MICROSAR LIN Driver

Technical Reference

Canoeemu

Version 6.0.0

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Status	Released

Document Information

History

Author	Date	Version	Remarks
Friedrich Kiesel	2012-07-20	4.0.0	AUTOSAR 4.0.3
Friedrich Kiesel	2012-12-07	4.0.1	Released document
Bastian Molkenthin	2013-04-11	4.1.0	Added Post-Build-Loadable
Lutz Pflüger	2013-10-28	5.0.0	R8 major version increase
Lutz Pflüger	2014-11-05	6.0.0	R11 major version increase, add not supported ASR features, remove CANoeApi description, remove unreferenced Documents, remove duplicated Chapter 4

Reference Documents

No.	Source	Title	Version
[1]	AUTOSAR	AUTOSAR_SWS_LINDriver.pdf	2.2.0
[2]	Vector	TechnicalReference_DrvLin__CoreAsr.pdf	6.0.0
[3]	Vector	CANoe osCAN Library	3.1

Scope of the Document

This technical reference describes the specific use of the Canoeemu driver software. It supplements the general LIN driver technical reference [2].

Caution
We have configured the programs in accordance with your specifications in the questionnaire. Whereas the programs do support other configurations than the one specified in your questionnaire, Vector´s release of the programs delivered to your company is expressly restricted to the configuration you have specified in the questionnaire.

Contents

Tables

1. Component History

The component history gives an overview over the important milestones that are supported in the different versions of the component.

Component Version	New Features
4.0.0	AUTOSAR 4
4.1.0	Support for Post-Build-Loadable
6.0.0	Support for Post-Build-Selectable

Table 1-1 Component history

2. Functional Description

2.1 Features

The features listed in the following tables cover the complete functionality specified for the LIN.

The AUTOSAR standard functionality is specified in [1], most of the features are covered by the MICROSAR LIN Core documentation [2]. All hardware specific features are listed in the tables

> Table 2-1 Supported AUTOSAR standard conform features

> Table 2-2 Not supported AUTOSAR standard conform features

For further information of not supported features see also chapter 4.

Vector Informatik provides further LIN functionality beyond the AUTOSAR standard. The corresponding features are listed in the table

> Table 2-3 Features provided beyond the AUTOSAR standard

The following features specified in [1] are supported:

Supported AUTOSAR Standard Conform Features

Table 2-1 Supported AUTOSAR standard conform features

The following features specified in [1] are not supported:

Not Supported AUTOSAR Standard Conform Features
Limitations of network mode changes: sleep (normal and internal) and wakeup (normal and internal).
Lin_WakeupInternal()

Table 2-2 Not supported AUTOSAR standard conform features

The following features are provided beyond the AUTOSAR standard:

Features Provided Beyond The AUTOSAR Standard

Table 2-3 Features provided beyond the AUTOSAR standard

2.2 Error Handling

Please refer to [2] for details about error handling.

3. API Description

For an interface overview please refer to [2].

There is no Canoeemu specific API.

3.1 Type Definitions

For a overview over the used types please refer to [2].

There are no Canoeemu specific types.

3.2 Interrupt Service Routines provided by LIN

The LIN Driver for Canoeemu does not have normal interrupt functions, but call back functions called by the ‘CANoe osCAN Library’ (refer to see [3]). This call back functions provide information about channel, data and state changes.

There are no interrupt functions used of the file ‘Lin_Irq.c’. The file itself is still applicable for compatibility to other Vector LIN Driver.

3.3 Services provided by LIN

For services provided by LIN please refer to [2].

3.4 Services used by LIN

For services used by LIN please refer to [2].

4. AUTOSAR Standard Compliance

4.1 Deviations

- Significant functional limitations regarding network management. It is possible that the network modes of Lin Driver and CANoe are not synchrony.
- Significant functional limitations of LIN Bus disturbing
  - Frames are queued until Bus disturbing stops
  - Disturbing Go-To-Sleep Command leads to not synchrony network management states
- A Frame Header with ID 0 on start measurement after ca. 100ms on Bus.
- Sending Frames within the first 100ms after start measurement are not working.

4.2 Additions/ Extensions

There are no hardware specific additions/extensions for the Canoeemu Lin driver.

4.3 Limitations

4.3.1 Controller

This LIN Driver is limited to the controller Canoeemu.

4.3.2 Compiler

This LIN Driver is limited to the compiler Ansi / Microsoft Visual C++.

5. Glossary and Abbreviations

5.1 Glossary

Term	Description
EAD	Embedded Architecture Designer; generation tool for MICROSAR components
GENy	Generation tool for CANbedded and MICROSAR components

Table 5-1 Glossary

5.2 Abbreviations

Abbreviation	Description
API	Application Programming Interface
AUTOSAR	Automotive Open System Architecture
BSW	Basis Software
DEM	Diagnostic Event Manager
DET	Development Error Tracer
EAD	Embedded Architecture Designer
ECU	Electronic Control Unit
HIS	Hersteller Initiative Software
ISR	Interrupt Service Routine
MICROSAR	Microcontroller Open System Architecture (the Vector AUTOSAR solution)
PPort	Provide Port
RPort	Require Port
RTE	Runtime Environment
SRS	Software Requirement Specification
SWC	Software Component
SWS	Software Specification

Table 5-2 Abbreviations

6. Contact

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