

### 7.3.5 Chip Identification Mode (Non-ISO Reset)

The security controllers of Infineon Technologies are provided with a security area containing a unique serial number for clear identification of each chip. The security area is located in the NVM and is protected against erasing and writing (see also 'NVM security memory area' on page 4-15).

**Table 7-4** Chip identification data

Address	Contents
080000 <sub>H</sub>	Internal control byte: 33 <sub>H</sub>
080001 <sub>H</sub>	Internal control byte: 66 <sub>H</sub>
080002 <sub>H</sub>	ROM type (1)
080003 <sub>H</sub>	ROM type (2)
080004 <sub>H</sub> – 080007 <sub>H</sub>	part of security area – cannot be read; <b>not output</b>
080008 <sub>H</sub>	Chip type (see <b>Table 2-33</b> on page 2-30)
080009 <sub>H</sub>	FF <sub>H</sub>
08000A <sub>H</sub>	Site / production year
08000B <sub>H</sub>	Lot number (1)
08000C <sub>H</sub>	Lot number (2)
08000D <sub>H</sub>	Wafer number
08000E <sub>H</sub>	Chip position on wafer (x-coordinate)
08000F <sub>H</sub>	Chip position on wafer (y-coordinate)
080010 <sub>H</sub> ...08001F <sub>H</sub>	User PROM data (00 <sub>H</sub> at time of delivery); <b>not output</b>
	5 additional control bytes

*Notes: Addresses 080004<sub>H</sub> to 080007<sub>H</sub> cannot be read, and return an undefined value for read operations.*

*All data in **Table 7-4** is output during the non-ISO reset period unless otherwise stated.*

The individual serial number contains several detailed production parameters, such as the following:

- chip type: individual number for derivatives and design level
- ROM type: individual number for each customer ROM mask
- batch number: manufacturing code (see below)
- wafer number: wafer number in the production lot
- X/Y position: the die x/y position marks the chip on the wafer

The ROM type information, located at addresses 080002<sub>H</sub> and 080003<sub>H</sub>, is ROM mask-dependent and does not have any universally valid layout. A ROM mask is defined by its ROM data, test program, chip type and package (chip/module).

The chip type is coded according to **Table 2-33** on page 2-30.

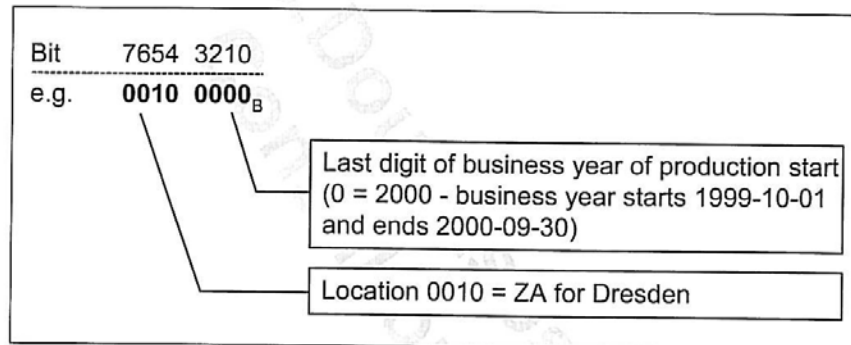
### 7.3.5.1 Batch Number for SLE 66CxxxPE Controllers

#### Site and production year

The production location is saved in the upper nibble of the address 08000A<sub>H</sub>

00 <sub>H</sub>	reserved
01 <sub>H</sub>	reserved
02 <sub>H</sub>	Dresden
03 <sub>H</sub>	reserved
04 <sub>H</sub>	UMC (from 11/01)
05 <sub>H</sub>	Altis
06 <sub>H</sub>	HeJian

ADDRESS 08000A<sub>H</sub>: e.g., 20<sub>H</sub>

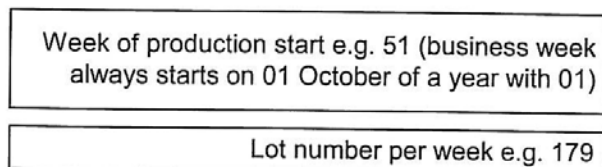


#### Lot number

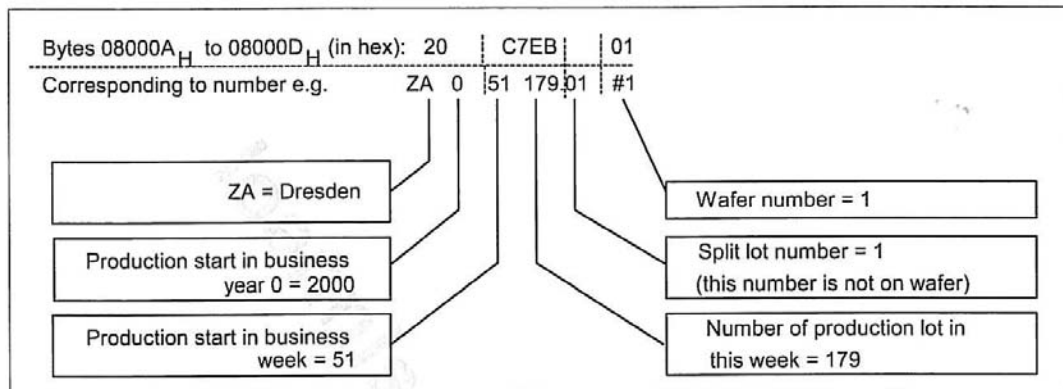
ADDRESS: 08000B<sub>H</sub>...08000C<sub>H</sub>

The hexadecimal number has to be converted into a decimal number.

e.g. 08000B<sub>H</sub> = C7<sub>H</sub> ; 08000C<sub>H</sub> = EB<sub>H</sub> corresponds to C7EB<sub>H</sub> = 51 179<sub>dec</sub>



Based on this information, the lot number for the delivery notes and on the wafers is generated. The following shows an example of the information contained in bytes 08000A<sub>H</sub> to 08000D<sub>H</sub> using the previous values.



### 7.3.5.2 Batch Number for UMC Production Site

The UMC coding of the lot numbers supports numbers and letters at all locations. The value at address 080000<sub>H</sub> must be modified as a consequence.

The split lot and number are saved at the physical addresses 08000A<sub>H</sub>, 08000B<sub>H</sub> and 08000C<sub>H</sub>

Format of the lot number: **Hcccc**

Bit	7	6	5	4	3	2	1	0
Address 08000A <sub>H</sub>	site (04 <sub>H</sub> )					c1		
Address 08000B <sub>H</sub>	c1	c2					c3	
Address 08000C <sub>H</sub>	c3					c4		

**site:** The production location is saved in the upper nibble of the address 08000A<sub>H</sub>

00 <sub>H</sub>	reserved
01 <sub>H</sub>	reserved
02 <sub>H</sub>	Dresden
03 <sub>H</sub>	reserved
04 <sub>H</sub>	UMC (from 11/01)
05 <sub>H</sub>	Altis
06 <sub>H</sub>	HeJian

c: There are 32 different characters (requiring 5 bits). These 5 bits of the four c-places will be linked to form up to a 20-bit number, which is distributed between the addresses 08000A<sub>H</sub>, 08000B<sub>H</sub> and 08000C<sub>H</sub>.

Allocation table:

Bit	Hex	Binary
0	00 <sub>H</sub>	00000 <sub>B</sub>
1	01 <sub>H</sub>	00001 <sub>B</sub>
2	02 <sub>H</sub>	00010 <sub>B</sub>
3	03 <sub>H</sub>	00011 <sub>B</sub>
4	04 <sub>H</sub>	00100 <sub>B</sub>
5	05 <sub>H</sub>	00101 <sub>B</sub>
6	06 <sub>H</sub>	00110 <sub>B</sub>
7	07 <sub>H</sub>	00111 <sub>B</sub>
8	08 <sub>H</sub>	01000 <sub>B</sub>
9	09 <sub>H</sub>	01001 <sub>B</sub>
A	0A <sub>H</sub>	01010 <sub>B</sub>
B	0B <sub>H</sub>	01011 <sub>B</sub>
C	0C <sub>H</sub>	01100 <sub>B</sub>
D	not used	
E	0D <sub>H</sub>	01101 <sub>B</sub>
F	0E <sub>H</sub>	01110 <sub>B</sub>
G	0F <sub>H</sub>	01111 <sub>B</sub>
H	10 <sub>H</sub>	10000 <sub>B</sub>

Bit	Hex	Binary
I	not used	
J	11 <sub>H</sub>	10001 <sub>B</sub>
K	12 <sub>H</sub>	10010 <sub>B</sub>
L	13 <sub>H</sub>	10011 <sub>B</sub>
M	14 <sub>H</sub>	10100 <sub>B</sub>
N	15 <sub>H</sub>	10101 <sub>B</sub>
O	not used	
P	16 <sub>H</sub>	10110 <sub>B</sub>
Q	17 <sub>H</sub>	10111 <sub>B</sub>
R	18 <sub>H</sub>	11000 <sub>B</sub>
S	19 <sub>H</sub>	11001 <sub>B</sub>
T	1A <sub>H</sub>	11010 <sub>B</sub>
U	1B <sub>H</sub>	11011 <sub>B</sub>
V	not used	
W	1C <sub>H</sub>	11100 <sub>B</sub>
X	1D <sub>H</sub>	11101 <sub>B</sub>
Y	1E <sub>H</sub>	11110 <sub>B</sub>
Z	1F <sub>H</sub>	11111 <sub>B</sub>

Example: **HBXQ5**

Site = UMC new: 4<sub>H</sub>  
 c1 = B            B<sub>H</sub>        or    01011<sub>B</sub>  
 c2 = X            1D<sub>H</sub>        or    11101<sub>B</sub>  
 c3 = Q            17<sub>H</sub>        or    10111<sub>B</sub>  
 c4 = 5            5<sub>H</sub>         or    00101<sub>B</sub>

c1 & c2 & c3 & c4: 0101 1111 0110 1110 0101<sub>B</sub>

c1 & c2 & c3 & c4: 5F6E5<sub>H</sub>

This means:

08000A<sub>H</sub> = 45<sub>H</sub>

08000B<sub>H</sub> = F6<sub>H</sub>  
 08000C<sub>H</sub> = E5<sub>H</sub>

### 7.3.5.3 Batch Number for Altis Production Site

ADDRESS 08000A<sub>H</sub>:

Bit no.	7654	3210
Bit value (e.g.)	0101	0000

First nibble of part 1 of batch number

Location 5 = EF for Altis

ADDRESS: 08000B<sub>H</sub>...08000C<sub>H</sub>

The hexadecimal number has to be converted into a decimal number.

e.g. 08000B<sub>H</sub> = 08H; 08000C<sub>H</sub> = 9C<sub>H</sub> corresponds to 08 1 56<sub>dec</sub>

Week of production start e.g. 08 (business week always starts on 01 October of a year with 01)

Number of production day in this week (0..6)  
 e.g. 1 (day counting always starts on Monday)

Start sequence within this particular week

#### Lot number

Based on this information, the lot number for the delivery notes and on the wafers is generated.

Bytes 08000A<sub>H</sub> to 08000D<sub>H</sub> (in hex): 52 | 089C | 01

Corresponding to number e.g. EF 2 08 1 56 01 #1

EF = Altis

Production start in business  
 year 2 = 2002

Production start in business  
 week = 08

Wafer number = 1

Split lot number = 1  
 (this number is not on wafer)

Start sequence within this  
 particular = 56

Number of production day  
 in this week = 1