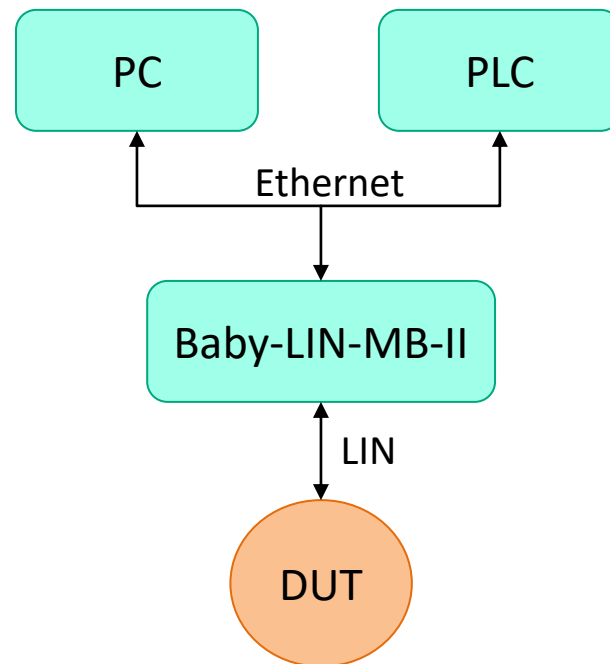


Commissioning a SDF application with a Baby-LIN-MB-II



1. Preconditions
2. Establish network connection
3. Validate connection and DUT wiring
4. Run SDF in SimpleMenu mode
5. Run SDF in Stand-Alone mode



Commissioning of a SDF application should be done in a same sequence as described in this document to ensure the most efficient proceeding.

In the first part a Windows PC is used as host counterpart to establish network connection, load and validate the SDF on the Baby-LIN-MB-II and run first macros of the SDF by SimpleMenu to validate, that the MB-II can be accessed by network and the DUT (Device under test) is correctly wired up to the Baby-LIN-MB-II and the power supply.

So you need a Windows desktop pc or laptop, which has the LINWorks pc software installed. The LINWorks Package can be downloaded here after registration:

<https://Lipowsky.com/downloads/>

Typically you will use
64 Bit Package

DOWNLOADS

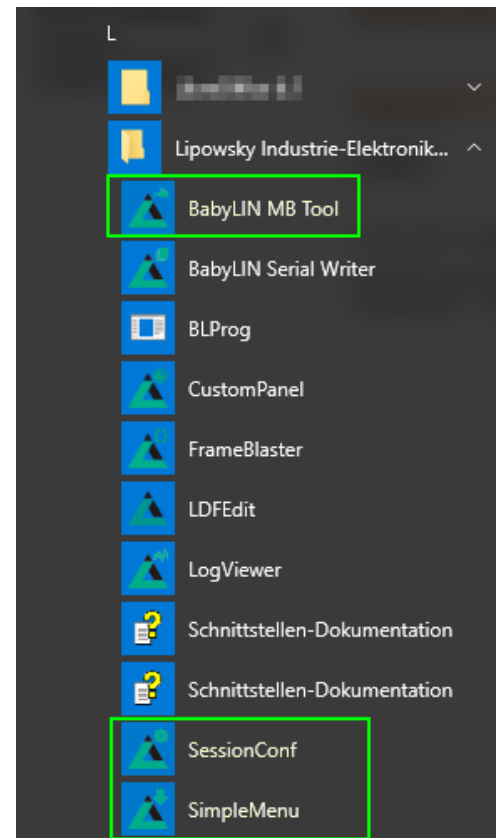
HERE YOU CAN DOWNLOAD DOCUMENTS FREE OF CHARGE.
FOR THE LOCKED CONTENT, PLEASE LOG IN WITH YOUR CUSTOMER ACCESS.

01 | Baby-LIN Software

LinWorks Installer (x64) Version 2.33.0 More ▼	1279.11MB 2022-11-22	🔒 ⬇️
LinWorks Installer (x86) Version 2.33.0 More ▼	1264.84MB 2022-11-22	🔒 ⬇️
LinWorks Portable (x64) Version 2.33.0 More ▼	1287.04MB 2022-11-22	🔒 ⬇️
LinWorks Portable (x86) Version 2.33.0 More ▼	1271.44MB 2022-11-22	🔒 ⬇️

After installation of the LINWorks package applications BabyLIN MB Tool, SessionConf and Simple Menu might be used for commissioning.

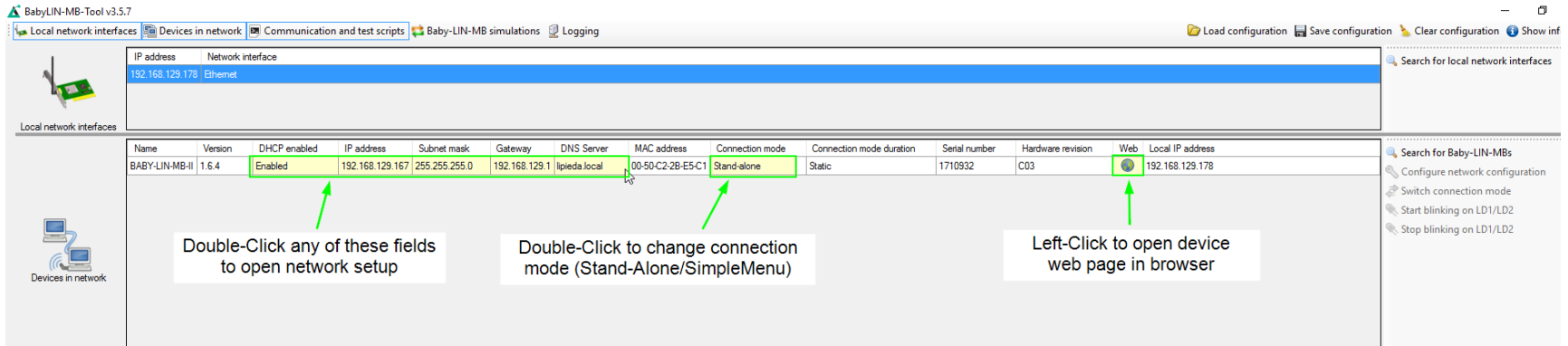
The other LINWork components will not be necessary for the commissioning



To allow network communication we need to setup the Network parameters in the BL-MB-II according to your needs.

By default the BL-MB-II is configured to use DHCP, but you probably want to use it with a fixed IP address.

To setup the Baby-LIN according your need connect the Baby-LIN-MB-II to your network, and start the BabyLIN MB tool application.



BabyLIN-MB-Tool v3.5.7

Local network interfaces | Devices in network | Communication and test scripts | Baby-LIN-MB simulations | Logging

Load configuration | Save configuration | Clear configuration | Show info

Search for local network interfaces

IP address	Network interface
192.168.129.178	Ethernet

Local network interfaces

Name	Version	DHCP enabled	IP address	Subnet mask	Gateway	DNS Server	MAC address	Connection mode	Connection mode duration	Serial number	Hardware revision	Web	Local IP address
BABY-LIN-MB-II	1.6.4	Enabled	192.168.129.167	255.255.255.0	192.168.129.1	lpieda.local	00-50-C2-2B-E5-C1	Stand-alone	Static	1710932	C03	<input checked="" type="checkbox"/>	192.168.129.178

Search for Baby-LIN-MBs

- Configure network configuration
- Switch connection mode
- Start blinking on LD1/LD2
- Stop blinking on LD1/LD2

Devices in network

Double-Click any of these fields to open network setup

Double-Click to change connection mode (Stand-Alone/SimpleMenu)

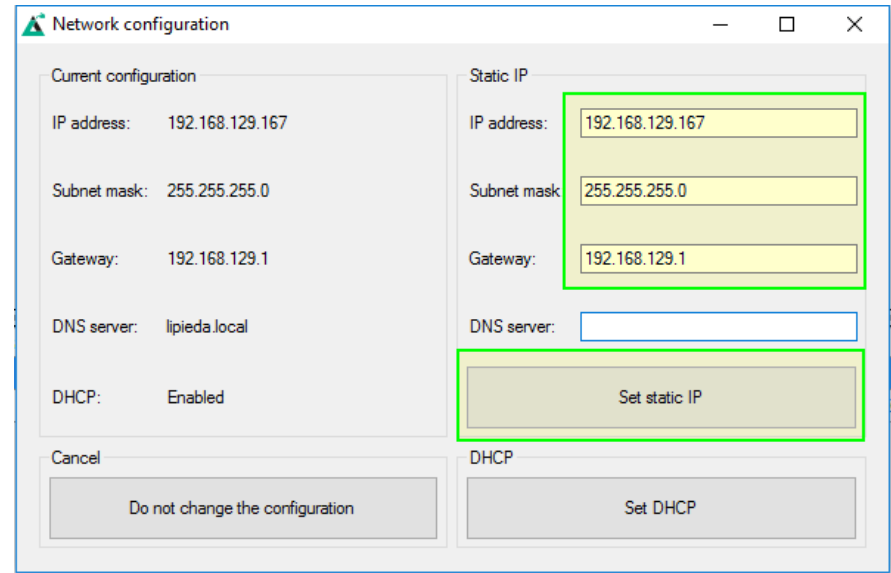
Left-Click to open device web page in browser

You should find your device in the devices in network section.

By double clicking one of the network property fields of your device, you can enter the

Name	Version	DHCP enabled	IP address	Subnet mask	Gateway	DNS Server	MAC a
BABY-LIN-MB-II	1.6.4	Enabled	192.168.129.167	255.255.255.0	192.168.129.1	lipieda.local	00-50-C

Double-Click any of these fields to open network setup



The Baby-LIN-MB-II is configured for DHCP my default.

If it will not find a DHCP server, e.g. in a 1:1 connection to your pc, the default IP 169.254.0.9 will be assigned.

In this network configuration mask, you can assign a static IP to your BL-MB-II. Fill in the IP-address, subnet mask and gateway address. The gateway field should not stay empty.

Finally you click on Set static IP, which will restart the MB-II network interface with the new parameters.

Make sure that your PC has a network interface available to access the same subnet.

If the parameters are set up correctly you should be able to open the device webpage by clicking on the earth icon

MAC address	Connection mode	Connection mode duration	Serial number	Hardware revision	Web
00-50-C2-2B-E5-96	Stand-alone	Static	1711022	C04	

The device web page opens with the dashboard display.

Here find some general infos about the MB-II device.

In the sub Menu System there are several items available

The database section is used to upload SDF to device (Stand-Alone Mode)


The settings section allows to set several parameters and to input activation keys.

The Mode Switch section can be used to toggle between Stand-Alone Mode and SimpleMenu mode.


BabyLIN-MB-II (1711022)

- Dashboard
- System**
- Database
- Settings
- Plugins
- Mode switch
- Update
- User manual
- Systeminfo
- Third-party licences


Dashboard



Channel 0
Buspower on
No SDF loaded



Channel 1
Buspower off
No SDF loaded



Channel 6
Buspower on
No SDF loaded

Name	Version
BabyLIN-MB-II	1.12.3
BLProg	2.58 Rev. 42668, 2019/01/24 10:36:35
devconf	1.1.9
macii	1.0.4
BabyLIN-MB-II-Hardware Revision	C04
USVCheck	1.9.2

#	Name	Serial	Heapsize	Version
1	MIF-LIN-II	0	286720	6.14 build 3
2	virtualcan	0	0	6.14 build 2

Name	Version	Filename	Size
Web Access	0.4.5	libWebAccess	753749
Autostart	0.2.3	libAutostart	55422
UDP Push Logger	0.1.5	libUDPPushLogger	37866

The dash board in Stand-Alone mode can be used to check the correct wiring of the LIN Bus voltage supply.

LIN Bus and LIN Bus supply (12V) are connected X9

X9-9 LIN Supply 12V for all LIN channels

X9-20 LIN Supply GND for all channels

X9-18 VLIN-Detect-1 (connect to 12Volt)

X9-8 LIN Bus-1

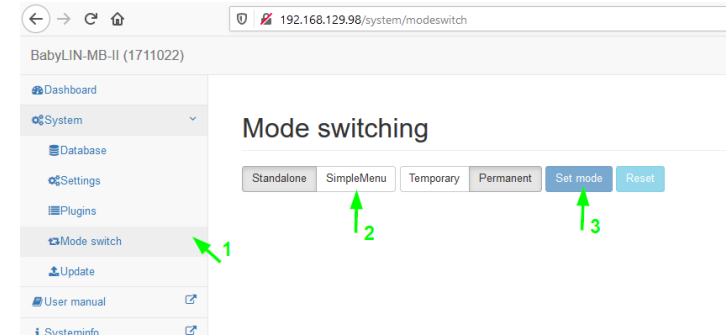
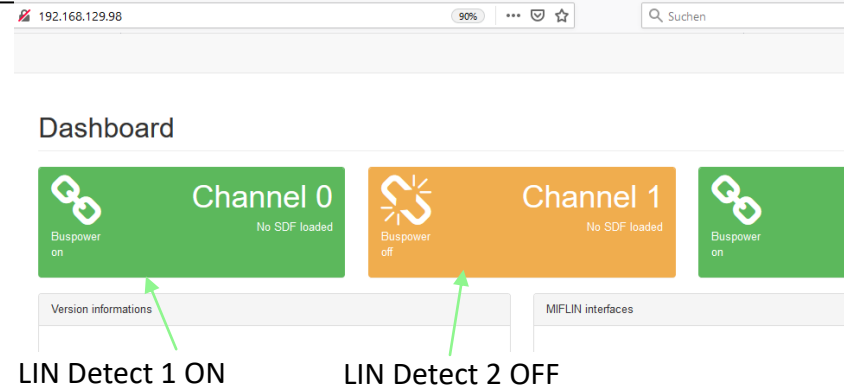
X9-6 VLIN-Detect-2 (connect to 12 Volt)

X9-21 LIN Bus-2

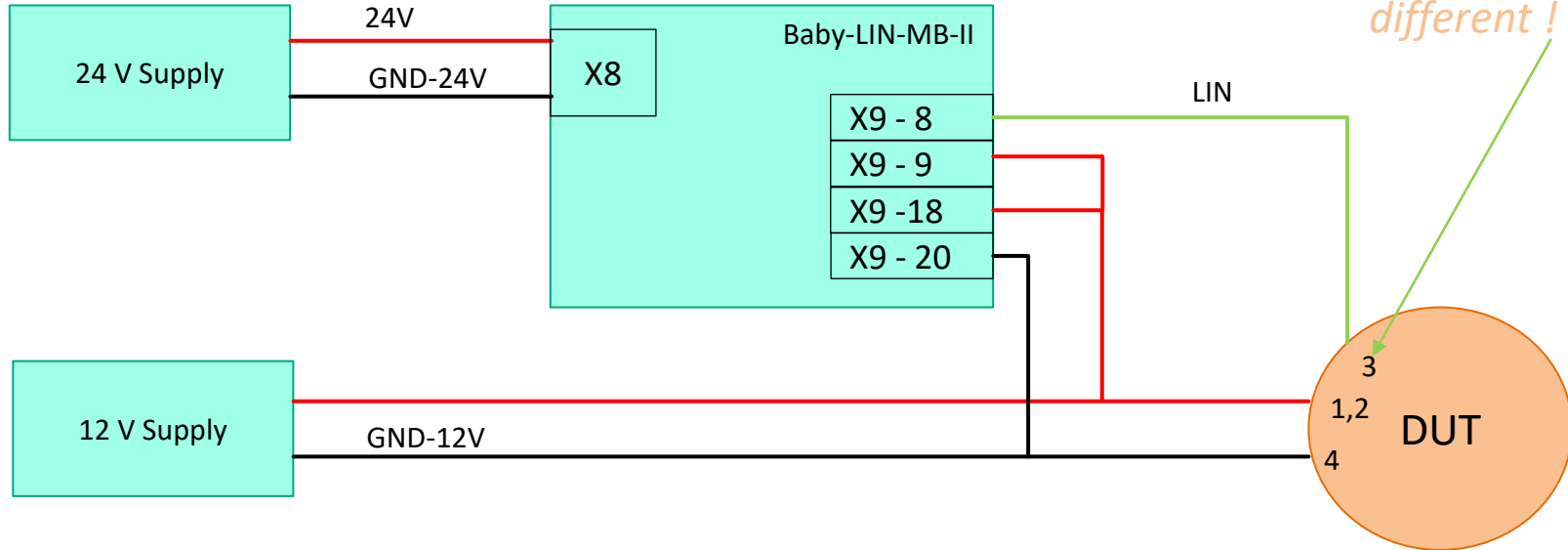
Using LIN1 need 4 connections, using LIN2 also, needs another 2 connections

If the VLIN Detect connection is right, the corresponding LIN channel symbol on Dashboard will be green, and it will turn to orange, if the LIN voltage is turned off.

After checking this, use the mode switch item in the left side menu to switch connection mode to **SimpleMenu** mode.



- X9-9 LIN Supply 12V for all LIN channels
- X9-20 LIN Supply GND for all channels
- X9-18 VLIN-Detect-1 (connect to 12Volt)
- X9-8 LIN Bus-1



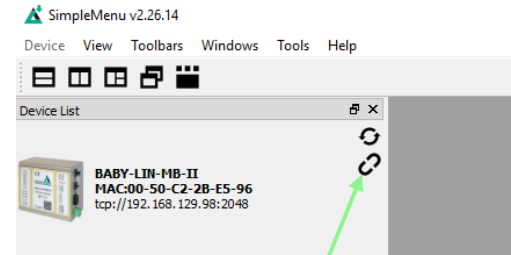
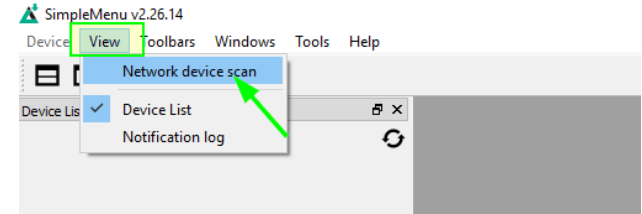
*Pinning on your
specific device
probably will be
different !*

After Switching MB-II to SimpleMenu Mode open the LINWorks SimpleMenu application.

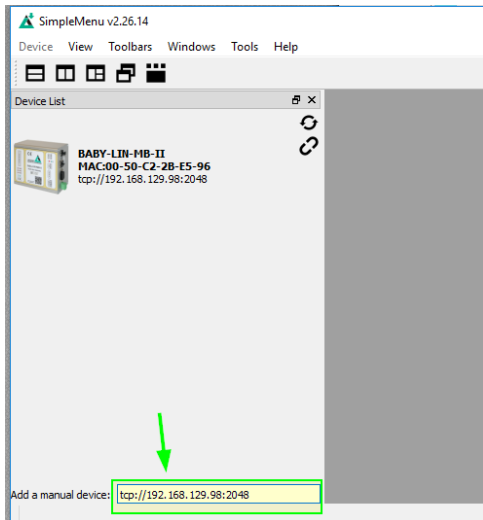
Activate the Network device scan.

After a short moment your Baby-LIN-MB-II device should be found and displayed.

In the case the device is not found automatically, you might add the device manually by inputting the IP-address followed by port number 2048



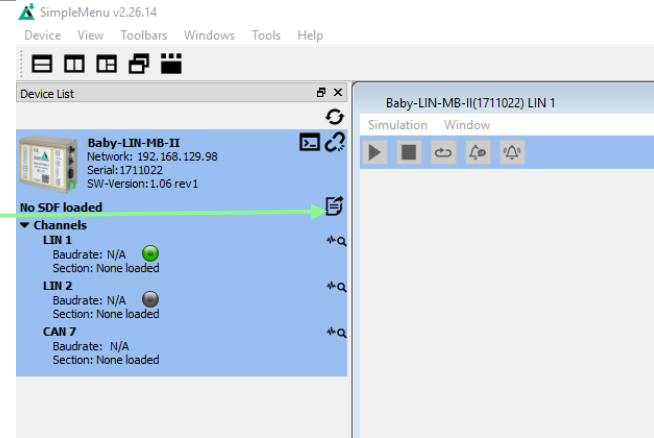
To open the connection click on the connect symbol in the device list



On successful connection the device list will show the serial number of the connected BL-MB-II and the available channels of the device.

Now you can download your SDF file to the device by clicking the download icon in the device list.

Dependent of the configuration of the SDF and the number of bus sections contained in the SDF, you get one or more channel windows, showing the GUI elements of the corresponding channel



Name	Raw value or Action	
DutSelection (1:Upper 2:Lower)	Run	
CurrentDutType		
TestSequence	Run	
IdentificationCheck	Run	
Rsp-B2-00-SupplierId	0	
Rsp-B2-00-FunctionId	0	
Rsp-B2-00-Variant	0	
Rsp-B2-01-SerialNum	0	
Rsp-B2-28-ProductionDate-Day	0	
Rsp-B2-28-ProductionDate-Month	0	
Rsp-B2-28-ProductionDate-Year	0	
Rsp-B2-2A-SwReferenceNum	0	
Rsp-B2-20-SwOTPNum	0	
Rsp-B2-2B-HwReferenceNum	0	
Rsp-B2-2B-PartNumber	0	
Calibration	Run	
DriveToPosition	Run	
Test-DriveToPos-0%	Run	
Test-DriveToPos-50%	Run	
Test-DriveToPos-100%	Run	
Sleep	Run	
EndStopPosLower	0	
EndStopPosUpper	0	

Elements will look different in your specific SDF-solution

Typically your SDF will have GUI elements for all macros you will call from your PLC later.

These macros can be started by pressing the corresponding button.

If there is a red gear wheel behind the macro button, then this macro has parameters, which you can setup by clicking on the gear wheel icon.

The meaning and valid range of the parameters depend on the specific project and will be documented in the corresponding target specification document delivered with the SDF.

Baby-LIN-MB-II(1711022)

Name	Raw value or Action	
DutSelection (1:Upper 2:Lower)	Run	
CurrentDutType	0	
TestSequence	Run	
IdentificationCheck	Run	
Rsp-B2-00-SupplierId	0	

Elements will look different in your specific SDF-solution

Macro Parameter - DutSelection

DutSelection C Dec

Parameter #1 C Dec

Parameter #2 C Dec

Macro Parameter - TestSequence

DeliveryPosPercent C Dec

SleepDelay C Dec

FirstRunDir C Dec

Parameter #3 C Dec

Parameter #4 C Dec

Parameter #5 C Dec

Parameter #6 C Dec

Parameter #7 C Dec

Parameter #8 C Dec

Parameter #9 C Dec

Reset parameters

Close Save Save and Run

You typically only input the named parameters in bold.

Pressing save & run will store the parameters and execute the macro.

Once setup with parameters the gearing wheel icon turns to green so you can issue the macro again without opening the parameter window.

Then the stored parameters are used.

When a macro is executed the result of macro is shown. In case of failure the failure code will be documented in the target specification document, so you can understand what is going wrong.

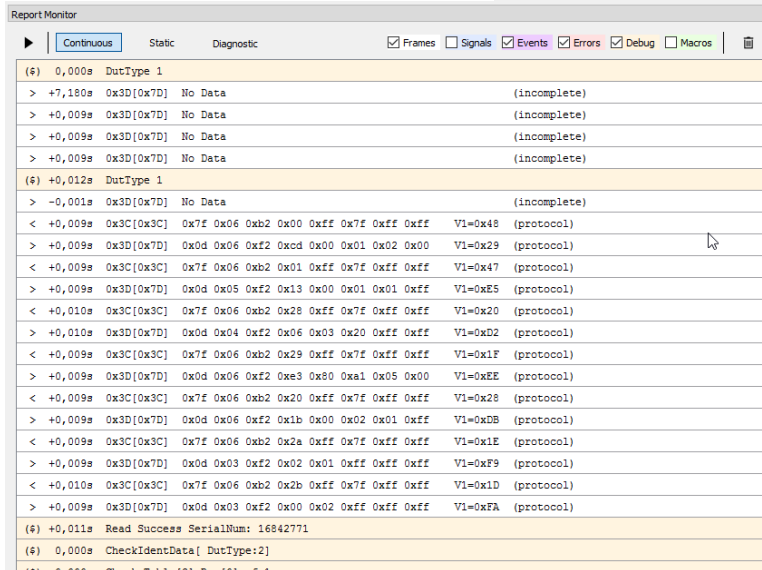
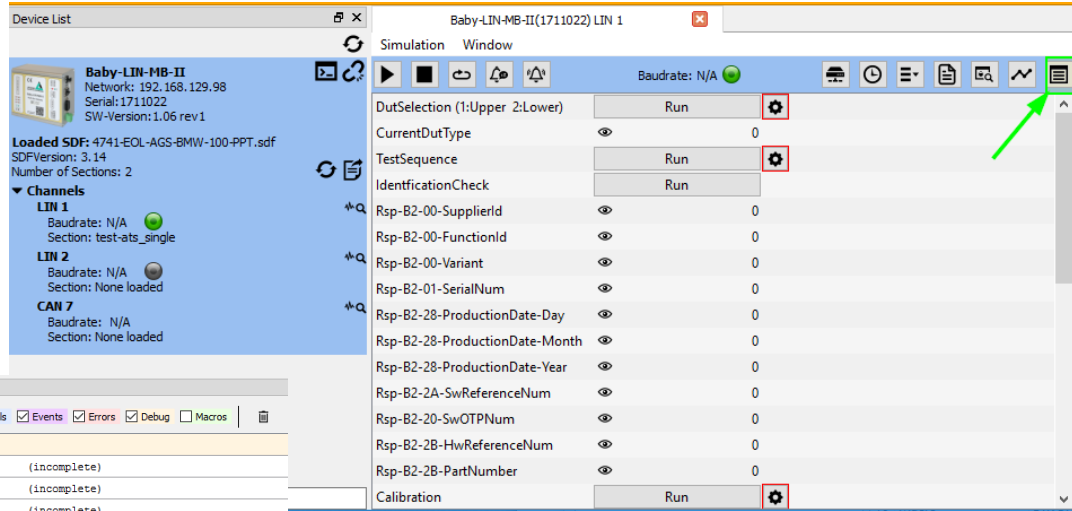
Baby-LIN-MB-II(1711022) LIN 1

Name	Raw value or Action	
DutSelection (1:Upper 2:Lower)	Run	Macro succeeded, Result = 0
CurrentDutType	1	
TestSequence	Run	Macro failed, Failure = 902
IdentificationCheck	Run	
Rsp-B2-00-SupplierId	0	
Rsp-B2-00-FunctionId	0	
Rsp-B2-00-Variant	0	

In case you need more information about the SDF operation and what is going on on the bus, you can open the frame monitor.

It is invoked by the upper most right icon in the channel window.

With LINWorks version V.2.27.1 the frame monitor was replaced by the report monitor, which will show additional reports.



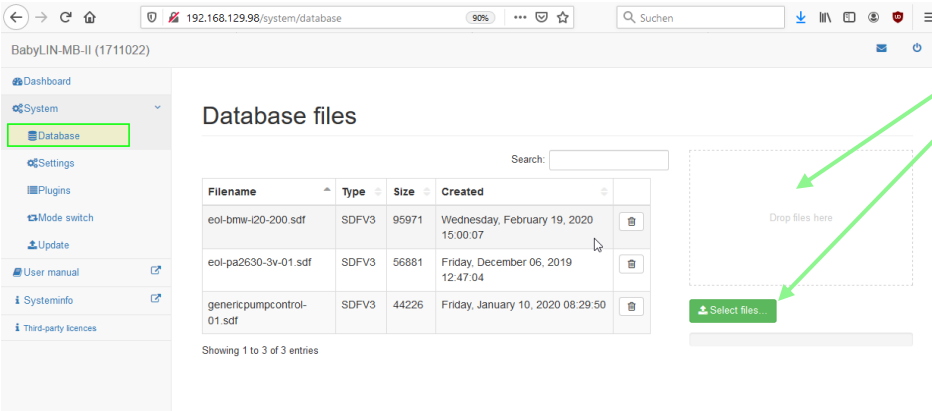
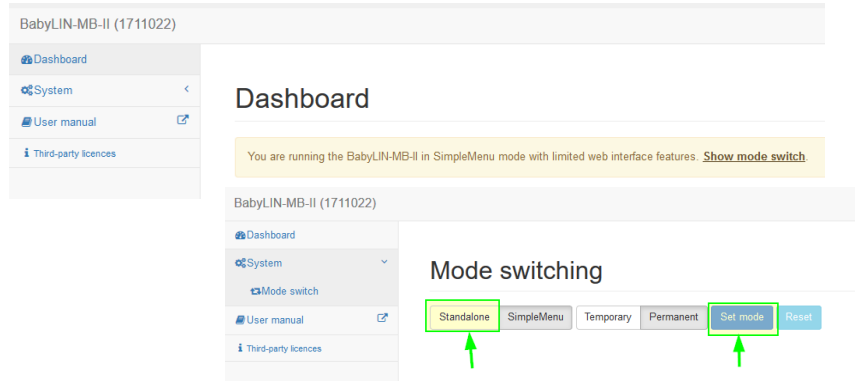
So in SimpleMenu operation you can validate the correct function of all macros without PLC.

Next we will validate the macros in stand alone mode.

First switch back to stand alone mode in device webpage. In SimpleMenu Mode the dashboard is reduced to only this function.

After switching back to Stand alone mode, you need to upload your final SDF to the BL-MB-II device.

This is done by device webpage, System-Database



You can drag and drop the file or select it in a file selection menu.

After uploading it, you can see it in the Database file list.

Now you use again BabyLIN MB Tool program to test SDF on BL-MB-II in Stand alone mode.

Open the BabyLIN MB Tool pc software.

Select your device in the Devices in network window.

Click on Create new connection

In the connection configuration dialogue adapt the Command timeout to a value which suits your application. It should be larger than the expected execution time of any macro you will use.

It should be larger than the execution time of any macro you will run.

With add files you should load the test script, which you received together with the SDF file.

Finally you close the configuration by clicking the create connection button.

Local network interfaces

Name	Version	DHCP enabled	IP address	Subnet mask	Gateway	DNS Server	MAC address	Connection mode	Connection mode duration	Serial number	Hardware revision	Web	Local IP address
BABY-LIN-MB II	1.6.4	Enabled	192.168.129.170	255.255.255.0	192.168.129.1	lpeda.local	00:50:C2:2B:E8:8E	Undetectable	Undetectable	2035142	D01	●	192.168.129.178
BABY-LIN-MB II	1.6.3	Enabled	192.168.129.209	255.255.255.0	192.168.129.1	lpeda.local	00:50:C2:2B:E5:6A	SimpleMenu	Static	1711007	CO4	●	192.168.129.178
BABY-LIN-MB II	1.12.3	Enabled	192.168.129.96	255.255.255.0	192.168.129.1	lpeda.local	00:50:C2:2B:E5:96	Stand-alone	Static	1711022	CO4	●	192.168.129.178
BABY-LIN-MB II	1.12.4	Enabled	192.168.129.167	255.255.255.0	192.168.129.1	lpeda.local	00:50:C2:2B:E5:C1	Stand-alone	Static	1710932	CO3	●	192.168.129.178
BABY-LIN-MB II	1.6.4	Enabled	192.168.129.121	255.255.255.0	192.168.129.1	lpeda.local	00:50:C2:2B:E7:94	SimpleMenu	Static	1526989	CO6	●	192.168.129.178
BABY-LIN-MB II	1.12.3	Enabled	192.168.129.211	255.255.255.0	192.168.129.1	lpeda.local	00:50:C2:2B:E5:77	Stand-alone	Static	1711015	CO4	●	192.168.129.178

Connection configuration

Connection via a serial port
Configuration: Serial connection
COM Port: COM20 | Data bits: 8 | Parity: None | DTR enabled:
Baud rate: 9600 | Stop bits: 1 | Handshake: None | RTS enabled:

Connection via TCP/IP
Configuration: TCP/IP connection
IP address: 192.168.129.98
TCP port: 10002

Script execution without a connection
Communication configuration
API mode: 0 | Delay after each command: 0 | Action on error: Stop task
Command TimeOut: 90000 | Delay after busy response: 50 | Show CmdDone:

Test scripts
+ Add files
Remove files
Remove all files
Edit selected files

Error action stop file

Log file
Select file to log to:
 Add date and time prefix

Create connection | Cancel

Type / ...	Connection details / Script file name	Status	Version / Error status	Error Code	Start time	Stop time	Runtime	Log file / Script file path	Last log message
TCP/IP	IP address: 192.168.129.98, TCP port: 10002	Running	Version: 1.12.3						[30.06.20, 11:41:23:2490] [=> Sending:] F001 :MacroEx...
F001	TestScript_4741.bt	Running			30.06.20, 11:40:50:7035		0:00:00:42	U:\all\public\CustomerProjects2\2020\2020-05-22-88388-4741-AGS-EOL-Eureka-Kran-Valeo-Patel	[30.06.20, 11:41:23:2490] [=> Sending:] F001 :MacroEx...

- Create new connection
- Remove selected connection
- Edit selected connection
- Show communication
- Open connection and start all tasks
- Close connection and stop all tasks
- Open all connections and start all tasks
- Close all connections and stop all tasks
- Single command execution
- Start debugging
- Continue execution
- Change log file

```

File: F001 - TestScript-4741.bt

[30.06.20, 11:41:22:8753] F001 [L012] C:MacroExec 0 !IdentRead 1 1000 6
[30.06.20, 11:41:22:8763] [=> Sending:] F001 :MacroExec 0 !IdentRead 1 1000 6
[30.06.20, 11:41:22:9275] [<= Received:] F001 :20
[30.06.20, 11:41:22:9275] F001 {:MacroExec 0 !IdentRead 1 1000 6} Received ar
[30.06.20, 11:41:22:9275] F001 [L013] C:MacroExec 0 !IdentRead 1 1000 7
[30.06.20, 11:41:22:9285] [=> Sending:] F001 :MacroExec 0 !IdentRead 1 1000 7
[30.06.20, 11:41:22:9792] [<= Received:] F001 :258
[30.06.20, 11:41:22:9792] F001 {:MacroExec 0 !IdentRead 1 1000 7} Received ar
[30.06.20, 11:41:22:9797] F001 [L014] C:MacroExec 0 !IdentRead 1 1000 8
[30.06.20, 11:41:22:9797] [=> Sending:] F001 :MacroExec 0 !IdentRead 1 1000 8
[30.06.20, 11:41:23:0314] [<= Received:] F001 :512
[30.06.20, 11:41:23:0314] F001 {:MacroExec 0 !IdentRead 1 1000 8} Received ar
[30.06.20, 11:41:23:0314] F001 [L015] C:MacroExec 0 !IdentRead 1 1000 9
[30.06.20, 11:41:23:0314] [=> Sending:] F001 :MacroExec 0 !IdentRead 1 1000 9
[30.06.20, 11:41:23:0827] [<= Received:] F001 :94470371
[30.06.20, 11:41:23:0827] F001 {:MacroExec 0 !IdentRead 1 1000 9} Received ar
[30.06.20, 11:41:23:0832] F001 [L016] C:MacroExec 0 !IdentRead 1 1000 10
[30.06.20, 11:41:23:0832] [=> Sending:] F001 :MacroExec 0 !IdentRead 1 1000 1
[30.06.20, 11:41:23:1340] [<= Received:] F001 :2231
[30.06.20, 11:41:23:1430] F001 {:MacroExec 0 !IdentRead 1 1000 10} Received a
[30.06.20, 11:41:23:1440] F001 [L017] C:MacroExec 0 !IdentRead 1 1000 11
[30.06.20, 11:41:23:1440] [=> Sending:] F001 :MacroExec 0 !IdentRead 1 1000 1
[30.06.20, 11:41:23:1948] [<= Received:] F001 :558
[30.06.20, 11:41:23:1948] F001 {:MacroExec 0 !IdentRead 1 1000 11} Received a
[30.06.20, 11:41:23:1952] F001 [L018] C:MacroExec 0 !IdentRead 1 1000 12
[30.06.20, 11:41:23:1957] [=> Sending:] F001 :MacroExec 0 !IdentRead 1 1000 1
[30.06.20, 11:41:23:2470] [<= Received:] F001 :546
[30.06.20, 11:41:23:2470] F001 {:MacroExec 0 !IdentRead 1 1000 12} Received a
[30.06.20, 11:41:23:2470] F001 [L019] J:loop
[30.06.20, 11:41:23:2480] F001 Jumping, Label: loop, Offset: -15
[30.06.20, 11:41:23:2490] F001 [L004] L:loop
[30.06.20, 11:41:23:2490] F001 Passing label: loop
[30.06.20, 11:41:23:2490] F001 [L005] C:MacroExec 0 !TestSequence 1 50000 50
    
```

Double Click here
to open test script
in editor

Double Click here
to open test script
execution view

Click here to start
test script execution

After running the SDF macro in Stand alone mode with BabyLIN MB Tool pc software you now can replace the BabyLIN MB tool by your PLC and send the commands from there.

The test script is a good example of what you have to send. Please consider that the first character (e.g. 'C') must not be sent by PLC, it's used to control the script handler in MB-Tool software

```
C:LoadSdf 0 xxxx-eol-check.sdf
C:MacroExec 0 !DutSelection 1 5000 1
C:MacroExec 0 !TestSequence 1 20000 0 0 0
C:MacroExec 0 !IdentificationCheck 1 5000
```

; This is just an example you macros typically will have other names

Additional we have some sample projects how to implement the necessary TCP-IP socket communication for Siemens, Beckhoff and Allen Bradley PLC.

You find them in the LINWorks Download package ZIP in subfolder
 \LinWorks-Installer-x64.zip\Development\Baby-LIN-MB-II-Ethernet-Connection-Samples

We strongly recommend to successfully operate all prementioned steps before using the Baby-LIN-MB-II with the PLC.

In case that you encounter problems with the PLC operation, and need support by Lipowsky, please **provide log file**, which can be created by the BL-MB-II. You can either create log file on an a FAT formatted USB Stick, or if you have latest firmware ($\geq 1.14.15$) installed on your Baby-LIN-MB-II, you can retrieve the log data, without a physical media (USB Stick) and without physical access to the device.

Direct Logfile access via Webpage:

Don't care about the name USB Log, clicking here
Will directly download the zipped logfiles to your browser.
Please provide this files for efficient support!

Legacy USB Stick Method

- The log file is generated by plugging the USB stick into the Baby-LIN-MB-II after the problem occurred.
- Wait until the stick is mounted (acknowledged by alternative blinking of the both LED's near the USB connector)
- Then press the black PB1 button for 1 second.
- The green LED will start blinking, indicating a log file is written.
- Wait a few second after the green LED stops blinking to remove USB stick
- In the sub directory \BL-MB-01\LOG you find several log files.
- Please provide these files.