



Installation & Operations Manual
2100 Series VOIP Phone



Thank you for purchasing RATH's 2100 Series VoIP Phone. We are the largest Emergency Communication Manufacturer in North America and have been in business for over 35 years.

We take great pride in our products, service, and support. Our Emergency Products are of the highest quality. Our experienced customer support teams are available to remotely assist with site preparation, installation, and maintenance. It is our sincere hope that your experience with us has and will continue to surpass your expectations.

Thank you for your business,

The RATH® Team

Table of Contents

Items Needed	Page 3
IP Interface Setup	Page 3
Phone Programming	Page 4
Adjusting the Volume	Page 5
Resetting the Phone	Page 5
Troubleshooting	Page 6

Items Needed

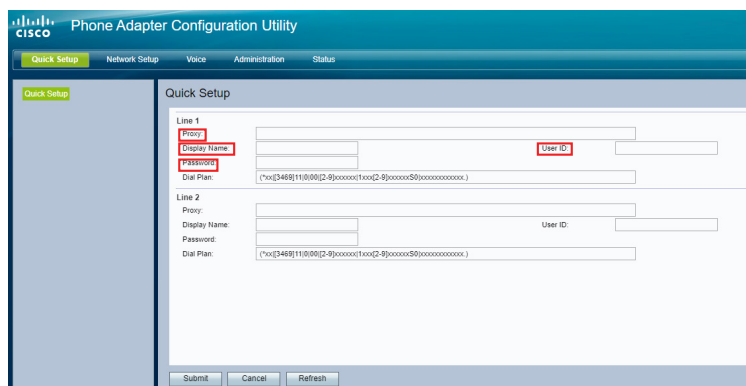
- Static IP address for VoIP Phone
- IP address of SIP Server

Note: The IP address must be in the same network as the SIP Server or must be port forwarded to reach the SIP Server.

- Name, Authentication Password, and Authentication ID for SIP Server
- Windows based PC with Network Interface Card
- POE or POE+ Network Switch
- Ethernet cable
- Small Phillips screwdriver

IP Interface Setup

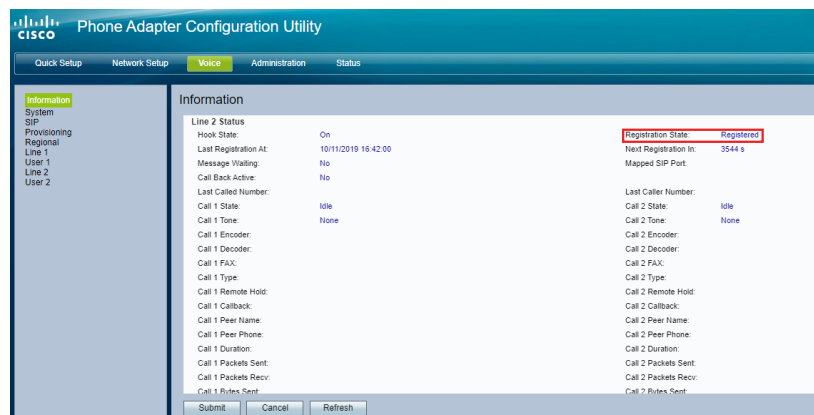
1. Connect the RATH® 2100 Series VoIP Phone to the POE port on the Network Switch by running an Ethernet cable from the PWR+DATA IN port on the VoIP Phone to the switch (do not exceed the 320' distance limitation).
2. Connect the Windows based PC to the same network as the VoIP Phone.
3. Change the IP address of the PC's Network Interface Card:
 - a. Navigate to **Control Panel**
 - b. Click on **Network and Sharing Center**
4. Turn off the wireless card of the laptop (if applicable).
5. Log into the VoIP Phone:
 - a. Enter the VoIP Phone IP address into the web browser (default is 192.168.1.160). Google Chrome or Firefox is recommended.
 - b. Log into phone: LOGIN: admin PASSWORD: admin
6. Enter the SIP Server information into the VoIP Phone:
 - a. In the **Quick Setup** tab, all the information is entered into the **Line 1** section
 - b. Enter the IP address of the SIP Server into the **Proxy** box
 - c. Enter the name as it will appear on the phone into **Display Name**
 - d. Enter Authentication ID into **User ID**
 - e. Enter Authentication Password into **Password**
 - f. Click **Submit** at the bottom of the page (unit will automatically reboot)



7. Change the IP address of the VoIP Phone:
 - a. Click on the **Network Setup** tab
 - b. Click on **Basic Setup** from the menu on the left-hand side followed by **Internet Settings**
 - c. Change the **IP Address**, **Subnet Mask**, and **Gateway**
Note: Verify the information entered in the fields and write down what is displayed.
 - d. Click **Submit** at the bottom of the page (unit will automatically reboot)



8. Change the IP address of the PC to match the new address scheme of the VoIP Phone (follow instructions listed in step 3).
9. Log back into the VoIP Phone in the web browser using the new IP address of the phone.
10. Verify device registration:
 - a. Click the **Voice** tab
 - b. Click **Line 1** from the menu on the left-hand side
 - c. The device should show **Registered** next to **Registration State**



Phone Programming

Programming Primary Phone Number using Onboard Keypad:

1. Press **ENTER** on the keypad to begin programming
2. Press **1**, **ENTER**, the number you want the phone to dial, **STOP**
3. Press and hold **STOP** for 3 seconds

Note: In situations where a delay is needed, such as needing an 8 or 9 to dial out, press the **PLAY/PAUSE** button on the keypad. The button can be pressed multiple times for a longer delay. One PAUSE = 1 second.

Programming Secondary Phone Numbers using Onboard Keypad:

1. Press **ENTER** on the keypad to begin programming
2. Press **2**, **ENTER**, the number you want the phone to dial, **STOP**

Note: 2100 Series VoIP Phones can call up to 5 numbers. Repeat the steps above for subsequent numbers. Substitute 2 with 3, 4, or 5 depending on the order you want the numbers to be dialed.

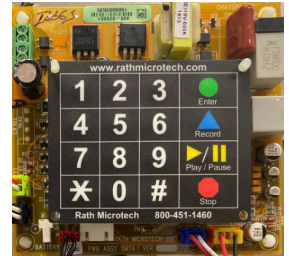
Example: To dial the third number, press **3**, **ENTER**, phone number, **STOP**.

3. Press and hold **STOP** for 3 seconds to exit programming

Programming Location Message using Onboard Keypad:

2100 Series VoIP Phones can play a location message when the call is answered. This feature is used when the phone is calling a phone number that cannot identify where the call is coming from by caller ID or needs more location information than the caller ID can provide. This feature is turned on by default. Perform the steps below to program the location message feature.

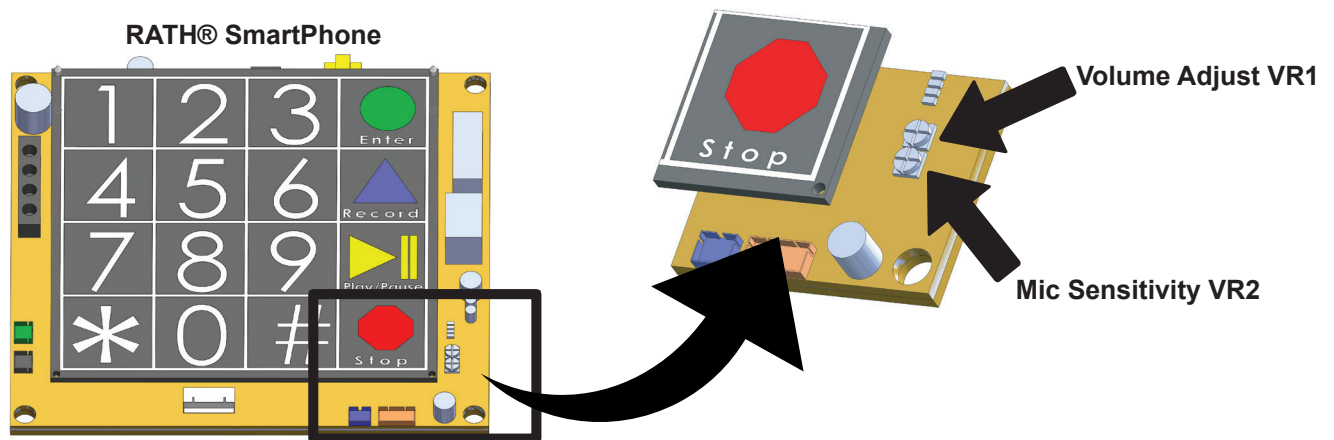
1. Press **ENTER** to begin programming
2. Press **1, 3, ENTER, (1, 2, or 3)** (1 will play message once, 2 will play message twice, 3 will play message on a loop until operator presses *)
3. Press **6, RECORD**, wait for the “beep”, speak location message, **STOP**
4. Press **6, PLAY/PAUSE** to play message back
5. Press and hold **STOP** for 3 seconds to exit programming



Keypad

Adjusting the Volume

If the volume is too low or high, adjust it by referring to the diagram and instructions below.



Adjusting the Microphone:

If the person you are calling reports your voice is not loud enough, increase the Microphone Sensitivity by adjusting VR2 a 1/4 turn clockwise (requires a small Phillips screwdriver).

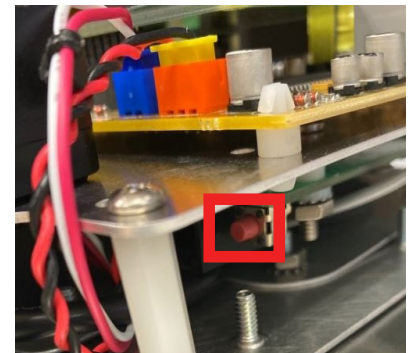
Adjusting the Speaker:

If the voice of the person you call is not loud enough in the phone speaker, increase the volume by adjusting VR1 a 1/4 turn clockwise.

Resetting the Phone

To reset all IP information entered into the 2100 Series VoIP Phone, press and hold the red reset button located under the yellow circuit board for 20 seconds. **THIS WILL DEFAULT THE UNIT TO DHCP.** To log back into the unit, perform one of the following steps:

1. Set the Network Interface Card of the PC to obtain an IP address automatically. Use a web scanner loaded on the PC to search for the device on the network. The network scanner should display the address that the unit is now using.



2. Unplug the phone line cord from the right side of the yellow circuit board on the 2100 Series VoIP Phone and plug it into a standard analog telephone.
 - a. Lift the handset on the analog phone and dial *, *, *, *
 - b. Dial **110** then # (phone will say IP address of unit)
 - c. Dial **120** then # for Subnet Mask
 - d. **Dial 130** then # for Gateway
 - e. Hang up the analog phone and plug the phone line cord back into the yellow circuit board

Troubleshooting

Problem	Possible Cause & Solutions
Phone won't show as Registered:	<ul style="list-style-type: none"> • Verify the SIP extension settings entered into the Phone match the SIP Server. • Double check the authentication password (verify the password meets complexity requirements). • Verify the IP address isn't being blacklisted or blocked by network. • Verify nothing else on the network shares same IP address as the Phone. • Verify that you can see the SIP Server and the Phone on the PC when it's connected to the network.
Phone won't call out, it just sits with dial tone:	<ul style="list-style-type: none"> • Follow the steps in Phone Programming to verify the dial out number programmed into the phone. • Verify the phone is in Standard Mode by pressing ENTER, 1, 9, ENTER, 1, then press and hold STOP for 3 seconds. • Verify the number being programmed into the phone is a valid, routable number.
Phone audio is distorted or very low:	<ul style="list-style-type: none"> • Adjust VR1 and VR2 potentiometers on the yellow circuit board. • Verify nothing is blocking the speaker or microphone holes on the face plate. • Verify network traffic isn't slow.
Phone doesn't respond when the call button pushed. No LED or audio:	<ul style="list-style-type: none"> • Verify that the line cord from the RJ11 jack on the yellow circuit board is connected to the RJ11 jack on the VoIP board. • Check that the voltage switch on the POE adapter is set to 12v. • The push button may be non-functional. Remove the black switch JST connector from the yellow circuit board and short across the 2 pins on the board in the connector using a flat metal screwdriver. • Verify that the phone is still connected and getting POE from the Network Switch. • Verify that the phone still shows as Registered (see step 10). • Reset phone (see Resetting Phone section).
Phone dials out but goes busy:	<ul style="list-style-type: none"> • Log into the VoIP Phone and verify that it still shows registered under Line 1 (see step 10). • Verify dialing string is programmed into the Phone (if an 8 or 9 is needed to dial out). • Phone may need to dial an extension rather than a standard 11 digit number.
Phone is dead. It will not call or program:	<ul style="list-style-type: none"> • Verify that the phone is still connected and getting POE from the Network Switch. • Verify that the voltage switch on the POE adapter is set to 12v. • Check the LEDs on all components (POE adapter, IP board, yellow circuit board). • Reset phone (see Resetting Phone section). • Verify that the phone does not exceed the 320' distance limitation from the Network Switch. • POE Switch is unable to handle the power requirements. POE+ or POE++ is recommended.