Northern Lights Electronic Design

Updating NLED Controllers Using The Serial Bootloader

Most NLED controllers offer bootloader support, a bootloader allows the device's firmware to be updated over a USB(or serial in some cases) and a small program. Updating the firwmare allows bugs to be fixed and features to be added. Check your devices webpage for update information or contact Support@NLEDshop.com if you found a bug or have any questions about usage.

Required Hardware and Software:

► Compatible NLED Controller and Compatible Power Adapter
► USB To Serial Adapter or Similar. Such as a FTDI or PL2303HX .
► Computer with Windows OS
► The firmware update file(.HEX) downloaded from the device webpage
► Microchip Serial Bootloader Software for your OS
     download from www.NLEDshop.com/bootloader

**Find the most recent device updates at www.NLEDshop.com/deviceupdates
& in the NLED Aurora Control software folder in /deviceupdates/**

Hookup Instructions:

The controllers that support the serial bootloader require an additional adapter to communicate with a computer. Commonly these are known as "USB To Serial Adapters", "FTDI Adapters", "Serial Adapter" and others. They output a TTL(0v, 5v) signal that is compatible with microcontrollers.

When hooking them up to a NLED device it is important to cross over the RX and TX connections. RX is receive, TX is transmit. From device to controller RX to TX, TX to RX, and GND to GND. See Fig. 3
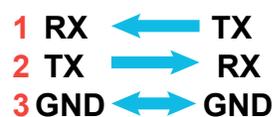
RX-TX-GND Header Connection
Device:
1 RX ⟵ TX
2 TX ⟶ RX
3 GND ⟷ GND

Fig. 3

Full Instructions on Page 2
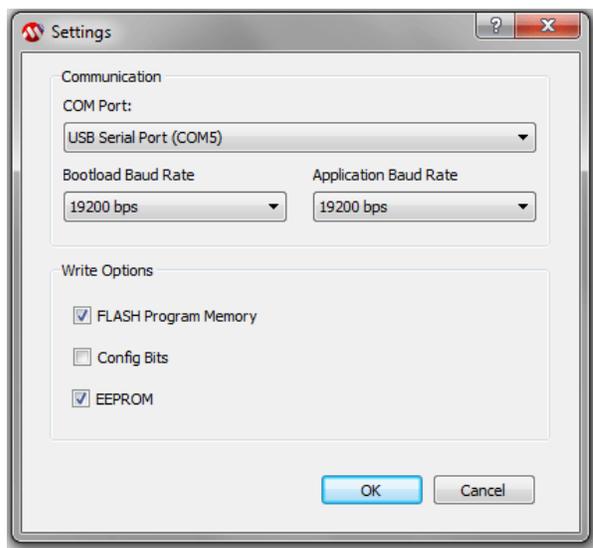
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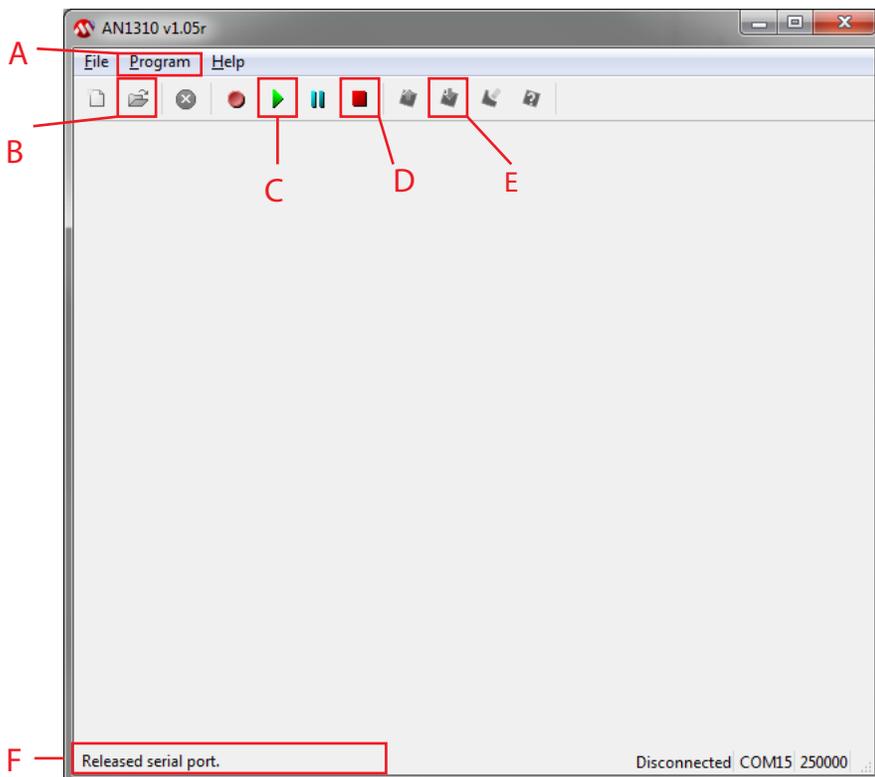
Fig. 2

Fig. 1

Instructions:

► Power off the device to be updated.

► Connect the device to the computer's USB port using the Serial Adapter. Connect RX, TX and GND as Fig. 3

► See device datasheet for bootloader entry instructions. Enter device into bootloader mode.

► Start the Bootloader Software by running the EXE(AN1310ui.exe) file.

► If not yet setup, the software must be configured. Ensure the software is directed to the Serial Adapter's port and the "FLASH Program Memory" and "EEPROM" boxes are checked. The baud rate is autodetected, 19200 is a good default. See Fig. 2

► Open the bootloader connection by pressing the red square button(Fig. 1, D). If the bottom left corner indicates "Bootloader Not Found" check all connections(Fig. 3) and software settings(Fig. 2)

► Use the open file dialog button(Fig. 1, A) and select the firmware update file(.HEX)

► Then Click the Program/Verify button(Fig. 1, E)

► It will take a few to several seconds to write the firmware, the progress is indicated in the bottom corner. When it completes, it will indicate success on the bottom corner.

► Restart the device either by power cycling or pressing the reset button.(Fig. 1, C)

Your Device should now be updated and ready to use.

Contact Support@NLEDshop.com for help