TeSys Programmer Firmware Update Utility for LTMR & LTMCU User Manual

8536IB1915 November 2018







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TeSys Programmer User Manual

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Document Scope

This User Manual describes how to upgrade / downgrade TeSys T product range (LTMR and LTMCU) firmware using the TeSys Programmer v2.1.0.0

- Chapter 1 describes how to use the TeSys Programmer with the following TeSys T communication versions: **Modbus RTU, CANopen, DeviceNet and Profibus.**
- Chapter 2 describes how to use the TeSys Programmer with the following TeSys T communication versions: **Modbus TCP, Ethernet IP**.
- Chapter 3 describes how to use the TeSys Programmer with LTMCU, LTMCUC and LTMCUF.
- Chapter 4 describes the new features and settings found in the Advanced Settings tab.



Safety Information

NOTICE:

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

A	DANGER	
HAZAR EXPLO • Appli work Z462	D OF ELECTRIC SHOCK, SION, OR ARC FLASH y appropriate personal protective oment (PPE) and follow safe electrical practices. See NFPA 70E or CSA	
 This equipment must qualified electrical per 	only be installed and serviced by rsonnel.	
 Turn off all power sup on or inside equipme 	oplying this equipment before working nt.	
 Always use a properly confirm power is off. 	y rated voltage sensing device to	
 Replace all devices, or power to this equipment 	doors and covers before turning on ent.	
Failure to follow these serious injury.	instructions will result in death or	
	A WA	ARNING
 UNINTENDED E The app program be allow Follow a Follow a manual. Follow a 	QUIPMENT OPERATION lication of this product requi ming of controls systems. C ed to program and apply thi Il local and national safety o Il electromagnetic compatib Il installation and wiring rule v these instructions can re	res expertise in the design and Only persons with such expertise should is product. codes and standards. wility rules described in the TeSys T user as described in the TeSys T user manual. esult in death or serious injury.
	NOTI	ICE
RISK OF FIRMV Updating the firm settings. All prod saved and restor SoMove Softwar Once programm process is comp • Close all • Do not c • Do not ir	VARE CORRUPTION ware on TeSys T returns th uct configurations will be loa red through the TeSys T De e. ing has begun, adhere to th lete: I other programs before star lose TeSys Programmer un nterrupt power to device.	ne TeSys T device to its original factory st. Product configurations should be vice Type Manager (DTM) inside e following until the programming rting programming. htil the process is complete.

- Do not disconnect the communication cable if programming is in progress.
- Remove all network cables except direct connections to this PC. •

Failure to follow these instructions can result in injury or equipment damage.



1. TeSys Programmer with LTMR: Modbus RTU, CANopen, DeviceNet and Profibus

1.1 Introduction and Setup

The current 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.

IMPORTANT: When upgrading/downgrading from a firmware version lower than 2.6 to a firmware version greater than 2.6, you must first upgrade to firmware version 2.6 and then again to the higher firmware version. (for example FW2.4 > **FW. 2.6** >FW 2.7). The reverse is true for downgrading. For example, to downgrade from FW 2.7 to FW 2.4 use sequence (FW2.7 > **FW. 2.6** >FW 2.4).

One physical link shall be established between your PC and the LTMR, from a USB port of the PC to the "LTME/HMI" port on the left side of the front face of the LTMR unit, as in Figure 1. 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 Cat 5 cable.



Figure 1

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).



1.2 Prepare your PC: Connection through USB to Serial

1. Download and install BOTH "<u>SoMove v2.6</u>" or greater and "<u>Tesys DTM Library v2.10.0</u>" or greater.

2. Unzip and Run 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:** file may run with no pop-up windows)

- 4. Download the Tesys T firmware to be installed
- 5. Unzip the Tesys T firmware file
- 6. Identify the USB COM port used by the TCSMCNAM3M002P. To do so, connect the cable at both ends, click the Start menu on your PC and search for "Device Manager", as in Figure 2. Open the Device Manager, then, click on Ports (Com & LPT) and read the number of the port "TSX C USB 485": In the example below, it is **COM12**, as in Figure 3.

	📇 Device Manager
	File Action View Help
Control Panel (3)	
Device Manager	
	VTUSLVSE031992L
and printers	Audio inputs and outputs
Update device drivers	> 🔐 Batteries
$D_{acuments}$ (117)	> I Biometric devices
Documents (147)	> 8 Bluetooth
	> 💻 Computer
	> Disk drives
	> La Display adapters
	> 🙀 Human Interface Devices
Microsoft OpeNieta (7)	> The ATA/ATAPI controllers
Microsoft OneNote (7)	> 🛁 Imaging devices
	> Keyboards
	> Memory technology devices
	Mice and other pointing devices
	> Monitors
Files (1294)	> 👷 Network adapters
Files (1204)	V 💭 Ports (COM & LPT)
	Intel(R) Active Management Technology - SOL (COM3)
	TSX C USB 485 (COM12)
	> 🚍 Print queues
See more results	> Processors
	> 🛐 Security devices
device manager X Shut down	Software devices
	Sound, video and game controllers
	> Storage controllers
Figure 2	🔪 🌆 System devices

Figure 3



1.3 Using TeSys Programmer Tool

IMPORTANT: Changing the firmware version will restore configuration settings of the Tesys T to factory default. If desired, enable the backup & restore settings from the Advanced Settings or save configurations using SoMove software BEFORE changing firmware. The programmer can be used for both firmware upgrades and firmware downgrades. The example 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:
 - i. Click on "Disconnect from Device" icon 🖄 on the "Main" toolbar
 - ii. Choose "Firmware Update" from "Device →Maintenance", as in the figure below.





A warning message is displayed, as in Figure 4, 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. If "Cancel" is selected, then the programmer exits.



Figure 4

2. From the pull-down menu located underneath the Tesys T graphic, as in Figure 5, select the COM port for the "TSX C USB 485". In this example, it is COM 12. Click on the "Connect" button to connect to the Tesys T. Once connected, the "Connected Device Info" fields will populate, as in Figure 6.





3. In the "Firmware Package Selection" field, click the "Browse" button, as in Figure 7, and navigate to the unzipped Tesys T firmware file, as in Figure 8. Open the file corresponding to the desired firmware, and verify that the correct version has appeared in the Device FW Version field, as in Figure 9.

		Name	Date modified	Туре	Size
Firmware Package Selection	on	📜 CO 1.3.000	10/9/2017 10:19 A	File folder	
Colort Firmura Doduces		📜 DN 1.8.000	10/9/2017 10:19 A	File folder	
Select Firmware Package :		ETH 2.2.000	10/9/2017 10:19 A	File folder	
	Drawas	📜 KE1.7.000	10/9/2017 10:19 A	File folder	
	Browse	KU2.5.000	10/9/2017 10:19 A	File folder	
		PB 1 3 000	10/9/2017 10:19 A	File folder	
		TeSys T 2.5.000.fw	12/20/2012 7:49 A	FW File	1 KB
C Device FW Version					
LTMR FW Version :					
					>
		: TeSys T 2.5.000.fw	~	*.fw	\sim
				Open	Cancel
Fig	gure 7	Figu	ıre 8		
	Device FW Version				
	П г. г. г. г.	2.5.000			
	LIMR FW Version :	2.0.000			
	L				
	F	igure 9			



4. You are now ready to upgrade the Tesys T. To begin the firmware upgrade, click the "Update" button, as in the below figure.

Update LTMR	
Backup settings FROM device	0%
Update Network firmware	0%
Update Device firmware	0%
Restore settings TO device	0%
TOTAL Progress	0%
	Update

IMPORTANT: Once the firmware upgrade has begun, DO NOT DISCONNECT THE DEVICE. Doing this can corrupt the hardware. Firmware upgrade can take up to 10 minutes.

5. A pop-up window, as in the below figure, will appear, requesting a to power cycle the LTMR.





6. Once the "Total Progress" bar reaches 100%, as per Figure 10, a pop-up window will appear, indicating successful LTMR Firmware Upgradation, as per Figure 11. At this time, Press "OK", power-cycle the device again and wait 20 seconds. Then, click the "Connect" button.

	TeSys Programmer Tool	×
TOTAL Progress 100%	Update Information Urmation Urm	
		ок

Figure 10

Figure 11

7. After clicking the "Connect", the new firmware version should populate as shown in the below figure.

Connected Device Info —		
Device FW :	2.5.000	
Network FW :	Modbus 0.0.000	
Serial Number :	0462051042642013	
Reference Number :	LTMR08MBD	
Mac Address :		Refresh
1	Figure 12	

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

Notice: 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 languages files in 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 FW version will not be accessible. It is recommended to update the LTMCU languages as soon as possible. To do so, use the LanDown tool and refer to the LTMCU User Manual.

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

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



2. TeSys Programmer with LTMR: Ethernet TCP/IP

2.1 Introduction and Setup

IMPORTANT: When upgrading/downgrading from a firmware version lower than 2.6 to a firmware version greater than 2.6, you must first upgrade to firmware version 2.6 and then again to the higher firmware version. (for example FW2.4 > **FW. 2.6** >FW 2.7). The reverse is true for downgrading. For example, to downgrade from FW 2.7 to FW 2.4 use sequence (FW2.7 > **FW. 2.6** >FW 2.4).

The current 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 shall be established between your PC and the LTMR, as per Figure 13.

One is a serial link from an 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).



Figure 13



2.2 Prepare your PC

2.2.1 Connection through USB to Serial

1. Download and install BOTH "<u>SoMove v2.6</u>" or greater and "<u>Tesys DTM Library v2.10.0</u>" 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:** file may run with no pop-up windows)

- 4. Download the <u>Tesys T firmware</u> to be installed
- 5. Unzip the Tesys T firmware file
- 6. Identify the USB COM port used by the TCSMCNAM3M002P. To do so, connect the cable at both ends, click the Start menu on your PC and search for "Device Manager", as in Figure 14. Open the Device Manager, then, click on Ports (Com & LPT) and read the number of the port "TSX C USB 485": In the example below, it is **COM12**, as in Figure 15.

	📩 Device Manager
	File Action View Help
Control Panel (3)	
🚽 Device Manager	
Wiew devices and printers	✓ a w10stvse031992t
	> Audio inputs and outputs
Update device drivers	Discretion de lines
Documents (147)	Biometric devices
	> Sidecootri
	Disk drives
	Human Interface Devices
	DE ATA (ATA DI controllers
Microsoft OneNote (7)	
	> == Imaging devices
	Memory technology devices
	Mice and other pointing devices
	Monitors
	Network adapters
Files (1284)	Ports (COM & LDT)
	Intel(B) Active Management Technology - SOL (COM3)
	TSX C USB 485 (COM12)
	Print queues
See more results	Security devices
	Software devices
device manager 🔰 🛛 🗙 Shut down 🕨	Sound video and game controllers
	Sex Storage controllers
E'	Surfage Controllers
Figure 14	

Figure 15



2.2.2 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 as shown in the diagram on Figure 13.
- 2. From the Start Menu of your PC, search for the words "Network and Sharing", then select "Network and Sharing Center" as per the below figure.

Control Panel (3)	
Network and Sharing Center	
Find and fix networking and connection problems	
Choose homegroup and sharing options	
Documents (5)	-
Pictures (3)	_
Microsoft Outlook (25)	_
O Saa maaa aanulta	
>> see more results	
network and sharing × 🛞 Shut down 🕨	



3. Click on Local Area Connection to which the LTMR is connected, as in the below figure.

🔾 🗢 👯 🕨 Control Panel 🕨	 Network and Internet Network and Sharing Ce 	nter 👻 🍫 Search Control Panel 🔎
Control Panel Home	View your basic network informatio	n and set up connections
Manage wireless networks		💐 👔 See full map
Change adapter settings	COMPLITERB Multin	e networks Internet =
Change advanced sharing	(This computer)	
settings	View your active networks	Connect or disconnect
	ATT7x986H4 Home network	Access type: Internet HomeGroup: Joined Connections: all Wireless Network Connection
See also	~	(ATT7:/986H4)
HomeGroup		
Internet Options	Unidentified network	Access type: No Internet access
Windows Firewall	Public network	Connections 🚆 Local Area Connection

4. On the next window, click on "Properties", as in the below figure.

Local Area Connection Status	×
General	
Connection	
IPv4 Connectivity:	No Internet access
IPv6 Connectivity:	No network access
Media State:	Enabled
Duration:	1 day 12:40:35
Speed:	100.0 Mbps
Details	
Activity	
Sent —	Received
Packets: 1,197	0
Properties Disable	Diagnose
	Close



5. On the next window, select "Internet Protocol Version 4 (TCP/IPv4)" and click on "Properties", as in the below figure.

Local Area Connection Properties	
Networking Sharing	
Connect using:	
Atheros AR8151 PCI-E Gigabit Ethernet Controller (NDIS €	
Configure	
This connection uses the following items:	
Client for Microsoft Networks	
QoS Packet Scheduler	
File and Printer Sharing for Microsoft Networks	
Internet Protocol Version 5 (TCP/IPV6)	
Internet Hotocol Version 4 (TCH/HV4)	
✓ ⊥ink-Layer Topology Discovery Responder	
Install Uninstall Properties	
Description	
Transmission Control Protocol/Internet Protocol. The default	
across diverse interconnected networks.	
OK Cancel	

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

Internet Protocol Version 4 (TCP/IPv4) Properties					
General					
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.					
Obtain an IP address automatical	ly				
O Use the following IP address:					
IP address:	85 . 16 . 100 . 0				
Subnet mask:	255.0.0.0				
Default gateway:	· · ·				
Obtain DNS server address auton	Obtain DNS server address automatically				
Ose the following DNS server add	resses:				
Preferred DNS server:					
Alternate DNS server:	· · ·				
Validate settings upon exit	Advanced				
	OK Cancel				



7. Then, on the next window, click "Add", as in the below figure.

Advanced TCP/IP Settings	? ×
IP Settings DNS WINS	
IP addresses	
IP address	Subnet mask
85.16.100.0	255.0.0.0
Add	Edit Remove
Default gateways:	
Gateway	Metric
Gutenay	
Add	Edit Remove
Automatic metric	
Interface metric:	
	OK Cancel

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 you a window, as in the below figure.

TCP/IP Address	? <mark>x</mark>
IP address:	192.168.16.1
Subnet mask:	255.255.255.0
	Add Cancel



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

dvanced TCP/IP Settings	<u> ২</u>
IP Settings DNS WINS	
- IP addresses	
IP address	Subnet mask
85.16.100.0	255.0.0.0
192.168.16.1	255.255.255.0
Add	Edit Remove
Default gateways:	
Gateway	Metric
Add	Edit Remove
Automatic metric Interface metric:	
	OK Cancel



2.3 Using TeSys Programmer

IMPORTANT: Changing the firmware version will restore configuration settings of the Tesys T to factory default. If desired, enable the backup & restore settings from the Advanced Settings or save configurations using SoMove software BEFORE changing firmware. The programmer can be used for both firmware upgrades and firmware downgrades. The example below is an example of upgrading the firmware from FW2.6 to FW2.7.

- 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:
 - i. Open an
 - ii. Click on "Disconnect from Device" icon 🖄 on the "Main" toolbar
 - iii. Choose "Firmware Update" from "Device → Maintenance", as in the figure below.

🙆 SoMove 2.6 - I	Untitled Proje	ct.psx*						
File View Co	mmunication	Device	Tools	Help				
		🔞 Edi	t topolog	у	- 1			
		🍓 Sele	ect printa	ble data				
3		Mai	ntenance	;	•	F	irmware update	
	data aro not	CUS	tom logic	:	- • F	_		_
		FB	diagram		•			
my Device	operate	par	ameter lis	st	fault		monitoring	di



A warning message is displayed, as in Figure 16, 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. If "Cancel" is selected, then the programmer exits.



Figure 16

2. From the pull-down menu located underneath the Tesys T graphic, as in Figure 17, select the COM port for the "TSX C USB 485". In this example, it is COM 12. Click on the "Connect" button to connect to the Tesys T. Once connected, the "Connected Device Info" fields will populate, as in Figure 18.

Connect PC to LTMR	Connected Device Info
Enclosure Separate, externally supplied control power that is switched from outside of enclosure	Device FW : 2.6.000
	Network FW : Modbus 0.0.000
TCSMCNAM3M002P If Ethernet:	Serial Number : 0462051042642013
cable Cat5 cable	Reference Number : LTMR08MBD
USB port	Mac Address : Refresh
Select Serial Port : Connect Intel(R) Active Management Technology - SOL (COM3)	
IP Address : TSX C USB 485 (COM12) Pect	
Figure 17	Figure 18



3. Once the USB connection is established, the Programmer will import the default "IP Address" and the "Connected Device Info" from the Tesys T as seen below. Click the "Connect" button beside the IP Address to connect to the device through the Ethernet Port, as in the below figure.

Connect PC to LTM	1R	
Enclos TCSMCNAM cabl	ASM002P USB port	e, externally control power witched from of enclosure
Select Serial Port :	TSX C USB 485 (COM12) Y	Disconnect
IP Address :	85.16.211.53	Connect
Connected Device Info —		
Device FW :	2.6.000	
Network FW :	Ethernet 2.2.000	
Serial Number :	0486051710116096	
Reference Number :	LTMR08EBD	
Mac Address :	00:80:F4:D2:D3:35	Refresh

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), as in the below figure.

Select Serial Port :	TSX C USB 485 (COM12) Y	Disconnect
IP Address :	85.16.211.53	Disconnect



5. In the "Firmware Package Selection" field, click the "Browse" button, as in Figure 19, and navigate to the unzipped Tesys T firmware file, as in Figure 20. Open the file corresponding to the desired firmware, and verify that the correct version has appeared in the Device FW Version field, as in Figure 21.

	Name	Date modified	Туре	Size
	ETH_3.4.000	2/15/2018 10:37 A	File folder	
Firmware Package Selection	📕 KE_1.9.000	2/15/2018 10:36 A	File folder	
	KU 2.8.000	2/15/2018 10:22 A	File folder	
Select Firmware Package :	TeSysT_Pack-10_FW2.8.fw	2/15/2018 10:46 A	FW File	1 K
Browse				
Device FW Version				
LTMR FW Version :				
	<			>
	TeSysT_Pack-10_FW2.8.fw	~ ×	fw	\sim
		\square	Open	Cancel
Figure 19		Figure 20		
C Device FW Version				
LTMR FW Version :	2.8.000			
L	Figure 21			

Figure 21



6. You are now ready to upgrade the Tesys T. To begin the firmware upgrade, click the "Update" button, as in the below figure.

Update LTMR	
Backup settings FROM device	0%
Update Network firmware	0%
Update Device firmware	0%
Restore settings TO device	0%
TOTAL Progress	0%
	Update

IMPORTANT: Once the firmware upgrade has begun, DO NOT DISCONNECT THE DEVICE. Doing this can corrupt the hardware. Please allow up to 10 minutes for the firmware upgrade to finish.

7. Once the "Total Progress" bar reaches 100%, as per Figure 22, a pop-up window will appear, indicating successful LTMR Firmware Upgradation, as per Figure 23. At this time, Press "OK", power-cycle the device again and wait 20 seconds. Then, click the "Connect" button.

I		TeSys	Programmer Tool	×
TOTAL Progress	100%	!	Update Information	
	Update		Please power cycle the device to finalize the update.	
]			
				ок



Figure 23



8. After clicking the "Connect" button, the new firmware should version should populate as shown below.

Connect PC to LTI	MR	
Enck TCSMCNA cal	Separa supplied that is s outside M3M002P USB port	te, externally control power witched from of enclosure
Select Serial Port :	TSX C USB 485 (COM4) 💙	Disconnect
IP Address :	85.16.62.159	Disconnect
Connected Device Info —		
Device FW :	2.8.000	
Network FW :	Ethernet 3.4.000	
Serial Number :	0488051540113005	
Commercial Reference :	LTMR27EBD	
Mac Address :	00:80:F4:D2:3E:9F	Refresh
[

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

Notice: 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 languages files in 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 FW version will not be accessible. Proceed as soon as possible to the LTMCU languages update. To do so, use the Landown software and refer to the LTMCU User Manual.



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

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



3. TeSys Programmer with LTMCU / LTMCUF / LTMCUC

3.1 Introduction and Setup

Chapter 3 describes how to upgrade / downgrade the LTMCU firmware, not the Language Files. It explains how to prepare the LTMCU and the PC, how to connect them and how to start the programmer.

Note that the firmware update procedure is the same for the LTMCU, LTMCUF, and LTMCUC so will be referred to as simply LTMCU throughout this manual

A physical link shall be established between your PC and the LTMCU and from your LTMCU to the Tesys T, as in the below figure. First, power on your Tesys T from a separate, externally supplied control power source that is switched from outside the enclosure. Secondly, connect the TCSMCNAM3M002P cable from a USB port of the PC to the RJ45 connector port on the front face of the LTMCU. Thirdly, connect the free end of the Cat5 cable to the "LTMCU/HMI" port on the left side of the Tesys T, then, while pressing both the "STOP" and "RESET" buttons (circled in red below) on the LTMCU, insert one end of the Cat5 cable into the rear RJ45 port of the LTMCU. Route the cables to the outside of the enclosure so the update can be performed without exposure to energized equipment (doors closed and interlocked).



Note: When connected properly, an hourglass will appear on the screen of the LTMCU. It is recommended to make a direct link between the Tesys T and LTMCU with the Cat5 cable. Do not include the LTME in the link between the Tesys T and LTMCU.

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).



3.2 Prepare your PC: Connection through USB to Serial

1. Download and install BOTH "<u>SoMove v2.6</u>" or greater and "<u>Tesys DTM Library v2.10.0</u>" or greater.

Unzip and Run 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:** file may run with no pop-up windows)

- 4. Download the Tesys T firmware to be installed
- 5. Unzip the Tesys T firmware file
- 6. Identify the USB COM port used by the TCSMCNAM3M002P. To do so, connect the cable at both ends, click the Start menu on your PC and search for "Device Manager", as in Figure 24. Open the Device Manager, then, click on Ports (Com & LPT) and read the number of the port "TSX C USB 485": In the example below, it is **COM12**, as in Figure 25.

	📇 Device Manager
	File Action View Help
Control Panel (3)	
🚽 Device Manager	
View devices and printers	Audio inputs and outputs
	Batterier
Update device drivers	Biometric devices
Documents (147)	Bluetooth
	> Computer
	Disk drives
	Display adapters
	Human Interface Devices
	DE ATA/ATAPI controllers
Microsoft OneNote (7)	> Imaging devices
	> Keyboards
	Memory technology devices
	Mice and other pointing devices
	Monitors
	> P Network adapters
Files (1284)	Ports (COM & LPT)
	Intel(R) Active Management Technology - SOL (COM3)
	TSX C USB 485 (COM12)
	> 🛱 Print queues
O Cara annu ann tha	> Processors
> See more results	> Security devices
	> Software devices
device manager × Shut down +	> 🖬 Sound, video and game controllers
	> 🍇 Storage controllers
Figure 24	🔪 📇 Sustem devices
i igule z i	

Figure 25



3.3 Using TeSys Programmer

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 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:
 - i. Click on "Disconnect from Device" icon 🖄 on the "Main" toolbar
 - ii. Choose "Firmware Update" from "Device →Maintenance", as in the figure below.





A warning message is displayed, as in the below figure, 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. If "Cancel" is selected, then the programmer exits.

~	HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH
1	 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 	er supplying this equipment before working on or inside equipment
 Always use a pr 	operly rated voltage sensing device to confirm power is off.
 Replace all devi 	ces, doors and covers before turning on power to this equipment.
Failure to follow	v these instructions will result in death or serious injury.
UNINTENDE	D EQUIPMENT OPERATION
 The applica programmi 	tion of this product requires expertise in the design and ng of controls systems. Only persons with such expertise should
to be allow	ed to program and apply this product.
 Follow all le 	ocal and national safety codes and standards.
 Follow all e 	lectromagnetic compatibility rules described in this guide.
 Follow all in 	nstallation and wiring rules described in this guide.
Failure to follow	v these instructions will result in death or serious injury.
	NOTICE
RISK OF FIF	RMWARE CORRUPTION
Updating the firmw factory settings. Al should be saved a inside SoMove So	vare on TeSys T returns the TeSys T device to its original I product configurations will be lost. Product configurations not restored through the TeSys T Device Type Manager (DTM) Itware.
Once programmin process is comple	g has begun, adhere to the following until the programming le:
 Close all oth 	er programs before starting programming.
Do not close	 recycline programmer until the process is complete.
Do not inter	up power to device.
Bemove VO	scanner for Elbernel TeSvs T
Failure to follow	these instructions will result in injury or equipment
	aloos mos doctorio win result in injury or equipment

2. From the home screen, click on "LTMCU Upgrade" in the upper-left corner of the screen as seen below.





3. In the "Firmware Package Selection" field, click on the "Browse" button, Figure 26, and navigate to the unzipped LTMCU firmware file, Figure 27, that will be put onto the device. The FW version will populate in the "LTMCU FW Version:" field, Figure 28.

		Name	Date modified	Туре	Size
			1/5/2018 3:41 PM	BIN File	500 KB
Firmware Package Selec	tion	STM32_KCOU_V3.0.000.bin	1/5/2018 3:41 PM	BIN FIIG	200 KB
Select FW Binary File:	Browse				
Device FW Version					
LTMCU FW Version :)
		STM32_KCOU_V3.0.000.bin	~	*.bin	~
				Open	Cancel
Fig	gure 26		Figure 27		
	Device FW Version				
	LTMCU FW Version :	3.0.000			
	L	Figure 28			

4. From the the pull-down menu located underneath the Tesys T graphic, Figure 29, select the COM port for the "TSX C USB 485". In this example, it is COM 12. Click on the "Connect" button to connect to the Tesys T. A prompt will appear as in Figure 30. Refer to page 22 for more detailed instructions on how to complete the connection. If the prompt is followed and closed, the "Connected Device Info" field will populate, as in Figure 31

Connect PC to LTMCU	TeSys T Programmer NOTICE ×
Call Calle 2. Plug in TCSMCMAMMOD2	Press "Stop" and "Reset " button on LTMCU together, then power on LTMCU by connecting with LTMR and then Press "OK"
cable supple dontrol power that a awithout drawn cutaide of endorume	ОК
	Figure 30
Select Serial Port : TSX C USB 485 (COM12) Connect Connected Device Info TSX C USB 485 (COM12) Connect TSX C USB 485 (COM12)	Connected Device Info
Figure 29	LTMCU Version : 2.0.000





5. You are now ready to update the LTMCU. To begin the firmware update, click the "Update" button.

IMPORTANT: Once the firmware update has begun, DO NOT DISCONNECT THE DEVICE. Doing this can corrupt the hardware.

Update LTMCU	
Program device main firmware	0%
	Update

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





Connect PC to LT	MCU	
2. Plu TCSMCNA cat	Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe Sabe	
Select Serial Port :	TSX C USB 485 (COM12) ~	Disconnect
Connected Device Info -		
LTMCU Version :	3.0.000	

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

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



4. Advanced Settings

Advanced Settings

4.1 Logging and Reporting

4.1.1 Reporting

TeSys Programmer supports report generation to help field services track job site progress and tracking by storing the file locally based on location defined in the Advanced Settings, as in the below figure. It will alert the user to start a new file when size increases to more than 1 MB.

Clear Report: to clear all the history reports.

4.1.1 Logging

TeSys Programmer supports simple logging of console/debug messages in text format. The log file size must not exceed 10 MB, beyond which the file will discard the beginning of the file. It provides an option in Advanced Settings screen for user to open the log file and change the file location, as in the below figure.

There is an option for user to set the message detail level as: ALL – DEBUG – INFO – ERROR

-Log and Report Settings	
Logging Level :	INFO V
File Location :	C:\Program Files (x86)\Common Files\Schneider Electric Shared\TeSysDTMLibrary\TeSysT\TeSysProgrammer\TeSysLogFile.log
	Open Location Open Log
Reporting Enable :	ON V
File Location :	C:\Program Files (x86)\Common Files\Schneider Electric Shared\TeSysDTMLibrary\TeSysTreSysProgrammer\TeSys_Programmer_Tool_Report.csv
	Open Report Clear Report

4.2 Upgrade Modes

4.2.1 Optimized Mode (default):

Compares the Source FW Package and the Target Device Firmware of the Device & Network and upgrades the device to the selected FW package by only upgrading the microcontroller that does not match the package.

4.2.2 Overwrite Mode:

Upgrades both the device and network firmware to the Source Firmware Package by reflashing both FW regardless of existing version.

```
FW Upgrade Settings

Optimized: Only update the files that are different (Default)

Overwrite: Overwrite all files
```



4.3 Backup & Restore Feature

TeSys Programmer allows backup of complete LTMR configuration before start firmware upgrade and restore at end process over HMI port using Modbus serial communication protocol, when enabled (Default), as in the below figure.

CBackup and Restore Settings	
Enabled: Restore the device settings after firmware update (Default)	
O 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.