Baby-LIN-MB-II
Getting started guide V1.1

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1 Contents

2 Glossary

ASCII	American Standard Code Information Interchange
CAN	Controller Area Network
CD	Compact Disk
DBC	Database CAN
DLL	Dynamic Link Library. It can be used to execute the DLL functions in custom applications.
EOL	End of line
LDF	LIN description file
LIN	Local Interconnect Network
LINWorks	Application software suite to configure the Baby-LIN devices
PC	Personal Computer
SDF	Session Description File
SO	Shared Object. This is the Linux variant of a Windows-DLL. It can be used to execute the SO functions in custom applications.
USB	Universal Serial Bus
VDC	Voltage Direct Current. This is the unit of DC voltage values.

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Getting started guide, Baby-LIN-MB-II
Date: 06.12.2016
Version: 1.1
Page 3

3 Introduction

This getting started guide will show you how to setup the Baby-LIN-MB-II to communicate with or monitor the LIN- or CAN-Bus. Simply follow the next steps.

> **Advice**
>
> This guide is made for new Baby-LIN-MB-II users. If you already have experience with Baby-LIN products or you are an advanced LIN- or CAN-Bus user then this guide probably is not suited for you.

> **Advice**
>
> This guide assumes you are using a Microsoft Windows operating system. If you use a Linux operating system please contact us to receive software for your distribution: "Support information"

4 Installation

Before you can start using the Baby-LIN-MB-II you have to install several components of the LINWorks software.

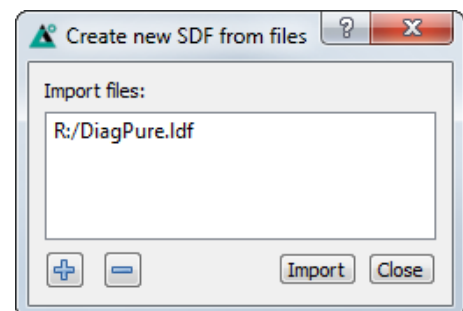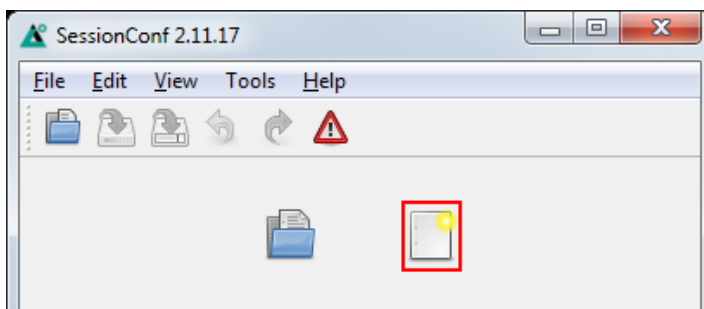If you have not already downloaded the LINWorks software, please download it now from our customer portal.

> **Advice**
>
> Check out chapter: "Downloads"

The following components are required for this getting started guide:
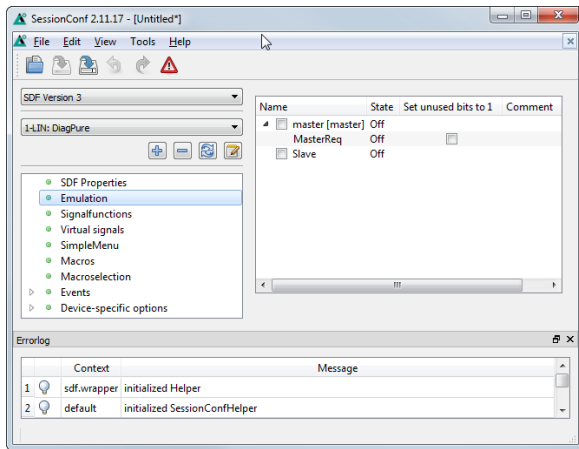
- Session Configurator
- Baby-LIN-MB-Tool

5 Create a SDF

First we have to create a SDF. This file contains all informations required by the Baby-LIN-MB-II to simulate nodes on the LIN- or CAN-Bus or monitor it. Therefor please start the Session Configurator and click on the right icon to create a new SDF file. Add your LDF or DBC and click on import. To import DBC files you additionally have to select the nodes, frames and signals you want to import.

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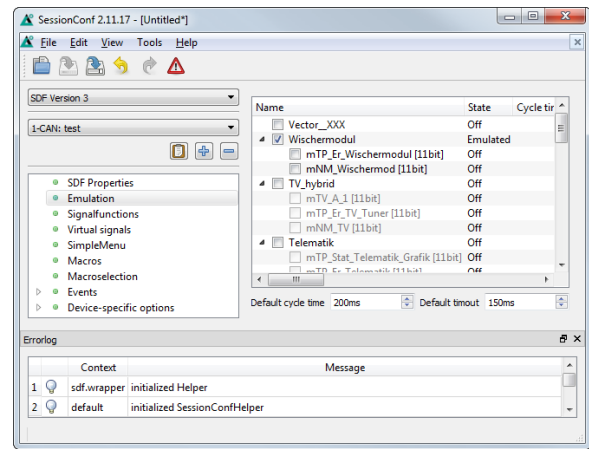Date: 06.12.2016
Version: 1.1
Page 4

Select Emulation in the navigation menu on the left. Here you can select which nodes you want to be simulated by the Baby-LIN-MB-II. If you only want to monitor the LIN- or CAN-Bus, select nothing.

LIN-Bus simulation

CAN-Bus simulation

> **Attention**
>
> For CAN-Bus simulations you have to select not only the nodes you want to be simulated by the Baby-LIN-MB-II, but also the frames that should be transmitted on the bus by the node. If a node is selected, but no frame, you will not see any data on the bus from this node.

> **Advice**
>
> There are other ways to monitor frames and signals, but this is a good and configrable starting point.

6 Transfer the SDF

To transfer the SDF to the Baby-LIN-MB-II you require a FAT formatted USB mass storage device. Please create the following folder structure:

```
USBDevice:\BL-MB-01\database
```

Now copy your newly created SDF into this folder. Remove the USB mass storage device from your PC and plug it into the USB host interface of the Baby-LIN-MB-II. Now press the green button on the Baby-LIN-MB-II to start copying the SDF to the device. During the copy operation the green LED is flashing. After the copying is completed successfully the green LED will stay on permanent. If an error occurred the red LED will turn on. You can now remove the USB mass storage device.

7 Connections

Please establish the following connections:

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Date: 06.12.2016
Version: 1.1
Page 5

- Connect the Baby-LIN-MB-II to your LIN- or CAN-Bus.

> **Danger**
>
> Please keep the LIN-Bus voltage within the following range: 8-26 VDC.
>
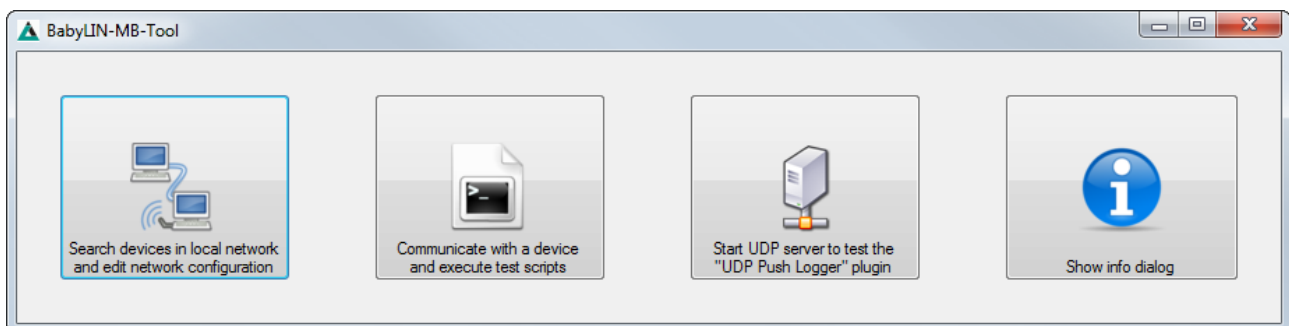> Otherwise the Baby-LIN-MB-II may get damaged.

> **Advice**
>
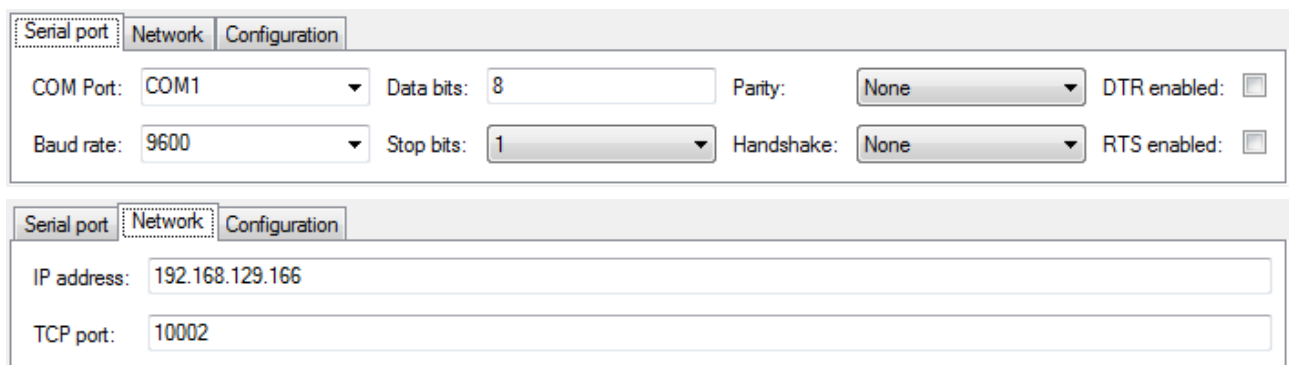> Make sure all other nodes are connected and running properly.

- Connect the Baby-LIN-MB-II to your PC using one of the following connection types:
  - ° Network connection using the Ethernet port.
  - ° Serial connection using the RS-232 port.

8 Start the bus communication

Start the Baby-LIN-MB-Tool and select the button named "Communicate with a device and execute test scripts". If you have connected the Baby-LIN-MB-II via Ethernet you can use the button "Search devices in local network and edit network configuration" to check the IP of your device.

Setup the connection details in the top. Depending on the connection type you are using select the "Serial port" tab for RS-232 or the "Network" tab for Ethernet connections.

A simple test script you can use to control the Baby-LIN-MB-II would be the following:

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Date: 06.12.2016
Version: 1.1
Page 6

LIN version compatible with BabyLIN-MB	LIN/CAN version not compatible with BabyLIN-MB

`C:Version`
`C:LoadSdf 0 Test.sdf`
`C:LinStart 0`
`C:LinRdSignal 0 !TestSignal`
`P:-1`
`C:LinStop 0`
	`C:Version`
	`C:LoadSdf 0 Test.sdf`
	`C:Start 0`
	`C:RdSignal 0 !TestSignal`
	`P:-1`
	`C:Stop 0`

Advice

The name of the SDF in this example is "Test.sdf". The name of the signal that is queried is "TestSignal". Change these names to fit your SDF and LDF.

Save these line in a text document and load it in the Baby-LIN-MB-Tool by clicking the "Add files" button.

To start the simulation/monitoring click on the "Start" button.

Now you will see the ASCII protocol output and the changes of the selected signal in real-time.

Advice

The Baby-LIN-MB-II features a lot more features and possibilities and can be used for a wide selection of applications. Keep on reading this manual to learn more about the Baby-LIN-MB-II.

Advice

The Baby-LIN-MB-II is not the only LIN- and CAN-Bus device from Lipowsky Industrie-Elektronik GmbH. Check out our other products at http://www.lipowsky.com/lipo/products/lin-and-can-systems/

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Getting started guide, Baby-LIN-MB-II
Date: 06.12.2016
Version: 1.1
Page 7

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Getting started guide, Baby-LIN-MB-II

Date: 06.12.2016

Version: 1.1

Page 8

9   Updates

9.1   Update philosophy

The functionality and features of the Baby-LIN-MB-II are defined by the installed firmware as well as the used versions of the LINWorks and Baby-LIN-Dll.

As we are permanently working on product improvements, the software and firmware are updated periodically. These updates make new features available and solve problems, which have been discovered by our internal tests or have been reported by customers with earlier versions.

All the firmware updates are done in a way, that the updated Baby-LIN-MB-II will continue to interwork with an already installed, older LINWorks installation. So updating the Baby-LIN firmware does not mean, that you necessarily have to update your LINWorks installation as well.

**Therefor it is highly recommended to always update
your Baby-LIN-MB-II to the latest available firmware version.**

We also recommend to also update your LINWorks software and Baby-LIN-Dll, if new updates get available. Since new versions of the Session Configurator may introduce new features to the SDF format, it is possible that older firmware, Simple Menu or Baby-LIN-Dll versions are not compatible. Therefor you should also update them.

**If you update your LinWorks it is highly recommended updating
the firmware of your Baby-LIN-MB-II to the latest available firmware version
as well as distributed the used versions of the Baby-LIN-Dll.**

So the sole reason to stay with an older LINWorks version should be, that you use a Baby-LIN-MB-II with outdated firmware version, which you can't upgrade for whatever reason.

**It is highly recommended updating the
Baby-LIN driver to the latest version.**

9.2   Downloads

The latest versions of our software, firmware and documents are available in out client portal: portal.lipowsky.de. There you can find downloads like:

- Software, especially the LINWorks suite.
- Device firmware for the Baby-LIN-MB-II.
- Manuals and datasheets.
- Application notes and examples how to create custom applications.

Advice

The LINWorks CD archive contains not only the LINWorks software but also the USB driver, manuals, datasheets, application notes and examples. Only the device firmware packages are not included.

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Getting started guide, Baby-LIN-MB-II
Date: 06.12.2016
Version: 1.1
Page 9

Before you can download anything you have to register yourself in our customer portal. Here you also have to select which product you are using. After your account has been activated by us you will receive an email. This can take up to some hours.

⚠️ **Attention**

After you received the activation email you will be able to login. In the login screen you should also select your preferred language. After the login you will be able to download all relevant files.

After the registration you will also be automatically notified via email when new versions are available.

ℹ️ **Advice**

If you have forgotten your password, please send us your Email address, that you used for the registration. Then we can reset your password so you can login again.

9.3 Installation

The LinWorks suite is delivered with a handy setup application. If you already have installed an older version you can simply install the newer versions. The setup application will take care of overwriting the required files. Simply follow these steps:

- Start the "Setup.exe".
- Select the components you want to install.
- Follow the instructions.

⚠️ **Attention**

Please stop all running LinWorks applications and disconnect all Baby-LIN devices before starting the setup.

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Getting started guide, Baby-LIN-MB-II
Date: 06.12.2016
Version: 1.1
Page 10

> ⚠️ **Attention**
>
> If you have used version of the Session Configurator and Simple Menu with version V1.x.x, the new version will be installed parallel to the old ones. Therefor you have to use the new shortcuts to start the new versions.

9.4   Check versions

If you want to check the current version of the Baby-LIN-MB-II firmware or a LINWorks component the following table shows you how it is done:

Component	How to check the version
Baby-LIN-MB-II firmware	There are two possibilities: • Call the "version" command of the ASCII command protocol. The return value is the firmware version. • Open the web interface and click on "Systeminfo"
LINWorks • Simple Menu • Session Configurator • LDFEdit	Select the menu option "Help/About". The info dialog will show the software version.
Baby-LIN-Dll	Call BLC_getVersionString(). The version is returned as string.
Baby-LIN-Dll .NET Wrapper	Call GetWrapperVersion(). The version is returned as string.

> ℹ️ **Advice**
>
> If you need support please always tell us the firmware and software versions you are using.

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Getting started guide, Baby-LIN-MB-II
Date: 06.12.2016
Version: 1.1
Page 11

10 Support information

In case of any questions you can get technical support by email or phone. We can use TeamViewer to give you direct support and help on your own PC. This way we are able to sort out problems fast and direct. We have sample code and application notes available, which will help you to make your job.

Lipowsky Industrie-Elektronik GmbH realized many successful LIN and CAN related projects and therefor we can draw upon many years of experience in these fields. We also provide turn key solutions for specific applications like EOL (End of Line) testers or programming stations.

Lipowsky Industrie-Elektronik GmbH designs, produces and applies the Baby-LIN products, so you can always expect qualified and fast support.

Contact information			
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Getting started guide, Baby-LIN-MB-II
Date: 06.12.2016
Version: 1.1
Page 12