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SLC-MA/CA04-MU

Manual Mode Quick Guide

Version: 1.0.1

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Relevant Products

Part Numbers
SLC-MA04-MU, SLC-CA04-MU

Revision History

Revision	Date	Author	Description
1.0.0	Jan. 18, 2012	JT Zheng	Initial Revision
1.0.1	Oct. 12, 2018	JT Zheng	New Mightex Logo

Manual Mode of SLC-MA04/CA04-MU module

The SLC-MA04/CA04-MU module is a 4 channel LED driver which user can control channel's output current with PC software ("LEDDriver.exe" or user's own software based SDK) via USB port as the same as other MA02/12/16 modules. For details of PC control, please refer to the "**Mightex Sirius Multi-Channel LED Controller User Manual**".

Additionally, SLC-MA04/CA04-MU has "Manual Control Mode" which allows user to control the output current manually with the nodes on device. For users intend to use the LED controller mainly in Manual mode, please read this guide (especially the "**5. Steps to use MA04/CA04 device in Manual Mode**" below) carefully.

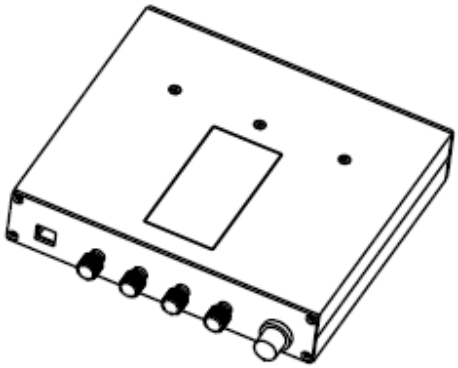
1. PC Mode and Manual Mode

PC Mode: When the LED Driver is in this mode, the Driver gets commands from host via the USB port, and control the channel's current accordingly. Other MA/CA LED Drivers except the SLC-MA04/CA04-MU can only work in this mode. The devices can also work without a Host connected, in such case, the last stored (via USB command) parameters are automatically set for the output currents of each channel when the device is powered up.
Manual Mode: When the LED Driver is in this mode, user can control the output current of each channel via the manual node on the device. Only SLC-MA04/CA04-MU device has such manual nodes and supports this mode.

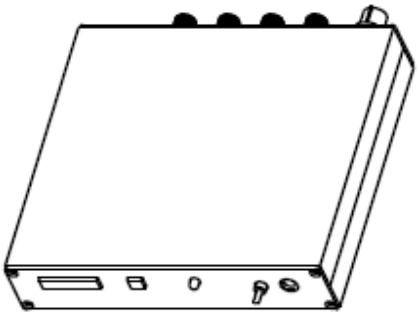
In most cases, the SLC-MA04/CA04-MU module is in **Manual Mode** when it's powered on (refer to following Power up mode), thus user can manually control the current output, the device will stay in **Manual Mode** when there's no Host connected.
It will enter **PC Mode** when it gets a "ECHOON" or "ECHOFF" (please refer to SDK manual for the command sets) command from Host via USB port, for example, the "LEDDrvier.exe" application sends an "ECHOOFF" command when the software starts, thus when user runs the "LEDDriver.exe" application, the connected device will enter **PC Mode** automatically, for user's own software (based on SDK), user should do similar (by sending an "ECHOOFF" command to the MA04 module).
When the module enters **PC Mode**, it will output the last stored mode/parameters of each channel as its initial outputs (note that those stored parameters were set by user with PC Software when user uses the module with PC last time), and user can use PC Software to change those parameters, when module is in **PC Mode**, all nodes are "dummy".
So briefly, the module behaves as:
*. When it's in **Manual Mode**, all channels are fully controlled by the 5 nodes.
*. When it's in **PC Mode**, all channels are fully controlled by PC software, the initial values of channel outputs when entering PC Mode is the last software stored parameters.

2. Manual Nodes and LCD Display

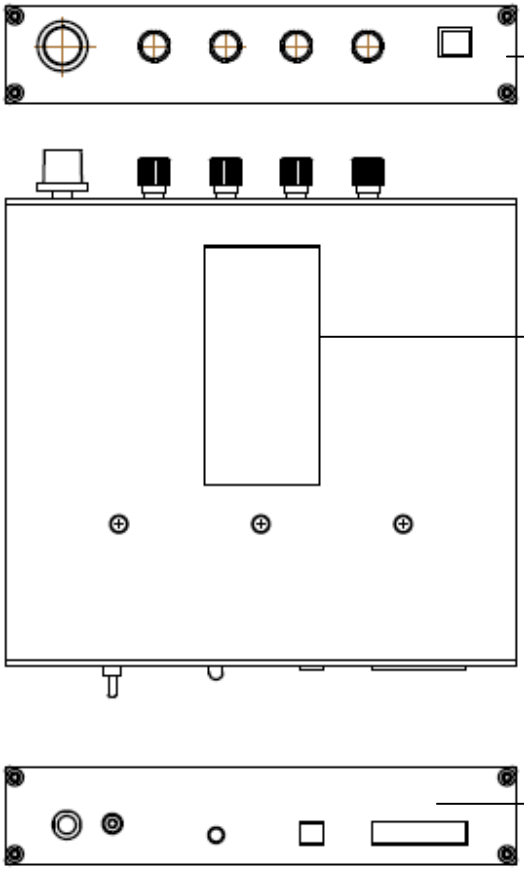
The SLC-MA04/CA04-MU has additional hardware to support operations of Manual Mode, it has 5 turning nodes and one 4x16 LCD display.



Top View of MA04/CA04 Module



Bottom View of MA04/CA04 Module



It has 5 nodes, the left most one is a global node for controlling all 4 channels, and the following nodes (from left to right) are for channel 1 to 4. And there's an USB port on the right side.

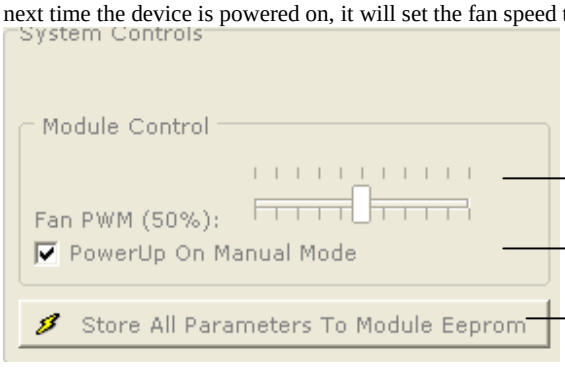
There's a 4x16 LCD display which will show the currents of each channel when the module is in Manual Mode as:

Chl1: xxxx (mA)
Chl2: xxxx (mA)
Chl3: xxxx (mA)
Chl4: xxxx (mA)

It has 4 LED+/LED- for each channel, and there's an additional Motor+/- for DC Motor fan driving.
The DC plug-in is 12 – 24 Vdc.

3. Fan Control

In addition to four LED channels, SLC-MA04/CA04-MU provides one motor driving interface (Motor+ and Motor-) for 12V DC motor, the main purpose of this interface is for driving the 12V DC fan on some of Mightex high power light source devices.
The fan speed can be controlled via the LEDDriver.exe software, user can set from 0 (Full Off) to 10 (Full On), e.g. 5 means 50% of the full speed.
User can set the speed level (it's also called PWM level via the interface below), and user can store the set PWM level to the NV memory of the device by clicking the button, thus the set PWM level will be remembered by the device and next time the device is powered on, it will set the fan speed to this level.



The Fan PWM Level control, set from 0% to 100%

Power Up Mode Control, it's always recommended to Keep its "Checked" which means **Manual Mode** when powered up.

User can click this button to store all the settings (including the currents for all channels, PWMLevel, power up mode…etc. into Device's NV memory, thus the device will remember those settings after power cycle.

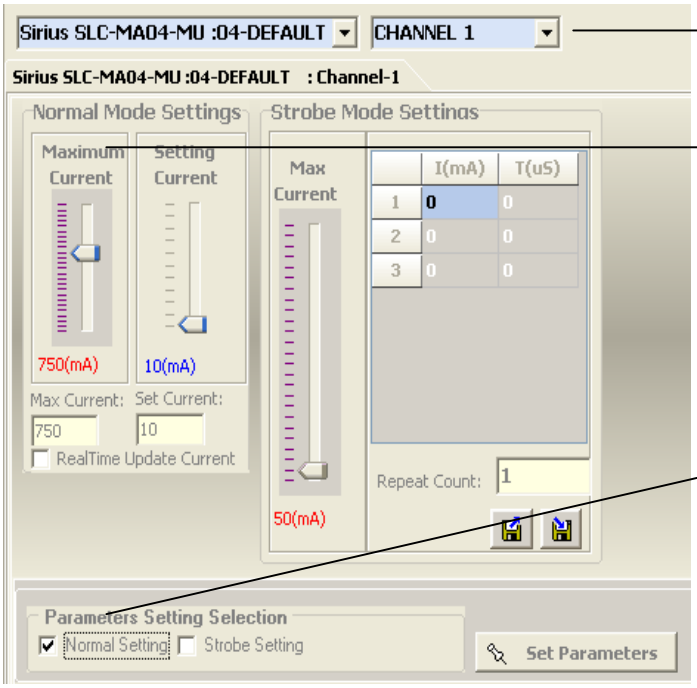
4. Power Up Mode

Although it's always recommended to set the MA/CA04 module in Manual Mode when it's powered up, it's possible to set it to PC Mode when it's powered up, for doing that user might uncheck the "PowerUp On Manual Mode" check box above and store the setting to device.
Note: If user does this, the device will be in PC mode after power up, there's no way to control the current manually via the nodes.

5. Steps to use MA04/CA04 device in Manual Mode

When user gets the SLC-MA04/CA04-MU device, the factory settings for each channel's Imax (including Imax for NORMAL mode and STROBE mode) are set to 20mA for the safety. User might do the following:

1). By Running "LEDDriver.exe", user should set proper Imax of NORMAL mode of each channel, sending the parameters to the device. User should set the Imax according to the light source connecting to each channel, e.g. user might set Imax = 350mA for channel 1, Imax = 500mA for channel 2, Imax = 750mA for channel 3 and Imax = 1200mA for channel 4 **according to the light sources connected to these channels.**



User can select channel here, for MA04 module, there're 4 channels.

User can set the proper Imax (for Normal Mode) of a certain channel according to the light source connected, and it's recommended to set the Iset to a small number (e.g. 10mA).

User should check the "Normal Setting", and click the [Set Parameters] button, that will send the Imax and Iset (for Normal Mode only) to device.

Note user need to set proper Imax for all channels he intends to use.
Click [Set Parameters] button sends the parameters to device, but those parameters are NOT stored in NV memory of device yet, for storing them, user needs to click the [Store…] button which is described below.

2). User should set proper PWM Level if fan driving is needed for a certain light source.
3). User should store the parameters (in the above (1) and (2) steps) by clicking the button of

(refer to the above "**3. Fan Control**" part about feature of this button)

4). Then user can turn off the device, disconnect it from the PC, next time when the device is power on, it's working in Manual Mode with the Imax set by user above, and the channel's output current is in the range of 0 – Imax (e.g. for channel 1, the current is from 0mA – 350mA), the actual output current is as following:

Iout = Imax * Position of Global Node * Position of Channel Node.

Note that Position of a node can be reckoned as 0% – 100% from Left to Right positions, when it's in the middle position, it's 50%.