

SHT3x Electronic Identification Code

How to read-out the serial number of SHT3x

The SHT3x provides a device specific serial number which can be read-out via the serial interface (I²C). The Serial number allows an unambiguous identification of each individual device. This application note describes the procedure to read-out the serial number.

Communication Sequence

The communication sequence for reading out the serial number complies with the general I²C serial interface protocol. For detailed information on I²C, please refer to the SHT3x Datasheet and the I²C bus specification by NXP Semiconductors [1].

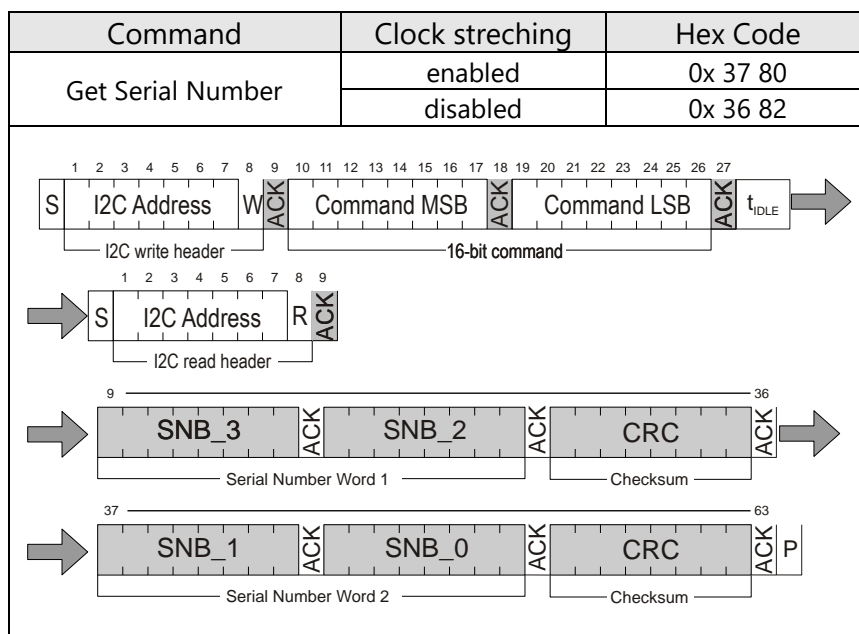


Table 1. Command to read out the Serial Number (Clear blocks are controlled by the microcontroller, grey blocks by the sensor.)

After issuing the measurement command and sending the ACK Bit the sensor needs the time $t_{IDLE} = 1\text{ms}$ to respond to the I²C read header with an ACK Bit. Hence it is recommended to wait $t_{IDLE} = 1\text{ms}$ before issuing the read header. The Get Serial Number command returns 2 words, every word is followed by a CRC Checksum. Together the 2 words (SNB₃ to SNB₀ in Table 1, SNB₀ is the LSB, whereas SNB₃ is the MSB) constitute a unique serial number with a length of 32 bit. This serial number can be used to identify each sensor individually.

Bibliography

[1] NXP Semiconductors, «User manual UM10204,» Bd. Rev. 6, 2014.

Revision History

Date	Version	Page(s)	Changes
November 2014	0.9		Release of D2 Version
May 2015	1		Release of Version 1
February 2018	2	1	Change of <code>HIDLE</code> to 1ms
January 2023	3	All All 1 2	Change of confidentiality to D1 Reformatting Changed Reference to NXP user manual (nonfunctioning link) Addition of Bibliography

Important Notices

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Do not use this product as safety or emergency stop devices or in any other application where failure of the product could result in personal injury. Do not use this product for applications other than its intended and authorized use. Before installing, handling, using or servicing this product, please consult the data sheet and application notes. Failure to comply with these instructions could result in death or serious injury.

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ESD Precautions

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take customary and statutory ESD precautions when handling this product. See application note "ESD, Latchup and EMC" for more information.

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