

Inventronics Constant Power Programmer

Manual Instruction

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1 Foreword

1.1 Objective

This document is the manual instruction for the programming software of Inventronics' programmable drivers, helping customer acknowledge the functions and methods of the software.

1.2 Background

Inventronics was concentrated on the constant current / constant voltage products in the past. When customer required different output current / voltage, the only option is do customization, causing the increase of model number and could up to thousands of models. This could cause very complicated process of stock, manufacture and warehouse management for both customer and Inventronics.

Because of the above situations, Inventronics invent the new programmable driver with 0-10V, PWM, and timer dimming functions. It is able to manufacture the programmable drivers ahead of schedule and change according to the requirement of customer easily through software, which could reduce the stress of purchasing, manufacture, sales and warehouse for both customer and Inventronics.

1.3 Definition

0~10V dimming driver: Inventronics Programmable Driver Software

Exx-xxxSxxxDx: Outdoor Constant Power Programmable Driver

LUD-xxxSxxxDx: Indoor Constant Power Programmable Driver

1.4 Abbreviation

| Abbreviation | Full Name |
|--------------|-----------------------------|
| PWM | Pulse Width Modulation |
| OLC | Output Lumen Compensation |
| CC | Constant Current |
| CV | Constant Voltage |
| OTP | Over Temperature Protection |

2. Software Overview

2.1 Objective

Help customer aware of the installation and application method of the programming software.

2.2 Function

Function Description

1. Choose Product and Start-up
2. Online Software Update
3. Language Change between Chinese and English
4. Self-adaptive Programming Offline Mode
5. Read/Save Configuration
6. Set Series/Model Number
7. Constant Power Working Curve
8. Set the Maximum Output Current
9. Set Dimming Method (0~10V, 0~5V, digital, PWM, Timer)
10. Set Timer Dimming Curve
11. Set OLC Curve
12. Set OTP Parameters
13. Matching Verification of Series and Model Number
14. Write/Read Configuration of Driver
15. Write/Read Configuration of Driver (Offline Mode)

3. Operating Environment

3.1 Hardware

1Ghz above Processor (32 bits)
512Mb above RAM
20GB above available hard-disk space
Mouse and Keyboard

3.2 Software

Operation system is WindowsXP or Windows7, with Microsoft.NET Framework 4.0 environment or higher version.

4. Instruction

4.1 Software Installation

4.1.1 Install USB Driver and Serial Port Driver

See in Figure 4.1.1.1

1. Uncompress file USB_MCom.rar
2. Launch USB_MCom.exe
3. Enter installation interface, click Next, then click Finish.

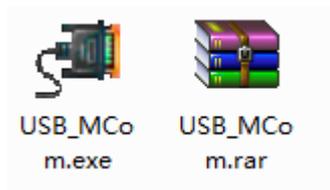


Figure 4.1.1.1 USB Driver Installation Package

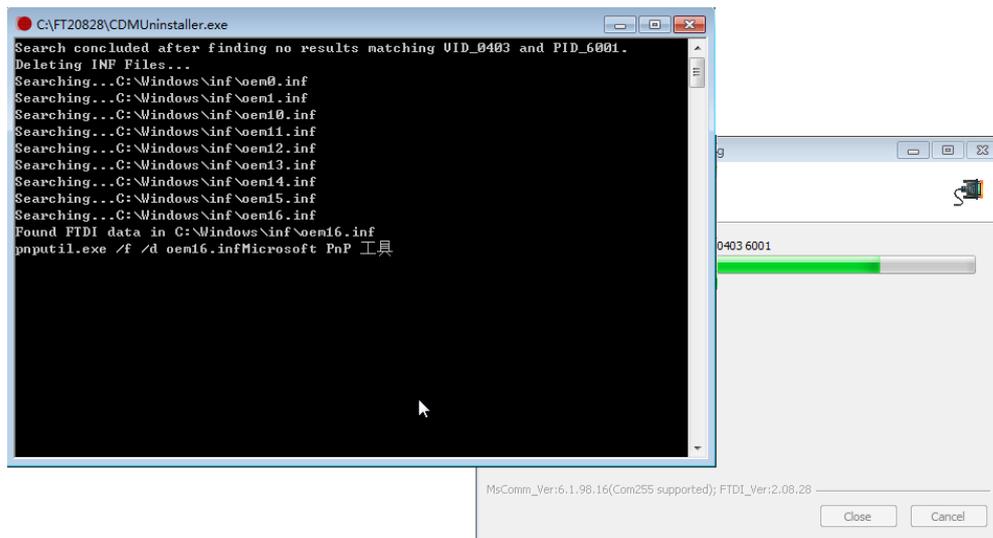


Figure 4.1.1.2

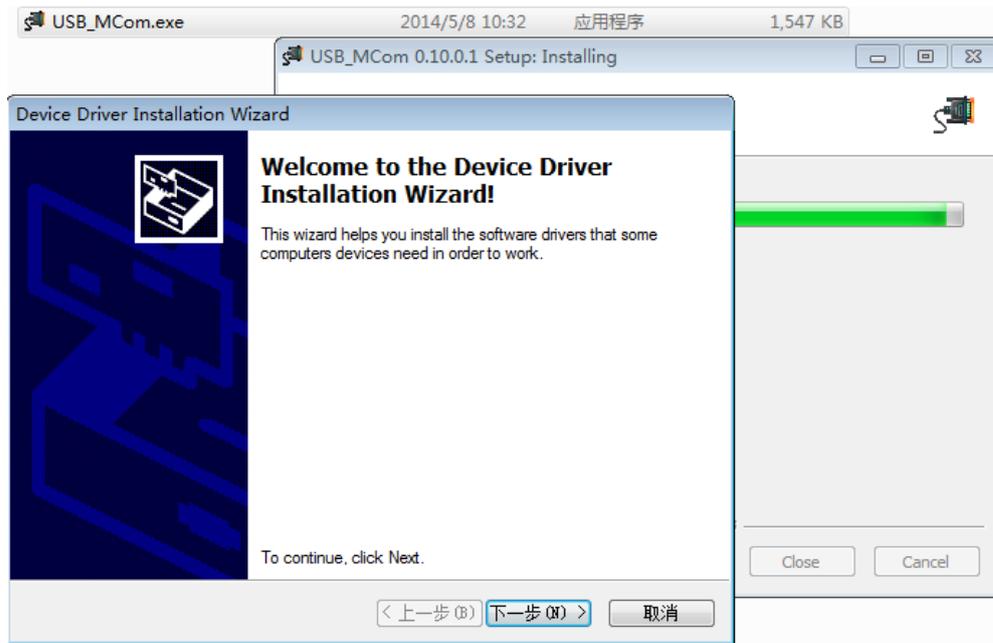


Figure 4.1.1.3



Figure 4.1.1.4

4.1.2 Software Installation

1. Uncompress zip file Inventronics Multi Programmer Setup.zip
2. Double click and launch Inventronics Multi Programmer Setup.msi, seen in Figure 4.1.2.1
3. If no Microsoft.NET Framework 4.0 environment in the PC, then need to install Framework 4.0 first. Download link:

<https://www.microsoft.com/zh-cn/download/details.aspx?id=17718>

4. Click Next, shown in Figure 4.1.2.2. Choose installation path, shown in Figure 4.1.2.3. Click Next again, shown in Figure 4.1.2.4. Continue with Next to Figure 4.1.2.5 showing the installation process of the software. Then, click Close to finish the installation,

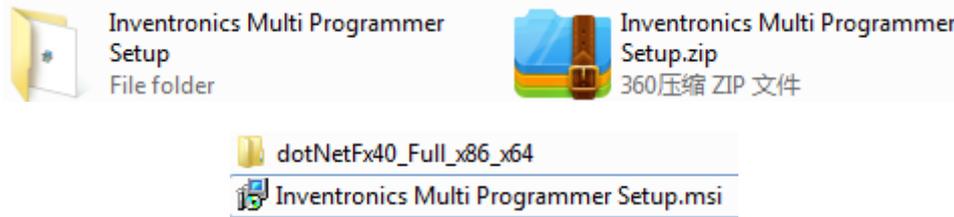


Figure 4.1.2.1 Inventronics Multi Programmer Setup Installation Package



Figure 4.1.2.2 Inventronics Multi Programmer Setup Installation

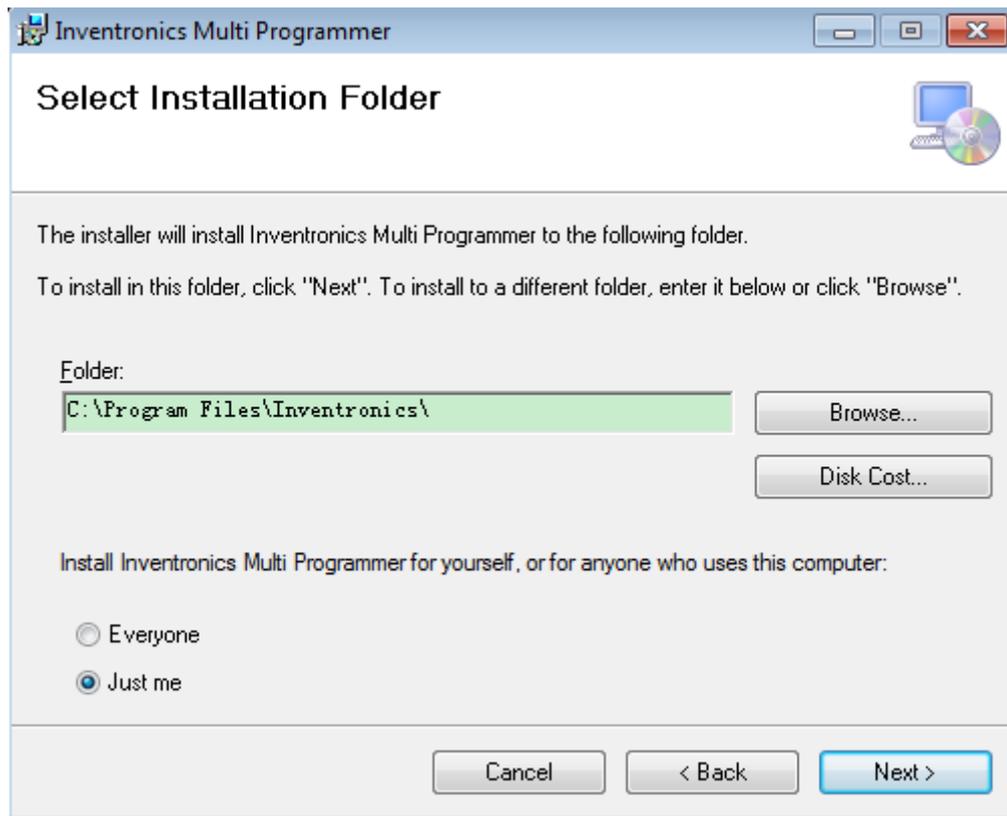


Figure 4.1.2.3 Inventronics Multi Programmer Setup Installation Path

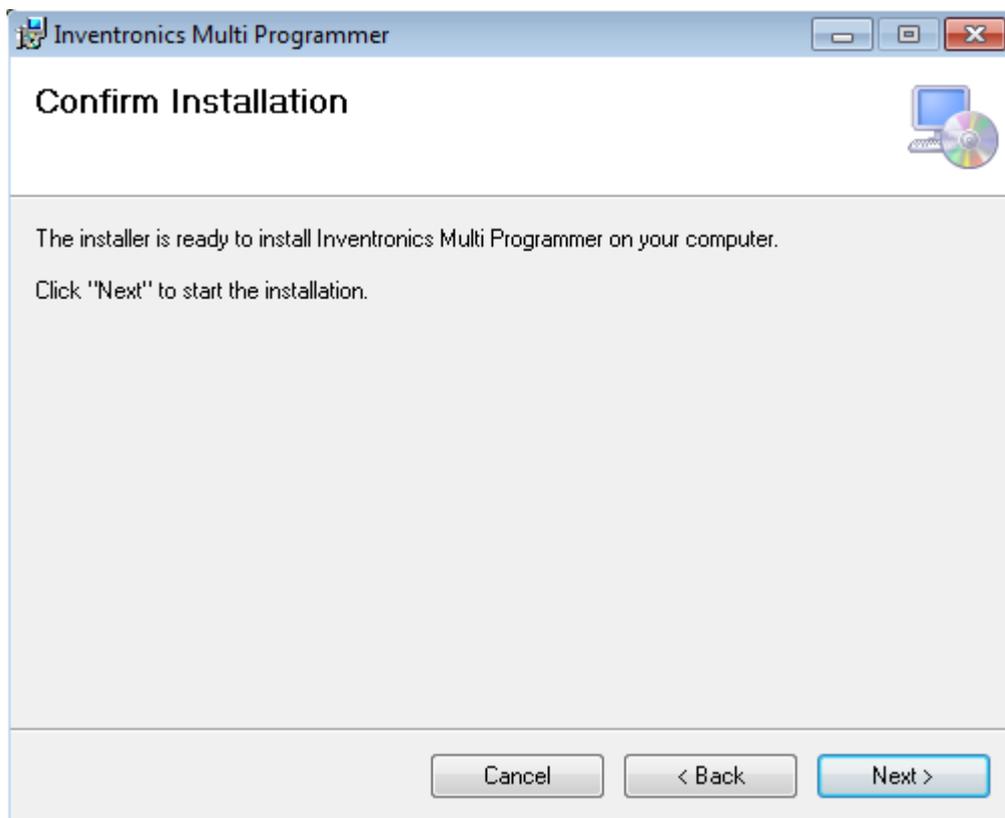


Figure 4.1.2.4 Inventronics Multi Programmer Setup Installation

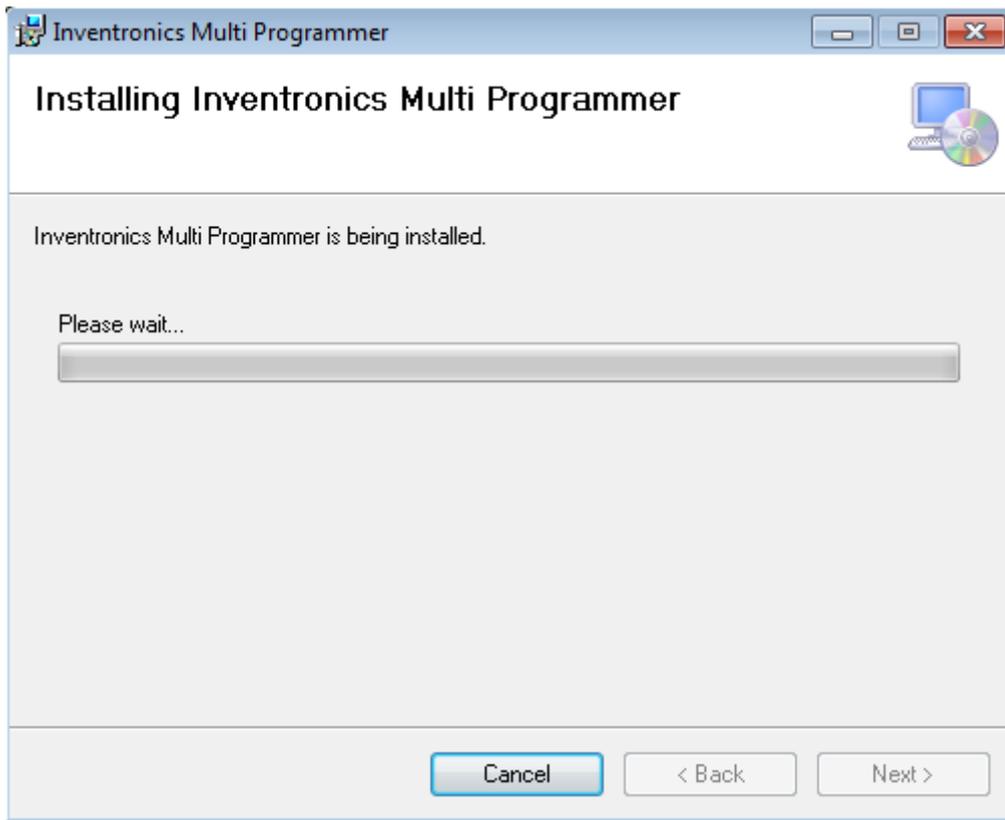


Figure 4.1.2.5 Inventronics Multi Programmer Setup Installation

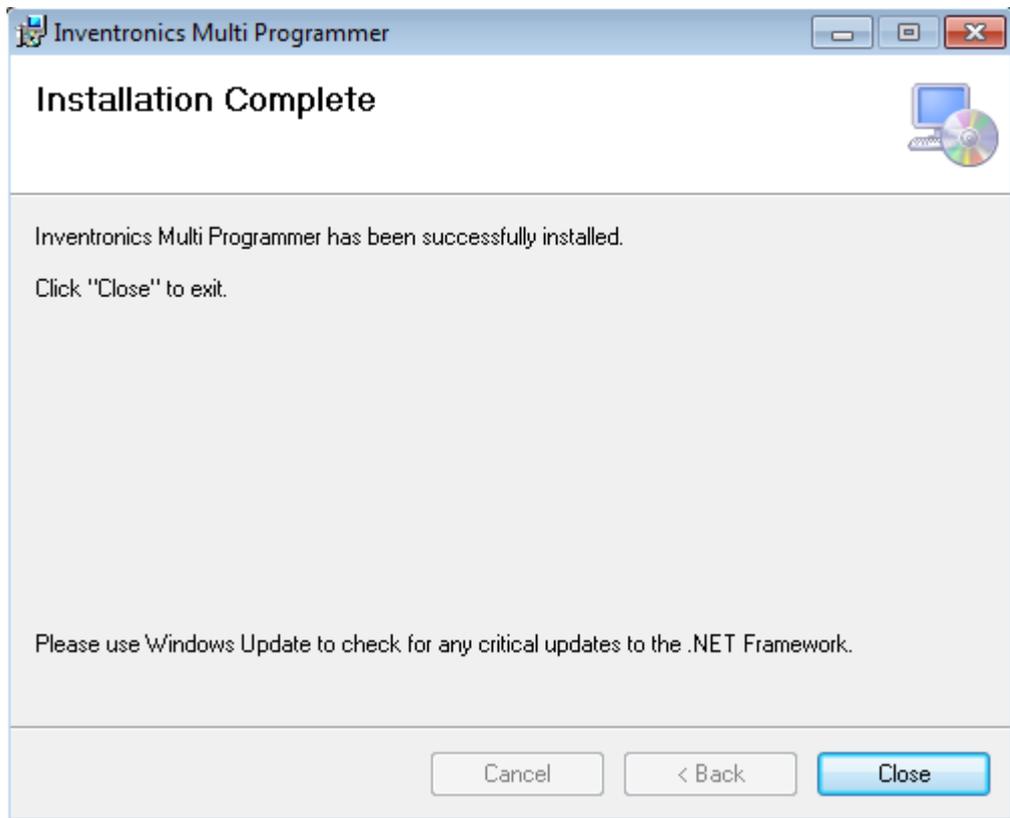


Figure 4.1.2.6 Inventronics Multi Programmer Setup Finish

4.2 Open Software

When installation is finished, a new folder 'Inventronics' is set in the start menu. 'Start' -> 'All Programs' -> Inventronics -> ProductInformation

Meanwhile, a shortcut icon (Inventronics Multi Programmer.exe) is created on the desktop.

Both paths can open the software, shown in Figure 4.2.1.

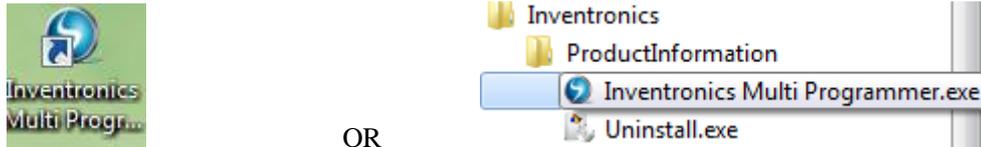


Figure 4.2.1 Software Launch Icon

5. Start-up Interface

5.1 Start-up Interface

Choose the product that is going to be programmed, including 0-10V dimming driver (Constant Power Driver), DALI driver (DALI Constant Power Driver), Current Limiter (0-xV Dimmer) and Combo dimmer (Programmable Timer Dimmer).



Figure 5.1.1 Driver Start-up Interface

6. Constant Power Driver Operation Example

6.1 Software Online Update

When the computer is connected to Internet, there will be an update notification when a new version is released. See Figure 6.1.1.

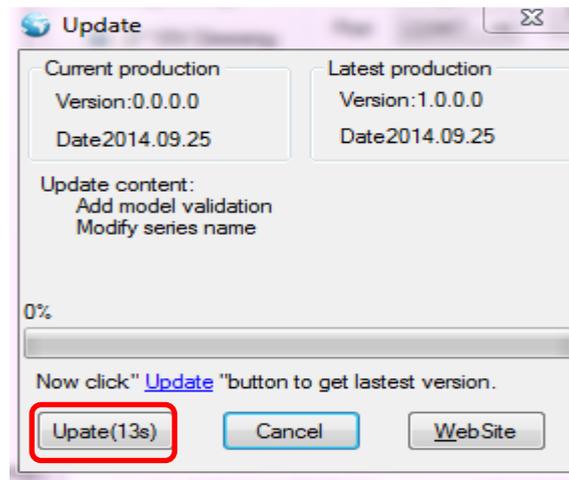


Figure 6.1.1 Update Interface

6.2 Language Change between Chinese and English

Software default language is consisted with the language of PC. If computer language is Chinese, then the software interface is Chinese. If computer language is English, then the software is English.

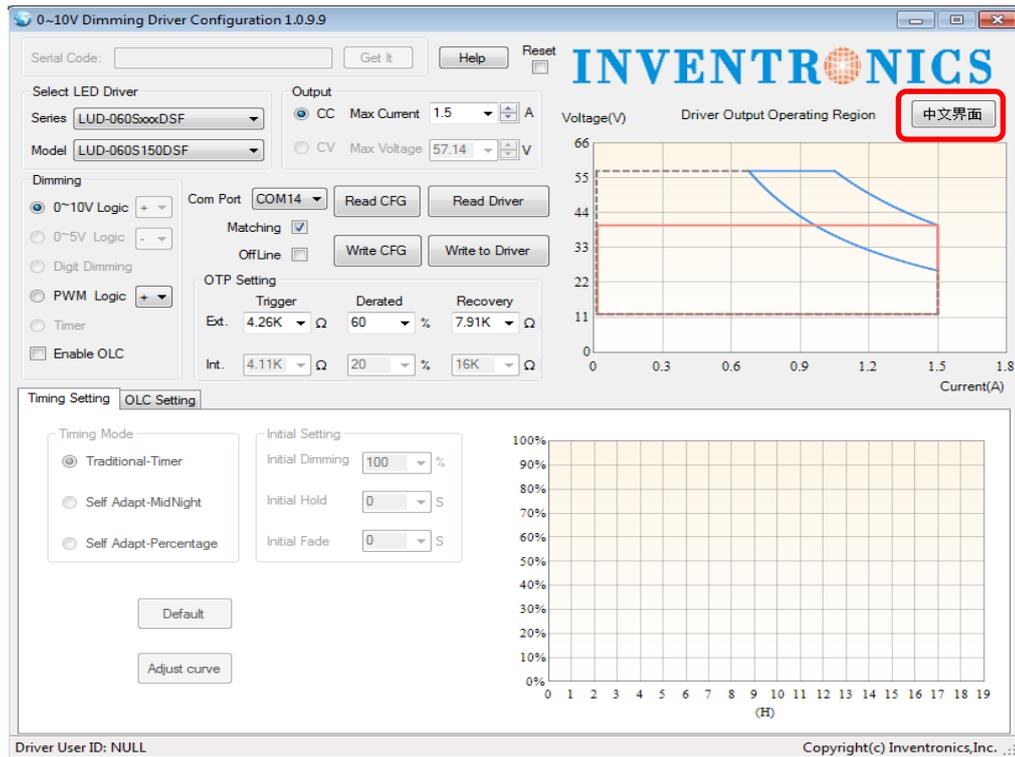


Figure 6.2.1

6.3 COM Port Setting

When the connection between the programmer and PC is ready, the corresponding COM port number COMx shows on the software. If multiple USB serial port is used for programming, please make sure the COM port number is right before read/write the driver.

If the corresponding COM port is not found, make sure the connection is right and click Com Port to refresh the serial and find the corresponding serial port.

Also, software will verify offline function when refresh the com port.

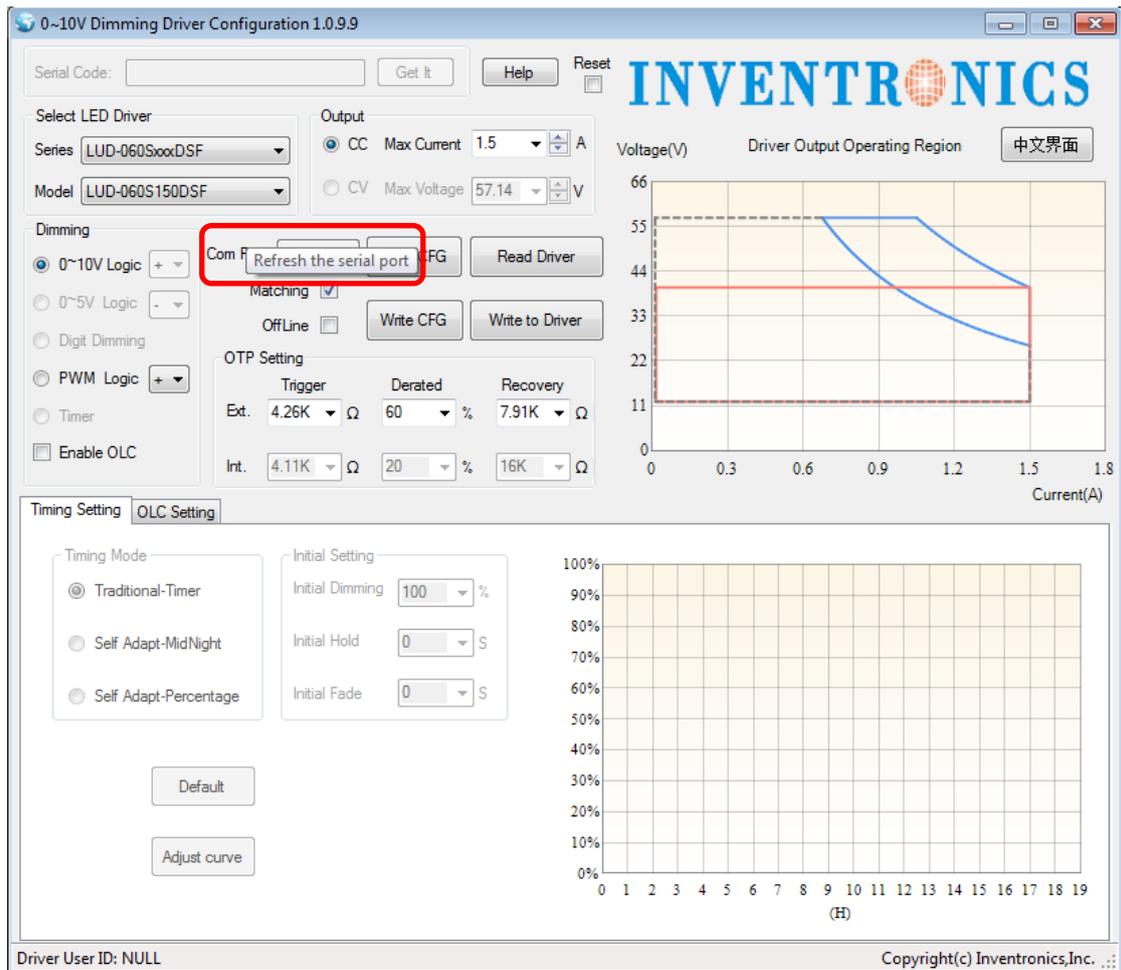


Figure 6.3.1

6.4 Read/Save Configuration (CFG)

Save Configuration: save all the configurations (including serial number, model number, output mode, dimming method, OTP setting, dimming setting and OLC setting) on the software as Default.ini in PC for next time.

Read Configuration: choose Default.ini from PC and all the configurations will show on the software interface.

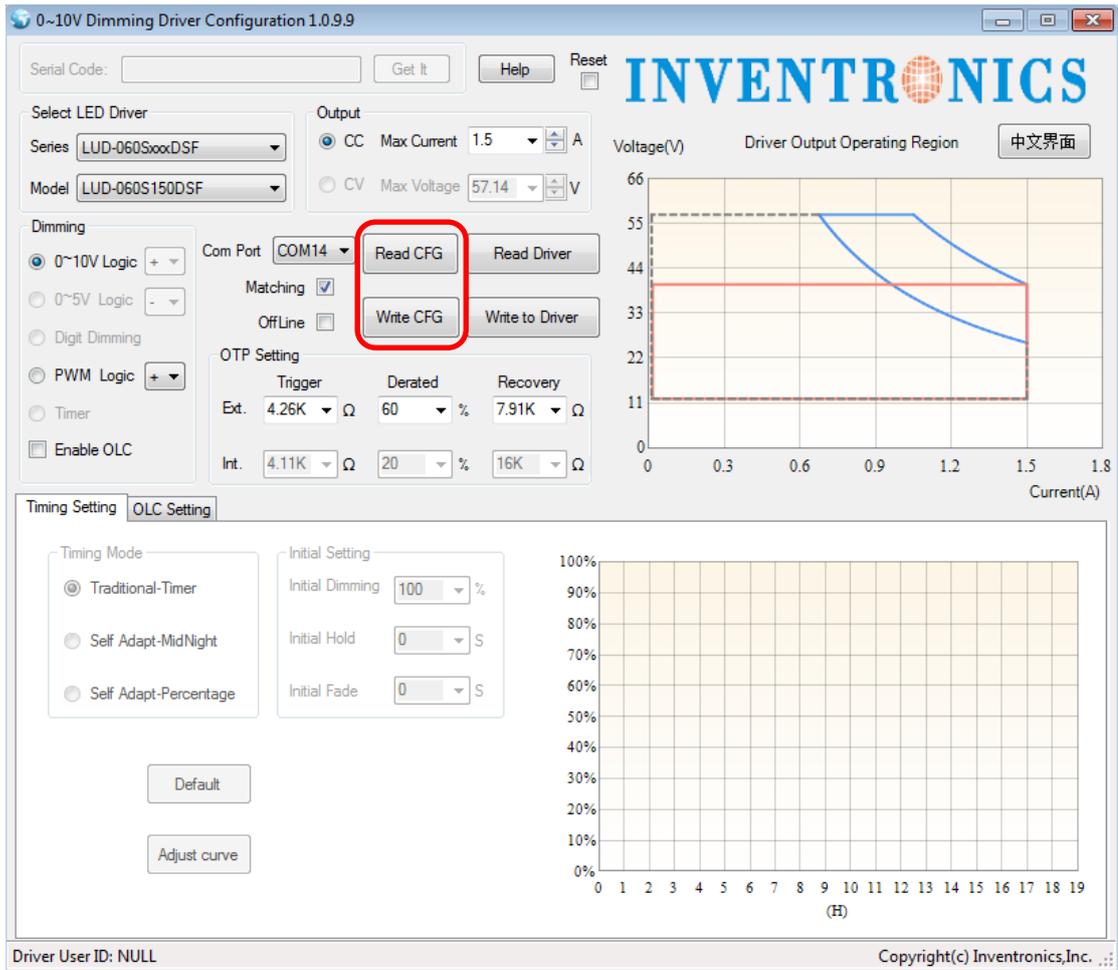


Figure 6.4.1

6.5 Choose Serial and Model Number of Driver

Choose corresponding serial and model number through pull-down menu.

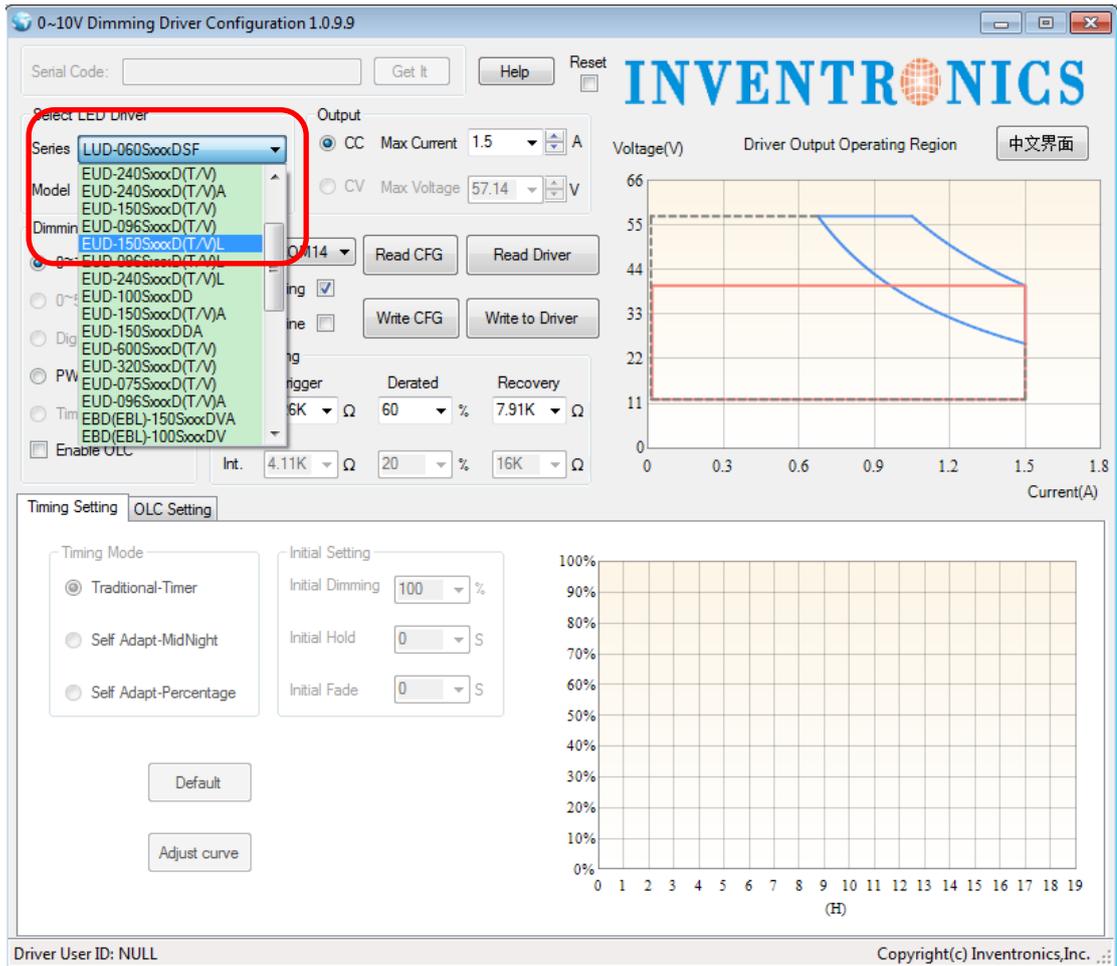


Figure 6.5.1

6.6 Driver Working Area Curve

Choose different serial number, the corresponding curve will show on the interface. The curve also changes along with the output current setting. Put cursor on the curve, the coordinate values display on the curve, like shown in Figure 6.6.1.

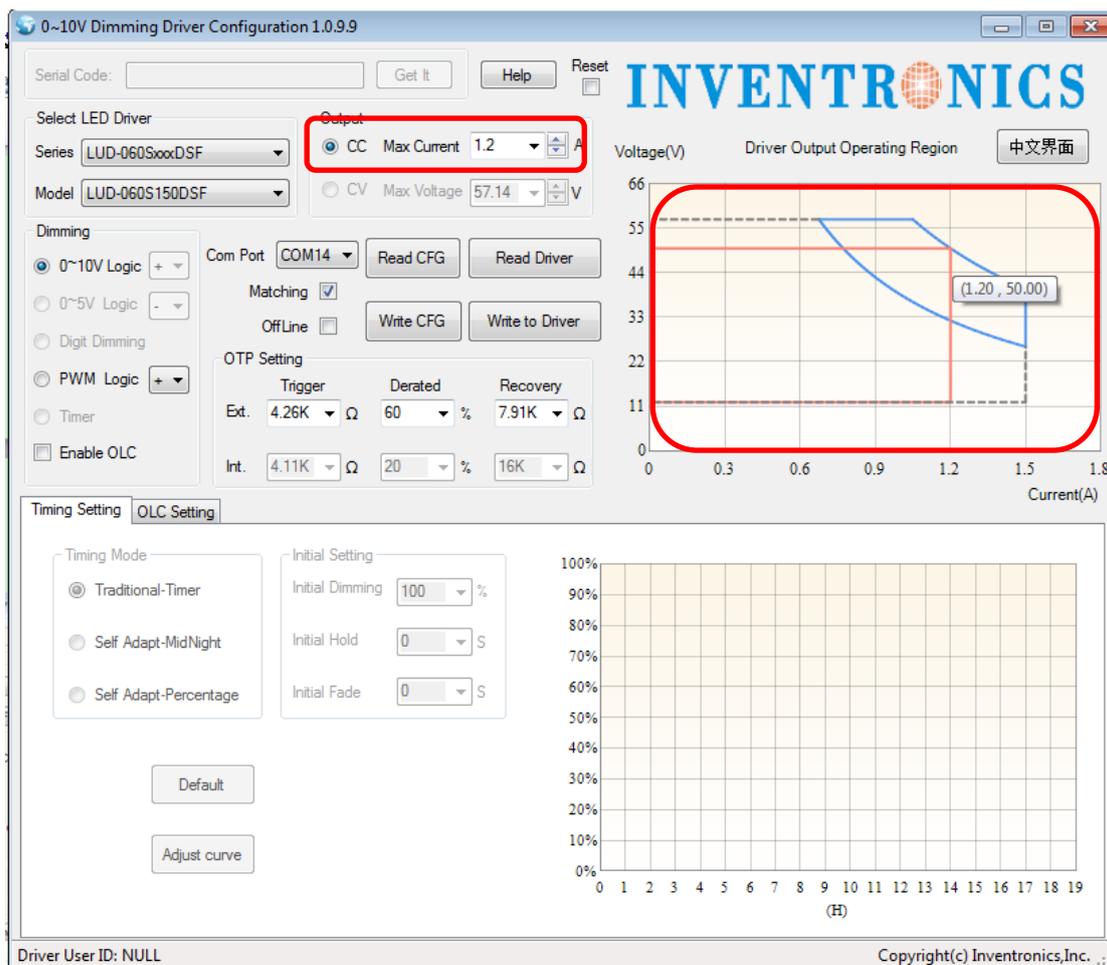


Figure 6.6.1

6.7 Choose CC/CV Mode

CC Mode: Click radio button CC in Output Box, and choose Max. Current in pull-down menu; manually input or use up/down arrow to increase/decrease input current value are also possible. The programmable value step is 1% of maximum output current, while input value is other than that, it would go to the closet value.

CV Mode: Click radio button CV in Output Box, and choose Max. Voltage in pull-down menu; manually input or use up/down arrow to increase/decrease voltage value are also possible. The programmable value step is 1% of maximum output current, while input value is other than that, it would go to the closet value.

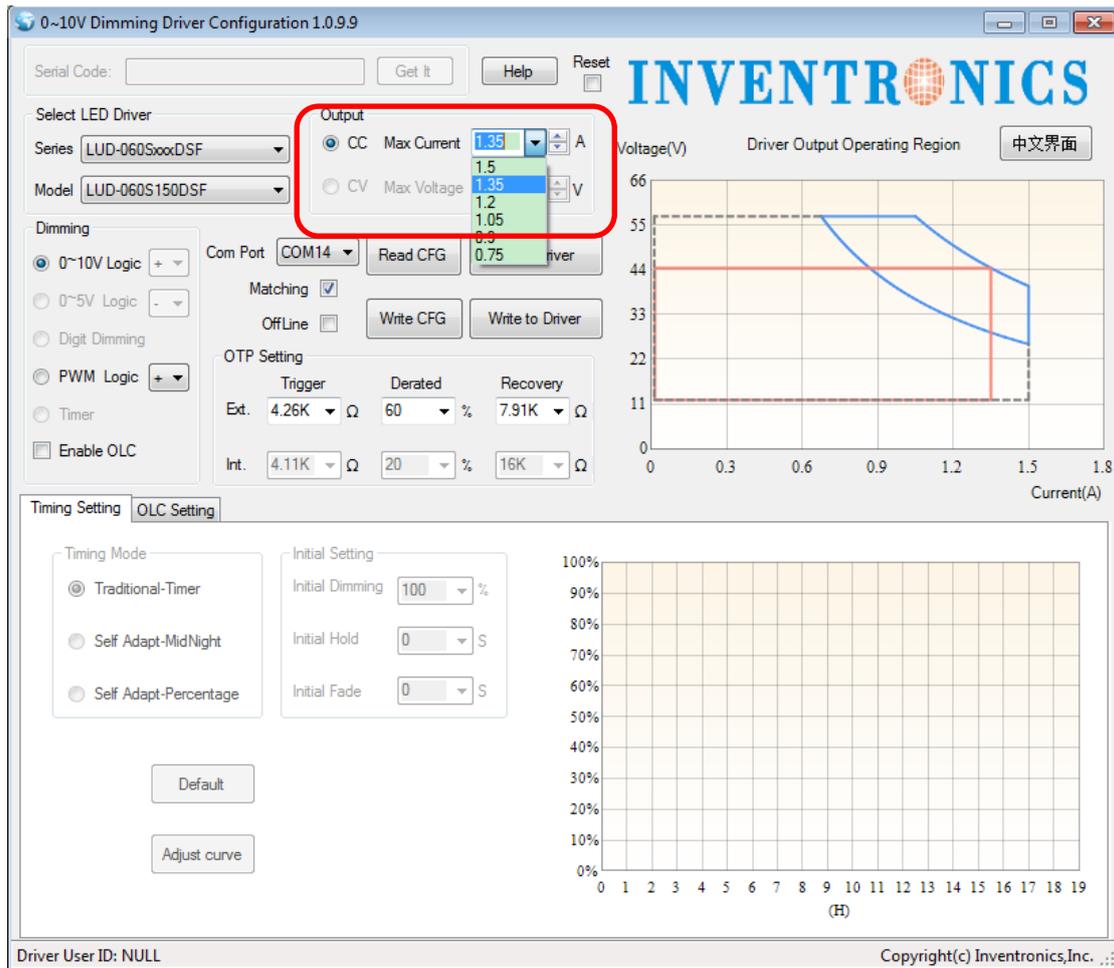


Figure 6.7.1

6.8 Choose Dimming Method

There are 5 optional dimming methods:

1. 0-10V: Dimming with external 0-10V analog voltage signal. +/- Logic optional
2. 0-5V: Dimming with external 0-5V analog voltage signal. +/- Logic optional
3. Digit Dimming: Digital dimming method
4. PWM: Dimming with external PWM signal. +/- Logic optional
5. Timer: three ways of timer dimming – traditional timer, self-adapt-midnight and self-adapt-percentage, both time and dimming level are adjustable.

You can enable OLC together with dimming method above:

Enable OLC: check Enable OLC to enable the function. Reset time and read operation time are also possible. The default current is set to 80% and will gradually increase to 100% along with time.

Default setting is 0-10V dimming.

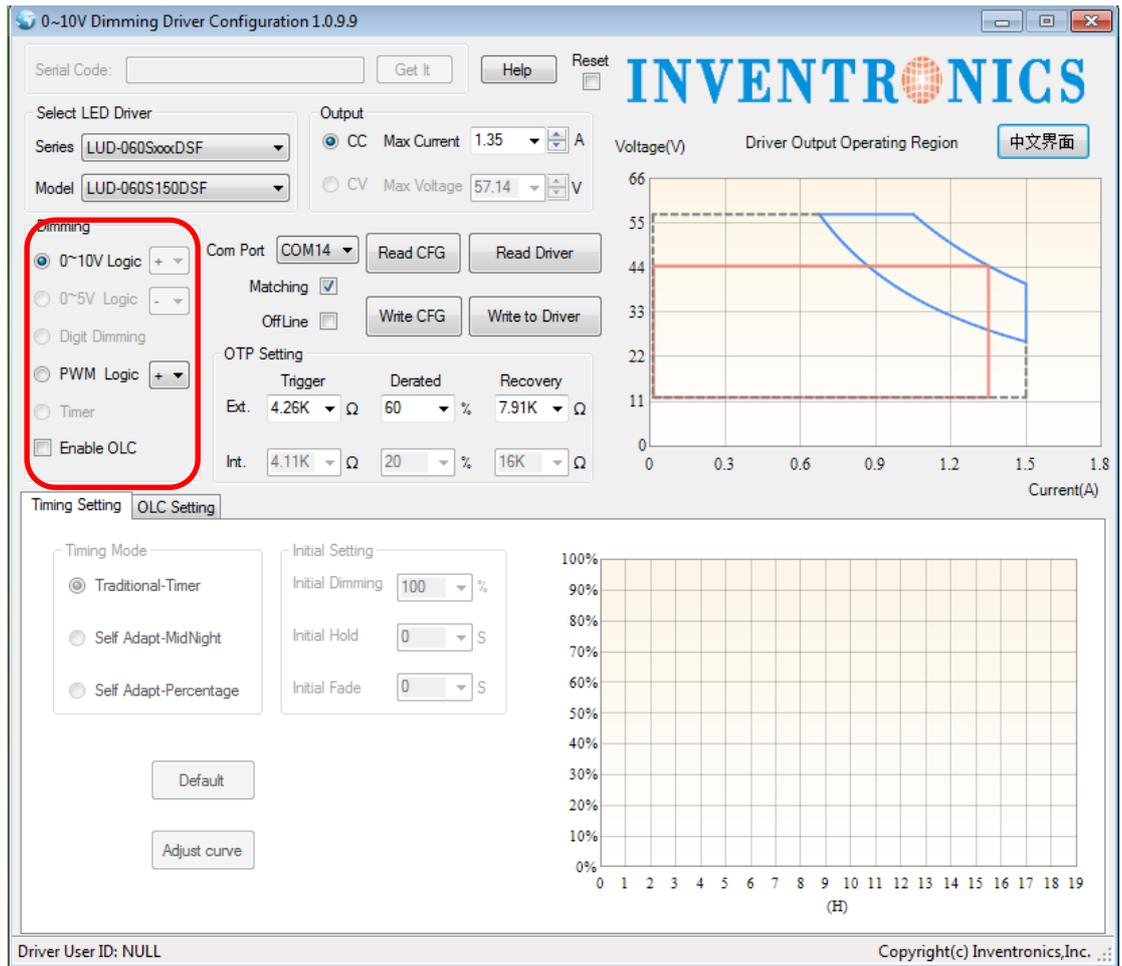


Figure 6.8.1

6.9 Timer Dimming Mode Curve Setting

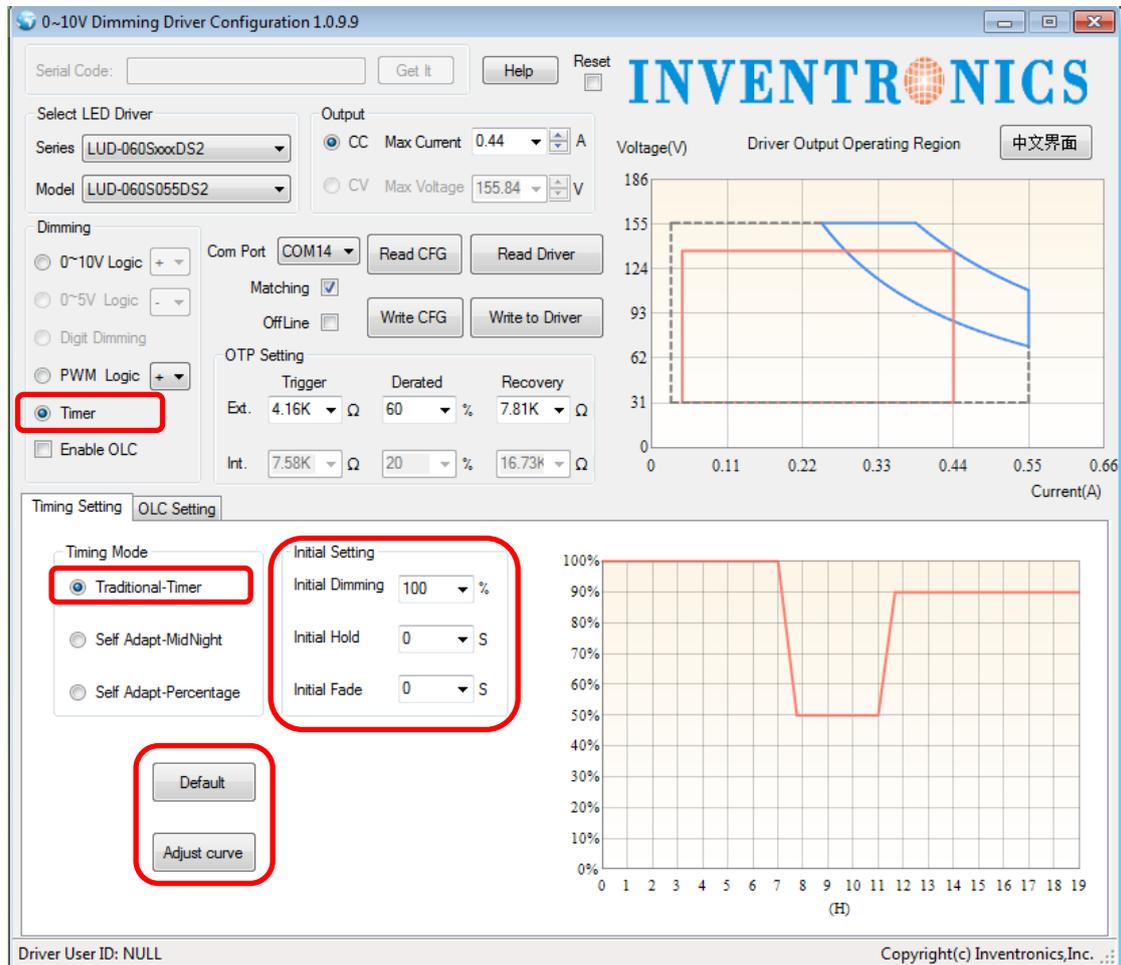


Figure 6.9.1 Traditional Timer Mode

6.9.1 Choose Timer Dimming

Check radio button: Timer

6.9.2 Choose Timer Mode

Choose Traditional-Timer

6.9.3 Default Setting

The initial operating curve is presented. Initial dimming, initial hold time and initial fade time can also be set, and the default values are like shown in 6.9.1. When driver is powered on, the output works according to the operation curve.

6.9.4 Set Curve

After clicking Adjust Curve button, a secondary window appears. For each light level, there are 3 different sliding blocks for adjusting dimming, holding time and fading time separately. When dragging the blocks, the operation curve would also changes directly.

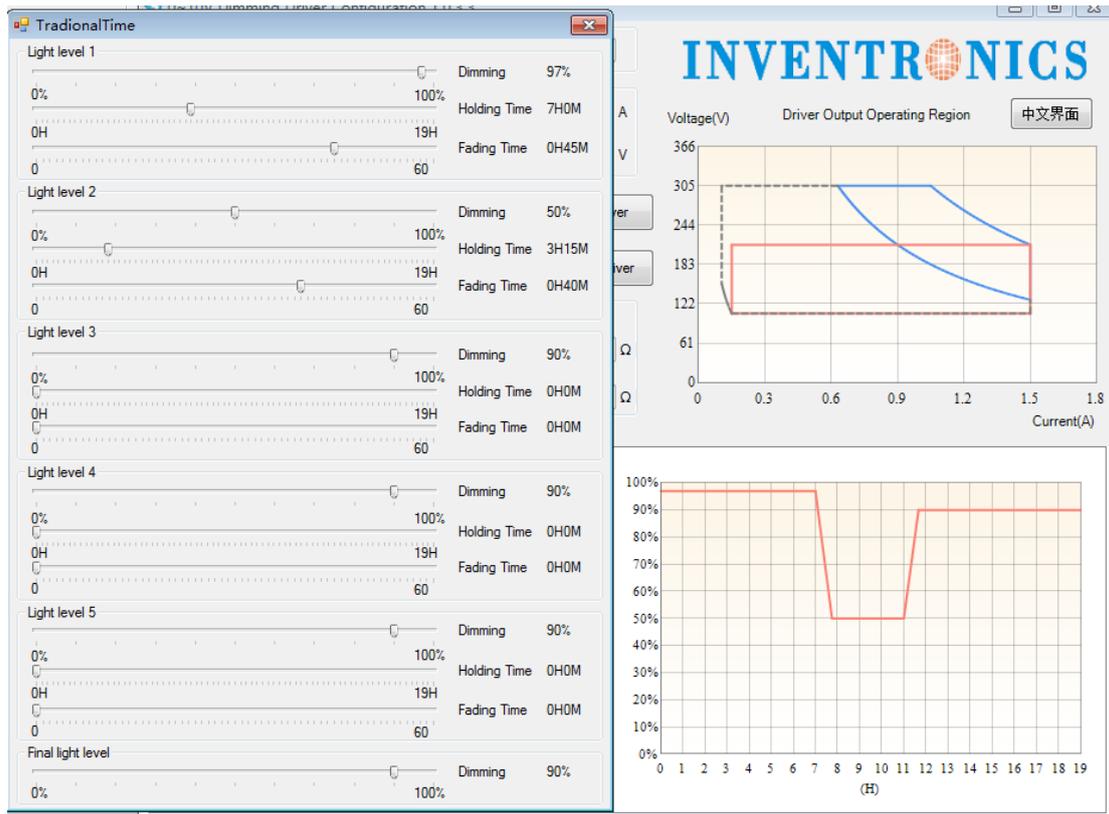


Figure 6.9.2 Set Curve

6.9.5 Default Curve

Click Default button, and the setting is back to the default curve.

6.10 Self-Adapt-Midnight Timer Setting

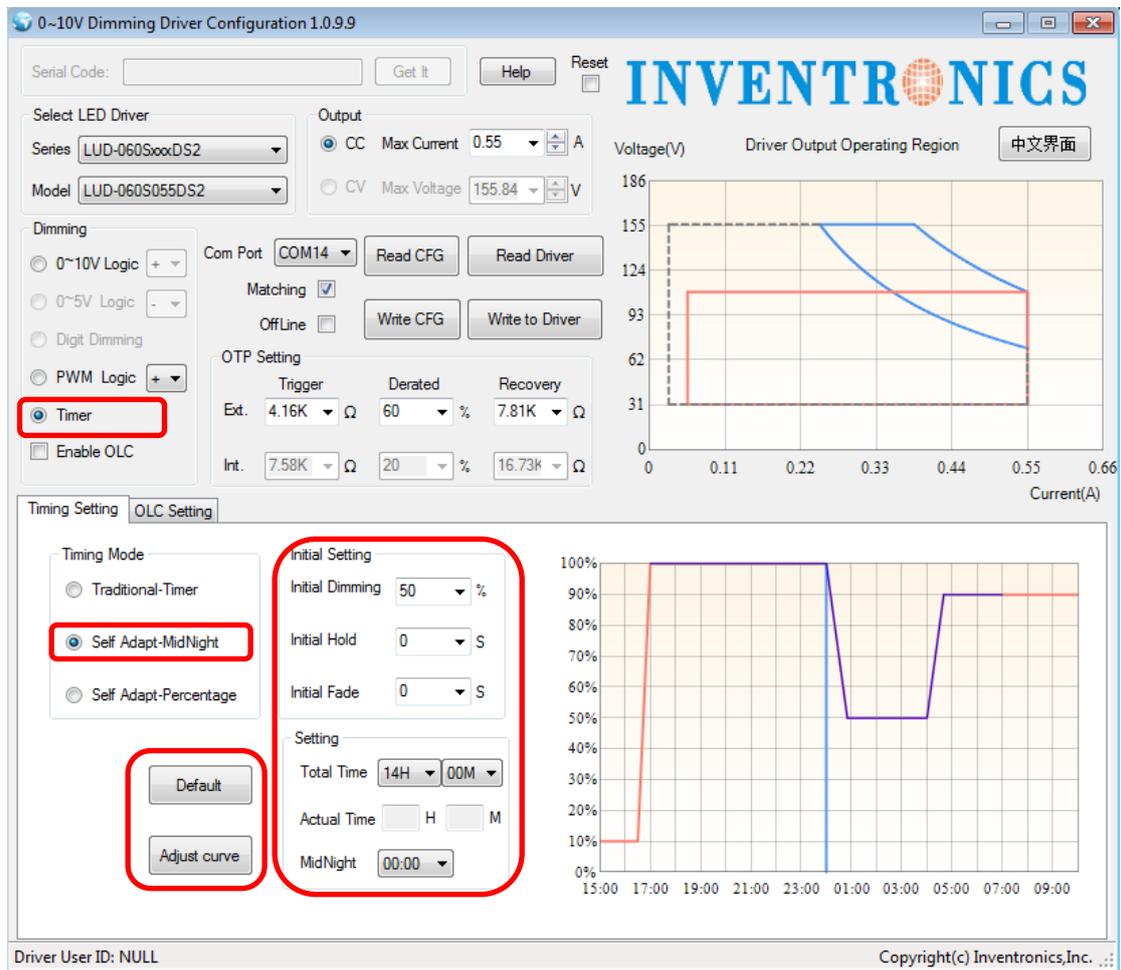


Figure 6.10.1 Self-adapt-midnight Timer Mode

6.10.1 Choose Timer Dimming

Check radio button: Timer

6.10.2 Choose Timer Mode

Choose Self-Adapt-Midnight Timer Mode

6.10.3 Parameter Setting

Initial dimming, holding time, fading time, total time and midnight time are all adjustable. The default values are shown in Figure 6.10.1. Driver could manage to change the starting/ending points of operation curve according to the last two days' turning on/off time.

6.10.4 Set Curve

After clicking Adjust Curve button, a secondary window appears. For each light level, there are 3 different sliding blocks for adjusting dimming, holding time and fading time separately. When dragging the blocks, the operation curve would also changes directly.

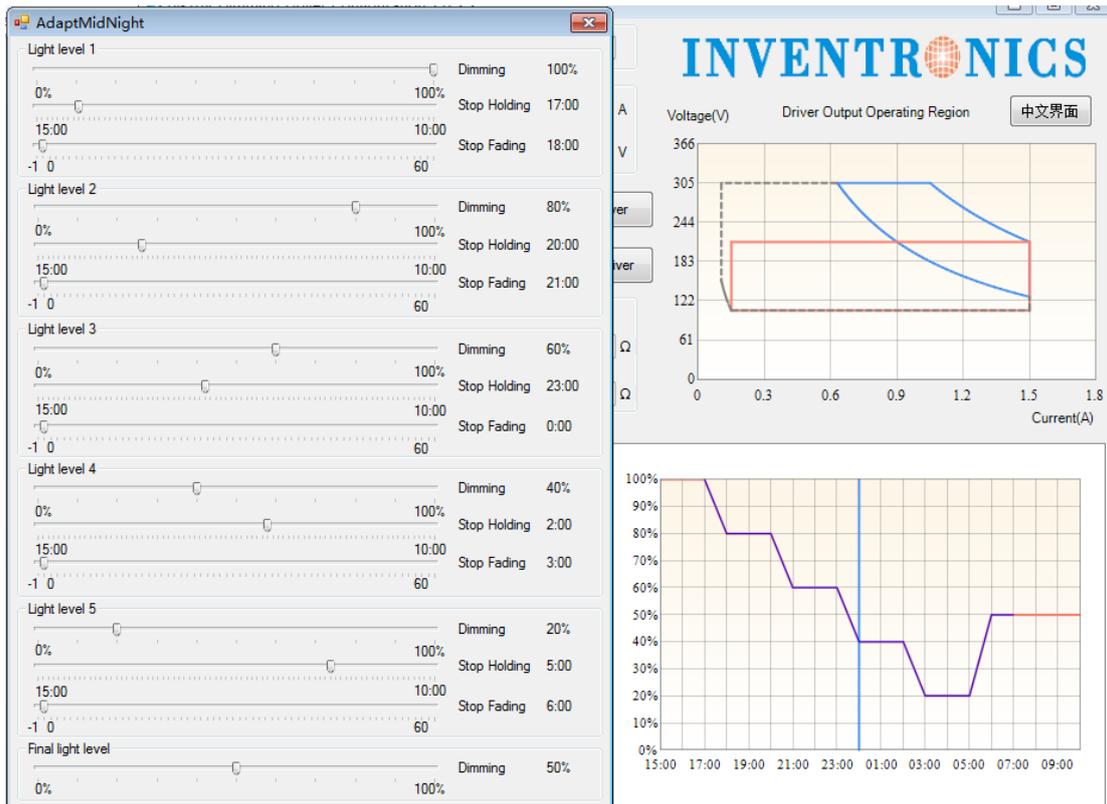


Figure 6.10.2 Set Curve

6.10.5 Default Curve

Click Default button, and the setting is back to the default curve.

6.11 Self-Adapt-Percentage Timer Dimming Mode

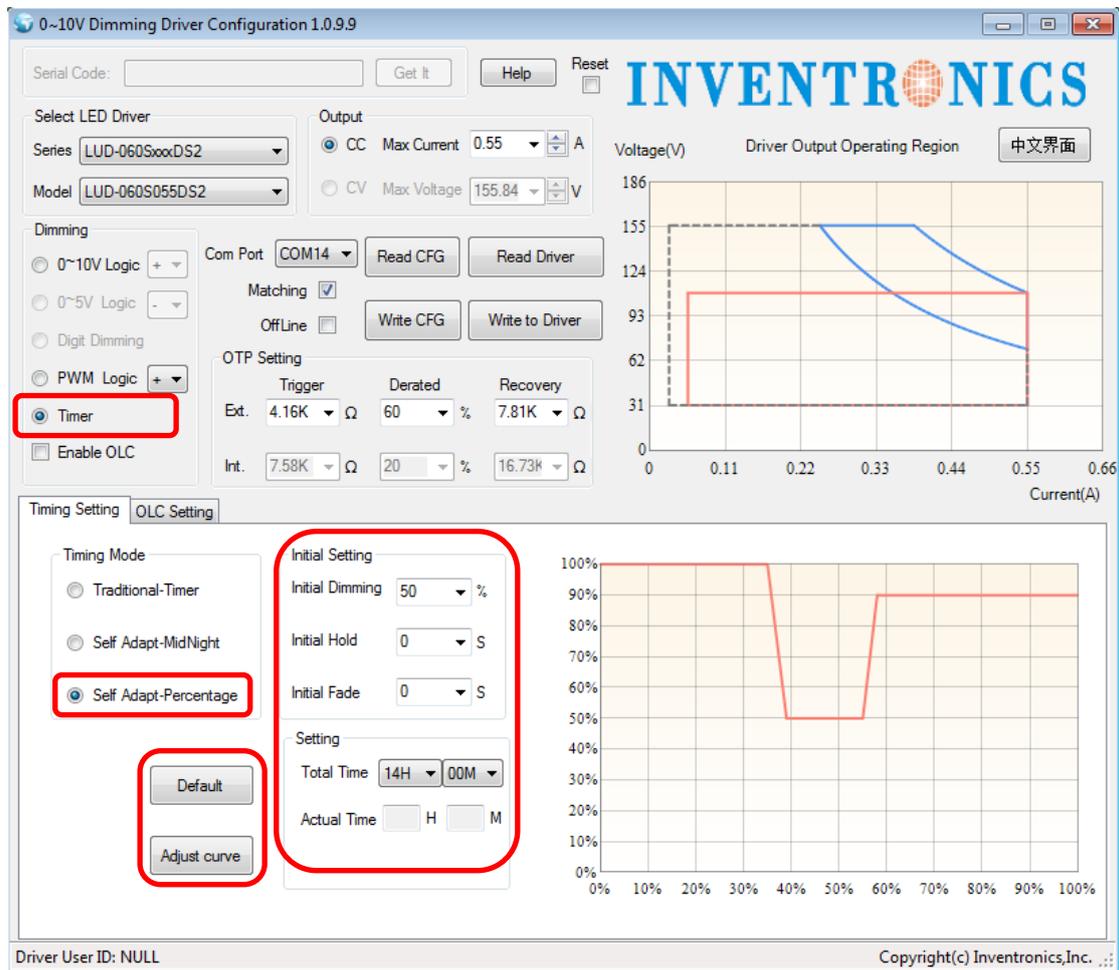


Figure 6.11.1 Self-Adapt-Percentage Mode

6.11.1 Choose Timer Dimming

Check radio button: Timer

6.11.2 Choose Timer Mode

Choose Self-Adapt-Midnight Timer Mode

6.11.3 Parameter Setting

Initial dimming, holding time, fading time and total time are all adjustable. The default values are shown in Figure 6.11.1. Driver could manage to change the dimming percentage of operation curve according to the last two days' working percentage.

6.11.4 Set Curve

After clicking Adjust Curve button, a secondary window appears. For each light level, there are 3 different sliding blocks for adjusting dimming, holding time and fading time separately. When dragging the blocks, the operation curve would also changes directly.

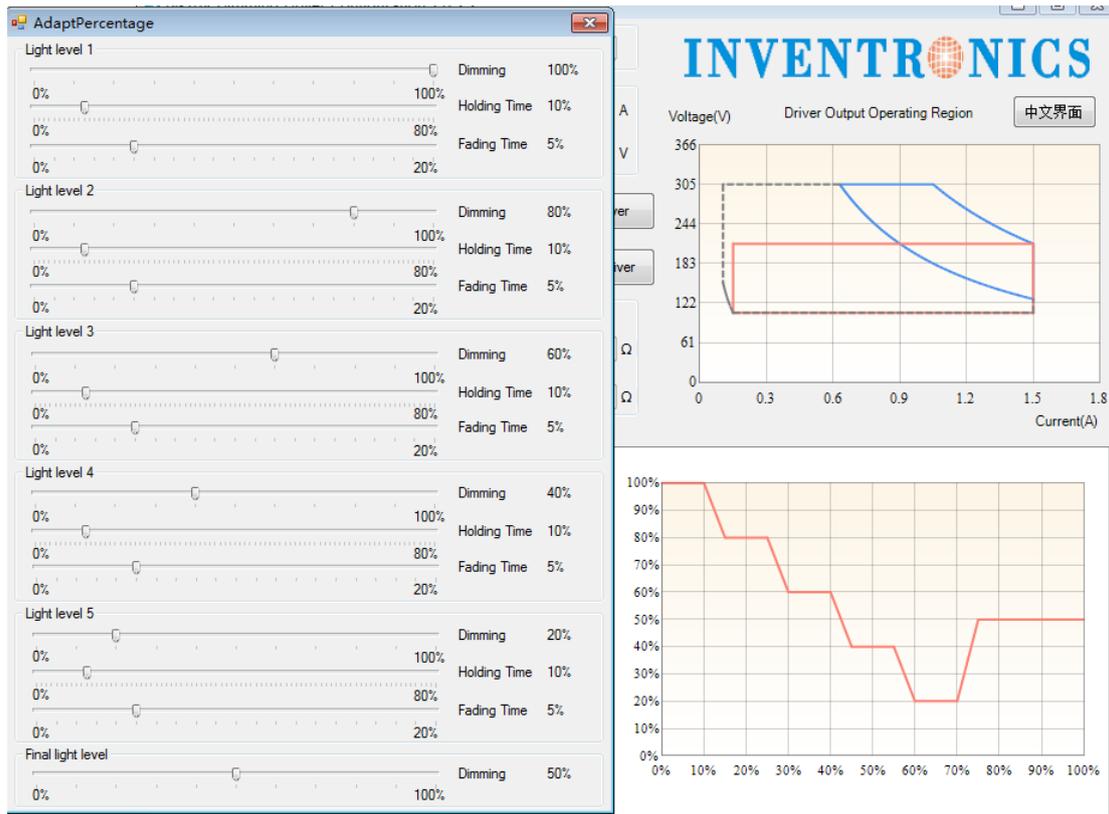


Figure 6.11.2 Set Curve

6.11.5 Default Curve

Click Default button, and the setting is back to the default curve.

6.12 OLC Curve Setting

Check Enable OLC. And it is able to set OLC curve, read OLC running time and reset times.

Input required current percentage and time in the blanks.

Note: the unit of time is kHrs. The percentage range of output current is 60%-100%. Time range is 0-64kHrs.

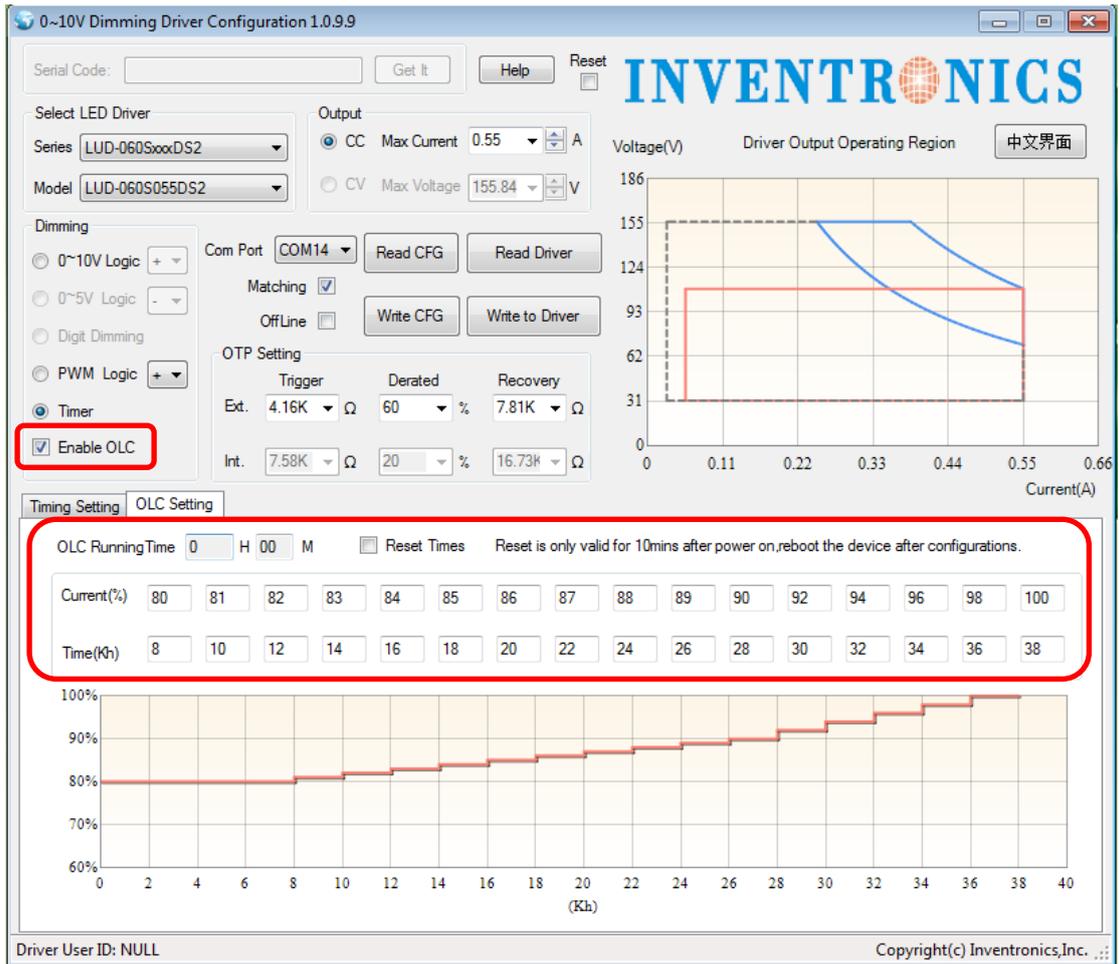


Figure 6.12.1

6.13 OTP Setting

See in Figure 6.13.1.1. External OTP setting of trigger, dimming level and recovery is possible.

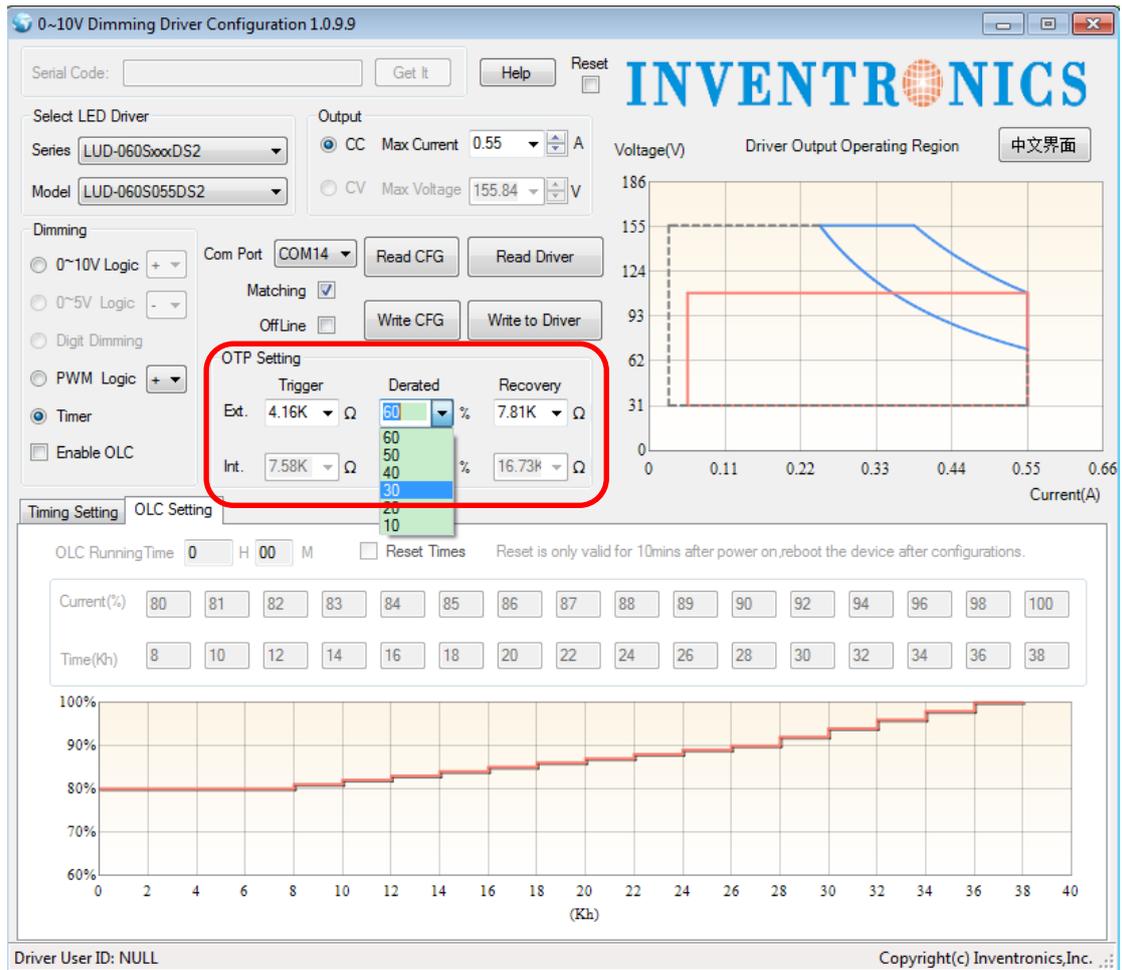


Figure 6.13.1

6.14 Offline Mode

The software would test offline function automatically when open it, see in Figure 6.14.1. If the function is fine, Offline is checked, otherwise, it's unchecked.

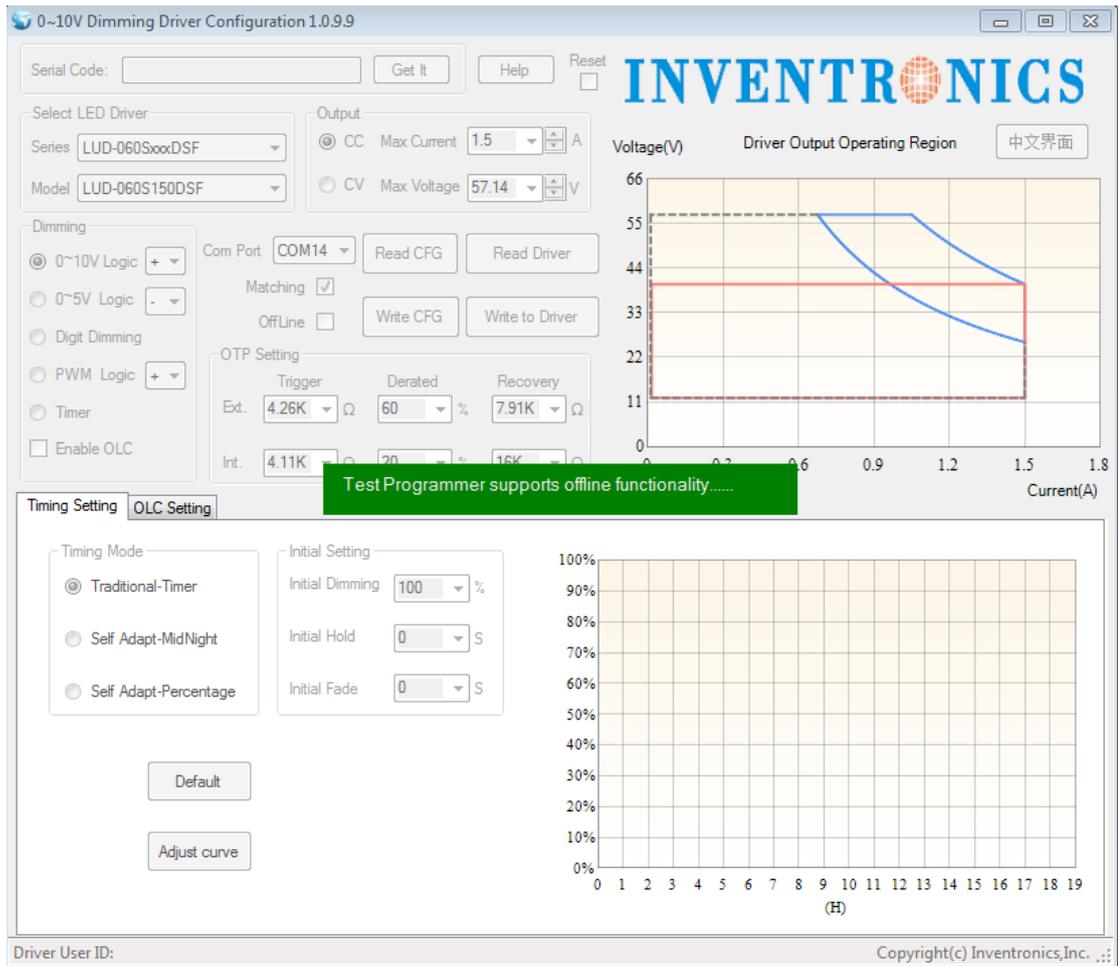


Figure 6.14.1 Testing offline function

Check Offline, meaning it is able to read/write programmer which could be used to program the driver offline. See in Figure 6.14.2.

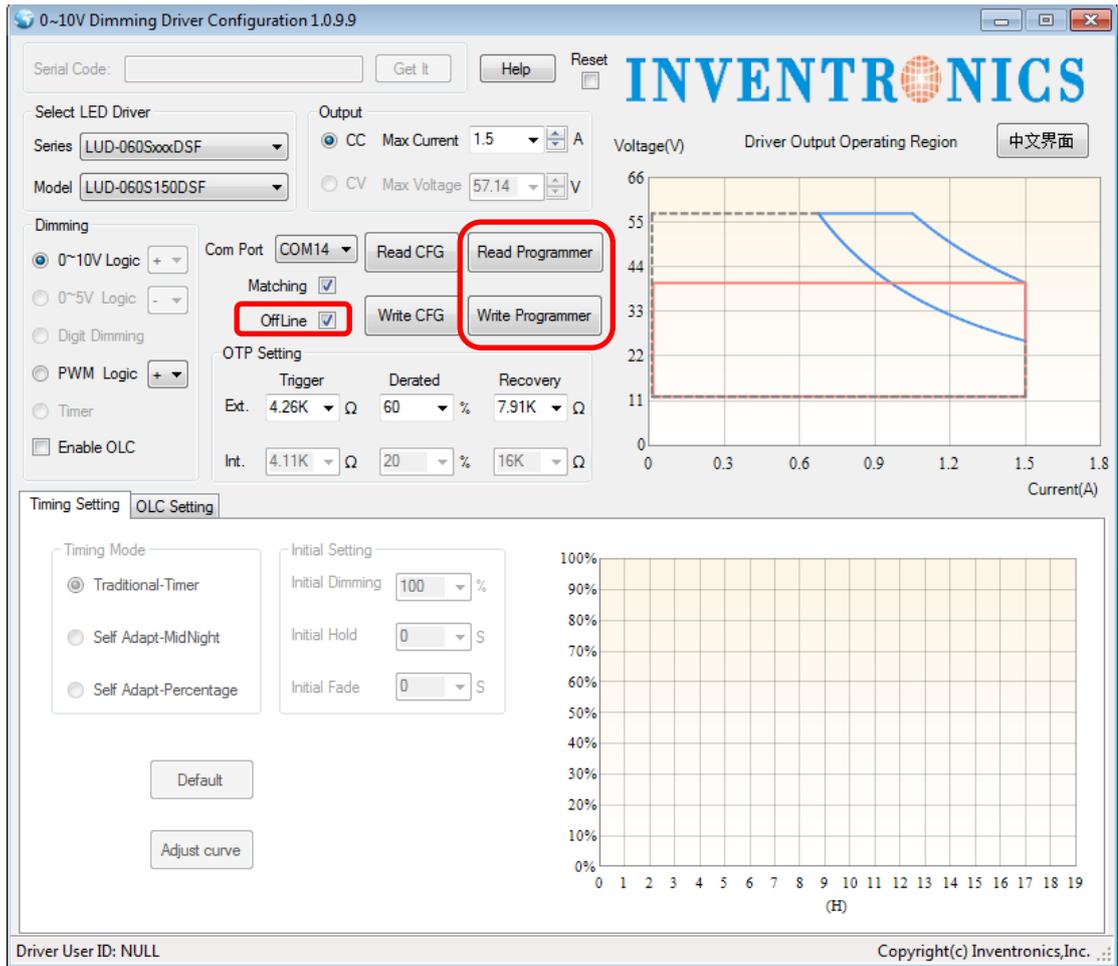


Figure 6.14.2 Read/Write to Programmer

Uncheck Offline, meaning online mode and could read/write to driver. See in Figure 6.14.3. This Online mode is default.

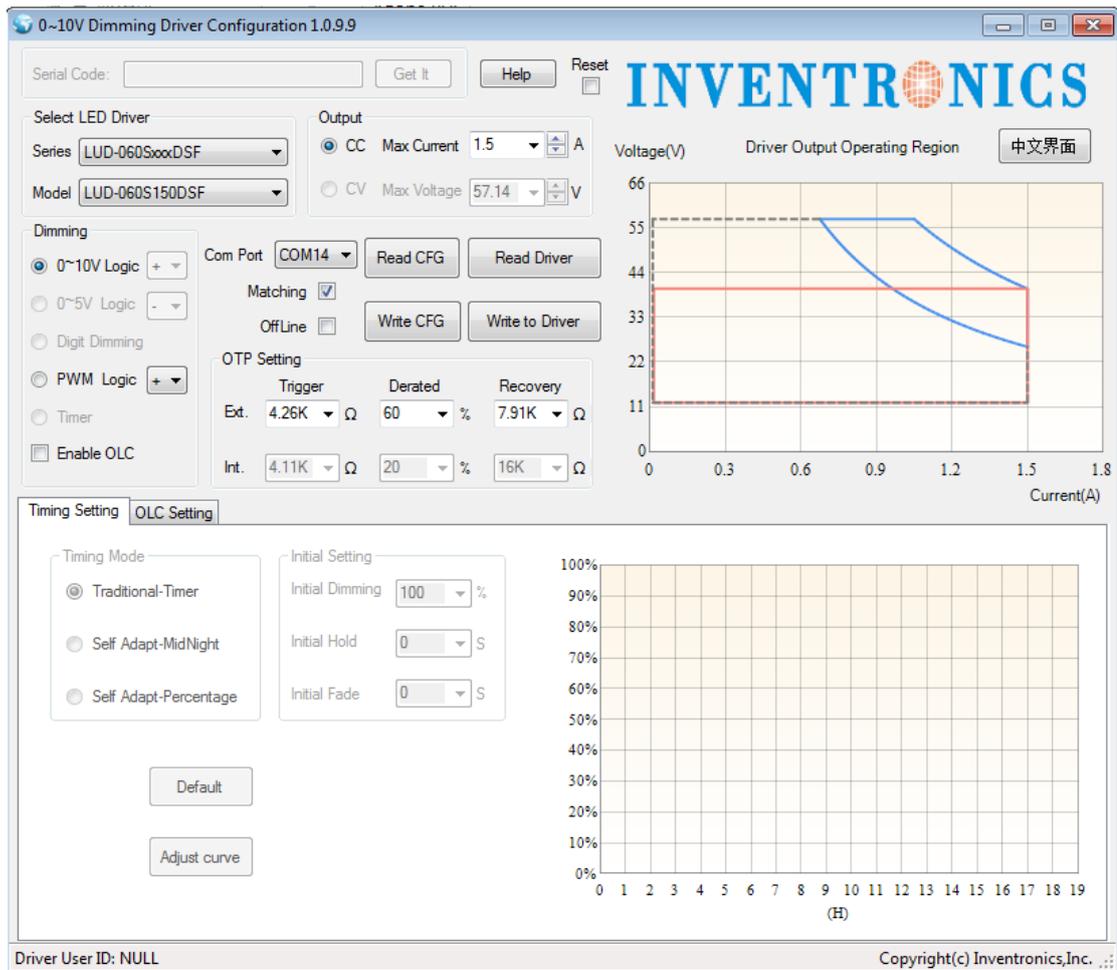


Figure 6.14.3 Read/ Write to Driver

6.15 Series and Model Number Matching

Online mode:

The default Matching mode means the software would verify if the driver is matching with the former wrote series and model number. If the data is coincident, continue to write settings to the driver. If not, the programming would not be allowed.

If uncheck the Matching mode, it means the software don't need a verification process, and can always write to driver.

Offline Mode:

With checked Matching mode, there is a verification process of the series and model number seeing if they are coincident with former setting.

With uncheck Matching mode, it means no verification, and configuration could be wrote to driver.

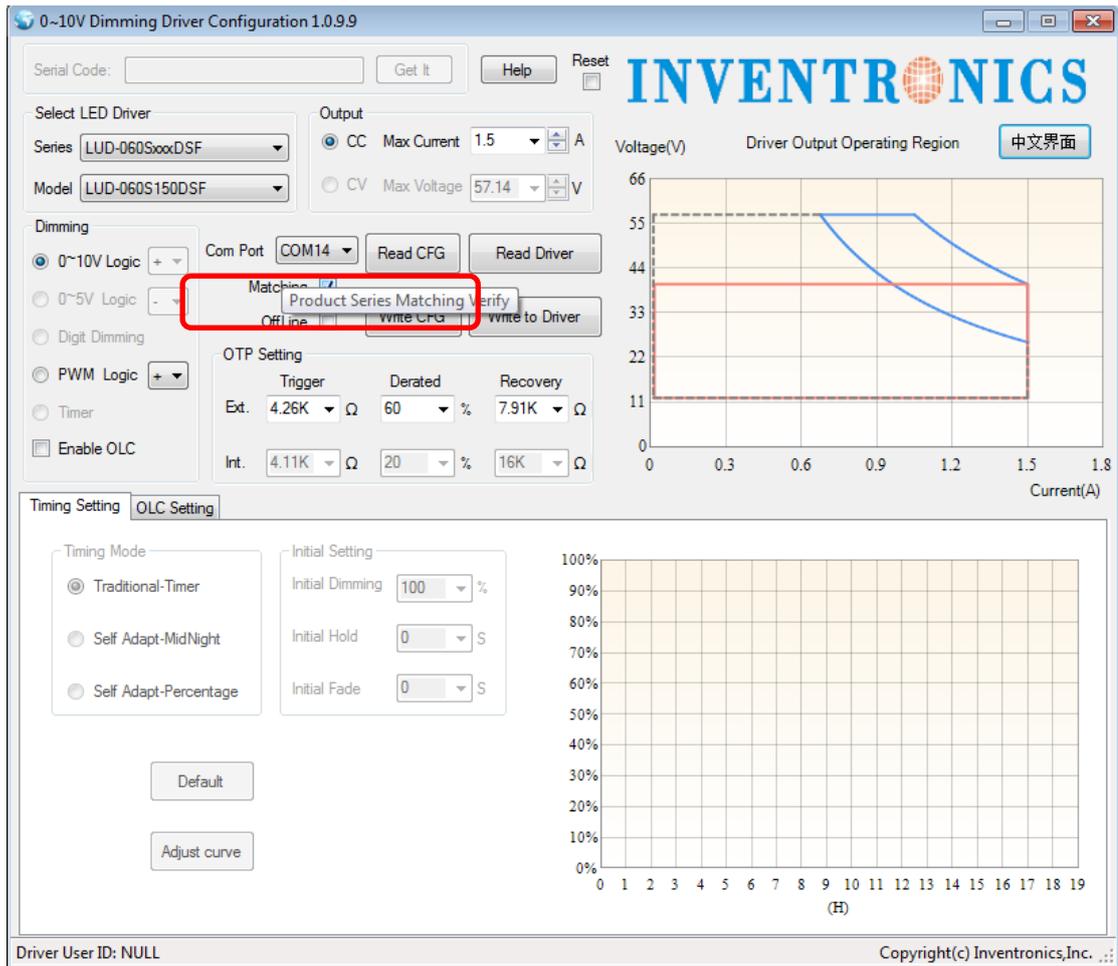


Figure 6.15.1

6.16 Read/Write to Driver/Programmer

Online Mode:

Write to Driver: when the setting on the software are all ready, click Write to Driver and the configurations can be written to the driver. If the data is transmitted successfully to the driver, there will be a pop up box with 'Success'. Otherwise, the pop up box would be saying 'Failure'.

Read Driver: read the configuration of the driver and show on the software.

See in Figure 6.16.1.

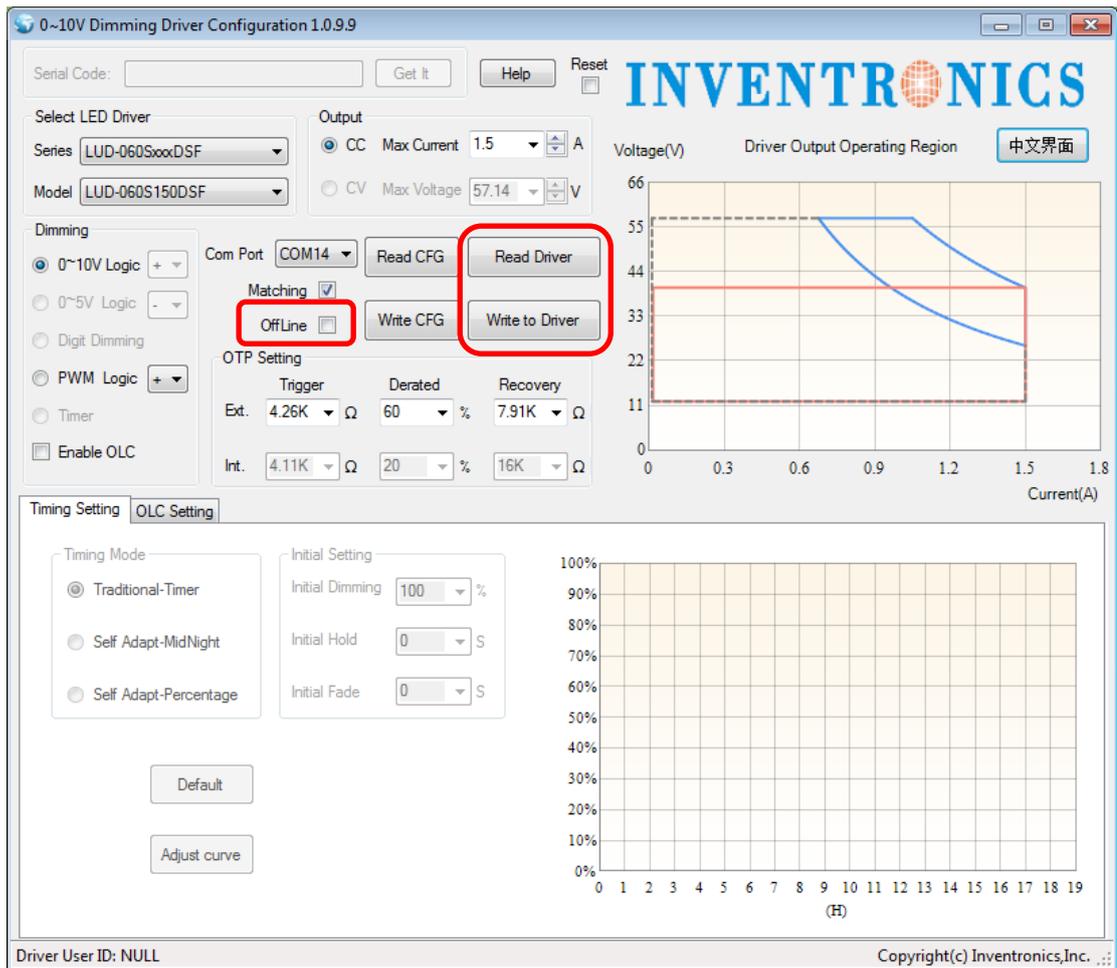


Figure 6.16.1 Read/Write to Driver

Offline Mode: when the setting on the software are all ready, click Write to Programmer and the configurations can be written to the driver. If the data is transmitted successfully to the driver, there will be a pop up box with 'Success'. Otherwise, the pop up box would be saying 'Failure'.

Read Programmer: read the configuration of the programmer and show on the software.

See in Figure 6.16.2.

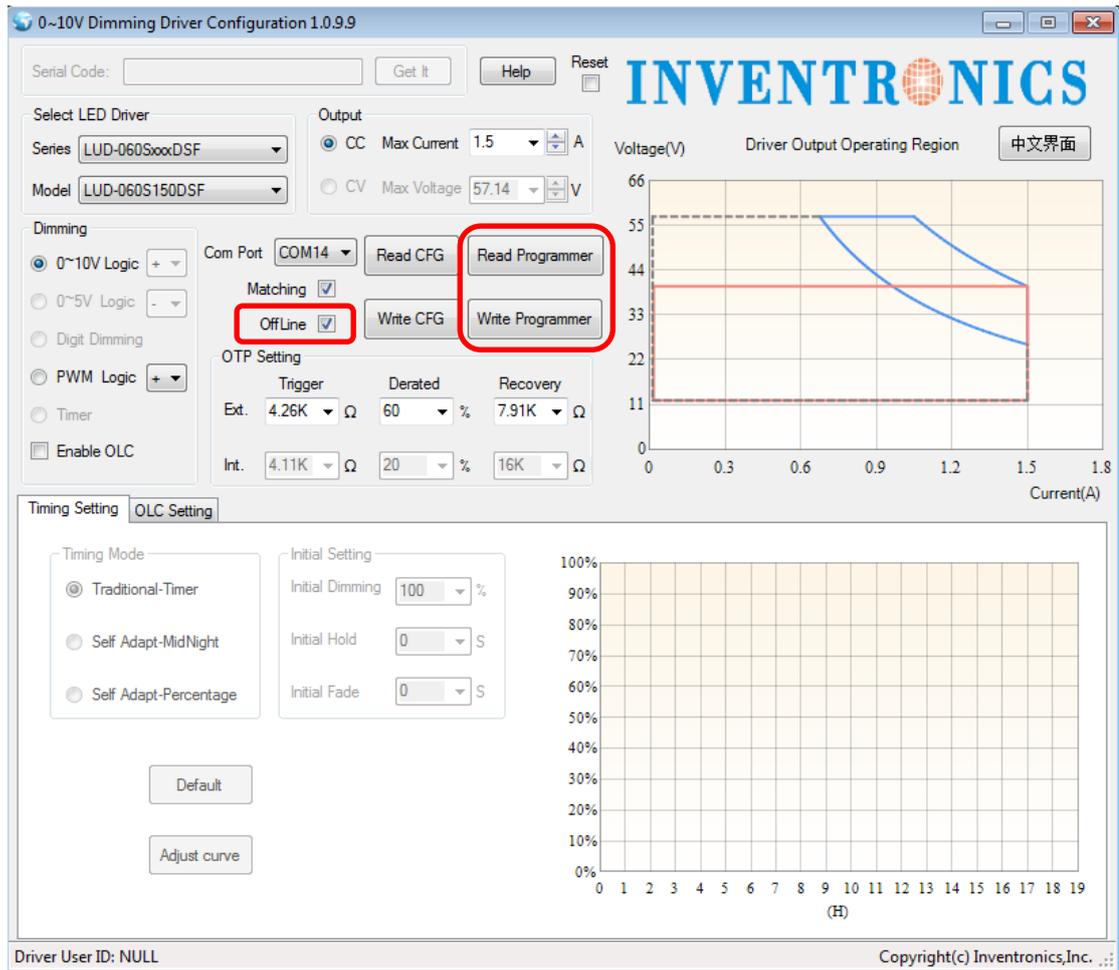


Figure 6.16.2 Read/Write to Programmer

6.17 Reset

Check Reset, and the successfully wrote configuration can act immediately. No need to power on/off again.

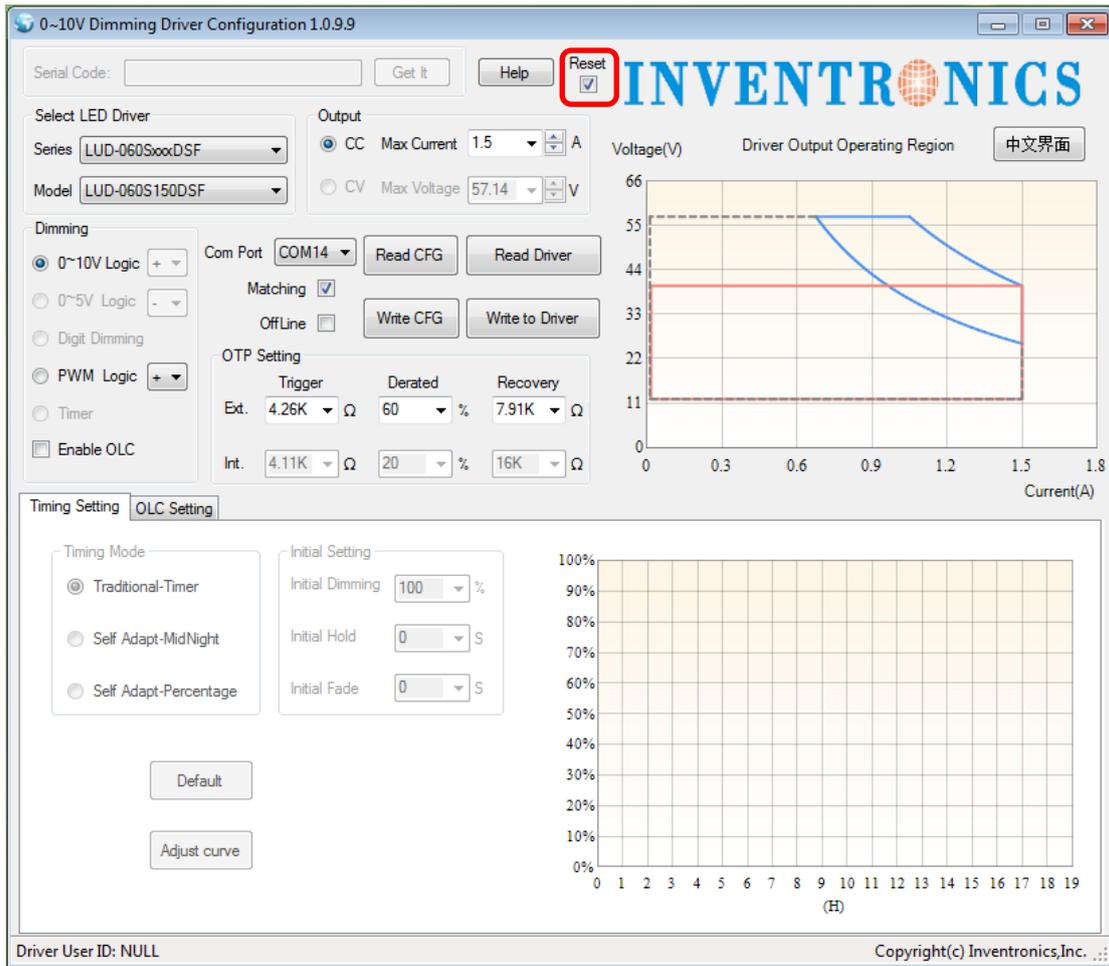


Figure 16.17.1

6.18 Help

You could find the software manual instruction through Help, see in Figure 6.18.1.

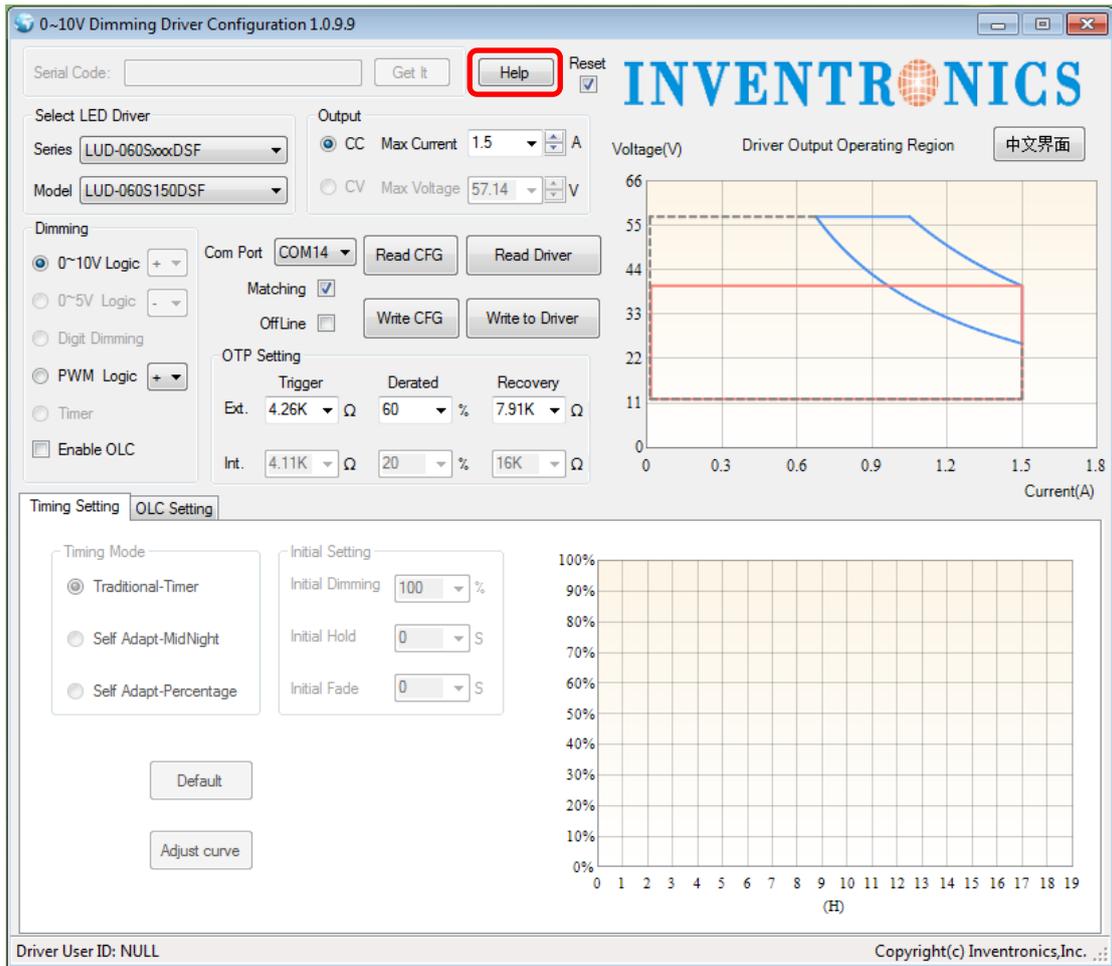


Figure 16.18.1