DALI – NFC Multi Tag

User Manual

1. Introduction

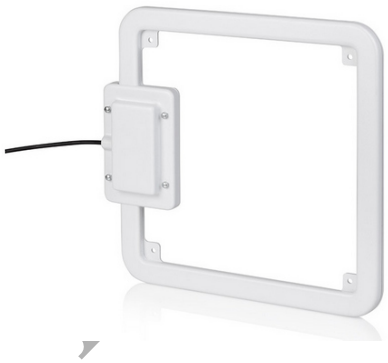
With NFC-Multi Tag, you can configure all features that are supported by a specific TCI device.

A feature typically belongs to one or two device families (LED indoor/Outdoor), but this does not mean that every device from different products family does support all features.

NFC-Multi Tag only works in combination with DALI PROGRAMMER interface cod. 127099, NFC interface CPR30 + cod.127101, ID ISC.PRH101-U cod. 127095A.

NFC programming
Cod. 127095A or 127101

DALI programming
Cod. 127099



2. System requirements

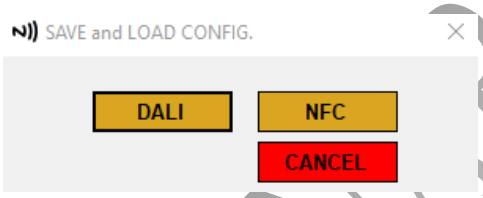
The minimum system requirements for using NFC-Multi tag are:

- PC or Laptop with Microsoft Windows 7 SP1, 8, 8,1 or 10;
- USB 2.0 ports;
- Microsoft.NET Framework 4.6.1;

3. NFC programming

3.1 Selecting the interface (NFC)

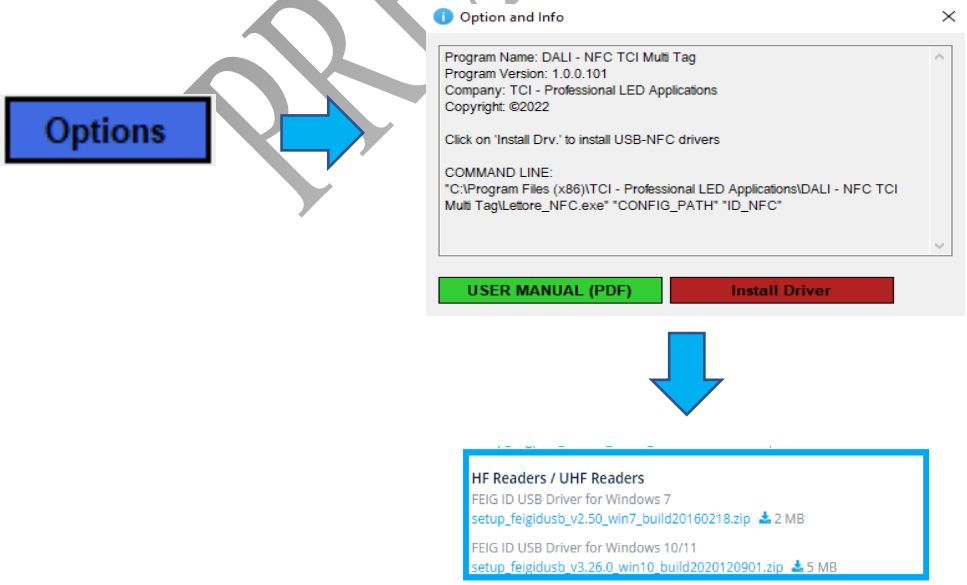
You must select the interface DALI or NFC, before to choose the interface be sure to connect the interface on the laptop:



3.2 Download NFC driver

Click on “Options” button, “Install driver” and automatically NFC-Multi Tag will launch to FEIG website in order to install the properly driver suitable to get in communication FEIG reader and laptop.

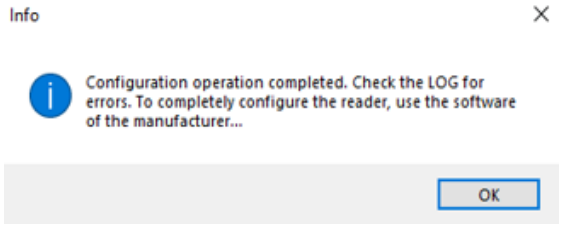
N.B FEIG driver must be installed only the first time for future programming it’s not necessary.



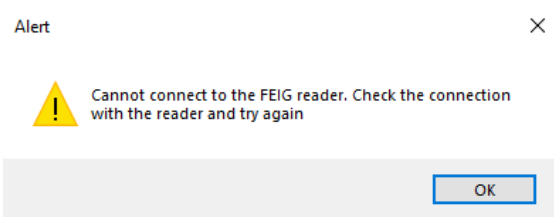
3.3 Confirmation and Error message

After install properly driver NFC-Multi Tag should recognize by themselves the connected interface (pic.1) otherwise if NFC-Multi Tag doesn't recognize the interface due to missing driver or because the connection between interface and laptop is missing second message will be displayed (pic.2).

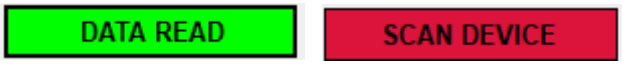
1.



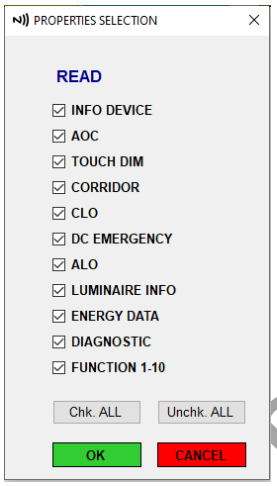
2.



3.4 Reading process



Click on "Data read" in order to scan the device under programming, a further pop-up "Properties selection" give the possibility to choose only the capabilities useful or necessary for the end user.



Properties can be selected one by one or using properly button "Check. All" or "Unchk. All".

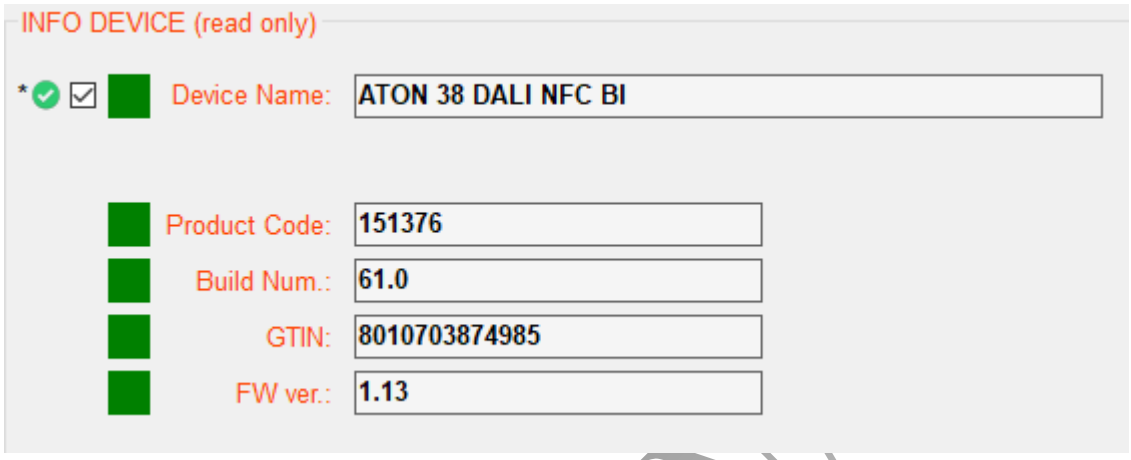
Click "OK" in order to proceed.

If the reading process is correctly terminated the following message will appear "PROCESS OF READING TAG TERMINATED".

4. Programmable features

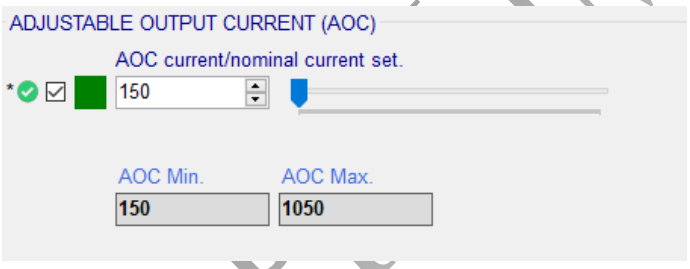
- **Device name**: Description of the product read by NFC-Multi Tag (eg. ATON 38 DALI NFC BI).
- **Product code**: P/N, order code of the product (eg. 151376).
- **Build Num**: xxxx
- **FW version**: FW version of the product.

4.1 Info device



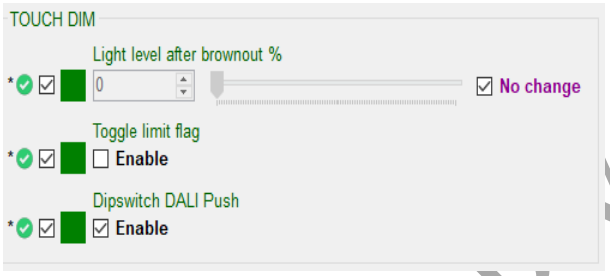
4.2 AOC (Adjustable Output Current)

During first reading NFC-Multi Tag show the output current define as factory default, minimum (AOC Min.) and maximum current (AOC max.) of the device.
Change this value writing the current value you need or by means properly “slide”.



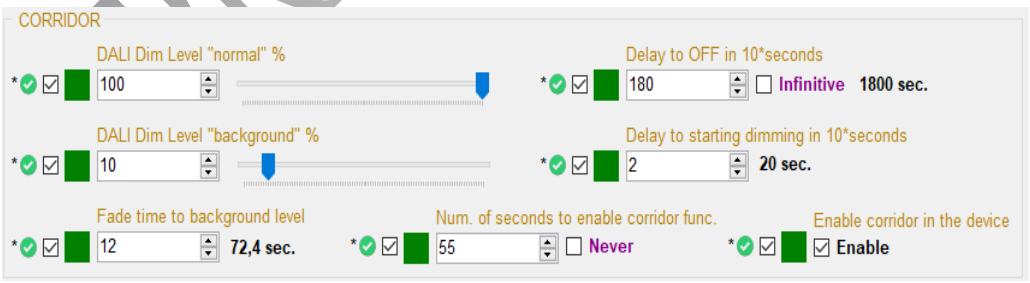
4.3 Touch dim

Bight level after brownout: if the flag on “No change” field is activated, after missing of the PUSH the brightness value come back at previously dimming value without change. Removing the flag on “No change” and adjust the brightness using the slide follow your needed.
Toogle limit flag:
Enable: set dim direction down above 70%, set dim direction up at 10% + min dim level.
Disable: switch dim direction every time when long push is performed.
DALI PUSH: possibility to enable or disable the functionality.



4.4 Corridor Function

DALI Dim Level “normal” %: starting brightness value (es. 100%).
DALI Dim Level “background” %: reached brightness value (es. 10%).
Fade time to background level: time in seconds in order to reach the “background level” (es. 100% to 10% in 72,4sec).
Delay to off: delay in seconds in order to reach OFF mode starting from “background level” (es. 10% to OFF in 1800sec)
Delay to starting dimming in 10 seconds: maintained time of “normal level” (es. Keep 100% for 20sec).
Numbers of seconds to enable corridor function: time in seconds before to start the corridor function.
Enable corridor function in the device: enable/disable the function on the device.



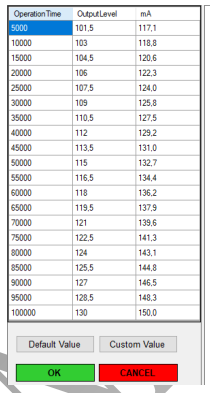
4.5 CLO

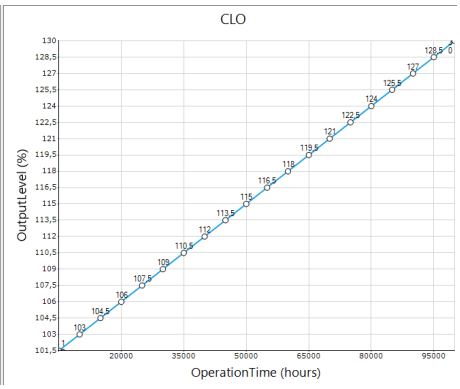
The decrease in the luminous flux of an LED module can be compensated over its entire lifetime via a preprogrammed current curve. The decrease light flux and lifetime value normally are provided directly by the LED chip manufacturer by means of TM21 and related LM report (es. LM80B20).

This not only ensure stable lighting but also saves energy and increase the lifetime of the LEDs.

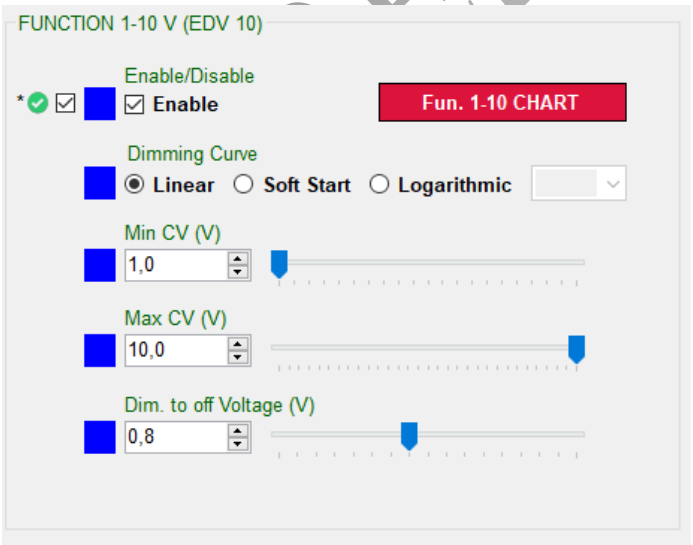
Hour time step x/20: setting of the hours (minimum adjustable 5khrs).

Value % time step x/20: setting of the brightness increasing.





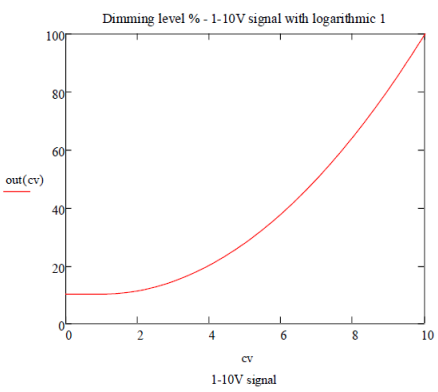
4.6 0/1-10V

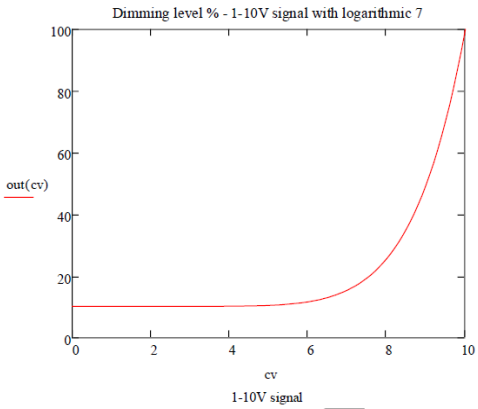


Enable/Disable: yes/no
Dimming curve: adjustable to Logarithmic, Linear and Soft start.
Min. CV (V): Minimum dimming voltage, 1…3V.
Max CV (V): Maximum dimming voltage, 7…10V.
Dim. To off Voltage (V): reached dimming value able to switch off the ECG.

Logarithmic curve:

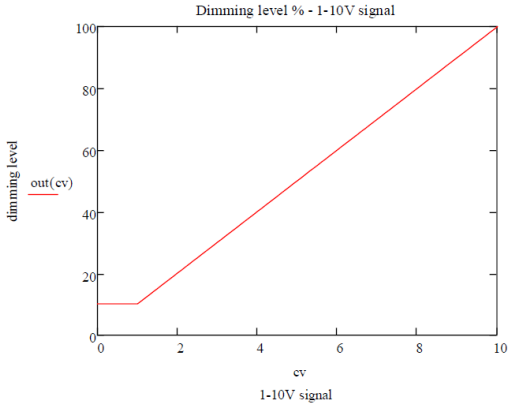
Level factor 1 provides a smoothly curve on the minimum voltage level guarantee an accurate control on the higher voltage, viceversa level factor 7 provides a steep curve on the higher voltage level guarantee an accurate control on the lower voltage.





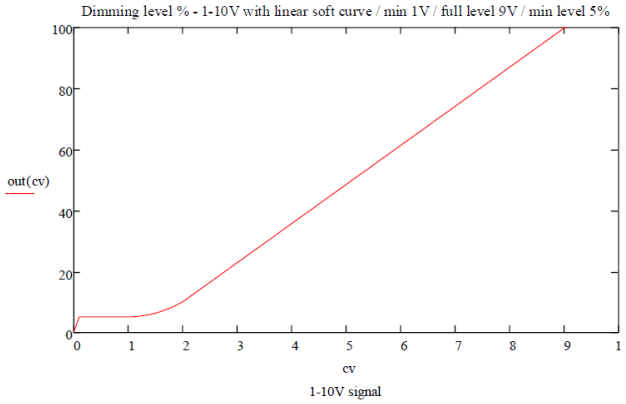
Linear curve:

It provides a constant linear curve between minimum and maximum voltage and minimum and maximum brightness.

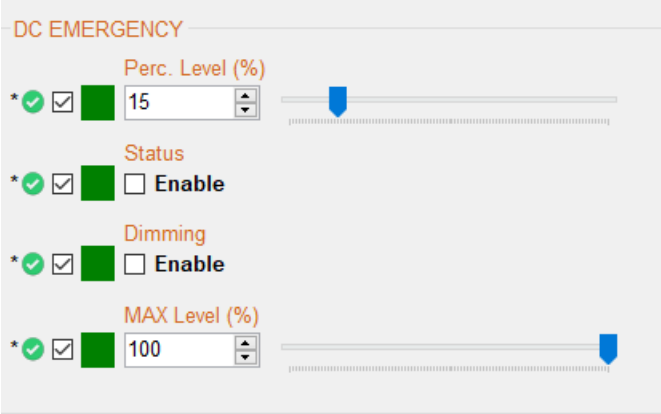


Linear soft curve:

It provides a slow ramp up over the first 1V above the minimum dim control voltage, after that curve is linear like above.



4.7 DC emergency

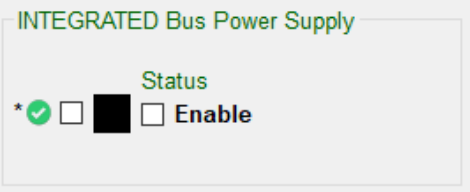


Perc. Level (%): the displayed data shown the factory default value.
Status: Enable/Disable.
Dimming: Enable/Disable.
Max Level (%): 0…100%.

4.8 Midnight

4.9 NTC

5. Integrated power supply (active DALI)



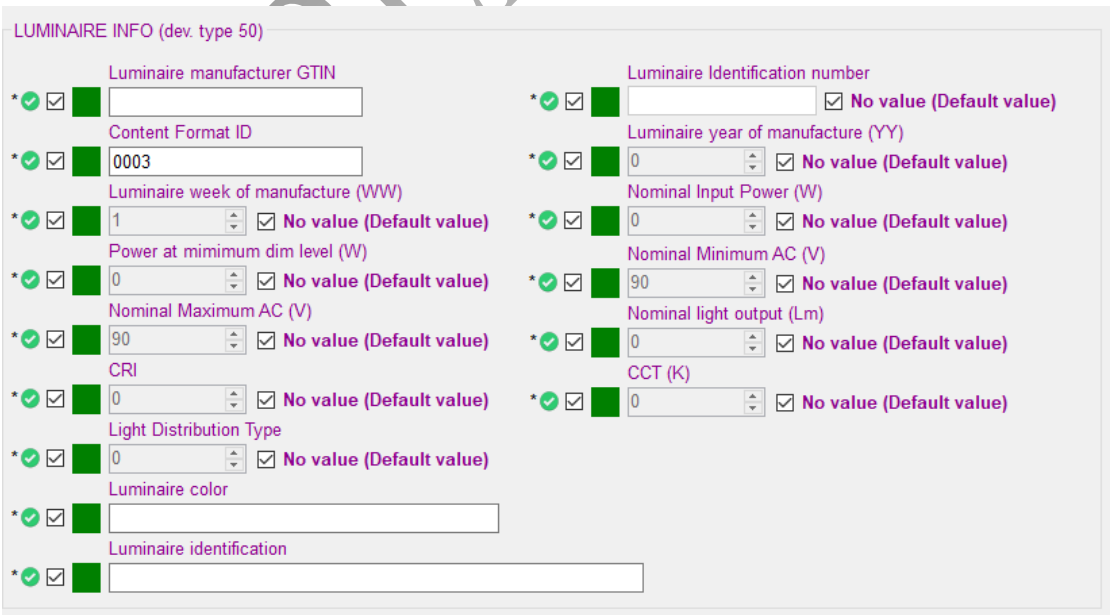
D4i led driver have an additional power supply for sensoring.

If driver must be used as standard DALI drivers it's enough to remove the flag on enable.

As factory default all TCI driver are sell without activate D4i.

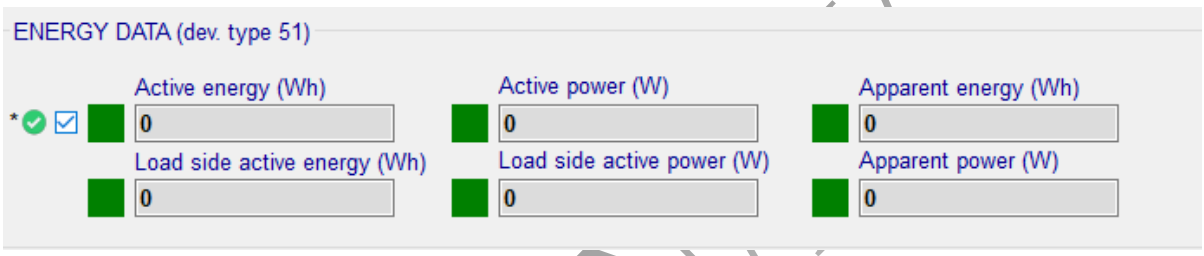
6. Diia Specification

6.1 Luminaire info (DT50)

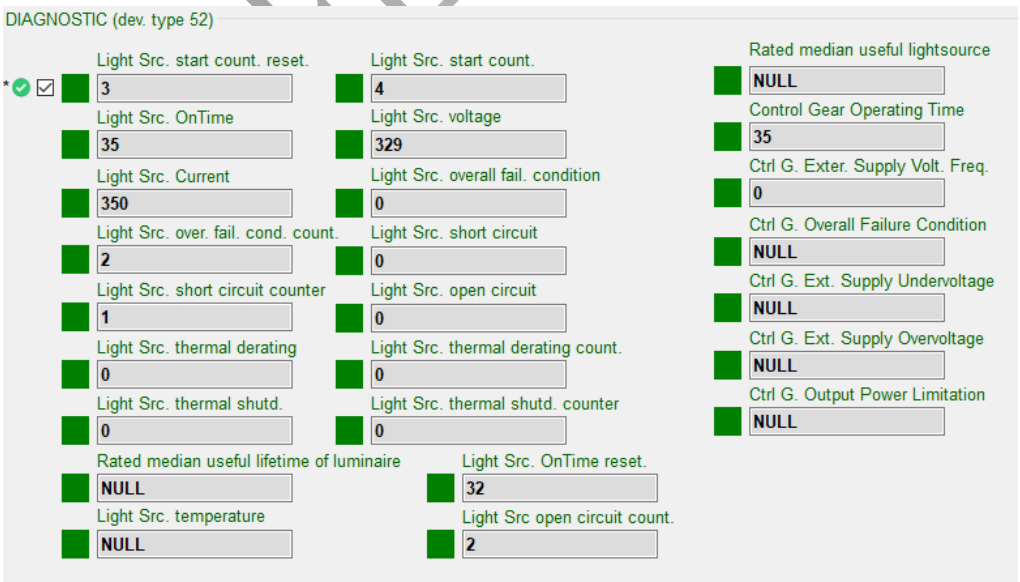


6.2 Energy data (DT51)

Active energy (Wh): Indicate the integral of the current power over a time interval.
Active power (W): Indicate the mean value of the current power, taken over one period.
Apparent energy (Wh): Indicate the integral of apparent power over a time interval, measured in units of VA hour.
Load side active energy (Wh): Indicate the integral of load side power over a time interval.
Load side active power (W): Indicate the input power minus the power used for the DALI bus power supply if present and the AUX power supply if present.
Apparent power (W): Indicate the power, calculated with the rms voltage and rms electric current.

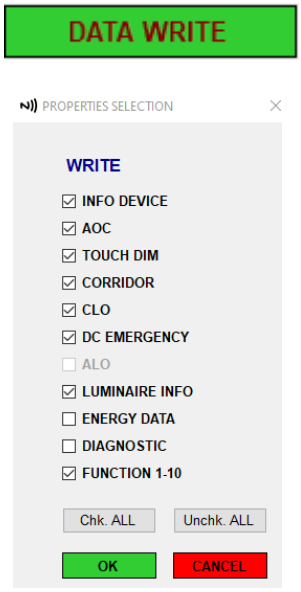


6.3 Diagnostic and Maintenance (DT52)



Parameter	Description
Ctrl. G. Ext. Supply Undervoltage Counter	Indicate how often undervoltage was measured at the mains input.
Ctrl .G. Ext. Supply Overvoltage Counter	Indicate how often overvoltage was measured at the mains input.
Ctrl. G. Ext. Supply Volt. Freq.	Indicate the supply frequency measured at mains input.
Ctrl. G. Ext. Supply Undervoltage	Indicate if there is currently undervoltage measured at the mains input.
Ctrl. G. Ext. Supply Overvoltage	Indicate if there is currently overvoltage measured at the mains input.
Crtl. G. Operating time	Indicate the time the LED driver was operated either via mains or from battery.
Ctrl. G. Start Counter	Indicate how often the LED drivers was started.
Ctrl. G. Power factor	Indicate the power factor of the LED driver under reading.
Ctrl. G. Overall Failure condition Counter	Indicate how often a failure was detected.
Ctrl. G. Output Power limitation Counter	Indicate how often the output power has to be limited.
Ctrl. G. External supply voltage	Indicate the mains input.
Ctrl. G. Thermal Derating Counter	Indicate how often the LED driver reached a critical temperature and the intelligent temperature Guard Function (ITG) started reducing the output power.
Ctrl. G. Thermal Shutdown counter	Indicate how often the LED driver reached a critical temperature and the intelligent temperature Guard Function (ITG) shut off the device.
Ctrl. G. Overall Failure Condition	Indicate if a failure is currently detected.
Ctrl. G. Output Power limitation	Indicate if the output power is currently limited by the LED driver.
Int. Control gear reference temp.	Indicate the internal control gear reference temperature in °C.
Ctrl. G. Thermal derating	Indicate if the output power of the LED driver has been reduced due to a critical temperature.
Ctrl. G. Thermal Shutdown	Indicate if the LED driver has been turned off due to a critical temperature.
Ctrl. G. Output Current Percentage	Indicate the active output current percentage.
Ctrl. G. Temperature	Indicate the temperature of the control gear in °C.
Light Src. Start count.	Indicate how often the LED was switched on.
Light Src. Start count. Reset	Indicate the resettable amount of starts of the light source.
Light Src. On time	Indicate for how long the LED has been switched on.
Light Src. Over Fail. cond. Count.	Indicate how often a failure was detected.
Light Src. Short circuit counter	Indicate how often a short circuit was detected.
Light Src. Open circuit counter	Indicate the amount of times the light source open circuit occurred.
Light Src. Thermal derating count.	Indicate how often the LED had reached the overload temperature.
Light Src. Thermal shutd. Counter	Indicate how often the LED had reached the shutdown temperature.
Light Src. Voltage	Indicate the voltage at the LED output.
Light Src. Current	Indicate the current at the LED output.
Light Src. Overall fail. Condition	Indicate if a failure is currently detected.
Light Src. Short circuit	Indicate if a short circuit is currently detected.
Light Src. Open circuit	Indicate if a open circuit is currently detected,
Light Src. Thermal derating	Indicate if a temperature overload is currently detected.
Light Src. Thermal shutd.	Indicate if a shutdown temperature is currently detected.
Rated median useful lifetime of luminaire	Indicate the rated median useful lifetime of the luminarie in hours.
Rated median useful lifetime of light source	Indicate the rated median useful light source starts of the luminaire.
Light Src. Temperature	Indicate the temperature of the light source in °C.
Light Src. On time reset	Indicate the resettable light source operating time in hrs, minutes and seconds.

7. Writing process



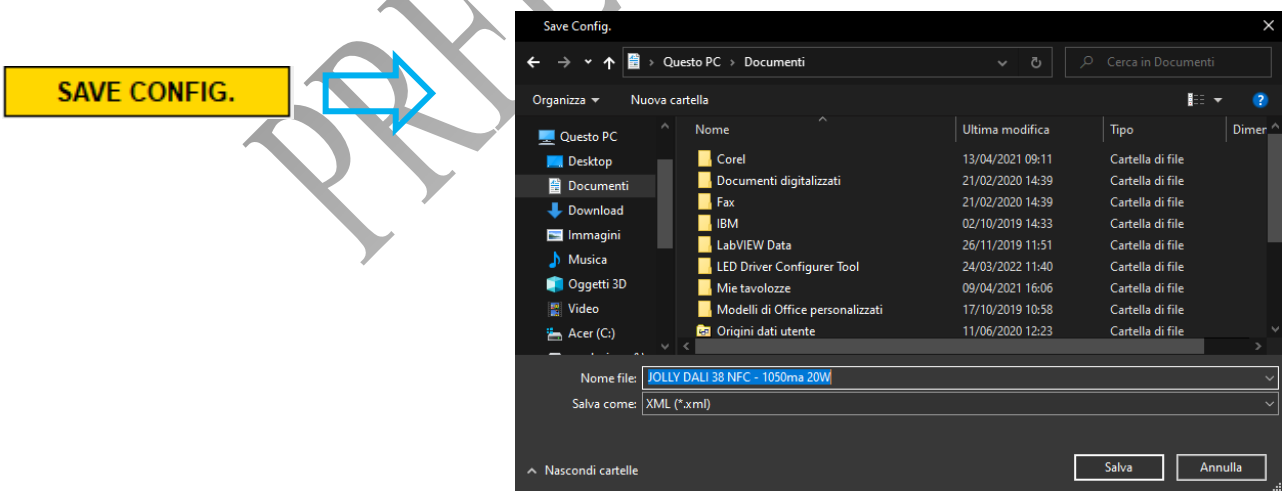
Click on “Data write” in order to write the device under programming, a further pop-up “Properties selection” give the possibility to choose again which capabilities you really need to set on the driver.

Select them one by one or use properly button “Chk. ALL” or “Unchk. ALL”.

If the writing process is correctly terminated the following message will appear “Process of writing tag terminated”.

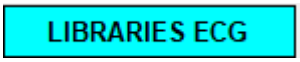
8. Save configuration file

Click on “Save config.” and select the folder where you need to store all configuration files to be used for future production.



9. Writing process using a configuration file (Multiprogrammer)

The saved xml. file can be upload on the next devices.
Click on “Libraries ECG”, based on the window that will appear you can proceed in two ways:

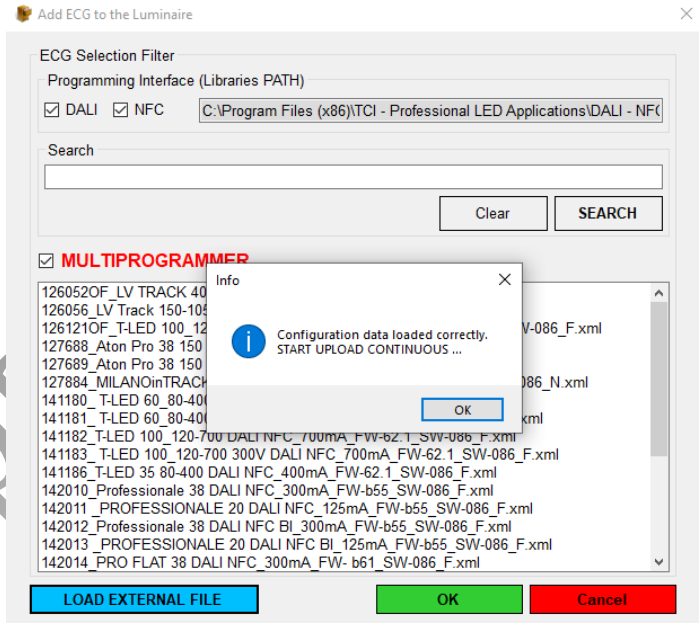


1) Click on “Load external file” select the configuration file previously saved (es. JOLLY DALI 38 NFC – 1050mA 20W) and confirm.

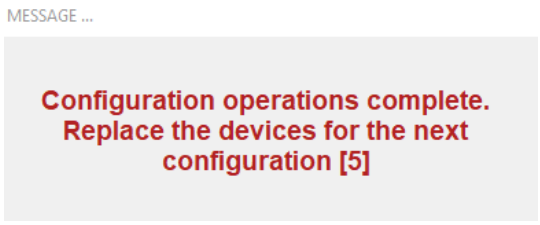
If you follow this procedure file will be uploaded in the software and modified, saved again or upload in the driver under programming.

2) Flag “Multiprogrammer”, click on “Load file” select the configuration file previously saved (es. JOLLY DALI 38 NFC – 1050mA 20W) and confirm.

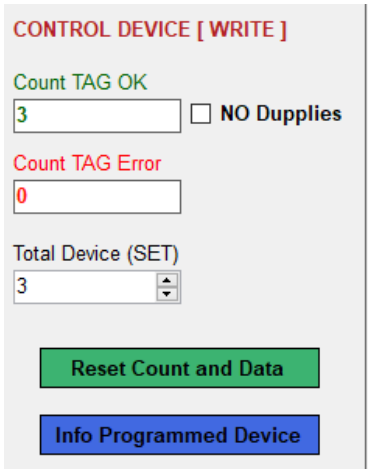
The following message will displayed ”Configuration data loaded correctly, START UPLOAD CONTINUOS”.



Software will start the programming, when first device has programmed software display this message: “CONFIGURATION OPERATIONS COMPLETE. REPLACE THE DEVICES FOR THE NEXT CONFIGURATION”, basically NFC-Multi tag provide a counter of 5sec at your disposal in order to change the ECG on the reader going ahead with the production.



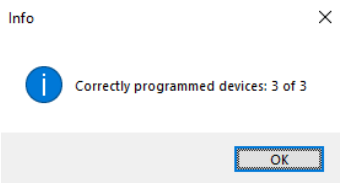
10. Counter



Count tag OK: numbers of the led driver correctly programmed;

Count tag error: numbers of the led driver bot programmed due to issue related on writing process;

Total device (SET): during production user can set up the amount of pieces/batch of devices to be programmed, after finish the production driver will show a properly message.

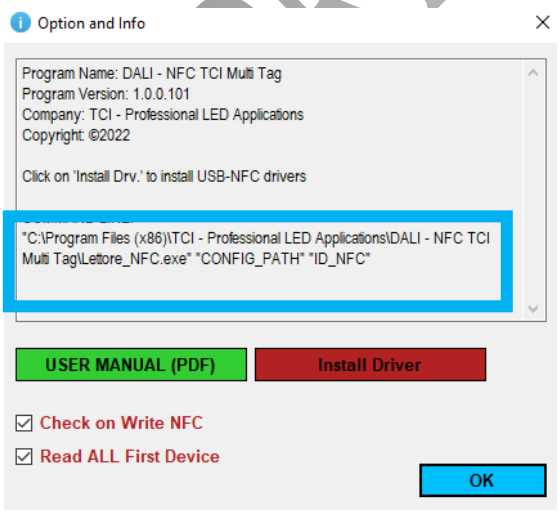


No dupplies: if the function is activated and the device has been already programmed, the counter it doesn't consider it.

11. Command line

ECG programming via command line, allow the final user to avoid the graphic interface during production process, create a pre-set configuration and launch them using the appropriate string.

Click on "Options" button and a further poup-up will appear, scroll down and select" Command line", copy and paste the sentence inside on the command line.

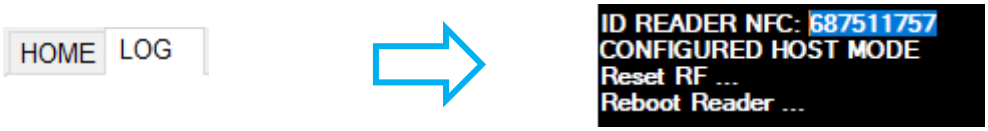


"C:\Users\D.Borsani\AppData\Local\Apps\2.0\H91YB1J2.CVE\YJHYAOH2.AYA\lett..tion_5db6bac3bc2673ee_0001.0000_b6f2c6d20a6f2d8b\Lettore_NFC.exe"

1) Add space, copy and paste the configuration file into “Config_path” field, eg.:

"C:\Users\D.Borsani\AppData\Local\Apps\2.0\H91YB1J2.CVE\YJHYAOH2.AYA\lett..tion_5db6bac3bc2673ee_0001.0000_b6f2c6d20a6f2d8b\Lettore_NFC.exe" "C:\Users\D.Borsani\Desktop\PROFESSIONALE DALI NFC 38W 1050MA.xml"

2) Add space, copy and paste the ID number of the NFC reader into “ID_NFC” field:



"C:\Users\D.Borsani\AppData\Local\Apps\2.0\H91YB1J2.CVE\YJHYAOH2.AYA\lett..tion_5db6bac3bc2673ee_0001.0000_b6f2c6d20a6f2d8b\Lettore_NFC.exe" "C:\Users\D.Borsani\Desktop\PROFESSIONALE DALI NFC 38W 1050MA.xml" "687511757"

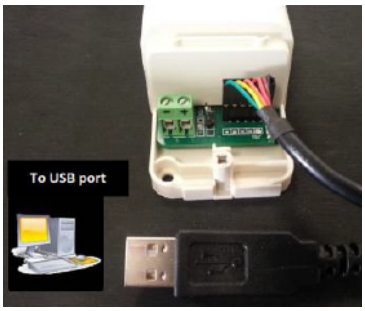
a. Error message during command line

Error message	*Description*
0 Success	All operations are finished with good results.
1 cannot read/write	Impossibile write and read on the products.
2 device not conforming to configuration	The device that you’re reading/writing is different from the device previously saved in the xml. File
7 no reader NFC	The software do not recognize the RFID NFC reader
8 Cannot reader NFC tag	The software recognize the NFC reader, but reader it self do not find any NFC chip to read.
9 No devices checked in the signal field	ECG missing on the reader.

12. DALI programming

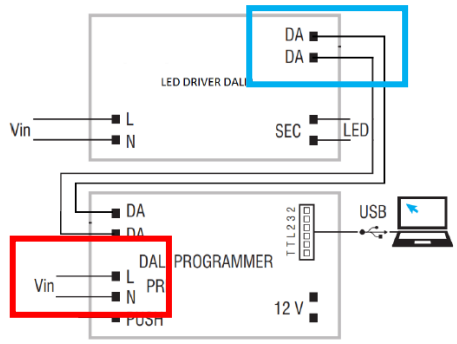
12.1 Selecting the interface (DALI)

Before to start wires all system as below mentioned:



First step connect the FTDI cable order (code 485720519) between laptop (USB) and our DALI PROGRAMMER.

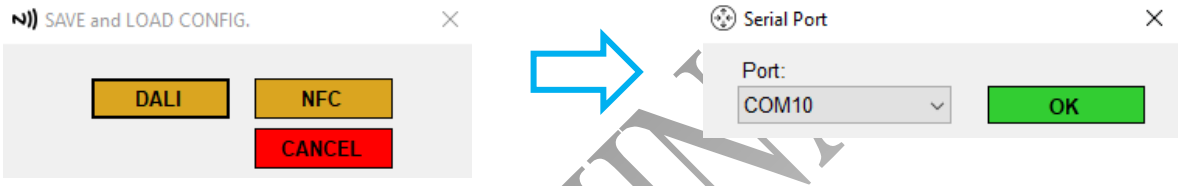
N.B If programmer works properly the green led chip is lights on.



- Connect **DALI output** of DALI PROGRAMMER into **DALI input** of ECG;
- Power ECG and programmer on primary side.

N.B it' not necessary connect a load on secondary side of the ECG.

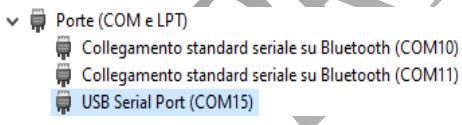
Select "DALI" as programming interface, a further window will appear "Serial port" now select COM port where the FTDI cable is connected.



12.2 COM port selection

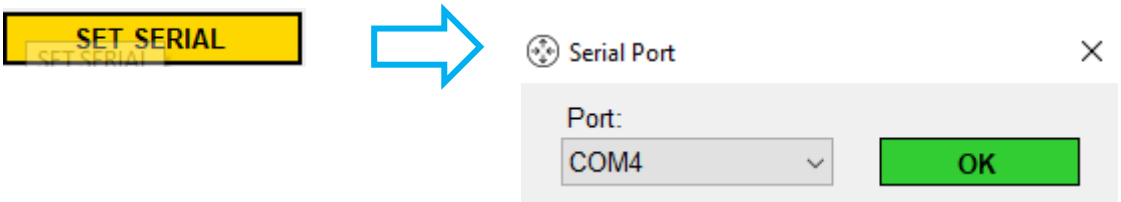
Check always which is the correct port, following below procedure:

- Control panel
- Device management
- COM port and LPT, click/extend this field and check which COM port has been assigned to the FTDI cable:



After select the correct COM port the follow message will appear "Connection process terminated".

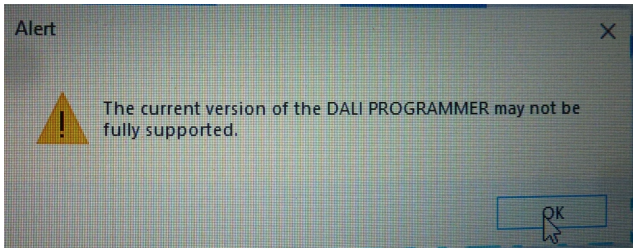
For whatever reason would be necessary, is always possible set again/change the serial port, by means of properly button:



12.3 Confirmation and error message

DALI programmer not supported due to an old firmware version (pic1). DALI programmer updated in accordance with last release (pic2).

Pic1

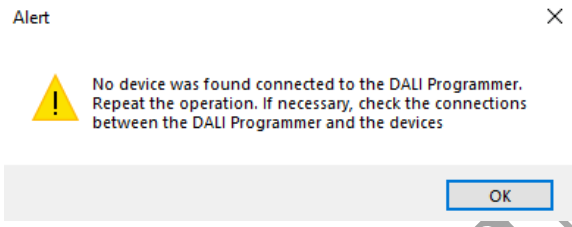


Pic.2

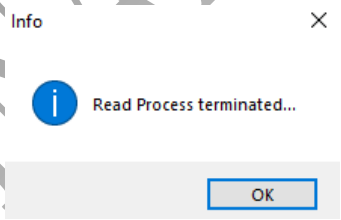
Before to scan DALI bus or start the commissioning of a new device/s please check carefully all wires.

Missing connection between programmer and device eg. Missing connection of the DALI bus (pic1). Confirmation of reading, all system has been wires correctly (pic2).

Pic1

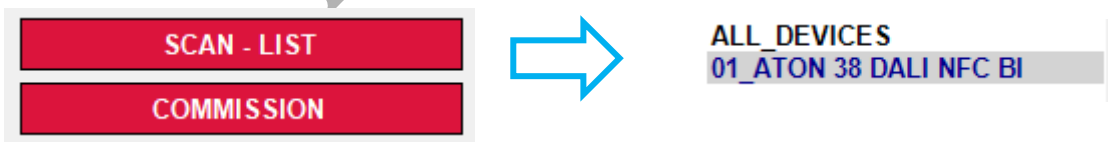


Pic2

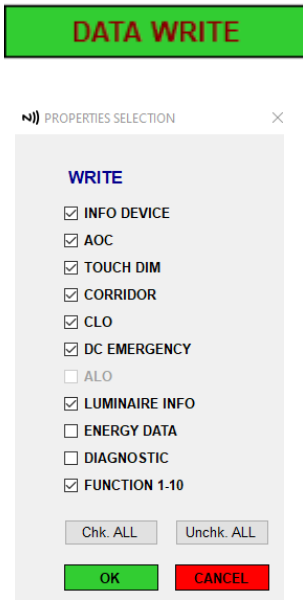


12.4 Commissioning

Depends on the ECG in your hands, you have to select “Commission” if the ECG under programming do not have any address, if the ECG already have an address it’s enough to click on “Scan list” and all ECG connected on DALI bus will be displayed as their description name.



13. Writing process



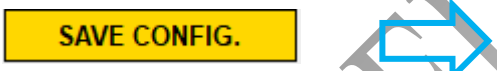
Click on “Data write” in order to write the device under programming, a further pop-up “Properties selection” give the possibility to choose again which capabilities you really need to set on the driver.

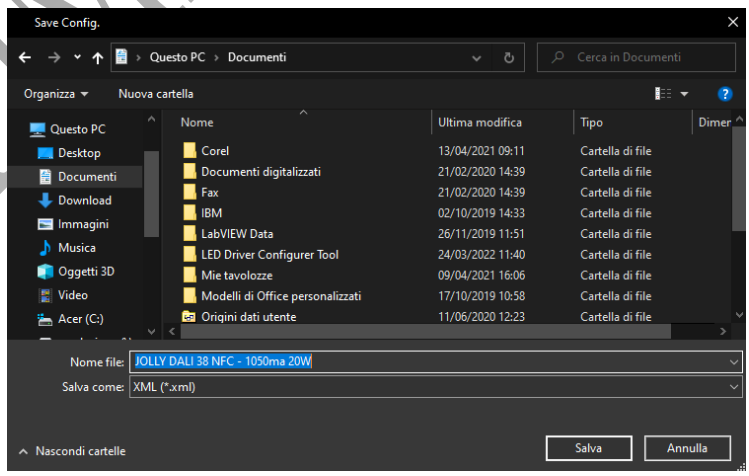
Select them one by one or use properly button “Chk. ALL” or “Unchk. ALL”.

If the writing process is correctly terminated the following message will appear “Process of writing tag terminated”.

14. Save a configuration file

Click on “Save config.” and select the folder where you need to store all configuration files to be used for future production.

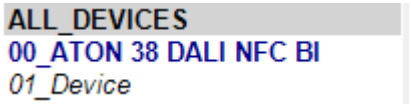




15. Writing process using a configuration file (All devices)

The saved xml. file (see section 13) can be upload on the next device or devices if several devices has to be programmed.

1) Click on “All devices” and NFC_DALI Multi Tag will show all devices connected on the BUS (00 and 01).



Software read only Info device and AOC capabilities on the first device therefore the description of the product will be displayed only on the first one.

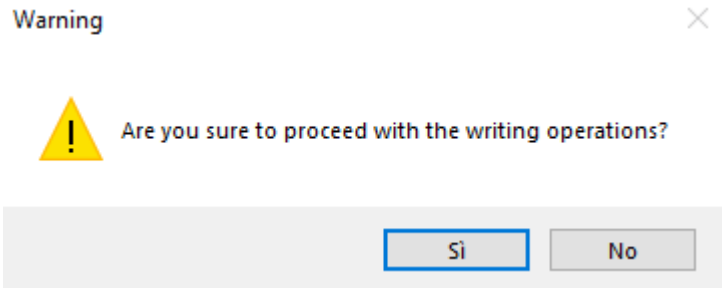
“00” and “01” are the short address automatically assigned by the software.
In order to read device “01” and others double click on them.

All devices function through DALI requires that the created net (devices under programming) is homogenous, so it means all devices has to be the same.

2) Click on “Libraries ECG”:

3) Click on “Load external file” select the configuration file previously saved (es. ATON 38 DALI NFC – 1050mA 20W) and confirm.

4) NFC- Multi Tag will start to write all parameters on all devices on the bus, please confirm the pop-up and go ahead with production.



16. Writing AOC using Tera Term (xml. File)

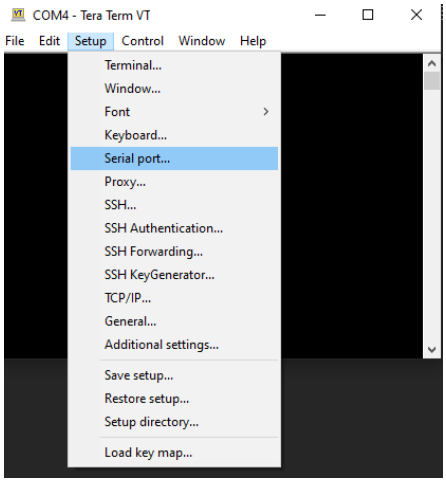
Teraterm is an open-source, free, software implemented and terminal emulator program which emulates different types of computer terminals. It also has a built-in macro scripting language and a few other useful plugins.

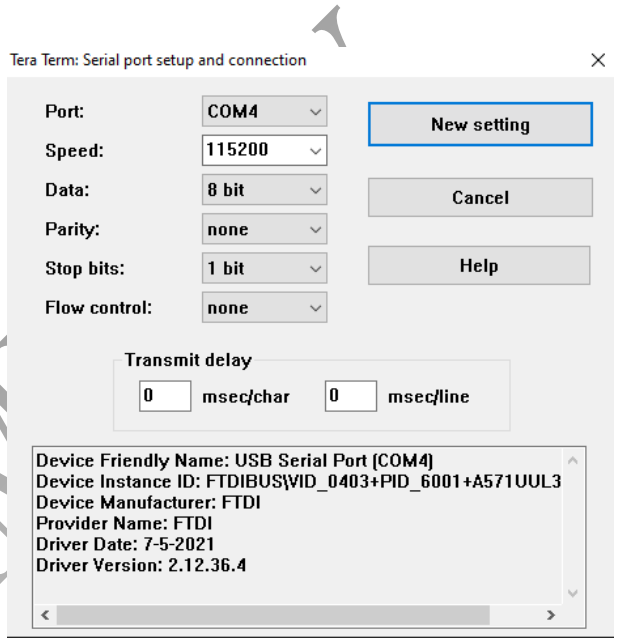
Normally Tera Term can be used even without NFC-DALI Multi Tag but of course it requires a different background and skills, due to missing graphic.

First step to is download from the website the exe. file, build the connection between DALI programmer and laptop (check the COM port) and DALI programmer vs LED driver and run it.

16.1 Set serial

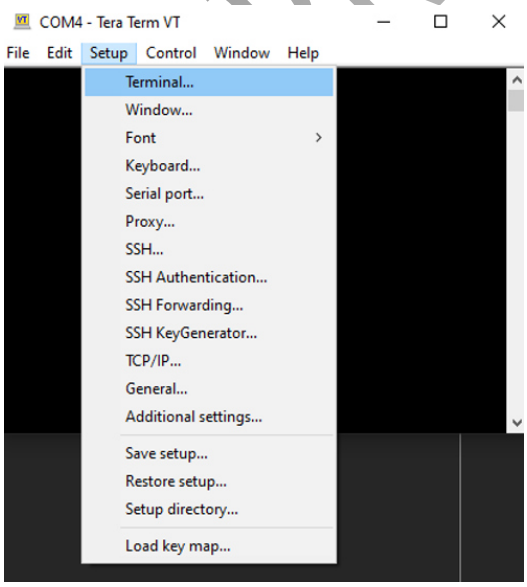
Click on “Setup” and select “Serial port”, aligned all parameter as the right picture and click on” New setting”.

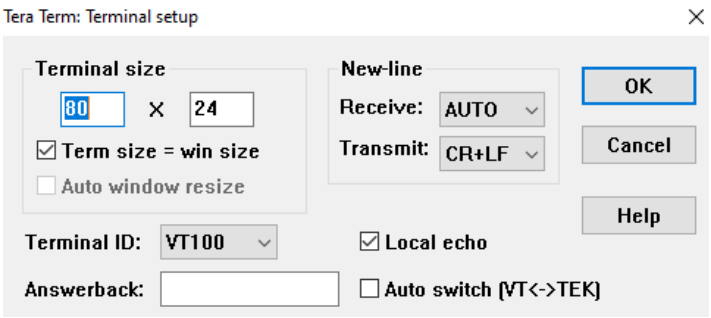




16.2 Set Terminal

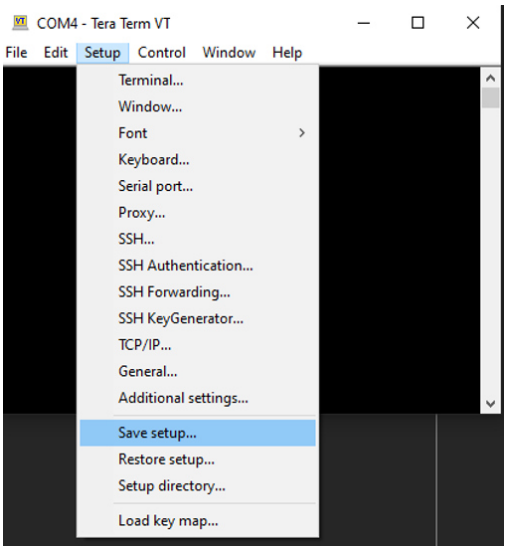
Click on “Setup”, select “Terminal” and align all features as the right picture.





16.3 Save set-up

Click “Setup”, select “Save setup” and choose the folder where the setup has to be saved.



16.4 Save xml. file

Before to start writing must be necessary save the “DALI_write_ProDALI_SetAOC.ttl” (xml. File) on your laptop ad change the AOC value into the file, of course with the value you need.

```
new_current_val = 300          ;<----------------------------  AOC value [mA]
```

This file can be easier find inside the zip. File you download from our website.

16.5 Writing xml. File

Click on “Tera Term” and fill the missing fields asked on the pop-up (right picture).

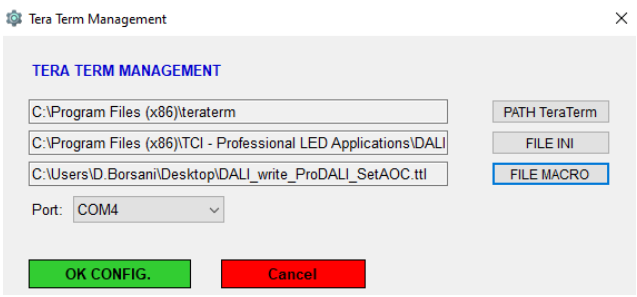
PATH TeraTerm: is the shortcut where the software has been installed.

FILE INI: select the shortcut to the setup before saved (see section 15.3)

FILE MACRO: select the shortcut where the macro file has been saved (see section 15.4)

Port: should be already defined, otherwise please check (see section 10.2)

TERA TERM

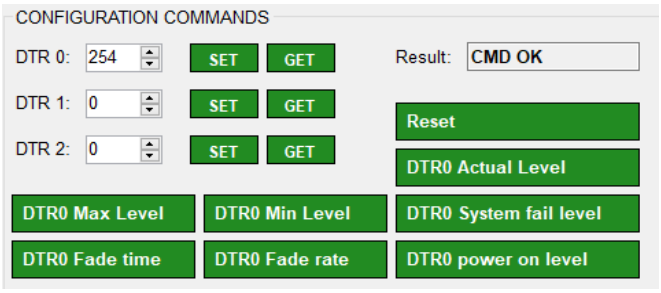


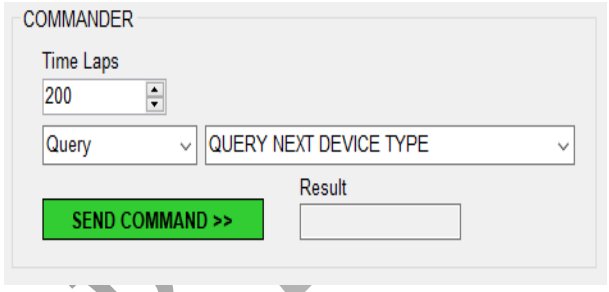
Now you should write the AOC value in the device under programming.

17. DALI commands

Accordingly with DALI standard we dedicate a complete section related to the DALI commands, under button functionality or using the properly query in order to recall most of them.

In accordance with the DTR0 at the left of the field (eg. DTR0 System failure level) write DALI value in accordance with the standard EN62386-102 (eg.254) and click “Set” in order to write this parameter or “Get” in order to know the existing value.



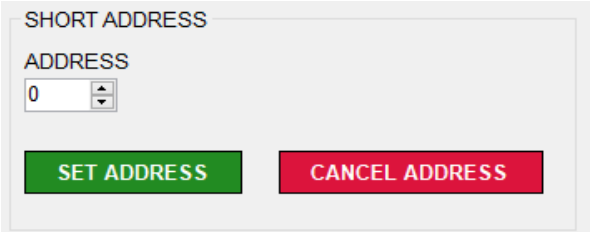


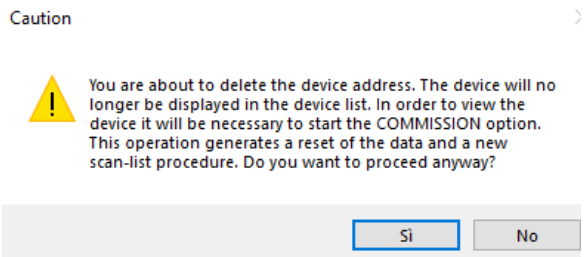
Parameter	Description
Fade time	The selected value is set as the fade time in seconds.
Fade rate	The selected value is set as the dimming speed. It Indicate by how many steps per second the intensity is change. The fade rate is used with DALI commands (UP) and (DOWN).
Minimum Level	The selected value is set as the minimum level for the control gear. This value cannot be fallen during dimming/brightening. Value range: Physical lower limit – Max. Level
Maximum Level	The selected value is set as the maximum level for the control gear. This value cannot be exceed during dimming/brightening. Value range: Minimum Level – Maximum Level
Power on Level	The selected value is set as the value after power is restored.
System failure Level	The selected value is set as the value in the event of failure of the DALI power supply.

18. Set/Cancel short address

In order to detect all devices on the DALI bus software will automatically assign a short address, but end user is free to change this value in accordance to their needs.

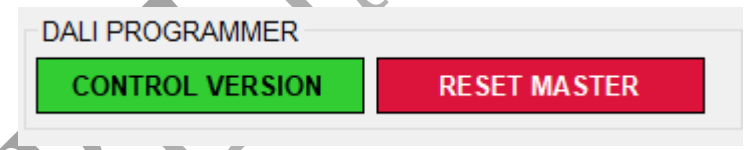
After finish all settings we always suggest to cancel the address before to place the goods on the market avoiding issue and incompatibility with DALI master used in final installation.



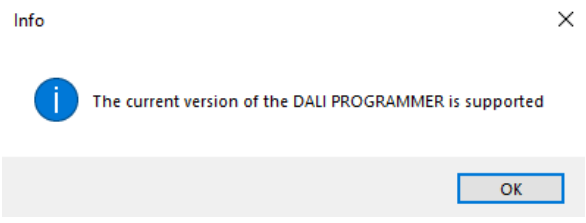


19. DALI PROGRAMMER

The following buttons can be used in order to check the compatibility between the hardware (DALI PROGRAMMER) and the software or to reset the master in the case will be necessary.



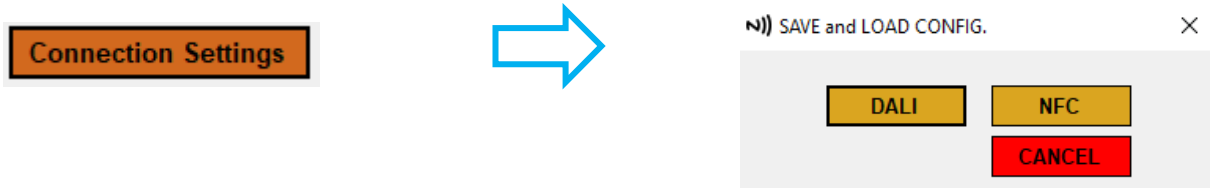
CONTROL VERSION: must be used in order to check the compatibility between the hardware (DALI PROGRAMMER) and the software.
The hardware version must be from 2.7 or higher, if the hardware is compatible the software will show the following popup-up:



RESET MASTER: sometimes it could happen that the software send the “error01” it could be due to an incompatibility with the hardware (an old firmware version) or because the communication laptop-ECG is missing. Check the connection and when you’re sure to have adjust the wires reset the master.

20. Connection settings

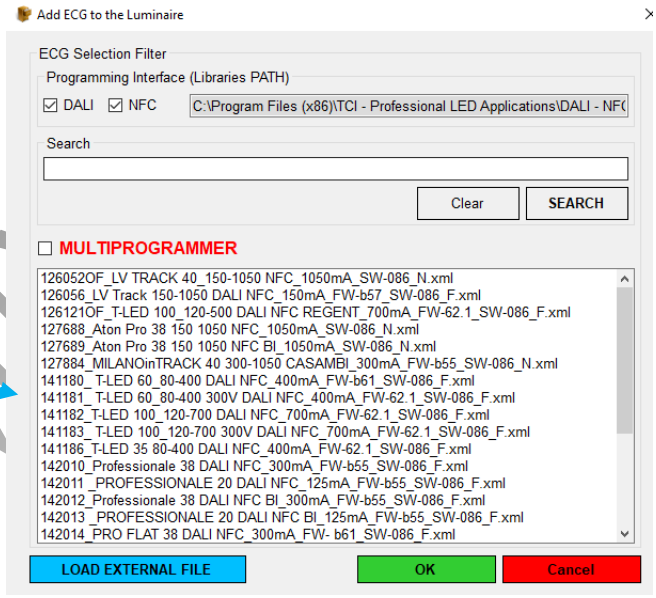
For whatever reason would be necessary is always possible change the interface from DALI to NFC or viceversa.



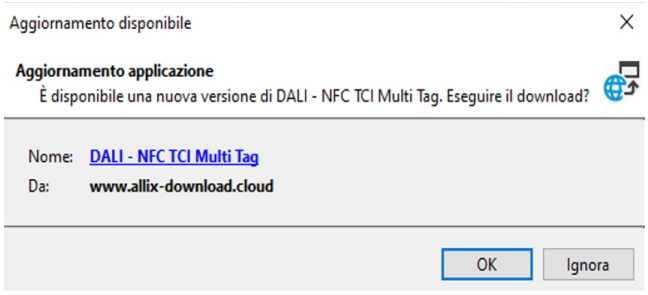
21. Library Management

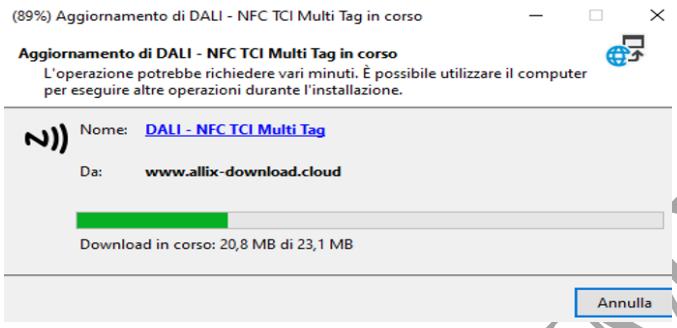
DALI-NFC multi tag it's an on-line version, it means that all updates published from TCI, library included, are always implemented on your installed software.

The white window show all pre- configured library.



22. Software updates





All update we publish, from graphic point of view and functionality are always and automatically implemented on your software.

If a new updates will be published on the net, when software will run, it will ask to confirm or not, please click “OK” and go ahead.

A second message will appear, with a slide showing the status of the upload.

N.B in order to install the updates, the laptop must be connect via Wi-Fi or LAN.

23. Software version/Options

Click on options in order to get more information about software, version included.

Eg. 1.0.0.101