



# WORKSHEET

**PRODUCTS SUPPORTED:**  
CONVERGE® Pro 2 128V, 128VD

CLEARONE DOCUMENT FRM-0009-001  
REVISION 1.0, APRIL 2017

## CONVERGE PRO 2 VoIP/SIP WORKSHEET

### OVERVIEW

AV Integrators and IT Admins can use this form to streamline the VoIP/SIP setup process for ClearOne CONVERGE Pro 2 128V/128VD.

**NOTE:** Such products require the use of a standard SIP connection to use a VoIP-enabled system, which may require the purchase of additional SIP software and licenses from a third-party vendor.

Configuring a ClearOne CONVERGE Pro 2 (CP2) requires the information asked in this worksheet. Please coordinate with your IT admin to obtain the necessary information prior to installation.

### DEVICE SETTINGS

Will the CP2 device use DHCP?	Yes	No
Device static IP address	_____	
Device subnet mask	_____	
Device gateway address	_____	
Device primary DNS	_____	
Device secondary DNS	_____	

### VLAN SETTINGS

Using a VLAN for VoIP traffic?	Yes	No (If no, you can skip this section.)
VLAN priority	_____	
VLAN ID (1-4094)	_____	
VLAN using DHCP?	Yes	No
VLAN static IP	_____	
VLAN subnet mask	_____	
VLAN gateway	_____	
VLAN primary DNS	_____	
VLAN secondary DNS	_____	

## VOIP STACK SETTINGS

### Packet Tagging

SIP packet tagging QoS priority level \_\_\_\_\_

RTP packet tagging QoS priority level \_\_\_\_\_

### Timers

Registration expiration (seconds) \_\_\_\_\_

Dial tone duration (ms) \_\_\_\_\_

Refresh by update (vs. by invite)                      Yes                      No

Minimum session timer (seconds) \_\_\_\_\_

Session expiration (seconds) \_\_\_\_\_

Digit map short timer (seconds) \_\_\_\_\_

Digit map long timer (seconds) \_\_\_\_\_

Digit map timeout (seconds) \_\_\_\_\_

### Audio Settings

DTMF Relay                      SIP Info                      Inband                      Out of Band

Dynamic payload type \_\_\_\_\_

RTP starting point \_\_\_\_\_

RTP range \_\_\_\_\_

### Proxy 1 Settings

Proxy 1 TCP port \_\_\_\_\_

Proxy 1 UDP port \_\_\_\_\_

Proxy 1 User domain \_\_\_\_\_

Proxy 1 Registrar address \_\_\_\_\_

Proxy 1 Registrar port \_\_\_\_\_

Proxy 1 Outbound proxy IP address/URL \_\_\_\_\_

Proxy 1 Outbound port \_\_\_\_\_

Proxy 1 Outbound listen port \_\_\_\_\_

### Proxy 2 Settings

Proxy 2 TCP port \_\_\_\_\_

Proxy 2 UDP port \_\_\_\_\_

Proxy 2 User domain \_\_\_\_\_

Proxy 2 Registrar address \_\_\_\_\_

Proxy 2 Registrar port \_\_\_\_\_

Proxy 2 Outbound proxy IP address/URL \_\_\_\_\_

Proxy 2 Outbound port \_\_\_\_\_

Proxy 2 Outbound listen port \_\_\_\_\_

## VOIP PHONE SETTINGS

How many VoIP phones?	1	2
Phone 1 phone number	_____	
Proxy 1 username	_____	
Proxy 1 password	_____	
Proxy 1 transport protocol:	UDP	TCP
Phone 2 phone number	_____	
Proxy 2 username	_____	
Proxy 2 password	_____	
Proxy 2 transport protocol:	UDP	TCP

## DIAL PLAN

Ask IT admin to provide extension length and outside dialing requirements to be checked against the CONVERGE Pro 2 dial plan and adjusted as needed.

### Dial Plan Syntax

The following table describes the possible elements of a dial plan:

Type	Description	Result
Digit	A digit (0-9) or an asterisk (*)	Indicates a specific digit (do not use #)
Range	[n1-n2] (where n1 and n2 represent digits)	A range of digits from n1 to n2
List	[n1 n2 n3] (where n1, n2, and n3 represent digits)	A list of digits (it must be the specific digits listed)
Wild Card (single)	x	x matches any single digit
Wild Card (multiple)	. (period)	. matches an arbitrary number of digits
S	short timer	A timed waiting period that corresponds to the value designated for a short timer (default is 10 seconds)
L	long timer	A timed waiting period that corresponds to the value designated for a long timer (default is 50 seconds)
(pipes character)	delimiter	Place this character, surrounded by spaces, between dial plan options if you want to use more than one option.

### Dial Plan Examples

The following table provides some dial plan examples and their meaning:

Example	Description
xxxxxxx	Any 7-digit number
[49]11	Either 411 or 911
[3-8]11	Any of the following numbers: 311, 411, 511, 611, 711, or 811
9[2-9]xxxxxx	A 9 followed by a digit in the range 2-9, followed by any six other digits. This is an example of a call from an internal network that uses a 9 to get an outside line, followed by a 7-digit local phone number (in North America, local numbers cannot begin with 0 or 1).
911   [3-7]xxx   8[2-9]xxxxxxxxS   8011.L	This dial plan permits four possible sequence types: <ul style="list-style-type: none"> <li>dialing 911</li> <li>dialing an in-office extension, in this case a 4-digit number that begins with 3, 4, 5, 6, or 7</li> <li>dialing an 8 (to get an outside line) followed by a valid North American 10-digit sequence (a number and an area code), followed by a short timer</li> <li>dialing an 8 (to get an outside line) followed by a 011, to initiate an international call, followed by an arbitrary number of digits (since international numbers can vary in length), followed by a long timer</li> </ul>

CONVERGE Pro 2 Dial Plan

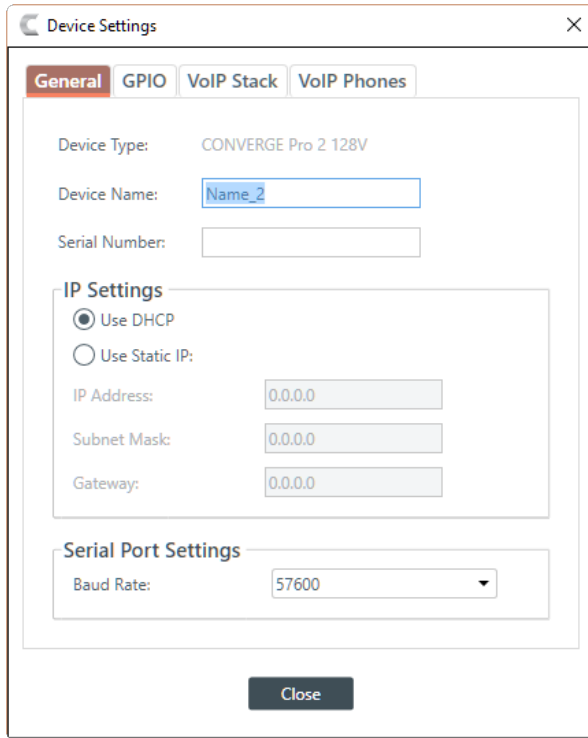
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## CONFIGURE CONVERGE PRO 2 DEVICE

Enter the above configuration information in the Device Settings in the CONVERGE Pro 2 CONSOLE.

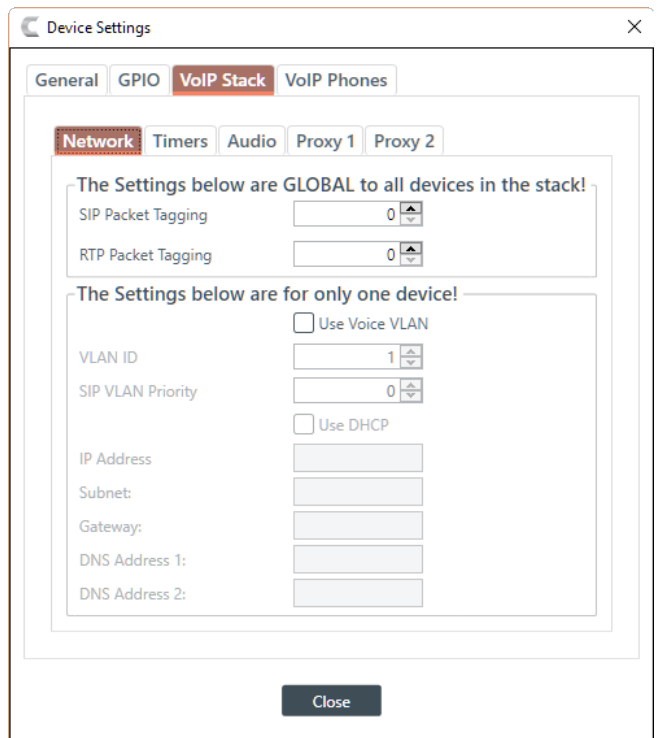
Device Settings are found by clicking Devices under Stack in the CONSOLE Navigation Panel. All devices you have added to the project are shown. Click Settings next to the device you want to configure.

Device IP settings are found on the General tab:



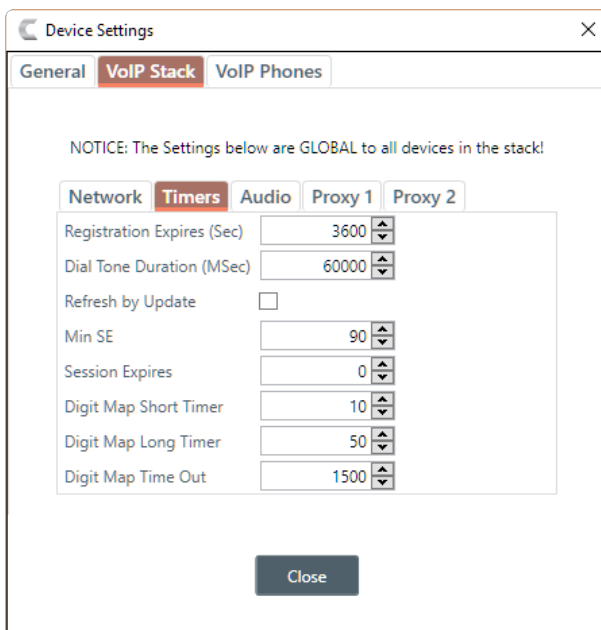
The screenshot shows the 'Device Settings' window with the 'General' tab selected. The 'Device Type' is 'CONVERGE Pro 2 128V'. The 'Device Name' is 'Name\_2'. The 'Serial Number' field is empty. Under 'IP Settings', 'Use DHCP' is selected. The 'IP Address', 'Subnet Mask', and 'Gateway' fields are all set to '0.0.0.0'. Under 'Serial Port Settings', the 'Baud Rate' is set to '57600'. A 'Close' button is at the bottom.

SIP, RTP, and VLAN settings are found on the VoIP Stack - Network tab.



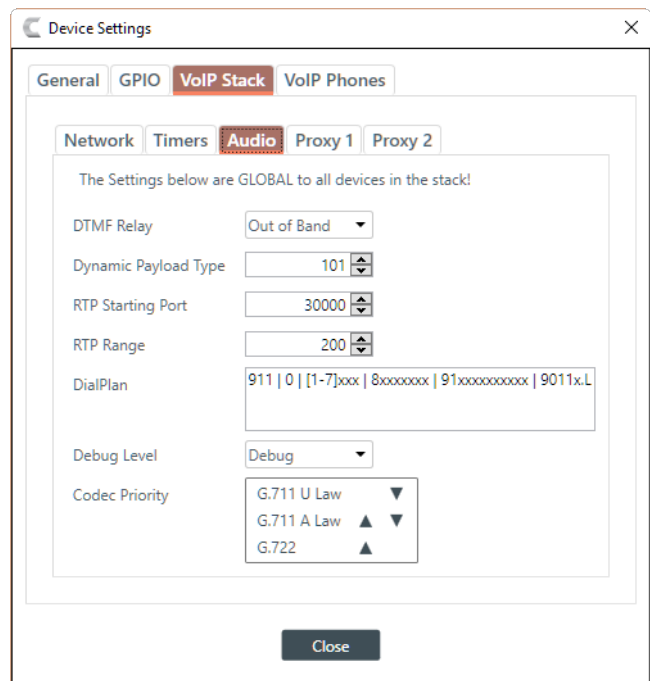
The screenshot shows the 'Device Settings' window with the 'VoIP Stack' tab selected and the 'Network' sub-tab active. A message states: 'The Settings below are GLOBAL to all devices in the stack!'. Below this, 'SIP Packet Tagging' and 'RTP Packet Tagging' are both set to '0'. Another message states: 'The Settings below are for only one device!'. Below this, 'Use Voice VLAN' is unchecked, 'VLAN ID' is '1', 'SIP VLAN Priority' is '0', 'Use DHCP' is unchecked, and 'IP Address', 'Subnet', 'Gateway', 'DNS Address 1', and 'DNS Address 2' fields are empty. A 'Close' button is at the bottom.

VoIP Timers settings are found on the VoIP Stack - Timers tab.



The screenshot shows the 'Device Settings' window with the 'VoIP Stack' tab selected and the 'Timers' sub-tab active. A message states: 'NOTICE: The Settings below are GLOBAL to all devices in the stack!'. Below this, the 'Timers' sub-tab is active. Settings include: 'Registration Expires (Sec)' at 3600, 'Dial Tone Duration (MSec)' at 60000, 'Refresh by Update' unchecked, 'Min SE' at 90, 'Session Expires' at 0, 'Digit Map Short Timer' at 10, 'Digit Map Long Timer' at 50, and 'Digit Map Time Out' at 1500. A 'Close' button is at the bottom.

VoIP Audio settings are found on the VoIP Stack - Audio tab.



The screenshot shows the 'Device Settings' window with the 'VoIP Stack' tab selected and the 'Audio' sub-tab active. A message states: 'The Settings below are GLOBAL to all devices in the stack!'. Below this, settings include: 'DTMF Relay' set to 'Out of Band', 'Dynamic Payload Type' at 101, 'RTP Starting Port' at 30000, 'RTP Range' at 200, 'DialPlan' set to '911 | 0 | [1-7]xxx | 8xxxxxxx | 91xxxxxxxx | 9011x.L', 'Debug Level' set to 'Debug', and 'Codec Priority' set to 'G.711 U Law'. A 'Close' button is at the bottom.

SIP Proxy 1 settings are found on the VoIP Stack - Proxy 1 tab (Proxy 2 settings, which are the same, appear on the Proxy 2 tab).

VoIP Phone settings appear on the VoIP Phones - Phone and Phone 2 tabs (which are identical).

**Important:** After you have configured the settings in the project, you must load the project to the device. Refer to the *CONVERGE Pro 2 User Manual* for information.

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