ASiKS-Engineering

User Manual

SmartLIN-RS232 HS Module

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This document provides detailed information about ASiKS-Engineering's SmartLIN-RS232 HS Module.

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1 Introduction

The SmartLIN-RS232 HS Module shown in Figure 1 is used for easily connecting a LIN Bus to the serial Port (RS232) of e.g. a PC.

As it is an active interface, LIN Bus specific signals like synchronisation break and synchronisation delimiter are generated by the interface and hence no special algorithm is required by the host application.

Figure 1: SmartLIN-RS232 HS Module

This interface provides the following features:

- Standard DIN rail housing with 8 terminal contacts
- Dimensions: 64mm x 64mm x 18mm

2 Terminal contacts

Table 1 illustrates the electrical characteristics of the SmartLIN-RS232 HS Module's terminal contacts.

Clamp	Symbol	Description	Min	Typ	Max	Unit
A	TxD*	RS232 data input				
B	RxD*	RS232 data output				
C	DTR*	RS232 signal input				
D	CTS*	RS232 signal output				
E	RTS*	RS232 signal input				
F	GND	Power Ground	0	0	0	V
G	VBat	Battery supply	8	12	16	V
H	LIN**	LIN bus line input/output	-0.3		VBat+1	V

Table 1: Electrical characteristics

Note *: The electrical characteristics of the RS232 Standard apply.

Note **: Master configuration (1k PullUp), slave configuration on request

3 Interface Detection

The SmartLIN-RS232 HS Module simply can be checked for availability as follows:

- RTS and DTR of the RS232 communication port are **set** and **cleared** again
- CTS is monitored
- If CTS is "ON", the interface is detected correctly and ready for use

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Listing 1 illustrates a programming example of an interface detection routine.

```
[…]

EscapeCommFunction(serial_struct_info->pComPortFile,SETDTR);

EscapeCommFunction(serial_struct_info->pComPortFile,SETRTS);



EscapeCommFunction(serial_struct_info->pComPortFile,CLRDTR);

EscapeCommFunction(serial_struct_info->pComPortFile,CLRRTS);



GetCommModemStatus(serial_struct_info->pComPortFile,&dwModemState);
```

Listing 1: Interface detection source code example

4 Communication

4.1 RS232 Port Initialization (UART protocol)

The host's communication port needs to be configured as follows:

- Baud rate: user defined
- Data Bits: 8
- Parity: None
- Stop Bits: 1

4.2 LIN Bus Data Sending

The SmartLIN-RS232 HS Module handles the LIN synchronisation break and delimiter generation whereby no special baud rate conversion mechanism is required by the host application. The LIN message header simply is expanded by some trailing bytes replacing the LIN synchronisation break and delimiter as illustrated in Figure 2.

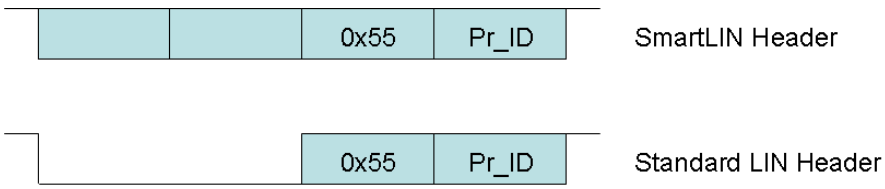

Figure 2: SmartLIN-RS232 LIN header structure

The values for synch break and delimiter easily can be calculated using the SmartLIN Bit Time Tool, available for download at our homepage.

NOTE: Depending on the delimiter value, RTS wire needs to be set or cleared accordingly!

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NOTE: The communications port's DTR wire **needs to be toggled** any time a message (Header and as the case may be response) is sent by the host application!

4.3 LIN Bus Data Receiving

For receiving of LIN Bus data using the SmartLIN-RS232 HS Module, the host application needs to monitor the "CE_BREAK" (communication break) flag through what the start of new LIN Bus Header is indicated.

5 Disclaimer

For damage of any kind, arising by the employment of the SmartLIN-RS232 HS Module, no requirements can be made valid opposite the supplier!

6 Contact Information

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Appendix A – Revision History

Revision History
1.0 Initial Release 15th January 2019