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

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**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 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
   c. Click Change Adapter Settings
   d. Right click on Ethernet/Local Area Connection
   e. Click on Properties
   f. Double click on Internet Protocol Version 4
   g. Click Use the Following IP Address:
      - Change the IP to the default IP address range of the VoIP Phone (192.168.1.100 is recommended)
      - Change Subnet Mask (default is 255.255.255.0)
  
  **Note:** If unit is labeled with a sticker indicating an alternate IP address, use a scheme in that network.
4. Turn off the wireless card of the laptop (if applicable)
5. Log into the VoIP Phone
   a. Enter the Phone IP address into the web browser (default is 192.168.1.160). Google Chrome or Firefox is recommended.
   b. Log into phone, PASSWORD: admin
6. Change the IP address of the VoIP Phone
   a. Click BASIC SETTINGS under the menu options on the top of the screen
   b. Under IP Address, click on the circle next to Statically Configure As
   c. Enter desired IP Address, Subnet Mask, and Default Router (Gateway) that the VoIP phone will use
  
  **Note:** Verify the information entered in the fields and write down what is displayed.
   d. Select proper time zone from drop down menu next to Time Zone
   e. Click Apply at the bottom of the page
7. Enter SIP Server information into VoIP Phone
   a. Click on FSX PORT tab under the menu options on the top of the screen
   b. Enter IP Address of SIP Server in Primary SIP Server box
   c. Scroll down and enter SIP Extension ID in SIP User ID box
   d. Enter Authentication ID in Authenticate ID box (can be the same as the SIP Extension ID)
   e. Enter Authentication Password in Authenticate Password box
   f. Fill in the Name locations as it will appear on the phone
   g. Click Apply at the bottom of the page
   h. Scroll back down to bottom of the page and click Reboot to restart unit and save changes

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. In STATUS tab locate Port Status
    b. Device should show Registered under Registration

**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, use 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 following steps to program the location message feature.
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, disconnect the Ethernet cord from the DATA OUT port on the POE adapter. Press and hold the reset button located in between the power barrel connector and the Ethernet connector on the IP board located under the yellow circuit board for 20 seconds. Plug the Ethernet cable back into the DATA OUT port. 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. The phone will ask for menu option, dial 01 (phone will say IP address of unit), then press #
   c. Dial 02 for Subnet Mask, then press #
   d. Dial 03 for Gateway, then press #
   e. Hang up the analog phone and plug the phone line cord back into the yellow circuit board
## Troubleshooting

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<th>Possible Cause &amp; Solutions</th>
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| Phone won’t show as Registered:        | • 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 the 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: | • 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:  | • 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 is pushed. No LED or audio: | • 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:         | • Log into the phone and verify that it still shows Registered under the Status tab (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: | • 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 the phone (see the Resetting Phone section).  
• Verify the phone doesn’t exceed the 320’ distance limitation from the Network Switch.  
• POE Switch is unable to handle the power requirements. POE+ or POE++ is recommended.                                                                                                                                                                                                                           |