# Updating Your CTOG-250 Comtech Traffic Optimization Gateway Firmware

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

The CTOG-250 Comtech Traffic Optimization Gateway and its CDM-800 Gateway Router are factory-shipped with the latest version of operating firmware. You can acquire firmware updates from Comtech EF Data via download from the Internet to a user-supplied PC, via e-mail, or on CD. These updates are transferable to an in-service CTOG-250 system without having to remove the covers of either product chassis.

Comtech EF Data's Web site catalogues its firmware update files by product type (e.g., modems, accessories, etc.) and specific model/optional configuration. This firmware update is available from Comtech EF Data's Web site (www.comtechefdata.com/software.asp) per the following table:

| Web Hyperlink | .EXE / .ZIP File | Contains Image File |
|---|---|---|
| F0020601x_V#### | FW-0020601x.* | FW-0020601x_ ctog250.bin –  Bulk firmware for CTOG-250 / CDM-800 Gateway Router operation |

Note that the 'x' in these hyperlinks and/or file names denote the firmware *revision letter*, and **V###** represents the firmware *version* (e.g., V151X = Version 1.5.1.X). When applicable, one version prior to the current release is also available for download.

Comtech EF Data provides firmware download files in two archive 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.

**Note:** For additional help with "zipped" file types, refer to the help files provided with the *PKZIP for Windows*, *WinZip*, or *ZipCentral* file archiving programs. *PKZIP for DOS* is not supported due to file naming conventions.

To verify the correct firmware number, follow **Step 1** in the next section, **II. Preparing for the Firmware Update**

## II.   Preparing for the Firmware Update

1. **First, identify the CTOG-250 assigned Management IP Address, and the firmware number/ revision letter/version number.**

   *User-supplied items needed:*

   - A Microsoft Windows-based PC, equipped with available serial and Ethernet ports; a compatible Web browser (e.g., Internet Explorer); and a terminal emulator program (e.g., Tera Term or HyperTerminal).

   - A 9-pin serial cable to connect the PC to the CTOG-250.

   **A.** Use the 9-pin serial cable to connect the CTOG-250 '**SERIAL**' port to a serial port on the user PC:
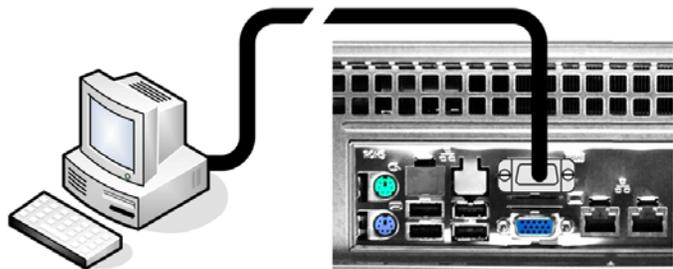


   **B.** **On the PC:** Open the terminal emulator program.



   *Refer to your terminal emulator program HELP feature or user guide for operating and configuration instructions.*

   Configure the utility program serial port communication and terminal display operation:

   - **38400 bps (Baud Rate)**    - **8 Data Bits**    - **1 Stop Bit**
   - **Parity = NO**    - **Port Flow Control = NONE**    - **Display New line Rx/Tx: CR**
   - **Local Echo = ON**

   **C.** **On the CTOG-250:** Turn on the power from the chassis front panel.

**D. On the PC:** Review and record the information displayed on the CTOG-250 Serial Interface:

- Management IP Address (e.g., default is 192.168.1.2/24)

- Firmware Number and Revision Letter (e.g., FW-0020601G)
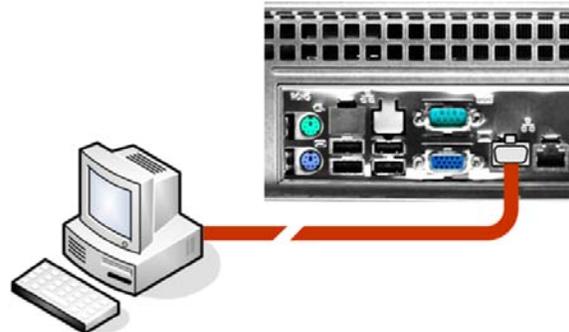
- Firmware Release Version (e.g., 1.5.1.X)



 *See* **Chapter 8. SERIAL-BASED REMOTE PRODUCT MANAGEMENT** *for information and instructions on using the CTOG-250 Serial Interface.*

**E.** Alternately, use the CTOG-250 Web Server Interface to obtain the firmware information.

- Use an Ethernet hub, switch, or direct cable connection to connect the CTOG-250 '**MGMT-1**' port to the PC:



- **On the PC:** Use a Web browser (e.g., Internet Explorer) to log in to the CTOG-250 Web Server Interface and access the '**Admin | Firmware**' page. Then, make note of the Slot #1 and Slot #2 firmware loads:

**Slot Information**

| Slot # | Running | Name | Version | Date | Size |
|--------|---------|------|---------|------|------|
| 1 | No | FW-0020601E | 1.4.6 | | |
| 2 | Yes | FW-0020601G | 1.5.1.X | | |

**Firmware Information**

| Type | Name | Version | Date | Size |
|------|------|---------|------|------|
| AHA Compression | UPGRADE_250_V1.JAM | 250:1 | | |
| Current Boot CDM-800 | FW-0000430V | 1.5.1.X | | |

Click "Here" to upgrade the AHA compression firmware

*See* **Chapter 7. ETHERNET-BASED REMOTE PRODUCT MANAGEMENT** *for information and instructions on using the CTOG-250 Web Server Interface.*

2. **Next, create a temporary folder (subdirectory) on the user PC for the firmware archive download.**

- *Drive letter "c:" is used in these examples. Any valid, writable drive letter can be used.*

- *Typical for all tasks: Type the command* <u>without quotes</u>*, and then press* **Enter** *to execute.*

There are several ways the user may use create a temporary folder on a Windows-based PC:

A. Use the **Windows Desktop** to create and rename the temporary folder.

- Right-click anywhere on the desktop to open the popup submenu, and then select **New > Folder** to create the temporary folder. The new folder will be created on the desktop.

- Right-click on the new folder and then select Rename from the popup submenu. Rename this folder to "temp" or some other convenient, unused name.
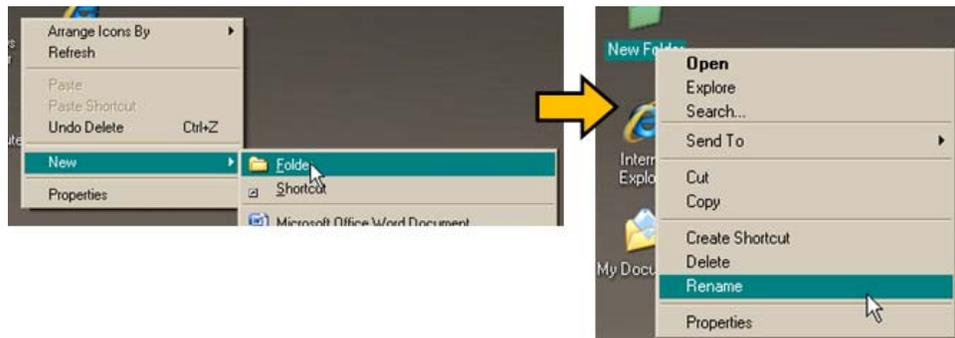


B. Use **Windows Explorer** to create and rename the temporary folder.

- Select **File > New > Folder** to create the temporary folder. The new folder will be created in the active folder.

- Right-click the "**New Folder**" folder name, and then rename this folder to "**temp**" or some other convenient, unused name.

**C.** Use the '**Run**' and '**Browse'** windows to create and rename the temporary folder.

- Select **[Start]** on the Windows taskbar and then click the **Run...** icon. The '**Run**' window will open.
- Click **[Browse]** in the '**Run**' window. The '**Browse**' window will open.

- Click the '**Create New Folder**' icon in the '**Browse**' window. The new folder will be created.

- Right-click the "New Folder" folder name and then rename this folder to "temp" or some other convenient, unused name.
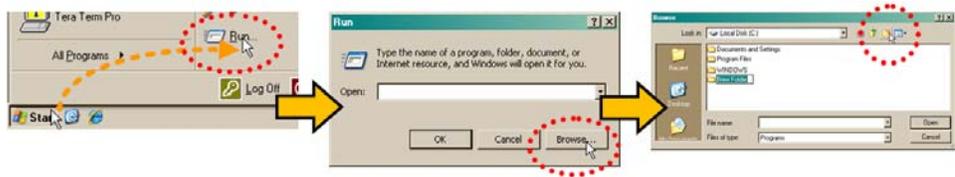


**D.** Use **Windows Command-line** to create the temporary folder.

- **First**, click **[Start]** on the Windows taskbar, and then click the **Run...** icon (or, depending on Windows OS versions *prior* to Windows 95, click the **MS-DOS Prompt icon** from the **Main Menu**).

- **Next**, open a Command-line window…

  o For Windows 95 or Windows 98 – Type "**command**".

  o For any Windows OS versions later than Windows 98 – Type "**cmd**" or "**command**".



  o Alternately, from **[Start]**, select **All Programs > Accessories > Command Prompt**.

- **Finally,** from the Command-line '**c:\>'** prompt, type "**mkdir temp**" or "**md temp**" (*mkdir* and *md* stand for *make directory*), and then click **[OK]**.
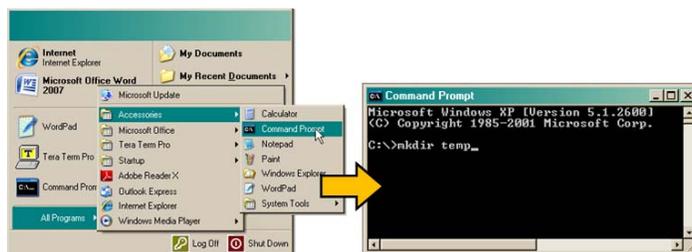
*There should now be a "temp" folder created and available for placement of the firmware file download.*

## III. Downloading and Extracting the Firmware Update

1. **First, download the firmware update archive file from the Comtech EF Data Web site:**

   A. Go online to www.comtechefdata.com.

   B. On the *Main* page – under **Support Information** or the **Support** tab, select the **Software Downloads** hyperlink.

   C. On the *Software Downloads* page – click **Download Flash and Software Update Files**.

   D. On the *Flash Updates Index* page – select the **(Select a Product Line) Advanced VSAT Series** hyperlink.

   E. On the *Advanced VSAT Solutions* product page – select the CTOG-250 product hyperlink.

   F. Select the appropriate firmware archive EXE or ZIP file download hyperlink.

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   G. **Download the archive file to the temporary folder.**

   • Once the **EXE** or **ZIP** hyperlink is selected the '**File Download'** window opens and prompts selection of **[Open]** or **[Save]**:

     o 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.

     o Click **[Save]** to open the **'Save As'** window. Be sure to select and **[Save]** the archive **\*.exe** or **\*.zip** file to the "**temp**" folder created earlier.

     o Otherwise, click **[Cancel]** to quit and exit the file download process.



2. **Next, extract the firmware files from the archive file.**

   (If not already done with **File Download > [Open]**) Extract the firmware files from the downloaded **\*.exe** or **\*.zip** archive file with the user-supplied utility program:

- Double-click on the archive file name, and then follow the prompts provided by the user-supplied utility program. Extract, at a minimum, two files:

  - o **FW0020601x_ctog250.bin** – the Firmware Bulk image file (where 'x' denotes the revision letter), and

  - o **CTOG-250ReleaseNotes_v#-#-#.pdf** – the Firmware Release Notes PDF file (where '#-#-#' denotes the firmware version number).

3. **Confirm availability of the firmware files in the temporary folder.**

   There are several ways the user may view the contents of the temporary folder on a Windows-based PC:

   A. **From the Windows Desktop:**

   - Double-left-click the "**temp"** folder saved to the Windows Desktop.

   - Use **Windows Explorer** to locate, and then double-left-click the "**temp**" folder.

   - Use the '**Browse'** window (**[Start] > ...Run > [Browse]**) to locate, and then double-click the "**c:\temp**" folder.

   B. **Using Command-line:**

   - Type "**cd c:\temp**" at the Command-line prompt to change to the temporary directory created earlier using Command-line.
     1.
   - Type "**dir**" to list the files extracted to the temporary directory from the downloaded archive file.

*The firmware files have been successfully downloaded and are now available for transfer to the CTOG-250.*

## IV. Performing the Ethernet FTP Upload Procedure

*To proceed with the firmware update procedure, assumptions are made that:*

- *The CTOG-250 is connected to a user-supplied, Windows-based PC, and:*

  - *The PC serial port is connected to the CTOG-250 'CONSOLE' port.*

  - *The PC Ethernet port is connected to the CTOG-250 'MGMT-1' Ethernet port with a user-supplied hub, switch, or direct Ethernet cable connection.*

  - *The PC is running a terminal emulation program (for operation of the CTOG-250 Serial Command Line Interface) and a compatible Web browser (for operation of the CTOG-250 Web Server Interface).*

- *The CTOG-250 Management IP Address has been noted using the CTOG-250 Serial Interface, and the firmware has been identified using either the serial interface or the CTOG-250 Web Server Interface 'Admin | Firmware' page.*

- *The latest firmware files have been downloaded or otherwise received from Comtech EF Data and are available on the user PC in an accessible temporary folder.*

1. Use Command-line to send a "PING" command to confirm proper connection and communication between the user PC and the CTOG-250:

- **If the Management IP Address of the unit is still not known**, type "**info**" at the serial interface **CTOG-250>** command prompt and record the displayed information. Alternately, use Serial Remote Control or the Web Server Interface:

  - **Serial Remote Control** – Type the **"<0/IPA?"** remote query (without quotes) at the serial interface **CTOG-250>** command prompt. The unit returns the configured Management IP Address:

    **>0000/IPA=192.168.1.10/24** *(default)*

  - **Web Server Interface** – View the *IP Address/CIDR Mask* entry on the '**Configuration | Interface | Mgt**' page:

    **FE - Management Interface**
    MAC Address: 00:25:90:4d:62:42
    IP Address/CIDR Mask: 192.168.1.2/24

  - **Once the Management IP address is known – use Command-line to PING:** Type "**ping xxx.xxx.xxx.xxx**" at the Command-line prompt (where 'xxx.xxx.xxx.xxx' is the unit Management IP Address).

    The response should confirm whether or not the unit is properly connected and communicating.

2. **Use Command-line to transfer (FTP) the files from the user PC to the CTOG-250:**

- Type "**ftp xxx.xxx.xxx.xxx**" (where '**xxx.xxx.xxx.xxx**' denotes the Management IP address of the unit being updated.

- Enter the username and password assigned to the unit. The default username and password is "**comtech**".

- Type "**bin**" to set the binary transfer mode.

- Type "**put FW0020601x_ctog250.bin**" (where '**x**' denotes the revision letter) at the Command-line prompt, without quotes, to begin the file transfer. The process sequences through several blocks – this may take several minutes for the transfer to occur. Once the update file is received, the image is written to Flash memory and the unit transmits the message "**UPLOAD COMPLETE.**"

> *In the event you receive the "Connection closed by remote host." message, wait another minute before continuing. The CDM-800 update sometimes takes longer than the FTP client allows.*

- Type "**bye**" to terminate the FTP session, and then close the Command-line window.

3. **Use the serial interface or the Web Server Interface 'Admin | Firmware' page to verify that the PC-to-Unit FTP file transfer was successful.**

4. **Use the CTOG-250 Web Server Interface to select the firmware and reboot the unit:**

A. **Select the desired Boot Slot (Image):**

- Go to the Web Server Interface '**Admin | Firmware**' page.

- Use the '**Boot From:'** drop-down menu to select **Latest**, **Slot 1**, or **Slot 2** (in the *Firmware Configuration* section).

  By default, the unit will boot from the Slot that stores the firmware version having the *latest date* (**Boot From: Latest**). '**Boot From:**' may also be set to force the unit to boot up using either firmware image loaded in **Slot 1** or **Slot 2**.

- Click **[Submit]** to save the setting.

B. **Reboot the CTOG-250:**

- Go to either the Web Server Interface '**Admin | Firmware**' page or the '**Utility | Reboot**' page.

- Click **[Reboot]** in the *System Reboot* section of the '**Admin | Firmware**' page or the '**Utility | Reboot**' page and **[OK]** when prompted, and then wait while the CTOG-250 reboots.

*The CTOG-250 and its CDM-800 are now operating with the latest firmware. The firmware update process is now complete.*

**Notes:**

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