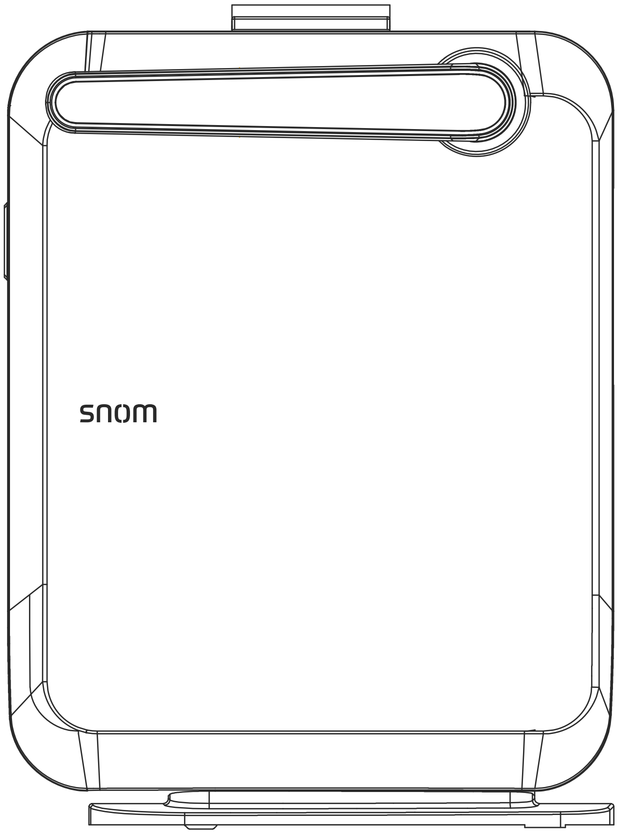
snom



M100 KLE

SIP DECT 4-Line Base Station

Administrator and Provisioning Manual

Rev. 1 06/19

Contents

PREFACE

Congratulations on your purchase of this Snom product. Please thoroughly read this manual for all the feature operations and troubleshooting information necessary to install and operate your new Snom product. You can also visit our website at *www.snomamericas.com*.

This administrator and provisioning manual contains detailed instructions for installing and configuring your M100 KLE SIP DECT 4-Line Base Station with software version 1.0.2.1 or newer. See *"Using the Status menu" on page 21* for instructions on checking the software version on the M100 KLE. Please read this manual before installing the product.

Please print this page and record the following information regarding your product:

Model number: M100 KLE

Type: SIP DECT 4-Line Base Station

Serial number: ________________________________

Purchase date: ________________________________

Place of purchase: _____________________________

Both the model and serial numbers of your Snom product can be found on the bottom of the device.

Save your sales receipt and original packaging in case it is necessary to return your telephone for warranty service.

Text Conventions

Table 1 lists text formats and describes how they are used in this guide.

Table 1. Description of Text Conventions

Text Format	Description
Screen	Identifies text that appears on a device screen or a WebUI page in a title, menu, or prompt.
HARD KEY or **DIAL-PAD KEY**	Identifies a hard key, including the dial-pad keys.
CallFwd	Identifies a soft key.
NOTE Notes provide important information about a feature or procedure.	Example of a Note.
CAUTION *A caution means that loss of data or unintended circumstances may result.*	Example of a Caution.

Audience

This guide is written for installers and system administrators. It assumes that you are familiar with networks and VoIP, both in theory and in practice. This guide also assumes that you have ordered your IP PBX equipment or service and selected which PBX features you want to implement. This guide references specific IP PBX equipment or services only for features or settings that have been designed for a specific service. Please consult your equipment supplier or service provider for recommended switches, routers, and firewall and NAT traversal settings, and so on.

As the M100 KLE SIP DECT 4-Line Base Station becomes certified for IP PBX equipment or services, Snom may publish interop guides for those specific services. The interop guides will recommend second-party devices and settings, along with M100 KLE-specific configurations for optimal performance with those services. For the latest updates, visit our website at *www.snomamericas.com*.

Related Documents

The ***M100 KLE Quick Installation Guide*** contains a quick reference guide to the M100 KLE external features and brief instructions on connecting the M100 KLE to a working IP PBX system.

The ***M100 KLE User manual*** contains a quick reference guide, full installation instructions, instructions for making and receiving calls, and a guide to all user-configurable settings.

The documents are available from our website at *www.snomamericas.com*.

CHAPTER 1

INTRODUCING THE M100 KLE

This administrator and provisioning guide contains detailed instructions for configuring the M100 KLE SIP DECT 4-Line Base Station. Please read this guide before attempting to configure the M100 KLE.

Some of the configuration tasks described in this chapter are duplicated in the Web User Interface (WebUI) described in the next chapter, but if you need to assign static IP addresses, they must be set at each device.

This chapter covers:

About the M100 KLE 4-Line base station

The Snom M100 KLE SIP DECT 4-Line Base Station with M10 KLE cordless handset is a cordless business phone system designed to work with popular SIP telephone (IP PBX) equipment and services. Once you have ordered and configured your SIP equipment or service, the M100 KLE and cordless accessories enable you to make and receive calls as you would with any other business phone.

The M100 KLE 4-Line base station features include:

- Up to 8 SIP account registrations
- Up to 6 active SIP sessions (across all handsets and cordless desksets)
- Registration of up to 10 DECT cordless handsets
- Shared call usage (held call pick up, call barge in to conference) on single SIP account among multiple users
- Power over Ethernet
- Handset locator
- 1,000-entry base directory with entries shared on all registered handsets and desksets

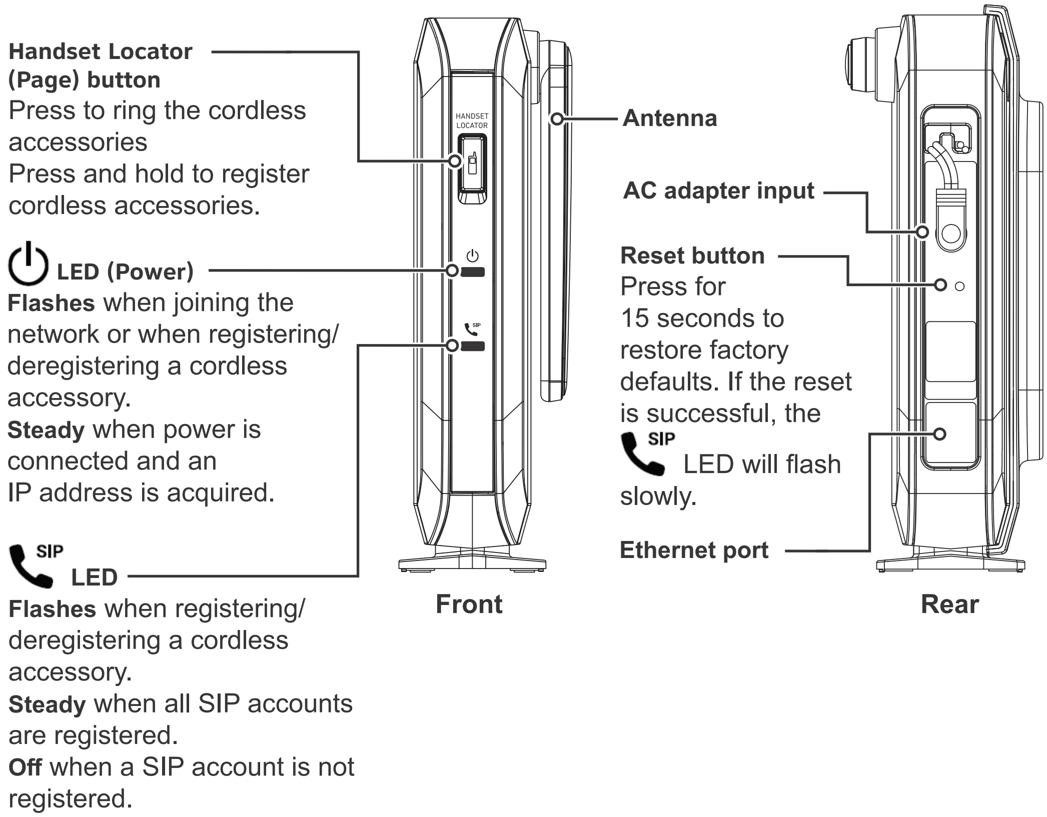
The M10 KLE cordless handset features include:

- 4 dedicated Line keys for Key System experience
- Backlit Liquid Crystal Display
- Speakerphone, hold, intercom and mute capability
- Corded headset jack
- 3-way conferencing
- 200-entry call history
- 500-entry local directory

You can configure the M100 KLE using the menus on the M10 KLE handset, a browser-based interface called the WebUI, or an automatic provisioning process (see *"Provisioning Using Configuration Files" on page 109*). The WebUI enables you to configure the M100 KLE using a computer that is connected to the same Local Area Network. The WebUI resides on the M100 KLE, and may get updated with firmware updates.

Quick Reference Guide

The external features of the M100 KLE 4-Line base station and handset are described below.



Handset Locator (Page) button
Press to ring the cordless accessories
Press and hold to register cordless accessories.

⏻ **LED (Power)**
Flashes when joining the network or when registering/ deregistering a cordless accessory.
Steady when power is connected and an IP address is acquired.

☎ SIP **LED**
Flashes when registering/ deregistering a cordless accessory.
Steady when all SIP accounts are registered.
Off when a SIP account is not registered.

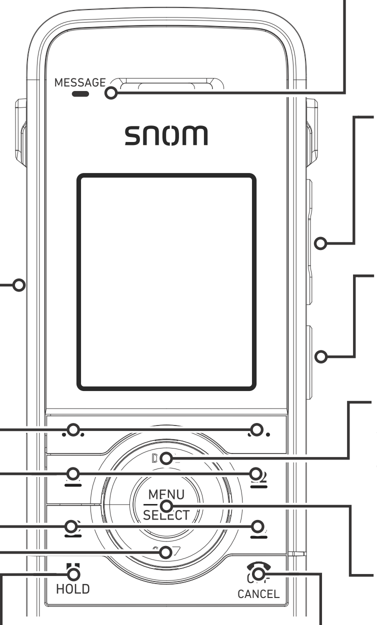
Antenna

AC adapter input

Reset button
Press for 15 seconds to restore factory defaults. If the reset is successful, the ☎ SIP LED will flash slowly.

Ethernet port

Cordless handset external features



HEADSET JACK
2.5 mm jack for connecting a corded headset.

SOFT KEYS
Perform the actions indicated by the on-screen labels.

L1 - L4
Programmable feature keys, preprogrammed as line keys for accessing shared calls.

CID ▼
While in menus, press ▼ to scroll down the menu. Press to display the Call history.

HOLD
Press to put a call on hold.

On back:

- **BELT CLIP**
- **SPEAKER**

MESSAGES LED
Flashes when a line has a new voice message.

– VOLUME +
During a call: increase or decrease listening volume. When idle: increase or decrease ringer volume.

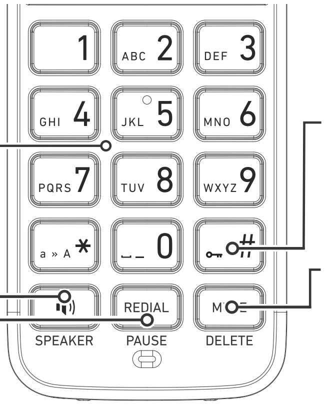
INT
Press to make an internal (intercom) call to another handset/deskset.

DIR ▲
While in menus, press ▲ to scroll up the menu. Press to display the Directory.

MENU/SELECT
Press to display the main menu.
Press to select a menu item.

OFF/CANCEL
Press to end a call.
Press to cancel an operation and leave a menu.

Dial pad and audio controls



DIAL PAD

SPEAKER
Press to use the handset speakerphone.

REDIAL/PAUSE
Press to redial a number or enter a pause when programming a phone number.

HANDSET LOCK
Press and hold to lock handset keys and prevent accidental key presses.

MUTE/DELETE
During a call, press to prevent your voice from being heard. While entering numbers or letters, press to delete previous character.

Network Requirements

A switched network topology is recommended for your LAN (using standard 10/100 Ethernet switches that carry traffic at a nominal rate of 100 Mbit/s).

The office LAN infrastructure should use Cat.-5/Cat.-5e cable.

The M100 KLE requires a wired connection to the LAN. However, wireless connections from your LAN to other devices (such as laptops) in your office will not impede performance.

A Dynamic Host Configuration Protocol (DHCP) server is recommended and must be on the same subnet as the M100 KLE 4-Line base stations so that IP addresses can be auto-assigned. In most cases, your network router will have a DHCP server. By default, the M100 KLE has DHCP enabled for automatic IP address assignment.

NOTE Some DHCP servers have default settings that limit the number of network IP addresses assigned to devices on the network. You should log in to your server to confirm that the IP range is sufficient.

If no DHCP server is present, you can assign a static IP to the M100 KLE. You can assign a static IP address using the M100 KLE menu. To assign a static IP: On the handset/deskset Main menu, go to **Admin settings > Network setting > IPv4 (or IPv6) > Set static IP**.
If you do not have a DHCP server or do not manually assign static IPs, you will not be able to access the WebUI and/or enable automatic time updates from an NTP server.

A DNS server is recommended to resolve the path to the Internet and to a server for firmware and configuration updates. If necessary, the system administrator can also download upgrade files and use the WebUI to update the M100 KLE firmware and/or configuration settings manually

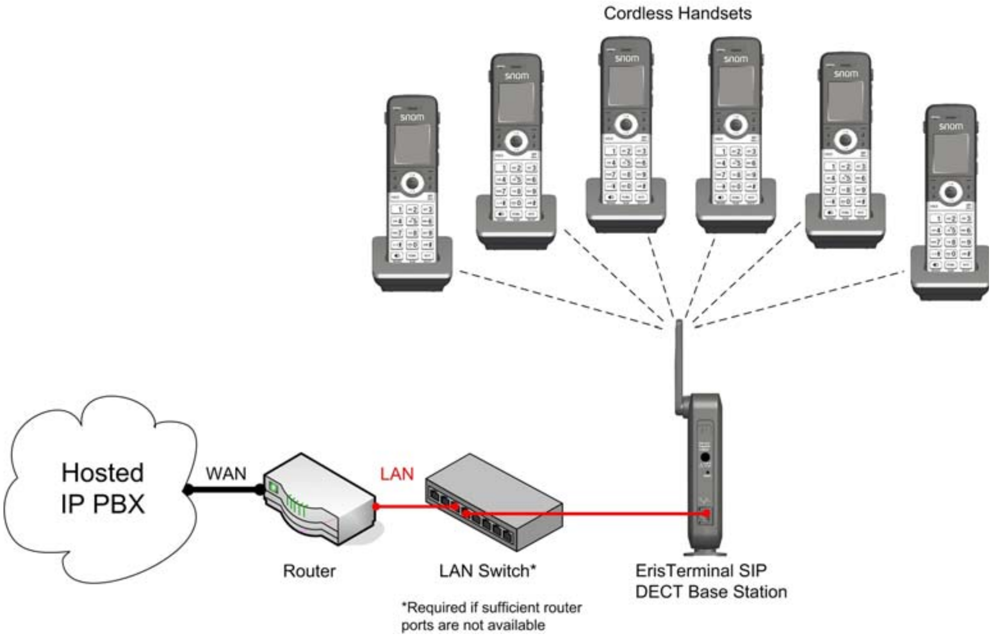

Cordless Handsets
Hosted IP PBX
WAN
LAN
Router
LAN Switch*
*Required if sufficient router ports are not available
ErisTerminal SIP DECT Base Station

Figure 1. M100 KLE Installation Example

M100 KLE Configuration Methods

You can configure the M100 KLE using one of the following methods:

- From the M10 KLE handset using the handset menus. The M10 KLE menus are best suited to configuring a few settings, perhaps after the initial setup has been done. For administrators, the settings available on the M10 KLE menus include network settings, account settings, and provisioning settings. See *"Using the Admin Settings Menu" on page 24*. Many of the settings accessible on the M10 KLE are most useful for end users. Through the menu, they can customize the screen appearance, sounds, and manage calls. For more information, see the M100 KLE/M10 KLE User Guide.
- The Web User Interface, or WebUI, which you access using your Internet browser. See *"Using the WebUI" on page 35*. The browser-based interface is easy to navigate and best suited to configuring a large number of M100 KLE settings at once. The WebUI gives you access to every setting required for configuring a single device. You can enter service provider account settings on the WebUI, assign accounts to handsets, and set up provisioning, which will allow you to automatically and remotely update the M100 KLE after initial configuration.
- Provisioning using configuration files. Working with configuration files allows you to configure the device at regular intervals. There are several methods available to enable the M100 KLE to locate and upload the configuration file. For example, you can enable the M100 KLE, when it starts up or reboots, to check for the presence of a configuration file on a provisioning server. If the configuration file is new or has been modified in any way, the M100 KLE automatically downloads the file and applies the new settings. For more information, see *"Provisioning Using Configuration Files" on page 109*.

Using Shared Calls

Your system allows shared calls usage among multiple handset users on a SIP account.

Incoming calls on an account can alert multiple handsets and be answered by any one of them. Multiple handsets can share an account for outgoing calls. This can be achieved via Account Assignments. For more details, see *“Account Assignments” on page 55*.

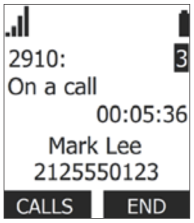
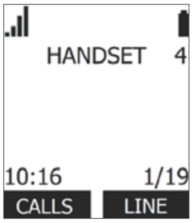
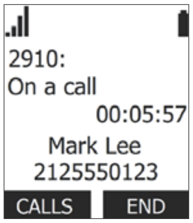
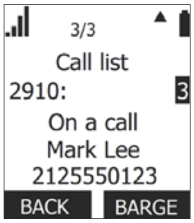
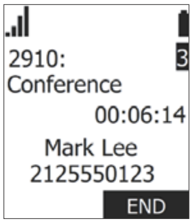
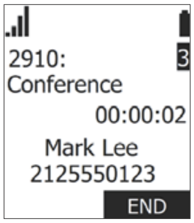
Typical call sharing operations like held call pick up and barge-in conference among handset users can be achieved via KeyLine Assignments. For more details, see *“KeyLine Assignments” on page 57*.

Each "KeyLine" number, when assigned to a shared call, behaves as a virtual "Line" number allowing easy, yet unique reference across multiple handset users.

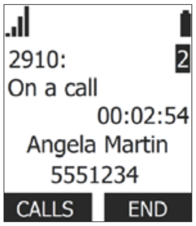
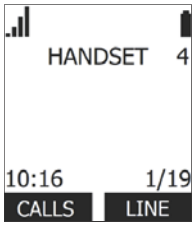
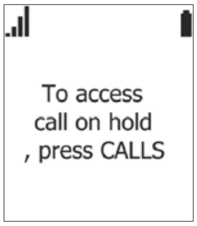
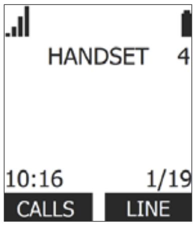
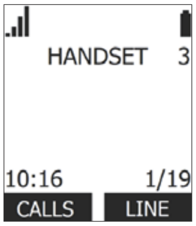
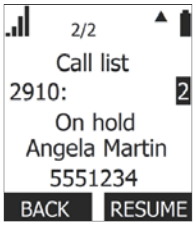
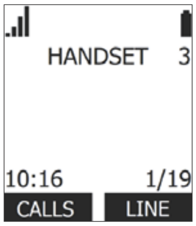
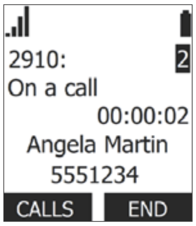
Using our default configuration for KeyLine as an example, any incoming/outgoing call on account 1 will get assigned a KeyLine number. The lowest unoccupied KeyLine number will typically be assigned first.

Please see the following scenarios to see how the KeyLine number can be utilized among users via the Call List.

Example - barging in a shared call:

	Alice's handset	Bob's handset
1. Alice is on a call.	 2910: 3 On a call 00:05:36 Mark Lee 2125550123 CALLS END	 HANDSET 4 10:16 1/19 CALLS LINE
2. Alice shouts across the room, "Bob, can you join my call on line 3?"		
3. Bob presses CALLS to display the Call List, and presses ▼ to select the call on line 3.	 2910: On a call 00:05:57 Mark Lee 2125550123 CALLS END	 3/3 ▲ Call list 2910: 3 On a call Mark Lee 2125550123 BACK BARGE
4. Bob presses BARGE to barge in the call.	 2910: 3 Conference 00:06:14 Mark Lee 2125550123 END	 2910: 3 Conference 00:00:02 Mark Lee 2125550123 END
Bob is now in a conference call with Alice and the caller on line 3.		

Example - picking up a held shared call:

	Alice’s handset	Bob’s handset
1. Alice is on a call.	 2910: 2 On a call 00:02:54 Angela Martin 5551234 	 HANDSET 4 10:16 1/19
2. Alice presses **HOLD** to put the call on hold.	 To access call on hold , press CALLS	 HANDSET 4 10:16 1/19
3. Alice shouts across the room, “Bob, can you pick up line 2?”		
4. Bob presses CALLS to display the Call List, and presses ▼ to select the call on line 2.	 HANDSET 3 10:16 1/19 	 2/2 ▲ Call list 2910: 2 On hold Angela Martin 5551234
5. Bob presses RESUME to pick up the call.	 HANDSET 3 10:16 1/19 	 2910: 2 On a call 00:00:02 Angela Martin 5551234
The call is now on Bob’s handset.		

Calls made on an account without assigning to any KeyLine number are considered to be private calls and will not be visible on the Call List of other handsets.

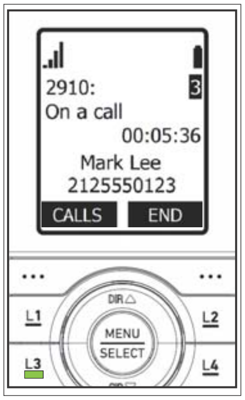
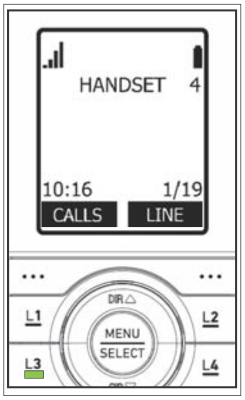
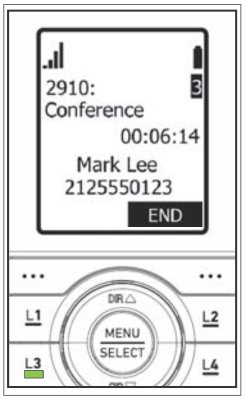
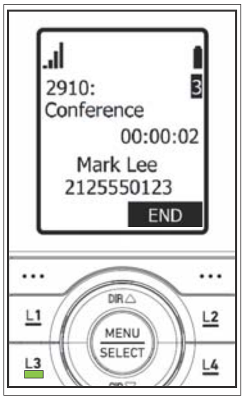
Key System Emulation

Each cordless handset or deskset is equipped with four line keys (L1 to L4) to to allow similar usage experience as a typical Key system.

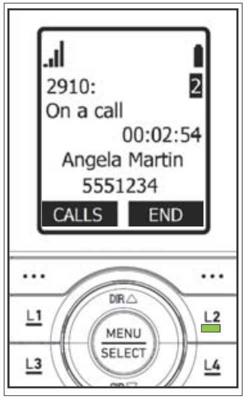
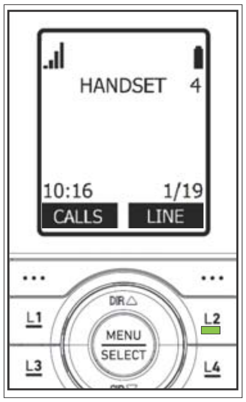
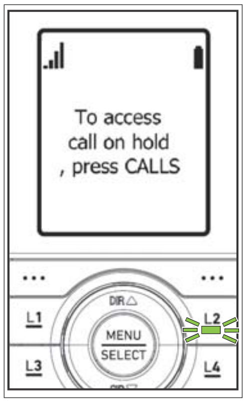
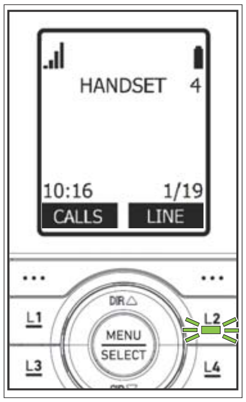
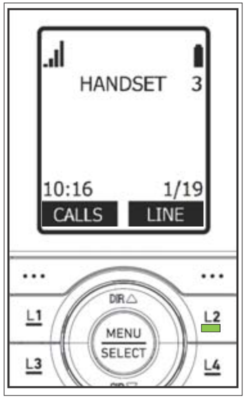
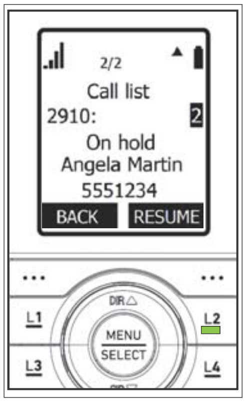
By assigning each Line key to a KeyLine number as done with our factory setting, the user can interact directly with shared calls and perform held call and barge-in conference via pressing the Line key (L1 to L4).

The following scenarios illustrate a Key system experience via direct interactions with the Line keys.

Example - barging in a shared call:

	Alice's handset	Bob's handset
1. Alice is on a call.	 2910: 3 On a call 00:05:36 Mark Lee 2125550123 CALLS END L1 L2 L3 L4 DIR MENU SELECT	 HANDSET 4 10:16 1/19 CALLS LINE L1 L2 L3 L4 DIR MENU SELECT
2. Alice shouts across the room, "Bob, can you join my call on line 3?"		
3. Bob presses **L3** to barge in the call.	 2910: 3 Conference 00:06:14 Mark Lee 2125550123 	 2910: 3 Conference 00:00:02 Mark Lee 2125550123
Bob is now in a conference call with Alice and the caller on line 3.		

Example - picking up a held shared call:

	Alice’s handset	Bob’s handset
1. Alice is on a call.	 2910: 2 On a call 00:02:54 Angela Martin 5551234 	 HANDSET 4 10:16 1/19
2. Alice presses **HOLD** to put the call on hold.	 To access call on hold , press CALLS 	 HANDSET 4 10:16 1/19
3. Alice shouts across the room, “Bob, can you pick up line 2?”		
4. Bob presses **L2** to pick up the call.	 HANDSET 3 10:16 1/19 	 2/2 Call list 2910: 2 On hold Angela Martin 5551234
The call is now on Bob’s handset.		

CHAPTER 2

CONFIGURATION USING THE PHONE MENUS

The M100 KLE Main Menu has the following sub-menus:

- Message—access the voice messages on each account.
- Directory—view and dial directory and blacklist entries.
- Call history—view missed calls, received calls and dialed calls.
- Intercom—call other handsets.
- Speed dial—view and edit speed dial entries.
- Features—set DND, call forward settings and other calling features.
- Status—view the handset and base station network status, account registration status, and product information.
- User settings—allows the user to set the language for the display, configure the appearance of the display, set date and time, and customize the audio settings.
- Admin settings—configure network settings (enter static IP addresses, for example), account settings and provisioning settings.

This chapter contains instructions for using the Admin Settings menu and for accessing the Status menu. See the M100 KLE/M10 KLE User Guide for more information about the other menus.

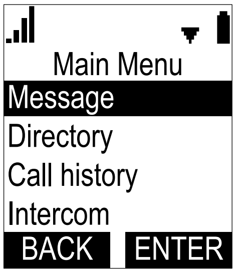
Viewing the Main Menu

To use the M10 KLE menu:

When the M10 KLE is idle, press **MENU/SELECT**.

The **Main Menu** appears.

1. Press ▼ or ▲ to highlight the desired sub-menu, and then press **MENU/SELECT**.



- Press **SELECT** or an appropriate soft key to save changes.
- Press **OFF/CANCEL** to cancel an operation, exit the menu display or return to the idle screen.

Using the Status menu

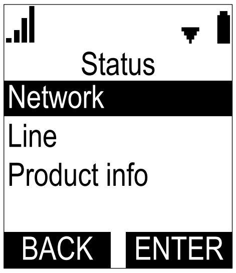
Use the **Status** menu to verify network settings and begin troubleshooting if network problems or account registration issues affect operation.

You can also find the software version of the M100 KLE on the **Product Info** screen, available from the **Status** menu.

To view the Status menu:

1. When the M10 KLE is idle, press **MENU/SELECT**.
2. On the **Main Menu**, press ▲ or ▼ to highlight **Status**, and then press **MENU/SELECT**.

   The **Status** menu appears.



3. On the **Status** menu, press ▲ or ▼ to highlight the desired menu, and then press **MENU/SELECT**.

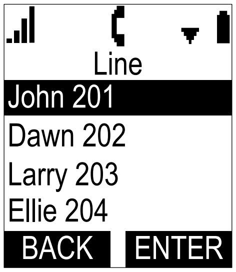
The available status menus are listed in Table 2.

Table 2. Status menu summary

Menu	Information listed
1. Network	■ IP address ■ DHCP status (Enabled/Disabled) ■ Subnet Mask ■ Gateway IP address ■ DNS server 1 IP address ■ DNS server 2 IP address
2. Line	Lines and registration status. On the **Line** menu, highlight and select the desired line to view detailed line status information: ■ Line status (Registered/Not registered) ■ Account display name ■ Account User ID ■ Server IP address
3. Product Info	Shows the product info for the handset or base station. Select **Handset** or **Base** to view the: ■ Model number (handset only) ■ Serial number (handset only) ■ Firmware version ■ V-Series ■ Hardware version ■ IPEI (handset only)

Viewing Line status

To view line status, from the **Status** menu, select **Line**. The **Line** menu lists the available lines, along with icons indicating each line's current registration status.



Line

John 201

Dawn 202

Larry 203

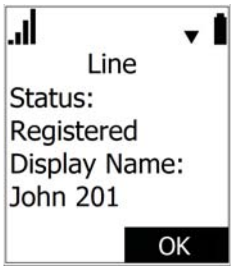
Ellie 204

Table 3. Line status icons

Icon	Description
☎	Line registered
☎̸	Line unregistered

To view complete status information for a line:

On the **Line** menu, press ▲ or ▼ to highlight the desired line, and then press **MENU/SELECT**. The full line status screen appears.



Line

Status:

Registered

Display Name:

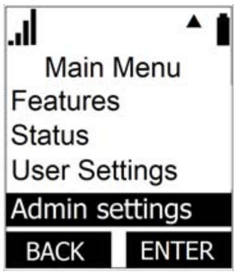
John 201

Using the Admin Settings Menu

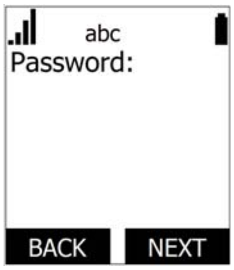
To access the Admin Settings menu:

1. When the M10 KLE is idle, press **MENU/SELECT**.

   The **Main Menu** appears.



2. Press ▲ or ▼ to highlight **Admin settings**, and then press **MENU/SELECT**.
3. Use the dial pad to enter the admin password, and then press **ENTER** . The default password is **admin** (press the * key to enable entering lower-case letters).



The Admin settings are listed in Table 4.

Table 4. Admin setting summary

Setting	Options
Network setting	DHCP (Enable, Disable) Set static IP VLAN ID Others
Security	Secure Browsing
Provisioning	Server string Login ID Login PW
Edit PIN code	Edit PIN
Firmware update	Select **Firmware update** to have the handset check whether a firmware update is available. See *“Updating a Cordless Handset/Deskset” on page 92*.

Using the Network Setting menu

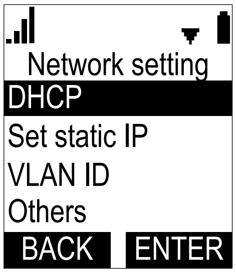
Use the Network setting menu to configure network-related settings for the M100 KLE. For more information about these settings, see *“Basic Network Settings” on page 69* and *“Advanced Network Settings” on page 71*.

To use the Network setting menu:

1. From the **Admin Settings** menu, press ▲ or ▼ to highlight **Network setting**, and then press **MENU/SELECT**.

   The **Network setting** menu appears.

2. Press ▲ or ▼ to highlight the desired option, and then press **MENU/SELECT**:

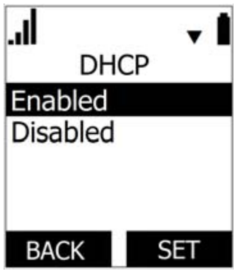
   

   - DHCP
   - Set static IP
   - VLAN ID
   - Others (DNS and NTP servers).

To enable or disable DHCP:

1. From the **Network setting** menu, press ▲ or ▼ to highlight **DHCP**, and then press **MENU/SELECT**.

   The **DHCP** screen appears.

2. Press ▲ or ▼ to select **Enabled** or **Disabled**, and then press **SET**.

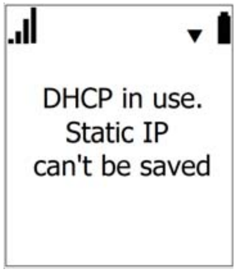
DHCP is enabled by default, which means the M100 KLE will get its IP address from the network. When DHCP is disabled, you must enter a static IP address for the M100 KLE.

NOTE You must be familiar with TCP/IP principles and protocols to configure static IP settings.

To set static IP for the M100 KLE:

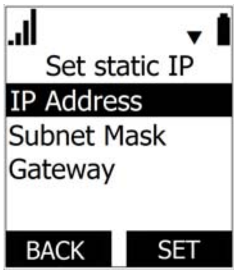
1. From the **Network setting** menu, press ▲ or ▼ to highlight **Set static IP**, and then press **MENU/SELECT**.

   If DHCP is disabled, the **Set static IP** menu appears. If DHCP is enabled, an error message appears briefly before returning you to the **Network setting** menu.



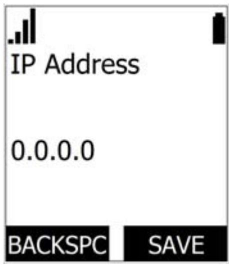
DHCP in use.
Static IP
can't be saved

2. On the **Set static IP** menu, with **IP Address** highlighted, press **MENU/SELECT**.



3. Enter the Static IP Address.

   - Press **BACKSPC** to delete numbers.
   - Use the dial pad to enter numbers.
   - To add a period, press the * key.



0.0.0.0

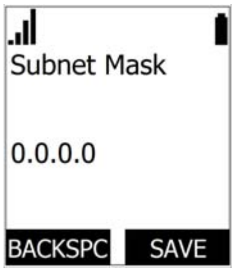
4. Press **SAVE** .

5. On the **Set static IP** menu, press ▲ or ▼ to highlight **Subnet Mask**, and then press **MENU/SELECT**.

6. Enter the Subnet Mask.

   - Press **BACKSPC** to delete numbers.

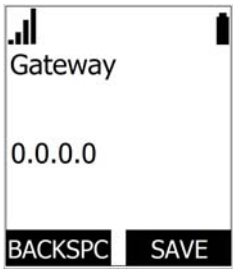
- Use the dial pad to enter numbers.
- To add a period, press the * key.



Subnet Mask

0.0.0.0

7. Press **SAVE** .
8. On the **Set static IP** menu, press ▲ or ▼ to highlight **Gateway**, and then press **MENU/SELECT**.
9. Enter the Gateway.
   - Press **BACKSPC** to delete numbers.
   - Use the dial pad to enter numbers.
   - To add a period, press the * key.



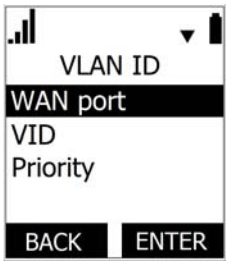
Gateway

0.0.0.0

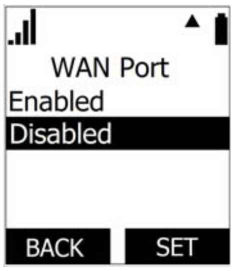
10. Press **SAVE** .

To set the VLAN ID for the M100 KLE:

1. From the **Network setting** menu, press ▲ or ▼ to highlight **VLAN ID**, and then press **MENU/SELECT**.



2. On the **VLAN ID** menu, with **WAN port** highlighted, press **MENU/SELECT**.

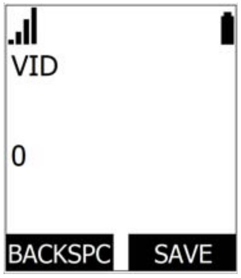


3. Press ▲ or ▼ to select **Enabled** or **Disabled**, and then press **SET** .

4. On the **VLAN ID** menu, press ▲ or ▼ to highlight **VID**, and then press **MENU/SELECT**.

5. Enter the WAN VID. The valid range is 0 to 4095.

   - Use the dial pad to enter numbers.
   - Press **BACKSPC** to delete numbers.

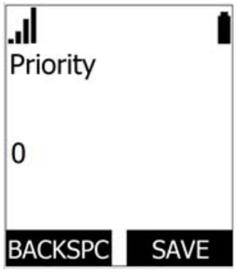


6. Press **SAVE** .

7. On the **VLAN ID** menu, press ▲ or ▼ to highlight **Priority**, and then press **MENU/SELECT**.

8. Enter the WAN Priority. The valid range is 0 to 7.

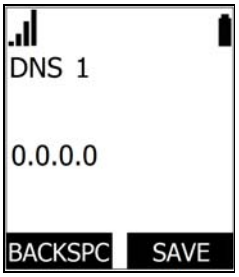
   - Use the dial pad to enter numbers.
   - Press **BACKSPC** to delete numbers.



9. Press **SAVE** .

To set other settings (DNS and NTP):

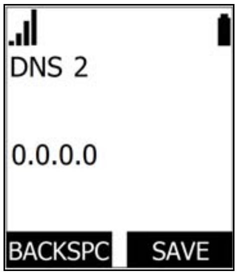
1. From the **Network setting** menu, press ▲ or ▼ to highlight **Others**, and then press **MENU/SELECT**.
2. On the **Others** menu, with **DNS 1** highlighted, press **MENU/SELECT**.
3. Enter the IP address for the primary DNS server.
   - Press **BACKSPC** to delete numbers.
   - Use the dial pad to enter numbers.



DNS 1

0.0.0.0

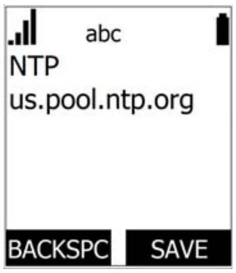
4. Press **SAVE** .
5. On the **Others** menu, press ▲ or ▼ to highlight **DNS 2**, and then press **MENU/SELECT**.
6. Enter the IP address for the secondary DNS server. The VDP650 uses this server if the primary server does not respond.
   - Press **BACKSPC** to delete numbers.
   - Use the dial pad to enter numbers.



DNS 2

0.0.0.0

7. Press **SAVE** .
8. On the **Others** menu, press ▲ or ▼ to highlight **NTP**, and then press **MENU/SELECT**.
9. Enter the IP address for the NTP server. If the VDP650 does not use an NTP server, you must manually enter the time and date settings.
   - Press **BACKSPC** to delete numbers.
   - Use the dial pad to enter numbers.



10. Press **SAVE** .

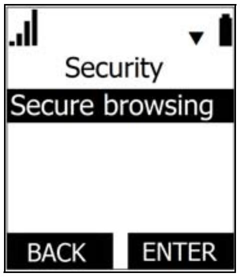
Using the Security menu

Use the Security menu to configure secure browsing settings.

To turn on/off secure browsing:

1. From the **Admin Settings** menu, press ▼ to highlight **Security**, and then press **MENU/SELECT**.

   The Security menu appears.



2. With **Secure Browsing** selected, press **ENTER**.
3. Press ▲ or ▼ to select **Enabled** or **Disabled**, and then press **ENTER**.
4. Press **NO** or **YES** on the message “Reboot Base to apply new Web Server settings?”

Using the Provisioning menu

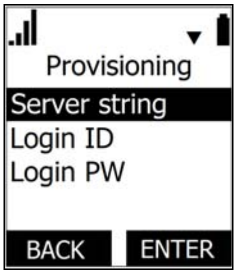
Use the Provisioning menu to configure auto-provisioning settings. For more information about auto-provisioning, see *“Provisioning” on page 95* and *“Provisioning Using Configuration Files” on page 109*.

On the Provisioning menu you can configure:

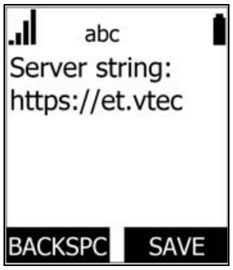
- Server string—the URL of the provisioning server. The URL can include a complete path to the configuration file.
- Login ID—the username the M100 KLE will use to access the provisioning server.
- Login PW—the password the M100 KLE will use to access the provisioning server.

To use the Provisioning menu:

1. From the **Admin Settings** menu, press ▼ to highlight **Provisioning**, and then press **SELECT**.
   The **Provisioning** menu appears.



2. On the **Provisioning** menu, with **Server string** highlighted, press **MENU/SELECT**.
3. Enter the URL of the provisioning server.
   - Press **BACKSPC** to delete numbers.
   - Press **1**, **0** and **#** to enter symbols. The period and “@” symbols are available under the **0** key.
   - Use the dial pad to enter numbers.

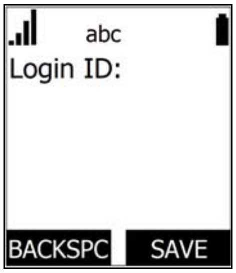


The format of the URL must be RFC 1738 compliant, as follows:
"<schema>://<user>:<password>@<host>:<port>/<url-path>"

"<user>:<password>@" may be empty.

"<port>" can be omitted if you do not need to specify the port number.

4. Press **SAVE** .
5. On the **Provisioning** menu, press ▲ or ▼ to highlight **Login ID**, and then press **MENU/SELECT**.
6. Enter the Login ID for access to the provisioning server if it is not part of the server string.
   - Press **BACKSPC** to delete numbers.
   - Use the dial pad to enter numbers.



abc

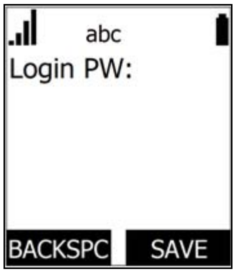
Login ID:

7. Press **SAVE** .

8. On the **Provisioning** menu, press ▲ or ▼ to highlight **Login PW**, and then press **MENU/SELECT**.

9. Enter the Login password.

    - Press **BACKSPC** to delete numbers.
    - Use the dial pad to enter numbers.



abc

Login PW:

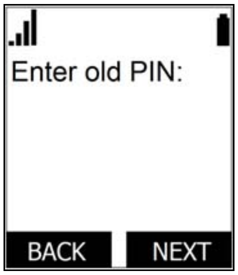
10. Press **SAVE** .

Editing the handset PIN code

The PIN code is a four-digit code that you use to deregister the handset from the base. The default PIN is **1592**. Changing the PIN on the handset will change the PIN for all registered handsets.

To edit the PIN code:

1. From the Admin Settings menu, press ▼ to highlight **Edit PIN code**, and then press **SELECT**.
   The **Enter old PIN** screen appears.



Enter old PIN:

2. Enter the current PIN using the dial pad keys.
3. Press **NEXT**.
4. Enter the new PIN, and then press **NEXT**.
5. Confirm the new PIN, and then press **NEXT**.

CHAPTER 3

USING THE WEBUI

The WebUI allows you to configure all aspects of M100 KLE 4-Line base station operation, including account settings, network settings, contact lists, and provisioning settings. The WebUI is embedded in the M100 KLE operating system. When you access the WebUI, you are accessing it on the device, not on the Internet.

This chapter describes how to access the WebUI and configure M100 KLE settings. This chapter covers:

- *"Using the Web User Interface (WebUI)" on page 36*
- *"Status Page" on page 38*
- *"System Pages" on page 40*
- *"Network Pages" on page 68*
- *"Contacts Pages" on page 74*
- *"Servicing Pages" on page 86*.

Using the Web User Interface (WebUI)

The Web User Interface (WebUI) resides on the M100 KLE 4-Line base station. You can access it using an Internet browser. After you log in to the WebUI, you can configure the M100 KLE on the following pages:

System

- SIP Account Management (see *page 40*)
- Call Settings (see *page 53*)
- User Preferences (see *page 55*)
- Handset Settings (see *page 55*)
- Server Application (see *page 63*)

Network

- Basic Network Settings (see *page 69*)
- Advanced Network Settings (see *page 71*)

Contacts

- Base Directory (see *page 74*)
- Blacklist
- LDAP (see *page 81*)
- Remote XML (see *page 84*)

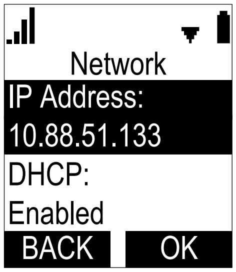
Servicing

- Reboot (see *page 86*)
- Time and Date (see *page 86*)
- Firmware Upgrade (see *page 90*)
- Provisioning (see *page 95*)
- Security (see *page 101*)
- Certificates (see *page 104*)
- Tr069 (see *page 106*)
- System Logs (see *page 107*)

The WebUI also has a **System Status** and a **Handset Status** page, where you can view network status and general information about the M100 KLE and handsets. The information on the Status page matches the **Status** menu available on the M10 KLE handset.

To access the WebUI:

1. Ensure that your computer is connected to the same network as the M100 KLE.
2. Find the IP address of the M100 KLE:
   a. On a handset, press **MENU/SELECT** .
   b. Press ▼ to highlight **Status**, and then press **MENU/SELECT**.
   c. With **Network** highlighted, press **MENU/SELECT**.
   The **Network** status screen appears.
   d. On the **Network** status screen, note the IP Address.
3. On your computer, open an Internet browser. (Depending on your browser, some of the pages presented here may look different and have different controls. Ensure that you are running the latest update of your preferred browser.)



Network
IP Address:
10.88.51.133
DHCP:
Enabled

4. Type the M100 KLE IP address in the browser address bar and press **ENTER** on your computer keyboard.
   The browser displays a window asking for your user name and password.
5. For the user name, enter **admin**. For the password, enter the default password, **admin**. You can change the password later on the WebUI **Security** page, available under **Servicing**.
6. Click **OK**.
   The WebUI appears.

Click topics from the navigation bar along the top of the WebUI, and then click the links along the left to view individual pages. For your security, the WebUI times out after 10 minutes, so if it is idle for that time, you must log in again.

Most WebUI configuration pages have a Save button. Click Save to save changes you have made on the page. During a configuration session, click Save before you move on to the next WebUI page.

The remaining procedures in this section assume that you are already logged into the WebUI.

NOTE The settings tables in this section contain settings that appear in the WebUI and their equivalent settings in the configuration file template. You can use the configuration file template to create custom configuration files. Configuration files can be hosted on a provisioning server and used for automatically configuring phones. For more information, see *"Provisioning Using Configuration Files" on page 109*.

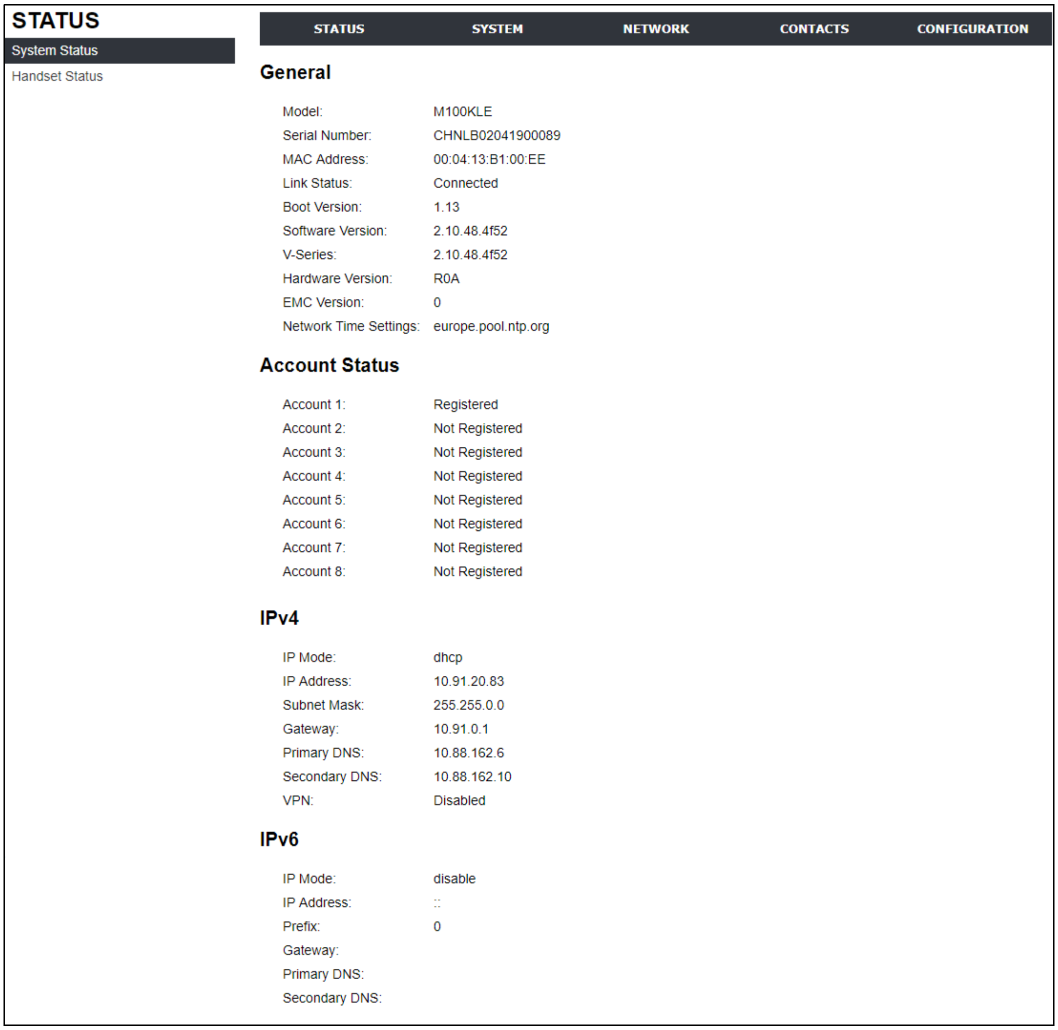
Status Page

On the Status pages, you can view network status and general information about the base station and handsets. Some of the information on the Status pages is also available on the Status menu available on the handset.

System Status

The System Status page shows:

- **General** information about your device, including model, MAC address, and firmware version
- **Account Status** information about your SIP account registration
- **Network** information regarding your device's network address and network connection



General

Model:	M100KLE
Serial Number:	CHNLB02041900089
MAC Address:	00:04:13:B1:00:EE
Link Status:	Connected
Boot Version:	1.13
Software Version:	2.10.48.4f52
V-Series:	2.10.48.4f52
Hardware Version:	R0A
EMC Version:	0
Network Time Settings:	europe.pool.ntp.org

Account Status

Account 1:	Registered
Account 2:	Not Registered
Account 3:	Not Registered
Account 4:	Not Registered
Account 5:	Not Registered
Account 6:	Not Registered
Account 7:	Not Registered
Account 8:	Not Registered

IPv4

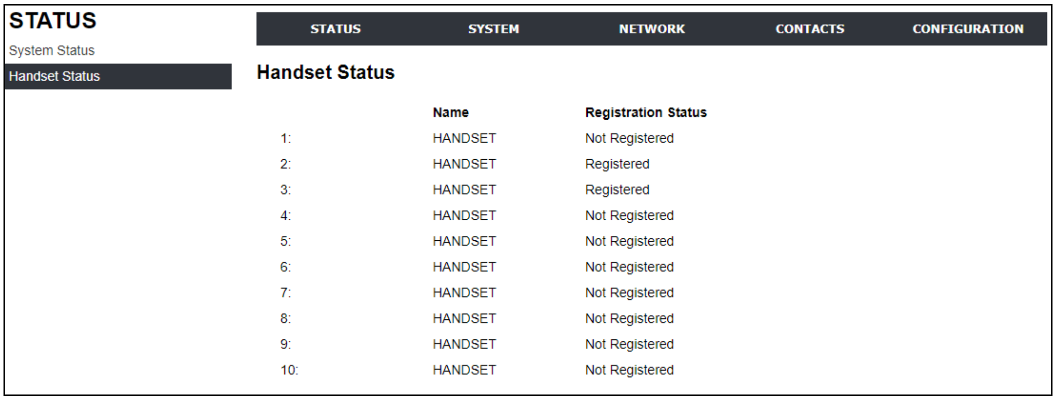
IP Mode:	dhcp
IP Address:	10.91.20.83
Subnet Mask:	255.255.0.0
Gateway:	10.91.0.1
Primary DNS:	10.88.162.6
Secondary DNS:	10.88.162.10
VPN:	Disabled

IPv6

IP Mode:	disable
IP Address:	::
Prefix:	0
Gateway:	
Primary DNS:	
Secondary DNS:	

Handset Status

The handset status page shows the name and registration status of cordless handsets. The page lists the maximum of 10 handsets, even if fewer handsets are registered. If you have not given the handsets unique names, the default name of “HANDSET” appears.



Handset Status

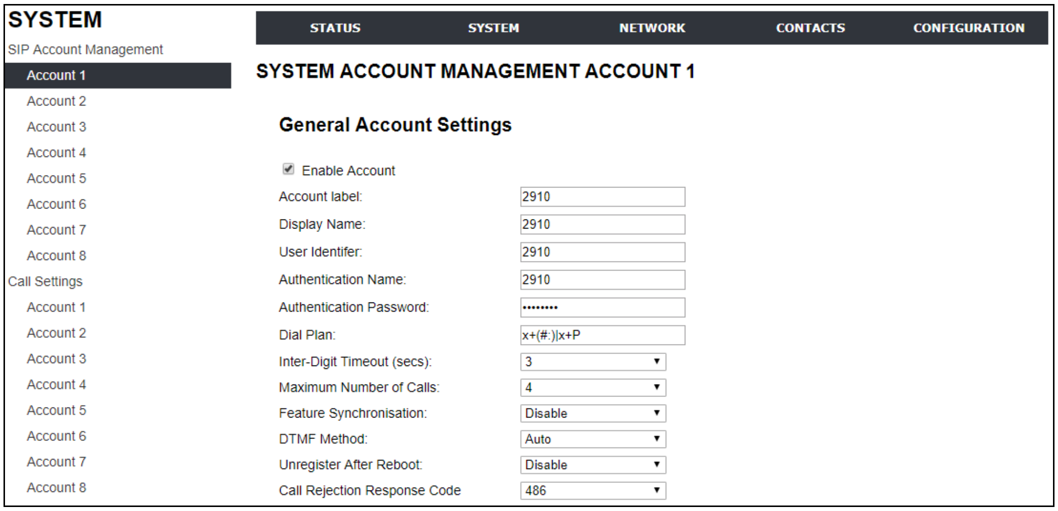
	Name	Registration Status
1:	HANDSET	Not Registered
2:	HANDSET	Registered
3:	HANDSET	Registered
4:	HANDSET	Not Registered
5:	HANDSET	Not Registered
6:	HANDSET	Not Registered
7:	HANDSET	Not Registered
8:	HANDSET	Not Registered
9:	HANDSET	Not Registered
10:	HANDSET	Not Registered

System Pages

SIP Account Management

On the SIP Account Management pages, you can configure each account you have ordered from your service provider.

The SIP Account settings are also available as parameters in the configuration file. See *“"sip_account" Module: SIP Account Settings” on page 119*.



SYSTEM ACCOUNT MANAGEMENT ACCOUNT 1

General Account Settings

☑ Enable Account

Account label:	2910
Display Name:	2910
User Identifer:	2910
Authentication Name:	2910
Authentication Password:	••••••••
Dial Plan:	x+(#:)|x+P
Inter-Digit Timeout (secs):	3
Maximum Number of Calls:	4
Feature Synchronisation:	Disable
DTMF Method:	Auto
Unregister After Reboot:	Disable
Call Rejection Response Code	486

General Account Settings

Click the link for each setting to see the matching configuration file parameter in *“Configuration File Parameter Guide” on page 117*. Default values and ranges are listed there.

Setting	Description
Enable Account	Enable or disable the SIP account. Select to enable.
Account label	Enter the name that will appear on the M10 KLEdisplay when account x is selected. The Account Label identifies the SIP account throughout the WebUI and on the handset Dialing Line menu.
Display Name	Enter the Display Name. The Display Name is the text portion of the caller ID that is displayed for outgoing calls using account x.
User Identifier	Enter the User identifier supplied by your service provider. The User ID, also known as the Account ID, is a SIP URI field used for SIP registration. **Note**: Do not enter the host name (e.g. "@sipservice.com"). The WebUI automatically adds the default host name.

Setting	Description
Authentication Name	If authentication is enabled on the server, enter the authentication name (or authentication ID) for authentication with the server.
Authentication Password	If authentication is enabled on the server, enter the authentication password for authentication with the server.
Dial Plan	Enter the dial plan, with dialing strings separated by a | symbol. See *"Dial Plan" on page 42*.
Inter Digit Timeout (secs)	Sets how long the M10 KLEwaits after any "P" (pause) in the dial string or in the dial plan.
Maximum Number of Calls	Select the maximum number of concurrent active calls allowed for that account.
Feature Synchronization	Enables the M100 KLE to synchronize with BroadWorks Application Server. Changes to features such as DND, Call Forward All, Call Forward No Answer, and Call Forward Busy on the server side will also update the settings on the M10 KLEmenu and WebUI. Similarly, changes made using the M10 KLEor WebUI will update the settings on the server.
DTMF method	Select the default DTMF transmission method. You may need to adjust this if call quality problems are triggering unwanted DTMF tones or you have problems sending DTMF tones in general.
Unregister after reboot	Enables the phone to unregister the account(s) after rebooting-before the account(s) register again as the phone starts up. If other phones that share the same account(s) unregister unexpectedly in tandem with the rebooting M100 KLE, disable this setting.
Call Rejection Response Code	Select the response code for call rejection. This code applies to the following call rejection cases: ■ User presses **Reject** for an incoming call (except when Call Forward Busy is enabled) ■ DND is enabled ■ Phone rejects a second incoming call with Call Waiting disabled ■ Phone rejects an anonymous call with Anonymous Call Rejection enabled ■ Phone rejects call when the maximum number of calls is reached

Dial Plan

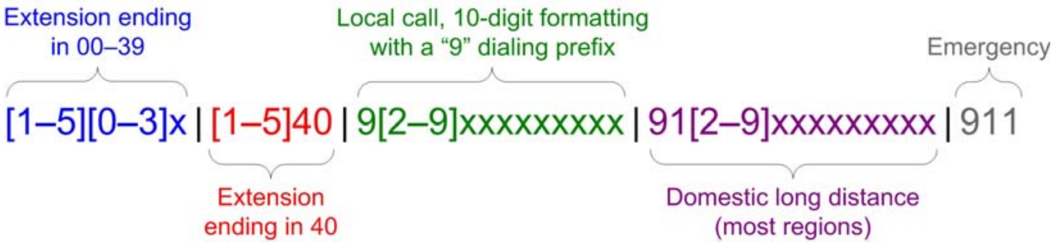
The dial plan consists of a series of dialing rules, or strings, that determine whether what the user has dialed is valid and when the M10 KLEshould dial the number.

> NOTE Numbers that are dialed when forwarding a call—when the user manually forwards a call, or a pre-configured number is dialed for Call Forward All, Call Forward–No Answer, or Call Forward Busy—always bypass the dial plan.

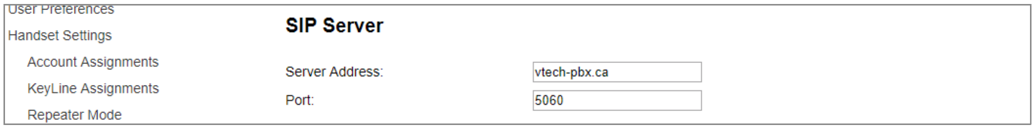
Dialing rules must consist of the elements defined in the table below.

Element	Description
x	Any dial pad key from 0 to 9, including # and *.
[0-9]	Any two numbers separated by a hyphen, where the second number is greater than the first. All numbers within the range or valid, excluding # and *.
x+	An unlimited series of digits.
,	This represents the playing of a secondary dial tone after the user enters the digit(s) specified or dials an external call prefix before the comma. For instance, "9,xxxxxxx" means the secondary dial tone is played after the user dials 9 until any new digit is entered. "9,3xxxxxx" means only when the digit 3 is hit would the secondary dial tone stop playing.
PX	This represents a pause of a defined time; X is the pause duration in seconds. For instance, "P3" would represent pause duration of 3 seconds. When "P" only is used, the pause time is the same as the Inter Digit Timeout (see *“SIP Account Management” on page 40*).
(0:9)	This is a substitution rule where the first number is replaced by the second. For example, "(4:723)xxxx" would replace "46789" with "723-6789". If the substituted number (the first number) is empty, the second number is added to the number dialed. For example, in "(:1)xxxxxxxxxx", the digit 1 is appended to any 10-digit number dialed.
|	This separator is used to indicate the start of a new pattern. Can be used to add multiple dialing rules to one pattern edit box.

A sample dial plan appears below.


Extension ending in 00–39
Local call, 10-digit formatting with a “9” dialing prefix
Emergency
[1–5][0–3]x | [1–5]40 | 9[2–9]xxxxxxxxx | 91[2–9]xxxxxxxxx | 911
Extension ending in 40
Domestic long distance (most regions)

SIP Server Settings



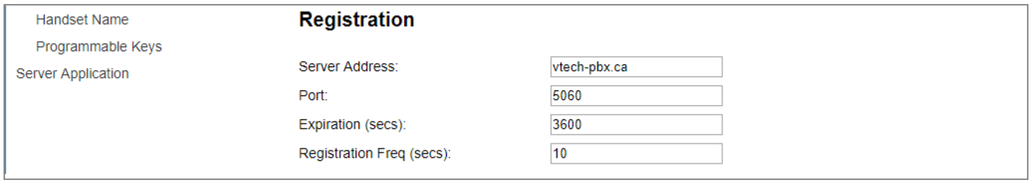
SIP Server

Server Address: vtech-pbx.ca

Port: 5060

Setting	Description
Server address	Enter the IP address or domain name for the SIP server.
Port	Enter the port number that the SIP server will use.

Registration Settings



Registration

Server Address: vtech-pbx.ca

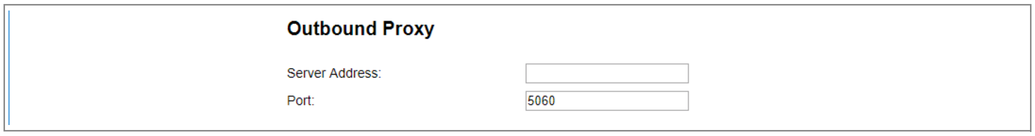
Port: 5060

Expiration (secs): 3600

Registration Freq (secs): 10

Setting	Description
Server address	Enter the IP address or domain name for the registrar server.
Port	Enter the port number that the registrar server will use.
Expiration (secs)	Enter the desired registration expiry time in seconds.
Registration Freq (secs)	Enter the desired registration retry frequency in seconds. If registration using the Primary Outbound Proxy fails, the Registration Freq setting determines the number of seconds before a registration attempt is made using the Backup Outbound Proxy.

Outbound Proxy Settings



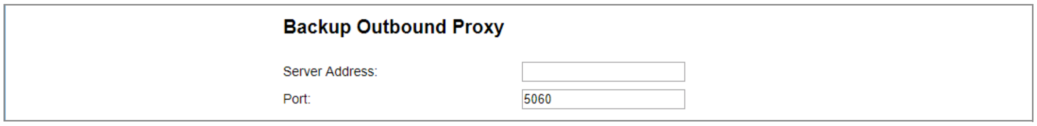
Outbound Proxy

Server Address:

Port: 5060

Setting	Description
Server Address	Enter the IP address or domain name for the proxy server.
Port	Enter the port number that the proxy server will use.

Backup Outbound Proxy Settings



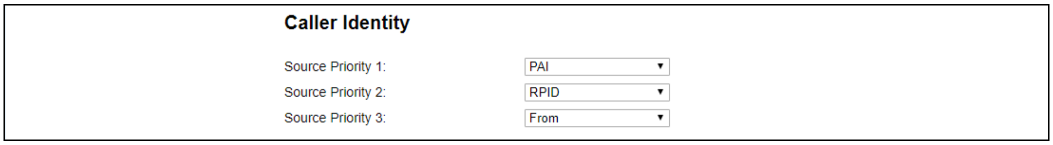
Backup Outbound Proxy

Server Address:

Port: 5060

Setting	Description
Server address	Enter the IP address or domain name for the backup proxy server.
Port	Enter the port number that the backup proxy server will use.

Caller Identity Settings



Caller Identity

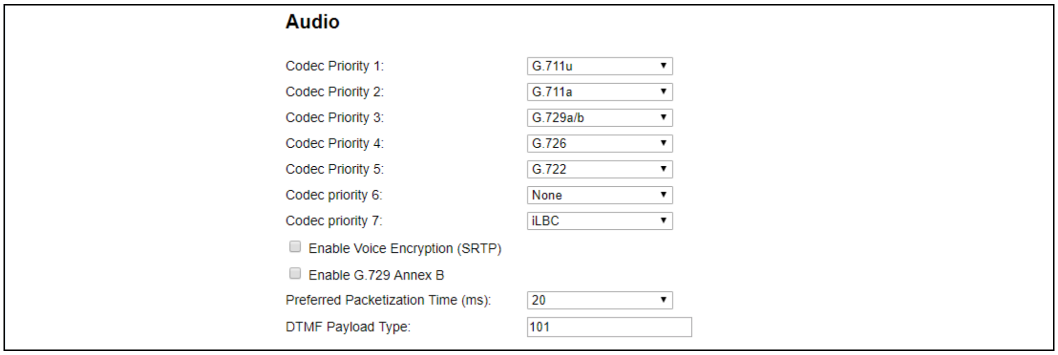
Source Priority 1: PAI

Source Priority 2: RPID

Source Priority 3: From

Setting	Description
Source Priority 1	Select the desired caller ID source to be displayed on the incoming call screen: “From” field, RPID (Remote-Party ID) or PAI (P-Asserted Identity) header.
Source Priority 2	Select the lower-priority caller ID source.
Source Priority 3	Select the lowest-priority caller ID source.

Audio Settings



Audio

Codec Priority 1: G.711u

Codec Priority 2: G.711a

Codec Priority 3: G.729a/b

Codec Priority 4: G.726

Codec Priority 5: G.722

Codec priority 6: None

Codec priority 7: iLBC

☐ Enable Voice Encryption (SRTP)

☐ Enable G.729 Annex B

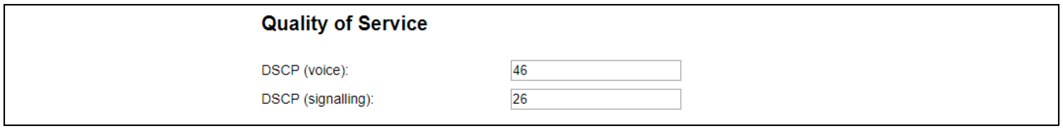
Preferred Packetization Time (ms): 20

DTMF Payload Type: 101

Setting	Description
Codec priority 1	Select the codec to be used first during a call.
Codec priority 2	Select the codec to be used second during a call if the previous codec fails.
Codec priority 3	Select the codec to be used third during a call if the previous codec fails.

Setting	Description
Codec priority 4	Select the codec to be used fourth during a call if the previous codec fails.
Codec priority 5	Select the codec to be used fifth during a call if the previous codec fails.
Codec priority 6	Select the codec to be used sixth during a call if the previous codec fails.
Codec priority 7	Select the codec to be used seventh during a call if the previous codec fails.
Enable voice encryption (SRTP)	Select to enable secure RTP for voice packets.
Enable G.729 Annex B	When G.729a/b is enabled, select to enable G.729 Annex B, with voice activity detection (VAD) and bandwidth-conserving silence suppression.
Preferred Packetization Time (ms)	Select the packetization interval time.
DTMF Payload Type	Set the DTMF payload type for in-call DTMF from 96–127.

Quality of Service



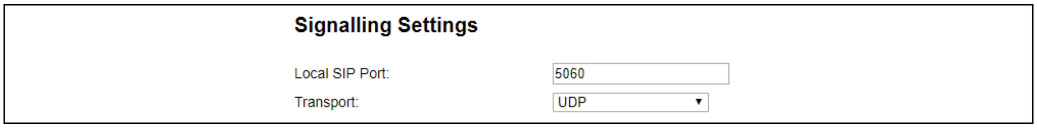
Quality of Service

DSCP (voice): 46

DSCP (signalling): 26

Setting	Description
DSCP (voice)	Enter the Differentiated Services Code Point (DSCP) value from the Quality of Service setting on your router or switch.
DSCP (signalling)	Enter the Differentiated Services Code Point (DSCP) value from the Quality of Service setting on your router or switch.

Signaling Settings



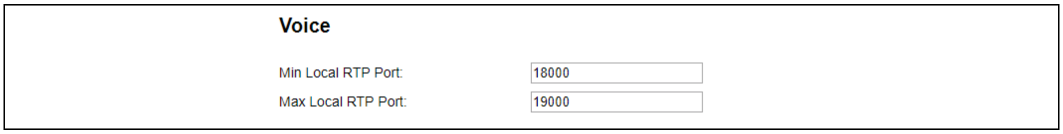
Signalling Settings

Local SIP Port: 5060

Transport: UDP

Setting	Description
Local SIP port	Enter the local SIP port.
Transport	Select the SIP transport protocol: ■ TCP (Transmission Control Protocol) is the most reliable protocol and includes error checking and delivery validation. ■ UDP (User Datagram Protocol) is generally less prone to latency, but SIP data may be subject to network congestion. ■ TLS (Transport Layer Security)—the M100 KLE supports secured SIP signalling via TLS. Optional server authentication is supported via user-uploaded certificates. TLS certificates are uploaded using the configuration file. See *“"file" Module: Imported File Settings” on page 168* and consult your service provider.

Voice Settings



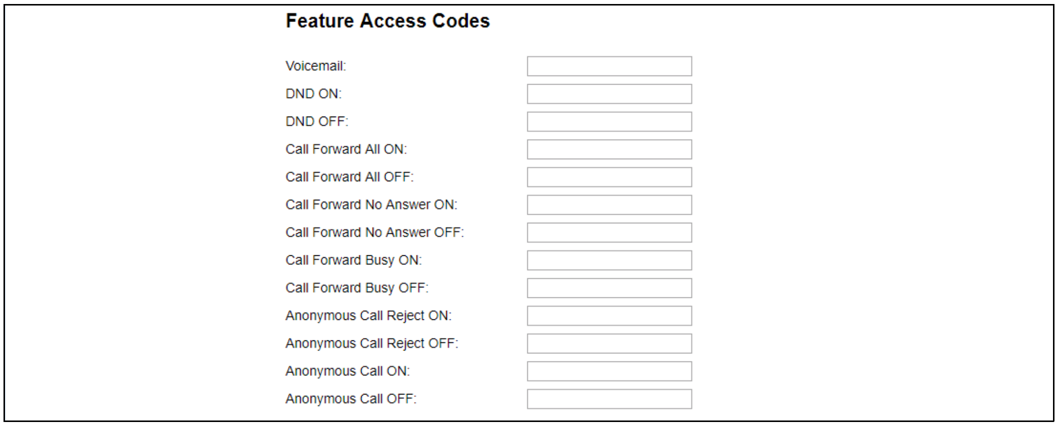
Voice

Min Local RTP Port:	18000
Max Local RTP Port:	19000

Setting	Description
Min Local RTP Port	Enter the lower limit of the Real-time Transport Protocol (RTP) port range. RTP ports specify the minimum and maximum port values that the phone will use for RTP packets.
Max Local RTP Port	Enter the upper limit of the RTP port range.

Feature Access Codes Settings

If your IP PBX service provider uses feature access codes, then enter the applicable codes here.



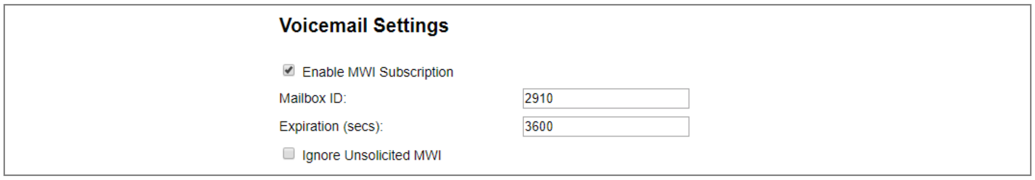
Feature Access Codes

Voicemail:	
DND ON:	
DND OFF:	
Call Forward All ON:	
Call Forward All OFF:	
Call Forward No Answer ON:	
Call Forward No Answer OFF:	
Call Forward Busy ON:	
Call Forward Busy OFF:	
Anonymous Call Reject ON:	
Anonymous Call Reject OFF:	
Anonymous Call ON:	
Anonymous Call OFF:	

Setting	Description
Voicemail	Enter the voicemail access code. The code is dialed when the user selects a line from the Message menu.
DND ON	Enter the Do Not Disturb ON access code.
DND OFF	Enter the Do Not Disturb OFF access code.
Call Forward All ON	Enter the Call Forward All ON access code.
Call Forward All OFF	Enter the Call Forward All OFF access code.
Call Forward No Answer ON	Enter the Call Forward No Answer ON access code.
Call Forward No Answer OFF	Enter the Call Forward No Answer OFF access code.
Call Forward Busy ON	Enter the Call Forward Busy ON access code.

Setting	Description
Call Forward Busy OFF	Enter the Call Forward Busy OFF access code.
Anonymous Call Reject ON	Enter the Anonymous Call Reject ON access code.
Anonymous Call Reject OFF	Enter the Anonymous Call Reject OFF access code.
Anonymous Call ON	Enter the Anonymous Call ON access code.
Anonymous Call OFF	Enter the Anonymous Call OFF access code.

Voicemail Settings



Voicemail Settings

☑ Enable MWI Subscription

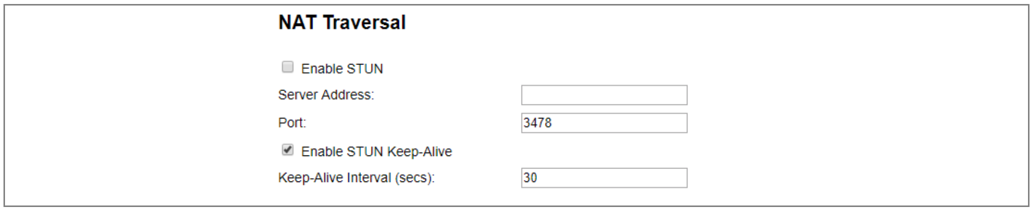
Mailbox ID: 2910

Expiration (secs): 3600

☐ Ignore Unsolicited MWI

Setting	Description
Enable MWI Subscription	When enabled, the account subscribes to the "message summary" event package. The account may use the User ID or the service provider's "Mailbox ID".
Mailbox ID	Enter the URI for the mailbox ID. The phone uses this URI for the MWI subscription. If left blank, the User ID is used for the MWI subscription.
Expiration (secs)	Enter the MWI subscription expiry time (in seconds) for account x.
Ignore unsolicited MWI	When selected, unsolicited MWI notifications—notifications in addition to, or instead of SUBSCRIBE and NOTIFY methods—are ignored for account x. If the M100 KLE receives unsolicited MWI notifications, the Message Waiting LED will not light to indicate new messages. Disable this setting if: ■ MWI service does not involve a subscription to a voicemail server. That is, the server supports unsolicited MWI notifications. ■ you want the Message Waiting LED to indicate new messages when the M100 KLE receives unsolicited MWI notifications.

NAT Traversal



NAT Traversal

☐ Enable STUN

Server Address:

Port: 3478

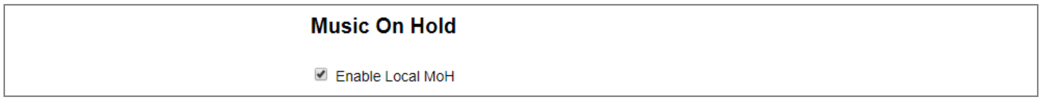
☑ Enable STUN Keep-Alive

Keep-Alive Interval (secs): 30

Setting	Description
Enable STUN	Enables or disables STUN (Simple Traversal of UDP through NATs) for account x. The Enable STUN setting allows the M100 KLE to identify its publicly addressable information behind a NAT via communicating with a STUN server.

Setting	Description
Server Address	Enter the STUN server IP address or domain name.
Port	Enter the STUN server port.
Enable STUN Keep-Alive	Enables or disables UDP keep-alives. Keep-alive packets are used to maintain connections established through NAT.
Keep-Alive Interval (secs)	Enter the interval (in seconds) for sending UDP keep-alives.

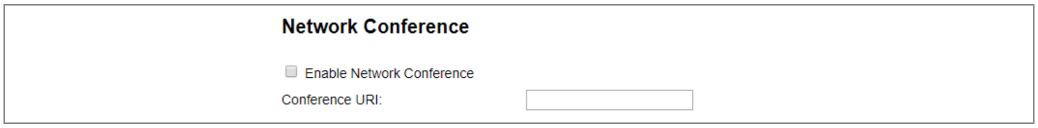
Music on Hold Settings


Music On Hold

☑ Enable Local MoH

Setting	Description
Enable Local MoH	Enables or disables a hold-reminder tone that the user hears when a far-end caller puts the call on hold.

Network Conference Settings

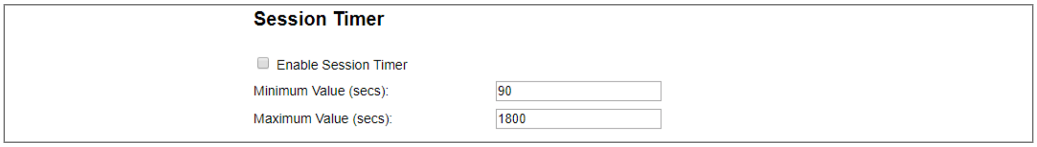

Network Conference

☐ Enable Network Conference

Conference URI:

Setting	Description
Enable Network Conference	Enables or disables network conferencing for account x.
Conference URI	Enter the URI for the network bridge for conference handling on account x.

Session Timer


Session Timer

☐ Enable Session Timer

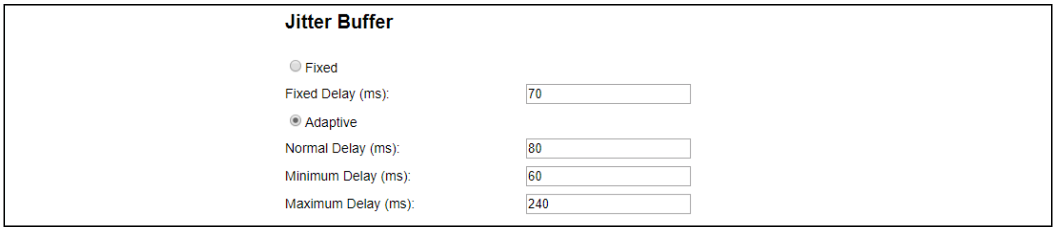
Minimum Value (secs): 90

Maximum Value (secs): 1800

Setting	Description
Enable Session Timer	Enables or disables the SIP session timer. The session timer allows a periodic refreshing of a SIP session using the RE-INVITE message.
Minimum Value (secs)	Sets the session timer minimum value (in seconds) for account x.

Setting	Description
Maximum Value (secs)	Sets the session timer maximum value (in seconds) for account x.

Jitter Buffer



Jitter Buffer

○ Fixed

Fixed Delay (ms): 70

● Adaptive

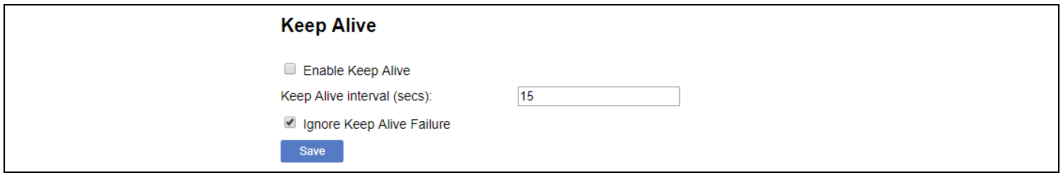
Normal Delay (ms): 80

Minimum Delay (ms): 60

Maximum Delay (ms): 240

Setting	Description
Fixed	Enable fixed jitter buffer mode.
Fixed Delay (ms)	If Fixed is selected, enter the fixed jitter delay.
Adaptive	Enable adaptive jitter buffer mode.
Normal Delay (ms)	If Adaptive is selected, enter the normal or “target” delay.
Minimum Delay (ms)	Enter the minimum delay.
Maximum Delay (ms)	Enter the maximum delay. This time, in milliseconds, must be at least twice the minimum delay.

Keep Alive



Keep Alive

□ Enable Keep Alive

Keep Alive interval (secs): 15

☑ Ignore Keep Alive Failure

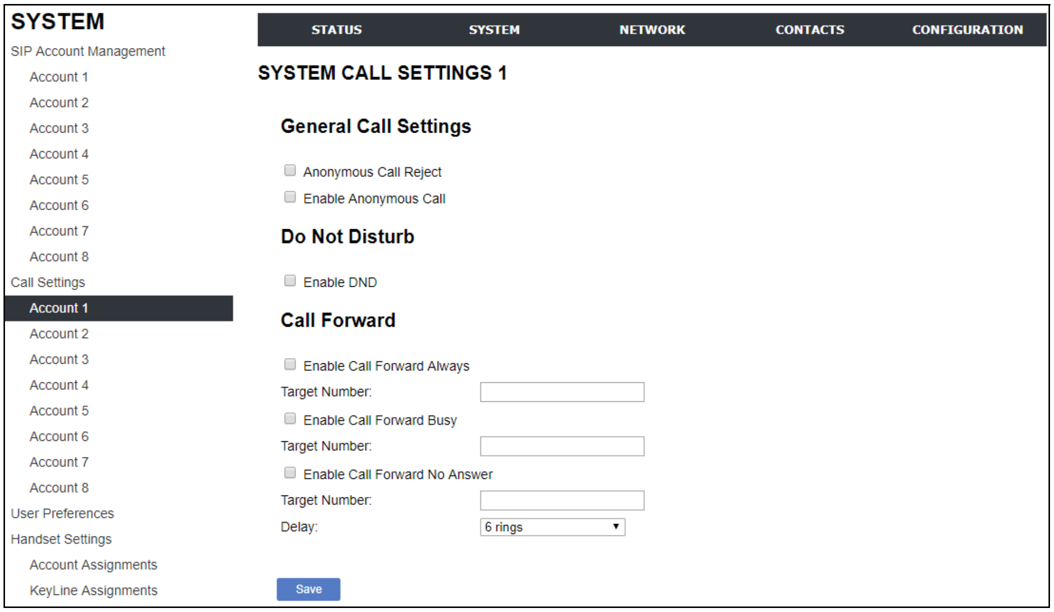
Setting	Description
Enable Keep Alive	Enable SIP keep alive in service of NAT traversal and as a heartbeat mechanism to audit the SIP server health status. Once enabled, OPTIONS traffic should be sent whenever the account is registered. OPTIONS traffic will occur periodically according to the keep-alive interval.
Keep Alive interval (secs)	Set the interval at which the OPTIONS for the keep-alive mechanism are sent.

Setting	Description
Ignore Keep Alive Failure	Enable the phone to ignore keep-alive failure, if the failure can trigger account re-registration and re-subscription (and active calls are dropped).

Call Settings

You can configure call settings for each account. Call Settings include Do Not Disturb and Call Forward settings.

The call settings are also available as parameters in the configuration file. See *“"call_settings" Module: Call Settings” on page 164*.



SYSTEM

SIP Account Management

- Account 1
- Account 2
- Account 3
- Account 4
- Account 5
- Account 6
- Account 7
- Account 8

Call Settings

- Account 1
- Account 2
- Account 3
- Account 4
- Account 5
- Account 6
- Account 7
- Account 8

User Preferences

Handset Settings

- Account Assignments
- KeyLine Assignments

SYSTEM CALL SETTINGS 1

General Call Settings

☐ Anonymous Call Reject

☐ Enable Anonymous Call

Do Not Disturb

☐ Enable DND

Call Forward

☐ Enable Call Forward Always

Target Number:

☐ Enable Call Forward Busy

Target Number:

☐ Enable Call Forward No Answer

Target Number:

Delay: 6 rings ▾

General Call Settings

Setting	Description
Anonymous Call Reject	Enables or disables rejecting calls indicated as "Anonymous."
Enable Anonymous Call	Enables or disables outgoing anonymous calls. When enabled, the caller name and number are indicated as "Anonymous."

Do Not Disturb

Setting	Description
Enable DND	Turns Do Not Disturb on or off.

Call Forward

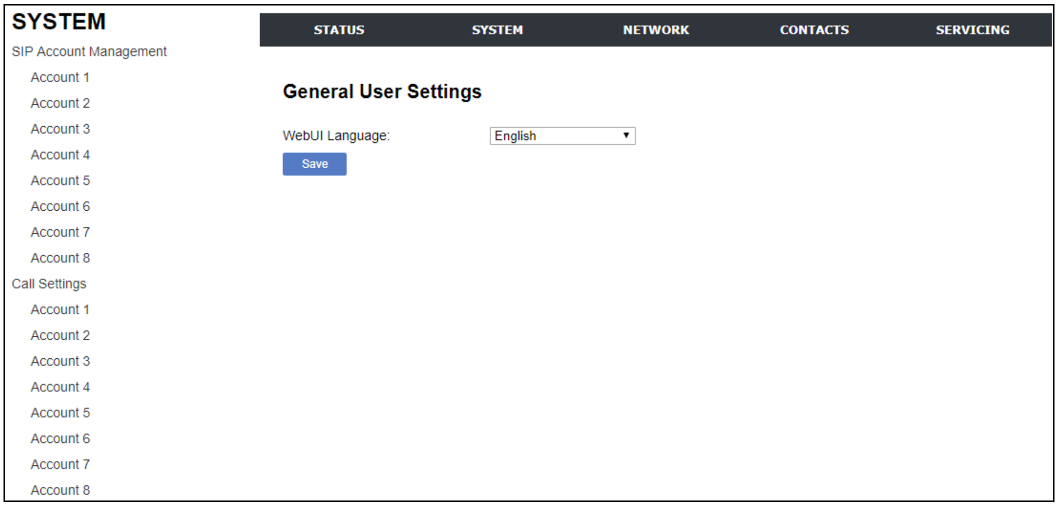
Setting	Description
Enable Call Forward Always	Enables or disables call forwarding for all calls on that line. Select to enable.
Target Number	Enter a number to which all calls will be forwarded.

Setting	Description
Enable Call Forward Busy	Enables or disables forwarding incoming calls to the target number if: ■ the number of active calls has reached the maximum number of calls configured for account x ■ Call Waiting Off is selected.
Target Number	Enter a number to which calls will be forwarded when Call Forward Busy is enabled.
Enable Call Forward No Answer	Enables or disables call forwarding for unanswered calls on that line.
Target Number	Enter a number to which unanswered calls will be forwarded.
Delay	Select the number of rings before unanswered calls are forwarded.

User Preferences

On the User Preferences page, you can set the language that appears on the WebUI. The User Preferences page is also available to phone users when they log on to the WebUI.

The preference settings are also available as parameters in the configuration file. See *“"user_pref" Module: User Preference Settings” on page 163*.



General User Settings

WebUI Language: English

General User Settings

Click the link for each setting to see the matching configuration file parameter in *“Configuration File Parameter Guide” on page 117*. Default values and ranges are listed there.

Setting	Description
WebUI Language	Sets the language that appears on the WebUI.

Handset Settings

The Handset Settings allow you to configure account assignments and names for the cordless handsets that are registered to the base station. For more information on registering cordless handsets, see the M100 KLE/M10 KLE User Guide.

The network settings are also available as parameters in the configuration file. See *“"hs_settings" Module: Handset Settings” on page 133*.

Account Assignments

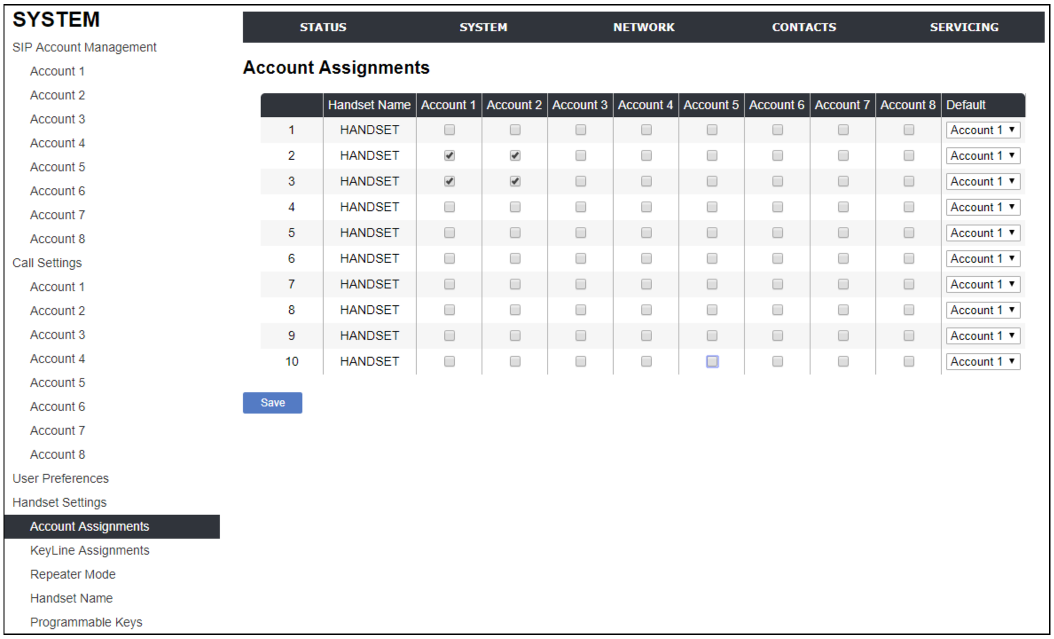
The **Account Assignments** table lists the maximum of 10 handsets, even if there are fewer handsets registered. The registration status of currently registered handsets does not affect what is listed on this table.

The table always displays the maximum eight accounts, even if there are fewer SIP accounts enabled.

If you have not entered any unique handset names yet, then the default name of "HANDSET" appears.

On the Account Assignments table, you can select which accounts will be available for both incoming and outgoing calls on each handset.

The handset will first attempt to use the account you select under Default when going off-hook.



Account Assignments

	Handset Name	Account 1	Account 2	Account 3	Account 4	Account 5	Account 6	Account 7	Account 8	Default
1	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾
2	HANDSET	☑	☑	□	□	□	□	□	□	Account 1 ▾
3	HANDSET	☑	☑	□	□	□	□	□	□	Account 1 ▾
4	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾
5	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾
6	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾
7	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾
8	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾
9	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾
10	HANDSET	□	□	□	□	□	□	□	□	Account 1 ▾

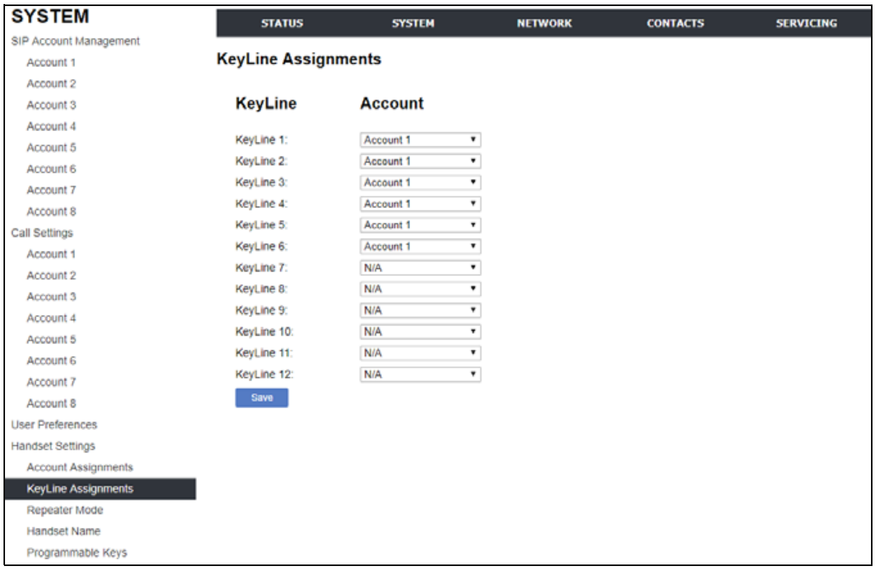
KeyLine Assignments

On the KeyLine Assignments page, you can assign accounts to KeyLine numbers. KeyLine assignments apply to all handsets and desksets registered to the M100 KLE SIP DECT 4-Line Base Station.

The KeyLine number is displayed on the handset/deskset when you are on a call or displaying calls in the Call List. The KeyLine number identifies the line number of a call.

Because a maximum of six active SIP sessions are supported across all handsets and desksets, you should only configure a maximum of six KeyLine assignments.

The factory default is set to Account 1 for Keyline 1 to 6.



KeyLine Assignments

KeyLine	Account
KeyLine 1:	Account 1
KeyLine 2:	Account 1
KeyLine 3:	Account 1
KeyLine 4:	Account 1
KeyLine 5:	Account 1
KeyLine 6:	Account 1
KeyLine 7:	N/A
KeyLine 8:	N/A
KeyLine 9:	N/A
KeyLine 10:	N/A
KeyLine 11:	N/A
KeyLine 12:	N/A

Setting	Description
Keyline 1-12	Select the account you want to assign to the corresponding KeyLine number. Default values (1-6): Account 1, (7-12): N/A

To enable a Key System experience for your phone system, you must configure the line keys (L1 to L4) for each handset and deskset. Such configuration is available via the WebUI, phone user interface, or the configuration file parameters. Each of these methods are described on the next page.

Web UI:

Select **SYSTEM** > **Handset Settings** > **Programmable keys.** In the Select Handset setting, select the handset you want to configure.

Under **Line Key Settings**, assign the KeyLine numbers that match the KeyLine numbers you configured in the WebUI KeyLine Assignments.

The default configuration to enable a Key System experience is:

Key: Line Key 1, **Type:** Keyline, **Value:** 1

Key: Line Key 2, **Type:** Keyline, **Value:** 2

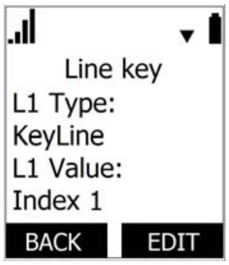
Key: Line Key 3, **Type:** Keyline, **Value:** 3

Key: Line Key 4, **Type:** Keyline, **Value:** 4

For more information, see the “KeyLine*” setting on *page 62*.

Phone User Interface:

On the handset/deskset, select **MENU** > **User Settings** > **Progrm’able key** > **Line key**.



Line key

L1 Type:

KeyLine

L1 Value:

Index 1

For each line key (L1 to L4), assign the KeyLine number that matches the KeyLine numbers you configured in the WebUI KeyLine Assignments.

The default configuration to enable a Key System experience is:

L1 Type: KeyLine, **L1 Value:** Index 1

L2 Type: KeyLine, **L2 Value:** Index 2

L3 Type: KeyLine, **L3 Value:** Index 3

L4 Type: KeyLine, **L4 Value:** Index 4

For more information about configuring the line keys (L1 to L4), see “Configuring the programmable keys” in the M100 KLE/M10 KLE User Guide.

Configuration parameters:

Import the following parameter values into the M100 KLE with the KeyLine numbers that match the KeyLine numbers you configured in the WebUI KeyLine Assignments. Replace the “x” in the parameter name with the handset number you want to configure.

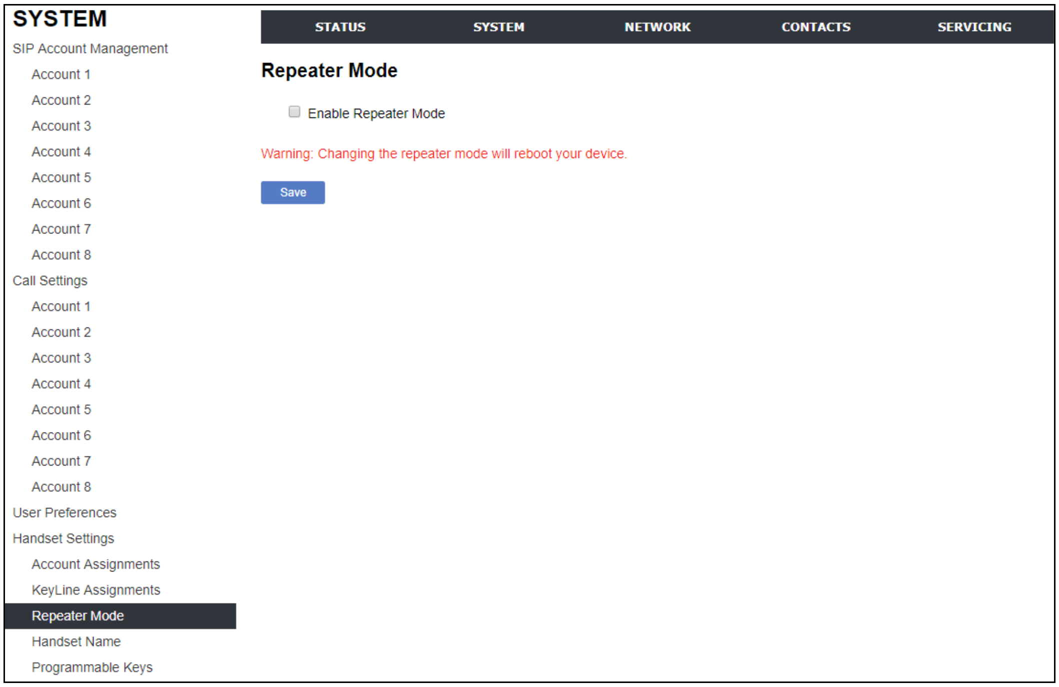
The default configuration to enable a Key System experience is:

```
hs_settings.x.pfk.line1.account = 1

hs_settings.x.pfk.line1.feature = keyline

hs_settings.x.pfk.line1.value = 1

hs_settings.x.pfk.line2.account = 1

hs_settings.x.pfk.line2.feature = keyline

hs_settings.x.pfk.line2.value = 2

hs_settings.x.pfk.line3.account = 1

hs_settings.x.pfk.line3.feature = keyline

hs_settings.x.pfk.line3.value = 3

hs_settings.x.pfk.line4.account = 1

hs_settings.x.pfk.line4.feature = keyline

hs_settings.x.pfk.line4.value = 4
```

For more information about these parameters, see *“"hs_settings" Module: Handset Settings” on page 133*.

Repeater Mode

On the **Repeater Mode** page, you can enable a repeater (such as the VSP605 Range Extender) to be registered to the base station.



Repeater Mode

□ Enable Repeater Mode

Warning: Changing the repeater mode will reboot your device.

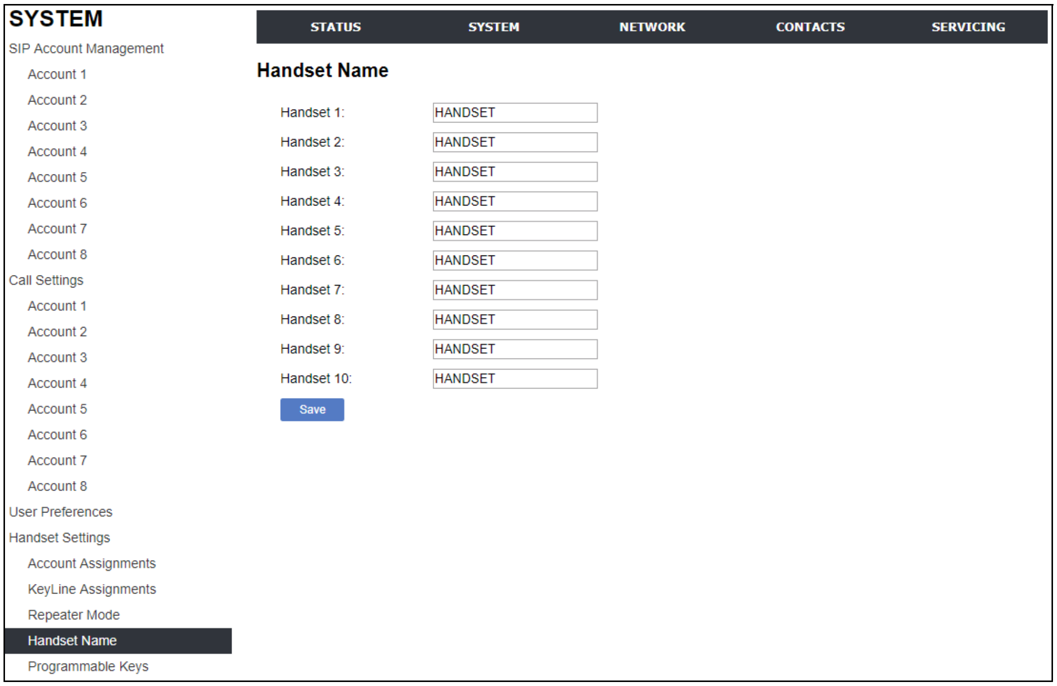
Setting	Description
Enable Repeater Mode	Select this check box to enable a repeater to be registered to your M100 KLE 4-Line base station. Changing this setting requires a reboot of the M100 KLE 4-Line base station.

Handset Name

On the **Handset Name** page, you can enter a name for each Handset. The Handset Name will be used throughout the WebUI and will appear on the handset Idle screen.

The Handset Name is limited to a maximum of 11 characters.

The default name is "HANDSET". Blank name fields are not allowed. If you click Save when any fields are empty, an error message appears.



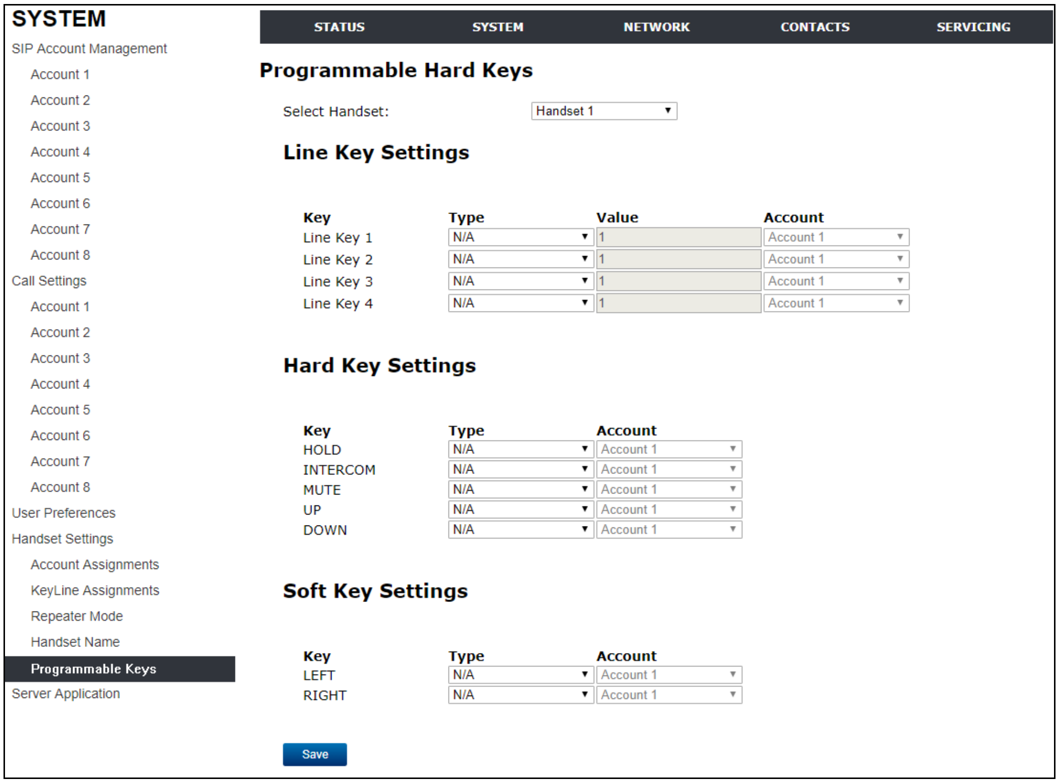
Handset Name

Handset 1:	HANDSET
Handset 2:	HANDSET
Handset 3:	HANDSET
Handset 4:	HANDSET
Handset 5:	HANDSET
Handset 6:	HANDSET
Handset 7:	HANDSET
Handset 8:	HANDSET
Handset 9:	HANDSET
Handset 10:	HANDSET

Programmable Hard Keys

You can assign additional functions to the Line keys, Hard keys, and Soft keys that are listed on the **Programmable Hard Keys** page. The functions that you assign to these keys apply to each key in idle mode only.

The programmable hard key settings are also available as parameters in the configuration file. See the parameters named **hs_settings.x.pfk.____** in *“"hs_settings" Module: Handset Settings” on page 133*.



Programmable Hard Keys

Select Handset: Handset 1

Line Key Settings

Key	Type	Value	Account
Line Key 1	N/A	1	Account 1
Line Key 2	N/A	1	Account 1
Line Key 3	N/A	1	Account 1
Line Key 4	N/A	1	Account 1

Hard Key Settings

Key	Type	Account
HOLD	N/A	Account 1
INTERCOM	N/A	Account 1
MUTE	N/A	Account 1
UP	N/A	Account 1
DOWN	N/A	Account 1

Soft Key Settings

Key	Type	Account
LEFT	N/A	Account 1
RIGHT	N/A	Account 1

In the **Select Handset** setting, select the handset whose keys you want to assign functions.

The following table lists the available selections for **Type**.

Setting	Description
N/A	Configures the key so it does not have a function. If you press the key while the handset is idle, nothing will happen.
KeyLine*	Configures the Line Key (L1-L4) for Key System Emulation. The phone user can manage his/her own held calls and shared calls within the system. The key LED will change according to call activity. In the **Value** setting, set the KeyLine number. For example, 1 for Line Key 1, 2 for Line Key 2, etc. For more information about KeyLine numbers, see *"KeyLine Assignments" on page 57*.
Line*	Configures the key for accessing a line. The phone user can make calls or answer calls by pressing these keys. The key LED will change according to call activity. In the **Account** setting, select the desired account number.
Shared Calls	Configures the key to access the Call List.
Directory	Configures the key to access the Directory menu.

Setting	Description
Call History	Configures the key to access the Call History list.
Redial	Configures the key to access the Redial list.
Messages	Configures the key to access the Message menu. In the **Account** setting, select the desired account number.
Do Not Disturb	Configures the key to turn Do Not Disturb on or off. In the **Account** setting, select the desired account number.
Call Forward Busy	Configures the key to turn Call Forward Busy on or off. In the **Account** setting, select the desired account number for which Call Forward Busy will apply. Make sure to also configure Call Forward settings on the Call Settings page.
Call Forward All	Configures the key to turn Call Forward All on or off. In the **Account** setting, select the desired account number for which Call Forward All will apply. Make sure to also configure Call Forward settings on the Call Settings page.
Call Forward No Answer	Configures the key to turn Call Forward No Answer on or off. In the **Account** setting, select the desired account number for which Call Forward No Answer will apply. Make sure to also configure Call Forward settings on the Call Settings page.

* This Type is only available for Line Key Settings (L1 to L4).

Server Application

On the Server Application page, you can enter Action URIs to allow the M100 KLE to interact with a server application by using an HTTP GET request. The action URI triggers a GET request when a specified event occurs. Action URIs allow an external application to take control of the display when an event occurs. These pre-defined events are listed under “Action URI” on the Server Application page.

Action URIs are typically used in conjunction with the XML Browser, which can be customised to deliver an appropriate user experience.

The M100 KLE supports both push and pull server applications. Note that Action URI events are not “push” events as it is the phone that requests a URI when triggered by certain states. You can enable push server applications under “XML Push Settings”.

Action URI Syntax

To access an XML application, the phone performs an HTTP GET on a URL.

An HTTP GET request may contain a variable name and variable value, which are separated by "=". Each variable value starts and ends with "$$" in the query part of the URL.

Action URI variables pass dynamic data to the server. The valid URL format is:

```
http://host[:port]/dir/file name?variable name=$$variable value$$
```

where:

- host is the hostname or IP address of the server supporting the XML application
- port is the port number the phones are using for the HTTP request

At the time of the HTTP call, the variable value field is populated with the appropriate data. For example, the following URL passes the SIP Account User Identifier to the server:

```
http://10.50.10.140/script.pl?name=$$SIPUSERNAME$$
```

A GET request then passes along the following information:

```
http://10.50.10.140/script.pl?name=42512
```

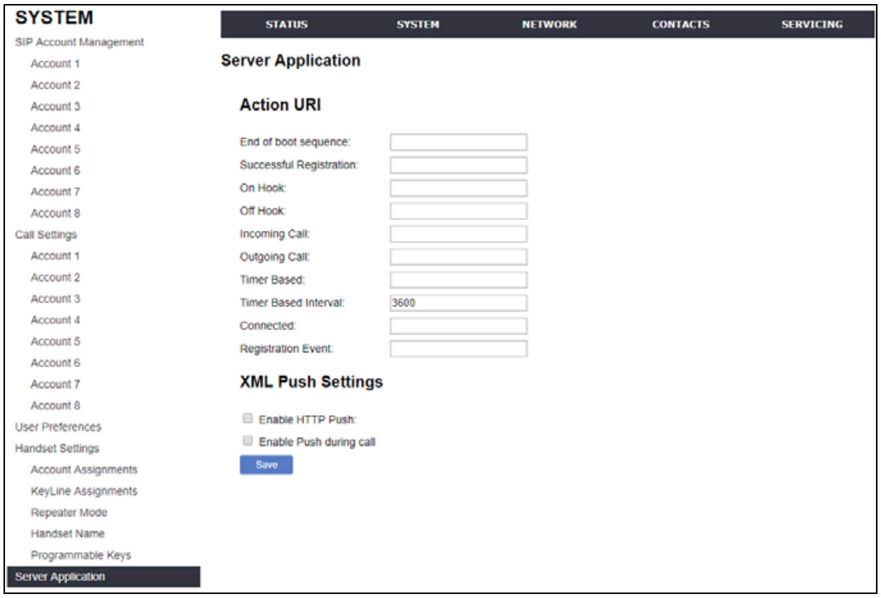
Assuming that the User Identifier is 42512.

Variable names are defined by the particular XML application being called.

Variable values are predefined and depend on the status of the phone. If the variable has no meaning in the current status, then the phone sends an empty string.

The table below lists all possible variable values. Note that variables applicable during an Incoming or Active Call (such as INCOMINGNAME and REMOTENUMBER) are initialised at the beginning and at the end of the call.

Variable value	Description
SIPUSERNAME	SIP Account User Identifier
DISPLAYNAME	SIP Account Display Name
LOCALIP	Phone's local IP Address
INCOMINGNAME	Caller ID name of the current Incoming Call
REMOTENUMBER	Remote party phone number (Incoming or Outgoing)
REGISTRATIONSTATE	Registration state available from the Registration event. Values are: ■ REGISTERED ■ DEREGISTERED ■ FAIL
MAC	The phone's MAC Address
MODEL	The phone's model number: M100 KLE.



Server Application

Action URI

End of boot sequence:

Successful Registration:

On Hook:

Off Hook:

Incoming Call:

Outgoing Call:

Timer Based:

Timer Based Interval: 3600

Connected:

Registration Event:

XML Push Settings

□ Enable HTTP Push:

□ Enable Push during call

Save

Action URI

Setting	Description
End of boot sequence	The End of boot sequence URI is triggered at the end of the phone boot sequence. Using the End of boot sequence URI, it is possible to develop self-provisioning on the phone. For example, an XML application can identify the phone and generate a MAC-specific file on the fly.
Successful Registration	The Successful Registration URI is triggered the first time the phone registers successfully to a SIP Account. If the phone registers to multiple SIP Accounts, then the Successful Registration URI is triggered for each line.
On Hook	The On Hook URI is triggered when the phone transitions from Active to Idle (or from Paging to Idle). For example, when: ■ The user presses the **End** soft keybutton ■ The user hangs up the handset during a call ■ A transfer is completed and the user returns to idle ■ The far end hangs up ■ The call was not answered ■ The call fails.

Setting	Description
Off Hook	The Off Hook URI is triggered when the user goes to Dial mode by: ■ Lifting the handset ■ Pressing the SPEAKER hard key ■ Pressing the [New] soft key during a held call. Note that the Off Hook URI will NOT be triggered when calling a pre-defined number and going immediately to Dialling mode—this event triggers the Outgoing Call URI instead.
Incoming Call	The Incoming Call URI is triggered for each Incoming Ring event or Call Waiting event. Using the Incoming Call URI, it is possible to display extra information on the phone for an Incoming Call. For example, the XML application that is called when there is an Incoming Call can do a database lookup and display information on the caller. Note that this Action URI will not be triggered if DND or Call Forward All is enabled or if Call Waiting is disabled (i.e., the call is rejected).
Outgoing Call	The Outgoing Call URI is triggered each time a SIP INVITE message is sent (Dialling mode). For example, after: ■ Pressing the Dial key in Pre-Dial with populated number ■ Using the dial pad to speed dial a call ■ Dialling a Directory number by going off-hook.
Timer Based	The Timer Based URI will be triggered when the configured timeout expires. The timer starts at the end of the phone boot sequence.
Timer Based Interval	Enter the interval before the Timer Based URI is triggered.
Connected	The Connected URI is triggered each time the phone is in an Active Call or is Paging.
Registration Event	The Registration Event URI is triggered every time there is a registration state change. For example: ■ Registered ■ Deregistered ■ Fail (Registration timed out, refused, or expired) The Registration Event URI is not triggered when the same event is repeated.

XML Push Settings

Setting	Description
Enable HTTP Push	Select to enable HTTP push, which enables the phone to display XML objects that are “pushed” to the phone from the server via http/https POST or SIP NOTIFY.
Enable Push during call	Select to enable the phone to display pushed XML objects during a call. Otherwise, the XML application is displayed after the call is over.

Network Pages

You can set up the M100 KLE for your network configuration on the Network pages. Your service provider may require you to configure your network to be compatible with its service, and the M100 KLE settings must match the network settings.

The network settings are grouped into Basic and Advanced Settings. IPv4 and IPv6 protocols are supported.

When both IPv4 and IPv6 are enabled and available, the following guidelines apply when determining which stack to use:

- For outgoing traffic, the IP address (or resolved IP) in the server field—either IPv4 or IPv6—will determine which stack to be used.
- In general, most operations can be associated with one of the servers listed on the “Basic Network Settings” page. However, for operations triggered by/dependent upon network status, the phone must determine which server to use. For example, a special case like the "Network down" LED indication on the base station can be ambiguous for server association. Because its primary purpose is to aid in troubleshooting SIP registration issues, this case will be associated with the SIP registration server.
- DNS entries with both IPv4 and IPv6 settings can be used to resolve FQDN entries. There are no preferences with the order of the DNS queries.
- Pcap should include traffic for both stacks.
- Dual stack operations should be transparent to PC port traffic.

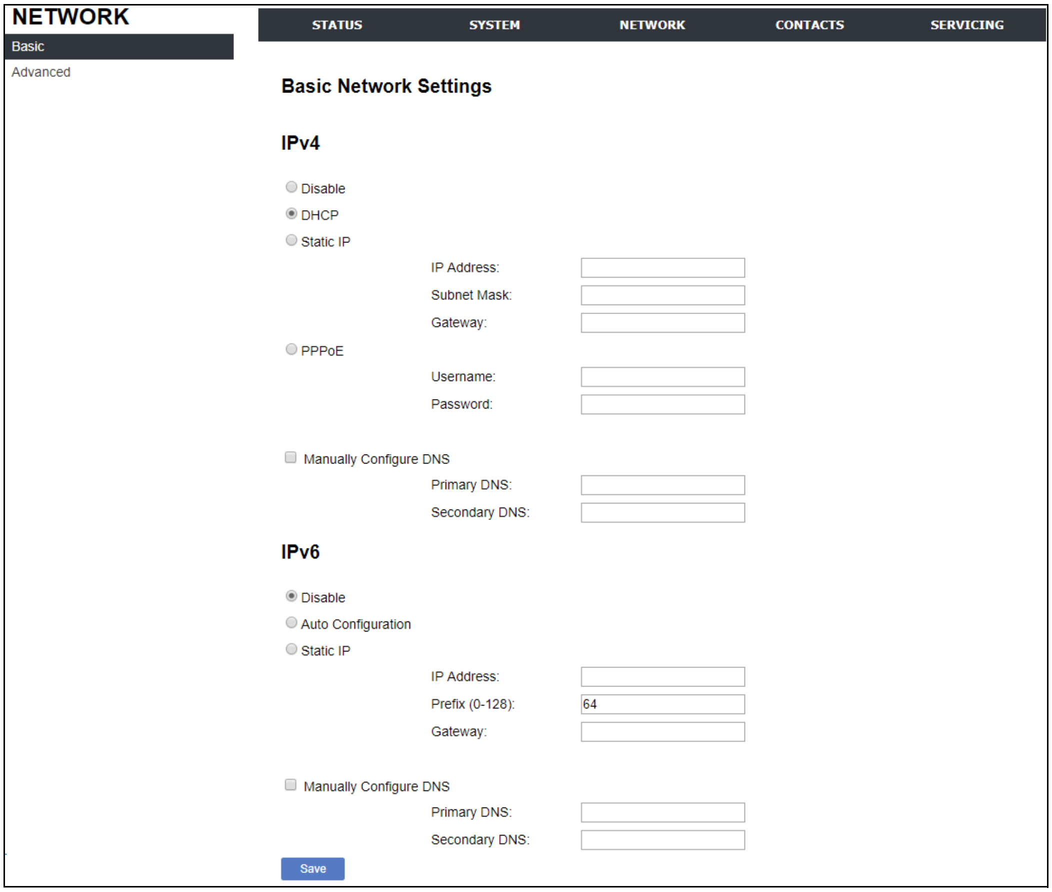
NOTE

- PnP is not supported on IPv6.
- VPN is not supported in IPv6 or PPPoE.

The network settings are also available as parameters in the configuration file. See *“"network" Module: Network Settings” on page 140*.

After entering information on this page, click Save to save it.

Basic Network Settings



Basic Network Settings

IPv4

○ Disable
● DHCP
○ Static IP

IP Address:
Subnet Mask:
Gateway:

○ PPPoE

Username:
Password:

□ Manually Configure DNS

Primary DNS:
Secondary DNS:

IPv6

● Disable
○ Auto Configuration
○ Static IP

IP Address:
Prefix (0-128): 64
Gateway:

□ Manually Configure DNS

Primary DNS:
Secondary DNS:

NOTE You must be familiar with TCP/IP principles and protocols to configure static IP settings.

Basic Network Settings

Click the link for each setting to see the matching configuration file parameter in *“"network" Module: Network Settings” on page 140*. Default values and ranges are listed there.

IPv4

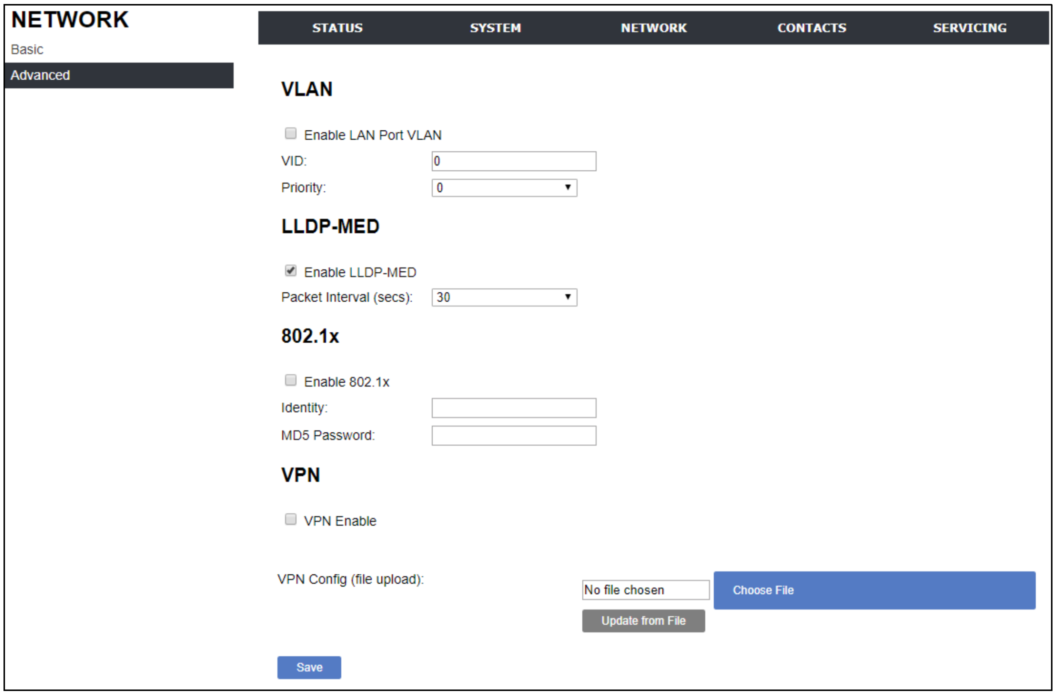
Setting	Description
Disable	Disables all related IPv4 settings.
DHCP	DHCP is selected (enabled) by default, which means the M100 KLE will get its IP address, Subnet Mask, Gateway, and DNS Server(s) from the network. When DHCP is disabled, you must enter a static IP address for the M100 KLE, as well as addresses for the Subnet Mask, Gateway, and DNS Server(s).

Setting	Description
Static IP	When Static IP is selected, you must enter a static IP address for the M100 KLE, as well as addresses for the Subnet Mask, Gateway, and DNS Server(s).
IP Address	If DHCP is disabled, enter a static IP address for the M100 KLE.
Subnet Mask	Enter the subnet mask.
Gateway	Enter the address of the default gateway (in this case, your router).
PPPoE	Select to enable PPPoE (Point-to-Point Protocol over Ethernet) mode.
Username	Enter your PPPoE account username.
Password	Enter your PPPoE account password.
Manually Configure DNS	Select to enable manual DNS configuration.
Primary DNS	If DHCP is disabled, enter addresses for the primary and secondary DNS servers.
Secondary DNS	

IPv6

Setting	Description
Disable	Disables all related IPv6 settings.
Auto Configuration	Auto configuration is selected (enabled) by default, which means the M100 KLE will get its IP address, Gateway, and DNS Server(s) from the network. When Auto Configuration is disabled, you must enter a static IP address for the M100 KLE, as well as addresses for the Gateway and DNS Server(s).
Static IP	When Static IP is selected, you must enter a static IP address for the M100 KLE, as well as an IPv6 address prefix, Gateway, and DNS Server(s).
IP Address	If Auto Configuration is disabled, enter a static IP address for the M100 KLE.
Prefix (0–128)	Enter the IPv6 address prefix length (0 to 128 bits).
Gateway	Enter the address of the default gateway (in this case, your router).
Manually Configure DNS	Select to enable manual DNS configuration.
Primary DNS	If Auto Configuration is disabled, enter addresses for the primary and secondary DNS servers.
Secondary DNS	

Advanced Network Settings



NETWORK

VLAN

☐ Enable LAN Port VLAN

VID: 0

Priority: 0

LLDP-MED

☑ Enable LLDP-MED

Packet Interval (secs): 30

802.1x

☐ Enable 802.1x

Identity:

MD5 Password:

VPN

☐ VPN Enable

VPN Config (file upload): No file chosen

VLAN

You can organize your network and optimize VoIP performance by creating a virtual LAN for phones and related devices.

Click the link for each setting to see the matching configuration file parameter in *“"network" Module: Network Settings” on page 140*. Default values and ranges are listed there.

Setting	Description
Enable LAN Port VLAN	Enable if the phone is part of a VLAN on your network. Select to enable.
VID	Enter the VLAN ID (vlan 5, for example).
Priority	Select the VLAN priority that matches the Quality of Service (QOS) settings that you have set for that VLAN ID. Outbound SIP packets will be marked and sent according to their priority. 7 is the highest priority. **Note**: Configuring QOS settings for your router or switch is a subject outside the scope of this document.

LLDP-MED

Setting	Description
Enable LLDP-MED	Enables or disables Link Layer Discovery Protocol for Media Endpoint Devices (LLDP-MED). LLDP-MED is a standards-based discovery protocol supported on some network switches. It is required for auto-configuration with VLAN settings.
Packet Interval (secs)	Sets the LLDP-MED packet interval (in seconds).

802.1x

Setting	Description
Enable 802.1x	Enables or disables the 802.1x authentication protocol. This protocol allows the phone to attach itself to network equipment that requires device authentication via 802.1x.
Identity	Enter the 802.1x EAPOL identity.
MD5 Password	Enter the 802.1x EAPOL MD5 password.

VPN

You can operate the M100 KLE SIP DECT 4-Line Base Station over a Virtual Private Network (VPN). VPN enables remote users and remote sites to connect to a main corporate network and SIP server with a high level of performance and security.

Configuring VPN using the WebUI consists of enabling VPN and uploading a VPN configuration file. The VPN configuration file (**openvpn_client.tar**) must contain the following files:

- **client.conf**
- a **keys** folder containing
  - **ca.crt**
  - **client.crt**
  - **client.key**

The filename of the VPN client configuration file and certificates must match the names provided above. For more information about configuring VPN, visit our website at *www.snomamericas.com*.

NOTE Ensure that NTP or manual time is configured correctly so that the M100 KLE is using the correct date and time before VPN setup. Mismatched time between sites and servers may invalidate the initial TLS handshake.

Setting	Description
VPN Enable	Enables or disables the phone to connect using the OpenVPN client. If VPN is enabled, but not connected, all SIP traffic will continue to route via the LAN IP. If VPN is enabled and connected, all SIP traffic will route via the VPN tunnel. The exception is the web server, which will still be accessible via the LAN IP.
VPN Config (file upload)	Browse to and upload the VPN configuration file **openvpn_client.tar**.

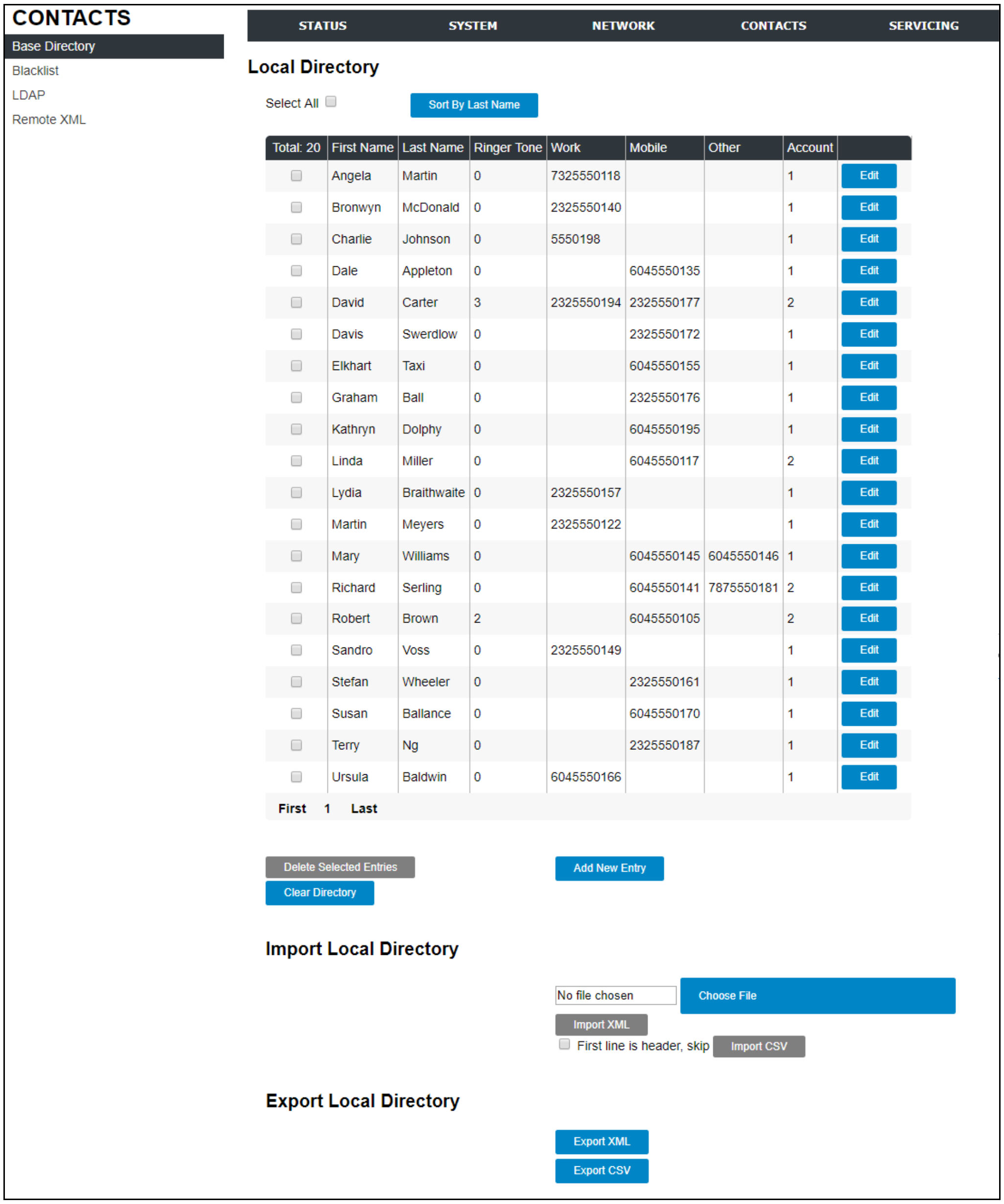
Contacts Pages

Base Directory

On the Base Directory page, you can manage directory entries that will be available on all handsets. You can sort, edit, delete, and add contact information for up to 200 entries. In order to back up your contacts or import another local directory file, the page also enables you to export and import the base directory.

The BaseDirectory lists entries on up to 10 pages, with 20 entries per page. Click Next, Last, First, or a page number to view the desired page of entries.

NOTE Each handset also has its own directory. You can add entries to the handset directory using the handset. For more information, see the M100 KLE/M10 KLE User Guide.



Local Directory

Select All □ Sort By Last Name

Total: 20	First Name	Last Name	Ringer Tone	Work	Mobile	Other	Account	
□	Angela	Martin	0	7325550118			1	Edit
□	Bronwyn	McDonald	0	2325550140			1	Edit
□	Charlie	Johnson	0	5550198			1	Edit
□	Dale	Appleton	0		6045550135		1	Edit
□	David	Carter	3	2325550194	2325550177		2	Edit
□	Davis	Swerdlow	0		2325550172		1	Edit
□	Elkhart	Taxi	0		6045550155		1	Edit
□	Graham	Ball	0		2325550176		1	Edit
□	Kathryn	Dolphy	0		6045550195		1	Edit
□	Linda	Miller	0		6045550117		2	Edit
□	Lydia	Braithwaite	0	2325550157			1	Edit
□	Martin	Meyers	0	2325550122			1	Edit
□	Mary	Williams	0		6045550145	6045550146	1	Edit
□	Richard	Serling	0		6045550141	7875550181	2	Edit
□	Robert	Brown	2		6045550105		2	Edit
□	Sandro	Voss	0	2325550149			1	Edit
□	Stefan	Wheeler	0		2325550161		1	Edit
□	Susan	Ballance	0		6045550170		1	Edit
□	Terry	Ng	0		2325550187		1	Edit
□	Ursula	Baldwin	0	6045550166			1	Edit

First 1 Last

Delete Selected Entries
Clear Directory
Add New Entry

Import Local Directory

No file chosen Choose File
Import XML
□ First line is header, skip Import CSV

Export Local Directory

Export XML
Export CSV

Table 5 describes the buttons available on the BaseDirectory page.

Table 5. BaseDirectory commands

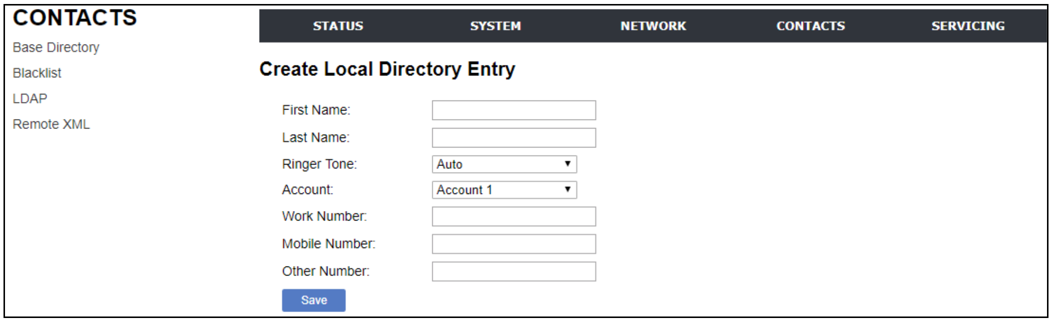
Click	To...
Sort By Last Name	Sort the list by last name.
Edit	Edit information for an entry
Next	View the next page of entries.

Table 5. BaseDirectory commands

Click	To...
Last	View the last page of entries.
First	View the first page of entries.
Delete Selected Entries	Delete selected entries from the directory. Click **Select All** to select every entry on the page you are viewing.
Add New Entry	Add a new directory entry.
Clear Directory	Delete all Directory entries.
Choose File	Import a directory file.
Export XML Export CSV	Export the directory.

To add a new directory entry:

1. Click Add New Entry .
   The **Create Base Directory Entry** page appears.



Create Local Directory Entry

First Name:

Last Name:

Ringer Tone: Auto

Account: Account 1

Work Number:

Mobile Number:

Other Number:

2. Enter the required information as described in the following table.

Create Base Directory Entry

Setting	Description	Range	Default
First Name	Enter the appropriate names in these fields. The maximum length of the first name and last name fields is 15 characters.	n/a	Blank
Last Name			
Ringer Tone	Sets a unique ringer tone for calls from this directory entry.	Auto, Tone 1–10	Tone 1

Setting	Description	Range	Default
Account	Sets the account used when you dial this directory entry.	Default Account, Account 1–8	Default Account
Work Number	Enter the appropriate names and numbers in these fields.	n/a	Blank
Mobile Number			
Other Number			

Directory Import/Export

The best way to create a directory file for import is to first export the directory from the phone. After exporting the file, open it in an .xml editor and add or modify entries.

Importing a directory file adds the imported directory entries to existing entries. Therefore, it is possible to have duplicate entries after importing a directory file. If you are importing a "complete" directory file with the aim of replacing the entire current directory, use **Select All** and Delete Selected Entries to clear the directory before importing the file.

NOTE Using the configuration file, you can set whether an imported directory file adds to existing entries or replaces existing entries. See *“"file" Module: Imported File Settings” on page 168*.

Directory files are .xml files that have the following tags:

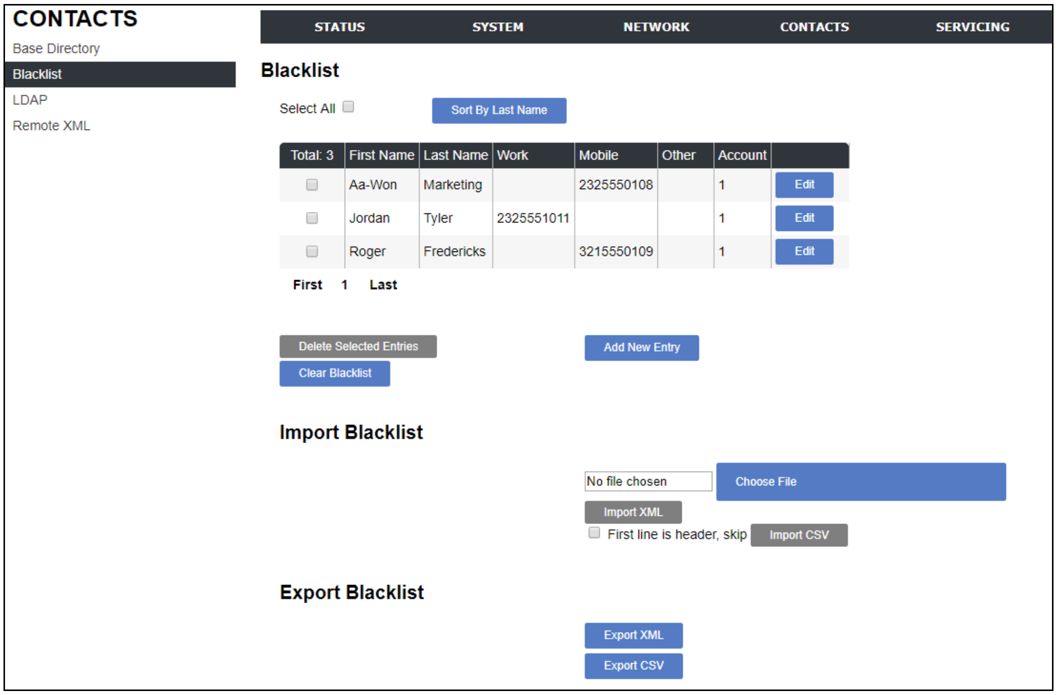
Local Directory WebUI field	Directory file XML tag
First Name	<DIR_ENTRY_NAME_FIRST>
Last Name	<DIR_ENTRY_NAME_LAST>
Work Number	<DIR_ENTRY_NUMBER_WORK>
Mobile Number	<DIR_ENTRY_NUMBER_MOBILE>
Other Number	<DIR_ENTRY_NUMBER_OTHER>
Account	<DIR_ENTRY_LINE_NUMBER>
Call Block (not on WebUI)	<DIR_ENTRY_BLOCK>
Ringer Tone	<DIR_ENTRY_RINGER>

Blacklist

On the Blacklist page, you can manage local blacklist entries. The M100 KLE rejects calls from numbers that match blacklist entries. You can sort, edit, delete, and add up to 200 blacklist entries. In order to back up your blacklist entries or import another local blacklist file, the page also enables you to export and import the blacklist.

The blacklist lists entries on up to 10 pages, with 20 entries per page. Click Next , Last , First , or a page number to view the desired page of entries.

NOTE You can also use the M10 KLE menu to manage blacklist entries. For more information, see the M100 KLE/M10 KLE User Guide.



Total: 3	First Name	Last Name	Work	Mobile	Other	Account	
□	Aa-Won	Marketing		2325550108		1	Edit
□	Jordan	Tyler	2325551011			1	Edit
□	Roger	Fredericks		3215550109		1	Edit

Table 6 describes the buttons available on the Blacklist page.

Table 6. Blacklist commands

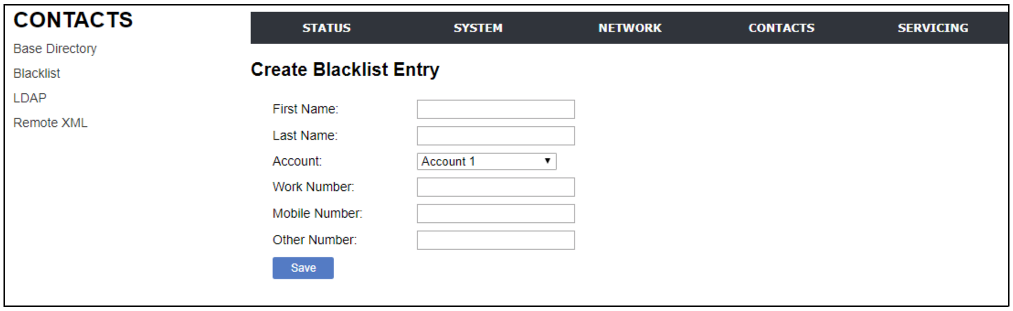
Click	To...
Sort By Last Name	Sort the list by last name.
Edit	Edit information for an entry
Next	View the next page of entries.
Last	View the last page of entries.
First	View the first page of entries.
Delete Selected Entries	Delete selected entries. Click **Select All** to select every entry on the page you are viewing.
Add New Entry	Add a new entry.
Clear Directory	Delete all entries.

Table 6. Blacklist commands

Click	To...
Choose File	Import a blacklist file.
Export XML Export CSV	Export the blacklist.

To add a new blacklist entry:

1. Click Add New Entry .
   The **Create Blacklist Entry** page appears.



Create Blacklist Entry

First Name:
Last Name:
Account: Account 1
Work Number:
Mobile Number:
Other Number:

2. Enter the required information as described in the following table.

Create Blacklist Entry

Setting	Description	Range	Default
First Name	Enter the appropriate names in these fields. The maximum length of the first name and last name fields is 15 characters.	n/a	Blank
Last Name			
Account	Sets the account used when you dial this directory entry.	Default Account, Account 1–8	Account 1
Work Number	Enter the appropriate names and numbers in these fields.	n/a	Blank
Mobile Number			
Other Number			

Blacklist Import/Export

The best way to create a blacklist file for import is to first export the blacklist from the M100 KLE. After exporting the file, open it in an .xml editor and add or modify entries.

Importing a blacklist file adds the imported blacklist entries to existing entries. Therefore, it is possible to have duplicate entries after importing a blacklist file. If you are importing a "complete" blacklist file with the aim of replacing the entire current blacklist, use **Select All** and Delete Selected Entries to clear the blacklist before importing the file.

NOTE Using the configuration file, you can set whether an imported blacklist file adds to or replaces existing entries. See *""file" Module: Imported File Settings" on page 168*.

Blacklist files are .xml files that have the following tags:

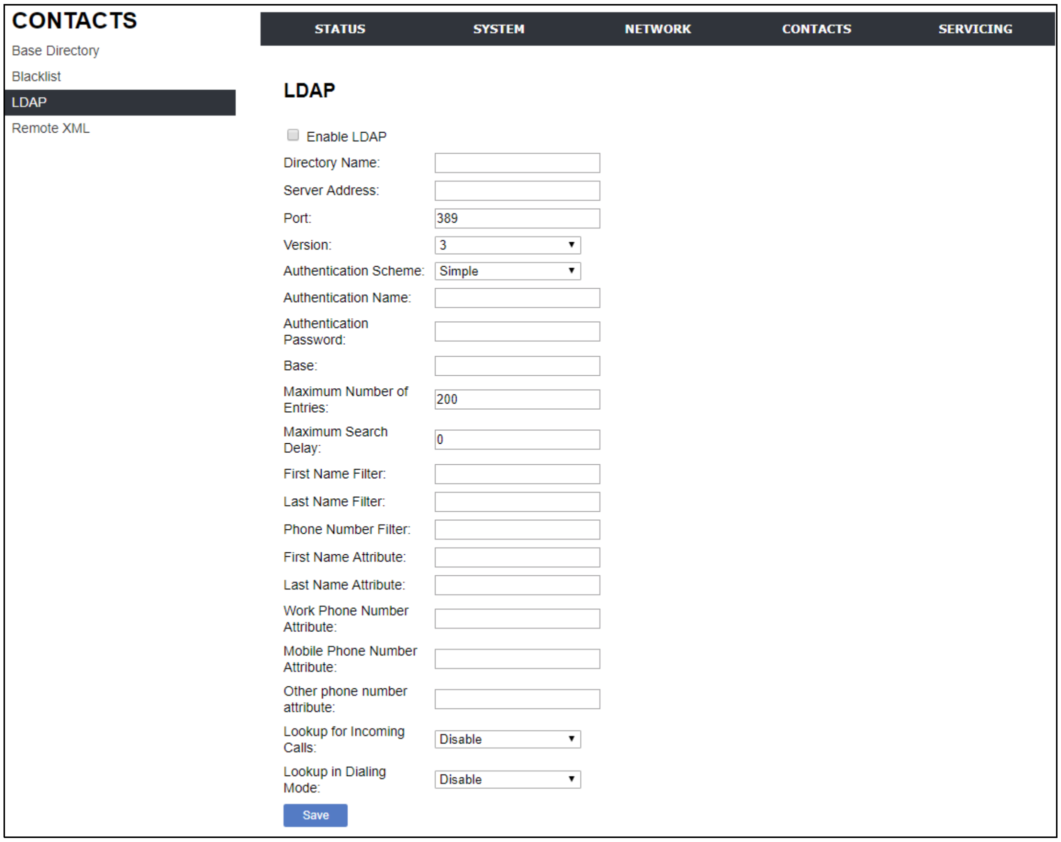
Blacklist WebUI field	Blacklist file XML tag
First Name	<BLACKLIST_ENTRY_NAME_FIRST>
Last Name	<BLACKLIST_ENTRY_NAME_LAST>
Work Number	<BLACKLIST_ENTRY_NUMBER_WORK>
Mobile Number	<BLACKLIST_ENTRY_NUMBER_MOBILE>
Other Number	<BLACKLIST_ENTRY_NUMBER_OTHER>
Account	<BLACKLIST_ENTRY_LINE_NUMBER>

LDAP

The phone supports remote Lightweight Directory Access Protocol (LDAP) directories. An LDAP directory is hosted on a remote server and may be the central directory for a large organization spread across several cities, offices, and departments. You can configure the phone to access the directory and allow users to search the directory for names and telephone numbers.

The LDAP settings are also available as parameters in the configuration file. See *“"remoteDir" Module: Remote Directory Settings” on page 155*.

After entering information on this page, click Save to save it.



LDAP

□ Enable LDAP
Directory Name:
Server Address:
Port: 389
Version: 3
Authentication Scheme: Simple
Authentication Name:
Authentication Password:
Base:
Maximum Number of Entries: 200
Maximum Search Delay: 0
First Name Filter:
Last Name Filter:
Phone Number Filter:
First Name Attribute:
Last Name Attribute:
Work Phone Number Attribute:
Mobile Phone Number Attribute:
Other phone number attribute:
Lookup for Incoming Calls: Disable
Lookup in Dialing Mode: Disable

LDAP Settings

Click the link for each setting to see the matching configuration file parameter in *“"remoteDir" Module: Remote Directory Settings” on page 155*. Default values and ranges are listed there.

Setting	Description
Enable LDAP	Enables or disables the phone's access to the LDAP directory.
Directory name	Enter the LDAP directory name.

Setting	Description
Server address	Enter the LDAP server domain name or IP address.
Port	Enter the LDAP server port.
Version	Select the LDAP protocol version supported on the phone. Ensure the protocol value matches the version assigned on the LDAP server.
Authentication scheme	Select the LDAP server authentication scheme.
Authentication name	Enter the user name or authentication name for LDAP server access.
Authentication password	Enter the authentication password for LDAP server access.
Base	Enter the LDAP search base. This sets where the search begins in the directory tree structure. Enter one of more attribute definitions, separated by commas (no spaces). Your directory may include attributes like "cn" (common name) or "ou" (organizational unit) or "dc" (domain component). For example: ou=accounting,dc=snom,dc=com
Maximum number of entries	Sets the maximum number of entries returned for an LDAP search. Limiting the number of hits can conserve network bandwidth.
Maximum search delay	Enter the delay (in seconds) before the phone starts returning search results.
First name filter	Enter the first name attributes for LDAP searching. The format of the search filter is compliant to the standard string representations of LDAP search filters (RFC 2254).
Last name filter	Enter the last name attributes for LDAP searching. The format of the search filter is compliant to the standard string representations of LDAP search filters (RFC 2254).
Phone number filter	Enter the number attributes for LDAP searching. The format of the search filter is compliant to the standard string representations of LDAP search filters (RFC 2254).
First name attribute	Sets the attribute for first name. What you enter here should match the first name attribute for entries on the LDAP server (gn for givenName, for example). This helps ensure that the phone displays LDAP entries in the same format as the Local Directory.
Last name attribute	Sets the attribute for last name. What you enter here should match the last name attribute for entries on the LDAP server (sn for surname, for example). This helps ensure that the phone displays LDAP entries in the same format as the Local Directory.

Setting	Description
Work number attribute	Sets the attribute for the work number. What you enter here should match the work number attribute for entries on the LDAP server (telephoneNumber, for example). This helps ensure that the phone displays LDAP entries in the same format as the Local Directory.
Mobile number attribute	Sets the attribute for the mobile number. What you enter here should match the mobile number attribute for entries on the LDAP server (mobile, for example). This helps ensure that the phone displays LDAP entries in the same format as the Local Directory.
Other number attribute	Sets the attribute for the other number. What you enter here should match the other number attribute for entries on the LDAP server (otherPhone, for example). This helps ensure that the phone displays LDAP entries in the same format as the Local Directory.
Lookup for incoming calls	Enables or disables LDAP incoming call lookup. If enabled, the phone searches the LDAP directory for the incoming call number. If the number is found, the phone uses the LDAP entry for CID info.
Lookup in dialing mode	Enables or disables LDAP outgoing call lookup. If enabled, numbers entered in pre-dial or live dial are matched against LDAP entries. If a match is found, the LDAP entry is displayed for dialing.

Remote XML

The M100 KLE supports three server-hosted Remote XML directories. A total of 5,000 Remote XML directory entries are supported. The 5,000 entries can be shared across the three remote XML directories.

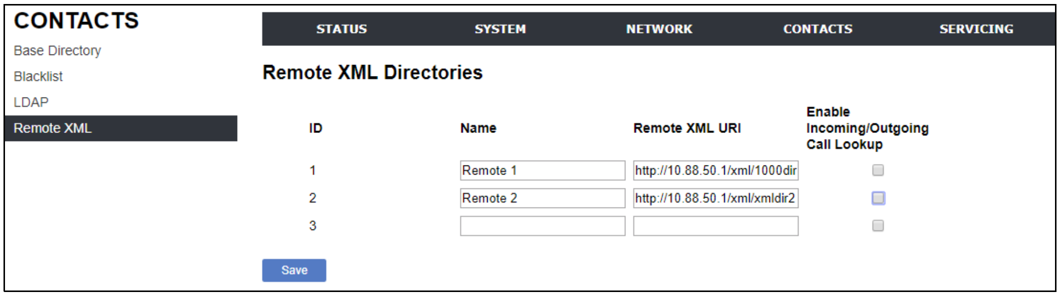
When the user selects a remote directory to view, the M100 KLE will sync with the directory server. The handset will display **Sync failed.** if any of the following failing conditions is encountered:

- Server not reachable
- Remote XML directory file is not available
- Invalid XML directory file

Remote XML Directory Format

The following shows a sample single-entry file which can be used in a remote XML directory. Note that the default tags are the same as those defined for the Local Directory.

```
<?xml version="1.0" encoding="utf-8"?>

<DIR_ENTRY>

<DIR_ENTRY_NAME_FIRST>John</DIR_ENTRY_NAME_FIRST>

<DIR_ENTRY_NAME_LAST>Smith</DIR_ENTRY_NAME_LAST>

<DIR_ENTRY_NUMBER_OTHER>3333</DIR_ENTRY_NUMBER_OTHER>

<DIR_ENTRY_NUMBER_WORK>1111</DIR_ENTRY_NUMBER_WORK>

<DIR_ENTRY_NUMBER_MOBILE>2222</DIR_ENTRY_NUMBER_MOBILE>

</DIR_ENTRY>
```



Remote XML Directories

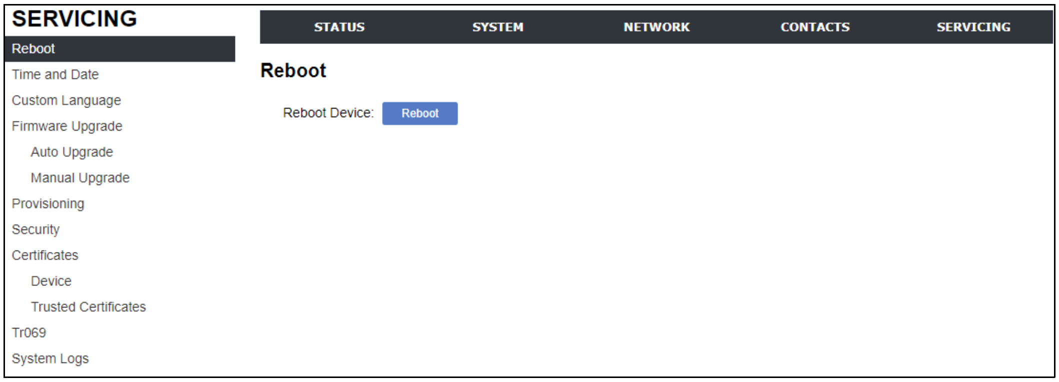
ID	Name	Remote XML URI	Enable Incoming/Outgoing Call Lookup
1	Remote 1	http://10.88.50.1/xml/1000dir	□
2	Remote 2	http://10.88.50.1/xml/xmldir2	□
3			□

Setting	Description
Name	Sets the name of the directory as it will appear on the M100 KLE Directory list. The following order applies to the Directory list when multiple server-based directories are enabled: 1. Local 2. Blacklist 3. LDAP 4. Remote XML directory 1 5. Remote XML directory 2 6. Remote XML directory 3 Any Remote XML directories will move up the list if LDAP directories are not enabled.
Remote XML URI	Enter the location of the XML directory file, from which the phone will sync and retrieve directory entries.
Enable Incoming/ Outgoing Call Lookup	Enables/disables the call lookup feature for incoming and outgoing calls.

Servicing Pages

Reboot

To manually reboot the M100 KLE and apply settings that you have updated, click Reboot .



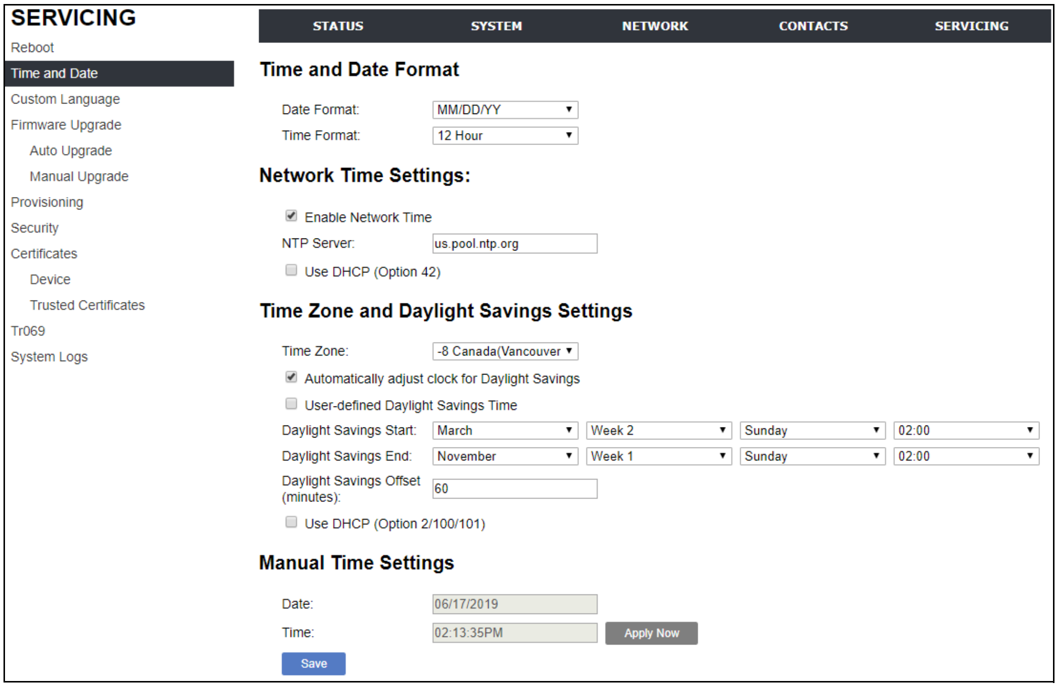
Reboot

Reboot Device: Reboot

Time and Date

On the Time and Date page, you can manually set the time and date, and the time and date formats. You can also set the system time to follow a Network Time Protocol (NTP) Server (recommended) or you can set the time and date manually.

The time and date settings are also available as parameters in the configuration file. See “"time_date" Module: Time and Date Settings” on page 150.



Time and Date Format

Date Format: MM/DD/YY

Time Format: 12 Hour

Network Time Settings:

☑ Enable Network Time

NTP Server: us.pool.ntp.org

□ Use DHCP (Option 42)

Time Zone and Daylight Savings Settings

Time Zone: -8 Canada(Vancouver

☑ Automatically adjust clock for Daylight Savings

□ User-defined Daylight Savings Time

Daylight Savings Start: March | Week 2 | Sunday | 02:00

Daylight Savings End: November | Week 1 | Sunday | 02:00

Daylight Savings Offset (minutes): 60

□ Use DHCP (Option 2/100/101)

Manual Time Settings

Date: 06/17/2019

Time: 02:13:35PM Apply Now

Save

Time and Date Format

Click the link for each setting to see the matching configuration file parameter in *“"time_date" Module: Time and Date Settings” on page 150*. Default values and ranges are listed there.

Setting	Description
Date Format	Sets the date format.
Time Format	Sets the clock to a 24-hour or 12-hour format.

Network Time Settings

Setting	Description
Enable Network Time	Enables or disables getting time and date information for your phone from the Internet.
NTP Server	If Enable Network Time is selected, enter the URL of your preferred time server.
Use DHCP (Option 42)	If Enable Network Time is selected, select to use DHCP to locate the time server. Option 42 specifies the NTP server available to the phone. When enabled, the phone obtains the time in the following priority: 1. Option 42 2. NTP Server 3. Manual time.

Time Zone and Daylight Savings Settings

Setting	Description
Time Zone	Select your time zone from the list.
Automatically adjust clock for Daylight Savings	Select to adjust the clock for daylight savings time according to the NTP server and time zone setting. To disable daylight savings adjustment, disable both this setting and User-defined Daylight Savings Time.
User-defined Daylight Savings Time	Select to set your own start and end dates and offset for Daylight Savings Time. To disable daylight savings adjustment, disable both this setting and Automatically adjust clock for Daylight Savings.
Daylight Savings Start: ■ Month ■ Week ■ Day ■ Hour	If User-defined DST is enabled, set the start date and time for daylight savings: Month, week, day, and hour.

Setting	Description
Daylight Savings End: ■ Month ■ Week ■ Day ■ Hour	If User-defined DST is enabled, set the end date and time for daylight savings: Month, week, day, and hour.
Daylight Savings Offset (minutes)	If User-defined DST is enabled, this specifies the daylight savings adjustment (in minutes) to be applied when the current time is between Daylight Savings Start and Daylight Savings End.
Use DHCP (Option 2/100/101)	If Enable Network Time is selected, select to use DHCP to determine the time zone offset. Options 2, 100 and 101 determine time zone information.

Manual Time Settings

If Enable Network Time is disabled or if the time server is not available, use Manual Time Settings to set the current time.

Setting	Description
Date	Select the current year, month, and day. Click the **Date** field and select the date from the calendar that appears.
Time	Sets the current hour, minute, and second. Click the Time field, and enter the current time. You can also refresh the page to update the manual time settings.

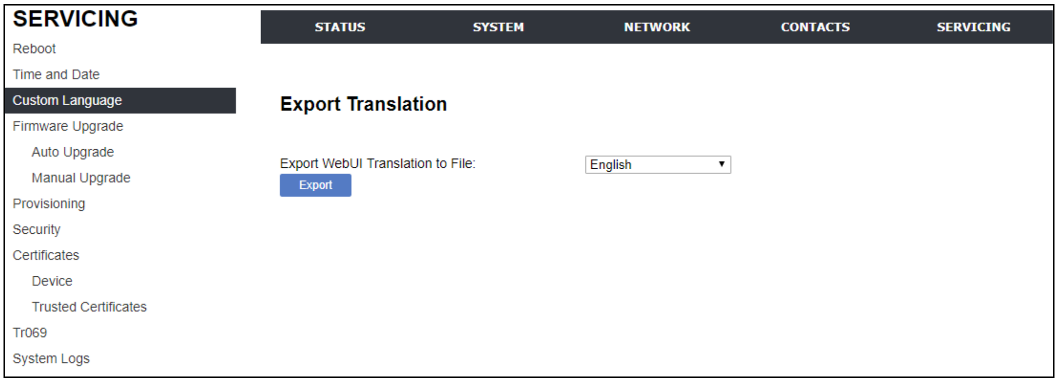
Click Apply Now to start the M100 KLE using the manual time settings.

Custom Language

On the Export Translation page, you can export WebUI language strings. After exporting language strings, you can use the resulting file as the basis for a custom language translation file (.tpk file).

You can import one custom language for use on the WebUI. The custom language adds to the existing languages available with the firmware.

Importing a custom language can only be done using the configuration file. See *“"file" Module: Imported File Settings” on page 168*.



Export Translation

Export WebUI Translation to File: English

The available languages for export are identical to the WebUI Language list described in *“User Preferences” on page 55*.

The filename of the exported language file will be:

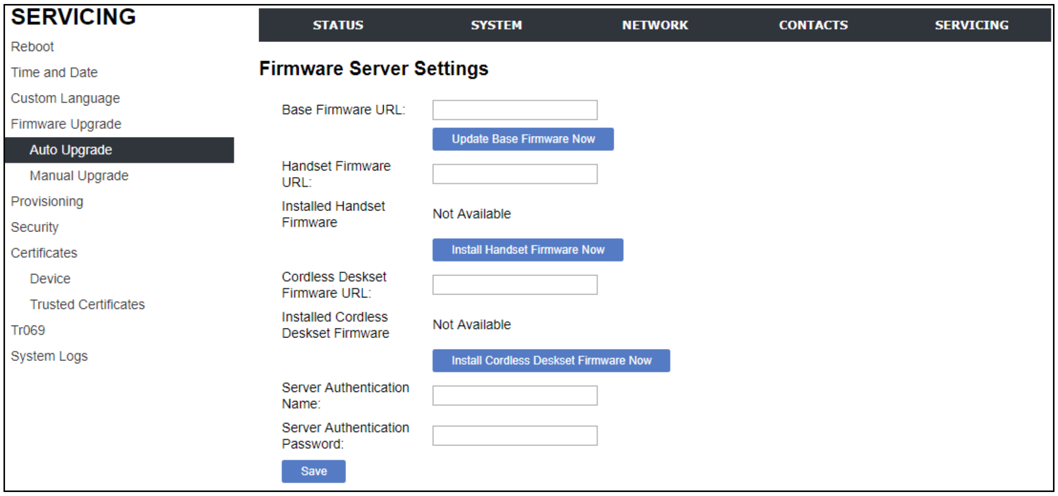
- WebUI: <Model Number>-<Display Name>-webui.tpk

Firmware Upgrade

You can update the M100 KLE with new firmware using the following methods:

- Retrieving a firmware update file from a remote host computer and accessed via a URL. This central location may be arranged by you, an authorized dealer, or your SIP service provider. Enter the URL under **Firmware Server Settings**.
- Using a file located on your computer or local network. No connection to the Internet is required. Consult your dealer for access to firmware update files. Click **Manual Upgrade** to view the page where you can manually upgrade the M100 KLE firmware.

The firmware upgrade settings are also available as parameters in the configuration file. See *“"provisioning" Module: Provisioning Settings” on page 145*.



Firmware Server Settings

Base Firmware URL:

Handset Firmware URL:

Installed Handset Firmware: Not Available

Cordless Deskset Firmware URL:

Installed Cordless Deskset Firmware: Not Available

Server Authentication Name:

Server Authentication Password:

Firmware Server Settings

Click the link for each setting to see the matching configuration file parameter in *“"provisioning" Module: Provisioning Settings” on page 145*. Default values and ranges are listed there.

Setting	Description
Base Firmware URL	The URL where the M100 KLE Base Station firmware update file resides. This should be a full path, including the filename of the firmware file.
Handset Firmware URL	The URL where the M10 KLE Cordless Handset firmware update file resides. This should be a full path, including the filename of the firmware file.
Installed Handset Firmware	The version number of handset firmware currently installed.

Setting	Description
Cordless Deskset Firmware URL	The URL where the VDP658 Deskset Accessory firmware update file resides. This should be a full path, including the filename of the firmware file.
Installed Cordless Deskset Firmware	The version number of deskset firmware currently installed.
Server authentication name	Authentication username for the firmware server.
Server authentication password	Authentication password for the firmware server.

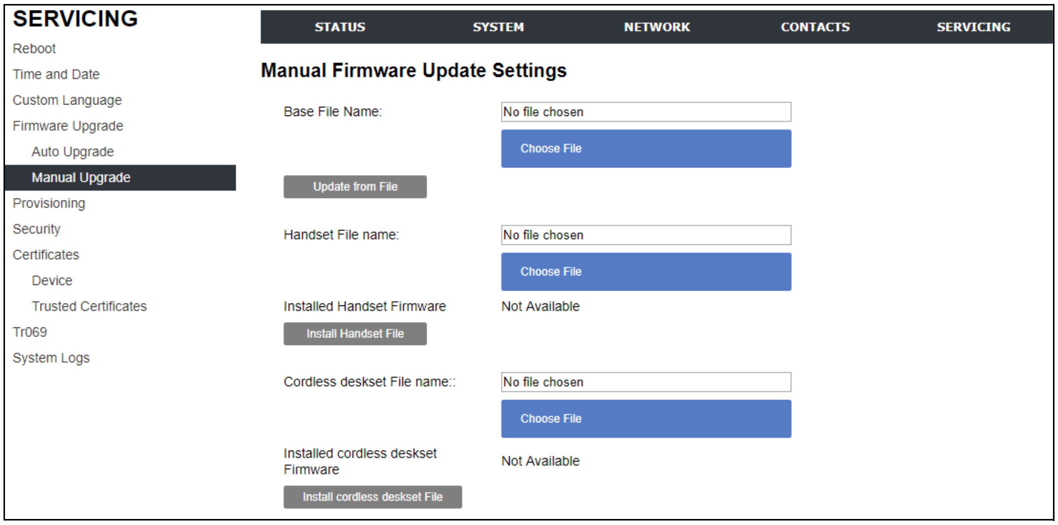
To update the firmware immediately:

- Click **Update Base Firmware Now** , **Install Handset Firmware Now**, or **Install Cordless Deskset Firmware Now**.

NOTE You can also configure the M100 KLE to check for firmware updates at regular intervals. See *"Provisioning" on page 95*.

Manual Firmware Update and Upload

On the Manual Firmware Update Settings page, you can upgrade the M100 KLE, handset, and cordless deskset firmware using a file located on your computer or local network.



Manual Firmware Update Settings

Base File Name: No file chosen

Handset File name: No file chosen

Installed Handset Firmware: Not Available

Cordless deskset File name:: No file chosen

Installed cordless deskset Firmware: Not Available

To update the firmware using a file on your computer or local network:

1. On the Manual Firmware Update page, click Choose File to locate and open the firmware update file.
2. Click Update from File, Install Handset File, or Install cordless deskset File.

After clicking Update from File the M100 KLE will update its firmware and restart.

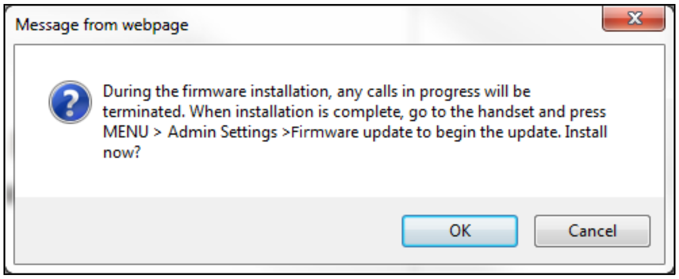
If you are updating handset and/or deskset firmware, you must perform one more procedure after clicking Install Handset File - see "Updating a Cordless Handset/Deskset", below.

Updating a Cordless Handset/Deskset

Updating DECT cordless handset/deskset firmware using the WebUI is a two-step process. First you must download the handset/deskset firmware and install it on the base station. Second, you must install the handset/deskset firmware on the handset/deskset. The handset/deskset downloads the firmware over the air from the base station.

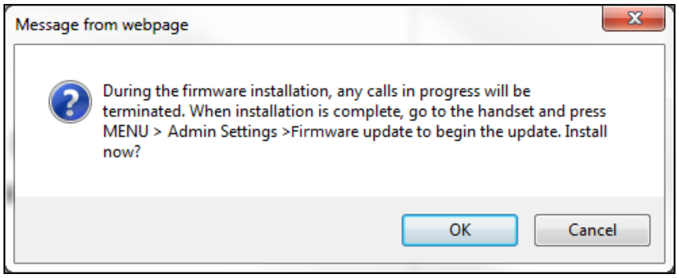
To install the handset/deskset firmware on the basestation:

1. **To install the handset firmware:** Click Install Handset Firmware Now on the **Firmware Server update** page, or Install Handset File on the **Manual Firmware update** page. The confirmation dialog box shown below appears.



During the firmware installation, any calls in progress will be terminated. When installation is complete, go to the handset and press MENU > Admin Settings >Firmware update to begin the update. Install now?

2. **To install the deskset firmware:** Click Install Cordless Deskset Firmware Now on the **Firmware Server update** page, or Install cordless deskset File on the **Manual Firmware update** page. The confirmation dialog box shown below appears.



During the firmware installation, any calls in progress will be terminated. When installation is complete, go to the handset and press MENU > Admin Settings >Firmware update to begin the update. Install now?

3. To begin installing the handset/deskset firmware, click OK. The message **Installing handset firmware. Please wait...** appears. To cancel the download, click Cancel.

After clicking OK, the message **System update in progress. Please wait...** appears on the handset/deskset.

After a successful update, the message **Firmware installation successful** appears on the WebUI.

An error message appears if:

- the handset/deskset firmware is aleady up to date.
- the handset/deskset firmware URL is incorrect, or the file cannot be retrieved for any other reason.
- the handset/deskset firmware file is corrupted.
- the handset/deskset doesn‘t recognize the firmware file. For example, the firmware file may belong to a different ErisTerminal product.

To install the firmware on the cordless handset/deskset:

NOTE Your cordless handset/deskset will automtically initiate the firmware update after a short period of time, as long as there are no active calls on the base station. If you wish to manually start the firmware update, perform the steps below.

1. On the handset/deskset, press **MENU**, and then select **Admin settings**.
2. Enter the admin password. The default is **admin**. To switch between entering upper or lower-case letters, press the * key.

3. On the Admin settings menu, select **Firmware update**.
   The handset/deskset checks for new firmware. If new firmware is found, the handset/deskset screen asks you to proceed with the update.

NOTE Only one handset/deskset at a time can perform a firmware update. The base LEDs flash to indicate the base is busy and all incoming calls are rejected while the update is in progress.

Provisioning

Provisioning refers to the process of acquiring and applying new settings for the M100 KLE using configuration files retrieved from a remote computer. After a M100 KLE is deployed, subsequent provisioning can update the M100 KLE with new settings; for example, if your service provider releases new features. See also *"Provisioning Using Configuration Files" on page 109*.

With automatic provisioning, you enable the M100 KLE to get its settings automatically—the process occurs in the background as part of routine system operation. Automatic provisioning can apply to multiple devices simultaneously.

With manual provisioning on the WebUI, you update the M100 KLE settings (configuration and/or firmware) yourself via **SERVICING > Provisioning > Import Configuration** and/or **SERVICING > Firmware Upgrade > Manual Upgrade**. Manual provisioning can only be performed on one M100 KLE at a time.

On the Provisioning page, you can enter settings that will enable the M100 KLE to receive automatic configuration and firmware updates. The Provisioning page also allows you to manually update M100 KLE configuration from a locally stored configuration file using an Import function. You can also export the M100 KLE configuration—either to back it up or apply the configuration to another M100 KLE in the future—to a file on your computer.

The provisioning process functions according to the Resynchronization settings and Provisioning Server Settings. The M100 KLE checks for the provisioning URL from the following sources in the order listed below:

1. PnP—Plug and Play Subscribe and Notify protocol

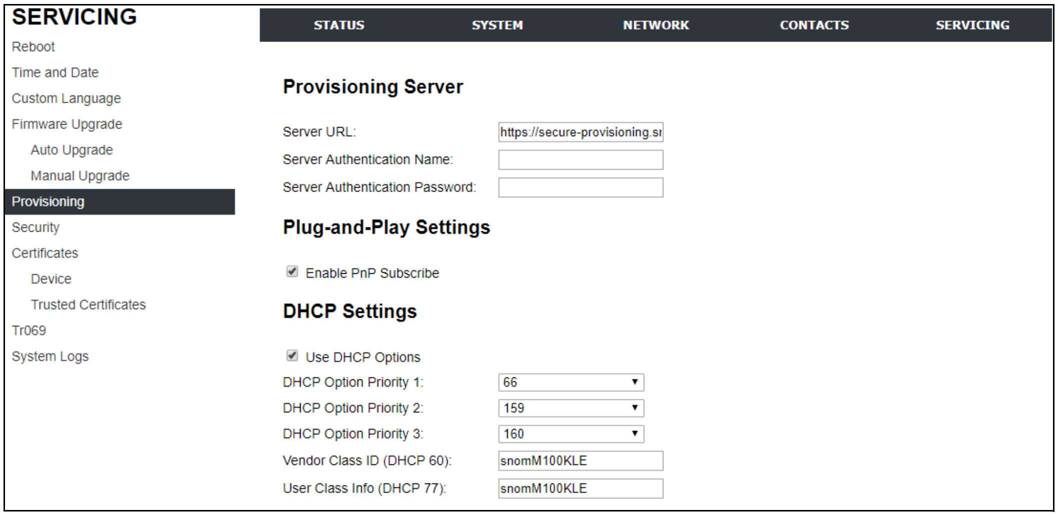
2. DHCP Options

3. Preconfigured URL—Any M100 KLE updated to the latest firmware release will have the Redirection Server URL available as the default Provisioning Server URL (see *"`provisioning.server_address`" on page 149*).

NOTE Using the Redirection Service requires contacting the Snom support team for an account.

If one of these sources is disabled, not available, or has not been configured, the M100 KLE proceeds to the next source until reaching the end of the list.

The provisioning settings are also available as parameters in the configuration file. See *""provisioning" Module: Provisioning Settings" on page 145*.



Provisioning Server

Server URL: https://secure-provisioning.sı

Server Authentication Name:

Server Authentication Password:

Plug-and-Play Settings

☑ Enable PnP Subscribe

DHCP Settings

☑ Use DHCP Options

DHCP Option Priority 1: 66

DHCP Option Priority 2: 159

DHCP Option Priority 3: 160

Vendor Class ID (DHCP 60): snomM100KLE

User Class Info (DHCP 77): snomM100KLE

Provisioning Server

Setting	Description
Server URL	URL of the provisioning file(s). The format of the URL must be RFC 1738 compliant, as follows: "<schema>://<user>:<password>@ <host>:<port>/<url-path>" "<user>:<password>@" may be empty. "<port>" can be omitted if you do not need to specify the port number.
Server authentication name	User name for access to the provisioning server
Server authentication password	Password for access to the provisioning server

Plug-and-Play Settings

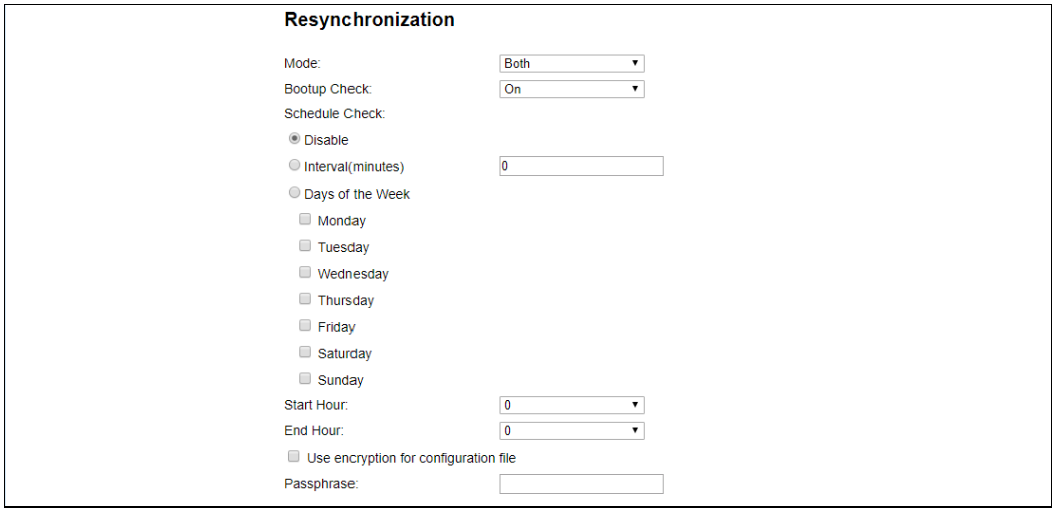
Setting	Description
Enable PnP Subscribe	Select to enable the M100 KLE to search for the provisioning URL via a SUBSCRIBE message to a multicast address (224.0.1.75). The M100 KLE expects the server to reply with a NOTIFY that includes the provisioning URL. The process times out after five attempts.

DHCP Settings

Setting	Description
Use DHCP Options	Enables the M100 KLE to use DHCP options to locate and retrieve the configuration file. When selected, the M100 KLE automatically attempts to get a provisioning server address, and then the configuration file. If DHCP options do not locate a configuration file, then the server provisioning string is checked. **Note**: Ensure that DHCP is also enabled on the “Basic Network Settings” page.
DHCP Option Priority 1	If DHCP is enabled, sets the DHCP Option priority. Select the highest priority option.
DHCP Option Priority 2	If DHCP is enabled, sets the DHCP Option priority. Select the second highest priority option.
DHCP Option Priority 3	If DHCP is enabled, sets the DHCP Option priority. Select the third highest priority option.
Vendor Class ID (DHCP 60)	DHCP Option 60 is available to send vendor-specific information to the DHCP Server.
User Class Info (DHCP 77)	DHCP Option 77 is available to send vendor-specific information to the DHCP Server.

Resynchronization

On the Resynchronization page, you can select how and when the phone checks for updated firmware and/or configuration files.



Resynchronization

Mode: Both

Bootup Check: On

Schedule Check:

● Disable

○ Interval(minutes) 0

○ Days of the Week

□ Monday

□ Tuesday

□ Wednesday

□ Thursday

□ Friday

□ Saturday

□ Sunday

Start Hour: 0

End Hour: 0

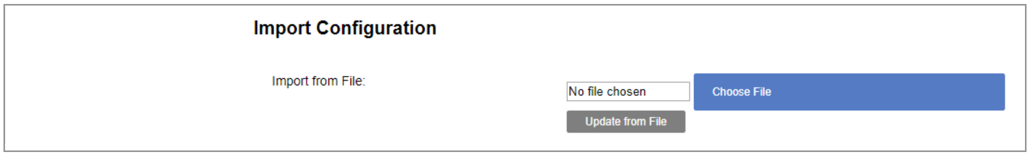
□ Use encryption for configuration file

Passphrase:

Setting	Description
Mode	Sets which files for which the M100 KLE checks. It can check for configuration files, firmware update files (from the URL entered on the Firmware Server Settings page), or both. **Note**: When checking for both configuration and firmware files, the firmware URL can be within the config file. This firmware URL takes take precedence over the URL on the Firmware Server Settings page. It will also update the URL on the Firmware Server Settings page. This allows you to change the firmware URL automatically.
Bootup Check	Sets the M100 KLE to check the provisioning URL for new configuration and/or firmware files upon bootup. The update is applied as part of the reboot process.
Schedule Check: Disable	When selected, disables regularly scheduled file checking.
Schedule Check: Interval	Sets an interval for checking for updates. After selecting Interval, enter the interval in minutes between update checks.
Schedule Check: Days of the Week	Select to enable weekly checking for updates on one or more days. After selecting Days of the Week, select the day(s) on which the M100 KLE checks for updates.
Start Hour	Select the hour of the day on which the M100 KLE checks for updates.
End Hour	Select the hour of the day on which the M100 KLE stops checking for updates.
Use encryption for configuration file	Enables an AES-encrypted configuration file to be decrypted before being applied to the M100 KLE. Select if the configuration file has been secured using AES encryption. See *“Securing configuration files with AES encryption” on page 115*.
Passphrase	If the configuration file has been secured using AES encryption, enter the 16-bit key. See *“Securing configuration files with AES encryption” on page 115*.

Import Configuration

You can configure the M100 KLE by importing a configuration file from your computer or your local network. For more information about configuration file types and configuration file formatting, see *“Provisioning Using Configuration Files” on page 109*.



Import Configuration

Import from File: No file chosen

To import a configuration file:

1. Click Choose File to locate and open the configuration file.
2. Click Update from File .

The M100 KLE will update its configuration.

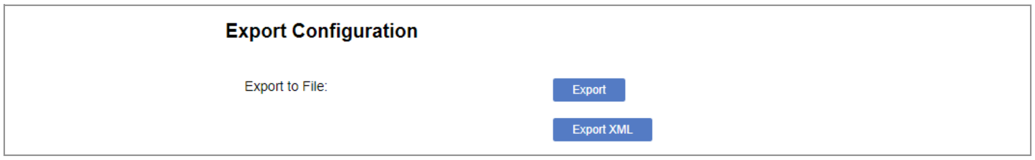
Manually importing a configuration file differs from the auto-provisioning process in that:

- The M100 KLE does not check whether the file has been loaded before. The configuration file is processed whether or not it is different from the current version.
- The M100 KLE will restart immediately after importing the configuration file, without waiting for one minute of inactivity.

Export Configuration

You can export all the settings you have configured on the WebUI and save them as a configuration file on your computer. You can then use this configuration file as a backup, or use it to update other phones.

Under **Export Configuration**, you can also reset the phone to its default configuration.



Export Configuration

Export to File:

NOTE

The exported configuration file will contain the following passwords in plain text:

- SIP account authentication password
- EAPOL password
- Firmware server password
- Provisioning server password
- Encryption passphrase
- LDAP server password

Please ensure that you save the exported configuration file in a secure location. You can also disable passwords from being exported as plain text. See *“provisioning.pwd_export_enable” on page 148*.

To export the configuration file:

- Click Export .

The format of the exported file is **<model name>_<mac address>.cfg**. For example, **M100 KLE_0011A0OCF489.cfg**.

Exporting a configuration file generates two header lines in the configuration file. These header lines provide the model number and software version in the following format:

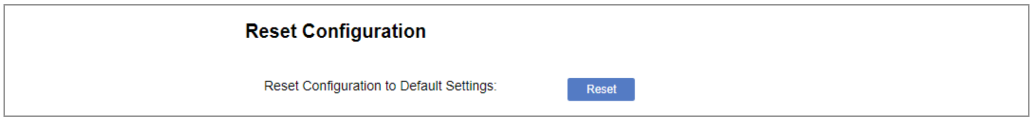
```
#Model Number = xxxxxxx
```

```
#SW Version = xxxxxxx
```

You can use the exported file as a general configuration file, and duplicate the settings across multiple units. However, ensure that you edit the file to remove any MAC-specific SIP account settings before applying the general configuration file to other units.

Reset Configuration

You can reset the phone to its default settings.



Reset Configuration

Reset Configuration to Default Settings: Reset

To reset the M100 KLE to its default configuration:

1. Under **Reset Configuration**, click Reset .
2. When the confirmation box appears, click **OK**.

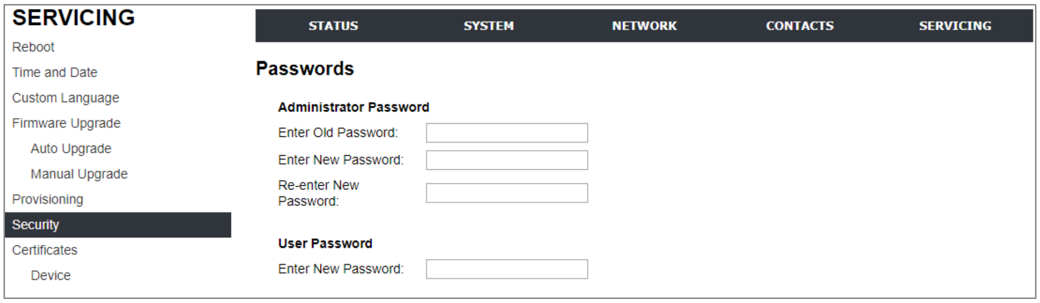
Security

On the **Security** page you can reset the admin password, reset the user password, and enter web server settings.

The security settings are also available as parameters in the configuration file. See *“"web" Module: Web Settings” on page 160*.

Passwords

You can set the administrator password and user password on the WebUI or by using provisioning. For more information on using provisioning to set passwords, see *“"profile" Module: Password Settings” on page 178*.



Passwords

Administrator Password

Enter Old Password:

Enter New Password:

Re-enter New Password:

User Password

Enter New Password:

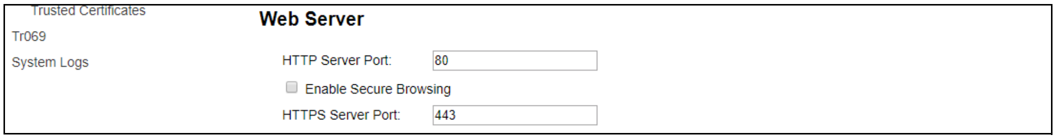
To change the admin password:

1. Enter the old password (for a new M100 KLE, the default password is **admin**).
2. Enter and re-enter a new password. The password is case sensitive and can consist of both numbers and letters (to a maximum of 15 characters).
3. Click Save .

To change the User password:

1. Enter the old password (for a new M100 KLE, the default password is **user**).
2. Enter and re-enter a new password. The password is case sensitive and can consist of both numbers and letters (to a maximum of 15 characters).
3. Click Save .

Web Server



Web Server

HTTP Server Port: 80

□ Enable Secure Browsing

HTTPS Server Port: 443

Setting	Description
HTTP Server port	Port used by the HTTP server.
Enable Secure Browsing	Sets the server to use the HTTPS protocol.
HTTPS Server port	Port used by the HTTPS server.

To configure Web Server Settings:

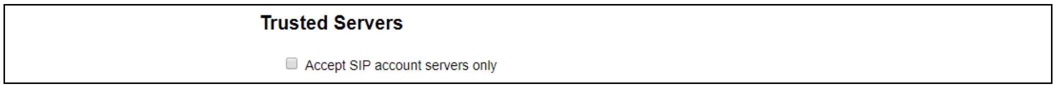
1. Enter the HTTP Server port number. The default setting is 80.
2. Enable or Disable Secure Browsing. When enabled, the HTTPS protocol is used, and you must select the HTTPS server port in the next step.
3. Enter the HTTPS server port number. The default setting is 443.

NOTE Changing the Web Server settings will reboot the M100 KLE.

Trusted Servers

The Trusted Servers setting provides a means of blocking unauthorised SIP traffic. When enabled, each account's Registration server, SIP server, Outbound Proxy server and Backup Outbound Proxy server will be used as sources for trusted SIP traffic. All unsolicited SIP traffic (for example, INVITE, NOTIFY, unsolicited MWI, OPTIONS) will be blocked unless it is from one of the trusted servers with the enabled accounts.

If additional trusted sources are required beyond what has been specified with the enabled accounts (for example, if IP dialling or other types of server traffic need to be secured), use the Trusted IP settings on the Security page.



Trusted Servers

□ Accept SIP account servers only

Setting	Description
Accept SIP account servers only	Enable or disable using the account servers as sources for trusted SIP traffic.

Trusted IP

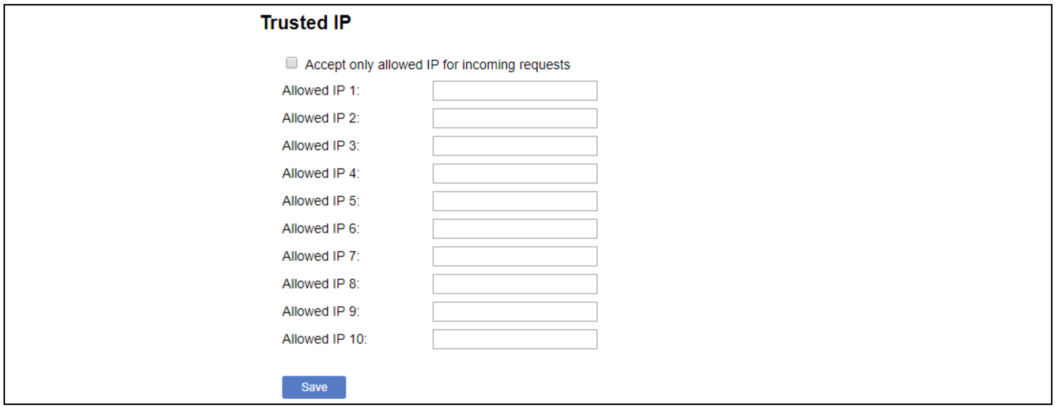
In addition to the Trusted Servers setting, incoming IP traffic can be filtered using an "Allowed IP" list of IP addresses. When this means is enabled, all unsolicited IP traffic will be blocked unless it is from one of the trusted IP addresses on the "Allowed IP" list.

Yu can enter the "Allowed IP" list in the 10 fields on the "Trusted IP" section. Entries on the "Allowed IP" list must be specified as IP addresses (IPv4 or IPv6).

Three formats are supported for entries on the "Allowed IP" list:

1. IP range specified using CIDR notation (defined in rfc4632). IPv4 or IPv6 address followed by a prefix; for example, 192.168.0.1/24.
2. IP range specified with a pair of starting and ending IPv4 or IPv6 addresses, separated by '-' (for example, 192.168.0.1-192.168.5.6).
   - No space before or after '-'
   - Both starting IP & ending IP have to be with the same IP version
   - Starting IP has to be smaller than the ending IP; otherwise, all traffic will be dropped.
3. Single IP address in IPv4 or IPv6.

NOTE To ensure WebUI access after configuring Trusted IP, you must include the IP of the Web Browser on the "Allowed IP" list.



Trusted IP

□ Accept only allowed IP for incoming requests

Allowed IP 1:

Allowed IP 2:

Allowed IP 3:

Allowed IP 4:

Allowed IP 5:

Allowed IP 6:

Allowed IP 7:

Allowed IP 8:

Allowed IP 9:

Allowed IP 10:

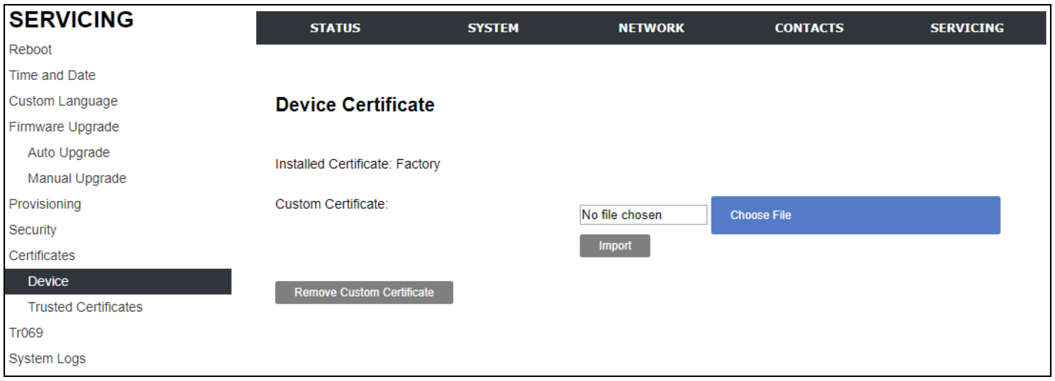
Setting	Description
Accept only allowed IP for incoming requests	Enable or disable using the “Allowed IP” list to filter all IP traffic.
Allowed IP 1–10	Enter IP addresses or address ranges to be used as sources of authorised IP traffic.

Certificates

You can add two types of certificates using the WebUI or the provisioning file (see *“"file" Module: Imported File Settings” on page 168*). The two types of certificates are:

- Device—A single Device Certificate can be uploaded so that other parties can authenticate the phone in the following cases:
  - When the phone acts as a web server for the user to manage configurations.
  - When the phone acts as a client for applications where HTTP is supported.
- Trusted—Trusted Certificates are for server authentication with secured HTTP transaction in the following applications: SIP signalling, Provisioning, Firmware, and LDAP directory service. Up to 20 trusted certificates can be installed.

Device Certificate



Device Certificate

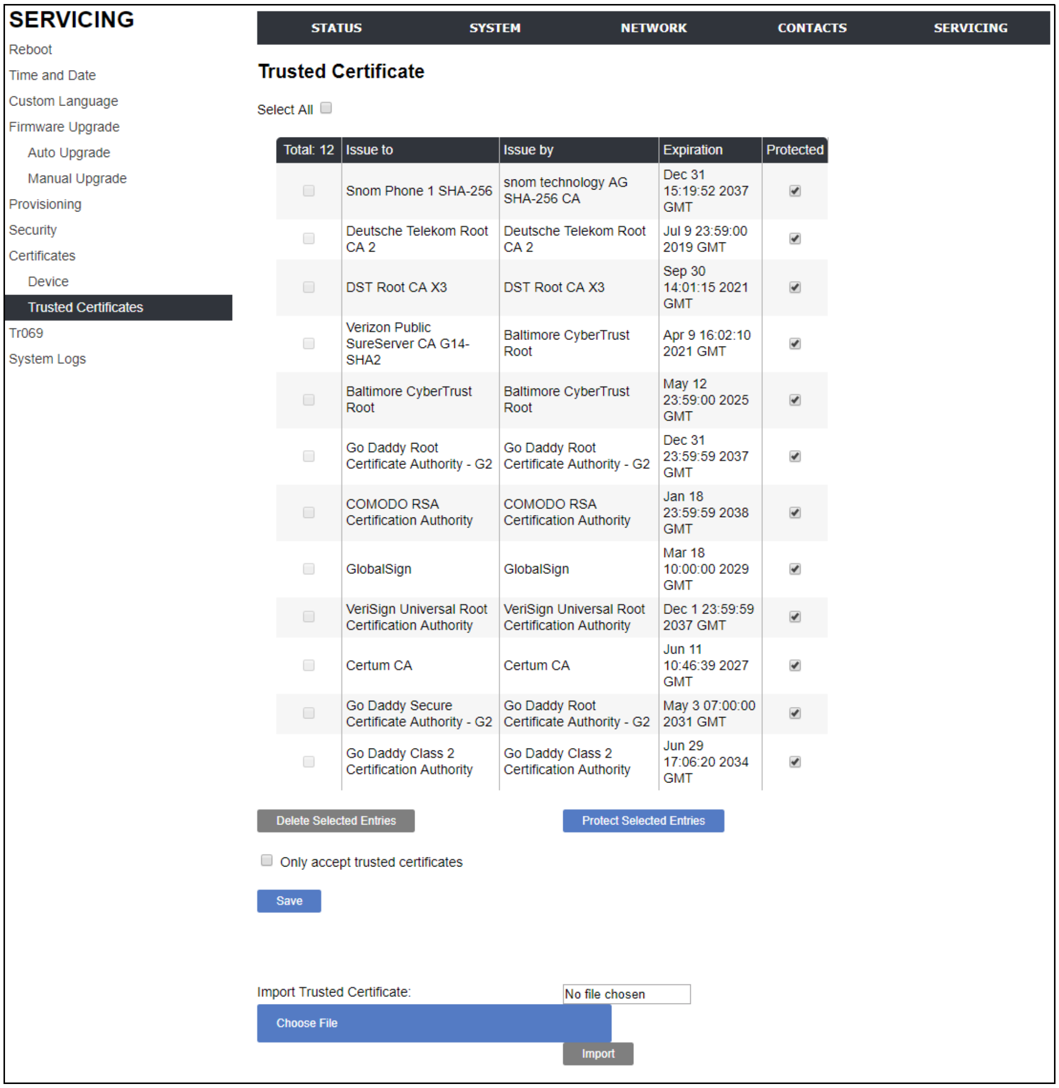
Installed Certificate: Factory

Custom Certificate:

To upload a Device certificate:

1. On the Device Certificate page, click Choose File .
2. Locate the certificate file and click **Open**.
3. On the Device Certificate page, click Import .

Trusted Certificate



Trusted Certificate

Select All □

Total: 12	Issue to	Issue by	Expiration	Protected
□	Snom Phone 1 SHA-256	snom technology AG SHA-256 CA	Dec 31 15:19:52 2037 GMT	☑
□	Deutsche Telekom Root CA 2	Deutsche Telekom Root CA 2	Jul 9 23:59:00 2019 GMT	☑
□	DST Root CA X3	DST Root CA X3	Sep 30 14:01:15 2021 GMT	☑
□	Verizon Public SureServer CA G14-SHA2	Baltimore CyberTrust Root	Apr 9 16:02:10 2021 GMT	☑
□	Baltimore CyberTrust Root	Baltimore CyberTrust Root	May 12 23:59:00 2025 GMT	☑
□	Go Daddy Root Certificate Authority - G2	Go Daddy Root Certificate Authority - G2	Dec 31 23:59:59 2037 GMT	☑
□	COMODO RSA Certification Authority	COMODO RSA Certification Authority	Jan 18 23:59:59 2038 GMT	☑
□	GlobalSign	GlobalSign	Mar 18 10:00:00 2029 GMT	☑
□	VeriSign Universal Root Certification Authority	VeriSign Universal Root Certification Authority	Dec 1 23:59:59 2037 GMT	☑
□	Certum CA	Certum CA	Jun 11 10:46:39 2027 GMT	☑
□	Go Daddy Secure Certificate Authority - G2	Go Daddy Root Certificate Authority - G2	May 3 07:00:00 2031 GMT	☑
□	Go Daddy Class 2 Certification Authority	Go Daddy Class 2 Certification Authority	Jun 29 17:06:20 2034 GMT	☑

□ Only accept trusted certificates

Import Trusted Certificate: No file chosen

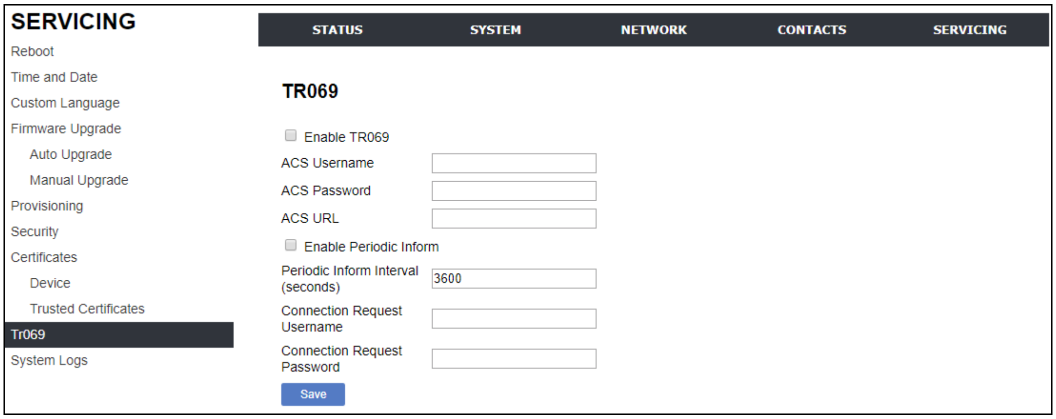
On the **Trusted Certificate** page, you can:

- import up to 20 trusted certificates.
- delete individual (or all) certificates.
- protect certificates by selecting them in the **Protected** column, and then clicking Protect Selected Entries. Protected certificates cannot be selected for deletion and are not removed during a reset to factory defaults.

Select **Only accept trusted certificates** to enable server authentication. Deselecting this option disables server authentication.

TR-069 Settings

The Broadband Forum’s Technical Report 069 (TR-069) defines a protocol for remote management and secure auto-configuration of compatible devices. On the **Tr069** page, you can enable TR-069 and configure access to an auto-configuration server (ACS).



TR069

□ Enable TR069

ACS Username

ACS Password

ACS URL

□ Enable Periodic Inform

Periodic Inform Interval (seconds) 3600

Connection Request Username

Connection Request Password

Setting	Description
Enable TR069	Enable/Disable TR-069 subsystem.
ACS Username	User name used for ACS authentication.
ACS Password	Password used for ACS authentication.
ACS URL	URL used to contact the ACS (for example, http://my.acs:9675/path/to/somewhere/).
Enable Period Inform	Enable/Disable periodic inform method calls.
Periodic Inform Interval (seconds)	Periodic inform method calls interval.
Connection Request Username	If the ACS wants to communicate with the device, it must offer the matching Connection Request user name. When the device sends the report to ACS for the first time, it contains information for this.
Connection Request Password	If the ACS wants to communicate with the device, it must offer the matching Connection Request password. When the device sends the report to ACS for the first time, it contains information for this.

System Logs

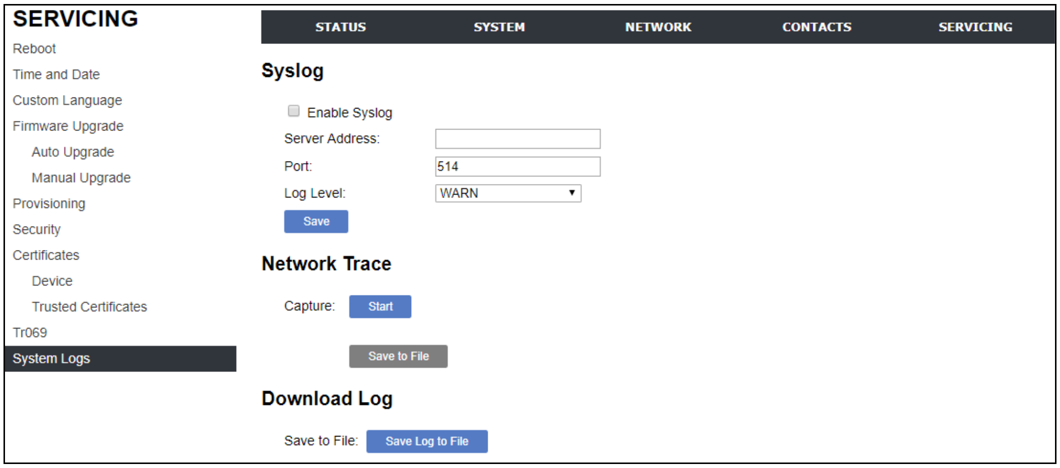
On the **Syslog Settings** page, you can enter settings related to system logging activities. It supports the following logging modes:

- Syslog server
- Volatile file

Under **Network Trace**, you can capture network traffic related to the phone's activity and save the capture as a .pcap file. The file can be used for diagnostic and troubleshooting purposes.

Under **Download Log**, you can save the system log to a file.

The Syslog settings are also available as parameters in the configuration file. See *""log" Module: Log Settings" on page 154*.



Syslog

☐ Enable Syslog

Server Address:

Port: 514

Log Level: WARN

Network Trace

Capture:

Download Log

Save to File:

Syslog Settings

Setting	Description
Enable Syslog	Enable log output to syslog server.
Server Address	Syslog server IP address.
Port	Syslog server port.
Log Level	Sets the log level. The higher the level, the larger the debug output. ■ 5—ALL ■ 4—DEBUG ■ 3—INFO ■ 2—WARNING ■ 1—ERROR ■ 0—CRITICAL

The logging levels are:

- CRITICAL: Operating conditions to be reported or corrected immediately (for example, an internal component failure or file system error).
- ERROR: Non-urgent failures—unexpected conditions that won't cause the device to malfunction.
- WARNING: An indication that an error or critical condition can occur if action is not taken.
- INFO: Normal operational messages.
- DEBUG: Developer messages for troubleshooting/debugging purposes.

Network Trace

To perform a network trace:

1. Start a network trace by clicking Start . The button changes to Stop .
2. Stop the network trace by clicking Stop .
3. Save the trace by clicking Save to file . Your browser should prompt you to save the **capture.pcap** file.

Download Log

To download the system log:

1. Click Save Log to file .
2. After your browser prompts you to save the **system.log** file, save the file in the desired location.

CHAPTER 4

PROVISIONING USING CONFIGURATION FILES

Provisioning using configuration files is the quickest way to configure multiple M100 KLE 4-Line base stations. You can place configuration files on a provisioning server, where the M100 KLE 4-Line base stations retrieve the files and update their configuration automatically.

Configuration files have the extension **.cfg** and contain settings that will apply to M100 KLE 4-Line base stations. To edit a configuration file, open it with a text editor such as Notepad.

The settings within a configuration file are grouped into modules. Most of the modules group their settings in the same way that settings are grouped on the M100 KLE WebUI. For example, the "time_date" module in the configuration file contains the same settings that are on the **Time and Date** WebUI page. For a complete list of M100 KLE configuration file modules and their associated parameters, see *"Configuration File Parameter Guide" on page 117*.

Using the WebUI, you can also import a configuration file and apply the configuration file settings to the M100 KLE. For more information, see *"Import Configuration" on page 99*.

This chapter covers:

The Provisioning Process

The automatic provisioning process is as follows:

1. Check for new or updated configuration files. For file-checking options, see *"Provisioning" on page 95* and *"Resynchronization: configuration file checking" on page 111*. The M100 KLE maintains a list of the last loaded provisioning files. The M100 KLE compares its current configuration against the files it finds on the provisioning server.

   If provisioning has been triggered by the resync timer expiring or by remote check-sync, the M100 KLE checks for updated files after one minute of inactivity.

2. Download the configuration files.

   If any file on the provisioning server has changed, the M100 KLE treats it as a new file and downloads it.

   If the provisioning URL specifies a path only with no filename, then by default the M100 KLE looks for and retrieves the following two files:

   - General file: **<model>.cfg**.
   - MAC-specific file: **<model>_<MAC Address>.cfg**.

   The <model> variable is the Snom product model: M100 KLE, for example.

   If the provisioning URL specifies both a path and filename, then the M100 KLE retrieves only the configuration file specified.

3. The M100 KLE restarts after one minute of inactivity.

During provisioning, the M100 KLE reads the configuration file and validates each module and setting. The M100 KLE considers a setting valid if it is:

- a valid data type
- formatted as a valid setting
- within a valid data range
- part of a module that passes an integrity check. That is, the module's settings are consistent and logical. For example, in the "network" module, if DHCP is disabled, but no static IP address is specified, the module will fail the integrity check and none of the settings will apply.

Invalid modules or invalid settings are skipped and logged as ERROR messages in the system log, but will not interrupt the provisioning process. The system log will include the module parameters that have not been applied. A recognized module with unrecognized settings will cause all other settings in that module to be skipped.

A successful configuration or firmware update is reported as an INFO message in the system log.

See *"Configuration File Parameter Guide" on page 117* for the options and value ranges available for each configuration file setting.

Resynchronization: configuration file checking

You can select a number of options that determine when the M100 KLE checks for new configuration files. This process of checking for configuration files is called Resynchronization. Resynchronization options are available on the WebUI **Provisioning** page, but you can also include them in a configuration file.

The resynchronization options are:

- Mode—sets the M100 KLE to check for a configuration file only, a firmware update file only, or both types of file.
- Never—configuration file checking is disabled
- Bootup—the M100 KLE checks for new configuration files when it boots up. Any updates are applied during the boot-up process.
- Remote check-sync—enables you to start a resynchronization remotely using your hosted server's web portal. The Remote check-sync settings are available only in the configuration file, not the WebUI.
- Repeatedly, at a defined interval from 60 to 65535 minutes (45 days).

M100 KLE restart

If the M100 KLE needs to restart after an auto-update, the restart happens only after the device has been idle for one minute.

To prevent users from delaying the update process (auto-updates cannot begin until the M100 KLE has been idle for one minute), or to avoid device restarts that might interfere with incoming calls:

- set the resynchronization interval to a suitable period
- upload any new configuration file(s) to your provisioning server after work hours so that the M100 KLE will download the file(s) when there is no call activity.

When you update the M100 KLE by importing a configuration file using the WebUI, the device restarts immediately after applying the new settings, regardless of whether the M100 KLE is idle.

Configuration File Types

The M100 KLE is able to retrieve and download two types of configuration file. Depending on your requirements, you may want to make both types of configuration file available on your provisioning server.

The two configuration file types are a general configuration file and a MAC-specific configuration file. The types differ in name only. The formatting of the files' content is the same.

The general configuration file contains settings that are required by every M100 KLE in the system.

The MAC-specific configuration file is a file that only a single M100 KLE can retrieve. The MAC-specific configuration file name contains a M100 KLE MAC address and can only be retrieved by the device with a matching MAC address.

The filename formats for both files are:

- General file: **<model>.cfg**
- MAC-specific file: **<model>_<MAC Address>.cfg**

The <model> variable is the Snom product model; for example, **M100 KLE**. For more information about the MAC-specific configuration file, see *"Guidelines for the MAC-Specific configuration file" on page 114*.

If the provisioning URL specifies a path only with no filename, then by default the M100 KLE will fetch both files.

However, if the provisioning URL specifies both a path and filename, then the M100 KLE will only fetch the single configuration file specified.

Both the general and MAC-specific files can contain any of the available configuration settings. A setting can appear in the general configuration file or the MAC-specific configuration file, or both files, or neither file. If a setting appears in both files, the setting that is read last is the one that applies.

When the M100 KLE fetches both a general and a MAC-specific configuration file, the general file is processed first. You can configure a setting for most of your M100 KLE 4-Line base stations in the general file, and then overwrite that setting for just a few M100 KLE 4-Line base stations using the MAC-specific file.

Data Files

The configuration file can also include links to data files for product customization. Allowed data types include the following:

- Directory (contacts, blacklist) in .xml format
- Certificates (server, provisioning) in pem format

Links to data files are in the configuration file's "file" module. This is where you enter any URLs to the data files that the M100 KLE 4-Line base station may require.

None of the data files are exported when you export a configuration file from the M100 KLE. However, you can export a Directory or Blacklist .xml file using the WebUI. After modifying the .xml file, you can use the configuration file "file" module to have the M100 KLE import the new file. For a complete list of data file parameters, see *“"file" Module: Imported File Settings” on page 168*.

Configuration File Tips and Security

All configuration settings are initially stored in a configuration template file. Copy, rename, and edit the template file to create a general configuration file and the MAC-specific configuration files you will need. You can store the general configuration file and the MAC-specific files on your provisioning server.

Do not modify the configuration file header line that includes the model and firmware version.

To save yourself time and effort, consider which settings will be common to all (or the majority of) M100 KLE 4-Line base stations. Such settings might include call settings, language, and NAT settings. You can then edit those settings in the configuration template and save it as the general configuration file. The remaining settings will make up the MAC-specific configuration file, which you will have to copy and edit for each M100 KLE.

Clearing parameters with %NULL in configuration file

For configuration file parameters that can have a text string value, you can clear the value of the parameter by applying the value %NULL in the configuration file.

For example: `sip_account.1.display_name = %NULL`

Guidelines for the MAC-Specific configuration file

The M100 KLE downloads the MAC-specific configuration file after the general configuration file. You must create a MAC-specific configuration file for each M100 KLE in your system. The file name must contain the M100 KLE MAC address, which is printed on a label on the bottom of the device. For example, a Snom M100 KLE 4-Line base station with the MAC address of 00:11:A0:10:6F:2D would download the **M100 KLE_0011A0106F2D.cfg** file.

NOTE When renaming a MAC-specific configuration file, ensure the filename is all upper case.

The MAC-specific configuration file contains settings intended exclusively for that M100 KLE 4-Line base station. Such settings will include SIP account settings such as display name, user ID, and authentication ID.

Securing configuration files with AES encryption

You can encrypt your configuration files to prevent unauthorized users modifying the configuration files. The M100 KLE firmware decrypts files using the AES 256 algorithm. After encrypting a file and placing it on your provisioning server, you can enable the M100 KLE to decrypt the file after fetching it from the server.

The procedures in this section use OpenSSL for Windows for file encryption, as shown in Figure 2.

To decrypt a configuration file, you will need a 16-character AES key that you specified when you encrypted the file. The key (or passphrase) is limited to 16 characters in length and supports special characters **~ ^ ` % ! & - _ + = | . @ * : ; , ? ( ) [ ] { } < > / \ #** as well as spaces.

NOTE The encryption of configuration files is supported only for the auto provisioning process. Encrypt files only if you intend to store them on a provisioning server. Do not encrypt files that you intend to manually import to the M100 KLE. You cannot enable decryption for manually imported configuration files.

To encrypt a configuration file:

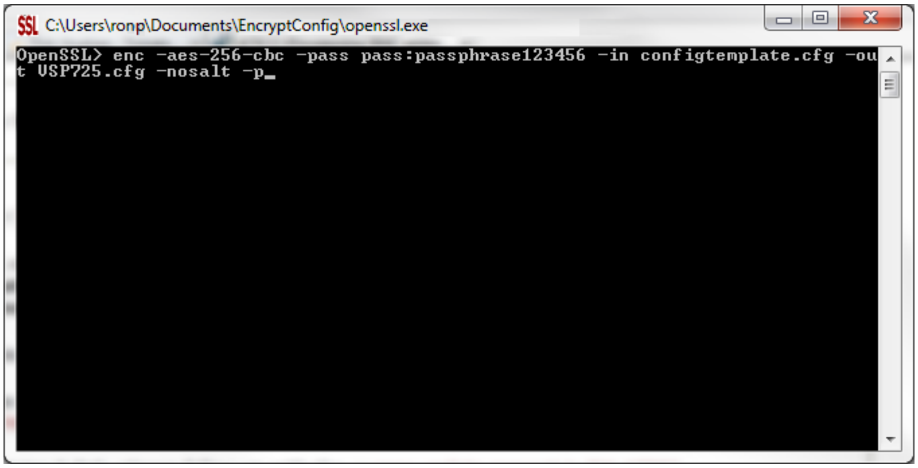
1. (Optional) Place your configuration file in the same folder as the openssl executable file. If the configuration file is not in the same folder as the openssl executable file, you can enter a relative pathname for the [infile] in the next step.

2. Double-click the **openssl.exe** file.

3. On the openssl command line, type:

   ```
   enc -aes-256-cbc -pass pass:[passphrase123456] -in [infile] -out [outfile]
   -nosalt -p
   ```

Elements in brackets are examples—do not enter the brackets. Enter a 16-character passphrase and the unencrypted configuration file filename (the "infile") and a name for the encrypted file ("outfile") that will result.

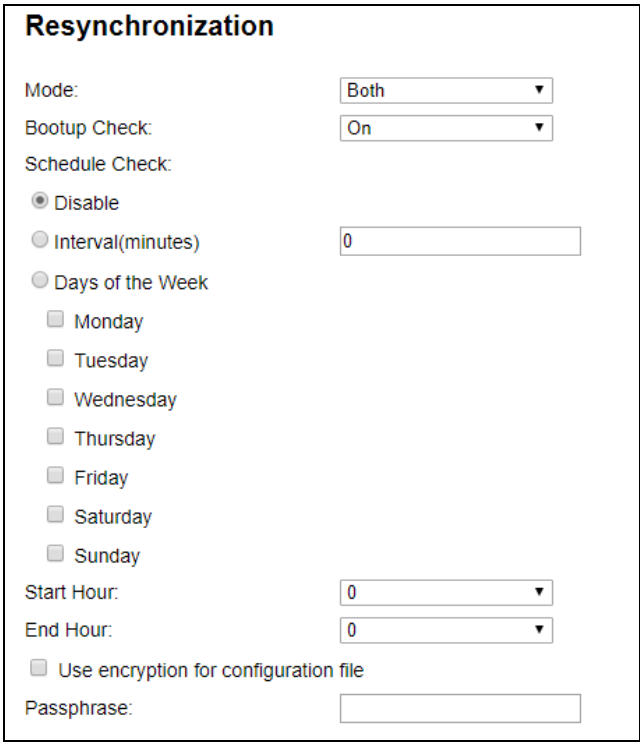


```
OpenSSL> enc -aes-256-cbc -pass pass:passphrase123456 -in configtemplate.cfg -ou
t USP725.cfg -nosalt -p_
```

Figure 2. OpenSSL command line

To enable configuration file decryption:

1. On the WebUI, click **Servicing > Provisioning**.
2. On the Provisioning page under **Resynchronization**, select **Use Encryption for configuration file**.



Resynchronization

Mode: Both ▼

Bootup Check: On ▼

Schedule Check:

● Disable

○ Interval(minutes) 0

○ Days of the Week

□ Monday

□ Tuesday

□ Wednesday

□ Thursday

□ Friday

□ Saturday

□ Sunday

Start Hour: 0 ▼

End Hour: 0 ▼

□ Use encryption for configuration file

Passphrase:

3. Enter the 16-character passphrase that you created when you encrypted the configuration file.
4. Click Save .

NOTE You must ensure that configuration files are encrypted when enabling AES Encryption. Decrypting an unencrypted file will result in a garbage file that is not processed. This will also be logged as an error in the system log.

CHAPTER 5

CONFIGURATION FILE PARAMETER GUIDE

This chapter lists the available options for all the settings within the M100 KLE configuration file. Most settings in the configuration file have an equivalent in the WebUI (see the settings tables in *"Using the WebUI" on page 35*). However, the options you must enter when editing the configuration file have a different syntax and format.

The settings are divided into modules. Most modules correspond to a page on the M100 KLE WebUI. You may wish to reorganize the modules within the configuration file itself. The configuration file settings can be listed in any order, and the configuration file will still be valid.

The modules included in the configuration file are:

- *""sip_account" Module: SIP Account Settings" on page 119*
- *""hs_settings" Module: Handset Settings" on page 133*
- *""network" Module: Network Settings" on page 140*
- *"“system" Module: System settings" on page 139*
- *""provisioning" Module: Provisioning Settings" on page 145*
- *""time_date" Module: Time and Date Settings" on page 150*
- *""log" Module: Log Settings" on page 154*
- *""remoteDir" Module: Remote Directory Settings" on page 155*
- *""web" Module: Web Settings" on page 160*
- *"“trusted_ip" Module: Trusted IP Settings" on page 161*
- *"“trusted_servers" Module: Trusted Server Settings" on page 162*
- *""user_pref" Module: User Preference Settings" on page 163*

"sip_account" Module: SIP Account Settings

The SIP Account settings enable you to set up individual accounts for each user. Each account requires you to configure the same group of SIP account settings. The SIP account settings for each account are identified by the account number, from 1 to 8 for the M100 KLE.

For example, for account 1 you would set:

```
sip_account.1.sip_account_enable = 1

sip_account.1.label = Line 1

sip_account.1.display_name = 1001

sip_account.1.user_id = 2325551001
```

and so on.

For account 2, you would set:

```
sip_account.2.sip_account_enable = 1

sip_account.2.label = Line 2

sip_account.2.display_name = 1002

sip_account.2.user_id = 2325551002
```

and so on, if you have additional accounts to configure.

The SIP account settings follow the format: sip_account.x.[element], where x is an account number ranging from 1 to 8 for the M100 KLE.

All these settings are exported when you manually export the configuration from the M100 KLE.

General configuration file settings

Setting:	**`sip_account.x.dial_plan`**		
Description:	Sets the dial plan for account x. See *"Dial Plan" on page 42*.		
Values:	Text string	**Default:**	x+P

Setting:	**`sip_account.x.call_restrict_dial_plan`**		
Description:	Enter call restriction dial plan, to prevent users from completing calls to certain numbers for this account.		
Values:	text string (dial plan syntax)	**Default:**	Blank

Setting:	`sip_account.x.inter_digit_timeout`		
Description:	Sets the inter-digit timeout (in seconds) for account x. The inter-digit timeout sets how long the M100 KLE waits after the last digit is entered before dialing the number.		
Values:	1–10	**Default:**	3

Setting:	`sip_account.x.maximum_call_number`		
Description:	Sets the maximum number of concurrent active calls allowed for that account.		
Values:	1–4	**Default:**	4

Setting:	`sip_account.x.dtmf_transport_method`		
Description:	Sets the transport method for DTMF signalling for account x.		
Values:	auto, rfc2833, inband, info	**Default:**	auto

Setting:	`sip_account.x.unregister_after_reboot_enable`		
Description:	Enables or disables the M100 KLE to unregister account x after rebooting.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.primary_sip_server_address`		
Description:	Sets the SIP server IP address for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.primary_sip_server_port`		
Description:	Sets the SIP server port for account x.		
Values:	1–65535	**Default:**	5060

Setting:	`sip_account.x.primary_registration_server_address`		
Description:	Sets the registration server IP address for account x.		
Values:	IPv4, IPv6 or FQDN	**Default:**	Blank

Setting: `sip_account.x.primary_registration_server_port`

Description: Sets the registration server port for account x.

Values: 1–65535 **Default:** 5060

Setting: `sip_account.x.primary_registration_expires`

Description: Sets the expiration time (in seconds) of the current registration for account x.

Values: 30–7200 **Default:** 3600

Setting: `sip_account.x.registration_retry_time`

Description: Sets the retry frequency of the current registration for account x.

Values: 1–1800 **Default:** 10

Setting: `sip_account.x.reliable_provisional_response_option`

Description: Sets the 100rel/PRACK option. Indicates if the reliable provisional responses are disabled, supported, or required.

1 (supported):

- We will include "100rel" in "Supported" header.
- This triggers the remote side (server or remote client) to include "Requires:100rel" in their response (180 or 183). Server may choose not to do so. But if it does, we need to respond with PRACK.
- We will NOT include a "Requires: 100rel" in our requests (INVITE). i.e. we won't force anyone to use 100rel, but we will do if we were asked to do.

2 (required):

- Everything as described for supported, plus our outgoing INVITE also includes "Requires: 100rel".
- This forces the remote party must support 100rel.

Values: 0 (disabled), 1 (supported), 2 (required) **Default:** 0

Setting: `sip_account.x.primary_outbound_proxy_server_address`

Description: Sets the outbound proxy server IP address for account x.

Values: IPv4, IPv6 or FQDN **Default:** Blank

Setting:	`sip_account.x.primary_outbound_proxy_server_port`		
Description:	Sets the outbound proxy server port for account x.		
Values:	1–65535	**Default:**	5060

Setting:	`sip_account.x.backup_outbound_proxy_server_address`		
Description:	Sets the backup outbound proxy server IP address for account x.		
Values:	IPv4, IPv6 or FQDN	**Default:**	Blank

Setting:	`sip_account.x.backup_outbound_proxy_server_port`		
Description:	Sets the backup outbound proxy server port for account x.		
Values:	1–65535	**Default:**	5060

Setting:	`sip_account.x.codec_priority.1`		
Description:	Sets the highest-priority codec for account x.		
Values:	g711u, g711a, g729, g726, g722, g723_1, ilbc, opus	**Default:**	g711u

Setting:	`sip_account.x.codec_priority.2`		
Description:	Sets the second highest-priority codec for account x.		
Values:	none, g711u, g711a, g729, g726, g722, g723_1, ilbc, opus	**Default:**	g711a

Setting:	`sip_account.x.codec_priority.3`		
Description:	Sets the third highest-priority codec for account x.		
Values:	none, g711u, g711a, g729, g726, g722, g723_1, ilbc, opus	**Default:**	g729

Setting:	`sip_account.x.codec_priority.4`		
Description:	Sets the fourth highest-priority codec for account x.		
Values:	none, g711u, g711a, g729, g726, g722, g723_1, ilbc, opus	**Default:**	g726

Setting: `sip_account.x.codec_priority.5`

Description: Sets the fifth highest-priority codec for account x.

Values: none, g711u, g711a, g729, g726, g722, g723_1, ilbc, opus **Default:** g722

Setting: `sip_account.x.codec_priority.6`

Description: Sets the highest-priority codec for account x.

Values: g711u, g711a, g729, g726, g722, g723_1, ilbc, opus **Default:** g723_1

Setting: `sip_account.x.codec_priority.7`

Description: Sets the highest-priority codec for account x.

Values: g711u, g711a, g729, g726, g722, g723_1, ilbc, opus **Default:** ilbc

Setting: `sip_account.x.voice_encryption_enable`

Description: Enables or disables SRTP voice encryption for account x.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `sip_account.x.g729_annexb_enable`

Description: Enables G.729 Annex B, with voice activity detection (VAD) and bandwidth-conserving silence suppression. This setting applies only when G.729a/b is selected in a `sip_account.x.codec_priority` parameter.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `sip_account.x.ilbc_payload_type`

Description: Set the default payload type for the ilbc codec.

Values: 96-127 **Default:** 98

Setting: `sip_account.x.dscp`

Description: Sets the Voice Quality of Service Layer 3 - DSCP for account x.

Values: 0–63 **Default:** 46

Setting:	`sip_account.x.sip_dscp`		
Description:	Sets the Signalling Quality of Service Layer 3 - DSCP for account x.		
Values:	0–63	**Default:**	26

Setting:	`sip_account.x.local_sip_port`		
Description:	Sets the Local SIP port for account x.		
Values:	1–65535	**Default:**	Account 1: 5060 Account 2: 5070 Account 3: 5080 Account 4: 5090 Account 5: 5100 Account 6: 5200 Account 7: 5300 Account 8: 5400

Setting:	`sip_account.x.transport_mode`		
Description:	Sets the Signalling Transport Mode for account x.		
Values:	udp, tcp, tls	**Default:**	udp

Setting:	`sip_account.x.mwi_enable`		
Description:	Enables or disables message waiting indicator subscription for account x. Enable if SUBSCRIBE and NOTIFY methods are used for MWI.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.mwi_subscription_expires`		
Description:	Sets the MWI subscription expiry time (in seconds) for account x.		
Values:	15–65535	**Default:**	3600

Setting:	`sip_account.x.mwi_ignore_unsolicited`		
Description:	Enables or disables ignoring of unsolicited MWI notifications—notifications in addition to, or instead of, SUBSCRIBE and NOTIFY methods—for account x. Disable if MWI service is configured on the voicemail server and does not involve a subscription to a voicemail server.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.nat_traversal_stun_enable`		
Description:	Enables or disables STUN (Simple Traversal of UDP through NATs) for account x. STUN enables clients, each behind a firewall, to establish calls via a service provider hosted outside of either local network.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.nat_traversal_stun_server_address`		
Description:	Sets the STUN server IP address.		
Values:	IPv4, IPv6 or FQDN	**Default:**	Blank

Setting:	`sip_account.x.nat_traversal_stun_server_port`		
Description:	Sets the STUN server port.		
Values:	1–65535	**Default:**	3478

Setting:	`sip_account.x.nat_traversal_stun_keep_alive_enable`		
Description:	Enables or disables UDP keep-alives. Keep-alive packets are used to maintain connections established through NAT.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`sip_account.x.nat_traversal_stun_keep_alive_interval`		
Description:	Sets the interval (in seconds) for sending UDP keep-alives.		
Values:	0–65535	**Default:**	30

Setting:	`sip_account.x.keep_alive_enable`		
Description:	Enable SIP keep alive for NAT traversal and monitoring SIP server status.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.keep_alive_interval`		
Description:	Sets the interval (in seconds) for sending keep-alives.		
Values:	1-3600	**Default:**	15

Setting:	`sip_account.x.keep_alive_ignore_failure`		
Description:	Enable the phone to ignore keep-alive failure, if failure triggers re-subscription (and calls are dropped).		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.music_on_hold_enable`		
Description:	Enables or disables a hold-reminder tone that a far-end caller hears when put on hold during a call on account x.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`sip_account.x.sip_session_timer_enable`		
Description:	Enables or disables the SIP session timer.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.sip_session_timer_min`		
Description:	Sets the session timer minimum value (in seconds) for account x.		
Values:	90–65535	**Default:**	90

Setting:	`sip_account.x.sip_session_timer_max`		
Description:	Sets the session timer maximum value (in seconds) for account x.		
Values:	90–65535	**Default:**	1800

Setting:	`sip_account.x.check_trusted_certificate`		
Description:	Enables or disables accepting only a trusted TLS certificate for account x.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.preferred_ptime`		
Description:	Enter the packetization interval time in milliseconds.		
Values:	10, 20, 30, 40, 50, 60	**Default:**	20

Setting:	`sip_account.x.cid_src_priority.1`		
Description:	Sets the first priority of the caller ID source to be displayed on the incoming call screen.		

Values: from, pai, rpid **Default:** pai

Setting: `sip_account.x.cid_src_priority.2`

Description: Sets the second priority of the caller ID source to be displayed on the incoming call screen.

Values: none, from, pai, rpid **Default:** rpid

Setting: `sip_account.x.cid_src_priority.3`

Description: Sets the third priority of the caller ID source to be displayed on the incoming call screen.

Values: none, from, pai, rpid **Default:** from

Setting: `sip_account.x.call_rejection_response_code`

Description: Select the response code for call rejection. This code applies to the following call rejection cases:

- User presses **Reject** for an incoming call
- DND is enabled
- Phone rejects a second incoming call with Call Waiting disabled
- Phone rejects an anonymous call with Anonymous Call Rejection enabled
- Phone rejects call when the maximum number of calls is reached

Values: 480, 486, 603 **Default:** 486

Setting: `sip_account.x.dtmf_payload_type`

Description: Set the configurable RTP payload type for in-call DTMF.

Values: 96-127 **Default:** 101

Setting: `sip_account.x.use_register_route_header`

Description: Use Route header for REGISTER

Values: 0 (disabled), 1 (enabled) **Default:** 1

Setting:	`sip_account.dirty_host_ttl`		
Description:	Specify the “Time to Live” (TTL) for dirty hosts in seconds. This means that, when a phone was unable to reach a host, the phone will not try to reach this host again until the time specified in this field has elapsed. If this setting is 0 or empty, it has no effect (the host is set as "dirty" but only for 0 seconds, which means it will have no effect on future requests)		
Values:	0-7200	**Default:**	0

Setting:	`sip_account.dns_query_option`		
Description:	Select DNS query option for SIP traffic only: 0 (DNS query with A record only) 1 (DNS query with NAPTR/SRV/A) DNS query for all other traffic (e.g. HTTP) should always perform A record only.		
Values:	0, 1	**Default:**	1

Setting:	`sip_account.shared_local_sip_port_enable`		
Description:	Allow the same SIP local port for multiple accounts. If enabled, the SIP local port defined in parameter **sip_account.shared_local_sip_port** will be used instead of the SIP local ports defined for the accounts, parameter: **sip_account.x.local_sip_port**.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.shared_local_sip_port`		
Description:	Defines the local SIP port to be used by all accounts, if enabled by parameter **sip_account.shared_local_sip_port_enable**.		
Values:	1-65535	**Default:**	5060

MAC-specific configuration file settings

Setting: `sip_account.x.sip_account_enable`

Description: Enables account x to be used by the device.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `sip_account.x.label`

Description: Sets the text that identifies the account on the device LCD. The account label appears on the Dialing Line list, dialing screen, and other call appearance screens.

Values: Text string **Default:** Blank

Setting: `sip_account.x.display_name`

Description: Sets the text portion of the caller ID that is displayed for outgoing calls using account x.

Values: Text string **Default:** Blank

Setting: `sip_account.x.user_id`

Description: Sets the account ID for account x. Depending on your service provider's specifications, this could be an extension number.
Note: Do not enter the host name (e.g. "@sipservice.com"). The configuration file automatically adds the default host name.

Values: Text string **Default:** Blank

Setting: `sip_account.x.authentication_name`

Description: Sets the authentication name for account x. Depending on your service provider's specifications, this could be identical to the user ID.

Values: Text string **Default:** Blank

Setting: `sip_account.x.authentication_access_password`

Description: Sets the authentication password for account x.

Values: Text string **Default:** Blank

Setting: `sip_account.x.feature_sync_enable`

Description: Enables or disables feature synchronization for account x. When enabled, features configured on the service provider's web portal will automatically be updated on the device's WebUI.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `sip_account.x.access_code_retrieve_voicemail`

Description: Sets the voicemail retrieval feature access code for account x.

Values: Text string **Default:** Blank

Setting: `sip_account.x.access_code_dnd_on`

Description: Sets the do not disturb (DND) ON feature access code for account x.

Values: Text string **Default:** Blank

Setting: `sip_account.x.access_code_dnd_off`

Description: Sets the do not disturb (DND) OFF feature access code for account x.

Values: Text string **Default:** Blank

Setting: `sip_account.x.access_code_cfa_on`

Description: Sets the Call Forward All ON feature access code for account x.

Values: Text string **Default:** Blank

Setting: `sip_account.x.access_code_cfa_off`

Description: Sets the Call Forward All OFF feature access code for account x.

Values: Text string **Default:** Blank

Setting: `sip_account.x.access_code_cfna_on`

Description: Sets the Call Forward No Answer ON feature access code for account x.

Values: Text string **Default:** Blank

Setting:	`sip_account.x.access_code_cfna_off`		
Description:	Sets the Call Forward No Answer OFF feature access code for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.access_code_cfb_on`		
Description:	Sets the Call Forward Busy ON feature access code for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.access_code_cfb_off`		
Description:	Sets the Call Forward Busy OFF feature access code for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.access_code_anonymous_call_block_on`		
Description:	Sets the Anonymous Call Block ON feature access code for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.access_code_anonymous_call_block_off`		
Description:	Sets the Anonymous Call Block OFF feature access code for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.access_code_outgoing_call_anonymous_on`		
Description:	Sets the Anonymous Outgoing Call ON feature access code for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.access_code_outgoing_call_anonymous_off`		
Description:	Sets the Anonymous Outgoing Call OFF feature access code for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`sip_account.x.mwi_uri`		
Description:	Sets the MWI URI that will be used for MWI subscription. If this setting is left blank, the M100 KLE uses the account x user ID for MWI subscription.		
Values:	SIP URI text string	**Default:**	Blank

Setting:	`sip_account.x.network_conference_enable`		
Description:	Enables or disables network conferencing for account x.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`sip_account.x.network_bridge_uri`		
Description:	Sets the URI for the network conferencing bridge on account x.		
Values:	Text string (SIP URI)	**Default:**	Blank

"hs_settings" Module: Handset Settings

The Handset Settings allow you to configure account assignments and names for the cordless handsets that are registered to the base station. For more information on registering cordless handsets, see the M100 KLE/M10 KLE User Guide.

General configuration file settings

Setting: `hs_settings.autoreg_enable`

Description: Enable/disable HS auto registration

- If enabled, handset with IPEI matching with **hs_settings.x.ipei** will be allowed to register without going through manual DECT registration
- Otherwise, handset have to be registered through manual DECT registration
- See also parameters **hs_settings.x.ipei**, **system.x.registered_ipei**

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `hs_settings.handset_us_pin_code`

Description: Sets the new 4-digit PIN for handset registration/deregistration.

Values: 4-digit number **Default:** 1592

Setting: `hs_settings.keyline.y`

Description: Assigns accounts to KeyLine numbers (where y ranges from 1-12 KeyLine numbers).
For more information, see *“KeyLine Assignments” on page 57*.

Values: 0-8 **Default:** 1 (where y = 1-6)
0 (where y = 7-12)

Setting: `hs_settings.x.pfk.line1.feature`

Description: Assign a feature to the **L1** line key.

Values: unassigned, keyline, line, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer **Default:** keyline

Setting:	`hs_settings.x.pfk.line1.account`		
Description:	Assign an Account number to the **L1** line key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.line1.value`		
Description:	Assign a KeyLine number to the **L1** line key.		
Values:	1-12	**Default:**	1

Setting:	`hs_settings.x.pfk.line2.feature`		
Description:	Assign a feature to the **L2** line key.		
Values:	unassigned, keyline, line, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	keyline

Setting:	`hs_settings.x.pfk.line2.account`		
Description:	Assign an Account number to the **L2** line key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.line2.value`		
Description:	Assign a KeyLine number to the **L2** line key.		
Values:	1-12	**Default:**	2

Setting:	`hs_settings.x.pfk.line3.feature`		
Description:	Assign a feature to the **L3** line key.		
Values:	unassigned, keyline, line, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	keyline

Setting:	`hs_settings.x.pfk.line3.account`		
Description:	Assign an Account number to the **L3** line key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.line3.value`		
Description:	Assign a KeyLine number to the **L3** line key.		
Values:	1-12	**Default:**	3

Setting:	`hs_settings.x.pfk.line4.feature`		
Description:	Assign a feature to the **L4** line key.		
Values:	unassigned, keyline, line, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	keyline

Setting:	`hs_settings.x.pfk.line4.account`		
Description:	Assign an Account number to the **L4** line key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.line4.value`		
Description:	Assign a KeyLine number to the **L4** line key.		
Values:	1-12	**Default:**	4

Setting:	`hs_settings.x.pfk.hold.feature`		
Description:	Assign a feature to the **HOLD** Hard Key.		
Values:	unassigned, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	unassigned

Setting:	`hs_settings.x.pfk.hold.account`		
Description:	Assign an Account number to the **HOLD** hard key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.intercom.feature`		
Description:	Assign a feature to the **INTERCOM** hard key.		
Values:	unassigned, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	unassigned

Setting:	`hs_settings.x.pfk.intercom.account`		
Description:	Assign an Account number to the **INTERCOM** hard key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.mute.feature`		
Description:	Assign a feature to the **MUTE** hard key.		
Values:	unassigned, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	unassigned

Setting:	`hs_settings.x.pfk.mute.account`		
Description:	Assign an Account number to the **MUTE** hard key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.up.feature`		
Description:	Assign a feature to the **UP** hard key.		
Values:	unassigned, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	VDP651: dir VDP658: unassigned

Setting:	`hs_settings.x.pfk.up.account`		
Description:	Assign an Account number to the **UP** hard key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.down.feature`		
Description:	Assign a feature to the **DOWN** hard key.		
Values:	unassigned, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	VDP651: call log VDP658: unassigned

Setting:	`hs_settings.x.pfk.down.account`		
Description:	Assign an Account number to the **DOWN** hard key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.softkeyleft.feature`		
Description:	Assign a feature to the **LEFT** soft key.		
Values:	unassigned, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	unassigned

Setting:	`hs_settings.x.pfk.softkeyleft.account`		
Description:	Assign a feature to the **LEFT** soft key.		
Values:	1-8	**Default:**	1

Setting:	`hs_settings.x.pfk.softkeyright.feature`		
Description:	Assign a feature to the **RIGHT** soft key.		
Values:	unassigned, call list, dir, call log, redial, messages, dnd, cfwd all, cfwd busy, cfwd no answer	**Default:**	unassigned

Setting:	`hs_settings.x.pfk.softkeyright.account`		
Description:	Assign an Account number to the **RIGHT** soft key.		
Values:	1-8	**Default:**	1

MAC-specific configuration file settings

Setting:	`hs_settings.x.handset_name`		
Description:	Sets the name for handset x. You can use up to 11 letters and/or numbers. Use alphanumeric characters only—no symbol characters are allowed.		
Values:	Text string	**Default:**	HANDSET

Setting:	`hs_settings.x.default_account`		
Description:	Sets the default account for handset x. The handset attempts to use this account first when going off hook.		
Values:	1–6	**Default:**	1

Setting:	`hs_settings.x.assigned_account`		
Description:	Sets the accounts for handset x that will be available for incoming and outgoing calls. List account numbers separated by commas (for example, 1,2,3,4,5,6,7,8).		
Values:	1–8	**Default:**	1,2,3,4,5,6,7,8

Setting:	`hs_settings.x.ipei`		
Description:	(where x ranges from 1-10) ■ Registration slot reserved for handset with the same IPEI as the configured one. ■ Handset with the same IPEI as the configured IPEI can register as Handset x without going through manual DECT registration ■ See also parameters **hs_settings.autoreg_enable**, **system.x.registered_ipei**.		
Values:	String (IPEI)	**Default:**	blank

“system” Module: System settings

The System settings enables you to configure DECT related settings for the M100 KLE 4-Line base station.

General configuration file settings

Setting: `system.repeater_mode_enable`

Description: Enables a repeater (such as the VSP605 Range Extender) to be registered to the M100 KLE 4-Line base station.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `system.eco`

Description: Enables or disables ECO mode.

Values: 0 (disabled), 1 (enabled) **Default:** 0

MAC-specific configuration file settings

Setting: `system.x.registered_ipei`

Description: Read-only parameters indicating handset registration status (for both auto & manual registration) (where x ranges from 1-10).

- [blank] if no handset is registered to the slot
- See also parameters **hs_settings.autoreg_enable**, **hs_settings.x.ipei**.

Values: N/A **Default:** N/A

"network" Module: Network Settings

The network settings follow the format: network.[element].

General configuration file settings

Setting:	`network.vlan.wan.enable`		
Description:	Enables or disables the WAN VLAN.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`network.vlan.wan.id`		
Description:	Sets the WAN VLAN ID.		
Values:	0–4095	**Default:**	0

Setting:	`network.vlan.wan.priority`		
Description:	Sets the WAN port priority.		
Values:	0–7	**Default:**	0

Setting:	`network.lldp_med.enable`		
Description:	Enables or disables LLDP-MED.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`network.lldp_med.interval`		
Description:	Sets the LLDP-MED packet interval (in seconds).		
Values:	1–30	**Default:**	30

Setting:	`network.eapol.enable`		
Description:	Enables or disables 802.1x EAPOL.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`network.eapol.identity`		
Description:	Sets the 802.1x EAPOL identity.		
Values:	Text string	**Default:**	Blank

Setting:	`network.eapol.access_password`		
Description:	Sets the 802.1x EAPOL MD5 password.		
Values:	Text string	**Default:**	Blank

Setting:	`network.vendor_class_id`		
Description:	Sets the vendor ID for DHCP option 60.		
Values:	Text string	**Default:**	snomM100KLE

Setting:	`network.user_class`		
Description:	Sets the user class for DHCP option 77.		
Values:	Text string	**Default:**	snomM100KLE

MAC-specific configuration file settings

Setting: `network.ip.mode`

Description: Sets the IPv4 network mode.

Values: disable, dhcp, static, pppoe **Default:** dhcp

Setting: `network.ip.static_ip_addr`

Description: Sets a static IP address for the network.

Values: Text string (IPv4) **Default:** Blank

Setting: `network.ip.subnet_mask`

Description: Sets the subnet mask for the network.

Values: Text string (IPv4) **Default:** Blank

Setting: `network.ip.gateway_addr`

Description: Sets the Gateway IP address.

Values: Text string (IPv4) **Default:** Blank

Setting: `network.ip.dns1`

Description: Sets the primary DNS server IP address.

Values: Text string (IPv4) **Default:** Blank

Setting: `network.ip.dns2`

Description: Sets the secondary DNS server IP address.

Values: Text string (IPv4) **Default:** Blank

Setting: `network.ip.manually_configure_dns`

Description: Enable or disable manual DNS configuration.

Values: 0 (disable), 1 (enable) **Default:** 0

Setting: `network.ip.pppoe.service_name`

Description: If IPv4 mode is PPPoE, enter the name of the applicable PPPoE provider, in case more than one is available.

Values: Text string **Default:** Blank

Setting: `network.ip.pppoe.username`

Description: If IPv4 mode is PPPoE, enter your PPPoE account username.

Values: Text string **Default:** Blank

Setting: `network.ip.pppoe.access_password`

Description: If IPv4 mode is PPPoE, enter your PPPoE account password.

Values: Text string **Default:** Blank

Setting: `network.ip6.mode`

Description: Set the IPv6 network mode, depending on how the device will be assigned an IP address.

Values: disable, auto, static **Default:** disable

Setting: `network.ip.static_ip6_addr`

Description: When IPv6 mode is static, enter the static IP address for the network.

Values: Text string (IPv6) **Default:** Blank

Setting: `network.ip6.prefix`

Description: When IPv6 mode is static, enter the IPv6 address prefix length.

Values: 0–128 **Default:** 64

Setting: `network.ip6.gateway_addr`

Description: When IPv6 mode is static, enter the default gateway address.

Values: Text string (IPv6) **Default:** Blank

Setting: `network.ip6.dns1`

Description: If manual DNS configuration is enabled, enter the address for the primary DNS server.

Values: Text string (IPv6) **Default:** Blank

Setting: `network.ip6.dns2`

Description: If manual DNS configuration is enabled, enter the address for the secondary DNS server.

Values: Text string (IPv6) **Default:** Blank

Setting: `network.ip6.manually_configure_dns`

Description: Enable or disable manual DNS configuration for IPv6.

Values: 0 (disable), 1 (enable) **Default:** 0

Setting: `network.vpn.enable`

Description: Enables or disables the phone to connect using the OpenVPN client. For more information, see *"VPN" on page 73*.

Values: 0 (disable), 1 (enable) **Default:** 0

"provisioning" Module: Provisioning Settings

The provisioning settings follow the format: provisioning.[element].

All these settings are exported when you manually export the configuration from the M100 KLE.

General configuration file settings

Setting:	`provisioning.dhcp_option_enable`		
Description:	Enables or disables using DHCP options for locating the configuration and firmware files.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`provisioning.dhcp_option_priority_1`		
Description:	Sets the first priority DHCP option for the provisioning/firmware file check.		
Values:	66, 159, 160	**Default:**	66

Setting:	`provisioning.dhcp_option_priority_2`		
Description:	Sets the second priority DHCP option for the provisioning/firmware file check.		
Values:	66, 159, 160	**Default:**	159

Setting:	`provisioning.dhcp_option_priority_3`		
Description:	Sets the third priority DHCP option for the provisioning/firmware file check.		
Values:	66, 159, 160	**Default:**	160

Setting:	`provisioning.resync_mode`		
Description:	Sets the mode of the device's provisioning/firmware file check. This determines which files the device retrieves when the resync process begins.		
Values:	config_only, firmware_only, config_and_firmware	**Default:**	config_and_firmware

Setting: `provisioning.bootup_check_enable`

Description: Enables or disables bootup check for configuration and firmware files.

Values: 0 (disabled), 1 (enabled) **Default:** 1

Setting: `provisioning.schedule_mode`

Description: Sets the type of schedule check for configuration and firmware files.

Values: disable, interval, weekday **Default:** disable

Setting: `provisioning.resync_time`

Description: Sets the interval (in minutes) between checks for new firmware and/or configuration files.

Values: 0–65535 **Default:** 0 (OFF)

Setting: `provisioning.weekdays`

Description: Sets the day(s) when the device checks for new firmware and/or configuration files. Enter a comma-delimited list of weekdays from 0 (Sunday) to 6 (Saturday). For example, 5,6,0 means the provisioning check will be performed on Friday, Saturday and Sunday.

Values: 0–6 **Default:** Blank

Setting: `provisioning.weekdays_start_hr`

Description: Sets the hour when the device checks for new firmware and/or configuration files.

Values: 0–23 **Default:** 0

Setting: `provisioning.weekdays_end_hr`

Description: Sets the hour when the device stops checking for new firmware and/or configuration files.

Values: 0–23 **Default:** 0

Setting: `provisioning.remote_check_sync_enable`

Description: Enables or disables remotely triggering the device to check for new firmware and/or configuration files. The file checking is triggered remotely via a SIP Notify message from the server containing the **check-sync** event.

Values: 0 (disabled), 1 (enabled) **Default:** 1

Setting: `provisioning.crypto_enable`

Description: Enables or disables encryption check for the configuration file(s). Enable if you have encrypted the configuration file(s) using AES encryption.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `provisioning.crypto_passphrase`

Description: Sets the AES encryption passphrase for decrypting the configuration file(s). Enter the key that was generated when you encrypted the file.

Values: Text string **Default:** Blank

Setting: `provisioning.check_trusted_certificate`

Description: Enables or disables accepting only a trusted TLS certificate for access to the provisioning server.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `provisioning.pnp_enable`

Description: Enables or disables the M100 KLE checking for the provisioning URL using the Plug-and-Play Subscribe and Notify protocol.

Values: 0 (disabled), 1 (enabled) **Default:** 1

Setting: `provisioning.pnp_response_timeout`

Description: Sets how long the M100 KLE repeats the SUBSCRIBE request if there is no reply from the PnP server.

Values: 1–60 **Default:** 10

Setting:	`provisioning.pwd_export_enable`		
Description:	Enables or disables passwords from being exported in plain text. This parameter is not available on the WebUI. The passwords affected are: ■ network.eapol.access_password ■ provisioning.fw_server_access_password ■ provisioning.server_access_password ■ profile.admin.access_password ■ profile.user.access_password ■ sip_account.x.authentication_access_password ■ remoteDir.ldap_access_password ■ remoteDir.broadsoft_access_password		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

MAC-specific configuration file settings

Setting:	`provisioning.firmware_url`		
Description:	Sets the URL for the server hosting the firmware file.		
Values:	Text string	**Default:**	Blank

Setting:	`provisioning.handset_firmware_url`		
Description:	Sets the URL for the server hosting the handset firmware file.		
Values:	Text string	**Default:**	Blank

Setting:	`provisioning.cordless_deskset_firmware_url`		
Description:	Sets the URL for the server hosting the cordless deskset firmware file.		
Values:	Text string	**Default:**	Blank

Setting:	`provisioning.fw_server_username`		
Description:	Sets the authentication name for the server hosting the firmware file.		
Values:	Text string	**Default:**	Blank

Setting:	`provisioning.fw_server_access_password`		
Description:	Sets the authentication password for the server hosting the firmware file.		
Values:	Text string	**Default:**	Blank

Setting:	`provisioning.server_address`		
Description:	Sets the provisioning server IP address.		
Values:	Text string	**Default:**	https://secure-provisioning.snom.com/snomM400SC/snomM400SC.htm

Setting:	`provisioning.server_username`		
Description:	Sets the authentication name for the provisioning server.		
Values:	Text string	**Default:**	Blank

Setting:	`provisioning.server_access_password`		
Description:	Sets the authentication password for the provisioning server.		
Values:	Text string	**Default:**	Blank

"time_date" Module: Time and Date Settings

The time and date settings follow the format: time_date.[element].

All these settings are exported when you manually export the configuration from the M100 KLE.

All the time and date settings are included in the general configuration file.

Setting:	`time_date.date_format`		
Description:	Sets the format for displaying the date.		
Values:	DD/MM/YY, MM/DD/YY, YY/MM/DD	**Default:**	DD/MM/YY

Setting:	`time_date.24hr_clock`		
Description:	Enables or disables 24-hour clock.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`time_date.ntp_server`		
Description:	Enables or disables NTP server to set time and date.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`time_date.ntp_server_addr`		
Description:	Sets the URL for the NTP server.		
Values:	IPv4, IPv6 or FQDN	**Default:**	us.pool.ntp.org

Setting:	`time_date.ntp_dhcp_option`		
Description:	Enables or disables DHCP option 42 to find the NTP server.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`time_date.selected_timezone`
Description:	Sets the local timezone.

Values:	Pacific/Pago_Pago, Pacific/Honolulu, America/Adak, America/Anchorage, America/Vancouver, America/Tijuana, America/Los_Angeles, America/Edmonton, America/Chihuahua, America/Denver, America/Phoenix, America/Winnipeg, Pacific/Easter, America/Mexico_City, America/Chicago, America/Nassau, America/Montreal, America/Grand_Turk, America/Havana, America/New_York, America/Caracas, America/Halifax, America/Santiago, America/Asuncion, Atlantic/Bermuda, Atlantic/Stanley, America/Port_of_Spain, America/St_Johns, America/Godthab, America/Argentina/Buenos_Aires, America/Fortaleza, America/Sao_Paulo, America/Noronha, Atlantic/Azores, GMT, America/Danmarkshavn, Atlantic/Faroe, Europe/Dublin, Europe/Lisbon, Atlantic/Canary, Europe/London, Africa/Casablanca, Europe/Tirane, Europe/Vienna, Europe/Brussels, Europe/Zagreb, Europe/Prague, Europe/Copenhagen, Europe/Paris, Europe/Berlin, Europe/Budapest, Europe/Rome, Europe/Luxembourg, Europe/Skopje, Europe/Amsterdam, Africa/Windhoek, Europe/Tallinn, Europe/Helsinki, Asia/Gaza, Europe/Athens, Asia/Jerusalem, Asia/Amman, Europe/Riga, Asia/Beirut, Europe/Chisinau, Europe/Kaliningrad, Europe/Bucharest, Asia/Damascus, Europe/Istanbul, Europe/Kiev, Africa/Djibouti, Asia/Baghdad, Europe/Moscow, Asia/Tehran, Asia/Yerevan, Asia/Baku, Asia/Tbilisi, Asia/Aqtau, Europe/Samara, Asia/Aqtobe, Asia/Bishkek, Asia/Karachi, Asia/Yekaterinburg, Asia/Kolkata, Asia/Almaty, Asia/Novosibirsk, Asia/Krasnoyarsk, Asia/Bangkok, Asia/Shanghai, Asia/Singapore, Australia/Perth, Asia/Seoul, Asia/Tokyo, Australia/Adelaide, Australia/Darwin, Australia/Sydney, Australia/Brisbane, Australia/Hobart, Asia/Vladivostok, Australia/Lord_Howe, Pacific/Noumea, Pacific/Auckland, Pacific/Chatham, Pacific/Tongatapu	**Default:**	America/New_York

Setting:	`time_date.daylight_saving_auto_adjust`		
Description:	Sets the device to automatically adjust clock for daylight savings.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`time_date.daylight_saving_user_defined`		
Description:	Enables or disables manual daylight savings configuration.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`time_date.daylight_saving_start_month`		
Description:	Sets the month that daylight savings time starts.		
Values:	January–December	**Default:**	March

Setting:	`time_date.daylight_saving_start_week`		
Description:	Sets the week that daylight savings time starts.		
Values:	1–5	**Default:**	2

Setting:	`time_date.daylight_saving_start_day`		
Description:	Sets the day that daylight savings time starts.		
Values:	Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	**Default:**	Sunday

Setting:	`time_date.daylight_saving_start_hour`		
Description:	Sets the hour that daylight savings time starts.		
Values:	00:00–23:00	**Default:**	02:00

Setting:	`time_date.daylight_saving_end_month`		
Description:	Sets the month that daylight savings time ends.		
Values:	January–December	**Default:**	November

Setting:	`time_date.daylight_saving_end_week`		
Description:	Sets the week that daylight savings time ends.		
Values:	1–5	**Default:**	1

Setting:	`time_date.daylight_saving_end_day`		
Description:	Sets the day that daylight savings time ends.		
Values:	Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	**Default:**	Sunday

Setting:	`time_date.daylight_saving_end_hour`		
Description:	Sets the hour that daylight savings time ends.		
Values:	00:00–23:00	**Default:**	02:00

Setting:	`time_date.daylight_saving_amount`		
Description:	Sets the daylight savings time offset in minutes.		
Values:	0–255	**Default:**	60

Setting:	`time_date.timezone_dhcp_option`		
Description:	Enables or disables DHCP option 2/100/101 for determining time zone information.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`time_date.ntp_server_update_interval`		
Description:	Sets the delay between NTP server updates, in seconds.		
Values:	0–4294967295	**Default:**	1000

Setting:	`time_date.time_and_date`		
Description:	Manually sets the date and time. Use the format <year>-<month>-<day>T<hour>:<minute>:<second>		
Values:	<year>-<month>-<day>T <hour>:<minute>:<second>	**Default:**	2016-03-01T12:00:00

"log" Module: Log Settings

The log settings control system logging activities. System logging may be required for troubleshooting purposes. The following logging modes are supported:

- Serial/Console—system log output to an external console using a serial/RS-232 cable
- Syslog server—output to a log file on a separate server
- Volatile file

The log settings follow the format: log.[element].

All the log settings are included in the general configuration file.

Setting:	`log.syslog_enable`		
Description:	Enables or disables log output to syslog server.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`log.syslog_server_address`		
Description:	Sets the syslog server IP address.		
Values:	Text string (IPv4 or IPv6)	**Default:**	Blank

Setting:	`log.syslog_server_port`		
Description:	Sets the syslog server port.		
Values:	1–65535	**Default:**	514

Setting:	`log.syslog_level`		
Description:	Sets the log level. The higher the level, the larger the debug output. 5—all 4—debug 3—info 2—warning 1—error 0—critical		
Values:	0–5	**Default:**	2

"remoteDir" Module: Remote Directory Settings

The remote directory settings follow the format: remoteDir.[element].

All these settings are exported when you manually export the configuration from the M100 KLE.

All the remote directory settings are included in the general configuration file.

Setting:	`remoteDir.ldap_enable`		
Description:	Enables or disables the M100 KLE 4-Line base station's access to the LDAP directory.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`remoteDir.ldap_directory_name`		
Description:	Sets the LDAP directory name.		
Values:	Text string	**Default:**	Blank

Setting:	`remoteDir.ldap_server_address`		
Description:	Sets the LDAP server IP address.		
Values:	Text string	**Default:**	Blank

Setting:	`remoteDir.ldap_port`		
Description:	Sets the LDAP server port.		
Values:	1–65535	**Default:**	389

Setting:	`remoteDir.ldap_protocol_version`		
Description:	Sets the LDAP protocol version.		
Values:	version_2, version_3	**Default:**	version_3

Setting:	`remoteDir.ldap_authentication_type`		
Description:	Sets the LDAP authentication type.		
Values:	simple, ssl	**Default:**	simple

Setting:	`remoteDir.ldap_user_name`		
Description:	Sets the LDAP authentication user name.		
Values:	Text string	**Default:**	Blank

Setting:	`remoteDir.ldap_access_password`		
Description:	Sets the LDAP authentication password.		
Values:	Text string	**Default:**	Blank

Setting:	`remoteDir.ldap_base`		
Description:	Sets the LDAP search base. This sets where the search begins in the directory tree structure. Enter one or more attribute definitions, separated by commas (no spaces). Your directory may include attributes like "cn" (common name) or "ou" (organizational unit) or "dc" (domain component). For example, ou=accounting,dc=snom,dc=com		
Values:	Text string	**Default:**	Blank

Setting:	`remoteDir.ldap_max_hits`		
Description:	Sets the maximum number of entries returned for an LDAP search. Limiting the number of hits can conserve network bandwidth.		
Values:	0–32000	**Default:**	200

Setting:	`remoteDir.ldap_search_delay`		
Description:	Sets the LDAP maximum search delay in seconds.		
Values:	0–500	**Default:**	0

Setting:	`remoteDir.ldap_firstname_filter`		
Description:	Sets the LDAP first name attribute filter.		
Values:	Text string	**Default:**	Firstname

Setting:	`remoteDir.ldap_lastname_filter`		
Description:	Sets the LDAP last name attribute filter.		
Values:	Text string	**Default:**	Lastname

Setting: `remoteDir.ldap_number_filter`

Description: Sets the LDAP number filter.

Values: Text string **Default:** Blank

Setting: `remoteDir.ldap_firstname_attribute`

Description: Sets the name attributes. Enter the name attributes that you want the M100 KLE to display for each entry returned after an LDAP search. Separate each attribute with a space. For example, givenName sn will display the first name and surname for each entry.

Values: Text string **Default:** Blank

Setting: `remoteDir.ldap_lastname_attribute`

Description: Sets the last name attributes.

Values: Text string **Default:** Blank

Setting: `remoteDir.ldap_work_number_attributes`

Description: Sets the number attributes. Enter the number attributes that you want the M100 KLE to display for each entry returned after an LDAP search. Separate each attribute with a space. For example, telephoneNumber mobile will display the work phone number and mobile phone number for each entry.

Values: Text string **Default:** Blank

Setting: `remoteDir.ldap_mobile_number_attributes`

Description: Sets the mobile number attributes.

Values: Text string **Default:** Blank

Setting: `remoteDir.ldap_other_number_attributes`

Description: Sets the “other” number attributes.

Values: Text string **Default:** Blank

Setting: `remoteDir.ldap_incall_lookup_enable`

Description: Enables or disables LDAP incoming call lookup. If enabled, the M100 KLE searches the LDAP directory for the incoming call number. If the number is found, the M100 KLE uses the LDAP entry for CID info.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `remoteDir.ldap_outcall_lookup_enable`

Description: Enables or disables LDAP outgoing call lookup. If enabled, numbers entered in pre-dial or live dial are matched against LDAP entries. If a match is found, the LDAP entry is displayed for dialing.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `remoteDir.ldap_check_certificate`

Description: Enables or disables accepting only a trusted LDAP certificate.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `remoteDir.xml.x.name`

Description: Sets the name of the directory as it will appear on the phone‘s Directory list. For this and following parameters, x is the number of the XML directory (1–3).

Values: Text string **Default:** Blank

Setting: `remoteDir.xml.x.uri`

Description: The location of the XML directory file, from which the phone will sync and retrieve directory entries.

Values: URI **Default:** Blank

Setting: `remoteDir.xml.x.call_lookup_enable`

Description: Enables/disables the call lookup feature for incoming and outgoing calls.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `remoteDir.xml.x.contact_entry_tag`

Description: Sets the tag name for directory entry.

Values: Text string **Default:** DIR_ENTRY

Setting:	`remoteDir.xml.x.first_name_tag`		
Description:	Sets the first name tag for a directory entry.		
Values:	Text string	**Default:**	DIR_ENTRY_NAME_FIRST

Setting:	`remoteDir.xml.x.last_name_tag`		
Description:	Sets the last name tag for a directory entry.		
Values:	Text string	**Default:**	DIR_ENTRY_NAME_LAST

Setting:	`remoteDir.xml.x.work_number_tag`		
Description:	Sets the work number tag for a directory entry.		
Values:	Text string	**Default:**	DIR_ENTRY_NUMBER_WORK

Setting:	`remoteDir.xml.x.mobile_number_tag`		
Description:	Sets the mobile number tag for a directory entry.		
Values:	Text string	**Default:**	DIR_ENTRY_NUMBER_MOBILE

Setting:	`remoteDir.xml.x.other_number_tag`		
Description:	Sets the other number tag for a directory entry.		
Values:	Text string	**Default:**	DIR_ENTRY_NUMBER_OTHER

"web" Module: Web Settings

The web settings control the web server IP, port, and security settings.

The web settings follow the format: web.[element].

All the web settings are included in the general configuration file.

Setting:	`web.server_enable`		
Description:	Enables or disables the availability of the phone’s embedded WebUI.		
Values:	0 (disabled), 1 (enabled)	**Default:**	1

Setting:	`web.http_port`		
Description:	Sets the http port when http is enabled.		
Values:	1–65535	**Default:**	80

Setting:	`web.https_enable`		
Description:	Sets server to use the https protocol.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`web.https_port`		
Description:	Sets the https port when https is enabled.		
Values:	1–65535	**Default:**	443

“trusted_ip” Module: Trusted IP Settings

The trusted_ip settings provide enhanced security for the M100 KLE. When enabled, these settings can filter network traffic and reject any traffic from unauthorized sources.

The trusted_ip settings follow the format: trusted_ip.[element].

All the trusted_ip settings are included in the general configuration file.

Setting:	`trusted_ip.only_accept_allowed_ip`		
Description:	Enables or disables using the Allowed IP list to filter network traffic. When enabled, all unsolicited IP traffic will be blocked unless it is from one of the trusted IP addresses on the "Allowed IP" list.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`trusted_ip.x.allow_ip`		
Description:	Enter an IP address or address range for one instance of the “Allowed IP” list. x ranges from 1 to 10. See *“Trusted IP” on page 103* for more information.		
Values:	Text string (IPv4 or IPv6, IP range in IPv4 or IPv6)	**Default:**	Blank

“trusted_servers” Module: Trusted Server Settings

The trusted_servers settings provide enhanced security for the M100 KLE. When enabled, these settings can filter network traffic and reject any traffic from unauthorized sources.

The trusted_servers settings follow the format: trusted_servers.[element].

All the trusted_servers settings are included in the general configuration file.

Setting:	`trusted_servers.only_accept_sip_account_servers`		
Description:	Enables or disables using each enabled account's Registration server, SIP server, Outbound Proxy server and Backup Outbound Proxy server as sources for trusted SIP traffic.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

"user_pref" Module: User Preference Settings

The user settings are accessible to the M100 KLE user. These settings are useful for initial setup. You may wish to remove these settings from auto-provisioning update files so that users do not have their own settings overwritten.

The user preference settings follow the format: user_pref.[element].

The user preference setting is included in the general configuration file.

Setting: `user_pref.web_language`

Description: Sets the language that appears on the WebUI.

Values: en, fr, es **Default:** en

Setting: `user_pref.call_terminated.busy_tone_enable`

Description: Enables the M100 KLE to play a busy tone when the far-end party ends the call, or when a network error condition (keep-alive failure) occurs.

Values: 0 (disabled), 1 (enabled) **Default:** 0

Setting: `user_pref.account.x.diversion_display`

Description: Enables or disables the display of diversion <name-addr> info (if available) for calls forwarded to account x.

Values: 0 (disabled), 1 (enabled) **Default:** 1

Setting: `user_pref.feature_access_code_on_sip_registered_enable`

Description: Enables or disables Feature Access Code (FAC) call sending out after registration succeeded. If enabled, then allow FAC call to be sent only if user changes corresponding status locally.

Values: 0 (disabled), 1 (enabled) **Default:** 0

"call_settings" Module: Call Settings

The call settings configure data related to a user's call preferences. The data is stored internally at /mnt/flash/CallSettings.xml.

All the call settings (except one) follow the format: call_settings.account.x.[element] where x is an account number ranging from 1 to 8.

All the call settings are included in the MAC-specific configuration file.

Setting:	`call_settings.account.x.block_anonymous_enable`		
Description:	Enables or disables anonymous call blocking.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`call_settings.account.x.outgoing_anonymous_enable`		
Description:	Enables or disables outgoing anonymous calls.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`call_settings.account.x.dnd_enable`		
Description:	Enables or disables Do Not Disturb for account x.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`call_settings.account.x.call_fwd_always_enable`		
Description:	Enables or disables Call Forward Always for account x.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`call_settings.account.x.call_fwd_always_target`		
Description:	Sets the Call Forward Always target number for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`call_settings.account.x.call_fwd_busy_enable`		
Description:	Enables or disables Call Forward Busy for account x.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`call_settings.account.x.call_fwd_busy_target`		
Description:	Sets the Call Forward Busy target number for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`call_settings.account.x.cfna_enable`		
Description:	Enables or disables Call Forward No Answer for account x.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`call_settings.account.x.cfna_target`		
Description:	Sets the Call Forward No Answer target number for account x.		
Values:	Text string	**Default:**	Blank

Setting:	`call_settings.account.x.cfna_delay`		
Description:	Sets the Call Forward No Answer delay (in number of rings) for account x.		
Values:	1–10	**Default:**	6

“audio” Module: Audio Settings

The audio settings include jitter buffer parameters and RTP port settings.

All the audio settings are included in the general configuration file.

Setting: `audio.x.jitter_mode`

Description: Select the desired mode for the jitter buffer: fixed (static) or adaptive. This setting depends on your network environment and conditions.

Values: fixed, adaptive **Default:** adaptive

Setting: `audio.x.fixed_jitter.delay`

Description: When in fixed jitter buffer mode, set the delay (in ms) desirable to provide good audio quality with the minimal possible delay.

Values: 30–500 **Default:** 70

Setting: `audio.x.adaptive_jitter.min_delay`

Description: When in adaptive jitter buffer mode, set the minimum delay (in ms) desirable to maintain data packet capture and audio quality.

Values: 20–250 **Default:** 60

Setting: `audio.x.adaptive_jitter.target_delay`

Description: When in adaptive jitter buffer mode, set the target delay (in ms) desirable to provide good audio quality with the minimal possible delay.

Values: 20–500 **Default:** 80

Setting: `audio.x.adaptive_jitter.max_delay`

Description: When in adaptive jitter buffer mode, set the maximum delay (in ms) desirable to maintain data packet capture and audio quality.

Values: 180–500 **Default:** 240

Setting: `audio.x.rtp.port_start`

Description: Sets the Local RTP port range start.

Values: 1–65535 **Default:** 18000

Setting:	`audio.x.rtp.port_end`		
Description:	Sets the Local RTP port range end.		
Values:	1–65535	**Default:**	19000

Setting:	`audio.rtcp_xr.enable`		
Description:	Enables or disables reporting of RTCP XR via SIP to a collector server. RTP Control Protocol Extended Reports (RTCP XR) are used for voice quality assessment and diagnostics.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

"file" Module: Imported File Settings

The "file" parameters enable the provisioning file to import additional configuration files of various types, including:

- Contact lists
- Security certificates

The following certificates are supported:

- Per-account TLS certificate (you can choose to use the Account 1 certificate for all accounts)
- LDAP
- Web server (the M100 KLE has a default self-signed web server certificate)
- Provisioning
- Languages

File parameter values are URLs that direct the M100 KLE to the location of the file to be imported.

None of these settings are exported when you manually export the configuration from the M100 KLE.

General configuration file settings

Setting:	`file.certificate.x.url`		
Description:	URL to upload a trusted certificate file in pem or crt. It will be given index x and marked as unprotected. x ranges from 1 to 20.		
Values:	Text string	**Default:**	Blank

Setting:	`file.protected_certificate.x.url`		
Description:	URL to upload a trusted certificate file in pem or crt. It will be given index x and marked as protected. x ranges from 1 to 20.		
Values:	Text string	**Default:**	Blank

Setting:	`file.certificate.trusted.url`		
Description:	URL to upload a trusted certificate file in pem or crt. It will be given the first available index and marked as unprotected. For example, <protocol>://<user>:<password>@<host>:<port>/<url-path>		
Values:	Text string	**Default:**	Blank

Setting: `file.protected_certificate.trusted.url`

Description: URL to upload a trusted certificate file in pem or crt. It will be given the first available index and marked as protected. For example,
<protocol>://<user>:<password>@<host>:<port>/<url-path>

Values: Text string **Default:** Blank

Setting: `file.protected_certificate.custom_device.url`

Description: URL to upload a custom device certificate to override the factory installed device certificate. For example,
<protocol>://<user>:<password>@<host>:<port>/<url-path>

Values: Text string **Default:** Blank

Setting: `file.action`

Description: Enables you to delete certain certificates.

- removecertificate_customdevice: remove the custom device certificate and resume the use of the factory installed device certificate
- removecertificate_allnonprotected: remove all non-protected trusted certificates
- removecertificate_all: remove the custom device certificate and all protected or non-protected trusted certificates

Enables you to delete a custom language from the WebUI, the deskset screens, or both.

Values: removecertificate_ customdevice, removecertificate_ allnonprotected,
removecertificate_all
removecustomlanguage_all,
removecustomlanguage_webui

Default: Blank

Setting: `file.vpn.advanced_config`

Description: URL of OpenVPN client configuration file. For more information, see *"VPN" on page 73*.

Values: Text string **Default:** Blank

MAC-specific configuration file settings

Setting: `file.contact.directory.append`

Description: URL of contact directory to be imported. Entries in the imported file will be added to existing directory entries.

Values: Text string **Default:** Blank

Setting: `file.contact.directory.overwrite`

Description: URL of contact directory to be imported. Entries in the imported file will replace all existing directory entries.

Values: Text string **Default:** Blank

Setting: `file.contact.blacklist.append`

Description: URL of contact blacklist to be imported. Entries in the imported file will be added to existing blacklist entries.

Values: Text string **Default:** Blank

Setting: `file.contact.blacklist.overwrite`

Description: URL of contact blacklist to be imported. Entries in the imported file will replace all existing directory entries.

Values: Text string **Default:** Blank

“xml_app” Module: XML App Settings

The M100 KLE supports both push and pull server applications. The XML app settings allow you to enable “push” events and how they interact with the phone during calls.

The XML app settings are included in the general configuration file.

Setting:	`xml_app.http_push_enable`		
Description:	Enable or disable HTTP push, which enables the phone to display XML objects that are “pushed” to the phone from the server via http/https POST or SIP NOTIFY.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`xml_app.push_during_call_enable`		
Description:	Enable or disable the phone to display pushed XML objects during a call. Otherwise, the XML application is displayed after the call is over.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

“tr069” Module: TR-069 Settings

The Broadband Forum’s Technical Report 069 (TR-069) defines a protocol for remote management and secure auto-configuration of compatible devices. The TR-069 settings allow you to enable TR-069 and configure access to an auto-configuration server (ACS).

All the TR-069 settings are included in the general configuration file.

Setting:	`tr069.enable`		
Description:	Enable/disable the TR-069 subsystem.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`tr069.acs.url`		
Description:	Enter the URL to the auto configuration server (ACS).		
Values:	Text string	**Default:**	Blank

Setting:	`tr069.acs.username`		
Description:	Enter user name for ACS authentication.		
Values:	Text string	**Default:**	Blank

Setting:	`tr069.acs.access_password`		
Description:	Enter password for ACS authentication.		
Values:	Text string	**Default:**	Blank

Setting:	`tr069.periodic_inform.enable`		
Description:	Enable/disable the phone sending Inform messages to the server.		
Values:	0 (disabled), 1 (enabled)	**Default:**	0

Setting:	`tr069.periodic_inform.interval`		
Description:	Set the interval (in seconds) between sending Inform messages.		
Values:	1–65535	**Default:**	3600

Setting:	`tr069.connection_request.username`		
Description:	Set the user name for authenticating the connection sent from the ACS.		
Values:	Text string	**Default:**	Blank

Setting:	`tr069.connection_request.access_password`		
Description:	Set the password for authenticating the connection sent from the ACS.		
Values:	Text string	**Default:**	Blank

"tone" Module: Tone Definition Settings

The Tone Definition settings configure data for various tones for the purpose of localization. The Audio Manager component uses the data from this model to populate the mcu on bootup.

Each tone definition must be a string of 12 elements separated by a space:

```
"<num of freq> <freq1> <amp1> <freq2> <amp2> <freq3> <amp3> <freq4> <amp4>
<on duration> <off duration> <repeat count>"
```

Where:

```
<num of freq>: 0-4

<freq1>: 0-65535

<amp1>: -32768-32767

<freq2>: 0-65535

<amp2>: -32768-32767

<freq3>: 0-65535

<amp3>: -32768-32767

<freq4>: 0-65535

<amp4>: -32768-32767

<on duration>: 0-2^32

<off duration>: 0-2^32

<repeat count>: 0-65535
```

All the tone definition settings are included in the general configuration file.

Setting:	`tone.inside_dial_tone.num_of_elements`		
Description:	Sets the number of tone elements for the dial tone.		
Values:	1–5	**Default:**	1

Setting:	`tone.inside_dial_tone.element.1`		
Description:	Defines the inside dial tone element 1.		
Values:	Tone element string	**Default:**	2 440 -22 350 -22 0 0 0 0 65535 0 65535

Setting:	`tone.inside_dial_tone.element.x`		
Description:	Defines the inside dial tone element x.		
Values:	Tone element string	**Default:**	Blank

Setting:	`tone.inside_dial_tone.num_of_repeat_all`		
Description:	Sets the number of repeats of all elements in sequence; that is, repeating back to the first element.		
Values:	0–65535	**Default:**	0

Setting:	`tone.stutter_dial_tone.num_of_elements`		
Description:	Sets the number of tone elements for the stutter dial tone.		
Values:	1–5	**Default:**	2

Setting:	`tone.stutter_dial_dial_tone.element.1`		
Description:	Defines the stutter dial tone element 1.		
Values:	Tone element string	**Default:**	2 440 -22 350 -22 0 0 0 0 100 100 10

Setting:	`tone.stutter_dial_dial_tone.element.2`		
Description:	Defines the stutter dial tone element 2.		
Values:	Tone element string	**Default:**	2 440 -22 350 -22 0 0 0 0 65535 0 65535

Setting:	`tone.stutter_dial_tone.element.x`		
Description:	Defines the stutter dial tone element x.		
Values:	Tone element string	**Default:**	Blank

Setting:	`tone.stutter_dial_tone.num_of_repeat_all`		
Description:	Sets the number of repeats of all elements in sequence; that is, repeating back to the first element.		
Values:	0–65535	**Default:**	0

Setting:	`tone.busy_tone.num_of_elements`		
Description:	Sets the number of tone elements for the busy tone.		
Values:	1–5	**Default:**	1

Setting:	`tone.busy_tone.element.1`		
Description:	Defines the busy tone element 1.		
Values:	Tone element string	**Default:**	2 480 -22 620 -22 0 0 0 0 375 375 65535

Setting:	`tone.busy_tone.element.x`		
Description:	Defines the busy tone element x.		
Values:	Tone element string	**Default:**	Blank

Setting:	`tone.busy_tone.num_of_repeat_all`		
Description:	Sets the number of repeats of all elements in sequence; that is, repeating back to the first element.		
Values:	0–65535	**Default:**	0

Setting:	`tone.ring_back_tone.num_of_elements`		
Description:	Sets the number of tone elements for the ringback tone.		
Values:	1–5	**Default:**	1

Setting:	`tone.ring_back_tone.element.1`		
Description:	Defines the ringback tone element 1.		
Values:	Tone element string	**Default:**	2 440 -22 480 -22 0 0 0 0 2000 4000 65535

Setting:	`tone.ring_back_tone.element.x`		
Description:	Defines the ringback tone element x.		
Values:	Tone element string	**Default:**	Blank

Setting: `tone.ring_back_tone.num_of_repeat_all`

Description: Sets the number of repeats of all elements in sequence; that is, repeating back to the first element.

Values: 0–65535 **Default:** 0

Setting: `tone.congestion_tone.num_of_elements`

Description: Sets the number of tone elements for the congestion tone.

Values: 1–5 **Default:** 3

Setting: `tone.congestion_tone.element.1`

Description: Defines the dial tone element 1.

Values: Tone element string **Default:** 1 950 -22 0 0 0 0 0 0 330 0 1

Setting: `tone.congestion_tone.element.2`

Description: Defines the dial tone element 2.

Values: Tone element string **Default:** 1 1400 -22 0 0 0 0 0 0 330 0 1

Setting: `tone.congestion_tone.element.3`

Description: Defines the dial tone element 3.

Values: Tone element string **Default:** 1 1800 -22 0 0 0 0 0 0 330 1000 1

Setting: `tone.congestion_tone.element.x`

Description: Defines the dial tone element x (x = 4–5).

Values: Tone element string **Default:** Blank

Setting: `tone.congestion_tone.num_of_repeat_all`

Description: Sets the number of repeats of all elements in sequence; that is, repeating back to the first element.

Values: 0–65535 **Default:** 65535

Setting:	`tone.dial_tone.num_of_elements`		
Description:	Sets the number of tone elements for the dial tone.		
Values:	1–5	**Default:**	1

Setting:	`tone.dial_tone.element.1`		
Description:	Defines the dial tone element 1.		
Values:	Tone element string	**Default:**	2 440 -22 350 -22 0 0 0 0 65535 0 65535

Setting:	`tone.dial_tone.element.x`		
Description:	Defines the dial tone element x (x = 2–5).		
Values:	Tone element string	**Default:**	Blank

Setting:	`tone.dial_tone.num_of_repeat_all`		
Description:	Sets the number of repeats of all elements in sequence; that is, repeating back to the first element.		
Values:	0–65535	**Default:**	0

"profile" Module: Password Settings

The password settings allow you to set the default administrator and user passwords in the configuration file. The administrator password is usually included in the general configuration file, while the user password is usually included in the MAC-specific configuration file. The passwords can also be set using the WebUI. Be aware that scheduled provisioning configuration file updates may reset these passwords.

General configuration file settings

Setting:	`profile.admin.access_password`		
Description:	Sets the administrator password for accessing the admin menus on the M10 KLE and the WebUI.		
Values:	Text string (15 characters maximum)	**Default:**	admin

MAC-specific configuration file settings

Setting:	`profile.user.access_password`		
Description:	Sets the user password for logging on to the WebUI and editing user-accessible settings.		
Values:	Text string (15 characters maximum)	**Default:**	user

CHAPTER 6

TROUBLESHOOTING

If you have difficulty with your M100 KLE 4-Line base station, please try the suggestions below.

NOTE For customer service or product information, contact the person who installed your system. If your installer is unavailable, visit our website at *www.snomamericas.com*.

Common Troubleshooting Procedures

Follow these procedures to resolve common issues. For more troubleshooting information, see the user‘s manual for your product.

The DECT handset doesn't register. "Registration failed" appears on the screen.

- Ensure the handset is fully charged and in the charger. Remove and replace the handset in its charger before selecting **Register** on the M100 KLE.
- Ensure the handset is not already registered to another base. If it has been registered to another base, deregister it.

The firmware upgrade or configuration update isn't working.

- Before using the WebUI, ensure you have the latest version of your web browser installed. Some menus and controls in older browsers may operate differently than described in this manual.
- Ensure you have specified the correct path to the firmware and configuration files on the **SERVICING > Firmware Upgrade > Auto Upgrade** page and the **SERVICING > Provisioning** page.

- If the phone is not downloading a MAC-specific configuration file, ensure the filename is all upper case.

Provisioning: "Use DHCP Option" is enabled, but the M100 KLE is not getting a provisioning URL from the DHCP Server.

- Ensure that DHCP is enabled in Network settings.

APPENDIXES

Appendix A: Maintenance

Taking care of your products

- Your M100 KLE 4-Line base station contains sophisticated electronic parts, so you must treat it with care.
- Avoid rough treatment.
- Place the handset down gently.
- Save the original packing materials to protect your M100 KLE 4-Line base station if you ever need to ship it.

Avoid water

- You can damage your M100 KLE 4-Line base station if it gets wet. Do not use the handset in the rain, or handle it with wet hands.Do not install the M100 KLE 4-Line base station near a sink, bathtub or shower.

Electrical storms

- Electrical storms can sometimes cause power surges harmful to electronic equipment. For your own safety, take caution when using electric appliances during storms.

Cleaning your products

- Your M100 KLE 4-Line base station has a durable plastic casing that should retain its luster for many years. Clean it only with a soft cloth slightly dampened with water or a mild soap.
- Do not use excess water or cleaning solvents of any kind.

Remember that electrical appliances can cause serious injury if used when you are wet or standing in water. If the M100 KLE 4-Line base station should fall into water, DO NOT RETRIEVE IT UNTIL YOU UNPLUG THE POWER CORD AND NETWORK CABLE FROM THE WALL, then pull the unit out by the unplugged cords.

Appendix B: GNU General Public License

COPYRIGHT NOTICE AND WARRANTY DISCLAIMER

I.

This Product contains Software applicable to GNU General Public License, Version 2 which can be used freely.

II.

Towards the licensor of this Software the following liability is disclaimed:

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

III.

The GNU General Public License is as follows:

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991
Free Software Foundation, Inc.
59 Temple Place, Suite 330
Boston, MA 02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author‘s protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone‘s free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program‘s source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program. In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients'exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and „any later version“, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM „AS IS"WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program‘s name and a brief idea of what it does>Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

IV.

If requested by you, the complete corresponding source code of the Software can be sent by Snom Technology GmbH on a standard data storage medium against the reimbursement of the manufacturing costs of EUR 5.- per unit.

The complete corresponding source code of the Software can also be downloaded from our web site *https://www.snom.com/footer/source-code-gpl-open-source/*.

V.

For further information see *http://www.snom.com*.