



## TECH NOTE I

# DOWNLOADING MOSCAD & MOSCAD-L FIRMWARE

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### SUMMARY

As new versions of Motorola's MOSCAD CPUs are released, it becomes increasingly important to understand the relationship between the firmware embedded in the CPU and software used to program the CPU (MOSCAD Programming Toolbox). This relationship is a simple one:

### **MOSCAD system firmware version must be less than the Toolbox version.**

If your MOSCAD application was programmed using Toolbox v6.50, you need to make sure your CPU firmware is lower than 6.50. This may be a problem if you receive new MOSCAD hardware as it will come pre-loaded with the latest firmware. In this case, the CPU will have to be "dumbed down" to the firmware that will allow it to talk with your Toolbox software.

### DETERMINING YOUR CPUs FIRMWARE

The easiest way to determine the version of firmware loaded in your CPU is to upload its site configuration using the Toolbox utility "Site Config". When uploading the site configuration you may receive the following message:

*This Toolbox version () does not support the site version ()  
Upload failed.*

This message indicates that you need to downgrade the firmware in the CPU to a version that is less than the version of Toolbox you are using.

If you successfully upload the site configuration from the CPU, there should be an entry displayed as **MOSCAD – Unit Version** that will indicate the firmware.

New hardware purchased will always be loaded with the latest and greatest firmware! If you are not using the latest Toolbox, you should immediately downgrade the firmware in the CPU to the version that will work with your Toolbox version.

CPU Version	Toolbox Version			
	6.50	7.50	8.50	9.50
MOSCAD 420	5.75	7.03	8.17	8.17
MOSCAD 400	5.71	7.01	8.16	8.16
MOSCAD-L 20	2.41	7.03	8.10	9.01
MOSCAD-L	2.40	7.00	8.10	8.10

FIRMWARE TABLE

### INSTALLING FIRMWARE FILES TO YOUR PC

Some firmware files are located on your Toolbox Install CD in either the "Firmware" directory or the "Installs" directory. The firmware files are deployed via self-extracting zip files or as a setup.

For those firmware versions not included on the CD, visit the ITS firmware download page at <http://www.itsinfo.com/moscad/firmware.htm> or contact ITS at (847)368-8400 for the files.

## DOWNLOADING FIRMWARE (TOOLBOX V9.50+)

1. Close all open Toolbox applications, utilities and diagnostics.
2. STOP the Toolbox MDLC Communications Driver.
3. Plug the Toolbox programming cable into MOSCAD CPU port 2.
4. Determine the version of firmware that your CPU requires by checking the Firmware table.
5. Open the "Downloader" utility in Toolbox.
6. Open the firmware by clicking on the "File Open" icon and browse to your firmware file (\*.krl). Make sure you select "System Download Files" from the "Files of types" drop-down box.
7. Expand the "System Download" parameters and ensure you have the correct COM port selected. Leave the "Data Speed" at 115200.
8. Use the "Download" icon to begin the process.
9. As prompted, switch the MOSCAD powers supply OFF.
10. While holding down CPU pushbutton 2 (PB2), switch the power supply ON.
11. Continue holding down the pushbutton until the CPU sends a confirmation message to the computer, "Command received from the unit."
12. After a successful download, the CPU will reset and Toolbox will provide a confirmation of the new firmware.

## DOWNLOADING FIRMWARE (ALL OTHER VERSIONS)

1. Close all open Toolbox applications, utilities and diagnostics.
2. STOP the Toolbox MDLC Communications Driver.
3. Plug the Toolbox programming cable into MOSCAD CPU port 2.
4. Determine the version of firmware that your CPU requires by checking the Firmware table.
5. Open the "System Downloader" utility in Toolbox.
6. Open the firmware by clicking on the "File Open" icon and browse to your firmware file (\*.krl).
7. From the "Options", "Setup" menu ensure you have the correct COM port selected. Leave the "Baud rate" at 115200
8. Press the "Erase System Flash from Memory" icon.
9. As prompted, switch the MOSCAD powers supply OFF.
10. While holding down CPU pushbutton 2 (PB2), switch the power supply ON.
11. Continue holding down the pushbutton until the CPU sends a confirmation message to the computer, "Command received from the unit."
12. Press the "Download modules to RTU" icon to begin the firmware load.
13. After a successful download, the CPU will reset and Toolbox will provide a confirmation of the new firmware.

For more information about ITS's services or Motorola MOSCAD product line, please call 847.368.8400 or visit us at <http://www.itsinfo.com/>

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