

26 Device electronic signature

Low-density value line devices are STM32F100xx microcontrollers where the flash memory density ranges between 16 and 32 Kbytes.

Medium-density value line devices are STM32F100xx microcontrollers where the flash memory density ranges between 64 and 128 Kbytes.

High-density value line devices are STM32F100xx microcontrollers where the flash memory density ranges between 256 and 512 Kbytes.

This section applies to all STM32F100xx devices, unless otherwise specified.

The electronic signature is stored in the System memory area in the flash memory module, and 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 STM32F100xx microcontroller.

26.1 Memory size registers

26.1.1 Flash size register

Base address: 0x1FFF F7E0

Read only = 0xXXXX 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_SIZE**: Flash memory size

This field value indicates the flash memory size of the device in Kbytes.

Example: 0x0080 = 128 Kbytes.

26.2 Unique device ID register (96 bits)

The unique device identifier is ideally suited:

- for use as serial numbers
- for use as security keys, 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

The 96-bit unique device identifier provides a reference number, unique for any device and in any context. These bits cannot 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 F7E8

Address offset: 0x00

Read only = 0xXXXXX where X is factory-programmed

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
U_ID(15:0)															
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

Bits 15:0 **U_ID(15:0)**: 15:0 unique ID bits

Address offset: 0x02

Read only = 0xXXXXX where X is factory-programmed

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
U_ID(31:16)															
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

Bits 15:0 **U_ID(31:16)**: 31:16 unique ID bits

This field value is also reserved for a future feature.

Address offset: 0x04

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

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
U_ID(63:48)															
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
U_ID(47:32)															
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

Bits 31:0 **U_ID(63:32)**: 63:32 unique ID bits

Address offset: 0x08
Read only = 0xXXXX XXXX where X is factory-programmed

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
U_ID(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
U_ID(79:64)															
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

Bits 31:0 **U_ID(95:64)**: 95:64 unique ID bits.