Azoteq Product Information Notice: PIN-230172-IQS72xxx Power Mode Information

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1 Introduction

This section provides the list of part numbers where caution is advised on certain scenarios that could lead to higher-than-expected power consumption with order codes as listed below.

1.1 Detailed Part Number List

- IQS7210A001QNR
- IQS7211A001CSR/QNR, IQS7211A101CSR/QNR,
- IQS7211E001QNR
- IQS7219A001QNR, IQS7219A002QNR
- IQS7221E001QNR/QFR
- IQS7222A001CSR/QNR/QFR
- IQS7222B001QNR, IQS7222B101QNR, IQS7222B102QNR
- IQS7222C101CSR/QNR, IQS7222C102QNR
- IQS7222D001QNR
- IQS7223C001CSR/QNR
- IQS7225A001QNR

1.2 Description of a Potential Power Consumption Increase

All the part numbers listed in the previous section offer flexible power modes. Depending on the application setup, these parts are at risk of higher-than-expected average ULP power consumption.

This potential power-mode-dependent issue is described below:

- Power modes determine the way in which sensing and sleep cycles are processed on the sensor. For more information on power mode handling, please refer to the respective datasheets.
- When enabling the lowest power mode, ultra-low power (ULP), the sensing circuit is set up in a way that allows a higher current drain on the analogue regulator during the sleep cycle.
- When the sensor wakes from the sleep cycle to start a special ultra-low power sensing cycle, an overshoot on the analogue regulator may cause an increase in the measured capacitance.
- When this increase in capacitance is more than the proximity threshold, the sensor will wake from sleep to debounce the perceived proximity event.
- When no proximity event is present, the IC will go back into the sleep cycle.
- Depending on the application setup, and the IC settings (gains and thresholds), these wake-debounce-sleep events/cycles could repeat multiple times and may lead to an increase in current consumption from the expected average value. The exact current consumption values are application dependant and can be avoided via the workarounds suggested below.

1.3 Workarounds to Improve Power Consumption

The recommended workarounds are as follows:

- Select a less sensitive proximity threshold or
- Disable ULP and opt for alternate low-power (LP) settings that may better suit the application

If the application has a low current power consumption target along with a sensitive proximity threshold requirement, it is recommended to move to an alternate part with a different order code as indicated in the respective datasheets.

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