

AS8221 FlexRay Standard Transceiver



AN1: Start-up/Shut-down Behavior

The following describes the start-up and shut-down behavior of AS8221.

1 POWER_OFF State

The AS8221 is unsupplied if both V_{BAT} and V_{CC} supply voltages are in undervoltage conditions and the device is in POWER_OFF state.

- Undervoltage V_{BAT} : $V_{BAT} < V_{BATTHL}$
- Undervoltage V_{CC} : $V_{CC} < V_{CCTHL}$

2 Start-Up from POWER_OFF

If the battery supply voltage V_{BAT} reaches the voltage recovery threshold, the device enters STAND_BY mode after the detection time for voltage recovery t_{UV_REC} .

Undervoltage recovery V_{BAT} : $V_{BAT} > V_{BATHH}$

3 Entering POWER_OFF from any State

If V_{BAT} falls below the undervoltage threshold V_{BATTHL} while V_{CC} is already in undervoltage condition or V_{CC} falls below the undervoltage threshold V_{CCTHL} while V_{BAT} is already in undervoltage condition the device enters POWER_OFF mode after a undervoltage detection time t_{UV_DETECT} .

Figure 1. V_{BAT} while $V_{CC} < V_{CCTHL}$

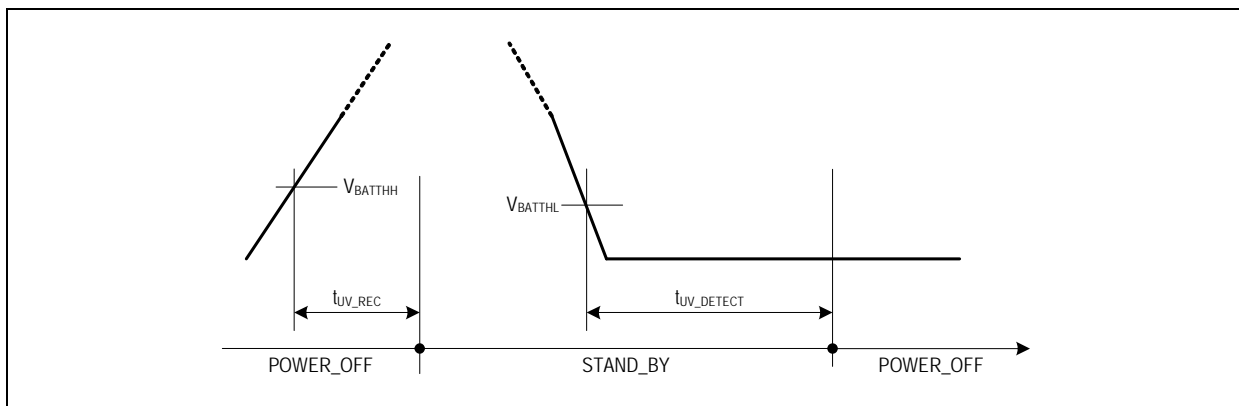
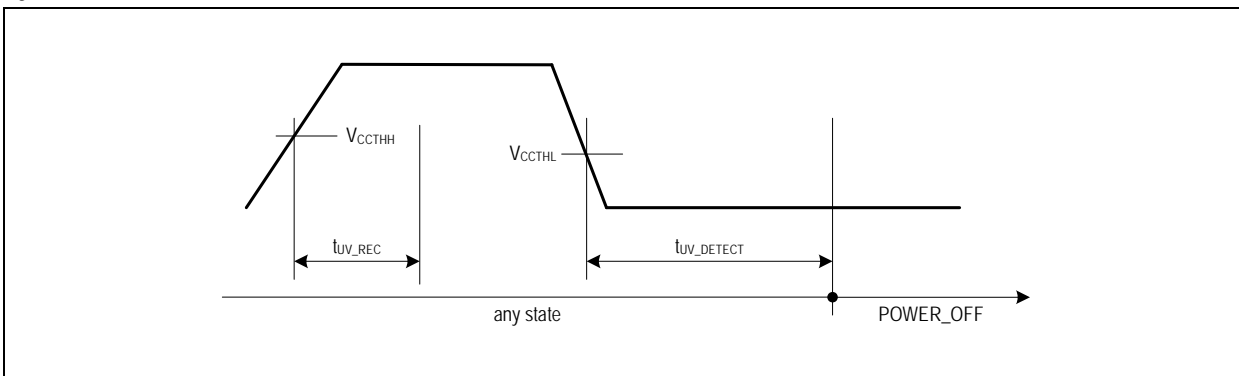


Figure 2. V_{CC} while $V_{BAT} < V_{BATTHL}$



4 Short Low Voltage Notches at Supply Voltages V_{BAT} and V_{CC}

If low voltage notches are shorter than t_{UV_DETECT} no mode change is initiated. If the notches are longer than the t_{UV_DETECT} transitions according the device datasheet will be performed. However, it is guaranteed that the device will always be in defined operation states. If the V_{CC} voltage falls below 4.75V the communication might be interfered.

5 Dynamic Low Battery Voltage

In reference to chapter 8.12.3 Dynamic low battery voltage of the FlexRay Electrical Physical Layer Specification V2.1 Rev B, it is guaranteed that the device will not hang-up or will enter an undefined operating state. According to the defined start-up and shut-down behavior the device always will be in a defined mode according to the device datasheet.

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Contact Information

Headquarters

austriamicrosystems AG
Tobelbaderstrasse 30
A-8141 Unterpremstaetten, Austria
Tel: +43 (0) 3136 500 0
Fax: +43 (0) 3136 525 01

For Sales Offices, Distributors and Representatives, please visit:

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