TLE9261...63(-3)BQX(V33)
Mid-Range+ SBC Family

Reference: Data Sheet

Infineon-TLE9263-3BQX-DS-v10_00-EN, Rev 1.0

Errata Sheet

Overview

This document lists the errata of the Mid-Range+ SBC Family related to the Data Sheet:
Infineon-TLE9263-3BQX-DS-v10_00-EN, Rev 1.0.

It is strongly recommended that the device behavior and proposed workarounds are considered for the application.

Affected products

- TLE9261BQX,
- TLE9261-3BQX,
- TLE9261BQXV33,
- TLE9261-3BQXV33,
- TLE9262BQX,
- TLE9262-3BQX,
- TLE9262BQXV33,
- TLE9262-3BQXV33,
- TLE9263BQX,
- TLE9263-3BQX,
- TLE9263BQXV33,
- TLE9263-3BQXV33

1 Unintended CAN dominant pulse when entering SBC Sleep or Fail-Safe Mode while in CAN Normal Mode

1.1 Description of behavior - occurrence

Necessary conditions:

- CAN is in Normal mode with VCAN nominally supplied AND
  - SBC in Normal Mode OR
  - SBC in Stop Mode

Unexpected device behavior:

- For following SBC mode changes:
  - the device is sent to SBC Sleep Mode from SBC Normal Mode without changing the CAN mode OR
  - the device enters SBC Fail-Safe Mode
- If above conditions apply, then a typ. 2us dominant pulse is sent on the CANL and CANH and is also received on RXDCAN

Note: the tolerance of the pulse is correlated with the oscillator frequency tolerance as specified in the datasheet parameter P_15.10.25 (f_{CLKSBC}).

1.2 Possible impact

This unexpected pulse could wake up other CAN nodes, which are not following the CAN wake-up pattern (WUP: dominant – recessive – dominant) according to ISO11898-6:2013 or ISO11898-2:2016

1.3 Root cause description

In case the device is sent to SBC Sleep Mode or enters SBC Fail-Safe Mode while the CAN transceiver is in Normal mode, following device behavior applies:

- the I/O structures of the device are tied to LOW level at the same time the SBC Sleep Mode is entered
- however, the CAN transceiver stays in Normal mode (i.e. transmitter enabled) for another typ. 2us before it is automatically set to CAN wake capable mode.
- this LOW level of the I/Os is interpreted as a dominant level on the CANTXD pin until the CAN wake capable mode is entered (typ. 2us)

1.4 Proposed workaround for SBC Sleep Mode

Below mentioned workaround is only required if following conditions apply:

- The CAN wake-up pattern according to ISO11898-6:2013 or ISO 11898-2:2016 is not implemented on other ECUs, i.e. a single dominant pulse on the CAN bus could wake up the respective ECU
- SBC Sleep Mode is entered while CAN Normal Mode is configured, i.e. the described behavior is not present and the workaround is not required if SBC Stop Mode is selected or CAN is OFF, in CAN Receive Only mode or CAN wake capable mode

To avoid this behavior the SBC Sleep mode entry sequence should be adapted as follows:

- Before SBC Sleep Mode entry the CAN transceiver should be set to CAN wake capable mode, CAN Receive Only mode or CAN OFF
- Right after this command the device should then be set to SBC Sleep Mode

Note: This workaround is backward compatible to the Mid Range SBC family but not required

Other workarounds or combination of workarounds might also be possible and could be checked for the application.

1.5 Corrective Action

The datasheet update specifying to avoid CAN Normal mode when entering SBC Sleep Mode.

2 Revision history

Revision	Date	Changes
1.1	2019-01-18	Corrected title to match affected products.
1.0	2018-04-09	Initial release.

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