IRIS740 740-460-2MP

Through Hull Network IP Camera - 2MP

INSTALLATION & OPERATION GUIDE

Important Notices. Read before Use:

This instruction manual is intended for administrators and users of the IRIS460 and 740 IP Cameras, including instructions for using and managing the camera on your network. The use of video surveillance devices can be prohibited by laws that vary from country to country. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for surveillance purposes.

Before installing the IP Camera, please read and follow all the safety and operating instructions to avoid any damages caused by faulty assembly and installation. The user must adhere to all the warnings on the product and in this manual.

Liability

Every reasonable care has been taken in the preparation of this instruction manual. Iris can not be held responsible for any technical or typographical errors and reserves the right to make alterations to the product and manuals without prior notice. Iris makes no warranty of any kind with regard to the material contained within this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The user should verify the relevant information is current and complete before placing orders. All products are sold subject to Iris' terms and conditions of sale at the time of order acknowledgement.

Iris shall not be liable nor responsible for the applications and resale of its products or bundled software with statements different from or beyond the specification/parameters stated by Iris. Iris is under no obligation to provide any further technical support service or product/software alteration beyond Iris' representation.

Regulatory Information

Disposal of Waste Equipment by Users in Private Household in the European Union.

This symbol on the product or its packaging indicates that it must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment
by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling please contact your local city office, your
household waste disposal service or the shop where you purchased the product.

This device 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 or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and 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: Reorientate or relocate the receiving antenna; Increase the separation between the equipment and the receiver, connect the equipment to an outlet on a different circuit from that to which the receiver is connected; consult the dealer or an experienced radio / TV technician for help.

We hereby declare that the product is in compliance with the essential requirements and other relevant provisions of European Directive 2004/108/EC, the RoHS Directive 2011/65/EU.

Warnings & Important Product Information

WARNING: Installation and Operation
This product must be installed and operated in accordance with these instructions. Failure to do so may result in poor product performance, damage to the product or vessel and or personal injury. Installation should only be carried out be qualified personnel or by persons competent in electrical systems.

WARNING: Power Supply and Grounding
Ensure the boats power supply is switched off during installation. Ensure suitably rated circuit breakers / fuses are used in the installation of the product in accordance with the electrical values shown in the technical specifications of the product. Never switch on power until the power connections are correctly terminated in accordance with the information provided in this document. Do not connect or disconnect the product with the power supply switched on. Never disconnect the DC ground with the power supply on.

WARNING: Wiring terminations
Where the products video, power and data terminations are extended, ensure that suitable connectors are used and that the point of termination for each cable is adequately protected against moisture ingress. Ensure correct polarity is strictly observed. Do not cut or remove cable connectors without prior permission from Iris Innovations Limited.

WARNING: Do Not Open the Unit
There are no user serviceable parts within the product so there s no need to open the device. The product has been certified to IP66 standards, however, submersion or the product or exposure to high pressure washing will invalidate the warranty.

WARNING: Disclaimer
This product is intended to be used only as an aid to navigation and must never be used as an alternative to correct navigational practices and judgements made on the basis of approved navigation methods. It is the users responsibility to observe correct and proper navigational skill when using this product. Only officially approved charts and notices to mariners contain the current information required for safe navigation.

Operating the camera or viewing the video input whilst the vessel is moving could cause a distraction and result in accidental collision resulting in property damage, injury or death. Iris Innovations cannot be held liable for any incidental, special, indirect or consequential damages whether resulting from the use, misuse or inability to use this product.

CAUTION: Switch Camera Off When Not in Use.
To prolong the operation life of the the cameras sensor we strongly advise that power to the camera is routed via a dedicated switch.

CAUTION: Service and Maintenance
This product contains no user serviceable parts. Please refer all maintenance and repair issues to your authorized Iris Innovations dealer. Any unauthorized work to the product may affect the warranty.

CAUTION: Care and Cleaning
This product is a sensitive piece of electronic, imaging equipment and must be handled and treated accordingly. Do not drop or shake the unit during installation. Avoid exposure of the imager to direct sunlight where possible as this may degrade the cameras performance over time.

When cleaning the device, ensure power is switched off. Clean the camera housing with a soft cloth. Moisten the cloth and use a mild detergent if required. The lens window has a protective coating which may suffer damage as a result of improper cleaning. To clean the lens window use a soft cotton cloth. Moisten with clean water if necessary. For further advise on cleaning the lens window, contact Iris Innovations.

INFORMATION: Product Disposal and Recycling
Dispose of this product in accordance with the WEEE Directive. The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electronic and electrical equipment. Iris Innovations supports the WEEE policy and politely request you observe correct disposal methods. For further information on how to correctly dispose of this product please contact Iris Innovations.

Please recycle unwanted packaging and documentation. The cardboard carton, all paper manuals and documents and the protective plastic bag in which the camera is shipped are widely recyclable. Please check with your local recycling plant for confirmation.

Overview of Key Features

Here's a brief list of some of the IRIS740's key features:

- 1280 x 720P Resolution Camera Module
- Mechanical IR Cutout filter for True Day / Night Operation
- Switches to Monchrome in Low Light for improved clarity.
- Low Power 12VDC Operation <100mA
- IP68 Ingress Protection
- Rugged Housing
- PoE Option - With Integrated PoE Filter
- Compatible with ONVIF compliant Chart Plotters such as the Raymarine Axiom and all other Raymarine network MFD's running Lighthouse II & III software.

Contents of Package

Please unpack your IRIS460 and check to make sure the following items are included. If there are any items missing please contact your Iris dealer:

- 1 x IRIS740 Through Hull Camera
- 1 x Lock-Nut
- 2 x Rubber Spacers
- 1 x Instruction Manual
- 1 x Water Resistant RJ45 connector kit

PoE Versions of the camera feature an integrated PoE filter.

About IP Cameras

An IP camera usually combines a high definition CCTV type camera sensor with additional encoding circuitry and software to convert the signal from and communications to the camera into a digital format that can be accessed via the internet or an ethernet based network.

The circuitry within the camera literally hosts it's own website. IP cameras are simply CCTV cameras with integrated video web servers. Therefore when you use your internet browser or camera software to view your camera, you are merely downloading a website hosted on the camera with live video.

Because the video signal between the sensor and encoder remains digital, and doesn't have to be converted to an analogue signal, higher resolutions can be achieved than standard analogue cameras.

IP cameras can usually be viewed by multiple clients across a network, which simplifies cabling reducing costs, whilst maintaining the integrity of the video signal.

Power over Ethernet

Power over Ethernet (PoE) is a method of sending power to a network device (such as the IRIS740) along the network cable, this eliminating the need for separate power cables and connections.

The power is introduced to the network cable via a PoE Injector. This can be a single or multichannel device that acts like a network hub whilst also 'injecting' the power onto the twisted pair cable.

Traditional PoE devices operate at 48VDC which means on board, an AC mains transformer is required to power the injector. This is an issue if the boat only has DC power which is often the case. AC powered units are unfavourable also because they do not conform to marine standards for electrical emissions and interference.

Iris produce a range of marine certified, DC voltage PoE injectors which operate between 8~36VDC and are EN60945 and EN55022 compliant.

The most common classification for PoE devices is IEEE802.3af-2003. This provides up to 15.4W of power but the consumption is limited to 350mA so may not be powerful enough to drive a PTZ device.

Recently, IEEE802.3at has become the standard. This can handle up to 25.5W and is sometimes referred to as PoE+.

Installation: IRIS740

WARNING:

Installation of the IRIS740 necessitates a hole being cut into the structure of the vessel. Although guidelines are provided below, the responsibility to ensure the camera is installed correctly and is sealed sufficiently to prevent water ingress belongs to the installer, who must be suitably competent. Iris Innovations Limited and Iris Innovations USA Corporation accept no liability whatsoever for issues that may arise as the result of improper or sub stand installation that results in damage caused directly or indirectly as a result of leakage.

IMPORTANT:

- Always ensure that the vessel's power source and battery are disconnected prior to installation

- Ensure a suitable fuse or circuit breaker are used. Iris recommend a 3A fuse.

- Prior to installation, ensure there is sufficient space within the vessel to accommodate the camera, taking into consideration room to tighten the cameras lock nut and facilitate access to connect and disconnect the cable.

- Although the camera housing and rear connector are waterproof, the PoE injector may not be. Ensure this is installed well away from any moisture or direct heat sources.

- ALWAYS POWER UP PRIOR TO DRILLING ANY HOLES TO ENSURE YO UARE INSTALLING THE CAMERA IN A POSITION THAT WILL DELIVER THE DESIRED FIELD OF VIEW!

Procedure:

1) Locate the camera as desired, taking into consideration internal or external obstacles that may affect the performance of the camera or inhibit the installation.

2) The camera should be positioned on a flat surface. Ensure the external surface of the hull (or transom) are even and parallel. It may be necessary to sand or grind the surface.

3) Once the installation area is prepared, drill a 90mm (3.54") hole using a suitable pilot hole and hole saw.

4) Ensure the inner hull surface is sealed to prevent water intrusion into the hull before the camera is secured in place.

5) Ensure that the hull surface is free from dirt, grease and debris. Remove anti-foul from the hull surface where the camera bezel will sit.

6) Use a suitable marine adhesive sealant (3M 4200 for example) to apply a liberal bead of sealant around the entire circumference of the back side of the bronze bezel. A channel is machined into the back of the bezel - ensure this is completely filled with sealant.

7) Apply a bead of sealant around the edge of the 90mm (3.54") hole.

8) Carefully slide the camera into the hole, ensure the orientation of the camera is as required. The camera is shipped with a removable stick-on arrow to indicate the 'top' of the cameras field of view.

9) From inside the vessel, slide the rubber spacer rings over the camera shaft as required to ensure the lock nut will provide a suitably tight fixing. Two rings are supplied.

10) Screw the lock nut in place and hand tighten. Do not lock fully in place at this stage.

11) Connect the waterproof RJ45 plug into the back of the camera. Details on connecting to the network via a PoE injector are listed above.

Procedure (Continued…):

12)   Ensure the camera orientation is as desired. Make any changes to the cameras orientation now before the sealant cures and the lock nut is fully tightened.

13)   Disconnect the cable from the camera.

14)   Follow the sealant manufacturers instructions on curing time before fully tightening the camera lock nut.

15)   From inside the vessel, apply another bead of sealant fully around the circumference of the camera shaft.

16)   Allow the sealant to fully cure before putting the boat back into the water.

17)   Connect the waterproof CAT5 cable to the camera connector, ensuring the connector sits true in the receptacle and the connector lock-nut is fully tightened without cross threading.

18)   Now connect the cable to your network and follow the setup instructions below.

DO NOT LAUNCH THE VESSEL UNLESS THE SEALANT IS FULLY CURED IN ACCORDANCE WITH THE SEALANT MANUFACTURERS INSTRUCTIONS AND YOU ARE SATISFIED THERE ARE NO LEAKS.

Apply Sealant (See Guidelines Above)
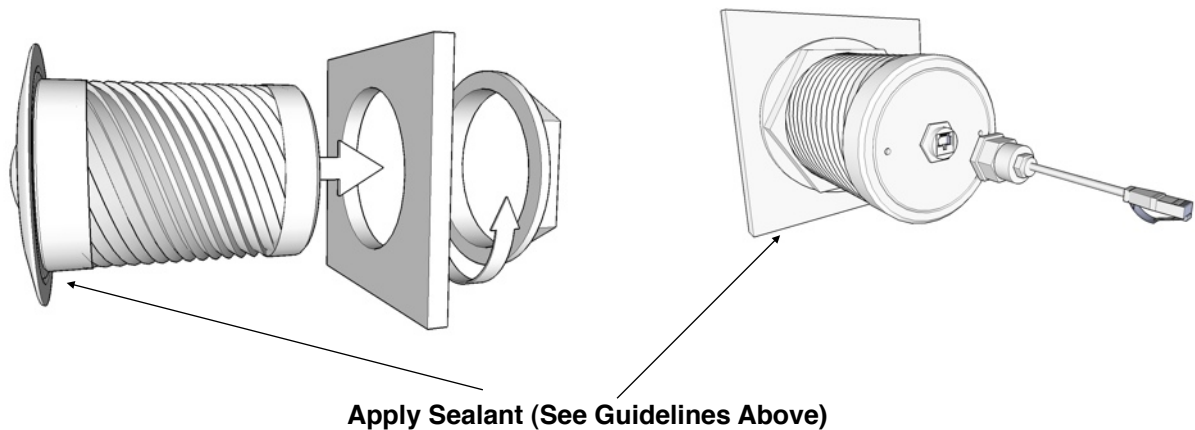
Setup

1. Connect the camera to a powered Ethernet source so that the unit is connected directly or indirectly to a DHCP server.

2. The camera will adopt an I.P. address provided by the DHCP server, and will initially be displayed on the host as a new attached device with name "-" (Please refer to Router/DHCP server manual for relevant instructions on performing this).

3. Once this is connected, new I.P and network details can be set via the Network setup page.

4. In the event of there being problems connecting the camera to your network, please contact your network administrator or IP specialist quoting the cameras individual MAC address which can be found printed on the carton label.

By default the camera is set to DHCP. Once connected directly or via your network to a DHCP router or server, the camera should automatically assume the address it has been assigned.

A software discovery tool is provided with the camera to assist camera discovery and assigning addresses if necessary. The tool is an executable program which can be copied onto your computer and run directly. Once opened, the discovery tool can be set to SCAN the network for any connected IRIS404 or 740 cameras. It does this by broadcasting specific information across the network which only an Iris camera will respond to. In doing so, the camera will return it's current IP address. The tool can be used to assign a new address if required. Details on the SADP Tool are listed below.

How to fit Field Installable Waterproof RJ45 Jacket

When installing in an external location, or any position that will be prone to moisture ingress or harsh weather, it is important the the waterproof RJ45 connector (supplied) is used to protect the cameras connections.
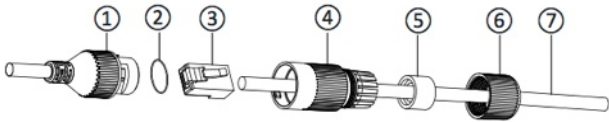
Part No	Description
1	Cameras Network Interface Socket
2	O Seal
3	RJ45 Network Connector
4	Waterproof Endcap
5	Rubber Gasket
6	Lock Nut
7	Network cable to Router / Switch / Hub / etc..
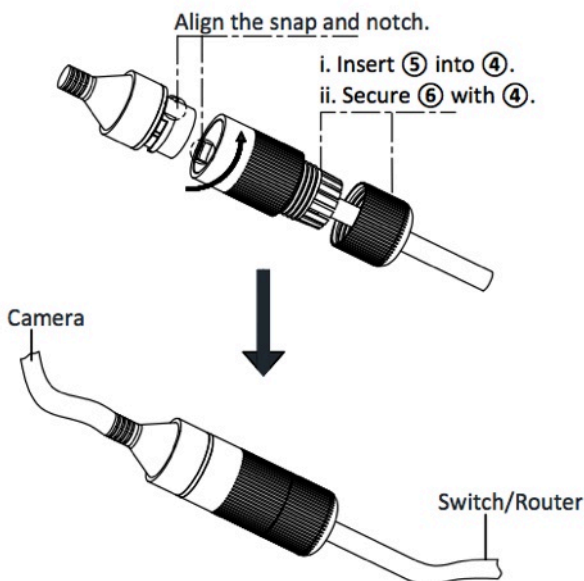
12VDC Models (Non PoE)

Non PoE versions of the camera have a separate DC Barrel Jack and Socket style connection. A screw terminal connector is supplied with these cameras. Care should be taken to observe polarity of the power wires and to ensure the connection is sufficiently protected from moisture ingress.

Method

Step.1:

Feed the plug-less network cable (7) through the lock nut (6), waterproof rubber gasket (5) (ensuring the rubber gasket inset ridge faces the end-cap (4).

Step.2:

Crimp an RJ45 Network plug (3) onto the end of the cable in accordance with the diagram below, taking care to ensure the wires are terminated in the correct order and are not crossed.
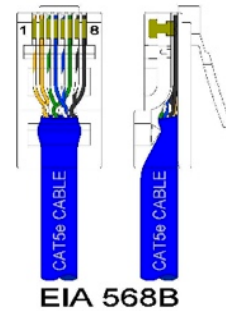
Pin No	Wire Colour
1	White / Orange
2	Orange
3	White / Green
4	Blue
5	White / Blue
6	Green
7	White / Brown
8	Brown

Step.3:

Place the O Seal (2) onto the end of the cameras network interface socket (1).

Step.4:

Insert the network plug (3) into the cameras network interface socket (1).

Step.5:

Insert the waterproof rubber gasket (5) into the waterproof end-cap (4) and secure lock nut (6) with the waterproof end cap (4).

Step.6:

Align the snap on waterproof end-cap (4) with the notch on the cameras network interface socket (1) and then secure the waterproof end-cap (4) to the cameras network interface socket (1).

Configuring the Camera over the LAN

WARNING: Stay Secure!

When connecting any device to a network with access over the internet brings risks to the security of your network and your data. Your IRIS740 features built in User Name and Password authentication but it is also your responsibility to strengthen your network security where ever possible. Please contact your IT expert for further advise. Iris cannot provide support with any aspect of your network security, other than the cameras built in security settings.

Basic Setup: Single Camera / Computer
The diagram below shows a very basic setup, with a single camera being viewed on a PC (or laptop).
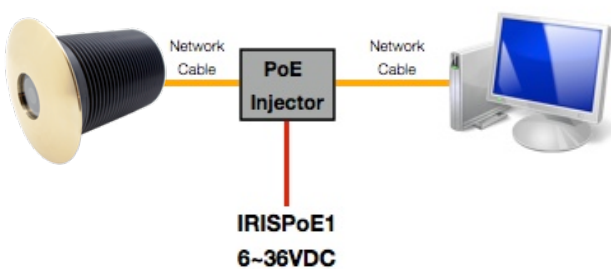
Use a standard 568B ethernet CAT5 cable to hook your computer up to the PoE injector, and then another 568B cable to hook the camera up to the injector.

With this type of installation, you must ensure the IP address of the camera is in the same range as the network adapter in your computer used to communicate with the camera. Consult documentation for your computer for information on how to view (and edit) your network adapter IP address.

The camera is set as default to DHCP, which means it has no IP address set, and awaits for a router on your network to assign the address.

To find your camera on the network, use an IP camera discovery tool, or an ONVIF Device Manager.

A great Onvif Device Manager can be found here:https://sourceforge.net/projects/onvifdm/

Once you've downloaded and installed the Device Manager software, open the program and then click the REFRESH button at the bottom of the device list on the left hand side. If everything is hooked up correctly, the details of your camera, including its IP address, will be displayed in the list.

If the cameras IP address falls outside the range of the IP address of your computers network adapter, you'll have to change the address on your adapter so it corresponds with the address of the camera. Once this is done (and you'll usually need to reboot your computer) you should simply be able to open your web browser, type the IP address of the camera into the address bar and access the camera. From here, if required, you can change the IP address of the camera as desired - back to the original address range of your computer for example. If you do this, then you will also have to change the address of your network adapter back to its previous range.

Basic Setup: Single Camera / Computer via Router using DHCP (default)
The diagram below shows a simple one camera / one computer device, but this time a router is used to manage your network devices and address allocation.
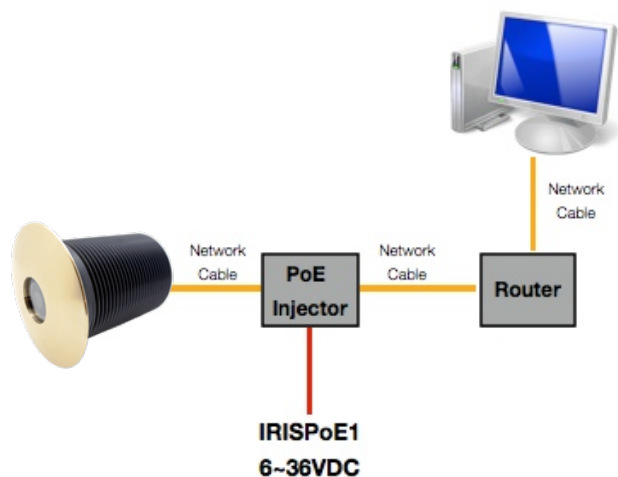
As mentioned previously, the camera as default is set to obtain its IP address automatically via DHCP. This means that once connected, your router will detect the device and assign it an IP address within its designated range (refer to the documentation for your router for further details). You must also ensure the network adapter for your computer is set to obtain its address via DHCP.

Operation

IP Addressing & DHCP (Dynamic Host Control Protocol).

Devices on your network require their own, unique IP address. Your camera is factory set as DHCP (Dynamic Host Control Protocol).

DHCP Addressing

DHCP allows devices on the network to receive their IP address automatically from a server (or a device on the network that acts as a server - such as a Raymarine MFD).

Nowadays, pretty much all routers have a DHCP server feature, which usually just needs enabling and configuring. Care should be taken on larger networks to ensure there are no conflicts if multiple routers or devices are configured as DHCP servers. Please refer to your IT specialist for further details if you are unsure.

Raymarine MFD's

For Raymarine MFD's, including Axiom models, running Lighthouse 2 or higher, all you need to do is connect the camera to your Raymarine network and wait! Your Raymarine device will take a few minutes to assign the camera address at first, but once assigned, your camera should appear within a short while after the MFD boots up and initializes.

NOTE: The first time you hook your camera up to the Raymarine it may take some time for the MFD to discover the camera. This is normal.

Static (or Fixed) IP Addressing

If you are not using a DHCP server, you will need to log onto the camera and assign an address to fit in with your network address range. This sounds obvious, and like it should be a basic step, but can actually be a major challenge, as you can only log into the camera if its address is in the same range as your network. If you do not have experience in this field we recommend you consult your IT specialist, as making undesirable changes to your settings could result in major network problems. For further details, please contact your Iris dealer.

Discovering your Camera

To discover your camera on your network you can check your router for attached devices (if using DHCP) or use a software discovery tool, or an ONVIF device manager.

A great Onvif Device Manager can be downloaded from here:https://sourceforge.net/projects/onvifdm/

Remember, you'll only be able to find a device on your network if it's in the same IP address range. If you are unsure how to do this, consult your IT specialist.

Once you have found, or set your cameras address, you can log on to set up and view your camera.

Logging Into your Camera
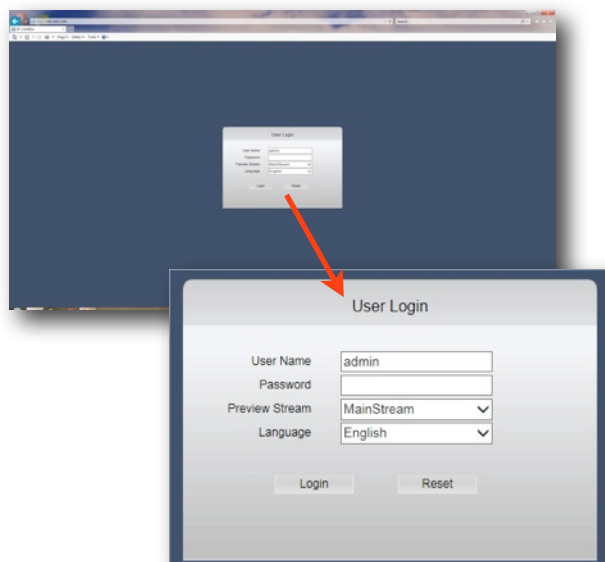
From your browser, type in your cameras IP address. The login page from the camera will be loaded up (see above).

The default log in details are as follows:

USER NAME: admin

PASSWORD:

No password is set as default.

Once you've entered the correct user-name and password the main window will be displayed. You can change the default user name and password from the cameras Set Up window.

Main Window

Playback
Used to search for stored snap-shots and videos as defined in Local Settings.

Local Settings
Defines path on local PC for storing snap-shots and video

Live View
Displays the live view from the camera

Remote Settings
Accesses Camera, Network and System Setting pages.

Logout
Logs out of the cameras interface.

Aspect Ratio

Camera Title
Can be toggled ON/OFF or re-labelled in Settings Menu

Time & Date
Can be toggled ON/OFF or adjusted in Settings Menu

Zoom
Once enabled, allows user to draw 'Region of Interest' which will fill the screen

Video
Stores video to path defined in Local Settings

Video Definition
Toggle between Standard Definition (1280x720) or High Definition (1920 x 1080)

Volume
Not Enabled on IRIS460

Full Screen
Scales Live Video Panel to Full Screen

Snapshot
Stores snap shot to path defined in Local Settings

Microphone
Not Enabled on IRIS460

Playback Window

Snap-Shots and Videos from the IRIS460 can be stored on a local network device, such as a PC. To define the storage path, format and duration, use the **LOCAL SETTINGS** panel (see below).


Search Criteris

Playback Window

Query Button

Playback Controls **Playback Time Line**   **Playback Table**
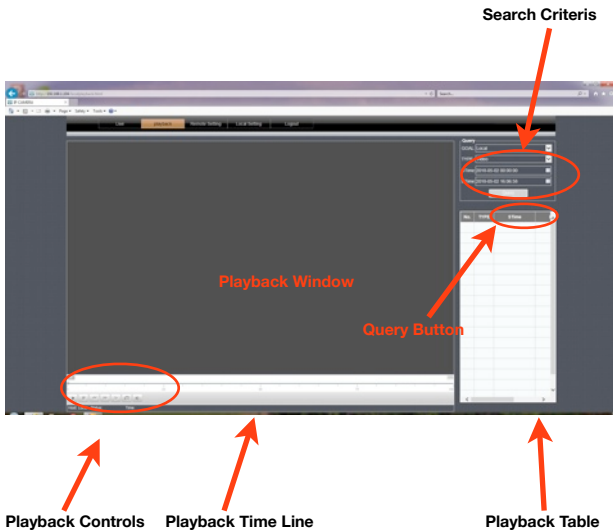
To search for files, set your desired start time (STime) and end time (ETime) and hit QUERY.
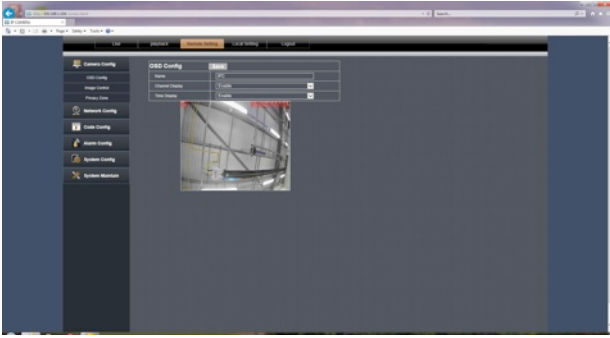
The list of available events will be displayed in the playback table.

To view and event, double click on the desired entry in the playback table.

Local Settings Window

Defines paths for storing Snap-Shots and Videos as detailed above.
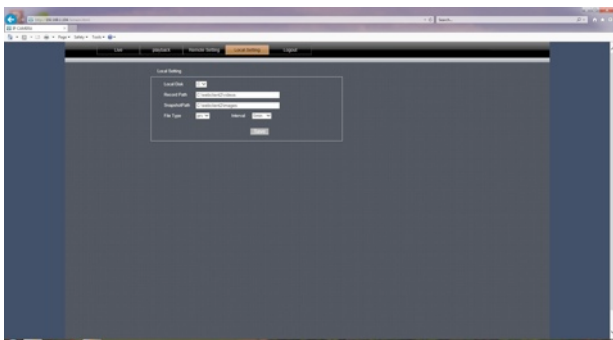
Remote Setting Window

The Remote Settings window contains the following sub-menus:

Camera Config

OSD Config: Sets camera name and Time / Data display (shown in image below).

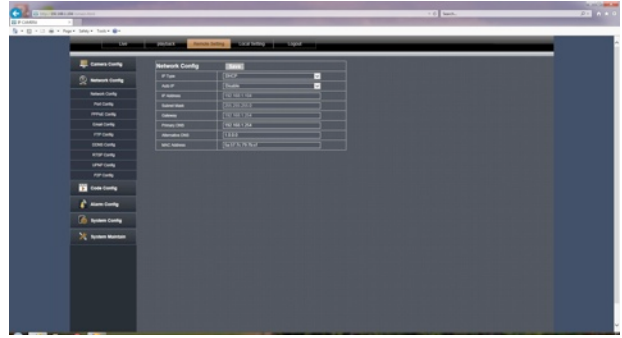Image Ctrl: Sets image values (Brightness, Colour, Contrast etc, as well as IR settings (see below).
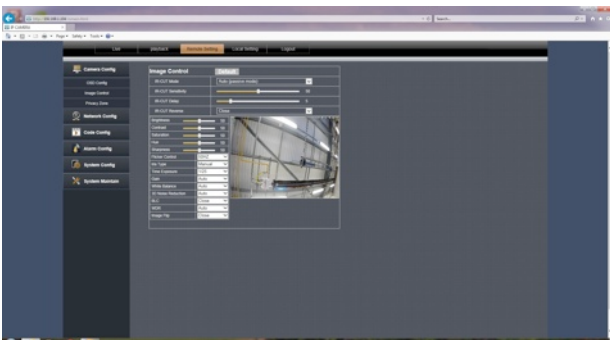
Privacy Zone: Configure multiple 'Privacy Zones' to black out areas that may either infringe privacy or you don't want other people with access to the camera to see.
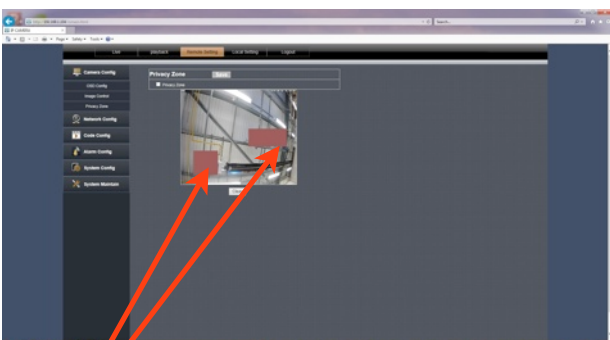
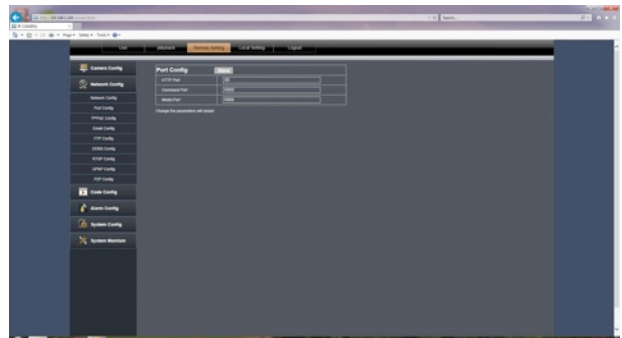Use mouse (or touch-screen) to 'draw' privacy zones.

Network Config

The Network Config tab contains the following sub menus:

Network Config: Set IP address details, including DHCP/Static (shown above).

Port Config: Define network port settings (shown below).

PPPoE Config: Enable / Disable PPPoE (default = disabled).

Email Config: Define email address snap-shots are sent to when an alarm (motion) is triggered. This requires an email account and the SMTP server details to configure.

FTP Config: Configure FTP server details for remote storage.

DDnS Config: Configure settings if you are using a Dynamic Domain Name Server.

RTSP Config: Configure RTSP port details. RTSP stream details are as follows:

MAIN Stream: rtsp://IP:Port/live/0/MAIN

SUB Stream: rtsp://IP:Port/live/0/SUB

Network Config (continued...)

UPnP Config: Configure UPnP protocol settings.

P2P Config: Configures Peer to Peer connections. Also displays QR Codes to download a generic F.O.C IP camera viewer App and the uniques configuration to enable the camera to connect to a third party VPN host for remote viewing, which can be accessed from the App (see below).
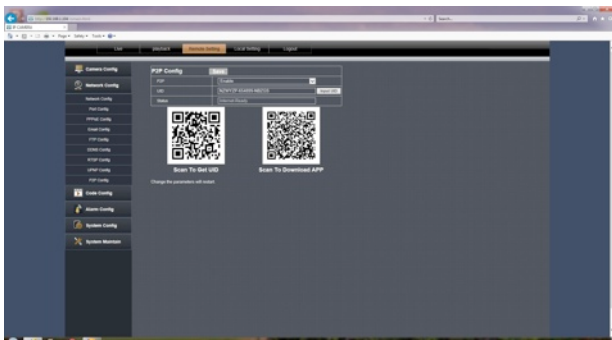

Code Config

The code config window is where camera resolution, refresh rate, bit rate control etc are set. Both streams can be configured independently.
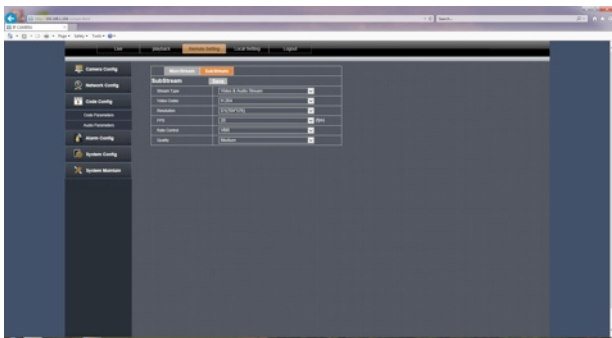

Alarm Config

The IRIS460 supports motion recording and scheduled recording.

For Motion Detection, you define the areas of the screen you wish to become 'alarmed' by drawing boxes as desired in the Alarm/Motion window. Subsequently, when motion is detected within these boxes, the camera enters alarm state and begins recording to the path defined in LOCAL SETTINGS.
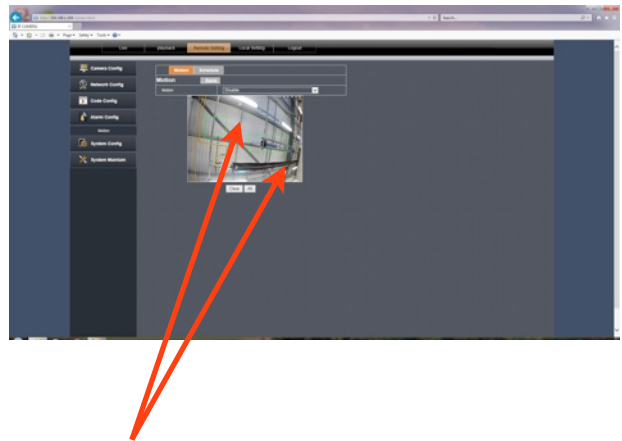
Use mouse (or touch-screen) to 'draw' motion alarm zones.

Scheduled Recording lets you define at which time and on which days the camera records, as shown below.
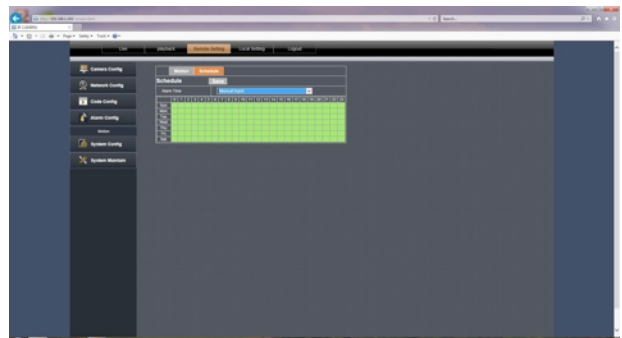
System Config

The System Config window contains the following sub menus:

Time Settings: Configure time zone settings and set Daylight Saving parameters.

User Management: Set user accounts and privileges.

Device Info: Displays camera serial number / software versions etc.

Log Query: Query cameras error and activity log by time and date.

Auto Reboot: Specify a time you wish the camera to automatically reset.

PTZ Settings: Not Applicable Feature for the IRIS460.

System Maintenance

The System Maintenance menu has two sub-menus:

Firmware Update: Define the path new firmware is located to perform a firmware upgrade.

Restore Default: Restores the camera to its default settings.

Appendix:

Connectivity Issues: The IRIS460 camera is usually viewed via an MFD using the RTSP feed and as the camera is set to DHCP as default, usually (and depending on the model of MFD used) connection should be plug and play.

There will however be certain situations where you may want to view on a PC (computer based navigation system for example, during manual configuration or when viewing the camera remotely).

In this scenario, please ensure you use a compatible browser. Please check the up to date specifications on our website (www.boat-cameras.com) to check compatible browsers.

Please also ensure your PC's firewalls and Active X settings are configured correctly.

For Active X settings, navigate to the appropriate point in your browser security settings and allow all Active X connections. Failure to do so may result in the camera video not displaying correctly, even though the interface may load correctly.

The camera acts as a 'web server' and certain files may need to be automatically installed by your computer from the camera. Ensure your security settings allow files to be downloaded and installed from the camera.

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