**B Series**—Robot Model

# **IP Camera**

2011-7 V4.18

# **User Manual**

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## **1** Introduction

The IP Camera combines a high quality digital video camera with network connectivity and a powerful web server to bring clear video to your desktop from anywhere on your local network or over the Internet.

#### 1.1 The package includes

```
✓ IP Camera * 1
```

- ✓ IP Camera Utility CD \*1
- ✓ 5V Power Adapter \*1
- ✓ Stand of plastic \* 1
- ✓ Cable \* 1

NOTE: If you select the device with wifi function, it has built-in wifi module and transmitting antenna in package.

#### **1.2 Function and Features**

- ✓ With built-in Microphone, it enables user to monitor the sound on the site. User can also connect this equipment to the speaker, and it supports two-way intercom function.
- ✓ It was equipped with pan/tilt function, horizontally 350° and vertically 100°. Its outlook is smart, easy and convenient to install in many sites.
- ✓ Support 802.11b/g protocol, can build up wireless monitoring.
- ✓ Infrared LED for night vision covers 5m area, to realize 24 hours monitoring.
- ✓ Motion detection and alarm pin can be connected to external sensors to detect environmental situation.
- ✓ Alarming record can be stored by email, FTP server. External alarm can be open when detecting something unusuality.
- ✓ It adopts the TCP/IP network protocols and has inner web server. Users can browse video through IE and other browsers. Data is transferred through one port; it is easy for user to do the network setting.
- ✓ Support mobile phone to view.
- Manufacture attaches a label at the bottom of each IP Camera, providing free DDNS.
   When IP Camera is connected to the internet, this DDNS can be used to visit the device.
- ✓ Manufacture provides free software, support Multi-view, Long time recording, video replay etc.

ltem	Sub Item	Description	
	Sensor	CMOS sensor	
	Total of pixel	300k	
Image Capture	Minimum	IR on A Lux	
Capture	illumination	IR on,0 Lux	
	Lens	f=3.6mm, F=2.0, Fixed Iris	
Pan/Tilt	Pan Coverage	350°	
F an/ Tin	Tilt Coverage	100°	
• • • •	Lighting	8pcs 850nm Infrared LEDs, 5m distance	
Assistant	Lighting Control	Auto control	
	Resolution	640*480(VGA)/320*240(QVGA)/160*120(QQVGA)	
	Compression	MJPEG	
Video and	Frame rate	30fps	
Audio	Bit rate	128kbps ~ 5Mbps	
	Image Rotation	Mirror /Flip	
	Audio Compression	ADPCM	
	Basic Protocol	TCP/IP、UDP/IP、HTTP、SMTP、FTP、DHCP、	
Network		DDNS、UPNP、NTP、PPPOE	
	Other Protocol	802.11b/g	
	Video control	support	
	Dual way audio	support	
	Motion Detection	support	
Other	Triggered Actions	Email/FTP/external alarm/send message to alarm	
Features		server	
	User Setting	Three levels	
	Date/ Time Setting	support	
	Upgrade	Upgrade from network	
	DDNS	A free DDNS provided by manufacturer	
	Ethernet	10Base-T/100base-TX	
Hardware	Alarm In	1 way	
Interface	Alarm Out	1 way	
	Audio In	Built-in Mic and External Mic interface	
	Audio Out	Built-in Speaker and Audio Line-out interface x 1	
	Weight	245g	
	Main body	111mm(L)*107mm(W)*121mm(H)	
Physical	Power	DC 5V	
Index	Power consumption	<6W	
	Operating temperature	<b>-20</b> ℃ <b>~ 50</b> ℃	
	Operating	10% ~ 80% non-condensing	

## **1.3 Technical Parameters**

	temperature	
	OS Supported	Microsoft Windows 98/2000/XP/Vista/7 etc.
Software(PC Side)	Browser	Internet Explorer6.0 and Above or Compatible Browser, Firefox, Safari etc.
Side)	Application Software	IPCMonitor.exe

## 2 Appearance and interface

#### 2.1 Appearance





Note: Status Indicator: the green light is to show that the device is running, Slow flicker (one per 2 second), indicates the device is searching for network; flicker (one or twice per second), indicates the wired network connected; Frequent flicker (2~3 times per second), indicates wireless network connected.

## 2.2 Interface of Equipment

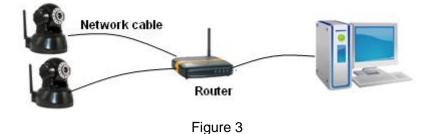


Figure 2

**RESET Button:** Press the RESET button and hold on more than 10 seconds, the equipment will restart and recover to the factory default settings.

## 3 Visit IP Camera from LAN

#### 3.1 Lan connection



#### 3.2 Search and set the ip address of the ip camera

Run "BSearch\_en.exe" in the CD, the setting interface as figure 4.

🖳 BSeries Intranet se	arch and settings(¥1	. 0. 0. 17)
Local PC information: Network adapter: Realtek RTL8	Device info Device na	
IP address:         192.168.12           Subnet mask:         255.255.255           Gateway:         192.168.1.1           DNS1:         202.96.134:           DNS2:         202.96.134:           DNS2:         202.96.128:           Device list	App. Firm P config P addres Subnet m Gateway DNS1(D): Http port( Authentic	st(1):       192 . 168 . 1 . 178         mask(1):       255 . 255 . 255 . 0         (G):       3         202 . 96 . 134 . 133         P):       1025 📚
1 Search(F3)	Tips: 1> This pc a 2> Only	t for watching: Update(F5) Update(F5) 5 tool is only used within LAN, and device is within the same subnet. y the legit user can update device informations Close

Figure 4

#### **Operation Steps:**

- 1) Click "Search (F3)
- 2) Choose the device
- 3) Change the ip address of the ip camera according to the information in the red frame on the left. The numbers in the red circle should not be the same.
- 4) Put the user name and password into "Authentication" (By default, the user name

#### is: admin, password is: 123456).

- 5) Click "Update"
- After successfully update, click "Search (F3)", choose the device and click "Browse (F4)". Then you may view the ip camera, like figure 5.

#### NOTE:

- If you don't know how to fill out the content of "IP config", you could also tick the "Set IP automatically" to get the IP address from the router automatically.
- 2) If you have the firewall software in your PC, when you run the BSearch\_en.exe, it may pop up a window to say "whether you want to block this program or not", then you should choose not to block.
- 3) The default ip address is 192.168.0.178 and default http port is 80.

kome to visit the IP Camera! Please select a visit mode: <u>Mode 1 to view</u> (For the browser with IE kernel) otice: <u>Download</u> and install Player(first use) <u>Mode 2 to view</u> (For FireFox, Safari Browser etc.) <u>Mobile view</u>

Figure 5

#### 3.3 Visit IP Camera

We suggest using IE kernel browser to view the video (it can provide more functions), but user need to install Player before viewing the video. Click "download and install player (first use)" link, it will popup dialogue box as Figure 6, click Run, it will automatically download player and install.



Figure 6

#### 3.3.1 Video Play Area

After install the plug-ins, click "Mode 1 to view" link in Figure 5 to view the video (video as Figure 7).

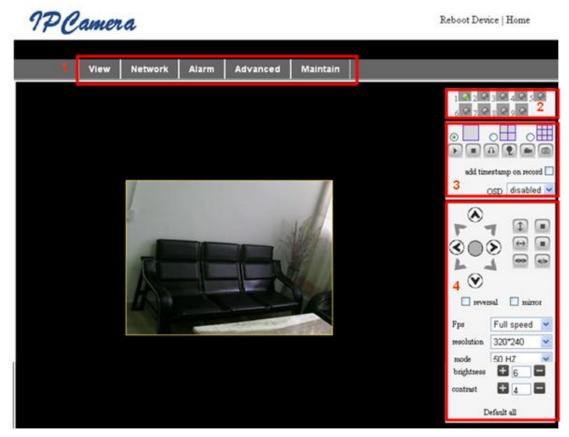


Figure 7

#### 1) Main Menu

The main menu includes the function setting of different submenu

#### 2) Status Displaying Area

In right up corner, it is the status displaying area, to show the 9 devices' status:

- if not connected, button is gray
- if connected, button is green
- If wrong connected , button is yellow
- If alarm , button is red

#### 3) Multi Channel displaying area

If users add multi channel (refer to 5.3.2), when shift to 4-Ch, 9-CH, and it will automatically show other devices. You select one device, and you can operate it by these keys: play, stop, and record, control Pan/tilt, etc.



These buttons mean start video, stop, monitor, talk, record and snapshot.

P.S.: If you want to click this button it to record the video, please go to advanced—Other Settings to set the Record Path first. Please see below figure8.

Other Settings			
Status LED Mode	Open Indicator LED 💌		
PTZ settings			
PTZ Center on Start	No 💙		
Horizon Patrol Rounds	1 V (NOTE: 0 means infinity)		
Vertical Patrol Rounds	1 V (NOTE: 0 means infinity)		
Manual PTZ Rate			
Auto Horizon Rate	5 💌		
Auto Vertical Rate	5 💌		
Path Set			
Record Path	C:\Documents and Settings\All Users\Documents Browse		

#### Figure 8

#### 4) PT and video control

In Pan/Tilt control area, user can control the position according to the arrow sign: up, down, left, right, middle, horizontal cruise, vertical cruise, and stop etc.

∞ (•)

Means open IO output and Close IO output.

User can also set the device frame rate, resolution, brightness, contrast and other parameters.

## 4 Visit IP Camera from WAN

#### 4.1 Wan connection

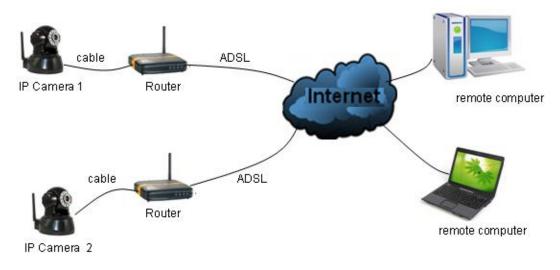


Figure 9

#### 4.2 Port forwarding

If visit IP Camera from WAN, you **must** do port forwarding on the router. Take Netgear router for example.

	<b>R</b> <b>VIZARD</b> rout Wire	· · · · · · · · · · · · · · · · · · ·	
Set Password     Router Upgrade     Advanced     Wireless Settings     Wireless	Basic Settings	Service Name     Server IP Address       Age-of-Empire     192     168     1     Address       # Service Name     Start Port     End Port     Server IP Address	
Repeating Function 1 • Port Forwarding / Port Triggeriny • WAN Setup • LAN Setup	Internet Service Provider	Edit Service     Delete Service       2     Add Custom Service	

#### Ports - Custom Services

Service Name

Input

IP

IP camera port #	Service Name	Input IP camera IP address
×	Service Type	

Ports - Custom Services

Service Type	TCP/UD	Service Type	TCP/UDP V
Starting Port		Starting Port	1025 (1~65534) 4
Ending Port	1025 (1~65534)	Ending Port	1025 (1~65534)
Server IP Address		Server IP Address	192 168 1 178
A	pply Cancel	A	Cancel



#### **Operation Steps:**

- 1) After login the interface of the router, choose "Port Forwarding"
- 2) Choose "Add custom Service"
- 3) Input IP camera port
- 4) Input IP camera IP address, click "Apply". (the http port and ip address should be the same as figure 4 which set by you own)

## Note: Different router has different settings for port-forwarding; please kindly follow your router guide to do the port-forwarding.

After the port-forwarding is done, you could view the IP Camera from WAN now.

#### 4.3 DDNS

You could also use the manufacturer DDNS to view the device as long as your port-forwarding succeeds.

#### 4.3.1 Manufacturer's DDNS

Device manufacturer has provided a free DDNS. User can find it in network menu, like

figure 11.

Manufacture's DDNS	
Manufacture's Domain	002alcn.nwsvr.com

Figure 11

#### 4.3.2 Third Party DDNS

User can also use third part DDNS, such as <u>www.dyndns.com</u> User must apply a free domain name from this website and fill the info into the below blanks (Figure 12) and save the settings. Then the domain name can be used.

DDNS Service	DynDns.org(dyndns) 💌
DDNS User	btest
DDNS Password	
DDNS Host	btest.dyndns.biz

Figure 12

Note: Using the third party domain name, if the http port is not 80, the port number should be adding to the domain name with colon. Example: <u>http://btest.dyndns.biz:81</u>. *While manufacturer DDNS is no need to add PORT.* 

## 5 Other Settings

## 5.1 Network Setting

#### 5.1.1 Basic Network Setting

The user can also enter the Basic Network Settings to set the IP address except using the search software. See below Figure 13.

Network Settings	
Obtain IP automatically	
IP Addr	192.168.0.139
Subnet Mask	255.255.255.0
Gateway	192.168.0.1
DNS Server	192.168.0.1
Http Port	80

Figure 13

#### 5.1.2 WIFI Setting

If the device is with WIFI, enter the Wireless LAN Setting, just as below Figure 14 shown, click the "Scan" button, it will show you all the wireless networks detected in the Wireless Network List column. Select one of them and tick "Using Wireless Lan", then the relevant

•	<u> </u>
Wireless Settings	
Wireless Network List	ChinaNet-TbkR[00255e1e5d08] infra WPA/WPA2-PSK wifi[001e5837857] infra WPA/WPA2-PSK netview[002586697046] infra WPA/WPA2-PSK Scan
Using Wireless Lan	
SSID	wifi
Encryption	WPA2 Personal (AES) 💌
Share Key	8939038200

data of the selected wireless network will be shown in the following blanks. Put in the password and click "Set", then the WIFI setting is finished.

#### Figure 14

- Note1: When the device is connected both WIFI and wired, it will firstly connect to the wired network, if it can't connect to it, then it will change to connect to the wifi. The IP address and port is the same, either wireless or wired network.
- Note2: Before you do the configuration of wireless as shown above; please make sure the device is connected to the network via network cable. After settings succeed, please reboot the device and wireless function takes effect.

#### 5.1.3 ADSL Setting

User could enable the ADSL Dialup according to the below Figure 15 (The ADSL provider will assign the user name and password to you when you apply for ADSL service.) Connect the device directly to the ADSL modem and it is connected to the Internet.

ADSL Settings	
Using ADSL Dialup	
ADSL User	szlgview@163.gd
ADSL Password	•••••



#### 5.1.4 UPnP Setting

If you enable UPNP, once the IP camera is connected into the LAN, it will communicate with the router in the LAN to do the port-forwarding automatically.

Below Figure 16, tick "Using UPNP to Map Port" and the setting are completed. You could check the UPNP succeeds or not in the interface of System Maintenance.

UPnP Settings	
Using UPnP to Map Port	



Before using UPNP function, please make sure the router's UPNP function has been triggered. Not all the routers support UPNP perfectly. Please test if the router works well with the equipment, if not, we would suggest you to disable this function and do the port-forwarding manually.

#### 5.1.5 DDNS Setting

Please refer to the content in 4.3.

#### 5.1.6 MSN Setting

MSN Config		
User	test1@hotmall.com	
Password		
MSN Friends List	friend1@hotmall.com	

#### Figure 17

User needs to apply for a MSN account for this device first, for example: <u>test1@hotmail.com</u>. Please put this MSN account and its password as above Figure 17. Then put your MSN account, for example: <u>friend1@hotmail.com</u>, into the 'MSN Friends List. Then on your <u>friend1@hotmail.com</u> MSN list, you can see <u>test1@hotmail.com</u> is online. You just send "url?" to <u>test1@hotmail.com</u> and you will get the WAN ip address of this ip camera. But please make sure <u>test1@hotmail.com</u> and <u>friend1@hotmail.com</u> should be MSN friends before you do the settings.

#### 5.2 Alarm Settings

#### 5.2.1 Alarm Setting

#### 1) Alarm Detect

User can select the motion detection. If there is any motion, it will detect the motion and trigger the alarm. In the motion detect sensibility, the larger the figure, the more sensitive.

As showed in Figure 18, if any external alarm detector is connected, user will be able to tick "Alarm Input Armed". If the external alarm detector is an always on switch alarm, please choose "open". If the external alarm detector is always off switch alarm, please

choose "close".

Alarm Settings		
Alarm Detect		
Motion Detect Armed	Motion Detect Sensibility 5 💌	
Alarm Input Armed	♥      Open      Close	
Alarm Action		
IO Linkage on Alarm		
Send Mail on Alarm		
Upload Image to FTP		
Enable Alarm Server		
Scheduler		
All time      Schedule(NOTICE:set the correct 'Device Clock')Device Clock		
Submit Refresh		

Figure 18

#### 2) Alarm Action

All kinds of alarm modes:-

- IO interface for alarm signal output: when relay is switched on, the external alarm will begin to alarm.
- Send alarm info by email.
- Send the site pictures to the FTP server, user can also set the break time between two pictures.
- Send alarm info to the alarm server.

#### 3) Scheduler

Device will trigger alarm in scheduled time. User can set schedule time to be "all the time". Before you set "Schedule", please go to Date and Time settings to set the correct time for the item, as shown in figure 19.

Alarm Detect	
Motion Detect Armed	Motion Detect Sensibility 5
Alarm Input Armed	♥ ⊙ Open ○ Close
Alarm Action	
IO Linkage on Alarm	
Send Mail on Alarm	
Upload Image to FTP	
Enable Alarm Server	
Scheduler	
All time Schedule	(NOTICE:set the correct 'Device Clock')Device Clock
Day     0     1     2     3     4       Sun     Mon     Image: Superstand	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Figure 19

### 5.2.2 Mail Service Setting

eMail Settings	
Sender	sendder@sohu.com
Receiver 1	receiver@sohu.com
Receiver 2	
Receiver 3	
Receiver 4	
SMTP Server	smtp. sohu. com
SMTP Port	25
Transport Layer Security Protocol	None 💌
	Gmail only support TLS at 465 port and STARTTLS at 25/587 port.
Need Authentication	
SMTP User	sender
SMTP Password	•••••
Test Please set at first, and then test.	
Report Internet IP by Mail	

Figure 20

The device will send alarm email to you. You only need to fill out the blanks with your email address as shown in Figure 20. After the setting, please click save and test to check if it works properly. If it is properly set, user can tick to enable "Report Internet IP by mail". After every restart, the device will send its Internet IP address to user's email address.

#### 5.2.3 FTP Service Setting

	Ftp Settings
FTP Server	192.168.0.56
FTP Port	21
FTP User	test
FTP Password	••••
FTP Upload Folder	/test
FTP Mode	PORT 💌
Test Please set at first, and then test.	
Upload Image Periodically	

#### Figure 21

When alarming, device will snap and send the image to FTP server, please make sure the FTP setting is correct. Above Figure 21 of FTP setting for your reference, after the setting is finished, click "Test" to test your settings are correct or not.

After correct setting FTP server, you can use "upload Image Periodically" function. Even no alarm, device can also send the snap image to FTP periodically.

In order to use FTP function, user should apply username and password on the FTP server first. And please apply some storage, and the authority to write and create sub-category into it.

#### 5.2.4 Alarm Server

Alarm server	
Server Address:	192.168.0.78
Server Port:	1000
User Name:	test
Password:	••••

#### Figure 22

Please confirm if you have connected to alarm server. The alarm message format as follow:

GET /api/alarm.asp?

username=username&

```
userpwd=password&
rea=alarm type (1=Motion Detection, 2 =Alarm from Alarm in port)&
io=0
```

Alarm server needs developing by user. User can extend other functions on this server, like SMS, MMS alarm, and mobile phone etc.

#### 5.3 Advanced

#### 5.3.1 User Setting

There are three levels of authority; they are Administrator/Operator/Visitor. Administrator have the highest authority, it can do any change to the settings. Operator account only can operate the IP camera, can't do changes to the settings. Visitor account only can watch the video, can't do any operation to the IP camera. *By default, the administrator's user name is admin, password: 123456*.

Users Settings		
User	Password	Group
admin	•••••	Administrator 💌
user	••••	Operator 🖌
guest	•••••	Visitor 💌

```
Figure 23
```

	Multi-Device Settings		
Device List in Lan	anonymous(192.168.0.247) 002alcl(192.168.0.67) 002abyc(192.168.0.239) 002aqvc(192.168.0.241)		
The 1st Device	This Device		
The 2nd Device	None		
The 3rd Device	None		
The 4th Device	None		
The 5th Device	None		
The 6th Device	None		
The 7th Device	None		
The 8th Device	None		
The 9th Device	None		
attention: If you want to access the device from internet, be sure the host and port that you set can be accessed from internet. Submit Refresh			

#### 5.3.2 Multi Device Setting

#### Figure 24

As Figure 24, User can maximum add 9 devices to view the device simultaneously. Click refresh button to check the device in the LAN. When click the device, will popup setting dialogue box and input the device info, as figure 25 and click save. After that, must click submit button to save.

The 2nd Device	None		
Alias Host Http Port User Password	002alcl		
Host	192.168.0.67		
Http Port	80		
User	admin		
Password	•••••		
	Save Remove		



#### 5.3.3 Other settings

You can choose open or close indicator LED. If set PTZ center on start 'Yes', when start device, Pan/Tilt will move to center and then stop. You can also set the Horizon patrol rounds and vertical patrol rounds, when you click patrol on the 'view' interface, it will round according to your setting rounds. You can also set PTZ rate, 0 means fastest.

Other Settings			
Status LED Mode	Open Indicator LED 💌		
PTZ settings			
PTZ Center on Start	No 🗸		
Horizon Patrol Rounds	1 V (NOTE: 0 means infinity)		
Vertical Patrol Rounds	1 V (NOTE: 0 means infinity)		
Manual PTZ Rate			
Auto Horizon Rate	5 🗸		
Auto Vertical Rate	5 💌		
Path Set			
Record Path	C:\Documents and Settings\All Users\Documents Browse		

Figure 26

## 5.4 Maintain

#### 5.4.1 Device Information

Device Info			
Device ID	002aaai		
Device Firmware Version	21.37.2.37		
Device Embeded Web UI Version	0.0.4.18		
MAC	00:01:02:03:02:03		
Alarm Status	None		
Third Party DDNS Status	3322 Succeed http://robbicam1.3322.org:10540		
UPnP Status	No Action		
MSN Status	No Action		

Figure 27

#### 5.4.2 Time Setting

If the device is connected to the Internet, you enable the NTP server to correct the time and select the right time zone. Or you should use the PC's time to correct its time.

Date&Time Settings			
Device Clock Time	2010 - 3 - 29 20:08:20		
Device Clock Timezone	(GMT +08:00) Beijing, Singapore, Taipei 💌		
Sync with NTP Server			
Ntp Server	time.nist.gov 💌		
Sync with PC Time			

Figure 28

#### 5.4.3 Firmware upgrade

The device runs 2 kinds of programmer, one is system firmware, the other is application firmware. They could be upgraded separately.

Upgrade Firmware			
Upgrade Device Firmware	Browser Submit		
Upgrade Device Embeded Web UI	Browser Submit		



#### 5.4.4 Restore Factory Default

Click "Restore Factory Default", it will pop up a dialogue to confirm if you really want to restore the factory default. After confirmation, the system will restore the factory default

and reboot.

#### 5.4.5 User browsing Log

After enter the log interface, you could view who and when the device is visited.

Log						
Mon,	2010-03-29	19:05:20	admin	192.168.0.175	access	~
Mon,	2010-03-29	19:43:33	user	192.168.0.175	access	
Mon,	2010-03-29	19:47:51	user	192.168.0.175	access	
Mon,	2010-03-29	19:49:02	guest	192.168.0.175	access	
Mon,	2010-03-29	19:57:40	admin	192.168.0.175	access	

Figure 30

## 6 Centralization Control

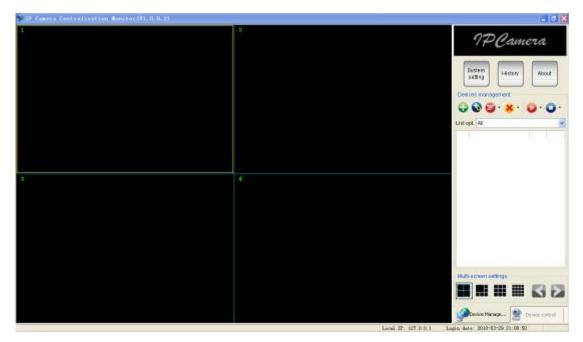


Figure 31

IPCMonitor is a free software offered by factory, several devices on LAN and WAN can be browsed at the same time. The software also supports snap, video record, alarm and so on. The below Figure 31 is the interface.

For more information, pls. refer to the <<IPCMonitor User Manual>> in CD.

## 7 FAQ

#### 1) Unmatched power adapter will damage the equipment or power adapter

When plug in the power adapter, please check carefully the voltage, it should be 5V

adapter for this equipment.

#### 2) Slowly browse speed

This equipment adopts MJEPG compression format, it needs large network bandwidth, the narrow bandwidth will affect the browse speed. The typical bandwidth uses situation as below:

640x480@10fps : 4.0 Megabits  $\sim$  5.0 Megabits 320x240@30fps : 1.2 Megabits  $\sim$  1.6 Megabits

#### 3) Color difference

The default is infrared lens, when visit outdoor or strong infrared light scenes, there are color differences, the color is not accordance to the real scenes. User can change it to color lens to solve this problem, but color lens can only use under the daylight situation.

#### 4) Can't find equipment via search software after connect to LAN

Make sure the equipment and PC is in the same LAN; if install firewall software, please close it and try again.

#### 5) Can find equipment via search software, but can't visit

If the IP address of IP camera and PC is not in the same Network Segment, you should change them on the same Network Segment before visit. Network Segment is the first three number of IP address. If the IP address of PC is 192.168.0.100, so it can only visit the equipment which IP address is between 192.168.0.1~192.168.0.255.

#### 6) Can visit via public IP address, but can't visit via manufacturer's domain name

Make sure the DNS setting is same as your PC, as below Figure 33, in the search tool, the DNS 1 and DNS 2 on both side should be same.

-Local PC information	τ	-Device information:	
Network adapter:	Realtek RTL8139/810x Far 💙	Device name:	002alcn
IP address:	192.168.0.175	Sys. FirmwareVer:	21.37.2.37
Subnet mask:	255,255,255.0	App. FirmwareVer:	0.0.4.18
Gateway:	192.168.0.1	IP config.:	Set IP automatically
		IP address(I):	192 . 168 . 0 . 78
DNS1:	192.168.0.1	Subnet mask(U):	255 . 255 . 255 . 0
DNS2:		Gateway(G):	192 . 168 . 0 . 1
Device list:	1 000		
Device ist.	1 pcs	DNS1(D):	192 . 168 . 0 . 1

Figure 32

## 8 FCC STATEMENT

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ! Reorient or relocate the receiving antenna.
- <sup>1</sup> ! Increase the separation between the equipment and receiver.

! Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

! Consult the dealer or an experienced radio/TV technician for help.

RF exposure statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.