IRIS®
INNOVATIONS

IRIS4106

Installation Instructions & User Guide

Contents:

Introduction

Thank you for purchasing this IRIS-4106 compact, marine IP camera from Iris.

The IRIS-4106 is the IP version of our popular IRIS106 camera designed for use aboard boats, with a marine grade 316L stainless steel bezel and non-corrosive housing. The camera features excellent low light operation and is an excellent tool for on board safety, situational awareness and security.

The camera is designed to be as small and low-profile as possible so that it does not protrude excessively from headlining and so that it blends into the aesthetic of the vessel. Additionally the cameras smoked style dome provides enhanced privacy.
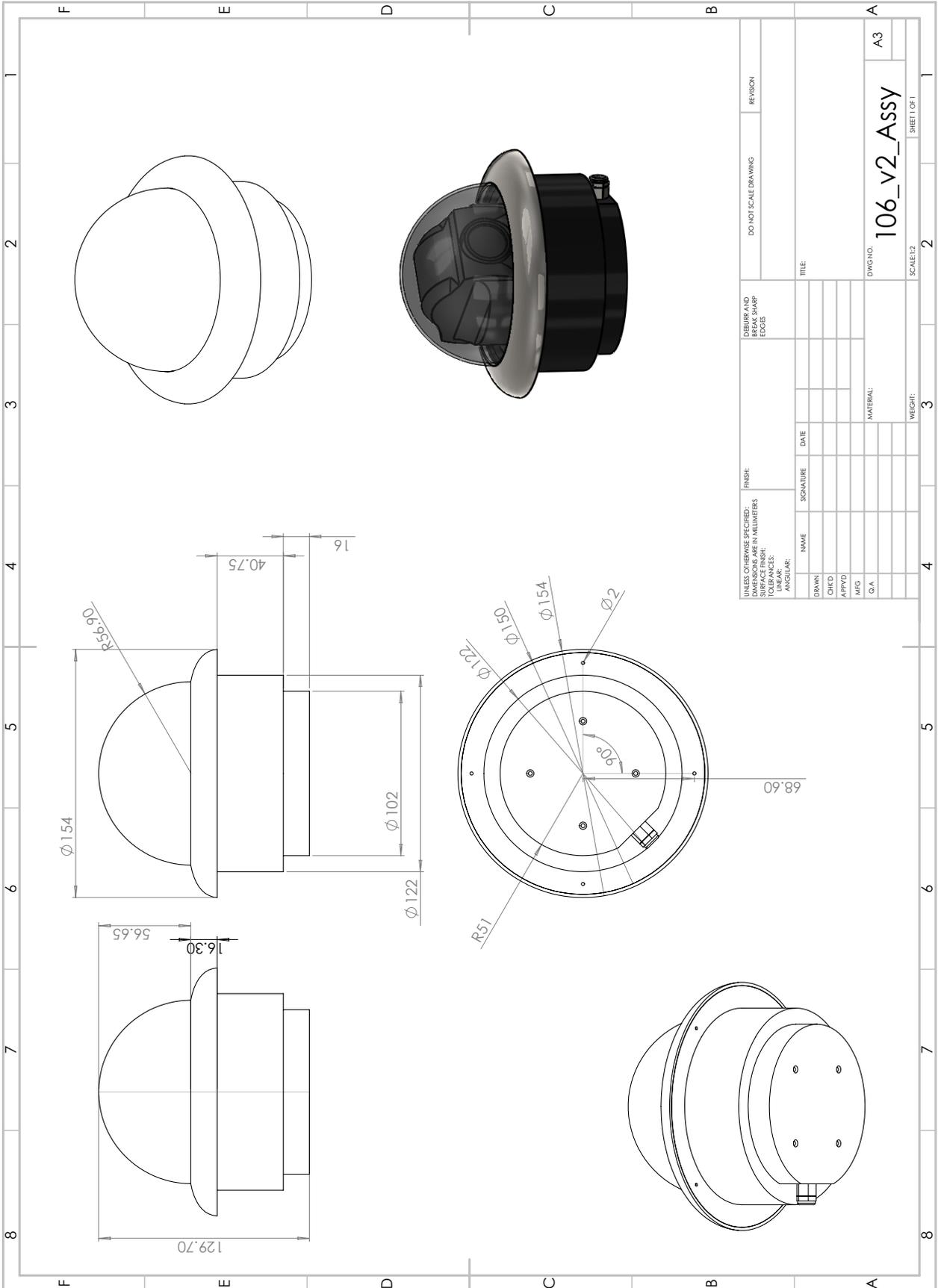
Key features of the IRIS4106 camera include:

- 5MP High Definition Camera

- 10x Optical Zoom

- High Speed Pan and Tilt Operation

- Proportional Control

- Power over Ethernet (PoE) or 12VDC Operation (IEEE802.3af)

- Auto / Manual Focus Control

- Automatic Day / Night Filter switches from colour during the day, to monochrome at night or in low light for enhanced image clarity

- Built-in Fan to Reduce Condensation

- Compact 4" Smoked Dome

- Marine Grade 316L Corrosion Proof Bezel

- IP66 Water Resistant

- Additional Serial Data Control (RS485 / Pelco D)

- ONVIF Compliant

This document contains safety, handling, disposal and recycling regulatory and software information. In order to activate your warranty please follow the instructions within the guide.

Please ensure your camera is installed in accordance with the instructions and guidelines provided within this document. We recommend visiting www.boat-cameras.com from time to time to check for updates to the manual and observing the latest versions of the manual when released.

Camera Dimensions

The technical drawing contains the following dimension labels and title block text:

- Ø154
- Ø102
- Ø122
- R56.90
- 40.75
- 16
- 56.65
- 16.30
- 129.70
- Ø122
- Ø150
- Ø154
- Ø2
- 90°
- 68.60
- R51
- 106_v2_Assy
- A3
- SCALE:1:2
- SHEET 1 OF 1
- DWG NO.
- DO NOT SCALE DRAWING
- REVISION
- TITLE:
- MATERIAL:
- WEIGHT:
- FINISH:
- DEBURR AND BREAK SHARP EDGES
- UNLESS OTHERWISE SPECIFIED:
- DIMENSIONS ARE IN MILLIMETERS
- SURFACE FINISH:
- TOLERANCES:
- LINEAR:
- ANGULAR:
- NAME
- SIGNATURE
- DATE
- DRAWN
- CHK'D
- APPV'D
- MFG
- Q.A

Conventions:

At various points within this guide, the following icons are used to illustrate important and/or potentially dangerous information:

INFORMATION:
This symbol points out important information pertaining to the installation, operation and maintenance of the camera.

WARNING:
This symbol indicates a risk of damaging the camera or other items, or an important issue that may effect the operation of the camera.

DANGER:
This symbol is used to alert the user / installer / maintainer of a serious risk of damage or personal injury or death.

Limited Warranty:

HIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER LEGAL RIGHTS, WHICH VARY FROM TERRITORY TO TERRITORY. IRIS DOES NOT EXCLUDE, LIMIT OR SUSPEND OTHER LEGAL RIGHTS YOU MAY HAVE UNDER THE LAWS OF YOUR TERRITORY.

This product is warranted to be free from defects in materials or workmanship for two years from the date of purchase. Upon registration of the product an additional 12 months warranty will be awarded free of charge.

Within this period, Iris Innovations will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labour, provided that the customer shall be responsible for any transportation cost. Repaired or replaced devices have a 90 day warranty. If the unit sent for repair is still within its manufactures initial warranty period then the new warranty is limited to the end of the initial period and will not extend beyond the end of the initial warranty period.

If you seek warranty service outside of the original country of purchase, Iris cannot guarantee that the parts needed to repair or replace your product will be available due to differences in product offerings and applicable standard, laws and regulations. In that case, Iris, at its sole discretion and subject to applicable laws, repair or replace your Iris product with comparable Iris products or parts, or require you to ship your product to a service facility in another territory that can service your product in which case you will be responsible for complying with all applicable import and export laws and regulations and for paying all customs duties, VAT, shipping fees, insurances and any other associated taxes and charges.

This warranty does not apply to: (i) cosmetic damage, such as scratches, nicks and dents; (ii) consumable parts, such as batteries, unless product damage has occurred due to a defect in materials or workmanship; (iii) damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes; (iv) damage caused by service performed by anyone who is not an authorised service provider of Iris Innovations Limited; or (v) damage to a product that has been modified or altered without the written permission of Iris Innovations. In addition, Iris reserves the right to refuse warranty claims against products or services that are obtained and/or used in contravention of the laws of any country.

This product is intended to be used only as a travel aid and must not be used for any purpose requiring precise measurement of direction, distance, location or topography.

For products purchased through unauthorised dealers or online resellers, any warranty claims should be made against the seller and not Iris. Iris is not liable for any warranty claim made on products purchased through unauthorised vendor.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE WARRANTIES AND REMEDIES CONTAINED IN THIS LIMITED WARRANTY ARE EXCLUSIVE AND IN LIEU OF, AND IRIS EXPRESSLY DISCLAIMS, ALL OTHER WARRANTIES AND REMEDIES,

WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY REMEDY OR OTHERWISE. IF IMPLIED WARRANTIES CANNOT BE DISCLAIMED UNDER THE LAWS OF YOUR TERRITORY THEN SUCH WARRANTIES ARE LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY.

IN NO EVENT SHALL IRIS BE LIABLE IN A CLAIM FOR BREACH OF WARRANTY FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT.

IMPORTANT: The terms and conditions outlined in this warranty are survived by the most recent warranty statement which can be found at: https://www.boat-cameras.com/onlinestore/warranty/

Warnings & Product Information:

LEGAL NOTICE:

In some jurisdictions it could be considered an invasion of privacy rights to take or publicly display photographs or videos of people or their vehicles using this product.

It is your responsibility to know and comply with applicable laws and rights to privacy in your jurisdiction.

DISTRACTION WARNING:

This device is intended to enhance the situational awareness when used properly. If used improperly you could become distracted by the display which could lead to an accident causing serious personal injury or death to yourself or others.

Always maintain awareness of your surroundings and do not stare at the display or become distracted by the display. Focusing solely on the display and not on your surroundings could cause you to miss obstacles or hazards. Use the device at your own risk.

Do not rely solely on the video from the camera to judge distances. Use the camera as a guide only to enhance your situational awareness.

INSTALLATION & 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 by qualified personnel or by persons competent in the installation of electronic systems.

POWER SUPPLY & GROUNDING:

Ensure the boat 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. This could result in the DC power being grounded through the common video ground which could in turn damage the video output circuit of the camera.

WARNING: WIRING TERMINATIONS

Where the product's 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 other than temporarily removing the Camera Address DIP Switch window whilst setting addresses. Ensure the DIP switch window is correctly replaced and that the rubber seal is not lost, pinched or damaged. The product has been certified to IP66 standards, however, submersion of the product, incorrect re-placement of the dome cover 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 camera's optical 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 authorised Iris Innovations dealer. Any unauthorised 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. Never manually alter the pan or tilt position whilst the power to the unit is on as this may permanently damage the motors. 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 to avoid unintentional movement of the cameras motors. Clean the camera housing with a soft cloth. Moisten the cloth and use a mild detergent if required but take care not to get detergent on the lens window. The dome cover has a protective coating which may suffer damage as a result of improper cleaning. To clean the dome 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.

Package Contents:

Please unpack your new IRIS4106 camera and check to make sure the following items are included in the box. If there are any items missing please contact your Iris dealer immediately:

- Manual

- IRIS4106 Camera

- Fixing Screw Pack

- Screw Terminal Jack Plug / Socket set

- RJ45 Field Installable Back-Shell

- Fixing Template

- Warranty Card

Please note: Package contents may change from time to time without notice. Check the latest information downloadable from our web site for up to date information.

Installation

Installation Considerations

It's important to fully consider the intended position of the camera and the desired field of view prior to installation. Considerations include how you are going to get cables to the position, will the camera be able to see the appropriate areas, will the camera interfere with any other fixture such as a doorway or walkway once it's fixed in place, or are there any obstructions behind the surface onto which the camera is to be installed.

It's strongly recommended that if possible the camera should be temporarily powered up prior to final installation and offered into position so that these factors can be assessed and any possible issue can be addressed before holes are drilled and difficult, time consuming and costly cable runs are attempted. Check third party hardware to ensure it doesn't effect the operation of the camera and vice versa.

Camera Installation

Observe extreme caution when siting the camera. Ensure the act of drilling the pilot holes and camera cut out hole does not infringe any cables, equipment or fixtures behind the panel onto which the camera is to be installed.

Once you've established a suitable fixing position, offer the cutting template into position. You may find in helpful to use tape to fix the template into place prior to drilling and cutting. Mark off the four Fixing Positions and the centre position.

Use a 122mm hole saw to create the cut out into which the camera will recess. The camera is supplied with 4 x Stainless Steel self tapping screws. Drill pilot holes accordingly. The four screw positions are very close to the cut out hole so care must be taken.

Pass the cable through your cut-out and terminate, carefully ensuring there are no polarity issues and the integrity of each termination is sound. Although the termination points may not be immediately exposed to moisture, the environment in which your camera operates may not always be completely dry - therefore, ensure any joints, connections, terminations etc are sealed using adhesive lines heat shrink or a suitable insulating / amalgamating tape.

When your cables are in place and correctly terminated, offer the camera up into the fixing position and firmly screw into place.

To avoid moisture ingress between the bottom of the camera and the surface onto which the camera is to be attached, apply a bead of suitable silicone sealant around the edge of the plate to create a seal. Use a non-permanent sealant in case the camera has to be removed at any point in the future. Using a permanent sealant could result in damage to both the mounting surface and the camera itself.
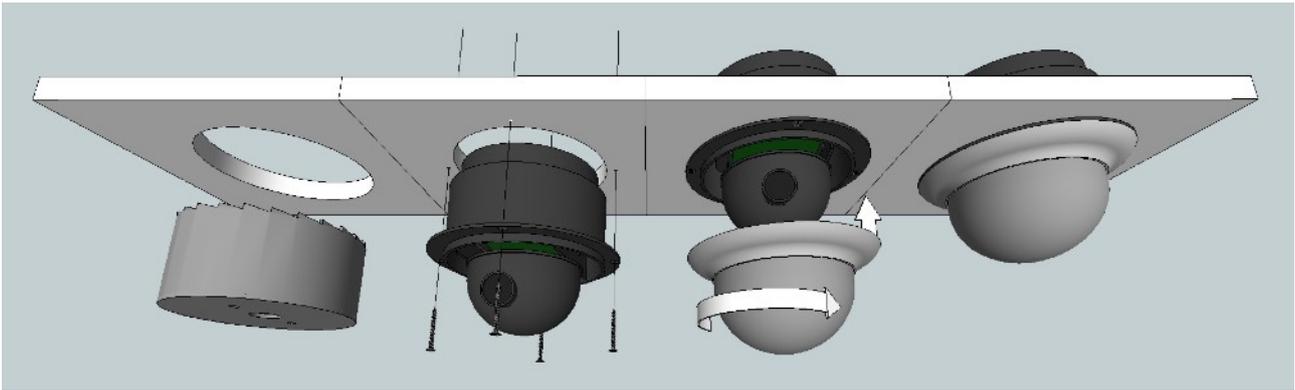
Step 1:

After you have established the desired mounting position and are happy there are no obstacles behind the surface into which you are drilling, use a 122mm hole saw to carefully create the circular recess into which the camera body will sit.

Step 2:

Once the mounting hole has been cut offer the camera into place and mark off the 4 fixing holes. Remove the camera carefully and use the 2mm drill bit to create 4 pilot holes. Now, once the cables have been run and connected up, re-insert the camera body into the recess and line up the four fixing holes with the pilot holes. Fix the camera in place with the four self tapping screws supplied. It is recommended that a marine grade sealant is used to add a bead of sealant behind the flange so that a seal is formed when the camera is screwed into place.

Step 3:

Power up the camera to test operation. Upon power-up, the camera will perform a short initialization routine whereby it will pan and tilt to find it's limits. On your screen will be listed the cameras physical address, protocol and baud rate and show the status of each initialization test. This should last for around thirty seconds whereafter the cameras video will be displayed and you should now be able to control the camera.

Step 4:

Now carefully screw the bezel into position. Care should be taken to avoid cross threading the bezel at this stage and it is vital that the bezel is tightly screwed into position.

Terminating RJ45 Connector
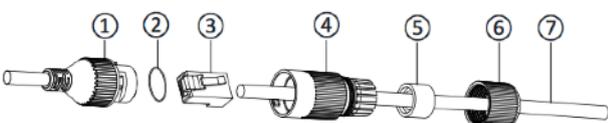
Part No	Description
1	Cameras Network Interface Socket
2	O Seal
3	RJ45 Network Connector
4	Waterproof Endcap
5	Rubber Gasket
6	Lock Nut
7	Network cable to Router / Switch / Hub / etc...
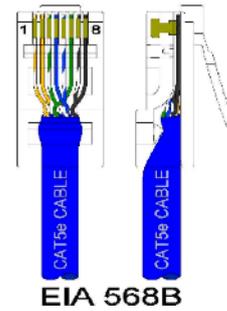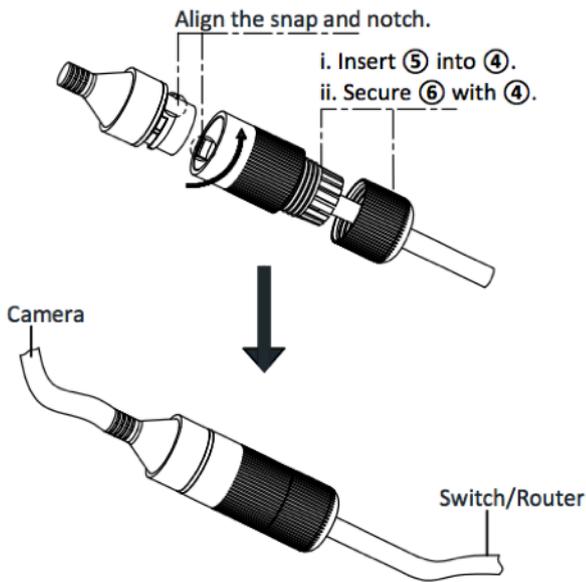
Pin No	Wire Colour
1	White / Orange
2	Orange
3	White / Green
4	Blue
5	White / Blue
6	Green
7	White / Brown
8	Brown

Terminating RJ45 Connector (EIA 568B)

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).

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.

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

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

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

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).

Connecting Up

Check compatibility of your IRIS4106 by confirming with the latest information on boat-cameras.com and with your chart-plotter manufacturer / dealer.

Some chart plotters will automatically assign the camera an IP address through RTSP whereas others will need you to manually configure an IP address.

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.

Login Credentials

By default, the camera is set with the following login credentials:

Username: admin
Password: admin

Depending on the system you are using to view the camera it may be necessary to change login credentials. Check with Iris or your chart plotter manufacturer for confirmation.

A Note on Resolution & Chartplotters (MFD's)

When using the IRIS4106 camera with a chart plotter, the resolution you set the camera is important, and it may be necessary to set the resolution of the camera in accordance with limitations of the MFD.

Currently, most chart plotters cannot display above 1920x1080P resolution, in fact many have to downscale the image in order to display.

If you find you are having trouble displaying the camera image, it may be necessary to check the resolution restrictions of your chart plotter and set the camera resolution accordingly.

If in doubt, or if you have problems, check with your chart plotter manufacturer or contact Iris for assistance.

Max Main Stream Res: 2592 x 1944 (5M) @ 30fps (H264/H265)

Max Sub Stream Res: 720 x 480 @ 30fps (H264/H265)

It is not possible to access the cameras browser interface from most chart plotters and changing settings such as resolutions must be done using a computer / laptop..
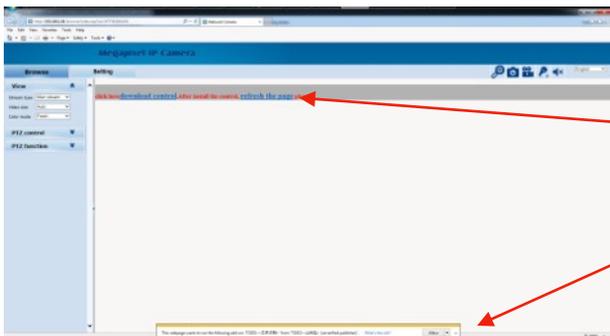
IRIS4106 Browser Interface viewed on compatible web browser.

Depending on the browser, you may be promoted to download a plug-in from the camera itself.

Click this link to initiate the download and then refresh the page as instructed.
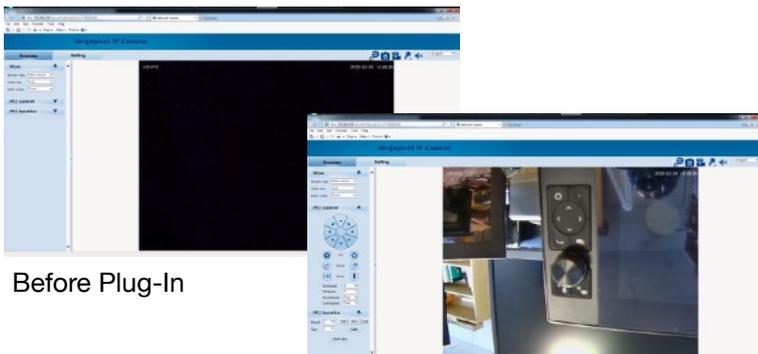
Before Plug-In

With Plug-In Installed

Browser Window

Video from the camera is view in the browser window.

To the left of the camera video window is the camera control panel. From here you can select the desired video stream from the camera, video size and colour mode. The cameras Pan, Tilt, Zoom controls are also accessed through the control Panel. Use the PTZ controls to drive the camera as required, control Iris, Zoom and Focus settings, select Pan, Tilt, Zoom and Focus speed, set and call preset positions, activate tours and the auto-pan feature

Stream Select
Video Size
Colour Mode

Pan/Tilt/Zoom
Lens Control

Speed Controls

Presets / Tours
Autopan

Zoom
Snapshot
Record
Microphone*
Loudspeaker*
Language

Video Window
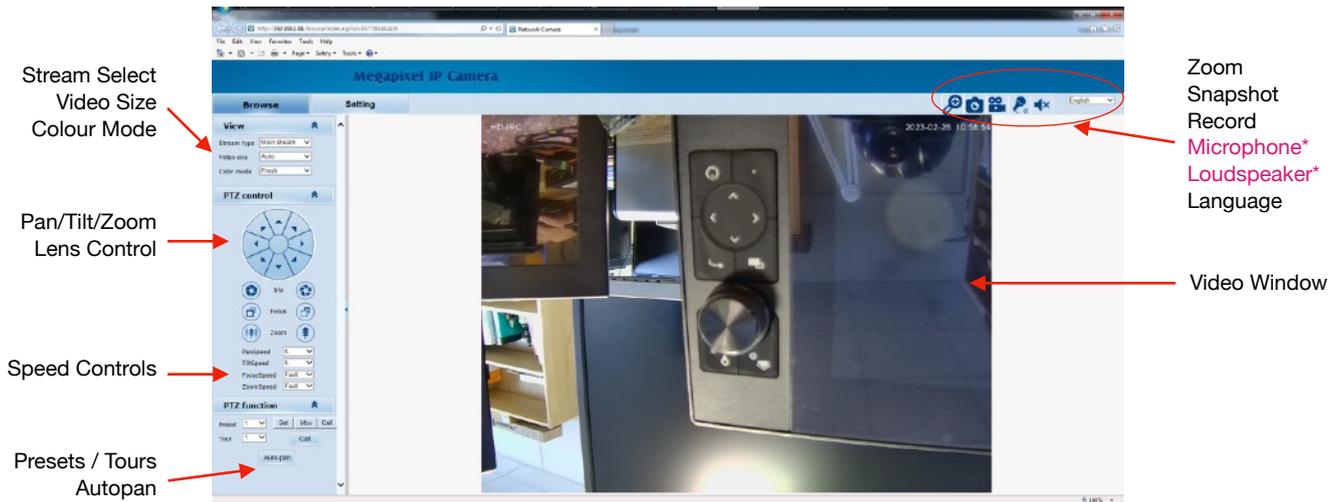
Settings & Menus

System Menu

View software version information, serial number, MAC number and time zone details.

View IP address, subnet, default gateway information, alarm server addresses, NTP server address and video settings (all these settings can be changed with the subsequent menus, as described herein.
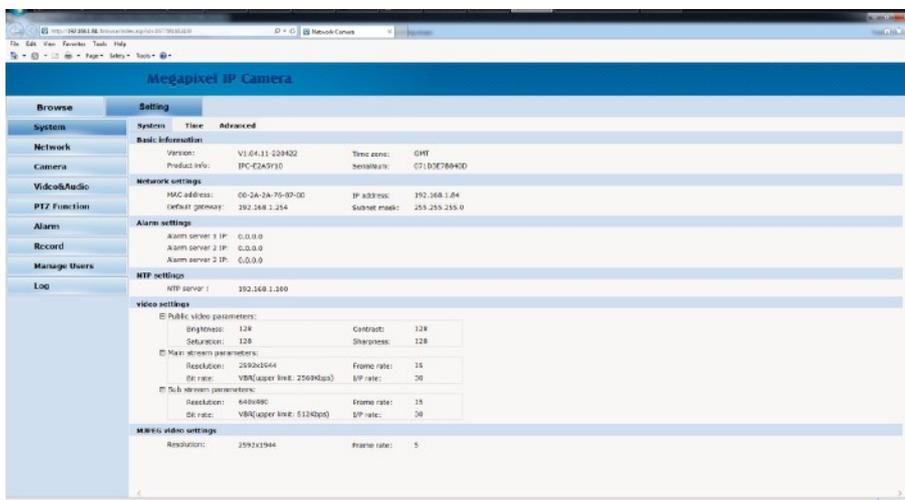
Time Menu

Set Time Zone and Daylight Saving Options, define Network Time Protocol settings and activate time sync to either connected PC or NTP.
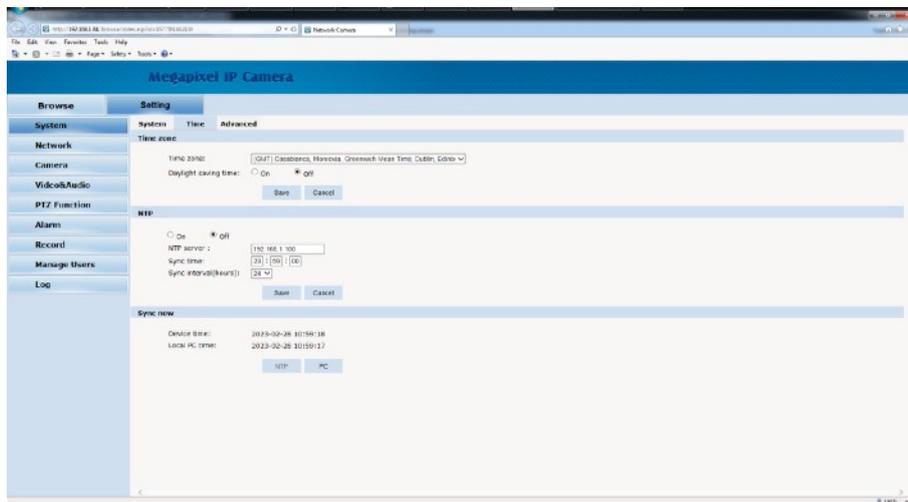
Advanced Menu

Set Auto Reboot schedule, restore to factory settings, reboot camera and define firmware upgrade path.
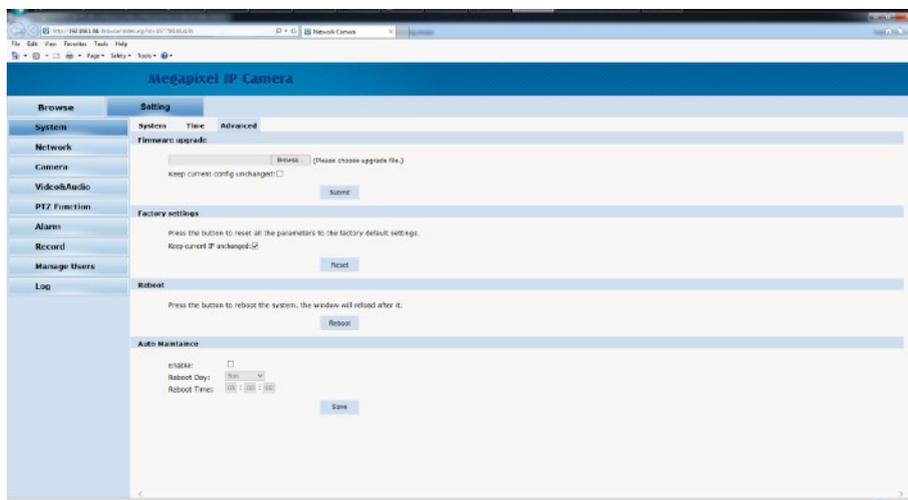
Network Menu

Define Network IP address settings, subnet mask, gateway address, DNS server addresses. Set DHCP ON / OFF
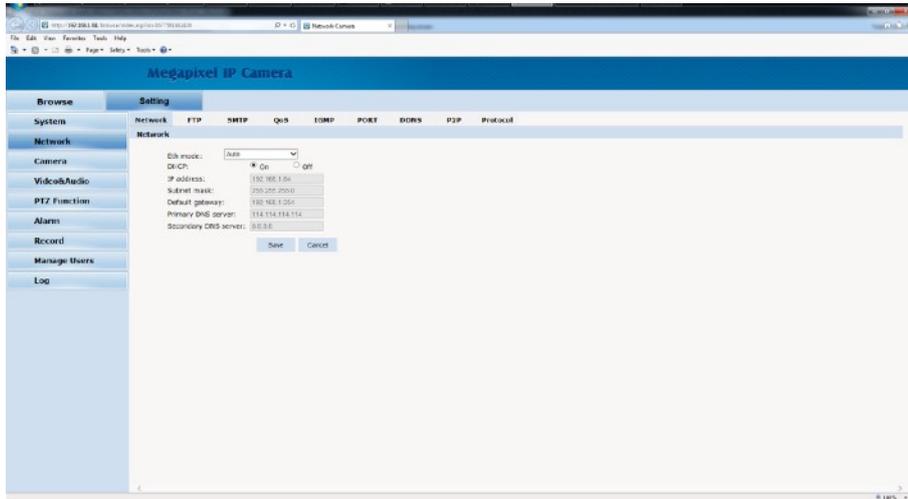
FTP Menu

Define FTP server parameters.
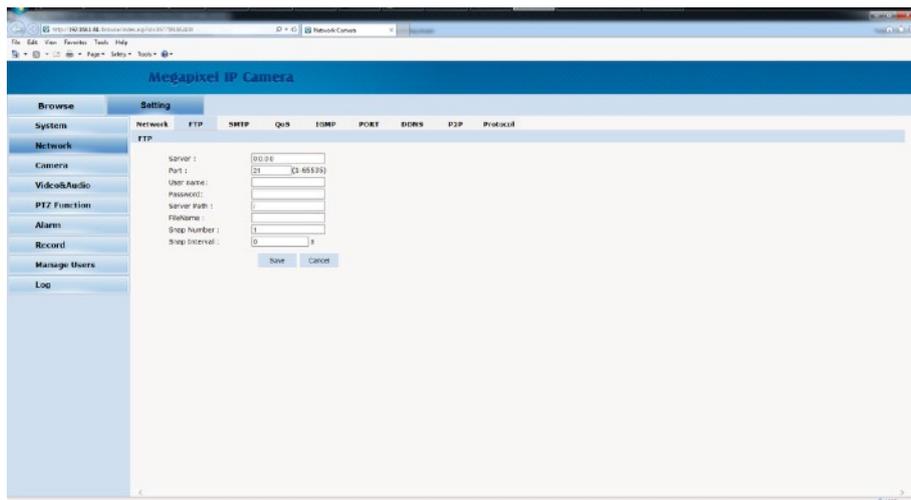
SMTP Menu

Define SMTP server parameters for email notifications (snapshot)
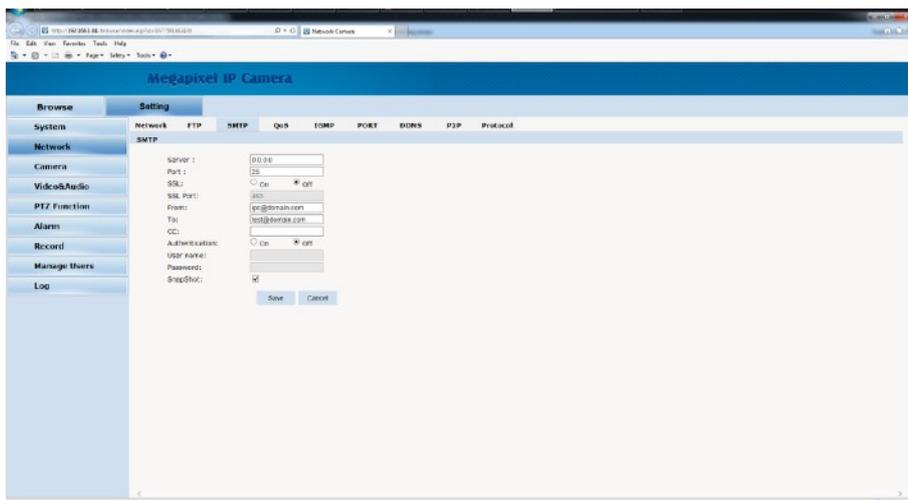
QoS Menu

Define Quality of Service Parameters
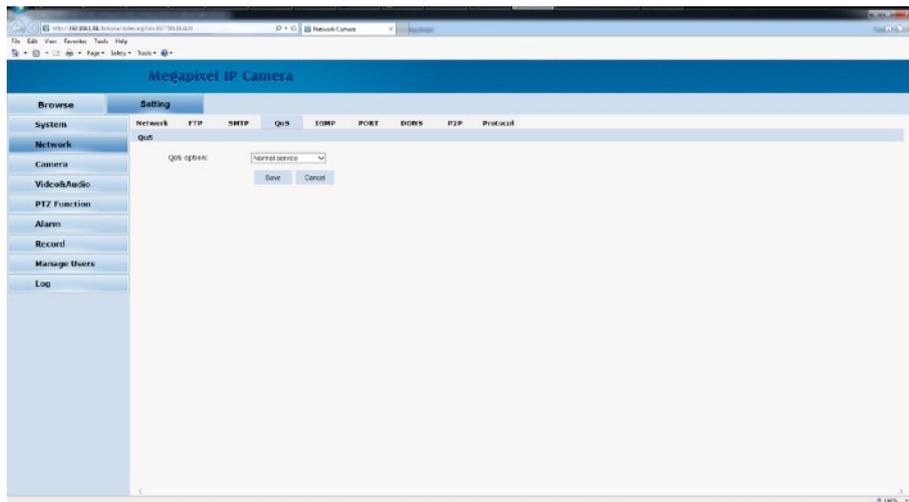
IGMP Menu

Define Internet Group Management / Multicast Parameters
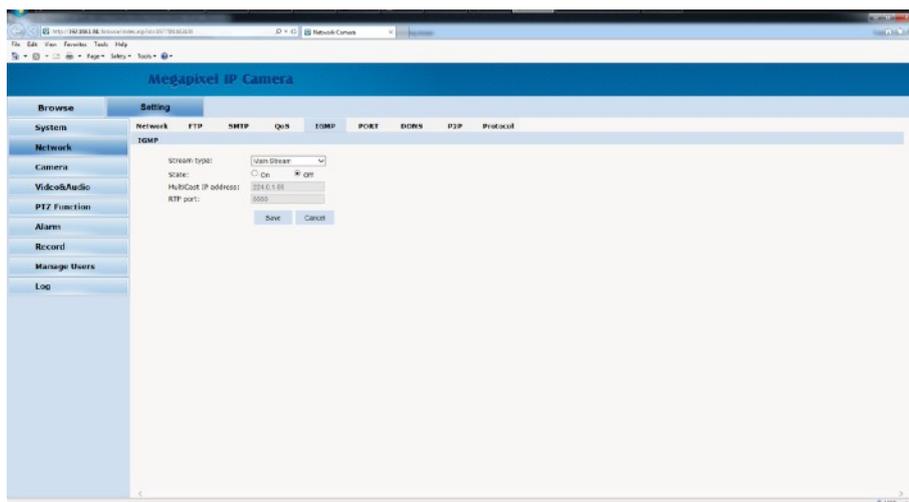
Port Menu

Specify Ports for RTSP, ONVIF, HTTP
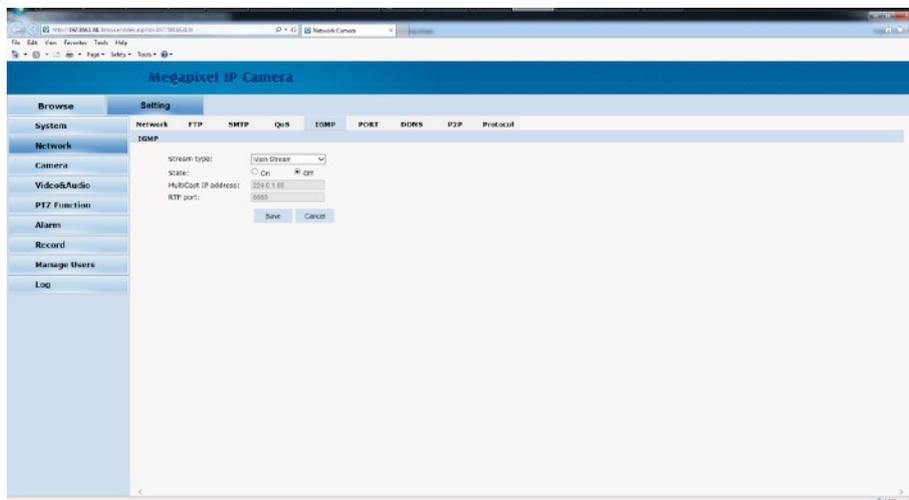
DDNS Menu

Define DDNS parameters
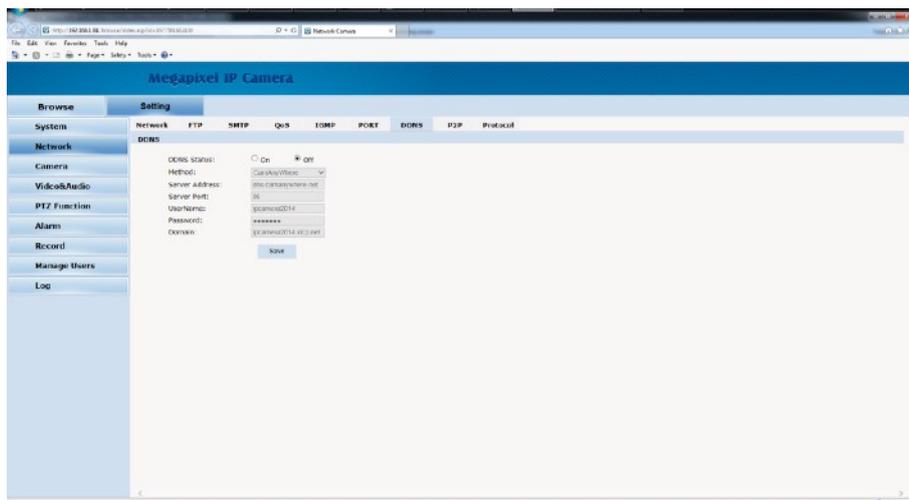
PTP Menu

Use QR codes to download and set up generic P2P Viewer Mobile App automatically.
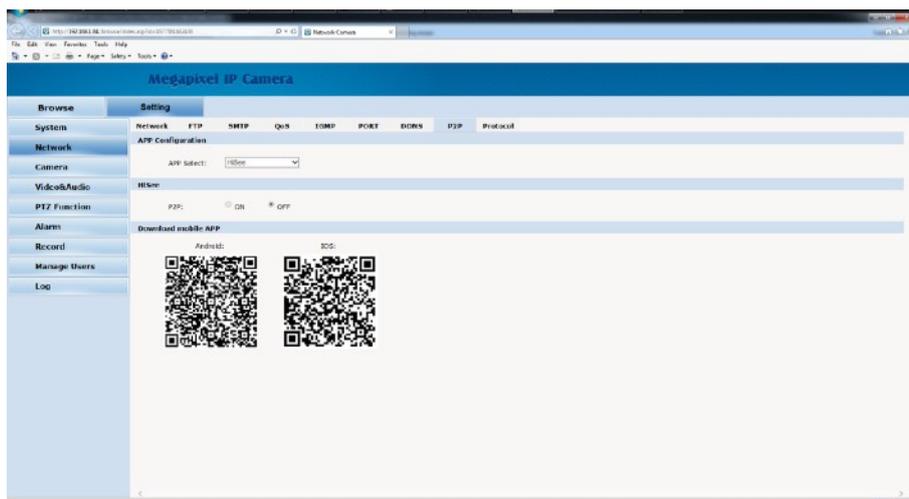
Protocol Menu

Activate ONVIF and HikVision Protocols
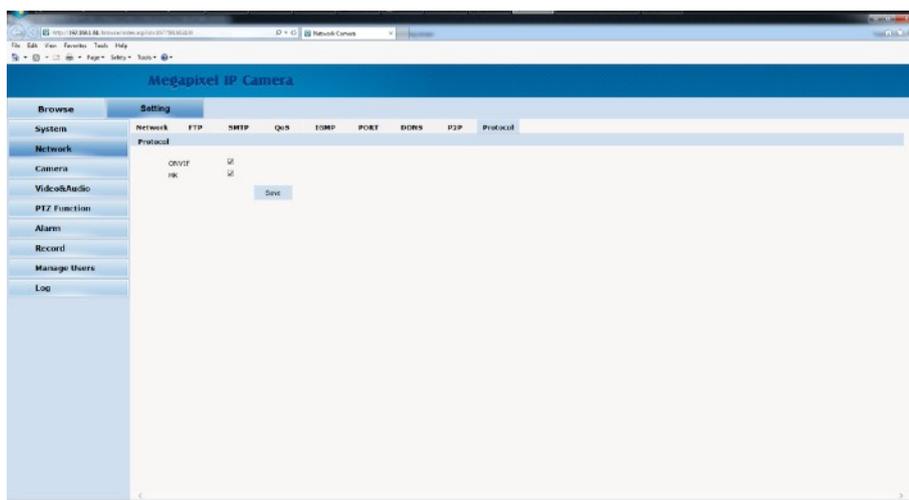
Camera Menu

Basic Settings (provides overview of current camera settings)
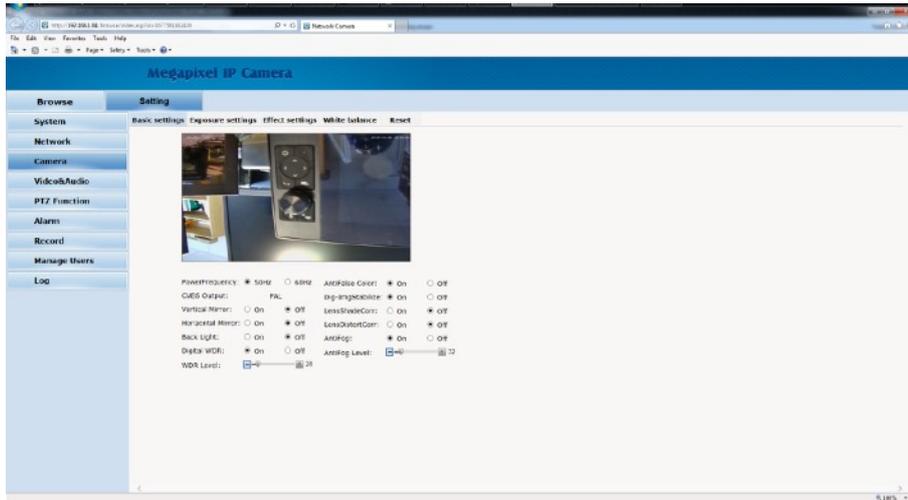
Exposure Settings

Set camera exposure modes, shutter and automatic gain control (AGC) and other exposure parameters.
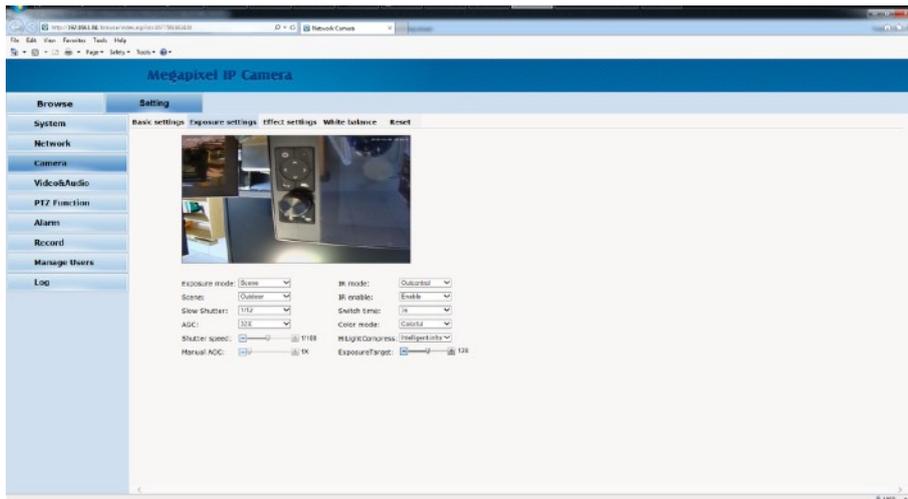
Effect Settings Menu
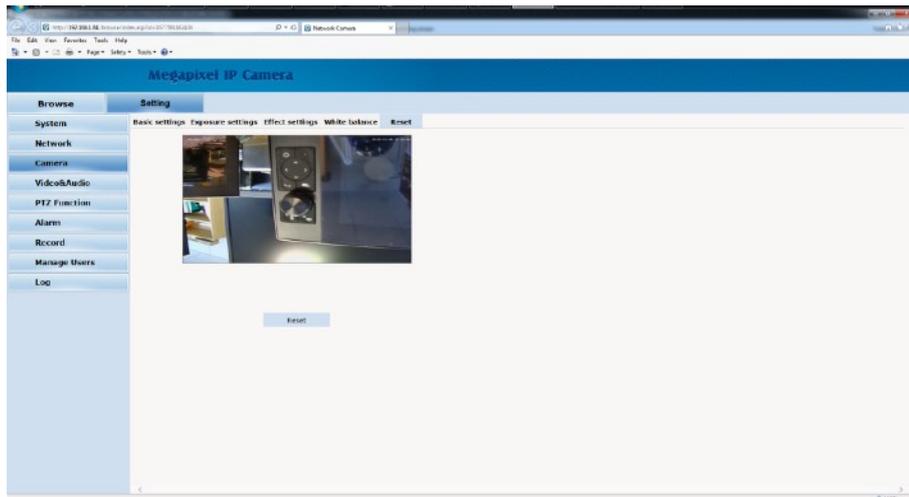
Adjust, Brightness, Contrast, Saturation, Hue, Sharpness, Gamma values etc.
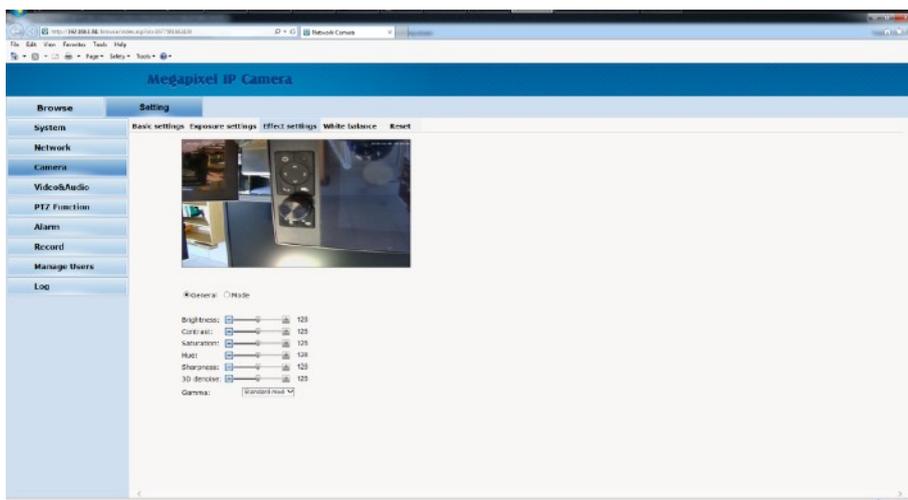
White Balance Settings

Adjust White Balance parameters and set Modes (Auto, Manual, Sunlight, Cloudy, Incandescent, Fluorescent, Sodium, AWC, Indoor, Outdoor)
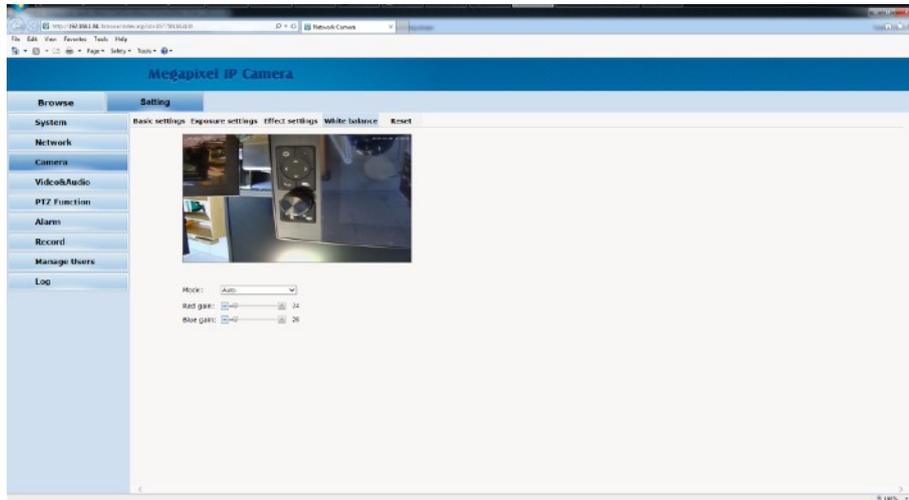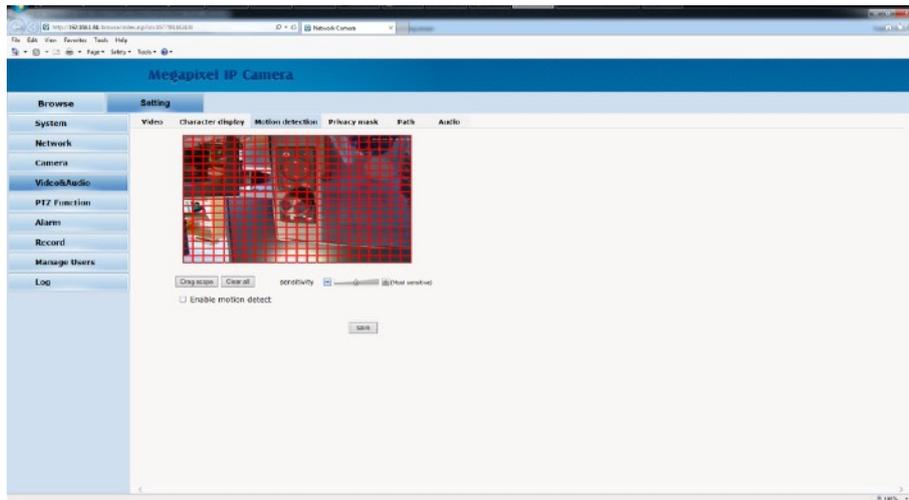

Reset

Reset camera parameters / video exposure settings etc to factory defaults

Video & Audio Menu: Video Settings

Define encoder types, resolution. Frame rate, I-Frame, I-Frame Rate, Bitrate, Image Quality and Bitrate - Per Stream (Main, Sub, MJPEG)

Resolution Options: Main Stream

Resolution Options: Sub Stream

Character Display Parameters

Set On Screen Text Field Parameters / Font Size, Position, and Content (Camera Name etc)

Motion Detection

Define Motion Detection Zone, Motion Sensitivity, and enable/disable Motion Detection feature.

Privacy Mask
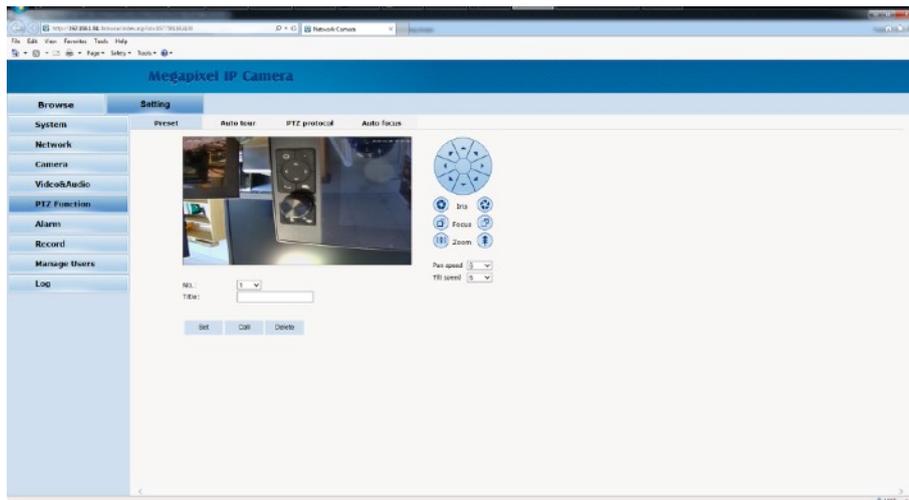
Define and name up to four privacy mask zones.
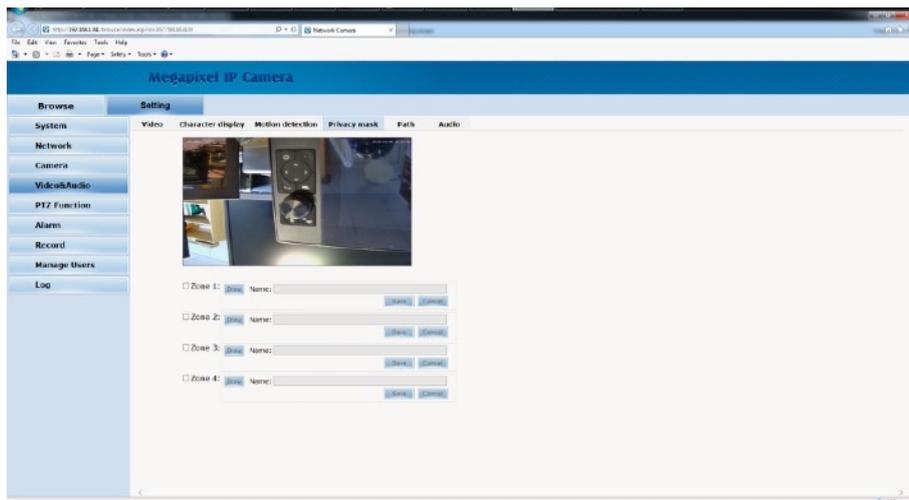
Path Menu

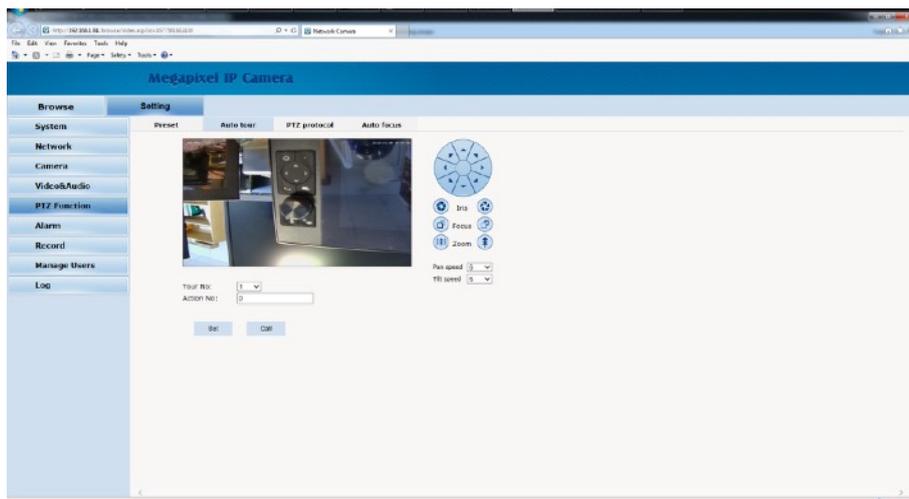Define paths and formats to save snapshot photos and video recordings.
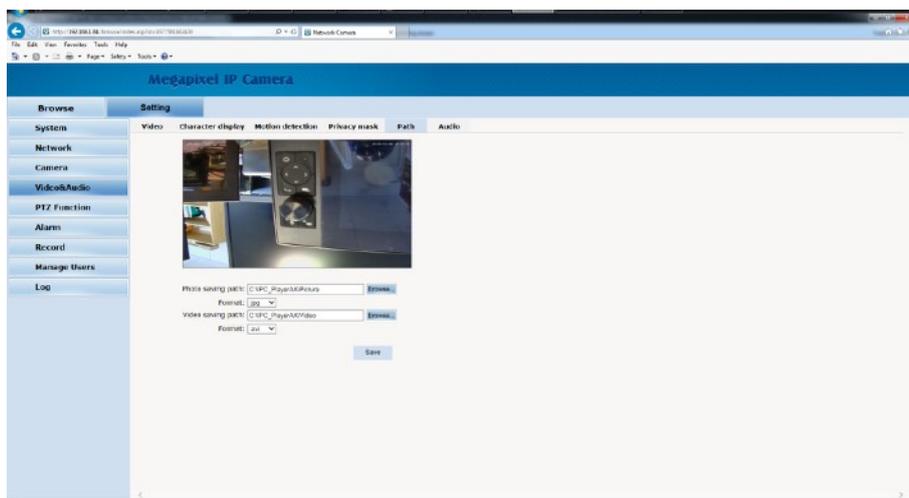
PTZ Function Menu: Presets

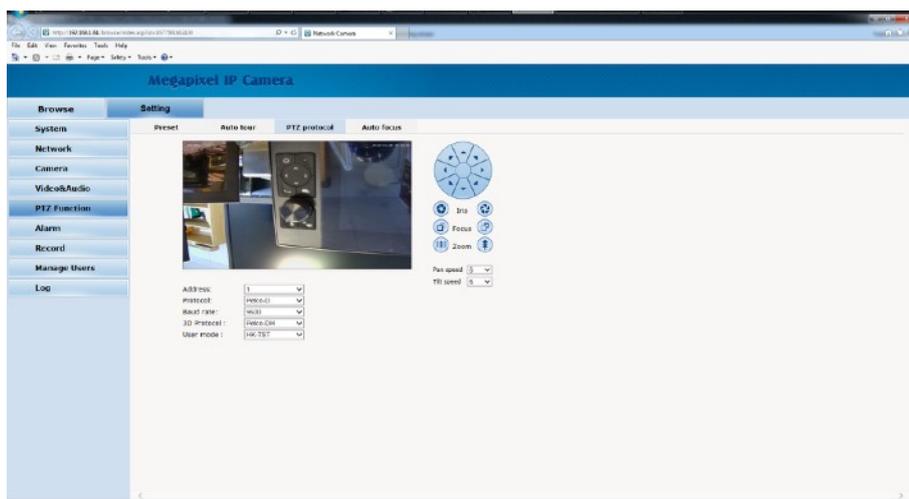Set and Call (for test purposes) User Presets Positions and Speeds

Auto Tour Menu

Configure Automated Tours (1~4). Each tour can support 10 presets. Assign Presets to tour as required. When operated, tour will cycle through presets assigned to each specific tour.
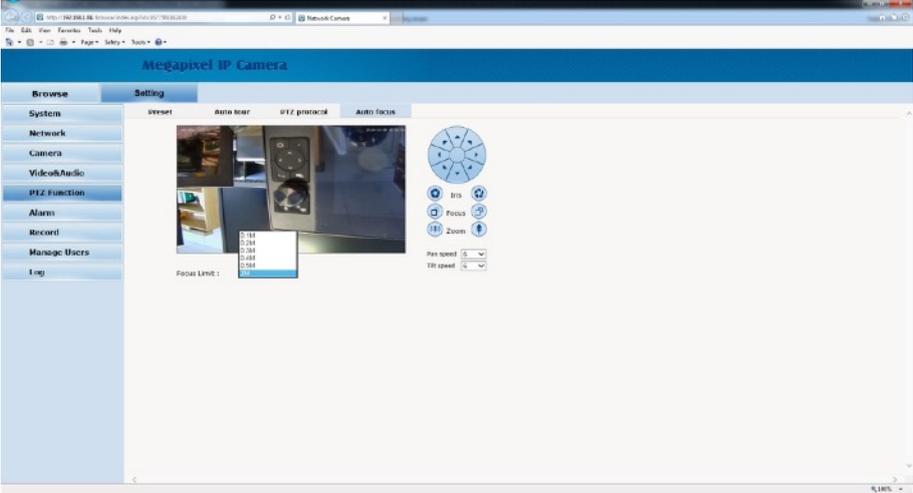

PTZ Protocol Menu

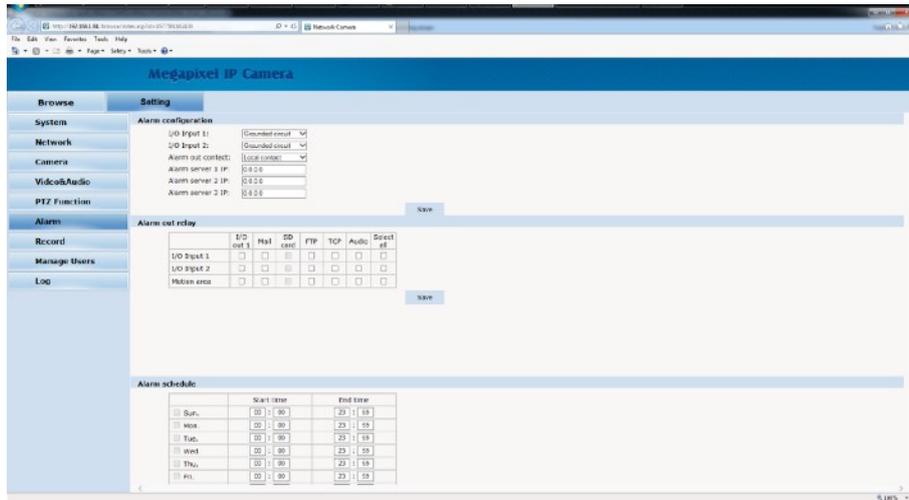Define PTZ Protocol and Protocol Values (Baud Rate, Address etc).

Autofocus Menu

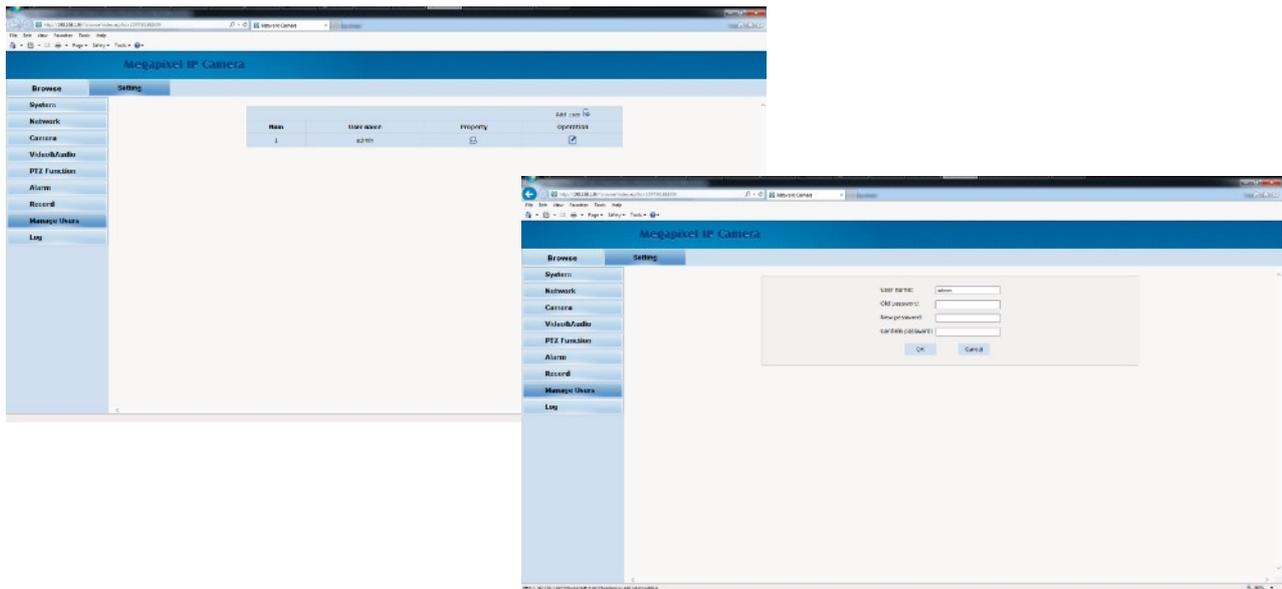Define Minimum Distance for Autofocus feature (0.1m to 2m)

Alarm Configuration Menu

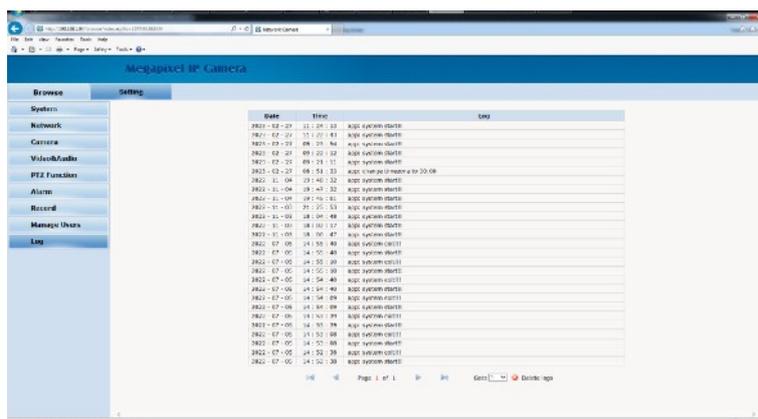Configure Alarm settings and actions and define alarm schedule.

Manage Users

Configure Users, Set Access Rights and Configure Passwords

Log

View System Event Log

Essential Safety Notices

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.

EMC Guidelines:

This product is designed to be used as a visual aid or part of a visual aid system and is not part of the vessels navigational system - even if used in conjunction with other on board equipment or third party systems - and is compliant with the EMC directive 2014/30/EC. The original Declaration of Conformity (DoC) is available from our website The camera should not be installed on the ships helm or in close proximity to radio receiver equipment. We recommend the camera is installed no closer than 1m from any equipment transmitting or cables carrying radio signals - particularly VHF radios and associated equipment. The device needs to be powered from a clean DC Power Supply fitted with an adequately rated fuse to profile the necessary electrical protection in accordance with its operating power ratings.

Water Ingress:

Disclaimer This product has been tested and complies with the requirements of the standard EN60529 to level IP66, however, water intrusion and subsequent equipment failure may occur is subject to commercial high pressure washing or sustained exposure to water spray. This product is not designed to be completely submerged and the cable exit point should be kept dry and protected from possible moisture ingress. Any damage caused as a result of these circumstances are not covered by the product warranty.

Full product safety, warning and compliance information, including Declaration of conformity is available from www.boat-cameras.com

Manufactured & Assembled in the United Kingdom

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