



## TECH NOTE 2

### DOWNLOADING MOSCAD & MOSCAD-L CPUS

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You will use the **MOSCAD Programming Toolbox** program group to download your CPU. This group can be found either on your desktop or by selecting **Start, Programs, MOSCAD Programming Toolbox X.X** where **X.X** is the version of your **MOSCAD Programming Toolbox**. To begin, open the **MOSCAD Programming Toolbox** program group.

#### RESETTING THE CPU

If you are downloading a new CPU or a CPU which you do not know the port settings or password, you must first reset the CPU to the program defaults. If this is a CPU that has already been downloaded and you know the port settings (port number and baud rate) skip to **Verifying Communication with the CPU**.

##### Resetting a MOSCAD CPU

1. Power off the CPU.
2. While holding **PB1** and **PB2** on the CPU, turn the power back on.
3. Continue holding **PB1** and **PB2** until the CPU "chirps" three (3) times then release.
4. Wait for approximately ten (10) seconds until the CPU "chirps" again.
5. When a MOSCAD CPU has been successfully reset, the only light visible on the CPU is the **PWR** indicator.

##### Resetting a MOSCAD-L CPU

1. While CPU has power, hold down **PB** for approximately thirty (30) seconds.
2. There is no audible indicator on the MOSCAD-L. Continue holding **PB** until the lights flash three (3) times then release.
3. Wait until all lights are off except the **PWR** indicator.

After a CPU has been reset, both **Port 1B** and **Port 2** are set as **Local Computer** with a baud rate of **9600** and no password. (The password will be set to the **Communication Driver Password** entered when downloading the **Site Configuration**.)

#### VERIFYING COMMUNICATION WITH THE CPU

The most common problem when downloading a CPU is the communication setup. You must have the correct computer serial port selected, the correct baud rate of the CPU port and the programming cable connected from the configured serial port on your computer to a CPU port configured for **Local Computer**. If you are unsure of any of these settings, reset the CPU before continuing.

1. Open the **Comm Setup** application.
2. Set the **Communication port** to the computer port which is connected to your CPU.
3. Set the **Baud rate** to the port speed on the CPU configured for **Local Computer**. If you have just reset the CPU, the **Baud rate** should be set to **9600**.
4. After properly setting **Communication port** and **Baud rate**, click the **OK** button.
5. Upon exiting the **Communication Setup** application, a pop-up window will appear indicating a need to "Close all Toolbox applications and stop the communication driver". Press the **OK** button to proceed.
6. If changes were made to the communication setup, close all running Toolbox applications and stop the communication driver using the **Stop Comm Driver** application. If the communication driver was running, a pop-up window will indicate "Communication driver was stopped". If the communication driver was not running, a pop-up window will indicate "Communication driver is not running. Nothing to stop".

7. Verify proper connection from the computer COM port listed in the **Communication port** setting to the MOSCAD CPU port configured for **Local Computer (Port 1B, Port 2 or Port 3** if you are using an RS232 board). If you have just reset the CPU you may use either **Port 1B** or **Port 2**.
8. Test your connection by opening the **Error Logger**.
9. When prompted for a password, enter the communication password for your system. (If you are unsure of your password or if you have an ITS designed system, use **motorola**). After you have entered the **Communication Driver Password**, click **Start** to test communications. If communication is successful, you will see either a list of errors or "No error messages". If communication is not successful, the application will wait until **Abort** is used to terminate communication. If you fail to communicate in ten (10) seconds, **Abort** and review these steps again.

## DOWNLOADING THE SITE CONFIGURATION

This explanation assumes that communication has been verified from your computer to the CPU. NOTE: If you are downloading the **Site Configuration** to a CPU that was just reset, the **Communication Driver Password** entered in **Step 9 of Verifying Communication with the CPU** will be downloaded along with the **Site Configuration** and will become the **Communication Password** for your CPU. This password **MUST** match the **Communication Password** assigned to the CPUs in your system for successful CPU to CPU communications.

### Toolbox version 8.5 or earlier

1. For MOSCAD CPUs, open the **MOSCAD Site Configuration** application.
2. For MOSCAD-L CPUs, open the **MOSCAD-L Site Configuration** application.
3. Select the appropriate site configuration by selecting **File, Open...** from the menu.
4. Take note of the **Port** configured as **Local Computer** as well as the **Baud rate**. You may need to change your **Comm Setup** to match these new settings after the download.
5. Select **File, Download...** from the menu.
6. In the **Site configuration communication** window, select **Local**, enter the appropriate **New Site ID** and **System Address** and click **Download**.
7. If, when trying to **Download**, you receive the message "**This Toolbox version () does not support the site version ()**", you will need to download compatible firmware to your CPU. See **Tech Note 1: Downloading MOSCAD & MOSCAD-L Firmware** for more information.
8. The process is complete when the **File Logger** indicates "successful download". Within 30-40 seconds after the file has been downloaded properly, MOSCAD CPUs will beep once while MOSCAD-L CPUs will flash its LEDs once.

### Toolbox Version 9.5 or later

1. Open the **MOSCAD-MOSCAD-L Site Config** application.
2. Select the appropriate site configuration by selecting **File, Open...** from the menu. (To find your configuration, you may need to change the **Files of type** to **Config File (\*.cfg)** in the **File Open** dialog box.)
3. Locate the **Port** configured as **Local Computer** by expanding the **Configuration** using the **+** next to your **Configuration**.
4. Expand each **Port** until you find the **Port** configured with a **Type** of **RS-232, Async, Local Computer**.
5. Double-click the **User** parameter and take note of the **Baud Rate**. You may need to change your **Comm Setup** to match these new settings after the download.
6. Select **Local** on the **Site ID Toolbar** and enter the appropriate **New Site ID** and **System Address**.
7. Select **File, Download...** from the menu.
8. If, when trying to **Download**, you receive the message "**This Toolbox version () does not support the site version ()**", you will need to download compatible firmware to your CPU. See **Tech Note 1: Downloading MOSCAD & MOSCAD-L Firmware** for more information.
9. The process is complete when the **File Logger** indicates "download finished successfully". Within 30-40 seconds after the file has been downloaded properly, MOSCAD CPUs will beep once while MOSCAD-L CPUs will flash its LEDs once.

The **CONF** light indicator should now be illuminated. (For MOSCAD-Ls, you may need to use the **PB** to toggle the display mode to **CPU** before you see the **CONF** light indicator.)

If you have downloaded a new site configuration to the CPU, it may be necessary to plug into the new **Local Computer** port on the CPU. For example, if you had reset your CPU prior to downloading the **Site Configuration** your programming cable may be plugged into **Port 1B**. If, in

your site configuration, **Local Computer** is now **Port 2**, you will need to plug into **Port 2**. Likewise, you will most likely have to reconfigure the **Comm Driver** to match the new speed of the **Local Computer** port. Follow the steps in **Verifying Communication with the CPU** to modify the settings.

#### DOWNLOADING THE APPLICATION

This explanation assumes that communication has been verified to the CPU and a valid site configuration has been downloaded to the CPU.

1. Open the **Appl Prog** application.
2. Select the appropriate application directory by selecting **Project, Open...** from the menu. To move up in a directory, use the **[..]** in the **Directories** list. (Do not select a file from the **File name** list!) Once the application directory is selected, click **OK**.
3. In the bottom left corner of the **Application Programmer** is the **Information** pane. Ensure the **Configuration** listed there matches the one downloaded in **Downloading the Site Configuration**. If the configuration does not match, select **Project, Select site configuration file** from the menu and from the **Select configuration** dialog, double click the correct configuration file.
4. Select **Runtime, Download Application/Network** from the menu.
5. Select **Reset Load** from the **Download** dialog and click **Download**.
6. The process is completed when the **File Logger** indicates "Download ended successfully"

The **APPL** light indicator should now be illuminated. (For MOSCAD-Ls, you may need to use the **PB** to toggle the display mode to **CPU** before you see the **APPL** light indicator.)

#### DOWNLOADING THE NETWORK CONFIGURATION

Not every CPU needs a **Network Configuration**. If you are using **Store & Forward** functionality, you will need to download a **Network Configuration**.

This explanation assumes that communication has been verified to the CPU and both a valid site configuration and application has been downloaded to the CPU.

1. Open the **Network Config** application.
2. Select the appropriate network configuration by selecting **File, Open...** from the menu.
3. Select **Tools, Download** from the menu.
4. Enter the appropriate **Site ID** and the **Link ID** for your RTU and click **OK**.
5. The process is completed when the **Data Download** indicates "Download ended successfully."

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