

## Baby-LIN / Baby-LIN-RC

### USB-LIN-bus converter with 32 Bit ARM-7 CPU

#### A. Baby-LIN (standard version)



The Baby-LIN allows to control LIN-bus equipped devices by use of an off the shelf standard personal computer. The only requirement is an USB-port on the PC.

The Baby-LIN unit includes an own 32-bit microcontroller, which takes care of all time critical tasks like message scheduling and LIN-bus protocol decoding.

After installation of a DLL on the pc the user can access the LIN-bus by the application programs included in the **LINWorks** software suite, or he can access the LIN-bus directly by the DLL-API. This API is easy to use and allows to fetch or put frames resp. signals to the LIN-bus.

Since Baby-LIN's power supply can be given from either the USB-side or the LIN-bus voltage, the unit can control a LIN-bus stand-alone without the presence of a PC.

A macro feature allows for storage of command sequences within the Baby-LIN. This can be used for example to make a LIN-equipped ECU run in an endless test loop.

The LIN-bus voltage can be in the range between 9 and 36 Volts. The LIN-bus is electrically isolated from the USB-side, eliminating interferences between the pc and the board electronics of the vehicle.

Due to the flash based firmware storage in the Baby-LIN, updates to new changes of the LIN-bus specification is easily possible.

The Baby-LIN is bundled with the software suite **LINWorks**. This package includes several application programs.

The **LINWorks** LDF-Editor allows inspection, edit and creation of a LDF (LIN Description File).

The **LINWorks** Session Configurator is used to define additional session parameters, e.g. which nodes on the bus are available and which nodes should be simulated by the Baby-LIN. So the Baby-LIN can not only play the role of a LIN-bus master, but also simulate slave nodes.

It is even possible to run a LIN-bus without any connected slaves at all, the Baby-LIN will then simulate all nodes (masters and slaves) at the same time.

A monitor mode allows for logging of the LIN-bus data and the operation as a slave without LDF-file.

The **LINWorks** software runs on WIN98SE, WIN2000 and WINXP. A Linux version is also available upon request.

#### Specifications

- integrated LPC-2136 (ARM-7 CPU ) with 256 KByte Flash and 32 KByte RAM
- additional 8 KByte parameter storage (FRAM)
- alternative supply from USB (55mA/5V) or from LIN-Bus voltage (70mA/12V)
- electrical isolation between USB- and LIN-bus interface
- support of LIN-version V.1.2, V.1.3, V.2.0 and V.2.1
- rugged pluggable terminals for LIN-bus connection
- USB 2.0 interface
- 5 pin USB-connector type B-mini
- 1,5 m USB-cable included
- **LINWorks** software suite included

## B. Baby-LIN-RC (with integrated keypad)



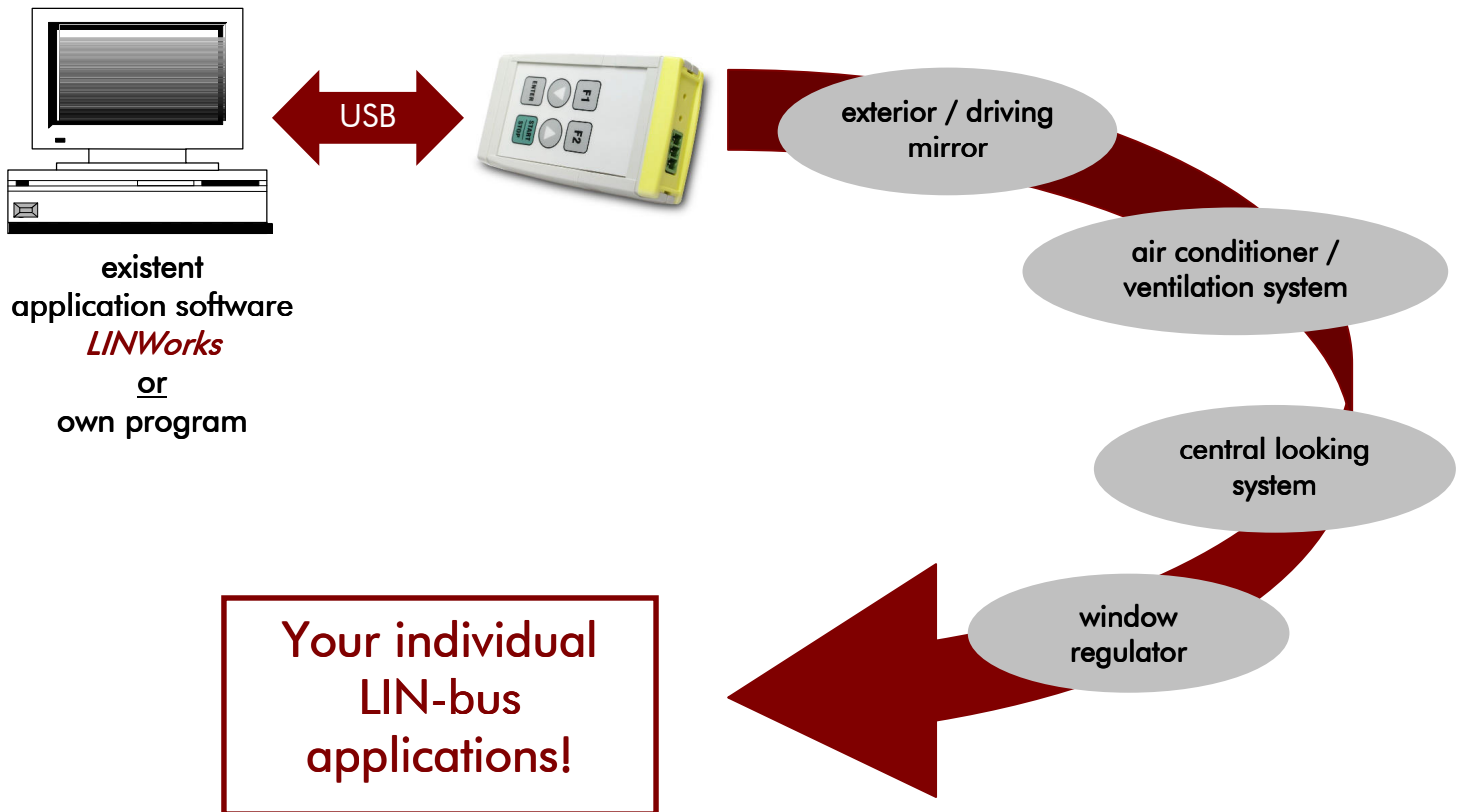
The Baby-LIN-RC has the same functionalities and features like the standard version (A).

More over the RC-model offers an **integrated keypad**. Thus, you are able to assign any LIN-bus-command to every button. If you push the key the appropriate LIN-bus-operation will be carried out.

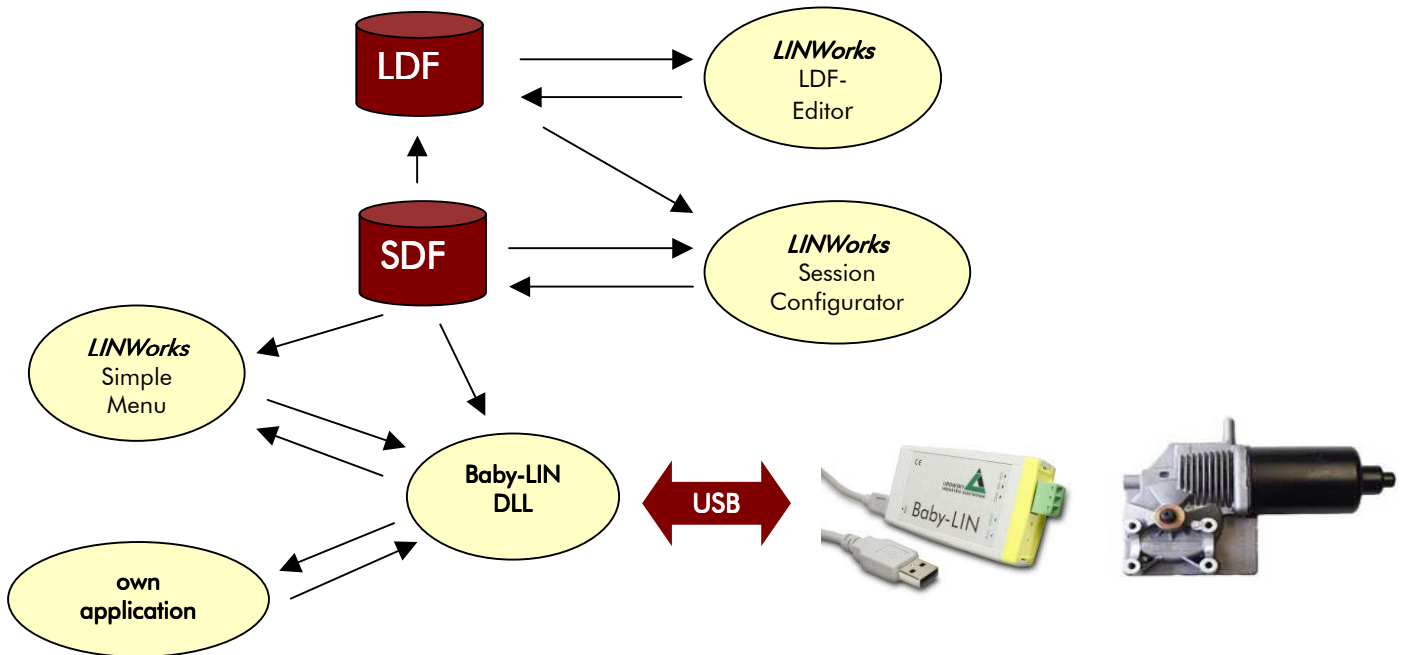
There are 6 direct keys which can be assigned, or if 1 or 2 shift keys are used, a total of 10 respectively 12 different key press events can be generated.

As the Baby-LIN can run a LIN simulation completely stand alone, this is ideal to create a PC independent solution for controlling a LIN-Bus with a small, handheld device.

### Example of use:



## LIN-Target Baby-LIN:



## Screenshots LINWorks:

