



# unIFY Control Panel

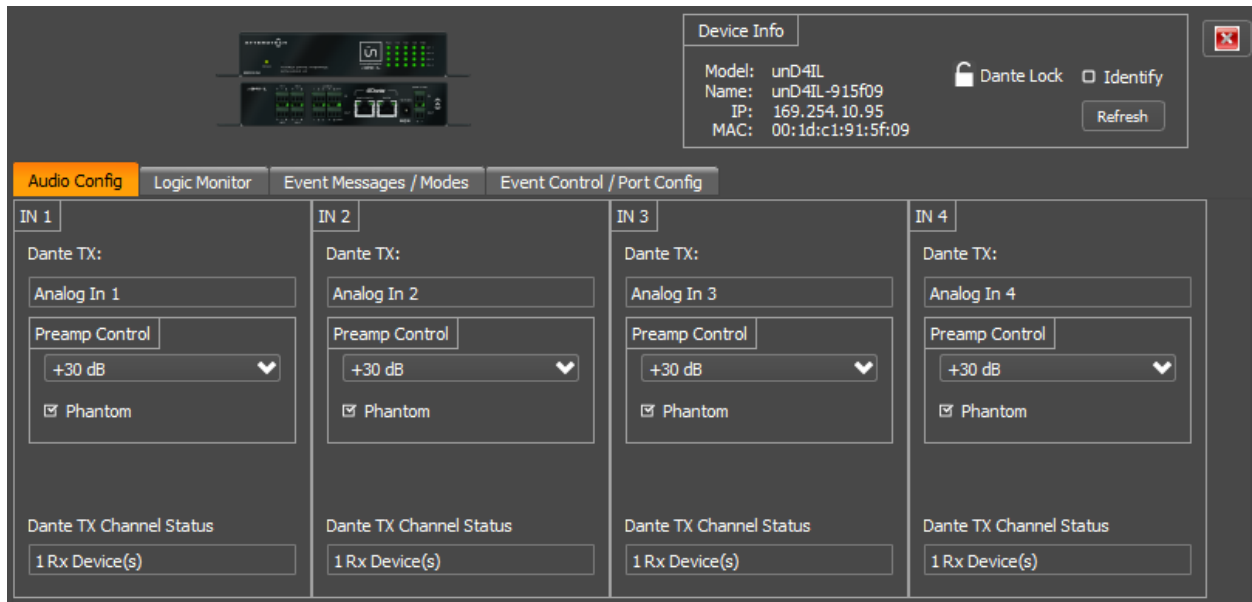
## unD4I-L Configuration



QSC, LLC • 1675 MacArthur Boulevard • Costa Mesa, CA 92626  
Ph: 800/854-4079 or 714/957-7100 • Fax: 714/754-6174

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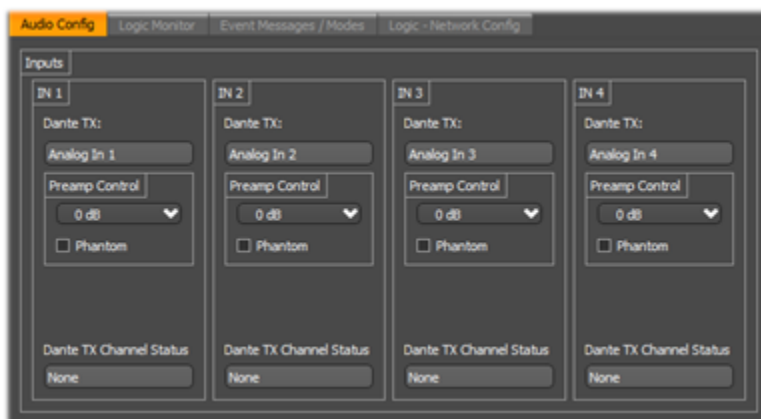


The configuration software for the unD4I-L is organized into the following key sections:

- Audio Config
- Logic Monitor
- Event Messages/Modes
- Event Control / Port Config

*\*Note: Any changes made to device settings will only persist until power is cycled on the device. To retain the settings, they must be stored to Preset 0 using the Save Presets feature within unIFY Control Panel.*

## Audio Config



### Dante™ TX Channel Name

This text field reports the Dante™ transmit channel name shown on the Dante™ network for corresponding analog input channels.

*\*Note: This field is non-editable. To edit the channel names, use the device list view control or us Dante™ Controller.*

### Preamp Control

The Preamp Control section allows the

user to adjust the microphone preamp gain settings and phantom power states for the corresponding inputs.

### Dante™ TX Channel Status

This text field reports the number of active Dante™ receive devices for the corresponding transmitter channel. If no devices are subscribed to the transmitter channel the text field will report *None*.

*\*Note: This is a read-only field and any channel routing configuration must be performed within Dante™ Controller.*

## Logic Monitor



### Logic Inputs

The Logic Monitor tab provides indicators of the active logic input states. Each logic input shows a green LED if the logic input is active (high). The corresponding analog voltage level is also shown in the “Level” text field. If the

logic input is connected to a digital device such as a microphone PTT switch the state LED will turn off when the contact is closed. For continuous voltage controls such as a potentiometer connected to the logic inputs, the Level field will indicate the current voltage read by the ADC on that input channel.

### Logic Outputs

This section shows the active state of the corresponding logic output with a state LED for each output. The state LED will show active green when the output is on.

A simple checkbox control is available for testing the logic output. Check the box to assert the logic output, uncheck to clear the output. In normal use, the output control is set by network control received by a third party control device such as a control system or audio DSP.

The “Link To” controls, allow the logic output of the unD4I-L to be logically linked to the unD4I-L’s corresponding logic input. When the link is enabled, if the unD4I-L output will mirror the state of the corresponding input.

## Event Messages/Modes

The Even Messages/Modes tab allows the installer to configure the logic event messages and event triggering modes for each of the logic inputs.

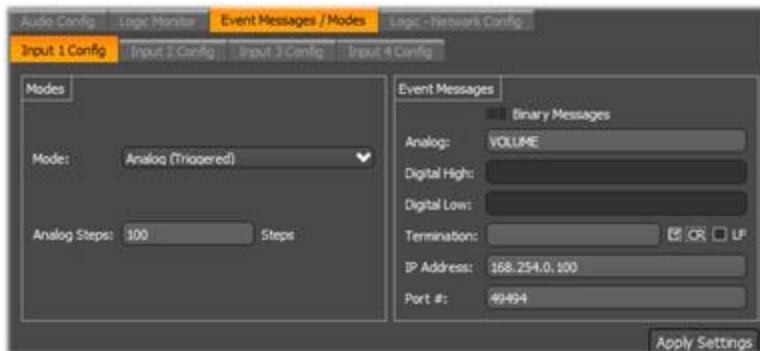
Each input supports the following modes:

- Digital
- Analog Triggered
- Analog Timed

In all modes the default message style is ASCII formatting. In the Digital mode, by checking the Binary Messages checkbox, the message formatting is changed to send hexadecimal bytes. To input the Digital mode binary messages, enter the event messages as hexadecimal bytes separated by spaces.

## Analog Triggered Mode

In analog triggered mode, the unD4I-L takes the maximum analog range for an input (0-4095) and subdivides it into a number of approximately equal sized steps determined by the "Analog Steps" field. There can be as few as 2 steps up to a maximum of 256. Using the analog voltage reading on the input, the unD4I-L determines what step the input is currently on and whether the current step has changed from the last time the input value was read. If it determines the step is now different, an event message is generated containing the current step level. The configurable step size allows the event messages to be tailored for the device that will be interpreting the control. Additionally it helps minimize the number of event message packets that are sent by the unD4I-L as the analog input voltage changes.

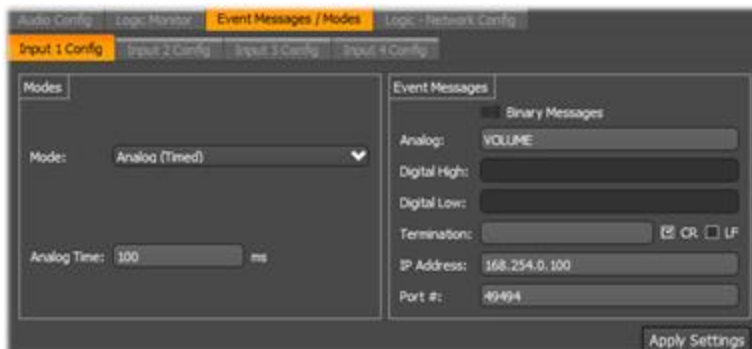


For example, take the message setup as configured in the example above. The "Analog Steps" setting is at 100 so each step size equate to  $4096 / 100 = 40.96$ . This is rounded up to 41. If the volume starts out at a value of 150, that is in step 3 as it's between the values 123 ( $41 * 3$ ) and 164 ( $41 * 4$ ). While the voltage remains in that range, nothing happens. However, if the value were to

increase to above 164 to say 170, it is now in the next step level, and a UDP event message will be sent to port 49494 at IP address 169.254.0.100 with contents of "VOLUME 4<CR>". On the other hand, if the input voltage were to decrease to 100, that is now below the previous step value of 123 ( $41 * 3$ ), it is now in step 2 and that is now a different step level and a UDP event message will be sent to port 49494 at IP address 169.254.0.100 with contents of "VOLUME 2<CR>". A typical use case for this mode would be a graduated volume control.

## Analog Timed Mode

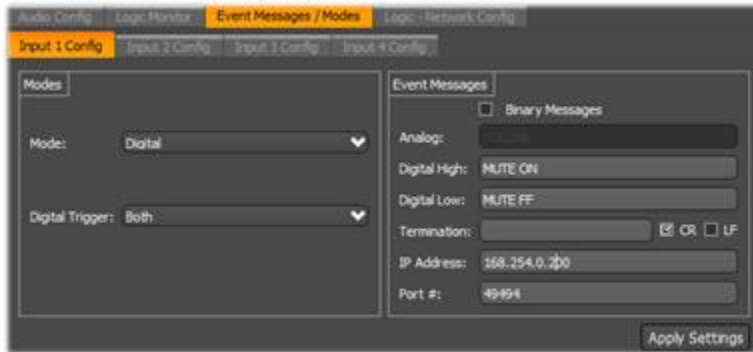
In analog timed mode, the event messages will be sent at a rate configured in the "Analog Time" field. The acceptable range for the "Analog Time" field is 0.1 to 10 seconds (100ms to 10,000ms). The raw value of the 12-bit A/D converter is appended to each event message.



As an example, the event message configured above would result in a UDP event message being sent to port 49494 of IP address 169.254.0.100 every tenth of a second where the data payload of the message would range from VOLUME 0<CR> to 4095<CR> depending on the current input level.

## Digital Mode

The digital mode allows for triggering an event message when the digital state of the input changes. The valid triggering options are rising, falling, or both. By selecting the triggering mode, once the unD4I-L detects a logic state change an event message is sent based on the selecting triggering mode. Subsequently, selection of the trigger type will enable the valid event message string fields.



As an example, the event message configured in the example above would result in an event message to be sent to UDP or TCP/IP port 49494 of IP address 169.254.0.200 every time Input 1 changes its digital state. If the state changes from low to high, a “MUTE ON<CR>” message is sent. If the state changes from high to low, a MUTE OFF<CR> message is sent.

An application example for this feature is the use of the unD4I-L to communicate the mute state of a connected microphone's switch setting to a DSP or control system that exists on the network.

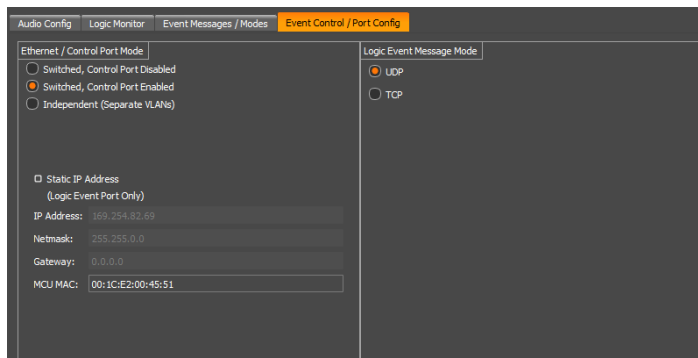
## Event Messages

This section allows the installer to specify the event message data that is sent when a logic event is detected on the corresponding unD4I-L logic inputs. The message fields themselves become enabled depending on the mode selected.

When the “Binary Messages” checkbox is left unchecked, the message data uses the direct ASCII characters as the message data. Checking the “Binary Messages” box converts the fields to use hexadecimal bytes instead. In this mode, each data byte in the message is represented by a two character hexadecimal value separated from each other by a space.

For example, the message data representation for the message 0xDEADBEEF would be “DE AD BE EF”.

## Event Control / Port Config



The Logic Event messaging and physical Ethernet ports can be configured to support various AV and control network architectures.



## Ethernet / Control Port Mode

The unD4I-L has two external ports. There are also two internal ports: one for control and one for networked audio. The Ethernet/Control port mode settings allows the integrator to determine how these ports are used.

### Switched, Control Port Enabled (Default Setting)

In this mode, the external ports act as a two port Ethernet switch and allow daisy chaining other devices to minimize external Ethernet infrastructure. Both internal ports (network AV and control) are also active and both will require an IP address to work correctly. Asynchronous logic event messages will be sent from the control port. Setup messages to the unD4I-L can be sent to either the network AV port or the control port.

### Switched, Control Port Disabled

This setting is used when 3rd party control, specifically the asynchronous logic event messages, are not required. The external ports still act as a two port Ethernet switch and allow daisy chaining other devices to minimize external Ethernet infrastructure. However, the internal control port network interface is disabled and will not attempt to acquire an IP address or communicate on the network.

### Independent (Separate VLANs)

In this mode, the external ports are isolated from one another internally as two separate VLANs. This setting is ideal for interfacing the logic events to a 3rd party control system where the AV network traffic is on a separate network to the control system network. Daisy chaining of devices is not supported in this mode.

**Note:** This setting is only valid if the device is utilizing -U firmware. If -C firmware is used, this option is not available for configuration.

### Static IP Address (Logic Event Port Only)

Like the Dante™ interface, the logic interface has customizable IP address settings. By default, the unD4I-L's logic event interface is set to obtain a dynamic IP address. This will use DHCP if a server is present on the network otherwise it will set itself a Local Link address instead (169.254.x.y).

If there is a need to assign a static IP address to the logic control interface, check the “Static IP Address” checkbox and then enter a valid IP address, netmask and gateway. Keep in mind that this interface is used to send the event messages from the unD4I-L to other control devices or DSP devices so these destination devices must be on an IP subnet and address range that can be reached by the unD4I-L. It must also be a unique address that is not used elsewhere on the network.

If the IP address mode is changed, once the “Apply” button is pressed the device will reset itself and will disconnect from the unIFY application. This is expected and required behavior of the unD4I-L, so keep this in mind when applying the settings of the device to ensure there is no unexpected loss of data.



## Logic Event Message Mode

In addition to the IP address setup, the logic event interface can be customized to send control packets using either TCP or UDP protocols. This is selected by clicking on the desired radio button in the “Event Message Send Method” section.

*\*Note: The logic event network interface configuration is a global setting and is not stored as preset data.*