



## Azoteq Product Change Notice: IQS7222B001, IQS7222B101 QNR

Issued Date: January 2022  
Effective Date: January 2022  
Product change classification: Minor

### 1 Azoteq Change Notification Policy

As Azoteq values our customers' needs, we try to keep our products in production for as long as possible. There are, however, legal, environmental or performance requirements that will sometimes necessitate the need for a running change to a part. We weigh this very carefully against the inconvenience caused to customers already in production.

### 2 Detailed Description of Changes

#### 2.1 Part Numbers Affected

- > IQS7222B001QNR (v1.27 - order code discontinued)
- > IQS7222B101QNR (v1.43)

#### 2.2 Statement of Changes Implemented

- > **Communications lock-up prevention when doing I<sup>2</sup>C comms shortly after power-on (implemented on v1.45):** Solves an issue when master device does polling during IQS7222B start-up. This may result in device lockup (no I<sup>2</sup>C communications possible until power-on reset). Workaround for v1.43 and earlier ICs: Suspend polling for at least 25ms after receiving a NACK.
- > **Communications lock-up prevention (implemented on v1.43):** When VDD drops below the reset voltage maximum level (during ESD strike for example) the IC will continue running, but I<sup>2</sup>C communications may break. When communications break only a hard reset will recover the device. Communications are now robust against such possible failure cases.
- > **I<sup>2</sup>C stop bit disable added (implemented on v1.43):** In some cases, the I<sup>2</sup>C master sends a stop bit after each read / write command. The stop bit closes the communication window on the IQS7222B and allows for sensing to continue. Disable this bit to allow efficient communications without losing the window for communications.
- > **Improved power consumption (implemented on v1.43):** During sensing phases all activated ProxFusion hardware should be active. During calculations and communication projected capacitive sensor hardware was still active. This update effectively disables all sensor hardware outside of the sensing windows, enabling an improved current consumption.
- > **Power mode integrity improvement (implemented on v1.43):** Risks mitigated where some ICs could not enter or remain in the lowest power mode (low risk due to IQS7222B only offering self-/or projected capacitive sensing)
- > **Communication time-out register added (implemented on v1.43):** Register added to give an adjustable communications window time-out. The default is also changed from 20ms to 500ms. This default time-out is acceptable to more types of master devices.
- > **Event mask added (implemented on v1.43):** An event mask is added to allow the master only to respond to certain selectable event types.



## 2.3 Customer Part Number Change

In cases where the order code remains unchanged, the change can be tracked via:

- > **Bulk check:** Bulk label LOT no.
- > **IC check:** Top marking product code
- > **Firmware check:** Memory map firmware version number

## 2.4 Part Identification Change (QFN)

	Old	Old	New
<b>Order code</b>	IQS7222B001QNR (v1.27)	IQS7222B101QNR (v1.43)	IQS7222B101QNR (v1.45)
<b>Top marking</b>	IQS722xy <b>EFA</b> xx IQS722xy <b>ECY</b> xx IQS722xy <b>DNS</b> xx	IQS722xy <b>EEK</b> zz Where "xx" is a batch code "AA" to "ZZ"	IQS722xy <b>EFA</b> zz IQS722xy <b>EEK</b> zz Where "xx" is a batch code "AA" to "ZZ"
<b>Bulk marking (bag label)</b>	(1T)ttttt.n-n <b>ppp</b> Where "ttttt.n-n" is a unique LOT identifier followed by a relevant product code "ppp" ppp = <b>EFB/ EDZ/ DOP</b>	(1T)ttttt.n-n <b>ppp</b> Where "ttttt.n-n" is a unique LOT identifier followed by a relevant product code "ppp" ppp = <b>EFS</b>	(1T)ttttt.n-n <b>ppp</b> Where "ttttt.n-n" is a unique LOT identifier followed by a relevant product code "ppp" ppp = <b>EME/ DOS</b>

## 2.5 Firmware Changes

### 2.5.1 Firmware ID

	Old	Old	New
<b>Order code</b>	IQS7222B001QNR	IQS7222B101QNR	IQS7222B101QNR
<b>Product code</b> (Address 0x00 16-bit)	698 (0x02BA)	698 (0x02BA)	698 (0x02BA)
<b>Major FW revision number</b> (Address 0x01 16-bit)	1	1	1
<b>Minor FW revision number</b> (Address 0x02 16-bit)	27 (0x01B)	43 (0x002B)	45 (0x002D)



### 3 Recommended Action

Although there are several issues addressed with this update, these are classified as “minor” and it is not mandatory to requalify the product. Changes are considered low risk and backward compatible. It is highly recommended to change to the latest version as soon as possible.

For devices already in the field, the impact needs to be assessed and discussed to mitigate risk.

### 4 Reference Documents

IQS7222B Datasheet version 1.0 (and future versions)




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