IP Dome Camera

IP Network Camera
User Manual

Model IP-CAM705

Version 1.0.0

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions"

Warnings: Serious injury may be caused if warnings are neglected.

Cautions: Injury or equipment damage may be caused if cautions are neglected.

Warnings

1. This product must only be used in strict compliance with UK electrical standards and safety regulations.

2. Input voltage must be applied according to specification and meet the IEC60950 - 1 standard. This camera uses 12vDV and must be connected to a 12vDC regulated power supply.

3. It is recommended to use a separate power supply for each camera and to avoid overload that the power supply is adequately rated to cover current rating of camera plus 30% head room to ensure overheating is not caused which can create a fire hazard.

4. Always make sure that power plugs are firmly inserted into power sockets.

5. When the product is installed on a wall or ceiling, the device must be firmly fixed.

6. If smoke, odour or noise is emitted from the device, turn off the power at once and unplug the power cable.

7. If the product fails to work properly, please contact your installer and never attempt to disassemble the camera yourself. (We cannot assume any responsibility for problems caused by unauthorised repair or maintenance.)

Cautions

1. Make sure the power supply voltage is correct before using the camera.

2. Do not drop the camera or subject it to physical shock.

3. Do not touch the CMOS sensor with your fingers. If cleaning is necessary, use clean dry cloth. If the camera is not used for an extended period, please fit the lens cap to protect the CCD from dust and dirt.

4. Do not aim the camera at the sun or use in very bright places. A blooming or smearing may occur otherwise (which is not a malfunction), which can affect the life of the CMOS sensor.

5. The CMOS sensor can be burnt out by a laser beam. Where laser equipment is used, make sure that the surface of the CMOS sensor is not exposed to laser light.

6. The camera should only be operated in temperatures between $-10℃ \sim +60℃$ and must not be installed in dusty or damp locations and not exposed to high electromagnetic radiation.

7. To avoid heat accumulation, good ventilation is required for operating environment.

8. Keep the camera away from liquid when in use.

INDEX

1.   Introduction

This network camera is a type of embedded digital surveillance product that combines the features of both traditional analogue camera and net DVS (Digital Video Server). Due to the embedded Linux operation system and the latest TI Davinci hardware platform the system operates with high scheduling efficiency. Furthermore, the firmware is burned onto the flash drive, which makes the product small, reliable and highly stable.

1.1 Network camera Functions and Features

The IP-CAM705 series support H.264 video Encoding and Oggvorbis Audio Encoding techniques. The camera accessing the Hybrid DVR9K uses the H.264 video codec.

The Network Functionality supporting TCP/IP includes TCP/IP, HTTP, DHCP, DNS, RTCP and PPPoE. Also IE browsing is available.

Heartbeat Function: The Heartbeat function allows the IP camera to initially communicate with a server regardless of the internal camera IP address.

Alarm Function: The product includes one input alarm channel and one alarm on/off output, and also supports motion detection, video loss, masking alarm and external alarm input.

Voice Talking： Supports two way audio.

User Management: Supports multilevel rights management. The administrator can create up to 15 separate users with different rights levels, which highly improve system security.

The IP-CAM705 series cameras support one channel video signal and 25fps in PAL or 30fps in NTSC and support both variable bit rate and variable frame rate with self-defined video quality and compression bit rate.

The IP-CAM705 cameras support resolutions of 4CIF (PAL: 704*576,NTSC:704*480), DCIF(PAL:528*384,NTSC:528*320), 2CIF(PAL:704*288,NTSC:704*240), CIF(PAL:352*288,NTSC:352*240) and QCIF(PAL:176*144,NTSC:176*120).

These products offer a 10M/100M self-adaptive Ethernet interface.

These cameras support parameter settings, the ability to browse real time videos and check camera performance through software or IE, and set external alarming and store the compressed bit rate through the network. They also support remote upgrades and maintenance. RS-485 supports monomial transparent channel function so that clients on remote PC can control the serial devices.

2.   Installation

1. Read the following instructions carefully before installation.

2. Make sure that all the related equipment is powered down during the installation.

3. Check the power supply to prevent any damage caused by mismatching problems.

4. This product must not be installed in conditions of high humidity or high temperatures. Inadequate ventilation, dampness or vibration must be avoided.

5. Do not attempt to disassemble the camera yourself. Users are responsible for any problems caused by modifications, unauthorised repair or poor installation and are not supported by the manufacturer's warranty.

6. Power Supply, Lens and SD card are Optional.

2.1 Panels Description

2.1.1 Side Elevation of the IP-CAM705
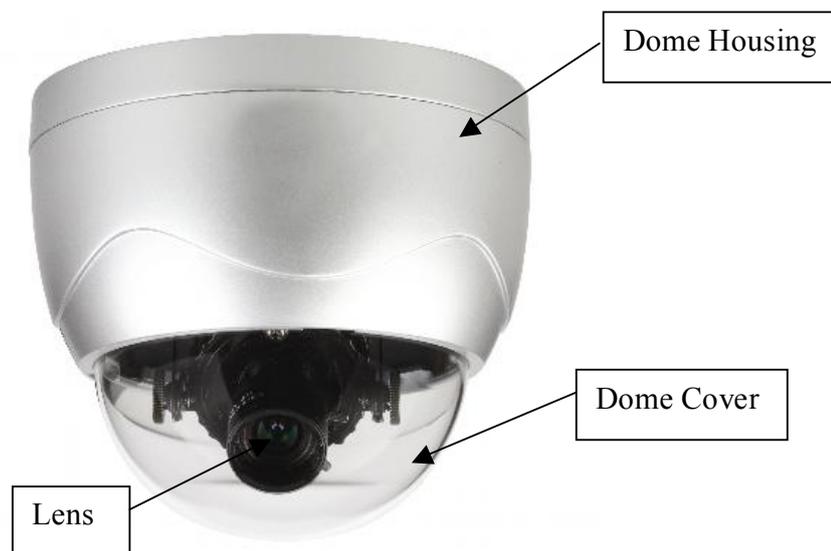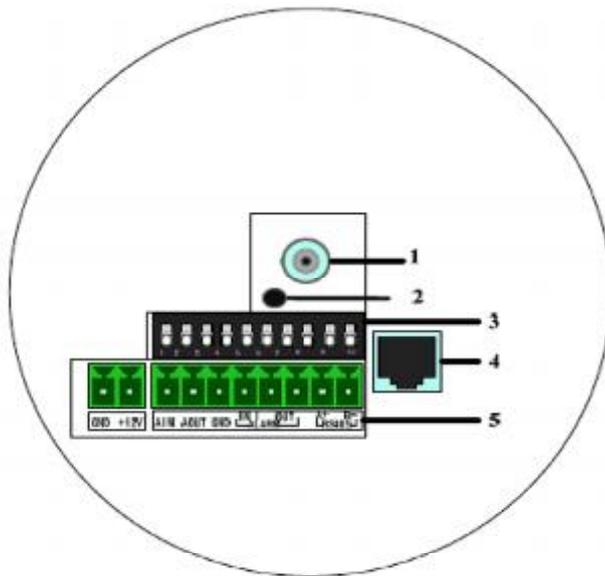
Dome Housing

Dome Cover

Lens

Fig 2.1.1 Side Elevation of IP-CAM705 series camera

2.1.2 Rear Panel Description

1. Analogue Video Output (BNC)
2. Power Lamp
3. Address & Protocol dial switch
4. Internet Interface
5. Power, voice input & output, alarm input and output and RS485.

Fig. 2.1.2   Rear Panel of IP-CAM705 series

Address& protocols dial switch. Define for dial switch from 1 to 5. Dial switch function as follows:

Switch Function	ON	OFF
1	SHARP	SOFT
2	AES	AI
3	BLC	OFF
4	FL	ON
5	NAGC	SAGC

Note: The dipswitches from 6 to 10 are not used on the IP-CAM705

2.2   Product Installation
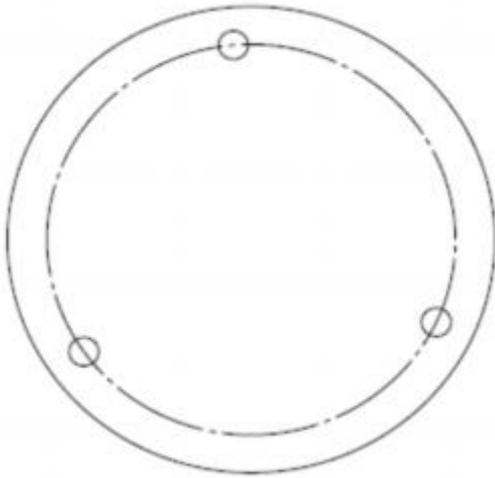
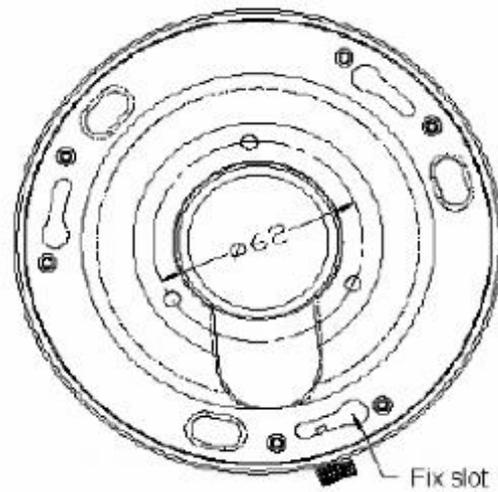Fig 2.2.4 Place card template to mark fixing holes

Fig 2.2.5 Fix securing plate

Position the three location pegs on the Dome camera into the three fixing slots on the securing plate. Ensure that the alignment marks correspond when the dome is fitted and then turn anti-clockwise to lock. The locking screw can now be tightened so that the dome cannot be moved.
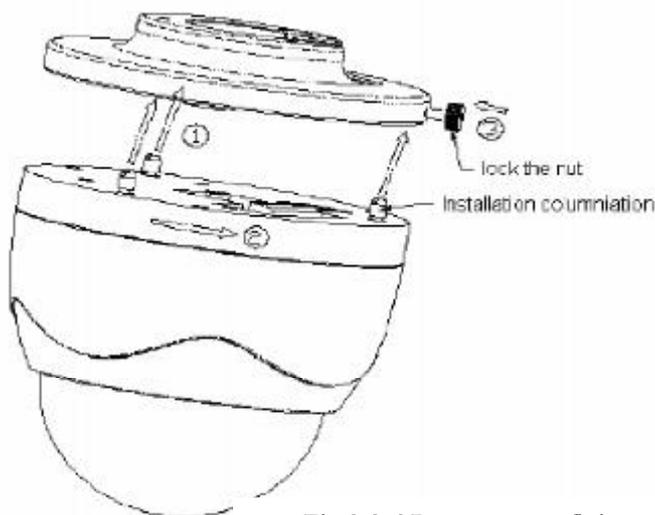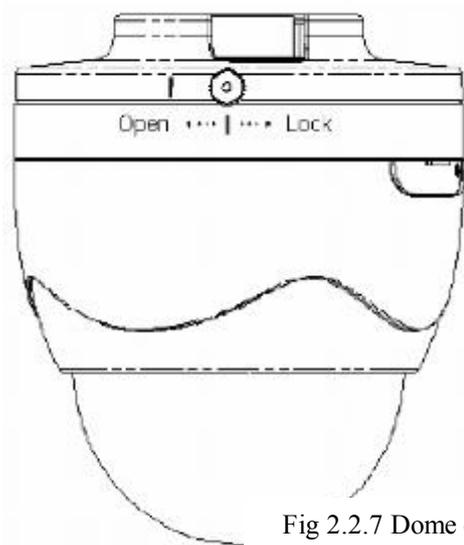

Fig 2.2.6 Dome camera fixing

Fig 2.2.7 Dome camera fixed

2.3   Installation of Client software

The DVR9K client software manual is supplied on the CD with the client software. The client software is installed using help screens and these are covered in the client software manual. The client software interfaces with both the DVR9K digital video recorder and/or the IP cameras.

3.   Parameter Configuration

There are several network parameters that need setting after the hardware installation. These parameters include IP address, subnet mask and port number, etc., which can be set by various means and two of them are detailed below.

1.   Set the camera parameters such as IP address and PPPOE through IE.
2.   Set the camera parameters through the client software.

Please make sure that the PC and network camera are connected and you can ping successfully before attempting the parameter changes as shown below in Fig.3.1 and Fig. 3.2.

Fig.3.1 LAN Connection

Fig.3.2 Crossover Connection

3.1 Parameter Configuration through IE
The default IP of the camera is 192.0.0.64 with 8000 as the default port, admin is the administrator and 12345 is the default password. The administrator can create up to 15 separate operators with different rights. To login the camera through IE, input the IP address in the address column and the Login dialogue box will display as Fig. 3.3. Input your user name and password, and then click Login to enter the Preview page. Double click the Camera 01 channel or Preview button to view the menu as Figure 3.4. Right click the Camera 01 channel and the Main Stream, Sub Stream and Open Sound options will be displayed. Select the Open Sound option.
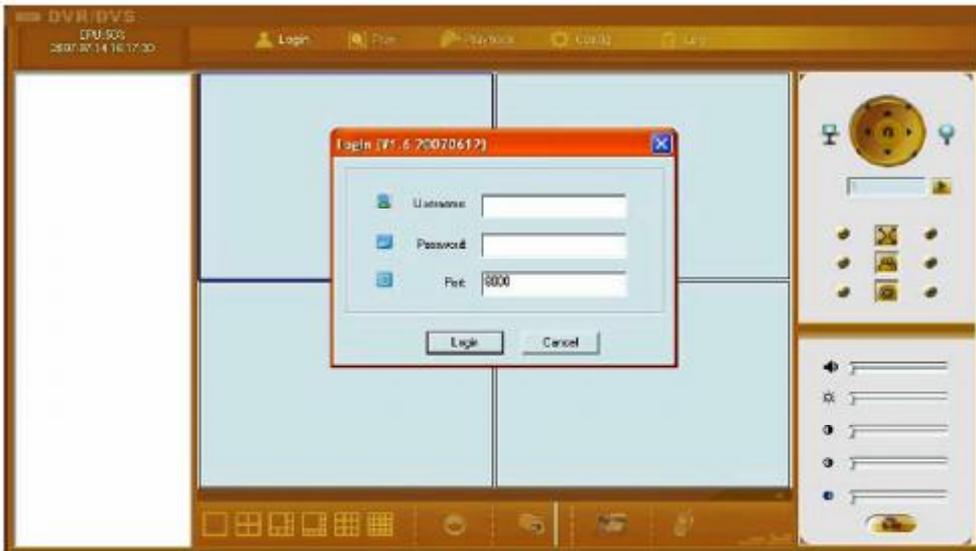
Fig. 3.1.1 Login Interface

Fig. 3.1.2   Preview Interface

It supports Playback and Log functions. To set the camera parameters through IE browser, click Config and wait for the Remote Parameters Config dialogue box to display and then set the parameters such as IP address, etc. as required.

For more specific information regarding Remote Parameters Config, please refer to the Client Software in remote-distance parameter settings. Instructions can be found in the client software path of Start → Program→ client software after installation.

Fig. 3.1.3   Remote Parameters Config

Note: Security level settings are necessary for browsing equipments by IE. Please open the IE browser and set the security level to "Low" in "Tools/ Internet Options/ Security/ Customise" or enable the "ActiveX Controls and Plug-Ins" directly.

3.2 Parameter Configuration through Client Software

Please refer to the client software instruction manual on the CD supplied with your I.P camera.

3.3   Parameter Configuration through DVR9K

Before configuration, please make sure that IP cameras are already connected to the same network. Enter camera management interface Menu→ Configuration Management→ Camera Configuration. Select Add, enter IP Channel Settings interface.

If the IP camera is the same segment with the DVR, please select the IP device in the list, and then input the correct user name and password in the blanks below. Select OK and finish adding the device.

If the IP camera is not online or is not in the same segment with DVR, the IP of this device can be input manually. Select OK and finish adding the device. If the IP camera is not online, the connection will be setup automatically when it online; if the IP camera is not in the same segment with DVR, the connection will be setup after adding it.
If Status is Connected, it means device successfully added else please examine the network or adding procedure. Finish adding all IP devices.

4. WAN Access

IP cameras have their own network capability and can be connected direct through a network for viewing only. In most circumstances however they would be connected through a DVR and do not have to be setup in the modem/router. If they are used independently then each IP camera must be allocated a unique IP address but can use the same port number.

4.1 WAN access using independent IP Camera not connected through DVR

1. Access to the network can be made via Internet Explorer by specifying the static IP address of the camera or via the client software. The client software can be setup using the Server Properties by setting the Server type, selecting Register Normal to request a static IP address and entering the static IP address. The port number is 8000.
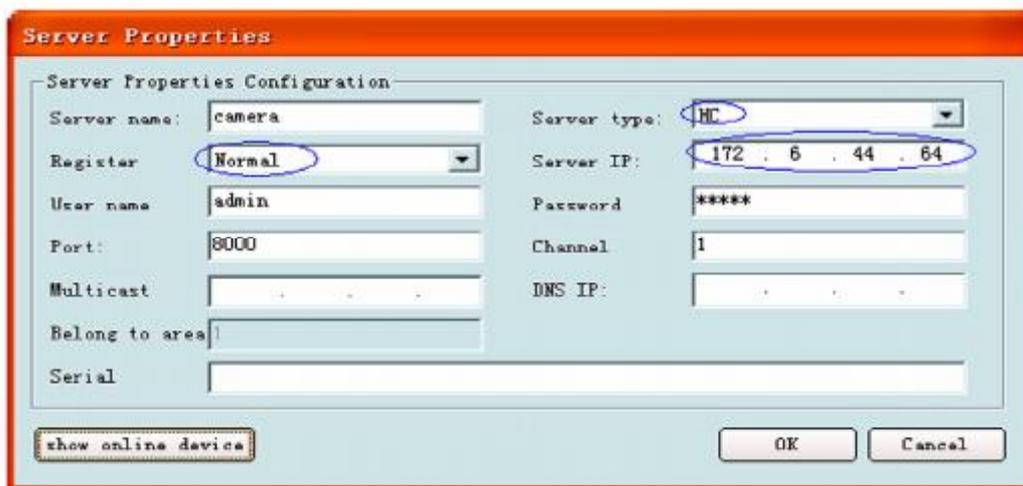

Fig.4.1.1 Static IP Configuration dialogue box

2. If the network camera is not connected to a DVR and has a static IP set in a modem/router over a network, the TCP port (default 8000) and HTTP port (default 80) require port mapping to allow access via the client software or IE.
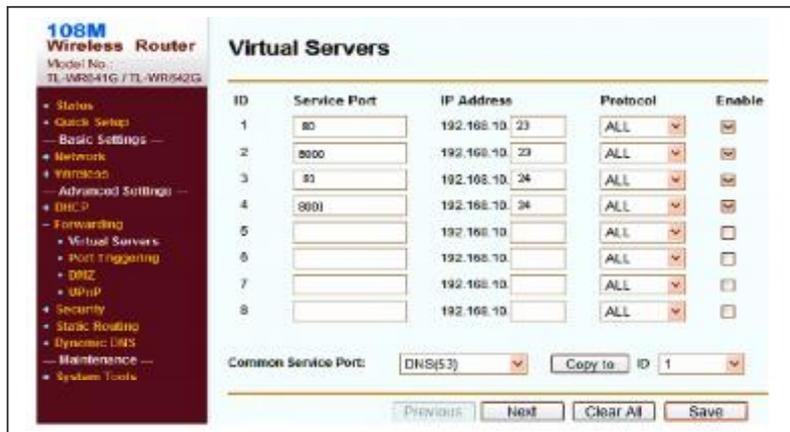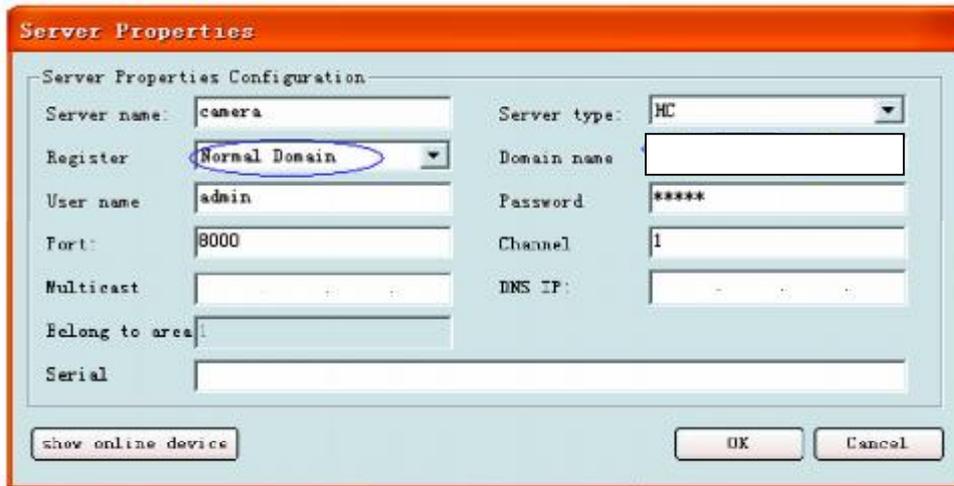

Fig.4.1.2 Port mapping

13

4.2   WAN Access with a dynamic IP address not connected through a DVR

By setting Register in client software to Normal Domain, a dynamic name can be entered in Domain name box. Of course the dynamic name must be registered with a dynamic IP site such as www.dydns.com. The dynamic name will also work with I.E.

Fig.4.2.1 Configuration of domain name in Client software

5.   Common failures and maintenance

5.1.   Power on failure
Check if the power plug is fixed into the socket and if the power supply is working correctly.

5.2.   Image blurred
Check if the lens connector is correct. There are two types lens mounts i.e C and CS which are different. Adjust lens focus and back focus.

5.3.   SD card not working properly
Check if the SD card is fitted correctly in the IP camera and the SD card slot is not damaged. If the system does not recognise the SD card, check if the SD card is compatible.

5.4.   What's the relationship between the image quality, resolution and browsing speed under different broadband bandwidths?
Under certain bandwidths, the image quality, resolution and browsing speed have a mutual relationship. The higher the image quality, the higher the resolution, which will inevitably consume more bandwidth. Thus browsing will become slower as resources required become greater. In practical applications, the image quality, standard and best browsing speed can be adjusted to suit the bandwidth available.

5.5.   Unable to connect
Check if the network works correctly and if the Link led is on.

5.6.   Can network camera be used in glaring environment?
Glare caused by direct sunlight or halogen lamp will cause the CMOS, CCD sensor overload, because long-time exposure to strong light may burn the image sensor.

5.7.   How long can the network of IP camera extend?
Generally, the LAN Cable or UTP Cable can extend to 100m.

Technical Specification for IP-CAM705

Parameter Model	IP-CAM705
Image Sensor	1/4 inch CMOS
Effective Pixels	640(H)×480(V)
Lens	3.5-8mm/F1.6/M12/ manual Iris lens
Min. Illumination	0.4Lux/F1.2
Video Output	1.0Vp-p Composite Output(75Ω/BNC)
Day&Night	Electronic
Video Compression	H.264/MPEG-4
Video Output	32 K ∼ 2M, adjustable(8Mbps maximum)
Audio Compression	OggVorbis
Image Resolution	704x576,640x480,528x384,704x288,352x288,176x144
Frame Rate	25fps(704x576)
Motion Detect	Supported
Dual Stream	Supported
SD Card Local Recording	Supported
Heartbeat	Supported
Password Protect	Supported
Protocols	TCP/IP,HTTP,DHCP,DNS,RTCP, PPPoE .
Voice Talk Input	1 channel (2.0 ∼ 2.4Vp-p,1kΩ)
Voice Output	1 channel (Line level, 600Ω)
Communication	1 RJ45 10M/100M self-adaptive Ethernet port and 1 RS-485 interface
Alarm Input	1 channel relay input
Alarm Output	1 channel relay output
Working Temperature	-10~60℃℃
Power Supply	12VDC, ±10%, support PoE (Power over Ethernet)
Power Consumption	3W MAX
Dimensions (mm)	φ145x132.8
Weight	900g