

Classic VoIP Phones with Auto Dialer

The **K-1900D-IP** and **K-1900W-IP** VoIP phones (**K-1900D/W-IP**) will auto-dial a 1-20 digit programmable phone number each time the handset is lifted. If the call is not answered, the phone will dial up to 3 additional phone numbers. The **K-1900D/W-IP** phones are designed to provide quick and reliable communication for SIP VoIP phone systems with PoE. The unit can be programmed from any PC on the same LAN or remotely using a Static IP address.

The **K-1900D-IP** is a desk style phone and the **K-1900W-IP** is a wall mount phone. Both are available in ash or red.



K-1900W-IP ASH
K-1900W-IP

K-1900D-IP ASH
K-1900D-IP

⚠ Installation requires a Network Administrator / IT Technician

Features

- Ring with adjustable volume and cadence
- Hearing aid compatible amplified handset with thumbwheel volume control
- Optional **RC-4A** for secure remote relay control, see **DOD 582**
- SIP compliant (see page 2 for compatible SIP servers and IP phone systems)
- PoE powered (class 1, <4 Watts)
- **Outbound Proxy, Authentication ID, Peer to Peer, VLAN Tagging**
- Network downloadable firmware
- Cycles to up to three rollover phone numbers on busy or no-answer
- Remotely programmable
- Extended temperature range (-40°F to 140°F)
- Selectable auto-answer feature for monitoring
- Diagnostics (for testing remote **RC-4A** relay)
- **K-1900D/W-IP** available in red or ash

Applications

- Kiosk Phone
- Courtesy Assistance Phone
- Customer Service Phone
- Automated Teller (ATM) Phone
- Security or Emergency Phone
- Hot-Line Phone

Specifications

Power: PoE class 1 (<4 Watts)

K-1900D-IP Dimensions: 4.0" x 4.74" x 9.0" (102 mm x 121 mm x 229 mm)

K-1900W-IP Dimensions: 9.0" x 8.25 x 4.75" (230 mm x 210 mm x 120 mm)

Shipping Weight: 3.0 lbs (1.36 kg)

Operating Temperature: -40°F to 140°F (-40° C to 60° C)

Humidity: 5% to 95% non-condensing

Audio Codecs: G711u, G711a, G722

Network Compliance: IEEE 802.3 af PoE, SIP 2.0 RFC3261, 100BASE-TX with auto cross over

Regulatory Compliance: CE, FCC Part 15 and Canada ICES-003 Class A

Connections: (1) RJ45 10/100 Base-T, (3) gel-filled butt connectors

Information: 715-386-8861
www.VikingElectronics.com

VoIP SIP System Compatibility

For compatibility and vendor specific detailed configuration instructions, see the **Viking VoIP SIP System Compatibility List**, DOD 944. To open and download this PDF file:

Scan the QR code below to open and download the **Viking VoIP SIP System Compatibility List**



- OR -

1. Go to **www.vikingelectronics.com** and enter **944** in the search box
2. Click **Application Note (DOD 944)** to open and download the PDF

Important: Exclusion from this list means only that compatibility has not been verified, **it does not mean incompatibility.** If you have questions, please call Viking Electronics at 715-386-8861.

Definitions

Client: A computer or device that makes use of a server. As an example, the client might request a particular file from the server.

DHCP: Dynamic Host Configuration Protocol. In this procedure the network server or router takes note of a client's MAC address and assigns an IP address to allow the client to communicate with other devices on the network.

DNS Server: A DNS (Domain Name System) server translates domain names (ie: www.vikingelectronics.com) into an IP address.

Ethernet: Ethernet is the most commonly used LAN technology. An Ethernet Local Area Network typically uses twisted pair wires to achieve transmission speeds up to 1Gbps.

Host: A computer or device connected to a network.

Host Name: A host name is a label assigned to a device connected to a computer network that is used to identify the device in various forms of network communication.

Hosts File: A file stored in a computer that lists host names and their corresponding IP addresses with the purpose of mapping addresses to hosts or vice versa.

Internet: A worldwide system of computer networks running on IP protocol which can be accessed by individual computers or networks.

IP: Internet Protocol is the set of communications conventions that govern the way computers communicate on networks and on the Internet.

IP Address: This is the address that uniquely identifies a host on a network.

LAN: Local Area Network. A LAN is a network connecting computers and other devices within an office or building.

Lease: The amount of time a DHCP server reserves an address it has assigned. If the address isn't used by the host for a period of time, the lease can expire and the address can be assigned to another host.

MAC Address: MAC stands for Media Access Control. A MAC address, also called a hardware address or physical address, is a unique address assigned to a device at the factory. It resides in the device's memory and is used by routers to send network traffic to the correct IP address. You can find the MAC address of your **K-1900D/W-IP** phone printed on a white label on the top surface of the PoE LAN port.

Router: A device that forwards data from one network to another. In order to send information to the right location, routers look at IP Address, MAC Address and Subnet Mask.

RTP: Real-Time Transport Protocol is an Internet protocol standard that specifies a way for programs to manage the real-time transmission of multimedia data over either unicast or multicast network services.

Server: A computer or device that fulfills requests from a client. This could involve the server sending a particular file requested by the client.

Session Initiation Protocol (SIP): Is a signaling communications protocol, widely used for controlling multimedia communication sessions such as voice and video calls over Internet Protocol (IP) networks. The protocol defines the messages that are sent between endpoints, which govern establishment, termination and other essential elements of a call.

Static IP Address: A static IP Address has been assigned manually and is permanent until it is manually removed. It is not subject to the Lease limitations of a Dynamic IP Address assigned by the DHCP Server. The default static IP Address is: **192.168.154.1**

Subnet: A portion of a network that shares a common address component. On TCP/IP networks, subnets are defined as all devices whose IP addresses have the same prefix. For example, all devices with IP addresses that start with 100.100.100. would be part of the same subnet. Dividing a network into subnets is useful for both security and performance reasons. IP networks are divided using a subnet mask.

TCP/IP: Transmission Control Protocol/Internet Protocol is the suite of communications protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP. TCP/IP is built into the UNIX operating system and is used by the Internet, making it the de facto standard for transmitting data over networks.

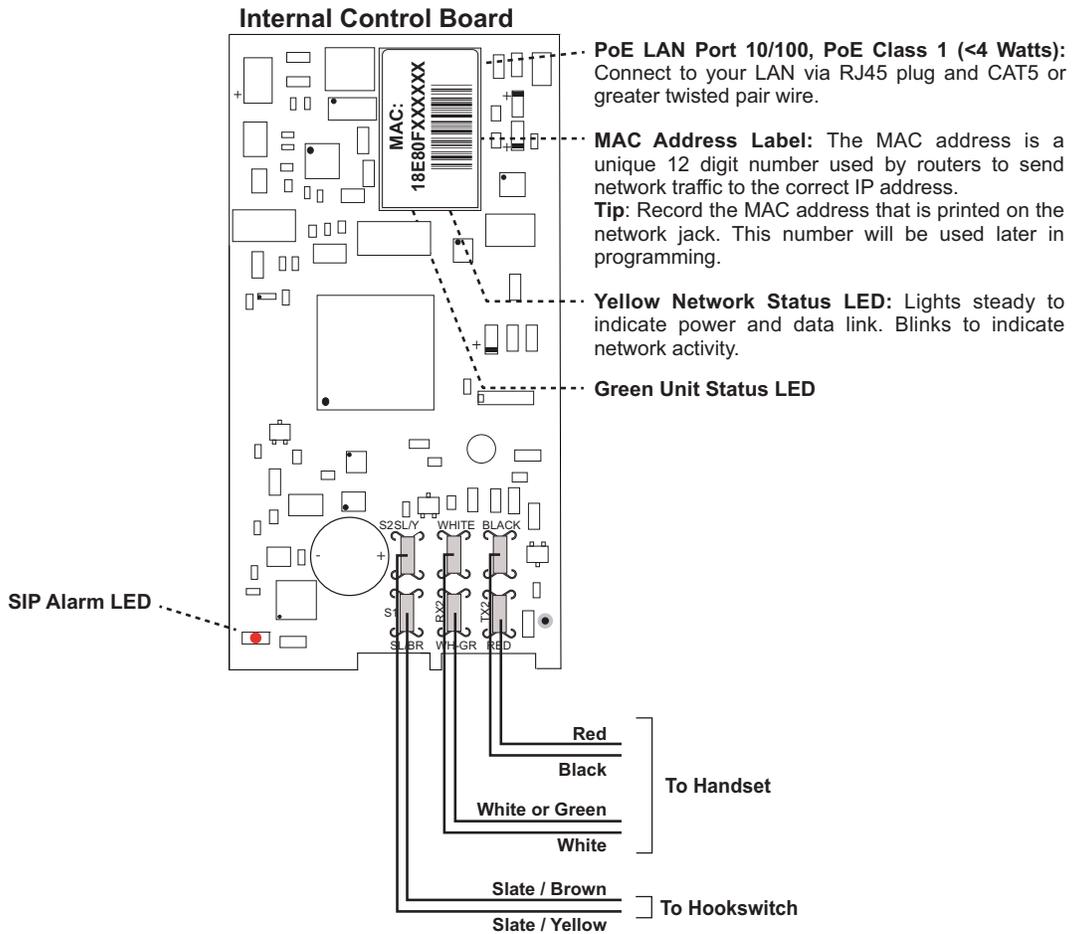
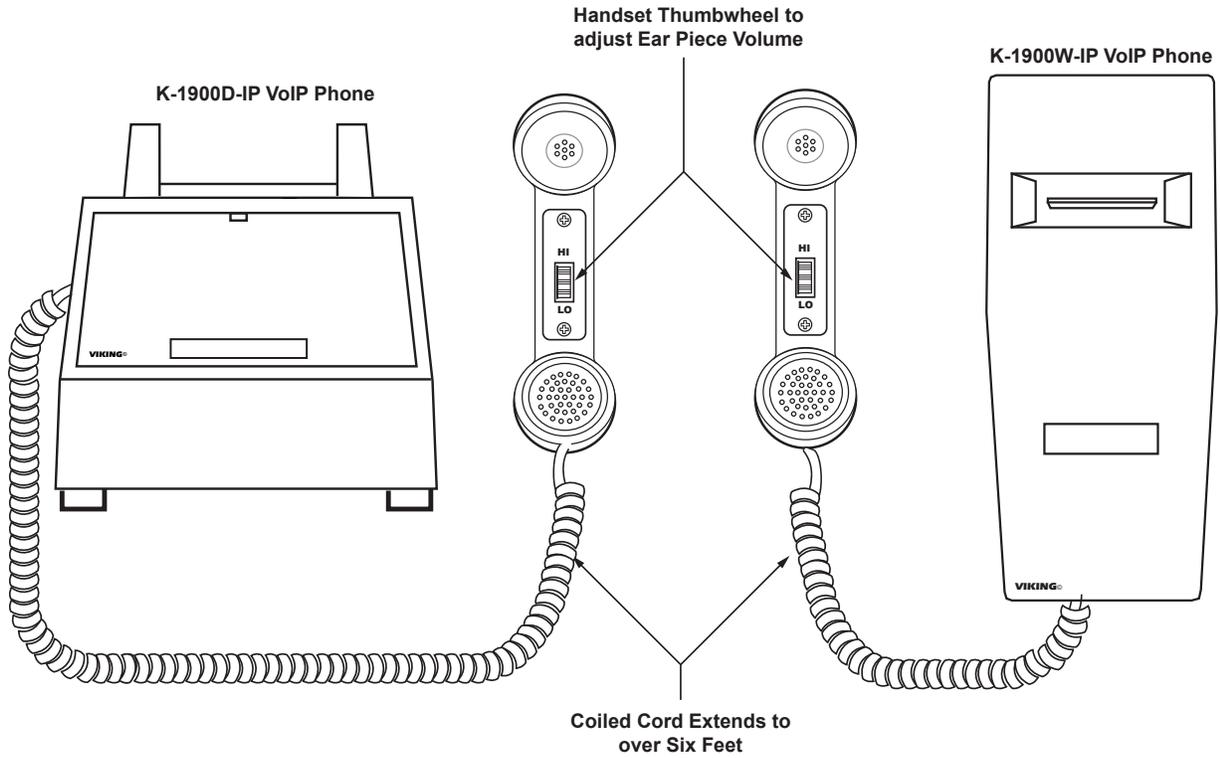
TISP: Telephone Internet Service Provider

WAN: Wide Area Network. A WAN is a network comprising a large geographical area like a state or country. The largest WAN is the Internet.

Wireless Access Point (AP): A device that allows wireless devices to connect to a wired network using Wi-Fi, or related standards. The AP usually connects to a router (via a wired network) as a standalone device, but it can also be an integral component of the router itself.

Wireless Repeater (Wireless Range Extender): takes an existing signal from a wireless router or access point and rebroadcasts it to create a second network. When two or more hosts have to be connected with one another over the IEEE 802.11 protocol and the distance is too long for a direct connection to be established, a wireless repeater is used to bridge the gap.

Features Overview

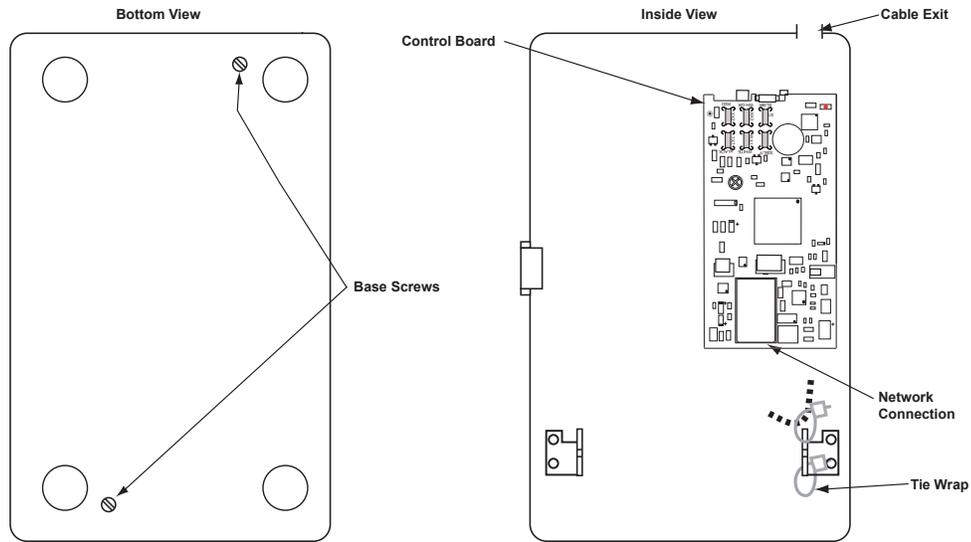


Installation and Mounting

A. Installing the K-1900D-IP

The network connection for the K-1900D-IP is inside the phone. To access the connector, remove the two screws on the bottom of the phone and lift off the cover. Locate the tie wrap on the left support and pass your network cable through it. Plug the cable into the RJ-45 jack on the control board making sure it does not interfere with the hook switch operation. Tighten the tie wrap. Route the network cable out the back of the phone. Place the cover onto the base making sure the network cable exits out the hole in the cover. Put the two screws back into the cover and tighten.

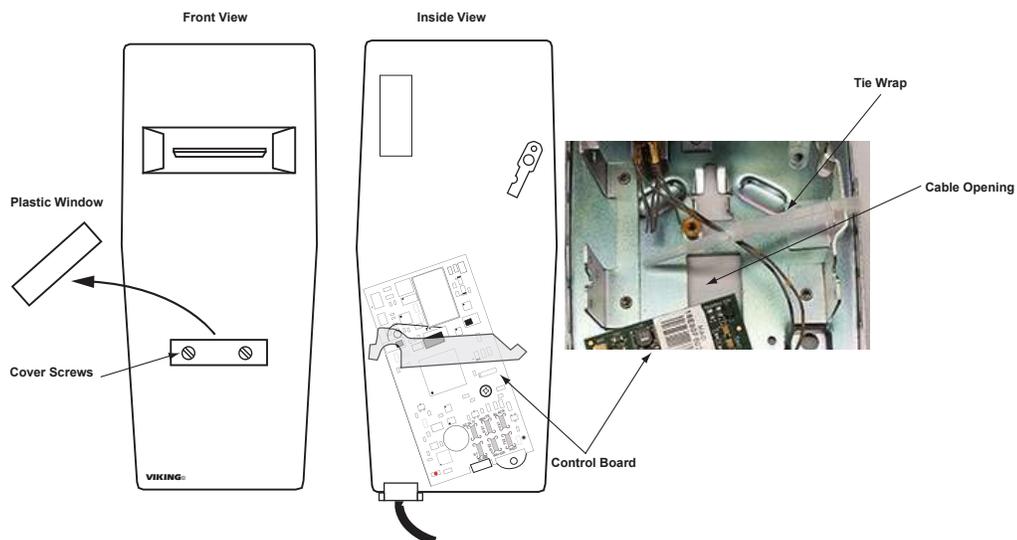
Tip: Record the MAC address that is printed on the network jack. This number will be used later in programming.



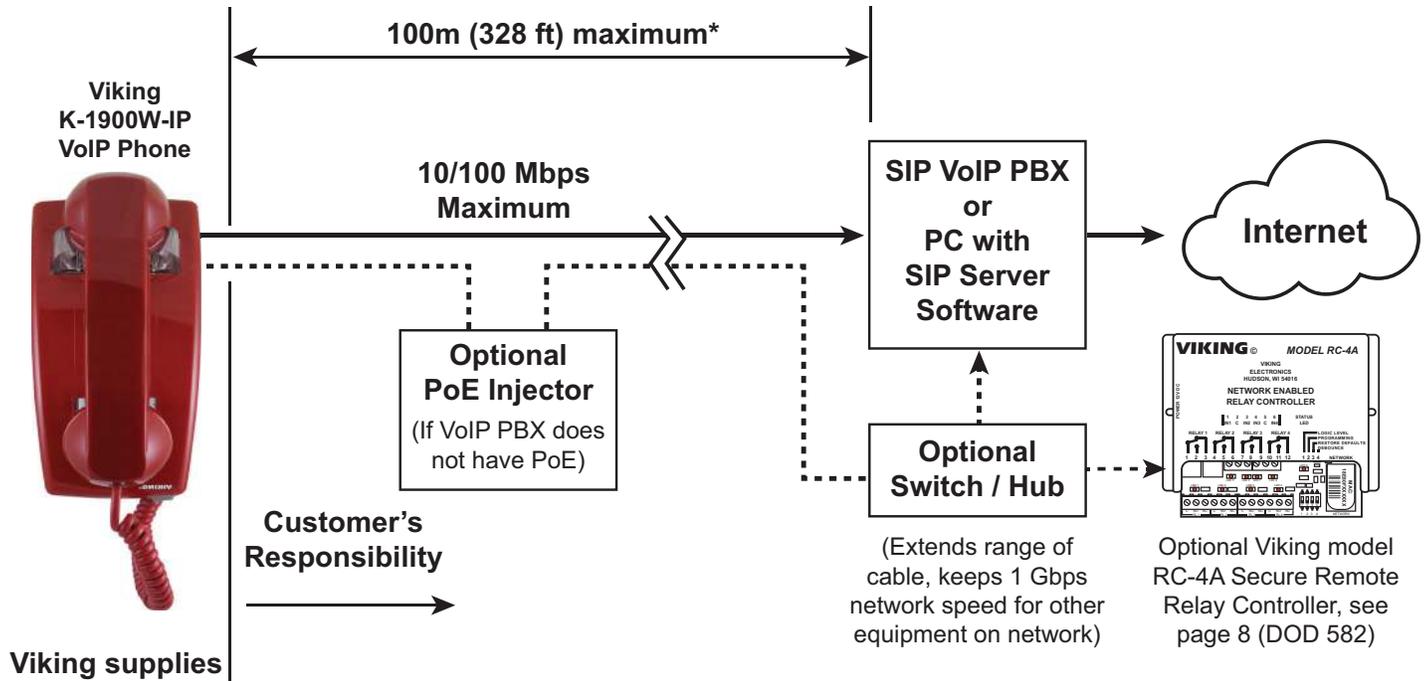
B. Installing the K1900-W-IP

The K-1900W-IP can be mounted directly to the wall or use an outlet plate with "T" rivets. To remove the cover of the phone, pry off the plastic window on the front of the base. Remove the two screws under the window and lift off the cover. Your network cable must pass through the opening in the back of the phone base then mount the phone base to the wall. Locate the tie wrap on the left support and pass your network cable through it. Plug the cable into the RJ-45 jack on the control board making sure it does not interfere with the hook switch operation. Tighten the tie wrap. Place the cover onto the base and put the two screws back into the cover and tighten. Replace the plastic window.

Tip: Record the MAC address that is printed on the network jack. This number will be used later in programming.



Typical Installation on SIP Based VoIP Phone System



* Note: A PoE extender can be used for an additional 100 meters per extender. For longer runs (up to 2 km / 1.2 miles) a ethernet to fiber media converter can be used.

PC Requirements

- IBM compatible personal computer with: Windows 7, 8 or 10
- Adobe Acrobat Reader 8 or higher
- K-1900D/W-IP hardware
- Available LAN with PoE (class 1, < 4 watts)
- Ethernet cable (CAT5 min.)
- 1 MB minimum free hard drive space for installation
- 16MB of free physical RAM

PC Programming

Download and install the programming software

1. Go to www.vikingelectronics.com and enter **K-1900D/W-IP** in the search box
2. Click **K-1900D/W-IP** in the search results
3. Scroll down the page to Downloads, click **IP Programming Software**
4. Install the programming software by saving or opening the file and then clicking on **setup Viking IP Programming.exe**
5. Follow the prompts on your screen to complete software installation.
6. To start the Viking IP Programming application, click on the Viking IP Programming icon on your desktop. The Main screen will appear, allowing the user to program any **K-1900D/W-IP** connected to that LAN.

Note: PC must be connected to the same LAN as the **K-1900D/W-IP**.

A. Manually Muting SIP/Network Failure Alarm Beeps (3 beeps repeated every 3 seconds)

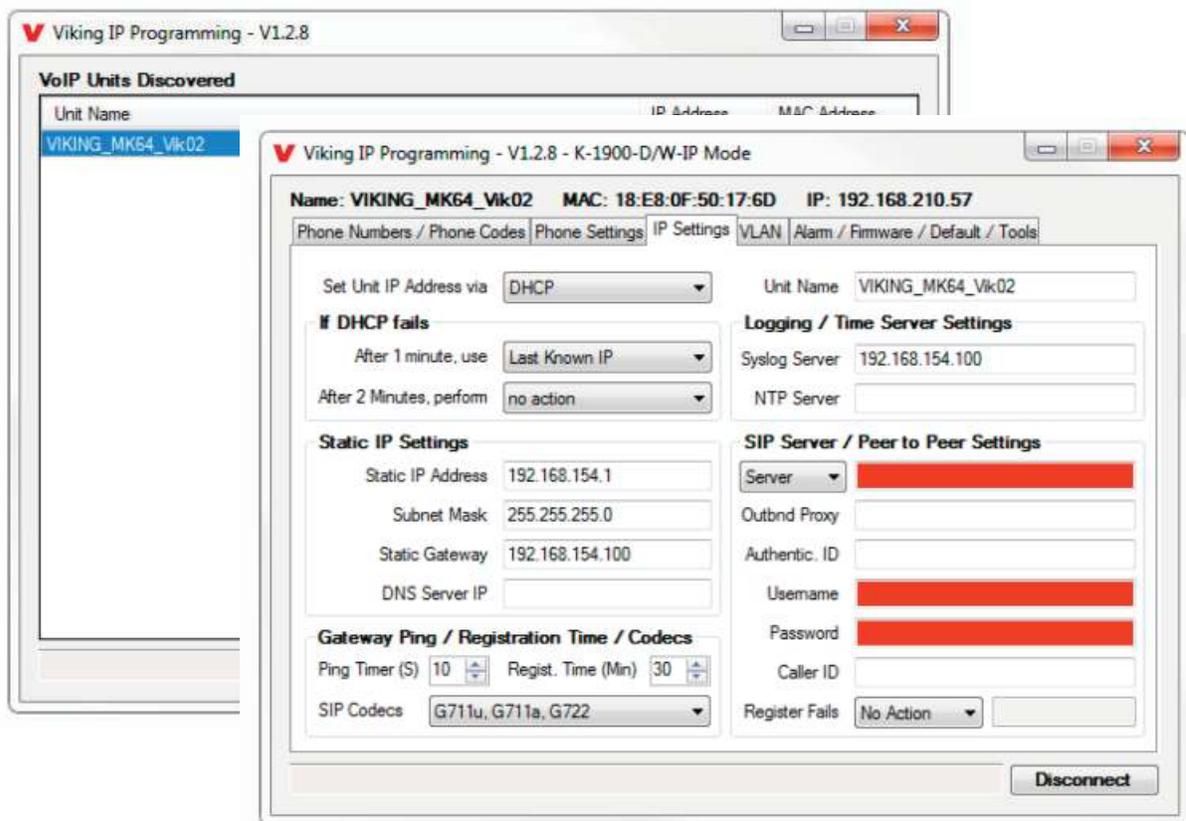
With the unit connected and powered (Green LED on and Yellow LED off or blinking) it will output 3 beeps every 3 seconds in the handset of the **K-1900D/W-IP** indicating a SIP registration failure, failure to receive an echo reply from a pinged gateway or ethernet connection failure. You can manually disable the beeps by clicking the “Mute Alarm Until Next Failure” tab in the Viking IP programming software. The LED will continue to flash allowing you to trouble shoot the failure.

B. Connect / Disconnect

Open the “Viking IP Programming” software on the PC and the start screen shown below will appear. Any Viking IP phones that are connected to the network will appear on the list. Simply select the **K-1900D/W-IP** on the list and click on the “Connect” button at the bottom or double click the selected phone. If the security code of the selected phone is still set to default (845464), the PC software will not require entering a security code to connect to the phone.

K-1900D/W-IP have a default name of “VIKING_MK64_Vik02”, so if many phones are connected to the same network that all have the default name, MAC addresses must be used to identify each phone.

When finished programming, click on the “Disconnect” button at the bottom. Closing the program will also automatically disconnect the unit.



C. Configuring the K-1900-D/W-IP Network Settings

Step 1.	Open the “Viking IP Programming” software on a windows PC that is connected to the same LAN as the K-1900-D/W-IP phone to be programmed.
Step 2.	The window in the upper left corner of the menu will show you each K-1900D/W-IP phone that is connected to that LAN. Select the unit with the same MAC address shown on the label located on the top of the ethernet connector on the K-1900D/W-IP phone.
Step 3.	Click the “Connect” button. If a pop up window appears, enter the unit’s security code (factory set to 845464) then click “OK”.
Step 4.	The program will then read and display the K-1900D/W-IP phone’s IP and programming settings.
Step 5.	Click on the “IP Settings” tab.
Step 6.	Select the appropriate value Static IP Settings or DHCP for “Set Unit IP Address via”. Note: changing the IP address will cause you to have to reconnect to the unit. Enter the values for the fields in “if DHCP fails” or “Static IP Settings” as needed.
Step 7.	Set the “Unit Name”, “Logging / Time Server Settings” as needed.
Step 8.	Select Peer-Peer in the “SIP Server / Peer to Peer Settings” to use the unit in Peer to Peer mode. Select Server to register with a SIP registrar server and fill in the “Outbnd Proxy” (SIP Outbound Proxy Server Address, “ip:port”), “Authentic. ID” (SIP Authentication ID), “Username” (SIP Username, <string>), “Password” (SIP Password), and “Caller ID” (SIP Caller ID) with values from your VoIP provider.

Viking IP Programming - V1.2.8 - K-1900-D/W-IP Mode

Name: VIKING_MK64_Vik02 MAC: 18-E8-0F:50-17-6D IP: 192.168.210.57

Phone Numbers / Phone Codes Phone Settings IP Settings VLAN Alarm / Firmware / Default / Tools

Set Unit IP Address via: DHCP

Unit Name: VIKING_MK64_Vik02

If DHCP fails

After 1 minute, use: Last Known IP

After 2 Minutes, perform: no action

Static IP Settings

Static IP Address: 192.168.154.1

Subnet Mask: 255.255.255.0

Static Gateway: 192.168.154.100

DNS Server IP:

Logging / Time Server Settings

Syslog Server: 192.168.154.100

NTP Server:

SIP Server / Peer to Peer Settings

Server: [Redacted]

Outbnd Proxy:

Authentic. ID:

Username: [Redacted]

Password: [Redacted]

Caller ID:

Register Fails: No Action

Gateway Ping / Registration Time / Codecs

Ping Timer (S): 10 Regist. Time (Min): 30

SIP Codecs: G711u, G711a, G722

Disconnect

Example 1: On-Premise SIP Phone System

(Panasonic TDE 100/200)

Example 2: Cloud Based Service Provider

(Voip.ms)

Example 3: Cloud Based Service Provider requiring Outbound Proxy and Authentication ID (Ring Central)

SIP Server / Peer to Peer Settings

Server: 192.168.0.101

Outbnd Proxy:

Authentic. ID:

Username: 117

Password: 9140

Caller ID: Door 1

Register Fails: Re-Resolve

SIP Server / Peer to Peer Settings

Server: chicago4.voip.ms

Outbnd Proxy:

Authentic. ID:

Username: 190106

Password: Bear987654!

Caller ID: Door 1

Register Fails: Re-Resolve

SIP Server / Peer to Peer Settings

Server: sip.ringcentral.com:5060

Outbnd Proxy: sip20.ringcentral.com:5090

Authentic. ID: 16572241020

Username: 17159644561

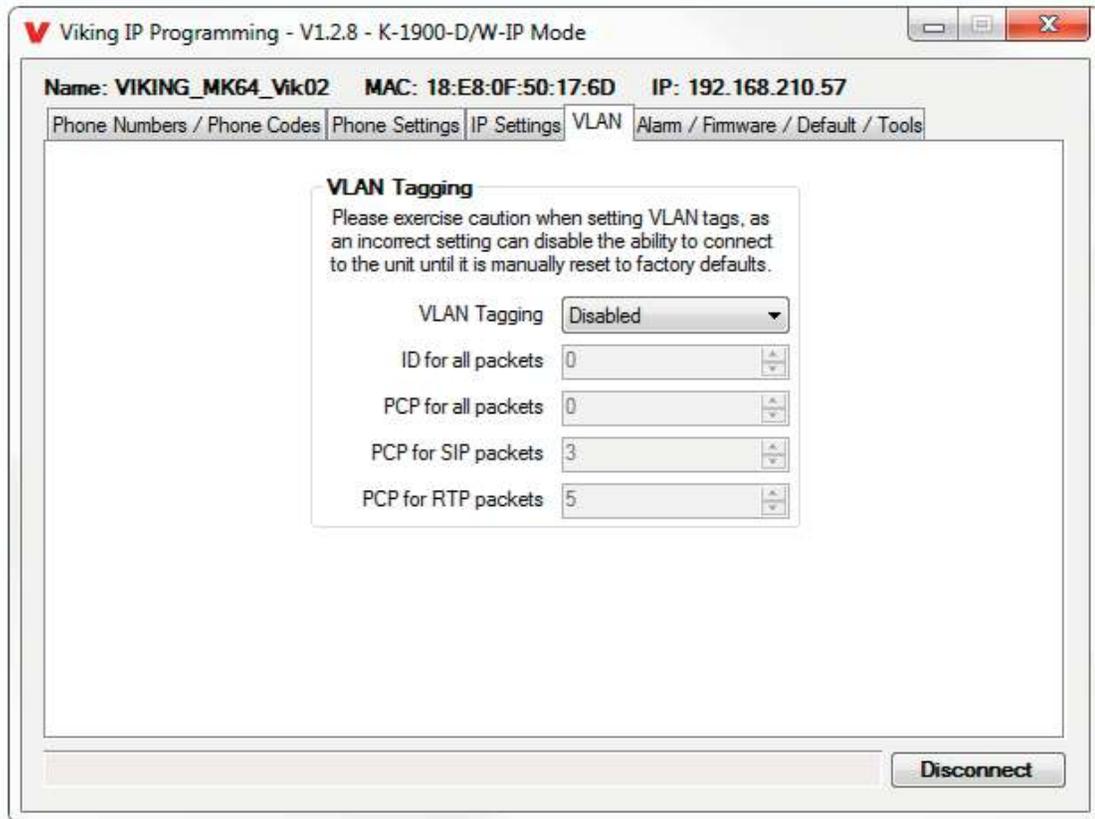
Password: 5j8QA28Lp

Caller ID: Door 1

Register Fails: Re-Resolve

D. Configuring K-1900D/W-IP VLAN Settings

Step 1.	Click on the "VLAN" tab
Step 2.	Disable or enable VLAN tagging by setting the value of "VLAN Tagging".
Step 3.	Set the VLAN tag ID by selecting an integer (1 to 4094) in "ID for all packets".
Step 4.	Set the Priority Code Point (PCP) value for all not SIP and RTP packets in the "PCP for all packets" input (0 is default, priorities are from low to high: 0, 1, 2, 3, 4, 5, 6, 7). Set the "PCP for SIP packets" (3 is default). Set the "PCP for RTP packets" (5 is default).



E. Manually Resetting the Security Code to Enter Programming

Step 1.	Power down the K-1900D/W-IP phone by disconnecting the LAN Cable (RJ45 plug).
Step 2.	Take the handset offhook, then reconnect the LAN Cable (RJ45 plug).
Step 3.	8-12 seconds after connecting the LAN Cable you should hear 2 beeps in the handset. Go back on-hook within 6 seconds and you should hear 2 more beeps.
Step 4.	The security code is now reset to 845464 (factory default).
Step 5.	You can now enter programming by following the steps in section B above.

F. Manually Resetting All Network Parameters to Factory Default

Step 1.	Power down the K-1900D/W-IP phone by disconnecting the LAN Cable (RJ45 plug).
Step 2.	Take the handset offhook, then reconnect the LAN Cable (RJ45 plug).
Step 3.	8-12 seconds after connecting the LAN Cable you should hear 2 beeps in the handset. 6 seconds later you should hear 4 beeps, go back on-hook within 6 seconds*. Unit will reset and 2 beeps will be heard in approximately 7 seconds.
Step 4.	You can now enter programming by following the steps in section B above.

***Note:** if you do not go back on-hook within 6 seconds, the handset will continue to beep until back on-hook. This indicates an error and network parameters will remain unchanged.

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Programming Features

1. Unit Name

Up to a 31 character unit name can be assigned to the **K-1900D/W-IP** phone being programmed.

2. SIP Server

Enter the IP address or URL of your SIP server or service provider in this field. The SIP server IP address is limited to 74 characters. **Note:** *If outbound proxy is not required, enter the SIP server IP address into the Outbnd Proxy field.* **Note:** *If an alternate SIP server IP address is programmed, the IP address for the SIP server and alternate SIP server will be limited to 31 characters.*

3. Peer to Peer Settings

When set to Peer to Peer mode, a SIP server is not used. The unit should be programmed with a Static IP Address and Username, a password is not used. Caller ID can be programmed if needed. Simply call the unit by entering the programmed “username@192.168...(Static IP address for the unit)”. The static IP address is normally programmed into a page button on the VoIP telephones.

4. Outbound Proxy

If your SIP provider requires an outbound proxy IP address enter it in the Outbnd Proxy field. If outbound proxy is not required enter the SIP server IP address into the Outbnd Proxy field. **Note:** *If not required, this field must match your SIP server IP address.*

5. Authentication ID

If your SIP provider requires Authentication ID, enter it in the Authentic ID field. If Authentication ID is not required, leave this field blank.

6. Register Fails (Re-Resolve or Alternate Server)

When registered to a SIP server in the event that registration is lost you can program the unit to re-resolve using the current SIP server IP address or route pages through an alternate SIP server. With Alternate Server selected enter the IP address of the alternate SIP server in the field next to the Register Fails drop down box. **Note:** *With an alternate SIP server IP address programmed, the IP address for the SIP server and alternate SIP server will be limited to 31 characters.*



The screenshot shows the 'Viking IP Programming - V1.2.8 - K-1900-D/W-IP Mode' window. At the top, it displays the device name 'VIKING_MK64_Vik02', MAC address '18:E8:0F:50:17:6D', and IP address '192.168.210.57'. Below this is a navigation bar with tabs: 'Phone Numbers / Phone Codes', 'Phone Settings', 'IP Settings', 'VLAN', 'Alarm / Firmware / Default / Tools'. The main content area is divided into two sections: 'Phone Numbers' and 'Phone Codes'. The 'Phone Numbers' section includes a descriptive text: 'These numbers are dialed in sequence after going off-hook with the handset.' and four input fields labeled 'First', 'Second', 'Third', and 'Fourth'. The 'Phone Codes' section includes two input fields: 'Security Code (6 digits)' with the value '845464' and 'Access Code (0-6 digits)' with the value '123456'. A 'Disconnect' button is located at the bottom right of the window.

7. Phone Numbers (1 - 4)

The phone number programmed in the first location is the number that is dialed when the "K-1900D/W-IP" goes off hook. Additional numbers will be dialed when there is no answer or a busy signal is detected. The K-1900D/W-IP phone is factory set with no phone numbers programmed. These phone numbers can be up to 20 digits.

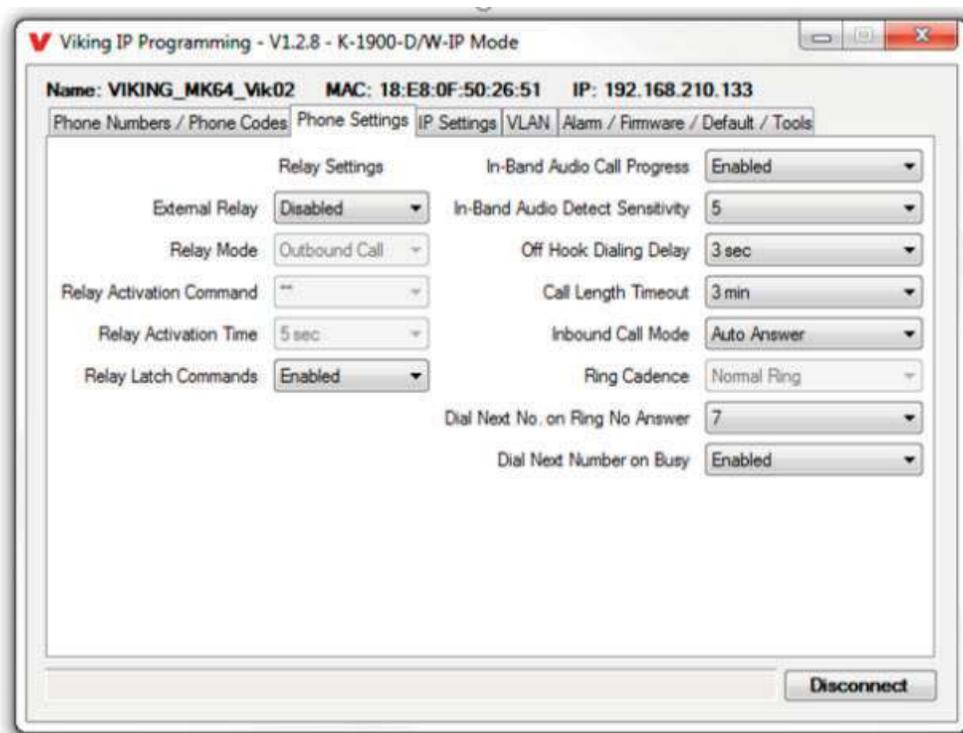
8. Security Code

The security code allows the user/installer to program the K-1900D/W-IP phone. It is recommended that the factory set security code be changed. **Factory Setting:** 845464

Note: The security code must be 6 digits and cannot include a * or a #.

9. Access Code

The access code comes into play when a tenant calls the K-1900D/W-IP and a visitor lifts the handset to answer the call or the K-1900D/W-IP automatically answers the call (see Inbound Call Mode). It is a 1 - 6 digit code (can not contain "*" or "#") that the tenant must dial before they are allowed to operate the door strike relays, as extra security on inbound calls. Once a tenant has entered the correct access code, 2 beeps are heard and the user can now enter any "Remote Access Operation Commands" (see page 17). This code is also used to enable audio in Auto Answer Secure and Silent Monitor Secure modes. The access code can be disabled if this basic security is not required. **Factory Setting:** 123456



10. External Relay (Optional RC-4A)

If your application requires a relay closure, the K-1900D/W-IP can operate external RC-4A relay contacts. The RC-4A has 4 relays onboard that can be controlled by the K-1900D/W-IP.

11. External RC-4A Relay Mode

Doorstrike Mode (Factory Setting): When programmed for Doorstrike Mode the relay is intended for door strike, maglock or gate control. The relay will momentarily activate for the preprogrammed relay activation time after detecting the correct relay activation command (one or two digit touch tone) from the called party.

Outbound Call Mode: When programmed for Outbound Call Mode the relay will activate continuously for the duration of any outbound call from the entry phone.

Inbound/Outbound Call Mode: When programmed for Inbound/Outbound Call Mode the relay will activate continuously for the duration of any inbound or outbound call to or from the entry phone. This mode is useful for turning on IR flood lights, for VoIP phones with cameras, etc.

Doorbell Mode: When programmed for Doorbell Mode the relay will momentarily activate the relay for the preprogrammed relay activation time on any outbound call from the entry phone. This mode is useful for activating a door chime, etc. When activating door chimes, a 0.5 - 1 second relay activation time is recommended.

Alarm Mode: When programmed in Alarm Mode the relay will activate continuously while the entry phone is powered and registered to the SIP server. In the event the unit loses power and/or SIP registration the relay will turn off, which can be used to signal an alarm device. This can only be used for internal relay control.

Ring Mode: When programmed for Ring Mode the relay will continuously activate when an inbound call is ringing to the entry phone. This mode is useful for activating a Viking model **SL-2** strobe light, etc.

Note: Inbound Call Mode must be set to Ring Low or Ring High.

Ring Flash Mode: When programmed for Ring Flash Mode the relay will momentarily turn on and off in a 400ms on/off cadence when an inbound call is ringing to the entry phone. This mode is useful for activating a Viking **LPL-1** remote visual indicator, etc.

Note: Inbound Call Mode must be set to Ring Low or Ring High.

12. Relay Activation Command

The one or two digit code stored in the Relay Activation Command is the touch tone command that the person being called must enter on their phone in order to momentarily activate the relay to control a doorstrike, mag-lock, gate controller, or other device. The code can contain up to two of the following characters 0 - 9, # or *. The code cannot match a relay latching or toggle command (11, 10, 1#) unless latching commands are disabled. The code must be entered while the remote phone is communicating with the entry phone. The entry phone determines which direction the touch tone is coming from and only responds to touch tones from the called phone. **Factory Setting **.**

13. Relay Activation Time

The value stored in the Relay Activation Time is the amount of time the relay will be energized after a correct momentary touch tone command is entered. This number can range from 0.5 - 99 seconds. *Note: This also affects timing in Doorbell Mode.* **Factory Setting: 5 seconds**

14. Relay Latch Commands

When set to "Enabled" the remote access operation commands to un-latch, latch or toggle the relay are enabled.

When set to "Disable" the remote access operation commands to un-latch, latch or toggle the relay are disabled. Disabling the Latch Commands can be useful in applications where you want to eliminate the possibility of inadvertently entering a Latch Command leaving a gate open/closed, etc. The relays can still be activated with the "Relay Activation Command" for momentary closures. **Factory Setting: Enabled**

15. In-Band Audio Call Progress

The In-Band Audio Call Progress Detection can be set to Enabled or Disabled. In-Band Audio Call Progress detection should be enabled in applications where you are making an outbound call through your VoIP phone system and are relying on In-Band analog audio for ringback or busy detection. **Factory Setting: Enabled.**

16. In-Band Audio Detection Sensitivity

The In-Band Audio Detect level (Sensitivity) can be set from 1 - 9, 1 = minimum setting, 9 = highest setting. Increasing or decreasing the sensitivity may be required in applications where you are making an outbound call through your VoIP phone system and are relying on In-Band analog audio detection. Power cycle unit after changing this setting.

Factory Setting: 5

17. Off Hook Dialing Delay

The Off Hook Dialing Delay is the length of time a user hears simulated dial tone after picking up the handset before the first number is dialed. The Off Hook Dialing Delay can be set to 1 - 6 seconds or "No Delay".

Factory Setting: 3 seconds

18. Call Length Time Out

This feature selects the maximum length of time that calls can be connected. Programmable in increments of 1 minute up to a maximum of 9 minutes or disabled. With the call length disabled, the **K-1900D/W-IP** phone must rely on a call ended signal, busy signal, or touch tone # to hang-up. **Factory Setting:** 3 minutes

Note: *Timer starts after call is connected. If call is not answered (and ring no answer disabled) there is a default 7 minute timer.*

19. Inbound Call Mode

The Inbound Call Mode determines how the **K-1900D/W-IP** handles incoming calls. One option is to generate a ring sound allowing someone to lift the handset to answer the inbound SIP call. The **K-1900D/W-IP** can also auto answer the call, to allow remote control of the doorstrike relay and the ability to listen to transmit audio from the handset of the phone. The last option is the silent monitor mode, which allows callers to listen to the transmit audio from the handset of the phone at a much higher volume than normal. The "secure" options for auto answer and silent monitor require the callers to dial the access code in order to remain connected and listen to the audio from the handset.

Factory Setting: Ring Low

Disabled – Inbound calls are not allowed.

Auto Answer – Inbound calls are auto answered and the caller hears transmit audio from the handset at a normal volume level.

Auto Answer Secure – Inbound calls are auto answered and the caller must dial the access code in order to listen to transmit audio from the handset (volume level is still normal).

Ring Low – In the "low" mode the phone will output a ring signal in the ring pattern selected in Ring Cadence. The call can then be answered by taking the handset off hook.

Ring High – In the "High" mode the phone will output a slightly louder, higher pitched ring signal in the ring pattern selected in Ring Cadence. The call can then be answered by taking the handset off hook.

Silent Monitor – Inbound calls are auto answered and the caller hears transmit audio from the handset at a much higher volume level.

Silent Monitor Secure – Inbound calls are auto answered and the caller must dial the access code in order to listen to transmit audio from the handset (volume level is still at a much higher volume level).

20. Ring Cadence

When “Inbound Call Mode” on the **K-1900D/W-IP** is set to “Ring Low” or “Ring High,” the Ring Cadence can be programmed to one of 4 different cadences: **Factory Setting:** Normal Ring

Normal Ring (single ring, 2 seconds on 4 seconds off)

Double Ring (double ring, 1 second on 0.5 seconds off 1 second on 3.5 seconds off)

Short-Short-Long (triple ring, 0.5 seconds on 0.5 seconds off 0.5 seconds on 0.5 seconds off 1 second on 3 seconds off)

Short-Long-Short (triple ring, 0.5 seconds on 0.5 seconds off 1 second on 0.5 seconds off 0.5 seconds on 3 seconds off)

21. Dial Next Number on Ring No Answer

If enabled and a ring-no-answer is detected, the **K-1900D/W-IP** phone will dial the other phone numbers.

Factory Setting: 7 (will redial after 7 rings)

22. Dial Next Number on Busy

If enabled and a busy is detected, the **K-1900D/W-IP** phone will dial the other phone numbers.

Note: If the busy signal is interrupted with a promotional message, contact your central office to have it removed.

The screenshot displays the 'Viking IP Programming - V1.2.8 - K-1900-D/W-IP Mode' window. At the top, it shows the unit's Name: VIKING_MK64_Vik02, MAC: 18:E8:0F:50:17:6D, and IP: 192.168.210.57. Below this are tabs for Phone Numbers / Phone Codes, Phone Settings, IP Settings, VLAN, Alarm / Firmware / Default / Tools. The main area is divided into several sections:
1. **Dynamic IP Settings:** Unit IP Address (192.168.210.57), Subnet Mask (255.255.255.0), Gateway IP Address (192.168.210.18), and DNS Server IP Address (192.168.210.253).
2. **Firmware Versions:** IP (R8.11.1912) and Unit (V1.1), each with an 'Update' button.
3. **Import / Export:** Buttons for 'Import Data' and 'Export Data'.
4. **Default Unit Settings:** Buttons for 'Clear Unit Settings' and 'Clear IP Settings'.
5. **SIP / Network Failure Alarm:** SIP Registration Status (Not Registered), Current Alarm Status (Activated - SIP), Alarm Muted (checkbox), Mute Current / Next Alarm button, and Permanent Alarm Mute (Alarm Tones Enabled).
6. **Diagnostics:** Test Relay Activation and Read Relay Status buttons, and a field for Last Read Relay Status.
At the bottom right, there are 'Apply' and 'Disconnect' buttons.

23. Mute Current / Next Alarm

A network failure alarm will be indicated by providing 3 beeps every 3 seconds in the handset of the **K-1900D/W-IP**. A network failure indicates the unit is not registered to the SIP server or there is a communication failure with the gateway. The three beeps can be muted by clicking on “Mute Current / Next Alarm”. The status LED will continue to flash to assist troubleshooting.

24. IP Firmware

If new **K-1900D/W-IP** firmware is available, after opening the programming software a pop-up window will come up asking you if you would like to update firmware. An alternative method of updating can be done by clicking the IP firmware “Update IP” button. You can then browse to the folder that contains the PIP file for updating the unit’s IP firmware. This method is typically only used when Viking technical support has sent you updated IP firmware.

25. Unit Firmware

If new **K-1900-D/W-IP** firmware is available, after opening the programming software a pop-up window will come up asking you if you would like to update firmware. An alternative method of updating can be done by clicking the Unit firmware “Update Unit” button. You can then browse to the folder that contains the HEX file for updating the unit’s firmware. This method is typically only used when Viking technical support has sent you updated firmware.

Note: *Export your phone settings before updating firmware.*

26. Import/Export

The Import/Export feature is useful for backing up all the **K-1900D/W-IP’s** programming or for importing programming when installing multiple units with a majority of the same programming.

27. Clear Phone Settings

Clicking on the “Clear Phone Settings” button in programming will reset all of the Phone Settings back to their factory default settings. **Note:** *This command will not change or reset your IP settings or erase any programmed phone numbers.*

28. Clear IP Settings

Clicking on the “Clear IP Settings” will reset the unit’s name, IP and SIP settings back to their factory default settings. **Note:** *This will not effect any unit / phone settings or erase any programmed phone numbers.*

29. Diagnostics

The Diagnostics section in the Viking IP Programming can be used to test the functionality of the **RC-4A** relay and read current **RC-4A** relay status.

Operation

A. Making a Call

When the handset is taken off-hook, the **K-1900D/W-IP** dials the pre-programmed telephone number stored in the first phone number location. In the event the line is busy or there is a ring-no-answer, the unit can be programmed to call up to 4 additional roll over numbers.

When the call is answered, relay activation commands can be entered or the # key can be used to force the phone to hang-up.

After communication is established, enter the 1 or 2 digit relay activation command (factory set to ******) to momentarily activate the entry phone (door strike) relay. Two beeps will be heard confirming that the relay has been activated. If you require the relay to remain on continuously (ie: a truck delivery), enter touch tones **"11"** to continuously activate the relay. A double beep will indicate that the relay is latched on. When the visitor calls in again (ie: they are finished unloading the truck), enter touch tones **"10"** to deactivate the relay. A single beep will indicate the relay is latched off.

B. Inbound Calls

How inbound calls are handled is determined by the Inbound Call Mode and these are the available options (see Inbound Call Mode on page 14 for more details):

Disabled - Inbound calls are blocked. Users will get busy or reorder tone if they attempt to call.

Ring Low or Ring High – Inbound calls generate a ring through the receiver of the handset using either a low or high pitched ring sound. Someone must lift the handset to answer the call.

Auto Answer or Auto Answer Secure – The **K-1900D/W-IP** auto answers the inbound call and the caller can listen to transmit audio from the handset at a normal volume level or remotely control the door strike relays if desired. In the "Secure" mode, the caller must dial the access code in order to listen to handset audio or control relays.

Silent Monitor or Silent Monitor Secure – The **K-1900D/W-IP** auto answers the inbound call and the caller can listen to transmit audio from the handset at a much louder volume than normal or remotely control the door strike relays if desired. The louder volume allows the caller to listen to sounds or conversations occurring around the phone. In the "Secure" mode, the caller must dial the access code in order to listen to handset audio or control relays.

C. Remote Access Operation Commands

The following commands can be entered after answering an inbound call from the entry phone, calling into the entry phone and the unit auto answers or someone answers the call by lifting the handset. After the entry phone auto answers the call, one or two beeps will be heard. If the access code has been disabled (two beeps heard), you can now enter the Remote Access Operation Commands below. If an access code has been programmed (one beep heard), enter the access code digits. With the correct code entered, two beeps will be heard and you can now enter the Remote Access Operation Commands below. The relay must be set to "Door Strike" Mode to be controlled by these commands.

Feature	Touch Tone Command	Description
Momentarily Activate Relay	** or __ __	Momentarily activate relay (1 or 2 digits, factory set to **).
Latch Relay	11	Latch* (continuously activate) relay.
Un-Latch Relay	10	Un-latch* (deactivate) relay.
Toggle Relay	1#	Toggle* relay from last position.

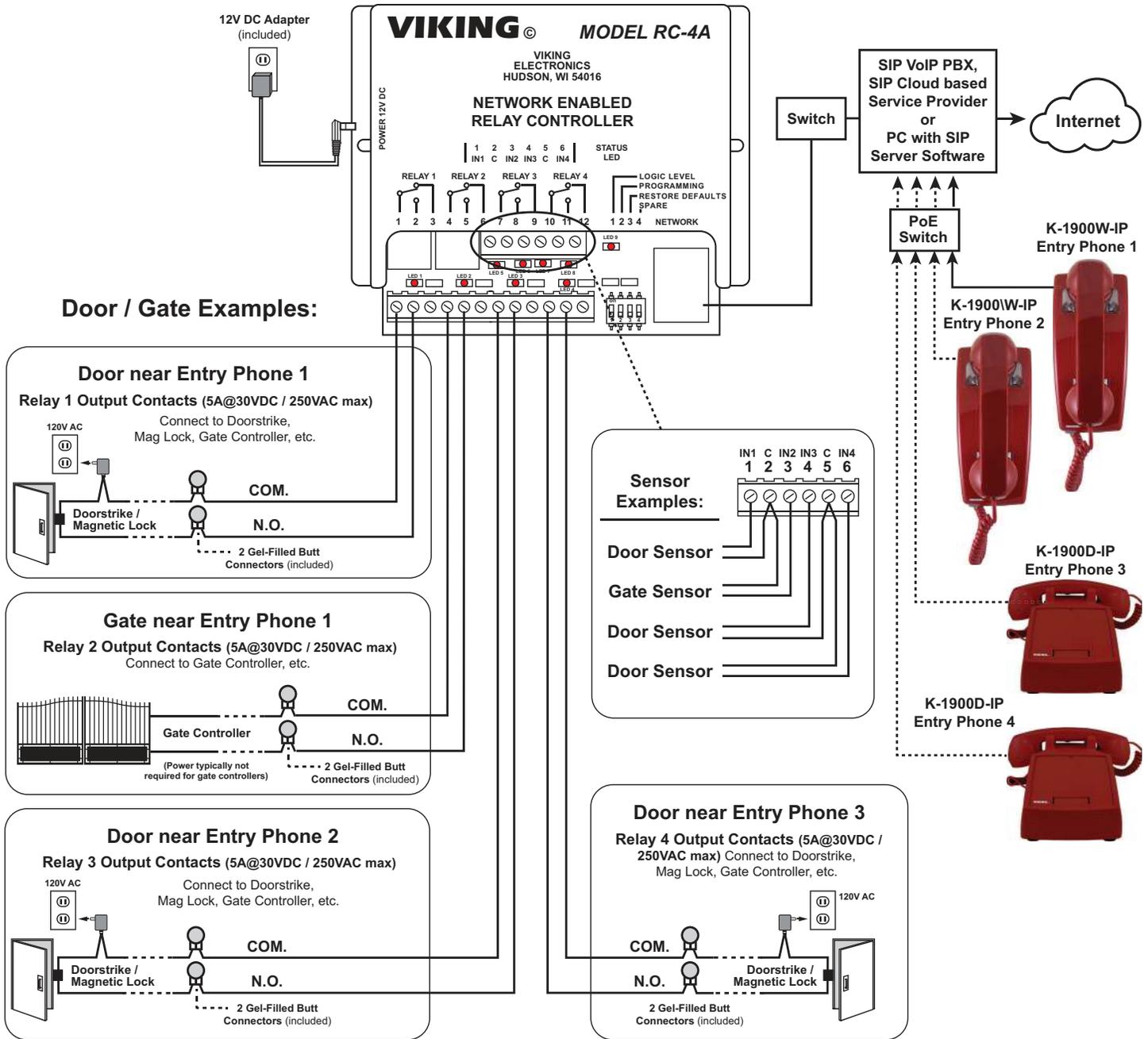
* **Note:** Latching commands must be enabled in programming.

Troubleshooting

If the unit cannot register with the SIP server, three beeps will be heard in the handset every 3 seconds until communication is restored. This alerts a potential user of a problem with the device that will prevent a phone call from being made. The **K-1900D/W-IP** will also flash its "SIP Alarm" LED (on PCB) for the entire time the unit is not registered.

You may silence the error beeps, per instance, by clicking the "Mute Current / Next Alarm" button in the Viking IP Programming software (see section **A** on page 7). The error beeps automatically re-enable once the unit is registered, to alert of any new problems that arise.

Using a Viking Model RC-4A for Secure Remote Relay Control



For applications requiring a relay closure, a Viking **RC-4A** remote relay controller can be used. The relay controller is mounted securely inside the building and connected to the same LAN as the **K-1900-D/W-IP**. The on board door strike relay would not be used in this case as the **K-1900D/W-IP** will send an encrypted message to the **RC-4A** to activate its relays which control the door strikes/gates.

Up to 4 **K-1900D/W-IP**'s can communicate with one **RC-4A** allowing you to securely control four entrances.

For more information, See DOD 582 @ VikingElectronics.com.

Added Protection for Your Viking Emergency Phone, Entry Phone, Doorbox or Other Telecom Device

The **VE-9x12's** provide the ultimate in weather protection for your Viking product or other telecom devices.

These enclosures are constructed of cast aluminum and are made for years of outdoor service. The heavy-duty aluminum doors are labeled "**Telephone**" and have a gasket seal to keep out even the harshest weather. The **VE-9x12's** allow you to choose from two panels that allow mounting many different Viking products.

The **VE-9x12's** are available in three high visibility colors: emergency red with silver lettering, safety yellow with red lettering, or black with silver lettering.

For more Information, See DOD 413



VE-9x12(Y)

VE-9x12(R)

VE-9x12(B)

Control Relay Contacts Across a Local Area Network

The **RC-4A** Network Enabled Relay Controller provides networked control of four relays via an easy-to-use web interface. The same interface can be used to check the status of four contact closure inputs. Relays can be toggled on or off, or user-programmed timed closures can be activated.

The **RC-4A** can be configured to work as a remote relay for Viking VoIP series entry phones, controlling door strikes and gates when a remote relay is required for security reasons. It can also be programmed to send an email or text message in response to a change in one or more of the sensor inputs. Two **RC-4A's** can be set up so that activity on a sensor input of one unit will automatically send a message across the network to activate one of the relays on the other unit. Two levels of user access permit selected users to have full operational and programming rights while others have operational control but not programming capability.



For more info, see **DOD 582**

Vandal Resistant VoIP Phone with Auto Dialer and Entry System

The **K-1900-7-IP Series** VoIP Panel Phones will auto-dial a 1-20 digit programmable phone number each time the handset is lifted. If the call is not answered, the phone will dial up to 3 additional phone numbers. The **K-1900-7-IP Series** phones are designed to provide quick and reliable communication for SIP VoIP phone systems with PoE. The unit can be programmed from any PC on the same LAN or remotely using a Static IP Address

When a call initiated by the **K-1900-7-IP SeriesP** phone is answered by an apartment or business tenant, a built-in relay may be activated to control an electric gate or door strike. The relay can also be programmed to activate whenever the phone is off hook, ideal for controlling cameras, etc.

The **K-1900-7-IP-EWP** and **K-1900712LIPEWP** share all of the features of the standard **K-1900-7-IP** and **K-1900-712L-IP** in addition to Enhanced Weather Protection (EWP) for outdoor installations where the unit is exposed to precipitation or condensation. EWP products feature foam rubber gaskets, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards. For more information on EWP, see **DOD 859**.

The **K-1900-712L-IP** and **K-1900712LIPEWP** have a 12" long armored cable with internal stainless steel lanyard for additional cable strength.

For more Information, see **DOD 365**.



Vandal Resistant VoIP Phone with Auto Dialer, Keypad and Entry System

The **K-1900-8-IP VoIP** panel phone can either auto-dial a phone number each time the handset is lifted, be used as a multi-number auto-dialer, or be used as a standard manual dial phone. The **K-1900-8-IP** VoIP phone is designed to provide quick and reliable communication for SIP VoIP phone systems with PoE. The unit can be programmed from any PC on the same LAN or remotely using a Static IP address. The **K-1900-8-IP** phone can dial up to 250 programmable numbers and another 250 rollover numbers.

When a call initiated by the **K-1900-8-IP** phone is answered by an apartment or business tenant, a built-in contact closure may be activated to control an electric gate or door strike. Up to 1,000 keyless entry codes may be programmed, providing tenants with keyless entry. A 26 Bit Wiegand input is provided for adding an optional proximity card reader with capacity to program up to 1,000 card numbers. Keyless entry codes and card numbers can be programmed to only allow access at specific times and/or day of the week. A request for exit (REX) input is included for easy exiting. The **K-1900-8-IP** also has automatic event logging allowing you to review the time and date of the call, which door was open/closed, what keyless entry code or proximity card was used, request for exit usage and whether it was an inbound or outbound call.

The **K-1900-8-IP-EWP** shares all of the features of the **K-1900-8-IP** in addition to Enhanced Weather Protection (EWP) for outdoor installations where the unit is exposed to precipitation or condensation. EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards. For more information on EWP, see **DOD 859**.



For more info,
see **DOD 361**

Warranty

IF YOU HAVE A PROBLEM WITH A VIKING PRODUCT, CONTACT VIKING TECHNICAL SUPPORT: 715-386-8666

Our Technical Support Department is available for assistance Monday through Friday 8:00am to 5:00pm central time. So that we can give you better service, before you call please:

1. Know the model number, the serial number and what software version you have (see serial label).
2. Have the Product Manual in front of you.
3. It is best if you are on site.

RETURNING PRODUCT FOR REPAIR

The following procedure is for equipment that needs repair:

1. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (RA) number. The customer MUST have a complete description of the problem, with all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.
2. Packing: Return equipment in original box or in proper packing so that damage will not occur while in transit. The original product boxes are not designed for shipping - an overpack box is required to prevent damage in transit. Static sensitive equipment such as a circuit board should be in an anti-static bag, sandwiched between foam and individually boxed. All equipment should be wrapped to avoid packing material lodging in or sticking to the equipment. Include ALL parts of the equipment. C.O.D. or freight collect shipments cannot be accepted. Ship cartons prepaid to:

**VIKING ELECTRONICS
1531 INDUSTRIAL STREET
HUDSON, WI 54016**

3. Return shipping address: Be sure to include your return shipping address inside the box. We cannot ship to a PO Box.
4. RA number on carton: In large printing, write the RA number on the outside of each carton being returned.

RETURNING PRODUCT FOR EXCHANGE

The following procedure is for equipment that has failed out-of-box (within 10 days of purchase):

1. Customer must contact Viking's Technical Support at 715-386-8666 to determine possible causes for the problem. The customer MUST be able to step through recommended tests for diagnosis.
2. If the Technical Support Product Specialist determines that the equipment is defective based on the customer's input and troubleshooting, a Return Authorization (RA) number will be issued. This number is valid for fourteen (14) calendar days from the date of issue.
3. After obtaining the RA number, return the approved equipment to your distributor. Please reference the RA number on the paperwork being shipped back with the unit(s), and also the outside of the shipping box. The original product boxes are not designed for shipping - an overpack box is required to prevent damage in transit. Once your distributor receives the package, they will replace the product over the counter at no charge. The distributor will then return the product to Viking using the same RA number.
4. **The distributor will NOT exchange this product without first obtaining the RA number from you. If you haven't followed the steps listed in 1, 2 and 3, be aware that you will have to pay a restocking charge.**

TWO YEAR LIMITED WARRANTY

Viking warrants its products to be free from defects in the workmanship or materials, under normal use and service, for a period of two years from the date of purchase from any authorized Viking distributor. If at any time during the warranty period, the product is deemed defective or malfunctions, return the product to Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI., 54016. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (R.A.) number.

This warranty does not cover any damage to the product due to lightning, over voltage, under voltage, accident, misuse, abuse, negligence or any damage caused by use of the product by the purchaser or others. This warranty does not cover non-EWP products that have been exposed to wet or corrosive environments. This warranty does not cover stainless steel surfaces that have not been properly maintained.

NO OTHER WARRANTIES. VIKING MAKES NO WARRANTIES RELATING TO ITS PRODUCTS OTHER THAN AS DESCRIBED ABOVE AND DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

EXCLUSION OF CONSEQUENTIAL DAMAGES. VIKING SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO PURCHASER, OR ANY OTHER PARTY, FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATED TO THE SALE OR USE OF THE PRODUCT SOLD HEREUNDER.

EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY. WHETHER IN AN ACTION BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR ANY OTHER LEGAL THEORY, ANY LIABILITY OF VIKING SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT, OR AT VIKING'S OPTION, REFUND OF THE PURCHASE PRICE AS THE EXCLUSIVE REMEDY AND ANY LIABILITY OF VIKING SHALL BE SO LIMITED.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT EACH AND EVERY PROVISION OF THIS AGREEMENT WHICH PROVIDES FOR DISCLAIMER OF WARRANTIES, EXCLUSION OF CONSEQUENTIAL DAMAGES, AND EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY, ARE SEVERABLE FROM ANY OTHER PROVISION AND EACH PROVISION IS A SEPARABLE AND INDEPENDENT ELEMENT OF RISK ALLOCATION AND IS INTENDED TO BE ENFORCED AS SUCH.

If trouble is experienced with the **K-1900D/W-IP Series** phone, for repair or warranty information, please contact:

Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI 54016 715-386-8666

WHEN PROGRAMMING EMERGENCY NUMBERS AND (OR) MAKING TEST CALLS TO EMERGENCY NUMBERS:

Remain on the line and briefly explain to the dispatcher the reason for the call. Perform such tests in off-peak hours, such as early morning or late evenings.

PART 15 LIMITATIONS

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CANADA

This class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme a la norme NMB-003 du Canada.

Product Support: 715-386-8666

Due to the dynamic nature of the product design, the information contained in this document is subject to change without notice. Viking Electronics, and its affiliates and/or subsidiaries assume no responsibility for errors and omissions contained in this information. Revisions of this document or new editions of it may be issued to incorporate such changes.