Computer-Controllable Two-/Four-Channel Universal LED Drivers

(Part Numbers: SLC-AA02-US, SLC-AV02-US, SLC-SA02-US, SLC-SV02-US, SLC-AA04-US, SLC-AV04-US, SLC-SA04-US, SLC-SV04-US)

FEATURES

- Computer controllable
- Universal - suitable for any LED
- Capable of driving variable loads
- User friendly application software with GUI
- SDK and Rich RS232 command set included for custom applications
- Normal, Strobe and Trigger mode for every channel
- Programmable constant current, pulse-width modulation and/or arbitrary waveform
- Driving current up to 1A in DC mode and up to 3.5A in pulse mode, with over current protection
- Up to 23.5V output voltage for each channel
- Built-in non-volatile memory, can be used without a PC

APPLICATIONS

- Machine vision
- Displays
- Microscopy
- Semiconductor equipment
- Testing instruments
- Medical instruments
- Lighting

PRODUCT DESCRIPTION

Goptica has developed a series of computer-controllable, multi-channel, universal LED drivers, which can be used to drive any type of LED in any of the three (3) modes: 'NORMAL' (or'constant current'), 'STROBE', and/or external 'TRIGGER' mode.Each unit comes with PC-based software with a userfriendly GUI,which enables users to drive LEDs without the need to write any code. In addition, a powerful SDK and a rich RS232 command set are provided, in order for users to write their own software and to integrate Goptica's LED drivers into their own systems. Furthermore, the drivers have a built-in security feature, allowing users to limit LED driving current and voltage.

This datasheet covers four (4) product series (i.e. AA, AV, SA, and SV), which currently include eight (8) models in total. The following table, which can also be used as a product selection guide, compares the key features of the 16 product models.

P/N	# of Channels	Control Mode(1)			Arbitrary Waveform(2)	Interface(3)	Forward Voltage Monitoring
		NORMAL	STROBE	TRIGGER			
SLC-SA02-US	2	•	•	•		USB & RS232	
SLC-SV02-US	2	•	•	•		USB & RS232	•
SLC-AA02-US	2	•	•	•	•	USB & RS232	
SLC-AV02-US	2	•	•	•	•	USB & RS232	•
SLC-SA04-US	4	•	•	•		USB & RS232	
SLC-SV04-US	4	•	•	•		USB & RS232	•
SLC-AA04-US	4	•	•	•	•	USB & RS232	
SLC-AV04-US	4	•	•	•	•	USB & RS232	•

Notes: (1) Each output channel can be individually configured to work in one of the following three (3) modes, controlled through a PC-based software with GUI. In all three modes, overdrive current limit can be set:

Normal: Constant current output at any value from 0mA to 1,000mA with 12-bit resolution.

Trigger: External trigger signal could be used to turn on each individual channel, generating driving current with any user-defined waveform. Alternatively, each output channel can work under the "FOLLOWER" mode, in which the current output follows the waveform of the trigger input; and

Strobe: Internal Strobe Generator generates frequencies as high as 25KHz. The strobe signal (i.e. current levels, duty cycle and strobe frequency) can be set through software. For AA and AV series, the strobe signal can be a user-defined arbitrary waveform with 128 data points.

(2) Arbitrary Waveform. Using the included application software or SDK or RS232 command set, user may define any arbitrary waveform using 128 data points.

(3) There is a flip switch on the back of the unit, which allows users to select either the USB2.0 or the RS232 interface.

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ELECTRICAL SPECIFICATION

Parameters	SLC-AAxx-xx	SLC-AVxx-xx	SLC-SAxx-xx	SLC-SVxx-xx	Unit
Power Supply Input Voltage V_{dc}	9 ~ 24				V
Power Supply Input Current	< 4,000				mA
Per Channel Driving Voltage (max) [1]	< 23.5V				V
Per Channel Driving Current	0 ~ 1,000 (“NORMAL” Mode)				mA
	0 ~ 3,500 (“STROBE” or “TRIGGER” Mode)				mA
Output Current Resolution	12				bit
Output Current Linearity	+/-4 (or +/-0.5%)				mA
Output Current Repeatability	+/-1 (or +/-0.2%)				mA
Trigger Input High Level	4.5 ~ 10.0				V
Trigger Input Low Level	0.8 (Max)				V
Forward Voltage Monitoring Accuracy	N.A.	+/-10	N.A.	+/-10	mV

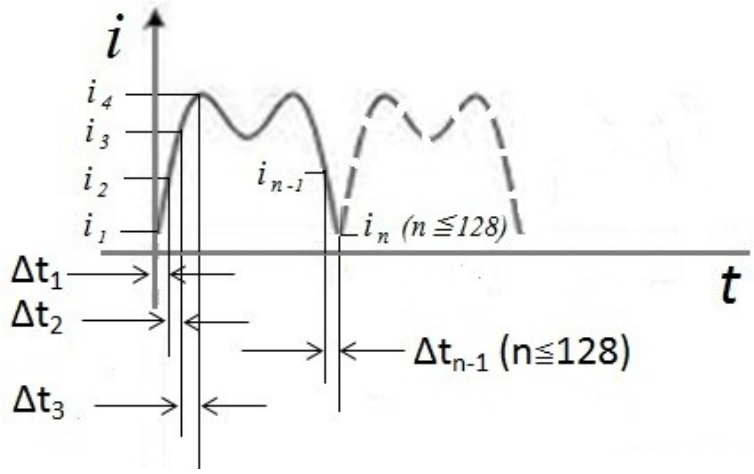
Notes: 1. Maximum Output Voltage is 0.5V less than the Power Supply Input Voltage. For instance, with a Power Supply Input Voltage of V_{dc} = 24V, the Maximum Output Voltage Vmax would be V_{dc} - 0.5V = 23.5V.

TIMING SPECIFICATION

Parameters	SLC-AAxx-xx	SLC-AVxx-xx	SLC-SAxx-xx	SLC-SVxx-xx	Unit
Timing Resolution	20				µs
# of Data Points for Waveform Definition	128		2		
Trigger Pulse Width	100 (Minimum)				µs
Max Trigger Delay	25				µs

What's "Arbitrary Waveform"?

For some LED controller models, one can use up to 128 pairs of [current (mA), duration (µs)] data points to define the 'shape' of the waveform. This will allow one to define an 'Arbitrary Waveform' for the LED driving current and consequently the LED's optical output. Details see diagram below.



	I(mA)	T(µS)
1	i_1	Δt_1
2	i_2	Δt_2
3	i_3	Δt_3
4	i_4	Δt_4
	...	...
n-1	i_{n-1}	Δt_{n-1}
n	i_n	Δt_n
	0	0

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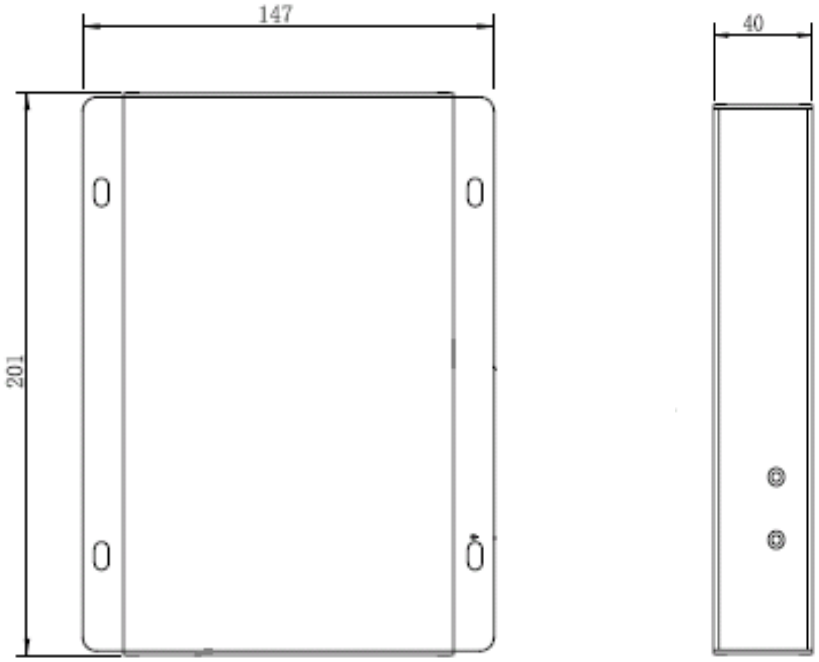
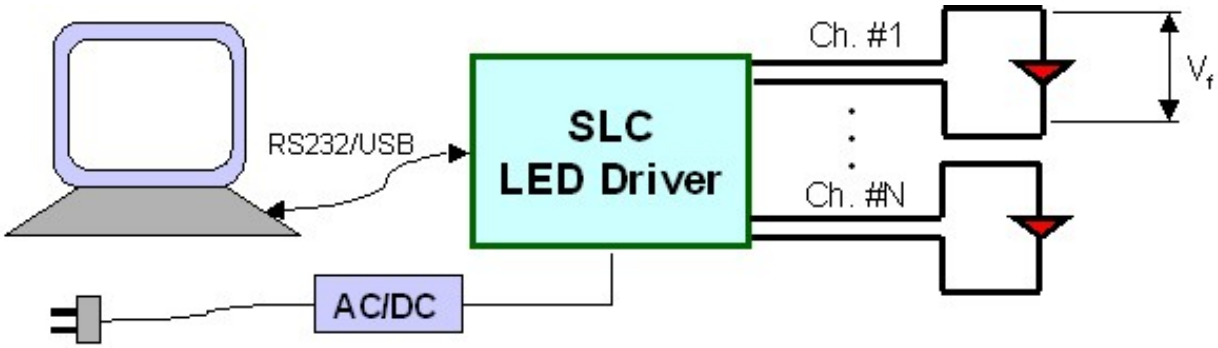
INSTALLATION DRAWING



APPLICATION DIAGRAM



OPERATION CONDITION

Operating Temperature Range:	0℃ ~ 45℃
Storage Temperature Range:	-25℃ ~ 85℃
Relative Humidity, Non-condensing:	5% ~ 95%

DIMENSION AND WEIGHT

Dimension: 201mm(L) x 147mm (W) x 40mm (H)

Weight: 600g

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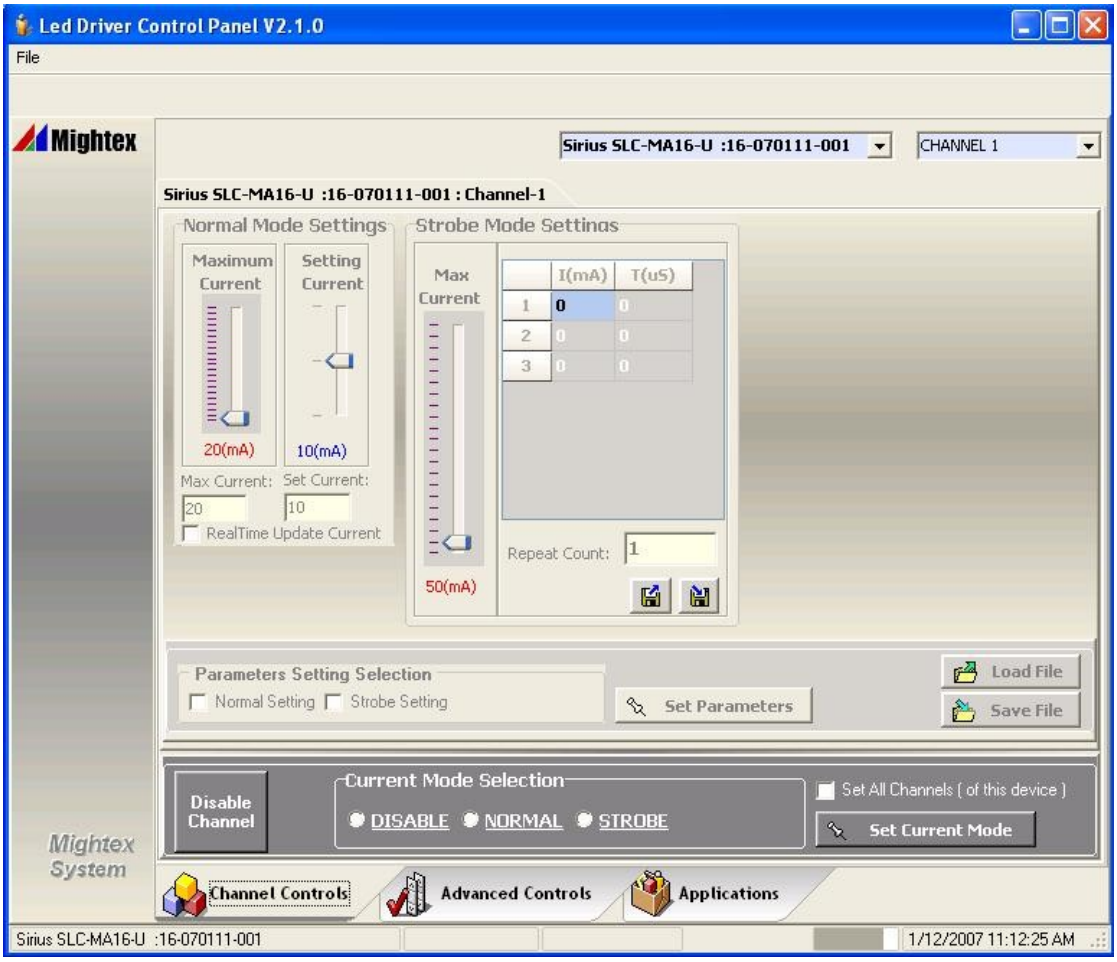
EXAMPLE OF GRAPHICAL USER INTERFACE



With a world-class OEM design team, Mightex offers a broad range of customized solutions in order to meet individual customer's unique requirements. Please call +86 -150-0085-3620or email sales@goptica.com for details.

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