Operating your UV-LED Evaluation Kit

Overview

This kit is designed to be an integrated part of an UV-LED evaluation. As such, we have tried to provide adequate mounting options, eye-safety interlocks, and a data collection system into its design.

Requirements

Hardware

The kit includes a driver board, an emitter board, and a pushbutton switch. The user must provide a housing or suitable brackets, and a power supply capable of providing 12V at 2A to ensure adequate "headroom". Technically the assembly will draw slightly over 1A at full power, but most 12V/1A supplies will not be adequately regulated at that power level. The power input is a common DC jack with center-positive connection and a 2.5mm ID / 3.5mm OD.

Software

The driver board has a USB device to log data on a PC. For Windows, this requires a driver, available from Cypress Semiconductor here:

https://www.cypress.com/?docID=50937

A serial terminal program is used to interface with a simple menu system, shown later. Tera Term is an excellent, Free option for Windows:

https://osdn.net/projects/ttssh2/releases/

MacOS-X and Linux do not require drivers, and it is assumed that anyone using these operating systems has a favorite terminal program already.

Setup

Prior to energizing the driver, please ensure that it is mounted in an appropriate housing with the emitters pointed in a safe direction.

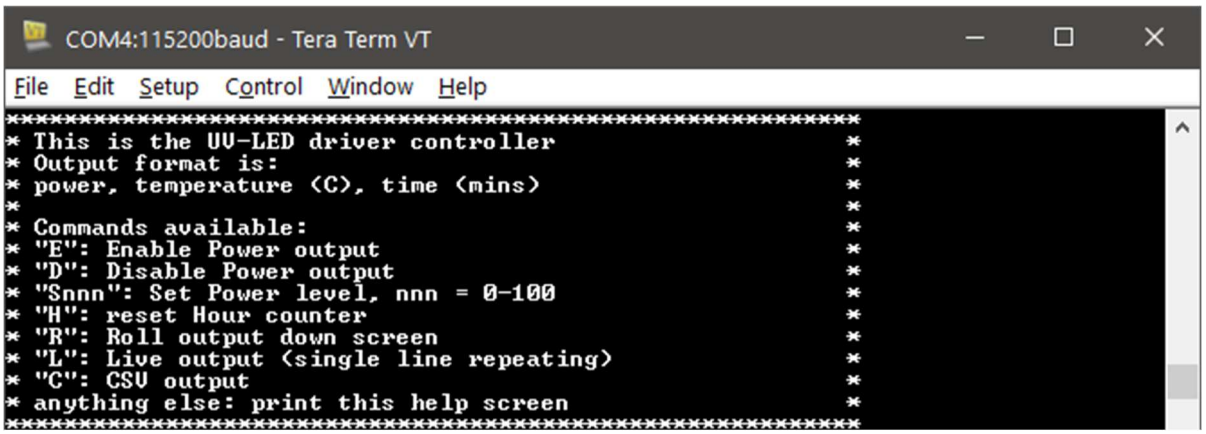
Install the USB driver before connecting to the PC. This should complete in the usual manner.

Install the switch wires into the green terminal block. Use a 1.5mm straight-bladed screwdriver for this. Any switch connected should be a normally-open type as the driver board will ONLY energize the output after reading an open-close-open action.

USE

Connect and power-on the 12V supply. The USB connection should be ready immediately after power-on (and will not be active without the 12V power input). The red LED indicator will flash once per second to show that power is on and the controller onboard is ready.

Note the serial port assigned by your operating system (Windows will be a COM port, Linux will be a TTYACM device), and configure your terminal program appropriately. The default serial configuration is 115200 8/N/1. The driver will print the following menu screen; if you do not see this simply push an unused menu key to reprint it:



The menu choices are not case-sensitive, ie “E” and “e” will both enable the power converter and turn on the UV emitters.

MENU OPTIONS

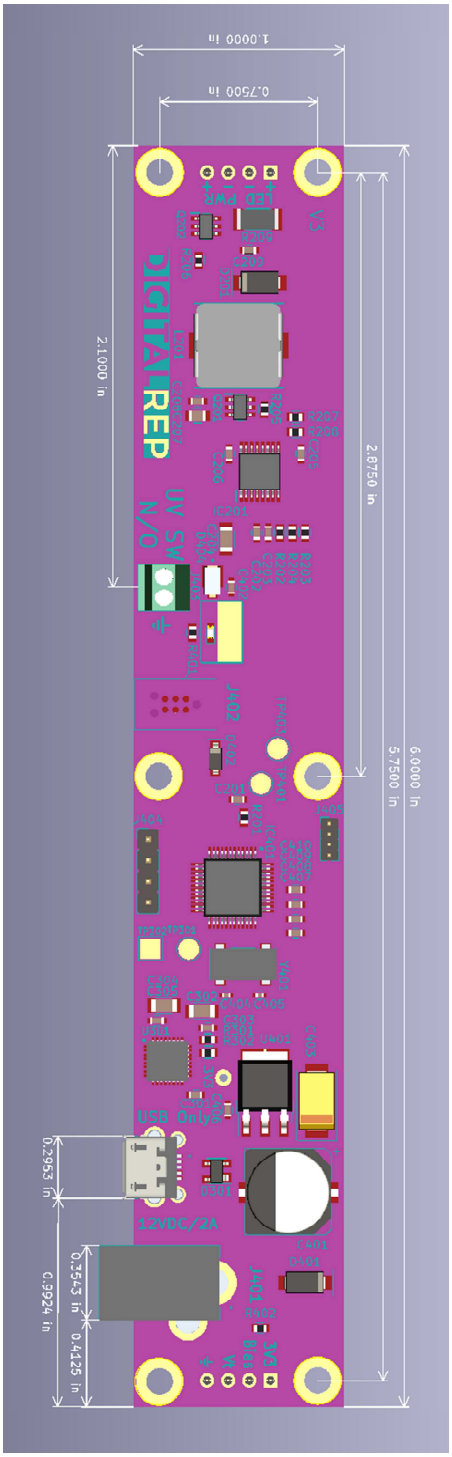
E/D are an alternative way to enable the UV emitters instead of pushing the button. This is intended for any control software the user may want to use.

Snnn controls the power output in percentage; default is 20% and ranges from 0-100%.

H will reset the on-time counter. This counter is updated in 5-minute intervals and is displayed in minutes. UV-LEDs, like all LEDs, degrade over time so this can be used to correlate actual emitted power to a time scale.

Output options are R, L, and C.

> R will roll a human-readable log with new lines.
>
> L will do a “live view” so the same line is re-used.
>
> C will output a comma-separated list of values for easier data manipulation later.

Any unrecognized keystrokes will simply print the splash screen. No changes will be made to the operation.

Board and Mounting Dimensions