

# TeSys™ Programmer

# Firmware Update Utility for LTMR and LTMCU

# Instruction Bulletin

**TeSys** offers innovative and connected solutions for motor starters.

8536IB1915R07/23  
Release date 07/2023



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# Safety Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this user guide or on the equipment to warn of hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

**DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

**WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

**CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

**NOTICE**

**NOTICE** is used to address practices not related to physical injury.

**NOTE:** Provides additional information to clarify or simplify a procedure.

## Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Electrical equipment should be transported, stored, installed, and operated only in the environment for which it is designed.



# Document Scope

This Instruction Bulletin describes how to upgrade/downgrade TeSys T product range (LTMR and LTMCU) firmware using the TeSys Programmer.

- LTMR: Modbus™ RTU, CANopen, DeviceNet, and Profibus , page 7 describes how to use the TeSys Programmer with the following TeSys T communication protocols: **Modbus RTU, CANopen, DeviceNet, and Profibus.**
- LTMR: Ethernet TCP/IP, page 15 describes how to use the TeSys Programmer with the following TeSys T communication protocols: **Modbus TCP, and Ethernet IP.**
- LTMCU, LTMCUF, and LTMUCUC , page 28 describes how to use the TeSys Programmer with LTMCU, LTMUCUC and LTMCUF.
- Advanced Settings, page 46 describes the new features and settings found in the Advanced Settings tab.

# Safety Information

**NOTE:** Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it.

## DANGER

### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.

**Failure to follow these instructions will result in death or serious injury.**

## WARNING

### UNINTENDED EQUIPMENT OPERATION

- The application of this product requires expertise in the design and programming of controls systems. Only persons with such expertise should be allowed to program and apply this product.
- Follow all local and national safety codes and standards.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## NOTICE

### RISK OF FIRMWARE CORRUPTION

Updating the firmware on TeSys T controller through the programmer provides an automatic restore function for the product configurations. Before changing the firmware version, it is recommended to save a backup of the product configuration through the TeSys T Device Type Manager (DTM) using SoMove™ Software. Once programming has begun, adhere to the following until the programming process is complete:

- Close all other programs before starting programming.
- Do not close the TeSys Programmer until the process is complete.
- Do not interrupt power to the device.
- Do not disconnect the communication cable if programming is in progress.
- Remove all network cables except direct connections to the PC.

**Failure to follow these instructions can result in equipment damage.**



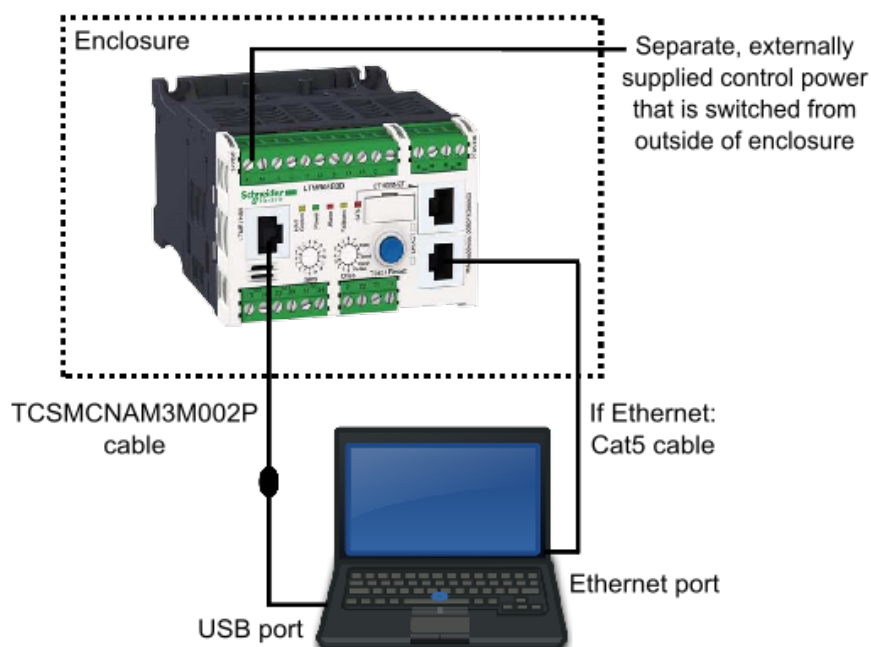
**WARNING:** This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

# LTMR: Modbus™ RTU, CANopen, DeviceNet, and Profibus

## Introduction and Setup — LTMR: Modbus RTU, CANopen, DeviceNet and Profibus

This chapter describes how to upgrade / downgrade a TeSys T firmware version for **LTMRxxMxx** (Modbus), **LTMRxxCxx** (CANopen), **LTMRxxDxx** (DeviceNet) or **LTMRxxPxx** (Profibus). It explains how to prepare the LTMR and the PC, how to connect them and how to run the programmer.

One physical link must be established between your PC and the LTMR, from a USB port on the PC to the “LTME/HMI” port on the left side of the front face of the LTMR unit. To do so, use the TCSMCNAM3M002P cable. Route the cable to the outside of the enclosure so the update can be performed without exposure to energized equipment (doors closed and interlocked). The Ethernet version of TeSys T requires a Cat5 cable.



**NOTE:** It is recommended to make a direct link. Do not include the LTMCU or LTME in the link between the PC and the LTMR.

Use a separate, externally supplied control power connection that is switched from outside of the enclosure. The control voltage supply must match the LTMR input voltage. With the power OFF, connect power to the “A1, A2” terminals of the LTMR (input polarity is indicated for DC models). Route the cable to the outside of the enclosure so the update can be performed without exposure to energized equipment (doors closed and interlocked).

## Prepare your PC: Connection through USB to Serial

1. Download and install “SoMove v2.6” or greater and “TeSys DTM Library v2.10.0” or greater.

2. Unzip and run the SoMove executable file.

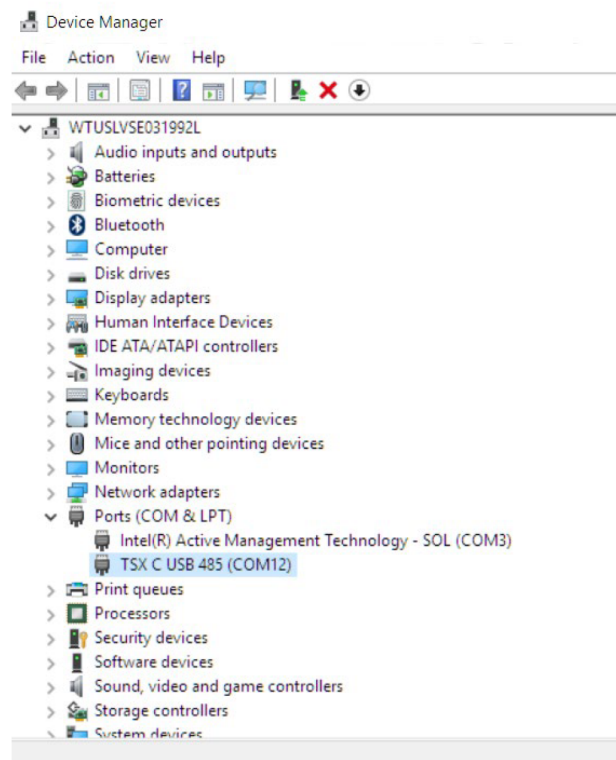
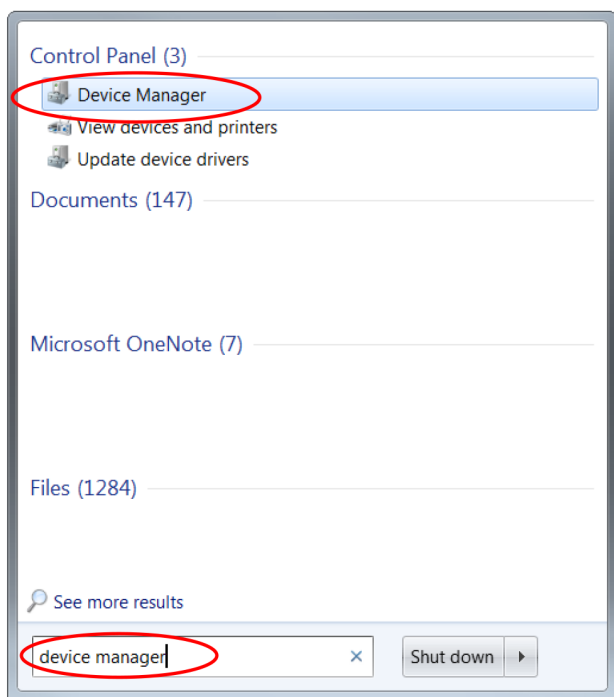
**NOTE:** This will also install the Modbus Driver Suite for cable TCSMCNAM3M002P.

3. Unzip and run the TeSys DTM Library executable file.

**NOTE:** The file may run with no pop-up windows.

4. Identify the USB COM port used by the TCSMCNAM3M002P cable.

To do so, connect the cable at both ends, click the Start menu on your PC and search for “Device Manager.” Open the Device Manager, click on Ports (Com & LPT), and read the number of the port associated with TSX C USB 485. In the example below, it is COM12.



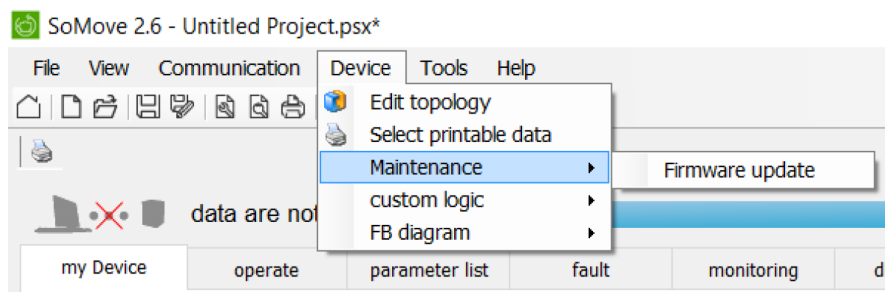
## Using TeSys Programmer Tool

**IMPORTANT:** Changing the firmware version of the TeSys T through the programmer provides an automatic restore function for the product configurations. Before changing the firmware version, it is recommended to save a backup of the product configuration through the TeSys T Device Type Manager (DTM) using SoMove Software. The programmer can be used for both firmware upgrades and firmware downgrades. Below is an example of downgrading the firmware from FW2.6 to FW2.5.

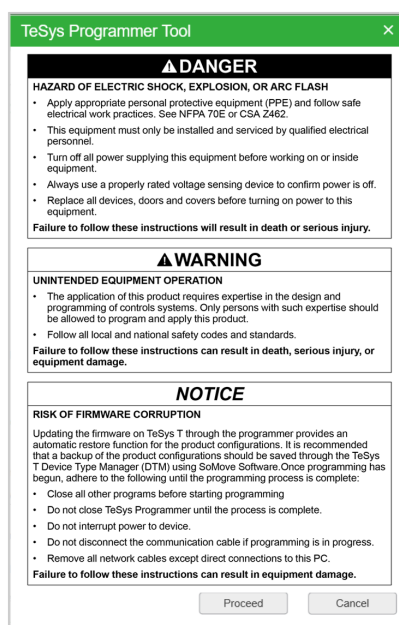
1. Open the TeSys Programmer Tool from one of the following locations:
  - a. Navigate to “C:\Program Files (x86)\Common Files\Schneider Electric Shared\TeSysDTMLibrary\TeSysT\TeSysProgrammer” and run “TeSysProgTool.exe.”
  - b. In SoMove:
    - (1) Click on the “Disconnect from Device” icon on the “Main” toolbar.



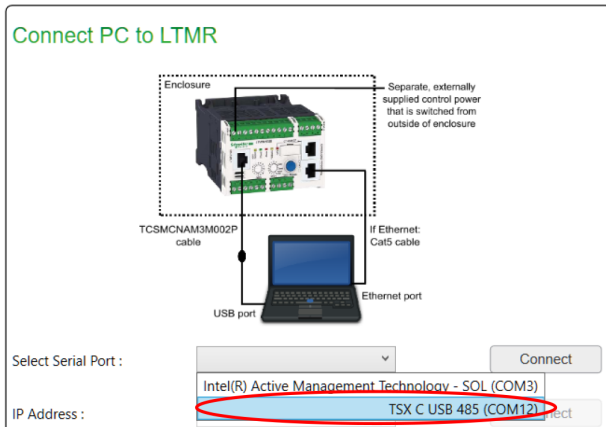
- (2) Choose “Firmware Update” from “Device → Maintenance.”



A warning message is displayed, stating that the TeSys Programmer is to be used for TeSys T firmware change (upgrading to a new version or downgrading to a former version) and not for setting the configuration parameters of the TeSys T. Read the message and click "Proceed." If "Cancel" is selected, the programmer exits.



- From the drop-down menu located underneath the TeSys T controller graphic, select the COM port associated with “TSX C USB 485.” In this example, it is COM 12. Click on the “Connect” button to connect to the TeSys T controller. Once connected, the “Connected Device Info” fields will populate.



Connected Device Info

|                    |                  |
|--------------------|------------------|
| Device FW :        | 2.6.000          |
| Network FW :       | Modbus 0.0.000   |
| Serial Number :    | 0462051042642013 |
| Reference Number : | LTMR08MBD        |
| Mac Address :      |                  |

Refresh

3. In the “Firmware Package Selection” field, click the “Change Path” button, and navigate to the directory of unzipped TeSys T firmware files. Select the correct firmware package from the “Select Firmware” drop-down. Verify that the updated version has appeared in the Device firmware Version field.

**Firmware Package Selection**

Select Firmware:

Path: C:\Users\SESA370041\Downloads\TeSys\_Programmer\_V2.2.011\TeS

**Change Path**

**Browse For Folder**

Select the directory that has the TeSysT firmware files.

- RMMS
- > RPG
- > simatic
- ▼ TeSys\_Programmer\_V2.2.011
  - Calibration Files
  - Configuration Files
  - TeSysT\_Firmware\_Packages**
- > TeSysDTMLibrary 2.8.0.0

**OK** **Cancel**

**Firmware Package Selection**

Select Firmware:

Path: C:\Users\SESA370041\Downloads\TeSys\_Programmer\_V2.2.011\TeS

**Device FW Version**

LTMR FW Version :

**Network FW Version**

CanOpen FW Version :

DeviceNet FW Version :

- TeSysT\_Pack-12\_FW2.8\_IR3.zip
- TeSysT\_Pack-12\_FW2.8\_IR2\_1.zip
- TeSysT\_Pack-12\_FW2.8\_IR2.zip
- TeSysT\_Pack-11\_FW2.8.zip
- TeSysT\_Pack-10\_FW2.8.zip
- TeSysT\_Pack-09\_FW2.7.zip
- TeSysT\_Pack-08\_FW2.6.zip
- TeSysT\_Pack-07\_FW2.5.zip
- TeSysT\_Pack-06\_FW2.4.zip
- TeSysT\_Pack-05\_FW2.3.zip
- TeSysT\_Pack-04\_FW2.2.zip
- TeSysT\_Pack-03\_FW2.1.zip
- TeSysT\_Pack-02\_FW1.8.zip
- TeSysT\_Pack-01\_FW1.7.zip

**Device FW Version**

LTMR FW Version :

4. You are now ready to upgrade the TeSys T. To begin the firmware upgrade, click the “Update” button.

### Update LTMR

Backup settings FROM device

0%

Update Network firmware

0%

Update Device firmware

0%

Restore settings TO device

0%

TOTAL Progress

0%

Update

**NOTE:** Firmware upgrade can take up to ten minutes.

## NOTICE

### RISK OF FIRMWARE CORRUPTION

Once the firmware upgrade has begun, adhere to the following until the programming process is complete:

- Do not close the TeSys Programmer until the process is complete.
- Do not interrupt power to the device.
- Do not disconnect the communication cable if programming is in progress.

**Failure to follow these instructions can result in equipment damage.**



5. A pop-up window will appear, requesting you to power cycle the LTMR.

### TeSys Programmer Tool

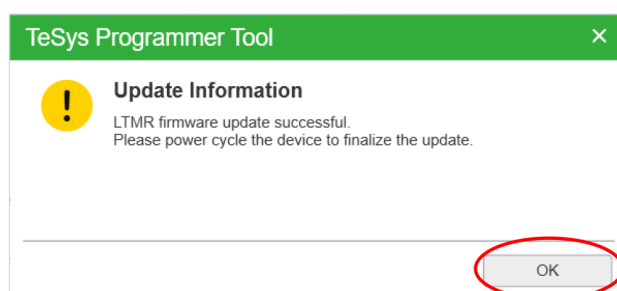


#### Update Information

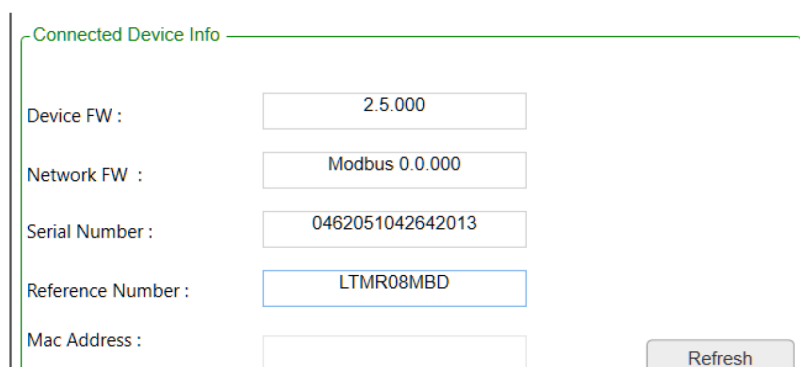
Device still in programming mode, do not disconnect communications.

Please power cycle the device and upgrade will resume automatically when ready.

6. Once the “Total Progress” bar reaches 100%, a pop-up window will appear, indicating a successful LTMR firmware upgrade. Press “OK,” power-cycle the device again and wait 20 seconds. Then, click the “Connect” button.



7. After clicking the “Connect” button, the new firmware version should populate.



8. The firmware update is finished and you can exit the TeSys Programmer or continue using the tool.

**NOTE:** If you access your TeSys T through a LTMCU, depending on the firmware upgrade performed on TeSys T, you may have to update the language files of your TeSys T.

If this occurs, and the language files in the LTMCU are not updated, the LTMCU displays “Error in languages” when connected to TeSys T.

It is nevertheless possible to operate temporarily both the TeSys T and the LTMCU, but the new TeSys T configuration parameters introduced by the new TeSys T firmware version will not be accessible. The LTMCU languages must be updated to access the TeSys T configuration parameters introduced by the new TeSys T firmware version. To do so, use the LanDown tool and refer to the [LTMCU User Manual](#).

LTMCU language file update may be necessary when LTMR is upgraded based on the following compatibility rules:

- LTMR firmware version 2.5 or 2.6
  - LTMCU language version must be 1.200 or higher.
- LTMR firmware version 2.7 or higher
  - LTMCU language version must be 1.300.

# LTMR: Ethernet TCP/IP

## Introduction and Setup

This chapter describes how to upgrade/downgrade a TeSys T LTMR Ethernet TCP/IP firmware version.

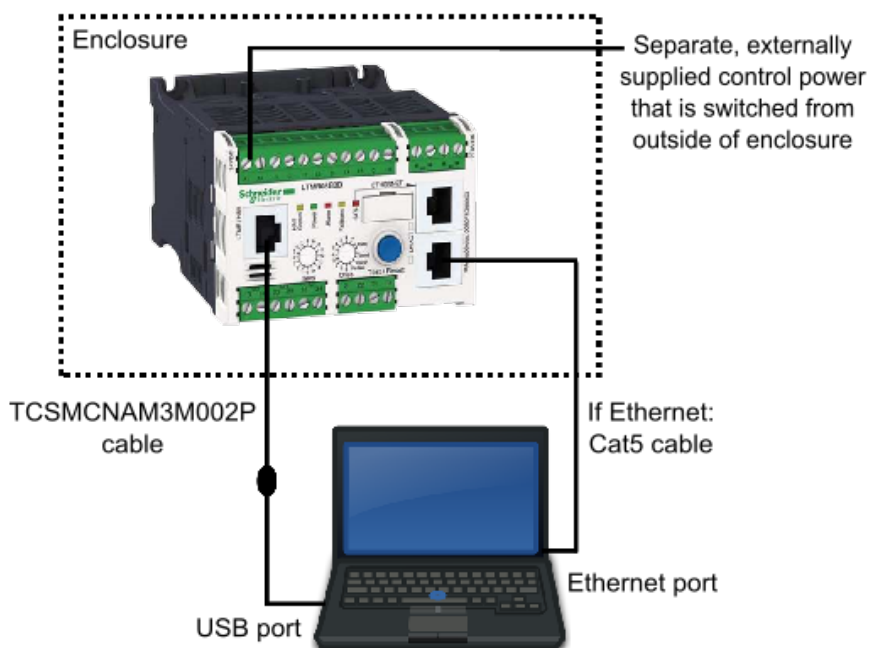
It is applicable to TeSys T with **LTMRxxExx** references.

It explains how to prepare the LTMR and the PC, how to connect them and how to run the programmer.

Two physical links must be established between your PC and the LTMR.

One is a serial link from a USB port of the PC to the “LTME/HMI” port on the left side of the front face of the LTMR unit. It uses the **TCSMCNAM3M002P** cable.

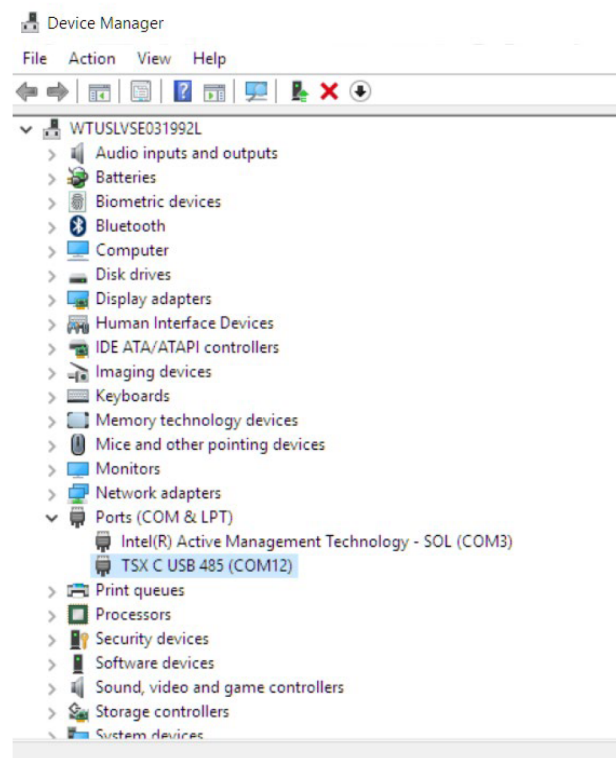
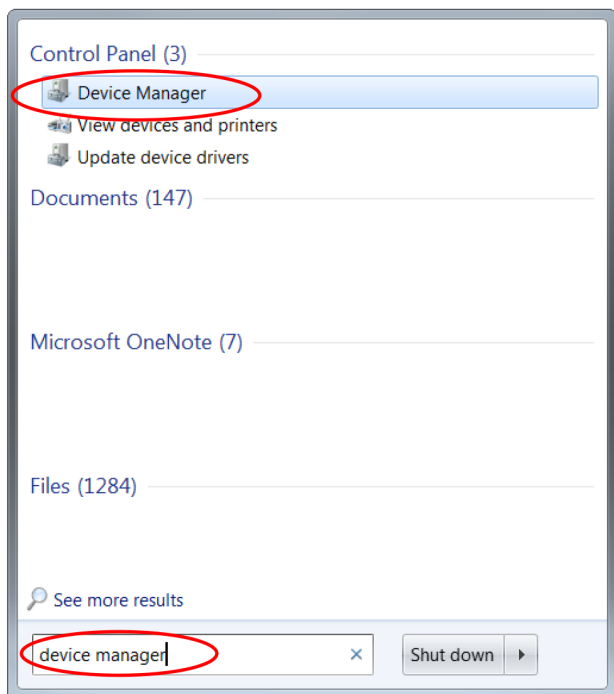
The second link is from the Ethernet port of your PC to any of the Ethernet ports of the LTMR, using one Cat5 Ethernet cable. Route the cable to the outside of the enclosure so the update can be performed without exposure to energized equipment (doors closed and interlocked).



# Prepare your PC — LTMR: Ethernet

## Connection through USB to Serial

1. Download and install both “SoMove v2.6” or greater and “TeSys DTM Library v2.10.0” or greater.
2. Unzip and run the SoMove executable file.  
**NOTE:** This will also install the Modbus Driver Suite for cable TCSMCNAM3M002P.
3. Unzip and run the TeSys DTM Library executable file.  
**NOTE:** The file may run with no pop-up windows.
4. Identify the USB COM port used by the TCSMCNAM3M002P cable. To do so, connect the cable at both ends, click the Start menu on your PC and search for “Device Manager.” Open the Device Manager, then, click on Ports (Com & LPT) and read the number of the port associated with TSX C USB 485: In the example below, it is COM12.



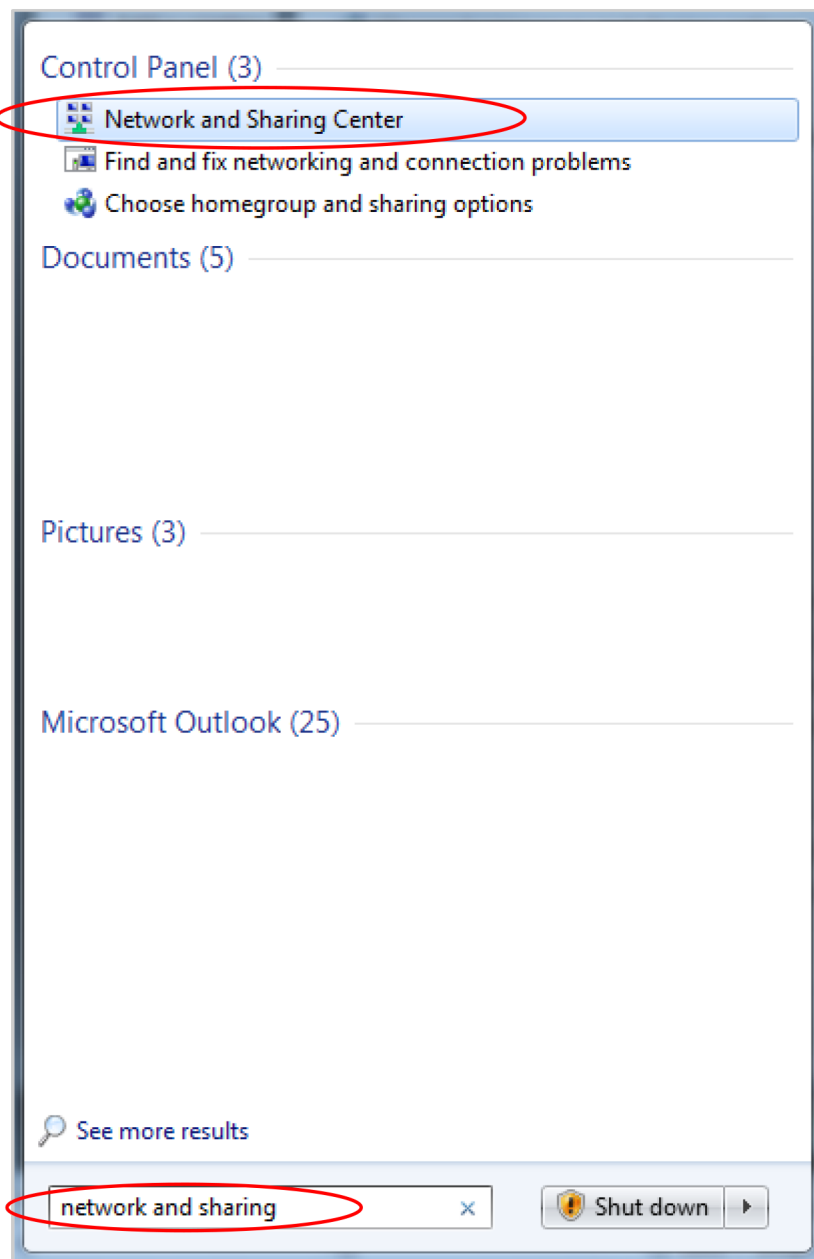
## Connection through Ethernet

You must configure a fixed IP address on your PC. In the first step, during the software upgrade of the LTMR, the LTMR will use its default IP address; then, in a second step, it will use the address 192.168.16.1.

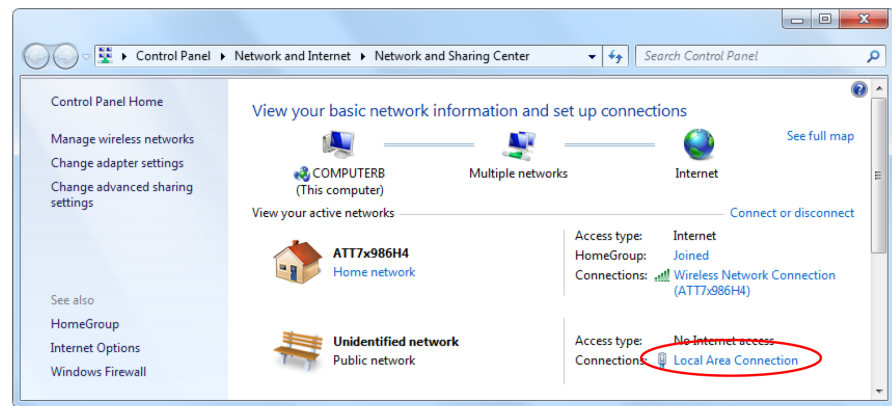
For each of these two LTMR addresses, it is mandatory to define in your PC a compatible IP address. This means that the PC and TeSys T must be in the same Ethernet sub network.

To configure these fixed IP addresses in your PC:

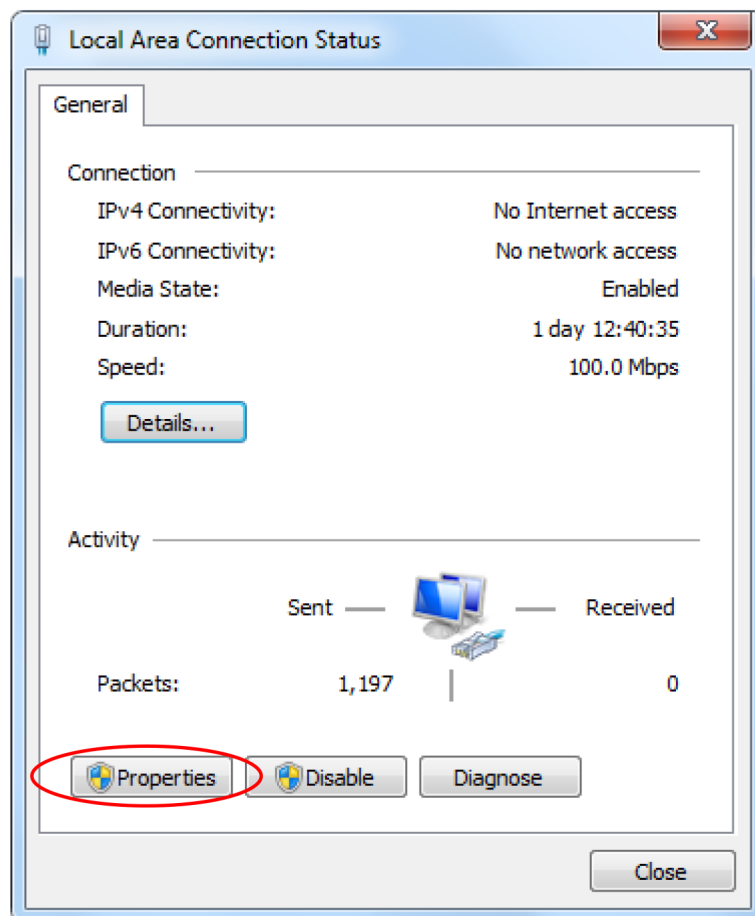
1. Connect the Ethernet cable.
2. From the Start menu of your PC, search for the words “Network and Sharing,” then select “Network and Sharing Center.”



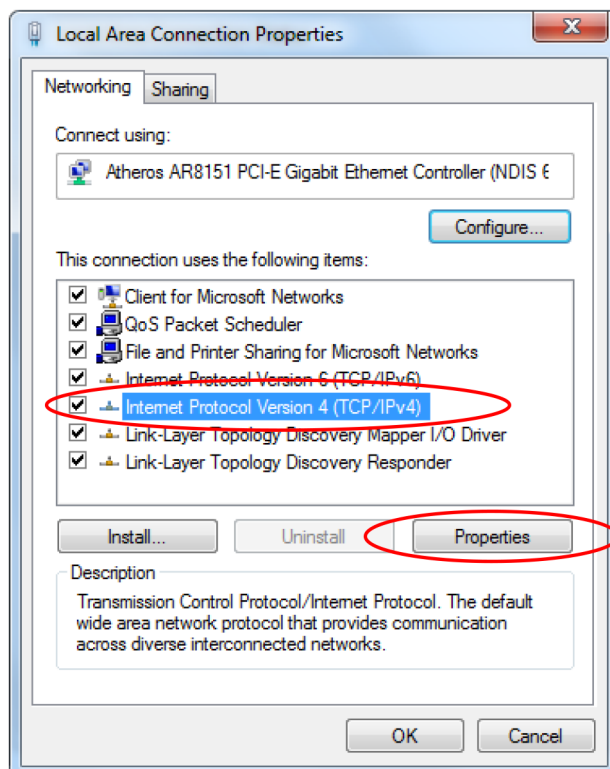
3. Click on Local Area Connection to which the LTMR is connected.



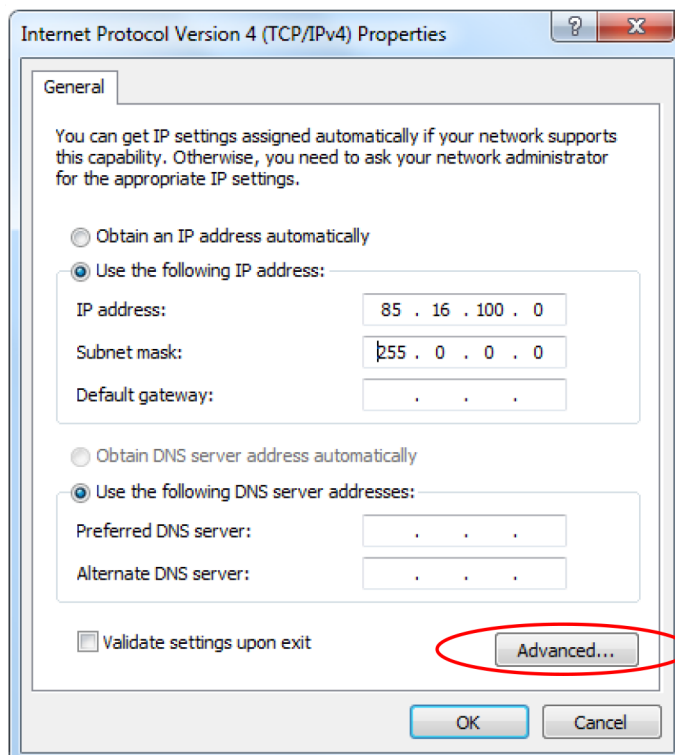
4. On the next window, click on "Properties."



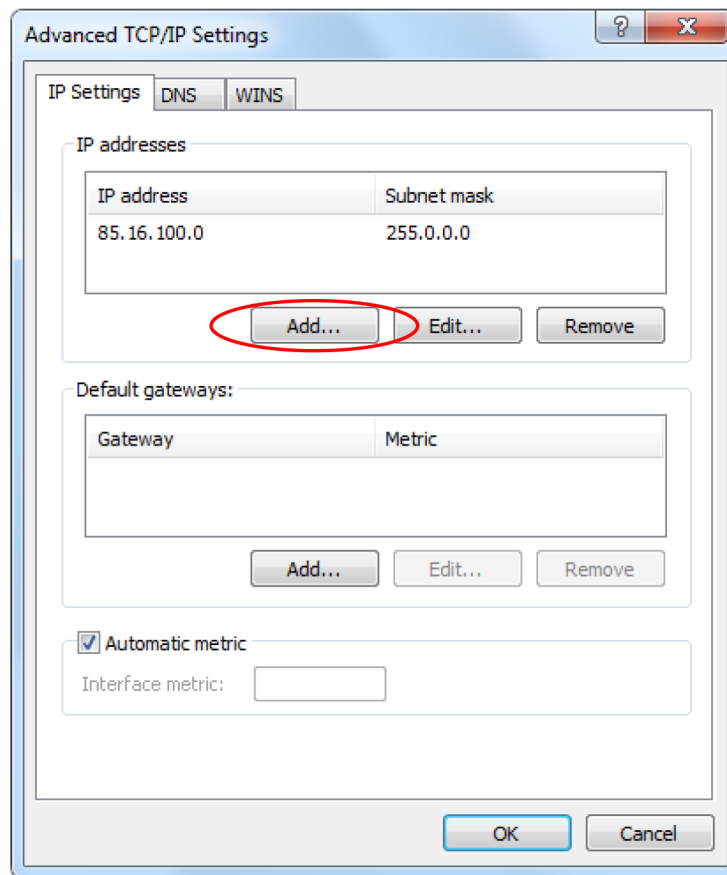
5. On the next window, select “Internet Protocol Version 4 (TCP/IPv4)” and click on “Properties.”



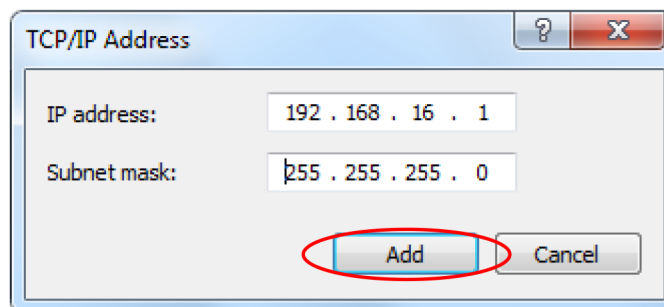
6. On the next window, select “Use the following IP address.” Enter 85.16.100.0 as the IP address and 255.0.0.0 as the subnet mask. Then, to define a second IP address for the PC, click on “Advanced.”



7. On the next window, click “Add.”

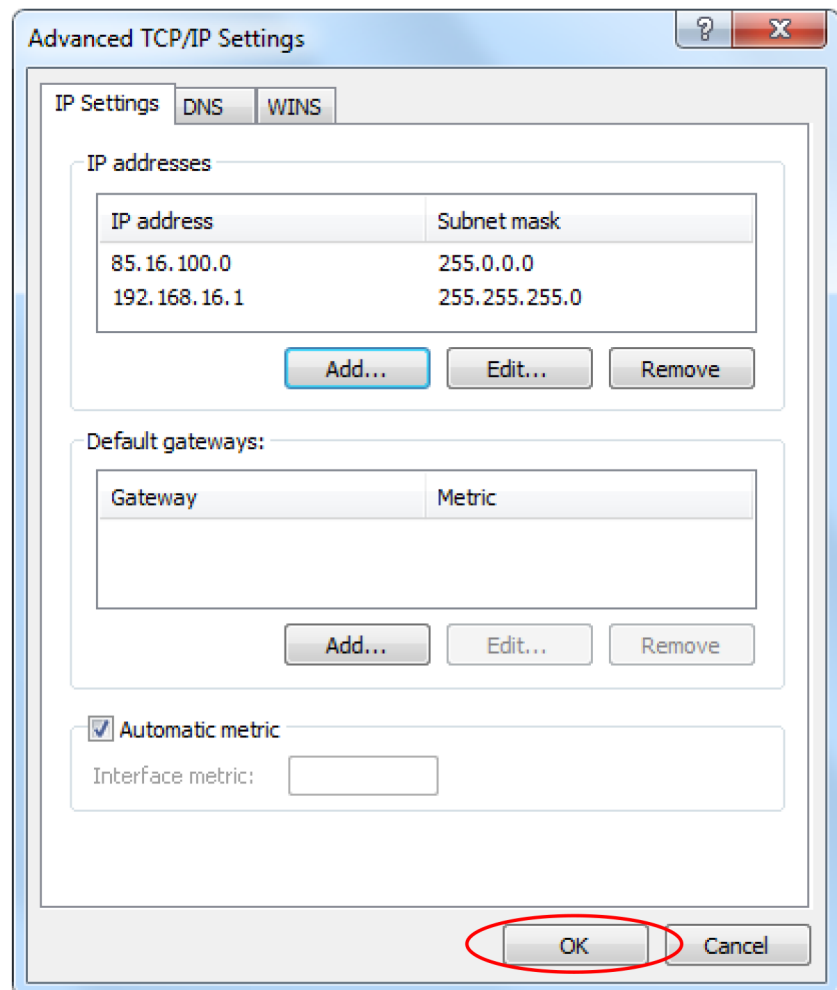


8. Now, enter the second IP address, 192.168.16.1 and click on “Add.” The subnet mask 255.255.255.0 is automatically selected and displays in the window.





9. Both IP addresses for the PC are now registered, and you can exit the previous IP addressing windows by pressing “OK.”



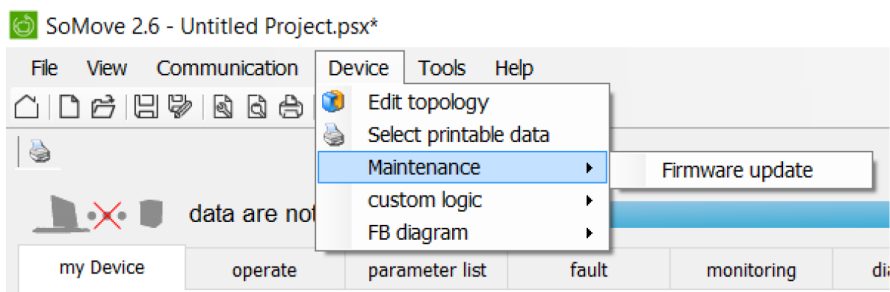
## Using TeSys Programmer — LTMR: Ethernet

**IMPORTANT:** Changing the firmware version of the TeSys T through the programmer provides an automatic restore function for the product configurations. Before changing the firmware version, it is recommended to save a backup of the product configuration through the TeSys T Device Type Manager (DTM) using SoMove Software. The programmer can be used for both firmware upgrades and firmware downgrades. The following steps show how to upgrade the firmware from FW2.6 to FW2.7.

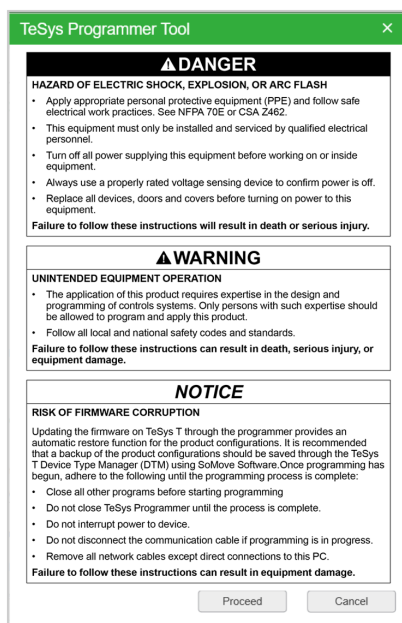
1. Open the TeSys Programmer Tool from one of the following locations:
  - a. Navigate to “C:\Program Files (x86)\Common Files\Schneider Electric Shared\TeSysDTMLibrary\TeSysT\TeSysProgrammer” and run “TeSysProgTool.exe.”
  - b. In SoMove:
    - (1) Click on the “Disconnect from Device” icon on the “Main” toolbar.



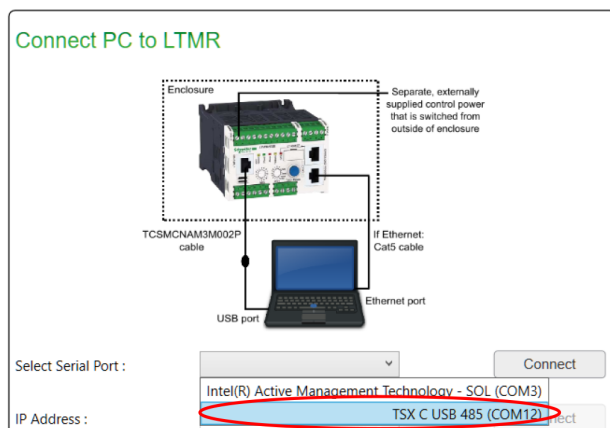
- (2) Choose “Firmware Update” from “Device → Maintenance.”



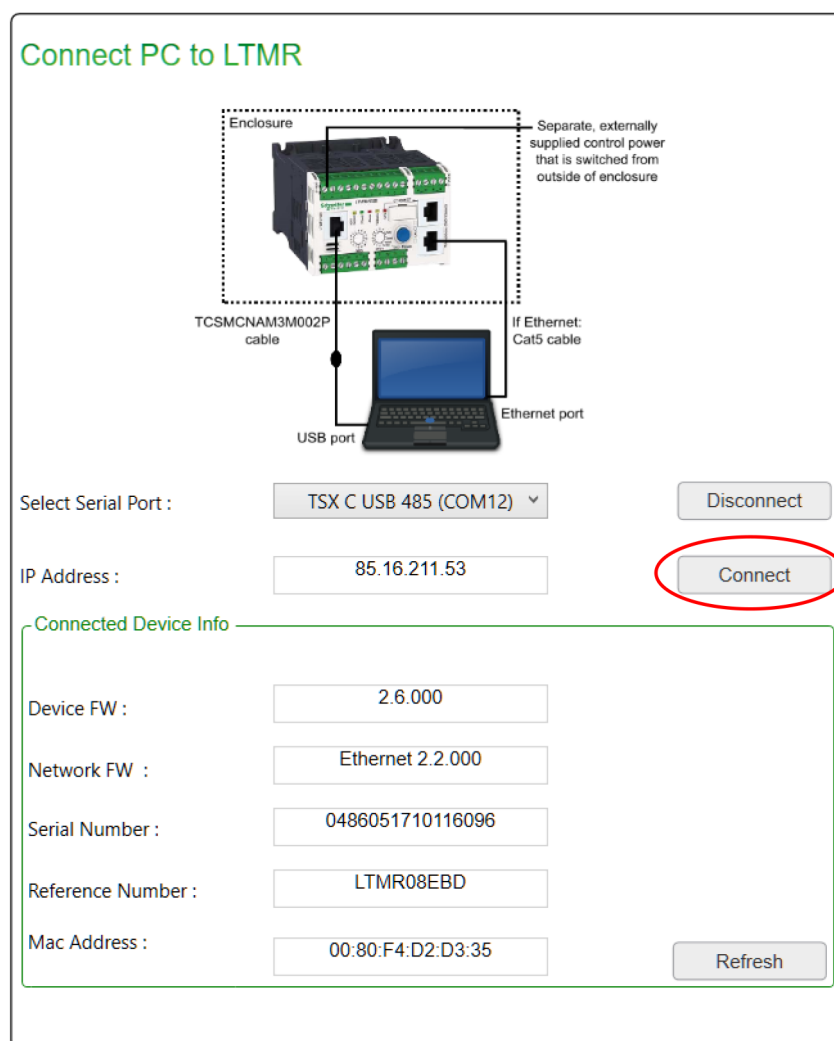
A warning message is displayed, stating that the TeSys Programmer is to be used for TeSys T firmware change (upgrading to a new version or downgrading to a former version) and not for setting the configuration parameters of the TeSys T. Read the message and click "Proceed." If "Cancel" is selected, the programmer exits.



- From the drop-down menu located underneath the TeSys T controller graphic, select the COM port associated with "TSX C USB 485." In this example, it is COM 12. Click on the "Connect" button to connect to the TeSys T controller. Once connected, the "Connected Device Info" fields will populate.



- Once the USB connection is established, the Programmer will import the default "IP Address" and the "Connected Device Info" from the TeSys T. Click the "Connect" button beside the IP Address to connect to the device through the Ethernet Port.



4. Once successfully connected through the Ethernet port, the button to the right of the IP address will read, “Disconnect” (giving you the option to now disconnect if desired).

|                      |                         |            |
|----------------------|-------------------------|------------|
| Select Serial Port : | TSX C USB 485 (COM12) ▾ | Disconnect |
| IP Address :         | 85.16.211.53            | Disconnect |

5. In the “Firmware Package Selection” field, click the “Change Path” button, and navigate to the directory of unzipped TeSys T firmware files. Select the correct firmware package from the “Select Firmware” drop-down. Verify that the updated version has appeared in the Device FW Version field.

**Firmware Package Selection**

Select Firmware: ▾

Path: C:\Users\SESA370041\Downloads\TeSys\_Programmer\_V2.2.011\TeS

Change Path

**Browse For Folder**

Select the directory that has the TeSysT firmware files.

- RMMS
- > RPG
- > simatic
- ▼ TeSys\_Programmer\_V2.2.011
  - Calibration Files
  - Configuration Files
  - TeSysT\_Firmware\_Packages
- > TeSysDTMLibrary 2.8.0.0

OK Cancel

**Firmware Package Selection**

Select Firmware: ▾

Path: C:\Users\SESA370041\Downloads\TeSys\_Programmer\_V2.2.011\TeS

Device FW Version

LTMR FW Version :

Network FW Version

CanOpen FW Version :

DeviceNet FW Version :

- TeSysT\_Pack-12\_FW2.8\_IR3.zip
- TeSysT\_Pack-12\_FW2.8\_IR2\_1.zip
- TeSysT\_Pack-12\_FW2.8\_IR2.zip
- TeSysT\_Pack-11\_FW2.8.zip
- TeSysT\_Pack-10\_FW2.8.zip
- TeSysT\_Pack-09\_FW2.7.zip
- TeSysT\_Pack-08\_FW2.6.zip
- TeSysT\_Pack-07\_FW2.5.zip
- TeSysT\_Pack-06\_FW2.4.zip
- TeSysT\_Pack-05\_FW2.3.zip
- TeSysT\_Pack-04\_FW2.2.zip
- TeSysT\_Pack-03\_FW2.1.zip
- TeSysT\_Pack-02\_FW1.8.zip
- TeSysT\_Pack-01\_FW1.7.zip

**Device FW Version**

LTMR FW Version : 2.5.000

6. You are now ready to upgrade the TeSys T. To begin the firmware upgrade, click the “Update” button.

### Update LTMR

Backup settings FROM device

0%

Update Network firmware

0%

Update Device firmware

0%

Restore settings TO device

0%

TOTAL Progress

0%

Update

**NOTE:** Firmware upgrade can take up to ten minutes.

## NOTICE

### RISK OF FIRMWARE CORRUPTION

Once the firmware upgrade has begun, adhere to the following until the programming process is complete:

- Do not close the TeSys Programmer until the process is complete.
- Do not interrupt power to the device.
- Do not disconnect the communication cable if programming is in progress.

**Failure to follow these instructions can result in equipment damage.**

7. A pop-up window will appear, requesting you to power cycle the LTMR.

### TeSys Programmer Tool

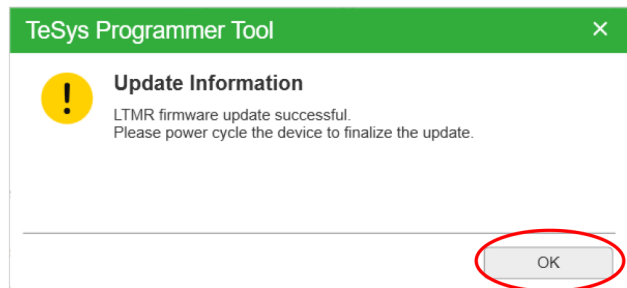
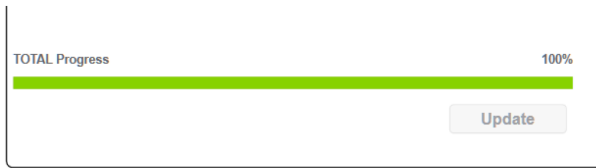


#### Update Information

Device still in programming mode, do not disconnect communications.

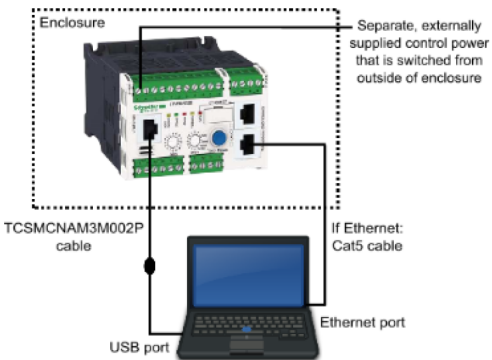
Please power cycle the device and upgrade will resume automatically when ready.

8. Once the “Total Progress” bar reaches 100%, a pop-up window will appear, indicating a successful LTMR firmware upgrade. Press “OK,” power-cycle the device again and wait 20 seconds. Then, click the “Connect” button.



9. After clicking the “Connect” button, the new firmware version should populate.

**Connect PC to LTMR**



Select Serial Port : TSX C USB 485 (COM4) ▼ Disconnect

IP Address : 85.16.62.159 Disconnect

**Connected Device Info**

|                        |                                |
|------------------------|--------------------------------|
| Device FW :            | <span>2.8.000</span>           |
| Network FW :           | <span>Ethernet 3.4.000</span>  |
| Serial Number :        | <span>0488051540113005</span>  |
| Commercial Reference : | <span>LTMR27EBD</span>         |
| Mac Address :          | <span>00:80:F4:D2:3E:9F</span> |

Refresh

10. The firmware update is finished and you can exit the TeSys Programmer or continue using the tool.

**NOTE:** If you access your TeSys T through a LTMCU, depending on the firmware upgrade performed on TeSys T, you may have to update the language files of your TeSys T.

If this occurs, and the language files in the LTMCU are not updated, the LTMCU displays “Error in languages” when connected to TeSys T.

It is nevertheless possible to operate temporarily both the TeSys T and the LTMCU, but the new TeSys T configuration parameters introduced by the new TeSys T firmware version will not be accessible. The LTMCU languages must be updated to access the TeSys T configuration parameters introduced by the new TeSys T firmware version. To do so, use the LanDown tool and refer to the LTMCU User Manual.

LTMCU language file update may be necessary when LTMR is upgraded based on the following compatibility rules:

- LTMR firmware version 2.5 or 2.6
  - LTMCU language version must be 1.200 or higher.
- LTMR firmware version 2.7 or higher
  - LTMCU language version must be 1.300.





## Prepare your PC: Connection through USB to Serial

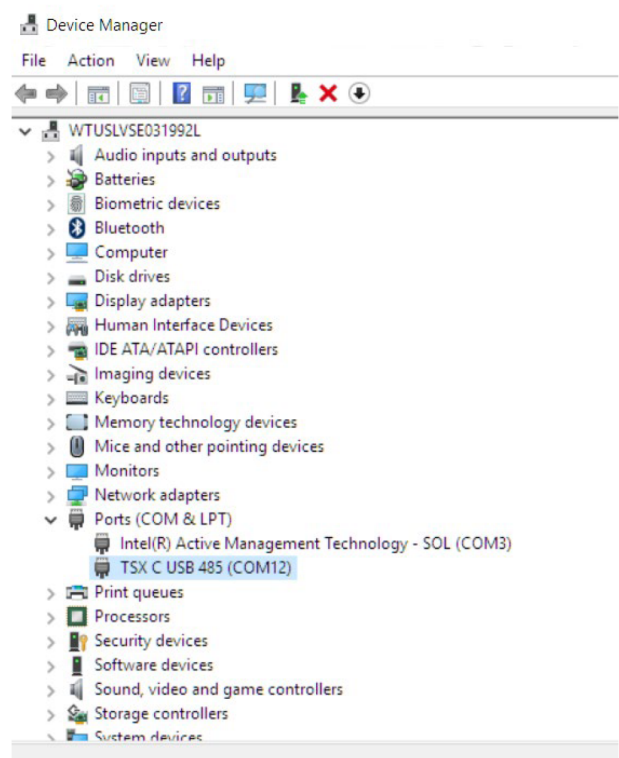
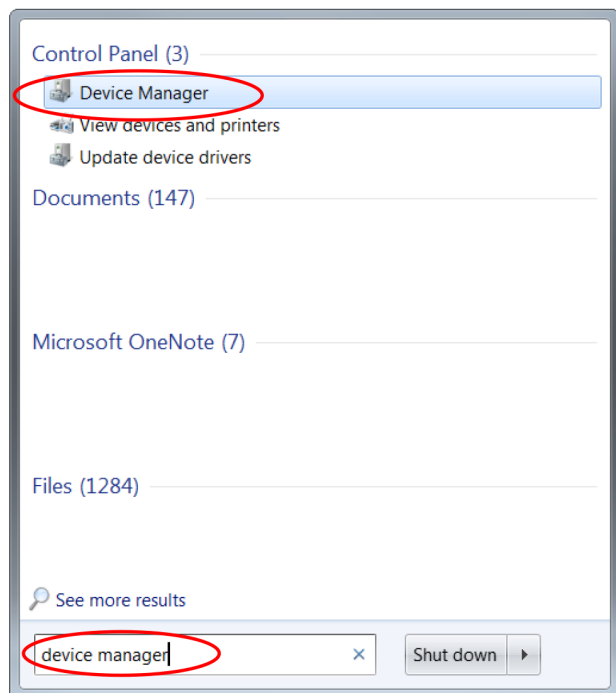
1. Download and install both “SoMove v2.6” or greater and “TeSys DTM Library v2.10.0” or greater.
2. Unzip and run the SoMove executable file.

**NOTE:** This will also install the Modbus Driver Suite for cable TCSMCNAM3M002P.

3. Unzip and run the TeSys DTM Library executable file

**NOTE:** The file may run with no pop-up windows.

4. Identify the USB COM port used by the TCSMCNAM3M002P cable. To do so, connect the cable at both ends, click the Start menu on your PC and search for “Device Manager.” Open the Device Manager, then, click on Ports (Com & LPT) and read the number of the port associated with “TSX C USB 485.” In the example below, it is COM12.



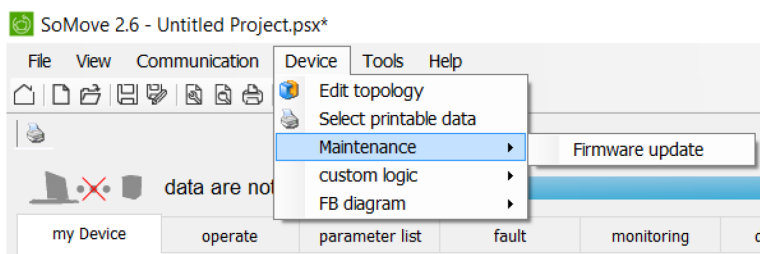
## Using TeSys Programmer — LTMCU, LTMCUF, and LTMCUUC

The programmer can be used for both firmware upgrades and firmware downgrades. The example below is an example of upgrading the firmware to FW v3.0.

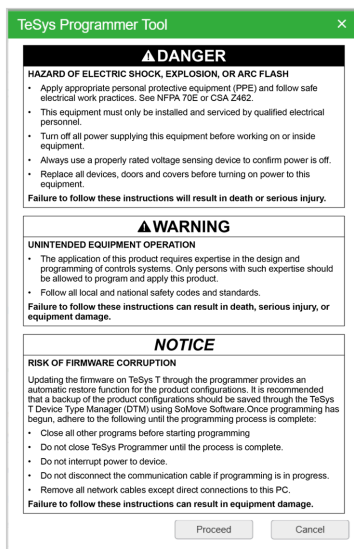
1. Run the tool “TeSysProgTool.exe” from the following locations:
  - a. Navigate to “C:\Program Files (x86)\Common Files\Schneider Electric Shared\TeSysDTMLibrary\TeSysT\TeSysProgrammer” and run “TeSysProgTool.exe”.
  - b. In SoMove:
    - (1) Click on “Disconnect from Device” icon on the “Main” toolbar.



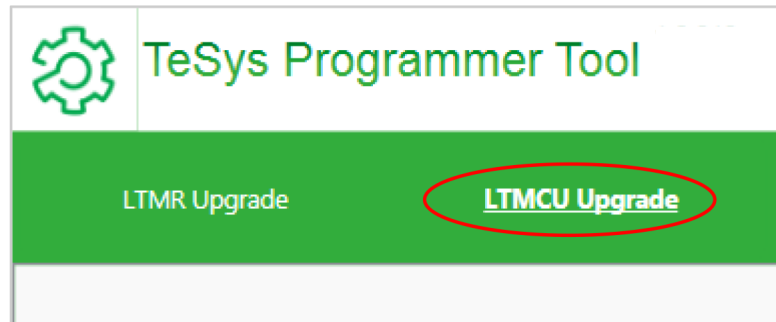
- (2) Choose “Firmware Update” from “Device → Maintenance.”



A warning message is displayed, stating that the TeSys T Programmer is to be used for TeSys T firmware change (upgrading to a new version or downgrading to a former version) and not for setting the configuration parameters of the TeSys T. Read the message and click "Proceed." If “Cancel” is selected, the programmer exits.



- From the home screen, click on “LTMCU Upgrade” in the upper-left corner of the screen.



- In the “Firmware Package Selection” field, click on the “Browse” button, and navigate to the unzipped LTMCU firmware file to be uploaded to the device. The firmware version will populate in the “LTMCU Firmware Version:” field.

**Firmware Package Selection**

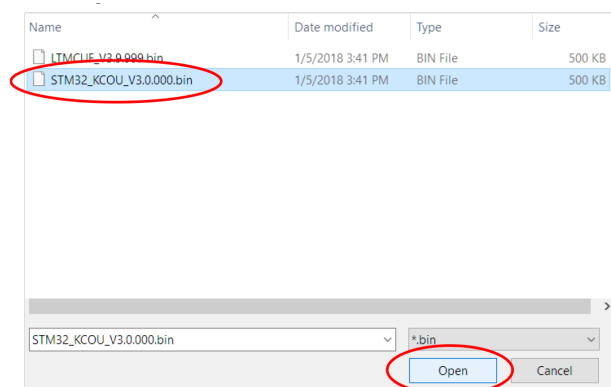
Select FW Binary File:

Device FW Version

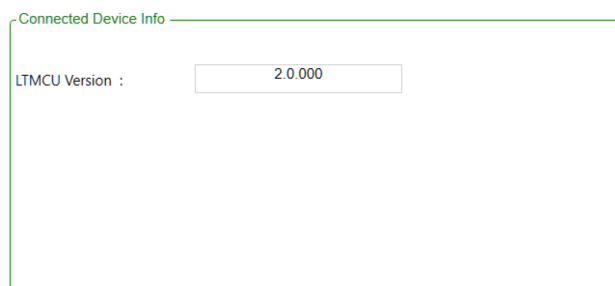
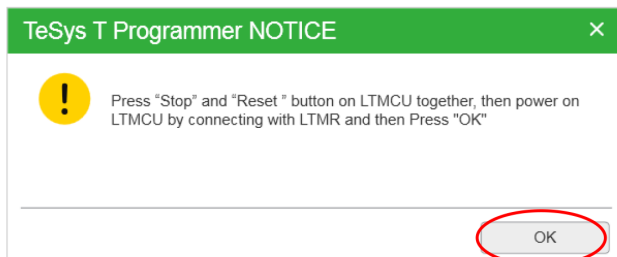
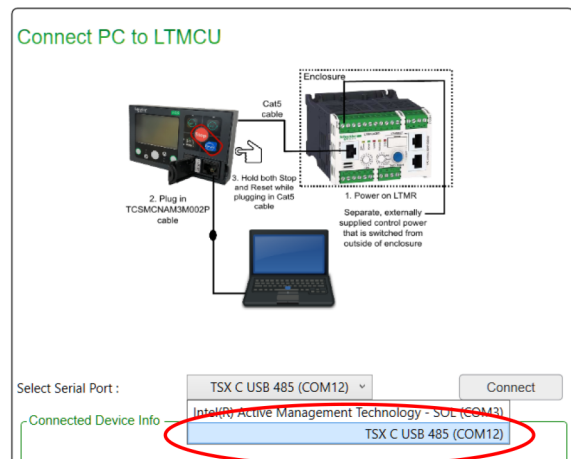
LTMCU FW Version :

Device FW Version

LTMCU FW Version :



- From the drop-down menu located underneath the TeSys T graphic, select the COM port for the associated TSX C USB 485 cable. In this example, it is COM 12. Click on the “Connect” button to connect to the TeSys T. A prompt will appear. Refer to [Item Connecting PC to LTMR](#), page 29 for more detailed instructions on how to complete the connection. If the prompt is followed and closed, the “Connected Device Info” field will populate.



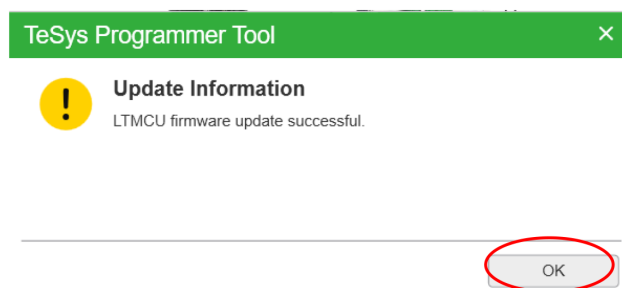
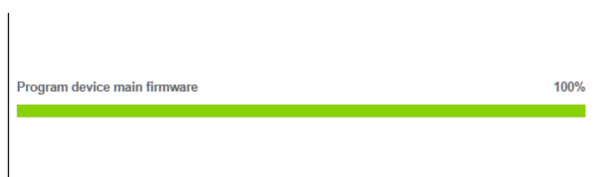
5. You are now ready to update the LTCMU. To begin the firmware update, click the “Update” button.



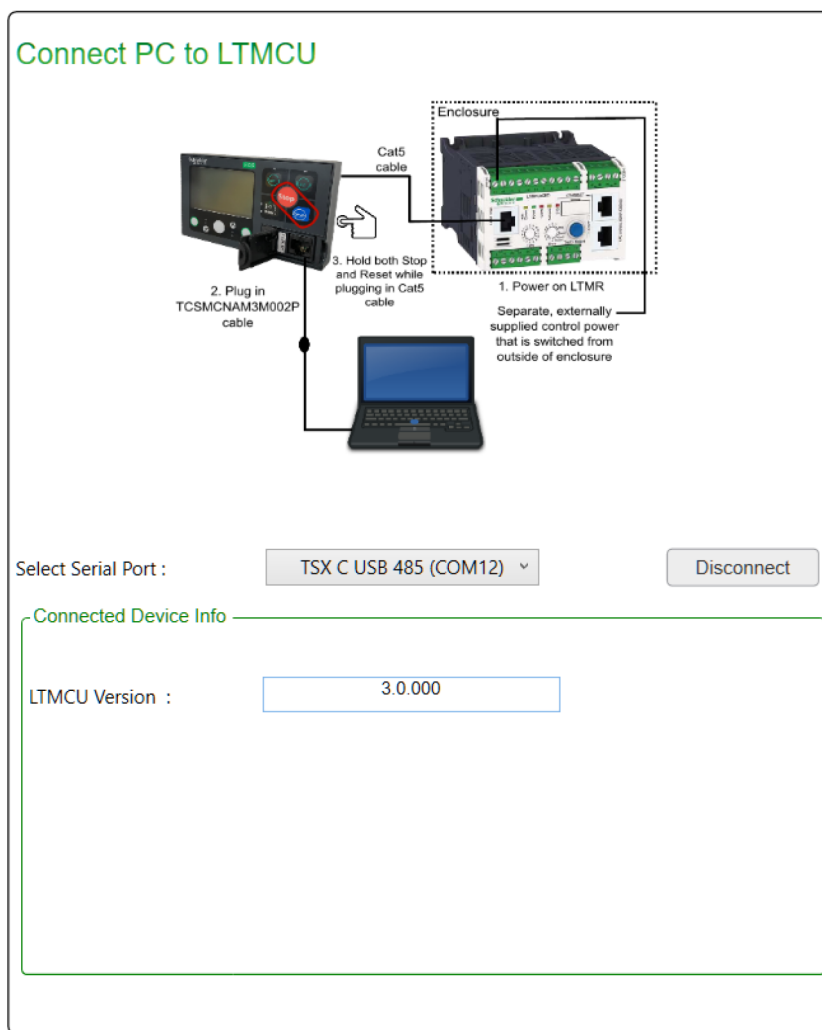
**NOTE:** Firmware upgrade can take up to ten minutes.

| <b><i>NOTICE</i></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>RISK OF FIRMWARE CORRUPTION</b></p> <p>Once the firmware upgrade has begun, adhere to the following until the programming process is complete:</p> <ul style="list-style-type: none"><li>• Do not close the TeSys Programmer until the process is complete.</li><li>• Do not interrupt power to the device.</li><li>• Do not disconnect the communication cable if programming is in progress.</li></ul> <p><b>Failure to follow these instructions can result in equipment damage.</b></p> |

6. When the “Total Progress” bar reaches 100%, a pop-up window will appear stating “LTCMU firmware upgrade successful.” Click the “OK” button.



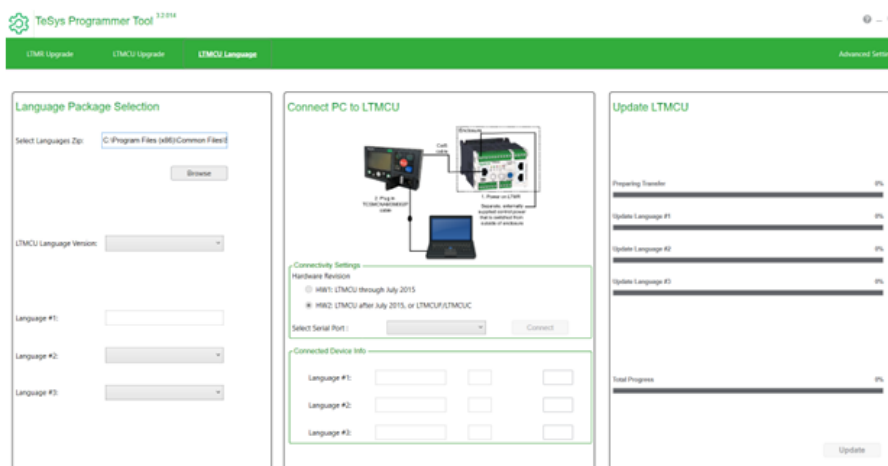
7. The updated firmware version will now appear in the “Connected Device Info” field.



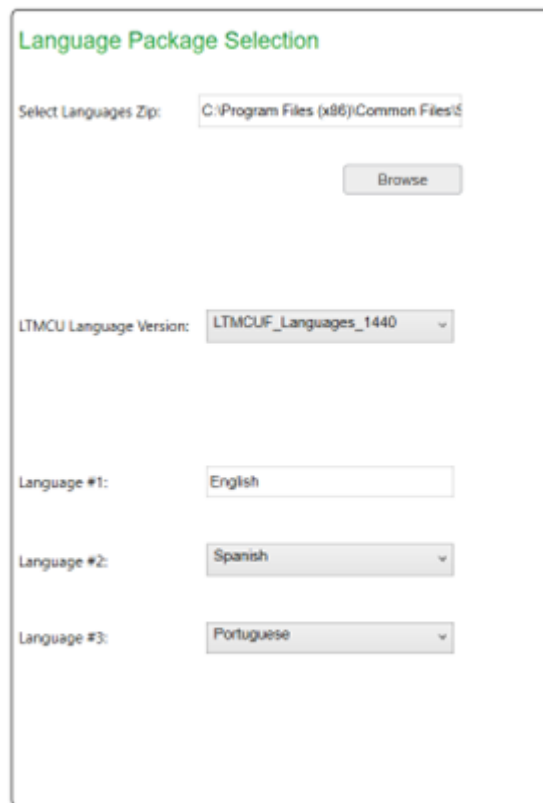
8. The firmware update is finished, you can now exit the TeSys Programmer tool or continue with another task.

## LTMCU Language Update

This chapter describes how to update the language in a TeSys T LTMCU display.

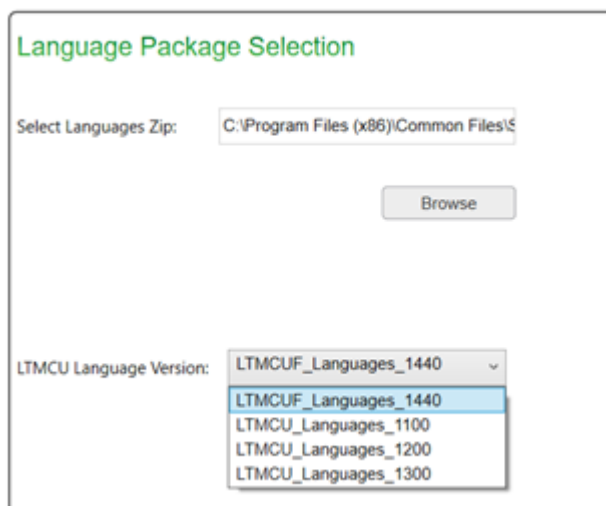


The first section of the LTCMU Language tab is the Language Package Selection, which allows you to choose the appropriate language package version for the LTCMU hardware in the TeSys Programmer Tool.



The screenshot shows the 'Language Package Selection' dialog box. It has a title bar with the text 'Language Package Selection' in green. Below the title bar, there is a text field labeled 'Select Languages Zip:' containing the path 'C:\Program Files (x86)\Common Files\'. To the right of this field is a 'Browse' button. Below this, there is a dropdown menu labeled 'LTCMU Language Version:' with 'LTMCUF\_Languages\_1440' selected. Further down, there are three more dropdown menus labeled 'Language #1:', 'Language #2:', and 'Language #3:'. The first is set to 'English', the second to 'Spanish', and the third to 'Portuguese'.

1. Select the LTCMU Language Version to be uploaded into the LTCMU from the drop-down menu, based on the specific hardware model of LTCMU to be programmed.



This screenshot shows the same 'Language Package Selection' dialog box, but with the 'LTCMU Language Version:' dropdown menu open. The menu is displaying a list of options: 'LTMCUF\_Languages\_1440' (which is highlighted in blue), 'LTMCU\_Languages\_1100', 'LTMCU\_Languages\_1200', and 'LTMCU\_Languages\_1300'. The other elements of the dialog box remain the same as in the previous screenshot.

2. By default, English is the first language programmed into the LTMCU. To select a second language, use the Language #2 drop-down menu. Repeat this process to select a third language, using the drop-down menu for Language #3.

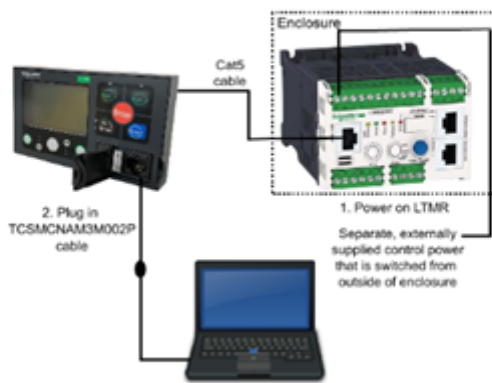
Language #1:

Language #2:

Language #3:

- The second section of the LTMCU Language tab allows you to connect a PC to the LTMCU. This tab shows:
- A diagram of the steps required to establish the connection between the LTMCU and a PC
- How to connect the hardware to a PC
- The language information previously loaded into the LTMCU

### Connect PC to LTMCU



1. Power on LTMRT  
Separate, externally supplied control power that is switched from outside of enclosure

2. Plug in TCSMCNAM3M002P cable

Enclosure

Cat5 cable

Connectivity Settings

Hardware Revision

☐ HW1: LTMCU through July 2015

☒ HW2: LTMCU after July 2015, or LTMCUF/LTMUC

Select Serial Port :

Language #1:

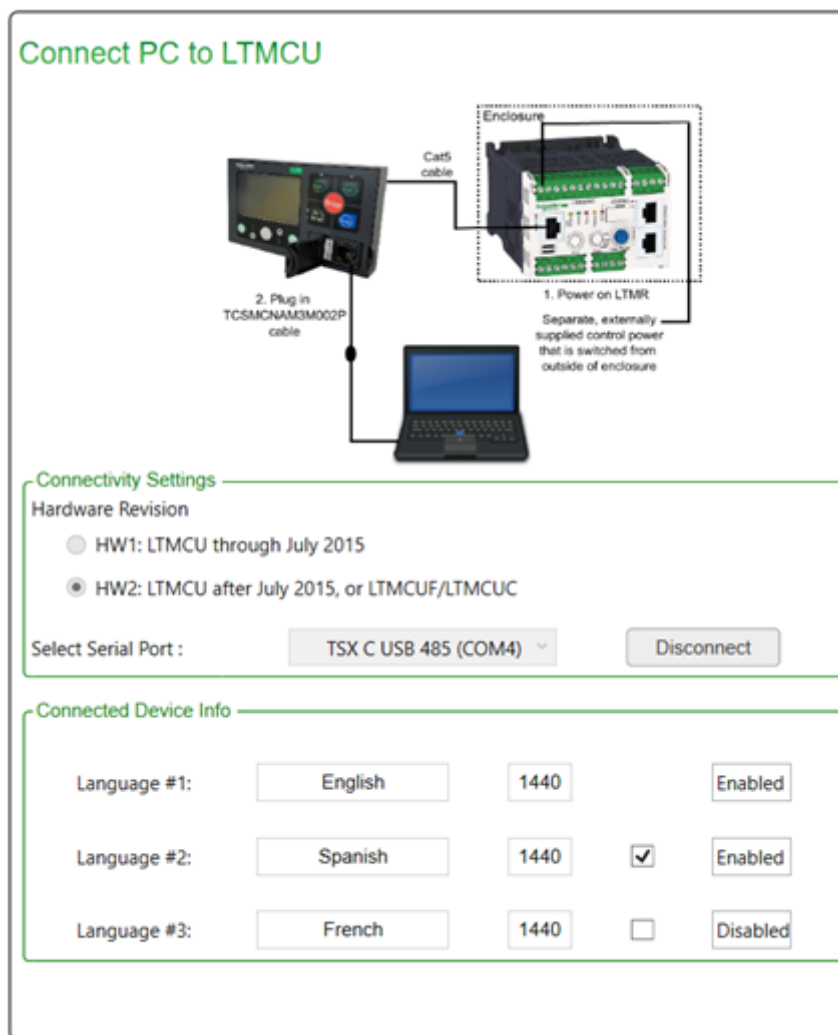
Language #2:

Language #3:



3. To establish the connection between a PC and the LTMCU successfully, go to connectivity settings and select HW1 if your LTMCU was manufactured before or on July 2015 or select HW2 if the manufacturing date is after July 2015 or if you have an LTMCUF or LTMCUC.
4. Select the appropriate serial port option from the drop-down menu, depending on how the connection is being established with the LTMCU, and click on the Connect button. This will display up to three languages loaded previously into the LTMCU.

5. To remove the language #2 and/or #3 that were previously loaded from the LTMCU, uncheck the box next to the languages. A check mark indicates the language is enabled and an empty checkbox indicates the language is disabled.



The third section in the LTMCU Language tab shows the status of the upload for each language into the LTMCU.

### Update LTCU

Preparing Transfer0%

Update Language #10%

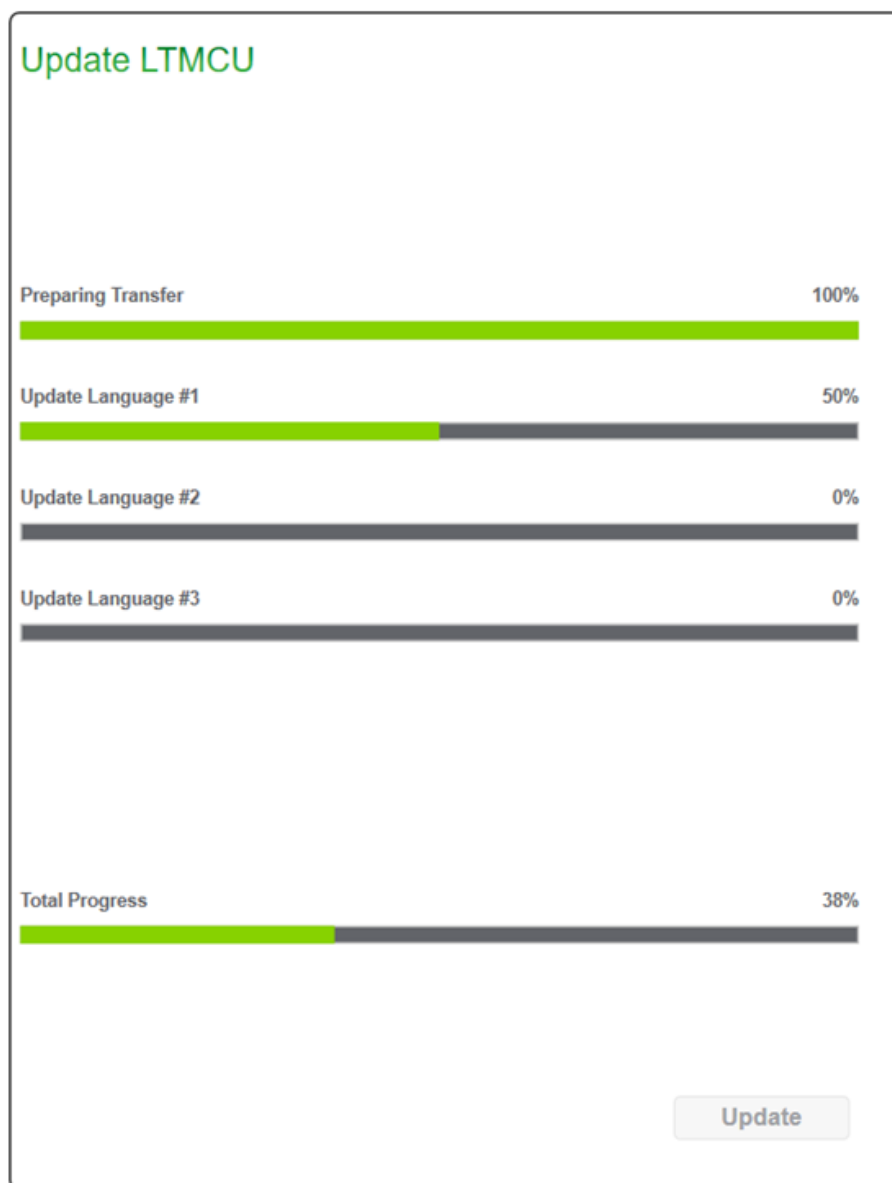
Update Language #20%

Update Language #30%

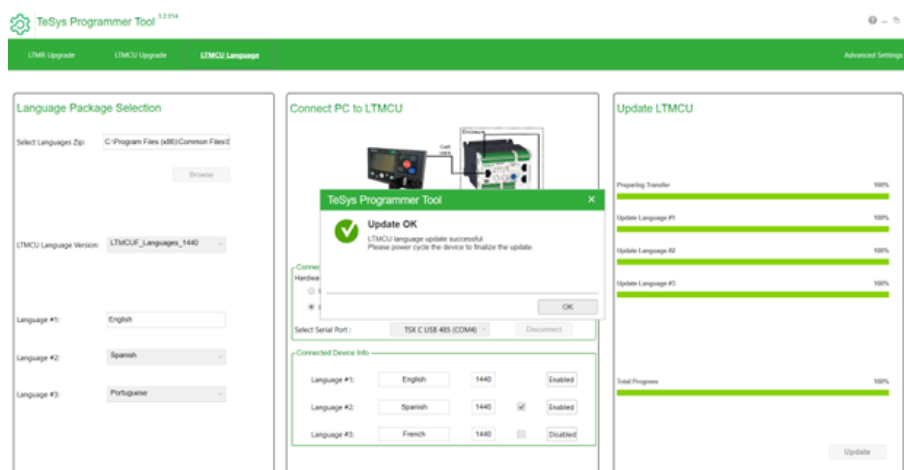
Total Progress0%

Update

6. To initiate the language package transfer process or to disable an existing language in the LTMCU, click on the Update button at the bottom right of the Update LTMCU section. The update normally takes several minutes.



7. After the update is completed, disconnect the LTMCU from your PC and connect it back to your TeSys T system and use as intended after updating.



## LTMR Calibration

The LTMR Calibration Tab is supported only for LTMR family devices.

The LTMR Calibration tab supports generated calibration files (.cal) from the TeSys and Karam Programmer Tools.

As with the other tabs, the LTMR Calibration tab is separated into two vertical panels, each panel encompassing one of the following features:

1. Fields and Status Log Box

## 2. Device connectivity, status, and functionality

The first panel in the LTMR Calibration tab is the **Fields and Status Log Box**.

- The calibration tab fields show the values of the LTMR registers and the Read/Open calibration file with naming “LTMR\_ProductSerialNumber.cal” and “LTMR\_SerProductSerialNumber.cal.”
- Fields contain Checksum, Commercial Reference, Serial Number, Hardware Version, Current Scaling Factors, Power Factor, L1RMS, L2RMS, and L3RMS.
- The calibration tab fields are editable for performing write and save operations.

Ensure the field values comply with the following standards:

### Checksum:

- The value cannot be null or empty.
- The value must be integers.

### Commercial Reference:

- Numeric and alphabetic characters

### Serial Number:

- Length must be 16 digits.
- The value cannot be null or empty.
- The value must be digits.

### Hardware version:

- Length must be five digits.
- The value cannot be null or empty.
- The value must be digits.

### Current Scaling Factors:

- Integer between 0 to 65535

### Power Factor:

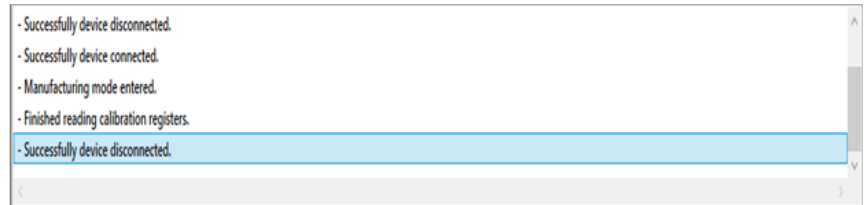
- Range => RANGE value 0 to 16000
- Shift=> SHIFT value 0 to 3599

### LxRMS:

- Range=> RANGE 0 to 16000
- Scale=>SCALE 0 to 65535

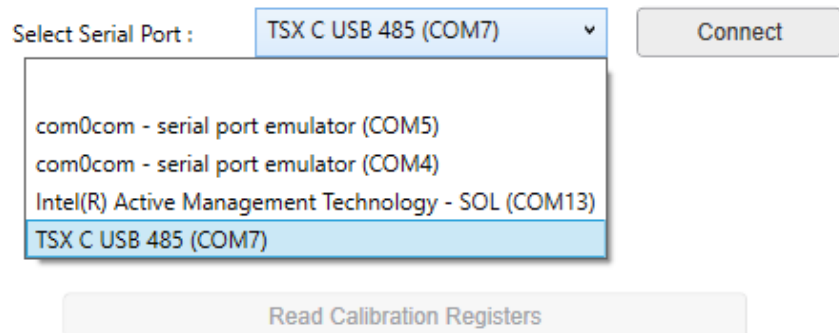
**NOTE:** A dialog pop up is displayed when a field value is not within the valid range.

- Status log box shows every operation status in calibration tab.

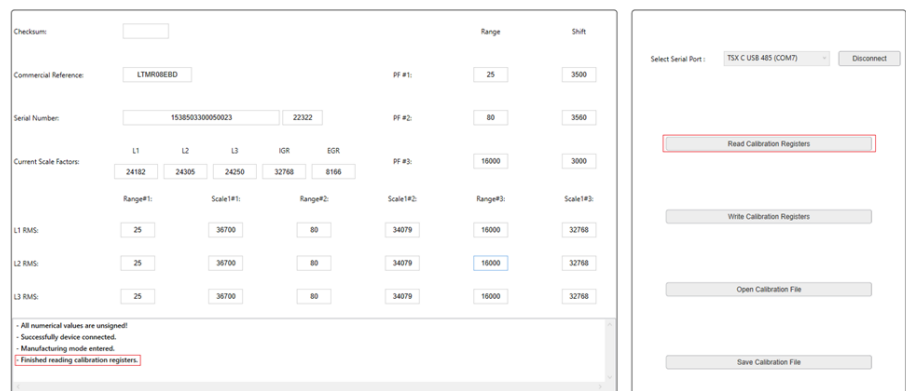


The second panel in the LTMR Calibration tab is **Device connectivity, status and functionality**.

1. The first text box is “Select Serial Port.” Select the appropriate serial port option from the drop-down menu, depending on how the connection is being established with the LTMR, and click on the connect button.



2. Read Calibration Register is a button used for reading calibration data from the device and displaying the calibration data in appropriate text fields, as well as showing the status log box message.



3. Write Calibration Register is a button used for writing the calibration data to the device. Performing the write operation, all text fields must be filled in with a particular range ( refer calibration field section).
1. The write operation checksum text field must be set to the same value as the device checksum in order to perform a write operation.
  2. Checksum value is located in log file.

## 3. Perform the following steps to open log file:

- Click on the Advanced Setting Tab.
- Go to the “Log and Report Settings” Section.
- Select Logging Level is “INFO.”
- In the File location row click the "Open Log" button.

Advanced Settings

Log and Report Settings

Logging Level: INFO

File Location: C:\Projects\Device\_Recovery\_3.1\bin\96\Debug\LogsAndReports\TeSysLogFile.log

Open Location Open Log

Checksum: Range Shift

Commercial Reference: LTMR08E0 FF #1: 25 3500

Serial Number: 1538503300050023 22322 FF #2: 80 3560

Current Scale Factors: L1 L2 L3 IGR EGR FF #3: 10000 3000

24182 24305 24250 32768 8166

Range#1: Scale1#1: Range#2: Scale1#2: Range#3: Scale1#3:

L1 RMS: 25 36700 80 34079 10000 32768

L2 RMS: 25 36700 80 34079 10000 32768

L3 RMS: 25 36700 80 34079 10000 32768

- Fail to write registers due to CheckSum is Not Match.  
- Manufacturing mode entered.  
- Fail to write registers due to CheckSum is Not Match.  
- Manufacturing mode entered.  
- Finished write calibration registers.

Select Serial Port: TSX C USB 485 (COM7) Disconnect

Read Calibration Registers

Write Calibration Registers

Open Calibration File

Save Calibration File

## 4. The Open Calibration File button is used for opening calibration (.cal) files. It displays the Calibration data in a text field.

Open Calibration File

Look in: 100fmc\calibration file

| Name                         | Date modified      | Type     |
|------------------------------|--------------------|----------|
| LTMR_0467011108633151.cal    | 10/13/2022 6:53 PM | CAL File |
| LTMR_Ser1108603300010151.cal | 10/13/2022 6:53 PM | CAL File |

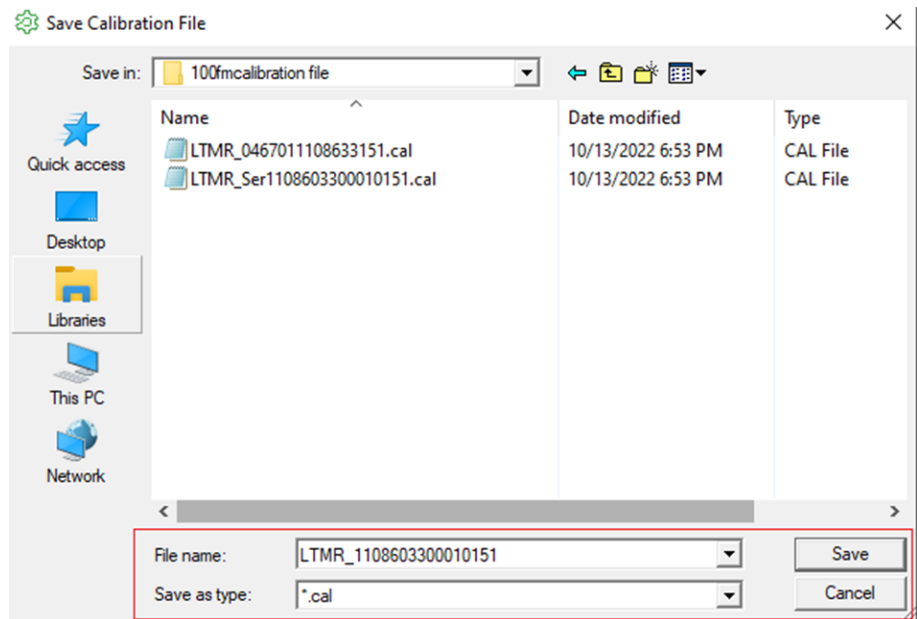
File name: LTMR\_0467011108633151.cal

Files of type: \*.cal

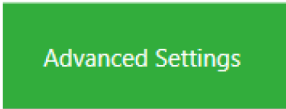
Open Cancel



5. The Save Calibration File button is used for saving calibration data from the text fields. The data is saved to a .cal file named "LTMR\_ProductSerialNumber.cal" or "LTMR\_SerProductSerialNumber.cal." where Product Serial Number is the serial number of the LTMR printed on the box.



# Advanced Settings



## Logging and Reporting

### Reporting

TeSys Programmer supports report generation to help track job site progress and tracking. The report file can be stored locally based on the location defined in the Advanced Settings. A new report file is created when the size increases above 1 MB, while preserving all old records.

Use Clear Report to clear all history reports.

|   | A                | B           | C                    | D                 | E                  | F                          | G          | H                                         | I       | J                  |
|---|------------------|-------------|----------------------|-------------------|--------------------|----------------------------|------------|-------------------------------------------|---------|--------------------|
| 1 | Serial Number    | MAC Address | Commercial Reference | Initial Device FW | Upgraded Device FW | Time Stamp                 | Time Taken | Upgrade Settings                          | Status  | Additional Details |
| 2 | 0469081322508050 |             | LTMR08CFM            | 2.7.000           | 2.7.000            | 1/10/2022 13:28 06:39 Mins |            | Overwrite: Device FW + Network FW Upgrade | Success |                    |

### Logging

TeSys Programmer supports simple logging of console/debug messages in text format. A new log file is created when the size increases above 5 MB, while preserving all old records. The Advance Settings screen provides an option for the user to open the log file and change the file location.

The user can select the type of messages to receive in the log file. The choices are All, Debug, Info, and Error.

Log and Report Settings

Logging Level :

INFO

File Location :

C:\Program Files (x86)\Common Files\Schneider Electric Shared\TeSysDTMLibrary\TeSysT\TeSysProgrammer\TeSysLogFile.log

Open Location

Open Log

Reporting Enable :

ON

File Location :

C:\Program Files (x86)\Common Files\Schneider Electric Shared\TeSysDTMLibrary\TeSysT\TeSysProgrammer\TeSys\_Programmer\_Tool\_Report.csv

Open Report

Clear Report

## Firmware Upgrade Settings

### Optimized Mode (default)

Compares the Source Firmware Package and the Target Device Firmware Package (devices and network) and upgrades the devices to the selected source firmware by upgrading only the microcontroller that does not match the package.

## Overwrite Mode

Upgrades the device and network firmware to the source firmware version, regardless of the existing version.

### FW Upgrade Settings

- ☒ Optimized: Only update the files that are different (Default)
- ☐ Overwrite: Overwrite all files

## Backup and Restore Feature

TeSys Programmer allows you to backup the LTMR configuration before starting the firmware update and restore the configuration at the end of the update over the HMI port using Modbus serial communication. To use this feature select "Enabled" in the Backup and Restore Settings.

### Backup and Restore Settings

- ☒ Enabled: Restore the device settings after firmware update (Default)
- ☐ Disabled: Reset to factory default values

When Enabled, all Configuration Registers and Custom Logic will be backed up and then restored after the firmware upgrade.

When Disabled, the device will be reset to factory default settings.





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As standards, specifications, and design change from time to time,  
please ask for confirmation of the information given in this publication.

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8536IB1915R07/23