

33 Device electronic signature

The device electronic signature is stored in the System memory area of the Flash memory module, and can be read using the debug interface or by the CPU. It contains factory-programmed identification and calibration data that allow the user firmware or other external devices to automatically match to the characteristics of the STM32F0xx microcontroller.

33.1 Unique device ID register (96 bits)

The unique device identifier is ideally suited:

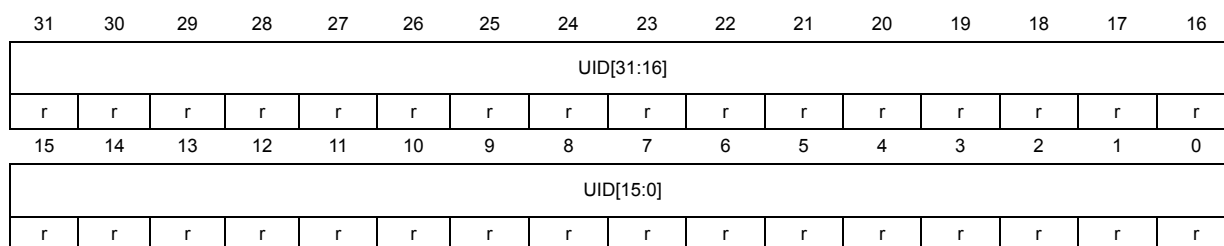
- for use as serial numbers (for example USB string serial numbers or other end applications)
- for use as part of the security keys in order to increase the security of code in Flash memory while using and combining this unique ID with software cryptographic primitives and protocols before programming the internal Flash memory
- to activate secure boot processes, etc.

The 96-bit unique device identifier provides a reference number which is unique for any device and in any context. These bits cannot be altered by the user.

Base address: 0x1FFF F7AC

Address offset: 0x00

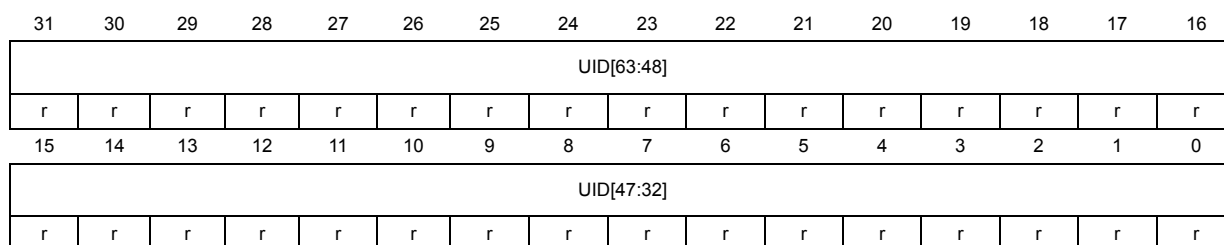
Read only = 0xXXXX XXXX where X is factory-programmed



Bits 31:0 **UID[31:0]**: X and Y coordinates on the wafer expressed in BCD format

Address offset: 0x04

Read only = 0xXXXX XXXX where X is factory-programmed



Bits 31:8 **UID[63:40]:** LOT_NUM[23:0]

Lot number (ASCII encoded)

Bits 7:0 **UID[39:32]:** WAF_NUM[7:0]

Wafer number (8-bit unsigned number)

Address offset: 0x08

Read only = 0xFFFF XXXX where X is factory-programmed

| | | | | | | | | | | | | | | | |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 |
| UID[95:80] | | | | | | | | | | | | | | | |
| r | r | r | r | r | r | r | r | r | r | r | r | r | r | r | r |
| 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| UID[79:64] | | | | | | | | | | | | | | | |
| r | r | r | r | r | r | r | r | r | r | r | r | r | r | r | r |

Bits 31:0 **UID[95:64]:** LOT_NUM[55:24]

Lot number (ASCII encoded)

33.2 Flash memory size data register

Base address: 0x1FFF F7CC

Address offset: 0x00

Read only = 0xFFFF where X is factory-programmed

| | | | | | | | | | | | | | | | |
|------------|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|
| 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| FLASH_SIZE | | | | | | | | | | | | | | | |
| r | r | r | r | r | r | r | r | r | r | r | r | r | r | r | r |

Bits 15:0 **FLASH_SIZE[15:0]:** Flash memory size

This bitfield indicates the size of the device Flash memory expressed in Kbytes.

As an example, 0x040 corresponds to 64 Kbytes.