

Potential RxD lock-up upon LIN wake-up during sleep mode transition

1 Silicon identification

This document refers only to L9638D device.

2 Reference specification

Limitations in this document are with reference to the L9638D datasheet rev 4 (October 2004).

3 Silicon limitations

3.1 Potential RxD lock-up upon LIN walk-up during sleep mode transition

A lock-up of the RxD signal path can potentially happen, when a falling edge on the LIN bus occurs during the transition from NORMAL to SLEEP mode.

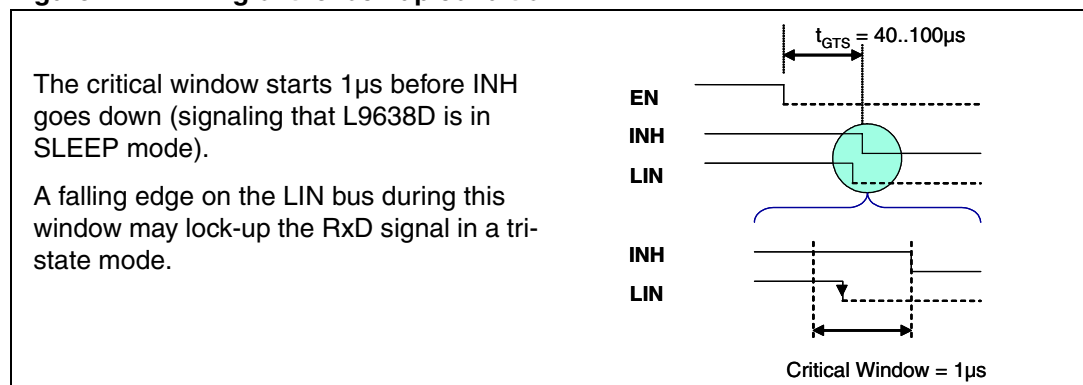
The transition from NORMAL to SLEEP mode is initiated by the application with a falling edge on EN. With this event an internal timer is started to qualify a valid low level on EN. At the end of this filter period (t_{GTS} , typically 40 μ s) the sleep mode is entered and the INH output signal is switching to low level.

This transition to SLEEP mode however does not occur when a walk-up event is detected before the timer expired (t_{GTS}).

The lock-up condition may occur: IF a falling edge on the LIN bus occurs WITHIN the critical window before INH goes low. The maximum duration of the critical window is 1 μ s. To exit the lock-up state the power supply of the device must be switched off.

The timing of the lock-up condition is shown in the diagram below.

Figure 1. Timing of the lock-up condition



4 Workaround

ST recommends to do not use the SLEEP mode of the L9638D if a falling edge on the LIN can occur during the transition from NORMAL to SLEEP.

A falling edge may be caused either by a frame, a wake-up signal or a perturbation on the LIN bus.

5 Revision history

Table 1. Document revision history

Date	Revision	Changes
21-Mar-2006	1	Initial release.

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