

39 Device electronic signature

The electronic signature is stored in the Flash memory area. It can be read using the JTAG/SWD or the CPU. It contains factory-programmed identification data that allow the user firmware or other external devices to automatically match its interface to the characteristics of the STM32F4xx microcontrollers.

39.1 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 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.

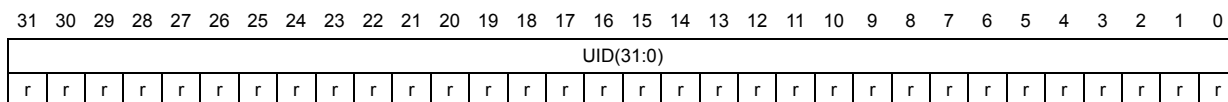
The 96-bit unique device identifier provides a reference number which is unique for any device and in any context. These bits can never be altered by the user.

The 96-bit unique device identifier can also be read in single bytes/half-words/words in different ways and then be concatenated using a custom algorithm.

Base address: 0x1FFF 7A10

Address offset: 0x00

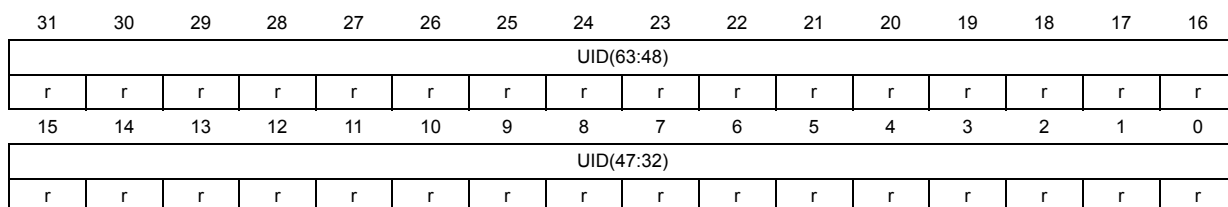
Read only = 0xFFFF XXXX where X is factory-programmed



Bits 31:0 **UID(31:0)**: X and Y coordinates on the wafer

Address offset: 0x04

Read only = 0xFFFF 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 (ASCII encoded).

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).

39.2 Flash size

Base address: 0x1FFF 7A22

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
F_SIZE															
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

Bits 15:0 **F_ID(15:0):** Flash memory size
This bitfield indicates the size of the device Flash memory expressed in Kbytes.
As an example, 0x0400 corresponds to 1024 Kbytes.