The Application Note is specific to the Unidrive M60x through M800x

Updating Unidrive M Firmware

Scope – The firmware for the Unidrive M series models M60x through M80x are intended to be field-upgradable via a communication link as using M-Connect hosted on a PC/Laptop running one of the supported versions of the Microsoft Windows Operating System and a communication link. The Apple Mac OS X and Linux are not supported.

The firmware revision on the host Unidrive M must be (at least) up to a revision of 01.00.00.00 to use this procedure, and a SI-Keypad must available.

It is recommended that any beta units hosting a firmware revision below 01.00.00.00 be returned to the factory for upgrade. Special equipment is required to bring any units below revision 01.00.00.00 to a revision of 01.00.00.00 as an initial step. After that is accomplished, one can use M-Connect for any firmware upgrade to a higher revision.

M-Connect is also used to upgrade the firmware on the Factory Fit Module (FFM) Ethernet option that is a standard on a number of these models. One typically will bring both the Unidrive M as well as the FFM Ethernet to the latest firmware revision in the same session.

This Quick note will illustrate using M-Connect version 01.05.00 to upgrade a M700 (above revision 01.00.00.00) to a firmware revision of 01.06.00.00 and the onboard FFM Ethernet option to 1.02.02.06 using an Ethernet communication link. The M701 fitted with a FFM RS-485 option is similar, but there is no firmware to upgrade on the FFM RS-485 and hence, no second step.

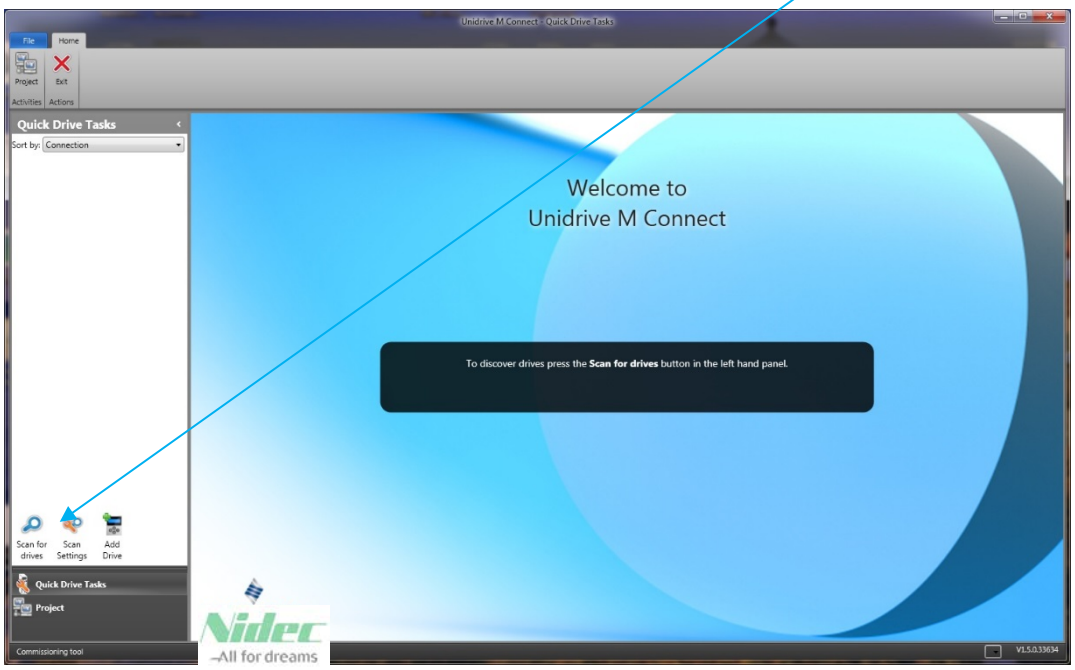
Equipment Required – A PC / Laptop running XP Pro SP3, Vista Business SP1 32-bit or Windows 7 Pro (32-bit or 64-bit) with CT M-Connect installed is recommended. A firmware image for both the Unidrive M and the FFM Ethernet will also be required.

A functional Ethernet link (or RS-485 link for a M701) between the PC/Laptop and the Uni-M is also required. Functional, in that it is possible to “ping” the M70x0 (or M702) from the PC/Laptop running M-Connect at the intended ipv4 address.

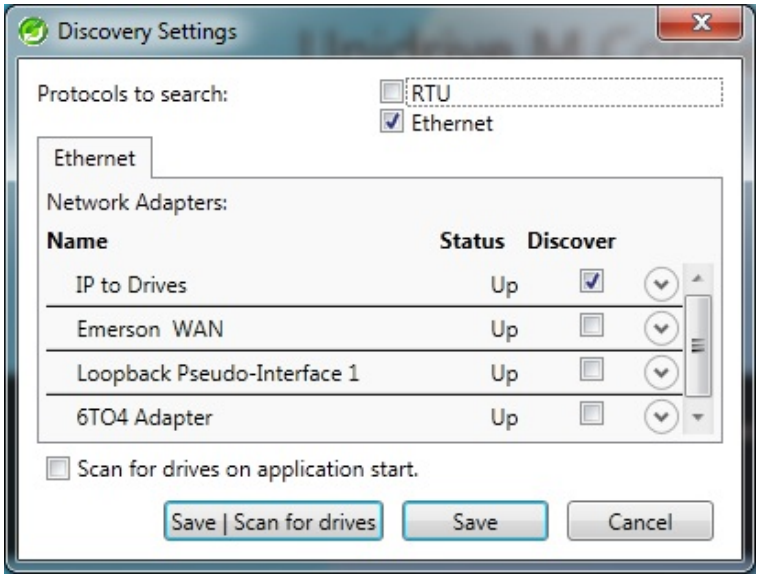
Note that the Uni-M must be powered to follow this procedure. Also note that this procedure assumes operating the M60x, M70x or M80x to be upgraded (and host the FFM-Ethernet) with full DC Link voltage present. When operated on reduced DC Link voltage (such as with a Unidrive M Demo), one must use the SI-Keypad and enter a value of 1001, followed by a reset to save the changes made.

Step by Step Instructions – Phase 1 **Drive Update**:

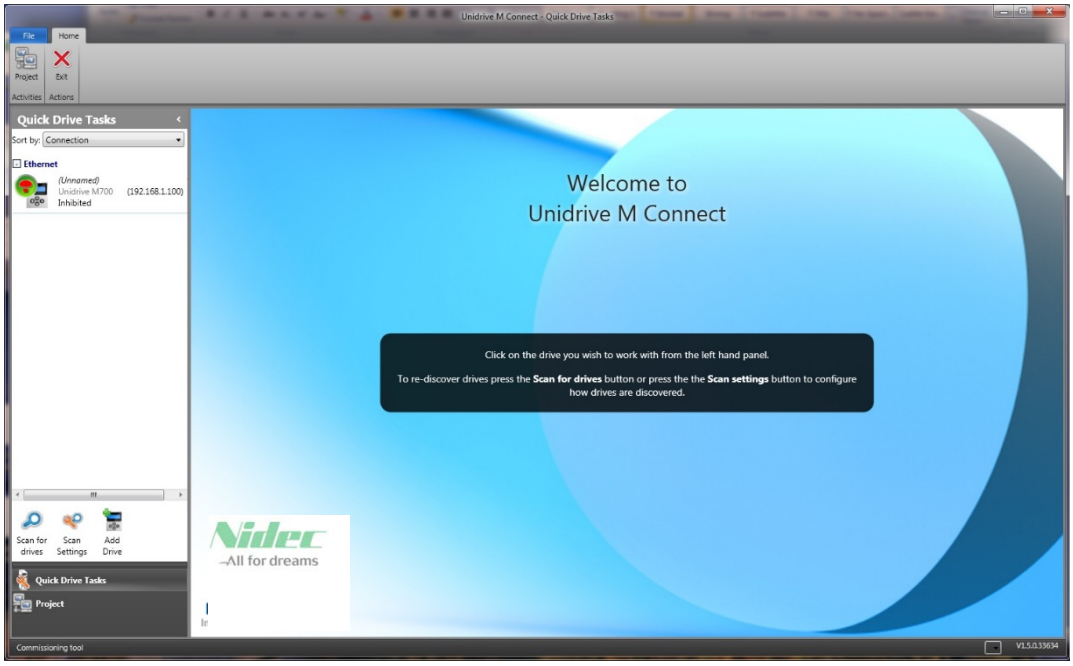
Run M-Connect. The opening screen appears. Click on “Scan Settings”.



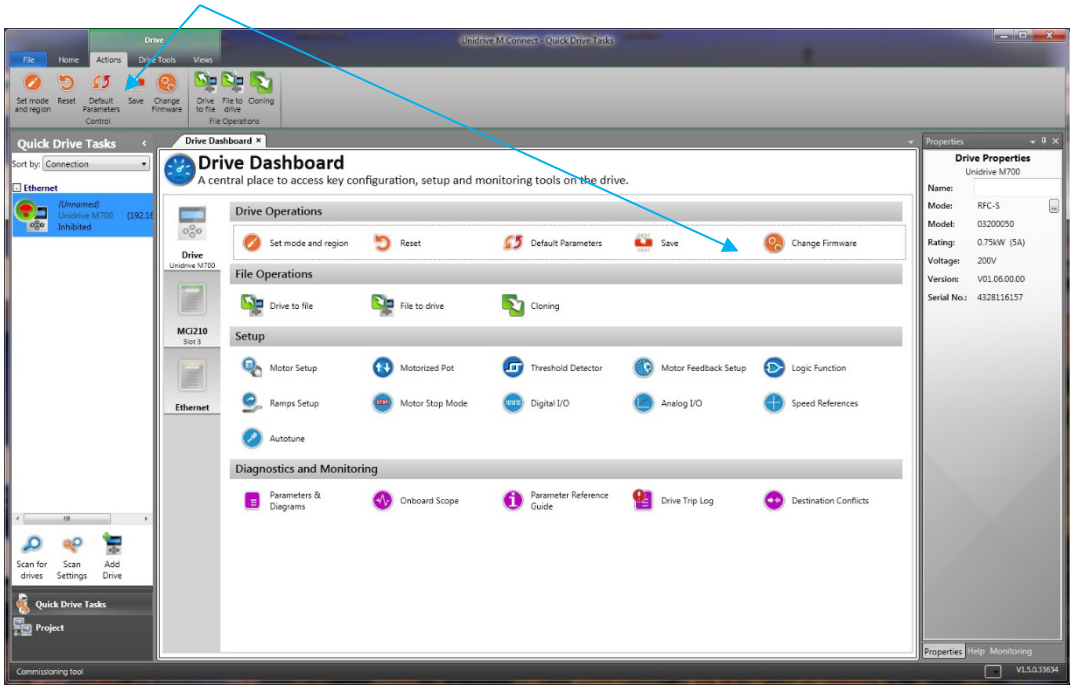
Check and confirm the Discovery Settings. The following are for a M700 or M702 using an Ethernet link. One would de-select the Ethernet option and select the RTU option for a M701 and a RS-485 link. Then “click” Save | Scan for drives.



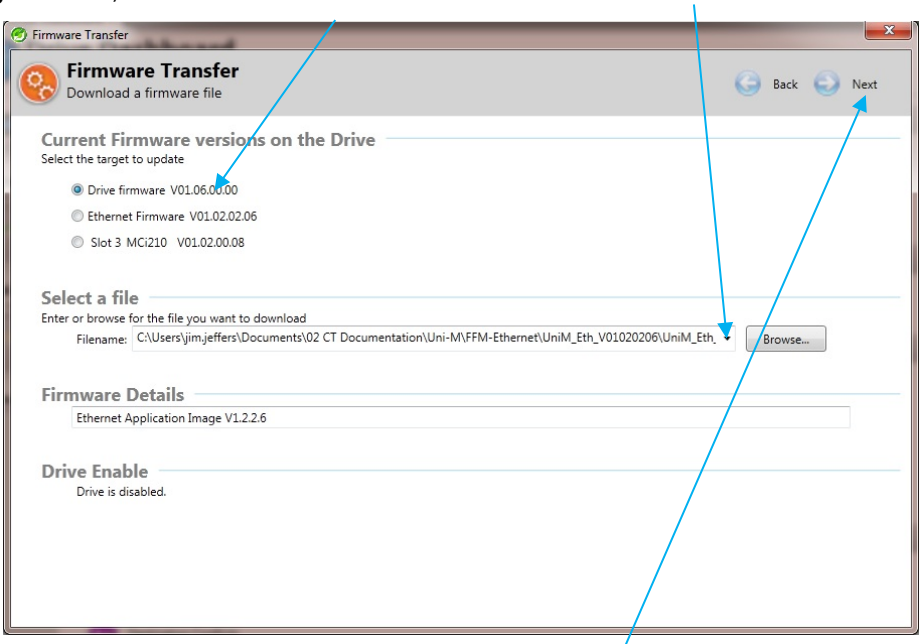
The target to be upgraded should be successfully discovered the Quick Drive Tasks pane. Note that if multiple Unidrive M(s) are present, one may observe more than one potential target. Select the drive to be upgraded in the Quick Drive Tasks



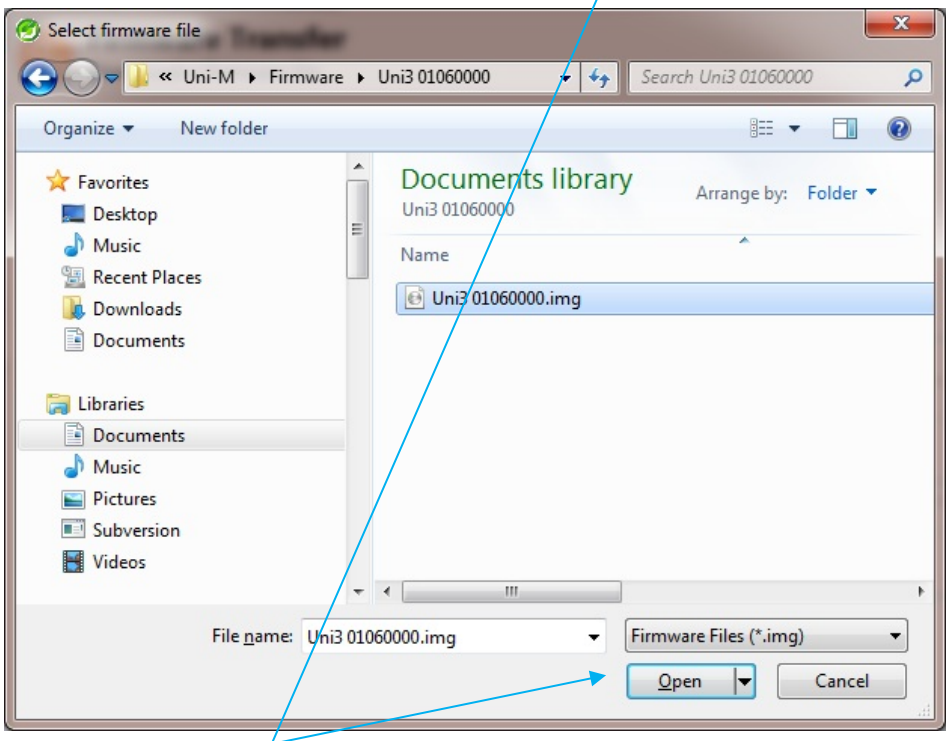
The next image illustrates the drive selected and the Drive Dashboard opened. Click the Change Firmware.



On the following window, select “Drive firmware V0x.xx.xx.xx”. Click on “Browse…”

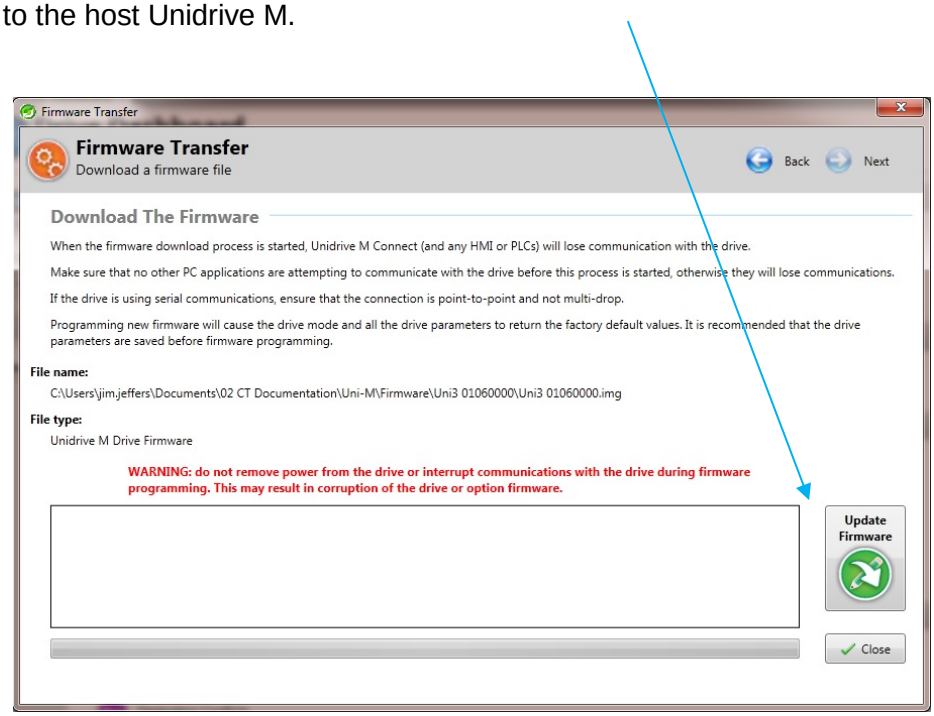


Navigate to the drive firmware image you intend to load into the Unidrive M.

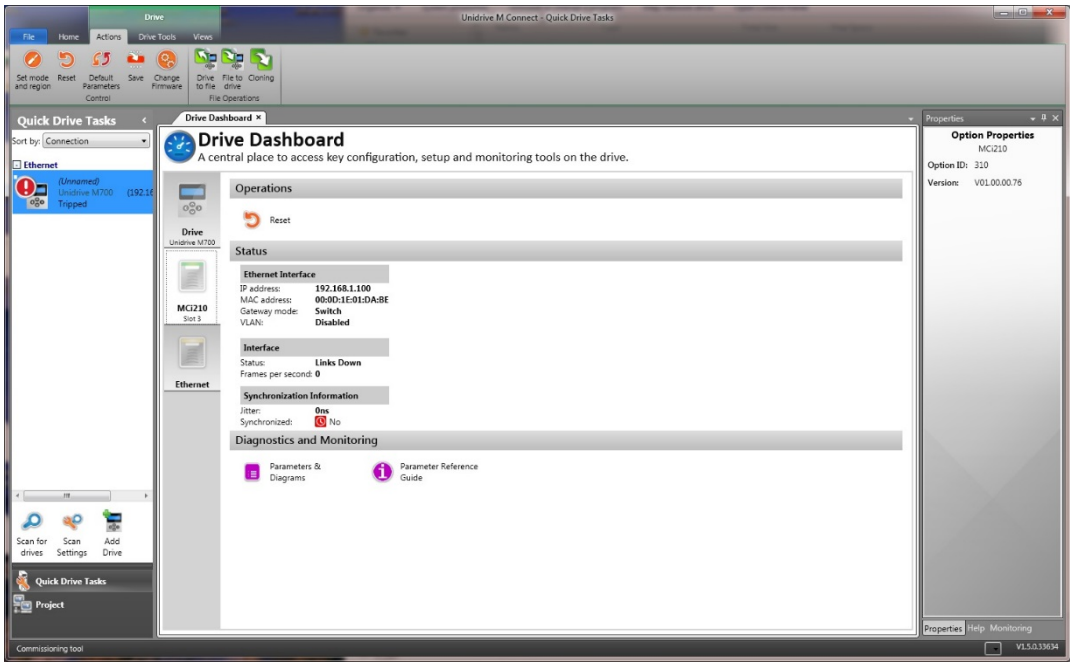


Click Open to select, and then “Next” in the previous image to proceed.

The following window will appear. Left-click the “Update Firmware” button to begin the transfer from the PC/Laptop to the host Unidrive M.



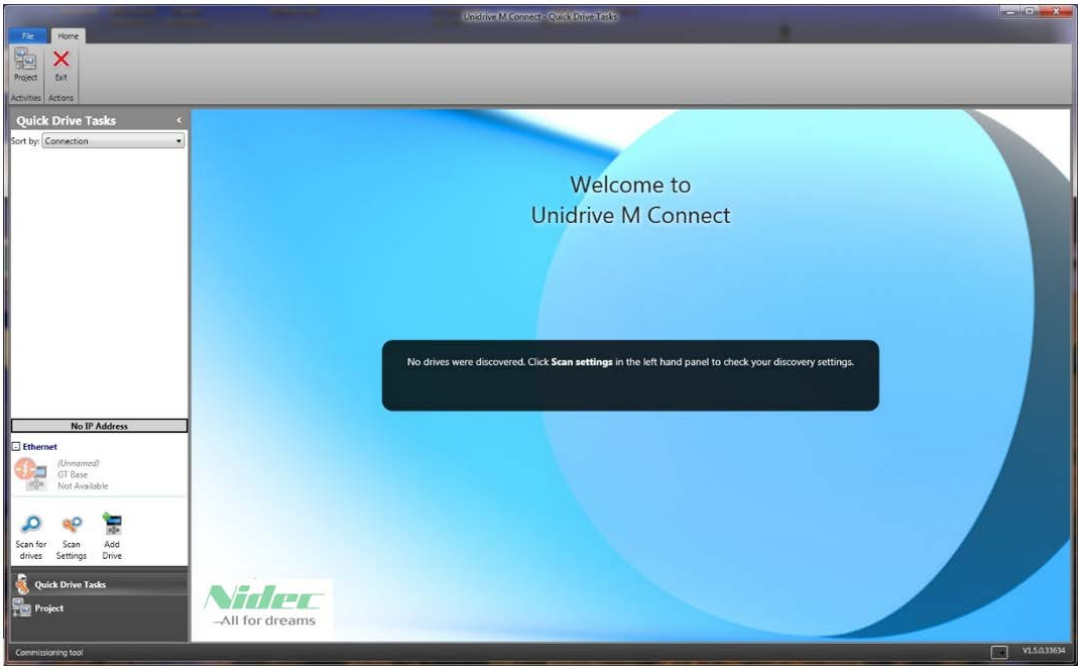
Once the transfer is complete, the host Unidrive M will actually execute the upgrade and this screen will be displayed. Note that that a trip is now present and that the firmware revision displayed is still is the original revision.



At this point, the initial clean-up is done with the SI-Keypad. Observe a trip indication on the SI-Keypad of “trip EEPROM.Fail.1” indication.

Press the enter button to clear the fault, and then enter a value of 1244 into parameter #00.000 and press the enter button to default the Unidrive M. Note that the Unidrive M will be in Open-Loop mode at this point. Save the configuration via a value of 1000 entered into parameter #00.000 (or a value of 1001 if the DC buss is below rated value) and press the enter button to execute. Cycle the power at this point, and clear any faults observed and save.

Cycle the power, and then re-start M-Connect, if necessary. Reconfirm the scan settings, and then “Scan for Drives”. This time, the following window will look like:



Note that if we were only going to upgrade the drive firmware, we could be almost done. Proceed to the section "**Clearing the Fault log**" to finish. However the next section covers upgrading the FFM-Ethernet firmware, which usually needs to be done on a M700 or M702 at the same time as the drive firmware is upgraded.

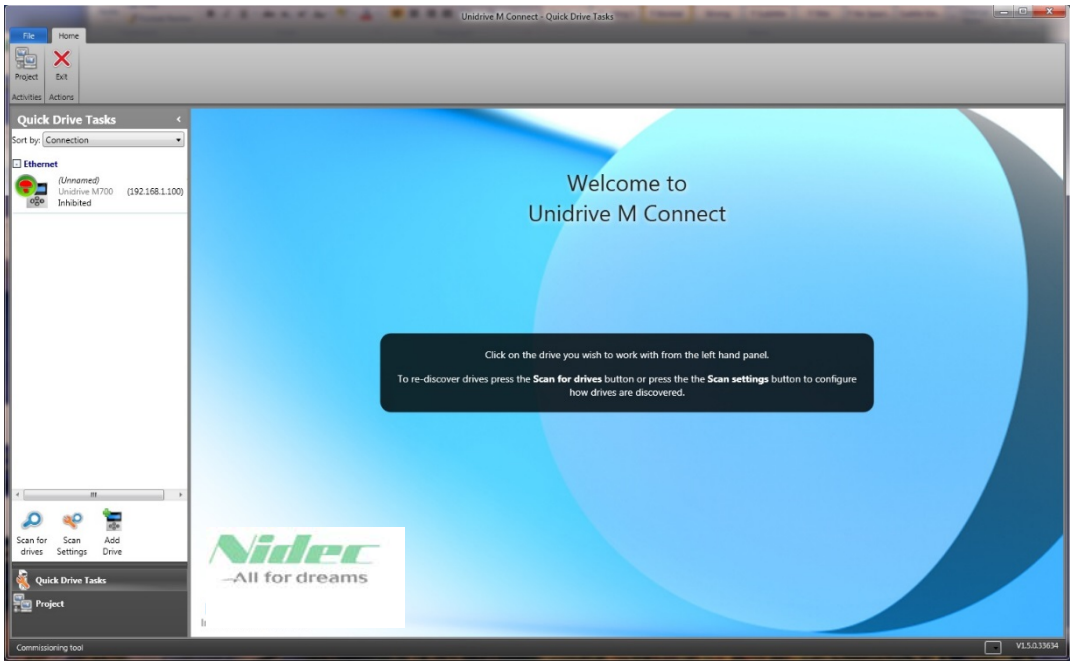
Step by Step Instructions – Phase 2 Clear faults and FFM-Ethernet update:

The first steps are done from the SI-Keypad. At a minimum, the FFM Ethernet interface needs to be configured so that from power up, DCHP is off and the ipv4 address is at the expected value. In this case that is value is 192.168.1.100.

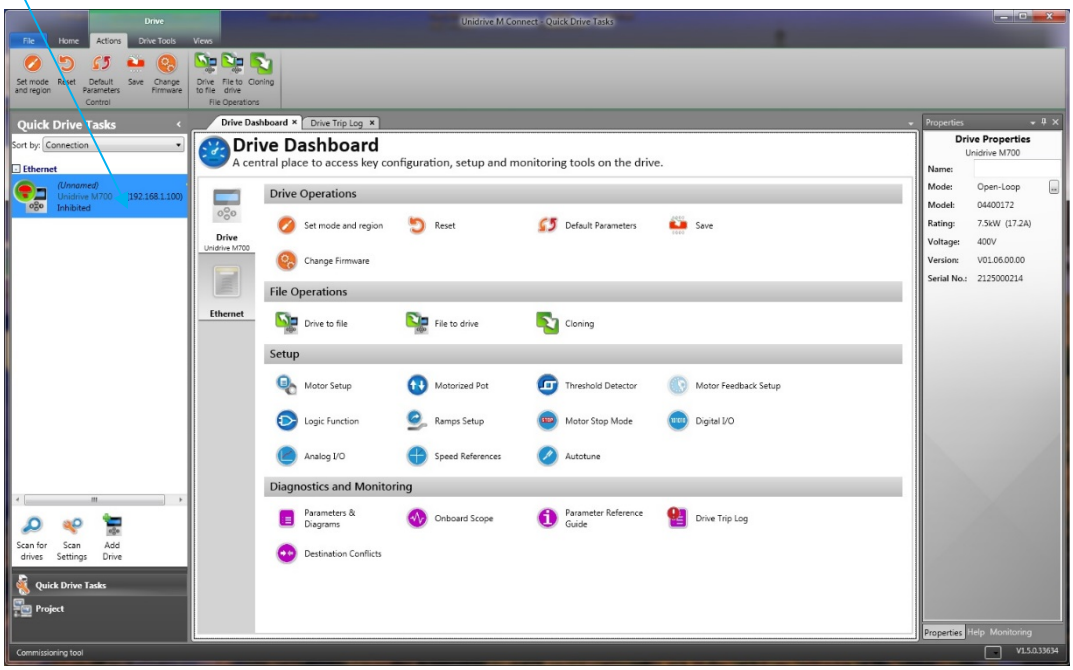
Set:

#4.02.005	to Off	DHCP Select
#4.02.006	to 192.168.1.100	IP Address
#4.20.02	to On (wait for Off)	Reset (self resets)
#00.000	to 1000 (or 1001)	Save value <enter>

Cycle power and confirm that the Unidrive M is present at the expected ipv4 address in the Quick Drive Task pane. See the image on the next page for a screen shot of this.

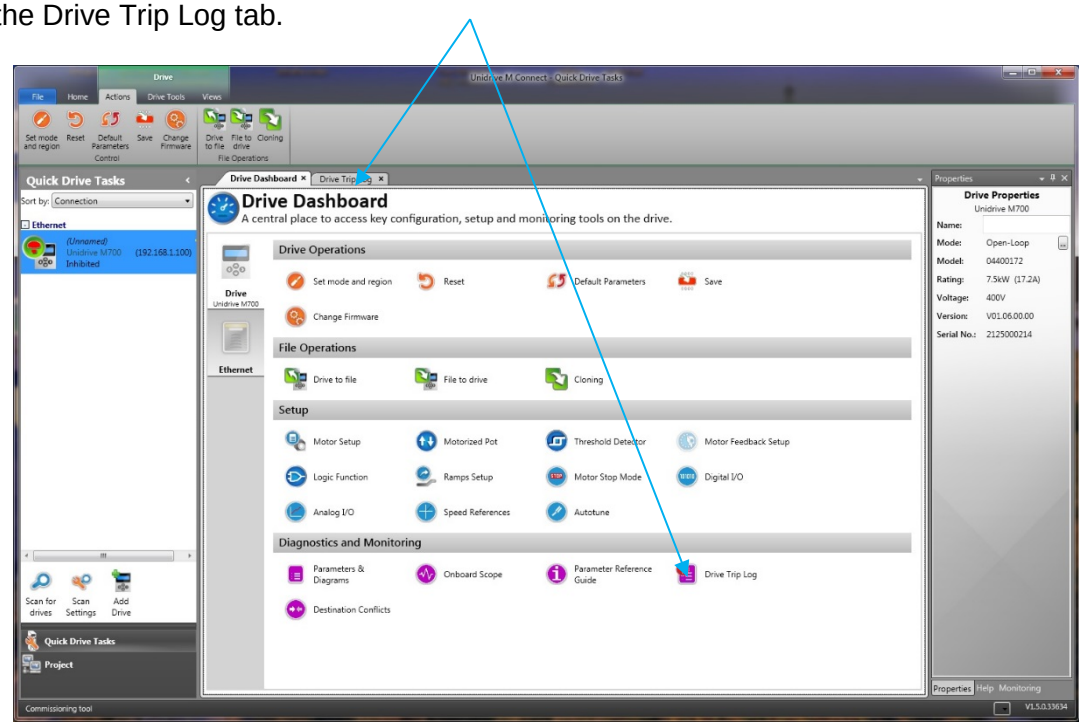


Left click the Unidrive M at 192.168.1.100 (in this case) to select and work with this unit. Then select the FFM-Ethernet in the Drive Dashboard.

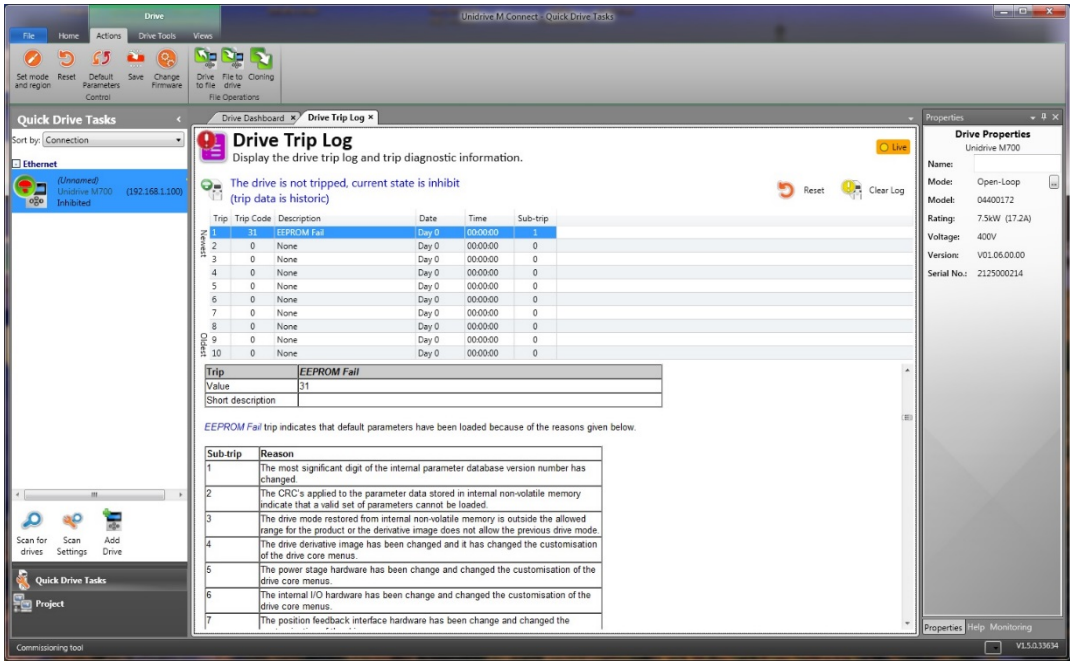


Clearing the Fault Log

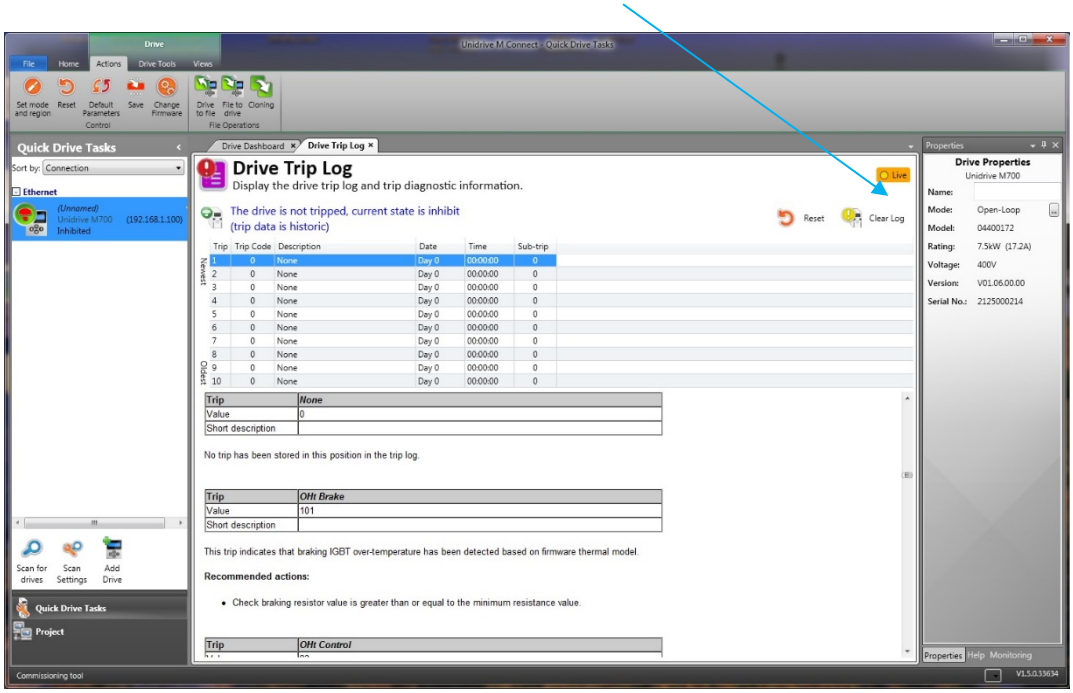
Click on the Drive Trip Log tab.



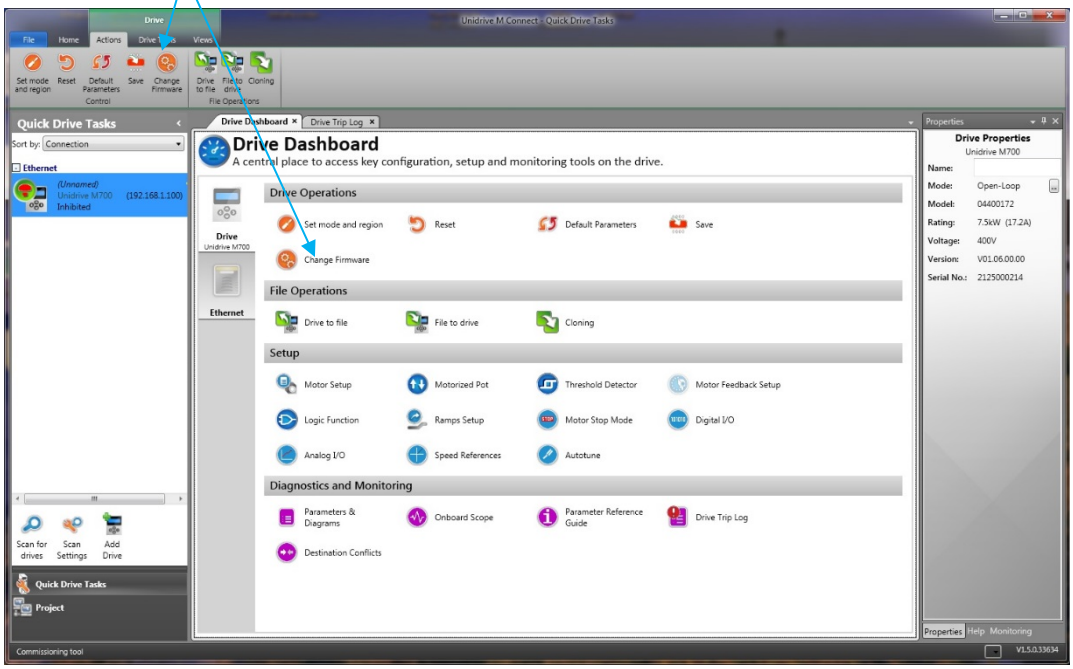
The previous EEPROM.Fail trip (at least) should still be present.



Left-click on the “Clear Log” icon, to clear out the fault history.

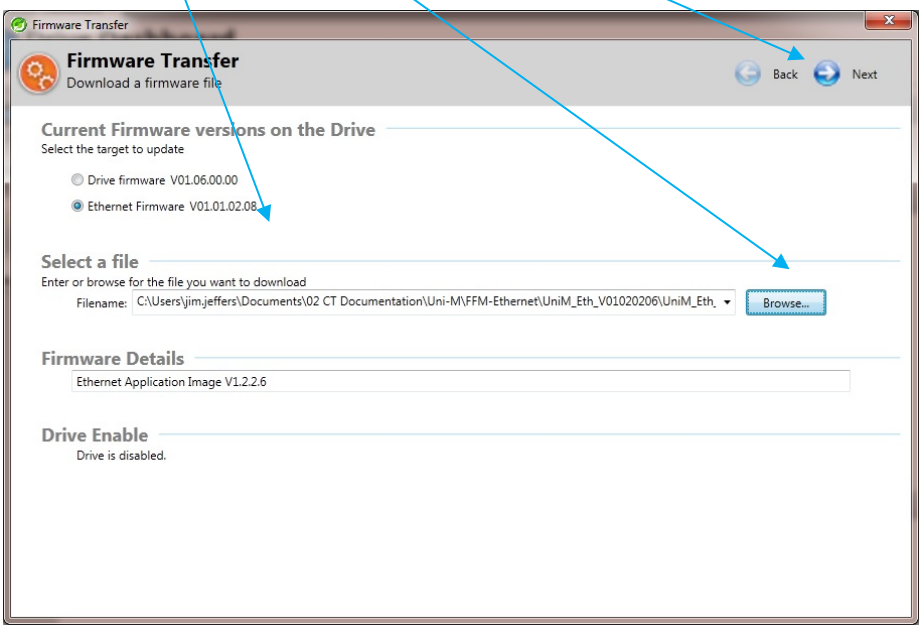


Now, left-click on the “Change Firmware”.

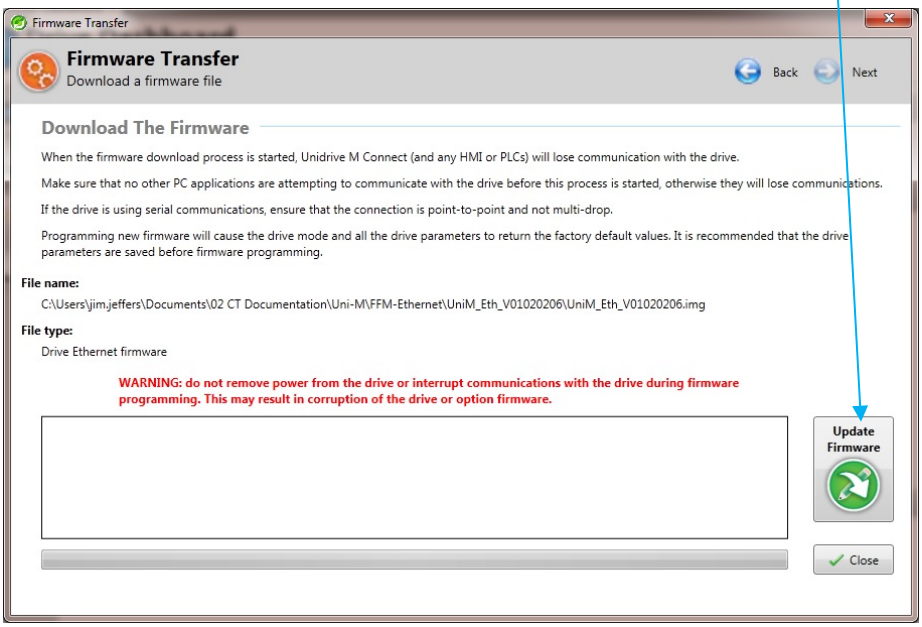


Left-click the Ethernet Firmware V0X.XX.XX.XX radio-button option.

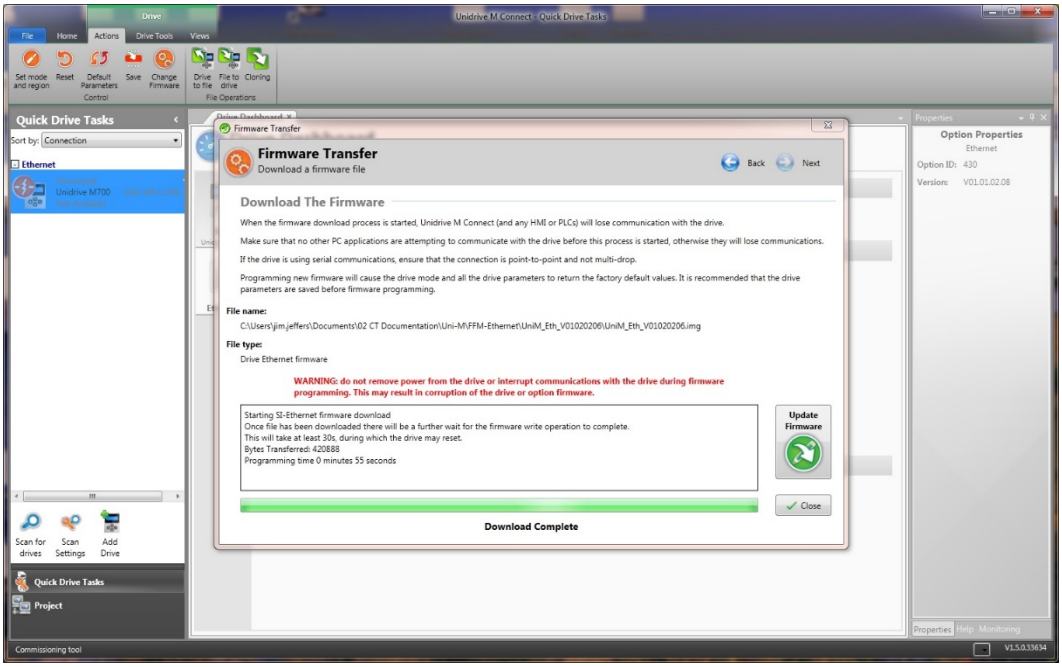
Then Browse… to the image of the firmware file to be loaded. Click -> Next image.



This illustrates the “Ready to Update Firmware” window, with all relevant options selected. When ready, click the green Update Firmware” image to initiate the transfer and update.



Download finished and internal update completed.



Clean Up and Finish

The steps are done from the SI-Keypad. The FFM-Ethernet needs to be defaulted, and saved. Usually, FFM Ethernet interface needs to be configured so that from power up, DCHP is off and the ipv4 address is at the expected value. In this case that is value is 192.168.1.100.

Set:

#4.20.03	to On	Default (self reset when #4.20.003 self resets).
#4.20.02	to On (wait for Off)	Reset (self resets)
#4.02.005	to Off	DHCP Select
#4.02.006	to 192.168.1.100	IP Address
#4.20.02	to On	Reset (self resets)
#00.000	to 1000 (or 1001)	Save value <enter>

Cycle power and confirm that the Unidrive M is present at the expected ipv4 address in the Quick Drive Task pane.

Resources: can be found on our website: www.controltechniques.com
For help contact techsupport.cta@mail.nidec.com, or
call Technical Support at 952-995-8000, 24/7/365