



# **ASTRO® 25**

## **INTEGRATED VOICE AND DATA**

# **KVL 4000 FLASHPORT**

## **UPGRADE USER GUIDE**

**January 2013**



**6871018P36-F**



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# Document History

Version	Description	Date
6871018P36-A	Original release of the <i>KVL 4000 FLASHPort Upgrade User Guide</i>	May 2010
6871018P36-B	Updated as follows: <ul style="list-style-type: none"> <li>• Added the following sections:               <ul style="list-style-type: none"> <li>– “Upgrading an MGEG, MCC 7500 Dispatch Console, or MCC 7500 AIS Secure Card”</li> <li>– “Upgrading a KMF Crypto Card”</li> <li>– “Upgrading Algorithms on TMGs and/or VPMs”</li> <li>– “Upgrading Algorithms on CDEMs and/or PDEGs”</li> <li>– “Upgrading the Application Boot Software on CDEMs and/or PDEGs”</li> <li>– “Upgrading the Application Main Software on CDEMs and/or PDEGs”</li> <li>– “Performing the OS Hardening”</li> <li>– “Installing the VPN Software”</li> <li>– “Setting the PDA USB Mode”</li> </ul> </li> <li>• Updated to include the Radio Authentication operating mode.</li> </ul>	November 2010
6871018P36-C	Updates to the “VPN Software” chapter	July 2011
6871018P36-D	Updated/added the following sections: <ul style="list-style-type: none"> <li>• “MOTOROLA SOLUTIONS, INC. END USER LICENSE AGREEMENT”</li> <li>• “PUBLICLY AVAILABLE SOFTWARE LIST – KVL SOFTWARE INSTALLATION WIZARD”</li> <li>• “PUBLICLY AVAILABLE SOFTWARE LIST – PDA”</li> <li>• “Obtaining Upgrades”</li> <li>• “Running the KVL Software Installation Wizard”</li> <li>• “Checking for Upgrades”</li> <li>• “Upgrading the Security Adapter”</li> <li>• “Upgrading Algorithms on CDEMs, PDEGs, and/or KMF CryptRs”</li> </ul>	March 2012

Version	Description	Date
	<ul style="list-style-type: none"> <li>• “Upgrading CDEMs and/or PDEGs”</li> <li>• “Applying Enhanced Security Settings Through the KVL Software Installation Wizard”</li> <li>• “Applying Transparent Security Settings Through the KVL Software Installation Wizard”</li> <li>• “Installing and Activating the VPN Software”</li> <li>• “Motorola System Support Center and Radio Support Center”</li> <li>• “North America Parts Organization”</li> <li>• “Interface Cables”</li> </ul>	
6871018P36-E	<p>Updated the following sections:</p> <ul style="list-style-type: none"> <li>• “Running the KVL Software Installation Wizard”</li> <li>• “Upgrading Target Devices”</li> <li>• “Applying Security Settings”</li> <li>• “Setting the PDA USB Mode”</li> <li>• “Interface Cables”</li> </ul>	November 2012
6871018P36-F	<p>Updated the following sections:</p> <ul style="list-style-type: none"> <li>• “Running the KVL Software Installation Wizard”</li> <li>• “Upgrading Radios and/or DIUs”</li> <li>• “Applying Security Settings”</li> </ul>	January 2013

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# About the KVL 4000 FLASHPort Upgrade User Guide

This manual provides instructions for upgrading the Key Variable Loader (KVL), radios, and other target devices. It also provides instructions for applying security settings on the KVL, installing and activating VPN software, as well as provides troubleshooting information.

This manual is intended for use by experienced technicians familiar with similar types of equipment. Technicians should understand encryption concepts and be familiar with other types of Motorola encryption equipment.

Depending on the options ordered, the KVL has the capability of being configured to operate in ASN (Advanced SECURENET®), ASTRO® 25, or Radio Authentication mode. This manual contains information relevant to all modes of operation.

## What Is Covered in This Manual?

This manual consists of the following chapters:

- [Chapter 1 Performing Upgrades](#)
- [Chapter 2 Applying Security Settings](#)
- [Chapter 3 VPN Software](#)
- [Chapter 4 Troubleshooting](#)

## Helpful Background Information

Motorola offers various courses designed to assist in learning about the system. For information, go to <http://www.motorolasolutions.com/training> to view the current course offerings and technology paths.

## Related Information

Refer to the following documents for associated information:

Related Information	Purpose
<i>Standards and Guidelines for Communication Sites</i>	Provides standards and guidelines that should be followed when setting up a Motorola communications site. Also known as R56 manual. This may be purchased on CD 9880384V83, by calling the North America Parts Organization at 800-422-4210 (or the international number: 302-444-9842).
<i>System Documentation Overview</i>	<p>For an overview of the ASTRO® 25 system documentation, open the graphical user interface for the ASTRO® 25 system documentation set and select the <b>System Documentation Overview</b> link. This opens a file that includes:</p> <ul style="list-style-type: none"> <li>• ASTRO® 25 system release documentation descriptions</li> <li>• ASTRO® 25 system diagrams</li> <li>• ASTRO® 25 system glossary</li> </ul> <p>For an additional overview of the system, review the architecture and descriptive information in the manuals that apply to your system configuration.</p>
<i>MC55 Enterprise Digital Assistant User Guide (72E-108859)</i>	Describes how to use the MC55 EDA.
<i>MC55 Quick Start Guide (72-127603)</i>	Describes how to get the MC55 EDA up and running.
<i>KVL 4000 Quick Start Guide</i>	Provides basic information on the KVL 4000.
<i>KVL 4000 Key Variable Loader Advanced SECURENET User Guide (6871018P35)</i>	Provides step-by-step instructions for using the Key Variable Loader (KVL) to create and store encryption keys, and then load them into other Motorola secure equipment, such as radios, fixed encryption units, digital interface units (DIUs), and others. This manual describes the Advanced SECURENET® operating mode.
<i>KVL 4000 Key Variable Loader ASTRO 25 User Guide</i>	Provides step-by-step instructions for using the Key Variable Loader (KVL) to create and store encryption keys, and then load them into other Motorola secure equipment, such as radios, fixed encryption units, digital interface units (DIUs), and others. This manual describes the ASTRO® 25 mode of operation.
<i>KVL 4000 Key Variable Loader Radio Authentication User Guide</i>	Provides step-by-step instructions for using the Key Variable Loader (KVL) to create and store authentication keys, and then load them into Motorola radios. This manual describes the Radio Authentication mode of operation.

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Version: 2.0  
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## PUBLICLY AVAILABLE SOFTWARE LIST – PDA

Name: NLOG  
Version: 2.0  
Description: NLog is a logging platform for .NET with rich log routing and management capabilities. It makes it easy to produce and manage high-quality logs for application.  
Software Site: <http://nlog.codeplex.com>  
<http://nlog-project.org>  
Source Code: No Source Code Distribution Obligations. The Source Code may be obtained from the original Software Site.  
License: BSD Type of License

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---

Name: Smart Device Framework - Community Edition  
Version: 2.3.0.39  
Description: Extensions, to the NET Compact Framework core libraries, which enables calls to OS services.  
Software Site: <http://www.opennetcf.com/Products/SmartDeviceFramework.aspx>  
Source Code: No Source Code Distribution Obligations. The Community Edition of the Smart Device Framework is only provided in Binary form from the Software Authors. Source Code can be obtained via commercially licensing the Software.  
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## **PUBLICLY AVAILABLE SOFTWARE LIST – SECURITY ADAPTER**

Name: Buffer Management Source Code from OpenBSD Operating System, as well as, OpenSSH Project.

Version: N/A

Description: This Package was included by Commercial Third Party Software Development Kit, from WindRiver-Interpeak, within the Motorola Product.

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Author: Tatu Ylonen <ylo@cs.hut.fi>

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Functions for manipulating fifo buffers (that can grow if needed).

As far as I am concerned, the code I have written for this software can be used freely for any purpose. Any derived versions of this software must be clearly marked as such, and if the derived work is incompatible with the protocol description in the RFC file, it must be called by a name other than "ssh" or "Secure Shell".

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Credits: OpenBSD Project, <http://www.openbsd.org>  
Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland

---

Name: C Support Libraries and Headers

Version: N/A

Description: The Packages were included by Commercial Third Party Software Development Kit, from Blunk Microsystems, within the Motorola Product.

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sccl.c, vscanf.c

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xscanf.c

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stdint.h

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# 1 Performing Upgrades

This chapter provides detailed procedures on performing upgrades for the KVL unit and target devices.

## 1.1 Obtaining Upgrades

### When and where to use:

Follow this procedure to obtain upgrades for the KVL Application, Security Adapter, radios, or other target devices, such as:

- Key Management Facility (KMF)
- Digital Interface Unit (DIU)
- Motorola Gold Elite Gateway (MGEG)
- Radio Network Controller (RNC)
- Telephone Media Gateway (TMG)
- Voice Processor Module (VPM)
- Motorola MCC 7500 products
- PDEG Encryption Unit
- CAI Data Encryption Module (CDEM)
- KMF CryptR

### Procedure Steps

---

- 1 Place an order with Motorola to receive an upgrade:
    - If you order a KVL 4000 upgrade, then you will receive a CD containing the KVL Software Installation Wizard, KVL Application software, and Security Adapter software.
    - If you order an upgrade for a radio or another target device, then you will receive a CD containing the KVL Software Installation Wizard and crypto module upgrade image software.
  - 2 To upgrade/reinstall the KVL Application and copy the Security Adapter or crypto module upgrades onto the PDA, follow [1.2 Running the KVL Software Installation Wizard, page 1-1](#).
- 

## 1.2 Running the KVL Software Installation Wizard

By running the KVL Software Installation Wizard you can upgrade/reinstall the KVL application, copy Security Adapter and/or crypto module upgrades onto the PDA, apply Enhanced Security Settings, and install patches, VPN software, ActiveSync software, and Windows Mobile Device Center Software, depending on the content of the CD.

**Prerequisites:**

- Ensure that you have the USB Programming Cable.
- For Windows XP, ensure that Microsoft ActiveSync is installed on your PC.
- For Windows Vista and Windows 7, ensure that Microsoft Windows Mobile Device Center is installed on your PC.

**Procedure Steps**

---

- 1 If the KVL Application software is running, exit or log out of the KVL.
  - 2 Disconnect the Security Adapter from the PDA.
  - 3 Connect the PDA to a PC using the USB Programming Cable.
- 

**Figure 1-1 PDA and PC – Connected**



**Step result:** For Windows XP, the ActiveSync application starts. For Windows Vista and Windows 7, the Windows Mobile Device Center starts.



**NOTE**

If ActiveSync or Windows Mobile Device Center do not start, perform [4.2 Setting the PDA USB Mode, page 4-1](#) to put the PDA into the **USB Client** or **USB OTG** mode.

- 
- 4 Insert the CD provided by Motorola and run the Setup.exe file to start the KVL Software Installation Wizard.  
**Step result:** The End User License Agreement screen appears.
-

- 
- 5 Click **Accept** and follow instructions on the consecutive screens. If you want to apply Enhanced Security Settings on your KVL, select an appropriate check box. The Enhanced Security Settings will be applied after the installation. For details, see [2.1 Applying Enhanced Security Settings Through the KVL Software Installation Wizard, page 2-1](#).

**NOTE**

During the installation process, the PDA may restart several times.

- 
- 6 When the installation is completed, exit the KVL Software Installation Wizard.
  - 7 Disconnect the USB Programming Cable from the PDA.
  - 8 Connect the Security Adapter to the PDA.

**NOTE**

If the Security Adapter is not detected automatically, perform [4.2 Setting the PDA USB Mode, page 4-1](#) to put the PDA into the **USB Host** or **USB OTG** mode.

- 
- 9 If you wanted to upgrade/reinstall the KVL application, the procedure is complete. Otherwise, perform one of the following actions:
    - To upgrade the Security Adapter software, go to [1.4 Upgrading the Security Adapter Software, page 1-4](#).
    - To upgrade a radio or another target device, go to [1.5 Upgrading Target Devices, page 1-4](#).
- 

## 1.3 Checking for Upgrades

**When and where to use:**

Use these steps to check if there are upgrades available on the PDA.

## Procedure Steps

---

- 1 Log on to the KVL application as an Administrator.

**Step result:** If at least one upgrade for the Security Adapter or a target's crypto module is available, the **Upgrades available** screen appears. Otherwise, the KVL main screen appears.

---

- 2 Select **Yes, allow access**.

**Step result:** A progress animation appears, indicating that the access to upgrades is being provided. When the process is completed, the **Upgrades** screen appears, presenting available upgrades.



### NOTE

If you select **No, not now**, the KVL main screen appears.

---

- 3 Tap **Done** to go to the KVL main screen.
- 

## 1.4 Upgrading the Security Adapter Software

### Prerequisites:

There are upgrades in the KVL database.

### Procedure Steps

---

- 1 To verify the available upgrades, follow [1.3 Checking for Upgrades, page 1-3](#).
- 

- 2 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade this KVL**>.

**Step result:** A progress animation appears, indicating that the Security Adapter software is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the Security Adapter software has been successfully upgraded.

---

- 3 Tap **Done** to return to the KVL main screen.
- 

- 4 Exit or log out of the KVL application.

**Step result:** The Security Adapter software has been upgraded.

---

## 1.5 Upgrading Target Devices

This section covers the following topics:

- [1.5.1 Upgrading Radios and/or DIUs, page 1-5](#)
- [1.5.2 Upgrading an MGEG, MCC 7500 Dispatch Console, or MCC 7500 AIS Secure Card, page 1-6](#)

- [1.5.3 Upgrading Algorithms on TMGs and/or VPMs, page 1-7](#)
- [1.5.4 Upgrading Algorithms on CDEMs, PDEGs, and/or KMF CryptRs, page 1-9](#)
- [1.5.5 Upgrading CDEMs and/or PDEGs, page 1-9](#)

## 1.5.1 Upgrading Radios and/or DIUs

### Prerequisites:

You need to have the KVL 4000 version R02.03.00 or later to be able to upgrade radios.

Ensure you have a Key load cable.

### When and where to use:

Use these steps to upgrade a radio or a Digital Interface Unit (DIU).

### Procedure Steps

- 1 To verify the available upgrades, follow [1.3 Checking for Upgrades, page 1-3](#).
- 2 Connect the target device to the key load port using an appropriate key load cable. See [A.1 Interface Cables, page A-1](#) for details.



#### IMPORTANT

The target device must be powered on before you perform the upgrade.



#### IMPORTANT

Do not switch off the target device before completing the upgrade procedure.

- 3 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.

- 4 Disconnect the target device.



#### NOTE

If you want to upgrade another target device, disconnect the current target device now and connect the new one. You can continue the process until you have upgraded all the target devices.

- 5 Tap **Done** on the consecutive screens to return to the KVL main screen.

## 1.5.2 Upgrading an MGEG, MCC 7500 Dispatch Console, or MCC 7500 AIS Secure Card

### Prerequisites:

Ensure you have a Key load cable.

### When and where to use:

Use these steps to upgrade:

- MGEG
- MCC 7500 Dispatch Console
- MCC 7500 AIS Secure Card

### Procedure Steps

- 1 To verify the available upgrades, follow [1.3 Checking for Upgrades, page 1-3](#).

- 2 Perform one of the following actions:

If...	Then...
You are upgrading an MGEG Secure Card...	Use Network Manager to disable the MGEG.
You are upgrading an MCC 7500 Dispatch Console Secure Card...	Log out of the Dispatch Console Application (Elite) or use Network Manager to disable the MCC 7500 Dispatch Console.
You are upgrading an MCC 7500 AIS Secure Card...	Use Network Manager to disable the AIS.



#### IMPORTANT

Before proceeding, verify the **KVL Ready** LED on the target device is lit.

- 3 Connect the target device to the key load port on the KVL using an appropriate key load cable. See [A.1 Interface Cables, page A-1](#) for details.



#### IMPORTANT

The target device must be powered on before you perform the upgrade.



#### IMPORTANT

Do not switch off the target device before completing the upgrade procedure.

- 4 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.



**IMPORTANT**

After a successful upgrade, the target device resets itself. (It may take up to 6 minutes for the target device to complete the reset.) Before proceeding, wait until the **KVL Ready** LED on the target device is lit again.

- 5 Disconnect the target device.

- 6 Tap **Done** on the consecutive screens to return to the KVL main screen.

- 7 Perform one of the following actions:

If...	Then...
You are upgrading an MGEG Secure Card...	Use Network Manager to re-enable the MGEG.
You are upgrading an MCC 7500 Dispatch Console Secure Card...	Log on to the Dispatch Console Application (Elite) again or use the Network Manager to re-enable the MCC 7500 Dispatch Console.
You are upgrading an MCC 7500 AIS Secure Card...	Use the Network Manager to re-enable the AIS.



**IMPORTANT**

Verify the **KVL Ready** LED on the target device is **not** lit.

## 1.5.3 Upgrading Algorithms on TMGs and/or VPMs

**Prerequisites:**

Ensure you have a Key load cable.

## Procedure Steps

---

- 1 To verify the available upgrades, follow [1.3 Checking for Upgrades, page 1-3](#).



**IMPORTANT**

Before proceeding, verify the **KVL Ready** LED on the target device is lit.

---

- 2 Connect the target device to the key load port on the KVL using an appropriate key load cable. See [A.1 Interface Cables, page A-1](#) for details.



**IMPORTANT**

The target device must be powered on before you perform the upgrade.



**IMPORTANT**

Do not switch off the target device before completing the upgrade procedure.

---

- 3 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.



**IMPORTANT**

After a successful upgrade, the target device resets itself. (It may take up to 6 minutes for the device to complete the reset.) Before proceeding, wait until the **KVL Ready** LED on the target device is lit again.

---

- 4 Disconnect the target device.
- 

- 5 Tap **Done** on the consecutive screens to return to the KVL main screen.
-

## 1.5.4 Upgrading Algorithms on CDEMs, PDEGs, and/or KMF CryptRs

### Prerequisites:

Ensure you have a key load cable.

### Procedure Steps

- 1 To verify the available upgrades, follow [1.3 Checking for Upgrades, page 1-3](#).
- 2 Connect the **red** key load port on the target device to the key load port on the KVL using an appropriate key load cable. See [A.1 Interface Cables, page A-1](#) for details.



#### IMPORTANT

The target device must be powered on before you perform the upgrade.



#### IMPORTANT

Do not switch off the target device before completing the upgrade procedure.

- 3 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.



#### NOTE

If the upgrade process starts but does not progress after 30 seconds, press the Reset button on the target device.

- 4 Power cycle the target device.
- 5 Disconnect the target device.
- 6 Tap **Done** on the consecutive screens to return to the KVL main screen.

## 1.5.5 Upgrading CDEMs and/or PDEGs

This section covers the following topics:

- [1.5.5.1 Upgrading the Application Boot Software on CDEMs and/or PDEGs, page 1-10](#)

- [1.5.5.2 Upgrading the Application Main Software on CDEMs and/or PDEGs, page 1-11](#)

## 1.5.5.1 Upgrading the Application Boot Software on CDEMs and/or PDEGs

### Prerequisites:

Ensure you have a key load cable.

### Procedure Steps

---

- 1 To verify the available upgrades, follow [1.3 Checking for Upgrades, page 1-3](#).
- 2 Connect the **red** key load port on the target device to the key load port on the KVL using an appropriate key load cable. See [A.1 Interface Cables, page A-1](#) for details.



#### IMPORTANT

The target device must be powered on before you perform the upgrade.



#### IMPORTANT

Do not switch off the target device before completing the upgrade procedure.

- 3 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.



#### NOTE

If the upgrade process starts but does not progress after 30 seconds, press the Reset button on the target device.

- 4 Power cycle the target device.
  - 5 Disconnect the target device.
  - 6 Tap **Done** on the consecutive screens to return to the KVL main screen.
-

- 7 Connect the **black** key load port on the target device to the key load port on the KVL using an appropriate key load cable. See [A.1 Interface Cables, page A-1](#) for details.

**IMPORTANT**

The target device must be powered on before you perform the upgrade.

**IMPORTANT**

Do not switch off the target device before completing the upgrade procedure.

- 
- 8 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.

**NOTE**

If the upgrade process starts but does not progress after 30 seconds, press the Reset button on the target device.

- 
- 9 Power cycle the target device.
  - 10 Disconnect the target device.
  - 11 Tap **Done** on the consecutive screens to return to the KVL main screen.
- 

## 1.5.5.2 Upgrading the Application Main Software on CDEMs and/or PDEGs

**Prerequisites:**

Ensure you have a key load cable.

**Procedure Steps**

- 
- 1 To verify the available upgrades, follow [1.3 Checking for Upgrades, page 1-3](#).
-

- 2 Connect the **red** key load port on the target device to the key load port on the KVL using a key load cable. See [A.1 Interface Cables, page A-1](#) for details.



**IMPORTANT**

The target device must be powered on before you perform the upgrade.



**IMPORTANT**

Do not switch off the target device before completing the upgrade procedure.

- 
- 3 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.



**NOTE**

If the upgrade process starts but does not progress after 30 seconds, press the Reset button on the target device.

- 
- 4 Power cycle the target device.
  - 5 Disconnect the target device.
  - 6 Tap **Done** on the consecutive screens to return to the KVL main screen.
  - 7 Connect the **black** key load port on the target device to the key load port on the KVL using an appropriate key load cable. See [A.1 Interface Cables, page A-1](#) for details.



**IMPORTANT**

The target device must be powered on before you perform the upgrade.



**IMPORTANT**

Do not switch off the target device before completing the upgrade procedure.

---

- 8 On the KVL main screen, select **Settings** → **Upgrade** → **Upgrade a crypto module**.

**Step result:** A progress animation appears, indicating that the connected target device is being upgraded. When the process is completed, a **completed** sound is played and a screen appears, informing that the upgrade was successful.



**NOTE**

If the upgrade process starts but does not progress after 30 seconds, press the Reset button on the target device.

- 
- 9 Power cycle the target device.

- 
- 10 Disconnect the target device.

- 
- 11 Tap **Done** on the consecutive screens to return to the KVL main screen.
-



# 2 Applying Security Settings

By default, the KVL uses Transparent Security Settings. If required by your organization's policies, apply Enhanced Security Settings on your KVL.

## 2.1 Applying Enhanced Security Settings Through the KVL Software Installation Wizard

### Prerequisites:

- Ensure that you have the USB Programming Cable.
- For Windows XP, ensure that Microsoft ActiveSync is installed on your PC.
- For Windows Vista and Windows 7, ensure that Microsoft Windows Mobile Device Center is installed on your PC.

### When and where to use:

By default, the KVL uses Transparent Security Settings. If required by your organization's policies, follow this procedure to apply Enhanced Security Settings.



### NOTE

Applying Enhanced Security Settings causes the KVL to:

- prevent installation and launching of any unsigned applications
- disable the use of wireless modem (Bluetooth and WiFi are disabled)
- require you to set a password on the Operating System

### Procedure Steps

- 
- 1 If the KVL Application software is running, exit or log out of the KVL.
- 
- 2 Disconnect the Security Adapter from the PDA.
-

- 3 Connect the PDA to a PC using the USB Programming Cable.

**Figure 2-1 PDA and PC – Connected**



**Step result:** For Windows XP, the ActiveSync application starts. For Windows Vista and Windows 7, the Windows Mobile Device Center starts.



**NOTE**

If ActiveSync or Windows Mobile Device Center do not start automatically, perform [4.2 Setting the PDA USB Mode, page 4-1](#) to put the PDA into the **USB Client** or **USB OTG** mode.

- 
- 4 Insert the CD provided by Motorola and run the Setup.exe file to start the KVL Software Installation Wizard.  
**Step result:** The End User License Agreement screen appears.

- 
- 5 Click **Accept**.

- 
- 6 In the window that appears, select the check box next to **Your device is using Transparent Security Settings (default)**, and click **Next**. The Enhanced Security Settings will be applied after the KVL application reinstallation/upgrade.



**NOTE**

During the process, the PDA may restart several times.

**Step result:** When the process is completed, a message appears, asking you to configure your device according to the security policy.

- 
- 7 Check your PDA screen and follow the instructions to renew your password settings.
-

- 8 When you have entered and confirmed the password on your PDA, click **OK** on the message on your PC.

**Step result:** The Enhanced Security Settings are applied successfully.

---

- 9 Click **Next** → **Exit** to close the KVL Software Installation Wizard.
- 

- 10 Disconnect the USB Programming Cable from the PDA.
- 

- 11 Connect the Security Adapter to the PDA.



**NOTE**

If the Security Adapter is not detected automatically, perform [4.2 Setting the PDA USB Mode, page 4-1](#) to put the PDA into the **USB Host** or **USB OTG** mode.

---

## 2.2 Applying Transparent Security Settings Through the KVL Software Installation Wizard

### Prerequisites:

- Ensure that you have the USB Programming Cable.
- For Windows XP, ensure that Microsoft ActiveSync is installed on your PC.
- For Windows Vista and Windows 7, ensure that Microsoft Windows Mobile Device Center is installed on your PC.

### Procedure Steps

---

- 1 If the KVL Application software is running, exit or log out of the KVL.
- 

- 2 Disconnect the Security Adapter from the PDA.
- 

- 3 Connect the PDA to a PC using the USB Programming Cable.

**Step result:** For Windows XP, the ActiveSync application starts. For Windows Vista and Windows 7, the Windows Mobile Device Center starts.



**NOTE**

If ActiveSync or Windows Mobile Device Center do not start automatically, perform [4.2 Setting the PDA USB Mode, page 4-1](#) to put the PDA into the **USB Client** or **USB OTG** mode.

---

- 4 Insert the CD provided by Motorola and run the Setup.exe file to start the KVL Software Installation Wizard.  
**Step result:** The End User License Agreement screen appears.
- 

- 5 Click **Accept**.
- 

- 6 In the window that appears, clear the check box next to **Your device is using Enhanced Security Settings**, and click **Next**. The Transparent Security Settings will be applied after the KVL application reinstallation/upgrade.



**NOTE**

During the installation process, the PDA may restart several times.

---

- 7 When the process is completed, click **Next** → **Exit** to close the KVL Software Installation Wizard.  
**Step result:** The Transparent Security Settings are applied successfully.
- 

- 8 Disconnect the USB Programming Cable from the PDA.
- 

- 9 Connect the Security Adapter to the PDA.



**NOTE**

If the Security Adapter is not detected automatically, perform [4.2 Setting the PDA USB Mode, page 4-1](#) to put the PDA into the **USB Host** or **USB OTG** mode.

---

# 3 VPN Software

## 3.1 Installing and Activating the VPN Software

### Procedure Steps

---

- 1 If you need to install/reinstall the VPN software, follow [1.2 Running the KVL Software Installation Wizard](#), page 1-1. The VPN software will be installed as part of the KVL application reinstallation process.
- 

- 2 To activate the VPN software, select **Start** → **Programs** → **NCP Secure Client**.

**Step result:** The NCP Secure Client launches, followed by a prompt to activate the software.



#### NOTE

If the activation prompt does not appear, long-press the NCP Secure Client screen, and select **Activation** from the menu that appears.

**Figure 3-1 NCP Secure Client Screen – Activation**



- 
- 3 Select **Yes**.

**Step result:** The License-Information screen appears.

---

- 4 Tap the blue **Next** arrow in the upper right corner of the screen.  
**Step result:** The Type of Activation screen appears.

---
- 5 Ensure the **Online Activation** radio button is selected, and then tap the blue **Next** arrow in the upper right corner of the screen.  
**Step result:** The License-Data screen appears.

---
- 6 Enter the license key and serial number, and then tap the blue **Next** arrow in the upper right corner of the screen.  
**Step result:** The Proxy Server screen appears.

---
- 7 If your PC connection uses a Proxy server, select the **Use Proxy Server** check box, enter the server address and port, and then tap the blue **Next** arrow in the upper right corner of the screen.  
**Step result:** The activation process begins, followed by the confirmation message.

---
- 8 To close the screen, select the blue **X** in the upper right corner.

---

# 4 Troubleshooting

## 4.1 Operational Errors

This section lists upgrade operational errors along with their probable causes and remedies.

**Table 4-1 Operational Errors**

<b>Error/Status Message</b>	<b>Probable Cause</b>	<b>Remedy</b>
Unable to upgrade No upgrades are available at this time.	You have already used the number of unit upgrades that were purchased or you have not purchased any upgrades.	Purchase more upgrades.
Out of memory	The KVL internal database is full and cannot store any more data.	Delete any items stored in the KVL to make room for new data. This includes items such as unused keys and log records.
Error Access to upgrades failed. Upgrades could not be verified.	The upgrade image supplied to the KVL is corrupted or damaged.	Place another copy of the upgrade image onto the KVL and try again. If the problem persists, contact Motorola.
Upgrade failed KVL Security Adapter was not responding.	The attempt to upgrade the Security Adapter has timed-out.	Detach and reattach the Security Adapter to the PDA and restart the KVL application. Retry the upgrade. If the problem persists, contact Motorola.

## 4.2 Setting the PDA USB Mode

**When and where to use:**

Sometimes, the PDA may not automatically detect whether it should work in a Host mode (when connected to the Security Adapter), or in a Client mode (when connected to a PC). In such a case, use these steps to set the PDA USB mode manually.

## Procedure Steps

---

- 1 On the Today screen, select .
  - 2 Select **Settings** → **System** → **USBConfig**.
  - 3 Perform one of the following actions:
    - If there are two options available (**USB Host** and **USB Client**), then select **USB Host** if you need to connect the PDA to the Security Adapter, or select **USB Client** if you need to connect the PDA to a PC.
    - If there are three options available (**USB Host**, **USB Client**, and **USB OTG**), then select **USB OTG** to allow the KVL to auto detect whether it is connected to the Security Adapter or a PC.
- 

## 4.3 Contacting Motorola

This section contains information about calling Motorola for help.

### 4.3.1 Motorola System Support Center and Radio Support Center

After collecting the required information and writing a detailed problem report, contact one of the following support centers to help with the problem:

- Motorola System Support Center (SSC):
  - North America: 800-221-7144
  - International: 302-444-9800



#### NOTE

The Motorola System Support Center (SSC) provides technical support, return material authorization (RMA) numbers, and confirmations for troubleshooting results. Call the System Support Center for information about returning faulty equipment or ordering replacement parts.

- Motorola Radio Support Center:
  - Phone: 800-247-2346
  - Fax: 800-318-0281



#### NOTE

The Motorola Radio Support Center repairs mobile and portable radios, and related RF equipment.

## 4.3.2 North America Parts Organization

The North America Parts Organization is your source for manuals, replacement parts, and assemblies.

**Table 4-2 North America Parts Organization Telephone Numbers**

<b>Purpose</b>	<b>Telephone Number</b>
For ordering	<ul style="list-style-type: none"><li>• 800-422-4210 (US and Canada orders)</li><li>• 302-444-9842 (International orders)</li></ul>
For Fax Orders	800-6226210 (US and Canada orders)
For help identifying an item or part number	800-422-4210; select choice 3 from the menu



# Appendix A: Interface Cables

## A.1 Interface Cables

**Table A-1 Interface Cables**

Item	Part Number	Used with	Adaptor Required
Key Load Cable (used for upgrading the crypto modules)	TKN8531	XTL 5000/2500	TRN7414 (W Control Head) HKN6182 (M/O Control Head)
		XTS 5000/3000/2500	NTN8613
		ASTRO Spectra	TRN7414
		APX 7500/6500	HKN6182
		APX 7000/6000/4000	NNTN7869
		RNC, DIU, TMG, MGEG, KMF, MCC 7500, VPM, PDEG, CDEM, KMF CryptR	n/a
	CKN6886	XTS 4000	n/a
	TDN9390	XTS 5000/3000/2500	n/a
	WPLN6905	APX 7000/6000/4000	n/a
	TKN1039	CRYPTR micro	n/a
USB Programming Cable	25-108022-02R	MC55	n/a