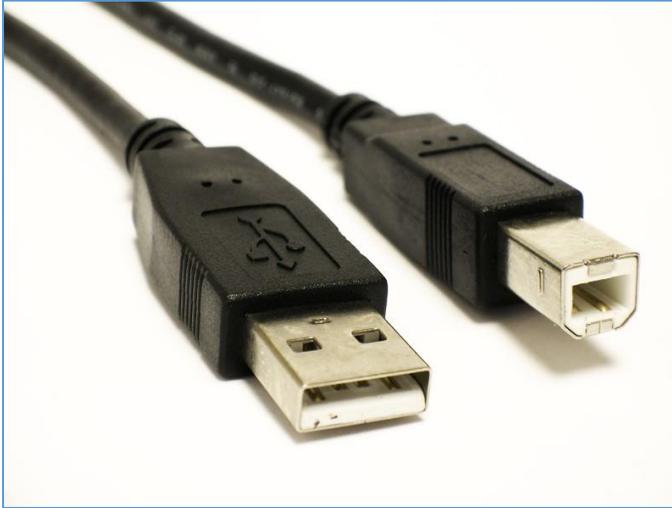


# Board Programming

All of the files, including this document, can be downloaded from <http://chemtrac.com/board-programming/>.

## Materials Needed:

1. Standard USB A/B Cable (see Image 1)
2. Laptop or Desktop with the Flash Magic software installed.



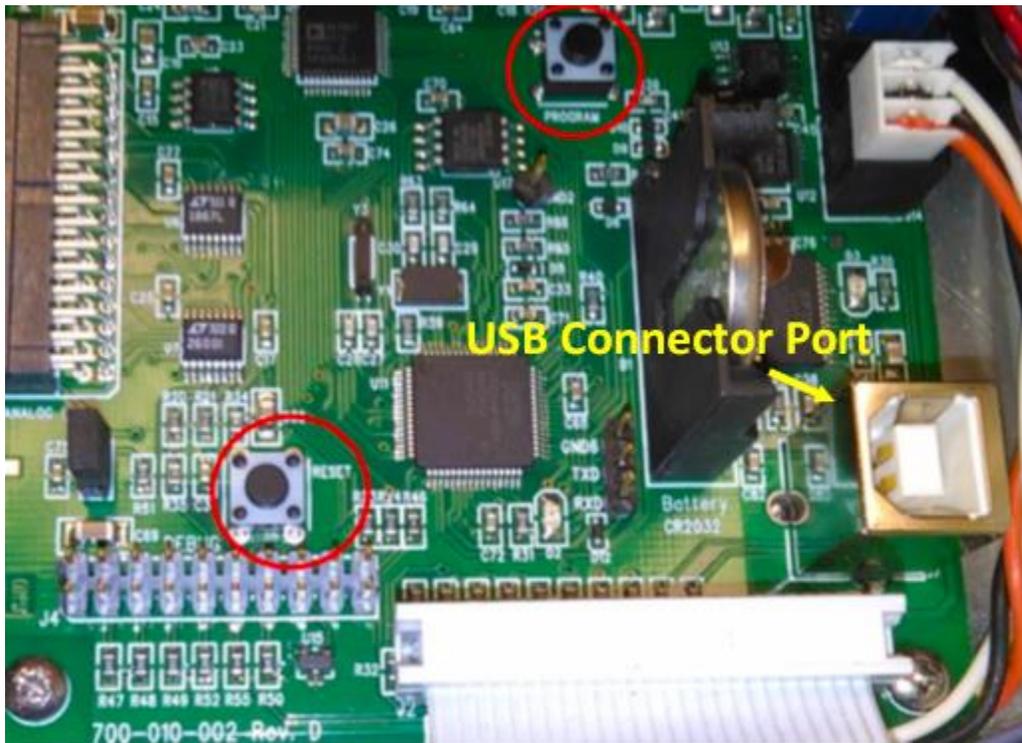
(Image 1)

## Install USB Driver:

1. [Download](#) the USB driver for the operating system that is being used.

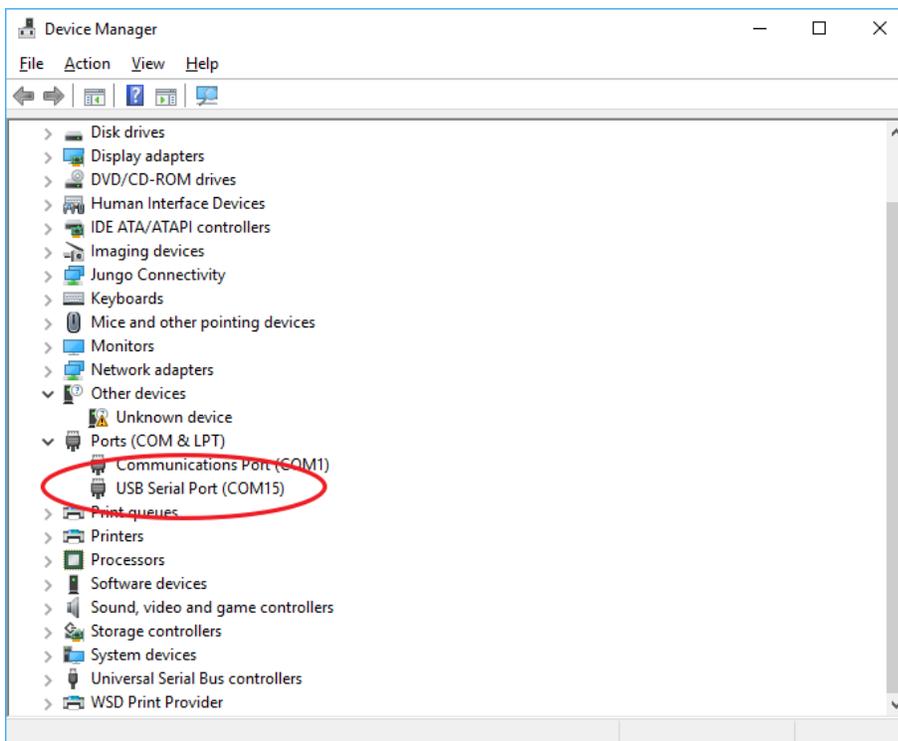
**CDM V2.12.00 WHQL Certified (Windows 10)** for Windows 10 and **CDM V2.10.00 WHQL Certified** for all other operating systems.

2. Open the downloaded driver and follow the prompts to complete the installation. NOTE: The USB cable should NOT be connected during this installation.
3. Connect the USB cable between the computer and the device. The connector port for the USB cable can be seen in the board image below.



(Image 2 – Particle Counter)

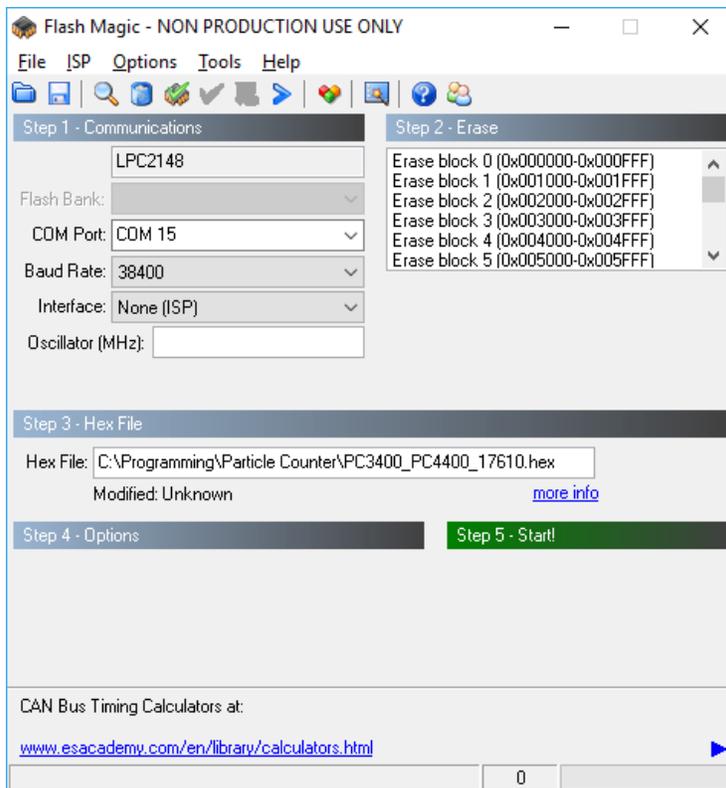
4. Turn on device.
5. Open Device Manager on the computer. Choose Run from the Start Menu and enter *devmgmt.msc* to open the Device Manager window.
6. Verify that a COM Port was created under the Ports (COM & LPT) section. A new item named USB Serial Port should be visible (see Image 3 below).



(Image 3)

## Install and configure Flash Magic:

1. Download and install Flash Magic from <http://chemtrac.com/board-programming/>.
2. Launch Flash Magic and use the following settings to configure the software.
  - **Communications**
  - Select LPC2148 (under device database ARM7 section)
  - COM Port COM Port that is shown under Device Manager – COM15 in the above image.
  - Baud Rate 38400
  - Interface None (ISP)
  - Oscillator(MHz) 12.00
  - **Erase** Check Erase blocks used by Hex File
  - **Hex File** Browse and select the hex file found on the download page. If the currently installed version of firmware in the Particle Counter is less than 2.00 (ex. 1.74) then the HEX file named PC3400 PC4400 17610.hex needs to be used. Use PC5000 2254.hex if the firmware is 2.0 or later. The firmware version can be determined by browsing to the STATUS page of the Particle Counter.



(Image 4)

## Programming the Particle Counter:

1. Press and hold the PROGRAM switch. (See Image 2)
  2. Press then release the RESET switch. (See Image 2)
  3. Release the PROGRAM switch. The Particle Counter display should be blank.
  4. In the Flash Magic program proceed to step 5 and press Start!.
- Note:** Programming may delay up to 15 seconds before it begins. The progress of the programming process is displayed in the lower left corner of the Flash Magic window.
5. The programming process can take as long as 3 minutes. Be patient!

6. When programming is completed, "Finished" is displayed in the lower left corner of the Flash Magic Window. Remove the USB cable from the Particle Counter.
7. Press and release the RESET switch. Verify the revision number by watching the splash screen during start-up.

Contact Chemtrac if you have any questions.

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