31 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 inter face 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 STM32C0 series microcontroller.

31.1 Unique device ID register (96 bits) (UID)

Base address: 0x1FFF 7550

Address offset: 0x00

Reset value: 0xXXXX XXXX (where X is factory-programmed)

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, and so on.

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.

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
UID[31:16]															
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[15:0]															
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

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

Address offset: 0x04

Reset value: 0xXXXX XXXX where X is factory-programmed

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
UID[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
UID[47:32]															
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

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

Reset value: 0xXXXX 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)

31.2 Flash memory size data register (FSIZER)

Base address: 0x1FFF 75A0

Address offset: 0x00

Reset value: 0xXXXX 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.

31.3 Package data register (PCKR)

Base address: 0x1FFF 7500

Address offset: 0x00

Reset value: 0xXXXX where X is factory-programmed

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	PKG[3:0]			
												r	r	r	r

Bits 15:4 Reserved

Bits 3:0 **PKG[3:0]:** Package type

Condition: STM32C011xx
0001: SO8
0010: WLCSP12
0011: UFQFPN20
0100: TSSOP20
Other: Reserved

Condition: STM32C031xx
0010: TSSOP20
0011: UFQFPN28
0100: UFQFPN32 / LQFP32
0101: UFQFPN48 / LQFP48
Other: Reserved

Condition: STM32C051xx
0001: WLCSP15
0010: TSSOP20
0011: UFQFPN28
0100: UFQFPN32 / LQFP32
0101: UFQFPN48 / LQFP48
Other: Reserved

Condition: STM32C071xx
0001: WLCSP19_GP
0010: WLCSP19_N
0011: TSSOP20_GP
0100: TSSOP20_N
0101: UFQFPN28_GP
0110: UFQFPN28_N
0111: UFQFPN32_GP / LQFP32_GP
1000: UFQFPN32_N / LQFP32_N
1001: UFQFPN48_GP / LQFP48_GP
1010: UFQFPN48_N / LQFP48_N
1011: LQFP64_GP
1000: LQFP64_N
1101: UFBGA64_GP
1110: UFBGA64_N
Other: Reserved

Condition: STM32C091xx/92xx
0001: TSSOP20
0010: WLCSP24
0011: UFQFPN28
0100: UFQFPN32 / LQFP32
0101: UFQFPN48 / LQFP48
0110: UFBGA64 / LQFP64
Other: Reserved