Invictus
(HD/IP & HD/IP with Analogue)
Installation/Configuration Manual

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1 Quick Start Guide Invictus & Invictus ‘Coastal’ installations.

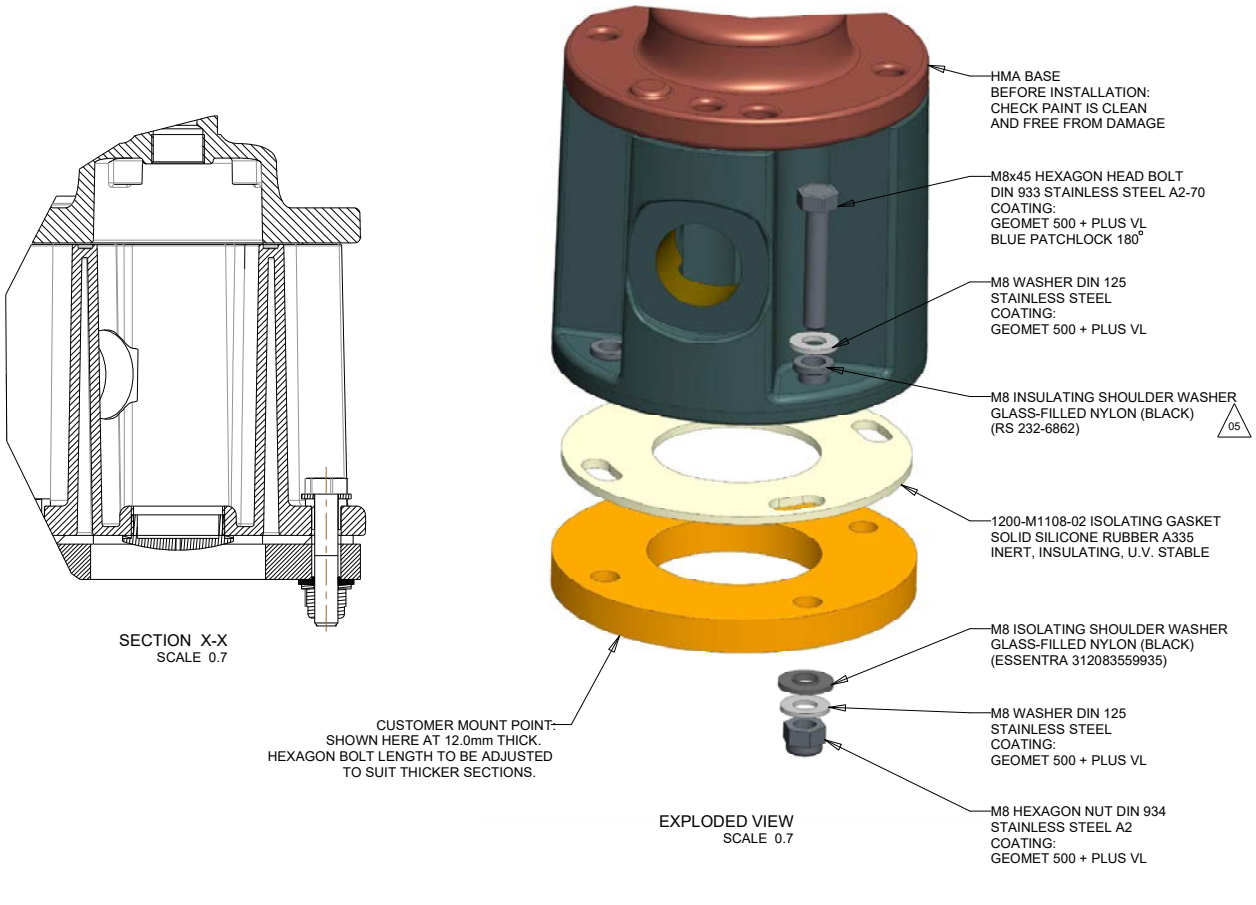
This is meant as a quick installation guide to help the installation process, for more information

For ‘Coastal’ Painted Cameras - Please Note The Following:

- Where 360-Vision Technology camera units are installed at or near coastal areas
- Where 360-Vision Technology camera units are installed on, or in contact with unprotected structures (exposed stainless steel) or similar where galvanic corrosion is a concern.

To mount the camera, the following minimum requirements shall be met:

MINIMUM REQUIREMENT FOR CUSTOMER INTERFACE BOLTING:



The above illustration shows how to isolate 360-Vision technology camera units from its mounting structure. A HMA version of camera mount is shown here, the same principle applies with PMA and direct mount versions.

Bolt torque setting is 5Nm +/-0.5Nm

Important: Failure to adhere to the fixing specifications will invalidate the paint warranty for coastal paint treatment.

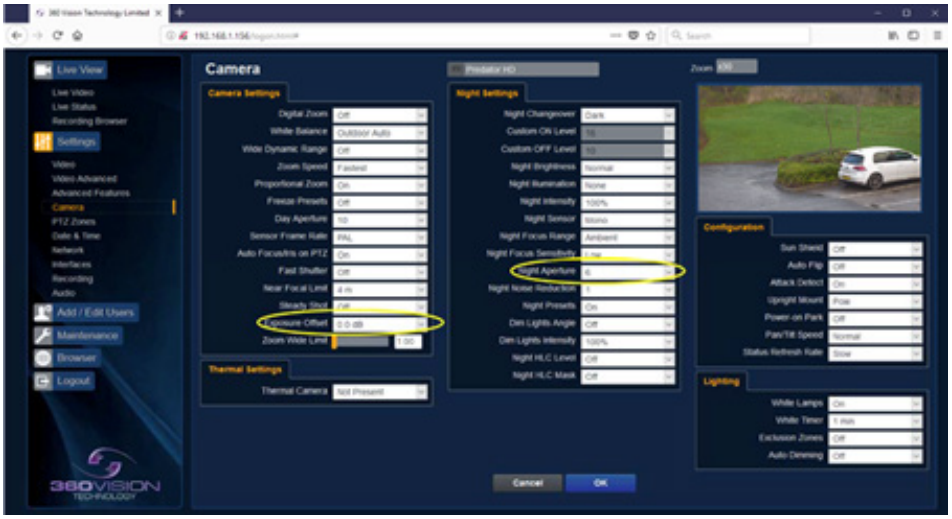
Please contact Technical Support for any Product issues or Troubleshooting during or after installation: email: techsupport@360visiontechnology.com or phone: 01928 246104

For anything else please contact sales: salesadmin@360visiontechnology.com or phone: 01928 570000

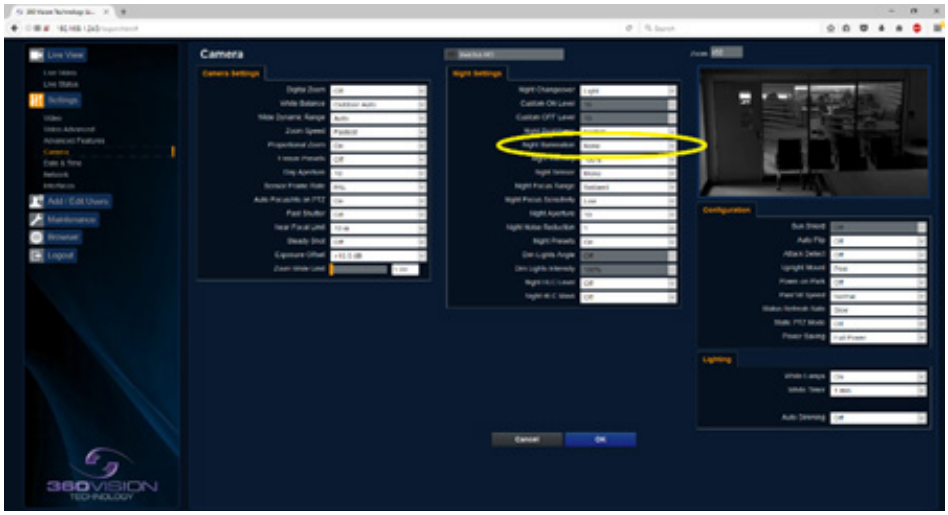
- Default IP for all products – 192.168.1.187
- Discovery and Configuration dedicated Stand Alone Apps are available by scanning this QR Code

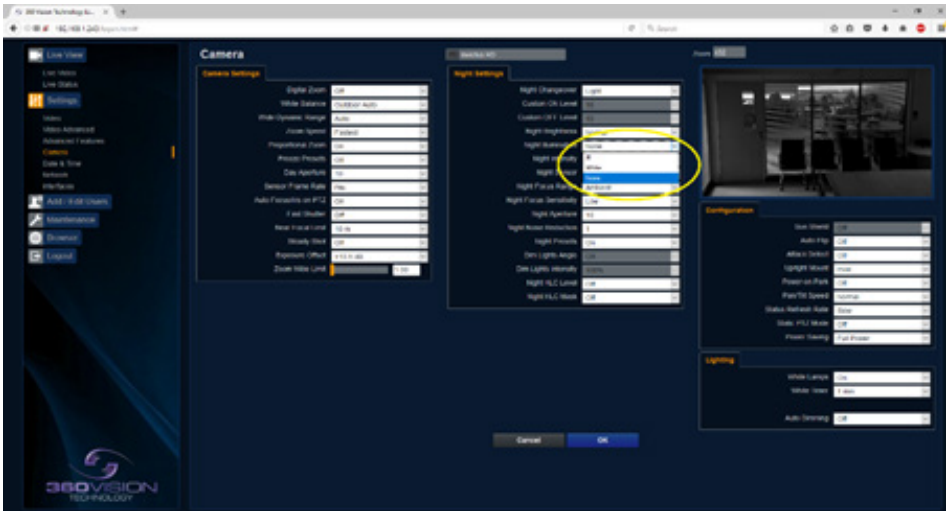
- Browser Connection possible via Safari, Firefox, MS Edge and IE – 1 second video update is standard via browsers – For real time video on setup, please use dedicated stand-alone apps

- Default INVICTUS settings set to ‘enhanced low light’ with Aperture set to 10 and Exposure Offset set to +10dB.
- If images are too bright (in well-lit scenes) reduce the Exposure Offset to suit



- Please Note Default ‘Night Illumination’ is set to ‘None’ if you require the IR Lamps to come on when the camera switches to mono this setting will need to be changed to ‘IR’





- All version cameras are set by default to ‘Digital’ Output Mode (25FPS(PAL)). This provides both HD/IP Video streaming and Analogue Video Output (plus IP ONVIF/SDK control and RS-485 twisted pair telemetry control options).
- To enable PAL Analogue Video Output (50 images per second) set the Output Mode to ‘Analogue’ (50FPS(PAL)). This setting is on the Video page

2 Photo-Biological Safety

Lighting options

- IR, IRWL
- The lighting options listed above fulfill the requirements for photo-biological safety according to IEC/EN 62471 (Risk Group 1)
- Avoid prolonged eye exposure, do not stare at operating lamp

Lighting option

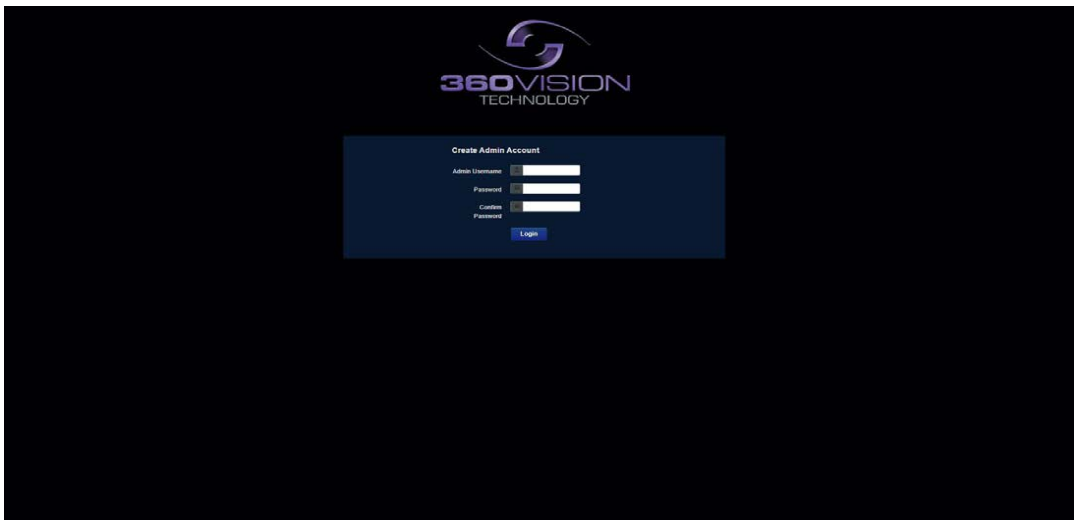
- SIR200
- The lighting options listed above fulfil the requirements for photo-biological safety according to IEC/EN 62471 (Risk Group 2).
- Avoid prolonged eye exposure, do not stare at operating lamp

Storage

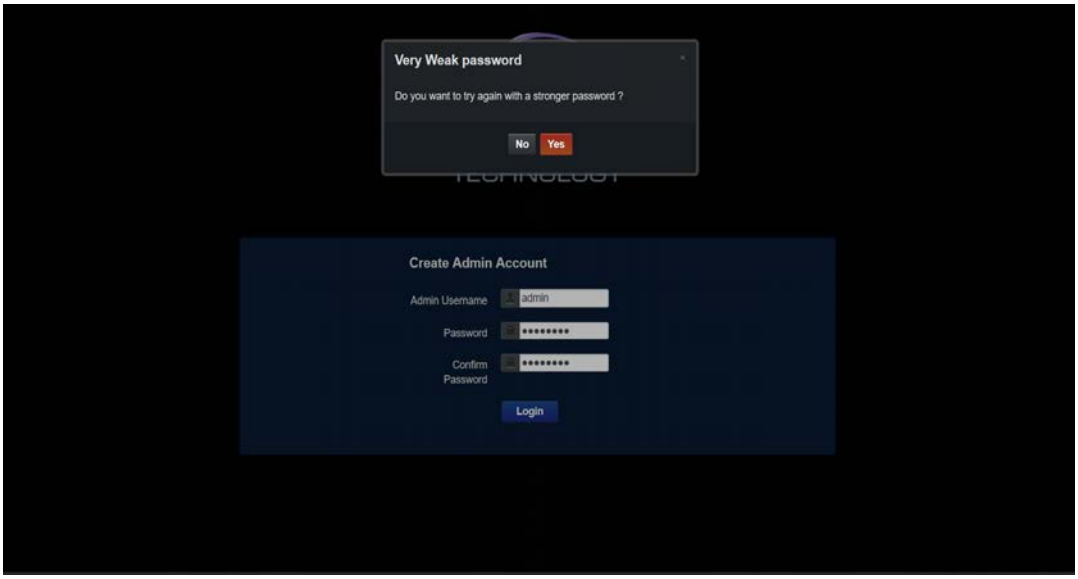
- Failure to adhere to storage conditions or leaving the product without power for extended periods in external conditions will result in condensation within the illumination housing. This is due to trapped air contained within the IP6x sealed unit which naturally dissipates once powered from an approved 360VTL Power Supply Unit (PSU).

3 Quick Start Guide Secure By Default

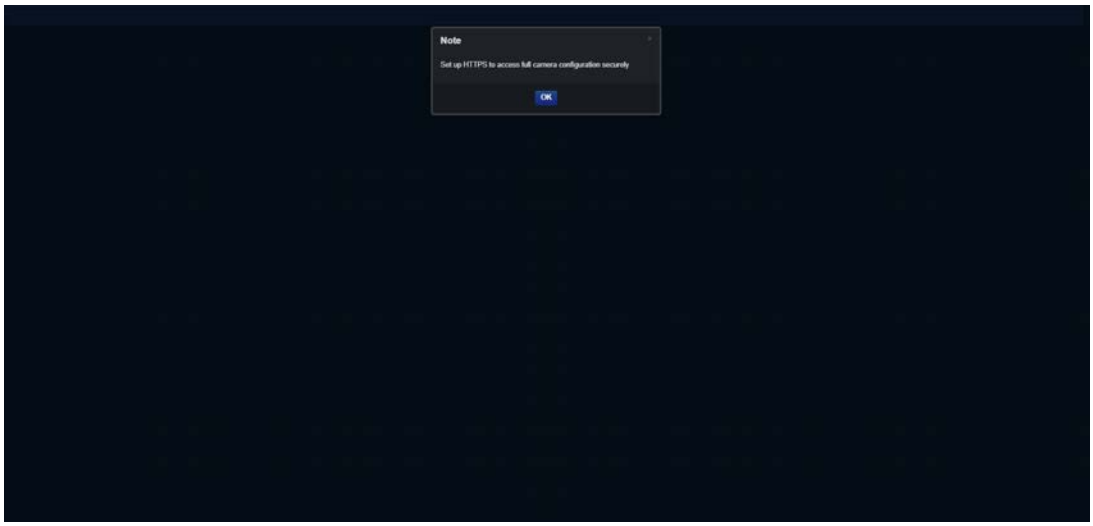
Browse to the default web page 192.168.1.187 using a web browser with a cleared cache, then enter a username and an 8-digit password then repeat the password, click login:-



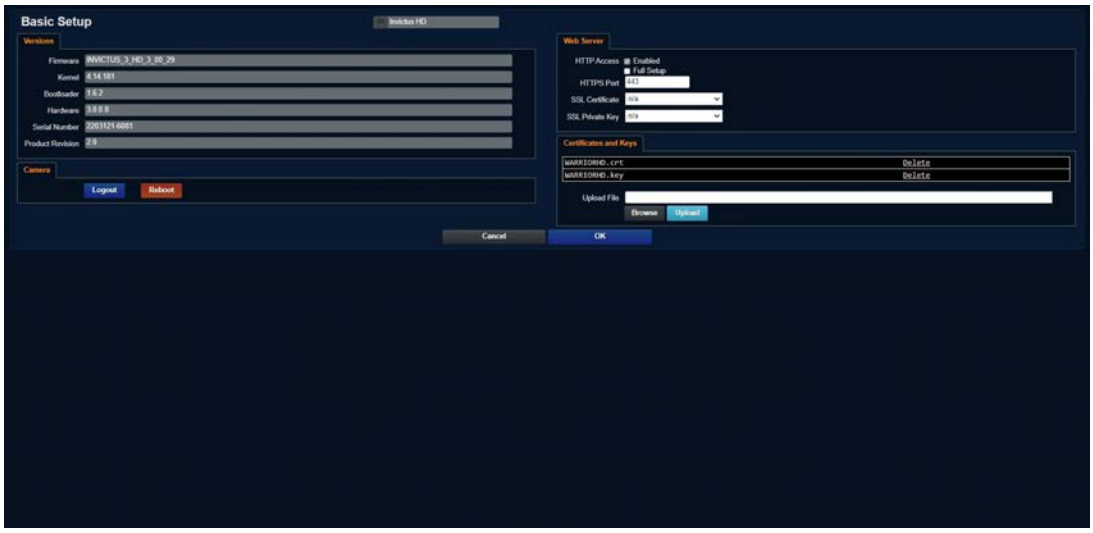
A very weak password option will then give the option to proceed by selecting ‘NO’ or ‘YES’ to change it:-



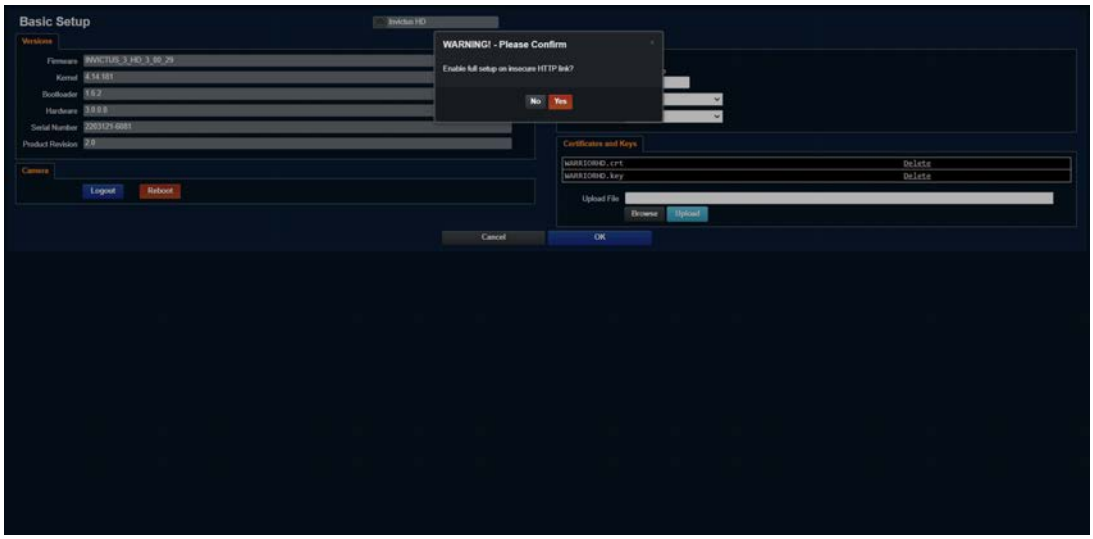
Select ‘OK’ on this screen to access the full camera configuration:-



On the ‘Basic Setup’ screen put a tick in the ‘Full Setup’ box and click ok:-

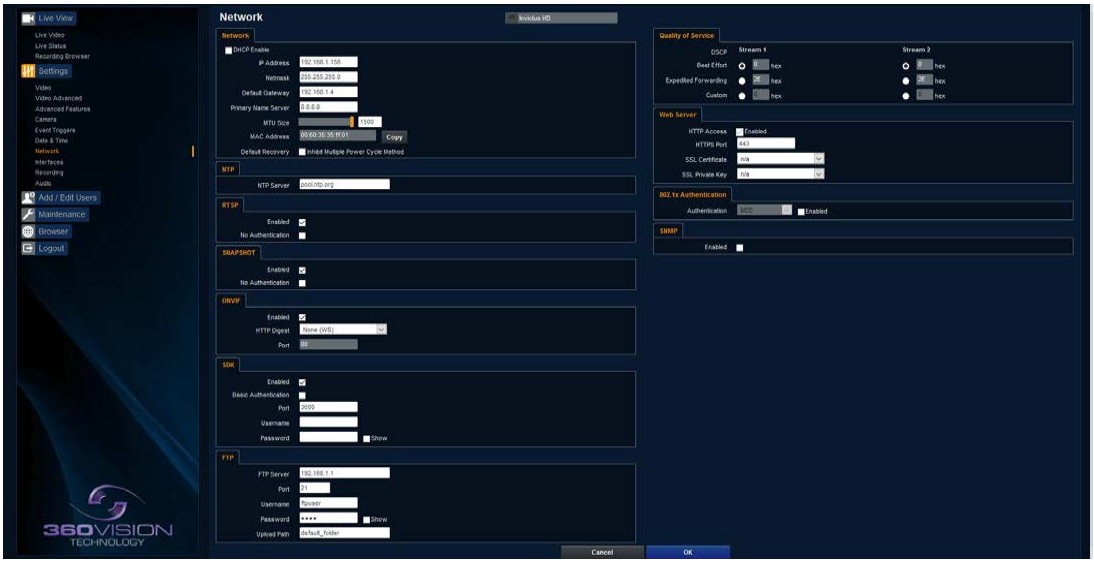


Then select ‘Yes’ to enable the full setup:-



A full camera browser page will then load with all the tab options to the left, no live video will be displayed until the next step.

By selecting the ‘Network’ option this screen will give all the options for selecting how the camera is to be used by putting a tick in the relevant boxes then select ‘OK’.



RTSP Enabled = To display the RTSP stream (No Authentication)
No Authentication = Removes the Authentication on RTSP streams.
SnapShot Enabled = Enables the option to use SnapShot.
No Authentication = Removes the Authentication on SnapShot.
ONVIF Enabled = Enables ONVIF Stream.
SDK Enabled = Enables 360 SDK options.

WARNING: FAILURE TO REMEMBER THE CORRECT PASSWORD WILL RESULT IN THE UNIT BEING RETURNED TO 360 VISION TECHNOLOGY TO BE RESET, INCURRING A COST.

4 Safety and Precautions

1. Please read these notes before attempting to operate the 360 Vision Invictus, and keep for future reference.

2. DO NOT disassemble or remove covers. This will break the water seals and invalidate the warranty.

3. All servicing and repairs must be handled by 360 Vision Technology.

4. Avoid pointing the camera directly towards a bright light source (sunlight), or expose the camera to intensive light situations as this may damage the camera pick-up device.

5. Installation should be carried out by suitably qualified personnel, in accordance with local codes of practice and regulations.

6. 360 Vision Technology Limited accept no liability for any damage caused by incorrect or improper installation.

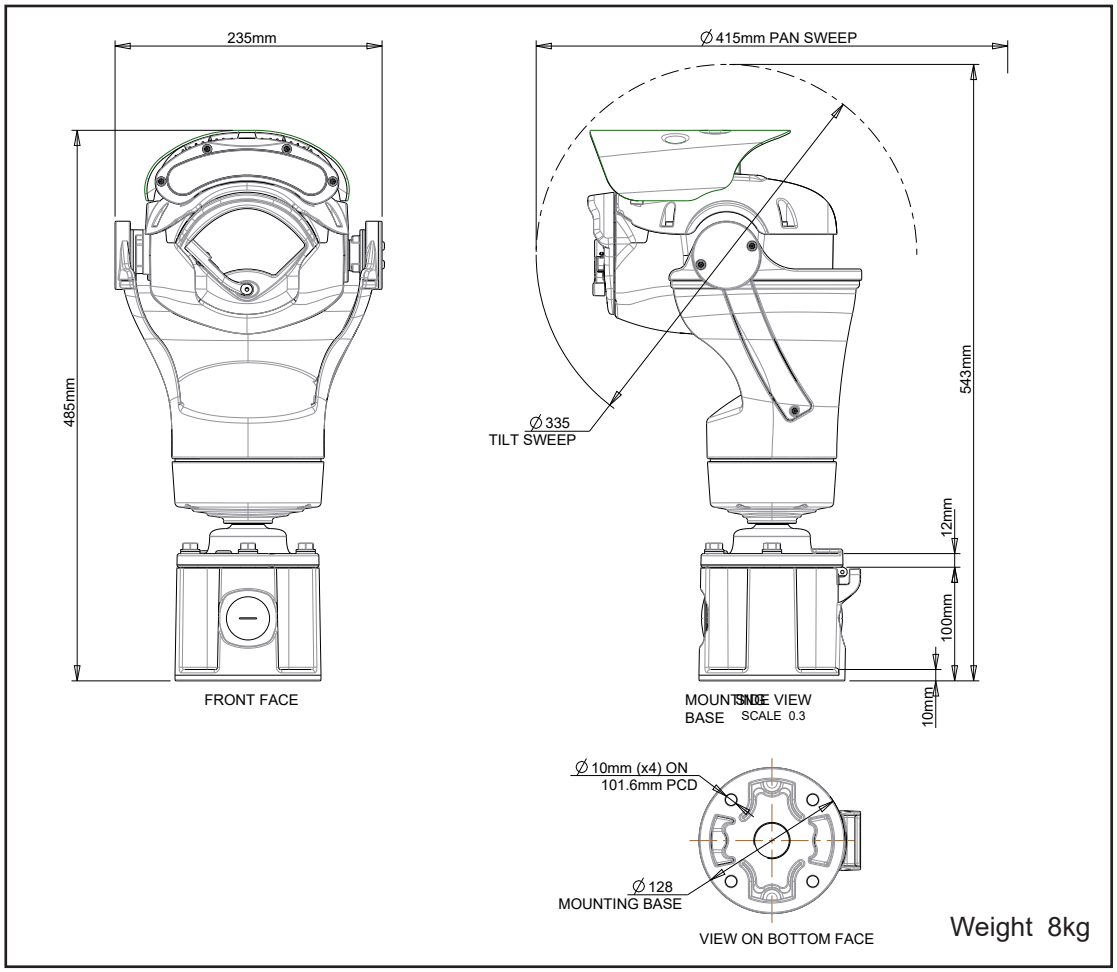
7. To prevent risk of injury caused by the Invictus or mounting options becoming detached, fit a suitable safety chain or lanyard.

8. Use only 360 Vision Invictus power supplies. These have suitable terminals for all the wires in the Invictus composite cable.

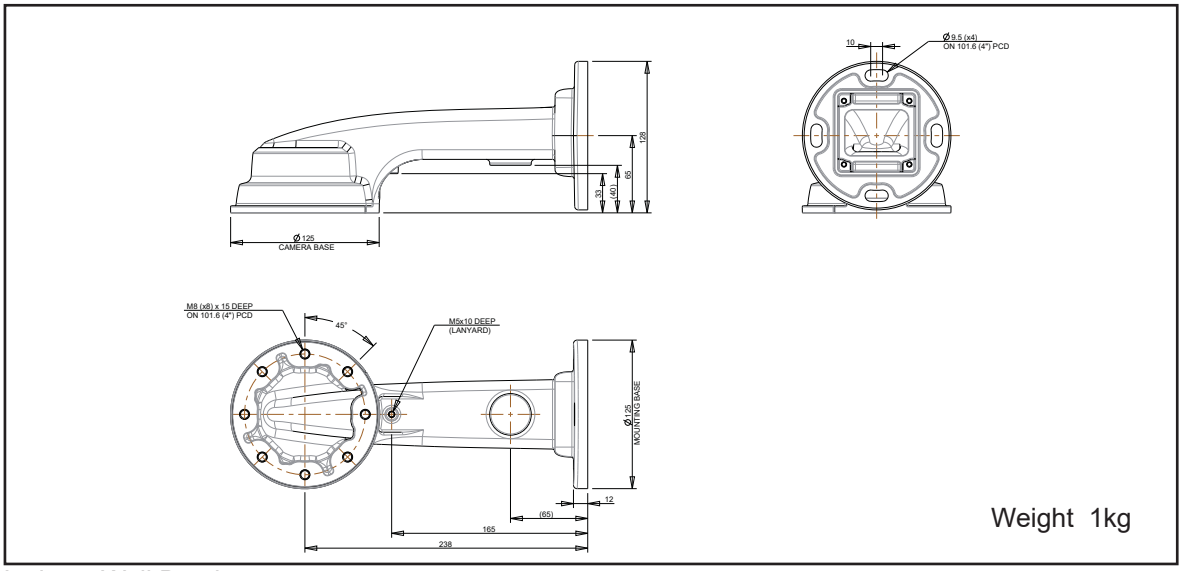
9. Please handle the Invictus with care, as improper handling may cause damage within this unit.

5 Housing Dimensional Drawing

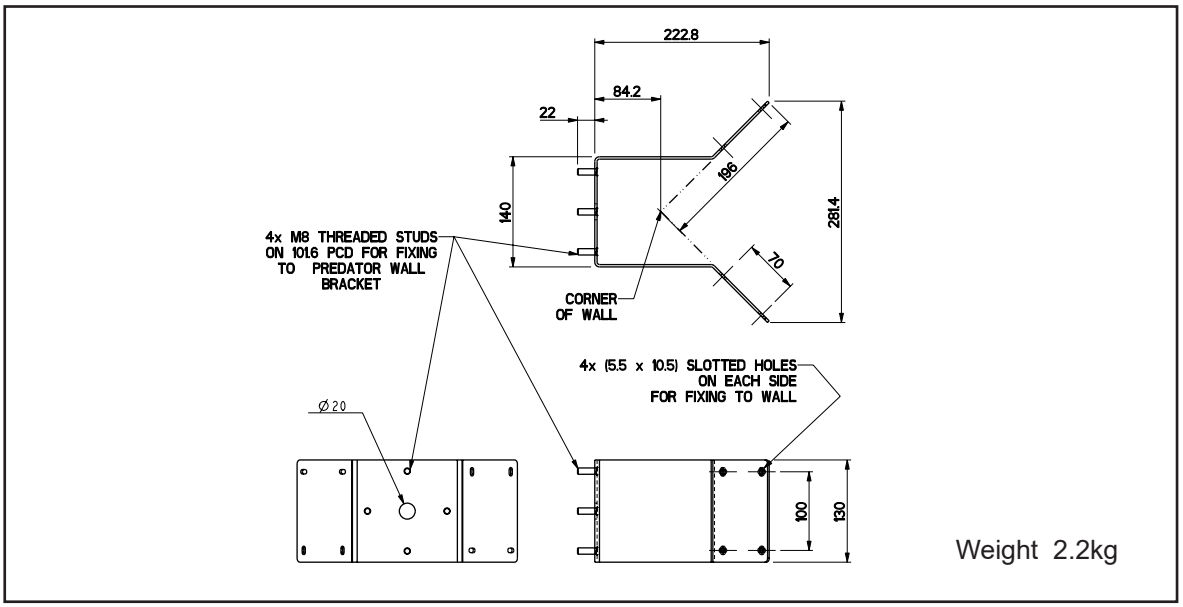
Invictus HMA with LED Array c/w Sun-shield fitted



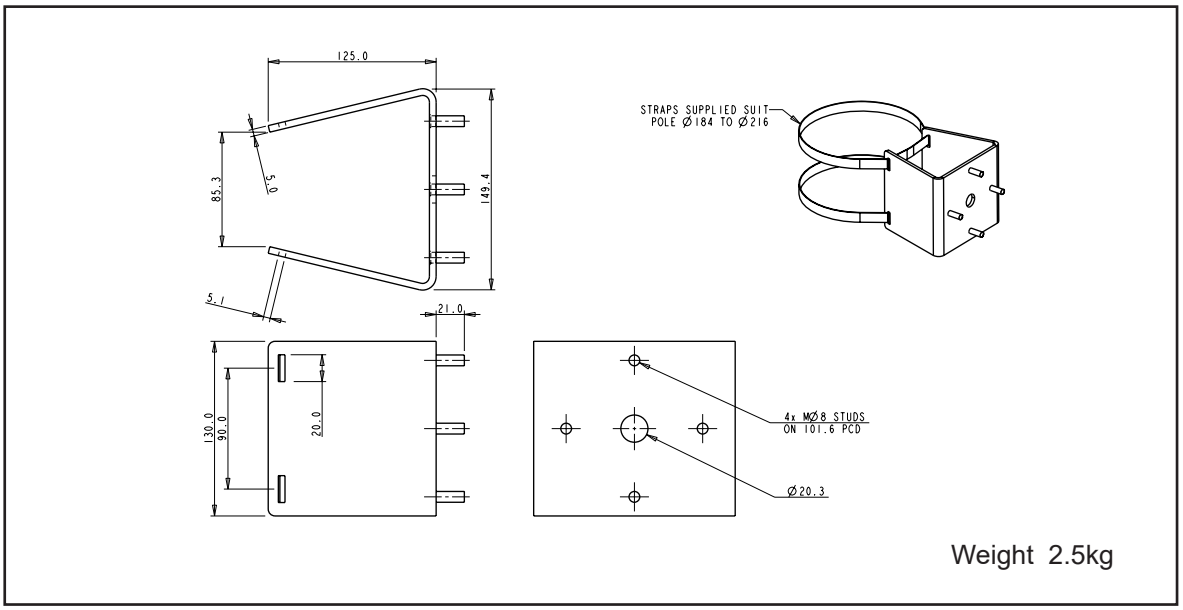
6 Bracket Dimensional Drawing



Invictus Wall Bracket



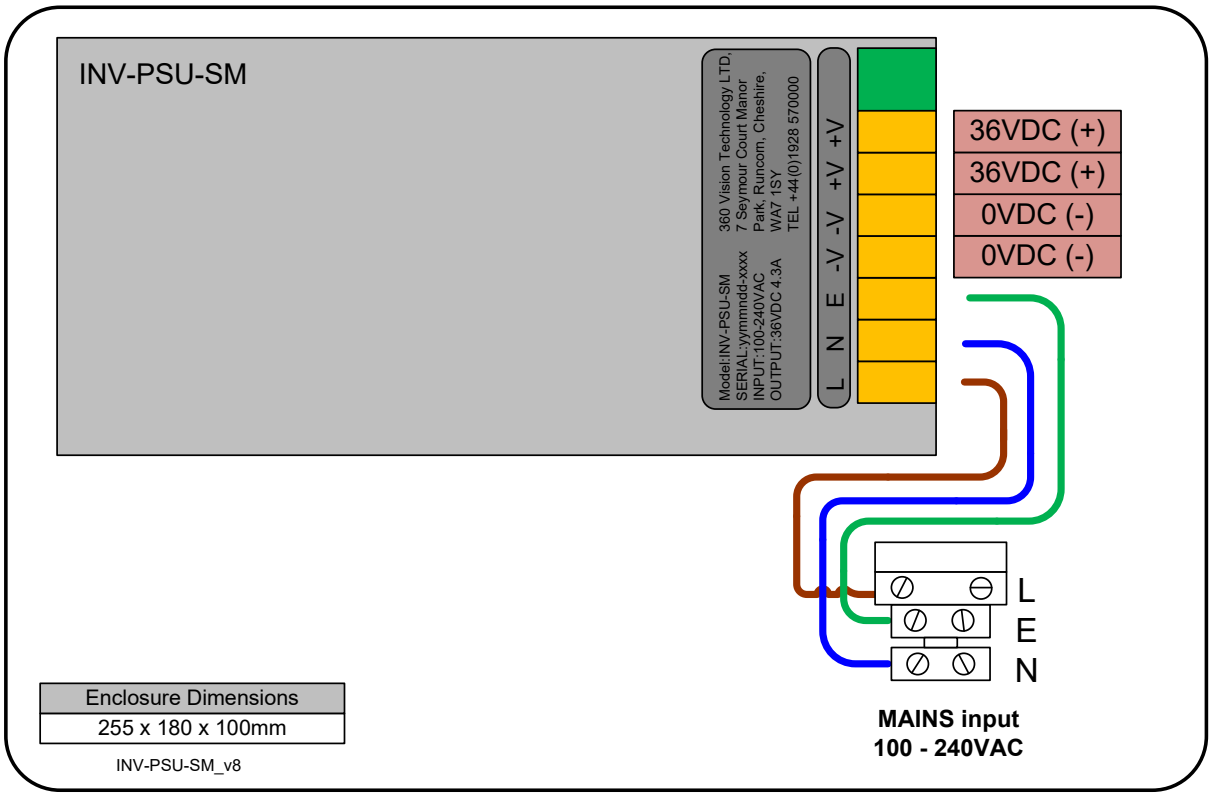
Invictus Corner Bracket



Invictus PMB Bracket

7 Connections

INV-PSU-SM Safety and Installation Sheet



MAINS FUSE

MAINS FUSE = 2AT

This PSU is compatible with the following products: INVICTUS

SAFETY: Isolate mains supply while installing.

FIXING: Securely fix the PSU with suitable fixings.

GLANDS: Face downwards, unused glands must be sealed.

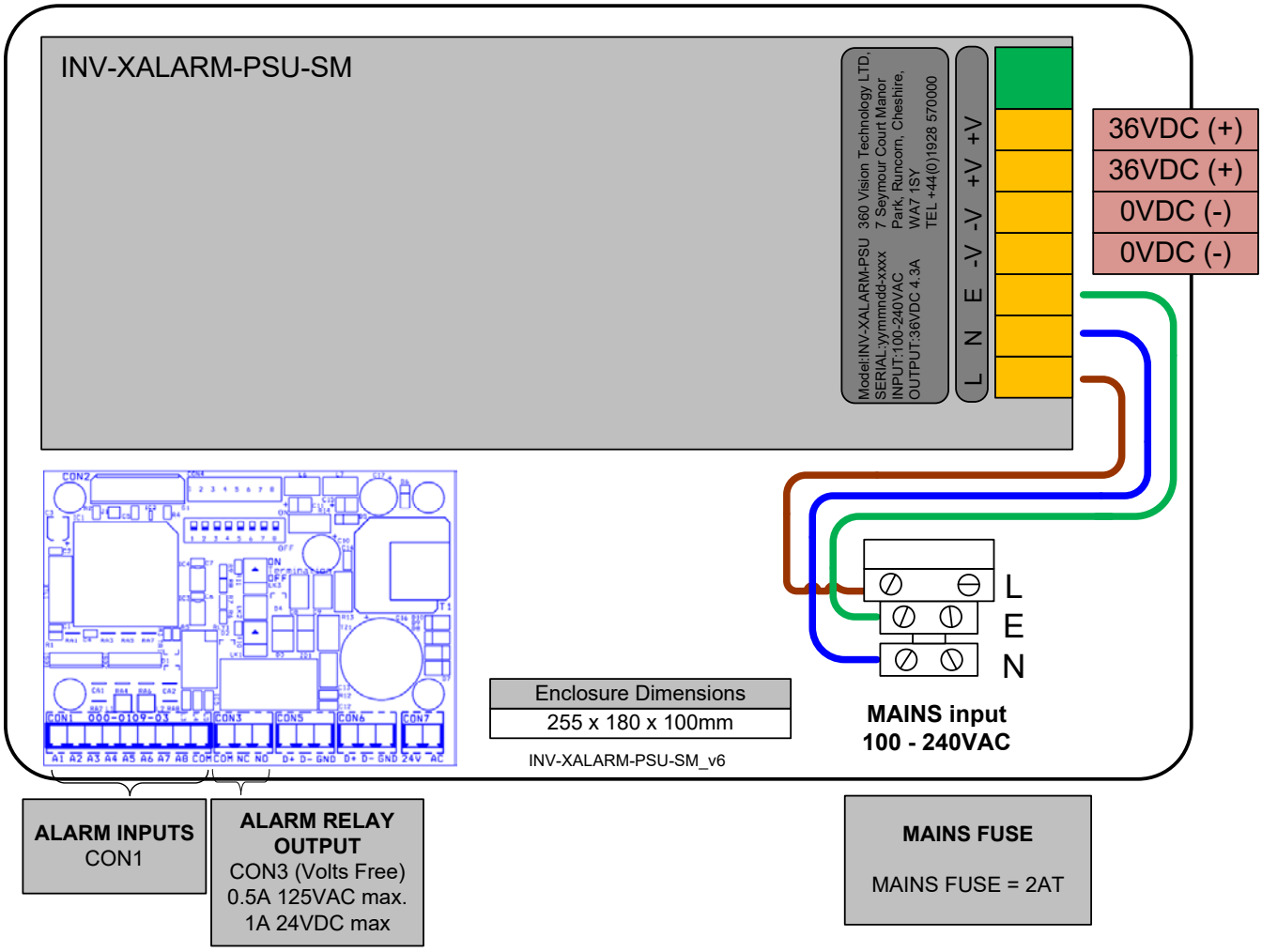
ELECTRICAL CONNECTIONS: Connecting the mains power.

MAINS INPUT 100-240VAC
L=LIVE (BROWN) 100-240VAC 50/60Hz
E=EARTH (GREEN/YELLOW)
N=NEUTRAL (BLUE)

SAFETY: ENSURE MAINS INPUT AND EARTH CONNECTIONS ARE SECURELY CONNECTED AND STRAIN RELIEVED.

FUSE PROTECTION: Mains input fuse 2AT Breaking Capacity Current 1500V @ AC 250V.

INV-XALARM-PSU-SM Safety and Installation Sheet



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FUSE PROTECTION: Mains input fuse 2AT Breaking Capacity Current 1500V @ AC 250V.

The INV-XALARM-PSU has eight normally open/normally closed (Dilswitch S1, switch 8 on) alarm inputs on connector CON1 on the alarm PCB. When using normally closed contacts, all un-used alarm inputs must be connected to alarm in common CON1. Connect switches or volts free relay outputs from PIRs or other equipment to CON1 connector so that the terminal labelled COM is connected to the appropriate alarm input (A1 to A8) when the alarm contact is activated. There is also an alarm relay which can be used to activate alarms on other equipment (DVRs etc..). The alarm relay contacts (Common – 'C', Normally Open – 'NO' and Normally Closed – 'NC') use connector CON3 on the alarm PCB.

When an alarm is activated, the ALARM PCB will activate the alarm relay output and will send commands to set the Invictus to activate 'alarm mode'. The Invictus will save the current status (pan, tilt, lens, tour and mimic) then it will seek the preset which corresponds with the active alarm number.

Alarm Number	Preset Number
1	1
2	2
3	3
4	4

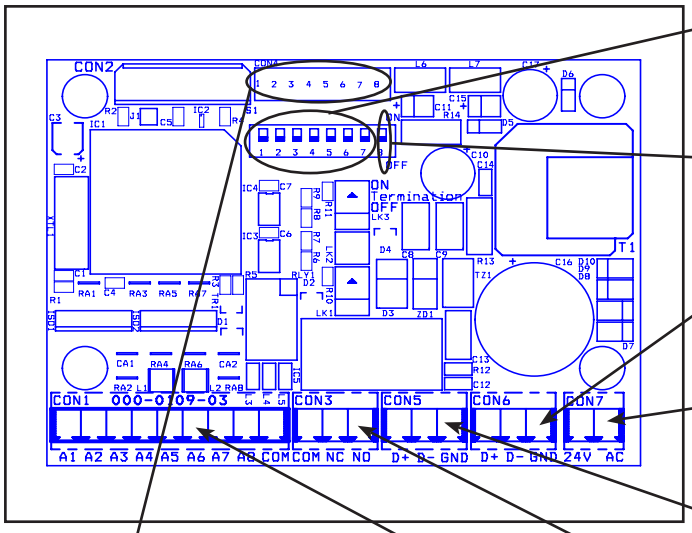
Alarm Number	Preset Number
5	5
6	6
7	7
8	8

The alarm will remain active while the alarm input is active. After the alarm input becomes inactive, a 10 second alarm timer will start. The timer extends the alarm activity until the alarm timer expires. If the alarm input becomes active again before the timer has expired, the timer resets and will restart again when the alarm input becomes inactive and a further preset seek command is sent to the Invictus.

If an alarm is active and a further alarm becomes active, the latest alarm will interrupt the previous alarm. (i.e. the latest alarm has highest priority) The Invictus will seek the preset that corresponds with the new alarm. When the contacts become inactive, the Invictus will seek the preset that corresponds with the previous highest priority alarm that is still active. When all alarms inputs are inactive the alarm timer starts. After the timer expires, the Alarm PCB sends a command to the Invictus to end the 'alarm mode' and the Invictus will return to the status position and action that had been saved when first alarm became active. (Fit a link on the alarm card CON4 position 7 to disable the automatic return to the pre-alarm status when all alarms and the alarm time have expired).

When an alarm is active and the Invictus has automatically selected the appropriate preset, it is possible to send further commands (i.e. manual control) to the Invictus which will override the preset which had previously been automatically selected. Each time an automatic preset seek occurs as described in the previous paragraph; the manual control will be interrupted.

7.1 Standalone Alarmcard Setup



Address (1-7) (Range 1 to 128)
Use Dilswitch to set address same as camera.
(page 15).

Alarm Input setting
Use Dilswitch pole 8 to set if alarms are N/O or N/C. All unused N/C contacts to be connected to alarm common.
(see page 15).

RS485 In Connections/LK3 termination
Connect RS485 from controller to CON6.

Power Connections
Connect 30vdc to CON7.

RS485 Out Connections/LK1 termination
Connect RS485 to camera to CON5.

Relay Output
Use CON3 for relay output.

Alarm Inputs
Use CON1 for volt free alarm inputs.

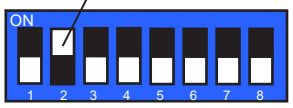
Protocol/Alarm settings
Use CON4 to set protocol and camera alarm behaviour. *(see page 16).*

Dil Switch Settings	1-7
Address 1 to 128 range	See below

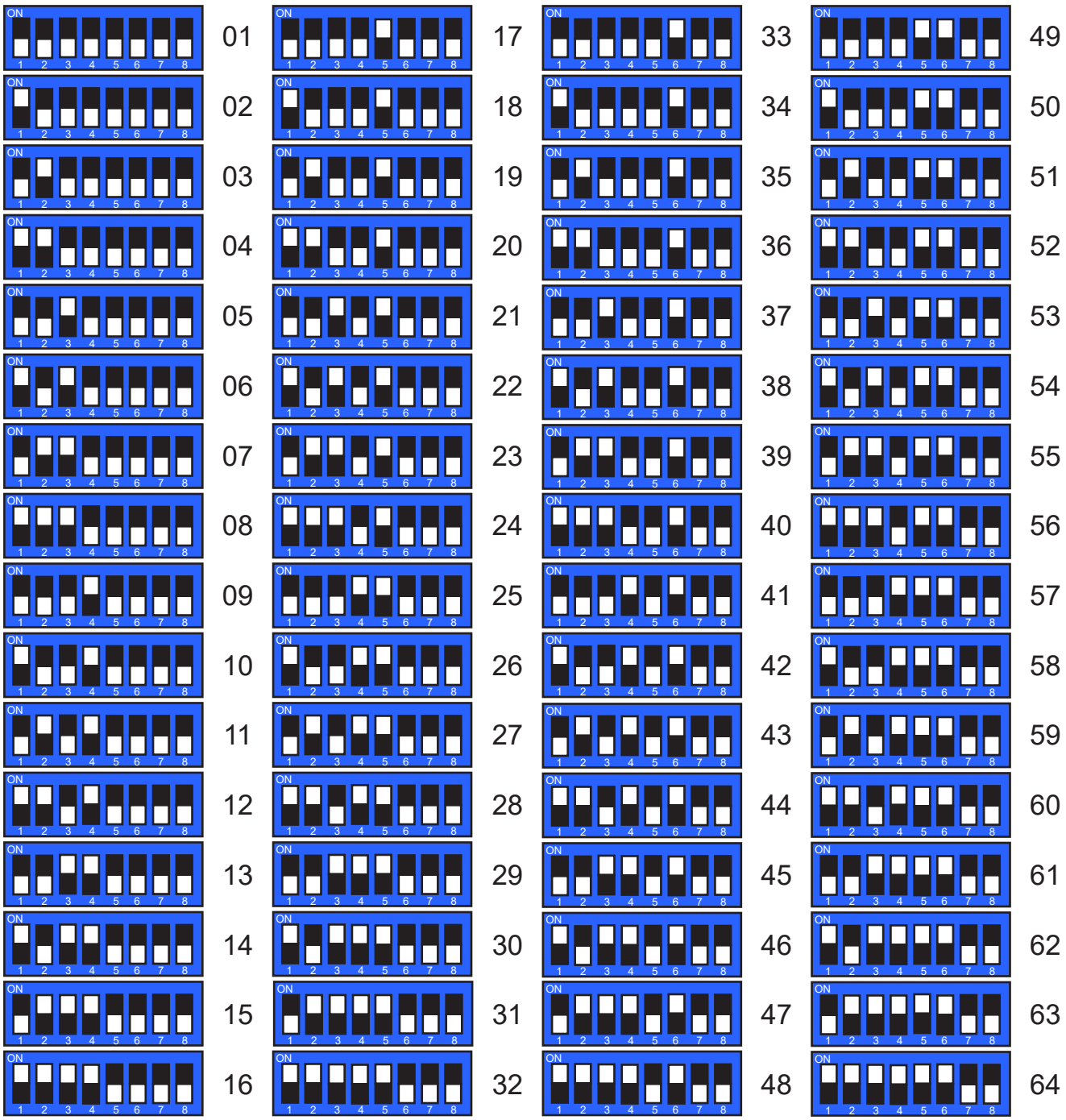
Dil Switch Settings	8
Normally Open Contacts	Off
Normally Closed Contacts (un-used inputs must be connected to common)	On

RS485 Address Settings

Switch is shown as white.

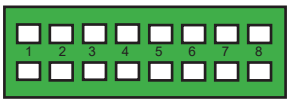


Example shows switch settings for camera address 3



CON4 Settings

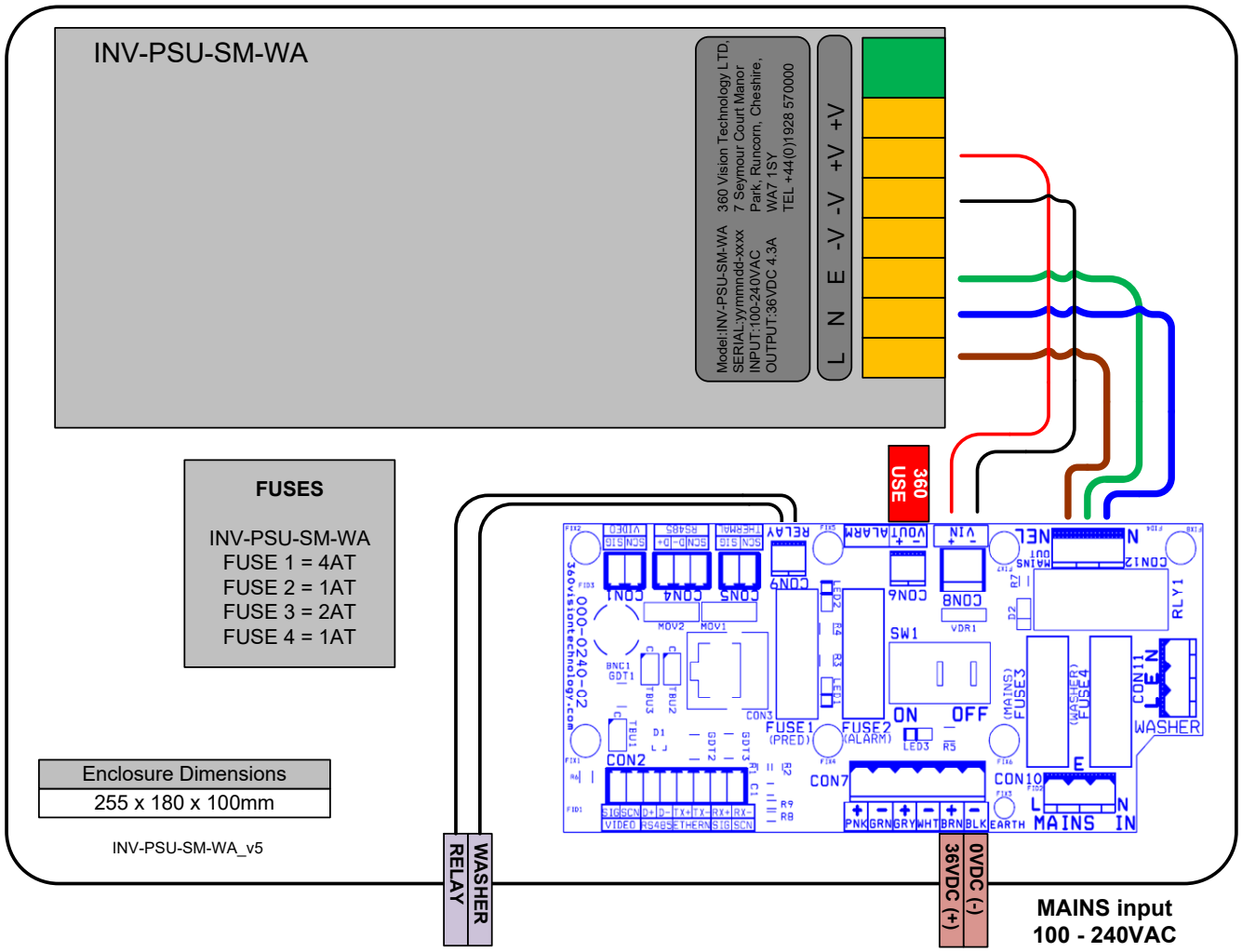
CON4



Protocol Settings	3	4	5	6
360 Vision	Off	Off	Off	Off
Pelco D 9600 baud	On	Off	Off	Off
Pelco D 4800 baud	Off	On	Off	Off
Pelco D 2400 baud	On	On	Off	Off
Pelco P 9600 baud	Off	Off	On	Off
Pelco P 4800 baud	On	Off	On	Off
Pelco P 2400 baud	Off	On	On	Off

Alarm Settings	7	8
Normal Operation	Off	Off
No Pre-alarm, No White Light	On	Off
Forced White Light	Off	On
No Pre-alarm, White Light Timer	On	On

INV-PSU-SM-WA Safety and Installation Sheet



This PSU is compatible with the following products: INVICTUS

SAFETY: Isolate mains supply while installing.

FIXING: Securely fix the PSU with suitable fixings.

GLANDS: Face downwards, unused glands must be sealed.

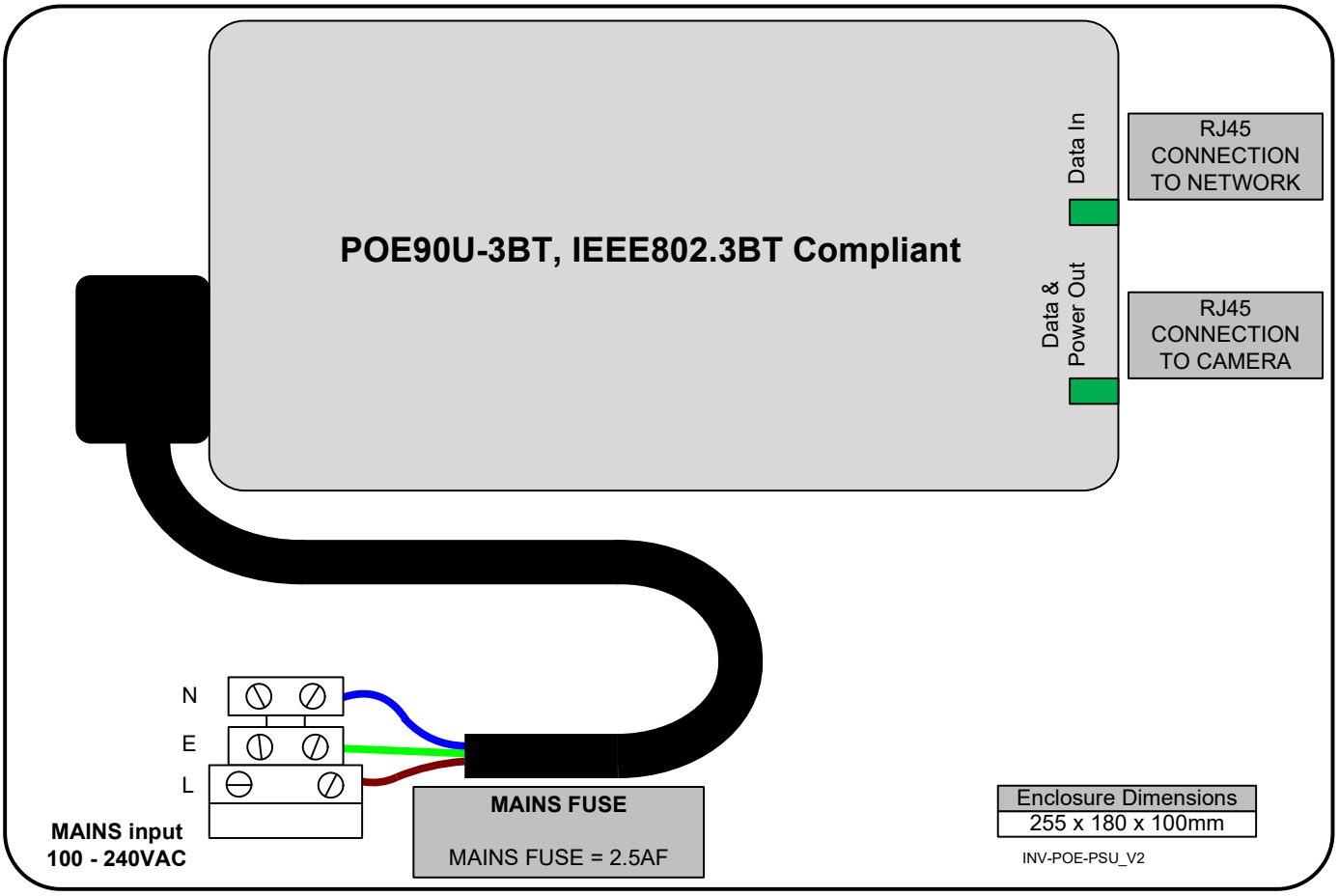
ELECTRICAL CONNECTIONS: Connecting the mains power.

MAINS INPUT 100-240VAC
L=LIVE (BROWN) 100-240VAC 50/60Hz
E=EARTH (GREEN/YELLOW)
N=NEUTRAL (BLUE)

SAFETY: ENSURE MAINS INPUT AND EARTH CONNECTIONS ARE SECURELY CONNECTED AND STRAIN RELIEVED.

FUSE PROTECTION: Mains input fuse 2AT Breaking Capacity Current 1500V @ AC 250V.

INV-POE-PSU Safety and Installation Sheet



This PSU is compatible with the following products: POE HD/IP INVICTUS

SAFETY: Isolate mains supply while installing.

FIXING: Securely fix the PSU with suitable fixings.

GLANDS: Face downwards, unused glands must be sealed.

ELECTRICAL CONNECTIONS: Connecting the mains power.

MAINS INPUT 100-240VAC
L=LIVE (BROWN) 100-240VAC 50/60Hz
E=EARTH (GREEN/YELLOW)
N=NEUTRAL (BLUE)

SAFETY: ENSURE MAINS INPUT AND EARTH CONNECTIONS ARE SECURELY CONNECTED AND STRAIN RELIEVED.

FUSE PROTECTION: Mains input fuse 2.5AF Breaking Capacity Current 1500V @ AC 250V.

360Vision Technology, 7 Seymour Court Manor Park, Runcorn, Cheshire, WA7 1SY, Tel +44 (0)1928 570000.
www.360visiontechnology.com

8 Invictus Washer/Nozzle Bracket

Nozzle bracket.
The Invictus washer bracket kit includes the bracket, nozzle M8 plain metal washer, M8 lock washer and four cable ties.

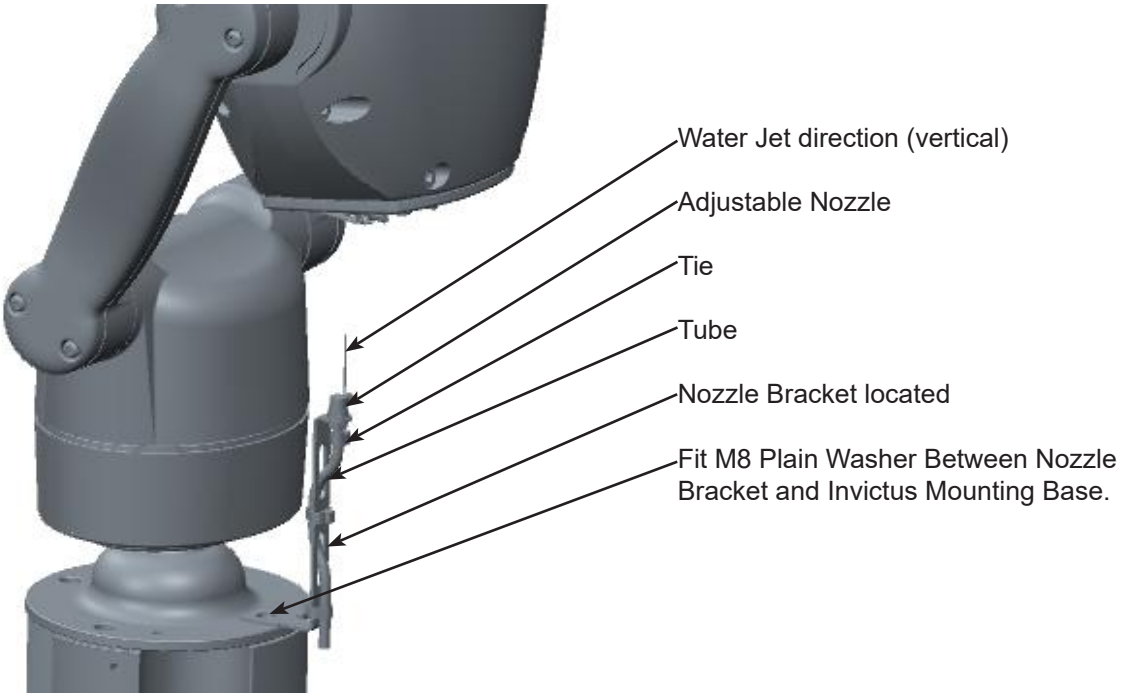
Nozzle Adjustment
The nozzle is set to produce a vertical water jet. The direction of the jet can be adjusted by rotating the nozzle body in the bracket, or by using the screw-driver slot.

Fixing Bracket to Invictus
Choose one of the four M8 Invictus fixing bolt positions to be used to mount the nozzle bracket so that it does not obscure an important view. E.g. directly above the horizontal bar of a wall bracket would be suitable.

Fit an M8 flat metal washer between the Invictus base and the nozzle bracket so that the base of the bracket is not crooked. Fit an M8 lock washer under the head of the bolt to reduce the risk of the bolt becoming loose and the bracket moving. Ensure that the curved end of the bracket fixing plate is directed towards the Invictus pan shaft so that the vertical part of the bracket is the maximum distance from the rotating body.

Tube Connection
Suitable tube (not supplied) for connection to the nozzle is PVC with internal diameter 3mm and outside diameter 6mm PVC.
The end of the tube is pushed over the ridged tube at the rear of the nozzle. Fit a cable tie around the joint between the PVC tube and the rear of the nozzle to ensure that the tube can not become detached.

The PVC tube should weave through the two slots in the bracket to provide strain relief. Cable ties can be used to secure the tube so that it is clear of the Invictus's rotating body. Take care that the cable ties do not cause excessive restriction of the tube.



9 Connections to Invictus with HMA

When the HMA (Hinged Mount Adaptor) is fitted to the Invictus , the 'Invictus Composite Cable' is not used. Connections between the power supply and Invictus use conventional cables as detailed below.

30Vdc Power connections between Invictus PSU and Invictus that is fitted with HMA

Cable Size	No IR	IR (SIR110)	IRWL (SIR140WL)
0.75mm²	85m	32m	32m
1.00mm²	113m	43m	43m
1.25mm²	141m	54m	54m
1.50mm²	170m	65m	65m
2.50mm²	283m	108m	108m
3.00mm²	340m	130m	130m
4.00mm²	450m	173m	173m

Camera power draw table.

	IR (SIR110)	IRWL (SIR140WL)
Full Power Idle (No Lamps)	17W	17W
Low Power Idle (No Lamps)	12W	12W
Idle (White Lamps)	N/A	29W
Idle (IR Lamps)	38W	38W
Voltage at PSU	36VDC	36VDC

Ethernet connections between Invictus PSU and Invictus that is fitted with HMA.

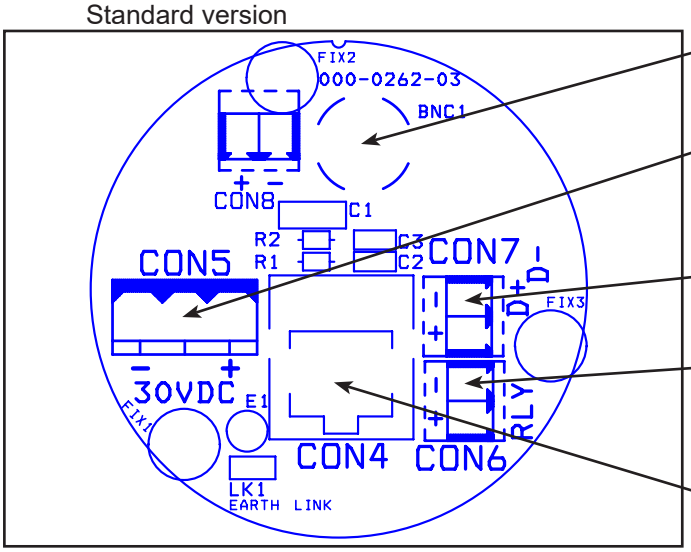
The Ethernet connection uses standard CAT5, CAT5e or CAT6 cables fitted with RJ45 connectors.

RJ45	CAT5, CAT5e, CAT6 Cable	Signal
Pin 1	White with Orange Band	Tx+
Pin 2	Orange	Tx-
Pin 3	White with Green Band	Rx+
Pin 4	Blue	
Pin 5	White with Blue Band	
Pin 6	Green	Rx-
Pin 7	White with Brown Band	
Pin 8	Brown	

Gain access to connectors in the HMA

- Ensure that the fixed part of the HMA is securely bolted to the top of the pole.
- The hinged part of the HMA (Hinged Mount Adapter) is fastened to the fixed part using three M8x30 long hex head bolts. Use a spanner (13mm) to remove the three bolts. Each bolt is fitted with a plain metal washer and a plastic washer (which prevents the paint on the hinged part from being damaged unnecessarily).
- Open the hinge taking care that the gasket is not damaged and support the weight of the Invictus. Take care when leaning the camera over, do not allow it to open unassisted. Gently open the HMA until the camera is resting on the hinge stop. The connection circuit board (PCB-000-0262-xx or PCB-000-0225-xx) can now be seen.

Standard version



Analogue Camera output (If fitted).
Use BNC for analogue video output.

Power Connections
Connect 22 - 36VDC to CON5.
Note: No longer supports AC power.

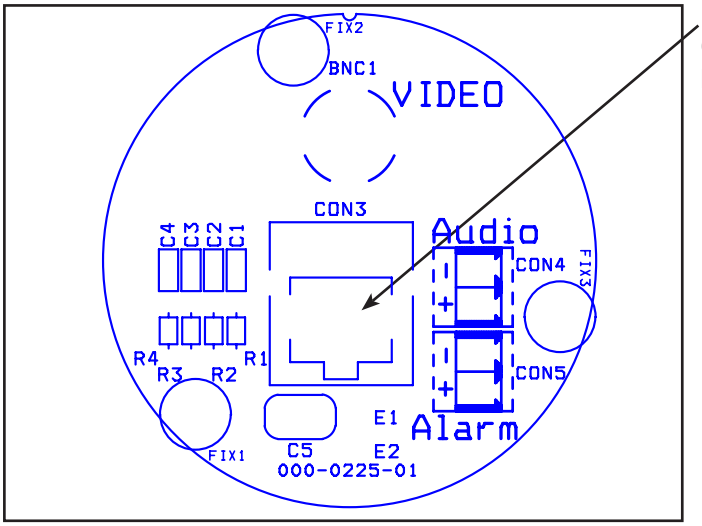
RS485 Connection (If fitted).
Use CON7 to connect the RS485 twisted pair data.

Washer Connection.
Use CON6 to connect washer signal to Invictus washer PSU (PCB-000-0240-xx) CON 9

Ethernet Connections
Connect Ethernet cable to HD HMA Invictus connection board using a RJ45 connector (CON4).

Please make sure there is adequate spare cable (20cm) for when the camera is resting on the lanyard, failure to do this could damage the connector circuit board.

POE version



Ethernet Connection
Connect Ethernet cable to HD HMA Invictus connection board using a RJ45 connector (CON3).

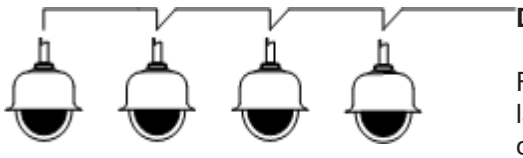
Please make sure there is adequate spare cable (20cm) for when the camera is resting on the lanyard, failure to do this could damage the connector circuit board.

Camera must be adequately sealed from any water ingress, using appropriate IP rated cable glands.

Invictus
Analogue
Installation/Configuration Section

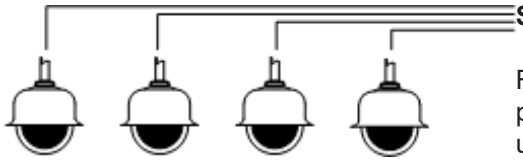
10 Basic Twisted Pair/RS485 Data Wiring

The Invictus is capable of being controlled by Twisted Pair Telemetry (RS485). Below are wiring configurations for two wiring formats used for Twisted Pair Telemetry (RS485). The Invictus camera ***cannot*** be wired in a Daisy Chain configuration as the RS485/twisted pair circuit is terminated/end of line.



Daisy Chain **(Cannot be used with the 360 Invictus)**

RS485 twisted pair cable is wired to each camera in a “chain”. Only the last camera is to have the RS485 (end of line) termination on, all other cameras in the chain must have the RS485 termination off.



Star Wired

RS485 twisted pair cable is wired to each camera in a “star” from one point. A suitable RS485 star driver/data distribution product must be used. All cameras in this wiring configuration must have the RS485 (end of line) termination on.

11 Invictus Protocol/Address setup.

All Invictus cameras are supplied set to 360 Vision protocol, camera twisted pair address 1. When the Invictus is switched on, an OSD (On Screen Display) is shown on the image from the camera for approx 20 seconds.

PRO:360VTL CAM:0001
Invictus Software Version

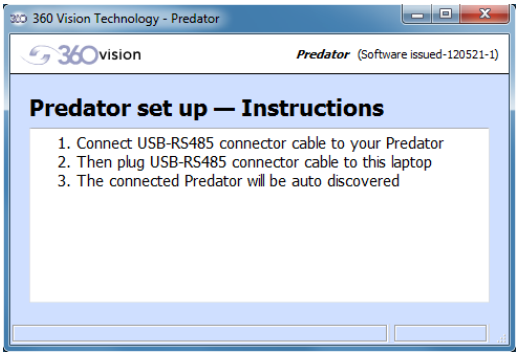
Analogue

PRO: Protocol being used for telemetry (e.g. 360 Vision Technology Ltd)
CAM: Camera RS485 ID (e.g. Cam 1)
Second Line: Shows the Invictus Software Version loaded into the camera.
Third Line: Shows current mode.

To change the above settings in the camera, 360 Invictus utility software, a USB/RS485 cable (PRED-USB-485) and a laptop are required.

The Predator utility and PRED-USB-485 cable drivers can be found via 360 Vision Technology technical support or QR code found here.

Install the software (Predator-issued-120521-1-installer.exe) on the laptop being used. Connect the RS485 end of the cable fitted with a 3 way connector to the Invictus RS485. Run the utility on the laptop and then connect the USB end of the cable into the laptop. The utility will then search for new comms ports and then will look for the camera across all baud rates used.



Settings that can be altered from this software are:

- Protocol: 360 Vision, Bosch. Forward Vision. Pelco D 2400/4800/9600. Pelco P 2400/4800/9600,
- Coax Cable length: Longer than 300m or shorter than 300m.
- RS485 Address: Used on RS485 systems only.

PRODUCT NO LONGER SUPPORTS COAX TELEMETRY

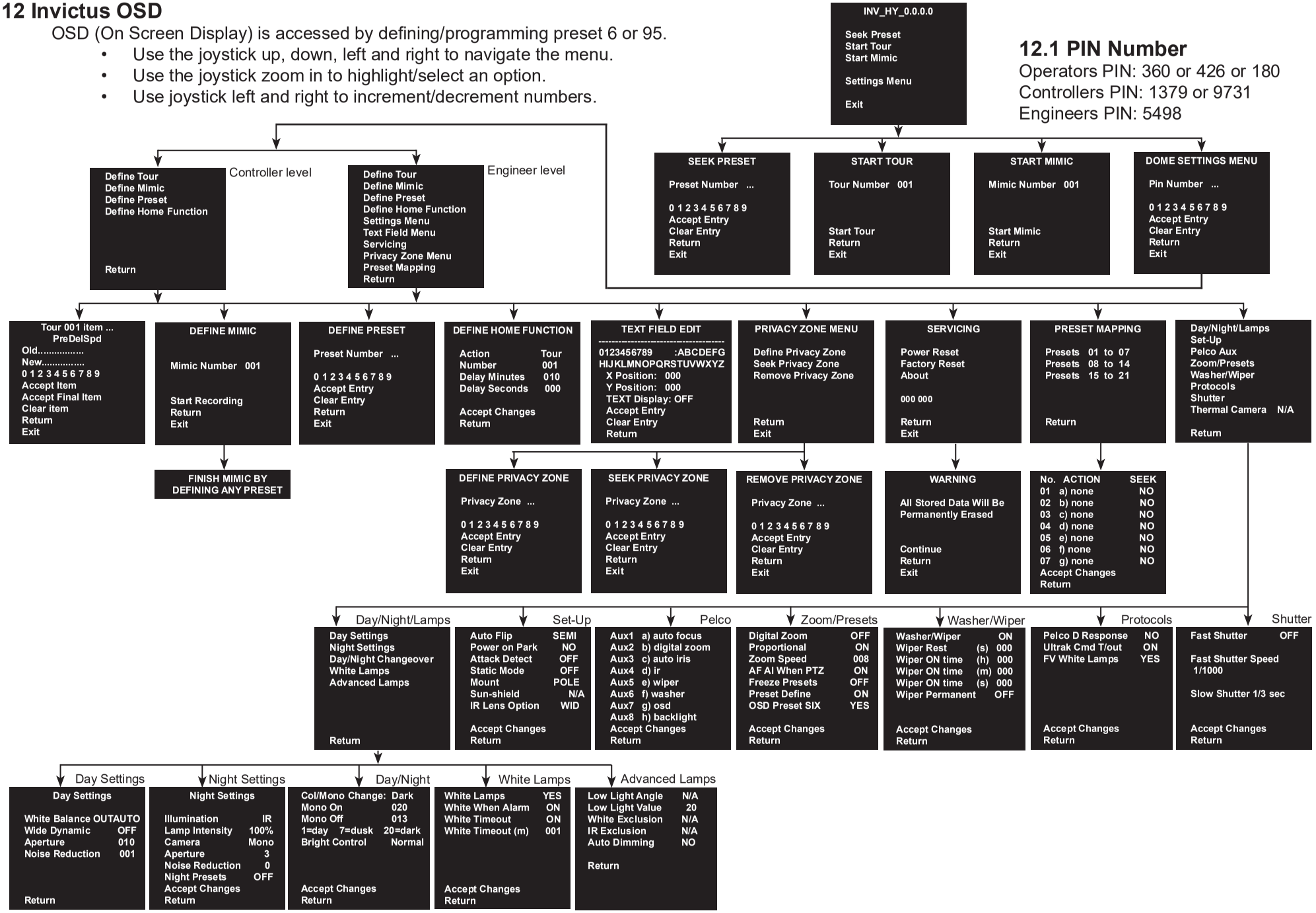
12 Invictus OSD

OSD (On Screen Display) is accessed by defining/programming preset 6 or 95.

- Use the joystick up, down, left and right to navigate the menu.
- Use the joystick zoom in to highlight/select an option.
- Use joystick left and right to increment/decrement numbers.

12.1 PIN Number

Operators PIN: 360 or 426 or 180
Controllers PIN: 1379 or 9731
Engineers PIN: 5498



13 OSD Operation/Navigation

Dome menu

- Seek Preset
- Start Tour
- Start Mimic
- Dome Settings Menu

Define Tour

A tour of presets is stored in the Invictus as a list of tour points. Each tour point consists of a preset number, the dwell time for which the Invictus will pause and the speed parameter that will be used to seek the preset. Each of the four tours of presets can contain between 2 and 90 points.

When programming a tour of presets it is necessary to first store all the required presets into the Invictus and to define the required dwell times and speeds of travel that you will require the Invictus to use when the tour is started.

A maximum of four individual tours of presets can be stored in each Invictus. Each tour can have between 2 and 90 points, each point can be a preset in the range 1 to 300. Different points can use any preset number, including repeats of ones that have been used before. The speed that the camera will travel at to reach the preset can be in the range 1°/sec (slowest) to 100°/sec (fastest). To seek the preset at maximum speed, set speed to 0. The delay (dwell) at each point is defined in seconds, range 1 to 100.

This page will open on Tour 1, use the joystick left and right to change to another tour. To add item 1, use the joystick to tilt down. This will highlight the number line so that the tour can be programmed. Use the joystick to navigate along the number line and zoom in to select the number. This will add the number in to the NEW tour. Add in the figures for the item/point in the tour using the sequence labelled above (PREDELSPD. PRE is preset position, DEL is delay in seconds and SPD is speed at °/second). This is how the camera will be programmed to move to a preset for a period of time at a set speed. All nine figures must be added into the item. Figures must be added in three i.e. preset 21 will be added as 021.

Example of an item/point

021005100 = Move to preset 21 for 5 seconds at 100°/sec

Highlight ACCEPT ITEM and zoom in, this will add the item/point into the tour. The OLD item/point will be shown on the screen. If these settings are acceptable, highlight the ACCEPT ITEM option and zoom in. There is no need to add in these points again. Keep adding points until the tour is complete. On the final item/point of the tour highlight and zoom in on ACCEPT FINAL ITEM. This will complete the tour programming.

Define Mimic (*Before going into the OSD screen to programme a Mimic tour it is recommended to move the camera in to the start position, any movement or delay will be recorded once the recording has started.)*

When a mimic tour is started, the Invictus will perform all the actions which were defined when the mimic was programmed. Up to four mimic tours can be defined.

Highlight and zoom in on START RECORDING, this will allow a mimic tour to be programmed into the camera. The mimic tour can then be used to playback any manual movement, preset seek or delay. Program a preset to end the mimic tour program.

Define Preset

Before going into the OSD screen to programme a preset, the camera must be in the position required. Once in the OSD you cannot manually move the camera.

Define Home Function

The camera will perform an ACTION (goto preset, start preset or mimic tour), after a period of inactivity. Use the NUMBER option to set which preset or tour to start, and the DELAY MINUTES/SECONDS to input the inactivity time period.

Day/Night/Lamps
Day Settings

- White Balance - Change the camera white balance settings to suit the area.
- Wide Dynamic - Enable WDR. Options available are ON, Auto and Off. Default is off.
- Aperture - Can be used to increase the picture detail. Default is 3.
- Noise Reduction - Used to reduce noise with scenes of low illumination. NR must be set to suit the environment. Default is 1.

Night Settings

- Illumination - When the camera goes into dark mode, what illumination is required. Options are none, IR and White Light. Please note illumination type will only work if the camera has this option fitted to the camera. Default is IR.
- Lamp Intensity - Choose lamp intensity, options 100%, 80%, 60%, 40% and 20%. Default is 100%.
- Camera - Choose when the camera goes into dark mode, what the image will be. Options are mono or colour. Default is Mono.
- Aperture - Can be used to increase the picture detail. Default is 3.
- Noise Reduction - Used to reduce noise with scenes of low illumination. NR must be set to suit the environment. Default is 1.
- Night Presets -This can be used to set the presets to different settings if required. Default is off.

Day/Night Changeover

- Col/Mono Level - Col/Mono level settings can be changed to suit the site requirements. Options are dark, medium and light. Default is dark. This sets when the camera goes into ‘dark mode’.
- Mono On - Range is 7 to 25. A lower value will set the level on when the scene is brighter, a higher value will set the level on when the scene is darker.
- Mono Off - Range is 1 to 20. A lower value will set the level off when the scene is brighter, a higher value will set the level off when the scene is darker.
- Bright Control - Options are normal or automatic activation.

White Lamps

- White Lamps - Set if white lights are to be used.
- White When Alarm - Set if white lights are to be used if an alarm is triggered. This feature works with 360 Standalone alarm-card or 360 Vision Matrix only.
- White Timeout - Use if a white light timer is required. Default is on.
- White Timeout (m) - Set white light timer, for automatic switch off.

Advanced Lamps

- Low Light Angle - Sets the angle in degrees at which the lights dim.
- Low Light Value - Sets the percentage the lights dim to in 20% increments.
- White Exclusion - Sets a zone the white lights will not come on, defined by preset 151 (Left) and 152 (Right)
- IR Exclusion - Sets a zone the IR lights will not come on, defined by preset 153 (Left) and 154 (Right)
- Auto Dimming - When selected the camera will reduce the lamp power, when looking in scenes where there is too much light.

Set-Up

- Auto Flip - Use this option to set how the camera behaves when full tilt down is reached.
  Semi - Requires a second tilt down command when at full tilt down to spin camera 180°.
  Full - Automatically spins the camera 180°
- Power on Park - When the camera powers up, it will go to a preset position. Preset 150. Default is off.
- Attack Detect - Camera will re-initialise camera motors so that camera looks back to the original position, if the camera is physically forced/moved. Default is off.
- Static Mode - Disables PTZ control.
- Mount - Can be used to flip the image, so the camera can be used on a pole or a ceiling, Default is pole.
- Sun-shield - N/A
- IR Lens Option - Choice of wide or narrow IR lenses that will be used when activated. Requires additional IR alarmcard.

Pelco

Used when using Pelco protocol auxiliary commands. Associate a function of the camera to a Pelco Aux command.

Zoom/Presets

- Digital Zoom - Use this option to enable or disable digital zoom.
- Proportional - Automatically reduces/increases pan/tilt speed depending on zoom ratio.
- Zoom speed -
- AF AI When PTZ - Auto focus/iris will activate when PTZ is used, can be switched off. Default is on.
- Freeze Presets - This option freezes the image, when moving between presets.
- Define Preset - Option to enable/disable the setting of presets. Default is on.
- OSD Preset Six - Go into OSD using preset 95 and you can switch off OSD access using preset 6.

Washer/Wiper

- Washer/Wiper - Option to disable wiper functions.
- Wiper Rest - Input a rest time for the wiper. *(See Special Presets - page 52).*
- Wiper On Time (h, m, & s) - Input a time period for the wiper operation.
  (See Special Presets - page 52).
- Wiper Permanent - Enable or disable the permanent wiper time period.

Protocols

- Pelco D Response - Used on systems using Pelco D protocol where a response from the camera is required. *Do not use if the system doesn't require a response as it will have an affect on the telemetry control of the camera.*
- Ultrak CMD T/out - Feature not supported.
- FV White Lamps - Used when using Forward Vision protocol, can be used to select what lamps are controlled from the lamp command.

Shutter

- Fast Shutter - Option to enable fast shutter and set speed of the shutter.
- Slow Shutter - Option to alter the slow shutter speed. Altering this figure will have an effect on the low light capabilities of the camera.

Text Field Menu

Navigate along alpha-numeric characters and use zoom in to select. Choose text position by inputting x and y co-ordinates. Set text display to on, if required.

Servicing

- Power Reset - This will reboot the camera, no settings will be lost.
- Factory Reset - This will reboot the camera and all the settings will be lost.
- Invictus Software Version - This shows the software version of the camera.

Privacy Zone Menu

Can be used to obscure a scene within an image e.g. private residence. Move the camera to the position required for the privacy zone before going into the camera OSD. You cannot manually move the camera once in the OSD. Use the zoom to set the size of the privacy zone. Privacy zone will cover the whole scene viewed when set.

- Define Privacy Zone - Used to set a privacy zone.
- Seek Privacy Zone - Used to seek a privacy zone.
- Remove Privacy Zone - Used to remove a privacy zone.

Preset Mapping

Use this option to re-map a function to a preset.

Options are:-

- None
- Auto focus
- Auto iris
- IR light
- Wiper
- White light
- Fast shutter
- WDR
- Ambient
- 20% lamp intensity
- 40% lamp intensity
- 60% lamp intensity
- 80% lamp intensity
- 100% lamp intensity
- Video switch
- White day
- IR-mono
- Mono
- Normal night
- Washer on
- Washer off
- Low power on
- Low power off

Invictus
HD/IP
Installation/Configuration Section

Invictus Configuration

14 Locating the Invictus on your Network

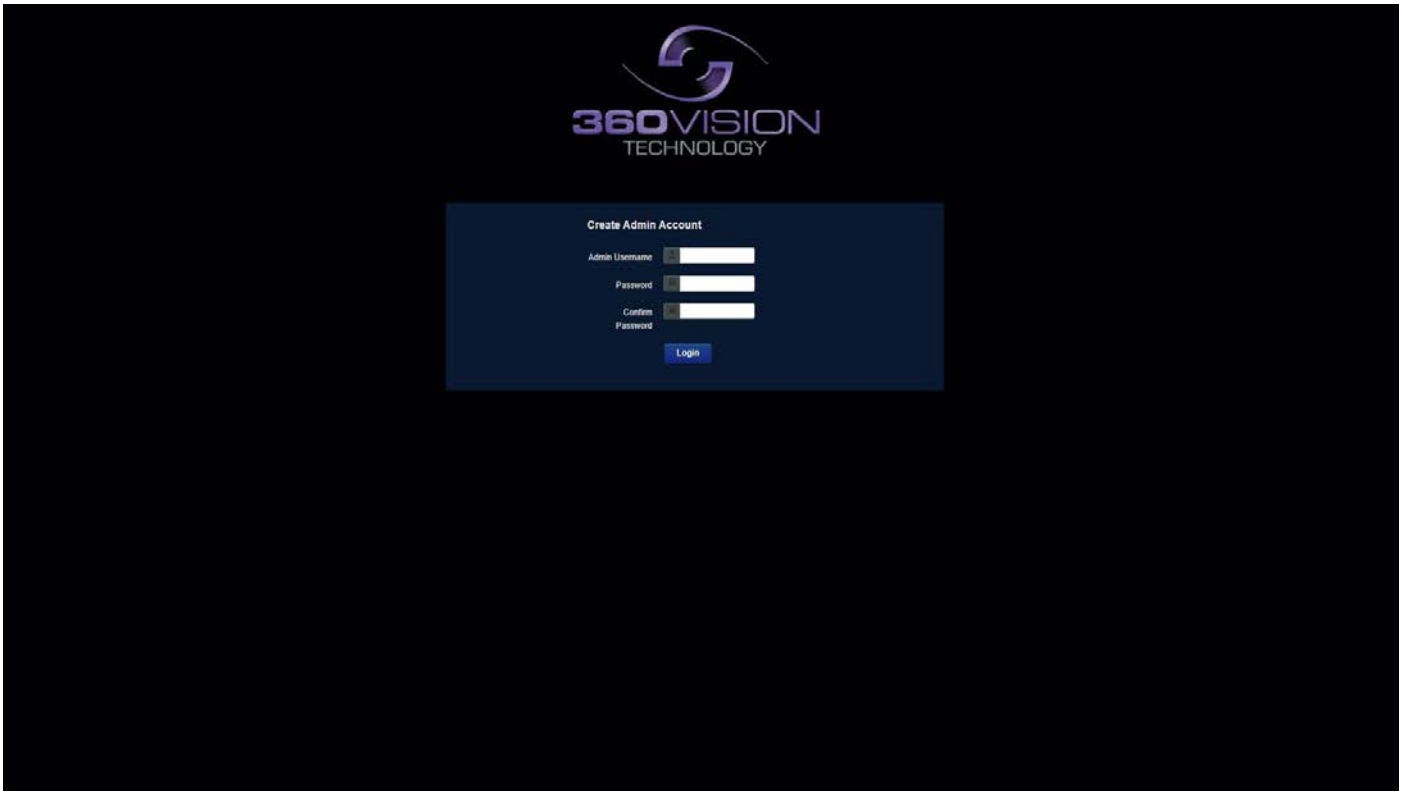
Default IP Address	192.168.1.187
Subnet	255.255.255.0
Gateway	192.168.1.4

Please note the camera cannot be discovered on the network on first power up using any camera discovery tools, please use the Secure by Default setup process (See page 7). Note the ports used by the Invictus are:-

Protocol	Port
ONVIF/HTTP	80 TCP
RTP Stream 1	6970 TCP/UDP
RTCP Stream 1	6971 TCP/UDP
RTP Stream 2	6972 TCP/UDP
RTCP Stream 2	6973 TCP/UDP
RTSP	554 TCP
360 SDK	3600 TCP
360 Event	9001 TCP

15 Connecting to the Invictus

Type in the IP address of the Invictus into the address bar of a web browser. The web page of the camera will then appear.



Invictus Web Page Login screen

See Secure By Design setup (See page 7 for initial set-up).

If you select the box ‘Remember Password’ it could compromise the security of the Invictus HD camera.

Select Login

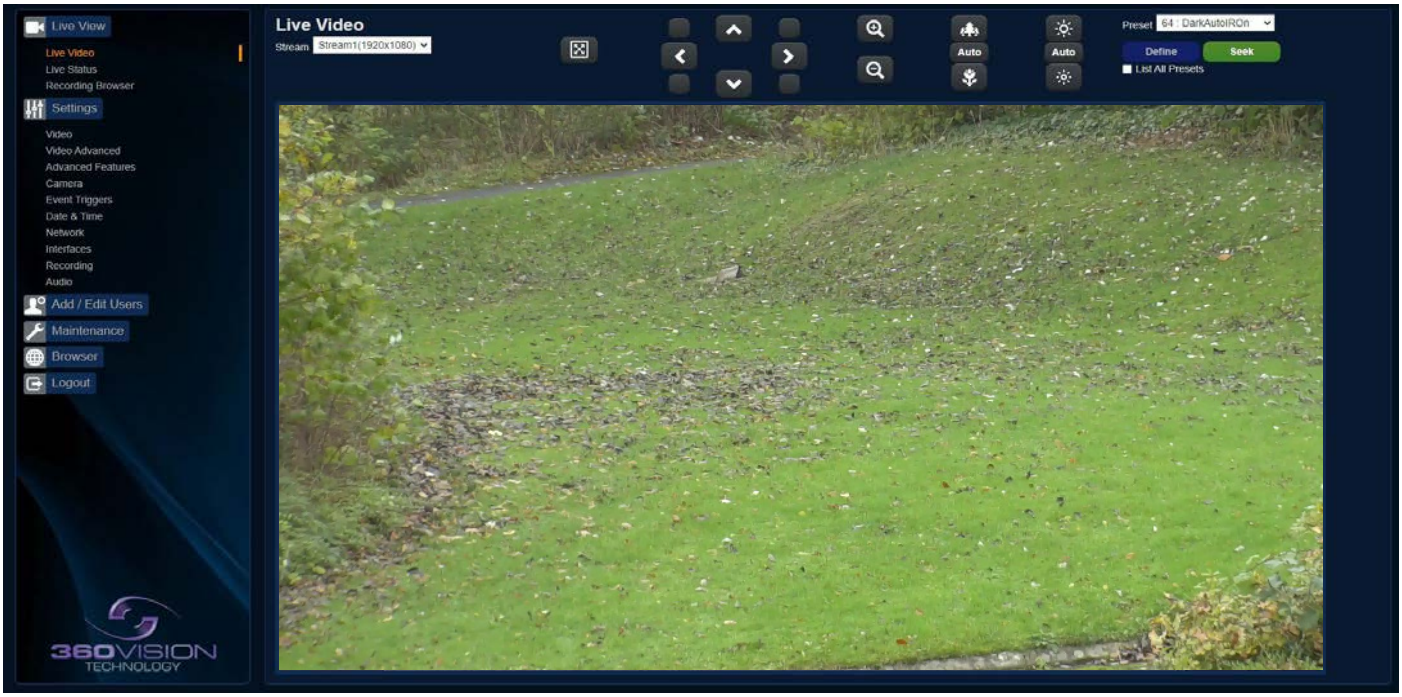
The web page will show MJPEG images *(See Browser - page 51)*.

There are six main tabs on the left of the web page/screen.

1 Live View
2 Settings
3 Add/Edit Users
4 Maintenance
5 Browser
6 Logout

15.1 Live View

15.1.1 Live Video

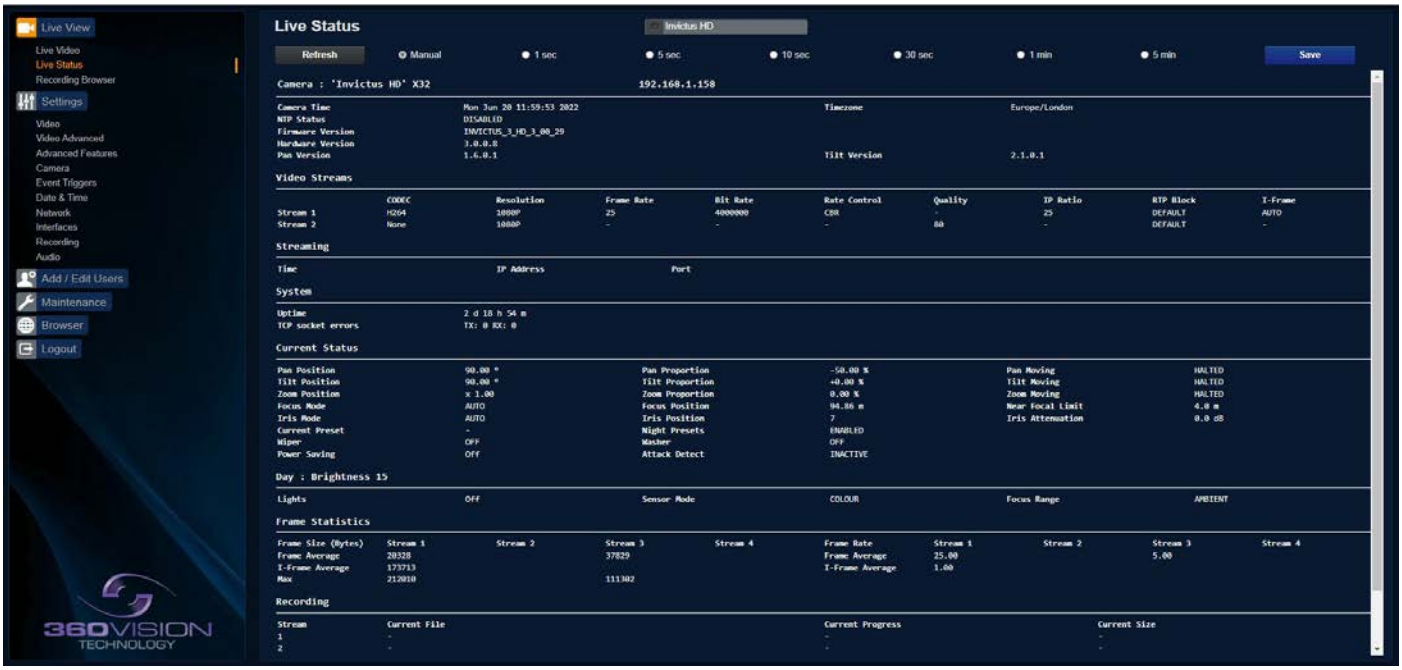


The Live Video page offers options to:-

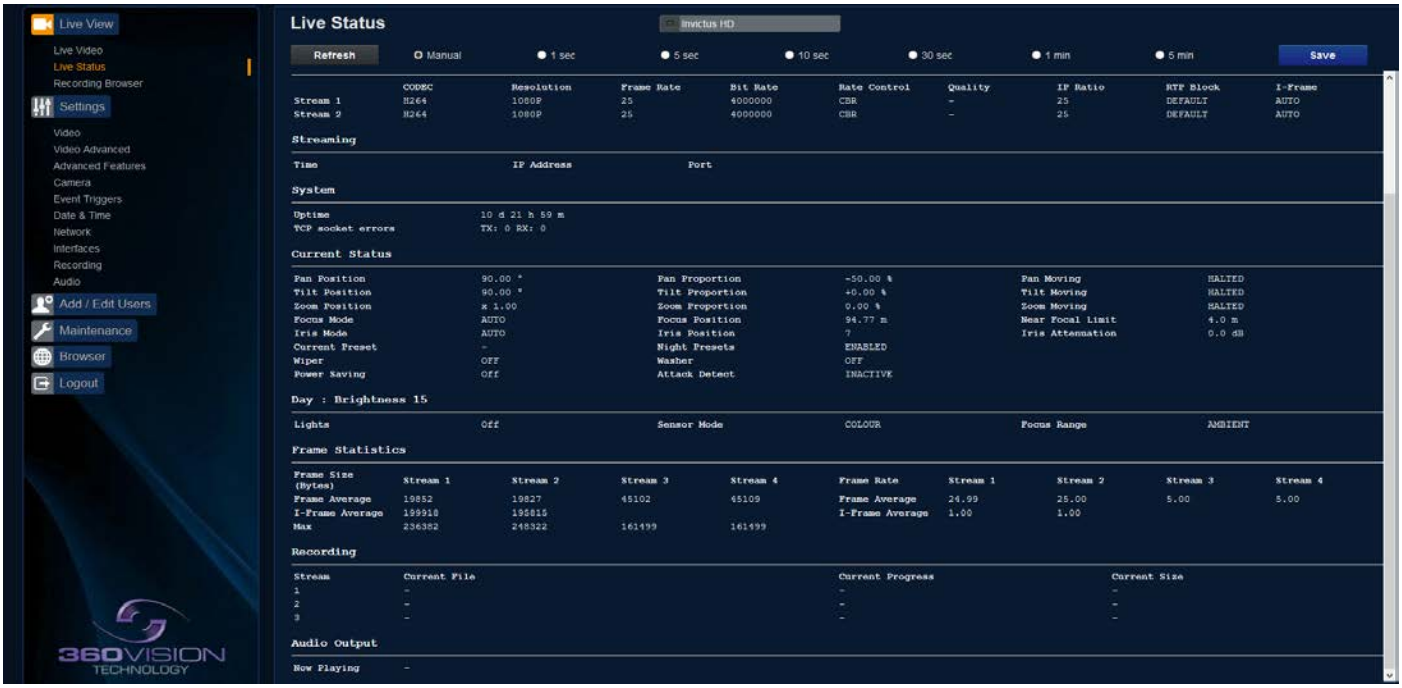
- Stream - Choose required stream from drop down selection.
- 1x Display - Use to show selected stream as full screen.
- Pan/Tilt - Use the up down left and right buttons to move the camera to the desired position.
- Zoom In/Out - This will operate the optical and digital zoom (if digital zoom is enabled). *(See Camera - Digital Zoom - page 40)*
- Focus Far/Auto/Near - This will operate the manual focus near, far or automatically focus as required. *(See Camera - AF AI when PTZ - page 40)*
- Iris Open/Auto/Close - This will operate the manual iris open, close or automatic as required. *(See Camera - AF AI when PTZ - page 40)*
- Preset Seek/Define - This will allow admin and operator user levels to seek or define presets (Viewer user level can only seek presets). *(See Advanced Features - Presets - page 38)*
- List all presets - Use to show all presets or programmed presets in drop down selection box.

15.1.2 Status

Status page shows information relating to the camera status.



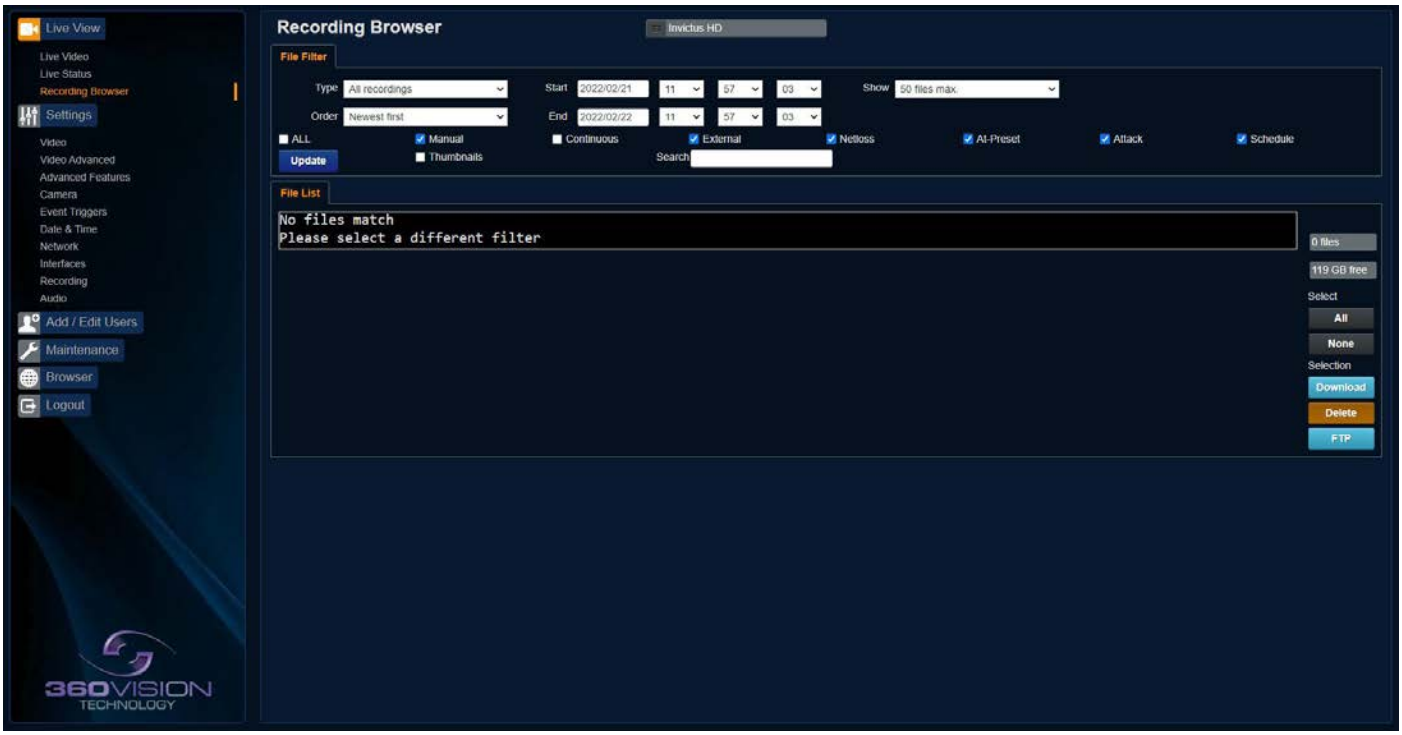
Status page, top section.



Status page, bottom section.

- Refresh - Select an automatic page refresh option.
- Camera - Shows information relating to the camera time & date settings, the version of codec and mainboard software loaded.
- Video Streams - Shows the current video streams configuration.
- Streaming - Shows the IP address on the PC that is receiving the video streams.
- System - Shows how long the camera has been powered, how much bandwidth it is using etc.
- Current Status - Shows the camera function information, i.e. PTZ positions, wiper and lamp activity etc.
- Frame Statistics - Gives information about the video stream, how big the frames are, how big the I frames are, how long it is taking to transmit the frames.

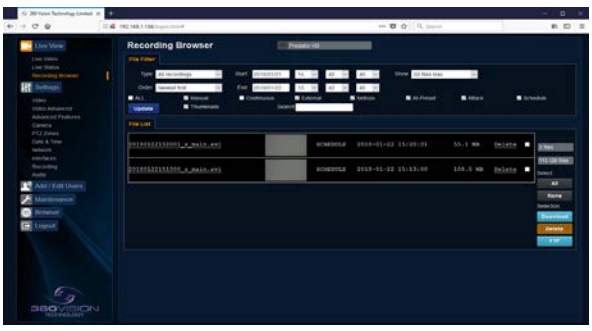
15.1.3 Recording Browser



Only available on Edge Recording Invictus

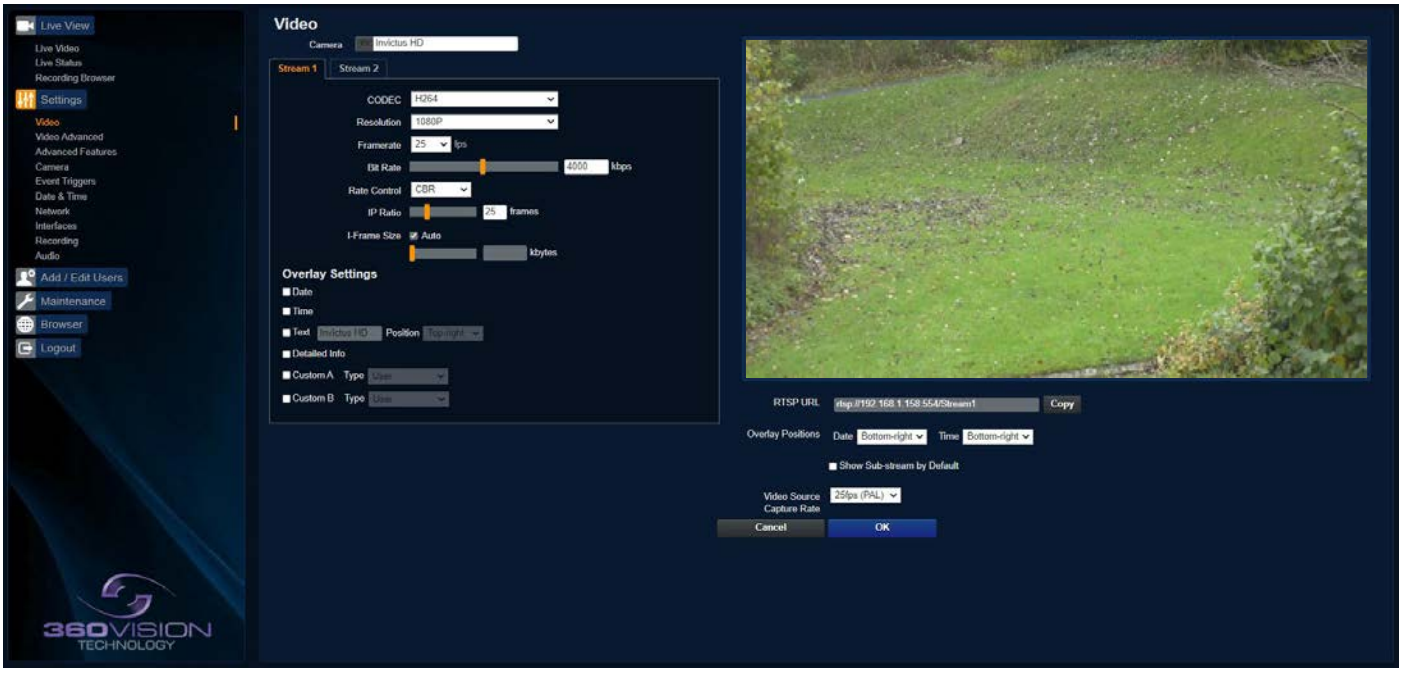
Recording browser web page offers access to files loaded onto the storage device. This includes recordings which can be filtered to show specific requirements.

- Type - Select which type of file you are interested in, choices are all recordings, video recordings, image recordings and audio files.
- Show - Choose how many files that will displayed on the page.
- Order - Choose what order the files are displayed in, choices are newest or oldest first.
- Filter - Choose what recording trigger is to be used for the filter.
- Search - Search filename using the YYYYMMDDhhmmss-x-name.avi format.
- Update - Used to apply any filter changes.
- FTP - Click to send selected file in the table to the FTP server *(See Network - page 43).*



Recording Browser Screen with thumbnails

15.2 Settings
15.2.1 Video



The Video page,offers options to setup:-

- Camera - Add or edit the camera name.
- CODEC - Choose which compression format, the stream will use.
- Resolution - Set what resolution the stream will use.
- Framerate - Configure how many frames per second (fps) the stream uses.
  (Also see section - Camera - Sensor Frame Rate - page 40).
- Bit Rate - Set the bit rate that the stream will use. Type in figure in Kbps. *(E.g. 4000Kbps is 4Mbps)*
- Rate Control - Configure the rate control of the stream, choices are VBR (Variable), CBR (Constant), and CVBR (Constrained Variable, limited to 8Mbps).
- IP Ratio - 25 ie i frame every 25th image.
- I-Frame Size - 55 default. Range 0 to 99 (Average frame size x value/10 = i frame size)

Overlay Options

- Date - Selecting this option will show the date as text on the video stream.
  (See section - Date/Time - page 42).
- Time - Selecting this option will show the time as text on the video stream.
  (See section - Date/Time - page 42).
- Text - Selecting this option will show the selected text on the video stream. Positions available are top left or right of the image.
- Detailed Info - This will show the information about the stream on the video.
- Custom A - Current Preset - Used to show the stored preset text when the camera is at the preset position. Text will be shown on top line of video.
- Custom B - Current Preset - Used to show the stored preset text when the camera is at the preset position. Text will be shown on second from top line of the video.

RTSP URL

- Copy - Use this option to copy the RTSP URL

Overlay Options

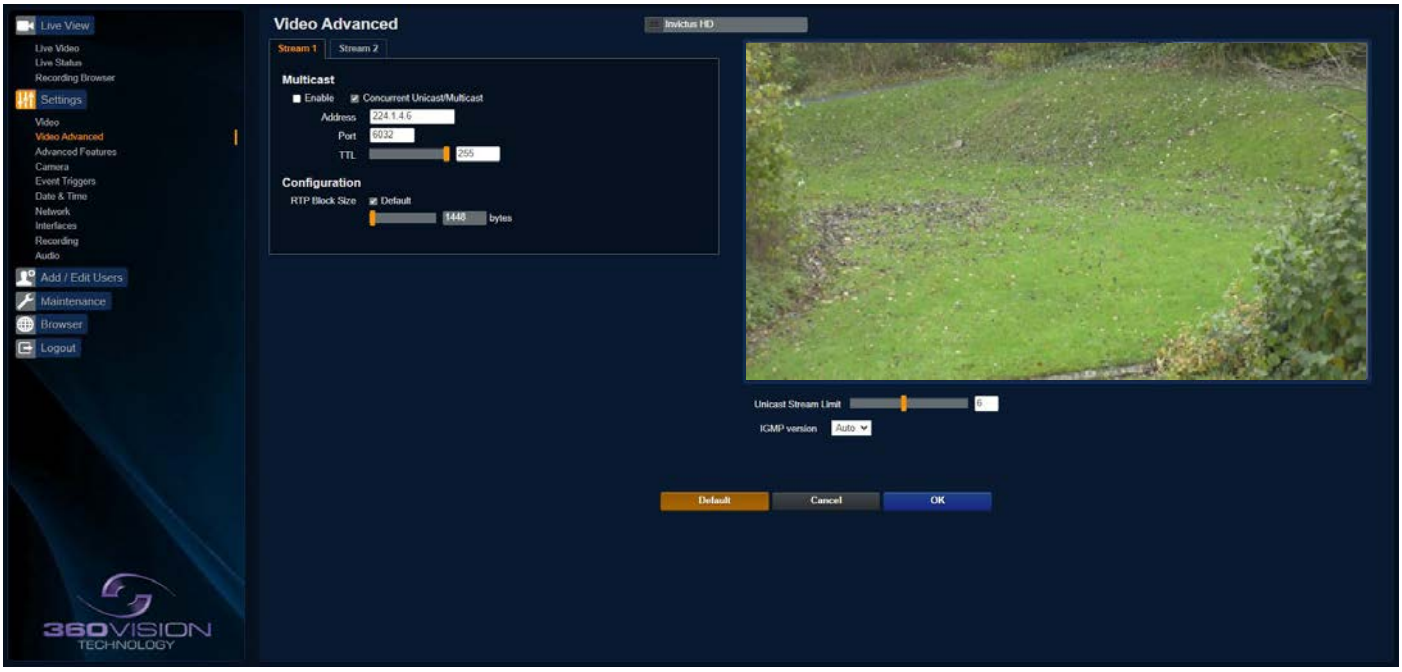
- Date Position - Choose date text to bottom right or left of the image.
- Time Position - Choose time text to bottom right or left of the image.
- Show Sub-stream - Shows second sub-stream if enabled.

Video Source Capture Rate

- Choice of analogue (50FPS) or digital/IP (25FPS) video output.
  Camera will perform an automatic reboot when this option is changed.

OK to program the new settings into the Invictus .
Cancel to abandon the changes to the video settings.

15.2.2 Video Advanced



Multicast
Tick the box to enable ‘multicast’. If the box is not ticked then ‘unicast’ is selected.

- Multicast Stream 1 - Set IP address and port for stream 1.
- Multicast Stream 2 - Set IP address and port for stream 2.
  (See Video - Stream Type - page 35).

Concurrent Uni/Multicast - Enable to allow concurrent unicast/multicast streams.

RTSP protocols allow ‘multicast’ or ‘unicast’ transmission. In addition to the ‘multicast’ feature being available on the Invictus, the ‘multicast’ feature must also be available on the receiving device.

Unicast
If lots of receivers (users) want to receive video streams from the Invictus, each receiver will have a separate video stream. This would increase the network bandwidth used. E.g. five users would require five video streams, that typically will require five times the bandwidth.

Multicast
If the receivers of the video streams are suitable for using ‘multicast’ and the video streams will all have the same format, then it may be possible to use ‘multicast’. In this mode, the CODEC in the Invictus chooses a ‘new UDP address’ (Typically an address which is outside the normal range of addresses for the network to which the Invictus is connected) and sends a video stream to the ‘new UDP address’. Multiple receivers can then access this single video stream. Consequently the bandwidth that is required by the Invictus is typically reduced to the single video stream.

When using ‘multicast’ all intermediate network-switches and routers must be set to allow the stream from the ‘new UDP address’ to be routed correctly.

Configuration
RTP Block Size

- Set the RTP block if required. Default is 1448.

Unicast Stream Limit

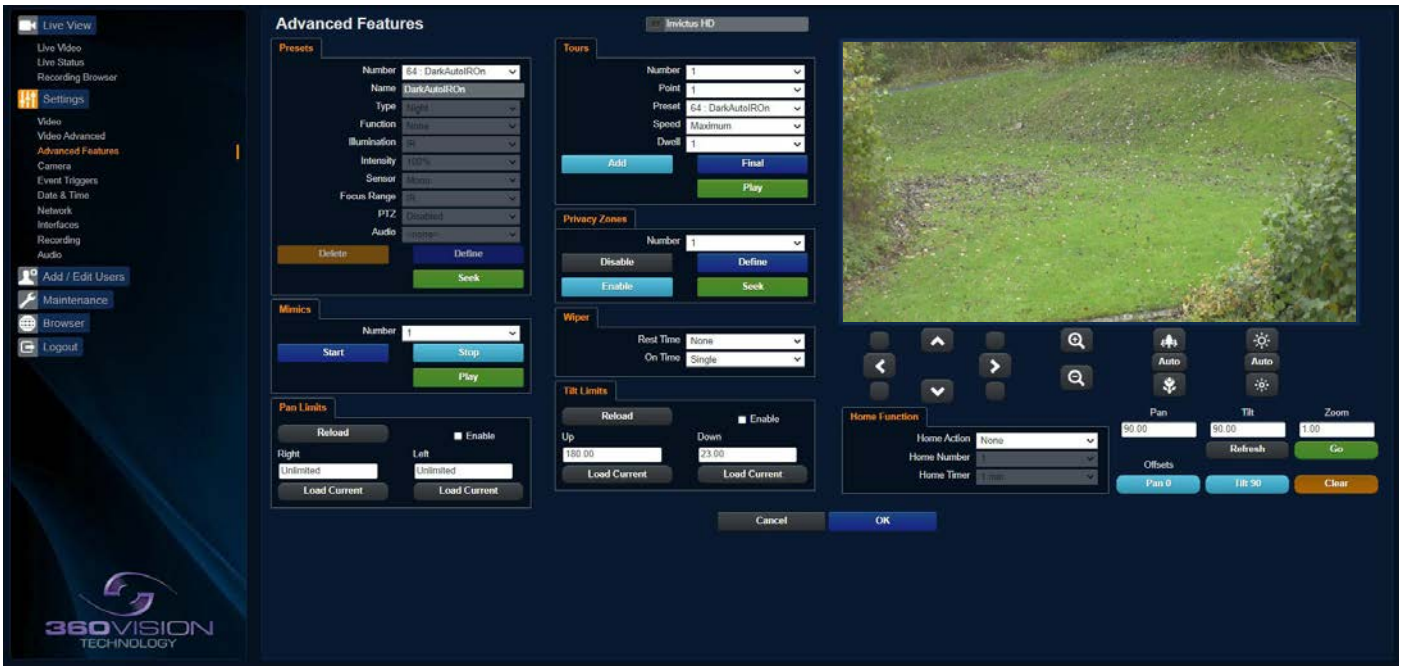
- Used to set the unicast stream limit.

IGMP Version

- Multicast Groups- options Auto 2 & 3.

OK to program the new settings into the Invictus .
Cancel to abandon the changes to the advanced video settings.
Default is used to factory reset the video stream settings.

15.2.3 Advanced Features



The Advanced Features page, offers options to:-

- Camera - Cannot be edited, shows label/name given to the camera.
  (See section Video - Camera - page 35).

A 'Preset' is a stored view. When a preset is defined, it will store the pan, tilt, zoom, focus and iris positions. Use the up, down left and right buttons to move the camera to the desired position and then use the zoom buttons to set the image as required.

Set Preset using the following options:-

- Number - Choose from a list of presets using the drop down box.
- Name - Edit the preset name to suit/help identify the position.
- Type - Options available are:-
  Night - Allows different options to be used for the preset that include lamps
  (See also Camera - Night Presets page 40)
  Simple - For setting a simple PTZ preset, no lamp options.
  Wiper - Set the preset to activate the wiper.
  Re-Map - Choose which function/preset you want to re-map to the new preset number above.
  Tour - Set the preset to start or stop a preset tour.
  Mimic - Set the preset to start or stop a mimic tour.
  User - Used on systems supporting 360 SDK.
  Auxiliary - Can be used to recall an auxiliary command. *(See Interfaces - Auxiliary page 45).*
  Power - Used to set the pan/tilt motors to use full or part power.
- Function - Function option will change to suit the above type.
- Illumination - Choice of illumination for preset with night presets function enabled. Options are IR, White Light and off.
- Intensity - Set lamp intensity for the preset using the illumination chosen above.
- Sensor - Presets have the choice of being either colour or mono, when the scene is dark.
- Focus Range - Sets how the camera will focus when in mono. Options are ambient or IR. The Focus Range setting will set the camera focus, (when in mono) to suit the light source in the scene.
  If this is set incorrectly the image may not be in focus, when in mono at night.
- PTZ - Camera can be set to pan, tilt and zoom or not. This can be used to operate the sensor or lamp function.
- Audio - Feature not supported.

Use the **Seek preset** button to test the preset.
Define preset button to set the above parameters.
Delete preset to remove the preset.

Mimics
When a mimic tour is started, the Invictus will perform all the actions which were defined when the mimic was programmed. Up to four mimic tours can be defined.

- Play - Starts the selected mimic tour.
- Start - Use this to start programming a mimic tour. Move the camera, seek presets and/or use the lens to define the actions to be saved for the mimic.
- Stop - Use to end the programming of the mimic tour into the Invictus.

The mimic and preset tours will repeat continuously until manually interrupted either by an alarm or user intervention.

Pan Limits
- Set Right and Left Pan Limits.

Preset Tour
A tour of presets is stored in the Invictus as a list of tour points. Each tour point consists of a preset number, the dwell time for which the Invictus will pause and the speed parameter that will be used to seek the preset. Each of the four tours of presets can contain between 2 and 90 points.

When programming a tour of presets it is necessary to first store all the required presets into the Invictus and to define the required dwell times and speeds of travel that you will require the Invictus to use when the tour is started.

A maximum of four individual tours of presets can be stored in each Invictus. Each tour can have between 2 and 90 points, each point can be a preset in the range 1 to 300. Different points can use any preset number, including repeats of ones that have been used before. The speed that the camera will travel at to reach the preset can be in the range 1°/sec (slowest) to 100°/sec (fastest). To seek the preset at maximum speed, set speed to 0. The delay (dwell) at each point is defined in seconds, range 1 to 100.

- Play - Starts the selected preset tour.
- Add - Use to add a new point to the tour.
- Final - Use to indicate that this point is the last point in the tour.

Privacy Zones
A privacy zone can be used to obscure a scene with in an image e.g. private residence.

Use the drop down box to select the privacy zone preset 1 to 24. Move the camera so that the scene to be obscured is in the centre of the image. Use zoom to set the size of the privacy zone.

- Define - Defines the image as a privacy zone preset.
- Seek - Seeks the selected privacy zone preset.
- Enable - Sets the selected privacy zone preset as a privacy zone.
- Disable - Disables the privacy zone of the selected privacy zone preset.

Up to eight privacy zones can be viewed at the same time. The privacy zone feature is not available when the camera is within 20° of the camera pointing vertically up or down.

Wiper
- Rest Time - Set wiper rest time.
- On Time - Set time period for how long wiper will run.

Tilt Limits
- Set Up and Down Tilt Limits

Home Function
The camera will perform an action (goto preset, start preset or mimic tour), after a period of inactivity.

- Home Action - This sends the camera to a preset, tour or mimic.
- Home Number - This sets the preset, tour or mimic the camera will go to/start.
- Home Timer - This sets the time for the period of inactivity.

PTZ position co-ordinates are also shown, use the refresh button to refresh the data if the camera has been moved.

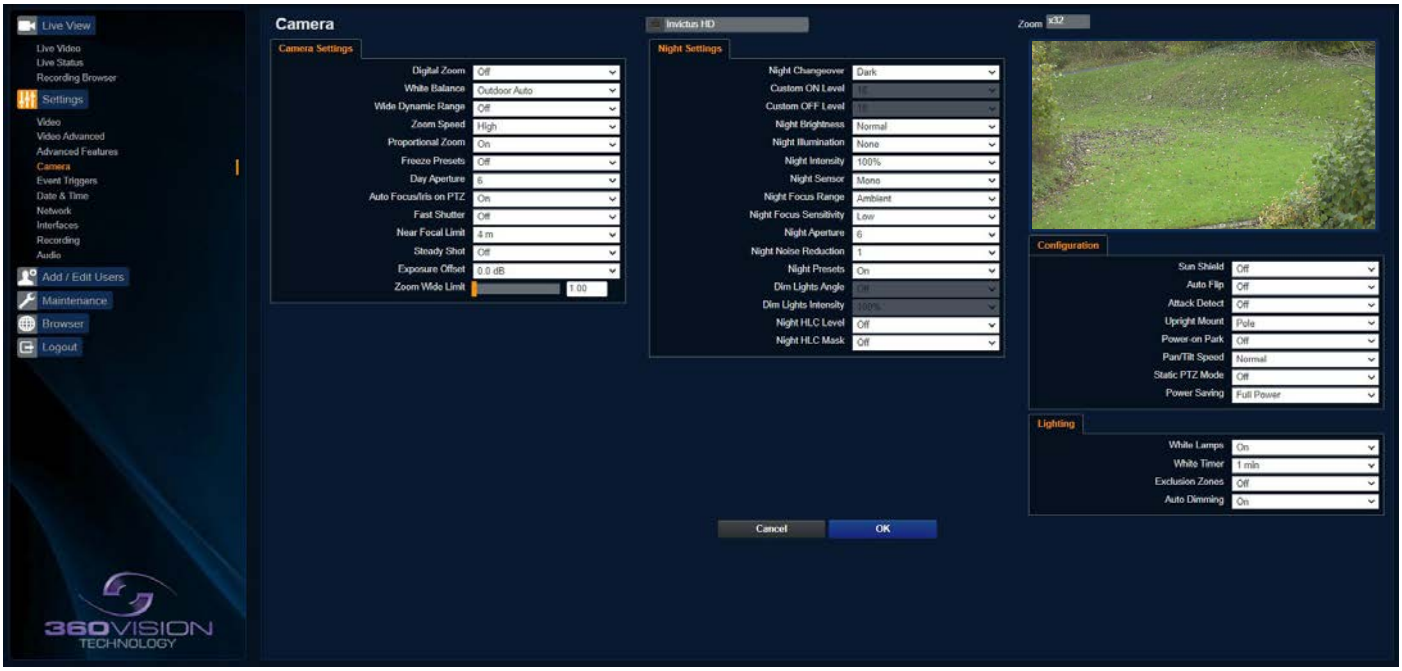
PTZ position co-ordinates can also be added manually, use the go button to send the camera to the coordinates set.

Pan/Tilt Offset
Used to set current pan/tilt to zero.

- Set - Set current position to zero.
- Clear - Clear current zero position.

OK to program the new settings into the Invictus .
Cancel to abandon the changes to the advanced feature settings.

15.2.4 Camera



- Camera - Cannot be edited, shows label/name given to the camera.
  (See section Video - Camera - page 35).

The Camera page, offers options to:-

- Digital Zoom - Enable digital zoom. Default is off.
- White Balance - Select White Balance settings to suit camera location.
  (See page 53 for table of options).
- Wide Dynamic range - Enable WDR. Options available are ON, Auto and Off. Default is Auto.
- Zoom speed - Select zoom speed of the lens. Options are slow, medium, high and highest.
- Proportional Zoom - Automatically reduces/increases pan/tilt speed depending on zoom ratio. Default is on.
- Freeze Preset - This option freezes the image, when moving between presets. This can help reduce the bandwidth. Default is off.
- Day Aperture - Can be used to increase the picture detail.
- Auto Focus/Iris on PTZ - Auto focus/iris will activate when PTZ is used, can be switched off. Default is on.
- Fast Shutter - Select fast shutter if using the Invictus camera on a ANPR system. Default is off.
  (See page 53 for table of options).
- Near Focal Limit - Can be used to set the near focal limit. This will help in scenes where the camera is focusing on objects near to the camera, causing the camera to be out of focus on distant objects. Default is 4m.
- Steady Shot - Can be used to reduce camera shake from the picture.

Steady Shot – The viewed picture is made from a window which shows part of the full picture from the camera sensor. This means that part of the picture is wasted. The viewed part of the picture is moved automatically to use some of the wasted part so that the observed picture is stable and has compensated for the vibrations and minor movements of the Invictus . The maximum amount of picture stability is achieved for all zoom settings. The part of the picture that is wasted reduces the resolution of the viewed picture when the camera is set to 1080P and steady shot is selected. When the camera is set to 720P it is usual for no resolution to be lost when steady shot is selected.

Stable Zoom – In this mode, when the picture is zoomed fully out (wide angle) the steady shot feature has no effect. As the picture is zoomed out the effect of the vibrations is naturally minimized. As the picture zooms in, the part of the picture that is viewed is a window within the whole (unzoomed) picture. The unused part of the picture is used to allow the viewed part of the picture to be moved automatically to compensate for the vibrations. In this mode, the viewed picture has full resolution for all of the zoom range, but the camera does not compensate for the vibrations when the picture zoom is at or near to the fully zoomed out setting.

Extended Zoom – This option doesn't produce a steady picture, instead of which, a window within the whole picture is viewed i.e. the scaling of the picture is altered slightly which gives the advantage that the normal 30x zoom has been extended to 36x zoom. This is effectively a digital zoom and as such, when 1080P is used, the resolution of the picture has been slightly reduced. When the camera is set to 720P it is usual for full resolution to be achieved for the full range of zoom settings.

- Exposure Offset - Used to set the camera exposure setting.
- Zoom Wide Limit - Used to set the camera zoomed out limit.

Night Settings

- Night Changeover - Night Changeover settings can be changed to suit the site requirements. Options are dark, medium, light and custom. Default is dark. *This sets when the camera goes into 'dark mode'.*
- Custom On Level - Range is 7 to 25. A lower value will set the level on when the scene is brighter, a higher value will set the level on when the scene is darker. Default is 7.
- Custom Off Level - Range is 1 to 20. A lower value will set the level off when the scene is brighter, a higher value will set the level off when the scene is darker. Default is 1.
- Night Brightness - This controls the exposure compensation, by artificially brightening the image. Options are normal and auto. Default is normal.
- Night Illumination - Choose which type of light source is required for when the camera is in dark mode. Options are IR or white light if supported by the camera.
- Night Intensity - Set what power the lamps will run at. Default is 100%.
- Night Sensor - Can be set to colour or mono. Default is mono.
- Night Focus Range - Sets how the camera will focus (when in mono) to suit the light source in the scene. If this is set incorrectly the image may not be in focus.
- Night Focus Sensitivity - This can be set to normal or low. When it is set to low the method used to focus the camera is suited to low light conditions. Default is low.
- Night Aperture - Can be used to increase the picture detail. Default is 3.
- Night Noise Reduction - Used to reduce noise with scenes of low illumination. NR must be set to suit the environment. Default is off.
- Night Presets - This can be used to set the presets to different settings if required. Default is off. *(See section Advanced Features - page 38).*
- Dim Lights Angle - Feature not available.
- Dim Lights Intensity - Feature not available
- Night HLC Level - Set a value to help mask high intensity light sources, options are low, medium and high.
- Night HLC Mask - Sets a mask for the light source, options are 1 (white) to 15 (grey).

Configuration

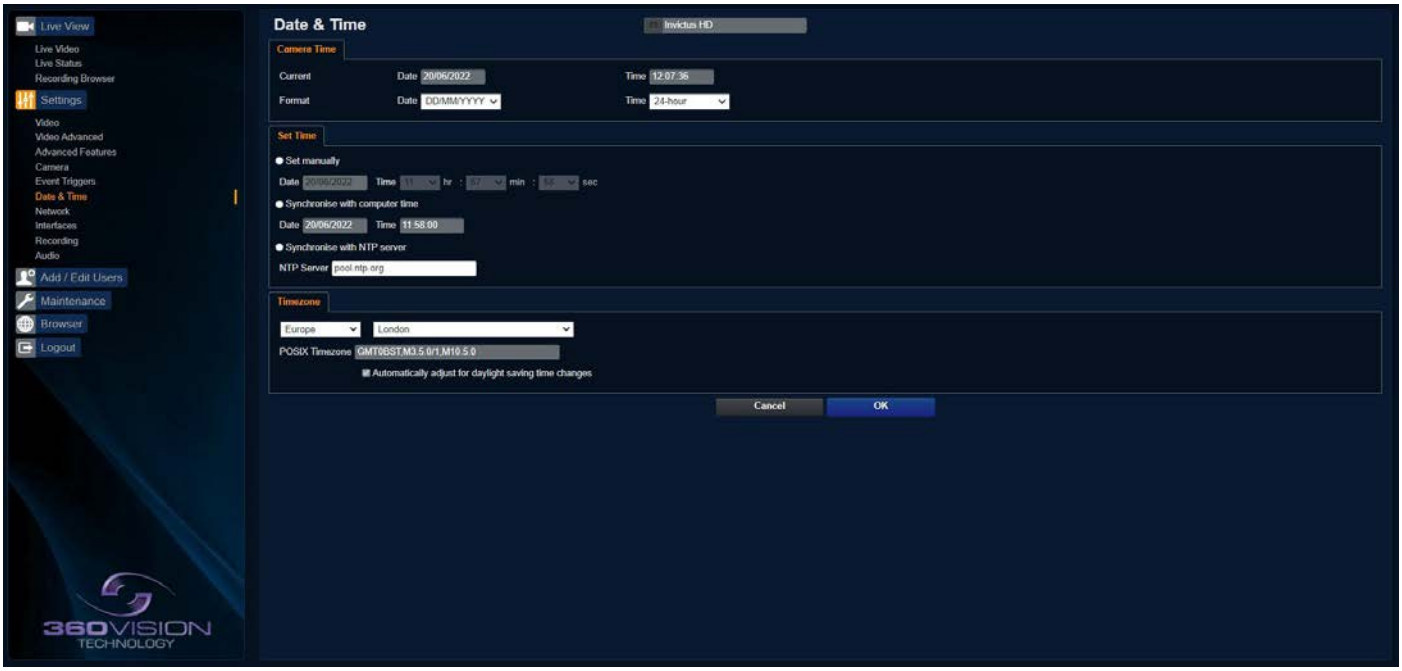
- Sun Shield - Reduces tilt range of the camera for when a sun-shield is fitted.
- Auto Flip - Use this option to set how the camera behaves when full tilt down is reached.
  Tilt - Requires a second tilt down command, when at full tilt down to spin camera 180°.
  Limit - Automatically spins the camera 180° when full tilt down is reached.
- Attack Detect - Attack Detect - Camera will re-initialise camera motors so that camera looks back to the original position, if the camera is physically forced/moved. Default is on.
- Upright Mount - Can be used to flip the image, so the camera can be used on a pole or a ceiling. Default is pole.
- Power on Park - When the camera powers up, it will go to a preset position. Preset 150. Default is off.
- Pan/Tilt Speed - Can be used to set the pan/tilt speed. Options are Normal, 20%, 40%, 60%, 80% Slower, 20%, 40%, 60% or 80% Faster. Default is normal.
- Static PTZ Mode - Set the camera to static mode. Switch off all PTZ functions.
- Power Saving - Reduces power consumption when static, camera will return to full power when PTZ is used.

Lighting

- White Lamps - Set if white lights are to be used.
- White Timer - Set white light timer, for automatic switch off.
- Exclusion zones - Set a zone where white light or IR will not come on.
- Auto Dimming - When selected the camera will reduce the lamp power, when looking in scenes where there is to much light.

OK to program the new settings into the Invictus .
Cancel to abandon the changes to the settings.

15.2.5 Date/Time



- Camera - Cannot be edited, shows label/name given to the camera.
  (See section Video - Camera - page 35).
- Time in Camera - Cannot be edited, shows the current date and time of the camera.
- Date Format - Select from the drop down the date format.
- Time Format - Choose 24hr or 12hr time display.

Set Time

The Date/Time page, offers options to:-

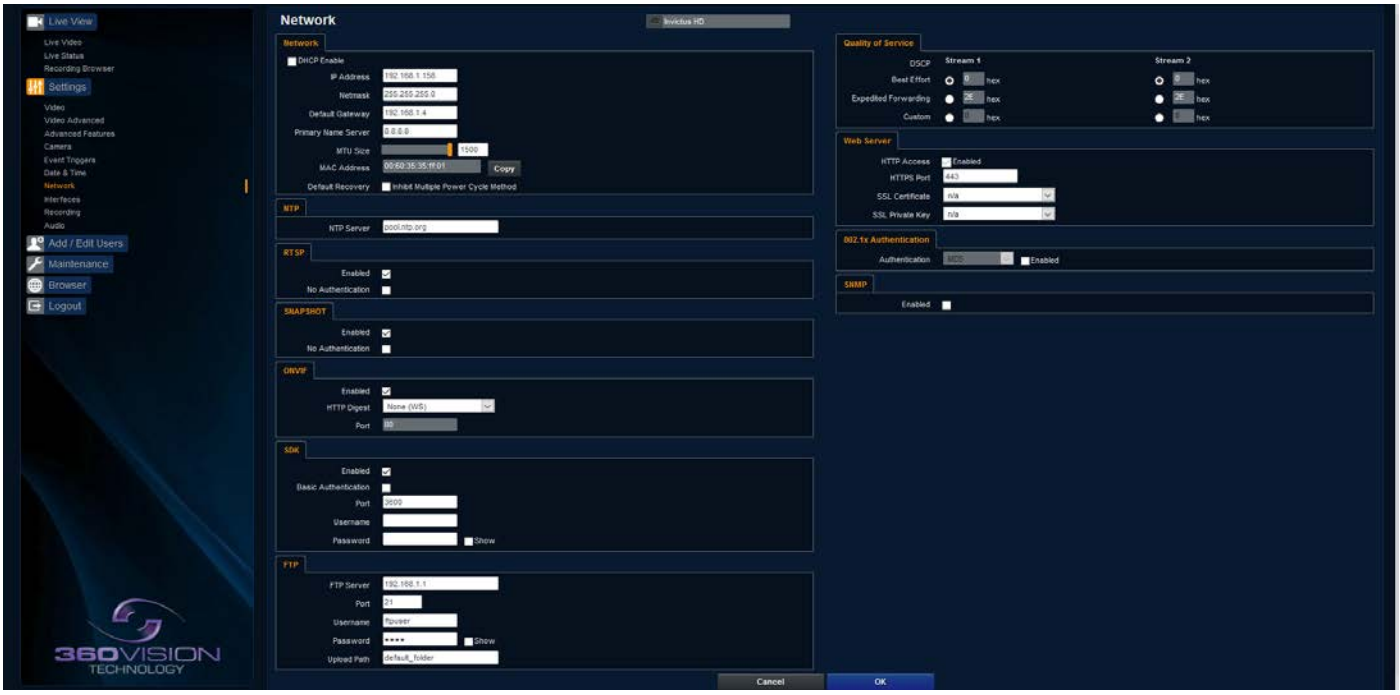
- Set Manually - Input time/date manually.
- Synchronize with Computer Time - Put a tick in the button and then click OK, to apply the local computer date/time to the camera.
- Synchronize with NTP Server - Put a tick in the button and then click OK, to apply the local server date/time to the camera.
- NTP Server - Input the address of the time server required, default is pool.ntp.org.

Time Zone

- Time Zone - Select time zone to suit the location of the camera/system.

OK to program the new settings into the Invictus .
Cancel to abandon the changes to the settings.

15.2.6 Network



- Camera - Cannot be edited, shows label/name given to the camera.
  (See Video - Camera - page 35).

Network

The Network tab, offers options to:-

- DHCP Enable - Allows the camera to be set using a dynamic IP address.
- IP Address - Input a static IP address, if DHCP is not used.
- Netmask - Input the Network Subnet Mask.
- Default Gateway - Input the Network Gateway.
- Primary Name Server - Input the Domain name server, if required.
- MTU Size - Option to change the MTU size, default is 1500 bytes.
- MAC Address - Displays the camera MAC address.
- Default Recovery - Inhibit Multiple Power Cycle Method, disables the Network recovery process
  (See Network Settings Recovery - page 51)

NTP

- NTP Server - Input the address of the time server required, default is pool.ntp.org.

RTSP
- Enabled - Enable RTSP stream
- No Authentication - Set if RTSP authentication is required

SNAP SHOT
- Enabled - Enable Snap Shot feature
- No Authentication - Set if Snap Shot authentication is required

ONVIF
- Enabled - Enable ONVIF output
- HTTP Digest - ONVIF Option for HTTP, MD5 & SHA-256.
- Port - Set ONVIF port

SDK
- Enabled - Enable SDK control of the camera
- Basic Authentication - This will allow the passwords to be set in plain text (prompts a warning message).
- Port - Set SDK port
- Username/Password - Set SDK username/password

FTP
- FTP Server - Set FTP server address
- Port - Set FTP Port
- Username/Password - Set FTP Server username/password
- Upload Path - The URL FTP folder path

Quality of Service
- Best Effort - Will send network packets with no quality of service policies.
- Expedited Forwarding - Will send network packets with an assured bandwidth quality of service policy.
- Custom - Input required Hex figure for quality of service policy
  - Best Effort = 0x00
  - Expedited Forwarding = 0x2E

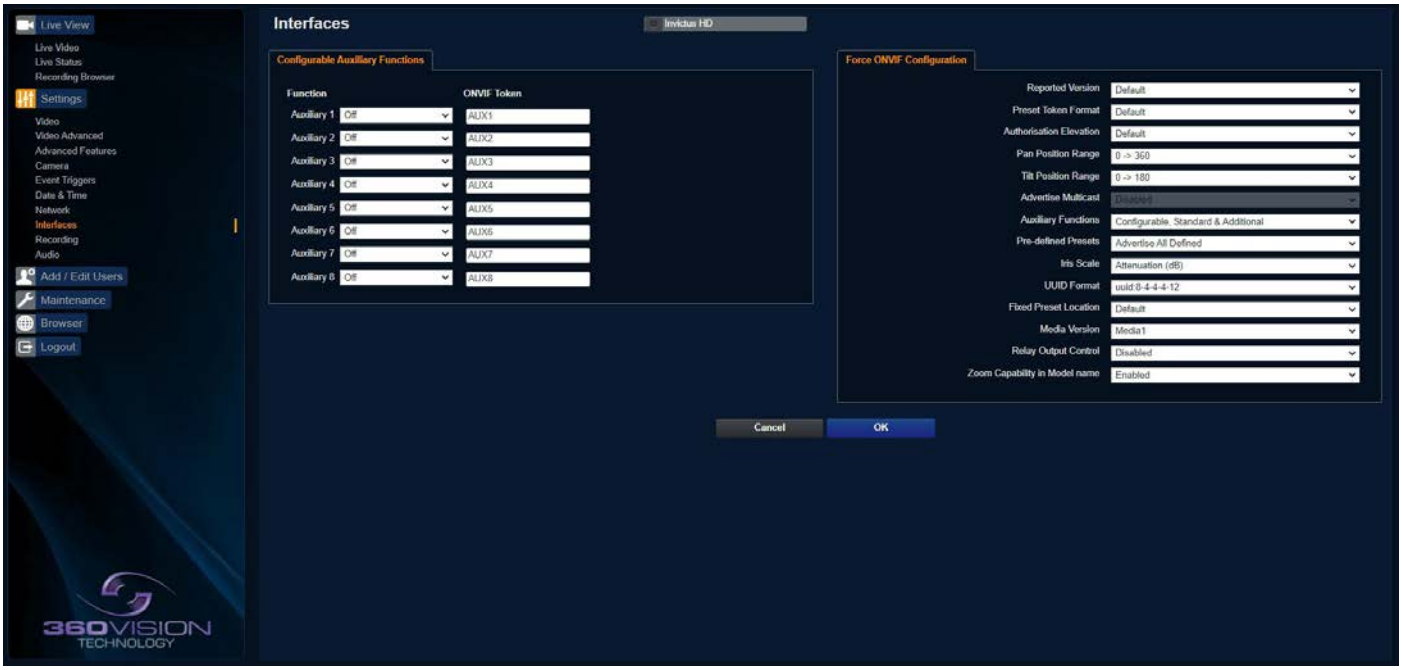
Web Server
- HTTP access - Enable or disable HTTP access, must be connected using HTTPS. *(See Maintenance - SSL Certificates and Keys - page 49)*
- HTTPS Port - Set required HTTPS port. Default is 443.
- SSL Certificate - Choose required SSL certificate.
- SSL Private Key - Choose required private key.

802.1x Authentication
- Authentication - Tick to enable 802.1x. Options to choose MD5 or TLS and add username/password.

SNMP
- Enabled - Enable SNMP

OK to apply the new settings into the Invictus .
Cancel to abandon the changes to the network settings.

15.2.7 Interfaces



- Camera - Cannot be edited, shows label/name given to the camera.
  (See section Video - Camera - page 35).

Auxiliary Functions
Allows the camera to be configured to use ONVIF Auxiliary commands.
Features available are:-

- Force White Light On - Forces white lights on.
- Force White Light Off - Switches off forced white lights.
- Wiper On - Activates wiper.
- Wiper Off - Stops wiper.
- Dark IR Light On - Switch on IR, when dark.
- Dark White Light On -Switch on white light, when dark.
- Dark Lights Off - When dark, switch off all lamps.
- Dark Sensor Mono - Sets the camera to a mono image, when in dark mode.
- Dark Sensor Colour - Sets the camera to a colour image, when in dark mode.
- Dark Focus Ambient - Sets the camera focus (when in mono), to suit the scene when ambient light is present.
- Dark Focus IR - Sets the camera focus (when in mono) to suit the scene when IR light is present.
- De-Fog On - Switches camera De-Fog feature on.
- De-Fog Off - Switches camera De-Fog feature off.
- Washer On - Activates wash function, sends camera to preset 299, activates wiper.
- Washer Off - Stops wash function.
- Force Night Settings - Used to set camera to night/dark settings.
- Force Day Settings - Used to force camera to day/light settings.
- Disable Forced Settings - Switch off forced settings, camera to use settings as per light level.
- Force Mono Settings - Force camera into mono, no lamps, ambient focus range.
- Force HLC On - Switch on HLC option.
- Force HLC Off - Switch off HLC option.
- Iris Open - Opens the camera iris.
- Iris Close - Closes the camera iris.
- Iris Auto - Switches on auto iris.
- Iris Manual - Sets camera to manual iris mode.
- Power Low - Sets the motors to use low power.
- Power On - Sets the motors to use full power.
- ONVIF Token - Used to alter the name of the ONVIF Auxiliary token.

Dark relates to when the camera is in dark mode, see section Camera - Night Changeover - page 40.

Force ONVIF Version Configuration

- Reported Version - Can be used to change the ONVIF version reported by the camera to the VMS, options are:- Default - ONVIF 2.40, V2.02, V2.20 & V2.40. OK setting and then re-boot camera from web page to apply.
- Preset Token Format - Default (Used on certain VMS servers. Uses mix of text and ‘P’ zero-pad number as preset tokens). Number only (Used on certain VMS servers. Uses numbers as preset tokens). ‘P’ zero-pad number (Used on certain VMS servers. Uses P001 to P360 as preset tokens).
- Authorisation Elevation - Used on Vicon VMS, allows the anonymous user to be set as admin, viewer or operator.
- Pan/Tilt position Range - Used on VMS systems that use specific pan and tilt operation, used to set the angular position to suit the VMS ONVIF position.
- Advertise Multicast - Option no longer required. When Multicast is enabled in Advanced Video page, the stream will be advertised.
- Auxiliary Functions - Used to set how the VMS will see the ONVIF Auxiliary Token.
  Configurable - Aux 1 - 8, configurable via web page
  Standard - Standard ONVIF
  Additional - Additional control commands using the ONVIF Standard
- Pre-defined Presets
  Advertise All - Show all pre-defined presets, when the VMS requests the presets from the camera.
  Advertise Re-definable - Show re-definable pre-defined presets only e.g. Home
  Omit - Do not show the pre-defined presets, when the VMS requests the presets from the camera.
- Iris Scale - Used on certain VMS systems, options are position or attenuation (dB).
- UUID Format - Option for UUID when connecting to VMS platforms.
- Fixed Preset Location - Default – User 1
- Media Version - Media 1 – Media 2 with Media 1 profiles – Media 2.
- Relay Output Control - Disabled – Force Night Mode.

OK to apply the new settings into the Invictus .
Cancel to abandon the changes to the settings.

15.2.8 Recording

Only available on Edge Recording

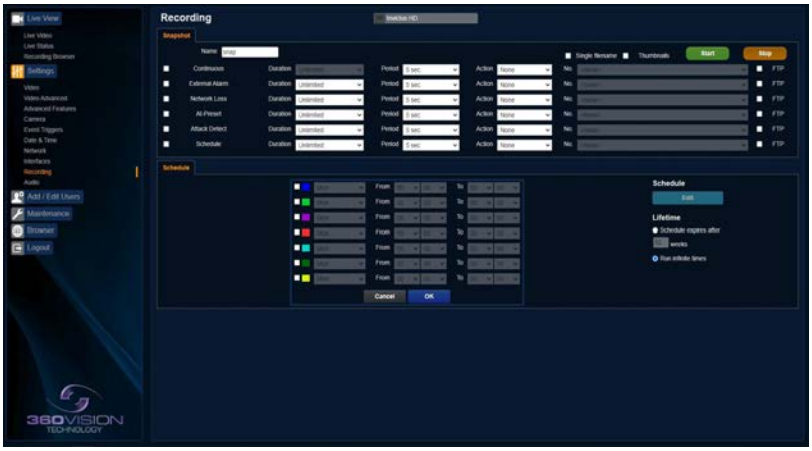
The role of the recording function is to store video snap shots as files on a storage device built into the camera. The recording function can auto-detect the necessary parameters from each configured stream, such as video compression, resolution, frame rate and bitrate. The size of the video created will depend on the video compression and bitrate used.

Different options can be used to start a recording per stream, these are manual, continuous, external alarm, network loss, attack detect and schedule. Each recording can be configured with different options including recording duration.

The recorded file name will be displayed as YYYYMMDDhhmmss-x-name.avi
(x indicates the recording trigger d is manual demand, a is attack detect, s is schedule).

- Camera - Cannot be edited, shows label/name given to the camera.
  (See Video - Camera - page 35)
- Name - Type in name of the file name to be used.
- Thumbnail - If enabled before the recording, thumbnails can then be used as a filter in the multimedia page *(See Recording browser - page 34).*
- Start/Stop - Demand a manual recording, use the start and stop to set.
- Continuous - Enable continuous recording.
- Network Loss - Trigger recording from a network connection loss to the camera.
- At Preset - Start recording when the camera gets to a specific preset, tour or mimic.
- Attack Detect - Start recording if the camera is attacked
- Schedule - Record as per recording schedule.

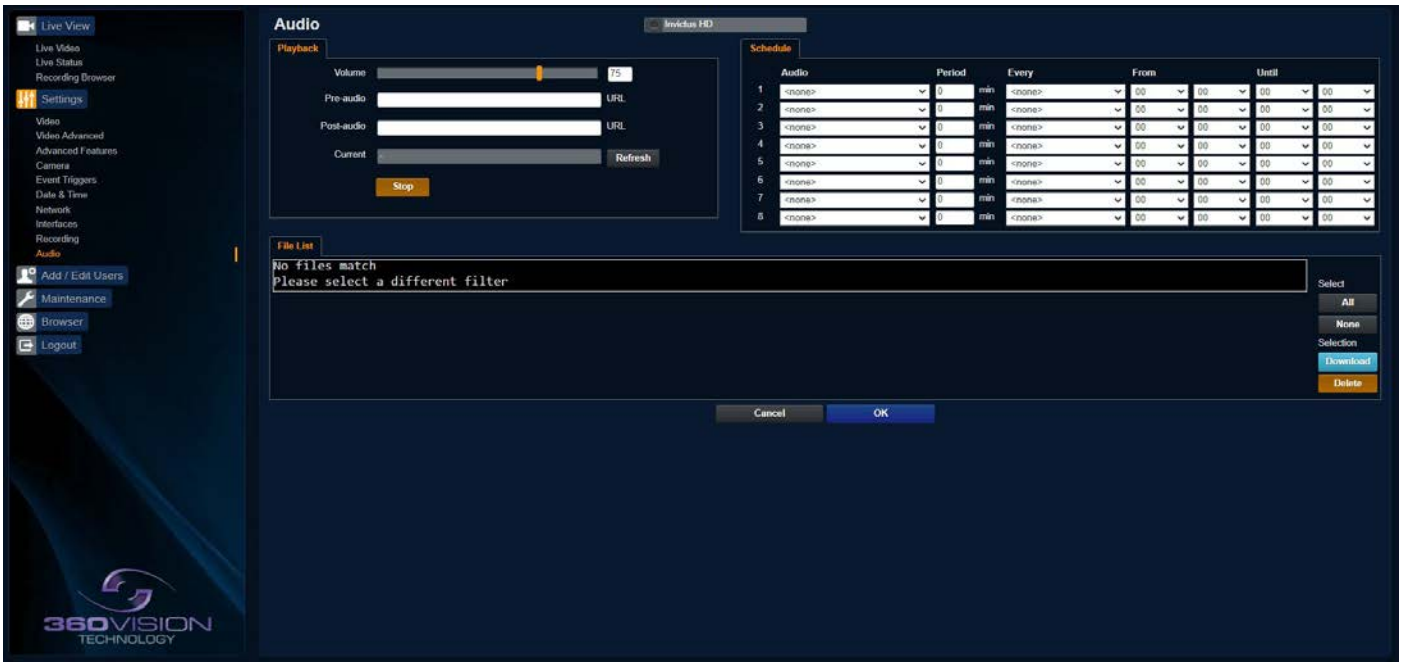
- Schedule Edit - Setup a recording schedule *(See Recording browser - page 34).*
- Lifetime - Recording schedule will stop after this period.



Schedule Screen

OK to apply the new settings into the Invictus.
Cancel to abandon the changes to the recording settings.

15.2.9 Audio



Only available on Edge Recording Invictus

- Camera - Cannot be edited, shows label/name given to the camera. *(See Video - Camera - page 35).*
- Volume - Set volume for audio playback.
- Pre-audio - Use HTTP commands to activate audio amp.
- Post-audio - Use HTTP commands to de-activate audio amp.
- Current - Current audio file being played back.
- Refresh - Update web page to show current audio file.
- Stop - Stop audio file currently being played.

Schedule

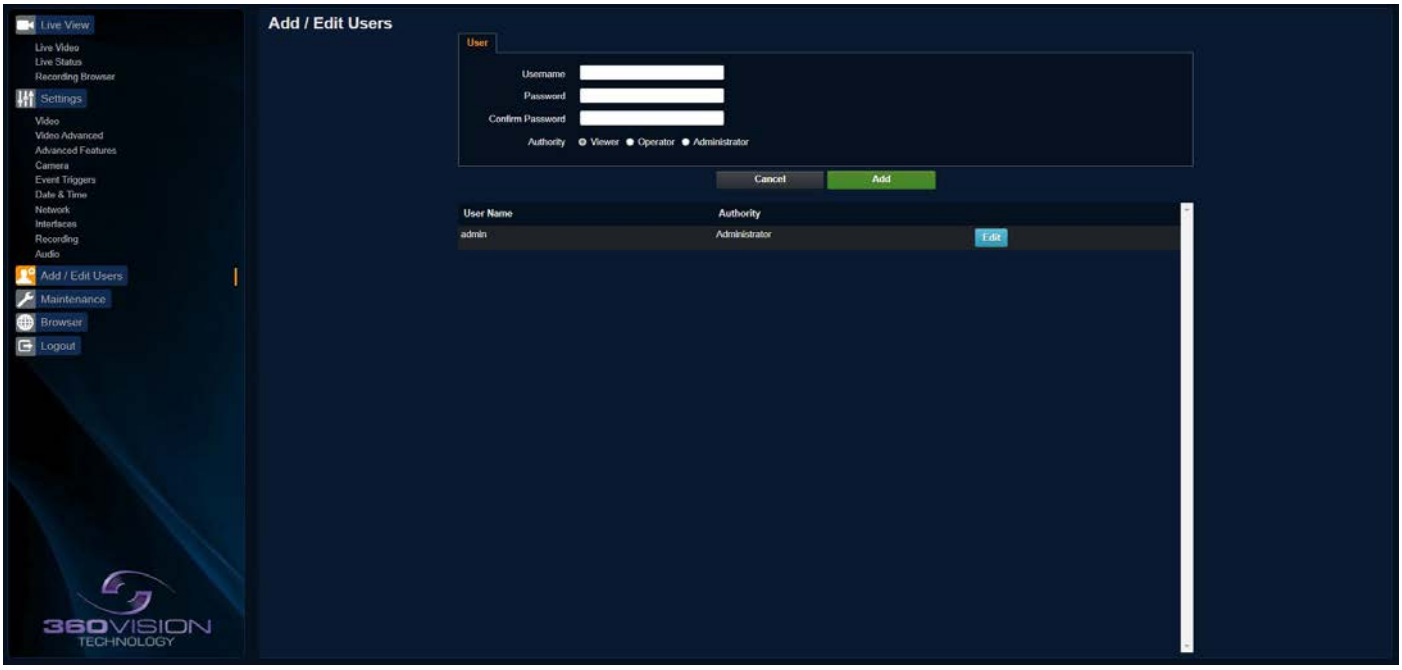
- Schedule - Used to set schedule for audio playback.

File List

- List - Shows all audio files loaded onto the camera.
- Select - Used to select all the files or none from the list.
- Delete - Used to delete the selected file.

OK to apply the new settings into the Invictus.
Cancel to abandon the changes to the audio settings.

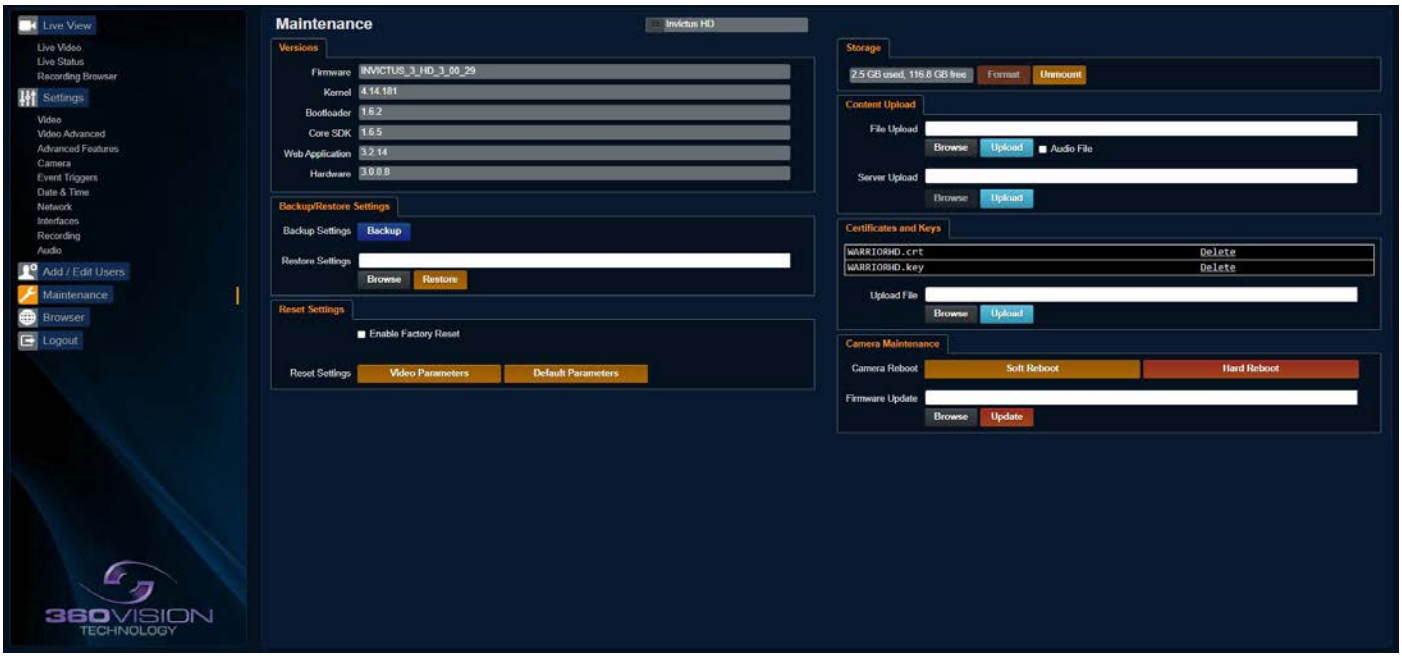
15.3 Add/Edit Users



The Add/Edit Users page, allows the admin user to create both operator and viewer level login details. The admin user login password, can also be changed here. The web page admin password is also the ONVIF admin password. Care must be taken, when changing the admin password.

Under Secure by Default specification, there is no facility to reset a forgotten admin password. If password is forgotten, the only solution is return to 360 Vision Technology. Please remember password used.

15.4 Maintenance



- Camera - Cannot be edited, shows label/name given to the camera.
  (See Video - Camera - page 35).

Version

- Firmware - Current firmware loaded onto the camera.
- Kernel - Current kernel file loaded onto the camera.

- Bootloader - Current Bootloader loaded onto the camera.
- Core SDK - Current SDK loaded onto the camera.
- Web Application - Current web application loaded onto the camera.
- Hardware - Current mainboard software loaded onto the camera.

Backup/Restore Settings

- Backup Settings - Save - Used to save the camera settings.
  The file is displayed as Invictus_HD_YYYYMMDD_HHMM.DAT clicking on this file will download the file to the PC download folder.
- Restore Settings - Browse to the required DAT file and then click restore. The camera will then apply the settings and reboot the camera.
  PLEASE NOTE:- All saved camera settings including passwords will be uploaded to the camera.

Restore settings

- Enable Factory Reset - Password required. All settings including IP address will reset to default.
- Video Parameters - Reset video and camera settings to default .
- Default Parameters - Reset codec parameters i.e. video stream settings.

Storage

- Used and free space on the memory device. Used for the firmware update process.
- Format - You can use this option to format the storage device. Please stay on the web page while it is doing this. Option available when the device is unmounted.
- Unmount - Select this option to unmount the storage, once confirmed. The web page will report back that the process is successful.

Content Upload

- Content Upload - Upload application software to camera memory.
- Server Upload - Download application files from FTP/HTTP server.

Certificates and Keys

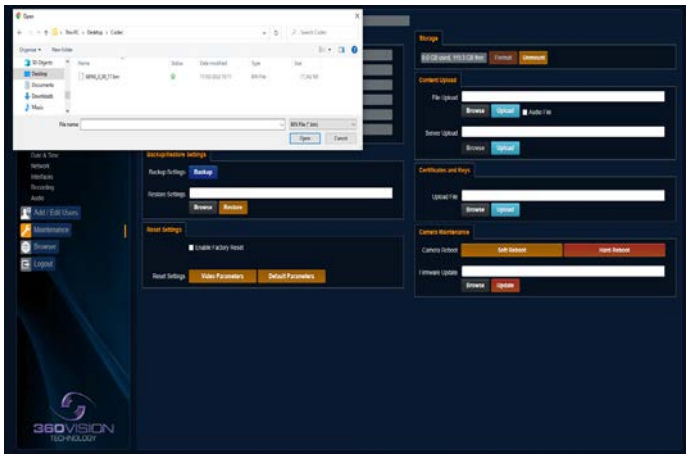
- Upload SSL file - Import SSL file. Supported files .key, .pem and .crt.

Camera Maintenance

- Camera reboot
  - Soft reset - This will reboot the codec, no settings will be lost.
  - Hard reset - This will reboot the camera, no settings will be lost.
- Firmware Update - Browse to codec file and then click on update. The camera codec will then be updated. The Invictus camera will re-boot once the update has been performed.

DO NOT interfere with this process as it may stop the camera from working.

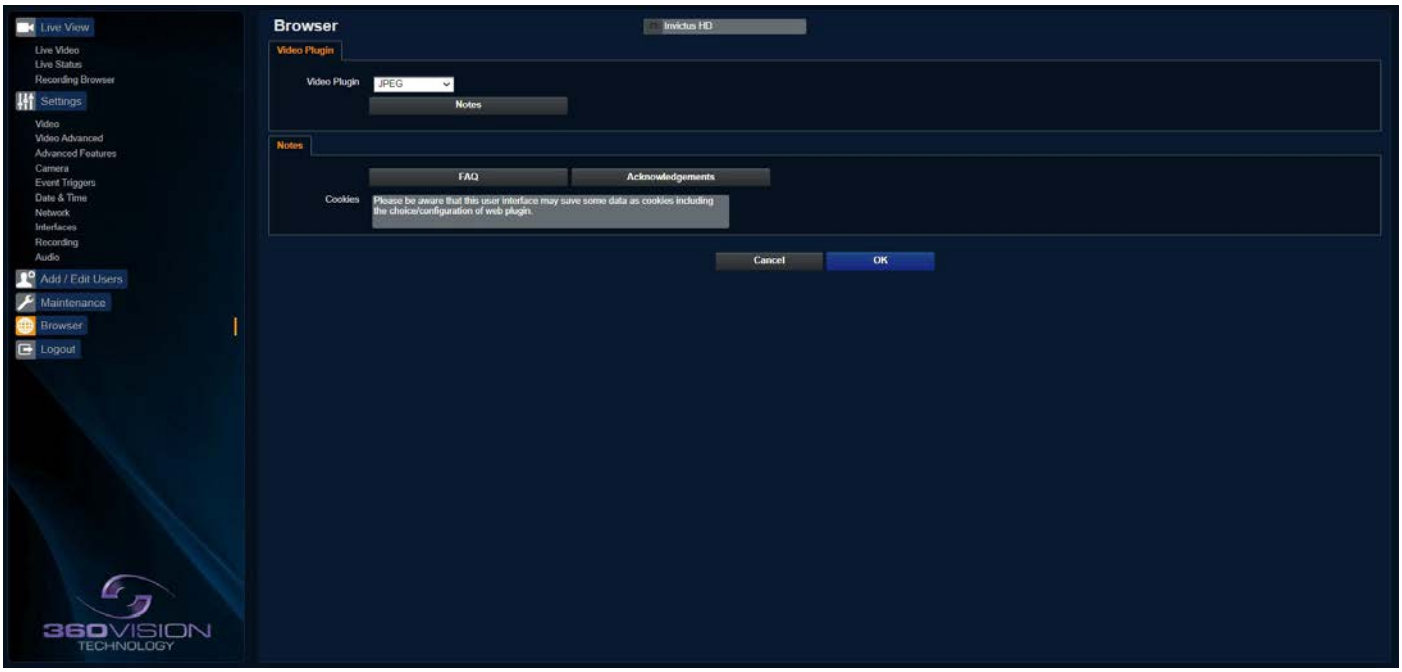
Contact 360 Vision Technical Support for the link to the update application & codec update files.



Update Screen

OK to apply the new settings into the Invictus .
Cancel to abandon the changes to the maintenance settings.

15.5 Browser



Video Plugin

- Video Plugin - Choose video plugin, choice of VLC, MJPEG (every 5 seconds), or none.

OK to apply the new settings into the Invictus .
Cancel to abandon the changes to the settings.

16 Network Settings Recovery

When network settings are changed, the IP address, Net Mask and Gateway are validated before they are saved. However if the settings are such that the Invictus has settings which mean that it cannot be seen on the user's network, it may become necessary to use the 'Network Settings Recovery' feature as described below.

The 'Network Settings Recovery' IP address may conflict with an IP address that is already defined on the network, it may be necessary to disconnect the Invictus from the network and control it locally using a network connection to a laptop so that the IP address can be set to a suitable setting before the Invictus is reconnected to the main network.

Procedure for 'Network Settings Recovery'

If necessary disconnect the Invictus from the main network.

Turn power to the Invictus OFF for 3 seconds.
Turn power to the Invictus ON for 4 seconds.
Repeat the above five times.

On the final power ON, leave the power switched on for at least 5 minutes to allow the Invictus to initialise.
(See section Locating the Invictus on your network - page 30).

17 Special Presets

Illumination (When it is dark)	Seek 64 (On)	IR (Mono/Colour not changed)	Seek 66 (Off)
	Seek 65 (On)	White Lights (Mono/Colour not changed, no timer)	Seek 66 (Off)
Night Sensor (When it is dark)	Seek 67 (Mono)		Seek 68 (Colour)
Night Focus Range (When it is dark)	Seek 69 (Ambient)		Seek 70 (IR)
Wiper	Seek 81	Double Wipe	Seek 86 (Stop)
	Seek 82	Permanent Intermittent Wipe	
	Seek 83	Permanent Fast Wipe	
	Seek 84	Timed Intermittent Wipe	
	Seek 85	Timed Fast Wipe	
De-Fog	Seek 87 (On)		Seek 88 (Off)
Washer	Seek 89 (On)	Define Preset 299 (Defines Washer Position)	Seek 90 (Off)
White Lights (When it is dark)	Seek 100 (On)	White Lights (Change to colour, timer used)	Seek 101 (Off)
Power on Park	Define/Seek 150	Program/Recall Power on Park preset position	

18 Important - Care of Painted Surfaces

The powder coating applied to the Invictus external housing is recognised as being in the forefront for quality and finish. However, in order to preserve the aesthetic finish it is recommended that the coating is regularly cleaned.

Regular cleaning on a maximum three month interval, using warm and mild detergent must be undertaken. Abrasive cleaners including strong solvent must NOT be used at any time.

In areas where the coating may come in contact with concentrated atmospheric pollutants [marine, chemical and especially bird droppings] it would be prudent to clean more frequently e.g. monthly. Dirt build up, depending on type, will compromise the surface coating of the paint and if left for long periods in sunlight, will lead to a breakdown of the protective paint coating. As an example, bird waste contains uric acid, which, if left untreated and exposed to sunlight, will breakdown the protective layer and compromise the efficacy of the paint, similar to that of motor vehicles.

When the Invictus is installed in areas where there is a high risk of damage from birds or their droppings, additional precautions and measures should be used to keep the birds away from the Invictus e.g. fit anti-bird spikes.

Full documentation of the cleaning schedule MUST be maintained to ensure that a warranty claim can be considered.

If damage occurs to the coating (e.g. the Invictus is dropped, scraped etc.), repairs MUST be carried out immediately.

Failure to ensure adequate cleaning maintenance will invalidate the paint and camera warranty.

19 Storage and Handling

Invictus should be handled with care and must not be dropped. When Invictus are inside the transit packaging which is used for despatch from the factory, they should not be stacked to a height of more than two Invictus. When Invictus are being stored before installation they should be kept in the transit packaging and located in a dry indoor environment preferably between 1°C and 35°C which is dry and dust free. Humidity should such that water vapour is non-condensing. Invictus can be allowed to be outside this range for short periods of time (24 hours maximum) for transport (e.g. in aircraft or vans) but must never be allowed to be outside the normal operating temperature range of -40°C to +60°C even during storage.
Before installation the Invictus should be clean and dry. (If necessary it should be cleaned and dried taking care that the glass is not scratched).

20 Disclaimer

This information and/or any technical information – whether received verbally or writing – is given in good faith but without warranty and this also applies where proprietary rights of third parties are involved. The information provided does not release you from your obligation to check its validity and to test the products suitability for the intended purpose(s) and use(s). The application, use and installation of the products either in isolation or in conjunction with other products used, provided and installed by you on the basis of the technical advice issued are beyond our control and therefore remain entirely your own responsibility.

21 PSU Enclosure Dimensions

Material	PC/ABS
INV-PSU-SM	255 x 180 x 100mm
INV-XALARM-PSU-SM	255 x 180 x 100mm
INV-PSU-SM-WA	255 x 180 x 100mm
INV-POE-PSU	255 x 180 x 100mm

22 White Balance and Fast Shutter options

White Balance Options
Auto
Outdoor
Indoor
Auto Tracing
Indoor A, B & C
Sodium
Sodium Auto A & B

Fast Shutter Options
1/1000
1/1250
1/1750
1/2500
1/6000
1/10000