

Chapter 15 Electronic Signature (ESIG)

The electronic signature contains the chip identification information: the flash memory area capacity and a unique identifier. It is burned into the system storage area of the memory module by the manufacturer at the factory and can be read by SWD (SDI) or application code.

15.1 Functional Description

Flash capacity: Indicates the current size of the chip that can be used by user applications.

Unique identification: 96-bit binary code, unique to any microcontroller, the user can only read access cannot be modified. This unique identification information can be used as a microcontroller (product) security password, encryption and decryption keys, product serial numbers, etc., to improve system security mechanisms or to indicate the identity information.

All the above can be read accessed by 8/16/32 bit by the user.

15.2 Register Description

Table 15-1 ESIG-related registers list

Name	Access Address	Description	Reset value
R16_ESIG_FLACAP	0x1FFFF7E0	Flash capacity register	0xFFFF
R32_ESIG_UNIID1	0x1FFFF7E8	UID register 1	0xFFFFFFFF
R32_ESIG_UNIID2	0x1FFFF7EC	UID register 2	0xFFFFFFFF
R32_ESIG_UNIID3	0x1FFFF7F0	UID register 3	0xFFFFFFFF

15.2.1 Flash capacity register (ESIG_FLACAP)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
F_SIZE[15:0]															

Bit	Name	Access	Description	Reset value
[15:0]	F_SIZE[15:0]	RO	Flash capacity in Kbyte. Example: 0x0080 = 128 K bytes	X

15.2.2 UID Register (ESIG_UNIID1)

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
U_ID[31:16]															

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
U_ID[15:0]															

Bit	Name	Access	Description	Reset value
[31:0]	U_ID[31:0]	RO	The 0-31 digits of UID.	X

15.2.3 UID Register (ESIG_UNIID2)

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
U_ID[63:48]															

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
U_ID[47:32]															

Bit	Name	Access	Description	Reset value
[31:0]	U_ID[63:32]	RO	The 32-63 digits of UID.	X

15.2.4 UID Register (ESIG_UNIID3)

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

Bit	Name	Access	Description	Reset value
[31:0]	U_ID[95:64]	RO	The 64-95 digits of UID.	X