

Light is OSRAM

**OSRAM**

# Tuner4TRONIC® Production 4.2

**Please note:**

All information in this guide has been prepared with great care. OSRAM, however, does not accept liability for possible errors, changes and/or omissions. Please check [www.osram.com](http://www.osram.com) or contact your sales partner for an updated copy of this guide. This technical application guide is for information purposes only and aims to support you in tackling the challenges and taking full advantage of all opportunities the technology has to offer. Please note that this guide is based on own measurements, tests, specific parameters and assumptions. Individual applications may not be covered and need different handling. Responsibility and testing obligations remain with the luminaire manufacturer/OEM/application planner.

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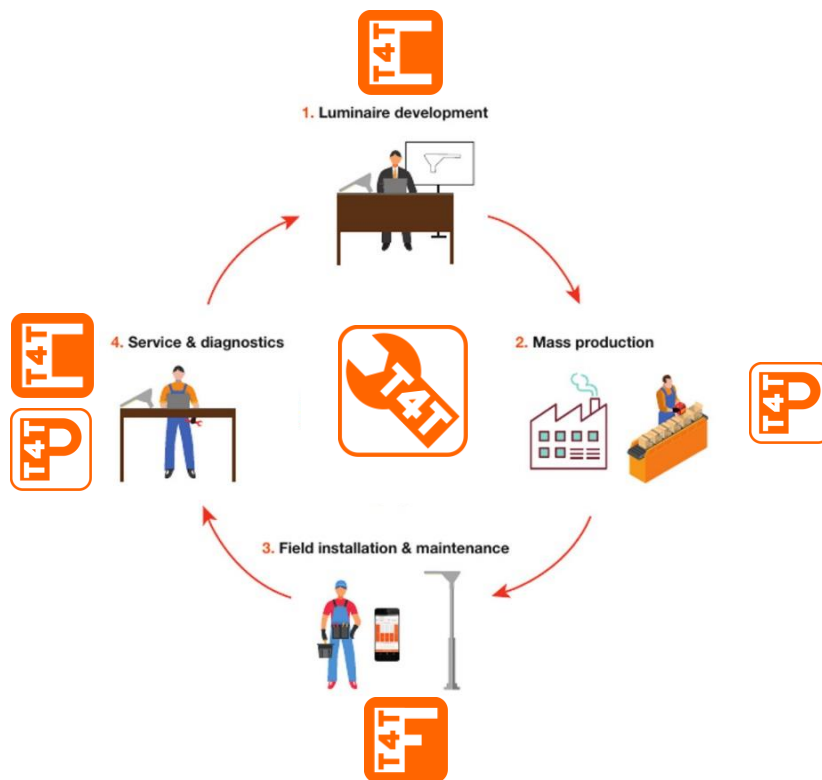
## 1 About Tuner4TRONIC

### 1.1 Purpose and Application

The Tuner4TRONIC (T4T) software suite allows luminaire manufacturers to program OSRAM drivers via DALI and/or NFC in a simple, fast, reliable and cost-effective way, speeding up the production process.

Tuner4TRONIC tools can be downloaded from [www.osram.com/T4T](http://www.osram.com/T4T).

[Click here to watch a short video that gives a great overview about Tuner4TRONIC.](#)



The Tuner4TRONIC software suite consists of different modules according to the environment of use:



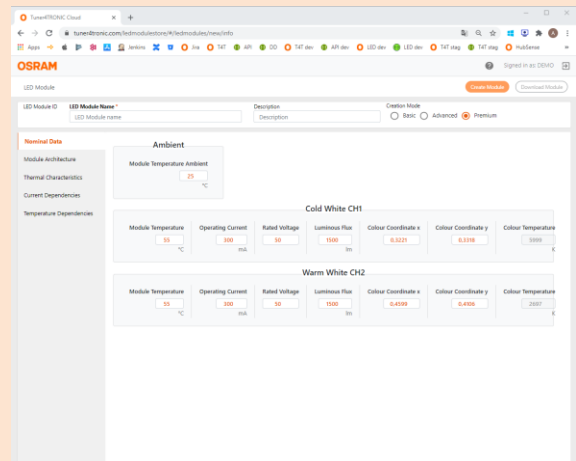
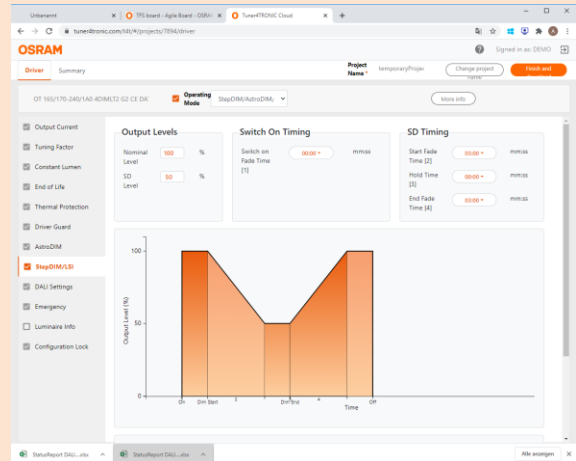
### Tuner4TRONIC Configurator

This web based browser application enables luminaire designers to configure LED drivers by setting parameters such as output current, dimming levels, constant lumen output, operating modes and much more. Thanks to its multi-level password system, Configuration Lock protects LED drivers against unauthorized changes while service technicians can still be granted access for selected features.

Once the configuration has been completed, the settings are exported as an encrypted read-only production file and transmitted to the production line.

[www.tuner4TRONIC.com](http://www.tuner4TRONIC.com)

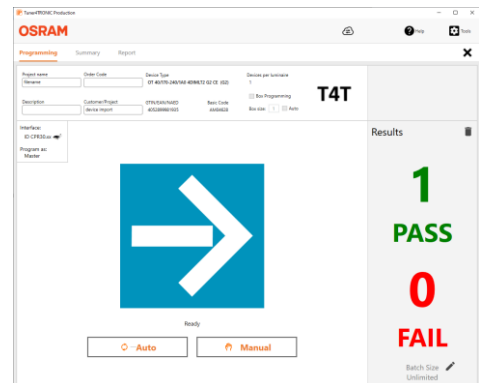
Same URL also provides a **Tuner4TRONIC TW LED Module Editor** to create settings for customized TW LED modules



### Tuner4TRONIC Production

In luminaire production encrypted production files from the T4T-Configurator can be uploaded into the LED drivers for the fast mass production.

T4T Production also allows reading data from drivers (to be displayed and edited in T4T-Configurator)





### Tuner4TRONIC Field

T4T-Field is an app for smartphones that can program OSRAM outdoor as well as indoor LED drivers via NFC - wireless and without mains-voltage. The app trims light output, CLO and dimming profiles of the driver. T4T-Field also allows uploading production files created by T4T-Configurator and copy data from one driver to another for on-site replacement.

[Click here to download the app from Google Play \(Android version\)](#)

[Click here to download the app from the App Store \(iPhone version\)](#)

[Click here to download the dedicated manual for T4T-Field](#)



### Tuner4TRONIC REST API

While the T4T-Configurator provides the users an intuitive graphical interface, the API („Application Programming Interface“) allows software developers a collection of functions and tools to create luminaire configurations automatically. Typically, the API is used to create luminaire files when a new order is available in the ERP system. The API is based on modern standards (REST) standards and comes with comprehensive documentations.



### Tuner4TRONIC Machine

The DLL and command line tools enable to integrate OSRAM LED driver programming into automatic programming stations in the production line.



T4T.DLL

## 1.2 Files Types

Tuner4TRONIC Development uses different file types:

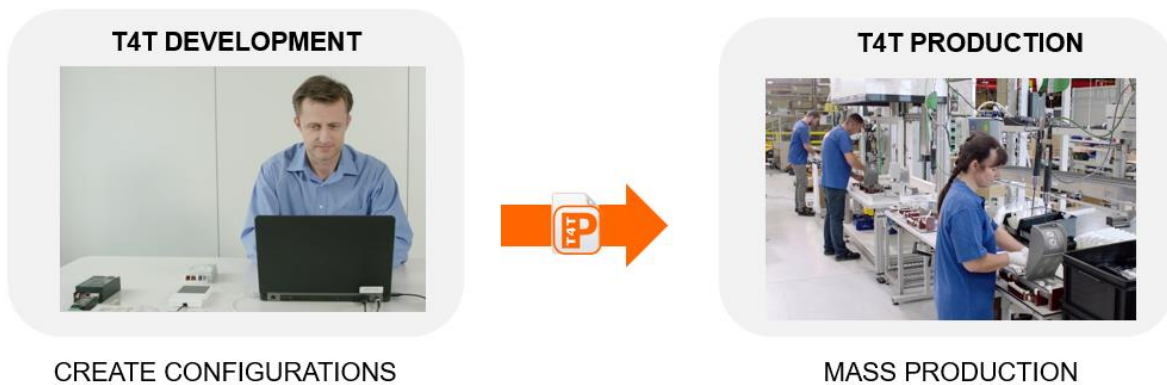
- Tuner4TRONIC production file = .osrtup
- Driver description file = .osrtud
- Driver data (readback) = .osrtur

## 1.3 Workflow between the different T4T Tools

The luminaire product designer creates his desired configuration (e.g. setting the operating current, CLO and dimming) using T4T Configurator. When the configuration is finished, he creates and downloads an read-only \*.osrtup file that goes to T4T Production on the assembly line in mass production.

For testing and diagnostics, data can be read back from the driver by T4T Production and import the \*.osrtur file for visualization in T4T Configurator

Our optional API allows to create luminaire and production files directly from an ERP system removing the need to create those files manually.



#### 1.4 System Requirements

The minimum system requirements:

- 1 GB main memory
- Windows 7 (both 32 or 64-bit), Window 8 / 8.1 (both 32 or 64-bit), or Windows 10 (both 32 or 64-bit) latest SP installed
- 100 MB hard disk memory
- Monitor with a resolution of 1024x768 pixels, the recommended zoom factor is 100%
- one free USB 2.0 port for Programming Interface

## 1.5 Programming Interfaces

To program a luminary containing an OSRAM driver, a programming interface (suitable for the used driver) is needed:

---

[1] Driver with DALI interface  
(multi and/or single programming)

DALI Magic



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[2] Driver with NFC interface

FEIG ISC.PRH101



FEIG CPR30



FEIG ISC.MR102  
(separate antenna  
ISC.ANT310/310 needed)



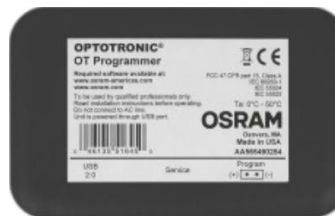
FEIG ISC.LR1002  
(separate antenna  
ISC.ANT310/310 or  
ISC.ANT800/600 needed)



- [3] Antenna FEIG ISC.ANT310/310  
with FEIG ISC.LR1002



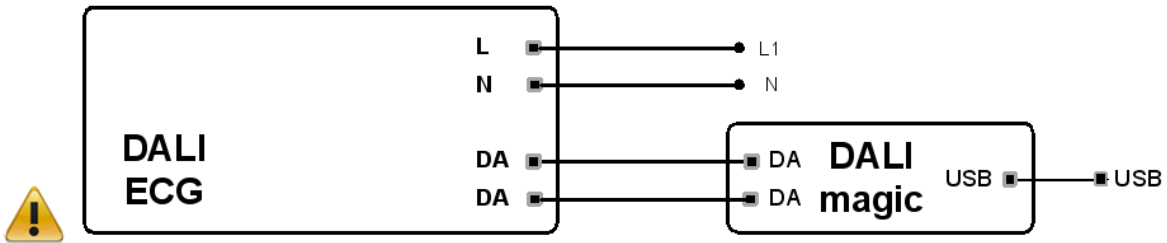
- [4] Driver with Prog+/Prog- interface OT Programmer (COM Box)



Tuner4TRONIC Production is capable to handle more than one programming interfaces connected to the same PC

### 1.6 Preparing a driver with DALI interface for programming

Step	Activity
1	Connect DALI magic and PC with the enclosed USB cable.
(2)	Connect the external 6V DC power supply to the DALI magic.  The use of the external power supply is mandatory in case of more than 4 drivers connected to the DALI line, anyhow it is strongly recommended to always use the external power supply in order to improve the stability of the DALI communication.
3	Connect the driver to mains and PE if the related terminal is available in the driver.
4	Connect the DALI® terminals of the DALI magic with the DALI® inputs of the driver(s).

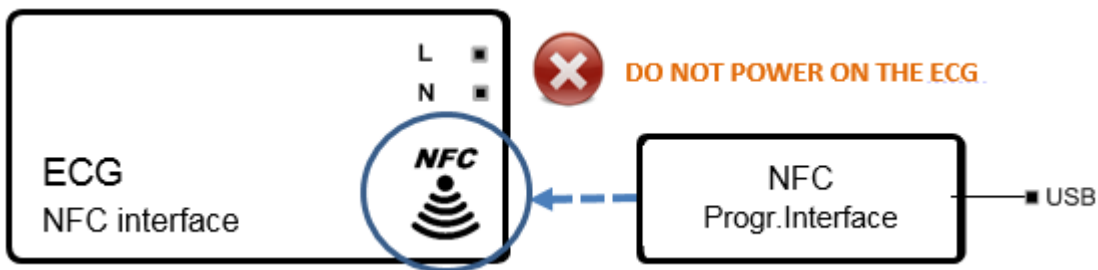


**NOTE:** most of the DALI LED drivers allow programming when supplied with a low voltage (e.g. 48V) in place of the mains voltage. For further details, please consult the LED driver's datasheets.

### 1.7 Preparing a driver with NFC interface for programming

Step Activity

- 1 Connect a NFC reader to the PC with the enclosed USB cable.
- 2 Place the driver (see logo on the driver) close to the NFC reader



#### Important Information:

Keep the driver powered OFF during programming via NFC unless otherwise indicated in the documentation of the driver. Keep both NFC reader and driver in close contact during the complete programming process.



## 1.8 Preparing a driver with Prog+/Prog- interface for programming

1. Connect the OT Programmer to the PC with an USB cable.
2. Connect the +/- terminals of the OT Programmer with the Prog+ / Prog- terminals/cables of the driver.

### Important Information:

**DO NOT POWER ON THE DRIVER!** Programming of the driver via Prog+ and Prog- is NOT allowed when the driver is powered with mains on terminals L/N.

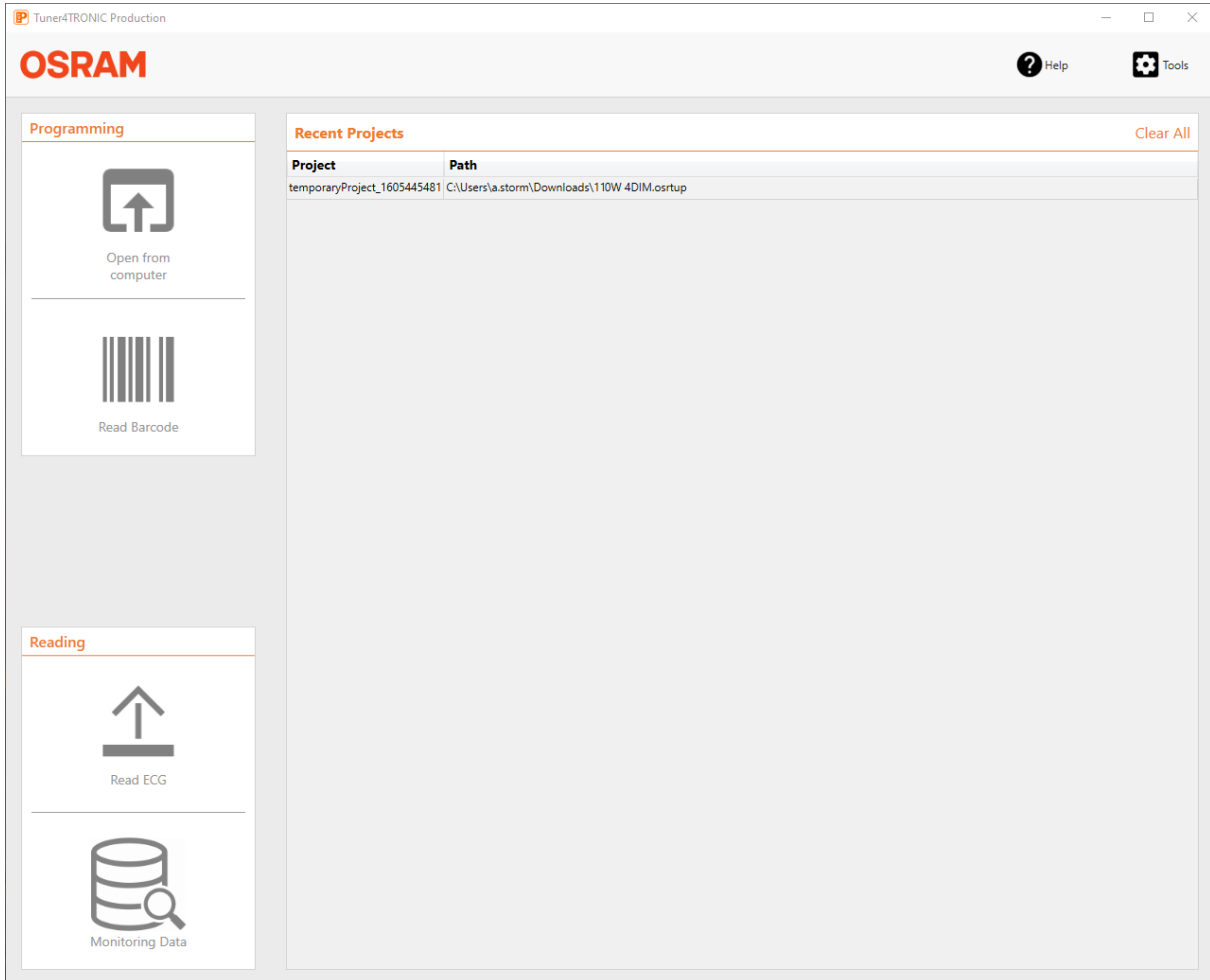
## 1.9 Software Installation

**To install the file you must have Windows administrator rights.** Extract the Tuner4TRONIC zip file into your local hard drive and then run "Install T4T.exe" located in that folder. **Running the Installer from inside the zip file will cause a faulty installation!**

Tuner4TRONIC Production can be launched from "Start" => "All Programs" => "OSRAM" => "Tuner4TRONIC" or by double-clicking the desktop icons.

## 2 Using T4T Production

### 2.1 Start Page



Open from computer Load an existing production file (\*.osrtup). This file has been created by Tuner4TRONIC Cloud, Tuner4TRONIC API or Tuner4TRONIC Development. After selecting a production file, the program will switch to the programming page.

Recently loaded production files can also be loaded from the recent projects list by double click.

Read Barcode Load production file from barcode

Read ECG Read data from driver connected by a programming interface (NFC, DALI) and create a raw data file (\*.osrtur). The raw data file can be saved for later processing or directly opened (imported) in Tuner4Tronic Cloud for displaying and editing data. A new production file can be created with T4T-C and opened again with T4T-P for programming drivers.

When DALI Magic has been selected as programming interface, a specific driver can be selected by entering its DALI short address.

**Please note, that the passwords are not copied when reading data from drivers.** In order to edit data in protected drivers, PWs need to be re-entered when creating a production file.

Monitoring Data Read and display Monitoring Data (PMD, D4i) from driver

Recent Projects Load a production file from list of recently opened projects. List can be cleared by "Clear All"

Tools Open tools page

Help Open help and about pages

## 2.2 Programming Page

The screenshot shows the OSRAM Tuner4TRONIC Production software interface. The main window is titled "OSRAM" and has a navigation bar with "Programming", "Summary", and "Report" tabs. The "Programming" tab is active. The interface displays the following information:

- Project name:** OT 110 4DIM
- Order Code:** [Empty field]
- Device Type:** OT 110/170-240/1A0 4DIMLT2 G2 CE DATA (G2)
- Devices per luminaire:** 1
- Description:** [Empty field]
- Customer/Project:** [Empty field]
- GTIN/EAN:** 4052899981959
- Basic Code:** AM35339
- Box Programming:**  Box Programming
- Box size:** 10  Auto

The central area shows a large blue square with a white arrow pointing right, labeled "READY". Below the arrow, it says "Waiting for ECGs...". At the bottom, there are two buttons: "Auto" (with a refresh icon) and "Manual" (with a hand icon).

On the right side, the "Results" section shows:

- 10 PASS** (in green)
- 0 FAIL** (in red)

At the bottom right, it says "Batch Size unlimited" with a pencil icon.

For programming devices select "Programming" on the navigation bar

**Project Data** Project related data, that has been loaded from production file is displayed and can be edited in the project data section

**Devices per Luminaire** Shows the number of devices in the luminaire, that will be programmed. Data is received from loaded production file

**Box Programming** Select “Box Programming” to program drivers in the box via NFC. Box programming can only be activated after having selected a programming interface that is suitable for box programming

If the driver is released for box programming, Auto checkbox will enter number of drivers by default. Default setting loaded from production file and can be edited. Programming will not start before number drivers detected matches the target number of drivers.

In case of verification error on one or more drivers, all drivers will be marked as failed. In this case, the hole box must be programmed again. Reprogramming drivers that have been programmed with the same production file before will be overwritten in the report (no increment of the total number of passes)

**Detected Devices** Shows the number of detected drivers (displayed after pressing programming buttons)

**Start Programming** Programming is started by pressing either

- Manual: Programming drivers in one single luminaire or one box
- Auto: Starts programming drivers after being connected to the programming interface. Auto mode continues until batch size is reached. In box programming mode, programming starts when number of identified drivers match the box size

**Status** Programming status is indicated by a symbol (see table Programming Status Indicators), a completion bar and text message

**Results** The number of passed and failed programmings is displayed. The same driver may be programmed multiple times. Only the last pass/fail will be counted and logged in the production file. The programming log can be viewed in the “Report” tab.



Press delete icon to delete the programming report in the production file and reset programming counter.



Press edit icon to edit the batch size

**Interface** Display connected programming interface

**Program as** Display programming role defined in production file.

Master: Allows programming of all features (assuming, master key matches key in target device)

Service: Allows partial programming of features protected by service key (assuming, service

key matches key in target device) and non-protected features

User: Allows partial programming of non-protected features

**Additional DALI Options** If DALI Magic has been selected as programming interface, “Selective Programming” can be enabled to program a driver in a DALI installation identified by its DALI short address.

Press “Search” to search for drivers in the DALI installation. All compatible drivers will be highlighted in green, and the ones to program can be selected by checking the box.

Short addresses to program are separated by comma.

Ranges (e.g. “2-9”) are also accepted.



The cloud icon is displayed, online services are available (connected)

Online services allow automated updating of device description files with latest drivers from DD-store and notifications in case of T4T-P updates.

### Programming Status Indicators



Waiting for Luminaire

Connect a luminaire/driver(s) to start/continue programming.



Programming in progress

Do not remove the connected luminaire/drivers(s) until programming process is completed.



PASS

Programming process has completed successfully. Remove luminaire/drivers(s)



FAIL

Programming process has stopped by user or due to errors. Fix the problem then start programming again. Check message on screen for further details.

## 2.3 Summary Page

Feature	Parameter	Value
OTi DALI 20/220-240/500 NFC S	AM31177	
Operating Mode	Mode	DALI
Output Current	Current	333 mA
Dim to Dark		Disabled
Tuning Factor	Min Limit	50 %
	Max Limit	100 %
	Reference Luminous Flux	0 lm
	Tuning Level (Light Output)	100 %
Constant Lumen		Disabled
	Output Level 8	100 %
	Operating Time 8	Off
	Operating Time 1	0 kh
	Output Level 1	70 %
	Output Level 2	100 %
	Operating Time 3	Off
	Output Level 3	100 %
	Operating Time 4	Off
	Output Level 4	100 %
	Operating Time 5	Off
	Output Level 5	100 %
	Operating Time 6	Off
	Output Level 6	100 %
Operating Time 7	Off	
Output Level 7	100 %	
Operating Time 2	50 kh	

For displaying list of parameters in production file select “Summary” on the navigation bar.

**Update (Cloud)** Press Update (Cloud) to convert values in report to clear text by using cloud services. Required, if data from production file **does not include report in clear text**

**Export** Press “Export” to create an html file with parameters

**Print** Press “Print” to print the list of parameters

## 2.4 Report Page

The screenshot shows the OSRAM Tuner4TRONIC Production software interface. The top navigation bar includes 'Programming', 'Summary', and 'Report' (which is highlighted). To the right of the navigation bar are 'Export' and 'Print' buttons. Below the navigation bar is a table with the following data:

ID	Device Name	Basic Code	Serial Number	Result
LUM1	OTI DALI 20/220-240/500 NFC S	AM31177	12774601631086018873	Passed
LUM1	OTI DALI 20/220-240/500 NFC S	AM31177	12793724337316299065	Passed

For displaying the programming report select “Report” on the navigation bar

**Export** Press export to create an html reporting file. Each line represents programming result one driver, luminaire or box

**Print** Press Print to print the report



## 2.5 Monitoring Data

Cluster	Name	Value	Unit
-- S/N: 12793724337316299065 --			
Active Energy and Power	Active Energy	2.1	Wh
	Active Power	N/A	W
Apparent Energy and Power	Apparent Energy	62.8	VAh
	Apparent Power	N/A	VA
Load Side Energy and Power	Active Load Energy	0	Wh
	Active Load Power	N/A	W
Control Gear Diagnostics and Maintenance	Operating Time	18:58	hh:mm
	Start Counter	74	
	Supply Voltage	N/A	Vrms
	Supply Voltage Frequency	N/A	Hz
	Power Factor	N/A	
	Control Gear Failure	N/A	
	Control Gear Failure Counter	N/I	
	External Supply Undervoltage	N/A	
	External Supply Undervoltage Counter	N/I	
	External Supply Overvoltage	N/A	
	External Supply Overvoltage Counter	0	
	Output Power Limitation	N/A	
	Control Gear Power Limitation Counter	N/I	
	Thermal Derating	N/A	
	Thermal Derating Counter	N/I	
	Thermal Shutdown	N/A	
	Thermal Shutdown Counter	N/I	
Temperature	N/A	°C	
Output Current Percent	0		
Light Source Diagnostics and Maintenance	Start Counter - Resettable	1	R
	Start Counter	3	
	On Time - Resettable	0:00	hh:mm R
	On Time	0:00	hh:mm
	Light Source Voltage	N/A	V
	Light Source Current	N/A	mA
	Overall Failure	N/A	
Overall Failure Counter	253		

**Address** If programming interface DALI magic is selected, a specific driver on a DALI network can be selected by DALI short address

**Read ECG** Press “Read ECG“ to read content of Monitoring Data from driver connected via the selected programming interface.

**Reset Failure Counters** Press “Reset Failure Counters” to reset failure counters in the driver.

Press “R” or dump icon to reset failure counters individually

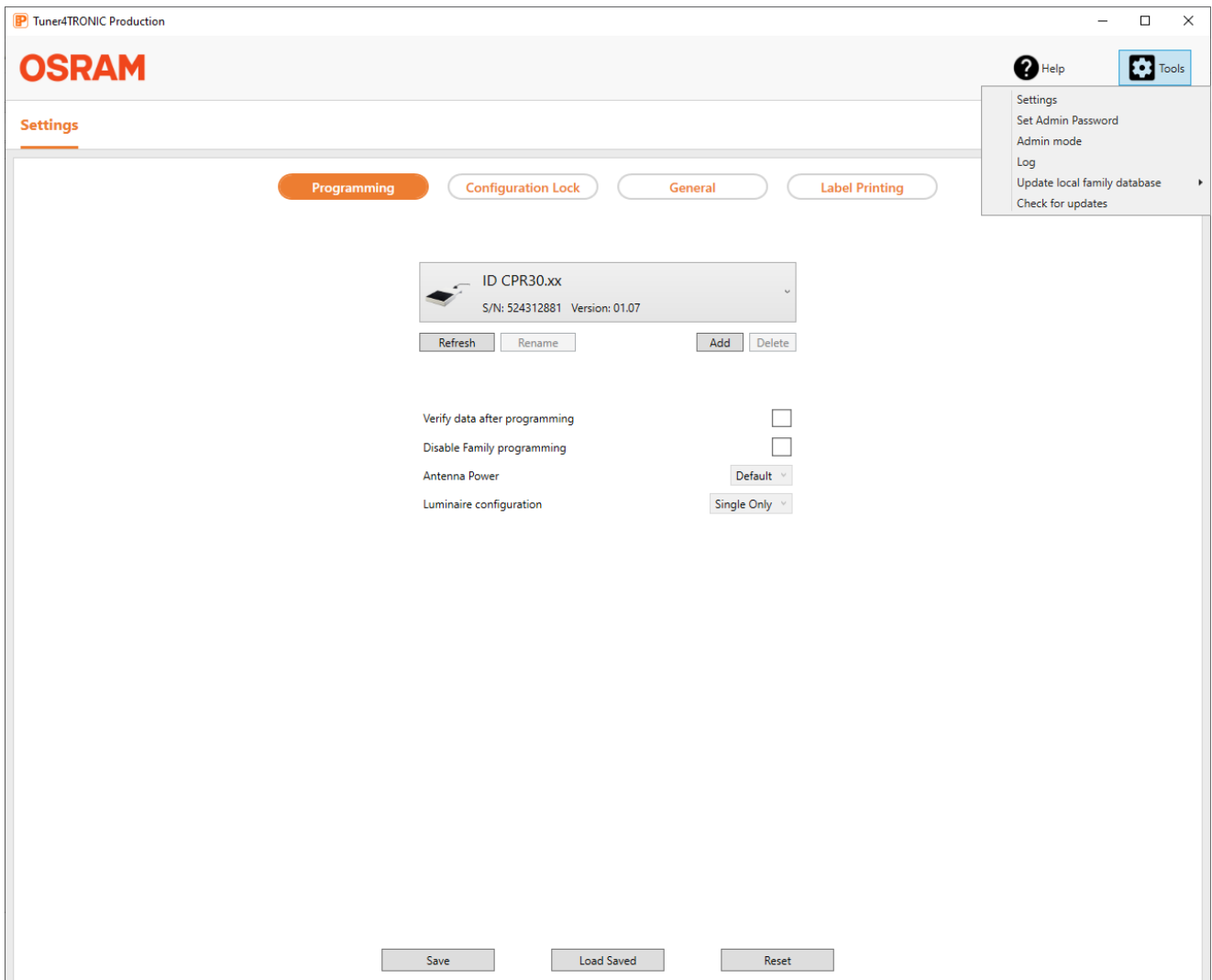
Reset will be affective after next driver power on

**Automatic Log** Reads Monitoring Data recurrently from driver and logs data

**Stop** Stop reading Monitoring Data

Table	Select "Table" for table data view
Panel	Select "Panel" for panel data view
Export	Press "Export" to create an html file with parameters

## 2.6 Tools Page

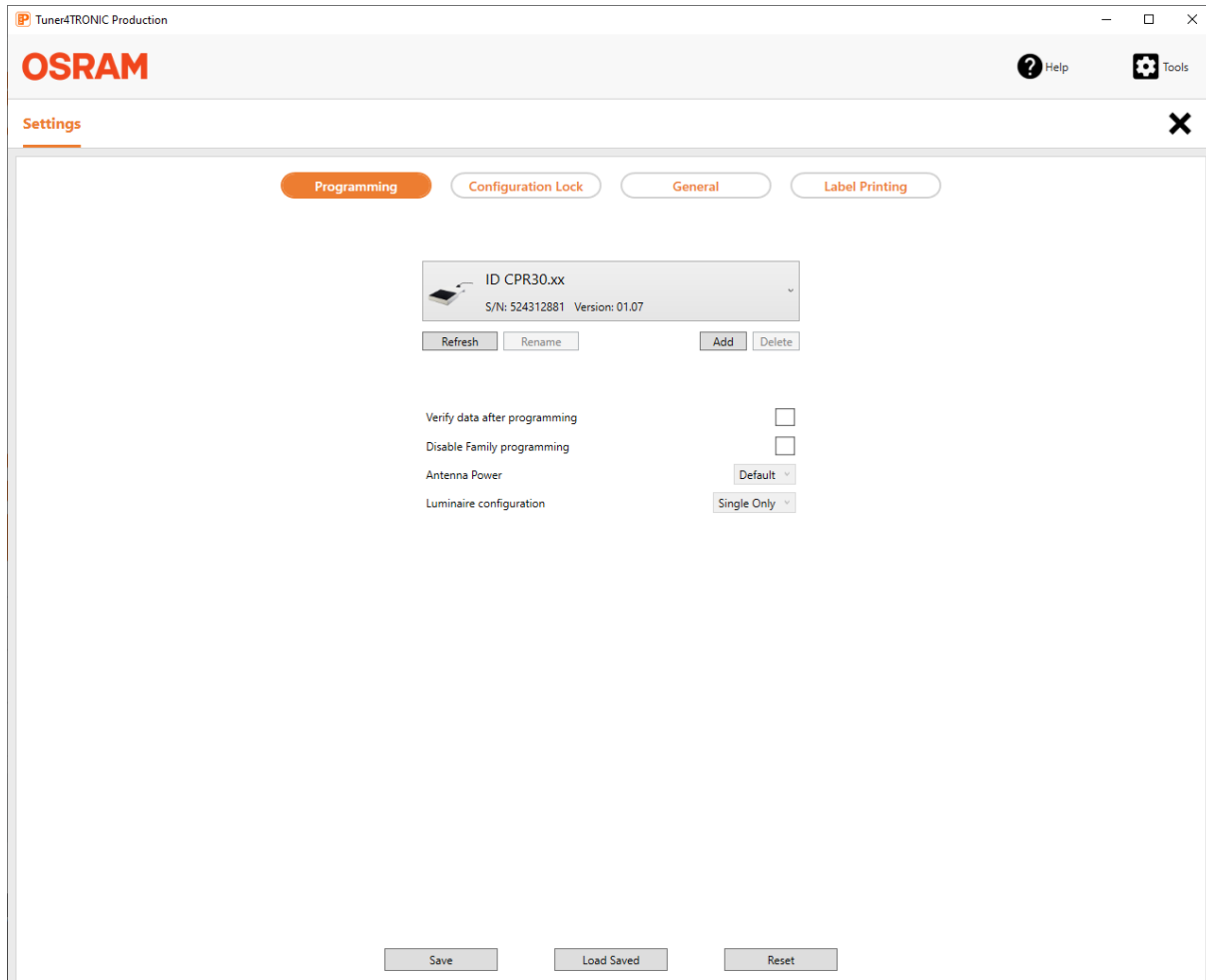


Press Tools and select tools from drop down list

Settings: see Settings page

Set Admin Password	Enter or delete password to use T4T-P in admin mode
Admin Mode	Toggle Admin Mode on/off. If admin mode is activated, production file cannot be reloaded and project data cannot be edited
Log	View log for debugging purposes. Press right mouse on log window to export csv log file
<b>Update local family database</b>	Updates database for family programming – either from cloud or from local zip file, if no internet connection. Zip file can be downloaded from <a href="http://www.osram.com/t4t">www.osram.com/t4t</a> → Additional SW
Check for updates	Select “Check for Updates” to check for new T4T-P versions from download center

## 2.7 Settings – Programming



Select Tools/Settings and press Programming to select programming options

**Save** Save options on local computer and in production file where applicable. If settings have not been saved, any changes will be ignored when restarting T4T-P

**Load Saved** Load options from local computer and from production file where applicable

**Reset** Reset options to factory settings and to data from production file where applicable

**Select programming interface** Select programming interface from drop-down list. Make sure that the programming interface is connected and not used by other tools. Press Refresh to refresh list of programming interfaces.

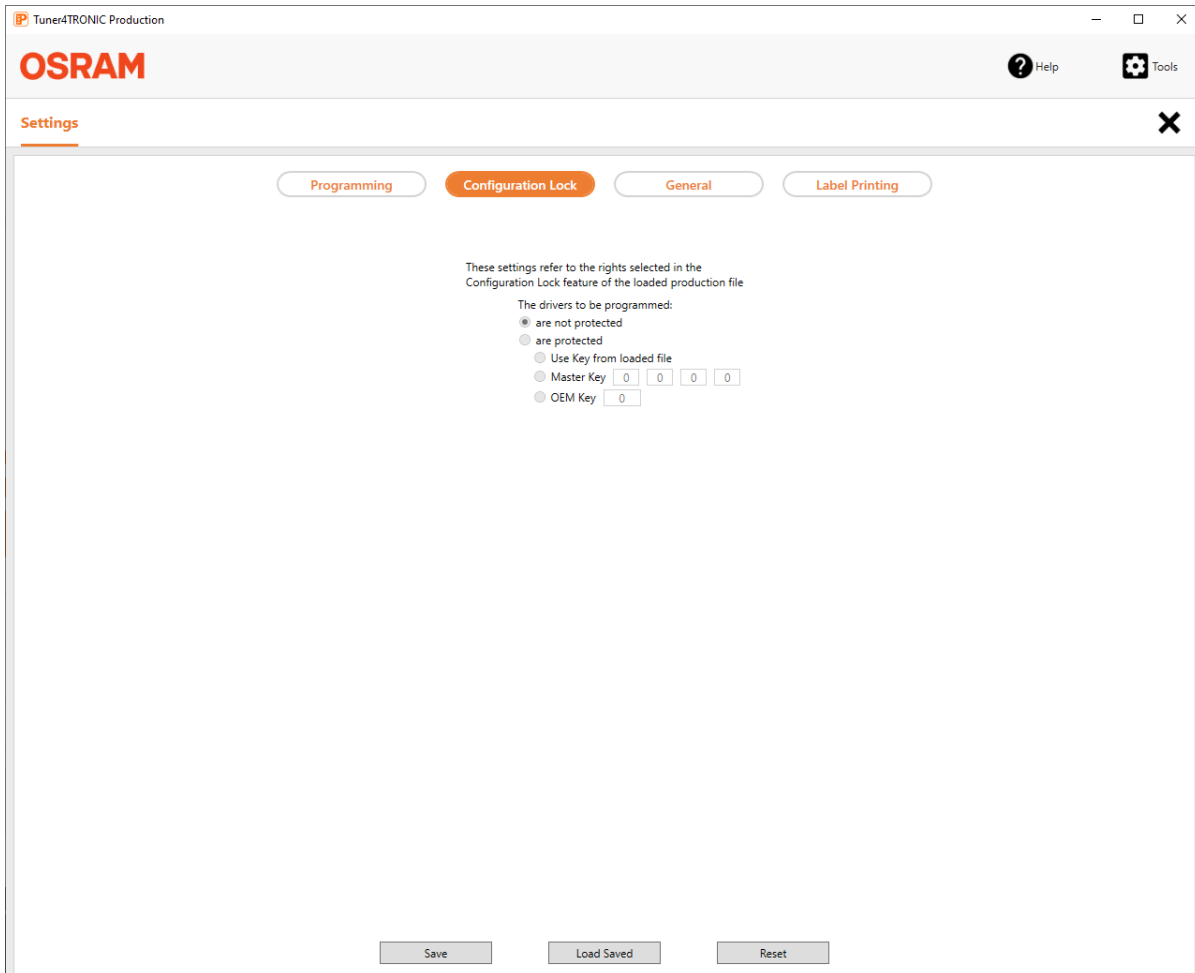
For USB programming interfaces, that use a COM port (e.g. OT Programmer, Feig ECCO), press “Add”, select a device type, select a COM port, press detect and finally press Add to add the Programming Interface to the drop down list.

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Verify data after programming	Select verify data after programming, if you want to verify data after each programming automatically. Default is set from production file.
Disable Family programming	<p>Family programming allows programming drivers of the same driver family or drivers from the next generation with the loaded production file. Family programming does not allow programming drivers from previous driver generations (no backwards compatibility).</p> <p>Select disable family programming to reject programming of any drivers other than the one specified in the production file. Default is set from production file.</p> <p>Family programming is a cloud service, hence internet access is required</p>
Antenna Power	Select antenna power to adapt power to specific setup
Luminaire Configuration	Select single programming or multiple programming. Multiple programming allows programming multiple drivers connected via DALI (test rack application or multiple drivers in one luminaire). Default setting is derived from production file.

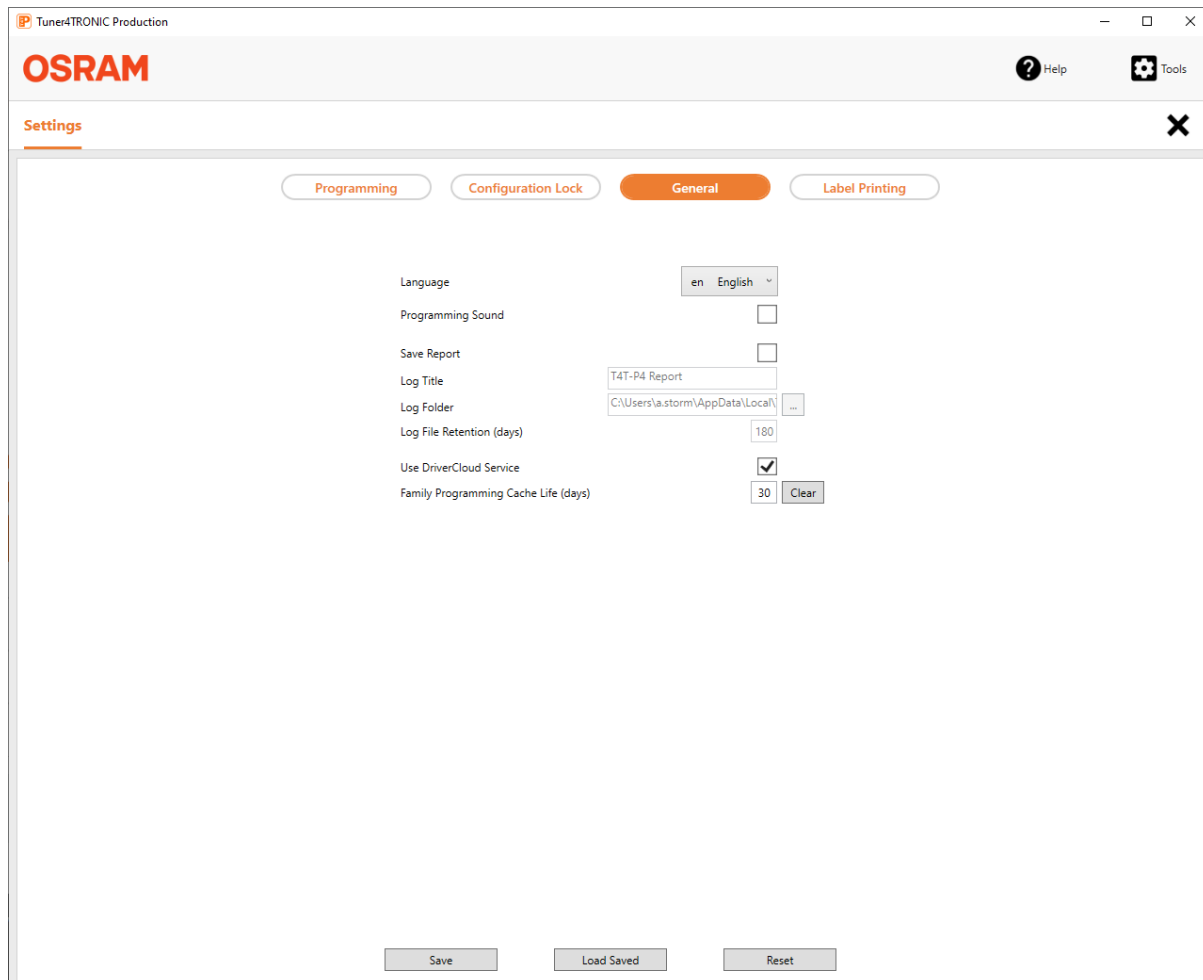
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## 2.8 Settings – Configuration Lock



Select Tools/Settings and press Configuration Lock to overwrite password settings defined in the production file to allow programming protected drivers. Master Key is used in drivers with two level PW protection. OEM key is used in drivers with single level PW protection.

## 2.9 Settings – General



Select Tools/Settings and press General edit general parameters

**Programming** Makes a sound after each programming sound

**Logging** Creates HTML programming log files (title and folder below)

**Log Files Retention (days)** Deletes log files after expiry period to free memory on local computer

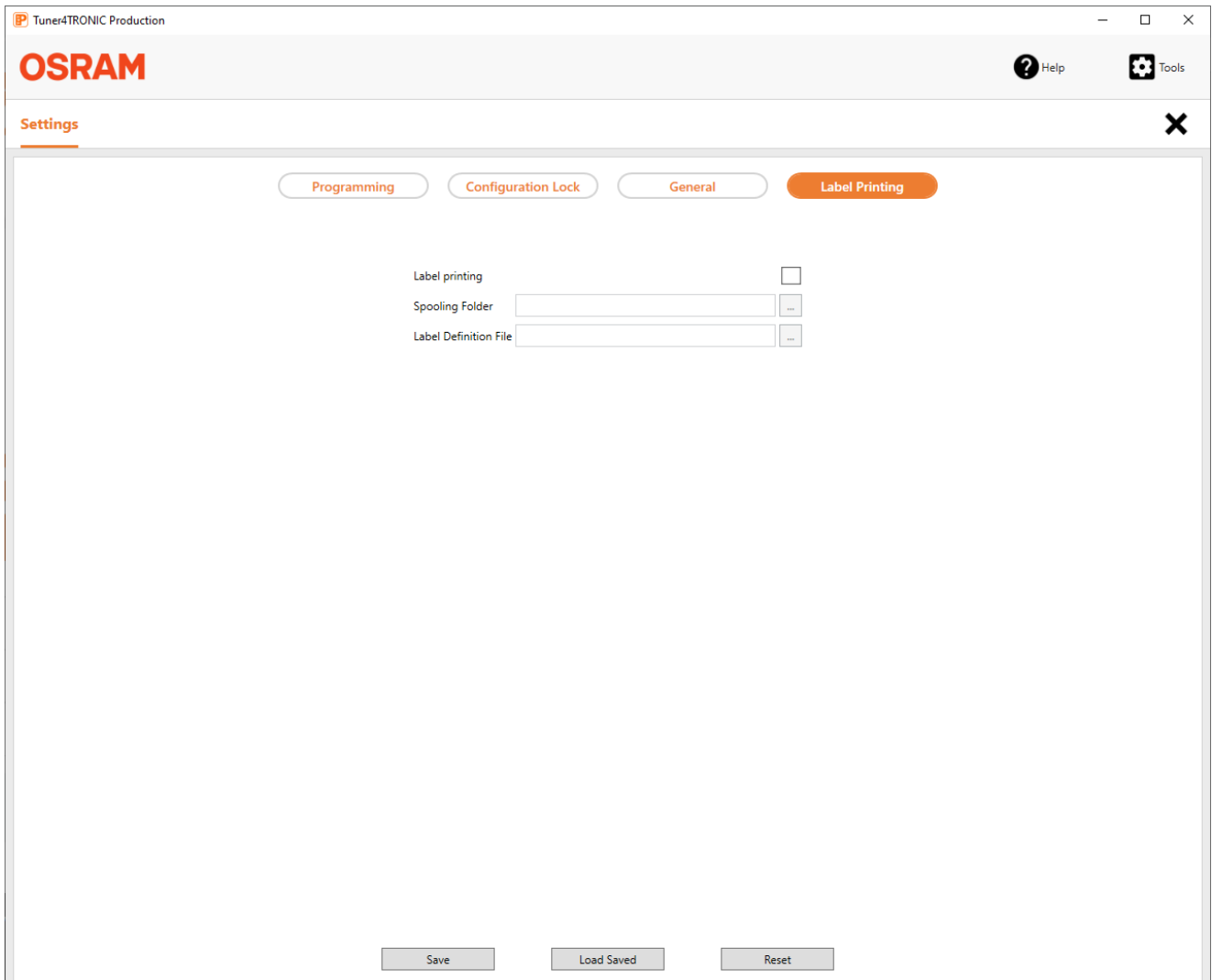
**Cloud Service** Enables access to cloud services, e.g. used for

- automated updates driver description files from DD-store
- T4T update notification
- family programming

- report files in clear text
- Driver registry

Family programming cache Deletes cached family programming files after expiry period to free memory on local computer

## 2.9 Settings – Label Printing



Select Tools/Settings and press Label Printing enable/disable label printing and define file name and spooling folder for labels.



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The OSRAM logo is displayed in a bold, orange, sans-serif font.