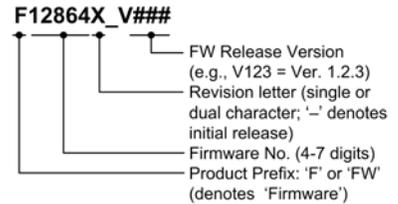


I. Introduction: About Firmware Files, Naming, Versions, and Formats

The CDM-625 Advanced Satellite Modem stores its firmware in flash memory, which allows the unit to upload firmware downloads from an external PC once Ethernet connectivity has been established.

The CDM-625 Advanced Satellite Modem is factory-shipped with its latest version of operating firmware. If a firmware update is needed, once Ethernet connectivity has been established with the unit, the update can be downloaded from the Comtech EF Data Web site (www.comtechefdata.com), or obtained through Comtech EF Data Customer Support via e-mail or on CD by standard mail delivery.

Comtech EF Data's Web site catalogues its firmware upgrade files by product type (e.g., modem, converter, etc.) and specific model/optional configuration. The hyperlinks appear as per the example to the right. In this example, the **F12864X_V###** firmware download hyperlink is depicted (the linked file applies to the base modem firmware), where 'X' denotes the revision letter, and ### represents the firmware version.



In addition to the download for the base modem bulk firmware, downloads are available for the IP Packet Processor Module which, with or without AES Encryption, is an option for the CDM-625 Advanced Satellite Modem. This module requires separate firmware upgrade.

Firmware upgrades are available from Comtech EF Data per the following table:

Web Hyperlink	EXE/ZIP Filename	Contains Image File ('x' denotes revision letter)
F12864X_V###	FW12864X	Fw12864.bin – Base modem firmware <u>up to</u> FW Ver 1.6.0.
F00020534X_V###	FW-0020534X	FW10805x.bin – Base modem firmware <u>from</u> FW Version 2.0.1 <u>to current</u> .
F0000342X_V###	FW0000342X	FW-0000342x.bin – IP Packet Processor Module option <u>without</u> AES Encryption.
CONTACT CEFD	FW0000438X	FW-0000438x.bin – IP Packet Processor Module option <u>with</u> AES Encryption.



Only firmware for the CDM-625 base modem and IP Packet Processor Module without AES Encryption is available for download from the CEFD Web site. To obtain the firmware upgrade for the CDM-625 IP Packet Processor Module with AES Encryption, contact Network Product Customer Support:

Phone: 480.333.2433

E-mail: cdmipsupport@comtechefdata.com.

The firmware download files are available from Comtech EF Data in two file formats: *.exe (self-extracting) and *.zip (compressed). Some firewalls will not allow the downloading of *.exe files; in this case, download the *.zip file instead. If applicable, one version prior to the current release is also available for download.



Important note about firmware updates: When updating the CDM-625 firmware to the current (e.g., Fw-0020534X Version 2.3.1) release from FW/12864AC Version 1.5.3 or lower, the firmware update MUST be FTP'd three times (3X) in order to program it correctly into both images. After each FTP, the active image MUST be switched, and the modem MUST be rebooted from the other image.

II. Getting Started: Preparing for the Firmware Download

Step	Task
1	<p>Connect the Windows-based user PC to the CDM-625:</p> <ul style="list-style-type: none"> Connect the appropriate modem Ethernet port either via a hub or a switch or directly with an Ethernet or crossover cable. Make sure that a compatible web browser is running on the PC. Connect the modem "Remote Control" port to a serial port on the PC. Make sure that a terminal emulator program such as Hyper Terminal is running on the PC.
2	<p>Identify the CDM-625 configuration in use, and its firmware number and current version:</p> <p>A. <u>For the CDM-625 Base Modem</u>, the firmware number and running version can be obtained as follows:</p> <ul style="list-style-type: none"> <i>From the modem front panel</i> – The firmware version is available from the VFD's top-level "splash" screen. To view this screen, press the [CLEAR] key several times. <p>The firmware numbers are provided within the SELECT: UTIL → Firmware → Info → Image#1 or Image#2 menu screens.</p> <ul style="list-style-type: none"> <i>From HTTP via the Base Modem Web Server Interface</i> – The Bootrom, Bulk1 and Bulk2 firmware loads may be viewed on the Admin Firmware Base Modem page. <i>Using serial Remote Control query</i> – The firmware number, versions, and revision level can be queried as follows: <ul style="list-style-type: none"> ▪ <i>Abbreviated:</i> <0/SWR> or: ▪ <i>Detailed:</i> <0/FRW?x (where: x = B (Boot), 1 (Image 1) or 2 (Image 2)) <p>B. <u>For the CDM-625 with installed IP Packet Processor</u>, the firmware number and running version can be obtained as follows:</p> <ul style="list-style-type: none"> <i>From the modem front panel</i> – Select the Utilities: Firmware → Packet-Processor → Info → Image#1 or Image#2 menu trees. <i>From HTTP via the Base Modem Web Server Interface</i> – Select the Admin Firmware Packet Processor page. The Bootrom, Bulk1 and Bulk2 firmware loads may be viewed here. <i>Using serial Remote Control query</i> – Use the IP Packet Processor's firmware revision query <0/VS1? (Image 1) or <0/VS2? (Image 2). <p> <i>For more information about using the CDM-625 front panel menus, Web Server Interface, or serial remote commands and queries, refer to the MN-CDM625 CDM-625 ADVANCED SATELLITE MODEM INSTALLATION AND OPERATION MANUAL:</i></p> <ul style="list-style-type: none"> Chapter 5. FRONT PANEL OPERATION Chapter 6. ETHERNET-BASED REMOTE PRODUCT MANAGEMENT Appendix D. REMOTE CONTROL

Step	Task
3	<p>Create a temporary folder (subdirectory) on the user PC for the firmware archive file download.</p> <div>  </div> <ul style="list-style-type: none"> <li>• <i>This guide uses drive letter "c:" in these examples. You may use any valid, writable drive letter.</i> <li>• <i>Typical for all tasks: Type the command <u>without quotes</u>, and then press Enter to execute.</i> <p>A temporary folder may be created on a Windows-based PC using differing methods:</p> <p>A. Use the <i>Windows Desktop</i> to create and rename the temporary folder.</p> <ul style="list-style-type: none"> <li>• Right-click anywhere on the desktop to open the popup submenu, and then select New > Folder to create the temporary folder. The "<i>New Folder</i>" will be created on the desktop. <li>• Right-click on the "<i>New Folder</i>" and then select '<i>Rename</i>' from the popup submenu. Rename this folder to "<i>temp</i>" or some other convenient, unused name. <p>B. Use <i>Windows Command-line</i> to create the temporary folder.</p> <ul style="list-style-type: none"> <li>• First, click [Start] on the Windows taskbar, and then click the Run... icon (or, depending on Windows OS versions <i>prior</i> to Windows 95, click the <i>MS-Command-line Prompt</i> icon from the Main Menu). <li>• Next, open a Command-line window... <ul style="list-style-type: none"> <li>○ For Windows 95 or Windows 98, type "command". <li>○ For any Windows OS versions later than Windows 98, type "cmd" or "command". <li>○ Alternately, from [Start], select All Programs > Accessories > Command Prompt. <li>• Finally, from the Command-line prompt (c:\>), type "mkdir temp" or "md temp" (<i>mkdir</i> and <i>md</i> stand for <i>make directory</i>), and then click [OK]. <p>C. Use the '<i>Run</i>' and '<i>Browse</i>' windows to create and rename the temporary folder.</p> <ul style="list-style-type: none"> <li>• Select [Start] on the Windows taskbar, and then click the Run... icon. The 'Run' window will open. <li>• Click [Browse] in the 'Run' window. The 'Browse' window will open. <li>• Click the Create New Folder icon in the 'Browse' window. The "<i>New Folder</i>" will be created. <li>• Right-click the "<i>New Folder</i>" folder name, and then rename this folder to "<i>temp</i>" or some other convenient, unused name.

There should now be a "temp" folder created and available for placement of the firmware archive file download.

III. Downloading and Extracting the Firmware Update

Step	Task
1	<p>Download the correct firmware archive file to the user PC temporary folder.</p> <ol style="list-style-type: none"> A. Go online to www.comtechefdata.com. B. On the <i>Main</i> page – under Support Information or the Support tab, select the Software Downloads hyperlink. C. On the <i>Software Downloads</i> page – click <i>Download Flash and Software Update Files</i>. D. On the <i>Flash & Software Update Files</i> page – select the <i>(Select a Product Line) Modems</i> hyperlink. E. On the <i>Modems</i> product page – select the <i>CDM-625</i> product hyperlink. F. Select the appropriate firmware EXE or ZIP download hyperlink (i.e. the CDM-625 Base Modem, or the CDM-625 with IP Packet Processor <i>without</i> AES Encryption; otherwise, contact CEFD Network Product Customer Support to obtain the firmware download for the IP Packet Processor <i>with</i> AES Encryption). <p>Refer to the table in I. About Firmware Numbers, File Versions, and Formats in this guide for the naming and availability of the firmware download hyperlinks, archive files, and downloaded image files.</p> <ol style="list-style-type: none"> G. Download the archive file to the temporary folder. <p>Once the EXE or ZIP hyperlink is selected, the 'File Download' window opens and prompts selection of [Open] or [Save]:</p> <ul style="list-style-type: none"> • Click [Open] to turn over file extraction to the user-supplied utility program. Be sure to extract the firmware files to the "temp" folder created earlier. • Click [Save] to open the 'Save As' window. Be sure to select and [Save] the *.exe or *.zip archive file to the "temp" folder created earlier. • Otherwise, click [Cancel] to quit and exit the file download process.
2	<p>Extract the firmware files from the downloaded *.exe or *.zip archive file with the user-supplied utility program (if not already done with File Download > [Open]).</p> <ol style="list-style-type: none"> A. <i>For the Base Modem update</i>, a minimum of two files should be extracted: <ul style="list-style-type: none"> • FW12864*.bin or FW-0020534*.bin – The base modem bulk image file (where '*' is the revision letter). • CDM625_ReleaseNotes_v###.pdf (or a variation of this filename, where "###" is the firmware version). B. <i>For the IP Packet Processor update</i>, a minimum of two files should be extracted: <ul style="list-style-type: none"> • <i>Without AES</i> – FW-0000342*.bin (where '*' is the revision letter) – <i>or</i> – • <i>With AES</i> – FW000438x.bin (where '*' is the revision letter). • CDM625_#.#.#_ReleaseNotes.pdf (or a variation of this filename, where "#.#.#" is the firmware version).

Step	Task
3	<p>Confirm availability of the firmware files in the temporary folder. There are a number of ways the user may view the contents of the temporary folder on a Windows-based PC:</p> <p>A. From the Windows Desktop:</p> <ul style="list-style-type: none"> • Double-left-click the "<i>temp</i>" folder saved to the Windows Desktop. • Use Windows Explorer to locate, and then double-left-click the "<i>temp</i>" folder. • Use the 'Browse' window ([Start] > ...Run > [Browse]) to locate, and then double-click the "c:\temp" folder. <p>B. Using Command-line:</p> <ul style="list-style-type: none"> • Type "<code>cd c:\temp</code>" at the prompt to change to the temporary directory created earlier using Command-line. • Type "<code>dir</code>" to list the files extracted to the temporary directory from the downloaded archive file.

The firmware files have been successfully downloaded to the user PC and are now available for FTP upload to the CDM-625.

IV. Executing the Ethernet FTP Upload Procedure

Step	Task
1	Verify that the Base Modem firmware update has been downloaded to the user PC and is available in the temporary folder, and ensure that the user PC is properly connected to the CDM-625.
2	<p>Confirm that there is proper connection and communication between the user PC and the modem.</p> <p><i>First</i>, determine the IP Address as follows:</p> <ul style="list-style-type: none"> • <i>Using the front panel</i> – SELECT: CONFIG → IP → Addresses → Add/Range • <i>Using serial Remote Control query</i> – <0/IPA? <p><i>Then</i>, use Command-line to "ping" the modem:</p> <ul style="list-style-type: none"> • From Windows, click [Start] on the Windows toolbar, and then select the Run... option (as an alternative, use the 'Command-line Prompt' or 'Command Prompt' icon in the Start menu): <ul style="list-style-type: none"> ○ <i>Using Win95 or Win98</i> – Type "command". ○ <i>Using WinNT, Win2K or WinXP</i> – Type "cmd". <p>Type "ping xxx.xxx.xxx.xxx" at the Command-line prompt (where "xxx.xxx.xxx.xxx" is the CDM-625 IP Address). The results should confirm whether or not the modem is connected and communicating.</p>
3	<p>Use Command-line to initiate the FTP session with the CDM-625.</p> <ol style="list-style-type: none"> A. Type "ftp xxx.xxx.xxx.xxx" (where "xxx.xxx.xxx.xxx" is the CDM-625 IP Address). B. If the optional IP Packet Processor is <i>installed and enabled</i>, enter the User Name and Password when prompted. Otherwise, press ENTER. C. Type "bin" to set the binary transfer mode. D. Type "prompt", and then type "hash" to facilitate the file upload.
4	<p>Upload the file:</p> <ul style="list-style-type: none"> • If the IP Packet Processor is <i>not installed</i> or is <i>installed but disabled</i>, type "put Fw-0020534*.bin bulk:" (where "*" denotes the revision letter) to begin the file transfers – the destination "bulk:" must be all lower case. • If the IP Packet Processor is <i>installed and enabled</i>, type "put Fw-0020534*.bin" (i.e., as per Step 3(A) but <i>without</i> typing the destination "bulk:"). <p>For either selection, it will take a few seconds to transfer the file.</p>
5	<p>Observe the file upload process:</p> <ol style="list-style-type: none"> A. The PC should report that the file transfer has occurred, and the CDM-625 front panel will display: <div style="background-color: #e0e0e0; padding: 5px; margin: 5px 0;"> <p>Programming bulk flash - (Block ID)... Please wait...</p> </div> B. The process sequences through several blocks – this will take several minutes. When it has finished, the CDM-625 front panel will display: <div style="background-color: #e0e0e0; padding: 5px; margin: 5px 0;"> <p>Bulk FTP done. Press CLEAR.</p> </div> C. Type "bye" to terminate the FTP session, and then close the Command-line window.

Step	Task
5 (cont.)	<p>D. Verify that the new firmware version has uploaded using any of the methods described in Step 2 in Sect. II.</p> <p>E. <i>If you are running a CDM-625 Base Modem without the optional IP Packet Processor, you may now reboot the system to activate the new firmware. However, if you are running a CDM-625 equipped with the optional IP Packet Processor installed, do NOT reboot at this time – proceed to Step 6 to continue the Ethernet FTP Upload Procedure.</i></p> <p>From the Admin Reboot web page, click [Reboot Now]. Both the web page and the CDM-625 front panel will display "Rebooting, Please wait..."</p> <p>The system reboot has completed once the CDM-625 front panel displays the top-level "splash" screen:</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Comtech CDM-625 Advanced Satellite Modem Ver2.3.1</p> </div> <p>You will need to log in to a new Web session at this time.</p> <p><i>If you are a Base Modem user, the CDM-625 is now operating with its latest firmware. The firmware update process is now complete.</i></p>
6	<p>Upgrading the IP Packet Processor:</p> <p>Use Command-line to initiate the FTP session with the modem.</p> <p>A. Type "ftp xxx.xxx.xxx.xxx" (where "xxx.xxx.xxx.xxx" is the CDM-625 IP Address).</p> <p>B. Enter the Admin User Name and Password to complete login.</p> <p>C. Type "bin" to set the binary transfer mode.</p> <p>Type "prompt", and then type "hash" to facilitate the file upload.</p>
7	<p>Upload the firmware file from the temporary folder on the user PC:</p> <p>Type "put FW#####.bin" (where '#####' is the designated image FW file number – 0000342 or 0000438 – and '*' is the revision letter) to begin the file upload.</p> <p>It will take several minutes to transfer and write the files to flash memory.</p>
8	<p>Observe the file upload process:</p> <p>A. The PC should report that the file transfer has occurred, and the display on the modem will report:</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Packet Processor upgrading Bootrom Please wait...</p> </div> <p>Followed by:</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Packet Processor upgrading Image Please wait...</p> </div>

Step	Task
8 (cont.)	<p>B. The process will complete in less than a minute. When it has finished, the modem front panel will display:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Packet Processor upgrade complete Press CLEAR to continue.</p> </div> <p>C. Type "bye" to terminate the FTP session, and then close the Command-line window.</p> <p>D. Verify that the new file has loaded into its designated Image slot by viewing the Admin Firmware Packet Processor web page (as per Step 2 in Sect. II). Press the PC's F5 key to ensure that the web page has properly refreshed.</p> <p>E. Change the desired image to boot using the Admin Firmware Packet Processor web page: Use the Boot From drop-down menu to boot the system from Latest (or the Image slot that was automatically selected for the FTP upload) then click [Submit] to save this change.</p> <p>F. Use the Admin Reboot web page to reboot the system to activate the new firmware:</p> <p>Click [Reboot Now]. Both the web page and the CDM-625 front panel will display "Rebooting, Please wait.."</p> <div style="float: left; margin-right: 10px;">  </div> <p><i>If the Top Card Application has been changed, when booting into a new image an additional step will occur as the modem downloads to a different flash memory. This additional upload takes approximately two minutes. The following messages will appear on the CDM-625 front panel display:</i></p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Programming Top-App to Top Card Flash. Please wait...</p> </div> <p>Followed by:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Send packet xxx of yyy to Top Card. Please wait...</p> </div> <p>Then:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Top Card programming was successfully Completed</p> </div> <p>G. The system reboot has completed once the CDM-625 front panel displays the top-level "splash" screen:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Comtech CDM-625 Advanced Satellite Modem PktP present Ver2.3.1</p> </div> <p>You will need to log in to a new Web session at this time.</p>

The Ethernet FTP Upload Procedure is now complete. The CDM-625 Advanced Satellite Modem is now operating with its current firmware.