IONODES
IMAGING TECHNOLOGY

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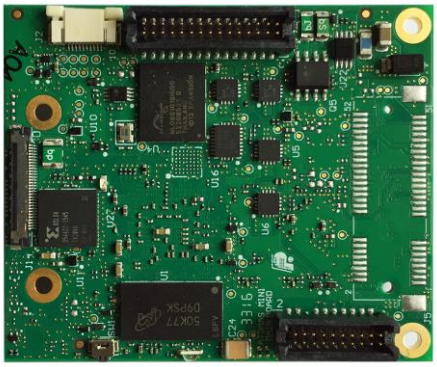

ATOMAS-MINI
User Manual

Version 1.5

IONODES
IMAGING TECHNOLOGY

IONODES INC.

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www.ionodes.com

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Before you begin

About the ATOMAS-MINI

The ATOMAS-MINI single port OEM encoder module delivers high quality H.264 video encoding to the video surveillance market. It is an embedded, high-performance digital video OEM encoder module designed for integration into HD cameras or other video capture products.

Embedding support for networked API's, products based on the ATOMAS-MINI can be integrated into a networked video management system allowing for centralized monitoring and management in a scalable and expandable IP surveillance system. Contact IONODES for a list of supported VMS systems.

The high-performance encoding capability of the ATOMAS-MINI offers a cost-effective way to convert existing cameras designs to benefit from video over IP networks.

The ATOMAS-MINI provides innovative configuration options and tools that can significantly decrease the amount of time and effort required to deploy a unit. Using web-based configuration tools, users can easily and remotely manage all aspects of the appliance.

To support high-performance encoding, while keeping the total cost of ownership within budget constraints, the ATOMAS-MINI uses highly efficient dual stream H.264 compression and supports an optional MJPEG stream.

Advanced features, such as "edge-recording" allow you to extend usage of the ATOMAS-MINI well into the future.

Parts List

Qty	Description
1	ATOMAS-MINI Module

Note: When unpacking, inspect the shipment box and appliance to identify any possible damages due to shipping. Make sure all items have been delivered and that no items are missing. Contact your Ionodes representative should you find any damages or defects.

Note: The product serial number label helps the Ionodes product support team identify your device and its factory configuration in the event that your Ionodes product or its components require service. The label is attached on the underside of the PCBA module.

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Hardware Integration

The ATOMAS-MINI has been designed to allow for flexible hardware integration to existing or new product designs. The ATOMAS-MINI proposes four (4) mounting holes for securing to your enclosure. In addition, a slight clearance around the board's edge can also be used for extrusion-type enclosures.

When integrating the ATOMAS-MINI into a product design, position the module to allow for air circulation around the board in order to maximize the chances of heat dissipation.

Warning: Be careful not to damage the module when using mounting screws.

Temperature Considerations

The ATOMAS-MINI has been designed with industrial temp. components (-40C to +85C); however, reaching your temperature requirements may require that you add heat sinks to certain board-level components which generate substancial heat. Our internal testing has allowed to confirm that with specific heatsinking, the device should be suitable for applications running between -10C and 60C ambient temperature. Note that you may be able to obtain better results using your own design.

Pinout Description

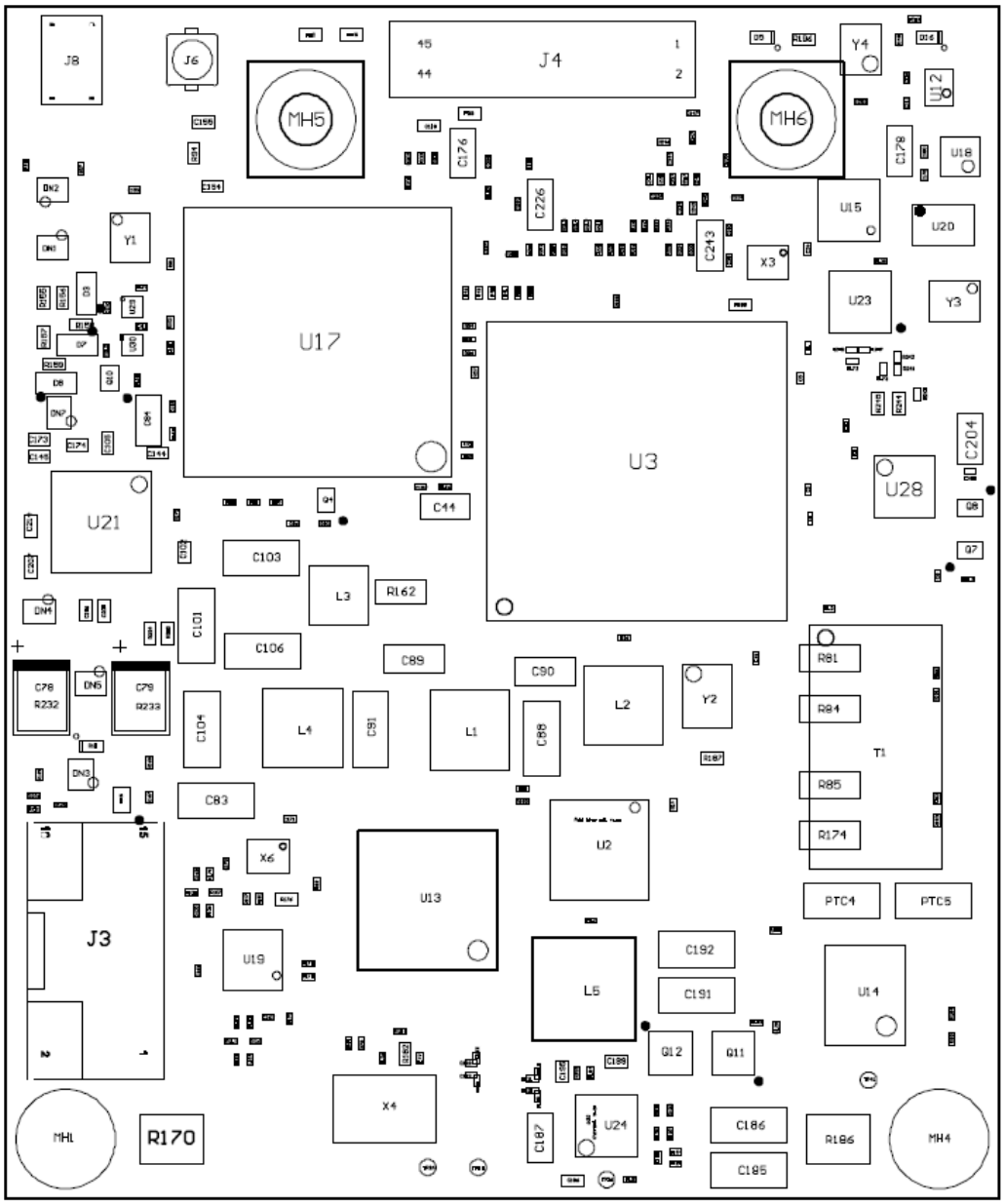


Figure 1 - Top Side

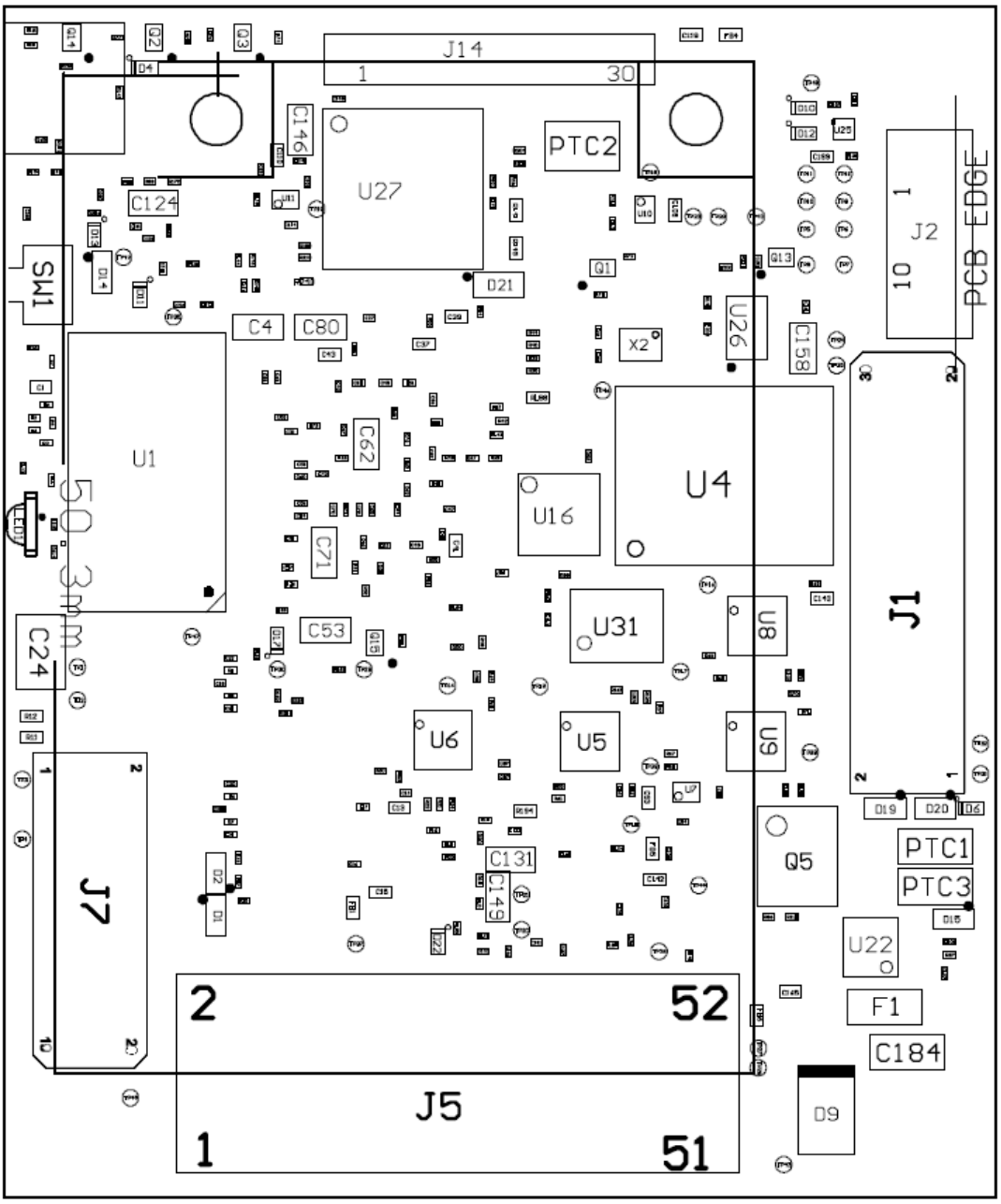


Figure 2 - Bottom Side

Connector Part Numbers

- ATOMAS-MINI-LVDS / Module
  - J1 – SAMTEC / TFC-115-32-F-D
  - J2 – TE Connectivity / 1-1734839-0
  - J3 – MOLEX / 5041891670
  - J7 – SAMTEC / TFC-110-32-F-D
  - J8 – SAMTEC / CLP-103-02-G-D
  - J14 – Kel / USL00-30L

- ATOMAS-MINI-YUV / Module
  - J1 – SAMTEC / TFC-115-32-F-D
  - J2 – TE Connectivity / 1-1734839-0
  - J3 – MOLEX / 5041891670
  - J4 – AVX / 04-6296-045-931-846+
  - J7 – SAMTEC / TFC-110-32-F-D

J1 – Audio & I/O Signals

SAMTEC / TFC-115-32-F-D

Pin No.	Name	Comments
1	UART0 TX	Serial Port TX – TTL Level 3.3V or 5V. Unprotected, please provide appropriate protection on external source.
2	DEBUG TX	For internal purposes only. DO NOT USE.
3	UART0 RX	Serial Port RX – TTL Level 3.3V or 5V. Unprotected, please provide appropriate protection on external source.
4	DEBUG RX	For internal purposes only. DO NOT USE.
5	AUDIO LINE OUT RIGHT	
6	AUDIO LINE OUT LEFT	
7	GND	
8	AUDIO COMMON	
9	AUDIO LINE IN RIGHT	

10	AUDIO LINE IN LEFT	
11	GND	
12	GND	
13	RST / FACT DFLT	Reset signal / factory reset
14	MAIN PWM	For internal purposes only. DO NOT USE.
15	MEZ RST#	For internal purposes only. DO NOT USE.
16	GND	
17	GND	
18	AUX SDA	I2C Data. For internal purposes only. DO NOT USE.
19	MEZ DRY IN1	I/O input for dry contact input.
20	AUX SCL	I2C Clock. For internal purposes only. DO NOT USE.
21	MEZ DRY IN2	I/O input for dry contact input.
22	GND	
23	MEZ DRY OUT	I/O output for dry contact output.
24	RS-485 TX+	
25	GND	
26	RS-485 TX-	
27	PWR SRC 0	For internal purposes only. DO NOT USE.
28	RS-485 RX+	
29	PWR SRC 1	For internal purposes only. DO NOT USE.
30	RS-485 RX-	

DEBUG Serial Port

The debug port (DEBUG TX/RX) is for internal use by IONODES and should be left disconnected on production designs.

UART0 Serial Port

J1 provides TTL 3.3V level RX an TX access to the serial port. Although there is some basic ESD protection on these signals, you are required to ensure voltage-level protection on these external signals.

RS-485 Serial Port

The serial port provided on J1 is typically to be used for integrating with your device's controller (such as a PTZ controller). J1 provides RS422/485 access to the device's serial port; TTL levels for this same serial port are accessible via UART0 pins (TX and RX) on connector J1.

To connect a serial controller to an ATOMAS-MINI using RS-422/485 4-wire configuration, use the following steps:

1. Ensure proper connection between RS-422 4-wire or RS-485 4-wire serial equipment and the ATOMAS-MINI, use the following scheme:

Equipment Serial Port	ATOMAS-MINI Serial Port
TX+	RX+
TX-	RX-
RX+	TX+
RX-	TX-
GND	GND

2. Select the desired operation mode (RS-422 4-wire or RS-485 4-wire) using the devices web interface or external VMS interface.

Note: The RS485 pins on connector J1 are only active if the mode of the serial port is set to RS422 or RS485 via the devices web interface. If the serial port is set to any other mode, the RS422/485 driver is disabled and the serial port can only be accessed using TTL UART0 pins on connector J1.

RST / FACT DFLT Signal

The ATOMAS-MINI provides a reset signal input. To trigger the reset signal, short the RST pin to the GND. The reset signal can be used to perform a device reboot, or to perform a complete reset to factory default settings of the device's configuration parameters.

To reboot the device without triggering a factory reset, short the RST pin of connector J1 and immediately release. The device should perform a complete reboot.

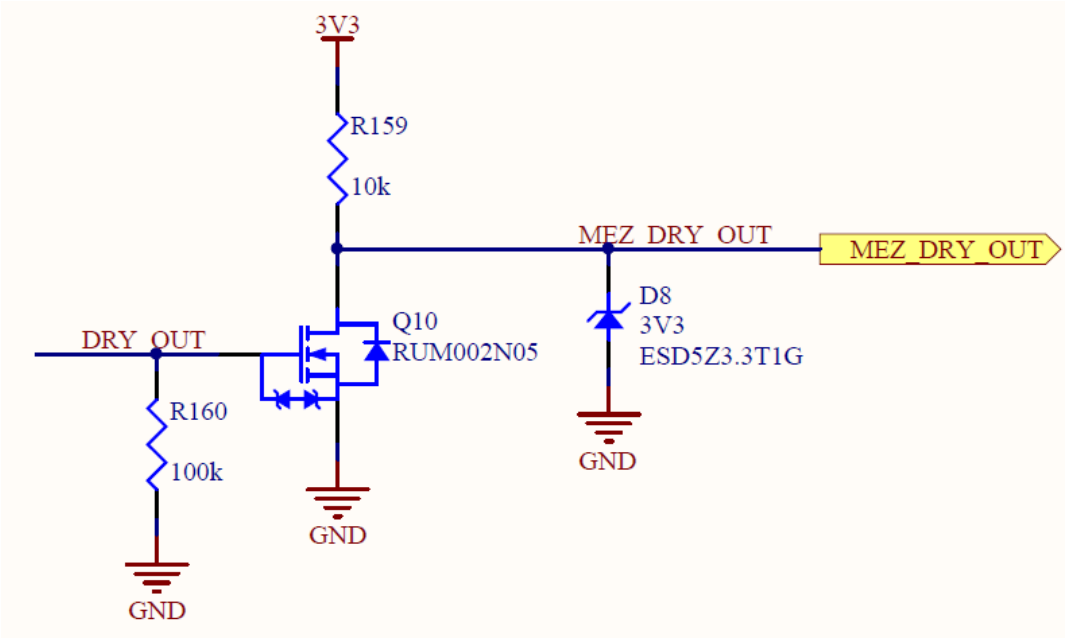
To reset the device to the factory default configuration, short the RST pin of connector J1 for approx. 20 seconds – release the pin once the LED pattern on the on-board LED displays alternating RED/GREEN colors. After the device reboots, it should be reset to the default factory configuration.

In addition to the RST pin of connector J1, there is a push button (SW1) that allows you to perform either a device reboot or a complete reset to factory default settings. To reboot the Atomas press the button and immediately release it, the LED will flash red, then will turn steady greed to indicate the reboot is finished. To perform a factory reset, press the button and release it as soon as the on-board LED displays alternating RED/GREEN colo. Once the device finishes rebooting, it will be configured to default settings.

MEZ DRY OUT Signal

The ATOMAS-MINI provides a digital output for providing functionality such as driving a relay. The open state of the I/O output is at 3.3V and the closed state is to the board ground (GND).

The below schematic excerpt describes functions of the I/O OUT exposed via J1


3V3
R159
10k
MEZ_DRY_OUT
MEZ_DRY_OUT
D8
3V3
ESD5Z3.3T1G
GND
DRY_OUT
Q10
RUM002N05
R160
100k
GND
GND

MEZ DRY IN Signals

The ATOMAS-MINI provides two (2) input pin signals, MEZ DRY IN1 and MEZ DRY IN2, for eventing purposes. To trigger an input pin (closed stated), you must connect the appropriate MEZ DRY IN signal with the provided GND located on connector J1. To set the open state, leave the input floating.

J2 - 10 Pin Micro SD / SD Connector

TE CONNECTIVITY 1-1734839-0

Pin No.	Name	Level
1	Write Protect	
2	Card Detect	
3	Data Bit 2	
4	Data Bit 3	
5	Command Line	
6	Power	2.7V – 3.6V DC
7	Clock	
8	GND	
9	Data Bit 0	
10	Data Bit 1	

Note: In order to use the micro SD / SD functionalities, make sure to use a 2GB to 64GB micro SD / SD card of class 6 or above. You must also make sure the card is formatted in FAT32 or EXT3.

J3 – Power Inputs

MOLEX / 5041891670

Pin No.	Name	Level
1	GND	
2	VIN+	DC Power Input. See power input range below. This input is protected via 5A fuse.
3	GND	
4	VIN+	DC Power Input. See power input range below. This input is protected via 5A fuse.
5	GND	

6	VIN+	DC Power Input. See power input range below. This input is protected via 5A fuse.
7	GND	
8	VIN+	DC Power Input. See power input range below. This input is protected via 5A fuse.
9	GND	
10	VRTC	DC Power Input for RTC.
11	N/C	
12	N/C	
13	GND	
14	Heater Out	DC Power Output for HEATER control. Optional, please consult IONODES for more info. (5V)
15	GND	
16	FAN Out	DC Power Output for FAN control. Optional, please consult IONODES for more info. (5V)

Power Input Range

The power input range on the ATOMAS-MINI-LVDS device is 7VDC to 12VDC.

The power input range on the ATOMAS-MINI-YUV device is 7VDC to 14VDC.

Note: IONODES has an optional PoE module (power-over-Ethernet) which can be used to add PoE support for your ATOMAS-MINI design. This module provides direct connection via a supplied cable. For more information on this module, please contact us.

VRTC

VRTC is provided in order to allow for optional integration of an external battery source (1.3V to 5.5V) for feeding the module's realtime clock (RTC). VRTC is only required to keep the date/time when the main power supply is not connected. All other data is saved in persistent FLASH memory.

Note: VRTC is not a mandatory signal to operate the ATOMAS-MINI.

J4 – Parallel Video Interface

AVX / 04-6296-045-931-846+

Pin No.	Name	Comments
1	GND	
2	GND	
3	SCL	I2C Serial Bus Clock
4	SDA	I2C Serial Bus Data I/O
5	XRST	System Reset
6	GND	
7	N/A	DO NOT CONNECT.
8	N/A	DO NOT CONNECT.
9	N/A	DO NOT CONNECT.
10	N/A	DO NOT CONNECT.
11	N/A	DO NOT CONNECT.
12	N/A	DO NOT CONNECT.
13	GND	
14	VD	Digital Video V-Active Signal
15	HD	Digital Video H-Active Signal
16	Y0	Digital Video Data (Luminance Parallel Data0)
17	Y1	Digital Video Data (Luminance Parallel Data1)
18	Y2	Digital Video Data (Luminance Parallel Data2)
19	Y3	Digital Video Data (Luminance Parallel Data3)
20	Y4	Digital Video Data (Luminance Parallel Data4)
21	Y5	Digital Video Data (Luminance Parallel Data5)
22	Y6	Digital Video Data (Luminance Parallel Data6)
23	Y7	Digital Video Data (Luminance Parallel Data7)
24	DCLK	Digital Video Clock
25	C0	Digital Video Data (Chroma Parallel Data 0)
26	C1	Digital Video Data (Chroma Parallel Data 1)
27	C2	Digital Video Data (Chroma Parallel Data 2)
28	C3	Digital Video Data (Chroma Parallel Data 3)
29	C4	Digital Video Data (Chroma Parallel Data 4)
30	C5	Digital Video Data (Chroma Parallel Data 5)

31	C6	Digital Video Data (Chroma Parallel Data 6)
32	C7	Digital Video Data (Chroma Parallel Data 7)
33	TRIGB	Mode Transition Signal
34	STRB	Camera Strobe Signal
35	GND	
36	GND	
37	VDD_18	Power Supply (1.8V)
38	VDD_12	Power Supply (1.2V)
39	VDD_12	Power Supply (1.2V)
40	VDD_12	Power Supply (1.2V)
41	VDD_33	Power Supply (3.3V)
42	VDD_33	Power Supply (3.3V)
43	VDD_33	Power Supply (3.3V)
44	GND	
45	GND	

Note: Available on ATOMAS-MINI-YUV only.

Note: The HD sensor connector has been designed to be directly compatible with SONY's FFC ribbon cables used with their FCB Micro Series cameras.

Note: The following cable is recommended for connectivity between connector J3 and the SONY FCB-MICRO cameras:

MOLEX P/N: 0150150245: CABLE FLAT FLEX 45POS .3MM 2"

J7 – Network & Power Outputs

SAMTEC / TFC-110-32-F-D

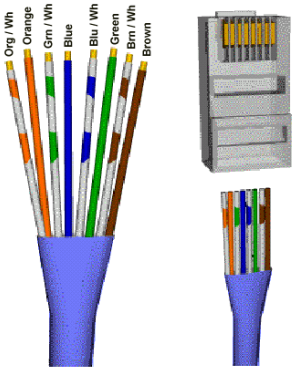
Pin No.	Name	Level
1	10/100 LAN TX +	Connects directly to RJ45 or network wiring.
2	10/100 LAN RX -	Connects directly to RJ45 or network wiring.
3	10/100 LAN TX -	Connects directly to RJ45 or network wiring.
4	10/100 LAN RX +	Connects directly to RJ45 or network wiring.
5	N/C	
6	N/C	
7	10/100 LAN LED2	Connects directly to RJ45 or network wiring.
8	10/100 LAN LED1	Connects directly to RJ45 or network wiring.
9	5V Out	5V DC Power Output (max. 1.5A)
10	3.3V Out	3.3V DC Power Output (max. 350mA)
11	FAN	DC Power Output for FAN control. Optional, please consult IONODES for more info. (5V)
12	HEATER	DC Power Output for HEATER control. Optional, please consult IONODES for more info. (5V)
13	GND	
14	GND	
15	VRTC	DC Power Input for RTC.
16	VIN	DC Power Input. See power input range in section 0. This input is not protected, use J3 VIN if possible.
17	GND	
18	VIN	DC Power Input. See power input range in section 0. This input is not protected, use J3 VIN if possible.
19	GND	
20	GND	

Warning: VIN power input on connector J7 is NOT protected. We recommend using VIN power input found on connector J3 which has 5A fuse protection. Should you choose to use J7 VIN, please ensure proper fuse protection on your VIN prior to connecting to the ATOMAS-MINI.

Warning: Please do not use VIN and VRTC signals on both J7 and J3 connectors simultaneously; please design according to use of only one of these two methods to provide DC power to the ATOMAS-MINI.

Network

J7 provides standard 4-wire network connectivity. You only need 4 wires for 10/100 Base-T network connection, please connect the appropriate network connection pins to your RJ45 connector or wiring. Network status LED pins are also accessible if needed.



Note: Magnetics are included on the ATOMAS-MINI, J7 can therefore be connected directly to network switching equipment.

J8 – Internal Port

Note: For internal purposes only. DO NOT USE.

Note: Available on ATOMAS-MINI-LVDS only.

J14 – LVDS Video Interface

Kel / USL00-30L

Pin No.	Name	Comments
1	LVDS DATA3 +	
2	LVDS DATA3 -	
3	LVDS CLK +	
4	LVDS CLK -	
5	LVDS DATA2 +	
6	LVDS DATA2 -	
7	LVDS DATA1 +	
8	LVDS DATA1 -	
9	LVDS DATA0 +	
10	LVDS DATA0-	
11	GND	
12	CAM UART TX	Connects to camera's TxD. CMOS 5V Low: Max 0.1V High: Min 4.4V
13	CAM UART RX	Connects to camera's RxD. CMOS 5V Low: Max 1.0V High: Min 2.3V
14	DC OUT	7V to 12V DC. Sourced directly from provided VIN.
15	DC OUT	7V to 12V DC. Sourced directly from provided VIN.
16	DC OUT	7V to 12V DC. Sourced directly from provided VIN.
17	DC OUT	7V to 12V DC. Sourced directly from provided VIN.
18	DC OUT	7V to 12V DC. Sourced directly from provided VIN.
19	GND	

20	GND	
21	N/C	
22	N/C	
23	N/C	
24	N/C	
25	N/C	
26	RESET OUT	Reset: Low (GND) Normal: Open (1.8V)
27	N/C	
28	N/C	
29	N/C	
30	N/C	

Note: Available on ATOMAS-MINI-LVDS only.

Understanding LED Status

Status of the ATOMAS-MINI is exposed via the on-board bi-color LED (Green/Red). The following describes the system status LED mappings of the ATOMAS-MINI:

Normal Operation:

- Operating system boot up – *LED is steady orange (max. 30 seconds)*
- Internal application startup – *LED is flashing orange (2 second interval)*
- System ready – *LED is steady green*
- Media streaming – *LED is flashing green (1/2 second interval)*

Special Operations:

- Identify command received – *LED is flashing orange/green*
- Hardware reload default settings – *LED is flashing rapidly red/green*
- Software watchdog is rebooting the appliance – *LED is flashing rapidly red*
- Firmware update in progress – LED *is flashing slowly red/green*

Note: Under normal operation, the ATOMAS-MINI takes up to 1 minute and a half to boot up.

ATOMAS-MINI-SDIO

The ATOMAS-MINI-SDIO breakout card is an optional module provided by IONODES which provides microSD storage support to your ATOMAS-MINI module.

The ATOMAS-MINI-SDIO module is provided as part of the ATOMAS-MINI-SDIO-KIT part number which also includes a cable required to connect the ATOMAS-MINI-SDIO to the ATOMAS-MINI module.

Pinout Description

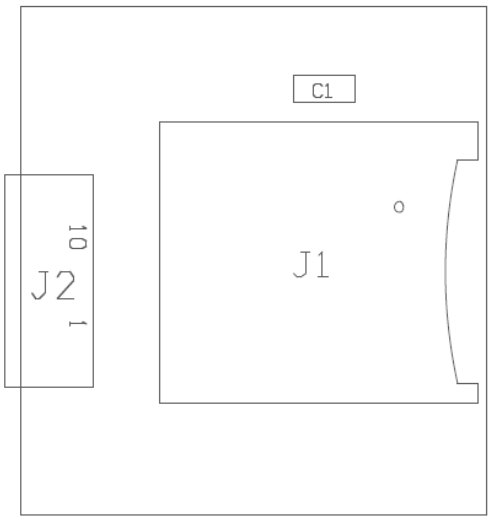


Figure 3 - Top Side

Connector Part Numbers

- J1 – MOLEX 502570-0893
- J2 – TE CONNECTIVITY 1-1734839-0

J1 – Micro SD Socket

In order to use the micro SD functionalities with the ATOMAS-MINI, make sure to use a 2GB to 64GB micro SD of class 6 or above. You must also make sure the card is formatted in FAT32 or EXT3.

J2 – 10 Pin Micro SD / SD Connector

Pin No.	Name	Level
1	Data Bit 1	
2	Data Bit 0	
3	GND	
4	Clock	
5	Power	2.7V – 3.6V DC
6	Command Line	
7	Data Bit 3	
8	Data Bit 2	
9	Card Detect	
10	Write Protect	Not Connected

Note: This connector is designed to mate with connector J4 of the ATOMAS-MINI encoder module. Pinout is inverted to keep the harness cable straight.

System Configuration

For initial set-up, the ATOMAS-MINI needs to be configured prior to using it with your network video management system. In most cases, only network configuration will be required. Since not all ATOMAS-MINI parameters can be controlled via networked video management systems, advanced parameters may need to be set-up as well through the ION specific software tools.

The initial configuration can be done locally on the ATOMAS-MINI using a laptop directly connected to the device's network port, or remotely over the network.

Network Configuration

By factory default, the ATOMAS-MINI is configured in DHCP. If you are not using a DHCP server it will automatically allocate itself an APIPA (Automatic Private IP Addressing) address in the range 169.254.0.1 to 169.254.255.254 with subnet mask 255.255.0.0.

Initial device network configuration is done via the IonConfigTool (ICT), a tool provided by IONODES and that can be found on the company's web site.

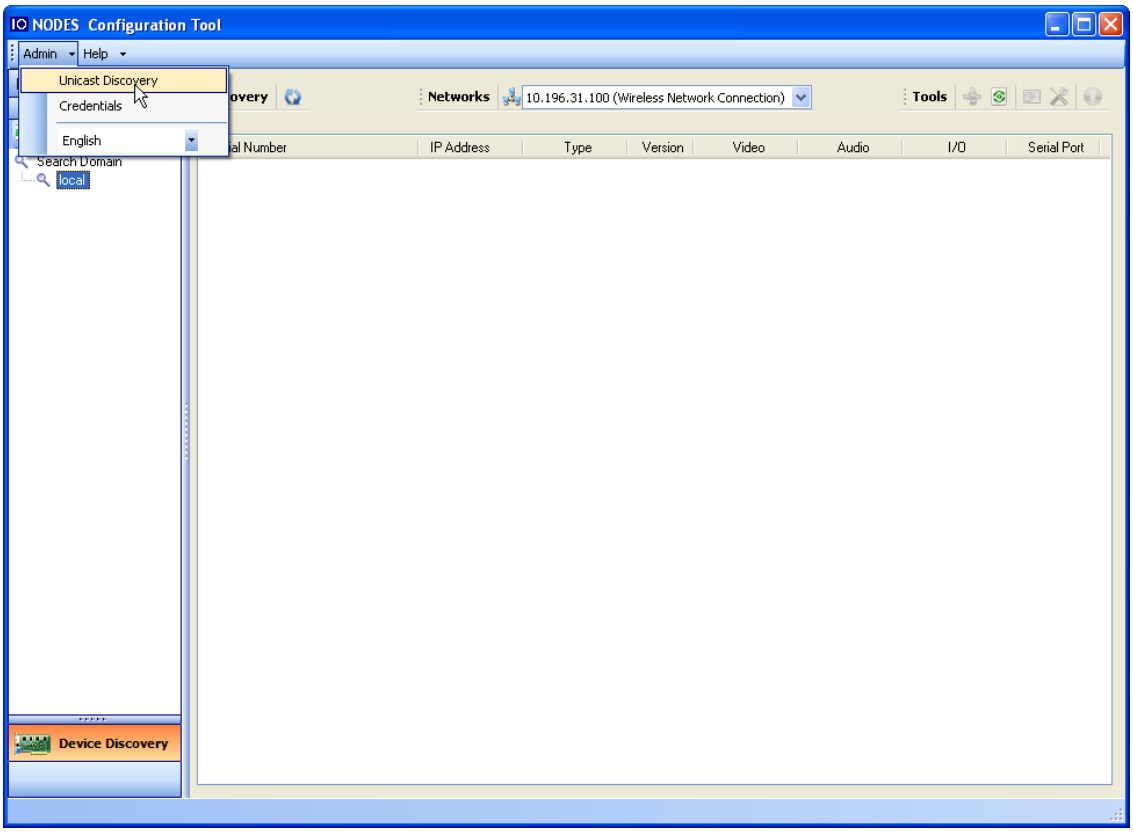
The ICT plays 5 important roles:

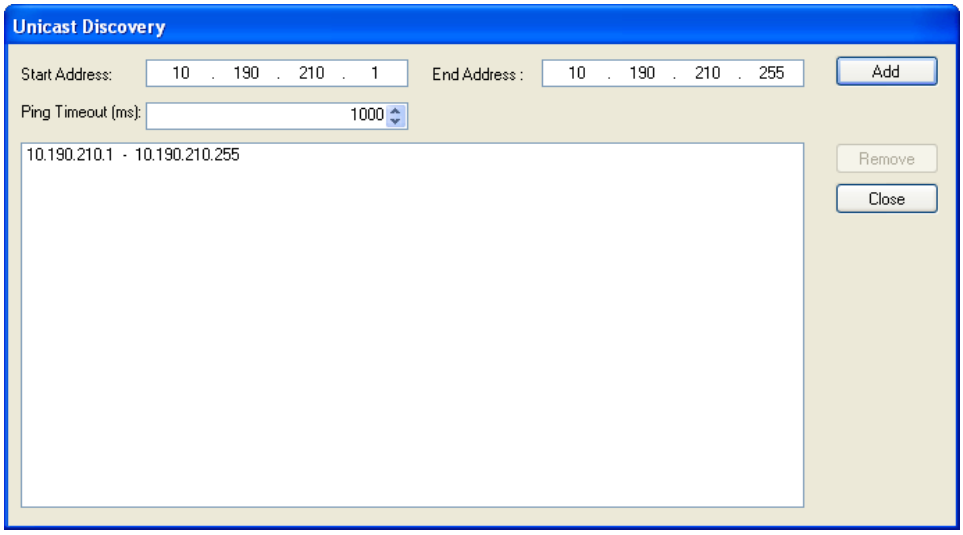
1. Discovery of all ATOMAS-MINI and other ION devices on the network
2. Remote configuration of the IP address and subnet mask
3. Identify an ION device by flashing the LED (*orange/green)*
4. Batch firmware upgrade of all common ION devices
5. Access to the web based ION management application

Once your device is installed on your network and powered up, launch ICT from any computer on the network and the following window will be displayed:

The ICT supports 2 ways to discover a device. The first way doesn't need any configuration and uses the Bonjour discovery protocol. In order to be able to discover a device via Bonjour, the network must support multicast delivery.

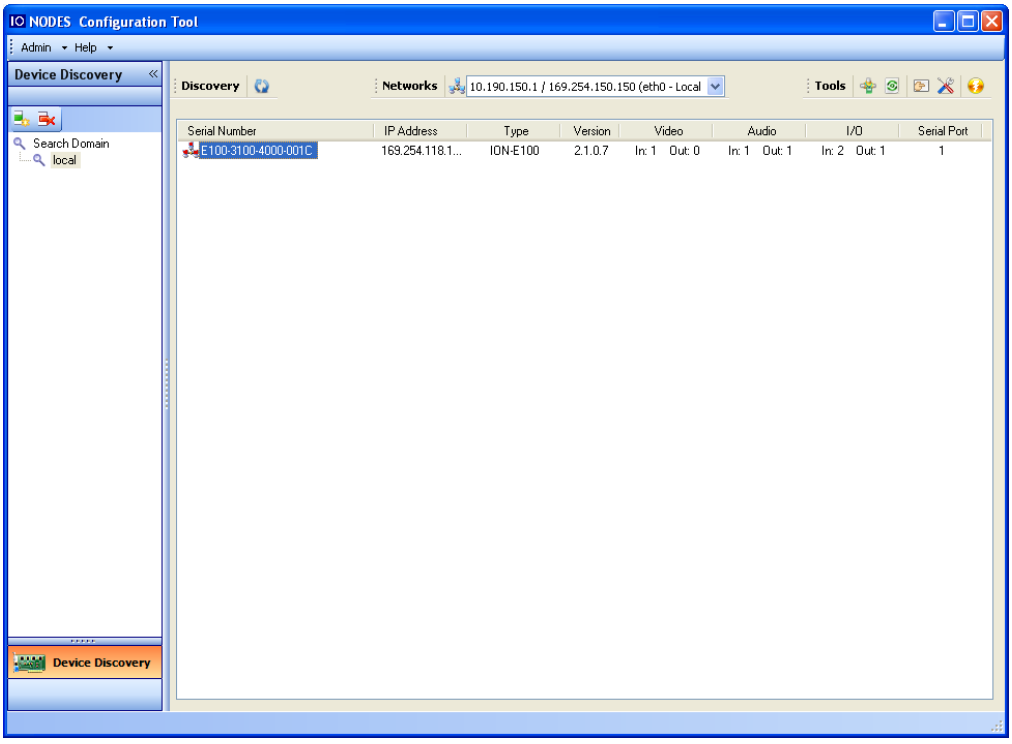
If it is not the case, you can use the second way, which is the Unicast Discovery. The Unicast Discovery can be configured by using the "Unicast Discovery" configuration form. This configuration form is available via the Admin / Unicast Discovery menu option.



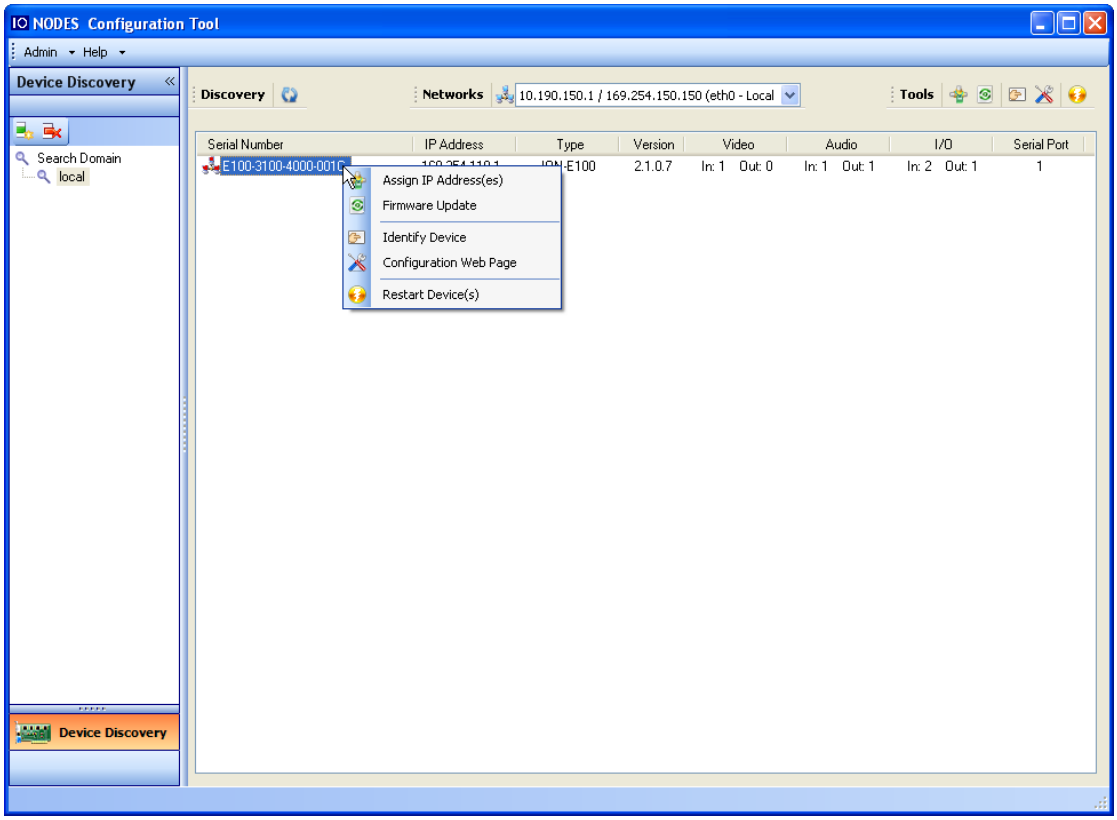


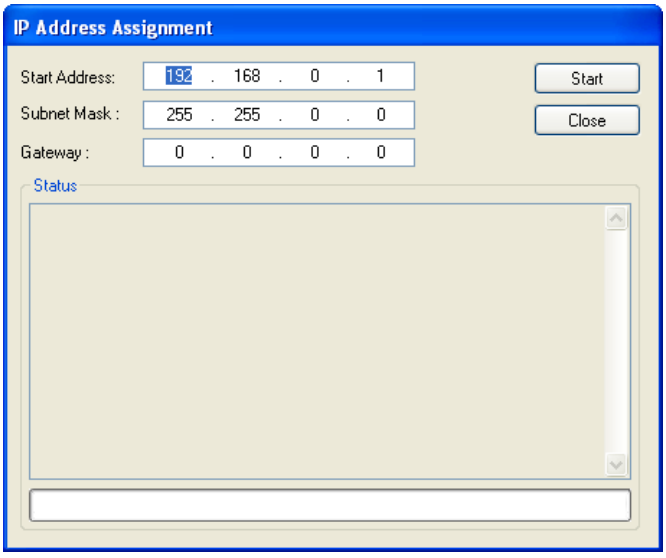
To configure the Unicast Discovery, add one or more IP address ranges. The Unicast Discovery tries to reach a device at a specific IP address in the configured ranges. The discovery can be a long process if the range of IP addresses is huge and the device is at the end of the range. To accelerate the discovery, add several small ranges of IP addresses. The ping timeout option can be increased for a high latency network.

The ICT will display as many devices as it discovers on the network.



If no DHCP server was able to assign an IP address to an ATOMAS-MINI, it will appear in the ICT device list with an APIPA address (169.254.*.*). If an ATOMAS-MINI displays an APIPA address it must be configured with a valid IP address before it can be remotely configured by selecting the ‘’Assign IP address’’ from the selection list and configuring the TCP/IP settings.



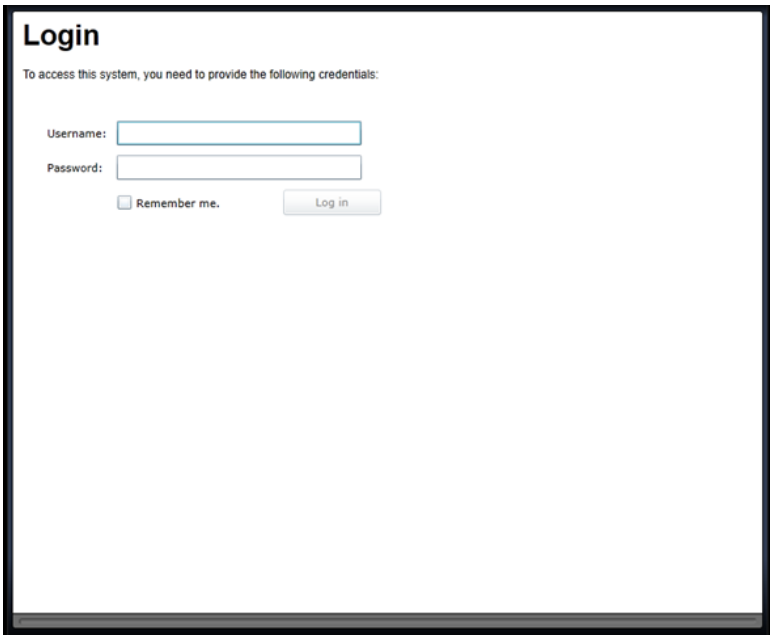


Once the IP information is set, the Silverlight web application served by the ATOMAS-MINI can be launched from the ICT or directly in your web browser by typing the device's IP address in the address bar. You can start to use your networked video management system for final system configuration or you can configure advanced parameters using the ATOMAS-MINI's web based management.

Note: Your computer must be in the same subnet (169.254.*.*) in order to be able to communicate with the Atomas.

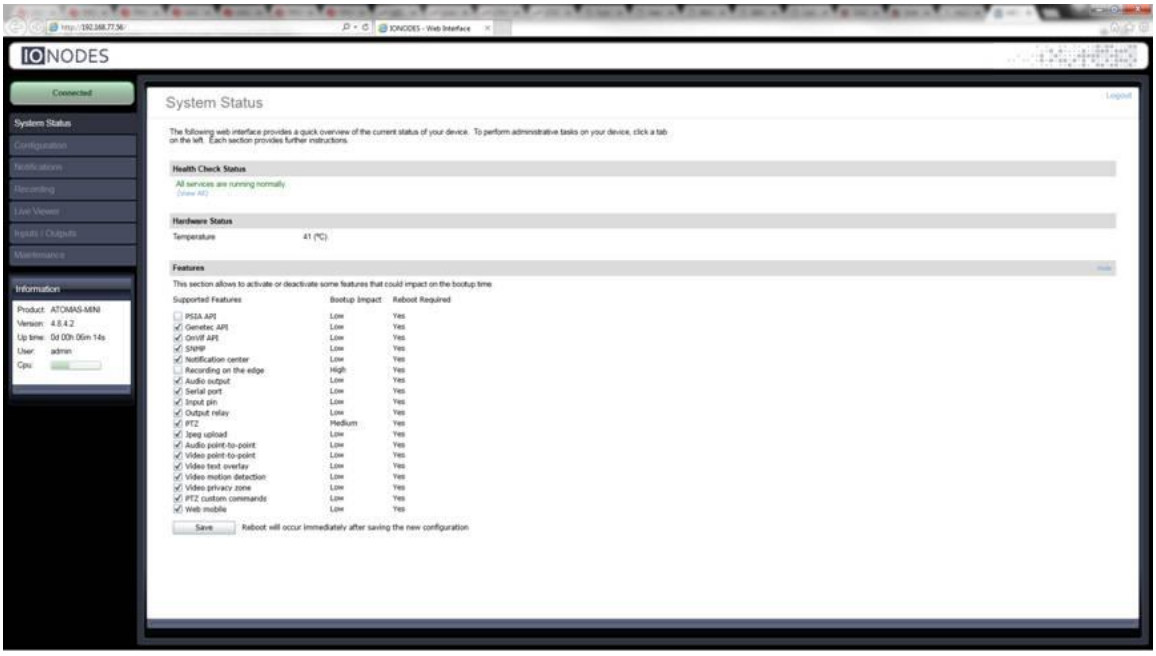
Using the ATOMAS-MINI Web Application

When entering the Web Application, you will be asked a username and password. The default user name and password are '***admin***'. The following window will be displayed:



System Status

Upon successfully logging into the web interface, a **System Status** screen will be displayed. The system status screen shows general devices health status as well as firmware version, system uptime, system average CPU utilization and internal temperature. The System Status page will also display the various features (e.g. Recording on the edge) you may either enable or disable depending on your needs.

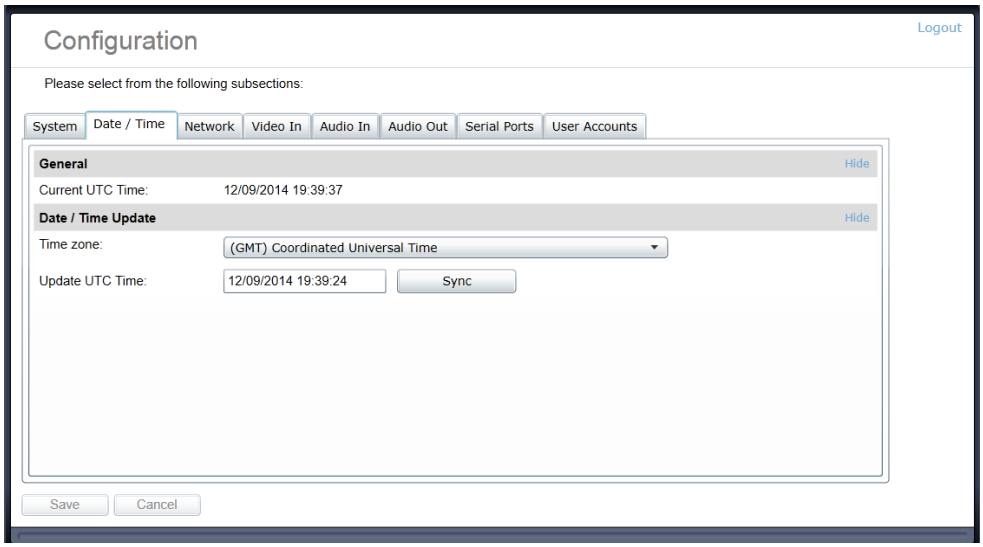


Configuration / System

Under the ***Configuration*** section, select the ***System*** tab to perform the following operations:

- View product model information, current firmware version and serial number.
- Specify a custom name; this name can be used by third-party software to display a friendly name for the device

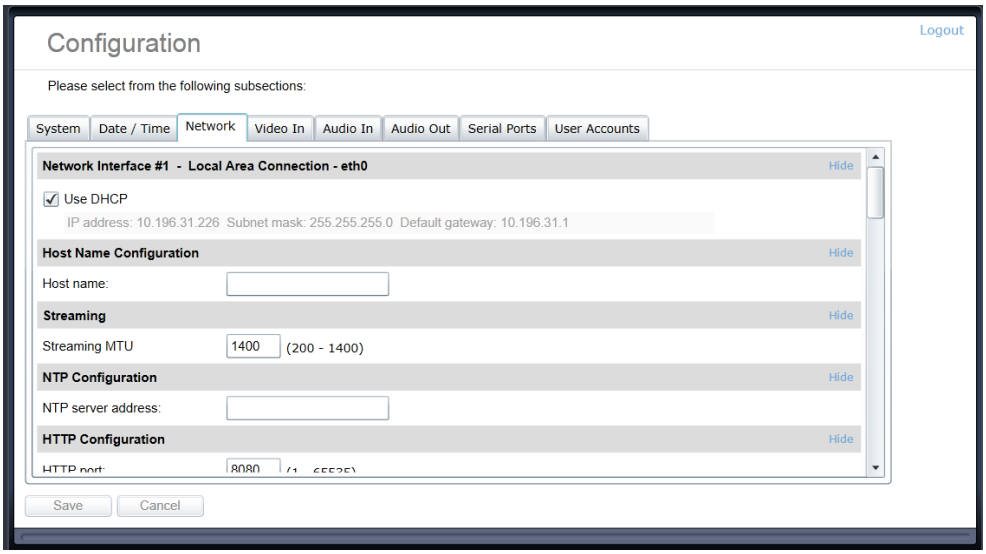
Configuration / Date Time



Under the ***Configuration*** section, select the ***Date Time*** tab to perform the following operations:

- Set the timezone in which the device is operating.
- Manually set the current date and time for the device's internal clock.

Configuration / Network

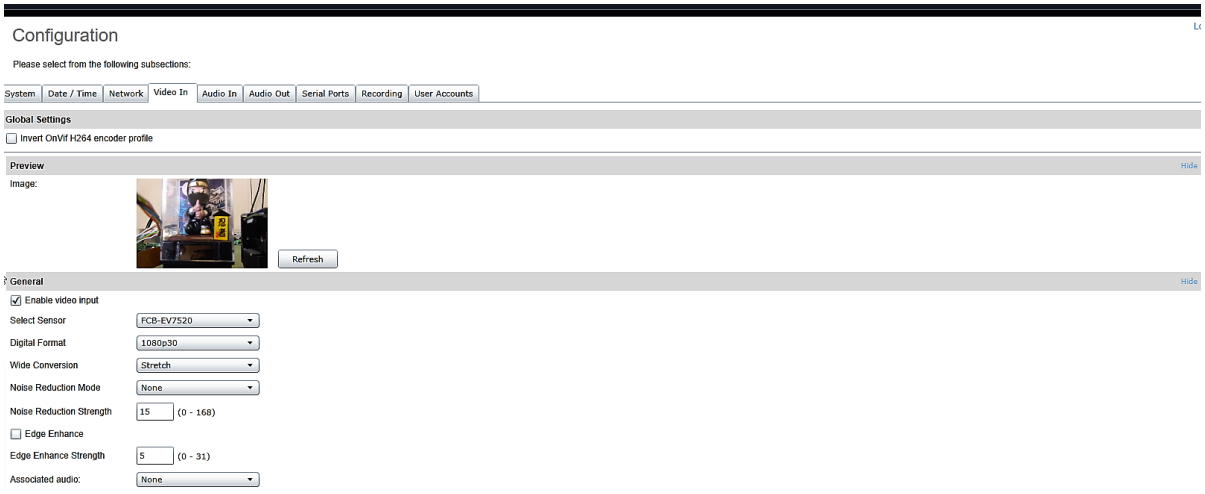


Under the ***Configuration*** section, select the ***Network*** tab to perform the following operations:

- **Network Interface** – Set the encoder's IP parameters; DHCP or static IP information.
- **Host Name Configuration** – Set the encoder's network name.
- **Streaming** – Set the MTU size for all media related RTP packets sent on the network; avoid changing this setting unless absolutely necessary.
- **NTP Configuration** – Configure an NTP server to allow the device to automatically update its internal clock using an NTP server.
- **HTTP Configuration** – Change the device's HTTP configuration
    - **HTTP Port** – TCP port used by the HTTP server
    - **HTTPS Port** – TCP port used for SSL connections on the HTTP server
    - **Authentication mode** – Basic or Digest Authentication for HTTP connections
    - **Accept HTTPS connections** – enables support of SSL connections
    - **Accept HTTPS only** – forces the HTTP server to accept only SSL connections
- **API Selection** – Enable the required Network APIs. Enable PSIA or GENETEC API depending on which VMS platform you intend to use with the device. Disabling any unrequired APIs will accelerate boot time. Note that the IONODES ION API and OnVIF API's are always enabled.
- **Bonjour** – Enable Bonjour discovery protocol and configure search domain.

- **SNMP** – Modify SNMP settings to match with any SNMP software you wish to use for monitoring the device.
- **RTSP Configuration** – Change the device's RTSP configuration
    - **RTSP Server Port** – TCP port used by the RTSP server.
    - **Session Timeout** – Configure timeout in seconds for RTSP keep-alive.
    - **Authentication mode** – Basic or Digest Authentication for RTSP connections.
- **Multicast** – Change the multicast IP address, starting port and TTL for all outgoing multicast streams. To disable multicast streaming, set the multicast start port to 65535.
- **Mail Server Configuration** – Change email server settings to use for email alerts and events. The mail frequency parameters allows you to limit the number of emails which can be sent out per minute. The number of retry parameter allows you to set a limit to the number of retries before an email transmission is aborted.

Configuration / Video In



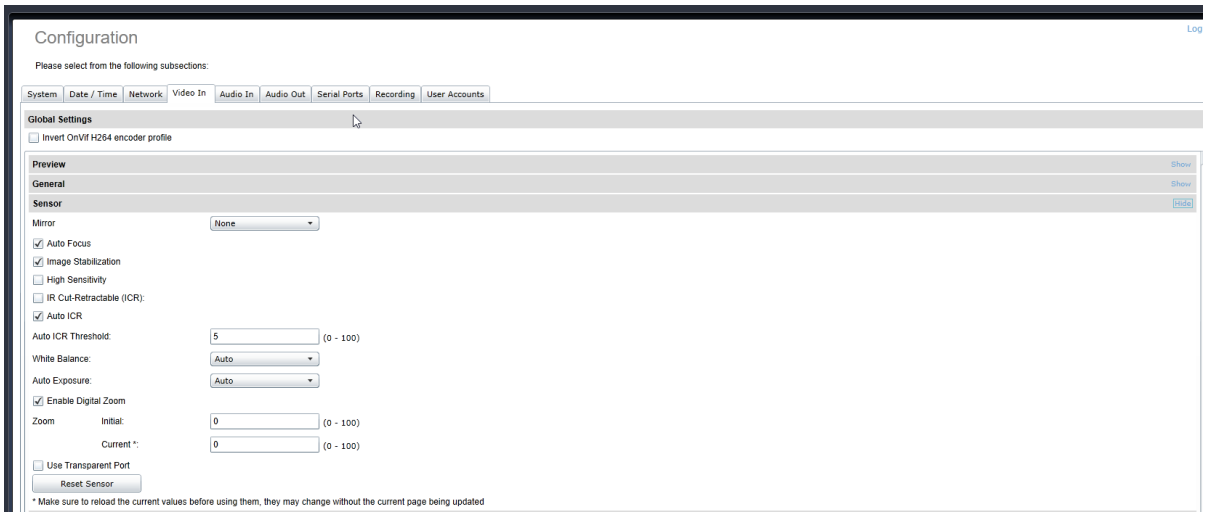
Under the ***Configuration*** section, select the ***Video In*** tab to perform the following operations:

- **Preview** – This section allows you to view a thumbnail preview image of the camera's video input. This feature requires that the MJPEG encoder be enabled on the camera, otherwise a placeholder image will be shown indicating "No Video Input". To enable MJPEG video, see sections **General** and **Video Compression** below.

- **General** – This section allows you to configure basic settings of the encoder module relating to management of video inputs.
    - **Enable video input –** This checkbox allows you to enable / disable the input.
    - **Select Sensor** – Select the appropriate HD camera sensor model connected to Atomas Mini. Select **Custom** if you would like to disable any command / control communication between the encoder module and the camera sensor; in this mode the encoder will act as a slave and only process incoming video data. In custom mode, the camera sensor command and control will only be accessible via a transparent TCP connection over which an external program will have the ability to exchange command and control data with the camera sensor directly.
    - **Digital Format** – Select the video resolution you would like to use on the connected HD camera sensor. The selected value will be set to the camera sensor upon boot-up, unless the sensor is set to Custom, in which case the encoder module will not communicate with the camera sensor.

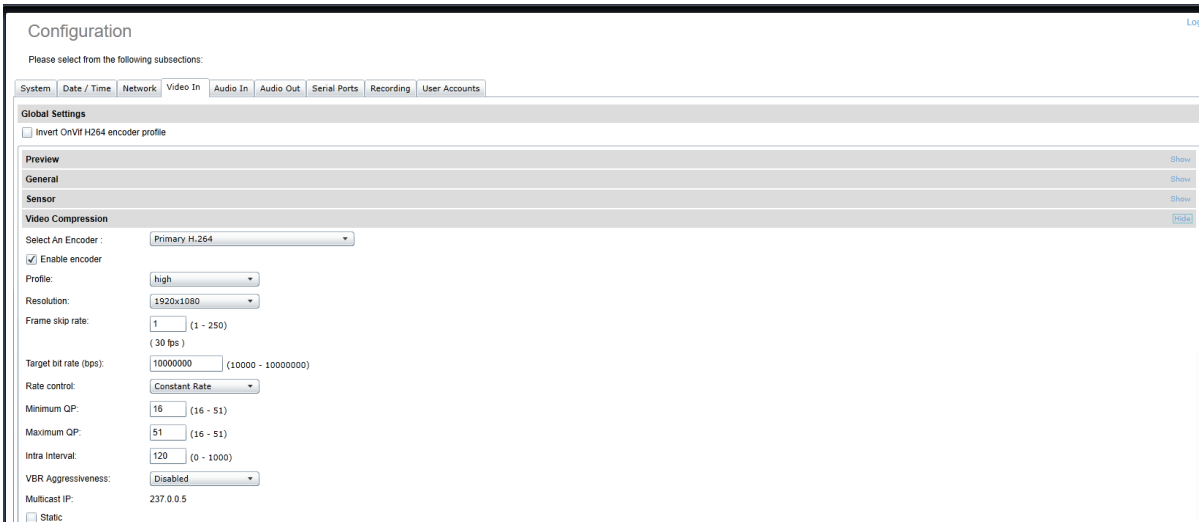
Note: 1080p50/60 resolutions will take most of the resources of the internal processor, we therefore recommend that motion detection, VBR aggressiveness, recording and noise reduction be disabled under this configuration.

- **Wide Conversion**– Set the desired behaviour when the video input requires rescaling; stretch or crop.
- **Noise Reduction Mode** – Encoder engine feature to help improve a low-light image
- **Noise Reduction Strength** – Scale to set Noise Reduction
- **Edge Enhance** – Allows the user to sharpen the image edge
- **Edge Enhance Strength** – Scale to set edge enhance feature
- **Associated Audio** – Set audio association to this video input. Any associated audio will be streamed with video content on RTSP connections. Associated audio will also be recorded within video clips if edge recording is enabled.



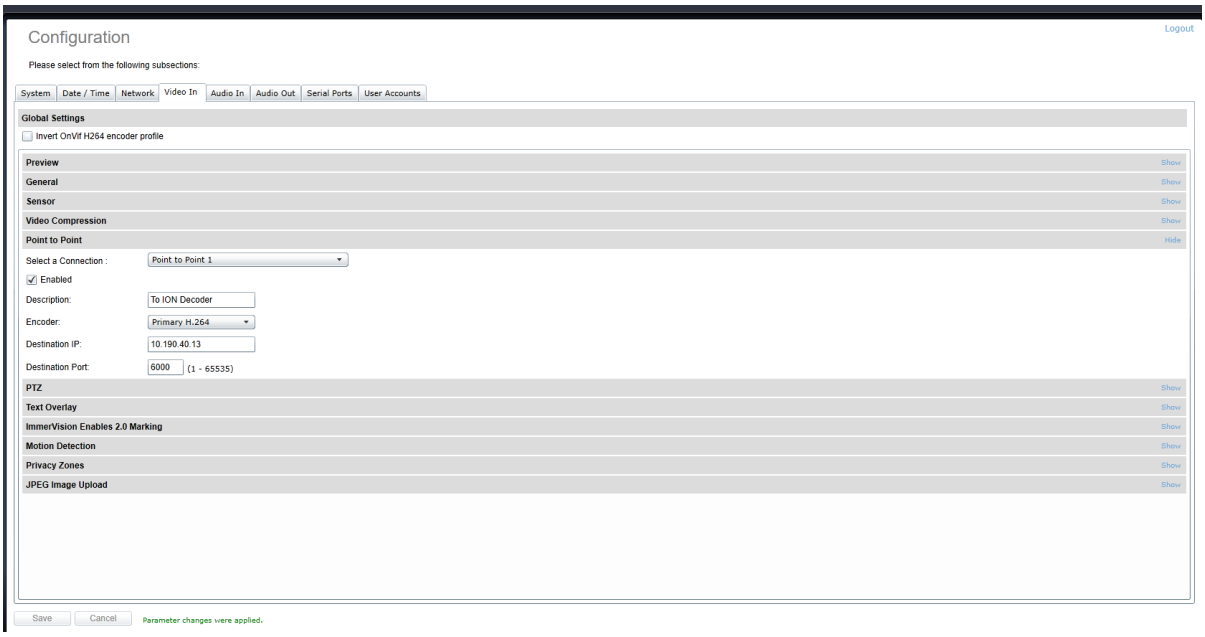
- **Sensor** – This section exposes all camera sensor parameters available. These parameters are set and saved to the camera bloc itself if possible. Note that these settings are only available if the Sensor selection is set to something other than Custom.

  - **Use Transparent Port** – Enable this feature to expose the camera sensor command and control port to external systems via a transparent TCP connection. When enabled, a serial port instance will be displayed and made configurable via the **Serial Port** configuration section. The name of this serial port instance is displayed via the **Transparent Port Instance** field.
  - **Reset Sensor** – Will reset the sensor to factory settings



- **Video Compression** – This section allows you to configure video compression parameters for any of the three available codec instances (Primary H.264, Secondary H.264 and MJPEG).
    - **Enable Encoder** – Allows you to enable the encoder to be utilized
    - **Profile** – Select the h264 profile you wish to use
    - **Resolution** – Select the video resolution to stream
    - **Frame skip rate** – Select the number of video frames
    - **Target bit rate** – Select the desired target bitrate
    - **Rate control** – Select between Constant Rate or Variable Rate
    - **Minimum QP / Maximum QP** – These parameters allow you to specify the compression range that the codec will use to determine image quality during compression. In order to force a specific quality setting, you can set the minimum and maximum to the same value. The lower the value, the better the quality will be. We do not recommend changing default values unless you have a good understanding of the H.264 compression process.
    - **Intrat Interval** – Defines the GOP size
    - **VBR aggressiveness** is unique to IONODES encoders and proposes various levels (disabled to aggressive) of motion triggered rate control. The more aggressive the setting, the more variation motion will have on the rate control. It

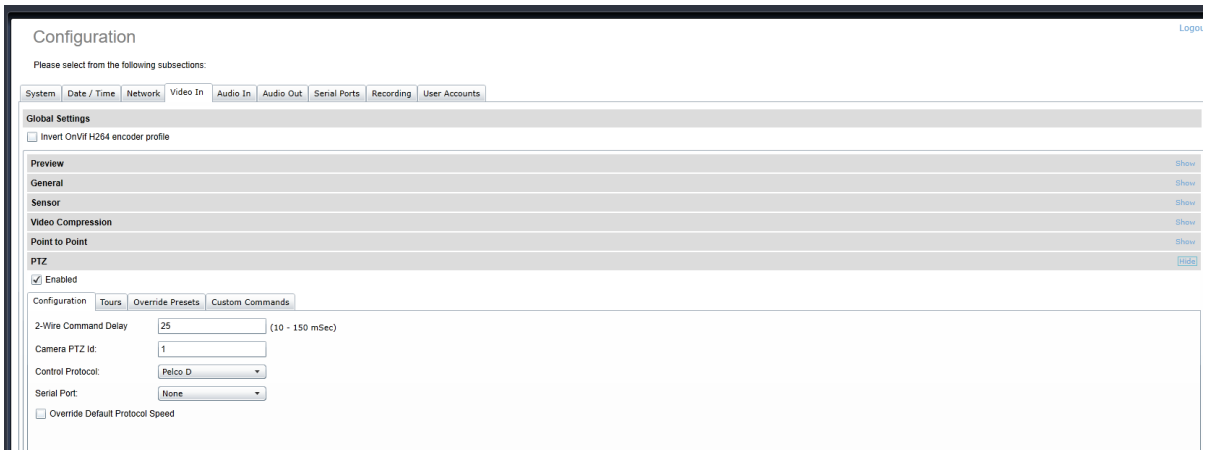
is strongly suggested to disable VBR aggressiveness for low bit rate scenarios (below 1Mbps) as this parameter may negatively affect perceived video quality



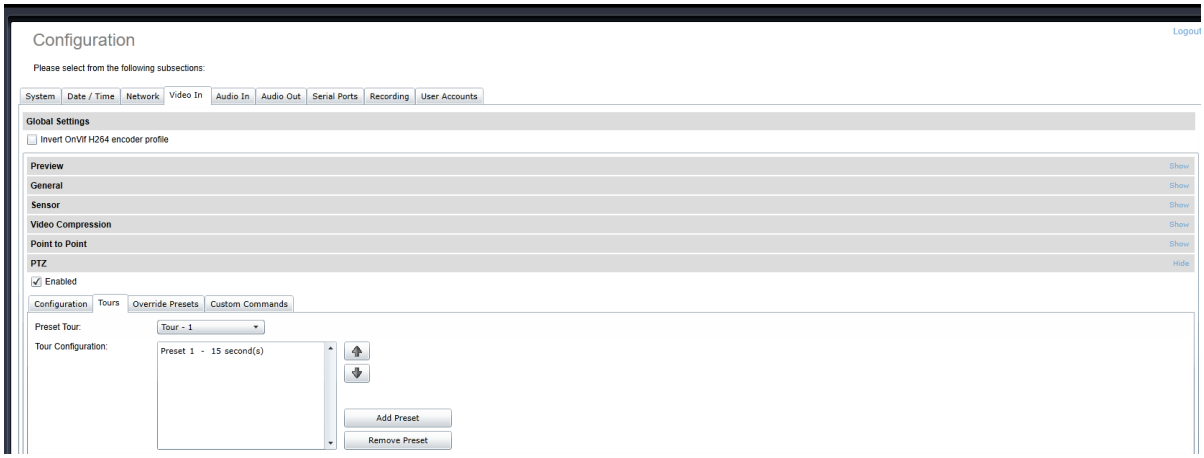
Point to Point – This section allows you to configure point to point video connections for creating persistent video streams from the encoder to a network endpoint.
Here's a quick overview of the settings available for a connection:

- Enabled: Indicates whether this connection is to be used.
- Description: Free-form user description of the connection, not used by the device.
- Encoder: Indicates which video feed is to be sent over the point-to-point connection. Possible values include «Primary H.264 », «Secondary H.264» and MJPEG. These values refer to the encoders configured in previous sections of the same web page.
- Destination IP: Address where to send the video. This is usually the address of an ION-R100. The destination can also be a multicast group address.
- Destination Port: Network port where to send the video. This value must match the port value in the ION-Decoder.

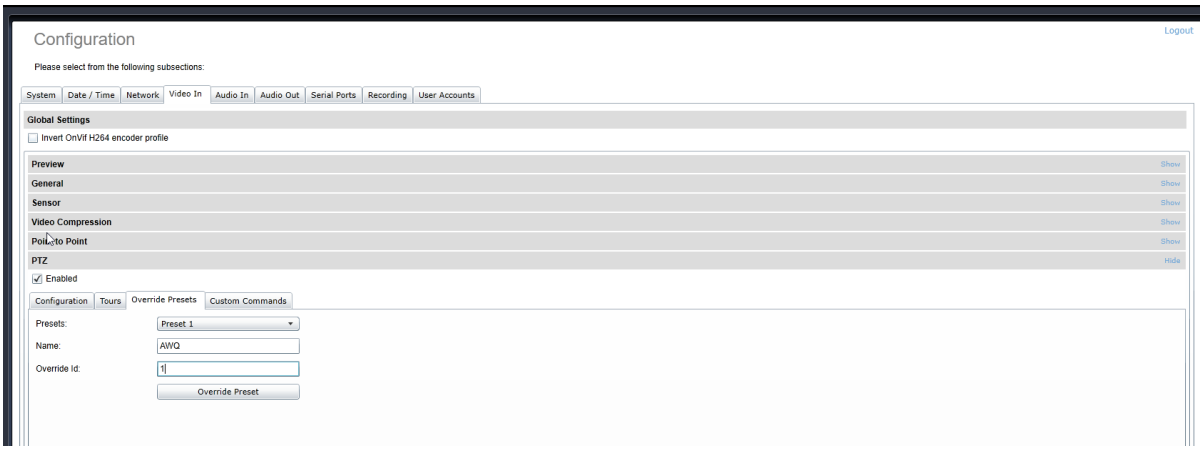
Once all the settings have been set, click on ***Save*** at the bottom of the page to apply them. The ATOMAS-MINI then creates or updates the connection as needed.



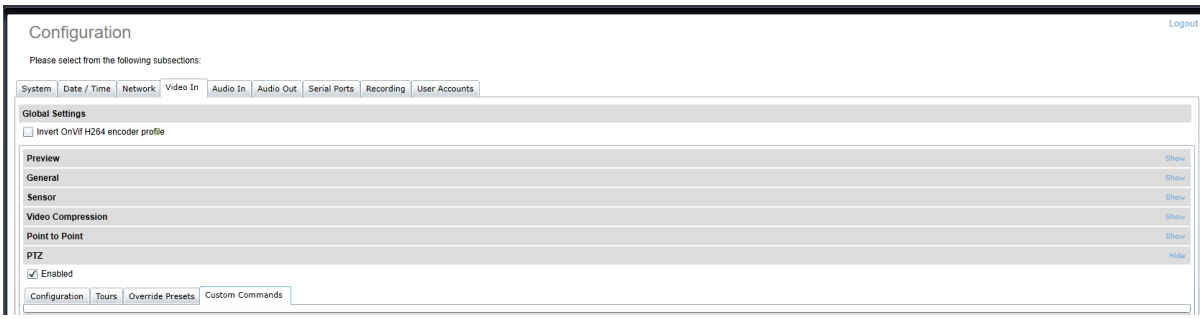
- **PTZ** – This section allows you to configure PTZ control behaviour.
  - **Enabled** – allows you to enable PTZ support on this encoder module.
  - **Camera PTZ Id** – Logical ID associated to the PTZ controller connected to this encoder module.
  - **Control Protocol** – PTZ protocol used by the PTZ controller connected to this encoder module.
  - **Serial Port** – Serial port instance on which is connected the PTZ controller.



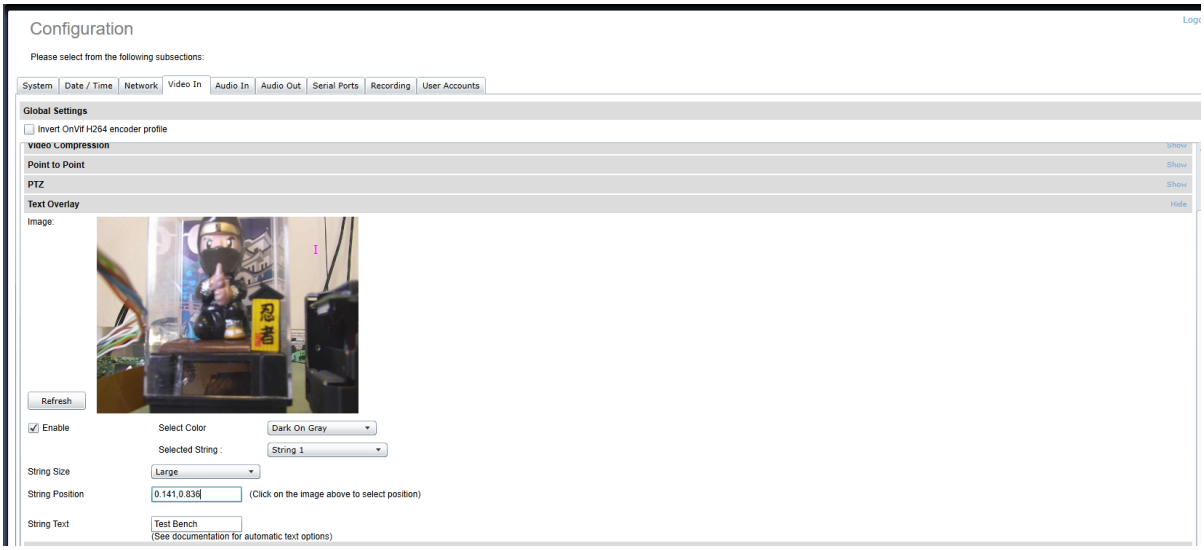
  - **Preset Tour** – This sub-section allows you to configure up to 8 preset tours. These tours are managed by the encoder module. See section 0 for more details on this feature



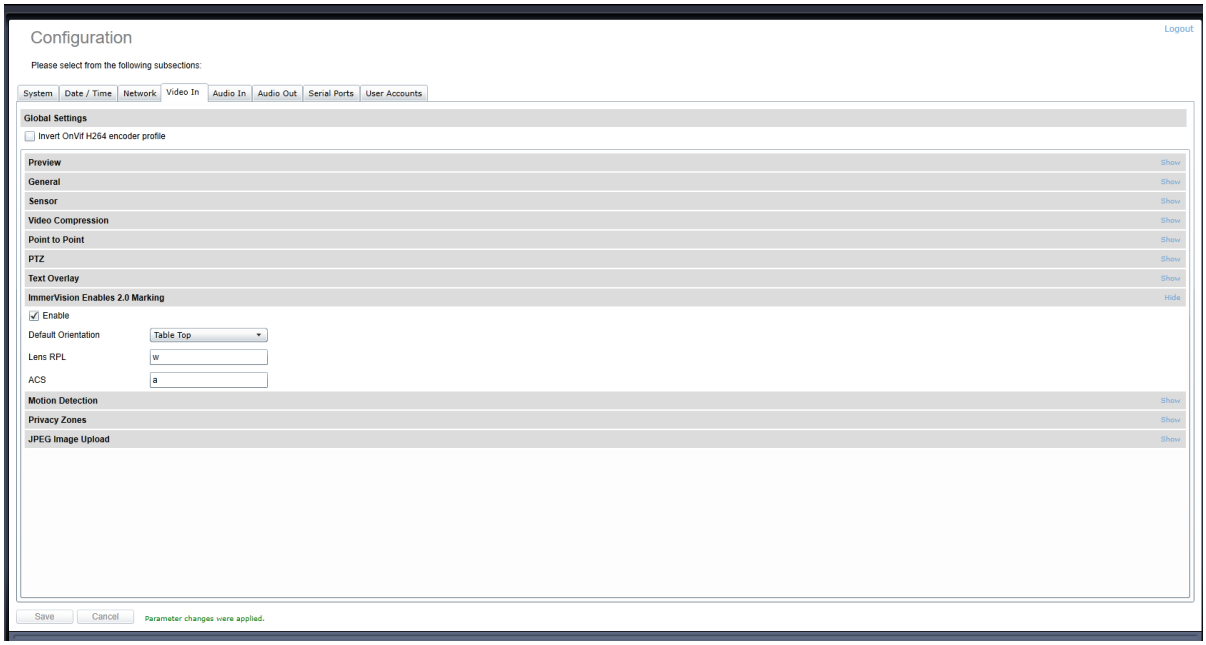
- **Override Presets** – Allows you to override a specific PTZ preset. Following the selected protocol, a fixed set of presets can be configured. But, depending of the PTZ controller, more presets can be available. To be able to call a preset over the official protocol preset range, a preset can be overridden to call an extended preset id.



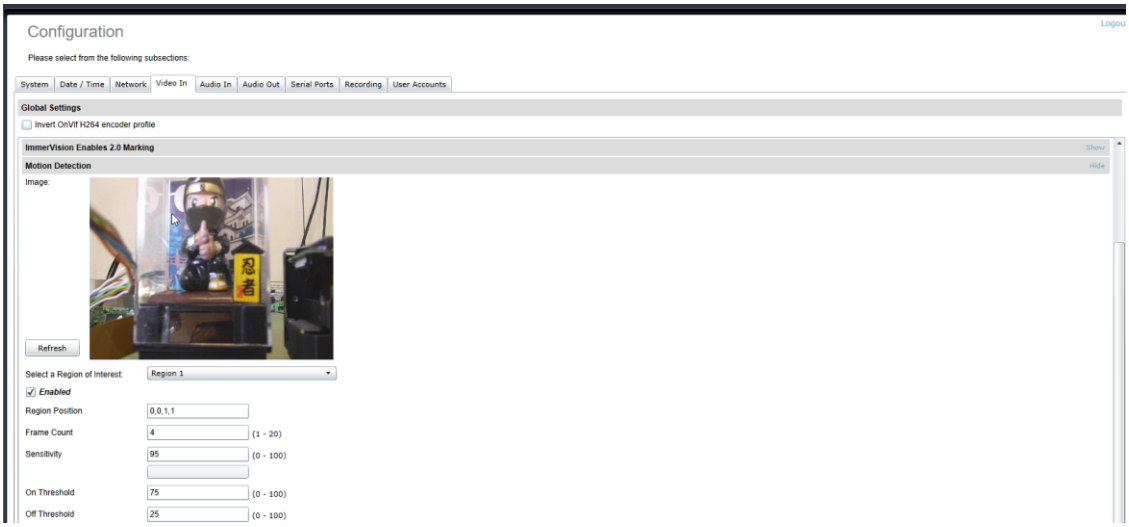
  - **Custom Commands** – Only available with certain PTZ protocols. Allows you to set custom, non-standard, commands for transmission to a PTZ controller.



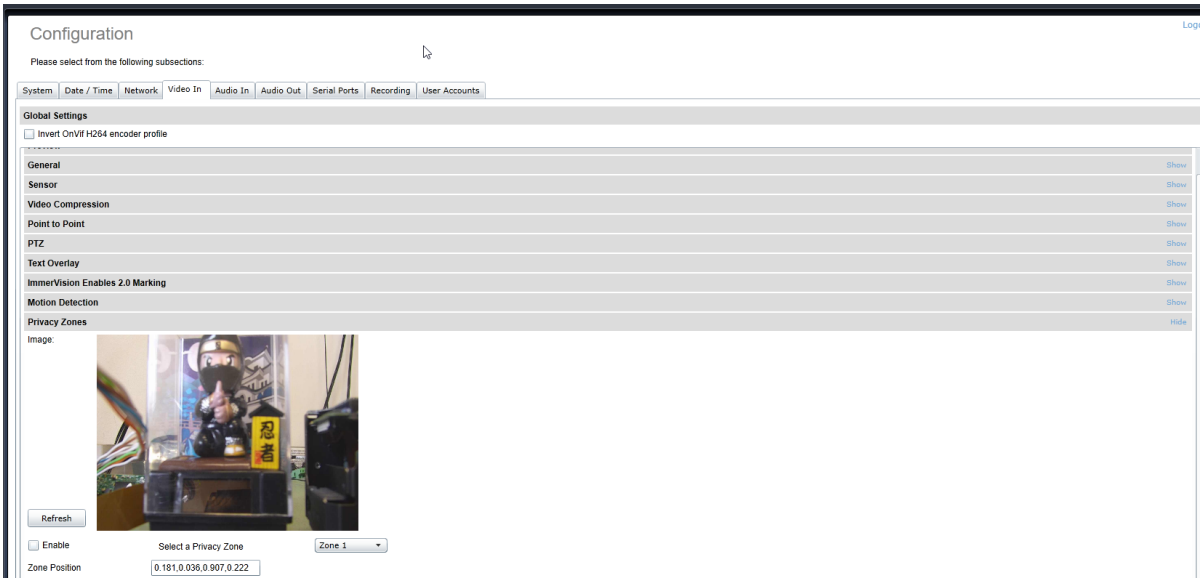
- **Text Overlay** – This section allows you to add text overlays to encoded video streams. Note that these strings will be embedded into the images streamed out of the device. See section 5.4 for details on the automatic text options.



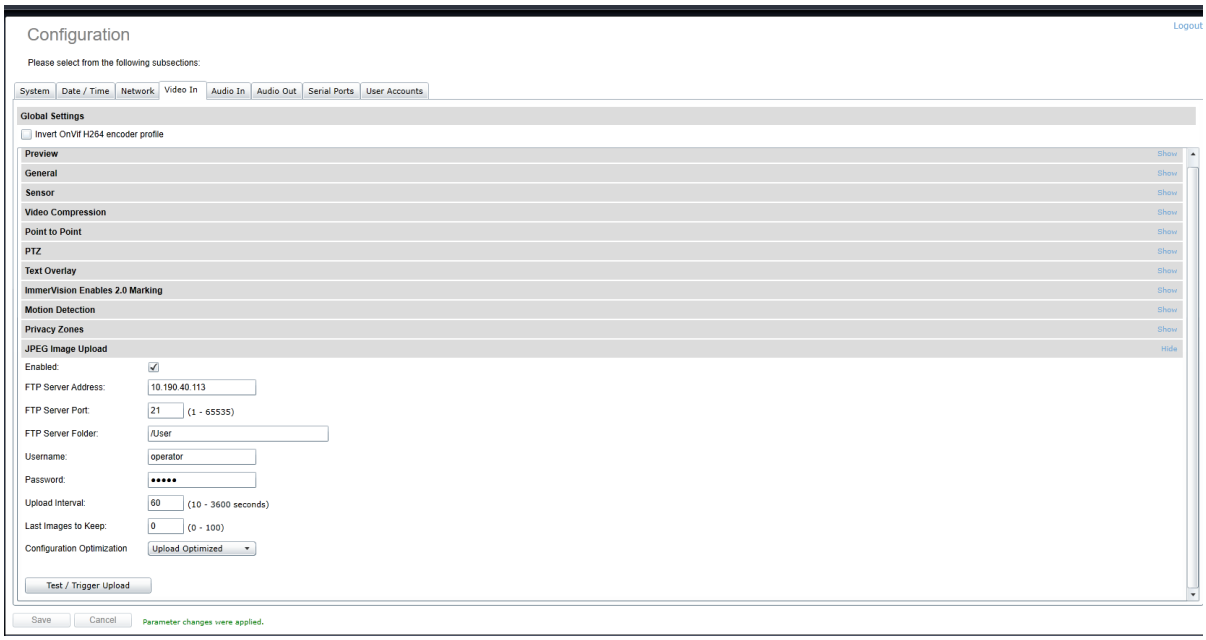
- **ImmerVision Enables 2.0 Marking – Associated to Immervision lens only.**
  - **Default Orientation –** Default orientation is inscribed in the QR code when orientation is not available
  - **Lens RPL –** Identifier of the lens
  - **ACS –** Precomputed autoconfiguration parameter for the lens/sensor combination



- **Motion Detection** – This section allows you to configure motion detection regions of interest. Most VMS platforms will control motion detection parameters and thus would not require setting anything within the web interface. For more details on configuring motion detection, see section **Error! Reference source not found.**5.

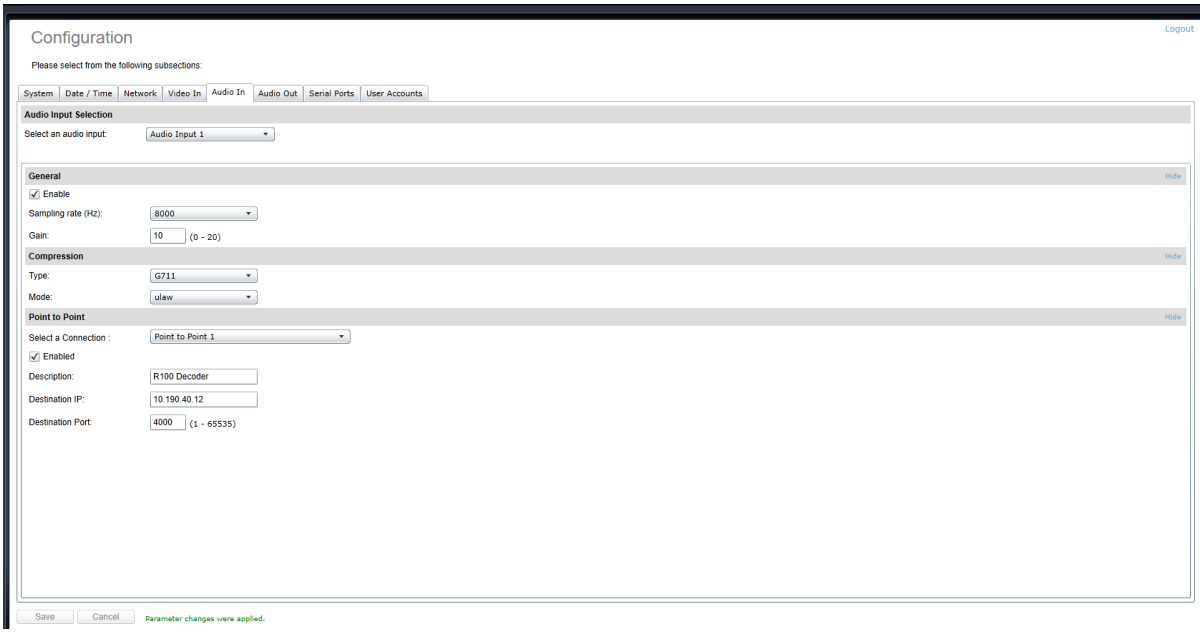


- **Privacy Zones** – This section allows you to configure up to 16 privacy zones



- **JPEG Upload** – This section allows you to configure JPEG Upload functionality. See section 5.5 for more details

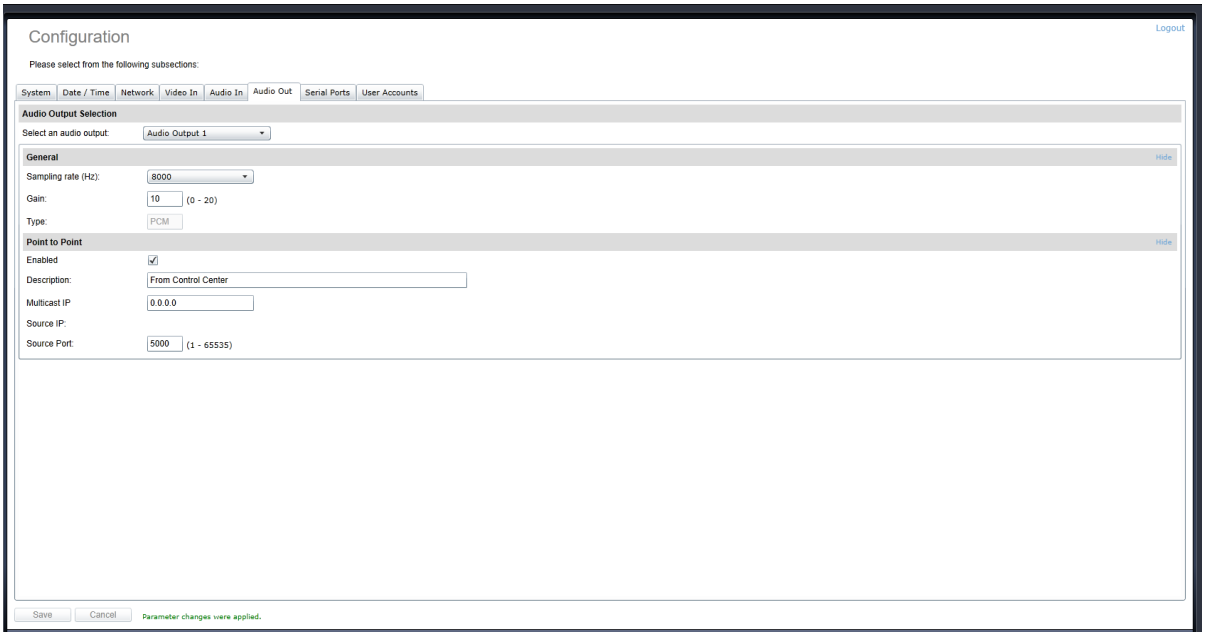
Configuration / Audio In



Under the ***Configuration*** section, select the ***Audio In*** tab to perform the following operations:

- Configure audio input compression parameters
- Configure point to point audio connections (up to three) for creating persistent audio streams from the encoder to a network endpoint. This feature is particularly useful when combined with an IONODES decoder (ION-R100)

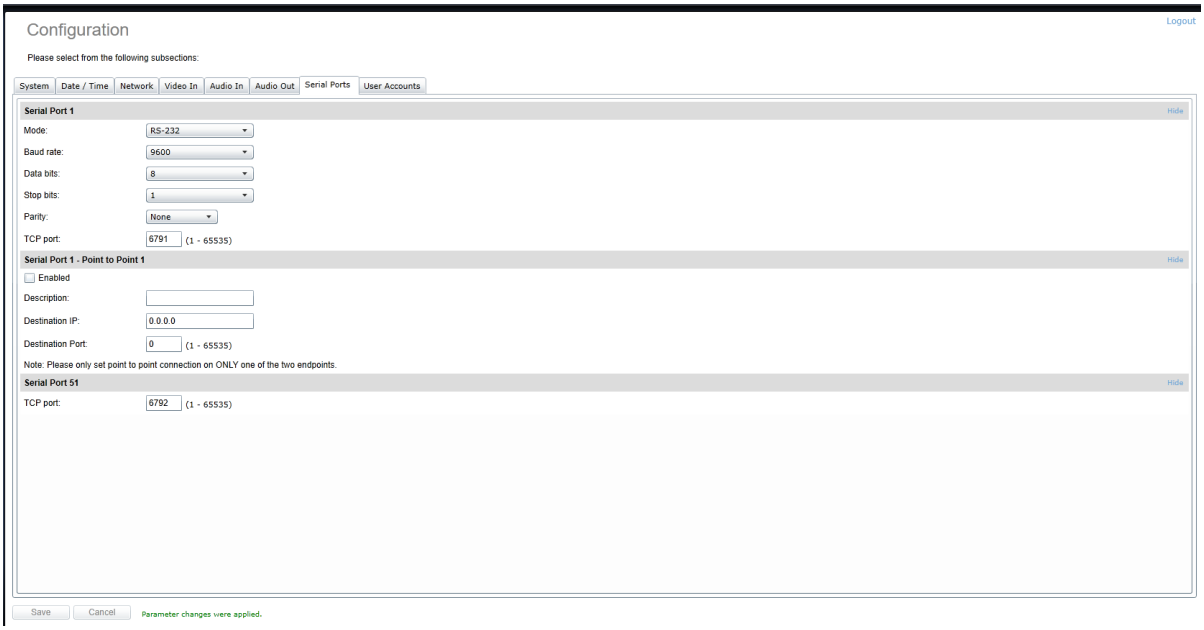
Configuration / Audio Out



Under the ***Configuration*** section, select the ***Audio Out*** tab to perform the following operations:

- Configure audio output parameters
- Configure a point to point audio connection for receiving a persistent audio stream from a network endpoint. This feature is particularly useful when combined with any IONODES decoder

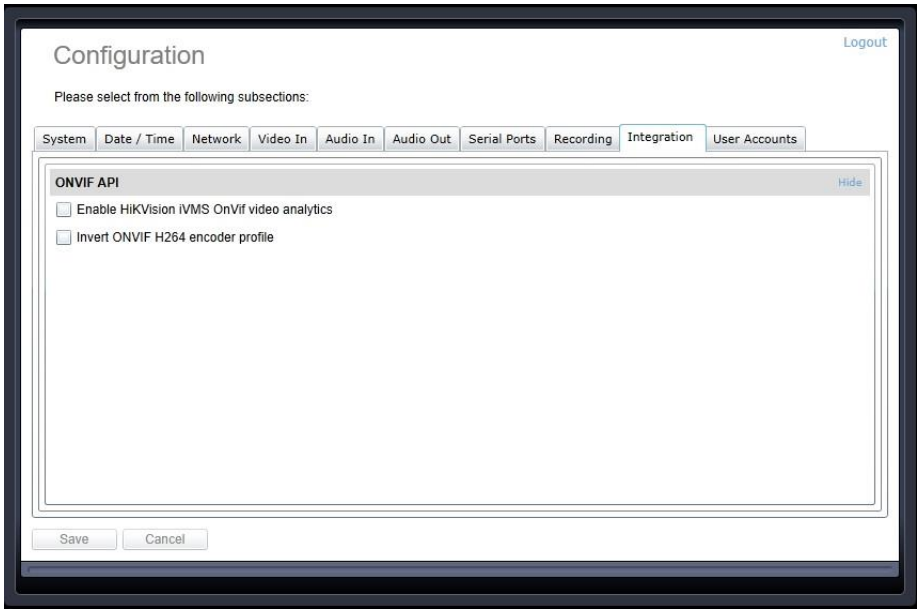
Configuration / Serial Ports



Under the ***Configuration*** section, select the ***Serial Ports*** tab to perform one of the following operations:

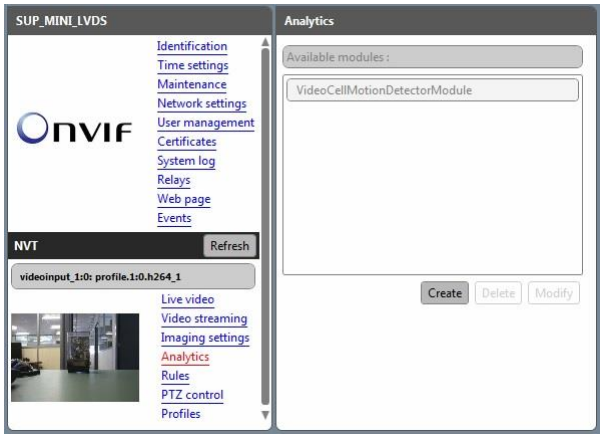
- **Serial Port 1** – This section allows you to configure serial port parameters for the serial port exposed on connector J3 / J4. This serial port is intended for connection to a PTZ controller. Configure the serial port settings to match the serial port settings of your PTZ controller.
- **Serial Port 1 Point to Point** – This section allows you to configure a point to point serial port connection for creating a persistent serial port connection with a network endpoint. This feature is particularly useful when combined with an IONODES decoder (ION-R100).
- **Serial Port 51** – This section will appear if you have enabled the "Use Transparent Port" feature in the Video In configuration section. This serial port instance represents the serial port connection between the encoder module and the camera sensor via connector J1. This section allows you to configure the TCP port on which the encoder module will accept transparent TCP connections – this connection allows external software / devices to send command and control data directly to a camera sensor. When in Custom sensor mode, this section will expose serial port settings to allow you to properly configure the serial port connection with your custom camera sensor.

Configuration / Integration



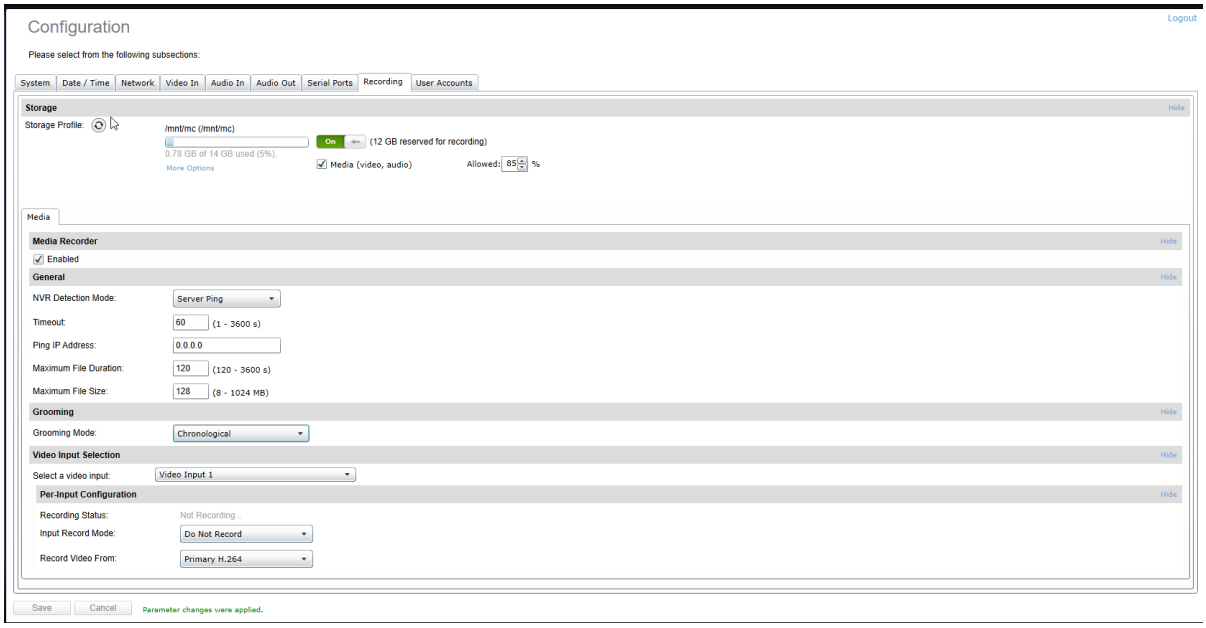
Under the ***Configuration*** section, select the ***Integration*** tab to perform one of the following operations:

- **Enable HikVision iVMS OnVif video analytics** – This enables the integration with the HikVision iVMS by leveraging the OnVif Video Analytics feature (more specifically the VideoCellMotionDetectorModule); more details on how to use this integration can be found in the dedicated article on the Support Center - Knowledge Base



- **Invert ONVIF H264 encoder profile** - This will invert the profile number for the two H.264 profiles that the encoder exposes to a VMS; for instance H.264_1 will actually be recognized by the VMS as Profile 2, while H.264_2 will become Profile 1 for the VMS

Configuration / Recording



Under the **Configuration** section, select the **Recording** tab to enable the Media Recorder to store video on the MicroSD card. This section allows you to perform the following operations:

- **Enabled** – Enable the Edge Recording
- **General**

  Global settings applied to the recorder module.
  - **NVR Detection Mode** – Method used to detect a connection loss with the NVR (VMS) server
    - **Server Ping** – The connection is declared active as long as the ATOMAS can ping the VMS at a regular interval.
      - **Timeout** – Duration in seconds to detect a NVR connection loss.
      - **Ping IP Address** – NVR Server IP address
    - **HTTP Internal API** – The connection is declared active as long as the ATOMAS receives HTTP requests from the VMS
      - **Timeout** – Duration in seconds to detect a NVR connection loss
    - **RTSP Internal API** – The connection is declared active as long as the ATOMAS receives RTSP keep alive requests.
      - **Timeout** – Duration in seconds to detect a NVR connection loss

- **Maximum File Duration** – Recorded file duration. When maximum file duration is reached, a new one will be created
- **Maximum File Size** – Recorded file size. When maximum file size is reached a new one will be created

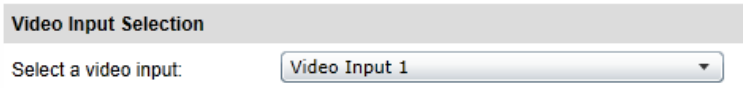
Note: The above rule is applied when one of the two condtions is reached.

- **Grooming**

  The grooming module manages the rules to apply during the recording in order to preserve the desired ratio of recorded files versus the empty space.

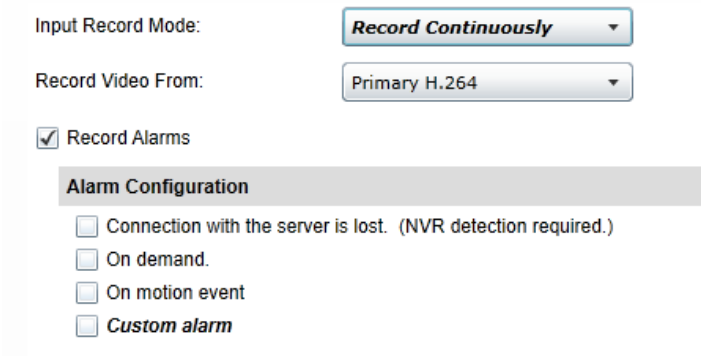
  - **Manual:** The storage management is done manually by the user. In this mode, no rule is applied and the storage media can be filled up with the recorded media files
  - **Chronological:** The groomer will start deleting the oldest file when the configured threshold is reached.
  - **By Input Retention Time:** The groomer will start deleting files base on the retention time specified in the “Per Input Configuration”

- **Video Input Selection**
  - **Select Video Input** – Represents the video input that is selected



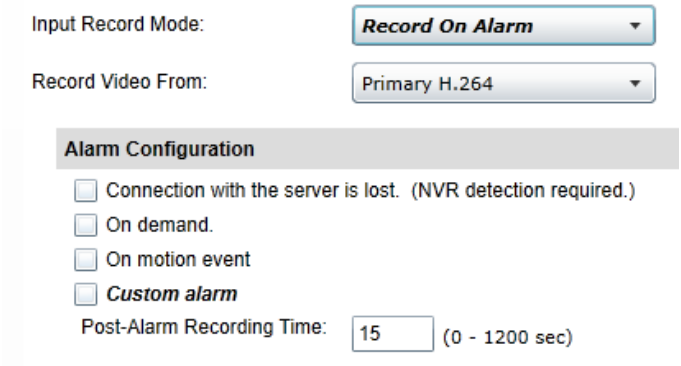
  - **Per-Input Configuration**
    - **Recording Status** – Current Recording status
    - **Input Record Mode**
      - **Do not Record –** Will not record
      - **Continuously –** Will record continuously. See the Continuously recording section below.
      - **On Alarm –** Will record as soon as a specific alarm is triggered. See the On Alarm recording section below.
    - **Record Video From** – Select either Primary or Secondary H.264

- **Continuously recording mode**



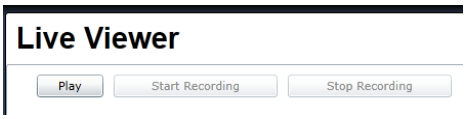
  - **Record Alarms –** Allow the recorder to record the triggered alarms in the system as well as the video file. Alarms will be recorded in a separate track in the ASF file.
    - **Connection with the server is lost** – Triggered when the connection with the VMS / Server is lost
    - **On demand** – Triggered when a user sends a Start or Stop recording command via the ION API.
    - **On motion event** – Triggered when motion is detected
    - **Custom alarm** – Triggered when a user sends a custom alarm command via the ION API.

- **Record On Alarm mode**



  - **Alarm Configuration**
    - **Connection with the server is lost –** Starts recording when a connection loss has been detected with the NVR
    - **On demand –** Starts / Stops recording when an ION API request has been received. The Live Viewer can also be used to triggered

an on-demand recording.

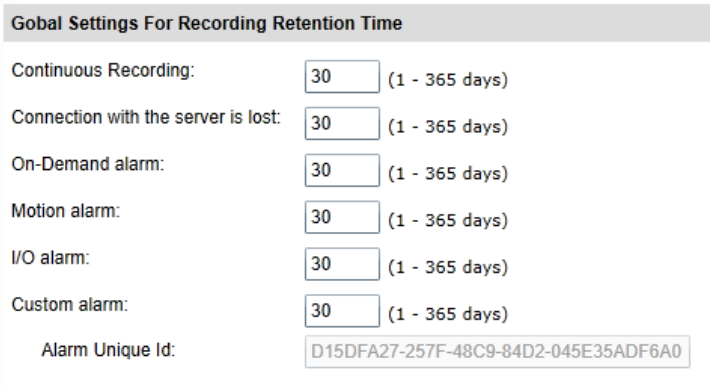


- **On-Motion event –** Starts recording when a motion event is triggered and Stops recording when no motion is detected.
- **Custom alarm –** Start / Stop recording when an ION API custom alarm request has been received. When selected, a unique identifier is generated and must be used when sending the ION API request.
- **Post-Alarm Recording Time –** Specify the number of seconds the recording must continue once the alarm is off.

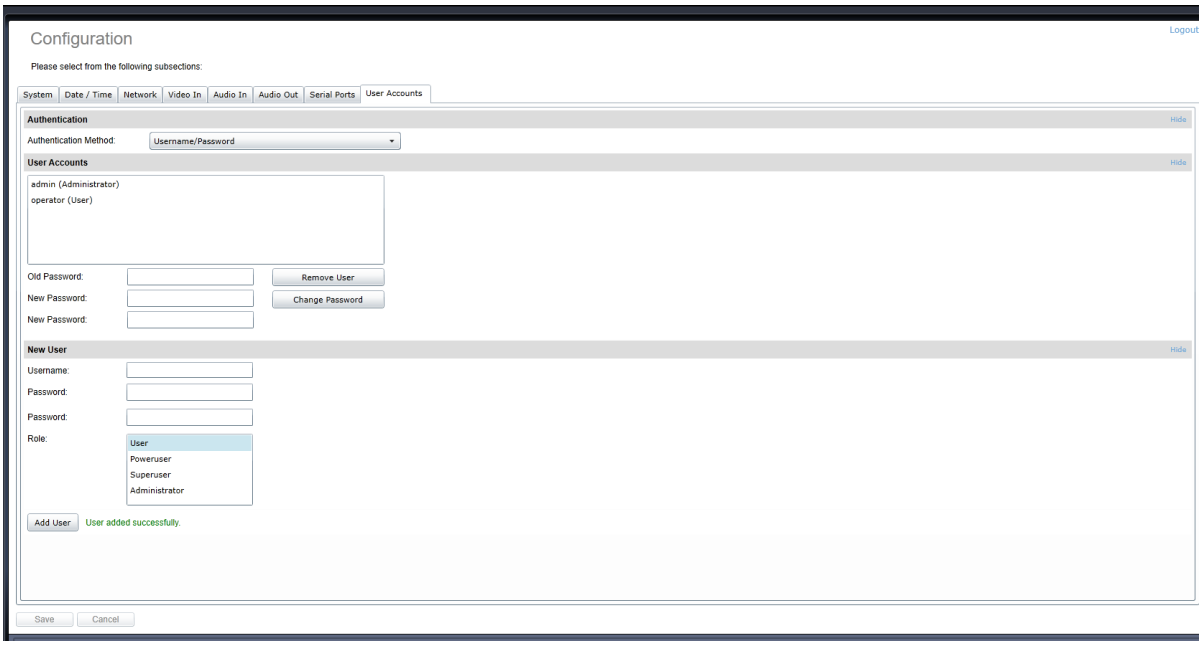
  - **Use Global Settings for Recording Retention Time** - If unchecked, specify the retention time for this particular video input. Otherwise, the global settings for recording retention time will be applied (see section “Global Settings for Recording Retention Time” below).
  - **Force Immediate Deletion of Video After Retention Time** – If checked, this rule override any grooming rule and will delete a video file as soon as the retention time has been reached.
  - **Mute Audio** - Will not record any audio, but the live stream will not affected

- **Global Settings For Recording Retention Time**

  Retention time in days by recording mode.



Configuration / User Accounts



Under the ***Configuration*** section, select the ***User Accounts*** tab to perform the following operations:

- Select the web interface's authentication method. A dual passphrase is made available for additional security.
- Manage user accounts which have access to the device.

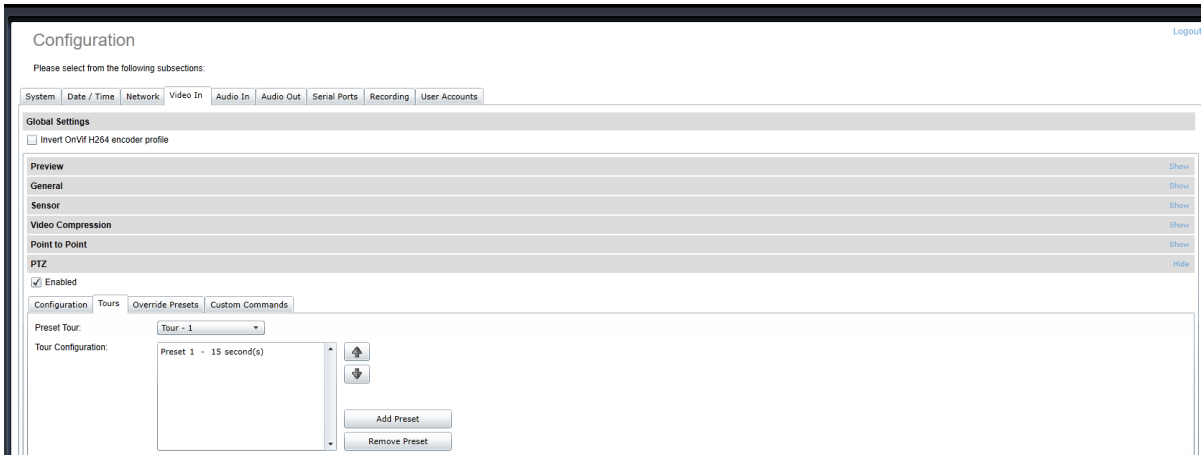
The user account roles are defined as follows:

- The **User** role allows access to viewing only, no permission to change any set-tings
- The **Poweruser** role allows access to live video and changing any setting aside from the user accounts list. This role does not grant access to recorded video clips.
- The **Superuser** role allows access to live and recorded clip viewing and changing any setting aside from the user accounts list.
- The **Administrator** role allows access to viewing and changing any setting in the system.

PTZ Preset Tours

Configuring Preset Tours

In IONODES devices, video inputs connected to PTZ cameras also support up to 8 preset tours. The PTZ preset tours can be set up from the PTZ sub-section of the video input configuration page:



To configure a PTZ preset tour, add or remove presets as needed. The tour starts at the top of the preset list and moves to the next preset in the list after the specified time. Once the tour has reached the end of the preset list, it moves back to the top of the list. If the preset list is empty, the tour simply stops without moving the camera.

A preset tour supports up to 32 presets.

To configure a preset in the tour, select the preset in the preset list by clicking on it. The preset number and duration can then be changed. Preset numbers range from 0 to 31 and durations from 1 to 60 seconds. You can also reorder of the preset list by selecting a preset in the list and by clicking the UP or DOWN button on the right side of the preset list to move it up or down.

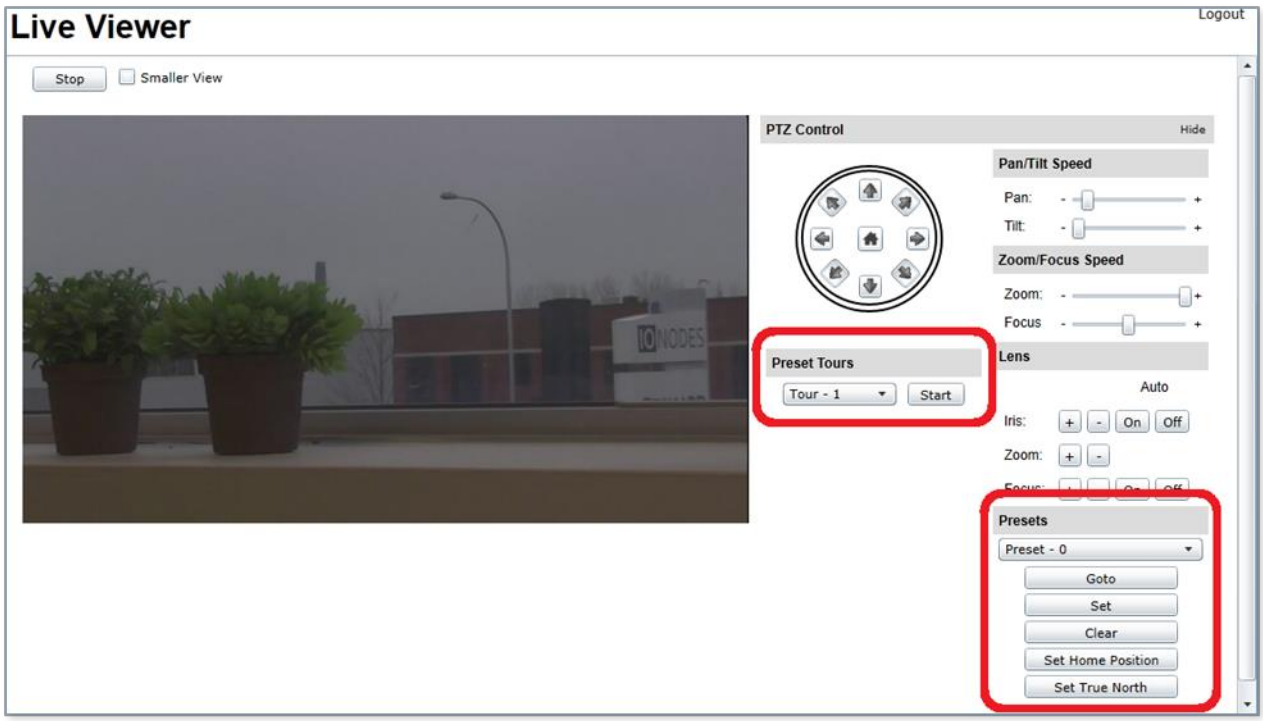
The changes are applied to the tour when you click on the **Save** button at the bottom of the web page.

Note: The position of each preset can be set in the Live Viewer web page of the device.

Using PTZ Preset Tours

Activating a PTZ preset tour is done in the Live Viewer web page of the device. Simply select the preset tour in the Preset Tours sub-section and press the Start button to start the tour.

If the tour is not configured or is empty, the tour immediately stops without moving the camera. The tour also automatically stops if the PTZ camera is moved manually by the user. After such an occurrence, the tour can be restarted by clicking on the Start button again.



Note: Please see Appendix B for details on the various scenarios for the PTZ integration with the Atomas-Mini

Text Overlay

The text overlay also includes special codes to display dynamic information. These special codes are as follow:

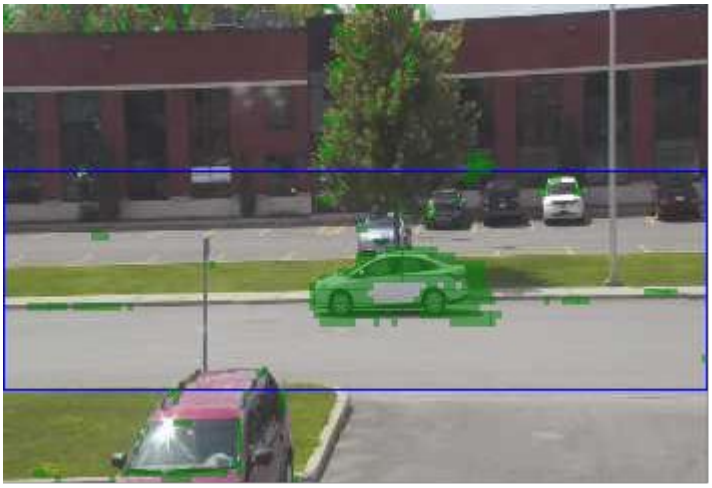
- %d Display the date and time (hh:mm:ss) in local time.
- %dz Display the date and time (hh:mm:ss) in UTC time.
- %t Display the time (hh:mm:ss) in local time.
- %tz Display the time (hh:mm:ss) in UTC time.
- %h Display the camera heading (short). Ex: N, W, SE, NW.
- %H Display the camera heading (long). Ex: NORTH, WEST, SOUTH EAST.
- %ht1 - %ht9 Display the camera heading (short) for 1 to 9 seconds when the camera moves.
- %Ht1 - %Ht9 Display the camera heading (long) for 1 to 9 seconds when the camera moves.
- %pt1 - %pt9 Display the camera azimuth and elevation for 1 to 9 seconds when the camera moves. Ex: AZ 280.72 EL 12.98

To use a special code, simply type the code in the String Text field instead of normal text to be displayed. When using a special code, the special code must be the only text displayed on that line. Should extra text appear on that line (ex: « Heading %H »), the special code will not be recognised and the text will appear as standard, static text.

Motion Detection

Motion detection configuration can be simple or complicated depending on the scene and the desired detection behaviour. Let's explore an example to better understand how each setting should be configured based on scene and behaviour requirements.

In our example, we wish to trigger a motion detection event when a vehicle appears within an outdoor scene.



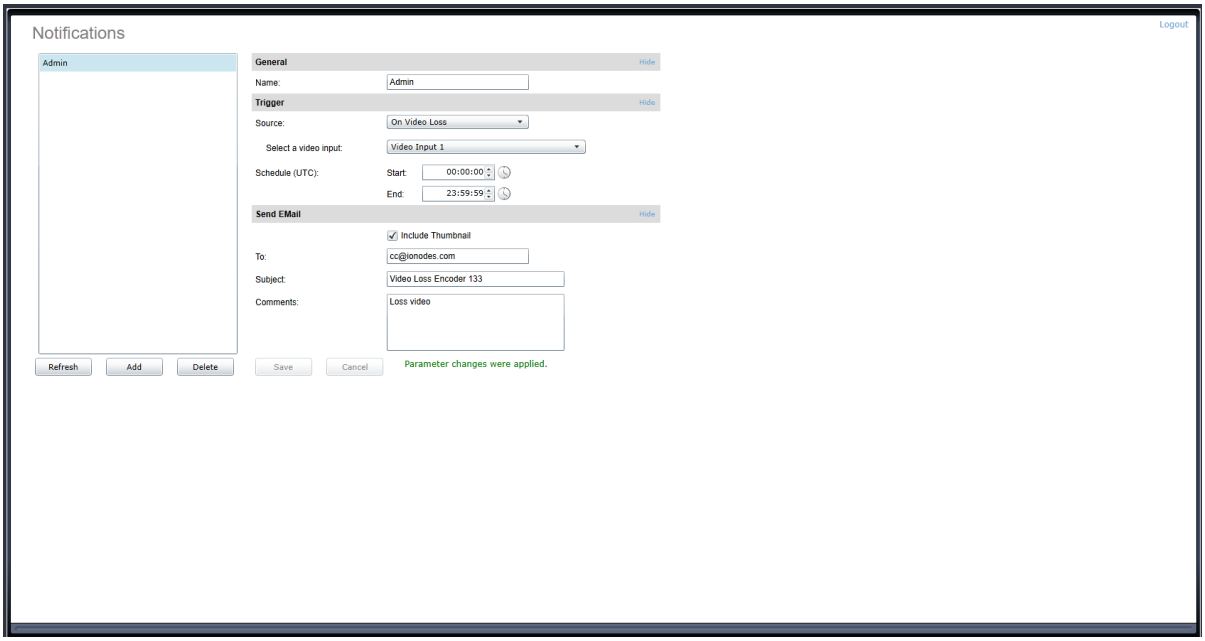
In the above scene, we have set the motion detection parameters as follows:

- Region Position (represented by the blue rectangle) was set to the street area where we wish the detection to occur. In our example, the region was set to: 0.35,0,0.81,1.00
- Frame count was set to 4 in order to eliminate any false detections. This means that the motion needs to be observed in at least 4 consecutive frames.
- Sensitivity was set to 95. This value is recommended and should not be changed.
- On threshold was set to 6% (6). We first estimate that the vehicle in the scene above occupies around 2700 pixels within the image. The Region we selected (in blue) represents approx. 38860 pixels, or 1/3 of the 352x240 image. We can now calculate that the car represents 6.95% (2700/38860) of the Region. We therefore set the motion On threshold to 6%.
- Off threshold was set to 2% (2). This value is low enough to ensure no more vehicles are in the scene.

Video recording based on motion detection will discard any recorded sequence of less than 5 seconds. Please ensure that your motion on / off scenarios are adequate for timespans of 5 seconds or more.

Notifications

The notification feature allows you to create rules which will trigger email notifications under certain conditions.



Creating a notification rule

To create a notification rule:

1. Click the **Add** button.
2. A popup window will appear requesting a name for the notification rule. Enter any textual name and click **Ok**.
3. The new notification rule will appear in the rule list in the left window.

To edit a notification rule:

1. Select the notification rule from the list.

2. Modify any rule parameters in the right window.
3. Click the **Save** button to save changes.

To delete a notification rule:

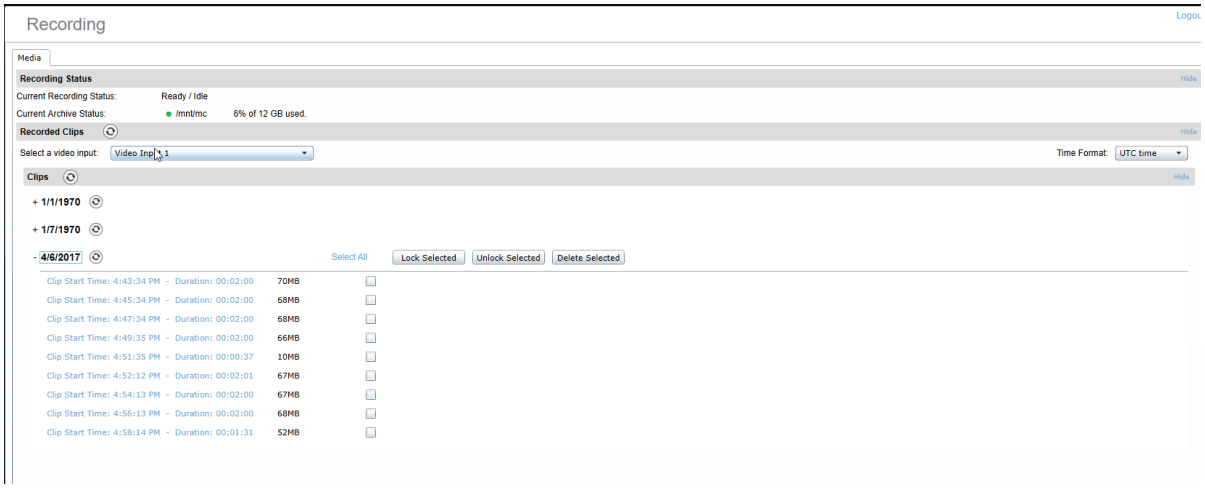
1. Select the notification rule from the list.
2. Click the **Delete** button.
3. A confirmation window will appear to confirm deletion. Click **Yes**.

Available notification rule parameters are as follow:

- **Name**: friendly name of the notification rule.
- **Trigger / Source**: event which will trigger the notification rule.
- **Trigger / Schedule**: time range in which the rule will be active. Note that this time is in UTC timezone format.
- **Send Email / Include Thumbnail**: Allows you to specify if an image capture should be attached to the notification email.
- **Send Email / To**: Set the destination email address.
- **Send Email / Subject**: Set the email subjet line.
- **Send Email / Comments**: Set the email message body content.

Recording

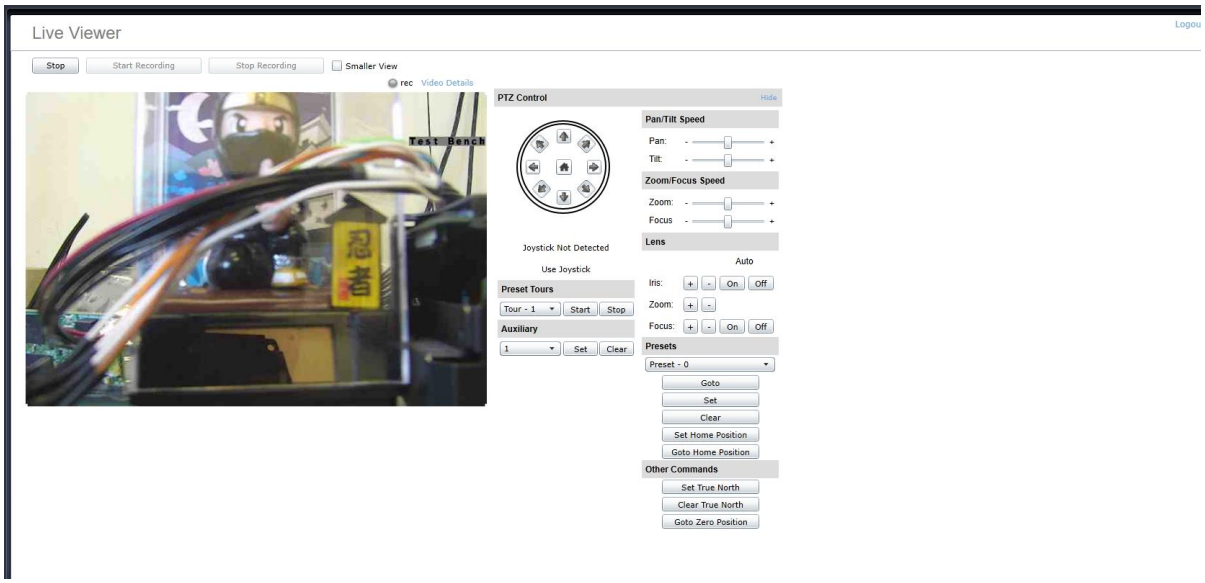
The recording page will display the current recording status and a list of recorded clips.



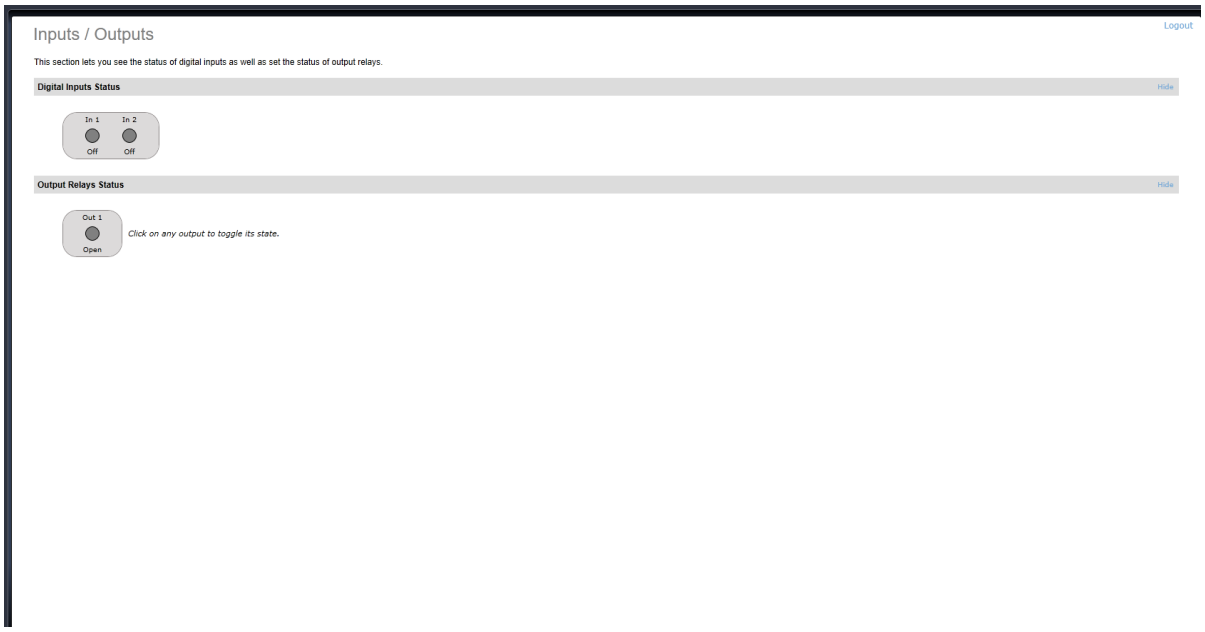
From the recorded clips list, you can select one or more clips to download, delete, lock or unlock.

Live Viewer

The Live Viewer pager allows you to play a mjpeg video as well as have access to the PTZ control.



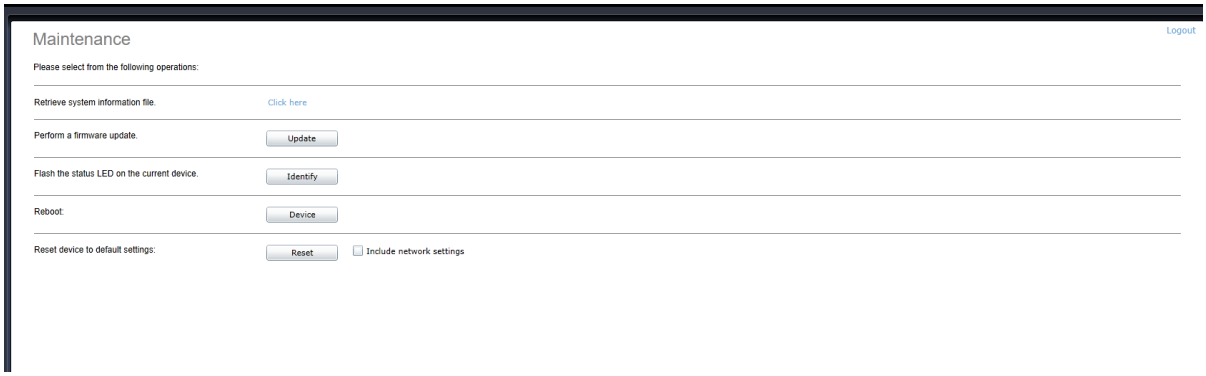
Inputs / Outputs



As described in section 3.1.2.5, the Atomas – Mini provides a digital I/O for control tasks purpose. The Inputs / Outputs page allows you to see the status of the digital I/O when they are connected to a relay switch.

Maintenance

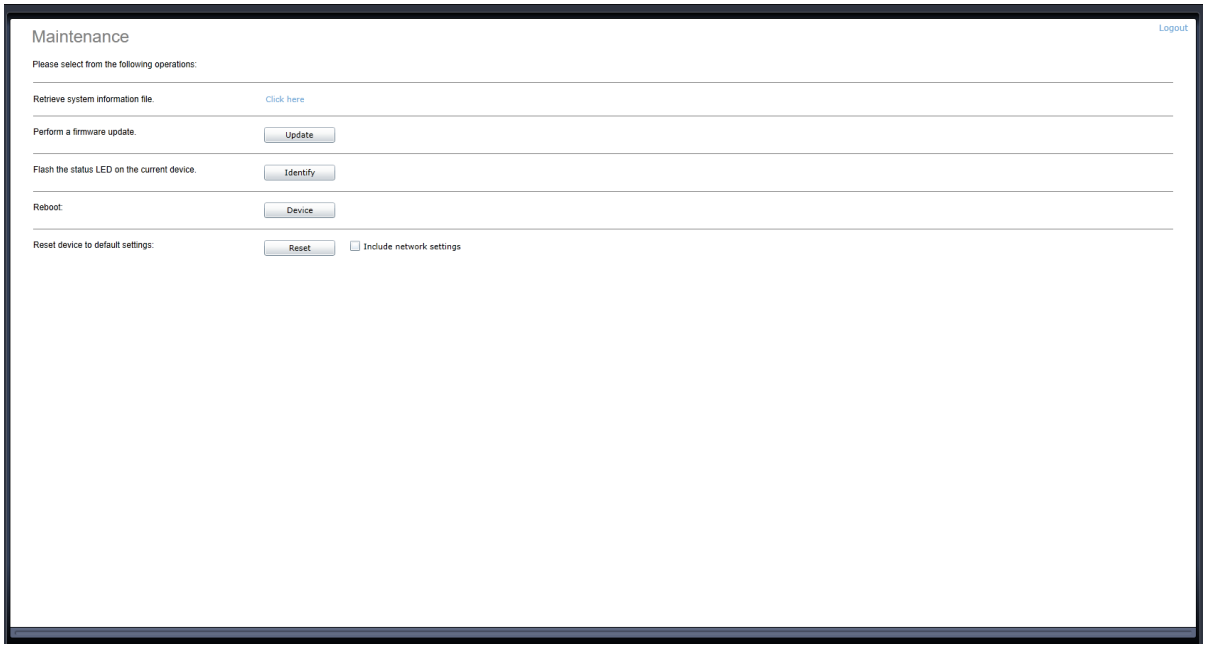
The Maintenance page allows you to grab the system information (sysinfo) file, perform an update, identify current device, reboot the unit and perform a factory reset.



Performing a Firmware Update

This section describes how to update your ATOMAS-MINI to newer firmware versions from the web application.

1. Navigate to your device's web application using your favorite web browser.
2. Click on the ***Maintenance*** tab.
3. Click on the ***Update*** button. You will be asked for the firmware update file; please select the **.iof** file which was provided by IONODES.



4. You will see the following messages indicating the status of the update:
    - Firmware upload in progress... (100%)
        - Lasts around 95 seconds.
        - Status LED is green.
    - Firmware uploaded. Saving to internal storage... (0%)
        - Lasts around 45 seconds.
        - Status LED is flashing red-green.
    - Validating and decompressing firmware... (0%)
        - Lasts around 105 seconds.
        - Status LED is flashing red-green.
    - Firmware ready for installation. Rebooting device... (0%)
        - Web page will disconnect from device until device has rebooted.
        - You will be prompted for login once the device is up again.
        - Lasts around 110 seconds.
        - Status LED is orange.
    - Testing firmware stability... (26%)
        - Lasts 120 seconds.

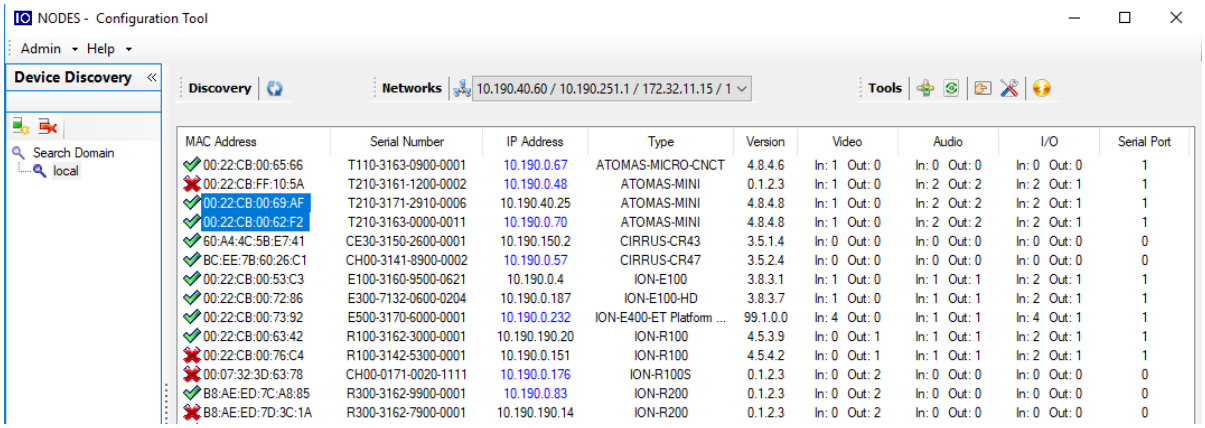
        - Status LED is flashing red-green.
    - Firmware update complete. (100%)

Batch Firmware Update

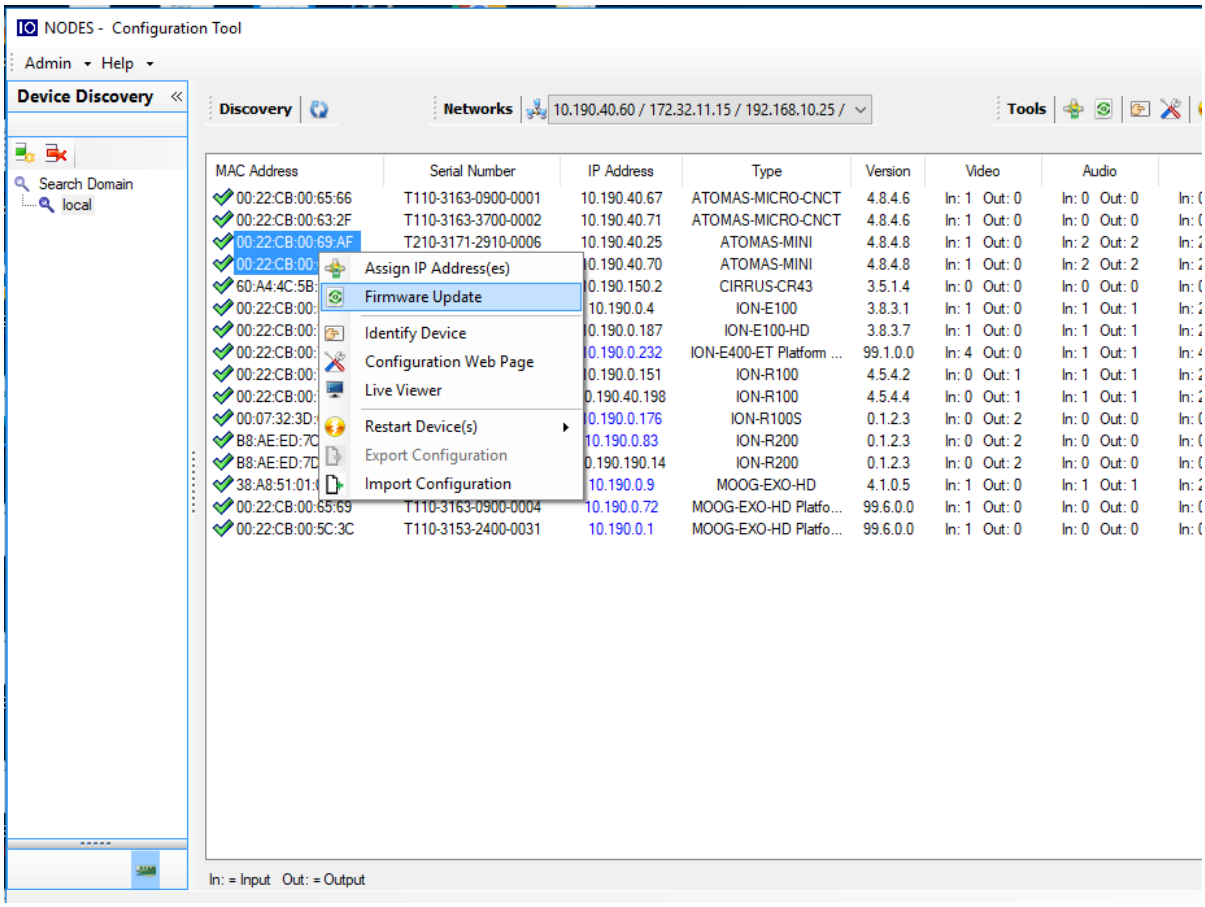
This section describes how to perform a batch update of multiple ATOMAS-MINI devices to newer firmware versions from the ICT.

The batch firmware update works by starting a firmware update session. Only one session at time is allowed and only 20 devices can be selected by session.

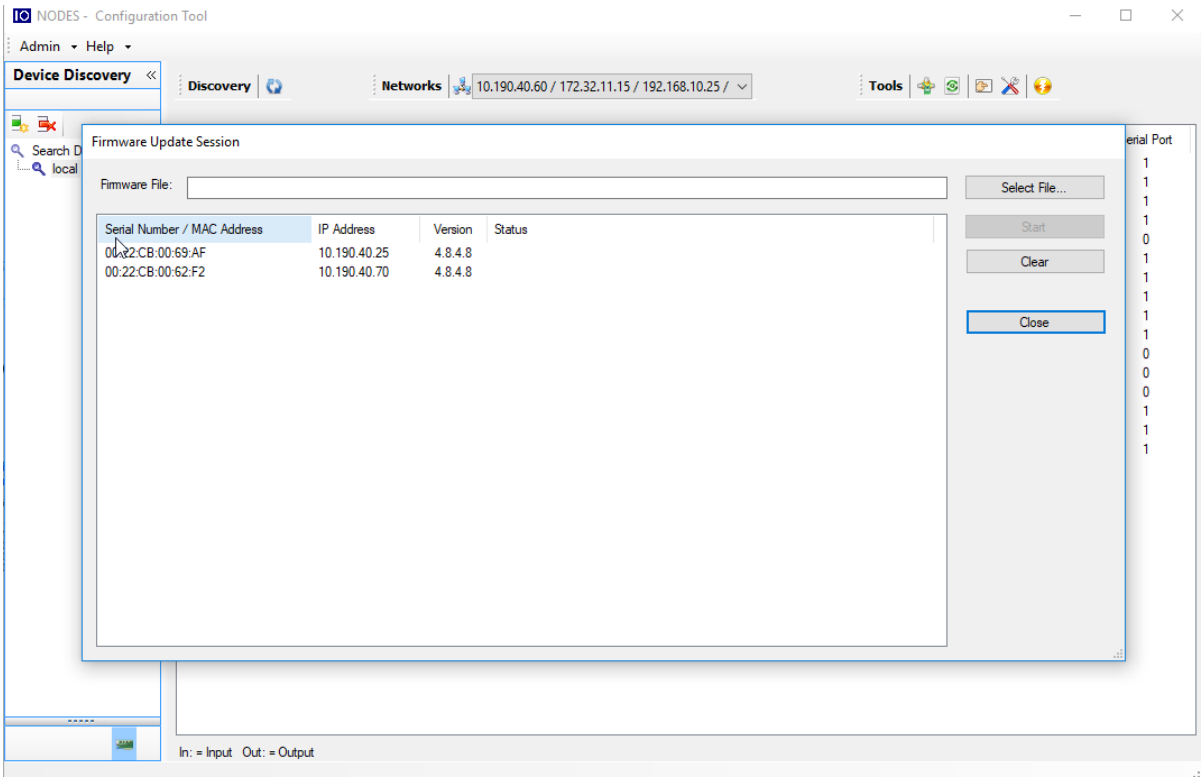
From the ICT, select one or more devices of the same type.



By using the right mouse button on the selected devices, choose the “Firmware Update” menu option.



To start a firmware update session, choose the ".iof" file corresponding to the new firmware by clicking to the "Select File …" button. Once selected, click to the "Start" button.



Once started, the “Firmware Update Session” window shows the progress of the firmware update. This window can be closed at any moment without losing the current session.

If closed, the progress of the current session can be followed by reopening the “Firmware Update Session” window by clicking the button from the “Tools” toolbar.

Once done, clear the current session from the “Firmware Update Session” window and restart a new session if needed.

Annex A – Troubleshooting Guide

- **Device does not seem to boot-up**
  - Verify that a 12VDC power supply is connected to the device.
  - If using PoE ensure the switch port supports PoE
  - When a valid power source is detected, the status LED will light up orange.
  - Verify the status of the system status LED to determine the state of the device as it powers up.

- **Cannot discover the device or communicate via the network**
  - Before the device can be discovered, the status LED must be lit GREEN as this indicates ready state of the device.
  - Make sure you have connected the device to your network.
  - Make sure the GREEN LED on the RJ45 connector is lit. If it is not lit, verify the network connectivity with the network switch.
  - Dynamic discovery of the ATOMAS-MINI requires multicast networking to be supported by your network and switch equipment. (Bonjour protocol)
  - Ensure you computer accessing the device is in the same subnet

- **Camera is not detected**
  - Validate the flex cable is properly connected into the Atomas-Mini

- **No video is displayed in the GUI**
  - Ensure the mjpeg codec is enabled

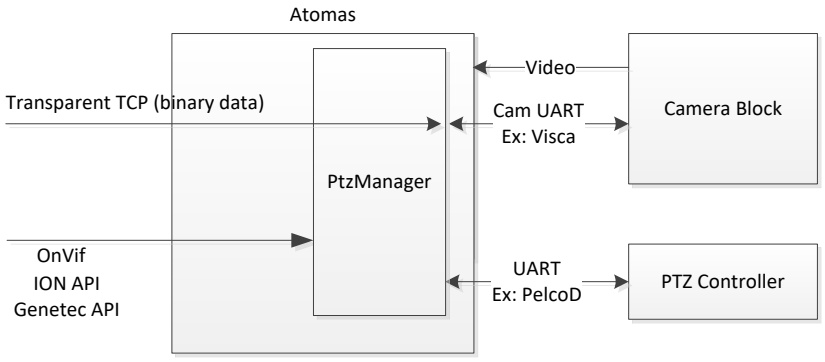
- **Device is not streaming**
  - Make sure the encoder instance (e.g. Primary H.264) you are streaming from is enabled
  - Ensure you are using the right URL (e.g. for primary encoder): rtsp://admin:admin@192.168.10.10/VideoInput/1/h264/1
  - Validate the camera is correctly connected into the Atomas-Mini

- Validate your network firewall is not blocking your video stream. Use Live Viewer (require mjpeg encoder being enabled) to make sure the Atomas is currently streaming

Annex B – PTZ Integration

This section describes the different PTZ scenarios that can be utilized with the Atomas-Mini.

Scenario 1



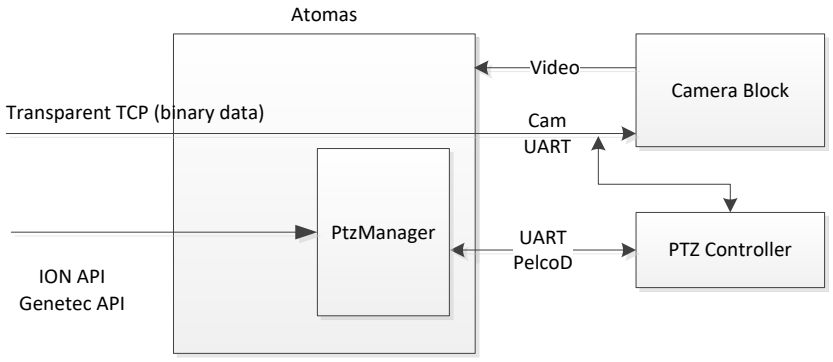
- Camera block connected to the video input port (YUV, LVDS, HD-SDI, MIPI)
- Camera block connected to the serial video command port
- PTZ controller connected to the serial port
- Requirements : Sensor selection from the web management interface: Configuration / Video In / General / Select Sensor
- Requirements: PTZ protocol selection from the web management interface : Configuration / Video In / PTZ
- Optional: Activation of Transparent TCP from the web management interface: Configuration / Video In / Sensor

In this scenario, the firmware completely manages the video commands (ex: VISCA) and PTZ (ex: PelcoD). PTZ can be used via the ION API, Genetec API or OnVif.

If the transparent TCP is active, it is possible to send control commands directly to the sensor. However this mode is not efficient with regards to managing possible conflict between the PTZ Manager and the commands sent as pass-through to the sensor.

The Transparent TCP mode is only available with camera blocks from Sony.

Scenario 2



- Camera block connected to the video input port (YUV, LVDS, HD-SDI, MIPI)
- PTZ controller connected to the serial port
- Requirements: No sensor selection or custom from the web management interface: Configuration / Video In / General / Select Sensor
- Requirements: PTZ protocol selection from the web management interface: Configuration / Video In / PTZ

In this scenario, the firmware manages the PTZ commands (ex: PelcoD). The PTZ Controller needs to manage the conversion of the commands coming from the serial port and going to the camera block. For example, the command PelcoD zoom, has to be converted by the PTZ Controller to a VISCA command.

The Transparent TCP can be activated **if the Custom sensor is selected**. In this case, the management of the commands to control the sensor have to be done strictly via the Transparent TCP. PTZ can be used via the ION API, Genetec API or OnVif. It is important to note that even though a sensor may have various serial ports, only one may be available at the same time. Additionally, this particular scenario is not recommended when a sensor has one serial port only because in this scenario the Atomas does not have a mechanism to manage the collisions on the serial port.

Annex C – Statement Limited Warranty

The warranties provided by Ionodes Inc. (Ionodes) in this Statement of Limited Warranty apply only to ATOMAS-MINI products purchased from an authorized Ionodes Inc. (Ionodes) Reseller, Integrator or Distributor and returned from European, Asian or North American countries, and excludes all Latin American countries. The term "ATOMAS-MINI" means an ATOMAS-MINI module, any module upgrade, or accessories, or any combination of them. The term "ATOMAS-MINI" does not include any software programs, whether pre–loaded with the ATOMAS-MINI, installed subsequently or otherwise, and any installed Micro SD Card, which are covered by a separate Limited Warranty. Nothing in this Statement of Warranty affects any statutory rights of purchaser that cannot be waived or limited by contract. If you have any questions regarding this Limited Warranty, contact Ionodes Inc. and its resellers. The Warranty period for the ATOMAS-MINI is 2 years from date of billing for the ATOMAS-MINI product.

The Ionodes Warranty for ATOMAS-MINI

Ionodes warrants that each ATOMAS-MINI is free from defects in materials and workmanship, and conforms to the ATOMAS-MINI Official Published Specifications (See http://www.ionodes.com for details). The warranty period for an ATOMAS-MINI is a specified, fixed period commencing on date of billing by Ionodes for the Product. If a valid proof of billing cannot be found, the warranty may be void by Ionodes Inc. or measured from the date the ATOMAS-MINI has shipped from a Ionodes Depot center based on its serial number.

If, during the warranty period, the ATOMAS-MINI is not in good working order, Ionodes will, at its option, repair or replace it at no additional charge, except as is set forth below. In some cases, the replacement product may not be new and may have been previously installed. Regardless of the replacement product used, Ionodes' appropriate warranty terms apply. In case Ionodes or your reseller are unable to repair an Ionodes ATOMAS-MINI, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired ATOMAS-MINI or ask for a cancellation of the respective agreement for such ATOMAS-MINI and get your money refunded.

Extent of Warranty

The warranty does not cover the repair or exchange of an ATOMAS-MINI resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by the end user, or failure caused by a product for which Ionodes is not responsible. The warranty is voided by removal or alteration of ATOMAS-MINI or parts identification labels, but not by the installation or replacement of Micro SD medium.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Items Not Covered by Warranty

Ionodes does not warrant uninterrupted or error–free operation of an ATOMAS-MINI. Any technical or other support provided for an ATOMAS-MINI under warranty, such as assistance via telephone

with "how–to" questions and those regarding ATOMAS-MINI set–up and installation, will be provided WITHOUT WARRANTIES OF ANY KIND.

For more information, please contact our technical support team:
- Call: 450.696.1060 or 1 - 844-696-1060 (North America Toll Free)
- Send an email to: support@ionodes.com
- Web request: http://ionodes.desk.com