per line is 30MB per second (100MB as theory). Thus, the total streaming on each line must be smaller then 30M. The bandwidth between routers are subject to each system, you have to

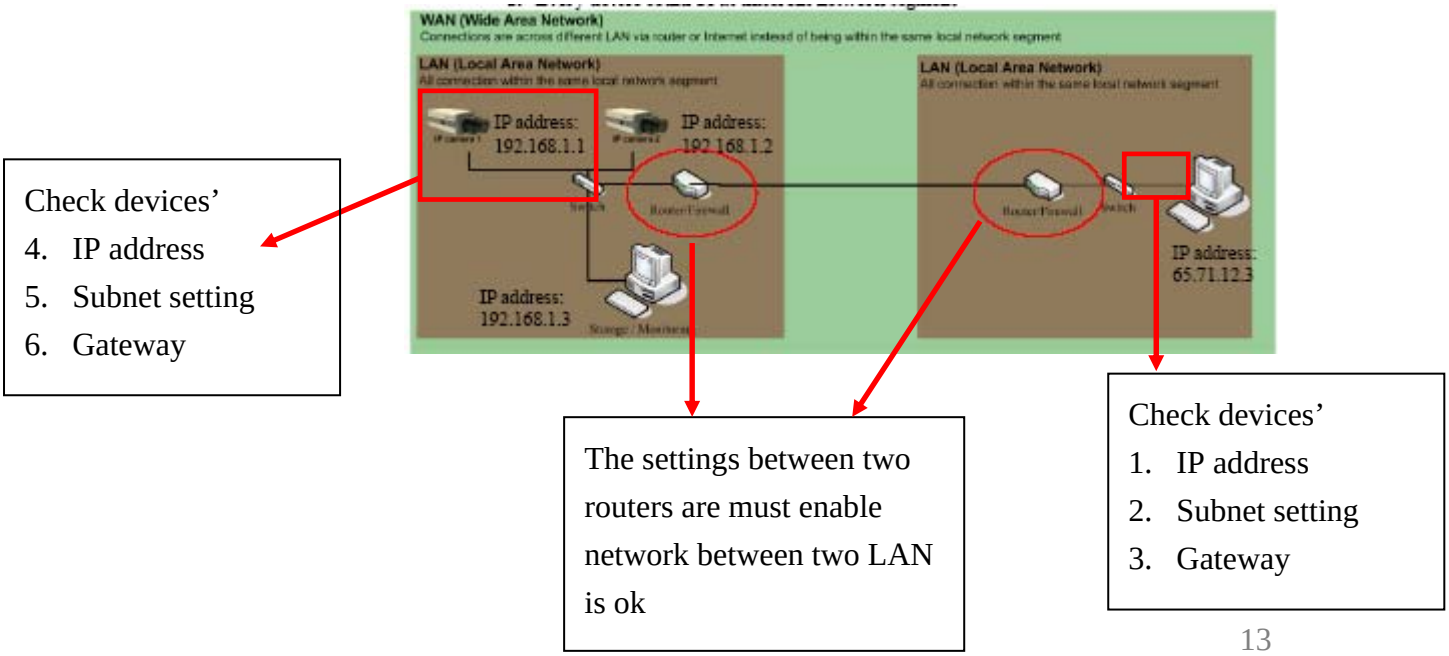
refer to the router's manual.



2-1-3-3. Device to device connectivity

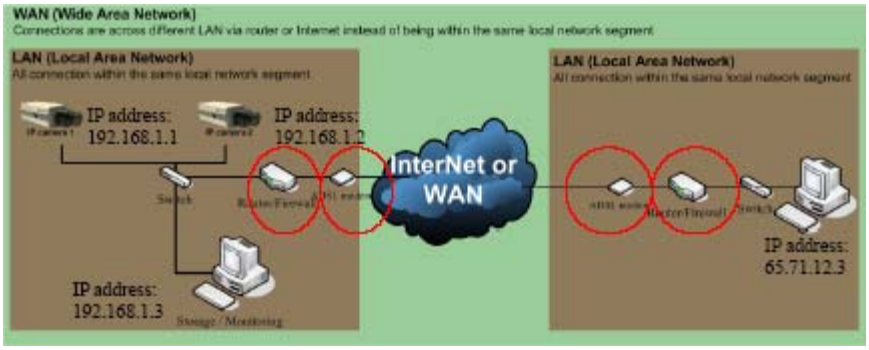
For computer to connect to a camera at different network segment, the network settings of each device and routers needs to be right otherwise the network is not connected.

Please refer to TS-00009 at at http://www.acti.com/support/support_package.asp to know more about the network connection cross routers.



2-1-4 WAN network system (internet)

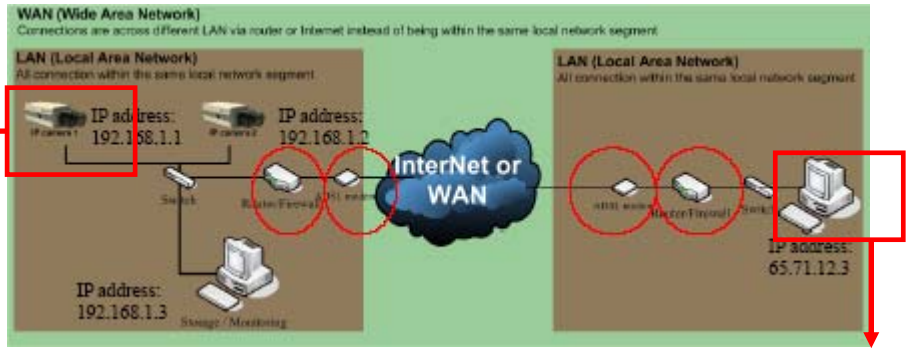
Below are what to check within a WAN environment.



2-1-4-1. Device network connectivity

Each device should have the network setting withint the same local network segment.

Check devices'
5. IP address
6. Subnet setting

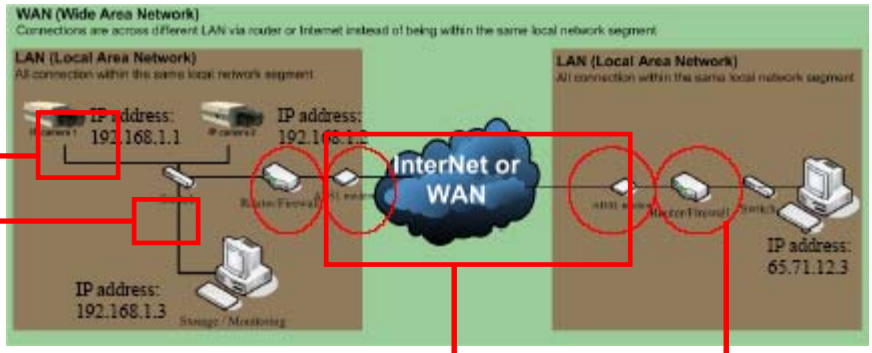


Check device's
5. IP address
6. Subnet setting

2-1-4-2. Bandwidth

Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused. Inside LAN, the bandwidth limitation of 100M

connection per line is 30MB per second (100MB as theory). Thus, the total streaming on each line must be smaller then 30M. The bandwidth between routers are subject to each system, you have to refer to the router's manual.



Each line's bandwidth can't exceed 100M

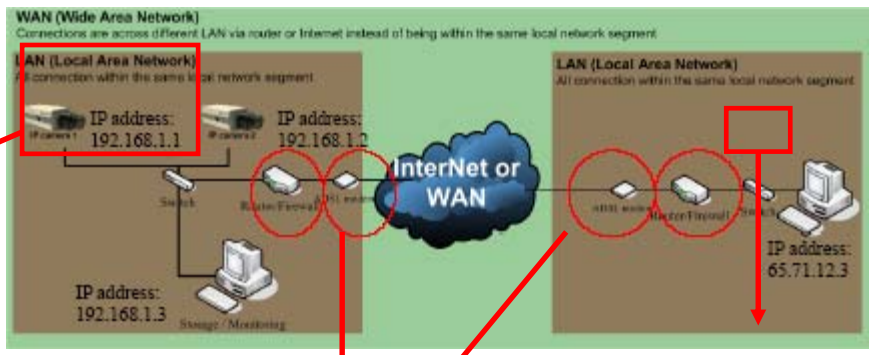
The The bandwidth of internet

Each line's bandwidth can't exceed 100M

2-1-4-3. Device to device connectivity

For computer to connect to a camera at different network segment, the network settings of each device and routers needs to be right otherwise the network is not connected. .

Please refer to TS-00009 at at http://www.acti.com/support/support_package.asp to know more about the network connection cross routers.



Check devices'
22. IP address
23. Subnet setting
24. Gateway

The settings between two routers are subject to different routers

Check devices'
19. IP address
20. Subnet setting
21. Gateway

2-2 Imaging

Imaging

Management

Storage

Monitor

In this chapter we will tell you how to select, install and configure the devices in this block. These devices includes camera, camera accessory (housing, mounting, lenses) video server.

Before we start to select the camera, you will need to know how the customer's site is.

2-2-1. Know customer site

There are two steps to select the camera. Step1: Select by camera type. Step2: Select by camera function. Through these two steps, you can have brief ideas about selecting the IP camera.

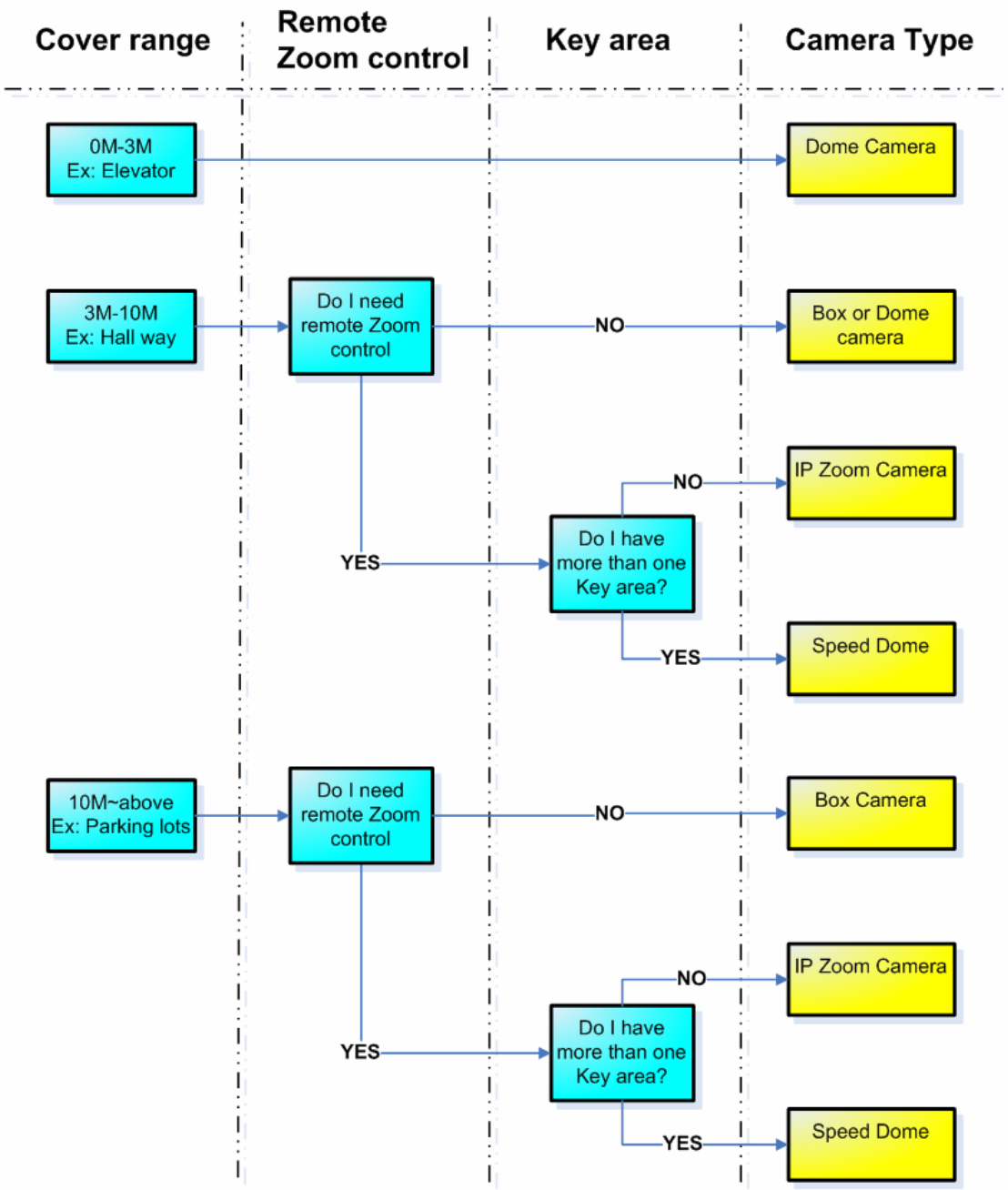
2-2-2. Select the camera

There are two steps to select the camera. Step1: Select by camera type. Step2: Select by camera function. Through these two steps, you can have

brief ideas about selecting the IP camera.

Step1: Select by Camera type

Please follow the flow chart to select your camera type.



Step2: Select by Camera function

After you select the camera type, you have to select the camera model by functions. In this step, we will provides you what functions to compare when looking at product selection guides. Thus, we recommend you to look at his chapter with a selection guide on

hand.

Below is a checklist for you to select each camera.

Item	Spec	Remark
Outdoor / Indoor		
Day/Night function		
Audio		
Vandal Proof		
WDR function		
Zoom capacity		
Rotation Speed		

A. Outdoor / Indoor

If you want to install a camera outdoor, it must have waterproof. The waterproof standard is called IP66.

For cameras integrated into a housing (ex: Dome camera , Speed dome camera, IP zoom camera.), you have to check if its housing complies to IP66 standard.

For cameras not integrated into a housing (ex: Box camera), you have to buy a IP66 compliant housing when installed outdoor.

B. Day/Night function

If your camera is installed at a outdoor, where the light is very bright in the day and the light is very dark in the night, you need cameras with Day/Night function otherwise you can't see clear images at night. There are two types of Day/Night function, one is done via "Mechanical removable IR-Filter" and the other is done via "Digital processing only". Besure to select the camera with 'Mechanical Removable IR-Filter" otherwise the image color will not be true during day time and the focus might shift when switching between day mode and night mode.

C. Audio

If you need to hear to sound from the camera site, you need cameras with audio function.

D. Vandal Proof

If you want to install a camera at a place where it might be damaged, it would be necessary to have vandalproof casing.
For cameras integrated into a housing (ex: Dome camera , Speed dome camera, IP zoom camera.), you have to check if its housing has vandal proof function.
For cameras not integrated into a housing (ex: Box camera), you have to buy a vandal proof housing.

E. <u>WDR function</u>

If you want to install a camera at indoor shooting both indoor and outdoor objects, you might have a problem obtaining clear images of both indoor objects and outdoor objects at the same time. This problem can be solved by

1. Shooting mainly indoor or mainly outdoor objects.
2. Buying a camera with WDR function.

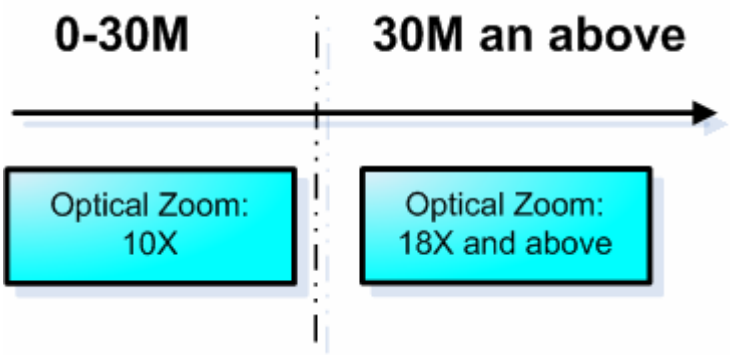
Cameras without WDR function might have darkened indoor images or over brightened outdoor images

Cameras With WDR function

F. <u>Zoom capacity</u> (Zoom camera, Speed dome only)

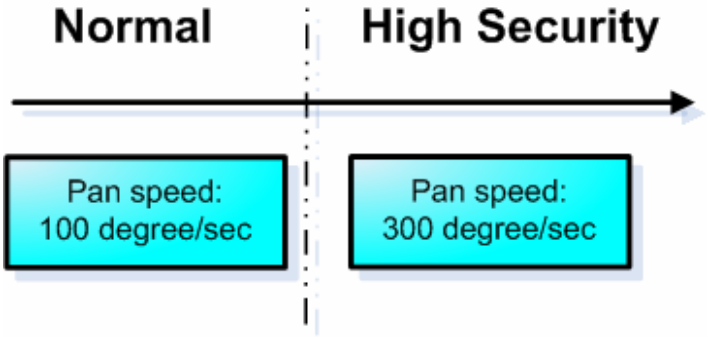
For zoom camera and speed dome camera, the more zoom capacity it has, the more cover range and the more detailed images it can get. There are two types of zoom: Optical and digital. Please select by optical zoom only since digital zoom will decrease the image quality.
To select sufficient zoom ratio, we select by considering cover range first then how detailed the image should be.
Because how detailed the image should be depends on different

viewer, below is a simple reference of how to select by cover range.



G. Rotation Speed (Speed dome only)

Rotation speed directly effect the how fast the speed dome can response to an event. You can select according to the below diagram



H. Image Quality

Image quality is another one thing important but you can't find it in any datasheet or selection guide. It's good for you to try the camera first to see if the image quality meets your standard.

2-2-3. Select camera accessory

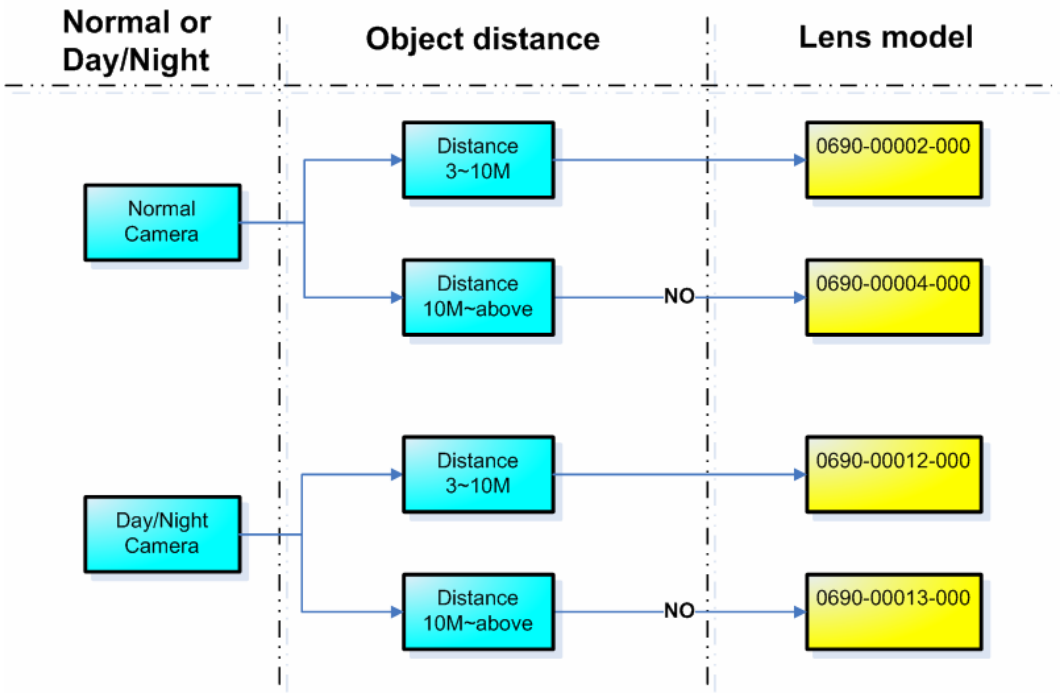
There are several types accessory required for each camera installation including lens, mounting, housing. Please see below for how to select each accessory.

2-1. Select lens (for Box camera only)

This section is for box camera only since dome camera, speed dome camera comes with lens built-in. Lens selection are based 5 specs (C/CS mount, Auto/Manual Iris, focal length, Aperture and IR correct) Please fill in the Lens Key item Table first, then select by below flow

Lens key item table		
Item	Spec	Remark
For Normal camera or Day/Night camera		
Object distance		3~10M 10M and above

Lens selection flow.



A. C/CS Mount

C/CS mount are different specs for lens to be mounted onto a camera. The mount standard of the camera and the lens should be the same , otherwise the focus of the image will fail. Thus, you have to make sure the lens you buy is compatible to your camera.

Note: Most cameras are C and CS compliant at the same time.

B. Auto/Manul Iris

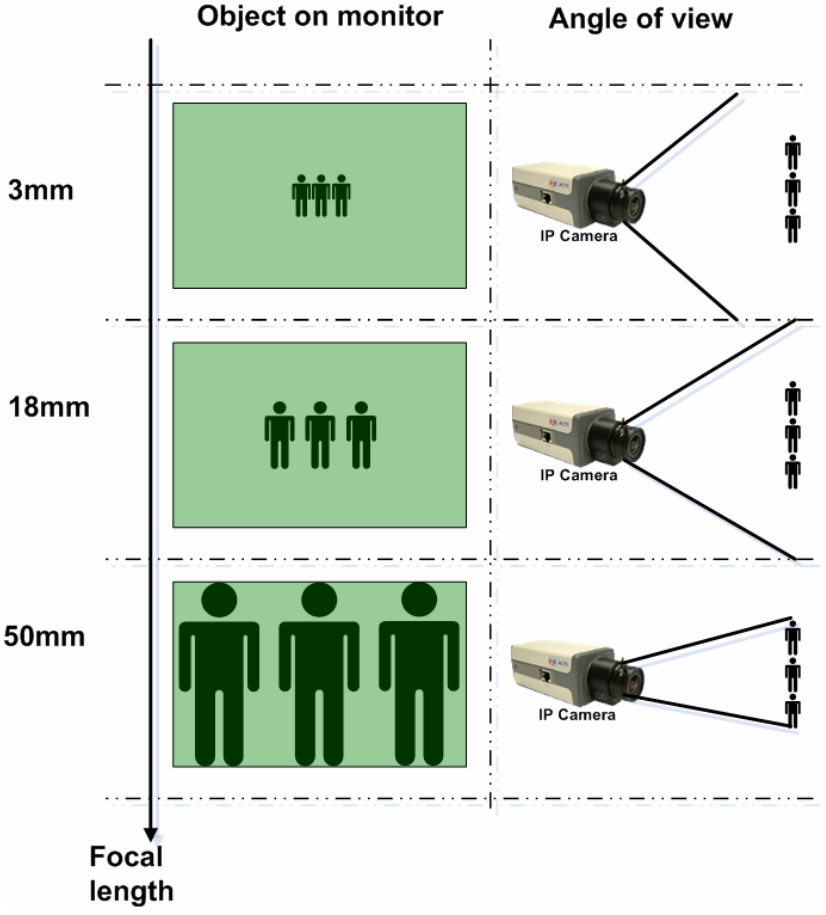
There are two ways (adjusting the iris and adjusting the electric shutter speed) for camera to adjust the incoming lighting strength to get the best image quality without either getting too bright images or getting too dark images. Adjusting the iris is always the better way because there might be some side effect

while changing the electric shutter speed.

The difference between auto iris and manual iris, is that auto iris will adjust itself instantly according to the environment lighting status (controlled by the camera) while manual iris's iris is fixed (normally people won't change the camera setting all the time after installed) thus the camera has to use electric shutter to control the lighting strength. If you have a lens supporting auto iris function, it can make sure your camera performance through out a day. Thus, we strongly recommend you to use auto-iris lens.

C. Focal length

Basically, focus length directly effect the lens' viewing angle and viewing distance and it is always marked as "f" in lens spec. Vari-focal lens have a range of "f" which means it can be adjusted to any "f" within the range onsite. The bigger the f is, the bigger viewing distance will be and the smalled viewing angle will be. Below is a reference for how the different focal length works when shooting at the same people at 10M away.

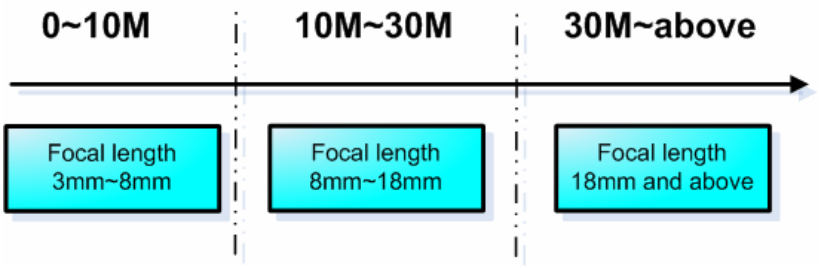


The selection of the focal length is based on two factors,

1. How big the area you wish this camera to cover (angle of view)?
2. How big you with the object to be seen on the monitor?

Sometimes, you can't have two factors satisfied at the same time, then you have to select one factor to be considered first. Thus, we highly recommend you to buy Varfi-focal length, which you can adjust onsite to ensure the best performance.

Regardless the angle of view, below is an selection based clear images to be seen from the monitor at a certain distance.



D. Aperture

This spec is marked as "F" in lens spec. The smaller the aperture is, the more sensitive the lens is (because it allows more lights to pass through). Aperture is subject to Focal length, usually a lens with higher focal length has bigger aperture. Please compare this spec with lenses with the same focal length only.

E. IR correct (Day/Night camera only)

If a camera has a Day/Night function which enables it to switch to B&E during night time, we strong recommend you to use the IR correct lens with it. Because without an IR correct lens, the focus of the camera will shift when switching between day mode or night mode.

2-2. Select mount/housing

This section tells you how to select the right mount or housing for different applications. Below is a mount/housing selection table of all our IP cameras. For analog cameras + video servers, please check the analog camera's spec.

There are 3 key items to select your mount/housing, we make a mounting/Housing key concerns table. You can first finish this table and then select by the selection table.

Mounting/Housing key concerns table		
Item	Spec	Remark
Outdoor / Indoor		Outdoor: With Water proof With Housing Indoor: Without housing
Mount Type		Flush mount (圖片) Solid ceiling mount (圖片) Corner mount(圖片) Wall mount (圖片) Pole mount(圖片)
Temperature (Outdoor only)		Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

Mount/Housing selection Table.

Camera Type	Model number	Status and Accessory	Indoor					Outdoor (0°c to 50°C)			
			Flush ceiling	Solid Ceiling	Corner	Wall	Pole	Solid Ceiling	Corner	Wall	Pole
Box	All Box camera	Status	OK	OK	N/A (Use Wall mount)	OK	N/A	OK	N/A (Use Wall mount)	OK	N/A
		Bracket	GL-202 or GL201	GL-202 or GL201		GL-202 or GL201		GL-210 or GL-205		GL-210 or GL-205	
		Housing	No need	No need		No need		GL-606 or GL-605*		GL-606 or GL-605*	
Zoom lens	CAM-5130 CAM-5140 CAM-5150	Staus	OK	OK	N/A (Use Wall mount)	OK	N/A	OK	N/A (Use Wall mount)	OK	N/A
		Bracket	GL-202 or GL201	GL-202 or GL201		GL-202 or GL201		GL-210 or GL-205		GL-210 or GL-205	
		Housing	No need	No need		No need		No need		No need	
Dome camera	CAM-7100	Status	OK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Bracket	No need								
		Housing	No need								
IP speed dome	CAM-6100	Status	OK	N/A	N/A (Outdoor solution)	N/A (Outdoor solution)	N/A (Outdoor solution)	OK	OK	OK	OK
		Bracket	No need								
		Housing	No need								
	CAM-6200	Status	OK	N/A	N/A (Outdoor solution)	N/A (Outdoor solution)	N/A (Outdoor solution)	OK	OK	OK	OK
		Bracket	No need								
		Housing	No need								
	CAM-6300	Status	OK	OK	OK	OK	OK	N/A	N/A	N/A	N/A
		Bracket	No need								
		Housing	No need	No need	No need	No need	No need				
	CAM-6400	Status	OK	OK	OK	OK	OK	OK	OK	OK	OK
		Bracket									
		Housing	No need	No need	No need	No need	No need	No need	No need	No need	No need
	CAM-6500	Status	OK	OK	OK	OK	OK	N/A	N/A	N/A	N/A
		Bracket	No need								
		Housing	No need	No need	No need	No need	No need				
	CAM-6600	Status	OK	OK	OK	OK	OK	OK	OK	OK	OK
		Bracket									
		Housing	No need	No need	No need	No need	No need	No need	No need	No need	No need

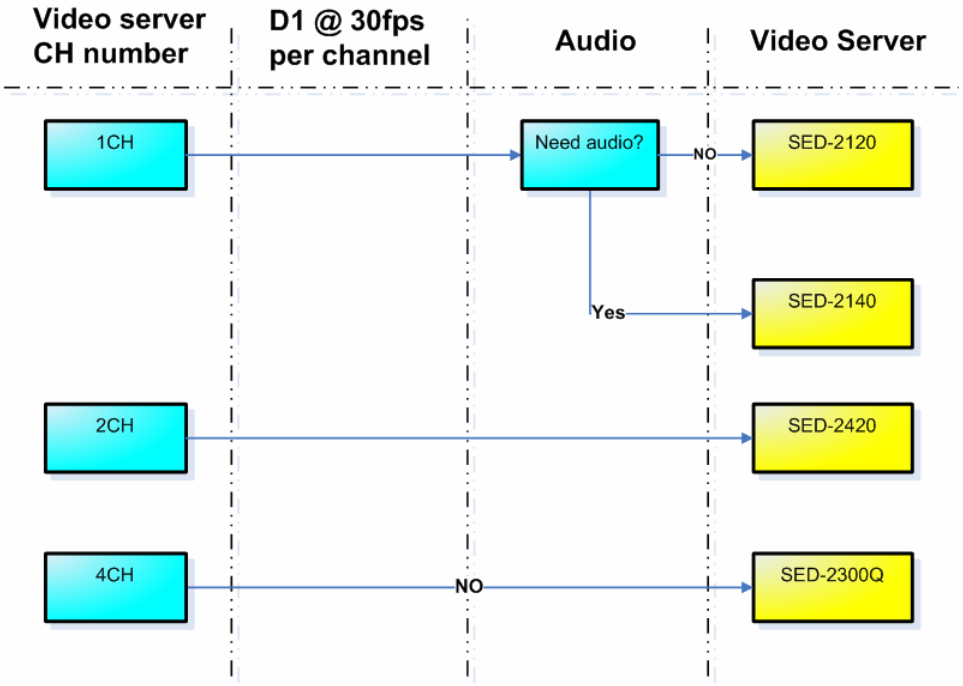
Camera Type	Model number	Status and Accessory	Outdoor extended Temperatue (-20°C~+70°C)			
			Solid Ceiling	Corner	Wall	Pole
Box	All Box camera	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
Zoom lens	CAM-5130 CAM-5140 CAM-5150	Staus	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
Dome camera	CAM-7100	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
IP speed dome	CAM-6100	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
	CAM-6200	Status	OK	OK	OK	OK
		Bracket				
		Housing				
	CAM-6300	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
	CAM-6400	Status	OK	OK	OK	OK
		Bracket				
		Housing	No need	No need	No need	No need
	CAM-6500	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
	CAM-6600	Status	OK	OK	OK	OK
		Bracket				
		Housing	No need	No need	No need	No need

*	You need to add option for heater & blower if your places is too cold or the
	This mount is available
	This mount is not available, but you can use other mount as a backup solution
	This mount is not available

2-2-4. Select video server

In normal case, we recommend you to buy IP camera instead of video server + analog camera.

If you want to connect the video server to your exisiting analog camera, ACTi provides many video servers for different applications. Below is a select diagram for you to choose.



2-2-5. Connections

4-1. Power

A. Connect to the respective device according to the specification specified on the hardware manual.

4-2. Ethernet Cable

B. Please always connect the Ethernet cable to WAN port.

4-3. Lens

C. Be sure to connect the Iris control cable to the Iris port

4-4. DI/DO

D. Options, if you have any sensors to connect, please make sure
- The voltage spec is correct (see hardware manual)
- The connection type is correct (we are using TTL)

4-5. Serial Connection

E. This section is for box camera (when connected to a RS-485 P/T bracket) and video server(when connected to a speed dome or a box camera with a P/T bracket). only, no need for dome camera, speed dome.

2-2-6. Camera configuration

The camera configuration includes two parts, analog imaging configuration and the web-configurator setting. Appropriate settings are required for both parts to ensure the camera performance.

Below are some key items to configure and how to configure.

5-1. Analog imaging configuration

The configuration of the analog imaging are done by either switching the DIP-Switch at the camera side panel or by entering the camera's OSD menu and setup. You can refer to camera's hardware manual for more information about switching the settings.

NOTE: You have to login the IP camera to view the image first, and adjust according to video displayed.

A. Auto Iris / Electric shutter (Box camera only)

Be sure to switch to Auto Iris when using a box camera with an auto iris lens. Otherwise, the image will be completedly dark.

B. DC level

Switch this level to micro adjust the video overall brightness. There's no rule to adjust this setting, just adjust it when there's a brightness issue.

C. BLC (Backlight Compensation)

Backlight compensation is to solve the backlighting problem. This problem happens often when at a scene containing objects with high lighting difference. (ex: shooting from indoor to outdoor, the lighting difference between indoor objects and outdoor objects is huge.)

Whether to enable this function or not is subject to each case. You have to adjust on-site and decide by on-site performance. That's because sometimes you might get worse images after you turn the BLC on.

D. WDR (Wide Dynamic Range)

Wide Dynamic Range works the same as BLC. But it has relatively strong functionality against backlighting problem. You can try to turn it on when you have such kind of problem.

E. Flickerless (Mostly for Japan only)

For special area where the TV standard frequency is different then the AC power frequency. Example: In some Japan area, the TV standard is NTSC (frequency: 60times /sec) but local power frequency is 50times /sec.

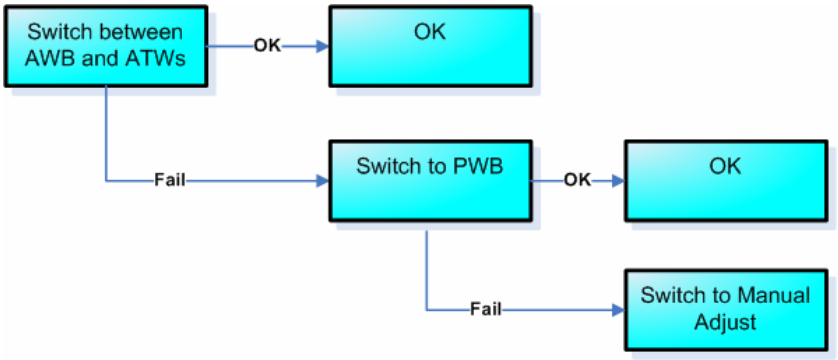
Only in such kind of cases, you will need to turn the Flickerless on.

F. White Balance (Color rendering)

White balance settings directly effect whether the color rendering is true or not. There are 4 types of white balance setting and each camera might not have them all. Please see below for how each setting means and how to adjust.

AWB (Auto White Balance)
ATW (Auto Trace White Balance)
PWB (Push White Balance)
Manually Adjust (Manually set Red and Blue parameters)

There's no need to change the setting if the color rendering is bad. Whenever theirs is a problem, please go through the setting below.



G. PTZ setting (for Zoom camera and speed dome only)

Zoom camera and PTZ camera can be remote controlled by

software. To do so, the PTZ setting of the camera must be exactly the same with the software or the control panel that controls it.

There are 5 PTZ settings, first two are for manually

G-1. Protocol

G-2. Baud rate

G-3. Parity (You have to get from your manufacturer)

G-4. Byte Length (always 8)

G-5. Stop bit (always 1)

Please refer to the monitor and management part for respective software setting. The overall settings will be described then.

F. Focus speed (For speed dome only)

PTZ camera always move from one prest to another preset. There's no need to adjust this parameter unless you have these problems

Problem1: Speed dome camera can't get clear image very fast when moving to a preset

Problem2: The moving items in the scene causes the focus to shift and result in unclear images

If you have problem1, please increase the focus sensitivity. If you have problem2, please decrease the focus sensitivity.

5-2. Web-configurator setting

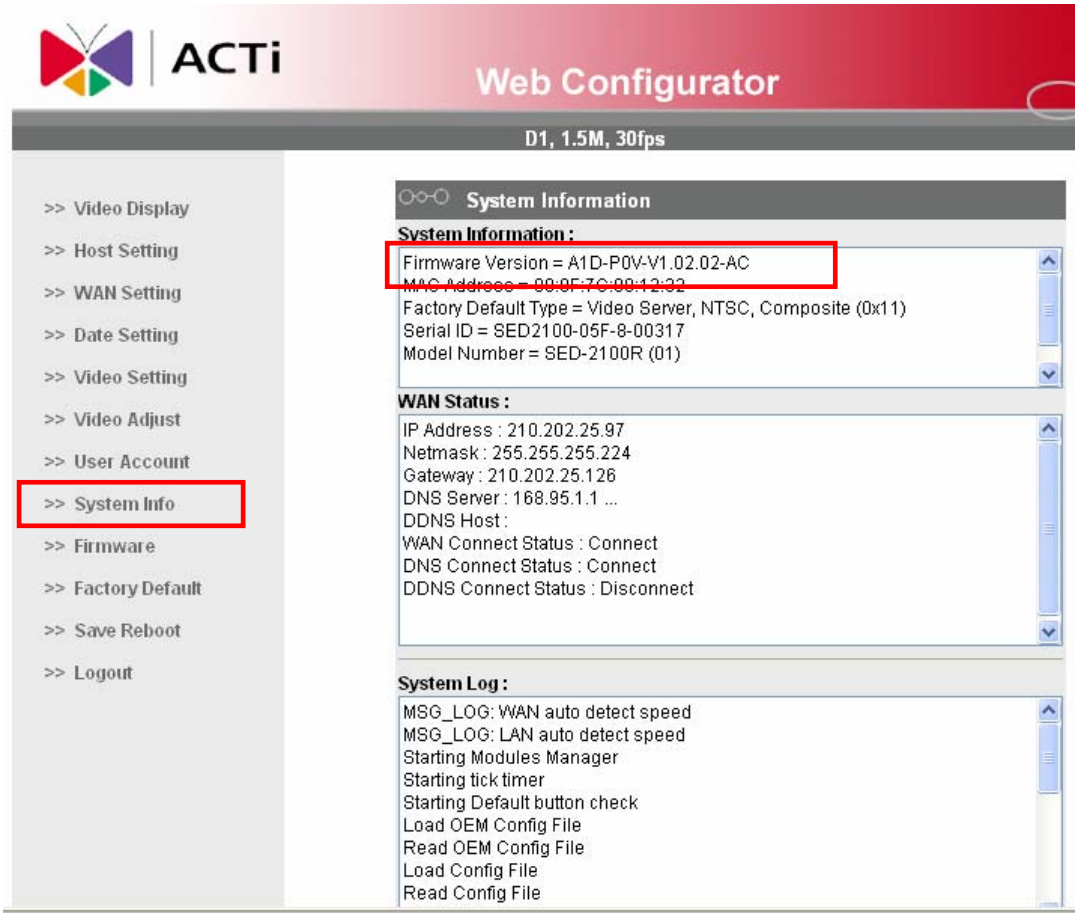
These settings are done via Web-configurator. To do so, you have to connect to the IP camera / Video server first. (please refer to hardware manual).

Below are some key items to configure in each sub-cateogry on the web-configurator.

NOTE: Some settings take effects only after you "Save and Reboot" the camera, you can always refer to the support package TS-00104 at http://www.acti.com/support/support_package.asp?

A. System information

Please go to the system information page to check out the firmware version.



We strongly recommend you to either

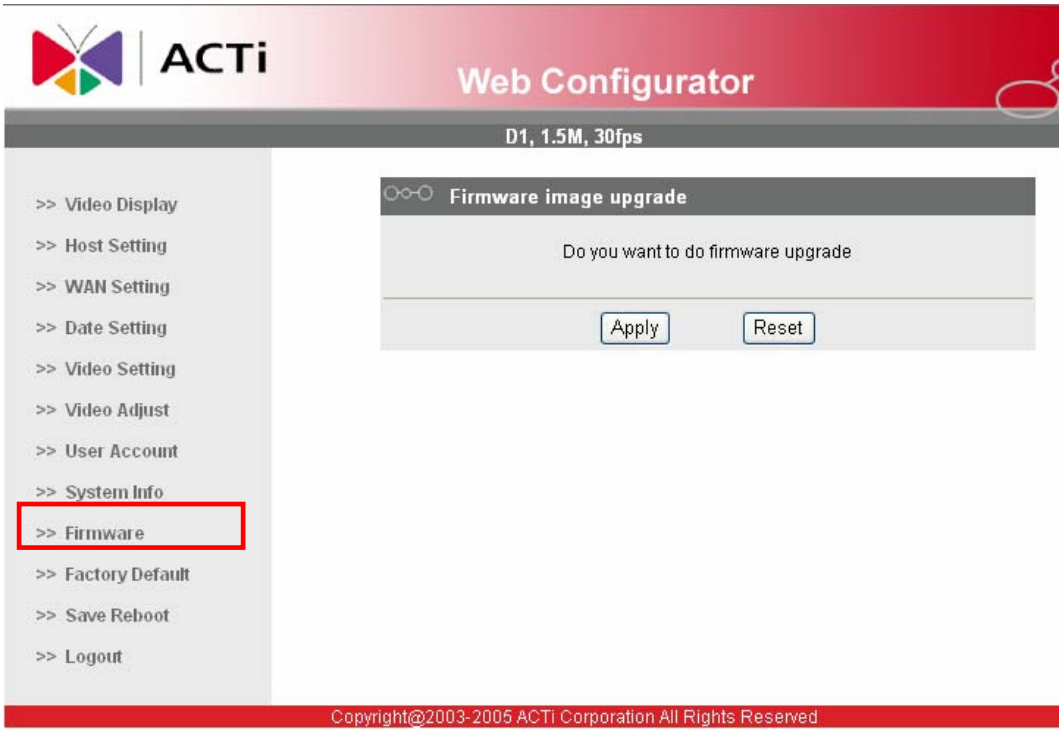
A-1. Use the stable firmware that you have used before

A-2. Use the newest firmware available on our website (http://www.acti.com)

Many problems are caused by inappropriate firmware version. Always check the firmware version before you start.

B. Firmware Upgrade

If the find the firmware version not right (either not the newest or not a stable one you used before), please follow the hardware manual to upgrade.



C. Host Setting

C-1. Language

-Select the language of your choice. This will be the default web-configurator UI next time you login. (default is English)

C-2. LAN port setting

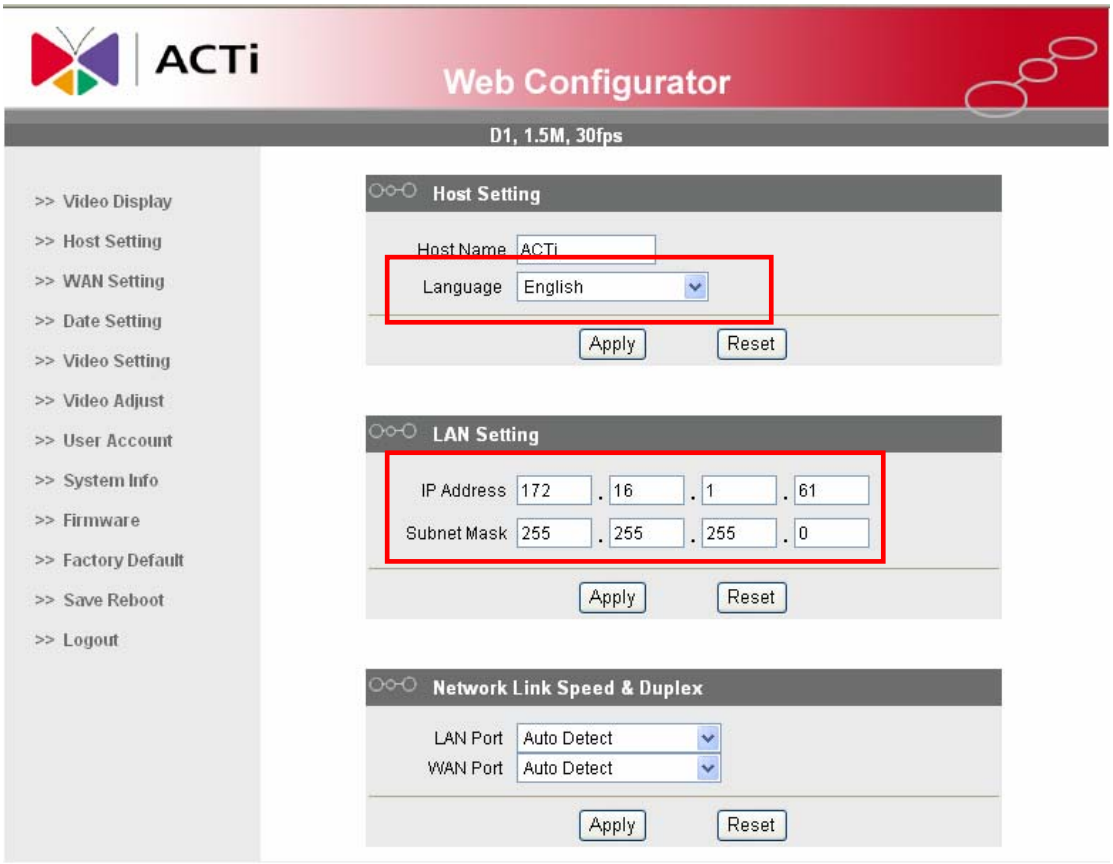
There are several items to check when setting the LAN port.

C-2-1. Make sure the IP address is not in the same network segment with the IP address set in the WAN setting. (Example: if WAN port IP address is 10.0.0.1, the LAN port IP address can't be 10.0.0.2)

C-2-2. If you connect this device to network via LAN port, please make sure the LAN port IP address is in the same network segment with the network it connected to. (Example: if you are connecting to a network 192.168.1.xxx via LAN port, your LAN port IP address be 192.168.1.xxx, where xxx can be any number from 1~255)

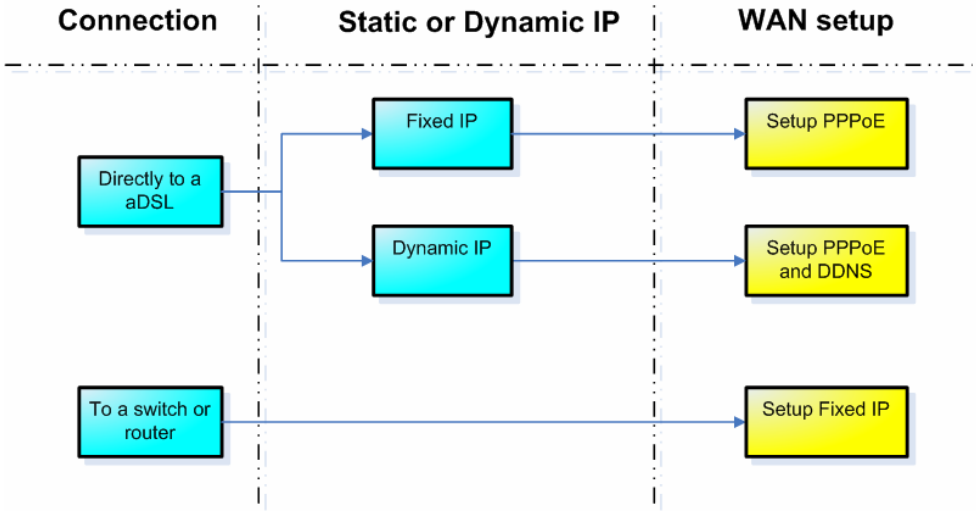
C-2-2. Always set the subnet to be 255.255.255.0 if you are not sure about it.

.

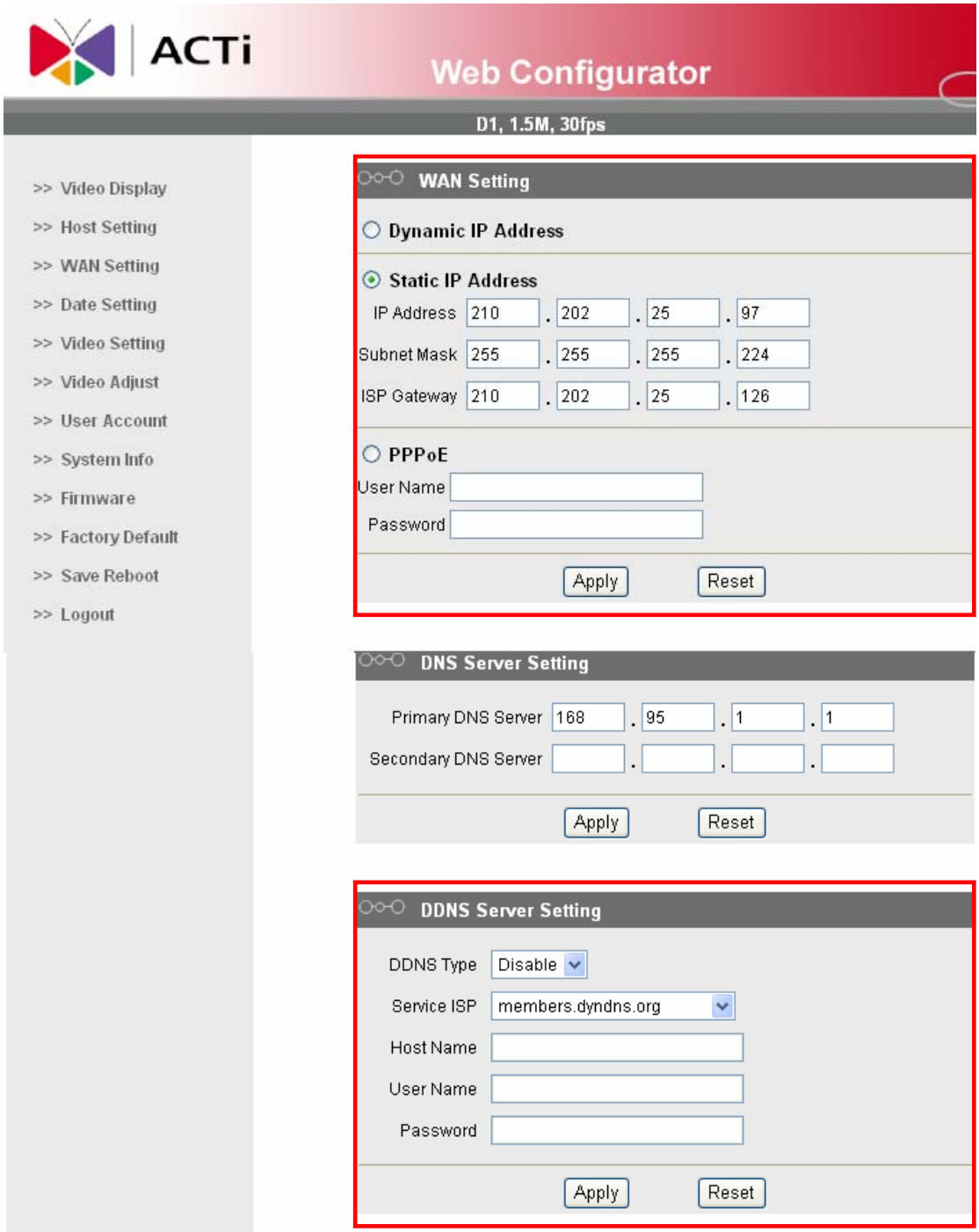


D. <u>WAN Setting</u>

Please refer to the flow below to know what to set.



Then set each item as below



D-1. Dynamic IP address

-Normally, we won't suggest customer to use Dynamic IP address.

D-2.Static IP address

-Set the IP address according to your network design. If you are not sure, please go back to chapter 2-1 for more details.

D-3. PPPoE

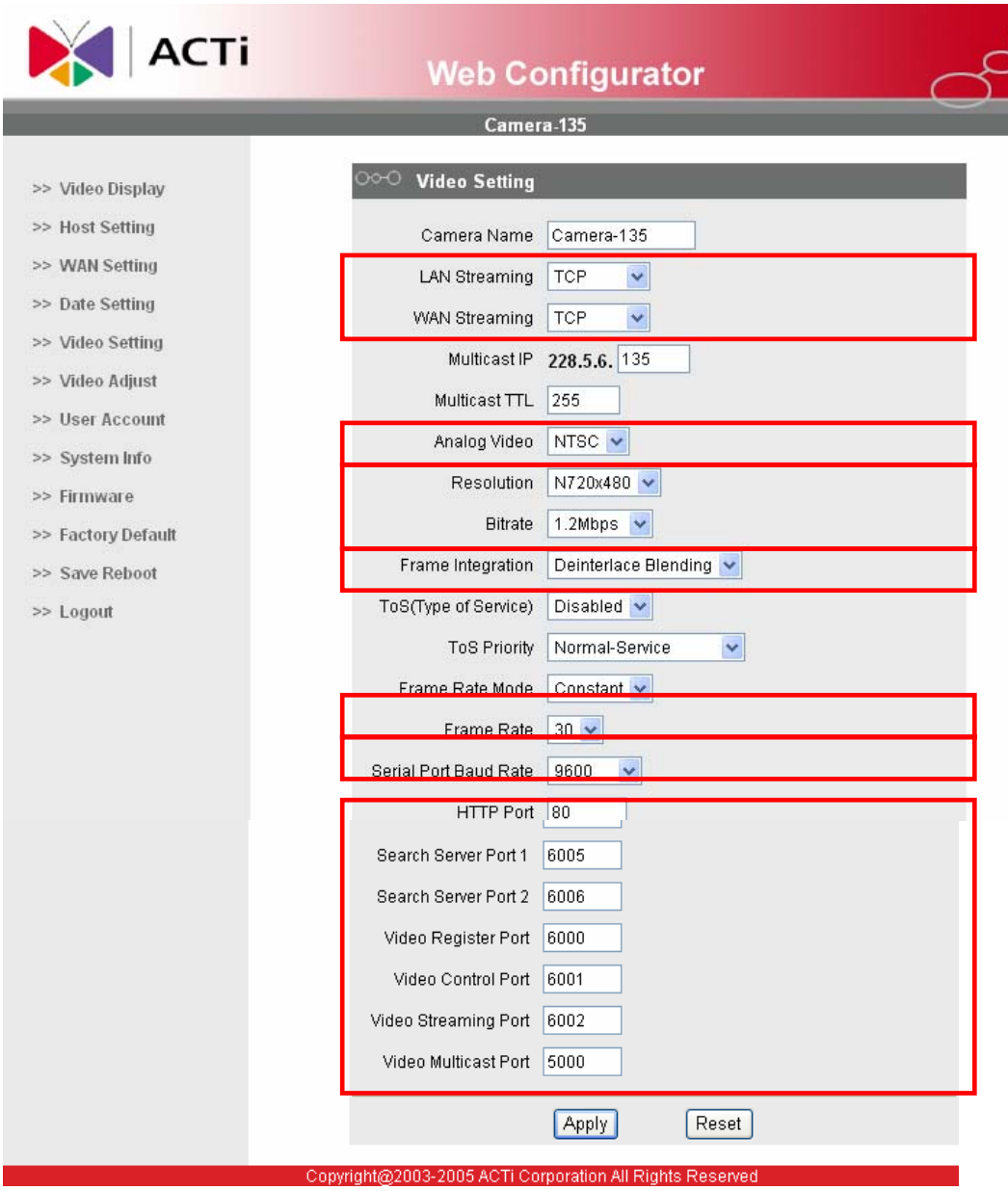
-Set to PPPoE only when the IP camera is connected directly to an aDSL modem. Just click to enable the PPPoE and and input the User Name and password of the internet service you bought from your ISP.

D-4. DDNS

-When we use PPPoE to connect to the internet, most of the time the device IP address is not static but dynamic. When using dynamic IP address, we recommend you to use DDNS function which enables you to input domanin name" actifrontdoor.dyndns.com" to connect to a camera instead of "IP address"
For how to apply and setup DDNS, please refer to support packge TS-00007 at
http://www.acti.com/support/support_package.asp?

E. Video Setting

Please refer to the flow below to know what to set.



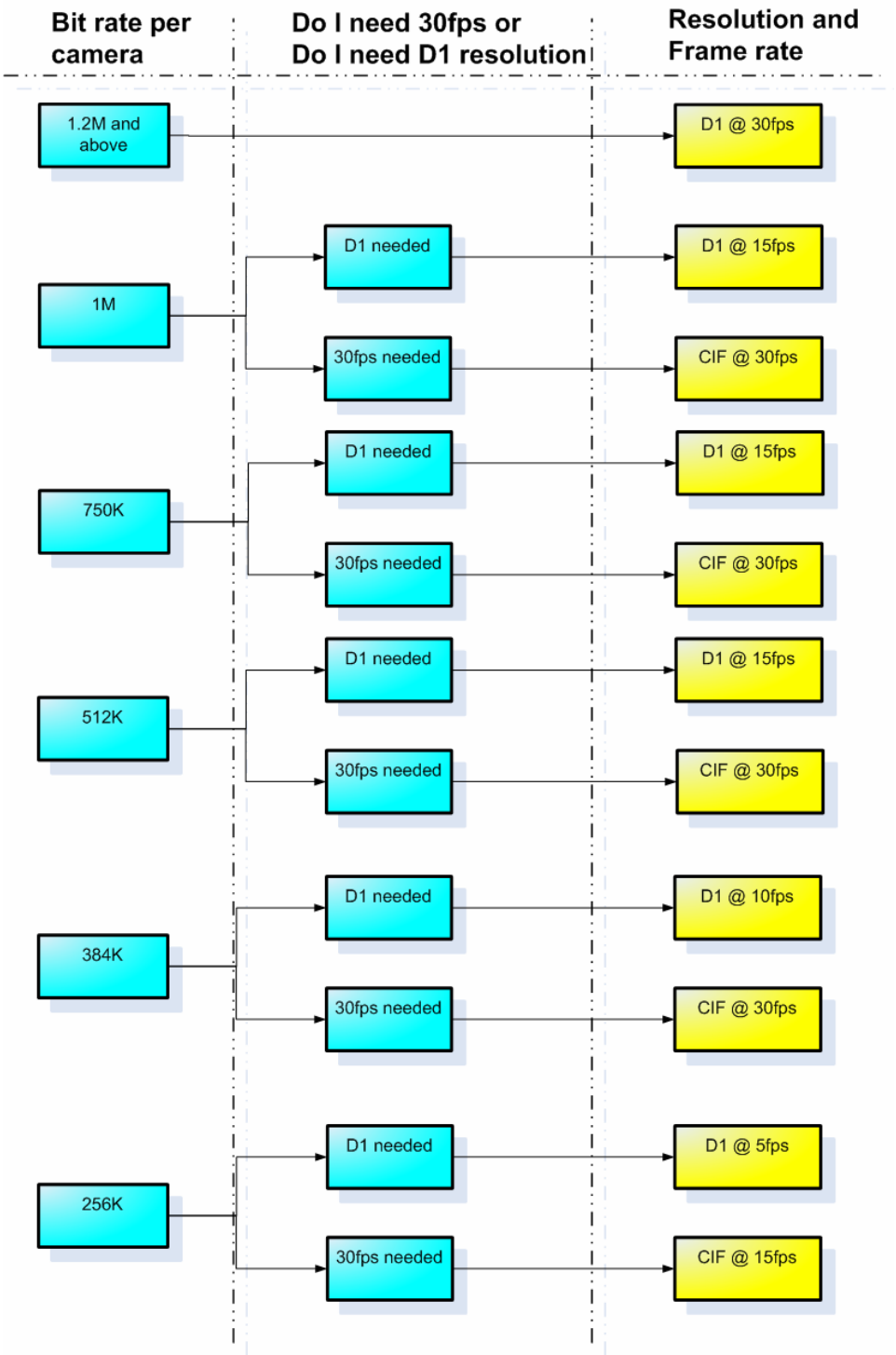
E-1. Streaming Type

This section is to set whether you use TCP/IP or Multicast to stream to video for LAN port or WAN port. We recommend you to use TCP/IP as your streaming type since the multicast might cause the network to fail without appropriate network setting (which requires some IT background).

E-2.Resolution & Bit rate & Frame rate

These three items are dependent to each other. Higher bit rate means better image quality but you can also lower

the frame rate to get good image quality in low big rate. Please refer to the description below for each setting, then refer to the flow to select the right bit rate, resolution combination for each bit rate.



-Bit rate: This seting is to select the size of the streaming transferred by this device. It directly effect the network bandwidth, storage size and the image quality (together

with resolution and frame rate). Thus, we always set our bit rate according to the bandwidth and the storage size first, then we adjust the resolution and the frame rate for the video quality.

-Resolution: This is to select how big your image is. The bigger the image is, the better resolution it can provide.

NTSC	PAL
Resolution	Resolution
D1 (720x480)	D1 (720x576)
CIF (360x240)	CIF (360x288)
QCIF (180x120)	QCIF (180x144)

-Frame rate: This setting directly effect how many frame rates you can get per second. Normally, we would recommend you to use 30fps because it won't miss a thing. But if you might eed to lower the frame rate if your bit rate is not enough for 30fps.

E-3. Frame integration

- This setting is for the interlacing problem which happens when shooting an high speed moving object. Below is a picture indicating the interlacing problem.

Interlacing problem

We strongly recommend you to use the "Deinterlace-Blending" if your are not sure what to use. If you are shooting a place where images are all moving very fast, you confront servious interlancing problem, then you can try to change it into "Deinterlace Motion".

NOTE: Deinterlace-blending deliver better images of static items while deinterlace-motion sacrifice some resolution to compensate for the motion.

E-4. Serial port baud rate

-This setting is important during the PTZ setting. Please refer to the table below for how to set it.

Application	How to set Serial baud baud rate:
Video Server + PTZ camera	This baud rate should be the same with the PTZ camera's baud rate rate setting
IP camera	No use
IP dome camera	No use
IP speed dome	This baud rate should be the same with the IP speed dome camera's

	hardware baud rate rate setting.
IP zoom camera	This baud rate should be the same with the IP zoom camera's hardware baud rate rate setting.

E-5. Network port setting

-This section lets you set the network port for the network connection. This setting is important otherwise the system will fail (no images, PTZ don't work or..). Please refer to support packge TS-00009 for how to set up http://www.acti.com/support/support_package.asp

F. Video Adjust

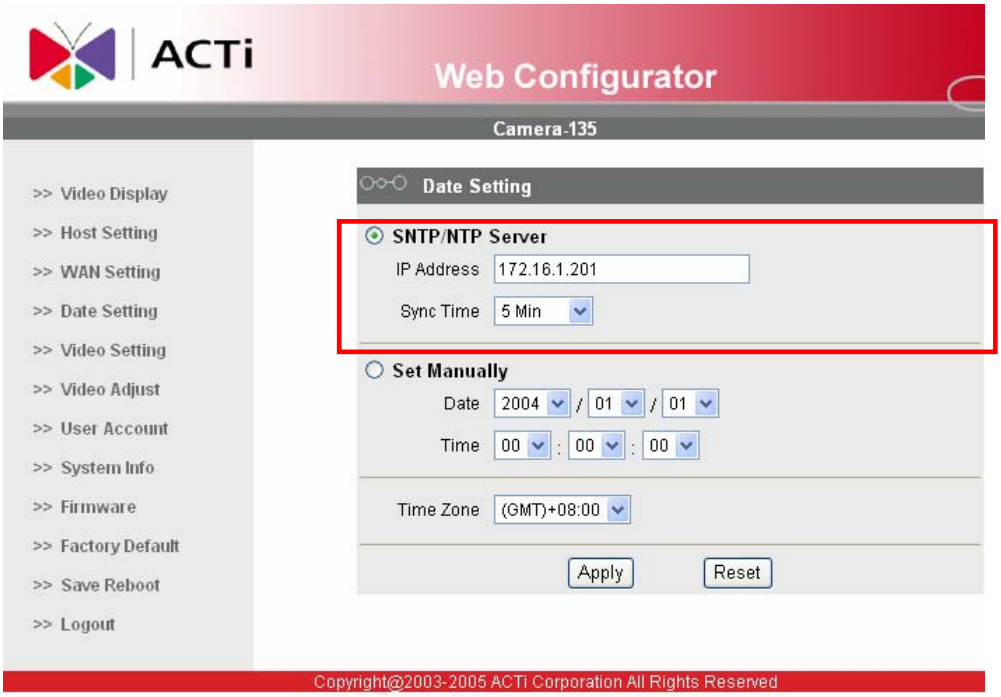
PTZ camera always move from one prest to another preset. There's no need to adjust this parameter unless you have these problems

NTSC		PAL	
Hue	**50**	**Hue**	**50**
Brightness	**55**	**Brightness**	**55**
Saturation	**85**	**Saturation**	**85**
Contrast	**55**	**Contrast**	**55**

G. Date Setting

This sections lets you know how to the set the time of the IP camera. Since the IP camera embeds the timecode within the streaming, it is important to set the time of the IP camera right. We recommend you to use SNTP/NTP because it can make sure all the IP camera are synchronized to the same time.
Please refer to support packge TS-00006 for how to set up
http://www.acti.com/support/support_package.asp
The synchronize time means the time interval for the IP camera to sync time with the SNTP/NTP server, we recommend you to set as 5mins in normal conditions.

If you are not sure about the SNTP / NTP, please select "Set Manually" and manually input the time.


ACTi
Web Configurator
Camera-135
>> Video Display
>> Host Setting
>> WAN Setting
>> Date Setting
>> Video Setting
>> Video Adjust
>> User Account
>> System Info
>> Firmware
>> Factory Default
>> Save Reboot
>> Logout
Date Setting
SNTP/NTP Server
IP Address 172.16.1.201
Sync Time 5 Min
Set Manually
Date 2004 / 01 / 01
Time 00 : 00 : 00
Time Zone (GMT)+08:00
Apply
Reset
Copyright@2003-2005 ACTi Corporation All Rights Reserved

2-3 Monitoring

In this block, any PC with network connectivity to this network, can view 1CH live images via Internet Explorer. Please go to through the steps below to build-up.

Step1. Check PC Spec

The PC spec should be

CPU	Intel Pentium-4 1.4G or above (FSB 400 and above)
RAM	≥256MB RAM
Motherboard	865 chip set or above
LAN Card	10/100 Mbps (Intel Chip Set)
OS	Windows XP SP2 Windows 2000 with SP4 or above

Browser	Internet Explorer 6.0 or above
Video Resolution	SVGA or XGA with 1024x768 resolution, 32-bit color

Step2. Network connection

Connect the PC to the network. Please follow the network architecture we come out at chapter 2-1 and refer to support packge TS-00009 for how to set up the PC connection.

http://www.acti.com/support/support_package.asp

Step3. Install software

There no need to setup anything. All we need is to make sure the Internet Explorer version is 6.0 or above.

Step4. Software and configuration

There no need to setup anything. All we need is to make sure the Internet Explorer version is 6.0 or above.

Step5. Operation

5-1. Open an Internet Explorer

5-2. Enter the network address of the Explorer

There two types of network address, one is IP address and the other is domain name.

IP address: 202.218.199.19 : HTTP port (according to the network architecture)

Domanin name: actidoor.dyndns.com

5-1. Enter the accound name and password

5-4. Click "Preview" to view the live images.

2-4 Management

In this block, a PC with network connectivity to this network, can view 16CH live images via Streaming Activator and record these images. You can search and playback these images later. This section is based on Streaming Activator 1.36.04.04.

Step1. Check PC Spec

The PC spec should be

CPU	Intel Pentium-4 3.0G or above (FSB 800)
RAM	≥1 GB DDR2-533 Memory
Motherboard	915 chip set or above
VGA Display Card	ATI PCI-Express Card (128MB on board, ATI MX300 GPU)
LAN Card	10/100 Mbps (Intel Chip Set)
OS	Windows XP SP2 Windows 2000 with SP4 or above
IDE HDD	Seagate 40 GB 7200 RPM

CD-ROM	32X
Required Utilities	FFDShow, DirectX 9.0b or later hardware acceleration
Video Resolution	SVGA or XGA with 1024x768 resolution, 32-bit color

Step2. Network connection

Connect the PC to the network. Please follow the network architecture we come out at chapter 2-1 and refer to support packge TS-00009 for how to set up the PC connection. http://www.acti.com/support/support_package.asp

Step3. Install software

3-1. Check Streaming Activator version

We strongly recommend you to use the latest Streaming Activator on the website or use a version which you used and find it reliable. This is to make sure the software to be stabile. You can always go to www.acti.com for newest software version.

3-2. Install Streaming Activator

Double click the “Streaming Activator” program on the CD bundled and follow the instruction to install. (for details, please refer to the hardware manual)

3-3. Install Utilities

Double click the “Direct X 9.0C” program on the CD bundled and follow the instruction to install. (for details, please refer to the hardware manual)

Step4. Software and configuration

Please follow the procedure below to Setup functions for streaming Activator to view and record 4 CH camera at the same time.
For detailed description please refer to the software manual.

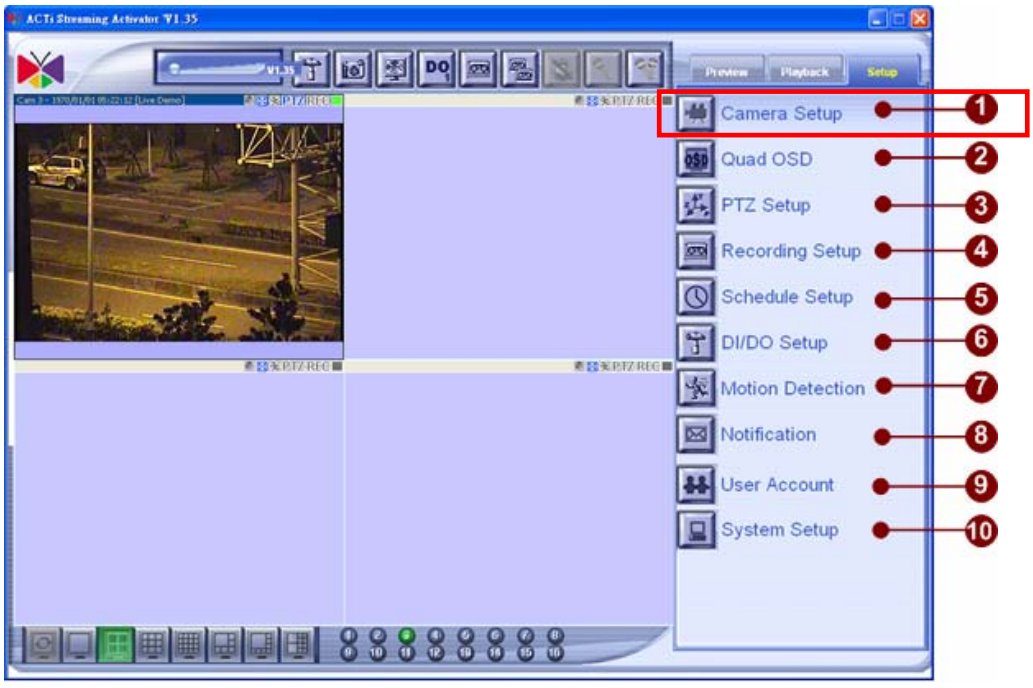
4-1. Start Streaming Activator

4-2. Click the Setup Icon

To setup the parameters in Streaming Activator, click on the Setup tab.

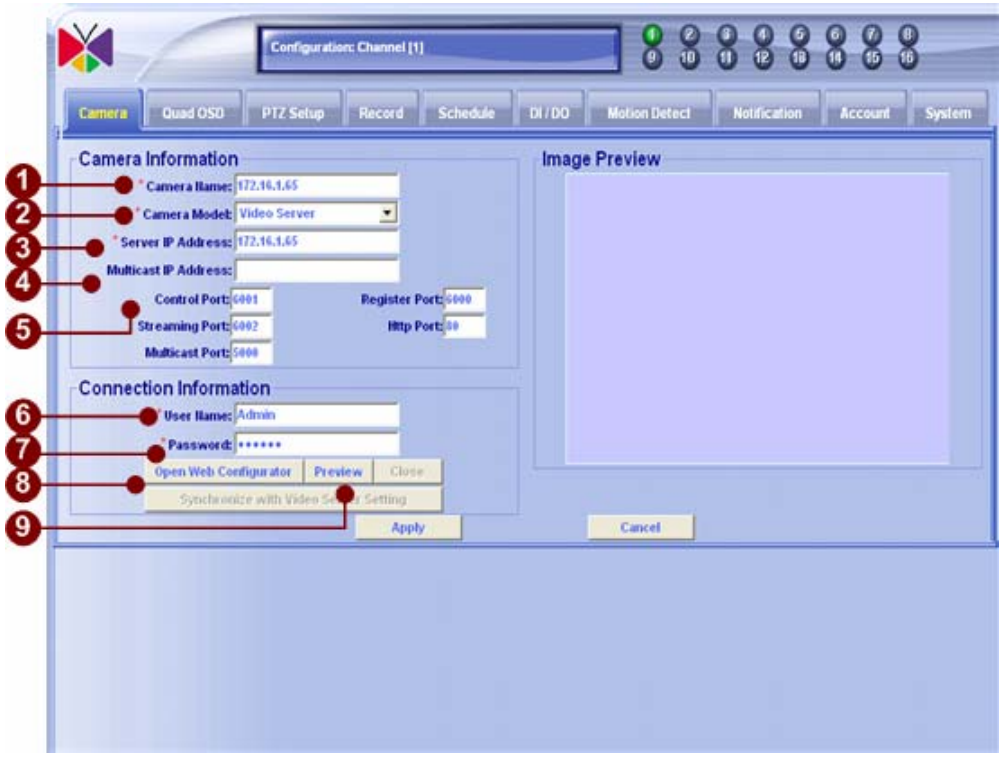
4-3. Click the Camear Setup

To setup the parameters in Streaming Activator, click on the Setup tab.



4-4. Enter Camera information for each channel

Please follow the network architecture at Chapter 2-1 to fill in the network setup below.



4-4-1. **Camera Name***: Input a camera name or description for the camera.

NOTE: The camera name will be displayed on top of the preview media window.

4-4-2. **Camera Model***: Choose the camera model within a selection list; including:

- **Video Server: SED-2100R**
- **Video Server(2-way Audio): SED-2400**
- **IP Camera: CAM-5100**
- **IP Camera(2-way Audio): CAM-5200**
- **IP Speed Dome: CAM-6100, CAM-5130**
- **IP Quad: SED-2300Q**

4-4-3. **Server IP Address***: Connect to the video server with unicast (TCP) connection

NOTE: You may enter host name address in this field as well. Make sure the host name can be resolved by DNS (Domain Name Server) in your network environment. This operation can also be verified by using ping command:

```
C:\>ping hostname.acti.com
```

t

icast IP Address: Subscribe to a multicast network to retrieve video

packets.

NOTE: If Multicast IP address is entered without Server IP address, then the preview window can only perform preview function.

If Multicast IP address and Server IP address are keyed in, then the preview window can perform preview and Digital I/O and PTZ operations. The limit of concurrent connections is 15.

4-4-2. **Port Setup** : the port number to be authorized by the video server

4-4-3. **User Name**: the account to be authorized by the video server

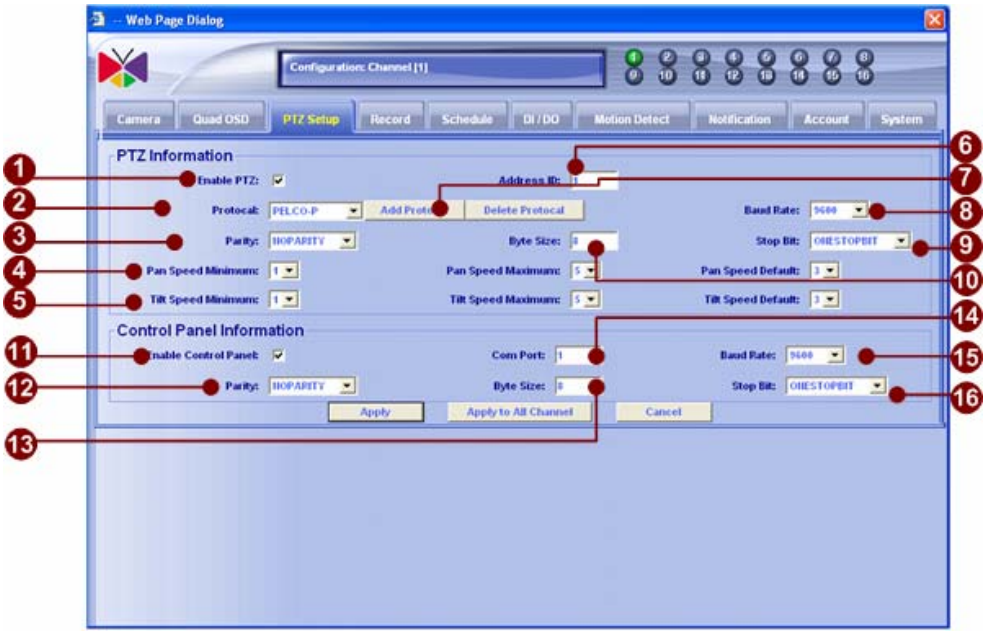
4-4-4. **Password**: the password to be authorized by the video server

4-4-5. **Open Web Configurator** button: click this button to open video server's Web Configurator directly

4-4-6. **Preview** button: click this button to see the preview window and adjust frame rate and video quality.

4-5. Setup PTZ setting

This PTZ setting is based on using the Streaming Activator to control the PTZ setting. If you want to use a control panel connected to a Streaming Activator, please refer to the software manual for more information.



Activator PTZ setup

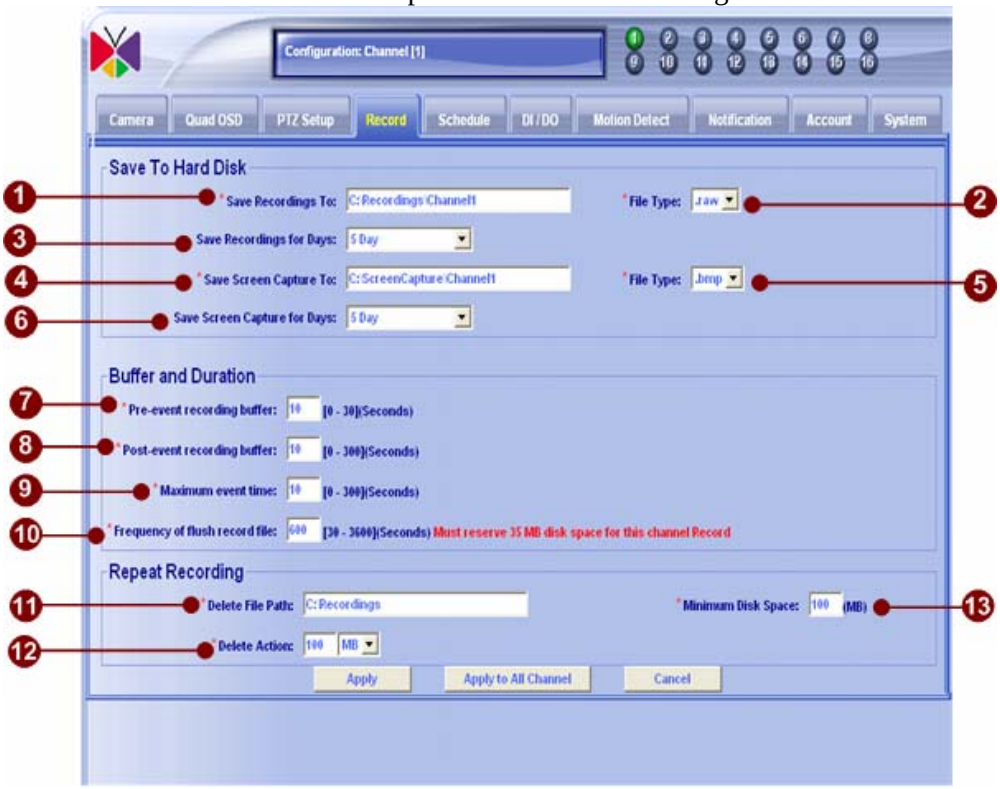
1. **Enable PTZ**: Click to enable or disable the PTZ control function on this camera.
2. **Protocol**: Supported PTZ protocols are **`Pelco-P(type1)`**, **`Pelco-P(type2)`**, **`Pelco-P(CAM-6100)`**, **`Pelco-P(CAM-6200)`**,

Pelco-P(CAM-6300), Pelco-P(CAM-6400), ,**Pelco-D, Pelco-D(CAM-6100), Pelco-D(CAM-6200), Pelco-D(CAM-6300), Pelco-D(CAM-6400), Videotrec, Samsung, Eyeview VCL, Eyeview** and **Dynacolor** .

3. **Parity**: Select the parity type of your PTZ device command. Please refer to your PTZ device manual. Normally it should be Noneparity.
4. **Pan Operation Settings:** Select your maximum, minimum and default pan speed. The speed varies from 1 (minimum) ~5(maximum).
5. **Tilt Operation Settings** Select your maximum, minimum and default tilt speed. The speed varies from 1 (minimum) ~5(maximum).
6. **Address ID**: Setup Speed Dome Address ID. The Address ID just supports 001.
7. **Add / Delete Protocol**: Supports Customer's defined PTZ Protocol.
8. **Baud Rate**: Select the baud rate of your PTZ device command. Please refer to your PTZ device manual.
9. **Stop pit** : Select the Stop bit of your PTZ device command. Please refer to your PTZ device manual. Normally it should be 1.
10. **Byte length**: Select the Byte length of your PTZ device command. Please refer to your PTZ device manual. Normally it should be 8.

4-6. Recording Setup

This section describes the setup in relation with recording.



F

Figure 1. Recording Setup Dialog Box

1. **Save Recordings To**: The directory to save the recorded files.

NOTE: If you choose "Apply to All Channel", all the recording files will be saved in the same directory.

NOTE: The directory can be a local hard-disk, RAID storage, NAS storage or mounted storage linked with NetBEUI. Following command is a sample to link a virtual drive with NetBEUI.

```
C:\>net use G: \\nas-server\D$\Recording
```

2. **File Type**: Supported file type are **raw** now.

NOTE: The content of the AVI format is standard MPEG4 raw data. In order to view this AVI file, on the local machine, user has to install FFDSHOW (MPEG4 Codec for DirectX platform) which can be downloaded from ACTi web site (www.acti.com) or retrieved from the bundled CD.

3. **Save Recordings for Days**: The recorded files will be removed after the number of days specified in this field. If this field is left as blank, then

the recorded files will not be removed.

4. **Save Screen Capture To:** The directory to save the screen capture image files. Refer to **`Save Recordings To`** notice for advanced configuration.
5. **File Type:** Specifies the image file type for the screen capture file; supported format is **`BMP`**.
6. **Save Screen Capture for Days**: The saved screen capture image files will be removed after the number of days specified in this field. If this field is left as blank, then the saved files will not be removed.
7. **Pre-event recording buffer (seconds):** Specifies a buffer (seconds) to retain before a certain event occurs.

NOTE: This value works with motion detection event, digital in event.

8. **Post-event recording buffer (seconds):** Specifies a buffer (seconds) to retain after a certain event occurs.
9. **Maximum event time (seconds):** This value specifies that within a certain period of time, all events generated will be ignored.

NOTE: For example, if an event occurs repeatedly in a short period of time, this value is to prevent the system from recording a new event file every second.

10. **Frequency of flush record file (seconds):** This value specifies that a new file will be generated after the amount of time specified in this field.
11. **Delete File Path:** Delete File Path is the path that Activator will start to delete files

NOTE: All sub-directories under this directory will be enlisted, and older files will be deleted.

12. **Minimum Disk Space:** the minimum disk space to be kept in the hard disk.
13. **Delete Action:** when the Minimum Disk Space is reached, it will delete an amount (size) of previously saved files according to your selection here.

NOTE: Repeat Recording works with Manual Record Mode, Background Record Mode and Schedule Recording.

4-6. Recording Schedule setup

This section describes how to setup recording by schedule.

Figure 2. Schedule recording Dialog Box

1. **Schedule ID:** This is the schedule ID given by the Streaming Activator, this number will show up once you input other columns. This ID is not changeable.
2. **Schedule Name:** You can input any words for you to remember this schedule with ease.
3. **Enable:** Click to select True(enable) or False(disable)
4. **Period:** Click to select the start date and the end date of this schedule recording.
5. **Daily schudule:** Click to select the start time and the end time of this schedule recording in a day.
6. **New schedule:** Click to to start a new schedule.

   Save: Click to save this schedule.

   Delete: Click to delete this schedule.
7. **Schedule List:** Show all schedule listing.

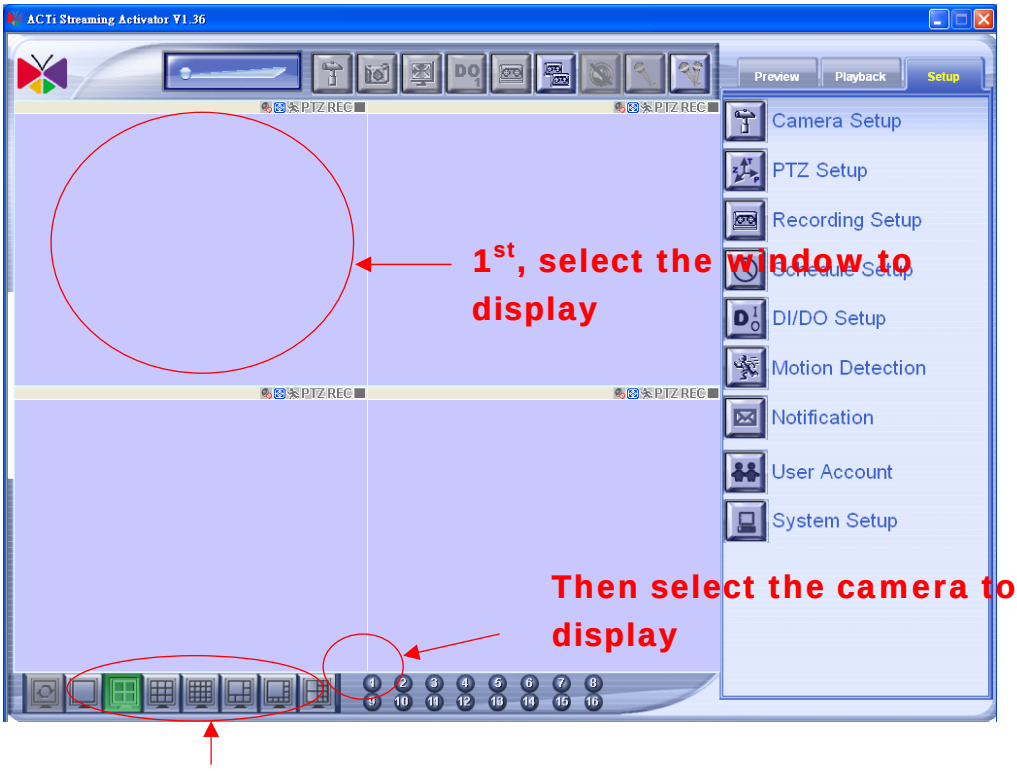
NOTE: Be sure to save your desired schedule. Your schedule will work only after you saved it.

Step5. Operation: Mutli-channel previewing and PTZ control

This section describes how to view multichannel at one time.

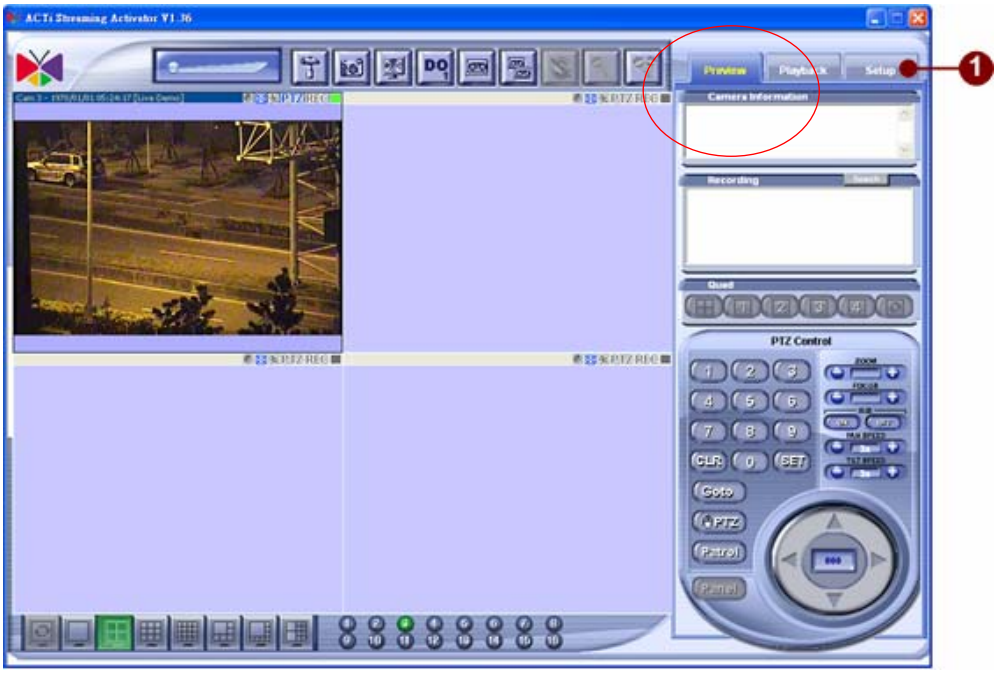
5-1. Open Streaming Activator

5-2. Click on the display window first then click on the camera you wish to see



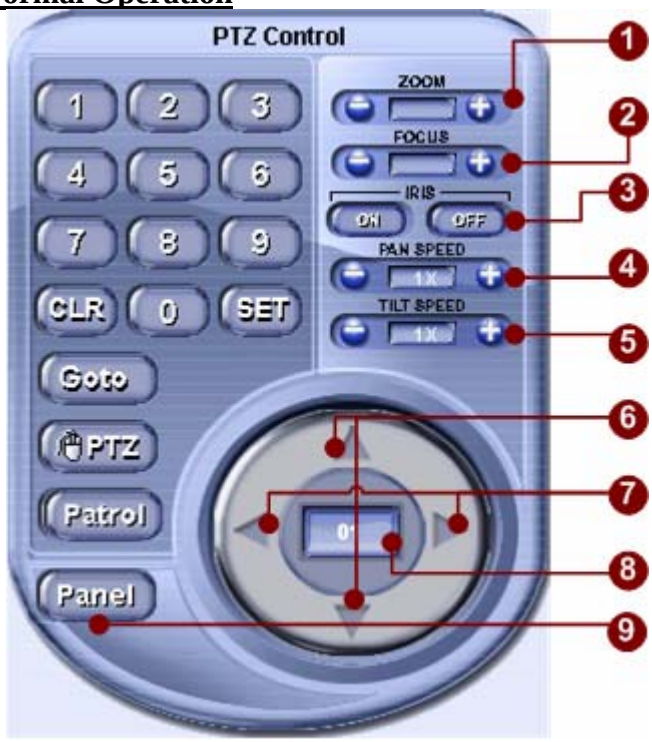
5-3. Repeat the 5-1~5-2 to see all cameras.

5-4. For PTZ control , click the window with the PTZ function, then click the Preview button



5-5. You can use the PTZ panel to control the PTZ function. (if the PTZ panel is greyed out and can't be controlled, please recheck your PTZ setting)

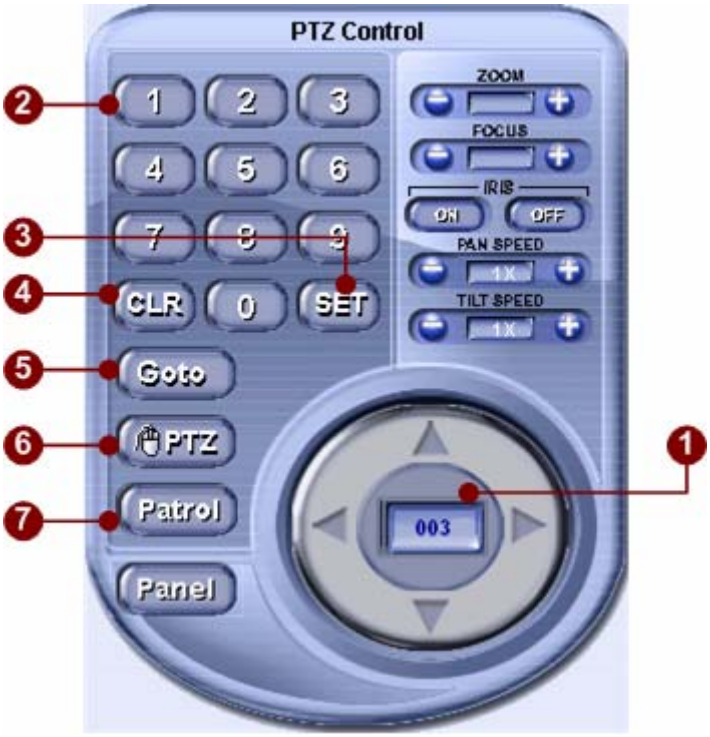
5-5-1 <u>Normal Operation</u>



1. **Zoom function**: click  to zoom in the view; click  to zoom out the view
2. **Focus function**: click  to sharpen the focus on the view; click  to loosen the focus on the view
3. **IRIS function**: click  to open the IRIS; click  to close the IRIS
4. **PAN Speed function**: click  to increase the speed of pan operation; click  to decrease the speed of pan operation
5. **TILT Speed function**: click  to increase the speed of tilt operation; click  to decrease the speed of tilt operation

6. **Tilt operation function**: click  to tilt up; click  to tilt down
7. **Pan operation function**: click  to pan right; click  to pan left
8. **Camera indicator**: indicates current active camera ID
9. **Remote control panel function**: Click this button to enable the remote control panel function. Remote control panel function transmits the control data from a control panel (connected to this PC) to the remote PTZ device (ex: IP speed dome or any PTZ device connected video server).

5-5-2 Preset Operation



1. **Position Indicator**: indicates current position

2. **Key Pad**: click on the number key pad to set the position indicator. Position indicator is formed in 3-digit number.
3.  **button**: save the position to the position indicator
4.  **button**: clear the position set in current position indicator
5.  **button**: go to the position set in current position indicator
6.  **button:** toggles mouse PTZ mode. With mouse PTZ mode, user may click on the screen to do pan and tilt operation
7.  **button:** toggles patrol mode. By clicking this button, Activator will starts patrol with preset positions.
8.  **button:** Click this button to enable the remote control panel function. Remote control panel function transmits the control data from a control panel (connected to this PC) to the remote PTZ device (ex: IP speed dome or any PTZ device connected video server).

 **NOTE:** Maximum umber of preset position is 8

 **NOTE:** To setup the position for Pelco_P or Pelco_D as follow:

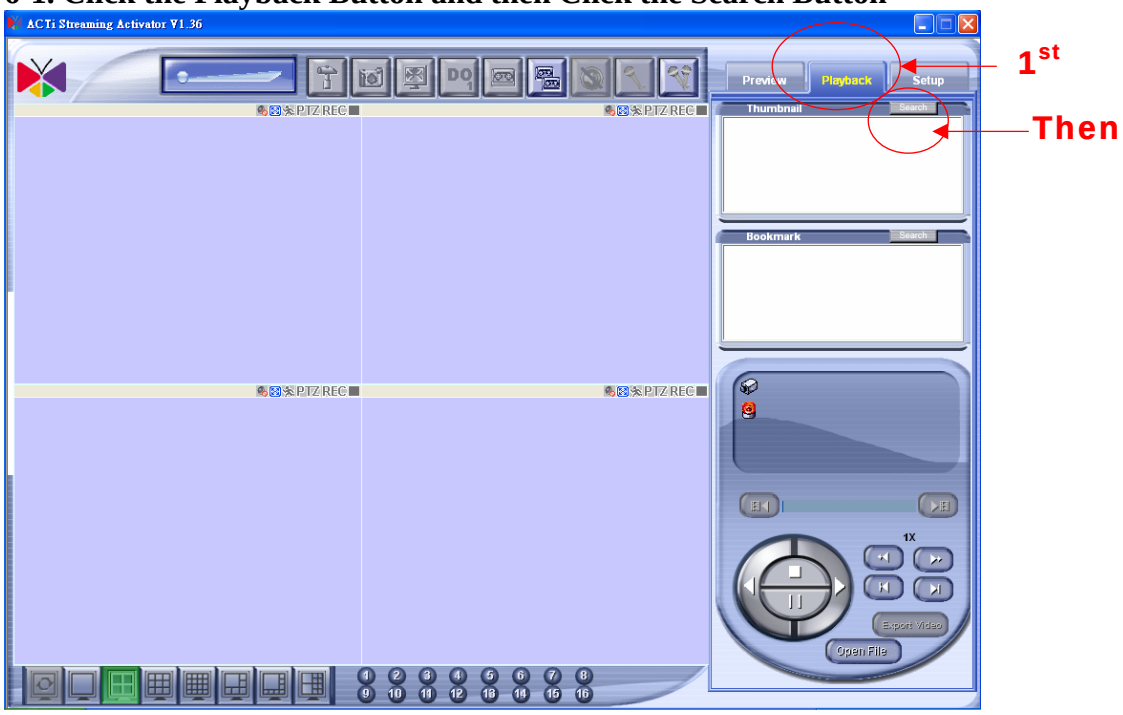
Move to the point →Key in the NO → 

 **NOTE:** To setup the position for Linlin as follow:

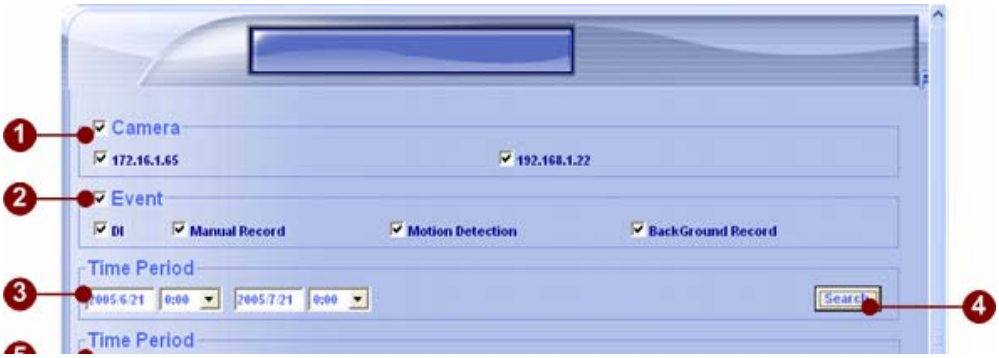
Key in the NO →  **→ Move to the point →** 

Step6. Search and playback Images

6-1. Click the Playback Button and then Click the Search Button

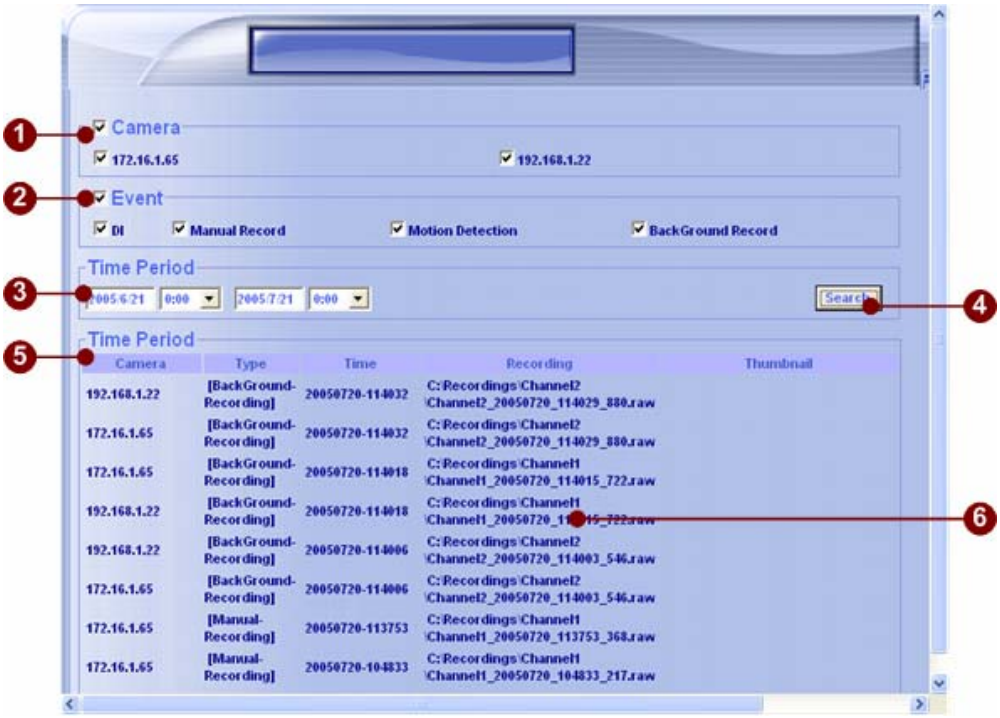


6-2. Select the camera and the event type to be searched and the click the search button



1. **Camera**: Lists the cameras connected. Click on **`Camera`** check box to select or de-select all cameras.
2. **Event**: Lists the Event list for search. Available events are **`DI, Manual Record, Motion Detection, and Background Record`**. Click on **`Event`** check box to select or de-select all events.
3. **Time Period**: Select a start and end time period.
4. **Search Button**: Click this button to start search events

6-3. You will see the searched result as below. Double click on the result to view the images.



5. **Event Search List**: This list displays the recorded files that match the criteria.

6. **Event Detail**: Click on the event detail to start playing video.

2-5 Storage

Storage

In this block, a PC with network connectivity to this network, can record up to 64CH cameras for future search and playback. This section is based on NVR 1.0.

Step1. Check PC Spec

The PC spec should be

CPU	Intel Pentium-4 3.2GHz or above (FSB 800)
RAM	≥ 2 GB DDR2 Memory
Motherboard	915 chip set or above
LAN Card	Gigabit Ethernet
OS	WSS 2003 (Windows Storage Server 2003)
HDD	Minimum: 250GB x 1; Recommended: 320GB x 4
RAID Configuration	Minimum: 3
CD-ROM	32X
Video Resolution	SVGA or XGA with 1024x768 resolution, 32-bit

color

Step2. Network connection

Connect the PC to the network. Please follow the network architecture we come out at chapter 2-1 and refer to support packge TS-00009 for how to set up the PC connection. http://www.acti.com/support/support_package.asp

Step3. Install software

3-1. Check NVR version

We strongly recommend you to use the latest NVR version or use a version which you used and find it reliable. This is to make sure the software to be stable. You can always go to www.acti.com to know the newest software version. Then you have to contact our sales representative to get it.

3-2. Install NVR

The NVR installtion is compliated. Please follow the QIG manual and install them step by step.

3-3. Install Utilities

No utility is required for NVR.

Step4. Software and configuration

Please follow the procedure below to Setup functions for NVR to record 64 CH cameras at the same time.

For detailed description please refer to the software manual.

4-1. Enter the NVR UI

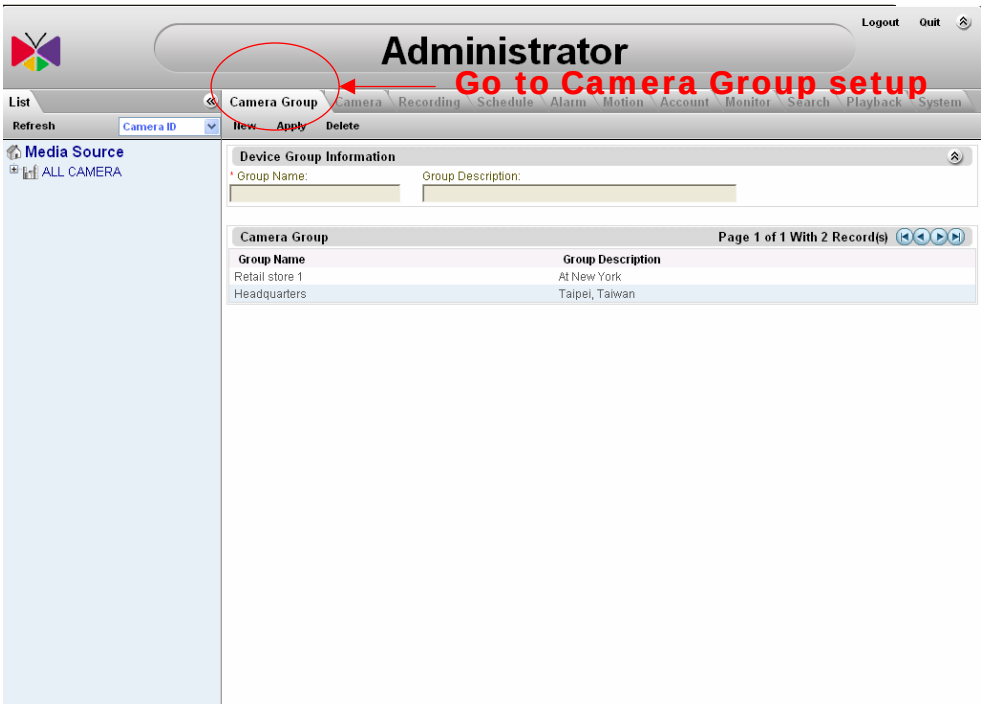
4-1-1. Open Internet Explorer

4-1-2. Enter the IP of the NVR to connect to the NVR.

4-1-3. Enter the account name and password

4-2. Setup Camera Group

4-2-1. Go to Camera group setup



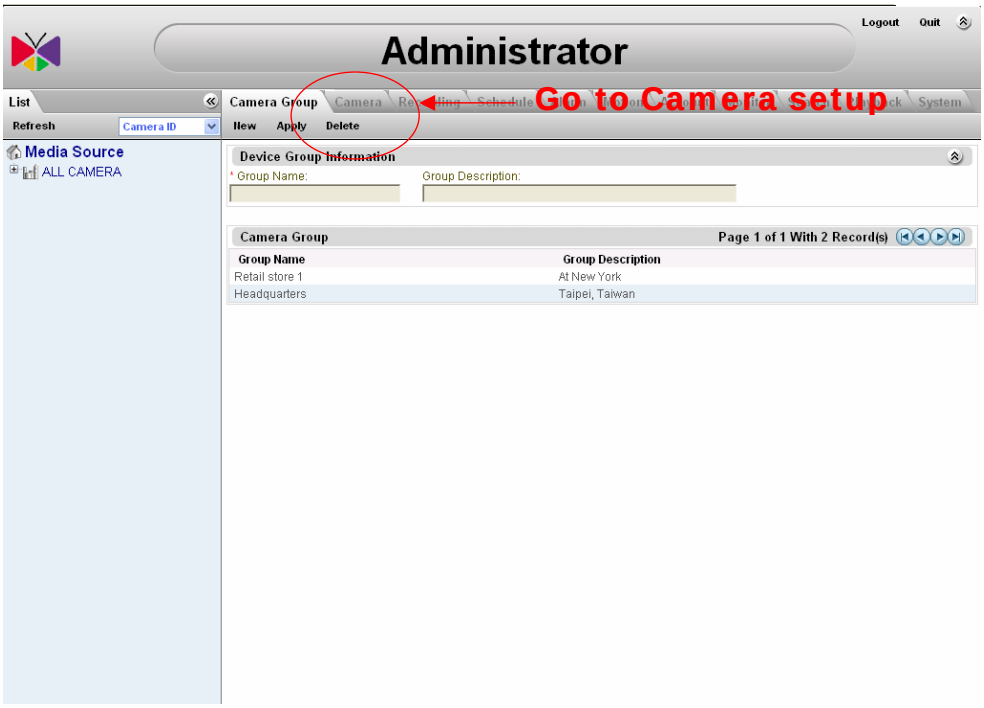
4-2-2. Setup camera group. You can use it to group your camera according to the site position (ex: shop1, shop2) or physical location (floor1, floor2)

1. **New, Apply, Delete** operation:.
   - **New:** Add a new camera group name
   - **Apply:** Apply current configuration
   - **Delete:** Delete this camera group information
2. **Device Group Information**: This panel contains basic camera group information
   - ***Group Name:** input a camera group name or description of the camera
   - **Group Description:** description of the camera group.
3. **Camera Group**: All camera group listing.

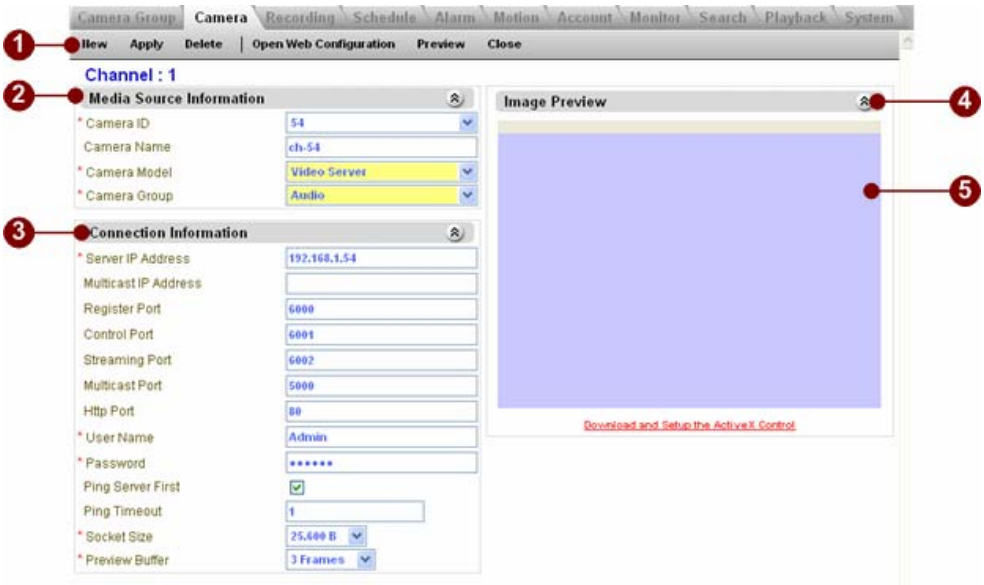
4. **Minimize and restore panel:** you can use this to minimize or restore this panel.
5. **Next and back page buttons:** you can use this to show next or go back page.

4-4. Setup Camera information

4-4-1. Go to Camera Setup



4-4-2. Enter Camera information as below



1. **New, Apply, Delete, Open Web Configurator, Preview, Close** operation:.

- **New:** Add a new camera source
- **Apply:** Apply current configuration, after apply, you can see the message.

Figure 3. Apply Camera Setup

- **Delete:** Delete this camera information, you can choose to delete only Camera Setting, delete All configuration Setting or delete All Log Records.

Figure 4. Delete Camera Setup

- **Open Web Configuration:** Open the web configurator to setup
- **Preview:** Preview your video source
- **Close:** Close the preview from video source

2. **Media Source Information**: This panel contains basic camera information

- ***Camera ID:** choose the Camera ID within a selection list.
- **Camera Name: i**nput a camera name or description of the camera.
- ***Camera Model:** choose the camera model within a selection list; including:

- **Video Server**
- **Video Server (2-way audio)**
- **IP Camera**
- **IP Camera (2–way audio)**
- **IP Dome**
- **IP Speed Dome**
- **IP Quad**

- ***Camera Group:** choose the camera group within a selection list.

3. **Connection Information**: input the information that you want to connect the server.
   - ***Server IP Address**: IP address of the camera source
   - **Multicast IP Address**: Multicast IP address of the camera source
   - **Register Port**: port for video registration
   - **Control Port:** control port setting
   - **Streaming Port:** port for video streaming
   - **Multicast Port:** port for multicasting
   - **HTTP Port:** port for HTTP services
   - ***User Name**: the account to be authorized by the video server
   - ***Password**: the password to be authorized by the video server
   - **Ping Server first:** If this check-box is checked, then NVR will send ICMP packets (ping the IP address or host name) before it starts to register to the video server.

NOTE: If the IP address is behind firewall and firewall will block the ICMP packets, then NVR cannot ping this IP device successfully, and will not register to the video server.
In this case, please do not check the check box.

   - **Ping Timeout:** Set the timeout value to ping the IP device. If it is set to 3 seconds, then, the maximum timeout value is 3 seconds..

NOTE: During the timeout period, the application will hang. We suggest that you set it to 1 second for the timeout.

   - ***Socket Size:** choose the network transport socket size, if your network is very busy or you use wireless network, you can choose the socket size to let our software get package for better performance. Default is 25,600 Byte.

NOTE: If the network bandwidth is not stable, please set the socket size to a smaller one, say 1000 bytes. In this case, the packet will be transmitted faster and will not be re-sent by the TCP protocol layer.

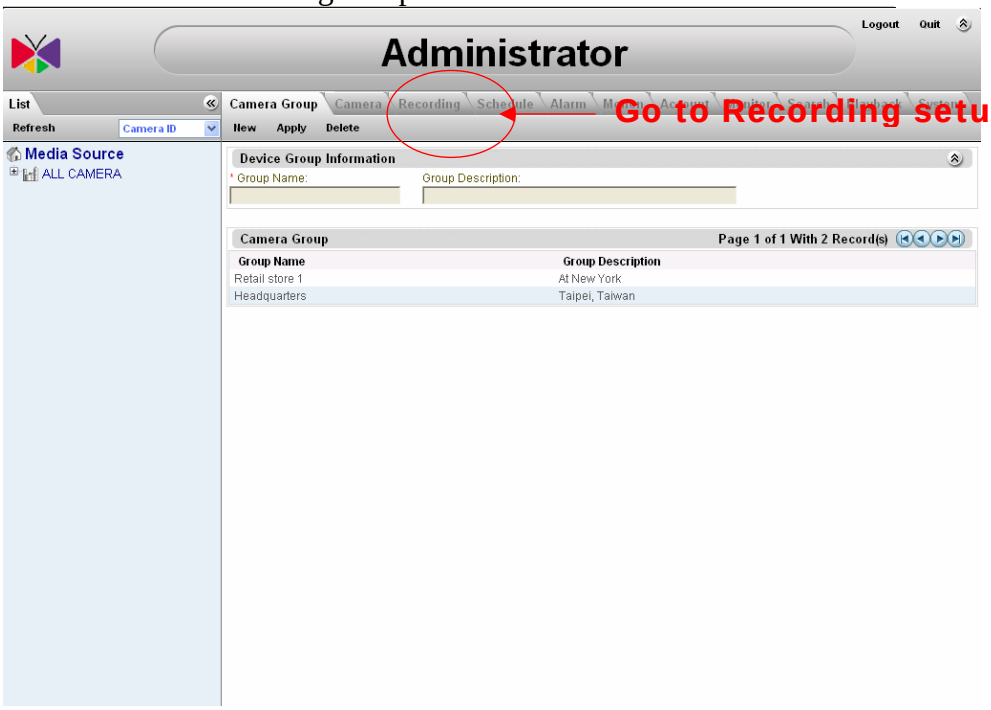
- *Preview Buffer: Select the video preview buffer size; the unit is number of frames. Default is 3 frames.

NOTE: If you set this value to a larger value, then the video display will be smoother; however, the video latency will increase.

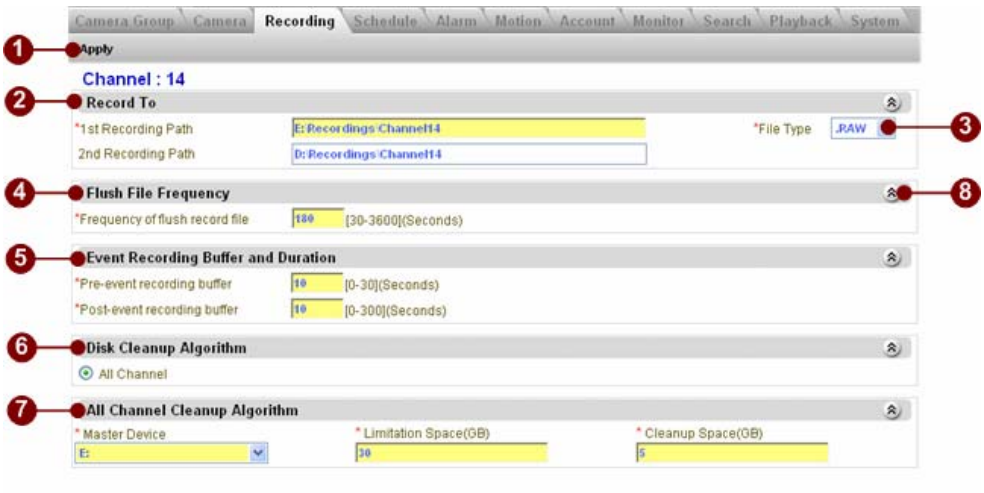
4. **Minimize and restore panel:** you can use this to minimize or restore this panel.
5. **Image Preview Window**: When user click on the **Preview** button, the preview video will be displayed in this window.

4-5. Setup Recording

4-5-1. Go to Recording Setup



4-5-2. Setup Recording as below



1. **Apply:** apply the setting to video channel
2. **Record To**: Recording file configuration
   - ***1st Recording Path**: indicates the main recording path. Default path is located at E: drive
   - **2nd Recording Path**: indicates a second recording path if the 1st recording HDD capacity is full. Default path is located at F: drive
3. **File Type**: MPEG-4 raw data format is supported
4. ***Frequency of flush record file (seconds):** This value specifies that a new file will be generated after the amount of time specified in this field.
5. **Event Recording Buffer and Duration:**
   - ***Pre-event recording buffer (seconds):** Specifies a buffer (seconds) to retain before a certain event occurs.

NOTE: This value works with motion detection (MD) event, digital in (DI) event.

   - ***Post-event recording buffer (seconds):** Specifies a buffer (seconds) to retain after a certain event occurs
6. **Disk Cleanup Algorithm:** specifies the threshold and algorithm to take if the hard disk capacity reaches the threshold
7. **All Disk Cleanup Algorithm:** specifies the threshold and algorithm to take if the hard disk capacity reaches the threshold
   - ***Master Drive**: indicates the main recording path. Default path is located at E: drive
   - ***Limitation Space(GB)**: the threshold of the disk space to be kept in the hard disk.
   - ***Cleanup Space(GB)** : when the limitation Disk Space is reached, it will delete an amount (size) of previously saved files according to

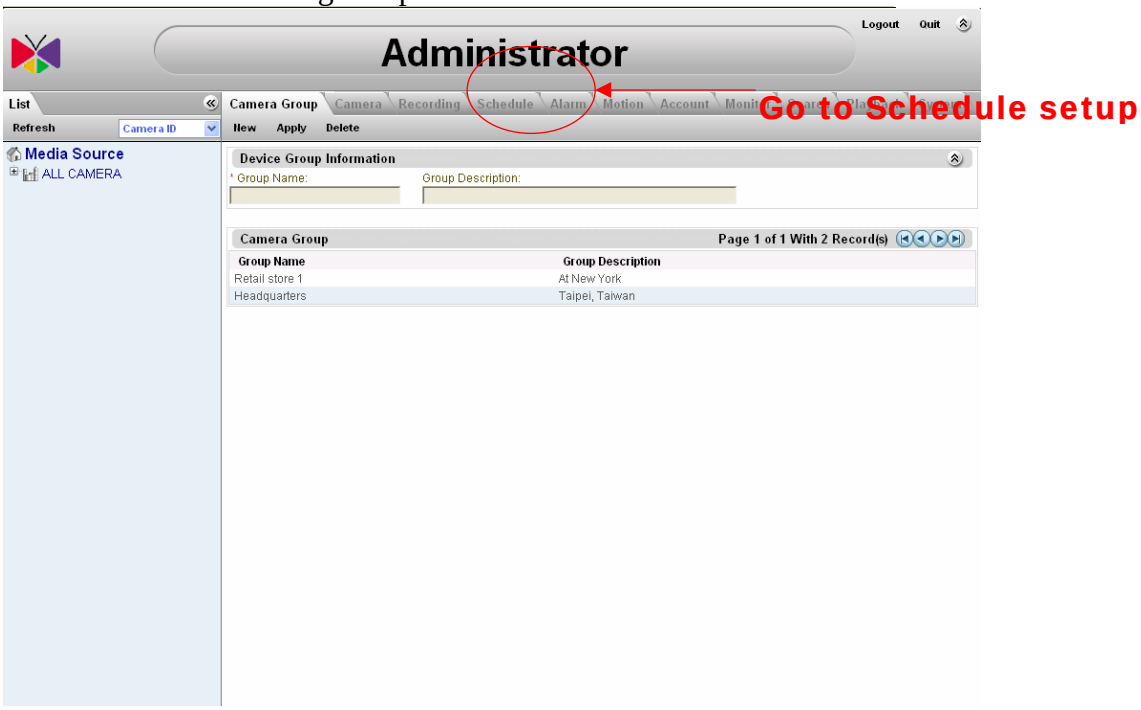
your selection here.

IMPORTANT: With these parameters, NVR storage management will start cleanup process when the Limitation Space value is reached. For example, if you set Limitation Space to 50 GB and Cleanup Space to 5 GB; it means that when the hard disk capacity is smaller than 50 GB, NVR storage manager will clean up 5 GB of the oldest files; with the oldest files being removed first.

8. **Minimize and restore panel:** you can use this to minimize or restore this panel.

4-6. Setup Schedule Recording

4-6-1. Go to Recording Setup



4-6-2. Setup Schedule as below

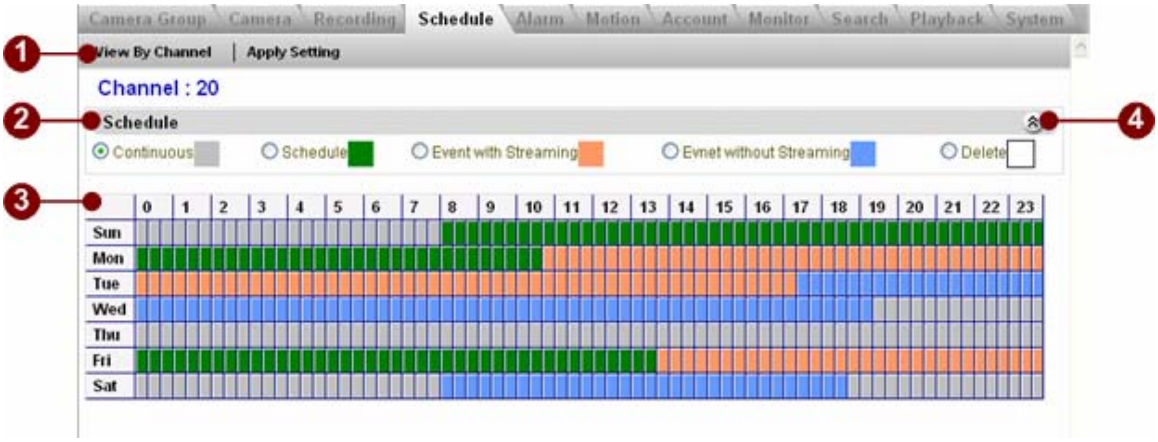


Figure 5. Schedule Setup Dialog Box

1. **View By Channel, Apply Setting**: View the channel schedule and specifies the programmed schedule is applied to a special day or day of week
2. **Schedule:** indicates the type of operation to be applied in this specified schedule
   - **Continuous**: specifies the channel applies continuous recording setting
   - **Schedule**: add a new schedule to a channel
   - **Event with streaming**:
   - **Event without streaming**:
   - **Delete**: delete certain schedule
3. **Scheduler table**: indicates the schedule status of each channel.
4. **Minimize and restore panel:** you can use this to minimize or restore this panel.

Step5. Operation: Login and preview images

Please follow the procedure below to Setup functions for NVR to record 64 CH cameras at the same time.

For detailed description please refer to the software manual.

5-1. Enter the NVR UI

5-1-1. Open Internet Explorer

5-1-2. Enter the IP of the NVR to connect to the NVR.

5-1-3. Enter the account name and password

5-2. Preview images

To start camera preview, click on the Camera setup tab, then after entering the required fields, you can click on Preview button to preview the video.

The camera screen consists of several items.

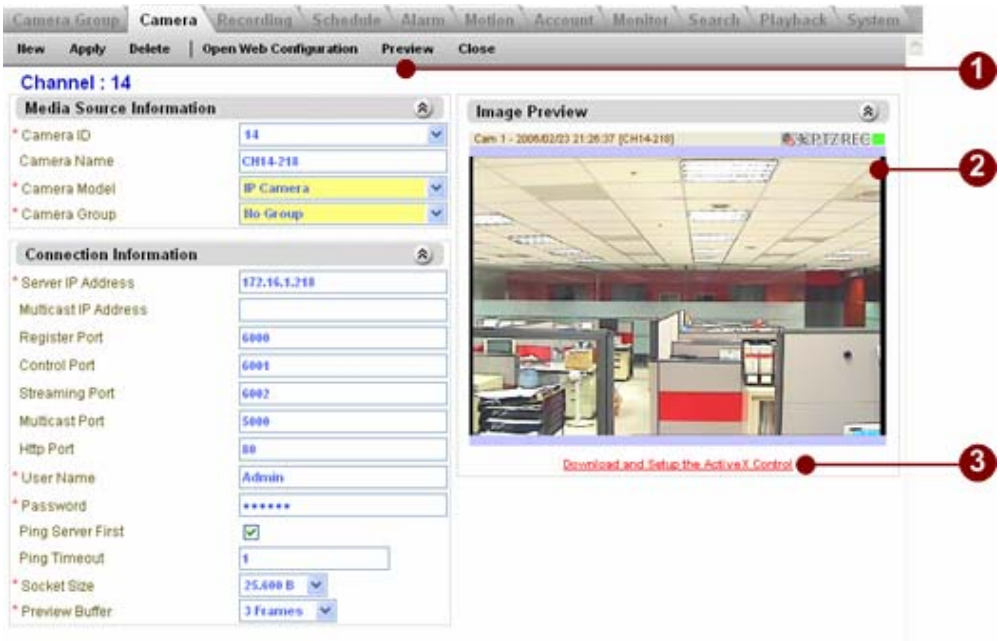


Figure 6. Camera Setup Dialog Box

1. **Preview**: Click on the preview button
2. **Image Preview:** Display the preview video
3. **Download & Setup the ActiveX Control:** If the preview video is not displayed, or the ActiveX Control shown in item 2 does not appear, then click here to download and setup NVR Client ActiveX Control.

IMPORTANT: Please refer to NVR QIG (Quick Installation Guide) for NVR Client ActiveX Control step-by-step setup guide.

Step6. Operation: Search and Playback Images

Please follow the procedure below to Setup functions for NVR to record 64 CH cameras at the same time.

For detailed description please refer to the software manual.

6-1. Enter the NVR UI

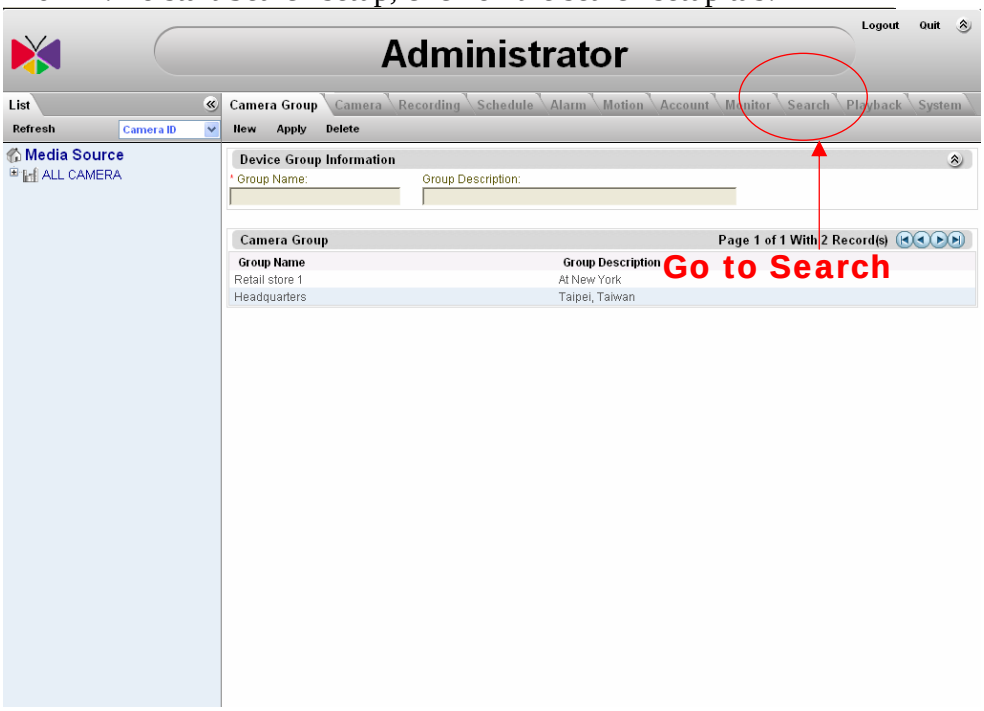
6-1-1. Open Internet Explorer

6-1-2. Enter the IP of the NVR to connect to the NVR.

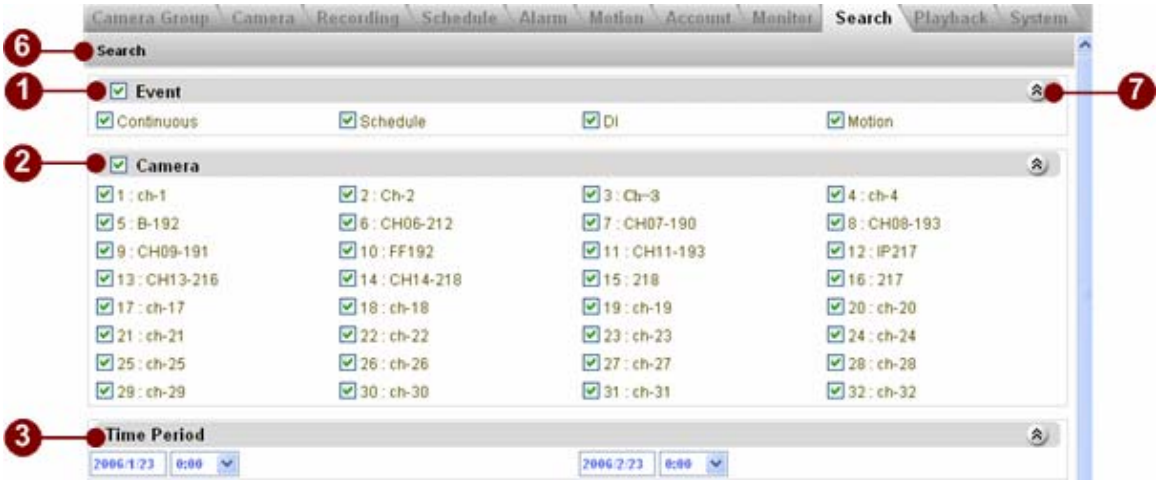
6-1-3. Enter the account name and password

6-2. Start Search

6-2-1. To start Search setup, click on the search setup tab.



6-2-2. Select search criteria to start seach .



1. **Event**: Search by Event.
   - **Continuous**: Search continuous Event .
   - **Schedule**: Search schedule Event.
   - **DI**: Search DI Event.
   - **Motion**: Search Motion Event.
2. **Camera:** Search by Camera.
3. **Time Period:** Search by time.

4. **Search Result:** Search Listing.
5. **Recorded File**: Recorded file name.
6. **Search button:** Click on to search.
7. **Next and back page buttons:** you can use this to show next or previous page.

6-3. View Searched Results

After clicking on the Search button described in previous section, the search result will be displayed as follow:

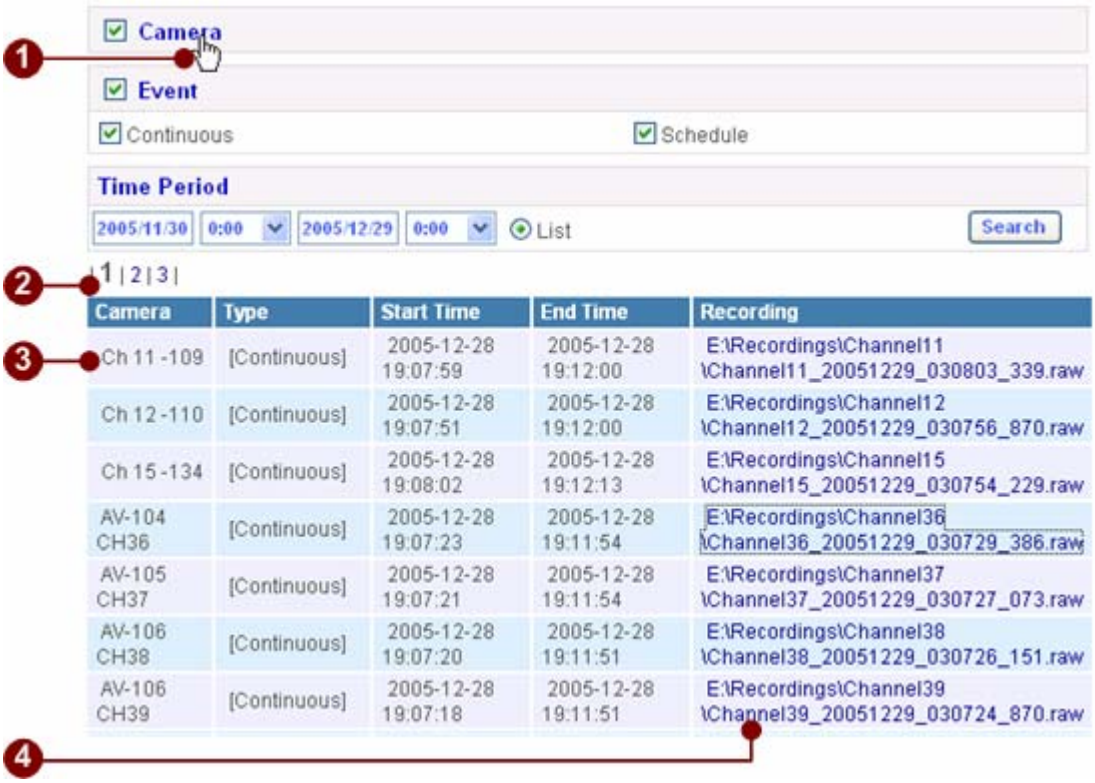


Figure 7. Search Video Clip

1. **Camera**: Click on the Camera title to minimize the panel

2. **Page Indicator**: shortcut to jump to that page. Each page displays 20 records
3. **Search Result:** search result including camera name, camera type, start time, end time and recording file name
4. **Recording Video Clip:** simply click on the video clip path to invoke playback window.

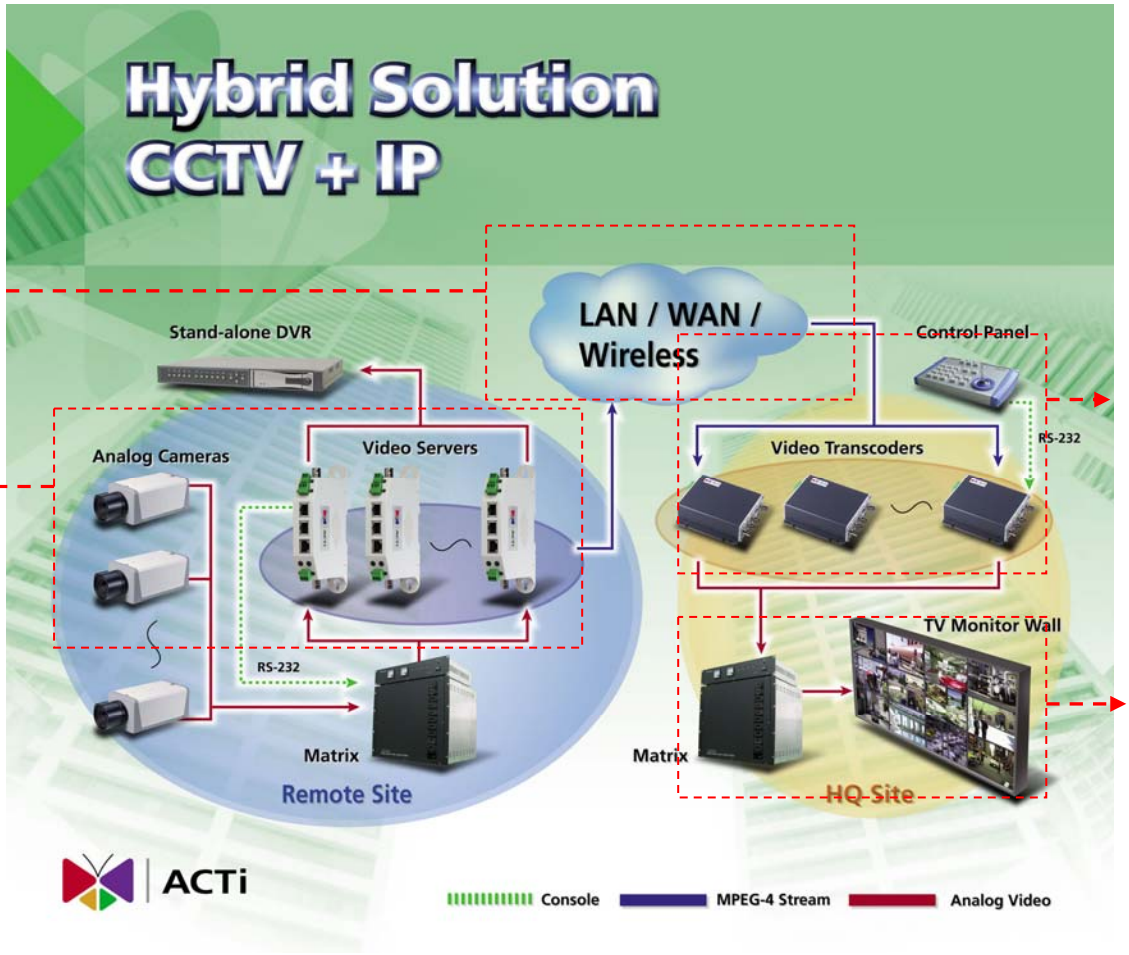
6-4. Double click on the searched item to playback back

Chapter 3. Hybrid IP Surveillance Solution

This chapter we will tell you how to step by step deploy a Hybrid IP Surveillance Solution.To start with, we divide a Hybrid IP surveillance solution into several building blocks as below. You can refer to the below description about how each building block work.

Transmission

Imaging



Decoding

Monitor

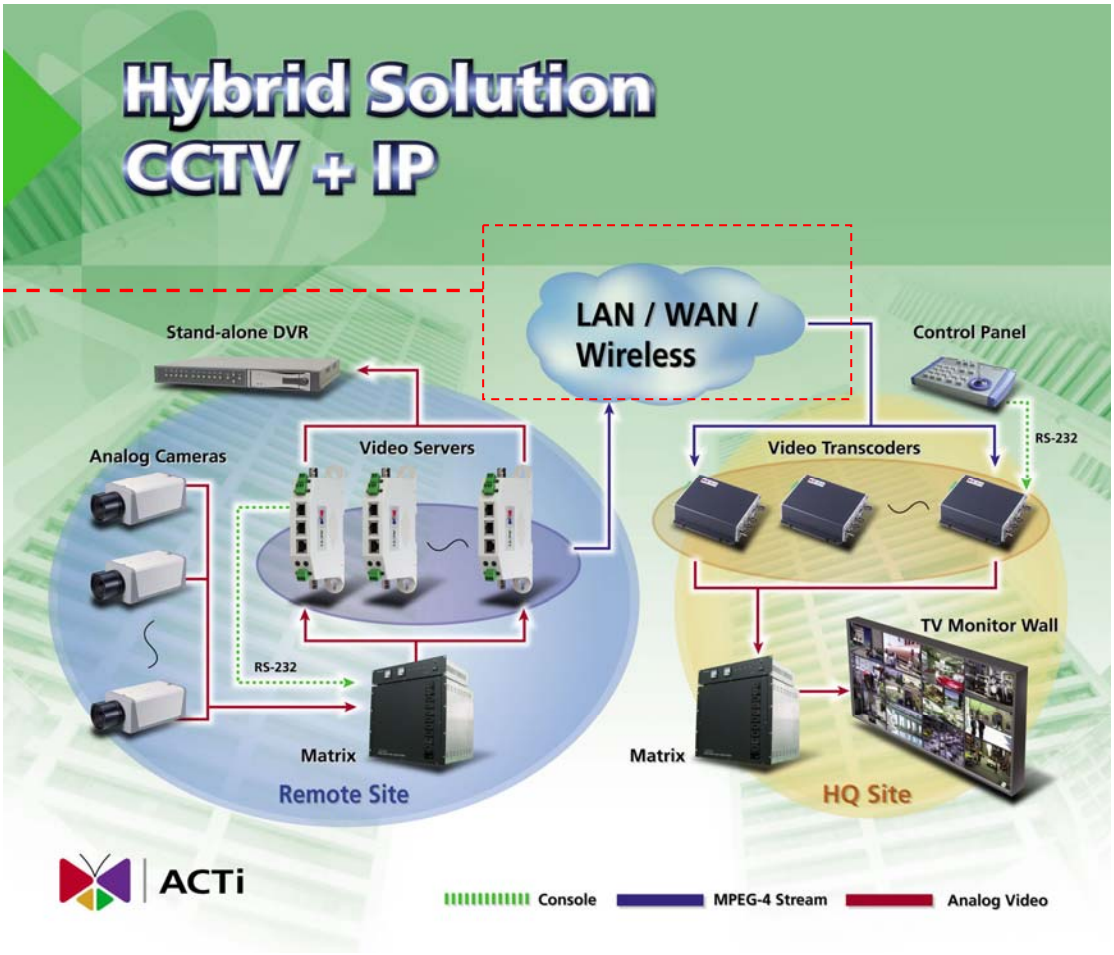
Management

Storage

We strongly recommend you to view Chapter 5, IP surveillance case study at the same time. Chapter 5 contains the detailed step by step selection and setting of a chain-retail shop project.

3-1 Network

Network



This block is very important because it stings up all other building blocks. All otther buiding blocks requires appropriate network setting and connection to make the system works. The network deployment and network settings are very flexible and subject to each system's design. Please go through below instruction to have an overview concept, then you can go back to this section if you have any problem about network setup.

You can also refer to support package TS-00029 at http://www.acti.com/support/support_package.asp to know more about LAN, WAN.

2-1-1 Network Consideration

This section tells you about what to consider when deploy an network.

2-1-1-1. Device network connectivity

Each device has to have a right setting for it to connect to the network.

2-1-1-2. Bandwidth

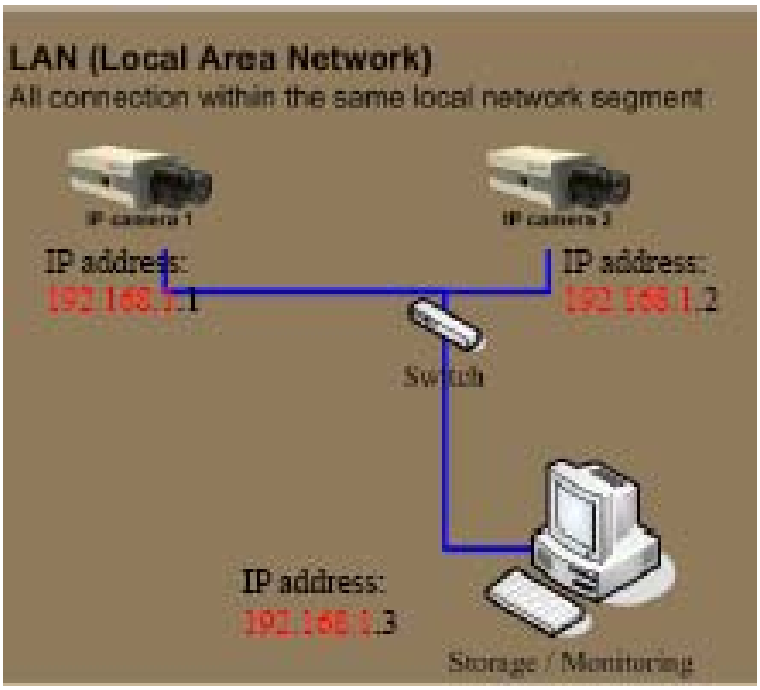
Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused.

2-1-1-3. Device to device connectivity

Even though each device is connected into internet, the network between two device might not be connected. This involves each device's setting and network equipments' setting.

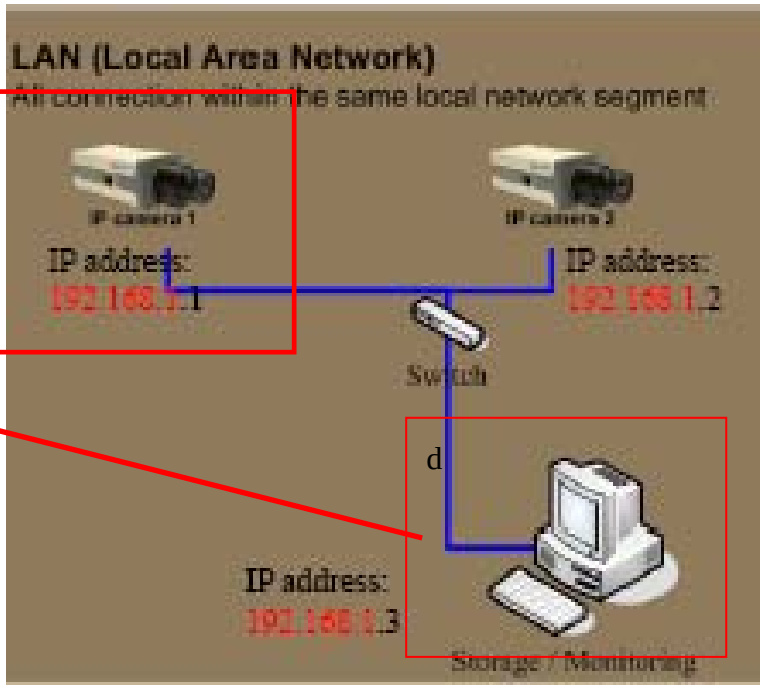
2-1-2 LAN network system

Below are what to check within a LAN environment.



2-1-2-1. Device network connectivity

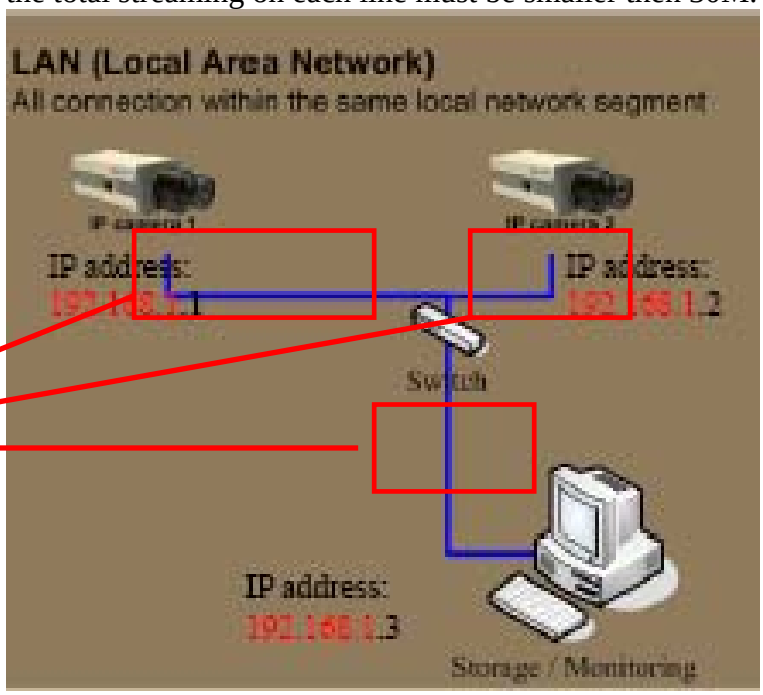
Each device should have the network setting withint the same local network segment.



Check device's
1. IP address

2-1-2-2. Bandwidth

Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused. Inside LAN, the bandwidth limitation of 100M connection per line is 30MB per second (100MB as theory). Thus, the total streaming on each line must be smaller then 30M.



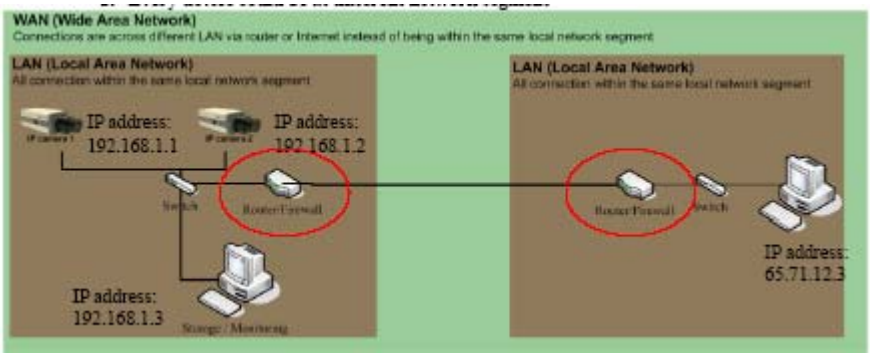
Each line's
bandwidth can't
exceed 100M

2-1-2-1. Device to device connectivity

There no need to worry about the device to device connectivity.

2-1-3 WAN network system (Via Routers)

Below are what to check within a WAN environment.

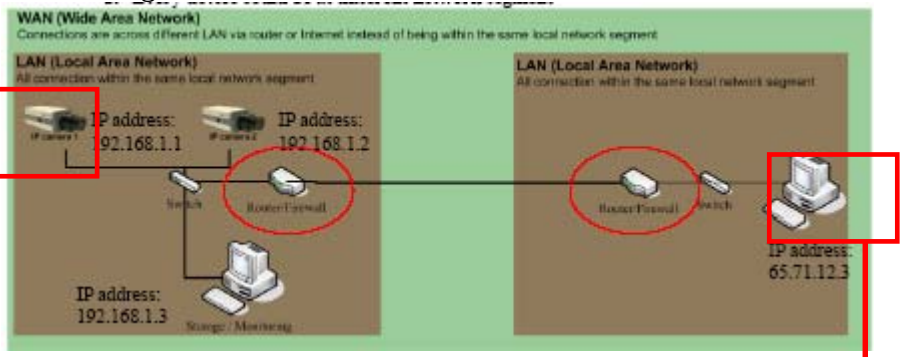


2-1-3-1. Device network connectivity

Each device should have the network setting withint the same local network segment.

Check devices'

3. IP address
4. Subnet setting



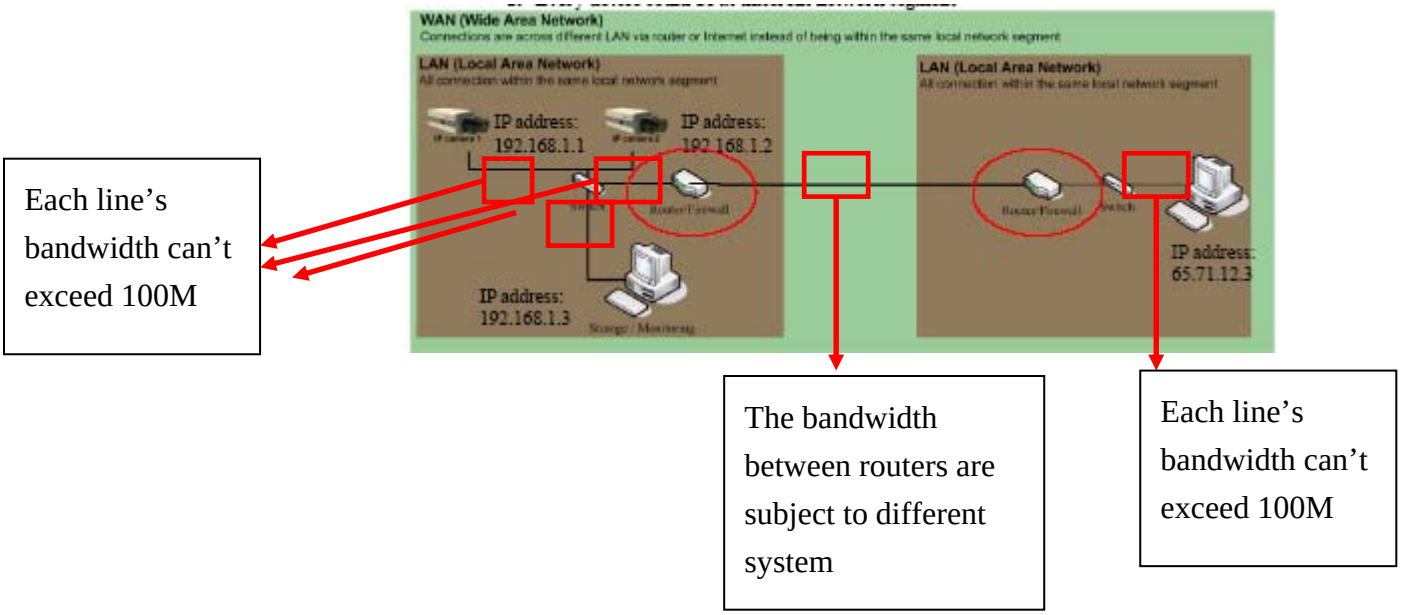
Check device's

3. IP address
4. Subnet setting

2-1-3-2. Bandwidth

Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused. Inside LAN, the bandwidth limitation of 100M connection per line is 30MB per second (100MB as theory). Thus, the total streaming on each line must be smaller then 30M. The bandwidth between routers are subject to each system, you have to

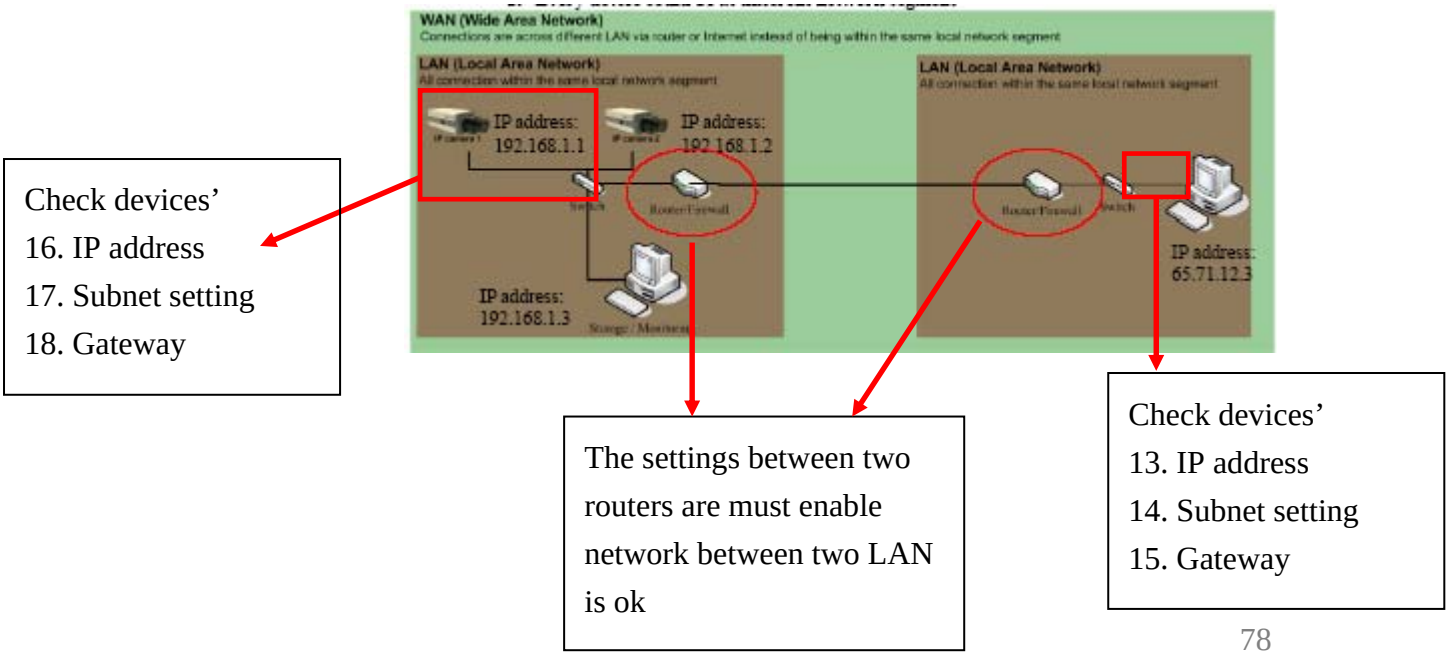
refer to the router's manual.



2-1-3-3. Device to device connectivity

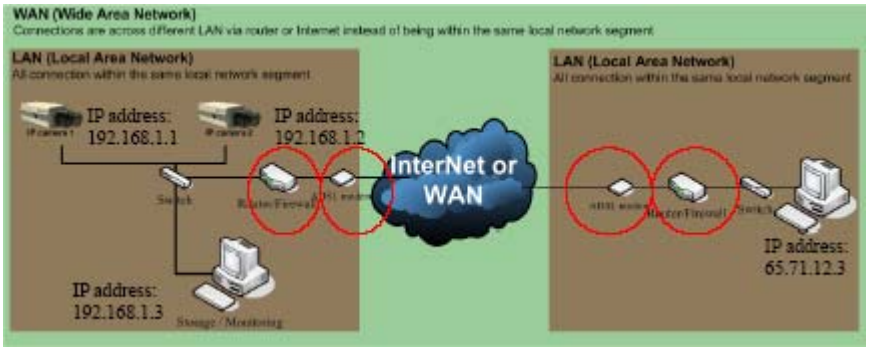
For computer to connect to a camera at different network segment, the network settings of each device and routers needs to be right otherwise the network is not connected.

Please refer to TS-00009 at at http://www.acti.com/support/support_package.asp to know more about the network connection cross routers.



2-1-4 WAN network system (internet)

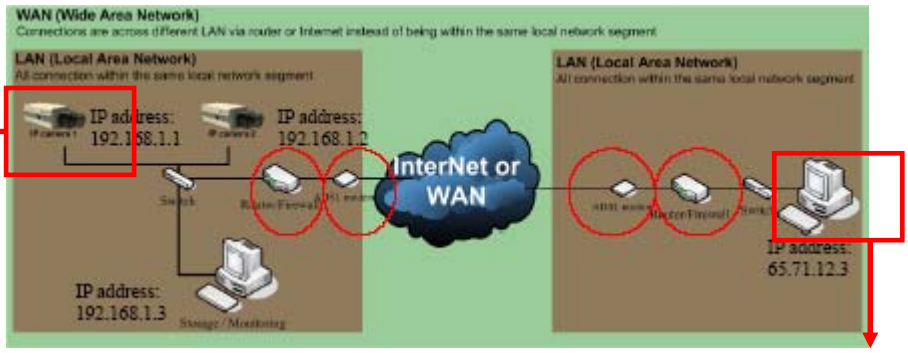
Below are what to check within a WAN environment.



2-1-4-1. Device network connectivity

Each device should have the network setting withint the same local network segment.

Check devices'
1. IP address
2. Subnet setting

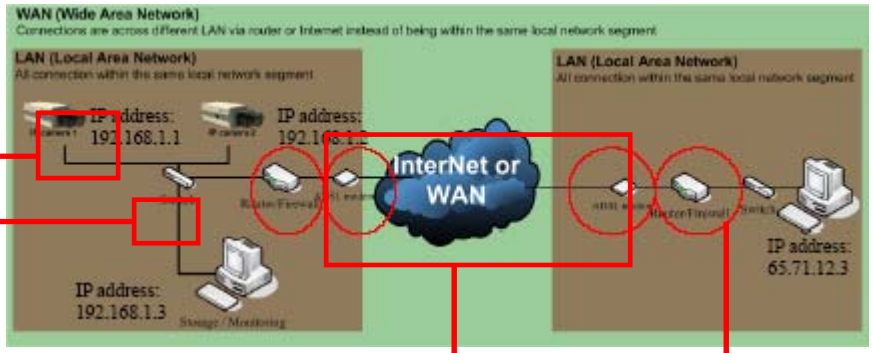


Check device's
1. IP address
2. Subnet setting

2-1-4-2. Bandwidth

Each network has its limitation of bandwidth. You have to keep the bandwidth below the limitation, otherwise may other problem will be caused. Inside LAN, the bandwidth limitation of 100M

connection per line is 30MB per second (100MB as theory). Thus, the total streaming on each line must be smaller then 30M. The bandwidth between routers are subject to each system, you have to refer to the router's manual.



Each line's bandwidth can't exceed 100M

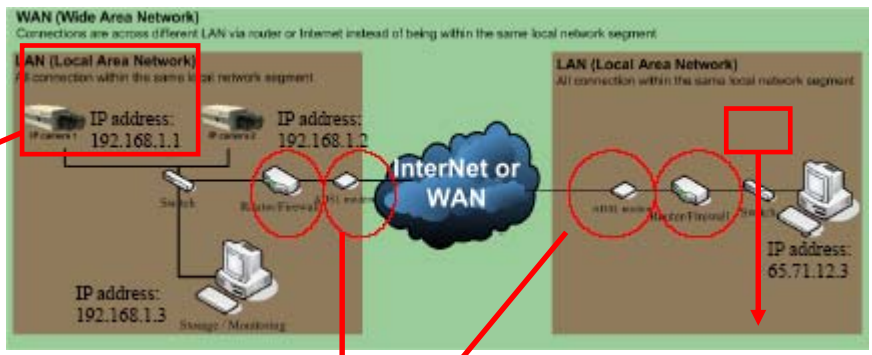
The The bandwidth of internet

Each line's bandwidth can't exceed 100M

2-1-4-3. Device to device connectivity

For computer to connect to a camera at different network segment, the network settings of each device and routers needs to be right otherwise the network is not connected. .

Please refer to TS-00009 at at http://www.acti.com/support/support_package.asp to know more about the network connection cross routers.

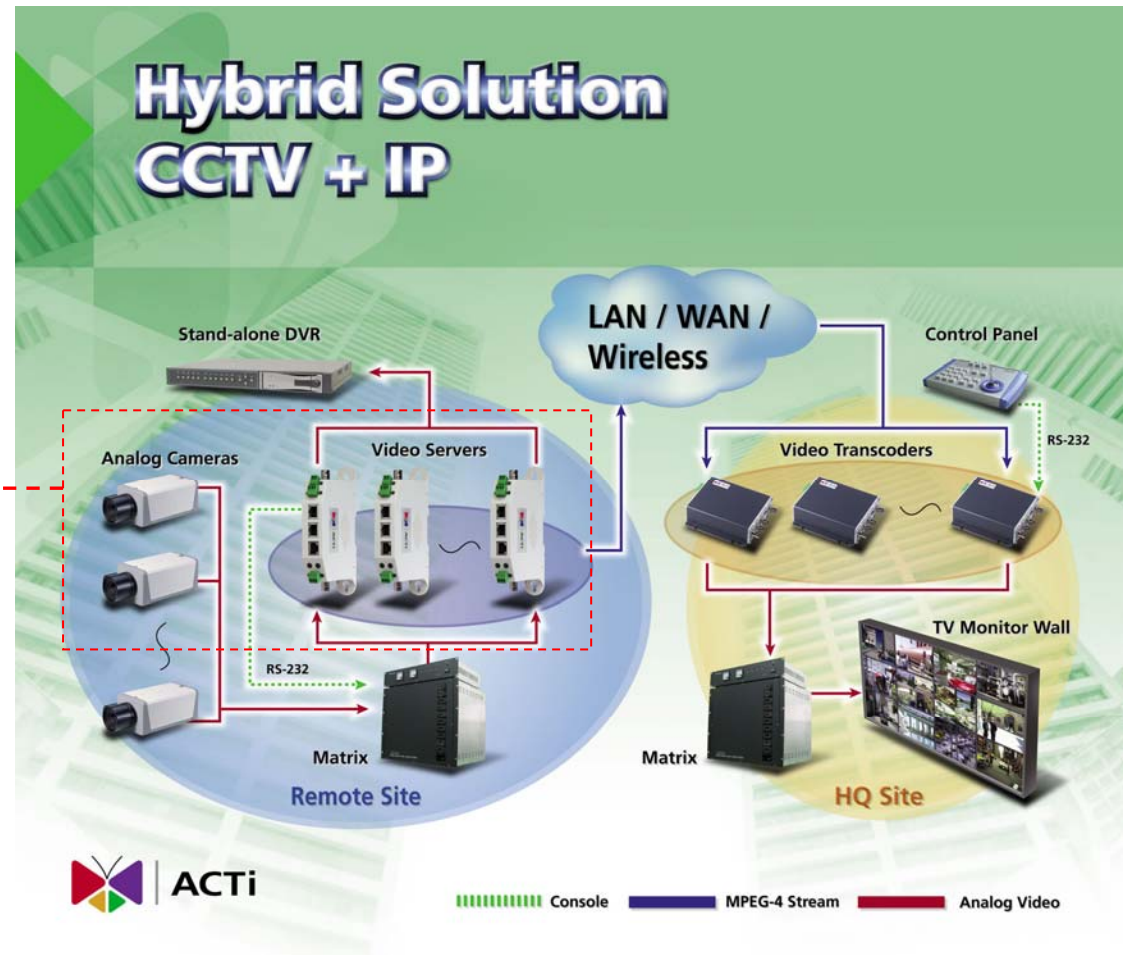


Check devices'
10. IP address
11. Subnet setting
12. Gateway

The settings between two routers are subject to different routers

Check devices'
7. IP address
8. Subnet setting
9. Gateway

3-2 Imaging



Imaging

In this chapter we will tell you how to select, install and configure the devices in this block. These devices includes camera, camera accessory (housing, mounting, lenses) video server.

Before we start to select the camera, you will need to know how the customer's site is.

3-2-1. Know customer site

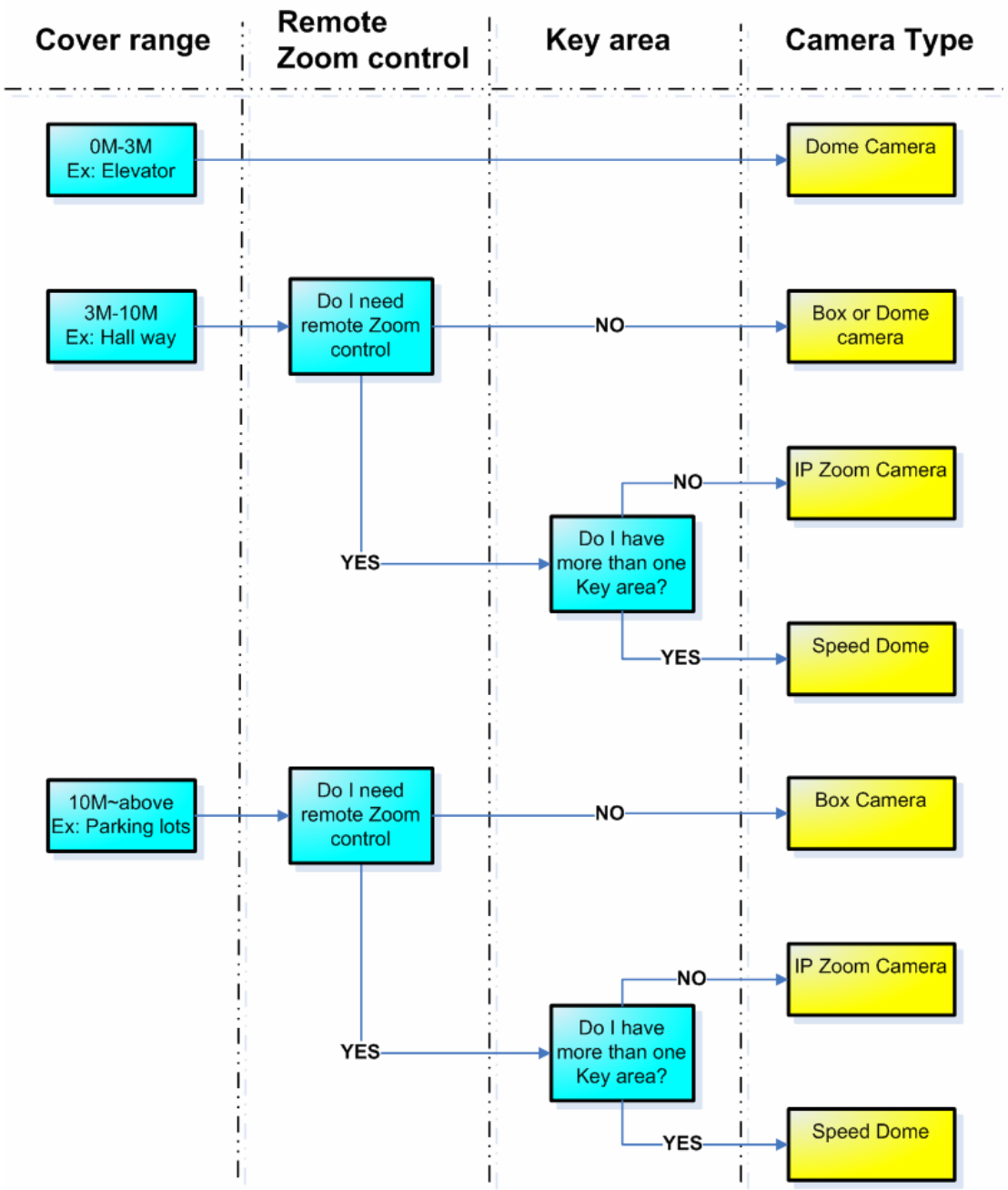
There are two steps to select the camera. Step1: Select by camera type. Step2: Select by camera function. Through these two steps, you can have brief ideas about selecting the IP camera.

3-2-2. Select the camera

There are two steps to select the camera. Step1: Select by camera type. Step2: Select by camera function. Through these two steps, you can have brief ideas about selecting the IP camera.

Step1: Select by Camera type

Please follow the flow chart to select your camera type.



Step2: Select by Camera function

After you select the camera type, you have to select the camera model by functions. In this step, we will provides you what functions to compare when looking at product selection guides. Thus, we recommend you to look at his chapter with a selection guide on

hand.

Below is a checklist for you to select each camera.

Item	Spec	Remark
Outdoor / Indoor		
Day/Night function		
Audio		
Vandal Proof		
WDR function		
Zoom capacity		
Rotation Speed		

I. Outdoor / Indoor

If you want to install a camera outdoor, it must have waterproof. The waterproof standard is called IP66.

For cameras integrated into a housing (ex: Dome camera , Speed dome camera, IP zoom camera.), you have to check if its housing complies to IP66 standard.

For cameras not integrated into a housing (ex: Box camera), you have to buy a IP66 compliant housing when installed outdoor.

J. Day/Night function

If your camera is installed at a outdoor, where the light is very bright in the day and the light is very dark in the night, you need cameras with Day/Night function otherwise you can't see clear images at night. There are two types of Day/Night function, one is done via "Mechanical removable IR-Filter" and the other is done via "Digital processing only". Besure to select the camera with 'Mechanical Removable IR-Filter" otherwise the image color will not be true during day time and the focus might shift when switching between day mode and night mode.

K. Audio

If you need to hear to sound from the camera site, you need cameras with audio function.

L. Vandal Proof

If you want to install a camera at a place where it might be damaged, it would be necessary to have vandalproof casing.
For cameras integrated into a housing (ex: Dome camera , Speed dome camera, IP zoom camera.), you have to check if its housing has vandal proof function.
For cameras not integrated into a housing (ex: Box camera), you have to buy a vandal proof housing.

M. WDR function

If you want to install a camera at indoor shooting both indoor and outdoor objects, you might have a problem obtaining clear images of both indoor objects and outdoor objects at the same time. This problem can be solved by

1. Shooting mainly indoor or mainly outdoor objects.
2. Buying a camera with WDR function.

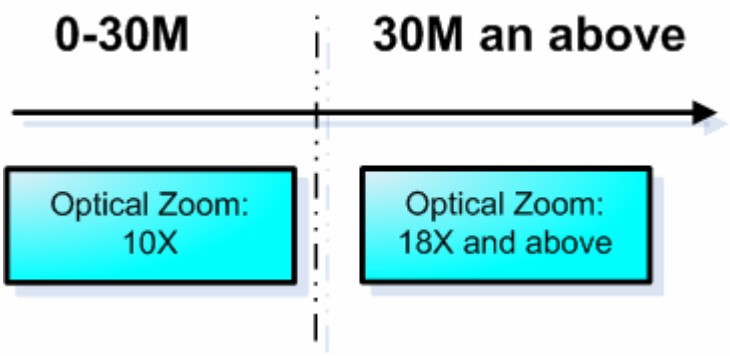
Cameras without WDR function might have darkened indoor images or over brightened outdoor images

Cameras With WDR function

N. Zoom capacity (Zoom camera, Speed dome only)

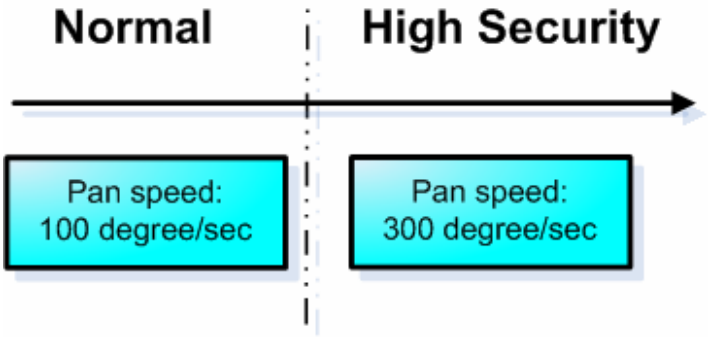
For zoom camera and speed dome camera, the more zoom capacity it has, the more cover range and the more detailed images it can get. There are two types of zoom: Optical and digital. Please select by optical zoom only since digital zoom will decrease the image quality.
To select sufficient zoom ratio, we select by considering cover range first then how detailed the image should be.
Because how detailed the image should be depends on different

viewer, below is a simple reference of how to select by cover range.



O. Rotation Speed (Speed dome only)

Rotation speed directly effect the how fast the speed dome can response to an event. You can select according to the below diagram



P. Image Quality

Image quality is another one thing important but you can't find it in any datasheet or selection guide. It's good for you to try the camera first to see if the image quality meets your standard.

3-2-3. Select camera accessory

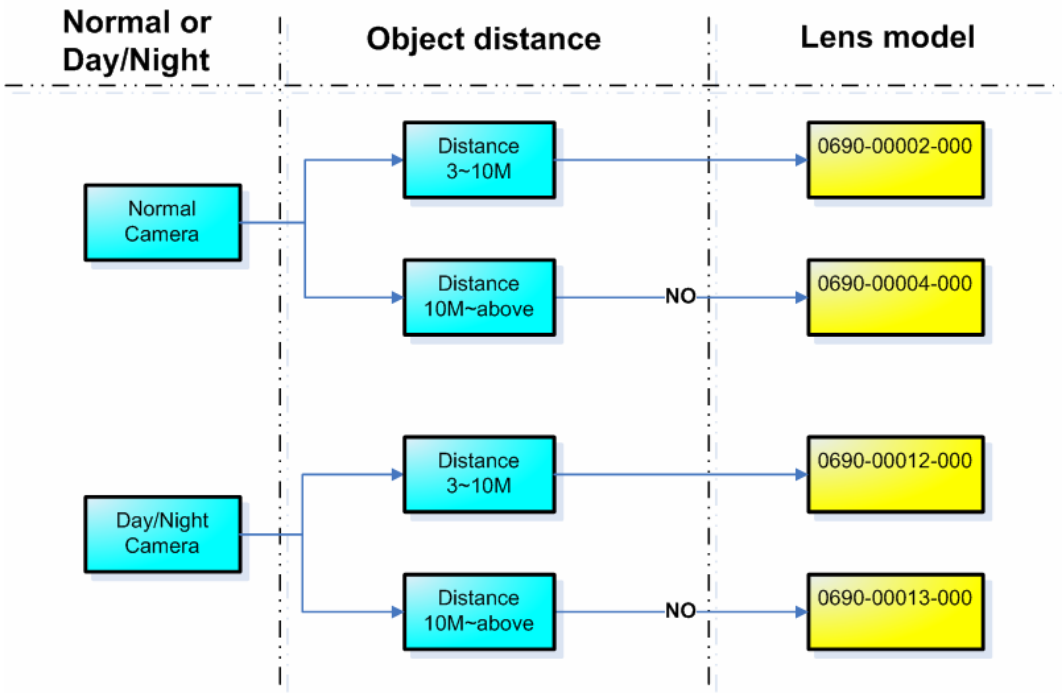
There are several types accessory required for each camera installation including lens, mounting, housing. Please see below for how to select each accessory.

2-1. Select lens (for Box camera only)

This section is for box camera only since dome camera, speed dome camera comes with lens built-in. Lens selection are based 5 specs (C/CS mount, Auto/Manual Iris, focal length, Aperture and IR correct) Please fill in the Lens Key item Table first, then select by below flow

Lens key item table		
Item	Spec	Remark
For Normal camera or Day/Night camera		
Object distance		3~10M 10M and above

Lens selection flow.



G. C/CS Mount

C/CS mount are different specs for lens to be mounted onto a camera. The mount standard of the camera and the lens should be the same , otherwise the focus of the image will fail. Thus, you have to make sure the lens you buy is compatible to your camera.

Note: Most cameras are C and CS compliant at the same time.

H. Auto/Manul Iris

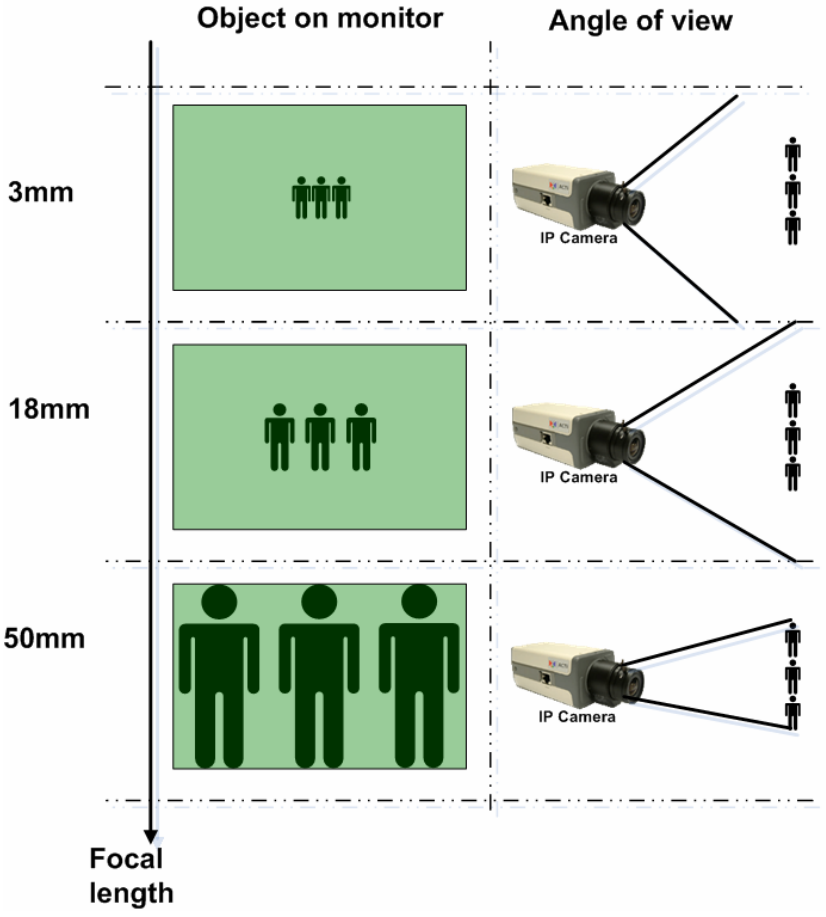
There are two ways (adjusting the iris and adjusting the electric shutter speed) for camera to adjust the incoming lighting strength to get the best image quality without either getting too bright images or getting too dark images. Adjusting the iris is always the better way because there might be some side effect

while changing the electric shutter speed.

The difference between auto iris and manual iris, is that auto iris will adjust itself instantly according to the environment lighting status (controlled by the camera) while manual iris's iris is fixed (normally people won't change the camera setting all the time after installed) thus the camera has to use electric shutter to control the lighting strength. If you have a lens supporting auto iris function, it can make sure your camera performance through out a day. Thus, we strongly recommend you to use auto-iris lens.

I. <u>Focal length</u>

Basically, focus length directly effect the lens' viewing angle and viewing distance and it is always marked as "f" in lens spec. Vari-focal lens have a range of "f" which means it can be adjusted to any "f" within the range onsite. The bigger the f is, the bigger viewing distance will be and the smalled viewing angle will be. Below is a reference for how the different focal length works when shooting at the same people at 10M away.

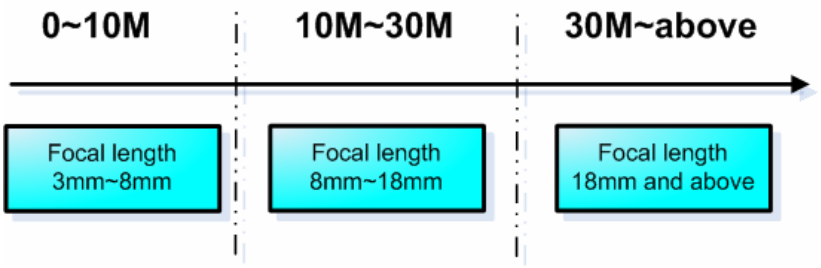


The selection of the focal length is based on two factors,

1. How big the area you wish this camera to cover (angle of view)?
2. How big you with the object to be seen on the monitor?

Sometimes, you can't have two factors satisfied at the same time, then you have to select one factor to be considered first. Thus, we highly recommend you to buy Varfi-focal length, which you can adjust onsite to ensure the best performance.

Regardless the angle of view, below is an selection based clear images to be seen from the monitor at a certain distance.



J. Aperture

This spec is marked as "F" in lens spec. The smaller the aperture is, the more sensitive the lens is (because it allows more lights to pass through). Aperture is subject to Focal length, usually a lens with higher focal length has bigger aperture. Please compare this spec with lenses with the same focal length only.

K. IR correct (Day/Night camera only)

If a camera has a Day/Night function which enables it to switch to B&E during night time, we strong recommend you to use the IR correct lens with it. Because without an IR correct lens, the focus of the camera will shift when switching between day mode or night mode.

2-2. Select mount/housing

This section tells you how to select the right mount or housing for different applications. Below is a mount/housing selection table of all our IP cameras. For analog cameras + video servers, please check the analog camera's spec.

There are 3 key items to select your mount/housing, we make a mounting/Housing key concerns table. You can first finish this table and then select by the selection table.

Mounting/Housing key concerns table		
Item	Spec	Remark
Outdoor / Indoor		Outdoor: With Water proof With Housing Indoor: Without housing
Mount Type		Flush mount (圖片) Solid ceiling mount (圖片) Corner mount(圖片) Wall mount (圖片) Pole mount(圖片)
Temperature (Outdoor only)		Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

Mount/Housing selection Table.

Camera Type	Model number	Status and Accessory	Indoor					Outdoor (0°c to 50°C)			
			Flush ceiling	Solid Ceiling	Corner	Wall	Pole	Solid Ceiling	Corner	Wall	Pole
Box	All Box camera	Status	OK	OK	N/A (Use Wall mount)	OK	N/A	OK	N/A (Use Wall mount)	OK	N/A
		Bracket	GL-202 or GL201	GL-202 or GL201		GL-202 or GL201		GL-210 or GL-205		GL-210 or GL-205	
		Housing	No need	No need		No need		GL-606 or GL-605*		GL-606 or GL-605*	
Zoom lens	CAM-5130 CAM-5140 CAM-5150	Staus	OK	OK	N/A (Use Wall mount)	OK	N/A	OK	N/A (Use Wall mount)	OK	N/A
		Bracket	GL-202 or GL201	GL-202 or GL201		GL-202 or GL201		GL-210 or GL-205		GL-210 or GL-205	
		Housing	No need	No need		No need		No need		No need	
Dome camera	CAM-7100	Status	OK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Bracket	No need								
		Housing	No need								
IP speed dome	CAM-6100	Status	OK	N/A	N/A (Outdoor solution)	N/A (Outdoor solution)	N/A (Outdoor solution)	OK	OK	OK	OK
		Bracket	No need								
		Housing	No need								
	CAM-6200	Status	OK	N/A	N/A (Outdoor solution)	N/A (Outdoor solution)	N/A (Outdoor solution)	OK	OK	OK	OK
		Bracket	No need								
		Housing	No need								
	CAM-6300	Status	OK	OK	OK	OK	OK	N/A	N/A	N/A	N/A
		Bracket	No need								
		Housing	No need	No need	No need	No need	No need				
	CAM-6400	Status	OK	OK	OK	OK	OK	OK	OK	OK	OK
		Bracket									
		Housing	No need	No need	No need	No need	No need	No need	No need	No need	No need
	CAM-6500	Status	OK	OK	OK	OK	OK	N/A	N/A	N/A	N/A
		Bracket	No need								
		Housing	No need	No need	No need	No need	No need				
	CAM-6600	Status	OK	OK	OK	OK	OK	OK	OK	OK	OK
		Bracket									
		Housing	No need	No need	No need	No need	No need	No need	No need	No need	No need

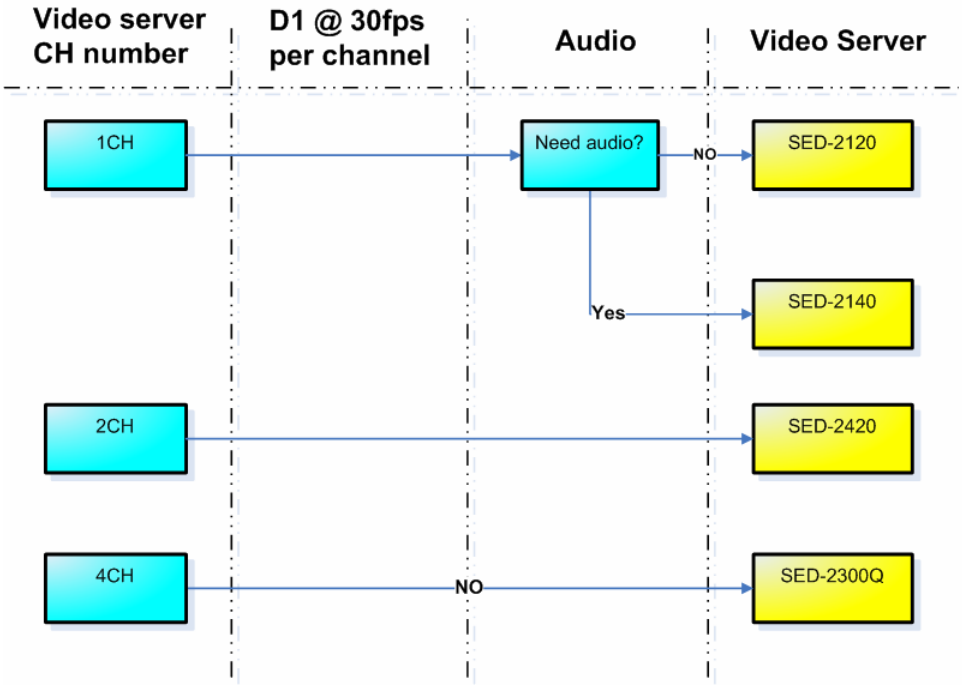
Camera Type	Model number	Status and Accessory	Outdoor extended Temperatue (-20°C~+70°C)			
			Solid Ceiling	Corner	Wall	Pole
Box	All Box camera	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
Zoom lens	CAM-5130 CAM-5140 CAM-5150	Staus	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
Dome camera	CAM-7100	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
IP speed dome	CAM-6100	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
	CAM-6200	Status	OK	OK	OK	OK
		Bracket				
		Housing				
	CAM-6300	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
	CAM-6400	Status	OK	OK	OK	OK
		Bracket				
		Housing	No need	No need	No need	No need
	CAM-6500	Status	N/A	N/A	N/A	N/A
		Bracket				
		Housing				
	CAM-6600	Status	OK	OK	OK	OK
		Bracket				
		Housing	No need	No need	No need	No need

*	You need to add option for heater & blower if your places is too cold or the
	This mount is available
	This mount is not available, but you can use other mount as a backup solution
	This mount is not available

3-2-4. Select video server

In normal case, we recommend you to buy IP camera instead of video server + analog camera.

If you want to connect the video server to your exisiting analog camera, ACTi provides many video servers for different applications. Below is a select diagram for you to choose.



3-2-5. Connections

3-2-5-1. Power

A. Connect to the respective device according to the specification specified on the hardware manual.

3-2-5-2. Ethernet Cable

B. Please always connect the Ethernet cable to WAN port.

3-2-5-3. Lens

C. Be sure to connect the Iris control cable to the Iris port

3-2-5-4. DI/DO

D. Options, if you have any sensors to connect, please make sure
   - The voltage spec is correct (see hardware manual)
   - The connection type is correct (we are using TTL)

4-5. Serial Connection

E. This section is for box camera (when connected to a RS-485 P/T bracket) and video server(when connected to a speed dome or a box camera with a P/T bracket). only, no need for dome camera, speed dome.

3-2-6. Camera configuration

The camera configuration includes two parts, analog imaging configuration and the web-configurator setting. Appropriate settings are required for both parts to ensure the camera performance.

Below are some key items to configure and how to configure.

5-1. Analog imaging configuration

The configuration of the analog imaging are done by either switching the DIP-Switch at the camera side panel or by entering the camera's OSD menu and setup. You can refer to camera's hardware manual for more information about switching the settings.

NOTE: You have to login the IP camera to view the image first, and adjust according to video displayed.

H. Auto Iris / Electric shutter (Box camera only)

Be sure to switch to Auto Iris when using a box camera with an auto iris lens. Otherwise, the image will be completedly dark.

I. DC level

Switch this level to micro adjust the video overall brightness. There's no rule to adjust this setting, just adjust it when there's a brightness issue.

J. BLC (Backlight Compensation)

Backlight compensation is to solve the backlighting problem. This problem happens often when at a scene containing objects with high lighting difference. (ex: shooting from indoor to outdoor, the lighting difference between indoor objects and outdoor objects is huge.)

Whether to enable this function or not is subject to each case. You have to adjust on-site and decide by on-site performance. That's because sometimes you might get worse images after you turn the BLC on.

K. WDR (Wide Dynamic Range)

Wide Dynamic Range works the same as BLC. But it has relatively strong functionality against backlighting problem. You can try to turn it on when you have such kind of problem.

L. Flickerless (Mostly for Japan only)

For special area where the TV standard frequency is different then the AC power frequency. Example: In some Japan area, the TV standard is NTSC (frequency: 60times /sec) but local power frequency is 50times /sec.

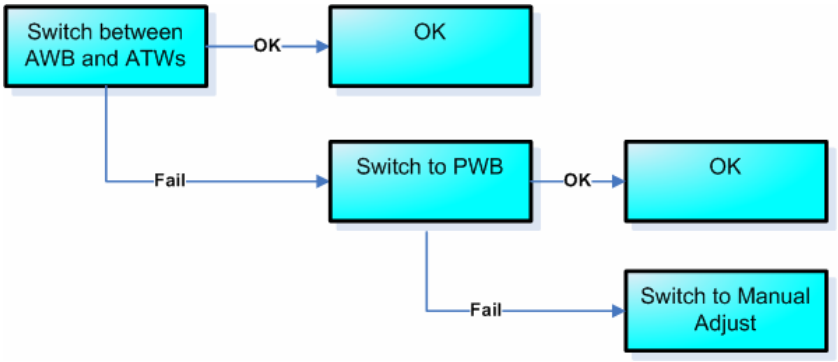
Only in such kind of cases, you will need to turn the Flickerless on.

M. White Balance (Color rendering)

White balance settings directly effect whether the color rendering is true or not. There are 4 types of white balance setting and each camera might not have them all. Please see below for how each setting means and how to adjust.

AWB (Auto White Balance)
ATW (Auto Trace White Balance)
PWB (Push White Balance)
Manually Adjust (Manually set Red and Blue parameters)

There's no need to change the setting if the color rendering is bad. Whenever theirs is a problem, please go through the setting below.



N. PTZ setting (for Zoom camera and speed dome only)

Zoom camera and PTZ camera can be remote controlled by

software. To do so, the PTZ setting of the camera must be exactly the same with the software or the control panel that controls it.

There are 5 PTZ settings, first two are for manually

G-1. Protocol

G-2. Baud rate

G-3. Parity (You have to get from your manufacturer)

G-4. Byte Length (always 8)

G-5. Stop bit (always 1)

Please refer to the monitor and management part for respective software setting. The overall settings will be described then.

L. Focus speed (For speed dome only)

PTZ camera always move from one prest to another preset. There's no need to adjust this parameter unless you have these problems

Problem1: Speed dome camera can't get clear image very fast when moving to a preset

Problem2: The moving items in the scene causes the focus to shift and result in unclear images

If you have problem1, please increase the focus sensitivity. If you have problem2, please decrease the focus sensitivity.

5-2. Web-configurator setting

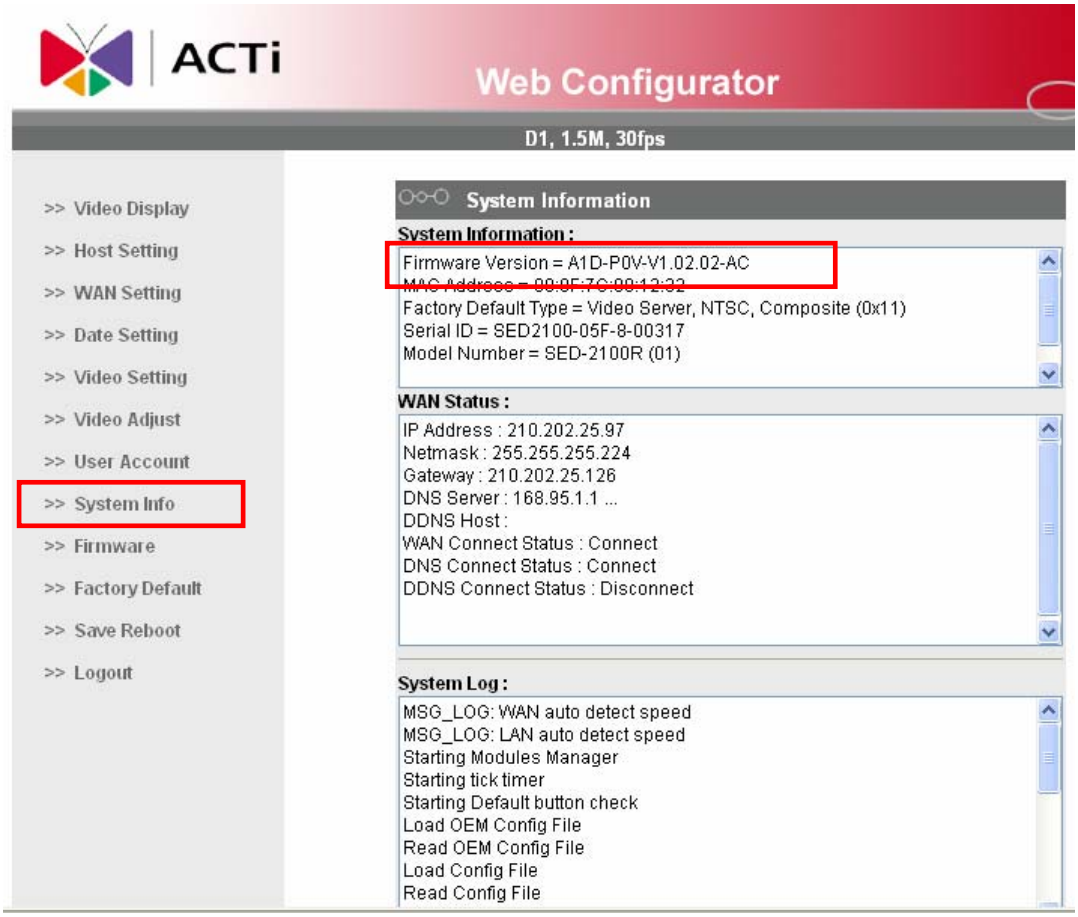
These settings are done via Web-configurator. To do so, you have to connect to the IP camera / Video server first. (please refer to hardware manual).

Below are some key items to configure in each sub-cateogry on the web-configurator.

NOTE: Some settings take effects only after you "Save and Reboot" the camera, you can always refer to the support package TS-00104 at http://www.acti.com/support/support_package.asp?

H. System information

Please go to the system information page to check out the firmware version.



We strongly recommend you to either

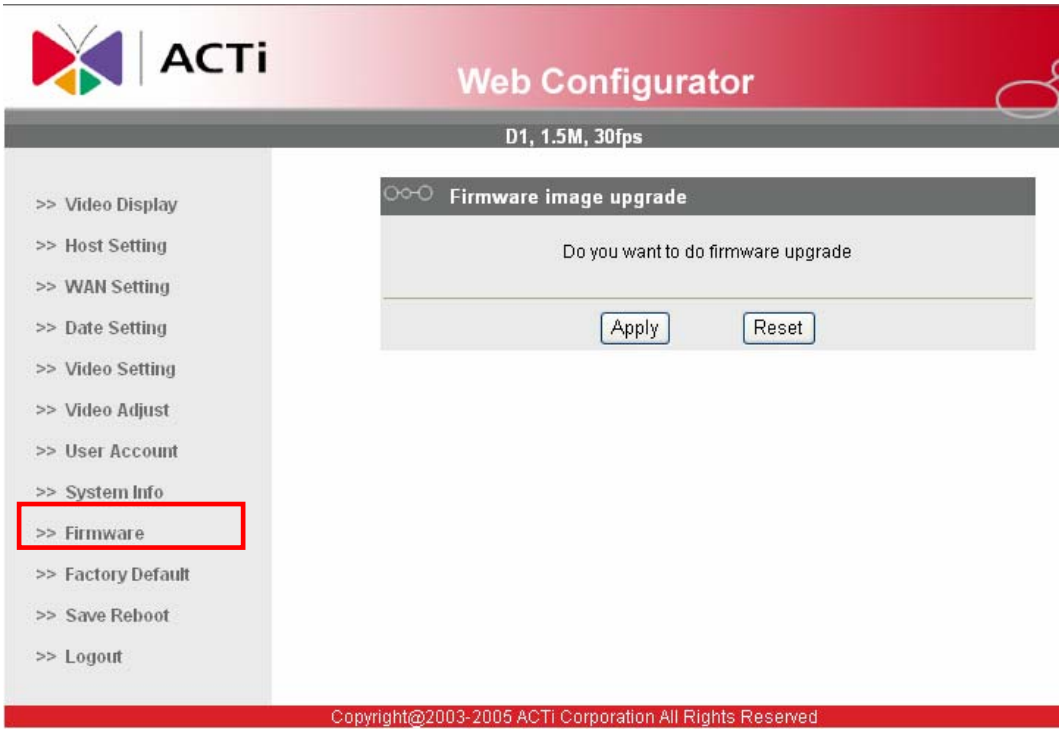
A-1. Use the stable firmware that you have used before

A-2. Use the newest firmware available on our website (http://www.acti.com)

Many problems are caused by inappropriate firmware version. Always check the firmware version before you start.

I. Firmware Upgrade

If the find the firmware version not right (either not the newest or not a stable one you used before), please follow the hardware manual to upgrade.



J. Host Setting

C-1. Language

-Select the language of your choice. This will be the default web-configurator UI next time you login. (default is English)

C-2. LAN port setting

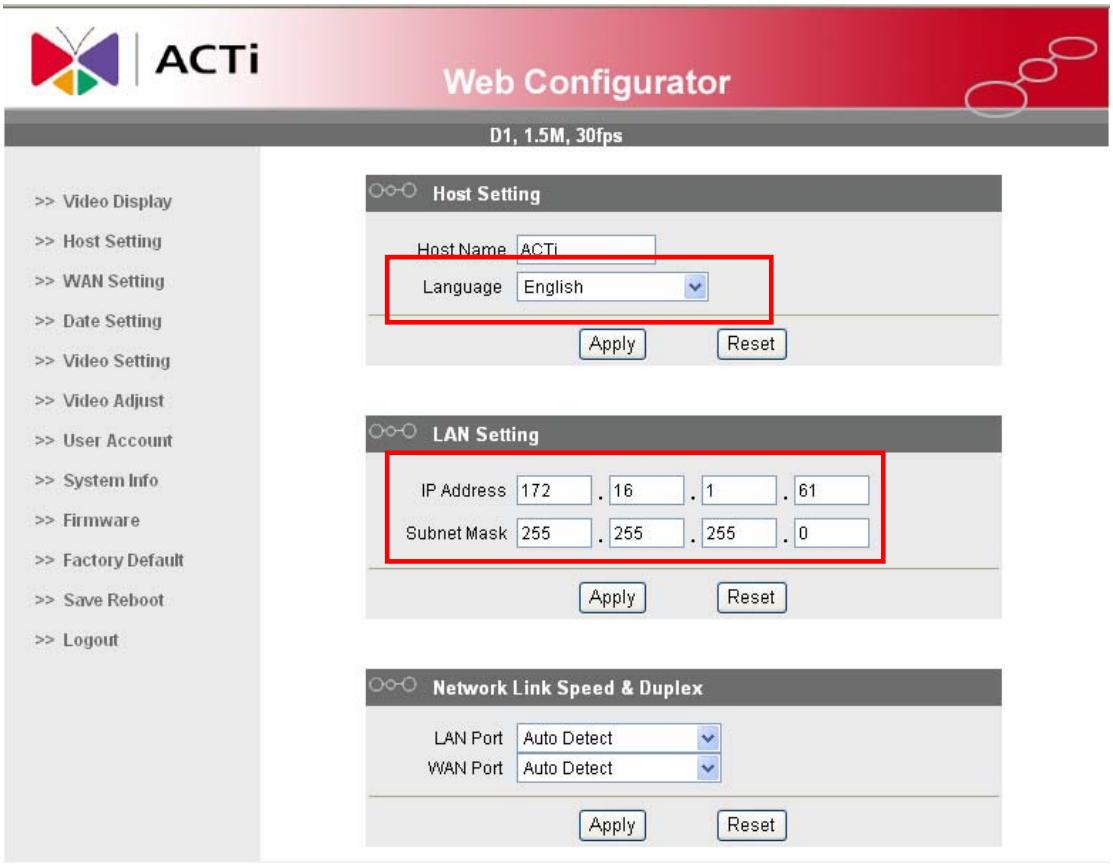
There are several items to check when setting the LAN port.

C-2-1. Make sure the IP address is not in the same network segment with the IP address set in the WAN setting. (Example: if WAN port IP address is 10.0.0.1, the LAN port IP address can't be 10.0.0.2)

C-2-2. If you connect this device to network via LAN port, please make sure the LAN port IP address is in the same network segment with the network it connected to. (Example: if you are connecting to a network 192.168.1.xxx via LAN port, your LAN port IP address be 192.168.1.xxx, where xxx can be any number from 1~255)

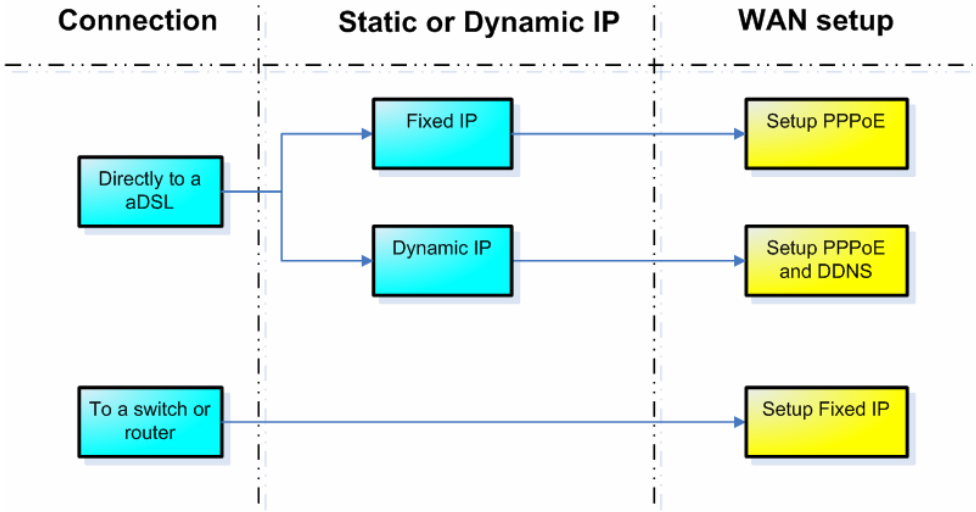
C-2-2. Always set the subnet to be 255.255.255.0 if you are not sure about it.

.

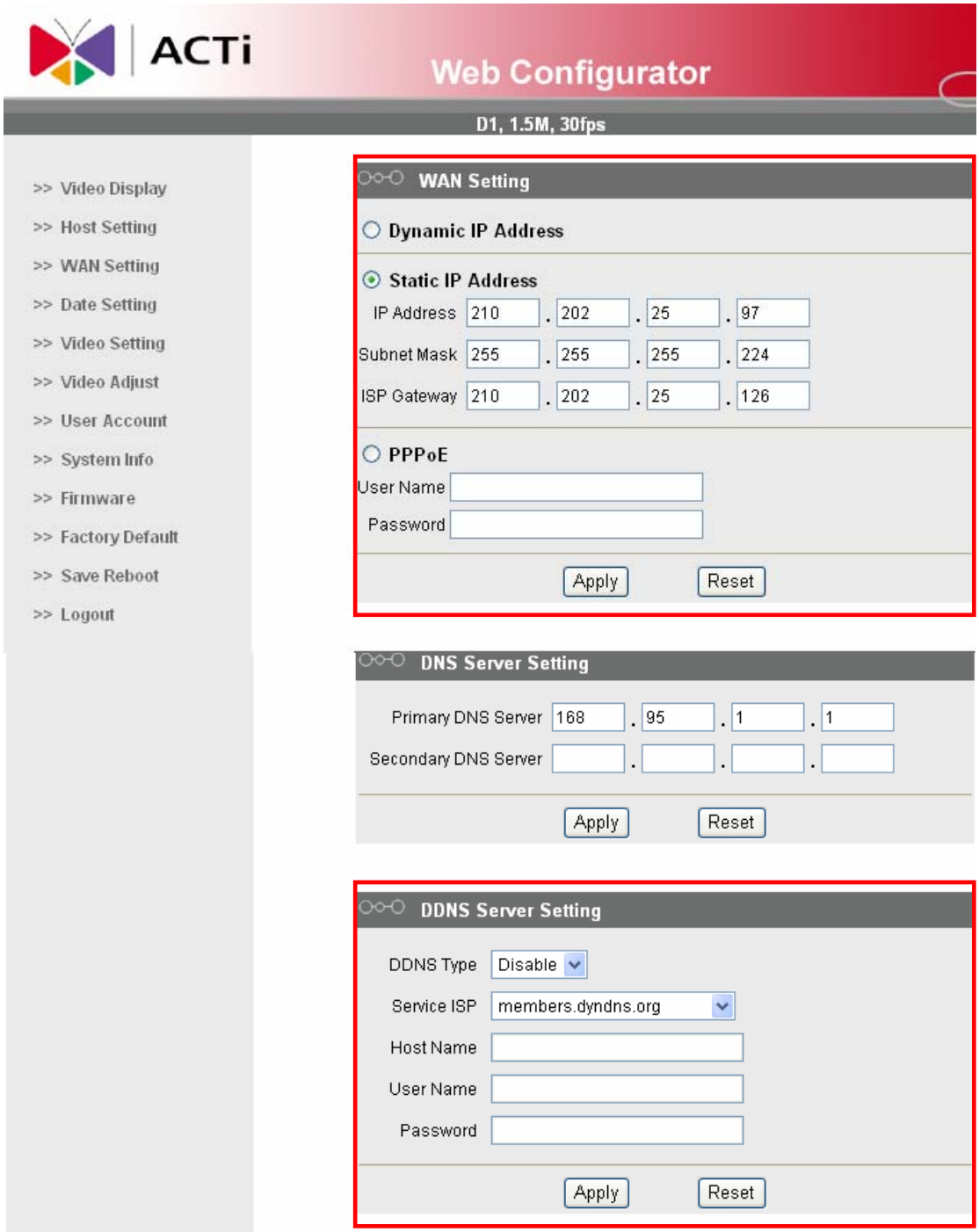


K. <u>WAN Setting</u>

Please refer to the flow below to know what to set.



Then set each item as below



D-1. Dynamic IP address

-Normally, we won't suggest customer to use Dynamic IP address.

D-2.Static IP address

-Set the IP address according to your network design. If you are not sure, please go back to chapter 2-1 for more details.

D-3. PPPoE

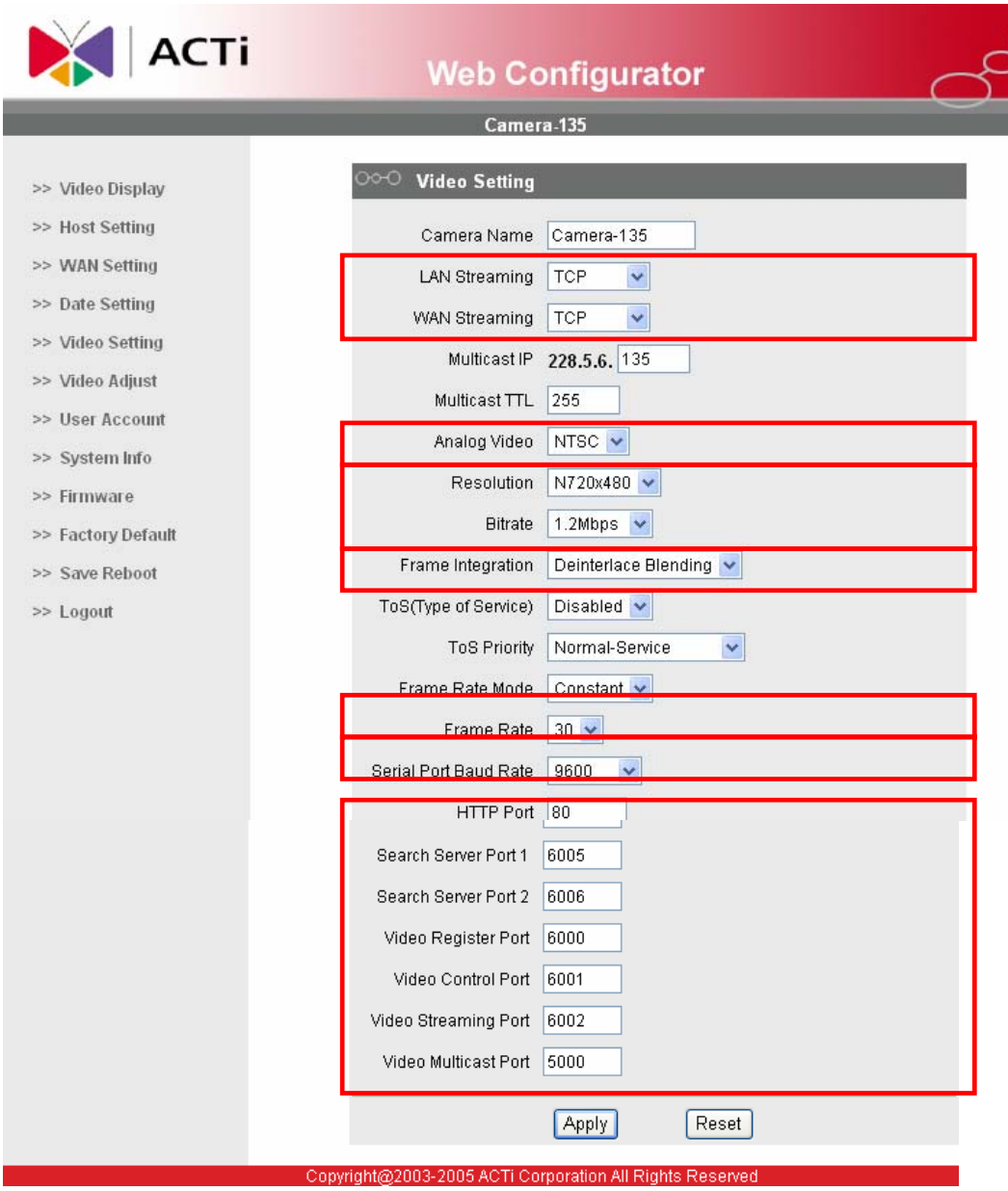
-Set to PPPoE only when the IP camera is connected directly to an aDSL modem. Just click to enable the PPPoE and and input the User Name and password of the internet service you bought from your ISP.

D-4. DDNS

-When we use PPPoE to connect to the internet, most of the time the device IP address is not static but dynamic. When using dynamic IP address, we recommend you to use DDNS function which enables you to input domanin name" actifrontdoor.dyndns.com" to connect to a camera instead of "IP address"
For how to apply and setup DDNS, please refer to support packge TS-00007 at
http://www.acti.com/support/support_package.asp?

L. Video Setting

Please refer to the flow below to know what to set.



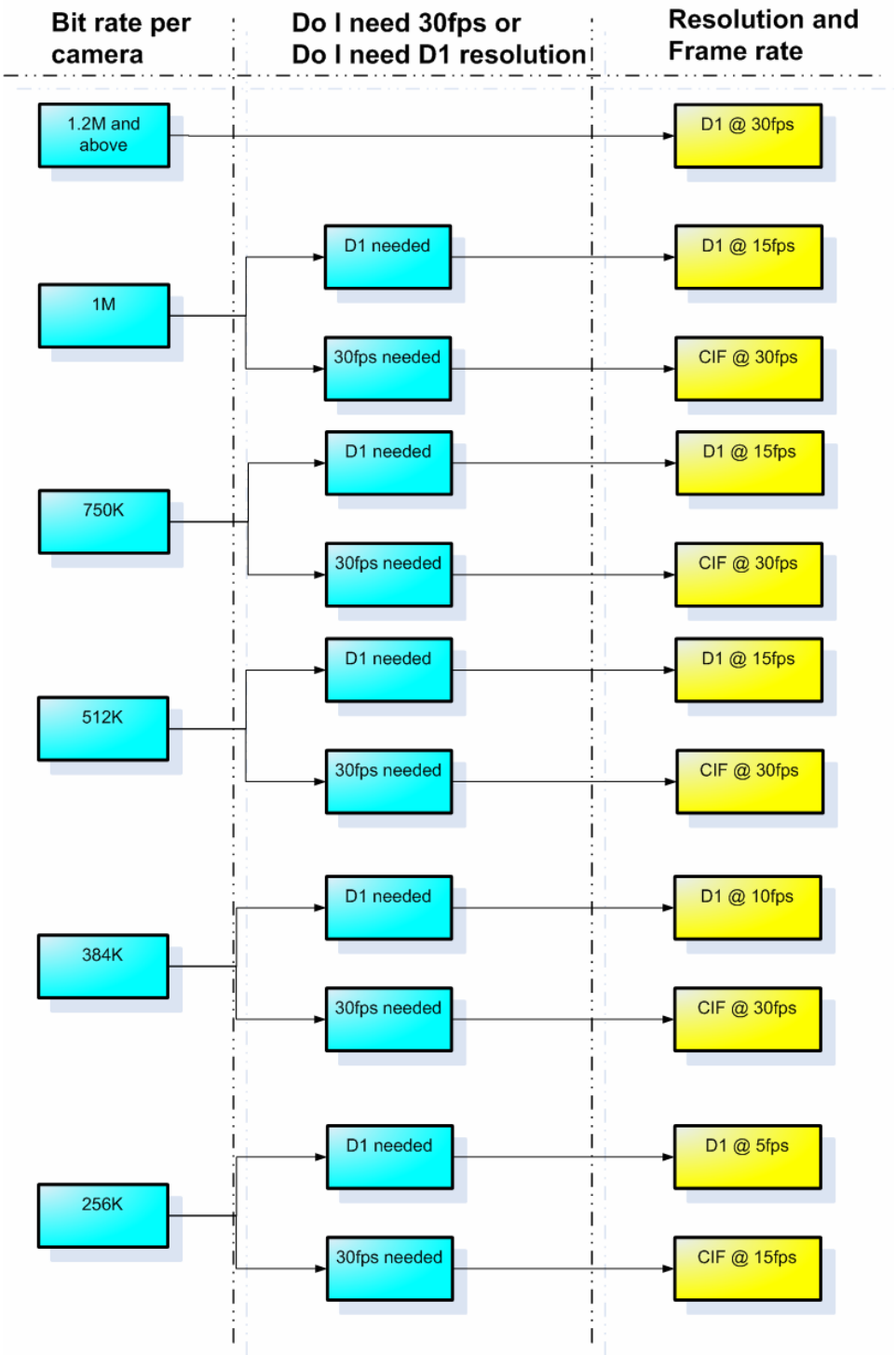
E-1. Streaming Type

This section is to set whether you use TCP/IP or Multicast to stream to video for LAN port or WAN port. We recommend you to use TCP/IP as your streaming type since the multicast might cause the network to fail without appropriate network setting (which requires some IT background).

E-2.Resolution & Bit rate & Frame rate

These three items are dependent to each other. Higher bit rate means better image quality but you can also lower

the frame rate to get good image quality in low big rate. Please refer to the description below for each setting, then refer to the flow to select the right bit rate, resolution combination for each bit rate.



-Bit rate: This seting is to select the size of the streaming transferred by this device. It directly effect the network bandwidth, storage size and the image quality (together

with resolution and frame rate). Thus, we always set our bit rate according to the bandwidth and the storage size first, then we adjust the resolution and the frame rate for the video quality.

-Resolution: This is to select how big your image is. The bigger the image is, the better resolution it can provide.

NTSC	PAL
Resolution	Resolution
D1 (720x480)	D1 (720x576)
CIF (360x240)	CIF (360x288)
QCIF (180x120)	QCIF (180x144)

-Frame rate: This setting directly effect how many frame rates you can get per second. Normally, we would recommend you to use 30fps because it won't miss a thing. But if you might eed to lower the frame rate if your bit rate is not enough for 30fps.

E-3. Frame integration

- This setting is for the interlacing problem which happens when shooting an high speed moving object. Below is a picture indicating the interlacing problem.

Interlacing problem

We strongly recommend you to use the "Deinterlace-Blending" if your are not sure what to use. If you are shooting a place where images are all moving very fast, you confront servious interlancing problem, then you can try to change it into "Deinterlace Motion".

NOTE: Deinterlace-blending deliver better images of static items while deinterlace-motion sacrifice some resolution to compensate for the motion.

E-4. Serial port baud rate

-This setting is important during the PTZ setting. Please refer to the table below for how to set it.

Application	How to set Serial baud baud rate:
Video Server + PTZ camera	This baud rate should be the same with the PTZ camera's baud rate rate setting
IP camera	No use
IP dome camera	No use
IP speed dome	This baud rate should be the same with the IP speed dome camera's

	hardware baud rate rate setting.
IP zoom camera	This baud rate should be the same with the IP zoom camera's hardware baud rate rate setting.

E-5. Network port setting

-This section lets you set the network port for the network connection. This setting is important otherwise the system will fail (no images, PTZ don't work or..). Please refer to support packge TS-00009 for how to set up http://www.acti.com/support/support_package.asp

M. Video Adjust

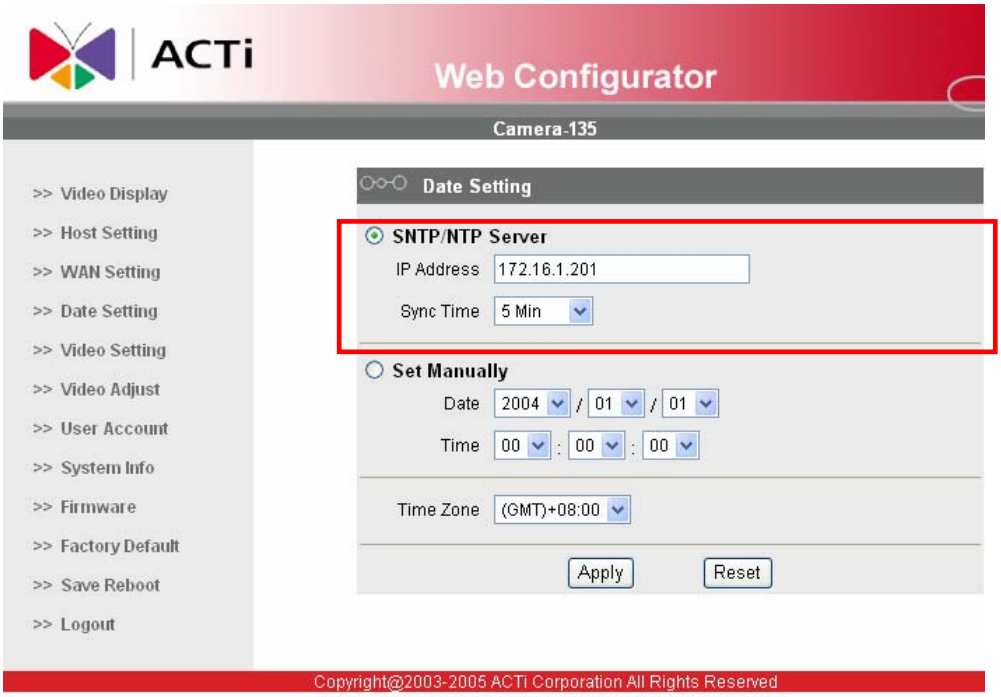
PTZ camera always move from one prest to another preset. There's no need to adjust this parameter unless you have these problems

NTSC		PAL	
Hue	**50**	**Hue**	**55**
Brightness	**44**	**Brightness**	**38**
Saturation	**54**	**Saturation**	**40**
Contrast	**50**	**Contrast**	**40**

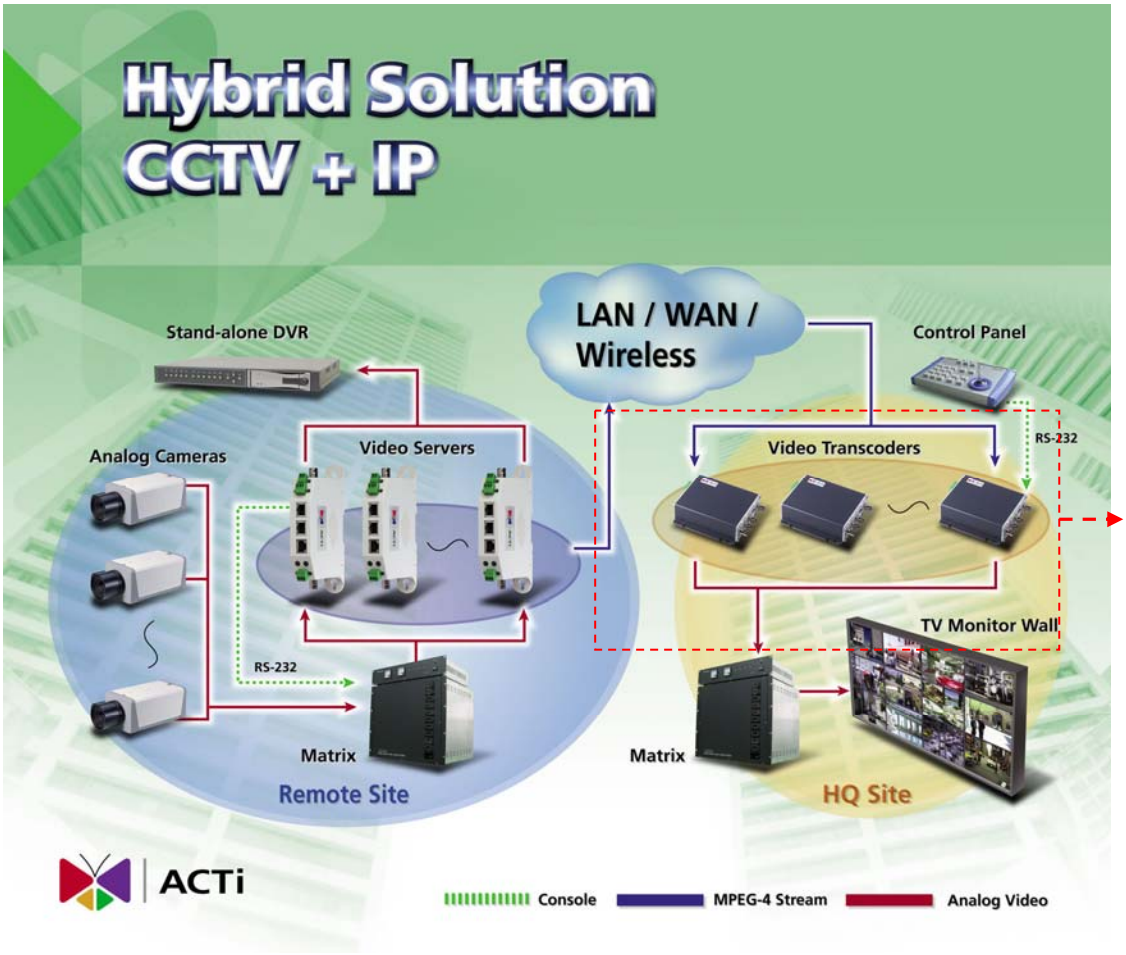
N. Date Setting

This sections lets you know how to the set the time of the IP camera. Since the IP camera embeds the timecode within the streaming, it is important to set the time of the IP camera right. We recommend you to use SNTP/NTP because it can make sure all the IP camera are synchronized to the same time.
Please refer to support packge TS-00006 for how to set up
http://www.acti.com/support/support_package.asp
The synchronize time means the time interval for the IP camera to sync time with the SNTP/NTP server, we recommend you to set as 5mins in normal conditions.

If you are not sure about the SNTP / NTP, please select "Set Manually" and manually input the time.


ACTi
Web Configurator
Camera-135
>> Video Display
>> Host Setting
>> WAN Setting
>> Date Setting
>> Video Setting
>> Video Adjust
>> User Account
>> System Info
>> Firmware
>> Factory Default
>> Save Reboot
>> Logout
Date Setting
SNTP/NTP Server
IP Address 172.16.1.201
Sync Time 5 Min
Set Manually
Date 2004 / 01 / 01
Time 00 : 00 : 00
Time Zone (GMT)+08:00
Apply
Reset
Copyright@2003-2005 ACTi Corporation All Rights Reserved

3-4 Decoding



In this chapter we will tell you how to select, install and configure the devices in this block. These devices includes transcoder.

3-3-1. Select the Transcoder

Please use SED-3300 as your transcoder since SED-3200 might not support some IP camera or video server.

3-3-2. Connections

3-3-5-1. Power

A. Connect to the respective device according to the specification specified on the hardware manual.

3-3-5-2. Ethernet Cable

B. Please always connect the Ethernet cable to WAN port.

3-3-5-3. Analog Monitor (DVR)

C. Connect the analog output to the DVR or analog monitor

3-3-5-4. RS-485 connection

Options, if you are connecting to a control panel, then follow the instruction on the manual to connect it. You can also use one control panel to control all IP cameras like the diagram below.

3-3-3. Connect the transcoder to network

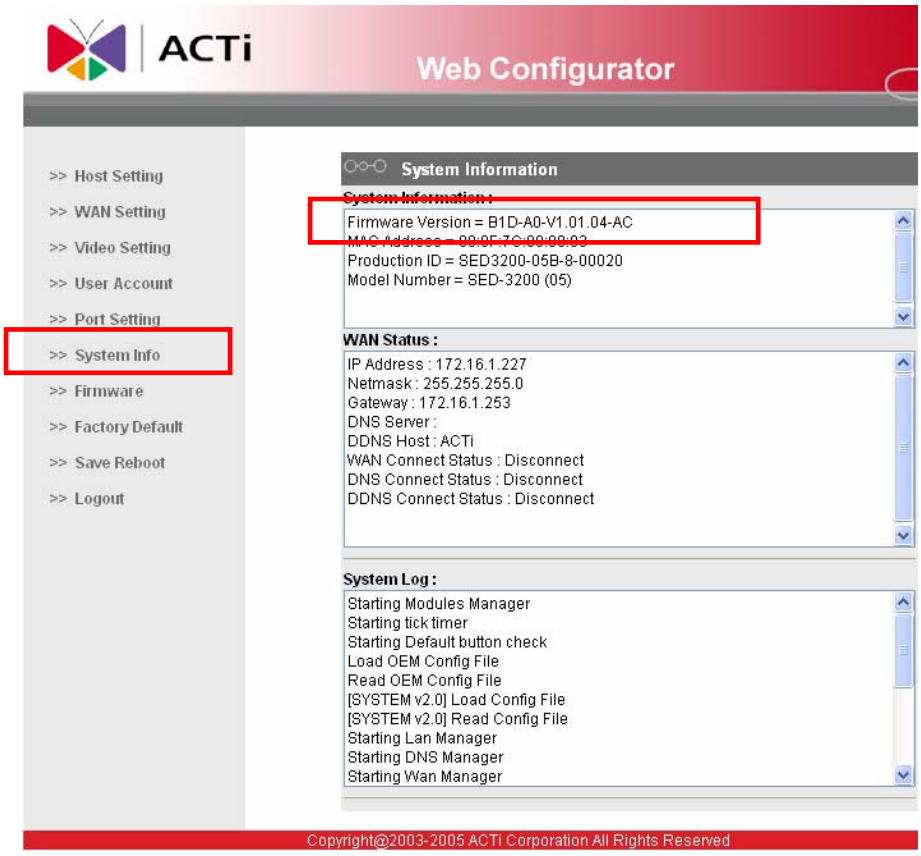
Connect the Transcoder to the network. Please follow the network architecture we come out at chapter 2-1 and refer to support packge TS-00009 for how to set up the Transcoder connection. http://www.acti.com/support/support_package.asp

3-3-4. Configure the Transcoder

These settings are done via Web-configurator. To do so, you have to connect to the transcoder first. (please refer to hardware manual). Below are some key items to configure in each sub-cateogry on the web-configurator.

A. System information

Please go to the system information page to check out the firmware version.



We strongly recommend you to either

A-1. Use the stable firmware that you have used before

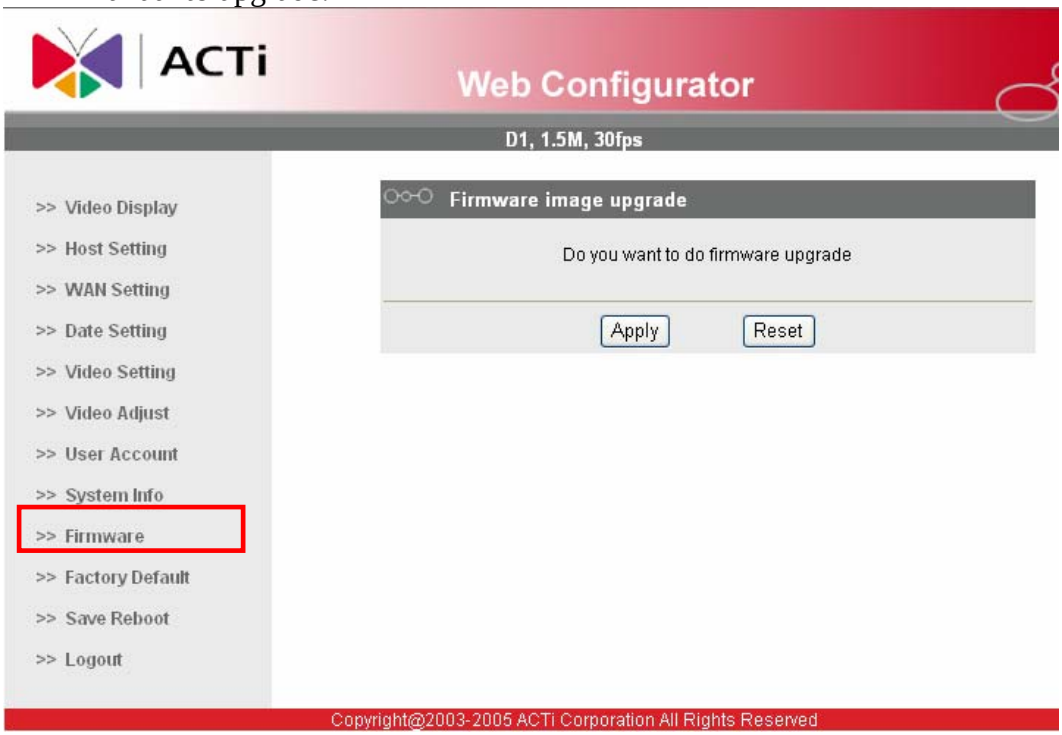
A-2. Use the newest firmware available on our website (http://www.acti.com)

Many problems are caused by inappropriate firmware version. Always check the firmware version before you start.

B. Firmware Upgrade

If the find the firmware version not right (either not the newest

or not a stable one you used before), please follow the hardware manual to upgrade.



C. Host Setting

C-1. Language

-Select the language of your choice. This will be the default web-configurator UI next time you login. (default is English)

C-2. LAN port setting

There are several items to check when setting the LAN port.

C-2-1. Make sure the IP address is not in the same network segment with the IP address set in the WAN setting. (Example: if WAN port IP address is 10.0.0.1, the LAN port IP address can't be 10.0.0.2)

C-2-2. If you connect this device to network via LAN port, please make sure the LAN port IP address is in the same network segment with the network it connected to. (Example: if you are connecting to a network 192.168.1.xxx via LAN port, your

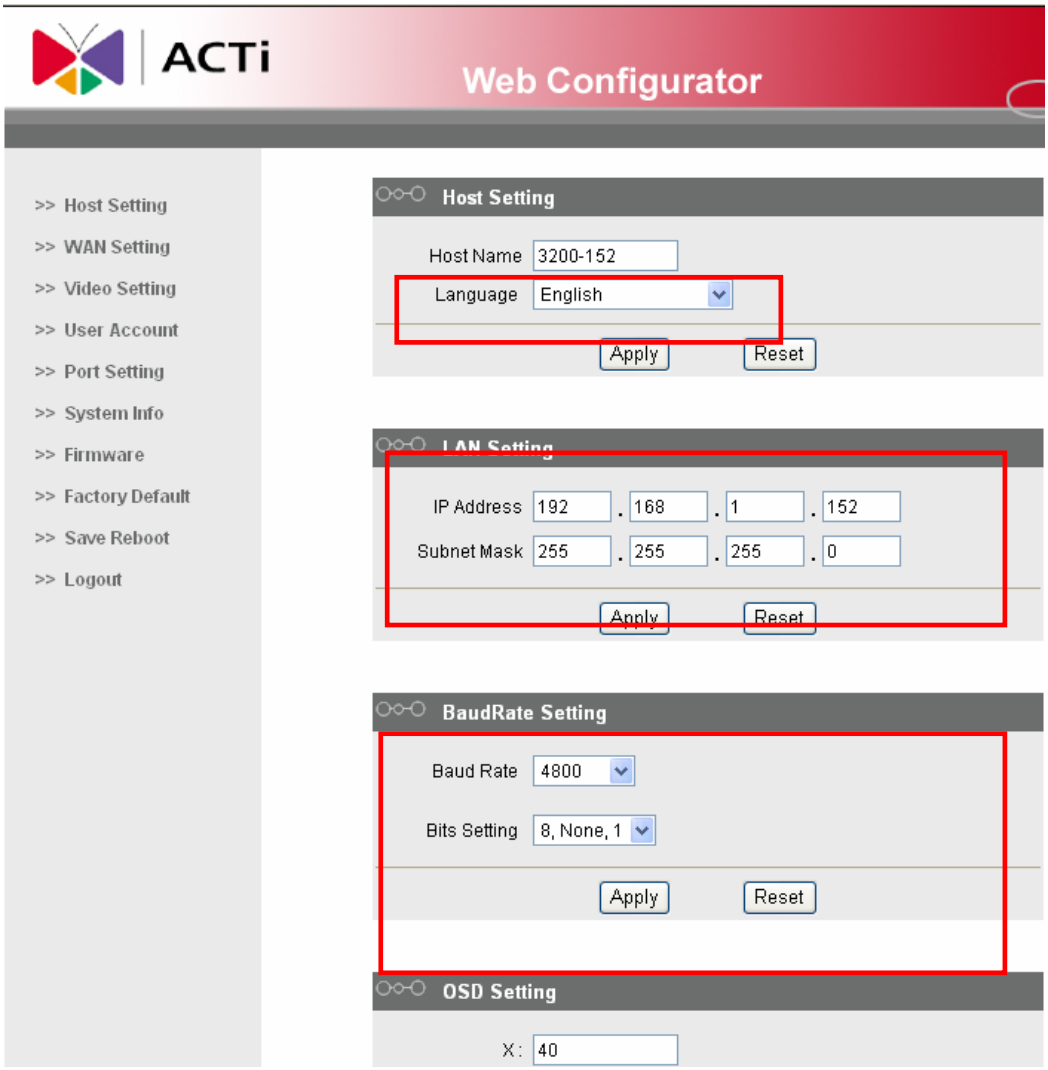
LAN port IP address be 192.168.1.xxx, where xxx can be any number from 1~255)

C-2-2. Always set the subnet to be 255.255.255.0 if you are not sure about it.

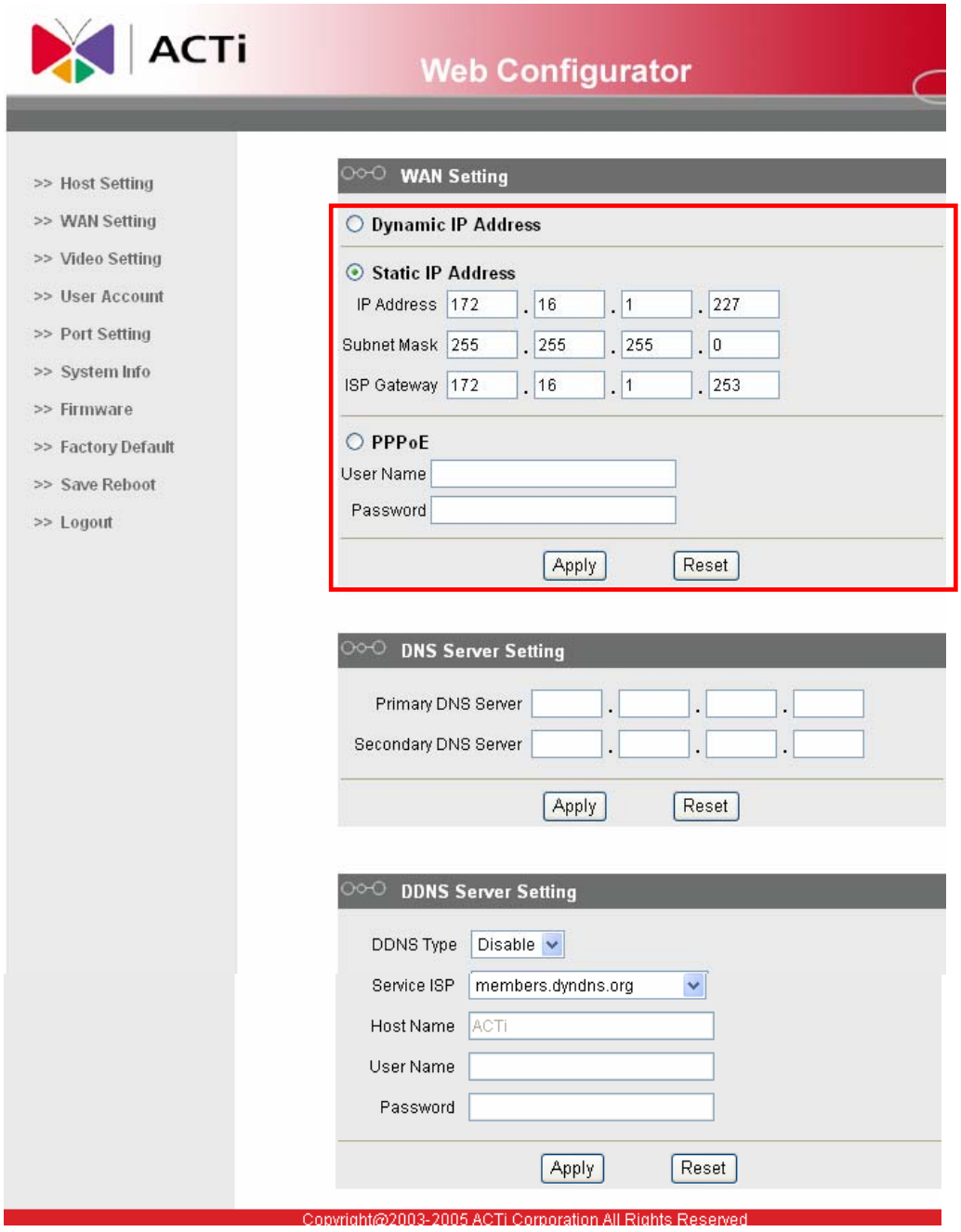
.

C-3. Baud rate setting (optional, when connecting to a control panel)

This setting has to be the same with the control panel it connects to. You have to refer to the control panel's operation manual for more information.



D. WAN Setting



Then set each item as below

D-1. Dynamic IP address

-Normally, we won't suggest customer to use Dynamic IP address.

D-2.Static IP address

-Set the IP address according to your network design. If

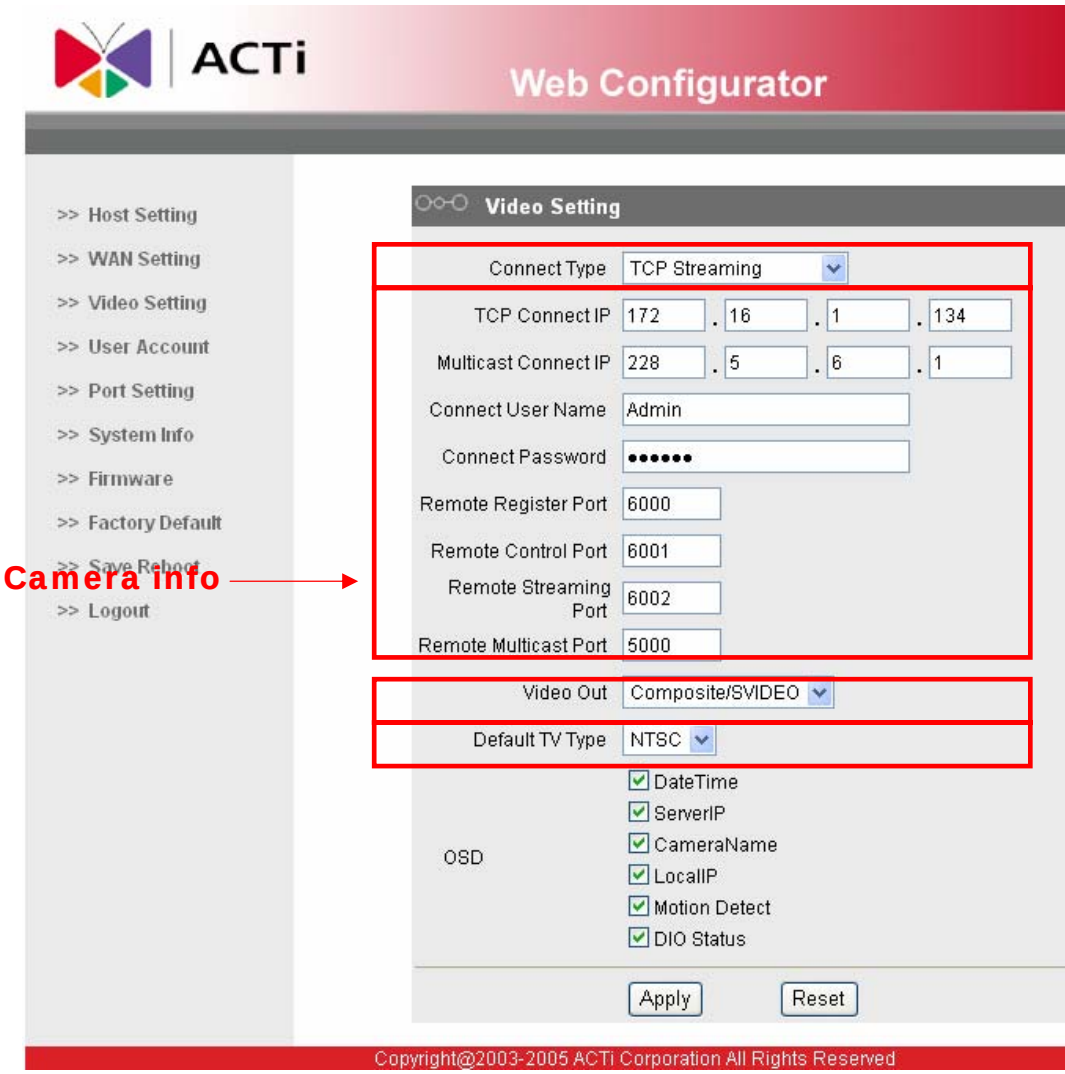
you are not sure, please go back to chapter 2-1 for more details.

D-3. PPPoE

-Set to PPPoE only when the IP camera is connected directly to an aDSL modem. Just click to enable the PPPoE and and input the User Name and password of the internet service you bought from your ISP.

E. Video Setting

Please refer to the flow below to know what to set.



E-1. Connect Type

This one is dependent to the streaming type settings of

the IP camera/video server this transcoder connects to. Please refer to the setting in the image block for details.

E-2. Camera information

All the settings here are dependent to the IP camera / video server setup, please refer to the setting in the imaging block.

E-2-1. TCP connect IP

Input the IP of the camera you connect to.

E-2-2. Mutlicast connect IP

Input the Mutlicast IP of the camera you connect to.

E-2-3. User Name

Enter the User name of the IP camera you connect to.

E-2-4. Password

Enter the Password of the IP camera you connect to.

E-2-5. Register port

Enter the Register port of the IP camera you connect to.

E-2-6.Control port

Enter the Control port of the IP camera you connect to.

E-2-7.Stream port

Enter the Stream port of the IP camera you connect to.

E-3. Video Output

This transcoder support two types of analog output. One is Composite output the other is Y/C output. You can have one output at a time. Please select according to the device you connect the analog output to.

E-4. Video Output standard

There are two types of analog signal, one is NTSC, the other is PAL. This setting is dependent to the analog monitor or the DVR you connect to.

3-4 Management

For management, please refer to DVR or Matrix’s user manual.

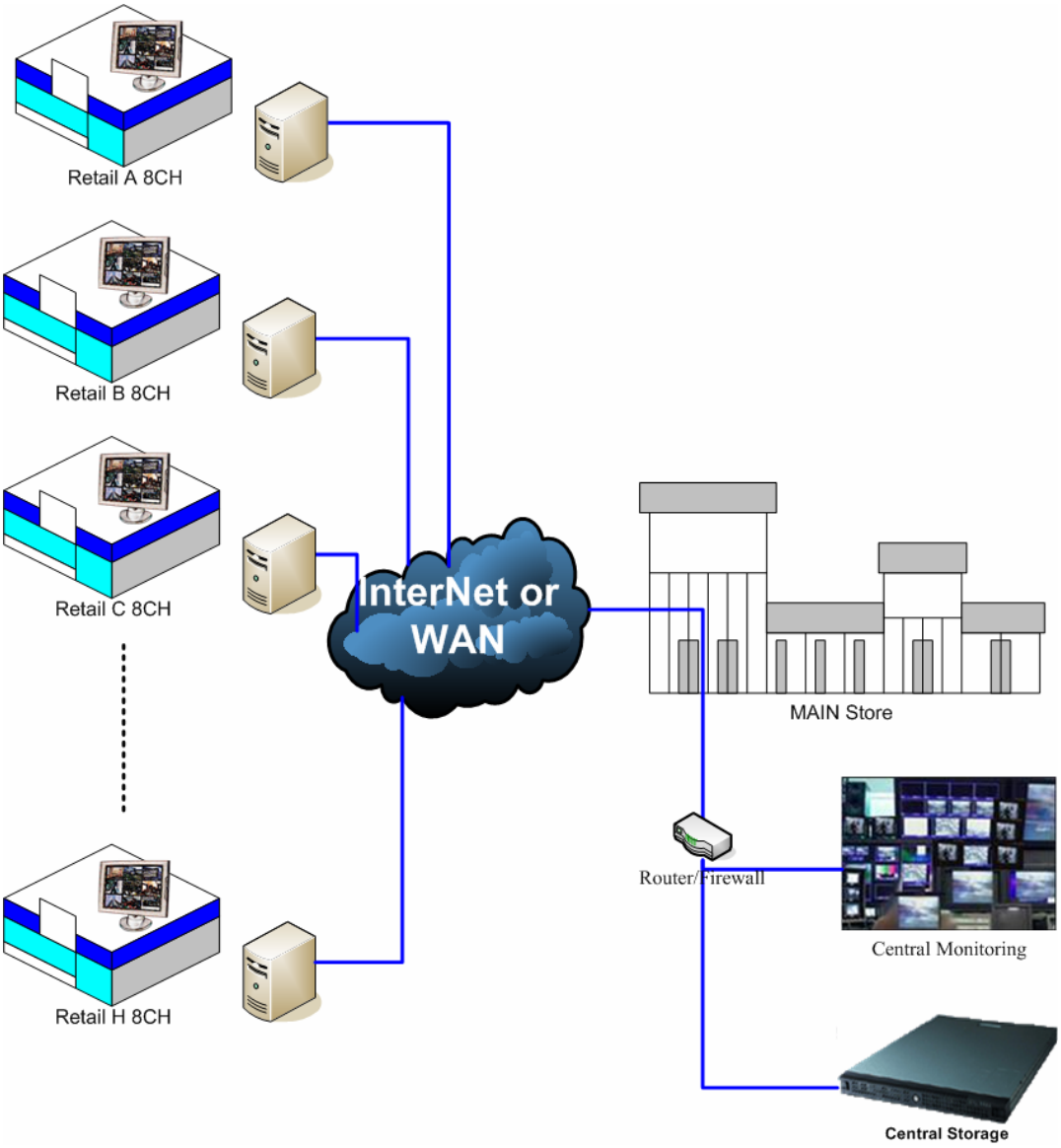
Chapter 5. Case Study- IP surveillance solution

This chapter we use a chain retail shop as a case study. We will follow the building blocks at chapter 2 to step by step by step deploy of this case.

5-1 Case introduction

A shop owner has 8 jewelry tails stores, he wants to monitor all stores to prevent accidents or robbert. In each store, it has 4 cameras and local monitoring and local storage. Besides, he wants to central management all 4 stores to prevent inside theft event.

5-1-1 System proposal



5-2 Network

We start by referring to support package TS-00029 at http://www.acti.com/support/support_package.asp to know about LAN, WAN and we find that our network system is WAN network system (internet).

Then we refer to the network builing block Because the system involves internet, this network envrironment is WAN network system (internet). Thus,

We looked through chapter 2-5-4 to know we have to check

5-1-1 Check what to consider

Below are what to check within a WAN environment.

5-1-1-1. Device network connectivity

In this case, we will set the network setting of each device in the same LAN in the same network segment.

We will set the IP address of devices at each retail shop as below

- Retail A: IP: 192.168.1.xx
  Subnet: 255.255.255.0
- Retail B: IP: 192.168.2.xx
  Subnet: 255.255.255.0
- Retail C: IP: 192.168.3.xx
  Subnet: 255.255.255.0
- Retail D: IP: 192.168.4.xx
  Subnet: 255.255.255.0
- Retail E: IP: 192.168.5.xx
  Subnet: 255.255.255.0
- Retail F: IP: 192.168.6.xx
  Subnet: 255.255.255.0
- Retail G: IP: 192.168.7.xx
  Subnet: 255.255.255.0
- Retail H: IP: 192.168.8.xx
  Subnet: 255.255.255.0
- Central Site: IP: 192.168.9.xx
  Subnet: 255.255.255.0

5-1-1-2. Bandwidth

The bandwidth limitation inside a LAN is 30MB per second. The bandwidth limitation between the internet is 3M upload, 12M download (according to the network service from ISP).
The limitation is the internet bandwidth. But since the internet service is not so stable, we recommend you to minus the bandwidth by 30% which will make 3M into 2.1M. We divided the 2.1M by 4 cameras, each camera has 500K bandwidth.

- Each camera' bit rate has to be smaller than 500K.

5-1-1-3. Device to device connectivity

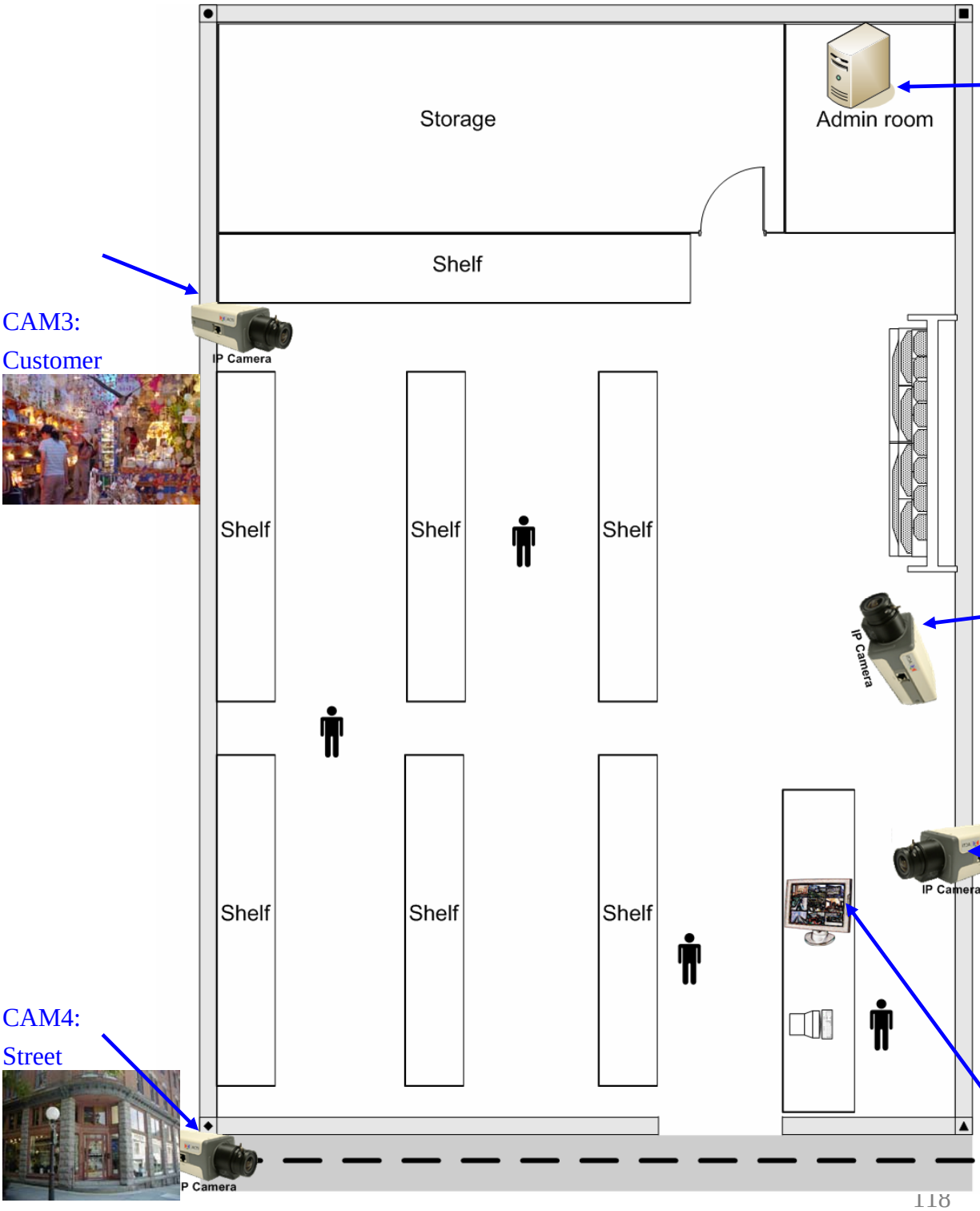
Referring to TS-00009 at http://www.acti.com/support/support_package.asp I will have to do certain sufficient setting for PC at central site to see me. Details, please refer to support package.

5-2 Imaging

After having the basic concepts of the network, we can now go to the camera selection. We follow the instruction at chapter 2-2 go select the camera.

5-2-1. Know customer site

The camera deployment of each shop is like below



5-2-1. Select by the camera type

There are four cameras with different application. We follow the selection flow at Chapter 2-2-2 to select camera for each device.

CAM 1: POS

The cover range is 0~3M.

● Camera Type: Dome camera.

CAM 2: Storage

The cover range is 3~10M.

Remote zoom control: No need. (just need to see the entrance of the storage room)

● Camera Type: Dome or Box camera. (we will use Box camera for selection example)

CAM 3: Customer

The cover range is 3~10M.

Remote zoom control: Needed. (we need to see if the customer is stealing something)

Key area: More than 1.

● Camera Type: Speed dome.

.

CAM 4: Street

The cover range is 10M and above

Remote zoom control: Needed. (we might need to see clearly people entering and leaving the entrance)

Key area: 1

● Camera Type: IP zoom camera.

.

5-2-2. Select by camera function

There are four cameras with different application. We follow the selection flow at Chapter 2-2-2 and we complete the selection table and refer to the product selection sheet to find the right model.

CAM 1: POS (Dome camera type)

Item	Spec	Remark
Outdoor / Indoor	Indoor	
Day/Night function	No need	The shop's light is always on.
Audio	Yes	Knowing the conversation at desk
Vandal Proof	Yes	Prevent it from damage
WDR function	No need	No BLC worry
Zoom capacity (Zoom camera only)	-	
Rotation Speed (PTZ camera only)	-	

● Camera Model: CAM-7100

CAM 2: Storage (Box camera type)

Item	Spec	Remark
Outdoor / Indoor	Indoor	
Day/Night function	No need	The shop's light is always on.
Audio	No need	
Vandal Proof	No need	
WDR function	No need	No BLC worry
Zoom capacity (Zoom camera only)	-	
Rotation Speed (PTZ camera only)	-	

● Camera Model: CAM-5100

CAM 3: Customer (Speed dome type)

Item	Spec	Remark
Outdoor / Indoor	Indoor	
Day/Night function	No need	The shop's light is always on.
Audio	No need	
Vandal Proof	No need	
WDR function	No need	No BLC worry

Zoom capacity (Zoom camera only)	10X and above	Distance is within 30M.
Rotation Speed (PTZ camera only)	50 degree/s	For small retail shop, 50˚/s is enough

● Camera Model: CAM-6200.

CAM 4: Street (IP zoom camera type)

Item	Spec	Remark
Outdoor / Indoor	Outdoor	
Day/Night function	Yes	The street might be very dark at night time
Audio	No need	
Vandal Proof	No need	Just with housing will be alright
WDR function	No need	No BLC worry
Zoom capacity (Zoom camera only)	10X and above	Distance is within 30M.
Rotation Speed (PTZ camera only)	-	

● Camera Model: CAM-5150.

5-2-3. Select camera accessory

There are four cameras with different application. We select the accessory respectively following Chapter 2-2-2 to select camera for each device.

CAM 1: POS (Dome camera type, CAM-7100)

Select Lens: No need, (for Box camera only)

Select mount/housing:

Mounting/Housing key concerns table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Camera Accessorry: No need, all come with the standard package.

CAM 2: Storage (Box camera type, CAM-5100)

Select Lens:

Lens key item table		
Item	Spec	Remark
For Normal camera or Day/Night camera	Normal camera	
Object distance	3~10M	3~10M 10M and above

- Lens model: 0690-00002-000

Select mount/housing:

Mounting/Housing key item table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Mount/housing: Mount GL-201; Housing no need

CAM 3: Customer (Speed dome camera type, CAM-6200)

Select Lens: No need, (for Box camera only).

Select mount/housing:

Mounting/Housing key item table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Camera Model number: CAM-6200NN
- Camera Accessorry: No need (all come with the standard package)

.

CAM 4: Street

Select Lens: No need, (for Box camera only).

Select mount/housing:

Mounting/Housing key item table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Camera Model number: CAM-6200NN
- Camera Accessorry: No need (all come with the standard package)

5-2-4. Select video server

Normally, we recommend user to use IP camera. If you want to use IP camera with video server, please select according to chapter 2-2-4.

5-2-5. Installation

Please read the hardware manual of each device (IP camera, video server, housing, mount) then follow the instruction to install.

5-2-6. Connections

Please read the hardware manual of each IP camera then follow the instruction to connect to respective devices..

CAM 1: POS (Dome camera type, CAM-7100)

-- Power: DC12V (using the adaptor provided)

-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,

-- Lens: No need

-- DI/DO: (options)

-- Serial connection: No need for Dome camera.

CAM 2: Storage (Box camera type, CAM-5100)

-- Power: DC12V (using the adaptor provided)

-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,

-- Lens: Be sure to connect the Iris control cable to the Iris port.(see CAM-5100 manual)

-- DI/DO: (options)
-- Serial connection: No need for Dome camera.

CAM 3: Customer (Speed dome camera type, CAM-6200)

-- Power: According to hardware manual
-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,
-- Lens: No need
-- Serial connection: No need for Dome camera.

.

CAM 4: Street

-- Power: According to hardware manual
-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,
-- Lens: No need
-- DI/DO: (options)
-- Serial connection: No need for Dome camera.

5-2-7. Camera configuration

Please follow the hardware manual to login the camera to view the image first. Then refer to the the 2-2-6 for items to adjust. Below is required configuration for each camera.

NOTE: These settings are for Retails ShopA. Please use it as an example to set cameras at other Retail shops.

CAM 1: POS (Dome camera type, CAM-7100)

● Analog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	No need (Box camera only)
DC level	Adjust it if you see images too bright or too dark
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images
WDR	No need
Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right

PTZ setting	No need
Focus Speed	No need

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.1)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.1(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we would use "Deinterlace-blending. E-4: Serial port baud rate: since it is a box camera, we don't need to set it. E-5: Following the TS-00009 support package, we set the port as Video Register: 6000 Video Control: 6001

	Video Streaming port: 6002 Video Multicast port: 5000 HTTP port: 6004 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 85 Contrast:55
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

CAM 2: Storage (Box camera type, CAM-5100)

- Analog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	Set the camera to auto Iris mode
DC level	Adjust it if you see images too bright or too dark
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images
WDR	No need
Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right
PTZ setting	No need

Focus Speed	No need

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.2)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.2(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we would use "Deinterlace-blending. E-4: Serial port baud rate: since it is a box camera, we don't need to set it. E-5: Following the TS-00009 support package, we set the port as Video Register: 6010 Video Control: 6011 Video Streaming port: 6012

	Video Multicast port: 5000 HTTP port: 6014 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 85 Contrast:55
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

CAM 3: Customer (Speed dome camera type, CAM-6200)

- Analog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	No need (Box camera only)
DC level	Adjust it if you see images too bright or too dark (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
WDR	No need
Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right

PTZ setting	We set the PTZ setting as Protocol: Pelco-P Baud rate: 9600
Focus Speed	Adjust it if you meet problem. (Need to access the OSD menu of IP speed dome via Streaming Explorer.)

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.3)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.3(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we would use "Deinterlace-blending. E-4: Serial port baud rate: Set to 9600 since the hardware setting of the camera is 9600. E-5: Following the TS-00009 support

	package, we set the port as Video Register: 6020 Video Control: 6021 Video Streaming port: 6022 Video Multicast port: 5000 HTTP port: 6024 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 85 Contrast:55
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

CAM 4: Street

- nalog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	No need (Box camera only)
DC level	Adjust it if you see images too bright or too dark (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
WDR	No need

Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right
PTZ setting	There's no need to set PTZ, the protocol is fixed to be Protocol: CAMPRO Baud rate: 9600
Focus Speed	Adjust it if you meet problem. (Need to access the OSD menu of IP speed dome via Streaming Explorer.)

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.4)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.4(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we

	would use “Deinterlace-blending. E-4: Serial port baud rate: Set to 9600 since the hardware setting of the camera is 9600. E-5: Following the TS-00009 support package, we set the port as Video Register: 6030 Video Control: 6031 Video Streaming port: 6032 Video Multicast port: 5000 HTTP port: 6024 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 85 Contrast:55
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

5-3 Monitoring

The monitoring site in at the front desk of each shop. If the clerk wants to view any camera in this shop, he just need to

5-3-1. Check PC spec

My computer is running on Windows XP with SP2 and has internet Explorer 6.0. Thus This computer can monitor the live images.

5-3-2. Network connection

Please follow the support package TS-00009 and the network architecture at chapter 2-2. I have to set my computer's network to be

IP: 192.168.1.5

Subnet: 255.255.255.0

5-3-3. Install software

No need.

5-3-4. Software and configuration

No need.

5-3-5. Operation

5-3-5-1. Open an Internet Explorer

5-3-5-2. Enter the network address of the Explorer

The connection between the computer to the camera is via the router.

For camera one,

IP address: 192.168.1.1 : 6004 (viewing camera 1)

NOTE: IP address: 61.218.225.65: 6004 (if there's anyone outside the shop and want to view the camera 1 images at Retail shopA.

5-3-5-1. Enter the accound name and password

5-3-5-4. Click "Preview" to view the live images.

5-4 Managment

The management site is at each retail store. They view and

5-4-1. Check PC spec

ok.

5-4-2. Network connection

Please follow the support package TS-00009 and the network architecture at chapter 2-2. I have to set my computer's network to be

IP: 192.168.1.6

Subnet: 255.255.255.0

5-4-3. Install software

5-4-3-1. Check Streaming Activator version

The version is 1.36.04.04, the newest one on 2006/3/6.

5-4-3-2. Install Streaming Activator

OK

5-4-3-1. Install Utilities

OK

5-4-4. Software and configuration

5-4-4-1. Setup Camera information

According to the network architecture, for Retail ShopA, all the camera setting at the management site should be as below. (please use it as a reference for other shops)

Camera information setup					
		Camera1	Camera2	Camera3	Camera4
Camear Name		POS camera	Storage	Customer	Street
Camear model		CAM-7100	CAM-5100	CAM-6200	CAM-5130
Server IP address		192.168.1.1	192.168.2.1	192.168.3.1	192.168.4.1
Port	Control	6001	6011	6021	6031
	Streaming	6002	6012	6022	6032
	Multicast	5000	5000	5000	5000
	Register	6000	6010	6020	6030

	HTTP	6004	6014	6024	6034
User Name		According to your setting			
Password		According to your setting			

5-4-4-2. PTZ setup

PTZ setup				
	Camera1	Camera2	Camera3	Camera4
Camear model	CAM-7100	CAM-5100	CAM-6200	CAM-5130
Enable PTZ	-	-	Yes	Yes
Address ID	-	-	1	1
Protocol	-	-	Pelco-P (CAM-6200)	CAMPRO (CAM-5130)
Baud rate	-	-	9600	9600
Parity			None	None
Byte length	-	-	8	8
Stop bit	-	-	1	1
Pan speed Min	-	-	1	1
Pan speed Max	-	-	5	5
Pan speed Default.	-	-	3	3
Tilt speed Min.	-	-	1	1
Tilt speed Max.	-	-	5	5
Tilt speed Default.	-	-	3	3

5-4-4-3. Recording setup

Recording setup				
	Camera1	Camera2	Camera3	Camera4
Camear model	CAM-7100	CAM-5100	CAM-6200	CAM-5130
Save Recordings to	C:\recordings\Channel1	C:\recordings\Channel2	C:\recordings\Channel3	C:\recordings\Channel4
File Type	.RAW	.RAW	.RAW	.RAW
Save Recordings for	7 Day	7 Day	7 Day	7 Day
Save Screen Capture to	C:\ScreenCapture\Channel1	C:\ScreenCapture\Channel2	C:\ScreenCapture\Channel3	C:\ScreenCapture\Channel4

File Type	.BMP	.BMP	.BMP	.BMP
Save Screen Capture for	7 Day	7 Day	7 Day	7 Day
Pre-event	10	10	10	10
Post-event	10	10	10	10
Minimum event time	10	10	10	10
Frequency of flush record file	600	600	600	600
Delete File Path	C:\Recordings	C:\Recordings	C:\Recordings	C:\Recordings
Delete action	100 MB	100 MB	100 MB	100 MB
Minimum Disk space	200 MB	200 MB	200 MB	200 MB

5-4-4-4. Schedule Setup

This is subject to each system.

5-5 Storage

The storage site is done by NVR at the central station, where IP address is 210.202.210.99.

5-5-1. Check PC spec

ok.

5-5-2. Network connection

Please follow the support package TS-00009 and the network architecture at chapter 2-2. I have to set my computer's network to be

IP: 192.168.9.1

Subnet: 255.255.255.0

Gateway: 192.168.9.254

5-5-3. Install software

5-5-3-1. Check NVR version

The version is NVR 1.0 the newest one on 2006/3/6.

5-5-3-2. Install NVR

OK

5-5-3-1. Install Utilities

No need

5-5-4. Software and configuration

5-5-4-1. Setup Camera Group

Camera Group setup	
Group Name	Description
Retail ShopA	Cameras at Retail ShopA
Retail ShopB	Cameras at Retail ShopB
Retail ShopC	Cameras at Retail ShopC
Retail ShopD	Cameras at Retail ShopD
Retail ShopE	Cameras at Retail ShopE
Retail ShopF	Cameras at Retail ShopF
Retail ShopG	Cameras at Retail ShopG
Retail ShopH	Cameras at Retail ShopH

5-5-4-2. Setup Camera information

Below we list down camera information setup of Retail ShopA and Retail shopB. Please use them as example for other site. Refering to the network architecture, we set as below

Retail Shop A camera information				
Camera	CAM1	CAM2	CAM3	CAM4
Group ID	1	2	3	4
Group Name	ShopA-POS	ShopA-Storage	ShopA-Cus	ShopA-Street
Camera Model:	IP dome	IP camera	IP speed dome	IP camera
Camera Group	Retail ShopA	Retail ShopA	Retail ShopA	Retail ShopA
Server IP address	61.218.225.65	61.218.225.65	61.218.225.65	61.218.225.65
Multicast IP address	Not needed	Not needed	Not needed	Not needed
Register Port	6000	6010	6020	6030
Control Port	6001	6011	6021	6031
Streaming Port	6002	6012	6022	6032

Multicast Port	5000	5000	5000	5000
HTTP port	6004	6014	6024	6034
User Name	According to your setting			
Password	According to your setting			
Ping Server First	Yes	Yes	Yes	Yes
Ping Time out	1	1	1	1
Socket Size	25,600	25,600	25,600	25,600
Preview Buffer	3 frames	3 frames	3 frames	3 frames

Retail Shop B camera information				
Camera	CAM1	CAM2	CAM3	CAM4
Group ID	5	6	7	8
Group Name	ShopA-POS	ShopA-Storage	ShopA-Cus	ShopA-Street
Camera Model:	IP dome	IP camera	IP speed dome	IP camera
Camera Group	Retail ShopA	Retail ShopA	Retail ShopA	Retail ShopA
Server IP address	61.218.225.66	61.218.225.66	61.218.225.66	61.218.225.66
Multicast IP address	Not needed	Not needed	Not needed	Not needed
Register Port	6000	6010	6020	6030
Control Port	6001	6011	6021	6031
Streaming Port	6002	6012	6022	6032
Multicast Port	5000	5000	5000	5000
HTTP port	6004	6014	6024	6034
User Name	According to your setting			
Password	According to your setting			
Ping Server First	Yes	Yes	Yes	Yes
Ping Time out	1	1	1	1
Socket Size	25,600	25,600	25,600	25,600
Preview Buffer	3 frames	3 frames	3 frames	3 frames

5-5-4-3. Recording setup

Below we list down recording setup of Retail ShopA and Retail shopB.
Please use them as example for other site.

Retail Shop A Recording Setup				
Camera	CAM1	CAM2	CAM3	CAM4
1st Recording Path	E:\Recordings\Channel1	E:\Recordings\Channel1	E:\Recordings\Channel1	E:\Recordings\Channel1
2nd Recording Path	D:\Recordings\Channel1	D:\Recordings\Channel1	D:\Recordings\Channel1	D:\Recordings\Channel1
File Type	IP dome	IP camera	IP speed dome	IP camera
Frequency of flush record file	600	600	600	600
Pre-event buffer	10	10	10	10
Post-event buffer	10	10	10	10
Disk Clean Algorithm	All Channel	All Channel	All Channel	All Channel
Master Device	E:	E:	E:	E:
Limiation Space	50	50	50	50

5-4-4-3. Schedule Setup

Recording setup				
	Camera1	Camera2	Camera3	Camera4
Camear model	CAM-7100	CAM-5100	CAM-6200	CAM-5130
Save Recordings to	C:\recordings\Channel1	C:\recordings\Channel2	C:\recordings\Channel3	C:\recordings\Channel4
File Type	.RAW	.RAW	.RAW	.RAW
Save Recordings for	7 Day	7 Day	7 Day	7 Day
Save Screen Capture to	C:\ScreenCapture\Channel1	C:\ScreenCapture\Channel2	C:\ScreenCapture\Channel3	C:\ScreenCapture\Channel4

File Type	.BMP	.BMP	.BMP	.BMP
Save Screen Capture for	7 Day	7 Day	7 Day	7 Day
Pre-event	10	10	10	10
Post-event	10	10	10	10
Minimum event time	10	10	10	10
Frequency of flush record file	600	600	600	600
Delete File Path	C:\Recordings	C:\Recordings	C:\Recordings	C:\Recordings
Delete action	100 MB	100 MB	100 MB	100 MB
Minimum Disk space	200 MB	200 MB	200 MB	200 MB

5-5-4-4. Schedule Setup

This is subject to each system.

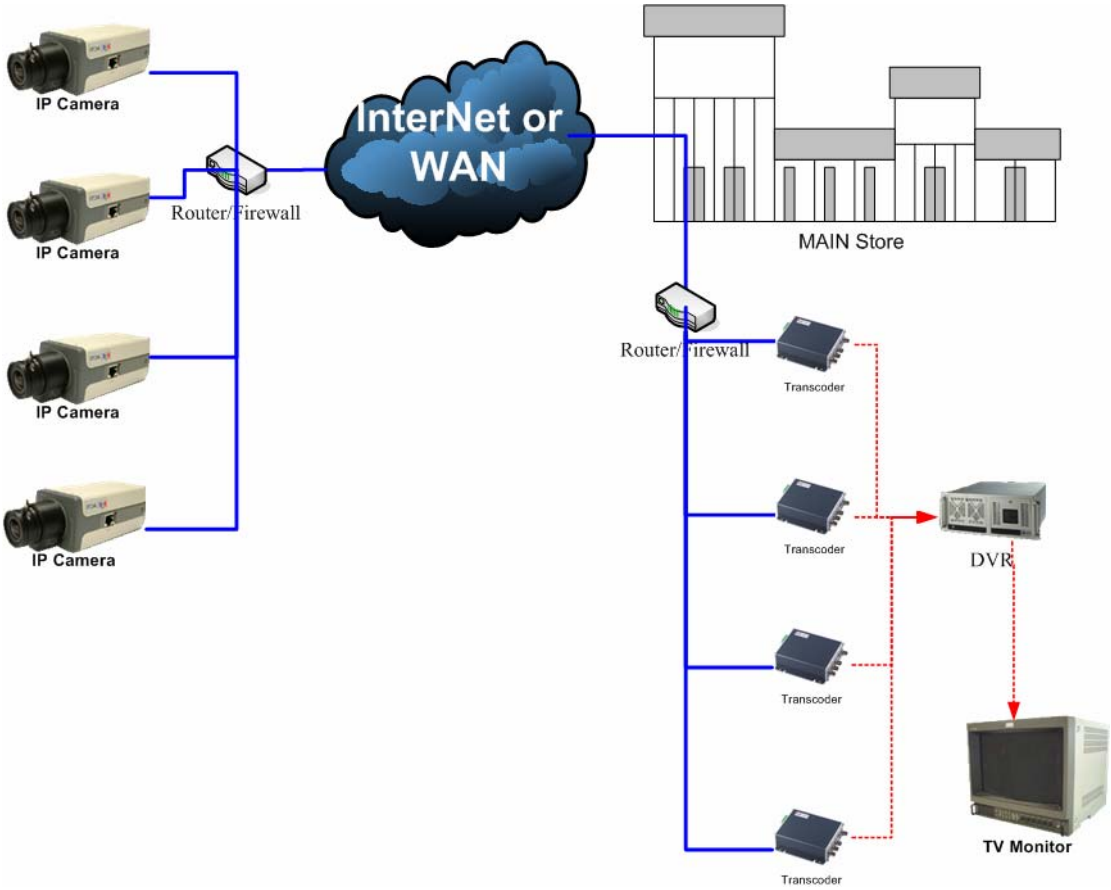
Chapter 6. Case Study- Hybrid IP surveillance solution

This chapter we use a chain retail shop as a case study. We will follow the building blocks at chapter 2 to step by step by step deploy of this case.

5-1 Case introduction

A shop owner has 8 jewelry tails store, he wants to monitor 1 retail store at central site via analog monitor to prevent accidents or robbert. In each store, it has 4 cameras and local monitoring and local storage.

5-1-1 System proposal



5-2 Network

We start by referring to support package TS-00029 at

http://www.acti.com/support/support_package.asp to know about LAN, WAN and we find that our network system is WAN network system (internet).

Then we refer to the network builing block Because the system involves internet, this network envrironment is WAN network system (internet). Thus,

We looked through chapter 2-5-4 to know we have to check

5-1-1 Check what to consider

Below are what to check within a WAN environment.

5-1-1-1. Device network connectivity

In this case, we will set the network setting of each device in the same LAN in the same network segment.

We will set the IP address of devices at each retail shop as below

- Retail A: IP: 192.168.1.xx
  Subnet: 255.255.255.0
- Central Site: IP: 192.168.2.xx
  Subnet: 255.255.255.0

5-1-1-2. Bandwidth

The bandwidth limitation inside a LAN is 30MB per second. The bandwidth limitation between the internet is 3M upload, 12M download (according to the network service from ISP).

The limitation is the internet bandwidth. But since the internet service is not so stable, we recommend you to minus the bandwidth by 30% which will make 3M into 2.1M. We divided the 2.1M by 4 cameras, each camera has 500K bandwidth.

- Each camera' bit rate has to be smaller than 500K.

5-1-1-3. Device to device connectivity

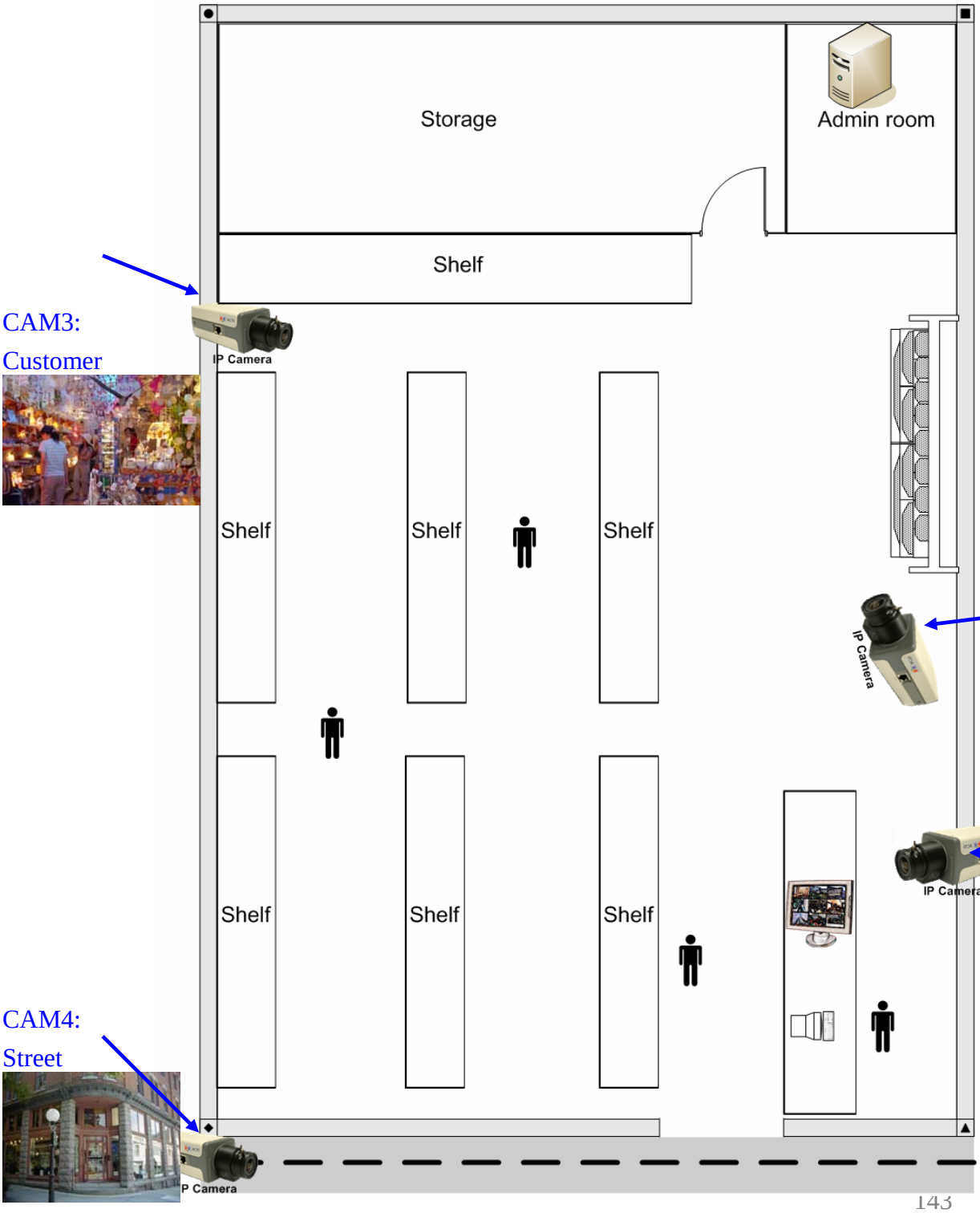
Referring to TS-00009 at http://www.acti.com/support/support_package.asp I will have to do certain sufficient setting for PC at central site to see me. Details, please refer to support package.

5-2 Imaging

After having the basic concepts of the network, we can now go to the camera selection. We follow the instruction at chapter 2-2 go select the camera.

5-2-2. Know customer site

The camera deployment of each shop is like below



5-2-8. Select by the camera type

There are four cameras with different application. We follow the selection flow at Chapter 2-2-2 to select camera for each device.

CAM 1: POS

The cover range is 0~3M.

● Camera Type: Dome camera.

CAM 2: Storage

The cover range is 3~10M.

Remote zoom control: No need. (just need to see the entrance of the storage room)

● Camera Type: Dome or Box camera. (we will use Box camera for selection example)

CAM 3: Customer

The cover range is 3~10M.

Remote zoom control: Needed. (we need to see if the customer is stealing something)

Key area: More than 1.

● Camera Type: Speed dome.

.

CAM 4: Street

The cover range is 10M and above

Remote zoom control: Needed. (we might need to see clearly people entering and leaving the entrance)

Key area: 1

● Camera Type: IP zoom camera.

.

5-2-9. Select by camera function

There are four cameras with different application. We follow the selection flow at Chapter 2-2-2 and we complete the selection table and refer to the product selection sheet to find the right model.

CAM 1: POS (Dome camera type)

Item	Spec	Remark
Outdoor / Indoor	Indoor	
Day/Night function	No need	The shop's light is always on.
Audio	Yes	Knowing the conversation at desk
Vandal Proof	Yes	Prevent it from damage
WDR function	No need	No BLC worry
Zoom capacity (Zoom camera only)	-	
Rotation Speed (PTZ camera only)	-	

● Camera Model: CAM-7100

CAM 2: Storage (Box camera type)

Item	Spec	Remark
Outdoor / Indoor	Indoor	
Day/Night function	No need	The shop's light is always on.
Audio	No need	
Vandal Proof	No need	
WDR function	No need	No BLC worry
Zoom capacity (Zoom camera only)	-	
Rotation Speed (PTZ camera only)	-	

● Camera Model: CAM-5100

CAM 3: Customer (Speed dome type)

Item	Spec	Remark
Outdoor / Indoor	Indoor	
Day/Night function	No need	The shop's light is always on.
Audio	No need	
Vandal Proof	No need	
WDR function	No need	No BLC worry

Zoom capacity (Zoom camera only)	10X and above	Distance is within 30M.
Rotation Speed (PTZ camera only)	50 degree/s	For small retail shop, 50˚/s is enough

● Camera Model: CAM-6200.

CAM 4: Street (IP zoom camera type)

Item	Spec	Remark
Outdoor / Indoor	Outdoor	
Day/Night function	Yes	The street might be very dark at night time
Audio	No need	
Vandal Proof	No need	Just with housing will be alright
WDR function	No need	No BLC worry
Zoom capacity (Zoom camera only)	10X and above	Distance is within 30M.
Rotation Speed (PTZ camera only)	-	

● Camera Model: CAM-5150.

5-2-10. Select camera accessory

There are four cameras with different application. We select the accessory respectively following Chapter 2-2-2 to select camera for each device.

CAM 1: POS (Dome camera type, CAM-7100)

Select Lens: No need, (for Box camera only)

Select mount/housing:

Mounting/Housing key concerns table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Camera Accessorry: No need, all come with the standard package.

CAM 2: Storage (Box camera type, CAM-5100)

Select Lens:

Lens key item table		
Item	Spec	Remark
For Normal camera or Day/Night camera	Normal camera	
Object distance	3~10M	3~10M 10M and above

- Lens model: 0690-00002-000

Select mount/housing:

Mounting/Housing key item table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Mount/housing: Mount GL-201; Housing no need

CAM 3: Customer (Speed dome camera type, CAM-6200)

Select Lens: No need, (for Box camera only).

Select mount/housing:

Mounting/Housing key item table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Camera Model number: CAM-6200NN
- Camera Accessorry: No need (all come with the standard package)

.

CAM 4: Street

Select Lens: No need, (for Box camera only).

Select mount/housing:

Mounting/Housing key item table		
Item	Spec	Remark
Outdoor / Indoor	Indoor	
Mount Type	Flush ceiling	According to customer's structure
Temperature	No need	Normal: 0˚C~ 50˚C Extended: -20˚C~ 70˚C

- Camera Model number: CAM-6200NN
- Camera Accessorry: No need (all come with the standard package)

5-2-11. Select video server

Normally, we recommend user to use IP camera. If you want to use IP camera with video server, please select according to chapter 2-2-4.

5-2-12. Installation

Please read the hardware manual of each device (IP camera, video server, housing, mount) then follow the instruction to install.

5-2-13. Connections

Please read the hardware manual of each IP camera then follow the instruction to connect to respective devices..

CAM 1: POS (Dome camera type, CAM-7100)

-- Power: DC12V (using the adaptor provided)

-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,

-- Lens: No need

-- DI/DO: (options)

-- Serial connection: No need for Dome camera.

CAM 2: Storage (Box camera type, CAM-5100)

-- Power: DC12V (using the adaptor provided)

-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,

-- Lens: Be sure to connect the Iris control cable to the Iris port.(see CAM-5100 manual)

-- DI/DO: (options)
-- Serial connection: No need for Dome camera.

CAM 3: Customer (Speed dome camera type, CAM-6200)

-- Power: According to hardware manual
-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,
-- Lens: No need
-- Serial connection: No need for Dome camera.

.

CAM 4: Street

-- Power: According to hardware manual
-- Ethernet Cable: 10/100M Ethernet Cable, connect to WAN port,
-- Lens: No need
-- DI/DO: (options)
-- Serial connection: No need for Dome camera.

5-2-14. Camera configuration

Please follow the hardware manual to login the camera to view the image first. Then refer to the the 2-2-6 for items to adjust. Below is required configuration for each camera.

NOTE: These settings are for Retails ShopA. Please use it as an example to set cameras at other Retail shops.

CAM 1: POS (Dome camera type, CAM-7100)

● Analog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	No need (Box camera only)
DC level	Adjust it if you see images too bright or too dark
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images
WDR	No need
Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right

PTZ setting	No need
Focus Speed	No need

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.1)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.1(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we would use "Deinterlace-blending. E-4: Serial port baud rate: since it is a box camera, we don't need to set it. E-5: Following the TS-00009 support package, we set the port as Video Register: 6000 Video Control: 6001

	Video Streaming port: 6002 Video Multicast port: 5000 HTTP port: 6004 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 54 Contrast:50
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

CAM 2: Storage (Box camera type, CAM-5100)

- Analog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	Set the camera to auto Iris mode
DC level	Adjust it if you see images too bright or too dark
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images
WDR	No need
Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right
PTZ setting	No need

Focus Speed	No need

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.2)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.2(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we would use "Deinterlace-blending. E-4: Serial port baud rate: since it is a box camera, we don't need to set it. E-5: Following the TS-00009 support package, we set the port as Video Register: 6010 Video Control: 6011 Video Streaming port: 6012

	Video Multicast port: 5000 HTTP port: 6014 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 54 Contrast:50
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

CAM 3: Customer (Speed dome camera type, CAM-6200)

- Analog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	No need (Box camera only)
DC level	Adjust it if you see images too bright or too dark (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
WDR	No need
Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right

PTZ setting	We set the PTZ setting as Protocol: Pelco-P Baud rate: 9600
Focus Speed	Adjust it if you meet problem. (Need to access the OSD menu of IP speed dome via Streaming Explorer.)

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.3)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.3(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we would use "Deinterlace-blending. E-4: Serial port baud rate: Set to 9600 since the hardware setting of the camera is 9600. E-5: Following the TS-00009 support

	package, we set the port as Video Register: 6020 Video Control: 6021 Video Streaming port: 6022 Video Multicast port: 5000 HTTP port: 6024 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 54 Contrast:50
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

CAM 4: Street

- nalog Imaging configuration:

Analog Imaging configuration:	
Auto Iris / Electric Shutter	No need (Box camera only)
DC level	Adjust it if you see images too bright or too dark (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
BLC	If you confront big BLC problem, you can try to switch it on or off to find the best images (Need to access the OSD menu of IP speed dome via Streaming Explorer.)
WDR	No need

Flickerless	No need (this site is not in Japan)
White Balance	Adjust only if you find the color is not right
PTZ setting	There's no need to set PTZ, the protocol is fixed to be Protocol: CAMPRO Baud rate: 9600
Focus Speed	Adjust it if you meet problem. (Need to access the OSD menu of IP speed dome via Streaming Explorer.)

- Web-configurator setting:

Web-configurator setting:	
System information	Check the firmware version
Firmware upgrade	If the firmware version is not right, please upgrade to appropriate firmware.
Host setting	C-1: Select the English as UI C-2-1 : The LAN port is not connected, thus we just need to make sure its IP address is not in the same network segment with WAN port. (LAN port: 192.168.0.100, WAN port: 192.168.1.4)
WAN setting	Follow the flow, we need to setup Fixed IP/Static IP (The camera is connected to a switch). Then set the IP to be 192.1681.4(according to the network architecture at chapter 2-1)
Video setting	E-1: Streaming Type set as TCP/IP. E-2: We know the bit rate for each camera is 500K, and since the D1 resolution is a must, we use 500K, D1@15fps E-3: Frame integratin, since there's no high speed moving objects, we

	would use “Deinterlace-blending. E-4: Serial port baud rate: Set to 9600 since the hardware setting of the camera is 9600. E-5: Following the TS-00009 support package, we set the port as Video Register: 6030 Video Control: 6031 Video Streaming port: 6032 Video Multicast port: 5000 HTTP port: 6024 Search Server port1: 6005 Search Server port2: 6006
Video adjust	The customer site is in USA (NTSC standard) then I adjust the camera parameter to be Hue: 50 Brightness: 44 Saturation: 54 Contrast:50
Date setting	We will use a computer running windows XP as an SNTP/NTP server. The IP of the computer is 192.168.1.6, thus we select the SNTP/NTP and input the IP to be 192.168.1.6. and selet the time interval to be 5mins.

5-3 Decoding

The decoding block is at the central site. There are 4 decoders and their setting is as below.

5-3-6. Select Transcoder

SED-3300.

5-3-7. Connections

5-3-2-1. Power

D. Connect to the respective device according to the specification specified on the hardware manual.

5-3-2-2. Ethernet Cable

E. Please always connect the Ethernet cable to WAN port.

5-3-2-3. Analog Monitor (DVR)

F. Connect the analog output to the DVR or analog monitor

5-3-2-4. RS-485 connection

Options, if you are connecting to a control panel, then follow the instruction on the manual to connect it.

5-3-8. Connect the Transcoder to network

5-3-9. Configure the Transcoder

5-3-4-1. System information

On 2006/03/06 the firmware version is B1D-A0-V1.01.04, not the latest B1D-V2.03.04 from ACTi website (www.acti.com)
, then I need to upgrade the firmware to the latest version.

5-3-4-2. Firmware Upgrade

Follow the operation manual to upgrade the firmware to the latest version.

5-3-4-3. Host Setting

The host setting of each transcoder is as below

Host setting					
Transcoder		Transcoder1	Transcoder2	Transcoder3	Transcoder4
Model number		SED-3300	SED-3300	SED-3300	SED-3300
IP address		192.168.0.1	192.168.0.2	192.168.0.3	192.168.0.4
Subnet		255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Baud rate setting		No need	No neeed	9600, N, 8, 1	9600, N, 8, 1

5-3-4-4. WAN setting

WAN setting					
Transcoder		Transcoder1	Transcoder2	Transcoder3	Transcoder4
IP address		192.168.2.1	192.168.2.2	192.168.2.3	192.168.2.4
Subnet		255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Gateway		192.168.2.254	192.168.2.254	192.168.2.254	192.168.2.254

5-3-4-5. Video Setting.

Host setting					
Transcoder		Transcoder1	Transcoder2	Transcoder3	Transcoder4
Target Camera at Retail Shop		CAM-7100	CAM-5100	CAM-6200	CAM-5130
Connect Type		TCP	TCP	TCP	TCP
TCP connect IP		61.218.225.65	61.218.225.65	61.218.225.65	61.218.225.65
Multicast connectIP		No need	No need	No need	No need
User Name		This is subject to each system			
Password		This is subject to each system			
Port	Control	6001	6011	6021	6031
	Streaming	6002	6012	6022	6032
	Multicast	5000	5000	5000	5000
	Register	6000	6010	6020	6030

	HTTP	6004	6014	6024	6034
User Name		According to your setting			
Password		According to your setting			

5-4 Managment

Please refer to DVR or Martix manual for details.

V.20060108

IP surveillance 101

www.acti.com

IP Surveillance 101

V0.9.10 Edition Dec., 2005

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1-3 Video Surveillance system evolution *5*

Chapter 0 - Preface

0-1 How to use this IP Surveillance 101

This IP Surveillance 101 aims to provide you a whole picture view about the IP Surveillance system and basic concepts about the everything involved in this system from image generation, network transmission to video management. We recommend you to see the outine of each chapter below and browse quickly through contents you are familiar with and look carefully for contents you are not familiar with.

0-2 Outline of each chapter

Chapter1: Introduction to IP Surveillance solution

This chapter talks about what IP Surveillance system is and the evolution history about video surveillance system.

Chapter2: Building blocks of IP Surveillance solution

Basically, for all Surveillance system, there can be 3 parts which are Video Production, Video Transmission and Video Preview & Management. This chapter will let you know how each part works.

Chapter3: Reference book, documentation

This chapter tells you the basic concepts about the Video Production.

Chapter4: Contact us

This chapter tells you the basic concepts about the Video Transmission.

Chapter 1 – Introduction to IP surveillance solution

1-1 What is IP Surveillance Solution

IP Surveillance Solution belongs to the video surveillance system and it contains digitalized video & audio stream generation, stream transfer via network (LAN/WAN/Internet), stream storage, stream management and stream intelleigence.

The main difference between IP Surveillance Solution and Analog Surveillance Solution is that IP Surveillance Solution uses network as the backbone to transporting data instead of using point-to-point coxial cabling. IP Surveillance data includes video, audio, event information, device control and user-defined informations.

1-2 What is Video Surveillance system

The video surveillance system is a part of the security surveillance system that includes Fire & alarm security, access control and video surveillance. Each one of the security surveillance system are focusing on different aspects and each of the security surveillance system is somehow integrated with other systems in different applications.

The video surveillance system is focusing on surveillance by video that is we secure our property by video monitoring, video recording and video playback. Basically, there are four building blocks of the video surveillance solution including video generation, data transmission and video monitoring and video management as below.

PICTURE:

Video generation block: In this block, the video/audio data is generated.

Data transmission block: In this block, data is transferred between the video generation block and the video monitoring block or the video management block. The data contains the video/audio stream, event information and control signals.

Video monitoring block: In this block, guards or administrator can view image from the video generation block and determine if there's an event happening and the respective response actions.

Video Management block: In this block, data could be stored, analized, and be played back in the future. The response action could be triggered upon an event and leaves a record for future event annalistic.

1-3 Video Surveillance system evolution

The video surveillance system exists for many years. The system starts from a purely analog system to current hybrid (including both analog and IP surveillance system) system and in the future 100% IP Surveillance system.

1-3-1. Analog CCTV system + VCR

PICTURE:

Video generation block: Analog camera that generate analog video via coaxial output. .

Data transmission block: All the data from camera and sensor to VCR is transferred via directly point-to-point cabling. There are coaxial cables to transfer the analog video, RS-485 cables to transfer the control signals to the camera or to a VCR (Video Cassete Recorder) and alarm-in/alarm-out cables to transfer the signals from sensor to a VCR or from a VCR to a buzzer. Because there's are so many cables to install and maintain, the cabling cost is huge and increase the difficulties to maintain the system.

Video monitoring block: Use analog TV to view the images.

Video Management block: The management is done via a VCR (Video Cassete Recorder). The VCR can record one camera's video of full frame at a maximum of 8 hours. That is, security operators have to replace the cassette every 8 hours and the cassette storage management requires a huge space a lot of human power and good storage environment (to prevent the video quality of the images stored in the cassette from worsening.

Sometimes, this system uses a quad/multiplexer with a VCR to increase its recording capacity camera number but this architecture will sacrifice either the image resolution or the image frame rate which decrease its security performance.

The video playback of a VCR is through manual Forwarding and Rewinding and the video is analized by operators. This playback mechanism will cost operators a lot of time when searching video for a specified time or event.

1-3-2. Analog CCTV system + DVR

PICTURE:

Video generation block: Analog camera that generate analog video via coaxial output. .

Data transmission block: All the data from camera and sensor to DVR is transferred via directly point-to-point cabling. There are coaxial cables to transfer the analog video, RS-485 cables to transfer the control signals to the camera or to a DVR (Digital Video Recorder) and alarm-in/alarm-out cables to transfer the signals from sensor to a DVR or from a DVR to a buzzer. Because there's are so many cables to install and maintain, the cabling cost is huge and increase the difficulties to maintain the system.

Video monitoring block: Use analog TV to view the images.

Video Management block: The management is done via a DVR (Digital

Video Recorder). The DVR digitalize the video and compress the digtal video and store the compression digital video. Because the compressed data is small and the HD's space increases significantly these years, a DVR can record a camera's video of full frame for some days. This means the operator doesn't need to replace the cassette constantly. Besides, as long as the HD is not broken, the images quality stays the same unlike images stored in cassettes.

The DVR's video inputs are typically 4, 9, or 16 which means the quad and multiplexer functionality is built-in..

The video playback of a DVR is more advanced than VCR. It can search video by time, event and some advanced searching in addition to VCR's manual Forwarding and rewinding. This playback mechanism saves enormous time of the operators when searching for a specified time or event.

1-3-3. **Analog CCTV system + networking DVR**

PICTURE:

Video generation block: Analog camera that generate analog video via coaxial output. .

Data transmission block: All the data from camera and sensor to DVR is transferred via directly point-to-point cabling. There are coaxial cables to transfer the analog video, RS-485 cables to transfer the control signals to the camera or to a DVR (Digital Video Recorder) and alarm-in/alarm-out cables to transfer the signals from sensor to a DVR or from a DVR to a buzzer. Because there's are so many cables to install and maintain, the cabling cost is huge and increase the difficulties to maintain the system.

All the data from DVR to a Client PC is via IP-based network (LAN/WAN/Internet). The PC can be anywhere with an network connection to the DVR.

Video monitoring block: There's are two ways to monitoring the video.

1. Use analog TV to view the images
2. Use a PC to access the DVR and view the images. The images could be live preview or recorded images.

Video Management block: The networking DVR enables a remote PC to view the live preview or playback images in additional to all other features of a conventional DVR. This greatly enhance the video surveillance system's functionality and flexibility..

For conventional DVR introduction, please go to 1-3-2 Analog CCTV system + DVR.

1-3-4. **IP Surveillance system** + **PC Servers**

PICTURE:

Video generation block: There's are two ways to generate the video.

1. Use an analog camera + video server
2. Use an IP camera

Either way, the video is digitalized and compressed.

Data transmission block: All the data from video server/IP camera to the PC servers is transferred via IP-based network (LAN/WAN/Internet). Transmission based on IP-based network have advantages over analog cabling including 1. The number of cables 2. The length of cables 3. The location of the camera. 4. PoE connection

1. The number of cables: In IP Surveillance system, multiple video input can share one network cable unlike the analog system cabling where each video input requires one coaxial cable. Besides, sometimes, the network infrastructure is pre-built in the building, the cabling cost is significantly small. Also, when adding a new camera, you just need to connect the IP camera to the nearest network switch instead of adding a new cable all the way from the control room to the camera. Both reasons save a lot cost.
2. The length of cables: In IP surveillance system, the network cross-nation is pre-built, it is possible for a control room at United Kindom to view cameras at USA or at China. But in analog surveillance system, because each video input requires a video cable from camera to the control room, you can't view a camera cross county or cross country Ex: view a camera in USA from China. IP surveillance system greatly enhance the system performance.
3. The locations of the cameras: In IP surveillance system, all the data is digitalized and can be transferred via wireless network and delivers the same image quality. With wireless connection, the camera can be installed at places where cabling is difficult or very costy. There's one special wireless (not the wireless we are talking about everyday) for analog system, but this special wireless has relative small transmission distance (less than 10M according to practical using) and the image quality is bad even the wireless distance is small.
4. PoE connection: When using PoE connection, the power and the network signal can be transferred via one network cable. Which

saves a lot of cabling cost.

Video monitoring block: Use a PC to access the video server and view the images.

Video Management block: The management is done via any PC server anywhere with a network connection to the video sever/IP cameras. There PC servers can deliver all the functionality a networking DVR has.

[Support Package]

ID	**TS-00006**	**Created** **Updated**	Nov, 10, 2005
Category	System Integration	**Sub Category**	Network
Product	All video servers/IP cameras		
Purpose	**How to setup NTP function in video server/IP camera?**		
Support URL	http://www.acti.com/support		
Tech Support	Customer.service@acti.com		
MSN Messenger ID	Customer.service@acti.com		

[Support Package]

How to setup NTP function in video server/IP camera?

NTP (Network Time Protocol) function is made to synchronize multiple network devices' time setting to a time server. Our video server/IP camera adds the time code into the streaming, thus our recording have the exact event time embedded. With NTP function, you can ensure all your video server/IP camera send streaming following the same time base and it would be very useful for future event analysis.

You can find in this manual tell you

A. How to setup your video server/IP camera NTP

B. How to set up a simple NTP server

C. Self diagnostic

[Support Package]

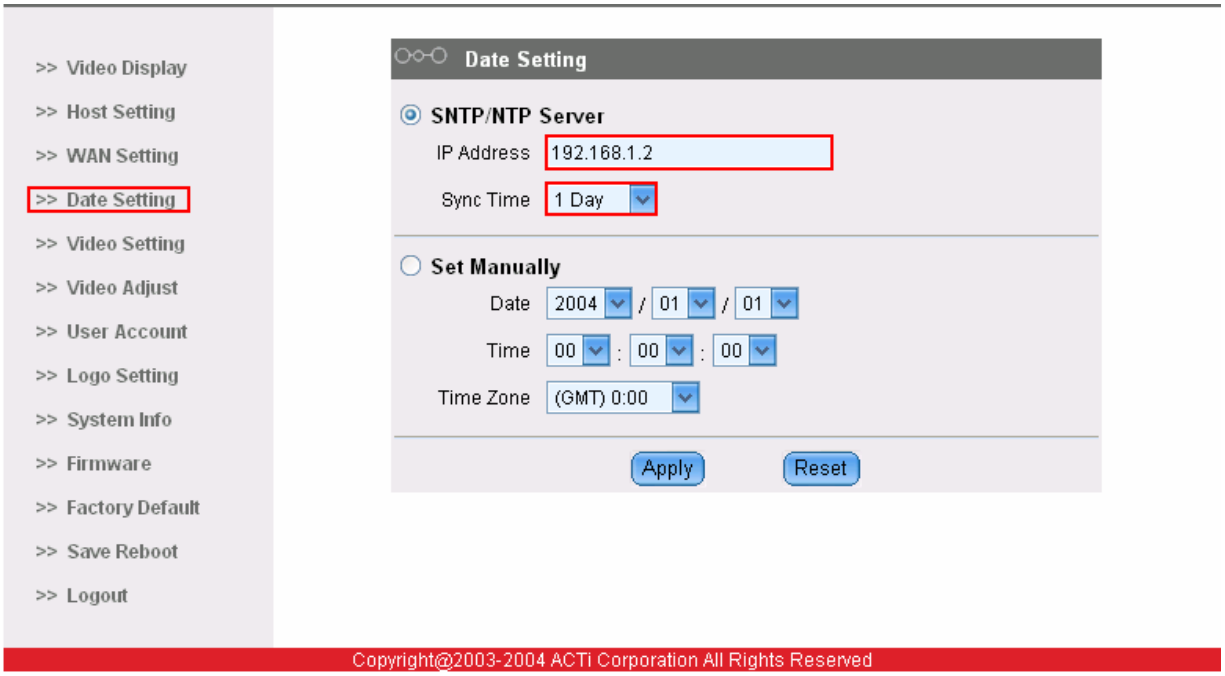
Chapter1: Setup your video server/IP camera

NTP setting

Follow the procedures below to setup.

Step1: Setup in the web-configurator

1. Open Web Configurator
2. Click on **Date Setting**.
3. Enable SNTP/NTP Server Function.
4. Enter the IP Address of SNTP/NTP Server. (you can use a PC with Windows XP OS)
5. Choose the **Sync Time**. This means the frequency to synchronize date, time with NTP server
6. After setting, click on the **Apply** button.
7. If you set the date/time manually, when Video Server is Power Off and Power On, the Date/Time will be reset to default.



[Support Package]

Step1: Setup in the web-configurator

1. When you can see the video screen, your setting is success.

Chapter2: Set up a simple NTP server

There's a simple way to set a NTP server UP. Because the Windows XP has embedded NTP server function inside, you can always refer a computer in the same network segment with Windows XP Operation system as a NTP server.

Chapter3: Self diagnostic

If the NTP function fails, it should be the connection failure between the device and the NTP server. Please check the network connectiion.

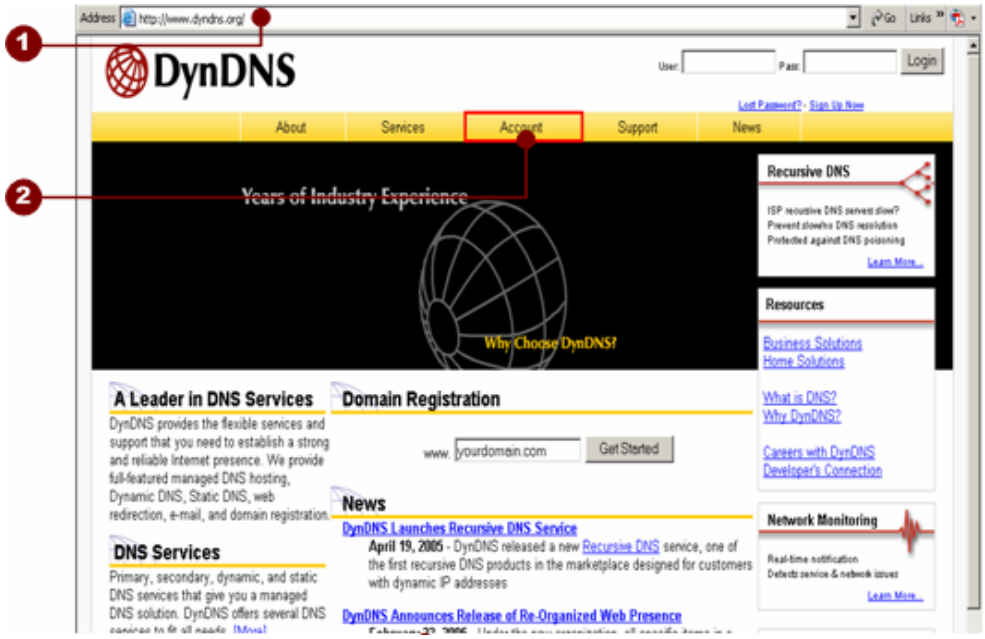
[Support Package]

ID	**TS-00007**	**Created** **Updated**	May. 22, 2005
Category	System Integration	**Sub Category**	Network
Product	SED-2100/CAM-5100		
Purpose	**How to use DDNS**		
Support URL	http://www.acti.com/support		
Tech Support	Customer.service@acti.com		
MSN Messenger ID	Customer.service@acti.com		

How To Use DDNS Service

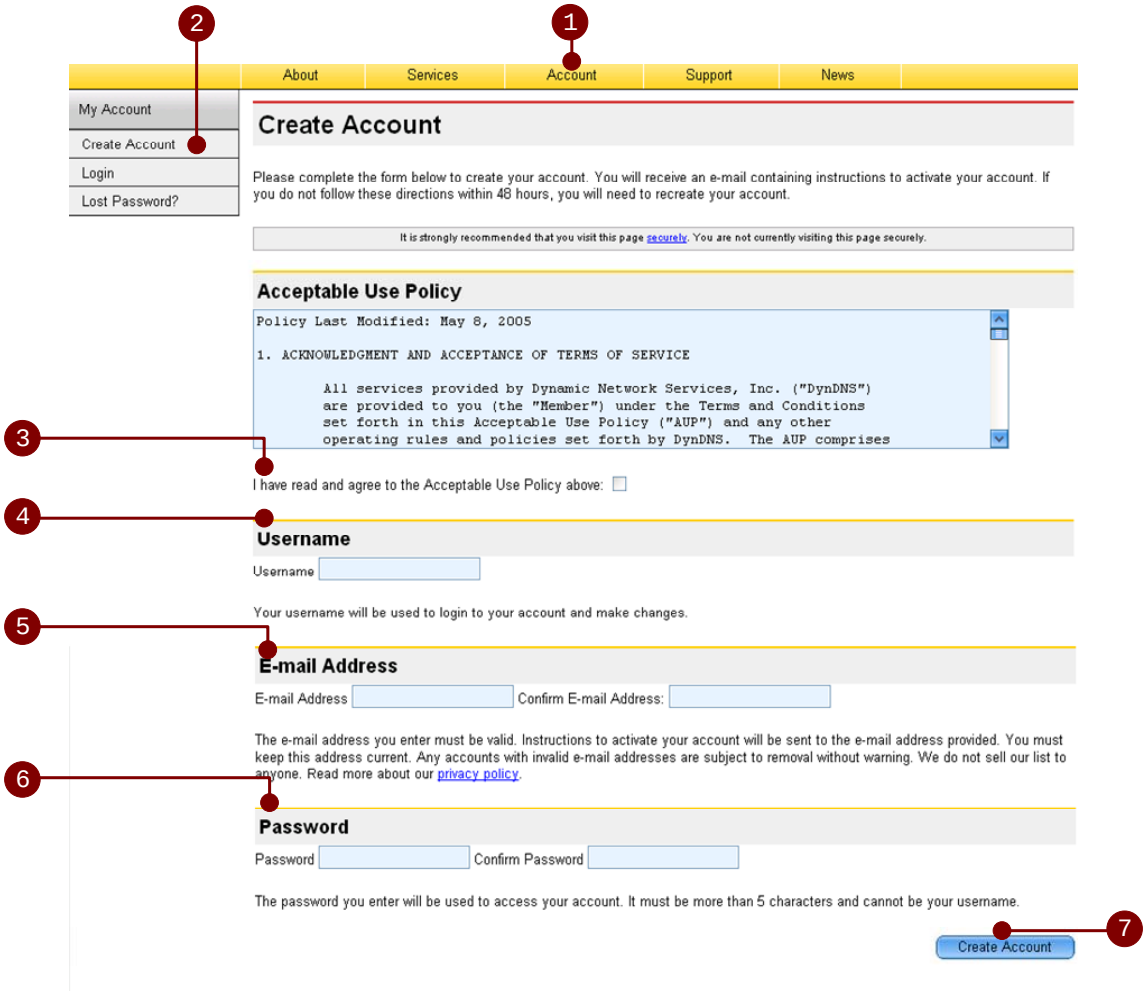
Step 1:

1. **First, you can apply a hostname in DDNS service provider. You may find DDNS service provider listing in Web Configurator.**
2. **Visit www.dyndns.org.**
3. **Click on "Account" button to add new account.**



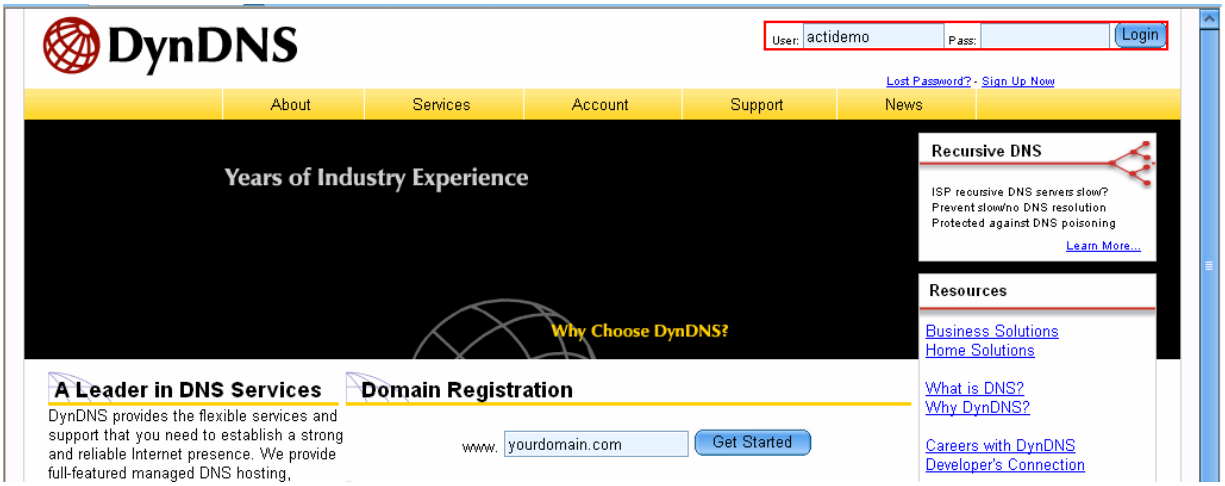
Step 2:

1. **Click on “Account”.**
2. **Click on “Create Account”.**
3. **Check “I have read and agree to the Acceptable Use Policy above”.**
4. **Input your Name.**
5. **Input your E-mail.**
6. **Input your Password.**
7. **Click on ”Create Account” button to continue.**



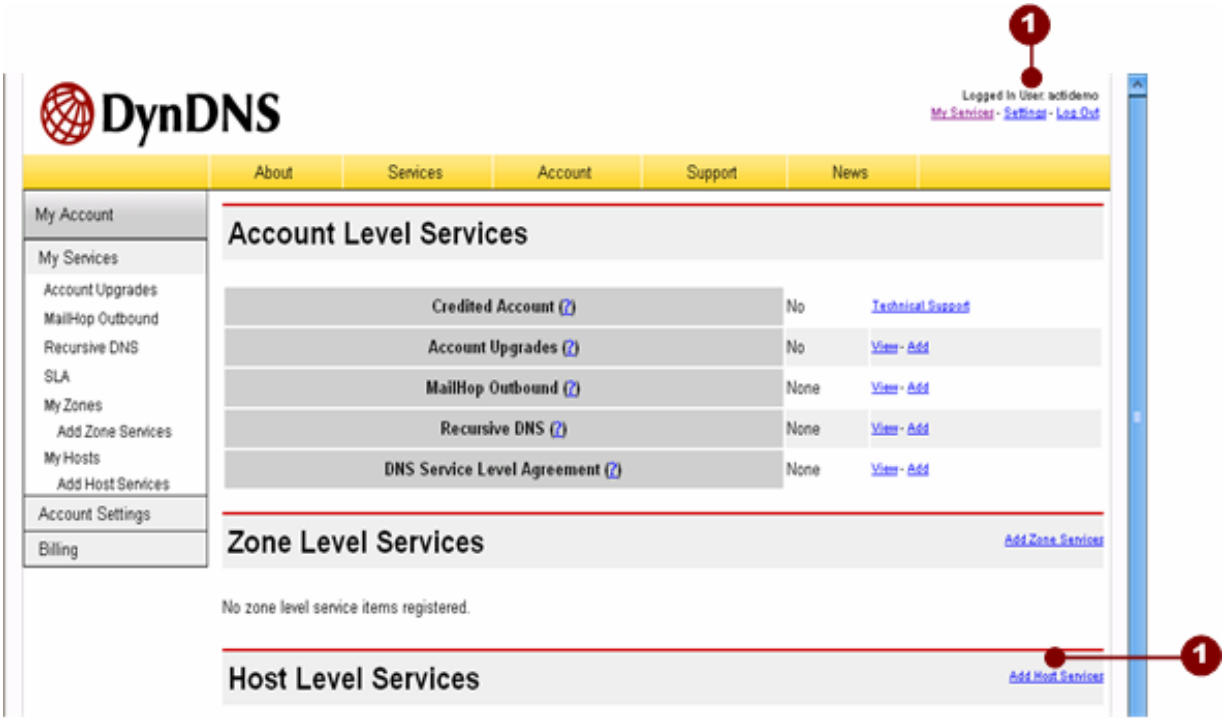
Step 3:

1. **If you apply the account successfully, you can use the account and password to login.**



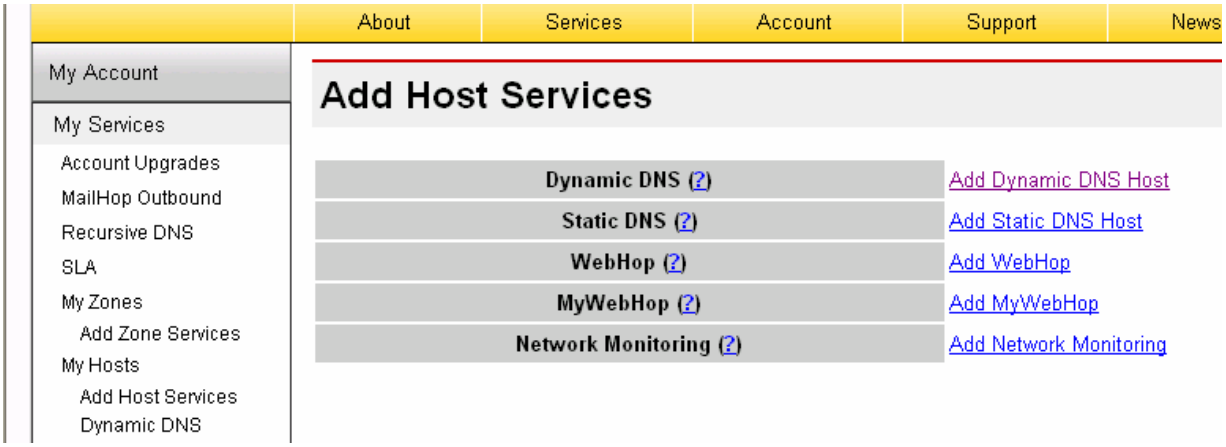
Step 4:

1. **After login, click on “My Services”.**
2. **Click on ”Add Host Services”**



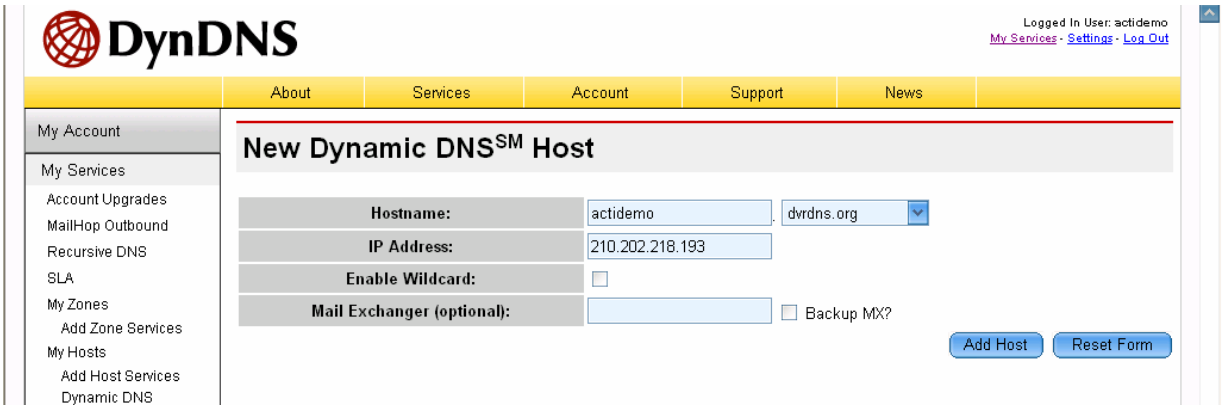
Step 5:

1. **Click on “Add Dynamic DNS Host”.**



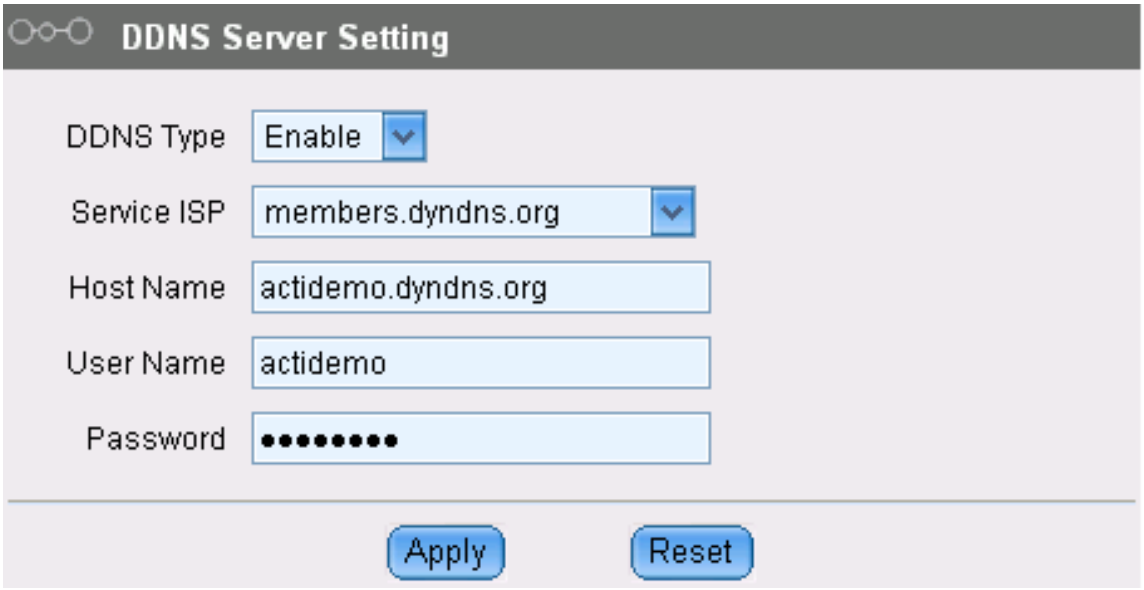
Step 6:

1. **Input the Hostname field (ex.actidemo.dyndns.org).**
2. **Click on “Add Host” Button.**
3. **DDNS apply successfully.**



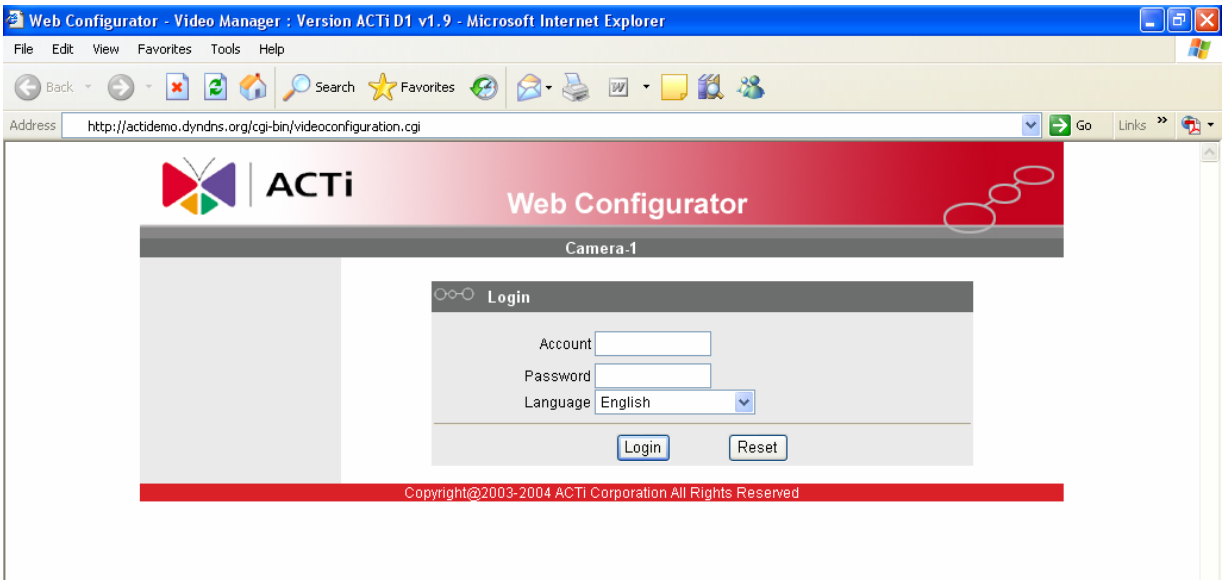
Step 7:

1. **Go to the Web Configurator.**
2. **Click on WAN Setting.**
3. **Enable DDNS.**
4. **Choose that you apply ISP. (ex.members.dyndns.org)**
5. **Input the Host Name. (ex. actidemo.dyndns.org)**
6. **Input the User Name.**
7. **Input the Password.**
8. **Click on “Apply” button.**
9. **Click on “Save and Reboot”.**



Step 8:

1. **Run Internet Explorer, then input http://actidemo.dyndns.org**
2. **You should be able to see the Web Configurator screen on this hostname**



[Support Package]

ID	**TS-00029**	**Created** **Updated**	Feb. 09, 2006
Category	System Integration	**Sub Category**	Network
Product	All video servers and IP cameras		
Purpose	**How to select LAN port or WAN port to connect for your system?**		
Support URL	http://www.acti.com/support		
Tech Support	Customer.service@acti.com		
MSN Messenger ID	Customer.service@acti.com		

[Support Package]

How to select LAN port or WAN port to connect for your system?

ACTi products have LAN port and WAN port supporting two different network settings according to your system needs. LAN means Local Area Network and LAN port supports LAN connection; WAN means Wide Area Network and WAN port supports WAN connection.

This support package will help you selecting which port to use in your system.

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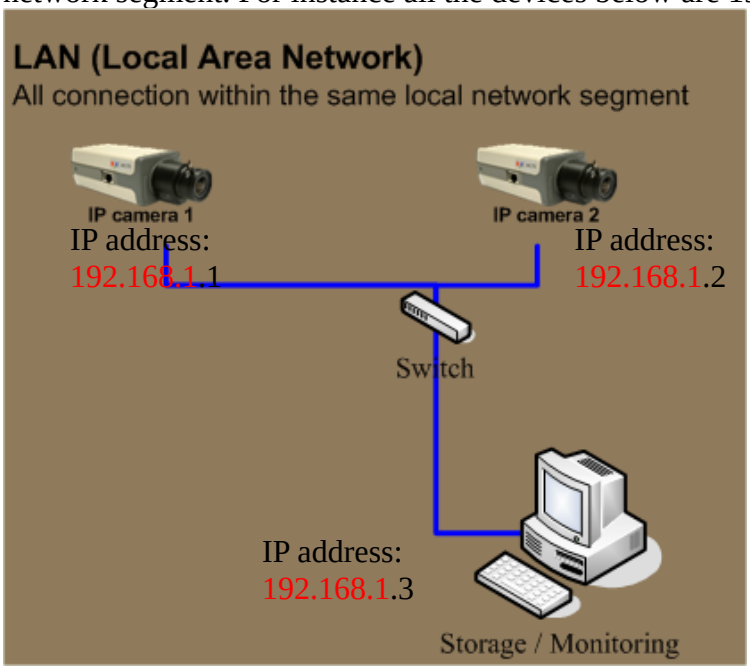
[Support Package]

Chapter1: Introduction to LAN and WAN

This chapter will introduce the LAN and WAN port idea before we select which port to use.

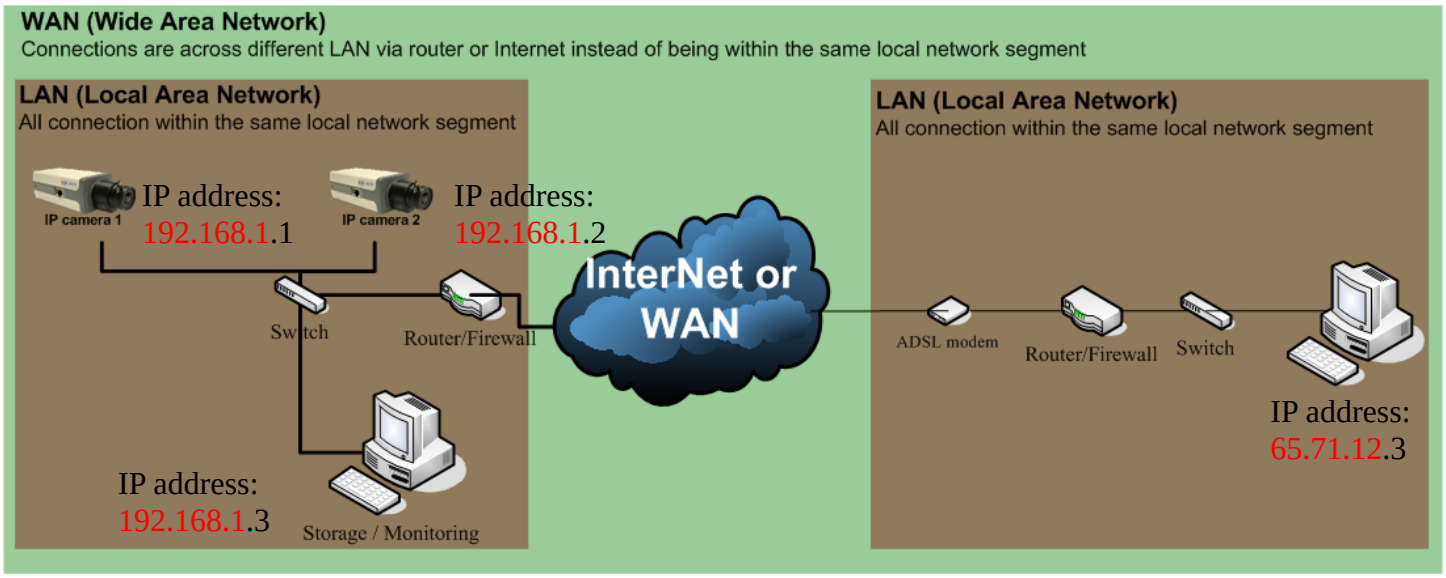
What is LAN

LAN means Local Area Network. It means all the network connections are within the same local network segment. For instance all the devices below are 192.168.1.xxx.



What is WAN

WAN means Wide Area Network. It means all the network connections are not just within the same local network segment. The connection could via routers and internet.



Chapter2: How to select LAN port and WAN port to connect to?

This chapter we will tell you which port to use under different network systems. You can also find the comparison table of LAN port and WAN port at the next chapter.

A. Not sure about my system: (Use WAN port)

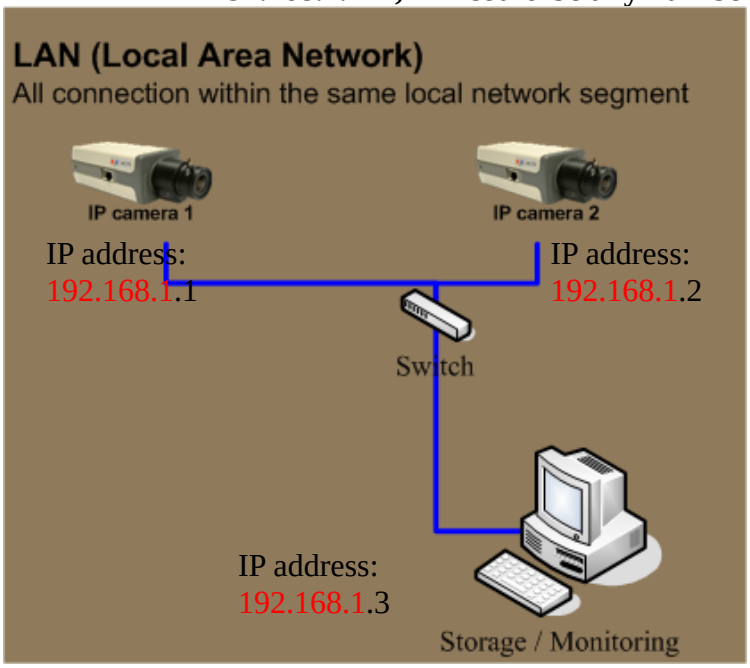
That's because WAN port supports every functionality LAN port supports and WAN port have the connectivity via Internet or WAN while LAN port can't.

B. Connection within a LAN: (Use WAN port or LAN port).

If all the network connection is within the same local network segment, you can use either LAN port or WAN port.

NOTE: In this system, you will find

a. **No ADSL modem or Cable modem or router.**
b. **Every device is within the same network segment (with IP address of 192.168.1.xxx, xxx could be any number between 1~255)**

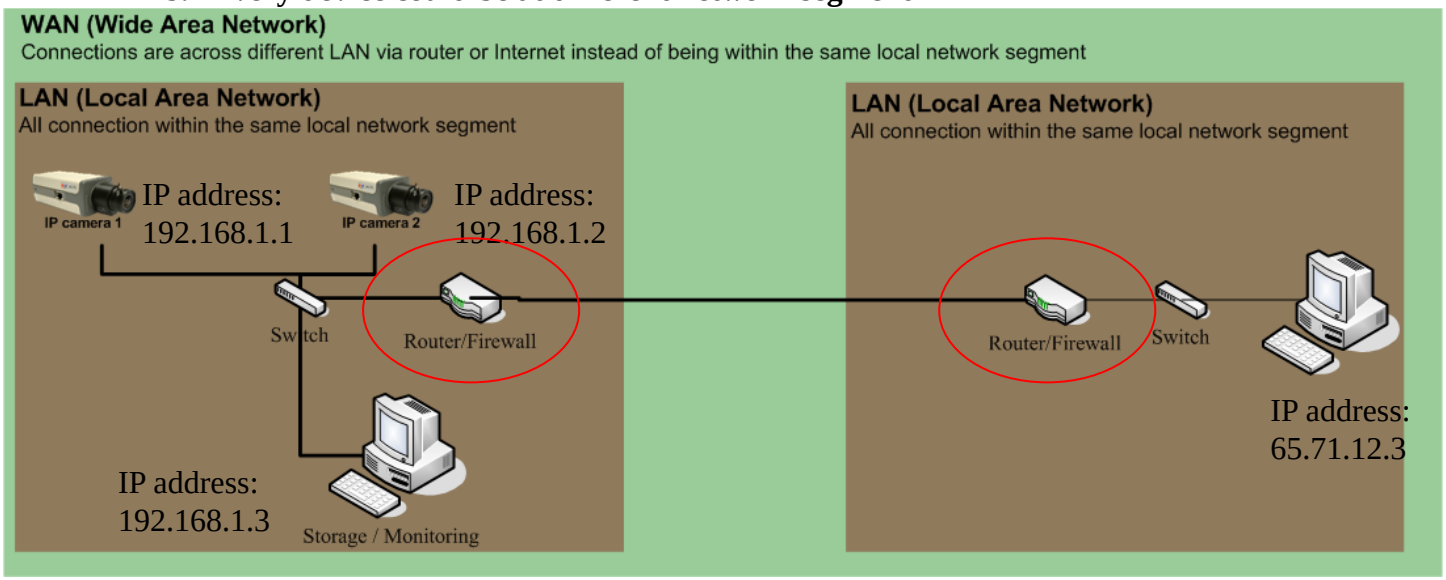


C. Connection via routers: (Use WAN port)

If your connection is not just within the LAN but come across routers, please use WAN port. That's because only WAN port has the network connectivity via routers.

NOTE: In this system, you will find

a. **Routers.**
b. **Every device could be at different network segment**

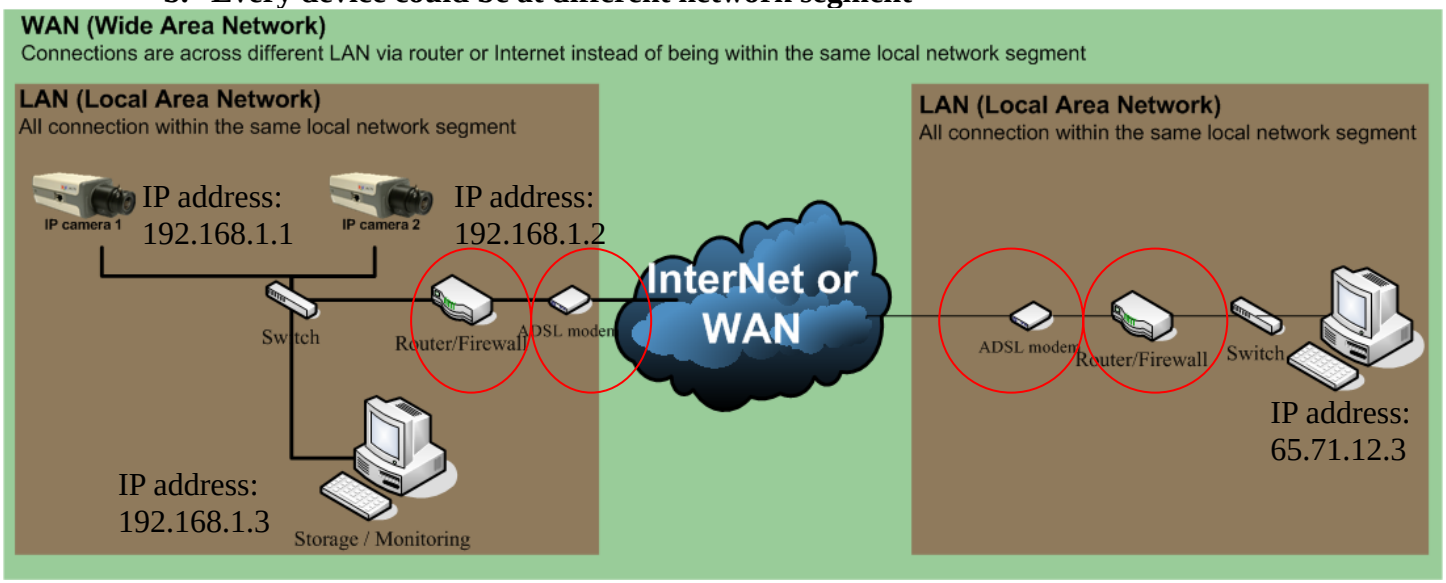


D. Connection via Internet: (Use WAN port)

If your connection is not just within the LAN but come across internets, please use WAN port. That's because only WAN port has the network connectivity via routers.

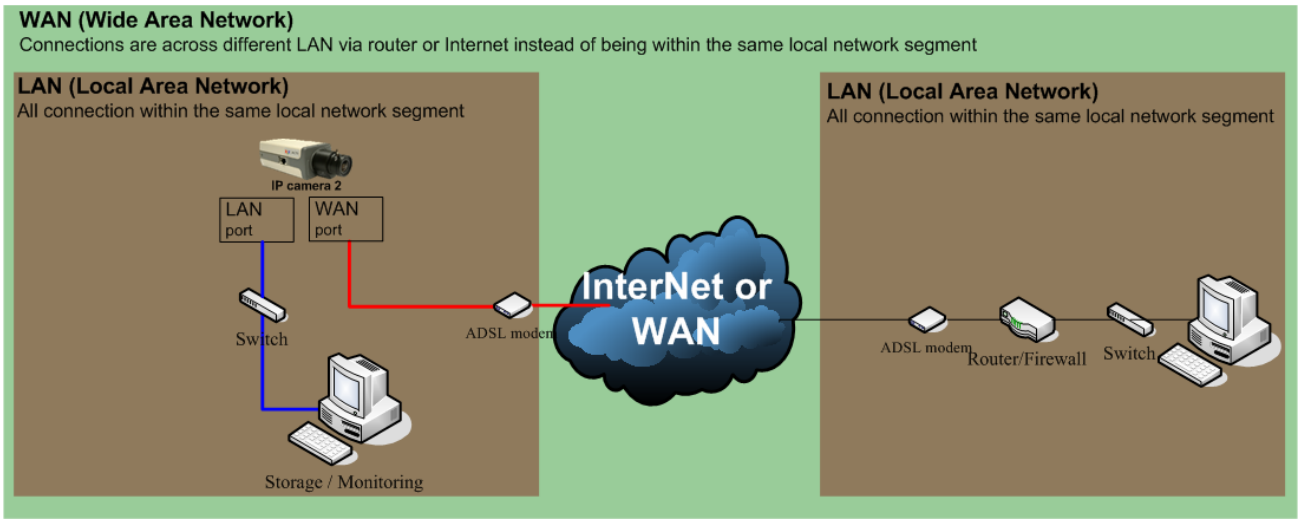
NOTE: In this system, you will find

a. **Routers, ADSL or Cable modem**
b. **Every device could be at different network segment**



E. Special Case: (Use WAN and LAN port)

For some special cases, you might need to use WAN and LAN port at the same time. In this kind of cases, you can regard WAN and LAN separately according to your system (that's because LAN port and WAN port works independently).



In this case, the IP camera uses WAN port to connect to the internet via an ADSL modem for remote client to preview. The IP camera also sends streaming to local PC for local storage and monitoring.

Chapter3: Comparison table of LAN / WAN

Below is the detailed function comparison table of LAN and WAN.

Category	Item	LAN	WAN
Video Quality and Frame rate	Full D1 (720*480) @ 30fps	OK	OK
Multiple Stream Support	Multiple stream with different bit rate	OK	OK
Preview (video + audio) via TCP/RTP transmission	Preview in a LAN	OK	OK
	Preview in a WAN (via routers)		OK
	Preview in a WAN (via Internet)		OK
Preview (video + audio) + Audio via Multicast transmission	Preview in a LAN	OK	OK
	Preview in a WAN (via routers)		OK
	Preview in a WAN (via Internet)		*
Control (Control Pan/Titl/Zoom, Sending audio from client to encoder, send DO event from client to encoder)	Control in a LAN	OK	OK
	Control in a WAN (via routers)		OK
	Control in a WAN (via Internet)		*
System Maintain (must be able to connected first)	Setup video server	OK	OK
	Firmware upgrade	OK	OK
	Reboot camera	OK	OK
Other function	DDNS		OK
	DNS		OK
	SNTP / NTP	OK	OK
	QoS transmission	OK	OK
Connection	10M Full Duplex /Half Duplex	OK	OK
	100M Full Duplex /Half Duplex	OK	OK
	10/100 Duplex auto sensing	OK	OK

* Most ISP doesn’t support Multicast over Internet. Though we support this function, you still can’t use it.

Chapter4: Notes on configuration

Please refer to the notes below during configuration

A. IP address Setting

The IP address of LAN port and the WAN port **MUST** be at different network segment. Below is the default IP address of LAN port and WAN port for your reference

- LAN port default
  IP: 192.168.0.100
  Subnet: None
  Gateway: None

- WAN port default
  IP: 10.0.0.1
  Subnet: 255.255.255.0
  Gate way: None

[Support Package]

ID	**TS-00029**	**Created** **Updated**	Feb. 09, 2006
Category	System Integration	**Sub Category**	Network
Product	All video servers and IP cameras		
Purpose	**How to select LAN port or WAN port to connect for your system?**		
Support URL	http://www.acti.com/support		
Tech Support	Customer.service@acti.com		
MSN Messenger ID	Customer.service@acti.com		

[Support Package]

How to select LAN port or WAN port to connect for your system?

ACTi products have LAN port and WAN port supporting two different network settings according to your system needs. LAN means Local Area Network and LAN port supports LAN connection; WAN means Wide Area Network and WAN port supports WAN connection.

This support package will help you selecting which port to use in your system.

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B. Connection within a LAN: (Use WAN port or LAN port) *4*

C. Connection via routers: (Use WAN port) *5*

D. Connection via Internet: (Use WAN port) *5*

E. Special Case: (Use WAN and LAN port) *6*

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Chapter4: Notes on configuration *8*

A. IP address Setting *8*

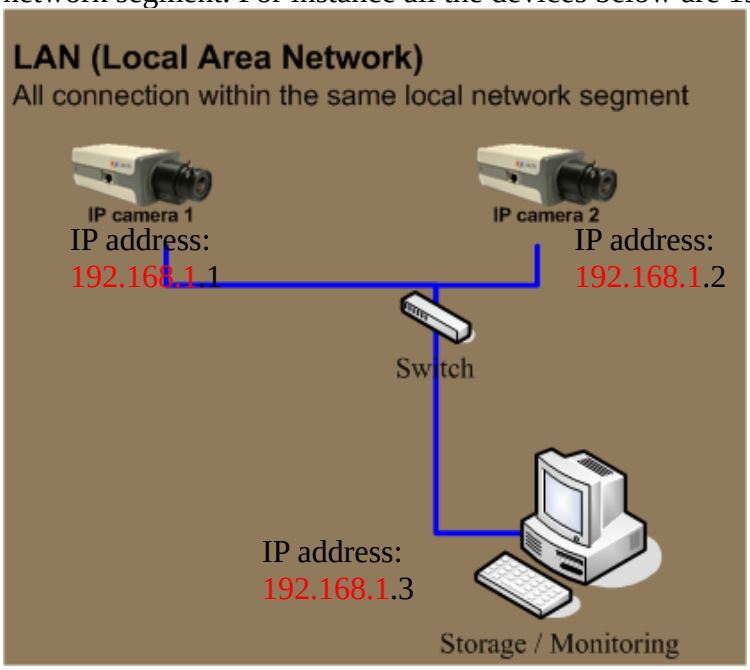
[Support Package]

Chapter1: Introduction to LAN and WAN

This chapter will introduce the LAN and WAN port idea before we select which port to use.

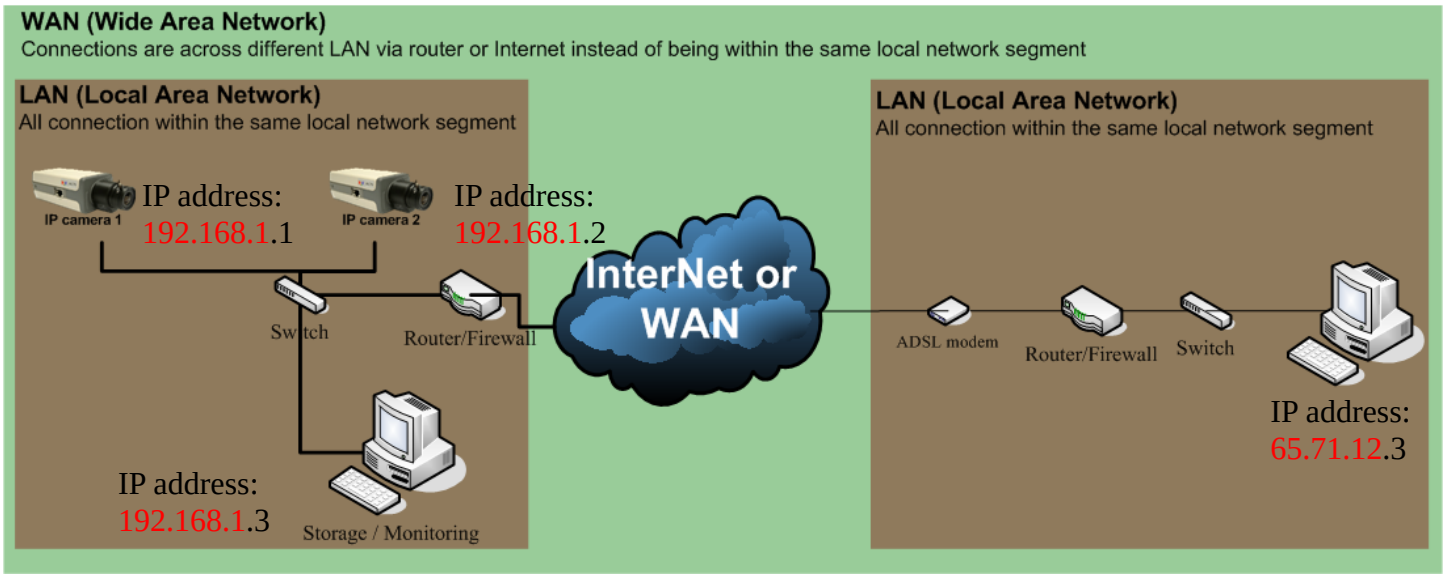
What is LAN

LAN means Local Area Network. It means all the network connections are within the same local network segment. For instance all the devices below are 192.168.1.xxx.



What is WAN

WAN means Wide Area Network. It means all the network connections are not just within the same local network segment. The connection could via routers and internet.



Chapter2: How to select LAN port and WAN port to connect to?

This chapter we will tell you which port to use under different network systems. You can also find the comparison table of LAN port and WAN port at the next chapter.

A. Not sure about my system: (Use WAN port)

That's because WAN port supports every functionality LAN port supports and WAN port have the connectivity via Internet or WAN while LAN port can't.

B. Connection within a LAN: (Use WAN port or LAN port).

If all the network connection is within the same local network segment, you can use either LAN port or WAN port.

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a. **No ADSL modem or Cable modem or router.**
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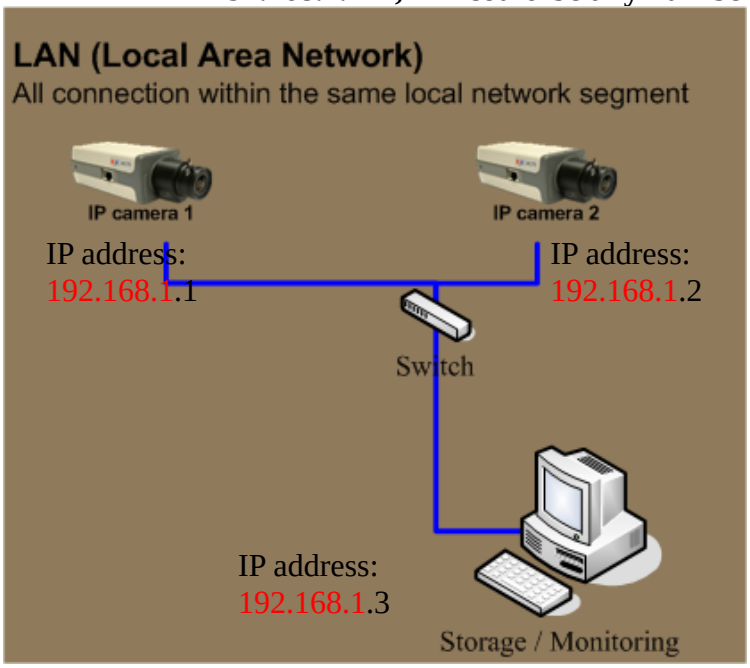

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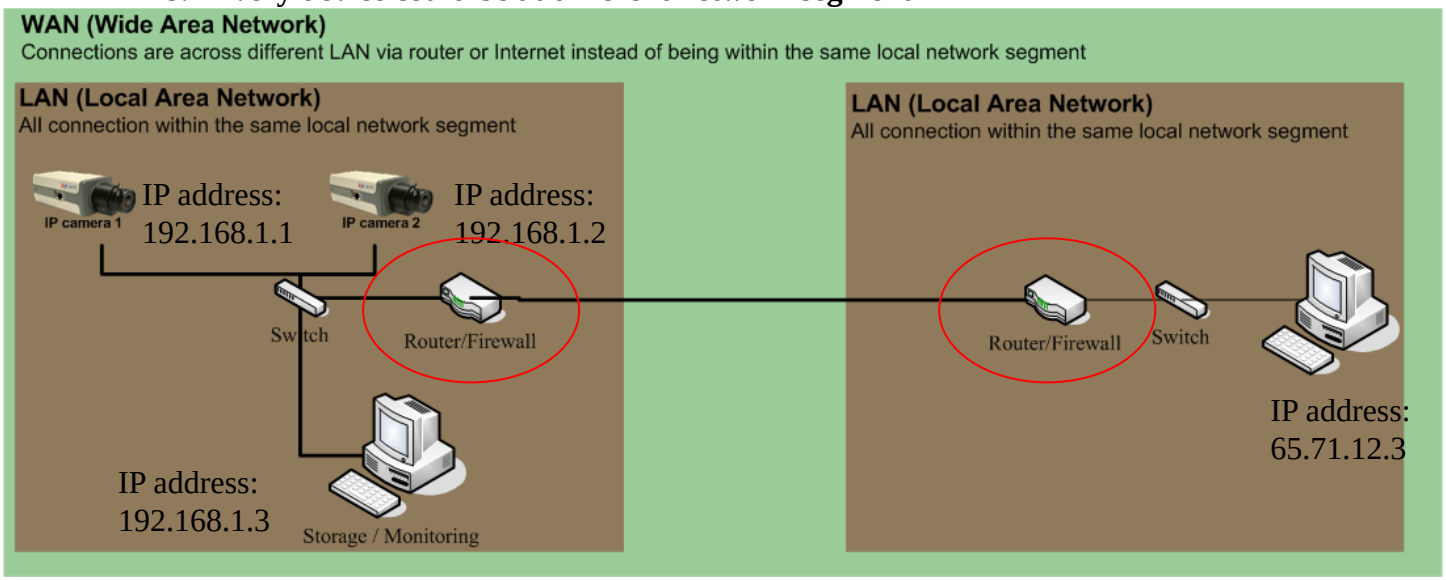

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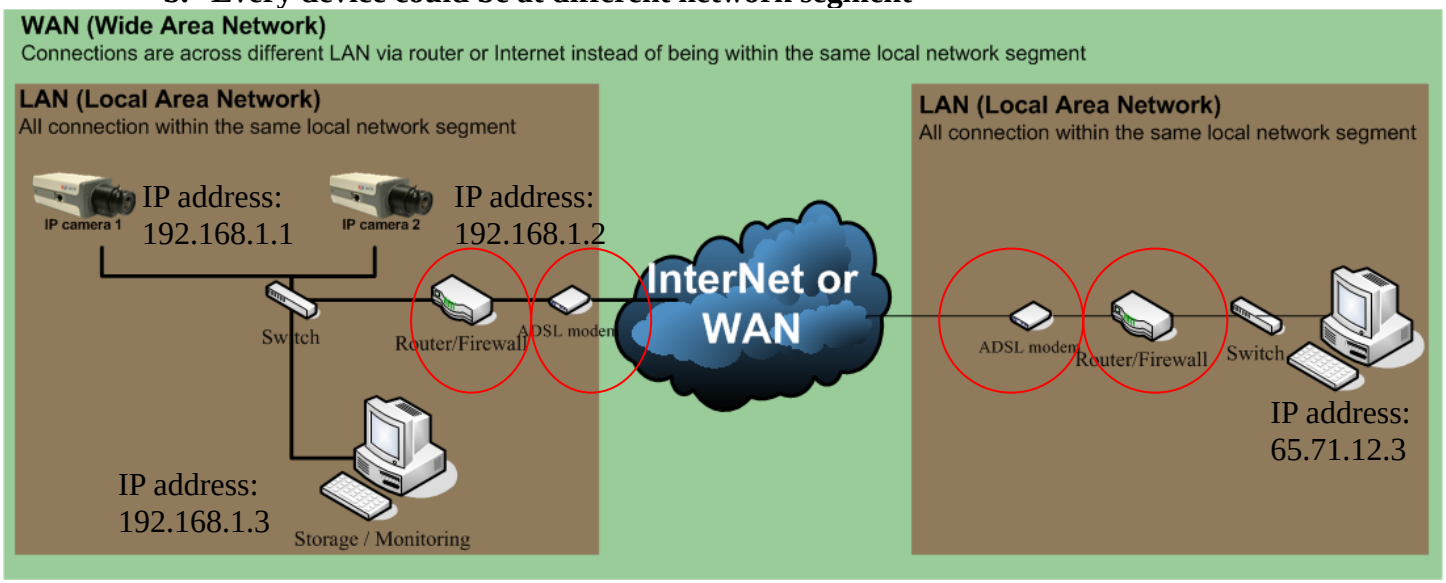

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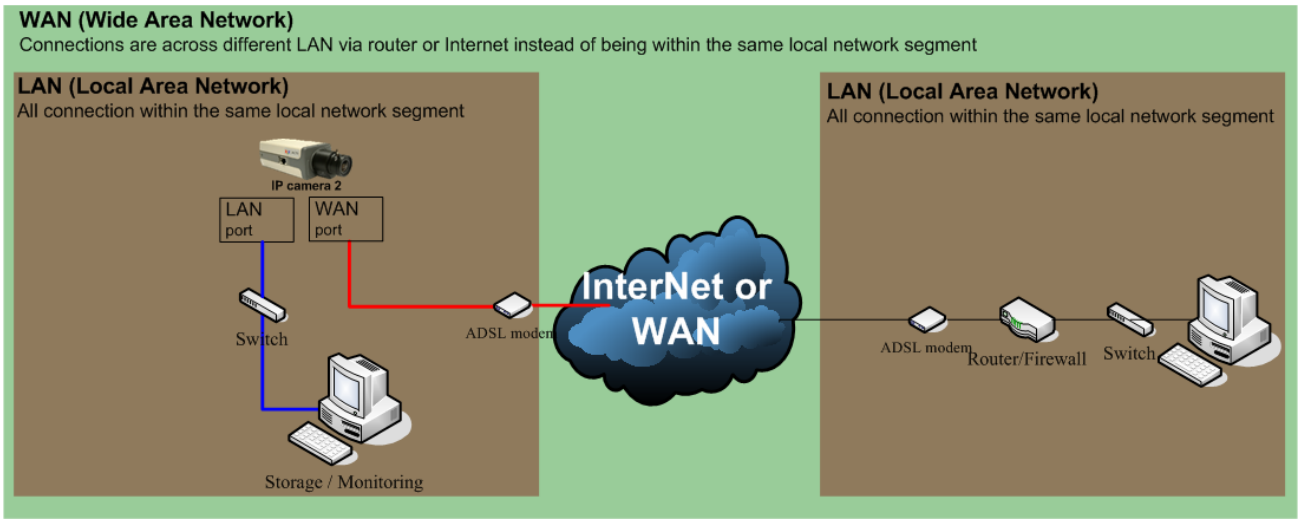

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  Subnet: None
  Gateway: None

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  Subnet: 255.255.255.0
  Gate way: None

[Support Package]

ID	**TS-00104**	**Created** **Updated**	Dec.12, 2005
Category	Hardware	**Sub Category**	Firmware
Product	All video servers and IP cameras		
Purpose	**Firmware function comparison and OnTheFlyChange available function list**		
Support URL	http://www.acti.com/support		
Tech Support	Customer.service@acti.com		
MSN Messenger ID	Customer.service@acti.com		

[Support Package]

Firmware function comparison and OnTheFlyChange available function list

This support package tells you

1. **Firmware function comparison table**
2. **OnTheFlyChange available function list**

Index

· *Firmware function comparison* *4*

· *OnTheFlyChange available function list* *4*

[Support Package]

· OnTheFlyChange available function list

Index	Function Description	OTFC (OnTheFlyChange)				
		TCP 1.0 (4M Flash)	TCP 1.1 (8M Flash)		TCP 2.0 (8M Flash)	
		All editions	A1X-P0V-V1.12.00-XX A4Q-P0V-V1.12.00-XX and below	A1X-P0V-V1.13.00-XX and after	A1X-P2N-V2.02.00-XX and below	A1X-P2N-V2.03.00-XX and after
1	Host Name	-	-	OK	-	OK
2	Language	-	-	-	-	-
3	LAN - IP Address	-	-	-	-	-
4	LAN - Subnet Mask	-	-	-	-	-
5	LAN Port - Network Speed & Duplex	-	-	-	-	-
6	WAN Port - Network Speed & Duplex	-	-	-	-	-
7	WAN - Dynamic IP Address	-	-	-	-	-
8	WAN - Static IP Address	-	-	-	-	-
9	WAN - Static IP Address - Subnet Mask	-	-	-	-	-
10	WAN - Static IP Address - ISP Gateway	-	-	-	-	-
11	WAN - PPPoE	-	-	-	-	-
12	WAN - DNS	-	-	OK	-	OK
13	WAN - DDNS	-	-	OK	-	OK
14	SNTP/NTP Server	OK	OK	OK	OK	OK
15	Set Time Manually	OK	OK	OK	OK	OK
16	Streaming Type	-	-	OK	-	OK
17	Analog Video Type	-	-	OK	-	OK
18	Resolution	-	-	OK	-	OK
19	Bitrate	-	-	OK	-	OK
20	ToS	-	-	OK	-	OK
21	Frame Rate Type	-	-	OK	-	OK
22	Port Setting	-	-	OK	-	OK
23	Video Adjustment	OK	OK	OK	OK	OK
24	User Account Setting	-	-	OK	-	OK
25	Firmware Upgrade	-	-	-	-	-
26	Factory Default Setting	-	-	OK	-	OK

[Support Package]

· Firmware function comparison

FIRMWARE VERSION		A1X-P0V-V1.0X.XX A4Q-P0V-V1.0X.XX	A1X-P0V-V1.1X.XX	A1X-P2N-V2.02.XX A1X-M2N-V2.03.XX	A1X-M2C-V2.00.XX
Product List		SEM-1010 SEM-1020 SED-2100 SED-2200 SED-8100 SED-2300Q CAM-5100 CAM-610X CAM-620X	CAM-5130 CAM-5140 CAM-5150	SEM-1110 SEM-1120 SED-2120 SED-2130 SED-2140 SED-2400 SED-2410 SED-2420 CAM-52XX CAM-710X	SED-2500
FUNCTION SPEC					
1	Logo modification by an external tool	V	V	V	V
2	New function active w/o reboot	V	V	V	V
3	Full screen w/ title bar	V	V	V	V
4	Bit rate up to 3M	V	V	V	V
5	ActiveX Control in server		V	V	V
6	Tool w/ upload customer's ID		V	V	V
7	1-1 firmware upgrade via URL command	V	V	V	V
8	1-1 INI function via URL		V	V	V
9	Display message while firmware		V	V	V
10	Apply & Save w/o reboot		V	V	V
11	Model No :: truncate from Serial No	V	V	V	V
12	Open serial port setting (N-O-E,8,1)	V	V	V	V
13	Driver supports both 48/56 pin		V	V	V
14	Show progress and status while		V	V	V
15	RTC Control - Battery built-in			V	V
16	Ony way audio (OKI)			V	V
17	Two way audio (OKI + CM-102)			V	V
18	RTP/RTSP Protocol			V	V
19	Support concurrent user no. up to 20		V	V	V
20	Video latency < 250 ms				V
21	Enhance deinterlace	V	V	V	V
22	Multicast for WAN		V	V	V