TEC2 CCM Programming Instructions

Using RS-485 UART Probe and STC Pins 36 and 38

BETTIS™

EMERSON™

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Section 1: TEC2 CCM Programming Instructions

1.1 Using RS-485 UART Probe and STC Pins 36 and 38

Figure 1 RS485 Setup

1. Connect USB cable to the RS485 Adapter and plug the other end of the cable into the USB port on the computer. See Figure 1.
2. Connect a two lead cable to the Phoenix connector. See Figure 2.

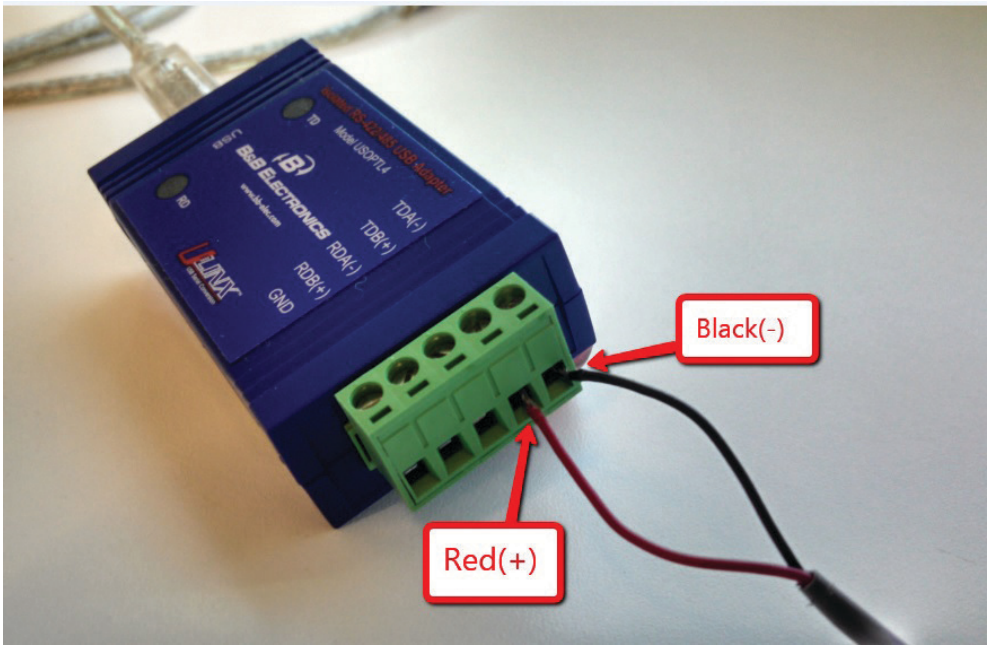


Figure 2 RS485 Adapter Box Connection

3. Connect RS485 cable to STC pins 36 and 38. See Figure 3.

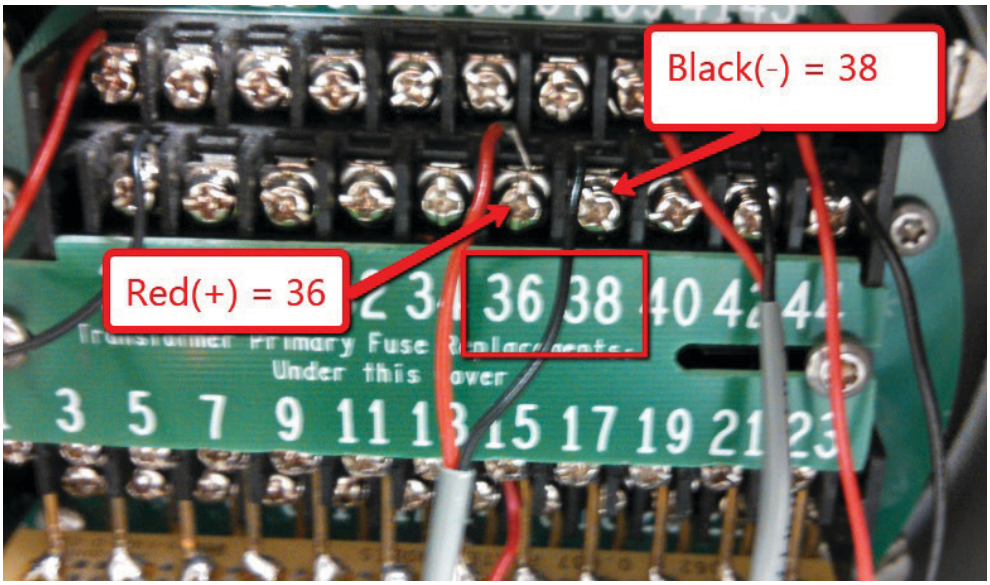


Figure 3 STC Pins 36 and 38

4. Set all switches on the RS485 Adapter box to ON. See Figure 4.

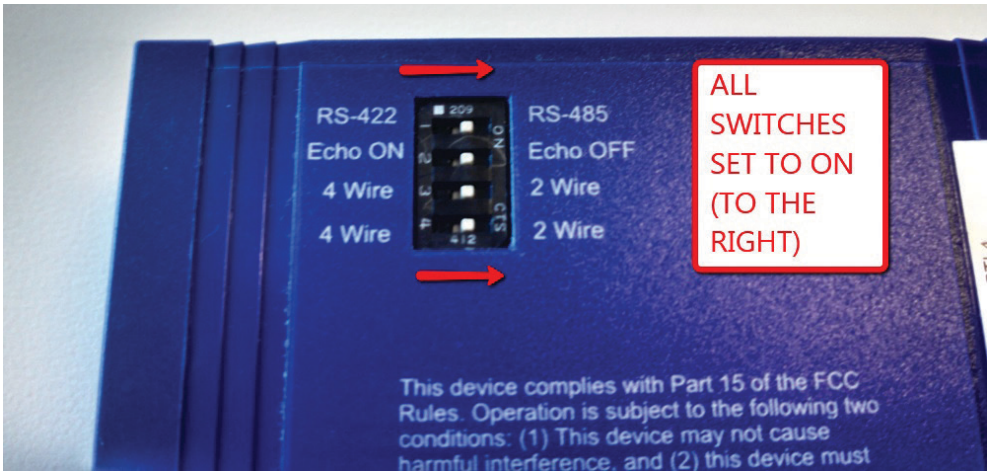


Figure 4 Adapter Switch Settings

5. Go to Windows Control Panel and open device manager. See Figure 5.

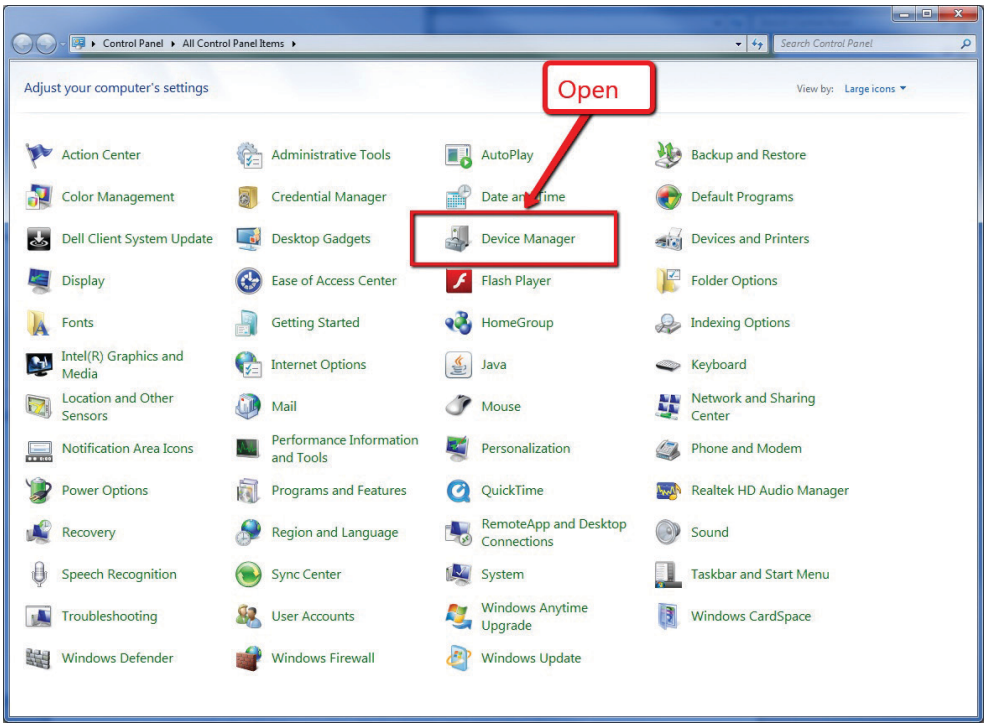


Figure 5 Windows Control Panel

6. Determine the RS485 Adapter box Com Port Number. See Figure 6.

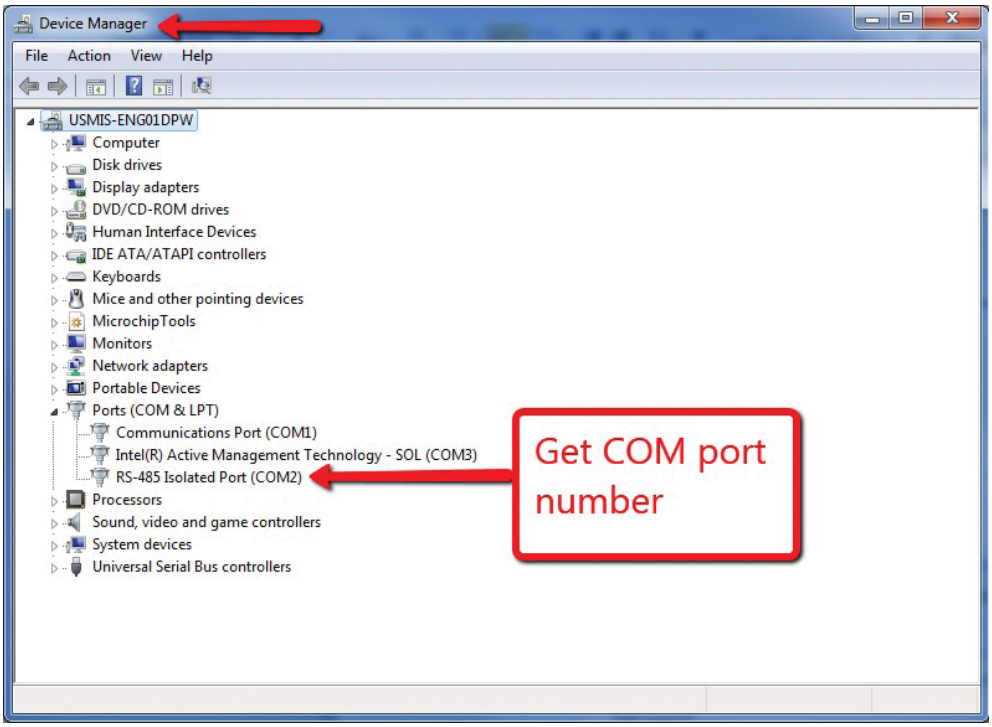


Figure 6 Com Port Number

7. Open the TEC-Flash.exe program. See Figure 7.

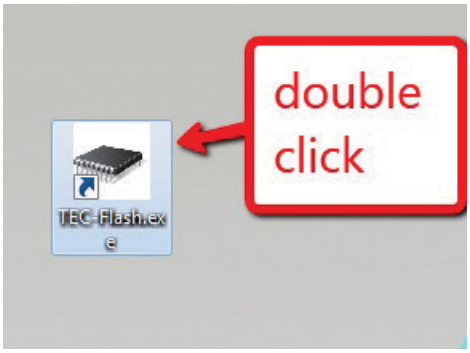


Figure 7 TEC-Flash.exe Icon

8. Select the correct Comm port and then select Open. See Figure 8.

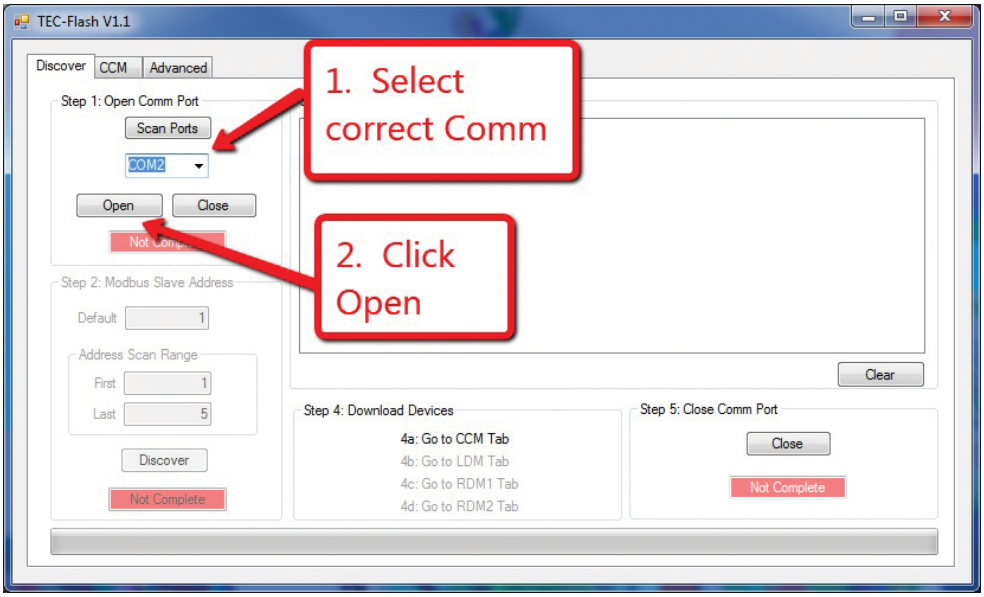


Figure 8 Open Comm Port

9. Enter the Modbus Address. Click on Discover. Select Check box for the Actuator, then click on the CCM Tab. See Figure 9.

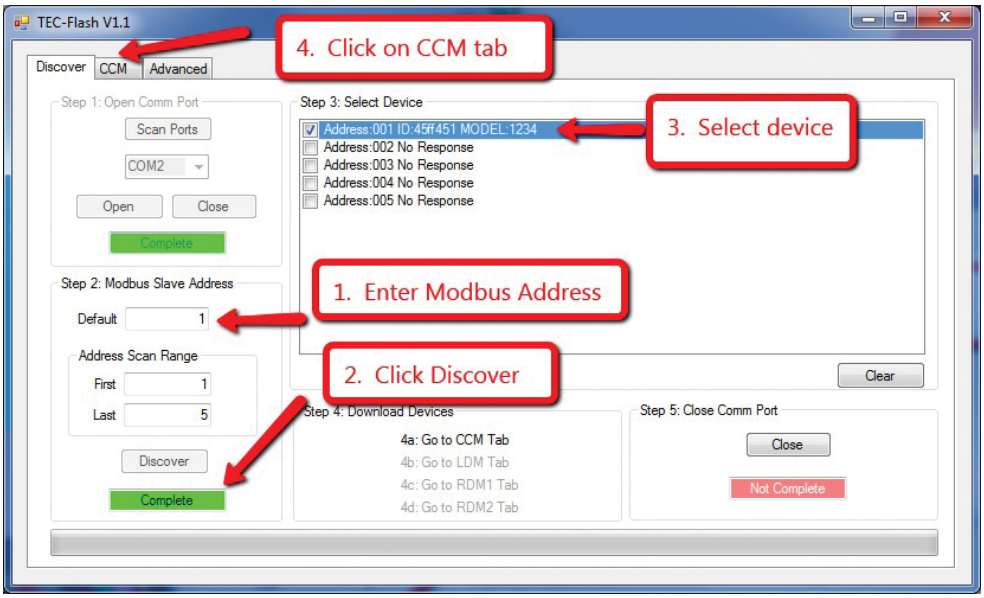


Figure 9 TEC-Flash Program Discover Tab

10. On the CCM tab, click Read Version button on Step 1. Then Click Read CRC on Step 2. Then click Open File on Step 3. See Figure 10.

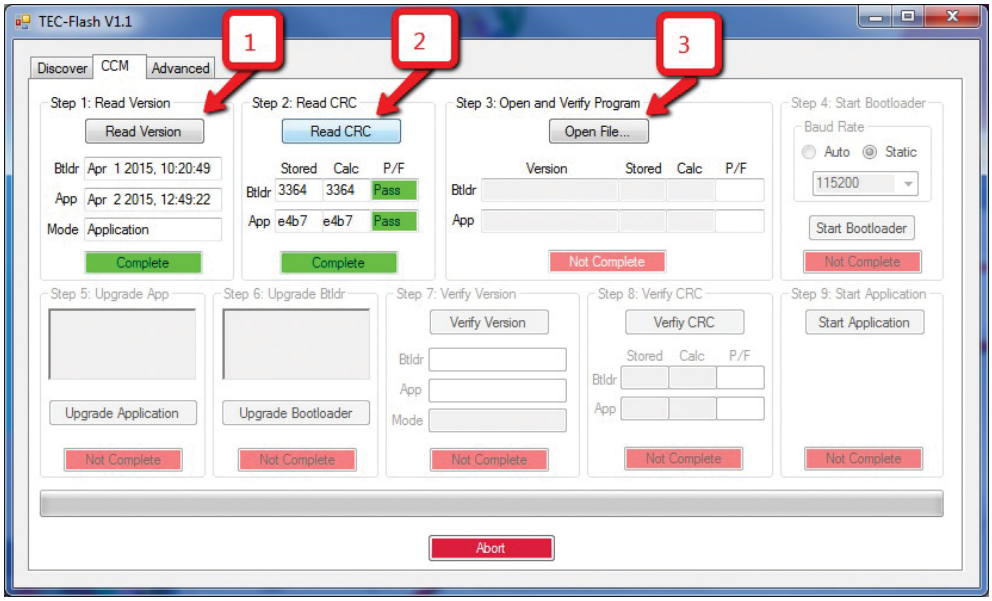


Figure 10 Perform Steps 1 and 2 then click Open File

11. Navigate to the directory that holds the BIN file you want to download. Select that file and click open. See Figure 11.

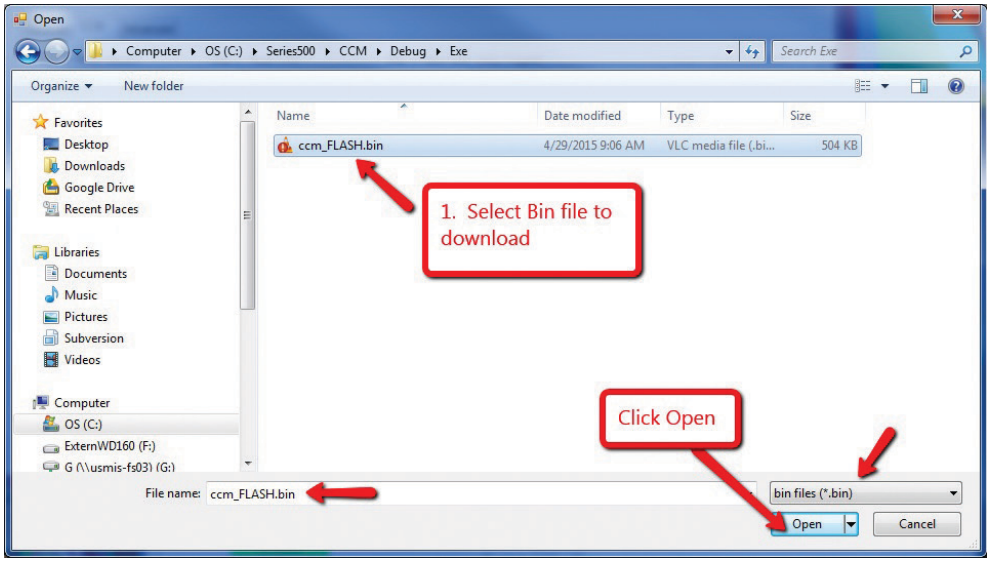
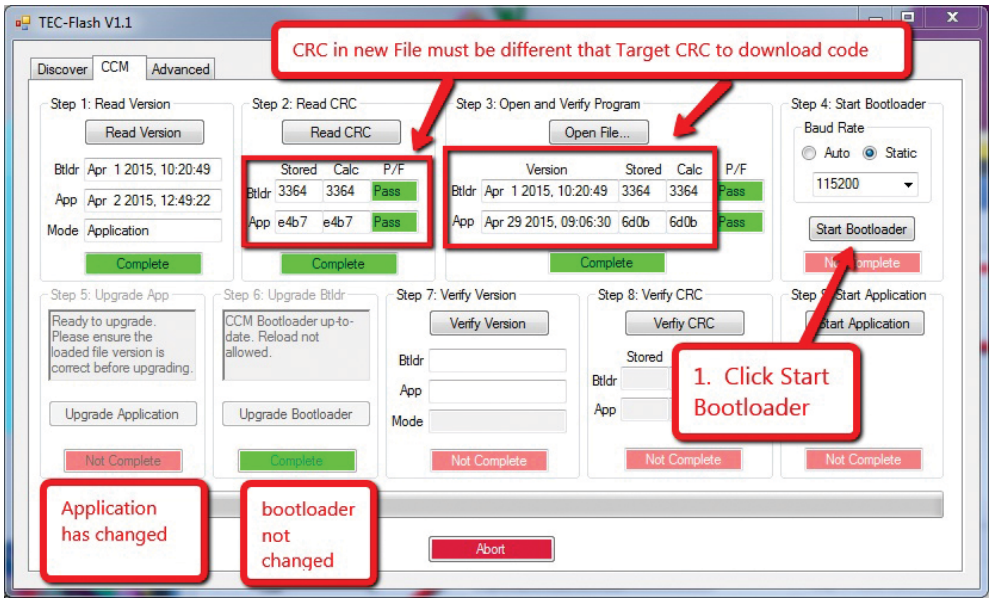


Figure 11 Open BIN File

12. Figure 12 below shows that in Step 2 box, the CRC values of the code in the existing board "Stored" is the CRC in the code. Calc is the CRC that TEC-Flash calculated for the code on the board. In the Step 3 box, the Stored is the CRC for the new file that is stored in the new BIN file itself. Calc is the value of the CRC that the TEC-Flash.exe program calculated for the BIN file you selected to download. The Btldr = Bootloader and App = the Target executable file. See Figure 12.

Figure 12 Screen Showing that Target executable and New File to Download are different.



13. After the bootloader has started, you should see “Firmware Upgrade in Progress” on the LDM. See Figure 13. You should see that Step 4, Start Bootloader now shows Complete in Green and that Step 5 is now enabled to Upgrade Application. See Figure 14.

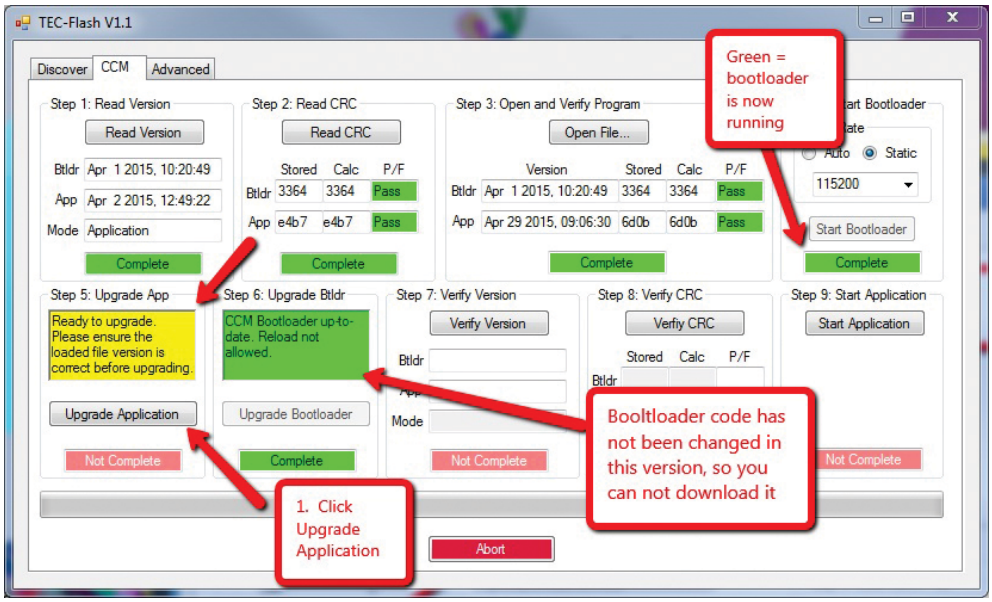


Figure 13 Bootloader Running

Figure 14 Upgrade in Progress

14. You should now see the Step 5 “In Progress” and the green download status bar. See Figure 15.

Figure 15 Download in Progress. Takes 5 to 6 minutes to finish with wired connection.

15. When the Download has completed, you can now perform Steps 7, 8 and 9. Step 9 restarts the actuator code and should now be running the new code you just downloaded. See Figures 16 and 17.

Figure 16 Start Application

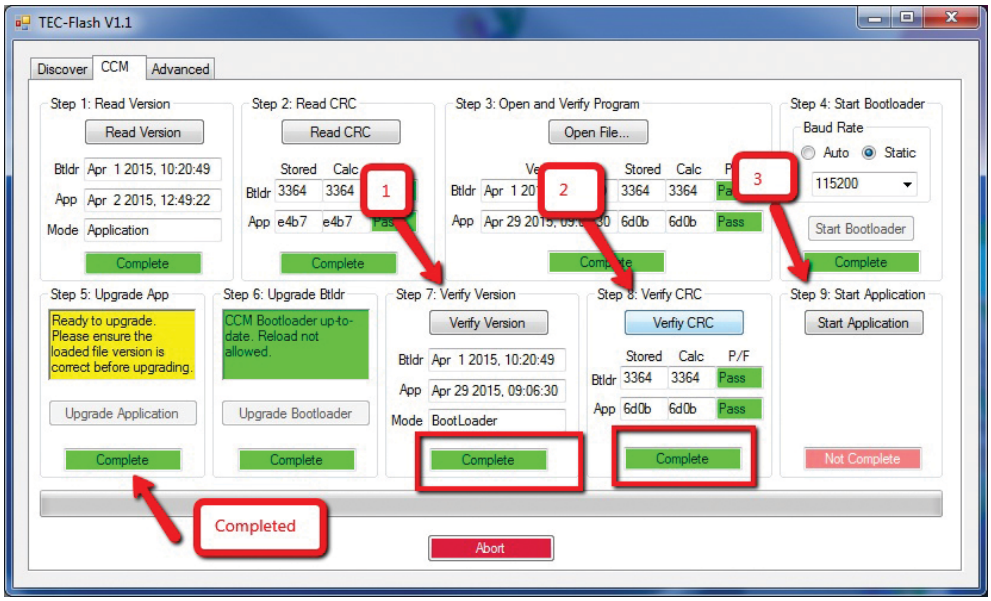
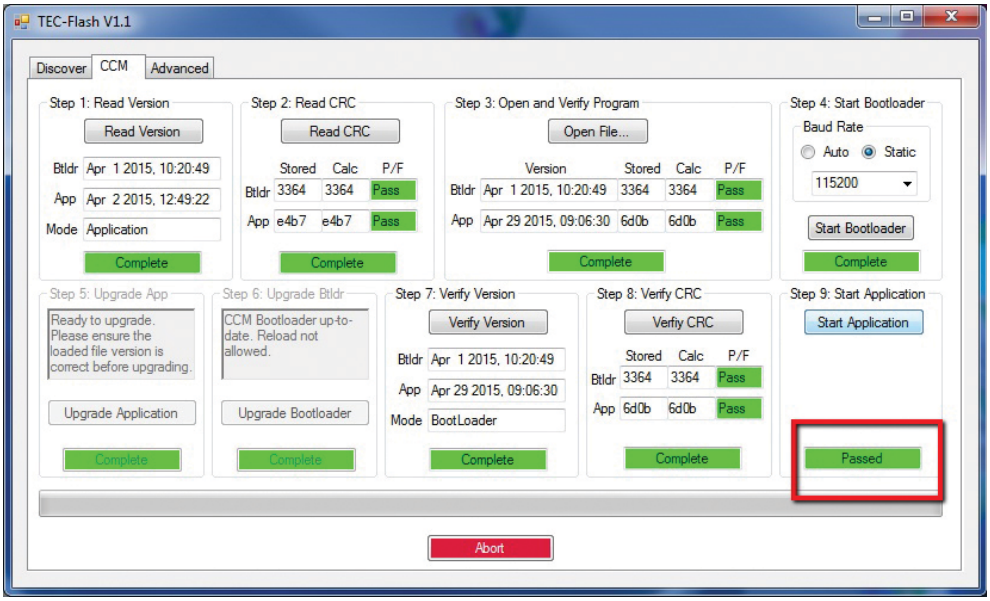


Figure 17 Application Started



16. The code in the Actuator should now be running and the version should be the new version that you downloaded.

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