

# SOLA SE II Light Engine- I/F Command String Definitions

REV 6/17/14

This document describes the command syntax via a Virtual COM USB connection to the SOLA SE II Light Engine.

## 1.1 USB.

The USB interface utilizes a FTDI USB/UART and connects to the host via a Virtual COM port. The Virtual COM port drivers for the FTDI-232RL USB/UART are available at <http://www.ftdichip.com/Drivers/VCP.htm>. Default Virtual COM port parameters are 9600,8,N,1.

## 1.2 Command Strings and Bit Definitions.

The following section defines the command strings and bit assignments. Bytes #s and bit #s are LSB=0. Bytes are expressed as hexadecimal. Bits not specifically defined here should remain as shown in the examples.

Initialization Command Strings:

*These two commands MUST be issued after every power cycle to properly configure controls for further commands.*

57 02 FF 50- Setup GPIO0-3

57 03 FD 50- Setup GPIO5-7

Channel Enable/Disable Command Strings:

*Byte 1, Bit 1, controls light. 0 enables, 1 disables.*

Examples:

4F 7D 50- Enables

4F 7F 50- Disables

IIC DAC Intensity Control Command Strings:

*Byte 2, Bits 3..0, Contain the high nibble of 8-bit DAC data.*

*Byte 1, Bits 7..4, Contain the low nibble of 8-bit DAC data.*

*Note- this 8-bit data is inverted. 0xFF is full off, 0x00 is full on.*

Examples:

53 18 03 04 FF F0 50- Sets DAC to 0xFF (Min off)

53 18 03 04 F0 00 50- Sets DAC to 0x00 (Max on)

53 18 03 04 FA A0 50- Sets DAC to 0xAA

Get Firmware Model / Rev Control Command String:

53 47 02 50- Reads the Model / Rev register.

Examples:

[TX] 53 47 02 50- Read HW Config reg.

[RX] 70 FF- Two bytes are returned. For F/W revision, only the first byte returned is pertinent.

## IIC Temp Sensor Command String:

53 91 02 50- Reads the IIC Temp Sensor

Returns two bytes. The most significant 11 bits of the two bytes are used with a resolution of 0.125 deg C.

### Examples:

[TX] 53 91 02 50- Command String to the IIC Temp Sensor.

[RX] 26 A0- Two bytes returned from Temp Sensor.

26 A0 (hex) = 0010 0110 1010 0000 (binary).

1<sup>st</sup> 11 MSb = 001 0011 0101 (binary)

001 0011 0101 (b) = 135 (h) = 309 (decimal)

309 \* 0.125 = 38.625 deg C.

## Set/Get default BNC Shutter polarity:

The factory default for the shutter open is high true. This is pulled high (open) internally. This polarity can be inverted with the following commands. This setting is stored internally in non-volatile memory as the power on default.

### Set:

53 46 02 02 00 50- Sets shutter (open) to low true.

53 46 02 02 FF 50- Sets shutter (open) to hi true.

### Get:

53 47 02 50- Two bytes are returned. The 2nd byte returned shows the present setting.

## Set default DAC power on levels:

The power on default intensity level can be set via the following command. This setting is stored internally in non-volatile memory as the power on default. Byte 1 contains the 8-bit DAC setting. Note this 8-bit data is inverted. 0xFF is full off, 0X00 is full on.

### Examples:

53 46 02 01 00 50- Set default intensity as 0x00 (Max on)

53 46 02 01 FF 50- Set default intensity as 0xFF (Max off)

53 46 02 01 80 50- Set default intensity as 0x80 (50%)