HTU2X Serial Number reading

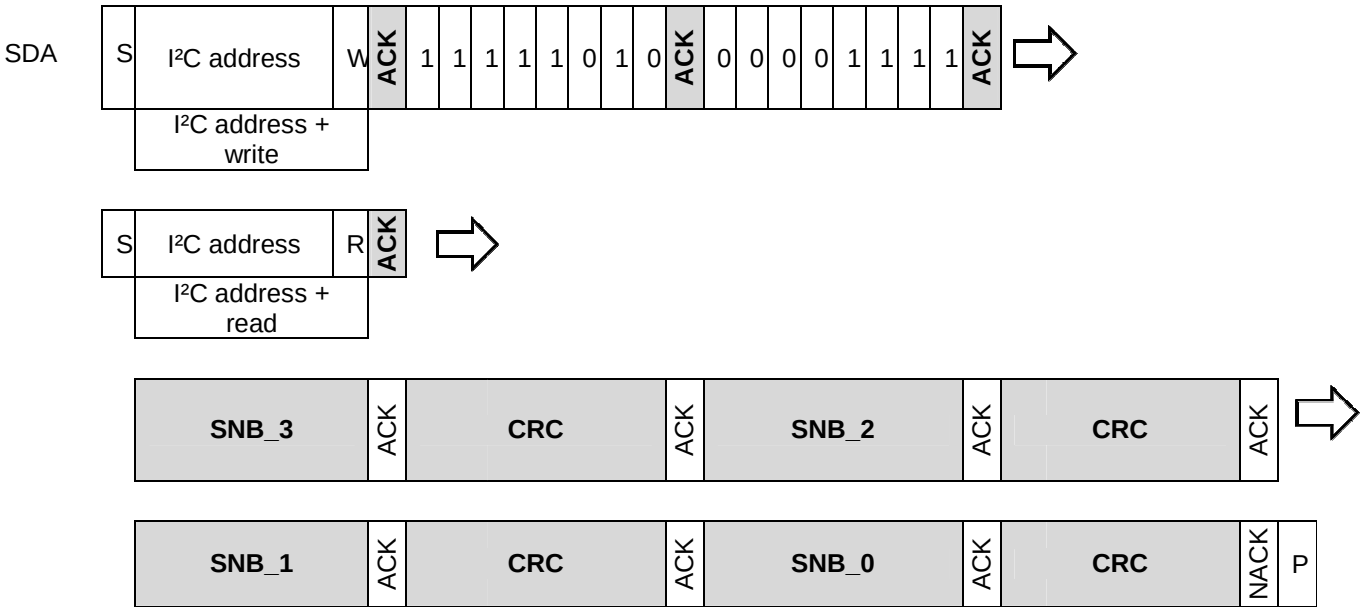
The HTU2X provides a device specific serial number which can be read-out via the serial interface (I2C) and allows for an unambiguous identification of each individual device. This application note describes the procedure for read-out of the serial number.

COMMUNICATION SEQUENCE

The communication sequences for reading out the serial number comply with the general I2C serial interface protocol. For detailed information on I2C, please refer to the Datasheet HTU2XD (HPC199 document).

The serial number of the HTU2X is partitioned to two different locations on the on-chip memory. Therefore, two memory access sequences are required to retrieve the complete serial number information. Figure below shows the corresponding communication sequence.

First memory access:



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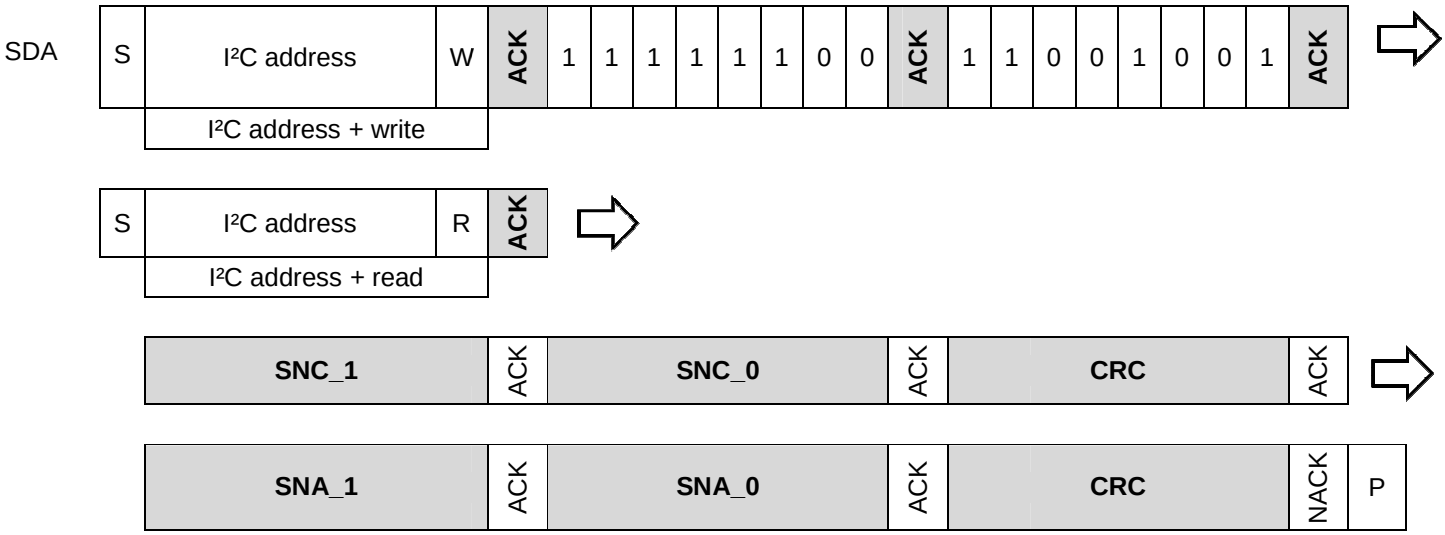
Second memory access:



S is for I2C start condition
P is for I2C stop condition
Data in bold are data from HTU2X sensor to master

COMPOSITION OF SERIAL NUMBER

After reading out the data as described above, the serial number is obtained by arranging the data bytes according to figure below.

64 bits							
16 bits		32 bits				16 bits	
SNA_1	**SNA_0**	**SNB_3**	**SNB_2**	**SNB_1**	**SNB_0**	**SNC_1**	**SNC_0**
0x48*	0x54*	0x00*	0xXX	0xXX	0xXX	0x32*	0xXX

* are fixed values

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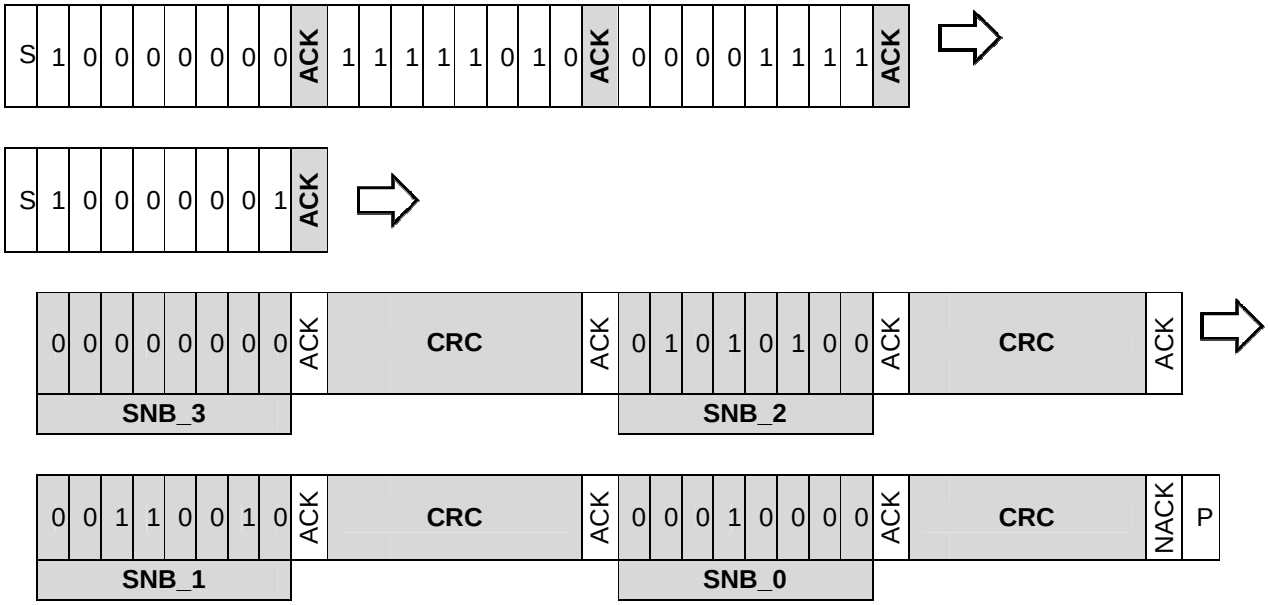
EXAMPLE

For illustration of the read-out procedure, a numeric example is presented below. The I2C address of the HTU2X is assumed as "0100'0000" (hexadecimal: 0x40).

The serial number of the numeric example reads (hexadecimal) is 0x4854'0054'3210'3212.

First memory access:

SDA



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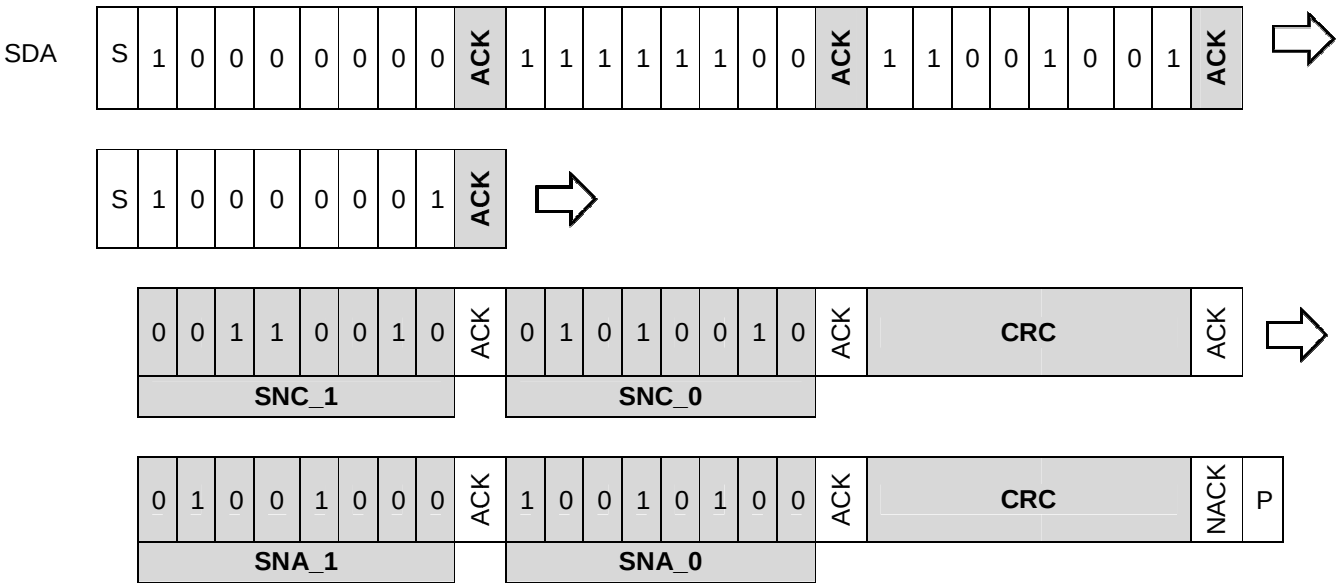
Second memory access:



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