



EM405-8 Firmware Upgrade Instructions

The EM405-8 firmware can be upgraded in the field using the procedures detailed in this document. For the latest firmware images and the latest update utility software, please visit www.chtech.com or contact C&H by email at support@chtech.com or by phone at 512.733.2621.

FIRMWARE IMAGES

The firmware consists of 3 images 1) Kernel, 2) Ramdisk, 3) EM405-8 Firmware. You may acquire the latest images at www.chtech.com. Each image is updated independently and the user can control whether he/she updates a single piece, all three pieces, or any combination of two pieces. The pieces required to bring the EM405-8 up to the latest firmware is dependent upon the existing firmware revisions on the EM405-8 and the newest revision to be uploaded.

The firmware image files are typically named as follows:

Kernel: 29427x__nor_data.img
Ramdisk: 29428x__ramdisk.img
Firmware: 29429x__nand.img

FIRMWARE UPDATE SOFTWARE UTILITY

The firmware update utility is a small Microsoft Windows application that communicates with the EM405-8 to upload the firmware. It allows the user to select which images to upload and it provides status during the upload process. The latest firmware update utility can be downloaded at www.chtech.com.

NETWORK CONNECTION

To perform the update the EM405-8 and the host computer must be connected either directly using a “crossover” network cable or via a network hub, switch or router using standard network cables. In update mode, the EM405-8 is automatically set to an IP address of **192.168.1.1**. This is not configurable. The host computer must be set to an IP address on the same subnet as the EM405-8 (**192.168.1.xxx**). If the EM405-8 and the host PC are connected directly or are connected via a hub switch or router on a network without the standard infrastructure (DHCP server, etc), the host PC should be configured to a static IP address in the 192.168.1.xxx subnet (other than 192.168.1.1).

The intricacies of network configuration are beyond the scope of this document as are the details of configuring the host PC to a static IP address. For the simplest case, disconnect the PC from all networks and connect the EM405-8 directly to the host PC via a crossover cable. Set the host PC to a static IP address of 192.168.1.2. Be sure to return PC to its standard network configuration before re-connecting it to its standard network.



UPDATE PROCEDURE

- 1) Using an item such as a bent paper-clip, depress the LAN Reset button on the back of the EM405-8. The LAN Reset button is accessible via a pinhole found just below the LAN connector on the rear panel.
- 2) While holding the LAN Reset button depressed power on the EM405-8.
- 3) Continue to hold the LAN Reset button depressed until the LAN LED on the front panel blinks Red (approximately 15 seconds).
- 4) Release the LAN Reset button. The LAN LED and the STATUS LED on the front panel of the EM405-8 should turn solid blue indicating that the EM405-8 is in update mode.
- 5) Launch the Firmware Update Utility by running the executable. You should see a panel that looks like Figure 1.

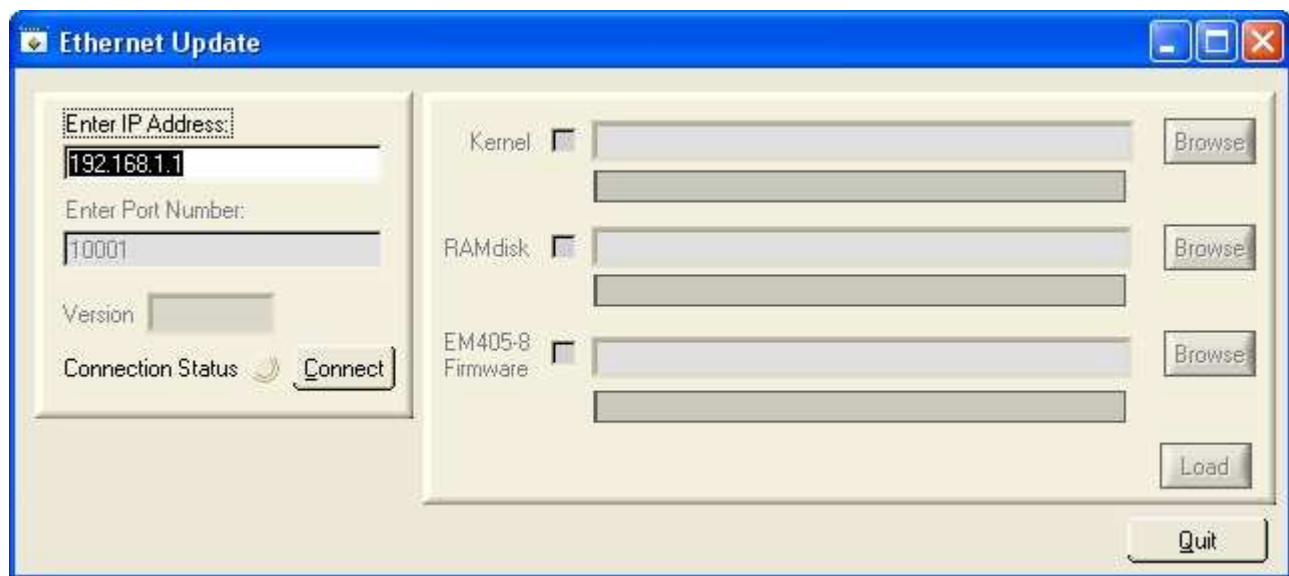


Figure 1 Firmware Update Utility Panel

- 6) Verify that the IP address on the panel is set to 192.168.1.1 and click on “Connect”
- 7) The “Connection Status” indicator on the front panel will turn green when a successful connection has been made.

We have noticed that in some occasions it requires multiple attempts to successfully connect. If it does not connect on the first try, try again. If it takes more than 2 or 3 times then it is likely that a network problem exists and you should review the Network Connection section of this document.

- 8) Select the Kernel, RAMdisk and EM405-8 Firmware image(s) to load by click on Browse for each image and navigating to the image files (see note below).
- 9) Verify that the selection box for each image you want to update is selected.



10) Click Load to begin the download.

WARNING: It is extremely important that you do not stop, exit or cancel an update before it is complete. Doing so may leave the EM405-8 in a state that requires it be sent back to the factory for recovery. This is especially true when updating the Kernel and RAMdisk images.

11) A status indicator will indicate the status of each image. The status indicator will display **“Complete”** when the upload is finished. Large images especially the EM405-8 Firmware images will take several minutes to load and at times it may appear that the status indicator has stopped updating for several seconds. If an error does occur a popup window should appear with a message describing the error.

NOTE: Older revisions of firmware can only update the kernel or RAMdisk. If this is the case for the current revision of the EM405-8, it will be indicated by a message on the Firmware Update Utility. In this scenario you must first update the RAMdisk to a newer version using the procedure above, then power off the unit and repeat the update procedure to update the full firmware.