IONODES

ATOMAS-MICRO
User Manual

Version 1.1

IONODES

The **smart** appliance of media.

IONODES INC.

Laval, Québec, Canada

Table of Contents

1 Before you begin

1.1 About the ATOMAS-MICRO

The ATOMAS-MICRO 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-MICRO 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-MICRO offers a cost-effective way to convert existing cameras designs to benefit from video over IP networks.

The ATOMAS-MICRO 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-MICRO 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-MICRO well into the future.

1.2   Parts List

Qty	Description
1	ATOMAS-MICRO-CNCT 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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1.3 Ordering Information

Below are the various part numbers associated to the ATOMAS-MICRO platform. Please ensure to use the proper part numbers when placing orders.

Part Number	Description
ATOMAS-MICRO-CNCT	H.264 IP video encoder OEM module with connector interface. Does not come with any cables or accessories.
ATOMAS-MICRO-CNCT-KIT	H.264 IP video encoder OEM module starter kit for SONY MA13X (North American model) Power supply, SONY MA130 camera & cables included.
ATOMAS-MICRO-CNCT-KIT-EU	H.264 IP video encoder OEM module starter kit for SONY MA13X (European model) Power supply, SONY MA130 camera & cables included.
ATOMAS-MICRO-CNCT-KIT-UK	H.264 IP video encoder OEM module starter kit for SONY MA13X (United Kingdom model) Power supply, SONY MA130 camera & cables included.
ATOMAS-MICRO-SDIO-KIT	Micro-SD breakout card and cable for use with ATOMAS-MICRO-CNCT OEM encoder.
ATOMAS-MICRO-POE-KIT	PoE module and cable for use with ATOMAS-MICRO OEM encoder.

2 Hardware Integration

The ATOMAS-MICRO has been designed to allow for flexible hardware integration to existing or new product designs. The ATOMAS-MICRO proposes two (2) corner cut-outs 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-MICRO 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.

2.1 Temperature Considerations

The ATOMAS-MICRO 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.

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3 ATOMAS-MICRO-CNCT

3.1 Pinout Description
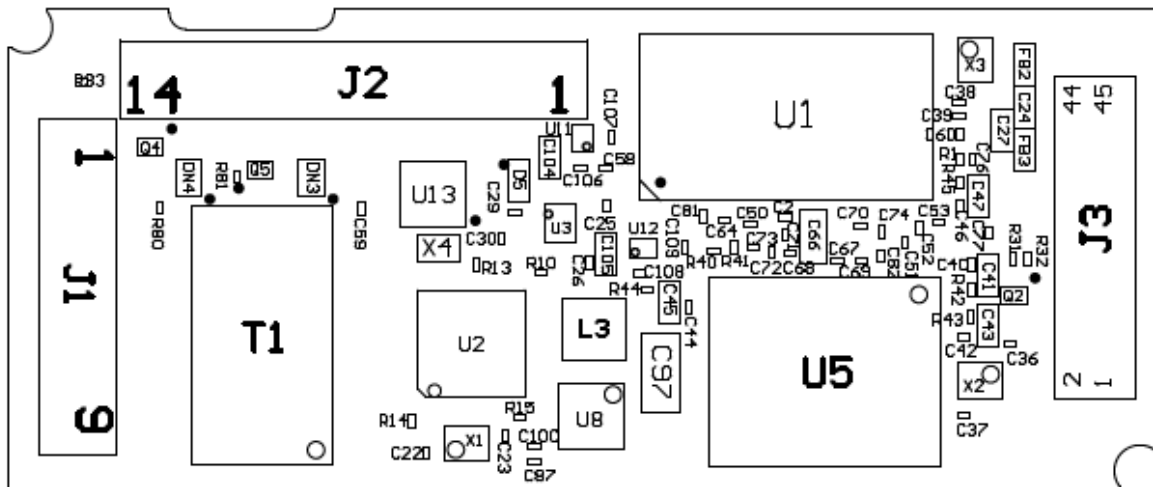
Figure 1 - Top Side
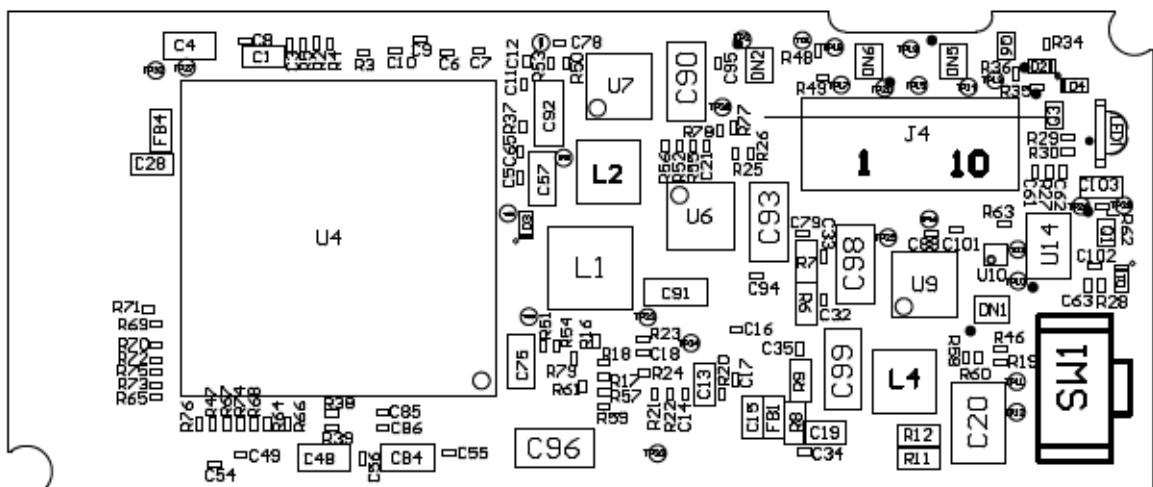
Figure 2 - Bottom Side

3.1.1 Connector Part Numbers

- J1 – MOLEX 53398-0971
- J2 – MOLEX 53398-1471
- J3 – AVX / KYOCERA 04-6296-045-931-846+
- J4 – TE CONNECTIVITY 1-1734839-0

3.1.2 J1 – Network and Power

Pin No.	Name	Comments
1	Vin	Power Input Vin. Range = 6V to 14V DC.
2	VRTC	VRTC is provided in order to allow for optional integration of an external battery source (CR2032) 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.
3	GND	Power Input Ground.
4	10/100 LAN TX -	Connects directly to RJ45 or network wiring.
5	10/100 LAN TX +	Connects directly to RJ45 or network wiring.
6	10/100 LAN LED1	Connects directly to RJ45 or network wiring.
7	10/100 LAN LED2	Connects directly to RJ45 or network wiring.
8	10/100 LAN RX -	Connects directly to RJ45 or network wiring.
9	10/100 LAN RX +	Connects directly to RJ45 or network wiring.

3.1.3 J2 – I/O Signals

Pin No.	Name	Comments
1	DEBUG TX	For internal purposes only. DO NOT USE.
2	DEBUG RX	For internal purposes only. DO NOT USE.
3	UART0 TX	Serial Port TX – TTL Level 3.3V. Unprotected, please provide appropriate protection on external source.
4	UART0 RX	Serial Port RX – TTL Level 3.3V. Unprotected, please provide appropriate protection on external source.
5	I2S RXD	For external device integration via I2S. Not used by default.
6	I2S TXD	For external device integration via I2S. Not used by default.
7	I2S WS	For external device integration via I2S. Not used by default.
8	I2S BCLK	For external device integration via I2S. Not used by default.
9	GND	
10	GPIO1	For external device integration via I2C or standard GPIO. Not used by default.
11	GPIO2	For external device integration via I2C or standard GPIO. Not used by default.
12	ST_LED_R	Device Status LED – Red
13	ST_LED_G	Device Status LED – Green
14	RST	Device Reset Signal

3.1.4 J2 – Debug Port

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

3.1.5 J1 – Network

J1 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-MICRO, J1 can therefore be connected directly to network switching equipment.
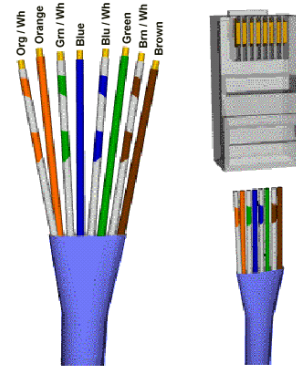
3.1.6 J2 – Status LEDs

J2 provides a means for exposing an application status LED on your product. The ATOMAS-MICRO has been designed to make use of a bi-color LED to display device status. The bi-color LED can be used via ST_LED_R (RED) and ST_LED_G (GREEN). Use these GPIO signals to drive the state of your external status LED's.

Note: LED color states and behaviour are described later in this manual.

3.1.7 J2 – UART

J2 provides TTL 3.3V level RX an TX access to the serial port. Although there is some basic ESD protection (provided by DSILC6-4) on these signals, you are required to ensure voltage-level protection on these external signals.

3.1.8 J2 – Reset

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

To reboot the device without triggering a factory reset, short the RST pin of connector J2 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 J2 for approx. 20 seconds – release the pin once the LED pattern on LED1 (RD1 + GN1) displays alternating RED/GREEN colors. After the device reboots, it should be reset to the default factory configuration.

3.1.9 J1 – Power

The module should be powered using a 12VDC power source. The power input range on the device is 6VDC to 14VDC.

Note: IONODES has a PoE module (power-over-Ethernet) which can be used to add PoE support for your ATOMAS-MICRO design. This module has the exact same physical form factor as the ATOMAS-MICRO and provides direct connection via a supplied cable. The P/N for this module is ATOMAS-MICRO-POE

3.1.10   J1 – VRTC

VRTC is provided in order to allow for optional integration of an external battery source (CR2032) 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-MICRO

3.1.11 J3 – HD Sensor Connector

P/N: 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: 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"

3.1.12 J4 – 10 Pin Micro SD / SD Connector

P/N: 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 32GB micro SD / SD card of class 6 or above. You must also make sure the card is formatted in FAT32 or EXT3.

Note: IONODES has a break-out board which can be used to add support for micro SD. This module connects directly to J4 via a provided cable. The P/N for this optional break-out board is ATOMAS-MICRO-SDIO

3.2 Understanding LED Status

Status of the ATOMAS-MICRO is exposed via the first bi-color LED (GN0/RD0). The following describes the system status LED mappings of the ATOMAS-MICRO:

3.2.1 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)*

3.2.2 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-MICRO takes up to 1 minute to boot up.

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4 ATOMAS-MICRO-POE

The ATOMAS-MICRO-POE module is an optional module provided by IONODES which provides power over Ethernet (PoE) support to your ATOMAS-MICRO module. The ATOMAS-MICRO-POE is designed with the same mechanical dimensions as the ATOMAS-MICRO module in order to allow for a stacked design.

The ATOMAS-MICRO-POE module is provided as part of the ATOMAS-MICRO-POE-KIT part number which also includes a cable required to connect the ATOMAS-MICRO-POE to the ATOMAS-MICRO module.
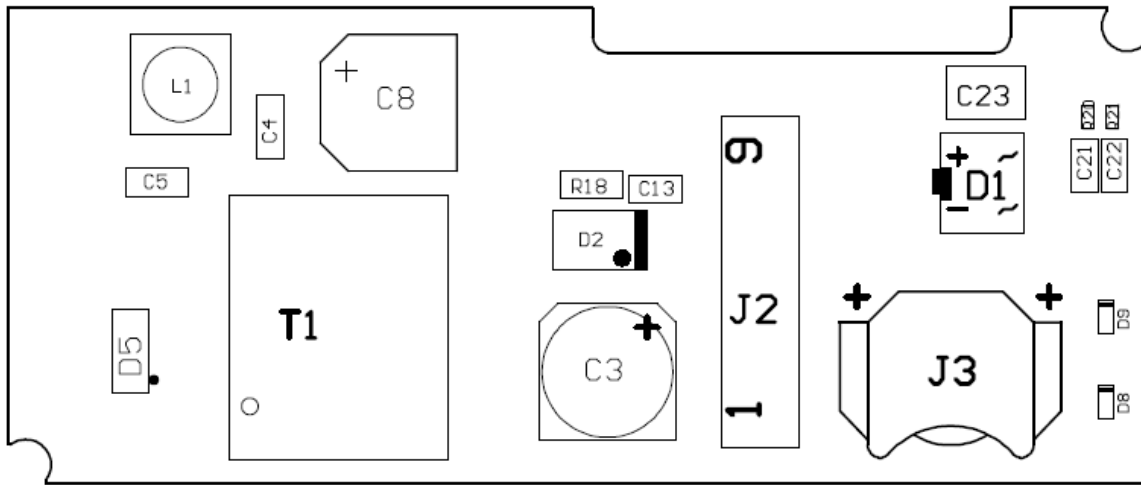
4.1 Pinout Description
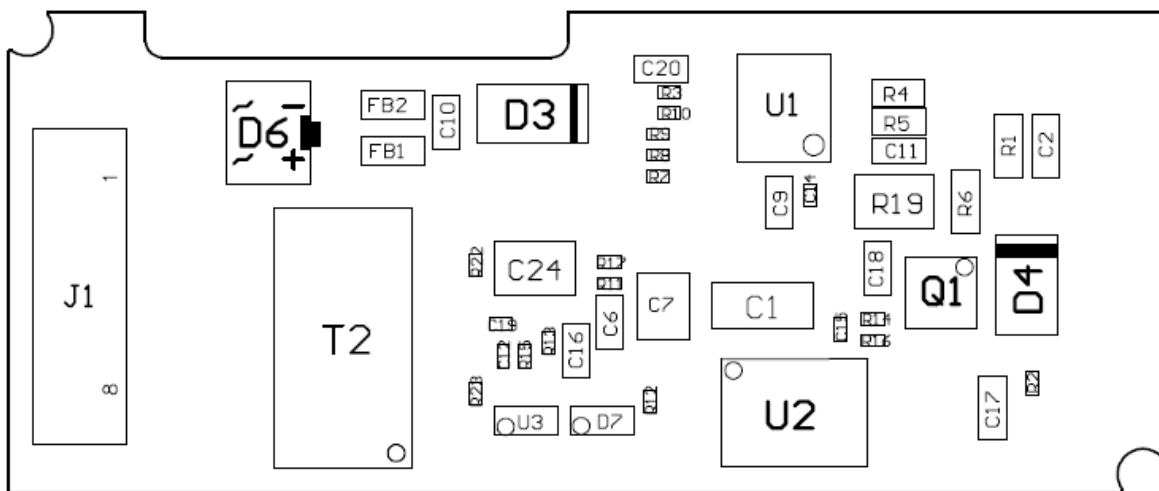
Figure 3 - Top Side

Figure 4 - Bottom Side

4.1.1 Connector Part Numbers

- J1 – MOLEX 53261-0871
- J2 – MOLEX 53398-0971
- J3 – KEYSTONE ELECTRONICS 2998

4.1.2 J1 – Network and Power Input

Pin No.	Name	Comments
1	ATOMAS_PWR+	Power Input Vin; 12VDC.
2	ATOMAS_PWR+	Power Input Vin; 12VDC.
3	ATOMAS_PWR-	Power Input Ground.
4	ATOMAS_PWR-	Power Input Ground.
5	10/100 LAN TX -	Connects directly to RJ45 or network wiring.
6	10/100 LAN TX +	Connects directly to RJ45 or network wiring.
7	10/100 LAN RX -	Connects directly to RJ45 or network wiring.
8	10/100 LAN RX +	Connects directly to RJ45 or network wiring.

Note: ATOMAS_PWR is optional and only needed if used as an alternate power source to PoE power provided on 10/100 LAN connection. Both power sources can be active at the same time.

4.1.3 J2 – Network and Power Output (to ATOMAS-MICRO)

Pin No.	Name	Comments
1	10/100 LAN RX +	
2	10/100 LAN RX -	
3	10/100 LAN LED2	
4	10/100 LAN LED1	
5	10/100 LAN TX +	
6	10/100 LAN TX -	
7	GND	Output to ATOMAS-MICRO
8	VRTC	1.3V to 5.5V output to ATOMAS-MICRO
9	Vout	Power output to ATOMAS-MICRO. 12V.

Note: This connector is designed to mate with connector J1 of the ATOMAS-MICRO encoder module. Pinout is inverted to keep the harness cable straight.

4.1.4 J3 – RTC Battery Connector

Pin No.	Name	Comments
1	VRTC	Range supported 1.3V to 5.5V.
2	GND	

VRTC is provided in order to allow for optional integration of an external battery source (6.8mm coin cell) 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.

Connector J3 is designed to hold a 6.8mm coin cell type battery with voltage range between 1.3V to 5.5V.

5 ATOMAS-MICRO-SDIO

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

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

5.1 Pinout Description
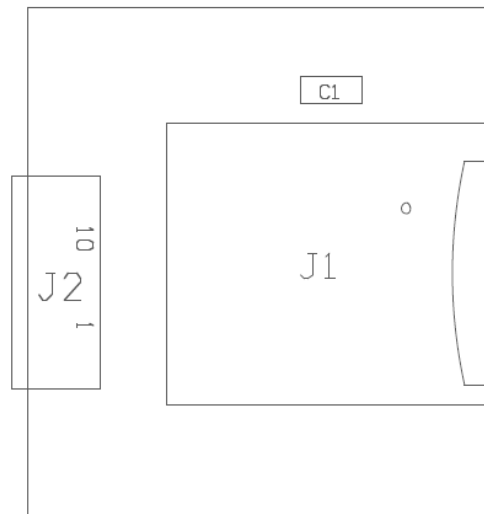
Figure 5 - Top Side

5.1.1 Connector Part Numbers

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

5.1.2 J1 – Micro SD Socket

In order to use the micro SD functionalities with the ATOMAS-MICRO, make sure to use a 2GB to 32GB micro SD of class 6 or above. You must also make sure the card is formatted in FAT32 or EXT3.

5.1.3 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-MICRO encoder module. Pinout is inverted to keep the harness cable straight.

6 System Configuration

For initial set-up, the ATOMAS-MICRO 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-MICRO 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-MICRO using a laptop directly connected to the device's network port, or remotely over the network.

6.1 Network Configuration

By factory default, the ATOMAS-MICRO 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-MICRO 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.
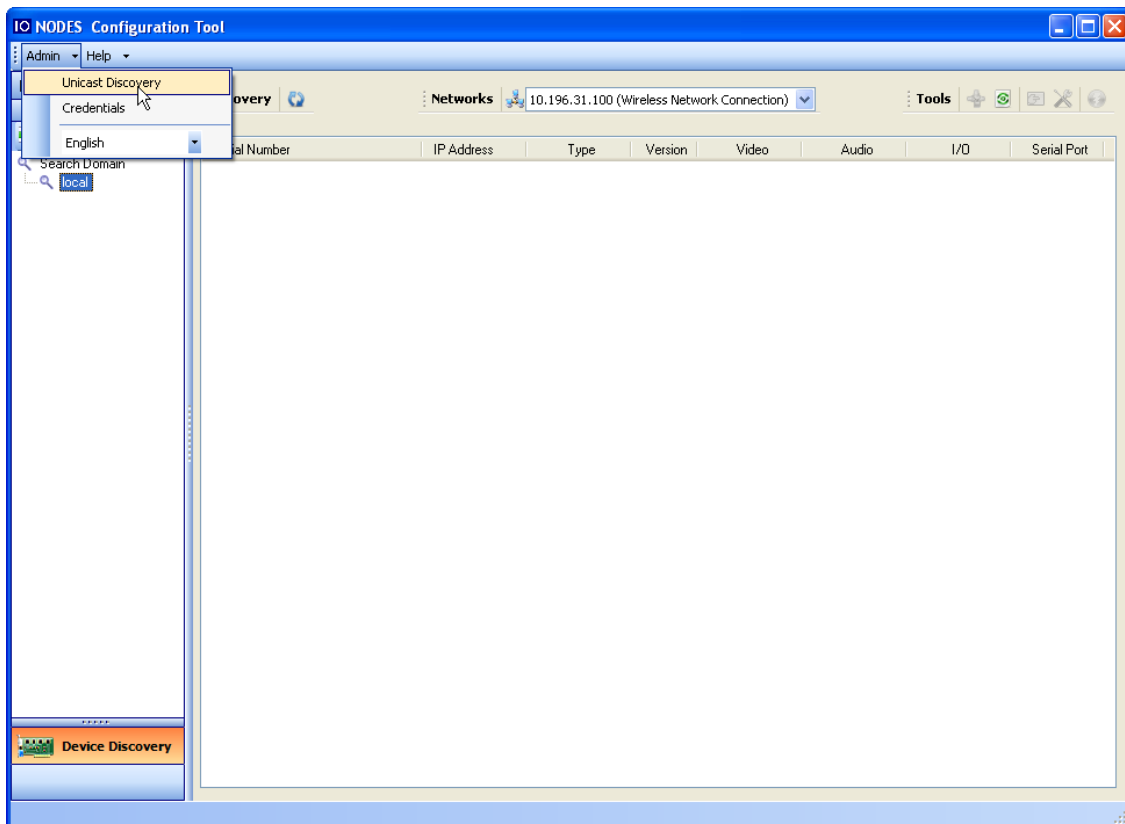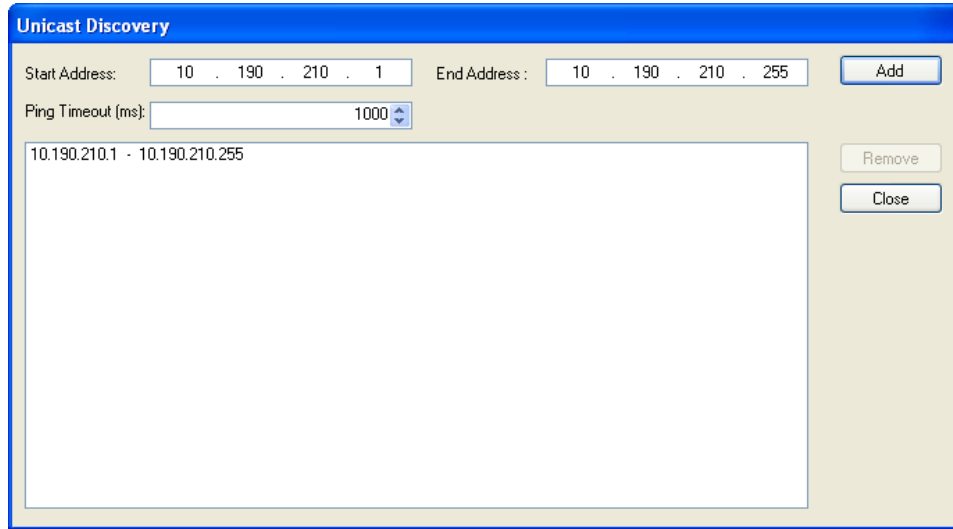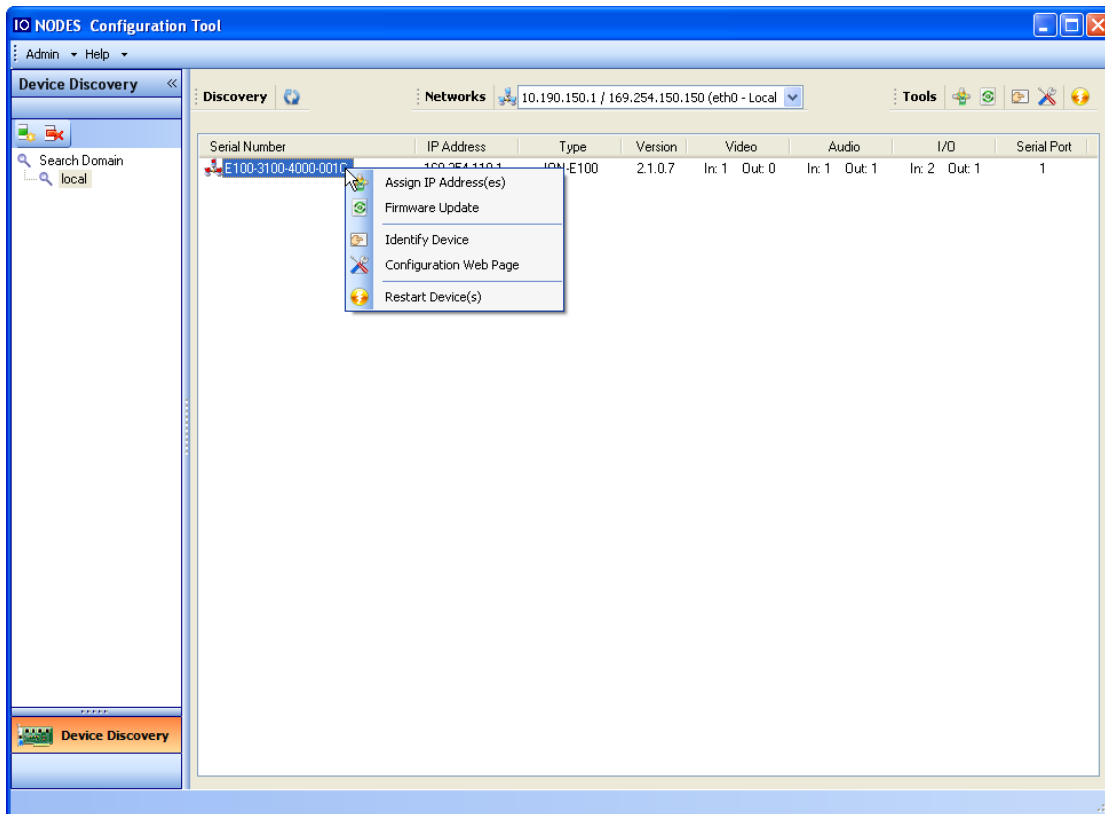
To configure the Unicast Discovery, add one or more IP address ranges. The Unicast Discovery tries to reach a device at a specific IP address in the configured ranges. The discovery can be a long process if the range of IP addresses is huge and the device is at the end of the range. To accelerate the 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.
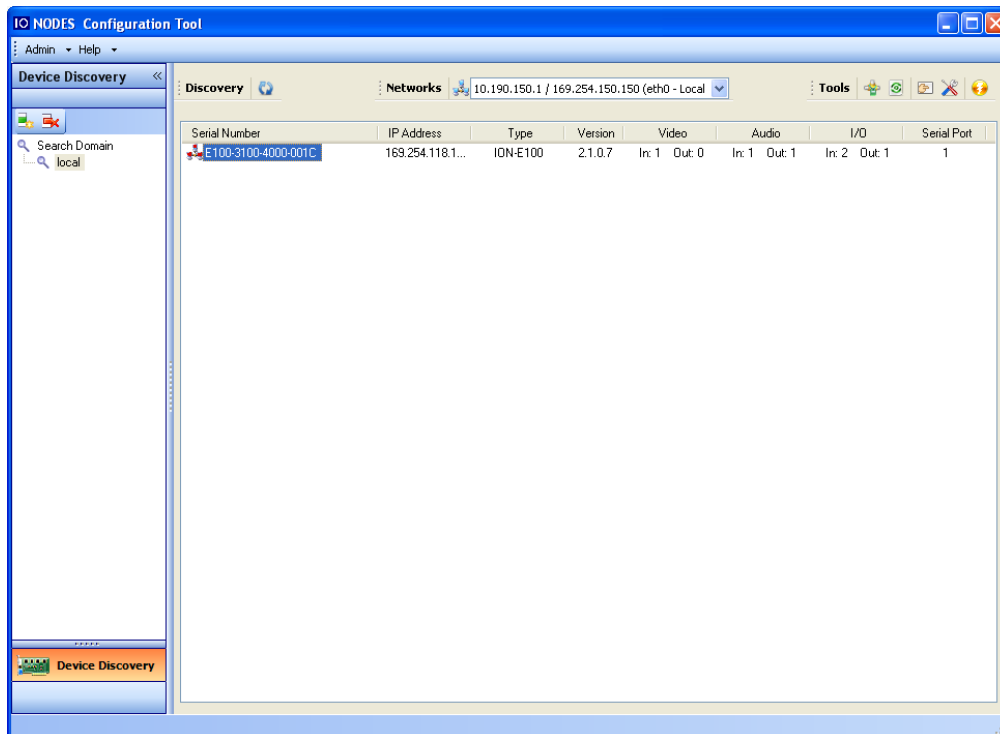
If no DHCP server was able to assign an IP address to an ATOMAS-MICRO, it will appear in the ICT device list with an APIPA address (169.254.*.*). If an ATOMAS-MICRO displays an APIPA address it must be configured with a valid IP address before it can be remotely configured by selecting the ''Assign IP address'' from the selection list and configuring the TCP/IP settings.
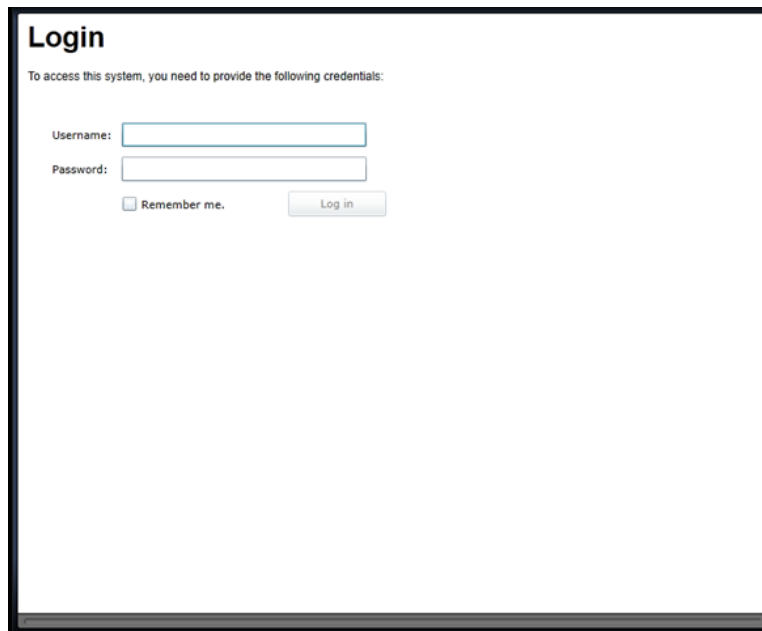
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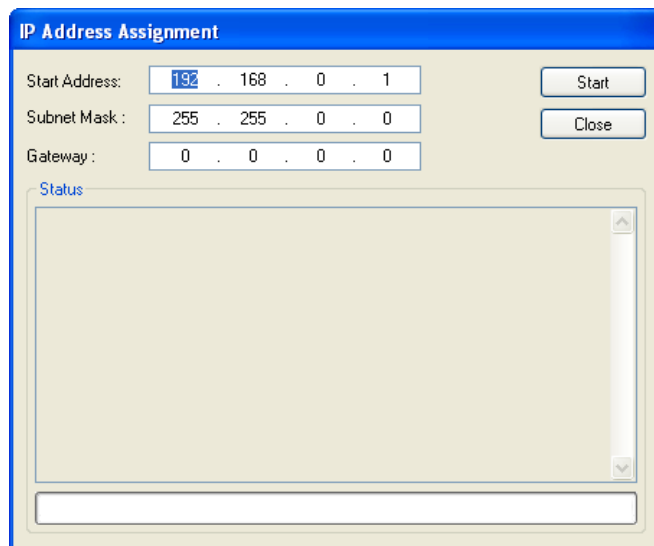
Once the IP information is set, the Silverlight web application served by the ATOMAS-MICRO can be launched from the ICT or directly in your web browser by typing the device's IP address in the address bar. You can start to use your networked video management system for final system configuration or you can configure advanced parameters using the ATOMAS-MICRO's web based management.
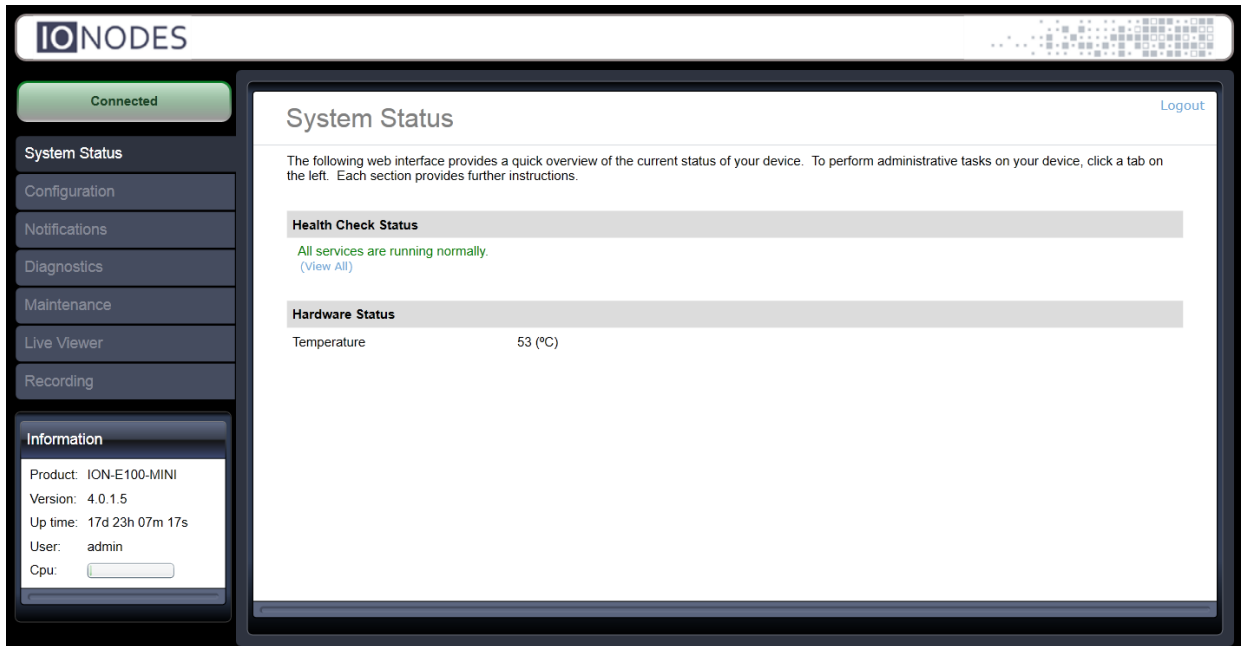
6.2 Using the ATOMAS-MICRO Web Application

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

Login

To access this system, you need to provide the following credentials:

Username:

Password:

☐ Remember me.   Log in

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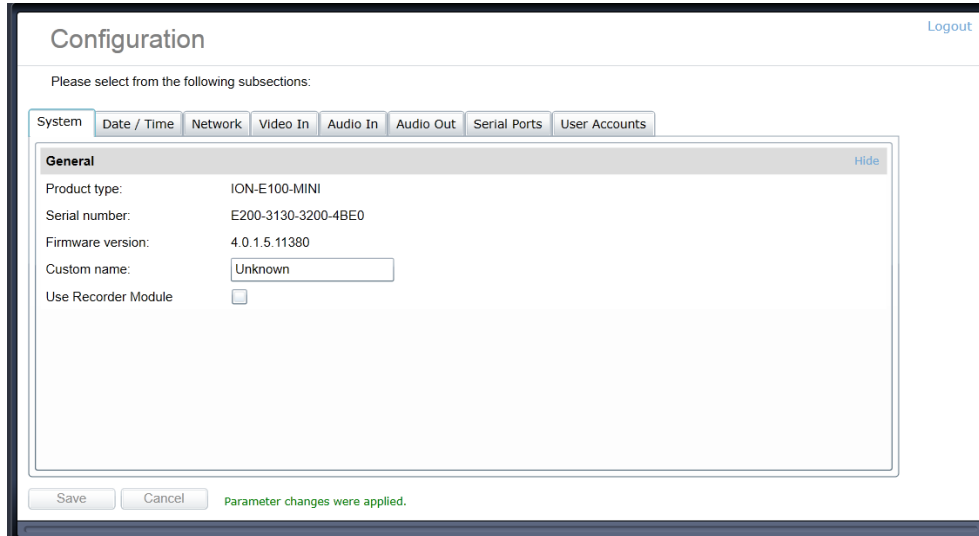
6.2.1 System Status

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.

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6.2.2 System Configuration

6.2.3 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.
- Enable edge recording by checkboxing the "Use Recorder Module" checkbox. Disabling the edge recording feature will reduce the device's boot time.
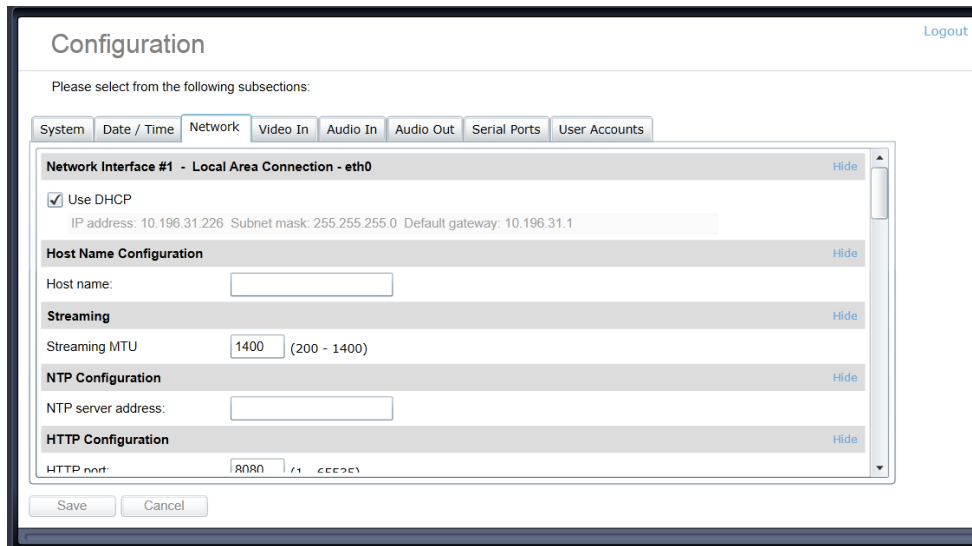
6.2.4 Configuration / Date Time

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.

6.2.5 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.
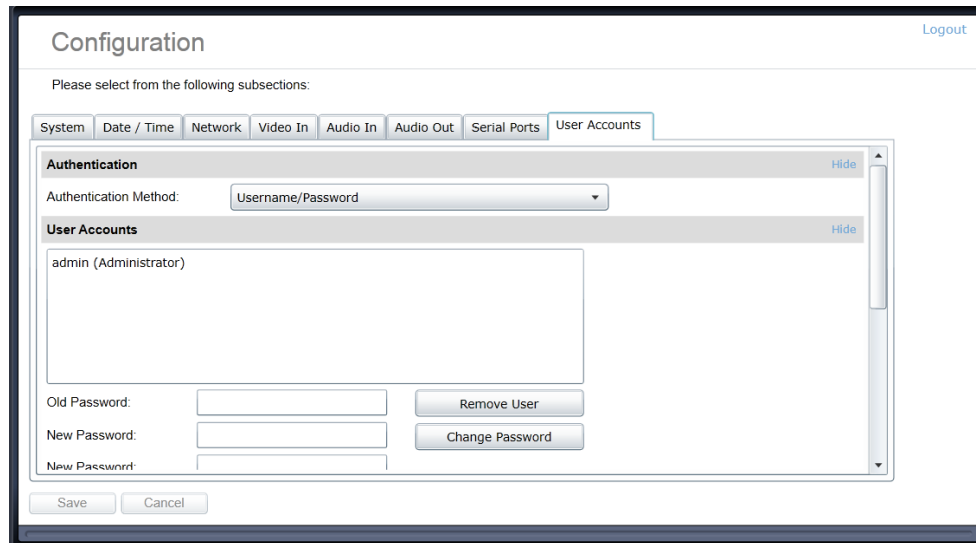
6.2.6 Configuration / Video In

TO BE COMPLETED.

6.2.7 Configuration / Serial Ports

TO BE COMPLETED.

6.2.8 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.

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6.3 Performing a Firmware Update

This section describes how to update your ATOMAS-MICRO 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.
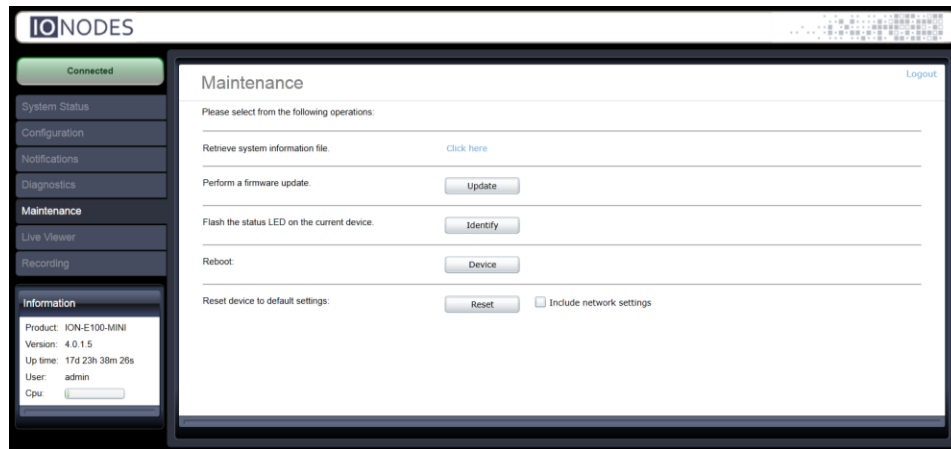

4. You will see the following messages indicating the status of the update:
   - ○ Firmware upload in progress... (100%)
     - ▪ Lasts around 95 seconds.
     - ▪ Status LED is green.
   - ○ Firmware uploaded. Saving to internal storage... (0%)
     - ▪ Lasts around 45 seconds.
     - ▪ Status LED is 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%)

6.4 Batch Firmware Update

This section describes how to perform a batch update of multiple ATOMAS-MICRO 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.
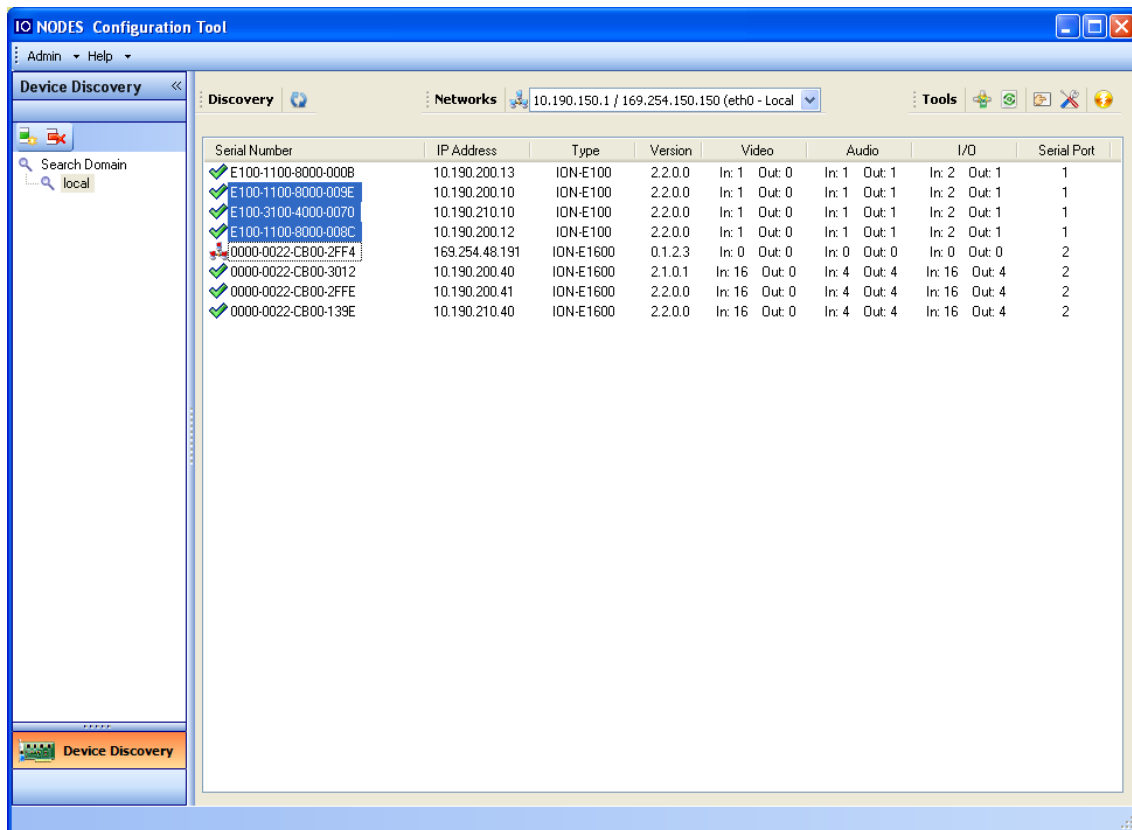
By using the right mouse button on the selected devices, choose the "Firmware Update" menu option.
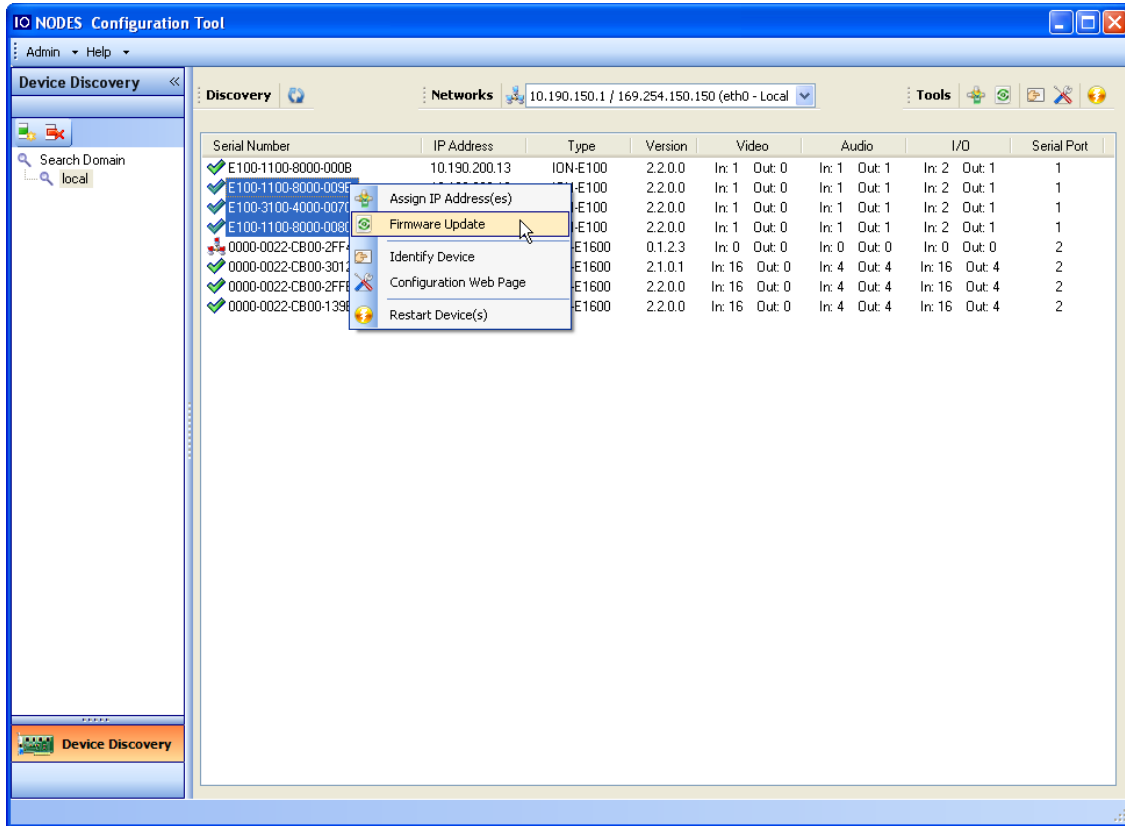
To start a firmware update session, choose the ".iof" file corresponding to the new firmware by clicking to the "Select File …" button. Once selected, click to the "Start" button.
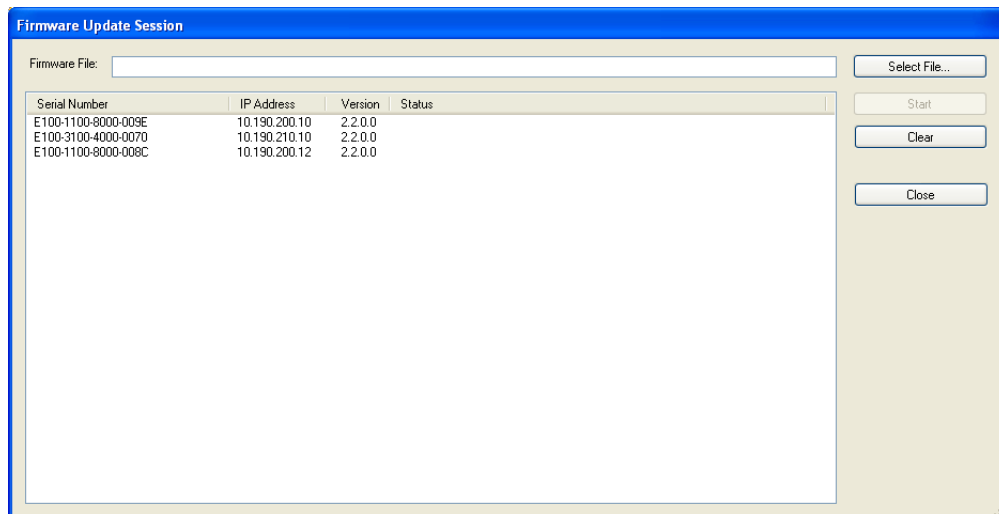
Once started, the "Firmware Update Session" window shows the progress of the firmware update. This window can be closed at any moment without losing the current session.

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.

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7 Point to Point Connections

Point-to-point connections between an ATOMAS-MICRO and an ION-R100 can be configured using the device's web application.

In the ATOMAS-MICRO's web application, in the **Configuration** section, go to the **Video In** tab. Scroll down all the way to the bottom of the configuration page. The last 3 sections are named **Point to Point 1**, **2** and **3**.

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 » and «Secondary H.264». 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. DNS names are not yet supported, only IP addresses.
- Destination Port: Network port where to send the video. This value must match the port value in the ION-R100.

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

Annex B – Troubleshooting Guide

- **Device does not seem to boot-up**
    - o Verify that a 12VDC power supply is connected to the device.
    - o When a valid power source is detected, the status LED will light up orange.
    - o 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**
    - o Before the device can be discovered, the status LED must be lit GREEN as this indicates ready state of the device.
    - o Make sure you have connected the device to your network.
    - o Make sure the GREEN LED on the RJ45 connector is lit. If it is not lit, verify the network connectivity with the network switch.
    - o Dynamic discovery of the ATOMAS-MICRO requires multicast networking to be supported by your network and switch equipment. (Bonjour protocol)

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IONODES

Annex C – Statement Limited Warranty

The warranties provided by Ionodes Inc. (Ionodes) in this Statement of Limited Warranty apply only to ATOMAS-MICRO 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-MICRO" means an ATOMAS-MICRO module, any module upgrade, or accessories, or any combination of them. The term "ATOMAS-MICRO" does not include any software programs, whether pre–loaded with the ATOMAS-MICRO, 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-MICRO is 2 years from date of billing for the ATOMAS-MICRO product.

The Ionodes Warranty for ATOMAS-MICRO

Ionodes warrants that each ATOMAS-MICRO is free from defects in materials and workmanship, and conforms to the ATOMAS-MICRO Official Published Specifications (See http://www.ionodes.com for details). The warranty period for an ATOMAS-MICRO 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-MICRO has shipped from a Ionodes Depot center based on its serial number.

If, during the warranty period, the ATOMAS-MICRO 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 re-placement product used, Ionodes' appropriate warranty terms apply. In case Ionodes or your reseller are unable to repair an Ionodes ATOMAS-MICRO, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired ATOMAS-MICRO or ask for a cancellation of the respective agreement for such ATOMAS-MICRO and get your money refunded.

Extent of Warranty

The warranty does not cover the repair or exchange of an ATOMAS-MICRO 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-MICRO 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-MICRO.   Any tech-nical or other support provided for an ATOMAS-MICRO under warranty, such as assistance via tele-phone with "how–to" questions and those regarding ATOMAS-MICRO set–up and installation, will be provided WITHOUT WARRANTIES OF ANY KIND.