
APPENDIX

A Frequently Asked Questions

Internet Camera Features

Q: What is an Internet Camera?

A: The Internet Camera is a standalone system connecting directly to an Ethernet or Fast Ethernet network and supported by the wireless transmission based on the IEEE 802.11g standard. It is different from the conventional PC Camera, the Internet Camera is an all-in-one system with built-in CPU and web-based solutions providing a low cost solution that can transmit high quality video images for monitoring. The Internet Camera can be managed remotely, accessed and controlled from any PC/Notebook over the Intranet or Internet via a web browser.

Q: What is the maximum number of users that can be allowed to access the ICA-110/ICA-110W simultaneously?

A: Maximum number of users that can log onto the ICA-110/ICA-110W at the same time is 64. Please keep in mind the

overall performance of the transmission speed will slow down when many users are logged on.

Q: What algorithm is used to compress the digital image?

A: The ICA-110/ICA-110W utilizes the JPEG image compression technology providing high quality images for users. JPEG is adopted since it is a standard for image compression and can be applied to various web browser and application software without the need to install extra software.

Q: Can I change the wireless antenna attached to the ICA-110W?

A: The wireless antenna can be changed for a variety of reasons such as extending the wireless transmission range, however, please consult authorized distributors before attempting as the connectors must be SMA connector type.

Q: What is the wireless transmission range for the ICA-110W?

A: Generally the wireless distance can go up to 100 meters indoors and up to 300 meters outdoors. The range is limited by the number of walls, ceilings, or other objects that the wireless signals must pass through. Typical ranges vary depends on the types of materials and background Radio Frequency (RF) noise in your home or business and the configuration setting of your network environment.

Internet Camera Installation

Q: Can the Internet Camera be used out-doors?

A: The ICA-110/ICA-110W is not weatherproof. It needs to be equipped with a weatherproof case to be used outdoors and it is not recommended.

Q: What network cabling is required for the ICA-110/ICA-110W?

A: The ICA-110/ICA-110W uses Category 5 UTP cable allowing 10 Base-T and 100 Base-T networking.

Q: Can the ICA-110/ICA-110W be setup as a PC-cam on the computer?

A: No, the ICA-110/ICA-110W is an Internet Camera used only on Ethernet and Fast Ethernet network and supported by wireless transmission.

Q: Can the ICA-110/ICA-110W be connected on the network if it consists of only private IP addresses?

A: The ICA-110/ICA-110W can be connected to LAN with private IP addresses. However, user can only access the Internet Camera in the LAN, not WAN.

Q: Can the ICA-110/ICA-110W be installed and work if a firewall exists on the network?

A: If a firewall exists on the network, port 80 is open for ordinary data communication. However, since the ICA-110/ICA-110W transmits image data, the default port 8481 is also required. Therefore, it is necessary to open port 8481 of the network for remote users to access the ICA-110/ICA-110W.

B PING Your IP Address

The PING (Packet Internet Groper) command can determine whether a specific IP address is accessible by sending a packet to the specific address and waiting for a reply. It can also provide a very useful tool to confirm if the IP address conflicts with the INTERNET CAMERA over the network.

Follow the step-by-step procedure below to utilize the PING command. However, you must disconnect the INTERNET CAMERA from the network first.

Start a DOS window.

Type ping x.x.x.x, where x.x.x.x is the IP address of the INTERNET CAMERA.

The succeeding replies as illustrated below will provide useful explanation to the cause of the problem with the INTERNET CAMERA IP address.

C Trouble Shooting

Q: I cannot access the ICA-110/ICA-110W from a web browser.

A1: The possible cause might be the IP Address for the ICA-110/ICA-110W is already being used by another device. To correct the possible problem, you need to first disconnect the ICA-110/ICA-110W from the network. Then run the PING utility (follow the instructions in Appendix B - PING Your IP Address).

A2: Another possible reason is the IP Address is located on a different subnet. To fix the problem, run the PING utility (follow the instructions in Appendix B - PING Your IP Address). If the utility returns “no response” or similar, the finding is probably correct, then you should proceed as follows:

In Windows 95/98/2000 and Windows NT, double check the IP Address of the ICA-110/ICA-110W is within the same subnet as your workstation.

Click “Start”, “Setting”, “Control Panel”, and the “Network” icon. Select TCP/IP from the “Network” dialog box and from the “TCP/IP Properties” dialog box click “Specify an IP address”.

If the ICA-110/ICA-110W is situated on a different subnet than your workstation, you will not be able to set the IP address from this workstation. To verify make sure the first 3 sections of the IP address of the ICA-110/ICA-110W corresponds to the first 3 sections of the workstation. Therefore the IP address of the ICA-110/ICA-110W must be set from a workstation on the same subnet.

A3: Other possible problems might be due to the network cable. Try replacing your network cable. Test the network interface of the product by connecting a local computer to the unit, utilizing a standard Crossover (hub to hub) Cable. If the problem is not solved the ICA-110/ICA-110W might be faulty.

Q: Why does the Power LED not light up constantly?

A: The power supply used might be at fault. Confirm that you are using the provided power supply DC 5V for the ICA-110/ICA-110W and verify that the power supply is well connected.

Q: Why does the Link LED not light up properly?

A1: There might be a problem with the network cable. To confirm that the cables are working, PING the address of a know device on the network. If the cabling is OK and your network is reachable, you should receive a reply similar to the following (...bytes = 32 time = 2 ms).

A2: The network device utilized by the ICA-110/ICA-110W is not functioning properly such as hubs or switches. Confirm the power for the devices are well connected and functioning.

A3: The wireless connection might be at fault. In ad-hoc mode make sure the ICA-110/ICA-110W wireless channel and ESSID is set to match the PC/Notebook wireless channel and ESSID for direct communication.

Under infrastructure mode make sure the ESSID on the PC/Notebook and the ICA-110/ICA-110W must match with the access point's ESSID.

Q: Why does the ICA-110/ICA-110W work locally but not externally?

A1: Might be caused from the firewall protection. Need to check the Internet firewall with your system administrator.

A2: The default router setting might be a possible reason. Need to double check if the configuration of the default router settings is required.

Q: Why does a series of broad vertical white line appears through out the image?

A: A likely issue is that the CMOS sensor becomes overloaded when the light source is too bright such as direct exposure to sunlight or halogen light. You need to reposition the Internet Camera into a more shaded area immediately as this will damage the CMOS sensor.

Q: There is bad focus on the ICA-110/ICA-110W, what should be done?

A1: The focus might not be correctly adjusted for the line of sight. You need to adjust the ICA-110/ICA-110W focus manually as described in Adjust Internet Camera Focus.

Q: Noisy images occur how can I solve the problem?

A1: The video images might be noisy if the ICA-110/ICA-110W is used in a very low light environment. To solve this issue you need more lighting.

A2: There might be wireless transmission interference make sure there are no other wireless devices on the network that will affect the wireless transmission.

Q: There is poor image quality, how can I improve the image?

A1: A probable cause might be the incorrect display properties configuration for your desktop. You need to open the Display Properties on your desktop and configure your display to show at least 65'000 colors for example at least 16-bit.

***NOTE:** Applying only 16 or 256 colors on your computer will produce dithering artifacts in the image.*

A2: The configuration on the ICA-110/ICA-110W image display is incorrect. Through the Web Configuration you need to adjust the image related parameter for improve images such as brightness, contrast, hue and light frequency. Please refer to the Web Configuration section for detail information.

Q: There are no images available through the web browser?

A: The ActiveX might be disabled. If you are viewing the images from Internet Explorer make sure ActiveX has been enabled in the Internet Options menu. Alternatively, you can use the Java Applet for viewing the required images.

E Adjust Internet Camera Focus

To adjust the focus of the lens, you need to turn the lens slowly in either clockwise or anti-clockwise direction until the desired image appears. DO NOT over turn the lens in either of the directions, as it will be out of focus.

NOTE: You can further adjust the ICA-110/ICA-110W's image quality through System Administration – Image of Web Configuration. Please refer to Web Configuration section for further details.

Warning

Direct exposure to sunlight may cause permanent damage to the CMOS sensor. Therefore do not expose the Internet Camera's lens directly to sunlight. When operation is required in glaring light environment, it is recommended to use an iris lens.

The Internet Camera is designed for indoor usage and if your application requires prolong exposure to sunlight, a sun visor is recommended to protect the Internet Camera.

I Glossary of Terms

NUMBERS

- 10BASE-T** 10BASE-T is Ethernet over UTP Category III, IV, or V unshielded twisted-pair media.
- 100BASE-TX** The two-pair twisted-media implementation of 100BASE-T is called *100BASE-TX*.
- 802.11g** An IEEE standard for wireless local area networks. It offers transmissions speeds at up to 54 Mbps in the 2.4-GHz band.

A

- Access point** It is the hardware interface between a wireless LAN and a wired LAN. The access point attaches to the wired LAN through an Ethernet connection.
- Applet** Applets are small Java programs that can be embedded in an HTML page. The rule at the moment is that an applet can only make an Internet connection to the computer from that the applet was sent.
- ASCII** American Standard Code For Information Interchange, it is the standard method for encoding characters as 8-bit sequences of binary numbers, allowing a maximum of 256 characters.

ARP Address Resolution Protocol. ARP is a protocol that resides at the TCP/IP Internet layer that delivers data on the same network by translating an IP address to a physical address.

AVI Audio Video Interleave, it is a Windows platform audio and video file type, a common format for small movies and videos.

B

BOOTP Bootstrap Protocol is an Internet protocol that can automatically configure a network device in a diskless workstation to give its own IP address.

C

Communication Communication has four components: sender, receiver, message, and medium. In networks, devices and application tasks and processes communicate messages to each other over media. They represent the sender and receivers. The data they send is the message. The cabling or transmission method they use is the medium.

Connection In networking, two devices establish a connection to communicate with each other.

D

DHCP Dynamic Host Configuration Protocol was developed by Microsoft a protocol for assigning dynamic IP

Ethernet The most popular LAN communication technology. There are a variety of types of Ethernet, including 10 Mbps (traditional Ethernet), 100 Mbps (Fast Ethernet), and 1,000 Mbps (Gigabit Ethernet). Most Ethernet networks use Category 5 cabling to carry information, in the form of electrical signals, between devices. Ethernet is an implementation of CSMA/CD that operates in a bus or star topology.

F

Fast Ethernet Fast Ethernet, also called 100BASE-T, operates at 10 or 100Mbps per second over UTP, STP, or fiber-optic media.

Firewall Firewall is considered the first line of defense in protecting private information. For better security, data can be encrypted. A system designed to prevent unauthorized access to or from a private network. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially Intranets all messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

G

Gateway A gateway links computers that use different data formats together.

Group Groups consist of several user machines that have similar characteristics such as being in the same department.

H

HEX

Short for hexadecimal refers to the base-16 number system, which consists of 16 unique symbols: the numbers 0 to 9 and the letters A to F. For example, the decimal number 15 is represented as F in the hexadecimal numbering system. The hexadecimal system is useful because it can represent every byte (8 bits) as two consecutive hexadecimal digits. It is easier for humans to read hexadecimal numbers than binary numbers.

I

IEEE

Institute of Electrical and Electronic Engineers.

Intranet

This is a private network, inside an organization or company, that uses the same software you will find on the public Internet. The only difference is that an Intranet is used for internal usage only.

Internet

The Internet is a globally linked system of computers that are logically connected based on the Internet Protocol (IP). The Internet provides different ways to access private and public information worldwide.

Internet address

To participate in Internet communications and on Internet Protocol-based networks, a node must have an Internet address that identifies it to the other nodes. All Internet addresses are IP addresses

IP

Internet Protocol is the standard that describes the layout of the basic unit of information on the Internet (the *packet*) and also details the numerical addressing

format used to route the information. Your Internet service provider controls the IP address of any device it connects to the Internet. The IP addresses in your network must conform to IP addressing rules. In smaller LANs, most people will allow the DHCP function of a router or gateway to assign the IP addresses on internal networks.

IP address

IP address is a 32-binary digit number that identifies each sender or receiver of information that is sent in packets across the Internet. For example 80.80.80.69 is an IP address, it is the closest thing the Internet has to telephone numbers. When you “call” that number, using any connection methods, you get connected to the computer that “owns” that IP address.

ISP

Internet Service Provider, is a company that maintains a network that is linked to the Internet by way of a dedicated communication line. An ISP offers the use of its dedicated communication lines to companies or individuals who can't afford the high monthly cost for a direct connection.

J**JAVA**

Java is a programming language that is specially designed for writing programs that can be safely downloaded to your computer through the Internet without the fear of viruses. It is an object-oriented multi-thread programming best for creating applets and applications for the Internet, Intranet and other complex, distributed network.

addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. In some systems, the device's IP address can even change while it is still connected. DHCP also supports a mix of static and dynamic IP addresses. This simplifies the task for network administrators because the software keeps track of IP addresses rather than requiring an administrator to manage the task. This means a new computer can be added to a network without the hassle of manually assigning it a unique IP address. DHCP allows the specification for the service provided by a router, gateway, or other network device that automatically assigns an IP address to any device that requests one

DNS

Domain Name System is an Internet service that translates domain names into IP addresses. Since domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses every time you use a domain name the DNS will translate the name into the corresponding IP address. For example, the domain name *www.network_camera.com* might translate to *192.167.222.8*.

E

Enterprise network

An enterprise network consists of collections of networks connected to each other over a geographically dispersed area. The enterprise network serves the needs of a widely distributed company and operates the company's mission-critical applications.

L

LAN Local Area Network a computer network that spans a relatively small area sharing common resources. Most LANs are confined to a single building or group of buildings.

N

NAT Network Address Translator generally applied by a router, that makes many different IP addresses on an internal network appear to the Internet as a single address. For routing messages properly within your network, each device requires a unique IP address. But the addresses may not be valid outside your network. NAT solves the problem. When devices within your network request information from the Internet, the requests are forwarded to the Internet under the router's IP address. NAT distributes the responses to the proper IP addresses within your network.

Network A network consists of a collection of two or more devices, people, or components that communicate with each other over physical or virtual media. The most common types of network are:

LAN – (local area network): Computers are in close distance to one another. They are usually in the same office space, room, or building.

WAN – (wide area network): The computers are in different geographic locations and are connected by telephone lines or radio waves.

NWay Protocol A network protocol that can automatically negotiate the highest possible transmission speed between two devices.

P

PING Packet Internet Groper, a utility used to determine whether a specific IP address is accessible. It functions by sending a packet to the specified address and waits for a reply. It is primarily used to troubleshoot Internet connections.

PPPoE Point-to-Point Protocol over Ethernet. PPPoE is a specification for connecting the users on an Ethernet to the Internet through a common broadband medium, such as DSL or cable modem. All the users over the Ethernet share a common connection.

Protocol Communication on the network is governed by sets of rules called protocols. Protocols provide the guidelines devices use to communicate with each other, and thus they have different functions. Some protocols are responsible for formatting and presenting and presenting data that will be transferred from file server memory to the file server's network adapter. Others are responsible for filtering information between networks and forwarding data to its destination. Still other protocols dictate how data is transferred across the medium, and how servers respond to workstation requests and vice versa. Common network protocols responsible for the presentation and formatting of data for a network operating system are the Internet Protocol (IP) or the Internet Protocol (IP). Protocols that dictate the format of data

for transferors the medium include token-passing and Carrier Sense Multiple Access with Collision Detection (CSMA/CD), implemented as token-ring, ARCNET, FDDI, or Ethernet. The Router Information Protocol (RIP), a part of the Transmission Control Protocol/Internet Protocol (TCP/IP) suite, forwards packets from one network to another using the same network protocol.

R

RARP Reverse Address Resolution Protocol, a TCP/IP protocol that allows a physical address, such as an Ethernet address, to be translated into an IP address.

RJ-45 RJ-45 connector is used for Ethernet cable connections.

Router A router is the network software or hardware entity charged with routing packets between networks.

S

Server It is a simple computer that provides resources, such as files or other information.

SMTP The Simple Mail Transfer Protocol is used for Internet mail.

SNMP Simple Network Management Protocol. SNMP was designed to provide a common foundation for managing network devices.

Station In LANs, a station consists of a device that can communicate data on the network. In FDDI, a station includes both physical nodes and addressable logical devices. Workstations, single-attach stations, dual-attach stations, and concentrators are FDDI stations.

Subnet mask In TCP/IP, the bits used to create the subnet are called the subnet mask.

T

(TCP/IP) Transmission Control Protocol/Internet Protocol is a widely used transport protocol that connects diverse computers of various transmission methods. It was developed by the Department of Defense to connect different computer types and led to the development of the Internet.

Transceiver A transceiver joins two network segments together. Transceivers can also be used to join a segment that uses one medium to a segment that uses a different medium. On a 10BASE-5 network, the transceiver connects the network adapter or other network device to the medium. Transceivers also can be used on 10BASE-2 or 10BASE-T networks to attach devices with AUI ports.

U

UDP The User Datagram Protocol is a connectionless protocol that resides above IP in the TCP/IP suite

ULP The upper-layer protocol refers to Application Layer protocols such as FTP,SNMP, and SMTP.

User Name The USERNAME is the unique name assigned to each person who has access to the LAN.

Utility It is a program that performs a specific task.

UTP Unshielded twisted-pair. UTP is a form of cable used by all access methods. It consists of several pairs of wires enclosed in an unshielded sheath.

W

WAN Wide-Area Network. A wide-area network consists of groups of interconnected computers that are separated by a wide distance and communicate with each other via common carrier telecommunication techniques.

Windows Windows is a graphical user interface for workstations that use DOS.

Workgroup A workgroup is a group of users who are physically located together and connected to the same LAN, or a group of users who are scattered throughout an organization but are logically connected by work and are connected to the same network group.

Workstations Workstation refers to the intelligent computer on the user's desktop. This computer may be an Intel-based PC, a Macintosh, or a UNIX-based workstation. The workstation is any intelligent device a user works from.