ATA6571

ATA6571 Errata and Data Sheet Clarification

The functionality of the ATA6571 device you have received is described in the Device Data Sheet DS20006329 except for the anomalies described in this document.

The NERR pin is pulled to GND under the following conditions, which are in addition to those described in the data sheet.

NERR pin is pulled to GND:

1. **When VS drops below its undervoltage detection level $V_{VS\_UV\_CAN\_Set}$ and the WAKE pin is externally pulled to VS**

If V_{VS} drops below its undervoltage detection level $V_{VS\_UV\_CAN\_Set}$ (see Section 5. Electrical Characteristics in the data sheet), the ATA6571 enters Standby Mode and the transceiver switches off and disengages from the bus until V_{VS} recovers. If at that time the WAKE pin is connected to VS, the NERR pin and the RXD pin will be pulled to GND.

Therefore, if the application circuit is used as depicted in the data sheet — i.e., with a switch to GND at the WAKE pin, the NERR pin additionally signals a VS-undervoltage event, which can be used to monitor the VS supply voltage. This is only the case if the WAKE pin is pulled up externally to VS when the WAKE switch is open.

In case VS drops below its undervoltage detection level $V_{VS\_UV\_CAN\_Set}$ when the WAKE pin is externally pulled to GND, it will not be signaled at the NERR pin and the RXD pin.

2. **When VS drops below its undervoltage detection level V_{VS_PWROFF} and the WAKE pin is externally pulled to GND**

If the V_{VS} voltage drops further below the supply voltage Threshold for power-off detection V_{VS_PWROFF} (see section 5. Electrical Characteristics in the data sheet), the CAN driver is already switched off. If this occurs when the WAKE pin is externally pulled to GND, the INH output switches off, the ATA6571 enters Sleep mode and the NERR pin and the RXD pin are pulled to GND by an internal 500Ω resistor.

3. **At VIO undervoltage**

If V_{VIO} drops below its undervoltage detection level (V_{VIO_UV}, see section 5. Electrical Characteristics in the data sheet), the transceiver switches off and disengages from the bus until V_{VIO} recovers. The NERR pin and the RXD pin is pulled immediately to GND by an internal 500Ω resistor.

If the voltage on the VIO pin drops below V_{VIO_UV} for longer than the undervoltage detection time, $t_{VSUP\_UV\_set}$, the $UV_{VCC/VIO}$ flag is set and the transceiver enters Sleep mode to save power and to ensure that the bus is not disturbed. In Sleep mode the voltage regulators connected to the INH pin are disabled, avoiding any extra power consumption that might be caused by a short-circuit condition.

This can be used to detect a VIO undervoltage.

4. **At V_{CC} undervoltage during data transmission**

If V_{VCC} drops below its undervoltage detection level (V_{VCC_UV}, see section 5. Electrical Characteristics in the data sheet) while the device is in Normal mode and transmits data, the transceiver switches off until V_{VCC} recovers. Additionally, the NERR pin is pulled to GND and the RXD pin is pulled to VIO.

This can be used to detect a VCC undervoltage.

If the voltage on the VCC pin drops below V_{VCC_UV} for longer than the undervoltage detection time, $t_{VSUP\_UV\_set}$, the $UV_{VCC/VIO}$ flag is set and the transceiver enters Sleep mode to save power. In Sleep mode the external voltage regulators connected to the INH pin are disabled, avoiding any extra power consumption that might be caused by a short-circuit condition.

The NERR pin is released when entering Sleep mode.

APPENDIX A: DOCUMENT REVISION HISTORY

Rev. A (November 2020)

- Initial Release of this Document. This Errata completes the Device Data Sheet DS20006329 with the following information:
  - Updated conditions where the NERR pin is pulled to GND.

Note the following details of the code protection feature on Microchip devices:

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