

ATA663431/54 Silicon Errata and Data Sheet Clarification

The functionality of the ATA663431/54 devices is described in the current Device Data Sheet (DS50002820D), except for the anomalies described in this document.

Silicon Issue

If the WDOSC pin is shorted to GND or is open, the Watchdog goes into a Safe state and keeps the reset line asserted. In this case, the LH pin is not activated.

Therefore, the “Limp Home (LH) State Diagram” (Fig. 1-14) in the data sheet is only valid for the normal Watchdog operation with R_{WDOSC} connected to the WDOSC pin and not in the case of an open or short-circuited WDOSC pin.

Data Sheet Clarifications

A detailed description of the ATA663431/54 behavior in case of a thermal shutdown of the VCC regulator is missing in the data sheet:

If the VCC regulator is switched off due to an overtemperature shutdown, caused by a high power dissipation (e.g., a high load current and/or a high supply voltage), the NRES output switches to GND due to the detection of a VCC undervoltage. The device enters Fail-Safe mode and signals the last fail-safe/wake-up source, as described in the table below:

TABLE 1: SIGNALING IN FAIL-SAFE MODE

Fail-Safe Sources	TXD	RXD
LIN wake-up (LIN pin)	Low	Low
Local wake-up (WKin pin or CL15 pin)	Low	High
$V_{VS_th_N_F_down}$ (battery) undervoltage detection ($V_{VS} < 3.9V$)	High	Low

If the thermal shutdown of the VCC regulator occurs after the last wake-up source is a LIN wake-up, it will signal a LIN wake-up on the TXD and RXD lines after the VCC Shutdown condition ends. If the last source is a local wake-up, it will signal that after the VCC shutdown.

APPENDIX A: REVISION HISTORY

Revision A (August 2021)

- Initial release of this document

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ISBN: 978-1-5224-8468-4

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