DMX512&RDM programming

User Manual V0.7

Revision history

Revision	Changes	Author	Date
V0.0.0	Initial release	David.Zhou	2020/09/10
V0.1.0	Add function setting address	David.Zhou	2020/09/30
V0.2.0	Add function default level and Save& Load profile	David.Zhou	2020/12/03
V0.3.0	Add "Read" function	David.Zhou	2021/04/02
V0.4.0	Modify OTP setting range to 80-110.	David.Zhou	2021/06/03
V0.6	Add compatibility for EUCO-1K0140GDA	David.Zhou	2021/09/13
V0.7	Update set up for functions in use manual	David.Zhou	2022/02/19

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I. Connect the device

Before launching the DMX512&RDM programming software, make sure the programmer is connected to the USB port of your computer. Then, connect the programmer to the LED driver via the DMX512&RDM cable. After all of this, connect the driver to AC input, and power on the driver. The connection is described in the following figure.



Figure 1. The connection of the DMX512&RDM programming tool



Figure 2. The picture of the DMX512&RDM programming tool

Note: Before running all the following functions, please make sure the driver is powered on. When the USB is connected to the computer, it may take a few minutes to install a driver automatically. Please wait patiently for the installation to finish.

II. Open DMX512&RDM programming software

Double click "*RDM_programming_tool.exe*" to start the software.



Figure 3 Open DALI programming software

III. Program the output current

Before programming the output current, please make sure the driver has properly connected and worked fine. Then turn on the AC power.

Step 1: The GUI interface of DMX512&RDM programming tool is shown in the following figure. Firstly, after opening the software, make sure the status light becomes green which means that the DMX512&RDM programming to has connected successfully. Otherwise, follow step "I-Connect the device" to check the USB cable and DMX512&RDM bus.

Operating	u mode			
Node	Single address -	CH01	Write	Read
DMX512 Level Write	255 Read		Address	ess 1 ≑ Read
Channel	All T 1400 mA Read	OTP on Trigger p Write		ි Read
Dimming				Dimming

Figure 4 the software of DMX512/RDM programming tool

Step 2: There are four (three for EUCO-1K0 series) items of current channel you can choose as shown below:

ļ	DMX51	2&RDM P	rogram	Tool 🛦	LELTA
Operatin	g mode —		53F		121
Mode	Single	address *	CH01	- Write	Read
DMX512 Level	2 default le 255 Rea	9		Address Write	ress 1 Read
Current	orogrammin	9		155.6.4	
Channel	All	-		LED fixture -] 9 7
Current	All CH01	mA	Trigger	point 110	C
Write	CH02 CH03	Read	Wri	te	Read
Dimming	-				
Level				0 *	Dimming
Conne	cted			Firm	ware update

Figure 5. Choose current channel

If you select the item **"AII"**, it means that you would program the current of all three channels at once. And the channel, "CH01", "CH02" and "CH03", would only program the corresponding channel 's current. However, for EUCO-1K0 series, there are only three items, such as "AII", "CH01", "CH02".

Step 3: After choosing the programming channel, the current value of that channel also need to be set. The default value for each channel is 1400mA as show in the figure. The current value range can be set from 500mA to 1400mA.

operading	mode			
Mode	Single address	-][CH01	- Write	Read
DMX512 c Level Write	255 ÷		Address Write	Idress
Current pro			on LED fixture er point 110	r
Write	Rea		Irite	Read
Dimming –				
Dimming —				Dimi

Figure 6. Set current value

Step 4: If the programming parameters have been set completely, click *"Write"* button. Then the driver would light-off and light-on automatically. And the status message at the bottom will show *"Current programming successfully"*.

Note: The" Current programming successfully" only means that the commands have be sent out. To check the programming is successful or not, please click the "Read" button to verify the programed current value.

Operating		DC	100	<i>c</i>
Mode	Single address	- CH01	- Write	Read
DMX512	default level 🕤		Device add	ress
Level	255 🕀		Address	1 🗧
Write	Read		Write	Read
Current or	ogramming			
Channel /		OTP	on LED fixture -	
Channel		Trigg	erpoint 110	r
Current	1400 mA			
Write	Rea		/rite	Read
wine	rtea			
Dimming -				
Dimming				
				Dimming

Figure 7. Current program successfully

Step 5: After current programming, click "**Read**" button to check if the programming level is right. There is one point which should be noted that the minimum scale of current programming is 1% of 1400mA. So it may not be set to the exact value as same as the current which was written.

Operating	mode			
Mode	Single address	- CH01	- Write	Read
DMX512 o Level Write	255 ÷		Address Write	dress
Current pro Channel A Current 1 Write		Trigg	on LED fixture er point 110 Irite	ි Read
Dimming -			0 1	Dimming

Figure 8. Read current programming

IV. Set LED OTP parameters

The driver has integrated the OTP function for the LED fixture via "NTC" terminal with a certain NTC component in LED fixture. Please refer to datasheet for the circuit details. For the OTP, there is one parameter need to be set: the NTC trigger point.

Operating	mode			
Mode	Single address	- CH01	- Write	Read
DMX512 d Level Write	lefault level		Address Write	fress
Current pro Channel A Current 1	- D	Trigg	er point 110	C Read
Dimming —			0	Dimming

Figure 9. Set OTP parameters

When the temperature of NTC component has exceeded NTC trigger point, it would start OTP protection process. Please refer to the driver's datasheet for full details of OTP.

In order to make sure the OTP protection works normal, some constraints have been introduced.

1. The range of NTC trigger point is 80° C~110 $^{\circ}$ C. The default value is 100° C.

Also, click the "Read" button could read the current OTP setting.

Note: The message after writing only means that the commands have be sent out. To check the programming is successful or not, please click the "Read" button to verify the written value.

V. Set address mode

The EUCO-1Kx140GDA RDM/DMX series have two different channel mode: Single address mode and Multiple address mode. The single address means that three current output channels share one DMX address. So the dimming actions of the three output channels are performed uniformly. And multiple address mode means that the three output channel could be set as different addresses. When in this mode, the three output channel could be controlled independently. The default address mode is single address mode.

U	MX512&RDM	Fiogram		SELTA
Operating	node			_
Mode	Single address	* CH01	- Write	Read
DMX512 d	Single address		Address	ress —
Write	Read		Write	Read
	<u> </u>			
Current pro	gramming	OTR	n LED fixture -	
Channel A	-		er point 110	r
	400 mA			
Current 1			rite	Read
Current 1	Read			
	Read			
	Read			

After the address was written, the driver should power off and wait at least 30s, then power on again to make sure the new address mode works normal. Of course, click "**Read**" button could read current address mode.

VI. Set DMX512 address

It should be noted that before setting DMX512 address, the address mode should be set first. When the driver is set as single address mode, there is only one address needed to be set. Otherwise, three addressed needed be set.

In the DMX512 or RDM network, every driver has its unique address. This address of driver could be set with the programming tool. The range of address is 1~512.

D	MX512&RDN	I Program	Tool A	NELTA
Operating	E Contra	DC		-
Mode	Single address	- CH01	- Write	Read
Level Write	255 ÷		Address Write	[1 Read
Current pro Channel A Current 1	11 + 400 mA	Trigge	n LED fixture – r point 110	C Read
	Rea			Rodu

Figure 11. Set address

Click "Read" button would read current DMX512 address.

VII. Set default level

It should be noted that before setting DMX512 address, the address mode should be set first. If the multiple address mode is chosen, the default level of every channel should be set.

In the DMX512&RDM network, the dimming command of DMX512 should be sent at least once a second. If the driver could not receive dimming command in two seconds, it will return to the default level.

You could click "Write" button to set this default level. Or click "Read" button to check current default level.

DMX512&R	DM programming tool \$008	504))	
H Save	Load			
D	MX512&RDM F	Program	Tool A	LITA
Operating	mode			
Mode	Single address	-][CH01	- Write	Read
DMX512 C	255 🕄		Device addr Address	ress
Write	Read		Write	Read
	400 mA	Trigger	All and a second se	ි Read
Write Dimming -	Read			
Level			0 *	Dimming
Connecte	ed		Firm	ware update

Figure 12. Set default level

VIII.Save& load profile

Step1: Please click the "Save" button in the tool bar. The GUI would save current configured parameters.

DMX512&R	DM programming tool \$00	E04	-	x
Save	Load			
D	MX512&RDM F	Program	n Tool 🔺	NELTA
Operating	mode			
Mode	Single address	-)(CH01	- Write	Read
DMX512 d	255		Device add Address	ress
Write	Read		Write	Read
Current pro Channel A Current 1 Write		Trigge	er point 110	°C Read
Dimming —			0	Dimming
Connecte	d		Firm	ware update

Figure 13. Save profile

The program will create a new folder in current path named "profile". In this folder, the file with parameters is named "config.ini".

Step2: Please click "Load" button to load the last saved profile.

Operating	mode			
Mode	Single address	-)(CH01	- Write	Read
DMX512 d	efault level		Device add Address	ress
Write	Read		Write	Read
	I (*	-	er point 110	r
Channel A Current 1 Write	400 mA	Trigge	rite	Read

Figure 14. Save profile

And every time the GUI starts, it will load the profile automatically.

IX. Firmware update

In case that the software needs to be updated to the latest version, the "firmware update" function is available. Please make sure to only activate this function with formal notice from Delta.

Step1: Before updating the firmware, please make sure that the programming tool you are using is the latest version which the model number is SDPT05UAB. And, the AC power of the driver has been turned off for at least 30 seconds.

Step2: Click "*Firmware update*" button in the lower right corner. The firmware update interface would pop out.

			n Tool 🛕	BELIA
Operating n	And the second s	Demi	Down	
Mode	Single address	- CH01	- Write	Read
DMX512 de	fault level 🦳		Device add	
Level	255 🖨		Address	1 🗘
Write	Read		Write	Read
<u>N</u>				N
Current prog	gramming			
Channel All	-	OTPO	n LED fixture -	
_		Trigge	er point 110)°C
Current 14	00 mA	C W	rite	Read
Write	Rea			
-	6			
Dimming				

Figure 15. Click Firmware update button

	Browse
Size	
Checksum	
Firmware update	Exit update mode
0	%

Figure 15. the interface of firmware update

Step3: Click *"Browse"* button and choose the hex file that you are ready for updating. Please check the size and checksum of hex file in case of updating wrong file.

	Browse
lize	
Checksum	
Firmware update	Exit update mode
0	0%

Figure 16. Choose hex file

	0%	
Firmwa	re update	Exit update mode
Checksum	0x210D2C	
Size	21926bytes	
00E00B01/EUCO	D-1K0140GDA_Erp_R	DM_S00E00B01.hex Browse

Figure 17. Checksum and file size

Step 4: Click "**Firmware update**" button before power AC on. When a message "*Wait for AC power on …*" pops up, turn on the AC power of driver. After the AC power is stable, click "*OK*" button.

00E00B01/EUCO	0-1K0140GDA_Erp_RDM_S00E00B01.hex Brows	se
Size	Tip X	
Checksum	Please turn on the AC power.	
Upda	ating OK update mode	
	0%	

Figure 17. Wait the Power AC on

If the MCU has already been in update mode, a message "MCU is ready for updating" would pop out.

Size	0140GDA_Erp_RDM_S00E	00B01.hex Browse
	🕲 Tip 🛛 🗙	
Checksum	MCU is ready for updating.	
Updating	ОК	t update mode
	0%	

Figure 18. Message: MCU is ready for updating

Click "OK" button, the firmware update process would begin.

00E00B01/EUCC	D-1K0140GDA_Erp_RD	M_S00E00B01.hex Browse
Size	21926bytes	
Checksum	0x210D2C	
Upd	ating	Exit update mode
	6%	

Figure 18. Update hex file

When the update is completed, "Update successfully" would pop out. The whole update process will take about one minute.

Size	Tip X	
Checksum	Update successfully.	
Firmware updat	ОК	Exit update mode
	100%	

Figure 19. Update successfully

Step 5: Click button "Exit Update Mode" to exit update mode.

Size	21926bytes	
Checksum	0x210D2C)
Firmwa	re update	Exit update mode
	0%	

Figure 20. Exit update mode