



# FLASHport™ Software User Guide

for

ASTRO™ 25 Portable Radios

and

ASTRO™ 25 Mobile Radios



6881094C35-C

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## **Introduction to FLASHport™**

Congratulations! You have just purchased a software upgrade that will use FLASHport technology from Motorola! FLASHport is a revolutionary new method that makes it possible to add software capabilities to your radios both at the time of purchase and later on. Previously, changing radio features and capabilities meant costly hardware modifications or buying a new radio. But now, similar to how a computer can be loaded with different software, your radio's features and capabilities can be upgraded with FLASHport software. This gives your Motorola radio the ability to meet your needs both today and in the future.

- System software packages provide basic radio control operations
- Enhancement packages build on systems packages and permit specific features to be installed in your radio.



# How to Use This Manual

This manual is designed to help you upgrade your radios with your new FLASHport software package.

The radio software included in the upgrade package must be installed with the help of the Customer Programming Software (CPS). This is provided as a separate application, and must be purchased and installed on your computer prior to beginning the radio upgrade.

The following sections of this guide apply to all upgrades:

- Getting Started
- Equipment Setup

Be sure to read through these sections before installing the radio upgrade software. Then, when you are ready to install the new radio upgrade software into the radio, you will proceed to “*Upgrading Your Radio*” on page 10.

## FLASHport Upgrade Package

Your FLASHport upgrade package contains the following major items:

- FLASHport User's Guide (this guide).
- CD-ROM disk(s) containing the FLASHport software files.
- New iButton® FLASHkey™ which has been programmed with the aftermarket order information.
- "I've Been FLASHED" stickers which allow you to mark each radio that has been upgraded
- New radio labels to add and/or replace the existing labels on the back of the radios. These labels identify the system package purchased and the radios'
- Model upgrade kits will also come with labels for the radio indicating the new model name. Kits are only supported for RB models, XTL 1500 and XTL 2500 models.



FLASHcode : 0000900002  
System Pkg #: ENH Smartnet System Software



# Items You Will Need to Get Started

Most of the items needed to perform a FLASHport upgrade are standard items required for any radio programming using Customer Programming Software (CPS).

- **Computer (For use with CPS)**

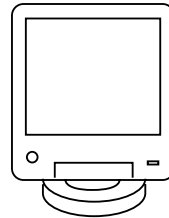
**Processor:** 400 MHz (or higher)  
Pentium grade processor

**Memory:** 128 MB RAM (Win 98/  
98SE/ME / Win NT 4.0 SP6+ /  
Win2000); 256 MB RAM or  
higher for Windows XP (Home  
or Professional)

**Hard Disk Space:** 1 Gigabyte  
drive with 450 MB minimum free  
space

**Peripherals:**

- Microsoft Windows supported mouse or trackball
- Microsoft Windows supported serial port for radio communication
- USB port for Windows 2000 SP2 or higher or Windows XP SP1 or higher (optional)
- Microsoft Windows supported printer port for report printing
- 1.44 MB 3.5" floppy disk drive
- CD-ROM for software installation
- internet access
- Windows email application for application email support





- **FLASHkey**

Included with the upgrade package. Connects to either the parallel port or the USB port on the computer, depending on the iButton adapter.



- **FLASHport Software Disk(s)**

Included with the upgrade package.



- **RS-232 Programming and Test Cable**

RKN4106 for XTS 2500, XTS 5000, XTS 1500, MT 1500 and PR1500.

RKN4122 for SSE 5000



- **USB Programming and Test Cable**

RKN4105 for XTS 2500, XTS 5000, XTS 1500, MT1500 and PR 1500.

RKN4121 for SSE 5000





## Getting Started

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- **HKN6155 Programming Cable**

For ASTRO Digital Spectra Plus and XTL 5000

XTL 5000 Mid-Power with W3, W4, W5, W7 or W9 Control Head.

- **HKN6183 RS–232 Programming Cable (GCAI)**

XTL 5000 High-Power with W3, W4, W5, W7 or W9 Control Head.

XTL 5000 with O5 or O3 Control Head.

XTL 2500, XTL 1500 and PM 1500

- **HKN6184 USB Programming Cable (GCAI)**

XTL 5000 High-Power with W3, W4, W5, W7, W9, or O3 control head (connect cable to the transceiver)

XTL 5000 Mid-Power or High-Power with O5 control head (connect cable to the control head)

XTL 2500, XTL 1500, and PM 1500 (connect cable to the control head)

- **HKN6180 RS–232 Programming Cable**

HPD 1000

- **HKN6177A 6' USB Data Cable**

HPD 1000

- **Radios**

— ASTRO 25 Portable: XTS 5000, XTS 2500, XTS 1500, MT 1500, PR 1500, SSE 5000

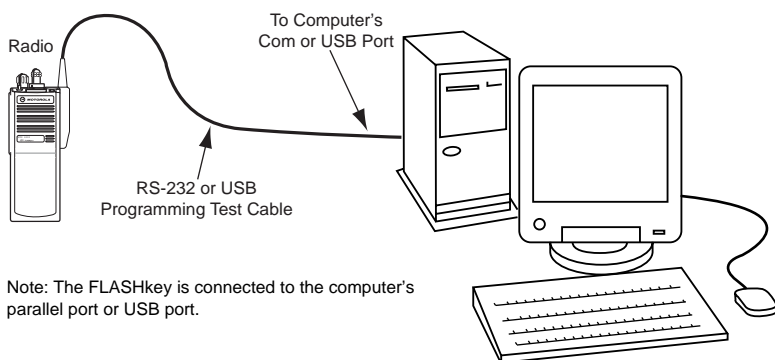
— ASTRO 25 Mobile: XTL 5000, XTL 2500, XTL 1500, HPD 1000, PM 1500, ASTRO Digital Spectra Plus

- **Customer Programming Software (CPS)**
  - **For ASTRO 25 Portable:**
    - CPS/Tuner — RVN4181
  - **For ASTRO 25 Mobile:**
    - CPS/Tuner — RVN4185
  - **For ASTRO 25 Portable and ASTRO 25 Mobile Combined Package:**
    - CPS/Tuner — RVN4186



# Equipment Setup

To begin your FLASHport upgrade, connect the equipment as shown below.



Note: The FLASHkey is connected to the computer's parallel port or USB port.

A complete description of the equipment is provided in *"Items You Will Need to Get Started"* on page 4.

**Note:** Any version of ASTRO 25 mobile radio software prior to R07.00.00 does not support USB. Instead, see *"HKN6183 RS-232 Programming Cable (GCAI)"* on page 6.

**Note:** For XTL 5000 with O5 control head, XTL 2500, XTL 1500, PM 1500 radios, it is very important to connect the programming cable directly into the control head even for remote mounted configurations.

**Note:** For XTL 5000 with O3 control head, it is very important to connect the programming cable directly into the front of the

transceiver. The O3 control head does not have a connector to the programming cable.

**Note:** Any version of mobile radio software prior to R08.00.00 will not work with the O3 control head.

**Note:** For XTL 1500, be sure to have the ignition sense cable connected to the radio before starting a FLASHport upgrade.

**Note:** If the FLASHport upgrade involves a Model Upgrade and involves a change in the Control Head Hardware, it is very important to install the new (destination) Control Head on to the transceiver BEFORE attempting to upgrade the radio. Model Upgrades are supported from an XTL 1500 or XTL 2500 to an XTL 2500, or an XTL 5000 radio, or from “RB” models to “full feature” models ONLY.



# Upgrading Your Radio Using CPS

This section provides instructions on how to upgrade or “FLASH” your radio with new features using the Customer Programming Software (CPS).

## “FLASHing” Procedure (CPS)

“FLASHing” or upgrading your radio requires the Customer Programming Software (CPS) which is used during normal radio programming and servicing procedures. Refer to the “Getting Started” section for your radio’s specific CPS part number. The following steps describe the best method to upgrade your radio.

**Note:** To save time, perform upgrades of the same model type consecutively. (Example: XTS 5000 Model 1 radio followed by an XTS 5000 Model 1 radio.)

**Note:** Do not disconnect your radio until the FLASHport upgrade process is completely finished.

To perform upgrades of the same model type consecutively, please follow the steps in section A before continuing on in section C.

To perform upgrades across models, please follow the steps in section B before continuing on in section C.

### **Section A: Preparing for an Upgrade of the Same Model Type**

- 1.** Your FLASHport software upgrade package includes one piece of software (FLASHport upgrade software) on CD-ROM. Before starting the upgrade procedure, copy the software to your PC hard drive.
- 2.** Connect the equipment as shown on page 8 of this guide. Make sure the radio is equipped with a charged battery (portables) or an external power supply (mobiles).
- 3.** Apply power to the radio. The radio should turn on and go through its power-up sequence.

Continue with steps detailed in Section C.



### Section B: Preparing for an Upgrade Across Different Model Types

**Note:** For clarity, the steps below use an example upgrade from an XTL 1500 to an XTL 2500.

1. Remove the XTL 1500 control head screws from the brick.
2. Carefully pry the control head cowling from the brick.



Caution

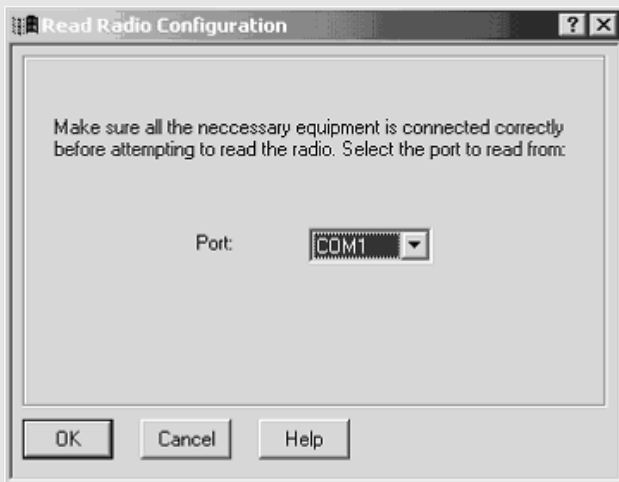
Extra care is required so as not to damage the TIB connection.

3. Carefully ease the TIB connection from the brick.
4. Connect the XTL 2500 cowling if it has not already been connected
5. Align the brick with the control head so that the pins on the TIB and the connections on the transceiver line up.
6. Ease the pins of the TIB connection into the brick. This will only fit one way.
7. Snap the XTL 2500 cowling securely over the brick.
8. Secure the control head to the brick with the screws used for the XTL 1500.
9. Power the radio on. The display should read “CH Mismatch”.
10. Connect the GCAI cable to the front of the control head and the other end to either the preferred serial port or USB, if supported.
11. Be sure to connect the proper FLASHkey to the parallel port which will support the model upgrade.  
Continue with steps in Section C.



## Section C: Performing the Upgrade

1. Launch the CPS program by selecting:  
**Start** → **Programs** → **Motorola** → *<ASTRO 25 Family>*  
→ *<ASTRO 25 Portable CPS>*  
(Note that the items listed in italics between < > will vary depending on the type of radio you are upgrading; make the selections appropriate to the radio type (e.g., XTS 5000 radio, XTS 2500 radio, etc.).)
2. From the menu bar in the CPS main window, select:  
**Tools** → **FLASHport** → **Read Radio Configuration**  
The following *Read Radio Configuration* screen will appear.  
Make sure the *Port* setting is correct and click on **OK**.





## Upgrading Your Radio

- The following *View Radio Configuration* screen will appear. Make a note of the *FLASHcode* and *System Package* fields currently set for the radio. After the upgrade, you'll re-examine this screen to make sure the upgrade was successful. (Note that you can click on the **Details** button to view the features currently enabled on this radio.)



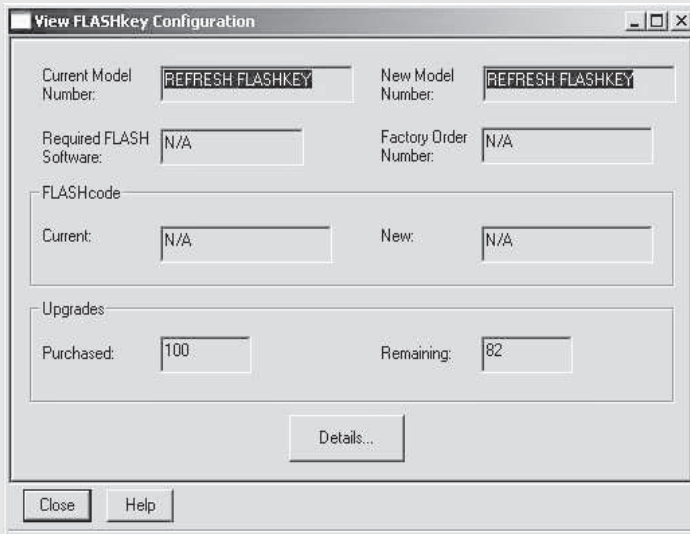
- Close the *View Radio Configuration* screen. From the menu bar in the CPS main window, select:  
**Tools** → **FLASHport** → **Read FlashKey Configuration**

The following *Read FLASHkey Configuration* screen will appear. Read the notice and click **OK**.



5. The FLASHkey Configuration will be read and the *View FLASHkey Configuration* screen will appear.

More data is displayed if a full upgrade FLASHkey is read; less data appears if a refresh FLASHkey is read.



**View FLASHkey Configuration**

Current Model Number:	REFRESH FLASHKEY	New Model Number:	REFRESH FLASHKEY
Required FLASH Software:	N/A	Factory Order Number:	N/A
FLASHcode			
Current:	N/A	New:	N/A
Upgrades:			
Purchased:	100	Remaining:	82

Details...

Close Help

6. From the menu bar in the CPS main window, select **Tools** → **FLASHport** → **Upgrade Radio**



## Upgrading Your Radio

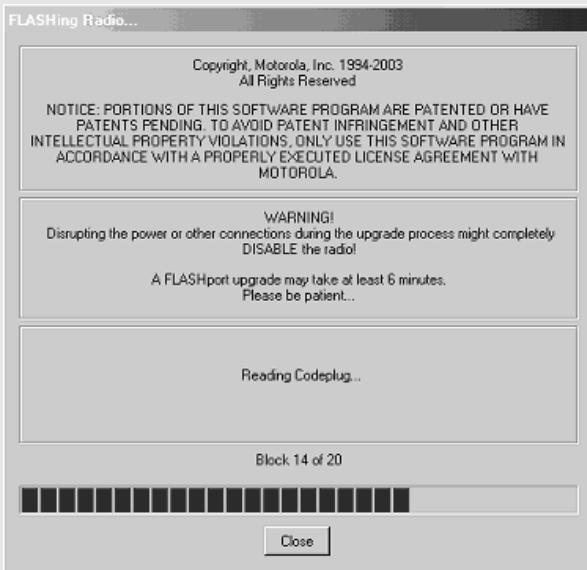
7. The *Upgrade Radio* screen will appear. Using the Browse button at the end of the edit control, navigate to the location of the new radio software file (copied to your PC in Step 1), verify that the directory paths in the *Current Settings* area are correct (typically valid unless you have moved files, in which case you'll have to select the proper paths), then click **OK**.

**Note:** Regarding the *UCM Upgrade Path & Filename* field, the UCM (Universal Crypto Module) is used for radios equipped with Secure Encryption. This field is only used if the radio contains a UCM module and the module software will be upgraded.

The screenshot shows a dialog box titled "Upgrade Radio" with a standard Windows window border. It contains the following fields and controls:

- A text field labeled "Select the FLASHport Upgrade file:" containing the path "F:\XTS5000\_R03.00.01\_DVN4016I.cvm".
- A section titled "Current Settings" containing:
  - A checked checkbox labeled "Upgrade Secure Encryption Module (UCM)".
  - A text field labeled "UCM Upgrade Path & Filename:" containing the path "F:\R05.02.02\_ucm50.rel.mac.aif".
  - A dropdown menu labeled "Port:" with "COM1" selected.
- At the bottom, there are three buttons: "OK", "Cancel", and "Help".

8. The *FLASHing Radio...* screen will appear. The new software will begin loading into the radio, as indicated by a progress bar at the bottom of the screen.



**Note:** For the XTL 5000 with O5 or O3 control head, XTL 2500, XTL 1500 and PM 1500 radios, the FLASHport process takes longer than other mobile radios due to the fact that these new control heads now contain upgradeable software. For Model Upgrade procedures, the FLASHport process may take longer than other radios due to the fact that the changes to the radio data settings vary by model number. For example, the maximum number of characters may change depending on the destination model.



## Upgrading Your Radio

9. When the software has completed loading into the radio, the following screen will appear.



10. Repeat Step 5 to verify that the new software version appears in the *FLASHcode* and *System Package* fields. You may also click on the **Details** button to verify that any new features have been enabled.
11. Once your radio has been successfully “FLASHed,” you are free to use the CPS to enter any customer-specific information normally contained within the CPS. After CPS programming is complete, save the codeplug data to an archive file. You may upgrade another radio by repeating Steps 2 through 9 (pages 13 through 18).

After completing the upgrade, disconnect the radio. Replace and/or add the radio label with the new radio label provided. **It is very important that the new labels are placed on each “FLASHed” radio so that the radios can be identified for future service and programming.**

To help identify the radios that have already been upgraded, place an “I’ve been FLASHED” sticker on the outside of the radio. These stickers can be easily removed by the end-user.

A FLASHcard should be given to the end-user with each radio upgraded. This FLASHcard provides the end-user with a quick reference of the new features that the radio now contains due to the upgrade.

Ensure that the new model number kits have been applied to each radio that has been subject to a model upgrade.

## Troubleshooting Hints

<b>Encaten Error Messages</b>	<b>Possible Corrective Actions</b>
Unable to create instance of Encaten Component	This is an error with the file EncatenComponent. dll. It is either not installed correctly or not registered. You may search for that file and if it is found then attempt to register the file (make sure CPS is closed before attempting this step) by going to Start->Run and typing in the following command: regsvr32 <full path>\Encaten-Component.dll If that does not work, then try uninstalling and then reinstalling CPS.
<b>Software Upgrade Kit Errors</b>	<b>Possible Corrective Actions</b>
Error extracting bootcode from upgrade file	This is an error with the software upgrade kit. It is either corrupted or an error occurred while extracting the bootcode software. Verify that the correct software upgrade kit has been selected.



## Troubleshooting Hints

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Error Opening Flash Upgrade File	This is an error with the software upgrade kit. It is either corrupted or the application cannot locate the file.
Bootcode Not Present!	This is an error with the software upgrade kit. It is either corrupted or does not contain the required bootcode. Verify that correct software upgrade kit has been selected.
Error extracting radio application software from upgrade file	This is an error with the software upgrade kit. It is either corrupted or error occurred while extracting the HOST software. Verify that the correct software upgrade kit has been selected.
Host Code Not Present!	This is an error with the software upgrade kit. It is either corrupted or does not contain the required HOST software. Verify that the correct software upgrade kit has been selected.
Error extracting DSP software from upgrade file	This is an error with the software upgrade kit. It is either corrupted or error occurred while extracting the DSP software. Verify that the correct software upgrade kit has been selected.



Checksum Error in the Flash Upgrade File.	This is an error with the software upgrade kit. It is corrupted and does not contain a valid checksum.
Dsp Code Not Present!	This is an error with the software upgrade kit. It is either corrupted or the application cannot locate it. Verify that the correct software upgrade kit has been selected and that the user has permissions to read the file.
There is a FLASH file and hardware mismatch	This is an error with the software upgrade kit. The file does not have the correct radio type for the radio being upgraded. Verify that the correct software upgrade kit has been selected.
Invalid Upgrade File Format	This is an error with the software upgrade kit. It is either corrupted or the contents of it are incorrect. Verify that the correct software upgrade kit has been selected.
Error encountered while handling the Flash Upgrade File.	This error means that the application had problems extracting data from the software upgrade kit. Verify that the correct software upgrade kit has been selected.



## Troubleshooting Hints

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Error encountered while validating Flash Upgrade File	This error means that the application had problems validating the data in the software upgrade kit. Verify that the correct software upgrade kit has been selected.
<b>FLASHkey Errors</b>	<b>Possible Corrective Actions</b>
Upgrades Expired!	This is an error of the FLASHkey. The number of upgrades remaining in the FLASHkey is zero so no more upgrades are available. Verify upgrades from the CPS Menubar (Tools- >FLASHport->Read FLASHkey Configuration). If upgrades remaining are zero, a new FLASHkey is needed.
Invalid Current Flash Code	Current FLASHcode in the radio does not match the Current FLASHcode value in the FLASHkey. Verify that the correct FLASHkey is attached.
Invalid Internal Codeplug Version	This is an error with the FLASHkey. The internal codeplug version of the FLASHkey is not supported by the application. A new FLASHkey is needed.

Invalid External Codeplug Version	This is an error with the FLASHkey. The external codeplug version of the FLASHkey is not supported by the application. A new FLASHkey is needed
Invalid Radio Model Number	This is an error with the FLASHkey. The FLASHkey's model number does not match the model number of the radio being upgraded. Verify that the correct FLASHkey is attached from the CPS Menubar (Tools->FLASHport->Read FLASHkey Configuration) to confirm this.
This radio can only be refreshed. The FLASHkey must be a refresh key.	This is an error with the FLASHkey. Some radios can only be refreshed therefore only a Refresh FLASHkey can be used. Verify that the correct FLASHkey is attached from the CPS Menubar (Tools->FLASHport->Read FLASHkey Configuration). From this Read FLASHkey screen, confirm that in the model number field, the value "REFRESH FLASHKEY" appears.



## Troubleshooting Hints

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<p>FLASHkey ID Verify Error - Upgrade Aborted</p>	<p>This is an error with the FLASHkey. The application was unable to validate the FLASHkey. Verify that the FLASHkey is connected properly from the CPS Menubar (Tools-&gt;FLASHport-&gt;Read FLASHkey Configuration). If unable to read, the FLASHkey must have been corrupted and a new FLASHkey is needed.</p>
<p>FLASHkey Data Read Error</p>	<p>This is an error with the FLASHkey. The application was unable to read the FLASHkey data. Verify that the FLASHkey is connected properly from the CPS Menubar (Tools-&gt;FLASHport-&gt;Read FLASHkey Configuration). If unable to read, the FLASHkey must have been corrupted and a new FLASHkey is needed.</p>
<p>Unsupported Destination Model Number for Model Upgrade.</p>	<p>This error occurs when there is an incompatibility between the distributed FLASHkey and the model upgrade listings in the installed CPS. Determine which of the two may be older and upgrade the older item to the latest version.</p>

<p>The FLASH Upgrade Failed!! Cannot read the FLASHkey.\nVerify that the FLASHkey is properly connected.</p>	<p>This is an error with the FLASHkey. The CPS was unable to read the FLASHkey. Verify that the FLASHkey is connected properly from the CPS Menubar (Tools-&gt;FLASHport-&gt;Read FLASHkey Configuration). If unable to read, the FLASHkey must have been corrupted and a new FLASHkey is needed.</p>		
<p>Invalid FLASHkey</p>	<p>This is an error with the FLASHkey. The refresh FLASHkey connected is invalid. Verify that the FLASHkey is connected properly from the CPS Menubar (Tools-&gt;FLASHport-&gt;Read FLASHkey Configuration). If unable to read, the FLASHkey must have been corrupted and a new FLASHkey is needed.</p>		
<table border="0" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;"><b>Communications Errors</b></td> <td style="width: 50%;"><b>Possible Corrective Actions</b></td> </tr> </table>		<b>Communications Errors</b>	<b>Possible Corrective Actions</b>
<b>Communications Errors</b>	<b>Possible Corrective Actions</b>		
<p>Error reading date code</p>	<p>This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.</p>		



## Troubleshooting Hints

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Error reading FLASHcode	This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Error reading serial number	This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Error reading model definition flag - FLASHport capable flag	This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Error writing post flash data	This is an error writing specific data to the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.

Error programming the codeplug	This is an error writing the codeplug to the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Error reading the codeplug	This is an error reading the codeplug from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Error reading system enhancement bytes	This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Error reading radio type	This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.



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Error reading radio processor type	This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Failed to download bootcode	This is an error while downloading the bootloader into the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Failed to upgrade the host	This is an error while upgrading the Host software in the radio. If the upgrade failed while upgrading host code, the radio will most likely power up in bootmode. Retry the upgrade.
Failed to upgrade the DSP	This is an error while upgrading the DSP software in the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.



Failed to unlock the radio	This is an error when unlocking the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Failed to read a radio component's version	This is an error reading specific data from the radio. Most likely a communication problem occurred. Check for loose cables. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Failed to open the port	This is an error having to do with failing to open communications with the radio. Check the connections and the cables. Try reading the radio. From the menubar select (File->Read Device) to see if a problem occurs. If successful, request user to reset the radio and retry the upgrade. If the problem persists, try using a different cable or computer.



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Radio failed to reset	This is an error having to do with the radio failing to reset. Therefore manually reset the radio. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
The Radio Failed to Bootstrap - Check All Cables	This error occurs because the radio is unable to enter bootmode. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.
Failed to download bootcode	This error occurs because the was unable to download the bootcode software into the radio. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.

<p>Failed to enter into Program Mode</p>	<p>Error while trying to put the radio in program mode. Most likely a communication problem occurred. Check for loose cables. Request user to retry the upgrade. If the problem persists, try using a different cable or computer.</p>
<p>Unable to read the RSSI DSP Offset from the tuning partition</p>	<p>This error happens only in mobile ASTRO Spectra Plus radios. It will not cause the upgrade to abort. The upgrade will continue anyway. When the upgrade completes, if the tuning partition was upgraded (see the status of the FLASHport upgrade) then the radio may need a cfix solution to fix a value in the tuning partition that can cause issues with radio operation.</p>
<p>Error encountered during flash radio</p>	<p>This error indicates that the was unable to completely upgrade the radio. Most likely a communication problem occurred. Check for loose cables. Request user to retry the upgrade. If the problem persists, try using a different cable or computer.</p>



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<p>Unable to reprogram the RSSI DSP Offset to the tuning partition</p>	<p>This error could happen only in mobile ASTRO Spectra Plus radios. It will not cause the upgrade to abort. The upgrade will continue anyway. When the upgrade completes, if the tuning partition was upgraded (see the status of the FLASHport upgrade) then the radio may need a cfix solution to fix a value in the tuning partition that can cause issues with radio operation.</p>
<p>Error encountered in update firmware</p>	<p>This error indicates that the was unable to upgrade one of the components in the radio. Most likely a communication problem occurred. Check for loose cables. Request user to retry the upgrade. If the problem persists, try using a different cable or computer.</p>

<b>Fixed Structure Codeplug Errors</b>	<b>Possible Corrective Actions</b>
<p>ERROR - Cannot proceed with FLASH Upgrade when the codeplug has more than one ASTRO System.\n Please remove the additional ASTRO Systems and try again!</p>	<p>This error only appears in the portable when upgrading to add the Conventional Radio Cloning option. The codeplug in the radio must have a special structure in order for the upgrade to continue. This error is appears when the codeplug has more than one ASTRO system.</p>
<p>ERROR - Cannot proceed with FLASH Upgrade when the codeplug has more than 240 Conventional Personalities.\n Please remove the additional Conventional Personalities and try again!</p>	<p>This error only appears in the portable when upgrading to add the Conventional Radio Cloning option. The codeplug in the radio must have a special structure in order for the upgrade to continue. This error appears when the codeplug has more than 240 Conventional Personalities.</p>



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<p>ERROR - Cannot proceed with FLASH Upgrade when the codeplug has more than 15 Zones.\n Please remove the additional Zones and try again!</p>	<p>This error only appears in the portable when upgrading to add the Conventional Radio Cloning option. The codeplug in the radio must have a special structure in order for the upgrade to continue. This error appears when the codeplug has more than 15 Zones.</p>
<p>ERROR - Cannot proceed with FLASH Upgrade when the codeplug has more than 16 Channels in each Zone.\n Please remove the additional Channels and try again!</p>	<p>This error only appears in the portable when upgrading to add the Conventional Radio Cloning option. The codeplug in the radio must have a special structure in order for the upgrade to continue. This error appears when the codeplug has more than 16 Channels in a zone.</p>

<b>USB Related Errors</b>	<b>Possible Corrective Actions</b>
<p>The currently selected FLASHport Upgrade file cannot be used for USB FLASHport.</p>	<p>This error may be due to software upgrade kit version. To be able to use USB communications in FLASHport, the bootcode software in the upgrade kit must be of at least a specific version or higher. This error appears if the version of the bootcode in the upgrade kit is older than what is needed for USB.</p>
<p>Error validating Flash RAM Downloader in upgrade file</p>	<p>This error may be due to software upgrade kit version. To be able to use USB communications in FLASHport, the bootcode software in the upgrade kit must be of at least a specific version or higher. This error specifies that CPS was unable for some reason to do that verification. Retry the upgrade.</p>



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<p>Failed to install Motorola XTS FLASHzap Device. Please reset your radio.</p>	<p>This error will occur if the FLASHzap Device was not installed correctly (this is not a CPS installation issue). The FLASHzap device is installed when USB is to be used for the first time for FLASHport upgrades in the specific machine. The installation of the device occurs automatically when the radio is put in bootmode and while connected through USB.</p>
<b>UCM Upgrade Errors</b> <b>Possible Corrective Actions</b>	
<p>Radio contains a Type I Encryption Module. Unable to upgrade this module type.</p>	<p>This error can be caused if the UCM in the radio is a Type I UCM module. The CPS is unable to upgrade it. UCM must be upgraded using other equipment available for type I modules</p>
<p>Invalid UCM Upgrade File</p>	<p>This is an error of the UCM upgrade file. The format and/or contents of the file are not valid. Verify that the correct UCM upgrade file has been selected. If so, the file may be corrupt or invalid so a new file will be needed to complete the UCM upgrade.</p>



<p>You need a secure enabled codeplug to upgrade the Secure Encryption Module in your radio. Please reprogram your radio with a secure enabled codeplug and try again. Aborting upgrade...</p>	<p>This is an error of the UCM upgrade. This message appears if the codeplug in the radio does not have the Secure Equipped feature enabled. Enable Secure Equipped in the codeplug, rewrite the codeplug to the radio and then try the upgrade again.</p>
<p>Secure Encryption Module Upgrade Failed</p>	<p>This is a generic error condition for UCM upgrade failures.</p>
<p style="text-align: center;"><b>Other Errors</b>                      <b>Possible Corrective Actions</b></p>	
<p>This Radio Cannot be FLASH Upgraded! The Controller Board Must be Initialized with a Proper Serial Number. Reset the Radio and Perform a Standard Read.</p>	<p>This error indicates that you are attempting to upgrade a CBI radio. Read the radio (File -&gt; Read Device) and initialize the radio with the proper serial number.</p>



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<p>This Radio is NOT FLASHportable!</p>	<p>This error indicates that the attached radio cannot be upgraded. Verify that correct radio is attached.</p>
<p>This Radio has an Invalid Serial Number - Upgrade Aborted</p>	<p>This error indicates that the radio's serial number has incorrect nomenclature. Verify that the serial number in the radio is of correct nomenclature.</p>
<p>H-Option File Import Failure</p>	<p>This is an error having to do with the hopt.mdf file. It is either corrupted or missing. It must be installed in the same directory as the executable files.</p>
<p>Unpack Codeplug Error - Upgrade Aborted</p>	<p>This is an error that occurred while trying to unpack the codeplug. From the CPS menubar, read the radio (File-&gt;Read Device) to see if an error occurs. If an error occurs, then there is something wrong with the codeplug. If an error does not occur, attempt the upgrade again.</p>
<p>This Radio is not supported by this application</p>	<p>The radio connected is not supported by the CPS application. Verify that the correct CPS is being used to upgrade the radio.</p>

Unable to Pack Codeplug - Upgrade Aborted	This is an error that occurred while trying to pack the codeplug. From the CPS try to read and write the radio to see if there are any problems with the codeplug. If an error occurs, then there is something wrong with the codeplug. If an error does not occur, attempt the upgrade again.
Flash Not Performed - Radio Already Upgraded	This error only occurs in releases of CPS older than R05.00.00. This error indicates that the radio connected to the PC has already been upgraded with the attached FLASHkey. A new FLASHkey is needed to upgrade this radio.
FLASH Unknown Failure	This is a generic error for unknown error conditions. Most likely a communication problem occurred. Check for loose cables and retry the upgrade. If the problem persists, try using a different cable or computer.



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<p>Codeplug Upgrade Failed.</p>	<p>This error indicates that the was unable to upgrade the codeplug. There could be many reasons why this happens:</p> <ul style="list-style-type: none"><li>• The model number of the radio cannot be found in the hopt.mdf file.</li><li>• The FLASHcode is invalid.</li><li>• An Enhancement Option is not found in the hopt.mdf file or it is not supported by the particular radio model.</li></ul>
<p>Model Upgrade File Not Found Please make sure modup.mdf is in the same directory as this CPS Application</p>	<p>This error occurs when the modup.mdf file is not installed to the same directory as the currently running CPS application. Scan the hard drive for the file and copy to the same directory as the currently running CPS.</p>
<p>Model Upgrade XML Initialization Failed Please make sure the correct version of MSXML is installed on this machine</p>	<p>This error occurs if the machine is not properly configured to handle XML documents. Run “msxml3sp1.exe” and reboot if prompted. Then run “msxml.msi” and reboot if prompted. These may be found in the Support directory on the ASTRO 25 CPS Install CD.</p>

<p>Model Upgrade XML Conversion Failed Please make sure the correct version of MSXML is installed on this machine</p>	<p>This error occurs if the machine is not properly configured to handle XML documents. Run “msxml3sp1.exe” and reboot if prompted. Then run msxml.msi and reboot if prompted. These may be found in the Support directory on the ASTRO 25 CPS install CD.</p> <p>This may also occur if the modup.mdf file has been corrupted. If the XML does not resolve the issue, delete the modup.mdf file and run the ‘Repair’ installation from the ASTRO 25 CPS Install CD.</p>
<p>Model Upgrade File Failed to Decrypt Please make sure modup.mdf is in the same directory as this CPS Application</p>	<p>This may occur if the modup.mdf file has been corrupted or does not exist in the same directory as the CPS. If the file is in the same directory, delete the modup.mdf file and run the ‘Repair’ installation from the ASTRO 25 CPS Install CD.</p>



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<p>Model Upgrade Lists Failed to Populate Please make sure modup.mdf is in the same directory as this CPS Application</p>	<p>This error occurs if the machine is not properly configured to handle XML documents. Run msxml3sp1.exe and reboot if prompted. Then run msxml.msi and reboot if prompted. These may be found in the Support directory on the ASTRO 25 CPS install CD. This may also occur if the modup.mdf file has been corrupted or does not exist in the same directory as the CPS. If the file is in the same directory, delete the modup.mdf file and run the 'Repair' installation from the ASTRO 25 CPS Install CD.</p>
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### **FLASHport Troubleshooting for the New ASTRO 25 Control Heads (XTL 5000 with O5 or O3 Control Head, XTL 2500, XTL 1500 and PM 1500)**

During remote flashing, if you get a CPS warning message that an error has occurred, and telling you to reset your system, there are three possible states that the radio can power-up in: Normal Mode, Boot Mode and an Unresponsive Mode.

#### **Normal Mode:**

If the transceiver powers-up in Normal Mode, the programmed

Zone/Channel information appears in the MCH's (Mobile Control Head) display.

### **Boot Mode:**

If the transceiver powers up in the Boot Mode, an "FL 01/90" error code appears in the MCH's display:

- when a programming cable is attached to the control head, after a brief delay, the transceiver goes into "Maintenance Mode" (this appears in the MCH's display).
- when a programming cable is not attached to the control head, the transceiver will continue to reset and display the "FL 01/90" error.

### **Unresponsive Mode:**

If you are sure that the programming cable is securely attached, and yet the MCH continues to reset and display the "FL 01/90" error, it is possible that the transceiver is completely unresponsive and the entire radio has to be sent back for service. An unresponsive mode is caused by either the "bootapp" being corrupted during FLASHing or the Nautilus image of the transceiver in a remote mount configuration being corrupted during FLASHing.

**Note:** If a FLASHing error occurs in the CPS instructing you to reset the system Off and then back On; and then once the MCH powers back up, if a spinning Motorola logo appears within the MCH display, clicking the "Retry" button at that point (from the error message that appears within the CPS) should recover the FLASHport process.