Pixel Controller Micro - Command Mode

Command Mode

Command mode allows the configurations to be adjusted via a USB to serial adapter over the TTL serial header GND-TX-RX. See user inputs in how to enter the device into Command Mode.

For configuring not through the software, the protocol is simple. The baud rate is 19,200 at 8-N-1. Once entered into command mode, send the data as numbers, the LED will toggle states with each byte. Do as follows:
Send as numbers: 123 -> 253 -> 82 -> 7

That unlocks locks the function and frames the data.
Then Send the configuration bytes, as numbers: Chipset ID# -> User Pixel Amount -> ConfigFlags
Once it has received those 7 bytes, it will start to blink steadily, power off the controller, set your DIP switches, and power the controller back up. Note: See configurations page for byte info.
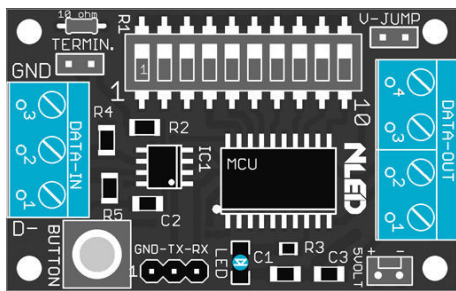

Fig. 4c

Controller RX supports both 3.3 volt and 5 volt logic levels, TX outputs at 5 volt logic level. Level translation is not required.

RX-TX-GND Header
Connection
Device:
1 RX ⟵ TX
2 TX ⟶ RX
3 GND ⟷ GND
Fig. 5b
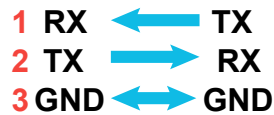
Chipset ID#:
0 - WS2811/WS2812/SK6812
2 - WS2801
4 - LPD8806
6 - LPD6803
8 - APA102

User Pixel Amount: 1 - 255

(Shown is RealTerm, but any serial terminal software will work)
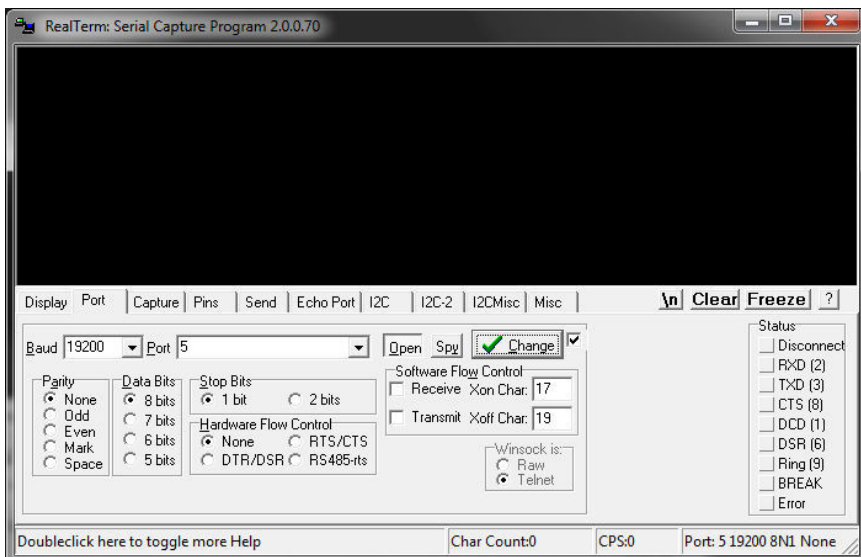
Configuration Byte Bit Order(ConfigFlags):
LSB - Bit0 - Indicator LED Enable
        Bit1 - DMX Decoder, Force Full Packets
        Bit2 - Enable Serial Color Swap
        Bit3 - GRB Color Order
        Bit4 - GRBW Color Order
        Bit5 - BGR Color Order
        Bit6 - BRG Color Order
MSB - Bit7 - Force Decoder Mode

Note: Do not set more than one color order at a time.

Default ConfigFlags is 0x01, 00000001

Device Configurations Settings

Some of the configuration settings on this controller can only be accessed through software, and/or through Command Mode(detailed on page 5)

Please visit the controller's webpage to find the link to the current version of the configuration software or use the Command Mode information here to send the configuration settings from a serial terminal.

Select Correct RGB Order for Pixels: The different pixel chipsets require data to be received in various orders. Not all pixels will expect data in RGB order. It may expect GRB, BRG, or any combination, it varies chipset to chipset. This configuration setting allows the user to select the correct color order for their pixels. Note on this controller not all color order options are available.

Select The Pixel Chipset Being Used: The most important configuration setting, this option must be the same as the pixels you expect to utilize. See pg. 2 for compatibility list.

Indicator LED Mode: Enables or disables the notification LED usage. If disabled the LED will not turn on.

DMX Decoder Mode, Force Full Packets: This setting allows up to a full universe of data to be converted from DMX-512 to TTL serial. When disabled, the controller will collect and send only the an amount of bytes equal to the User Pixel Amount configuration.

Force Decoder Mode: Forces Decoder Mode when DIP10 is set, ignoring serial mode. When enabled it allows the starting address for Decoder Mode to use DIP9 for addressing. Otherwise if DIP10 and DIP9 are set it would enter Serial mode when powered up. With this configuration enabled, it can not enter serial mode.

Enable Serial Color Swap: When disabled, and in serial mode all data is received and transmitted in RGB order, it is fastest to have it disabled but any color ordering has to be done on transmitter side. When enabled it will try and use the color order as selected in the configurations. Not all chipsets have the function available.

User Pixel Amount: Configures how many pixels the DMX routine should collect data for, default is 170 RGB pixels, which equates to 510 DMX channels. If a RGBW chipset is selected, it would instead collect data for 128 pixels which would be 512 channels. Most users can leave this at 170. But for better performance with fast packet rates or partial packets, this value could be lowered to match the amount of pixels that will be controlled.