

4. LED

4.1 _LED

C Hello

ARM LED

LED

① LED ;

② ;

③ ;

LED

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LED LED

LED LED

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LED

1 3.3V LED 0V LED

2 0V LED 3.3V LED

3 1.2V LED 0V LED

4 0V LED 1.2V LED

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/ LED GPIO 3.3V 1.2V

1 0

1-->

0-->

4.2 GPIO

GPIO: General-purpose input/output

4.2.1 GPIO

- a. GPIO GPIO
- b. /
- c. (Mode) GPIO
- d. Mode GPIO
- e.

4.2.2 GPIO

- a. power/clock
GPIO (Module)
GPIO
- b. GPIO USB

c. GPIO

d. GPIO

GPIO 2

1.

bit n

```
val = data_reg;
val = val | (1<<n);
data_reg = val;
```

bit n

```
val = data_reg;
val = val & ~(1<<n);
data_reg = val;
```

2. set-and-clear protocol

set_reg, clr_reg, data_reg ,

bit n set_reg = (1<<n);

bit n clr_reg = (1<<n);

4.2.3 GPIO

4.3 IMX6ULL GPIO

CCM: Clock Controller Module ()

IOMUXC : IOMUX Controller IO

GPIO: General-purpose input/output

4.3.1 IMX6ULL GPIO

Chapter 26: General Purpose Input/Output (GPIO)

5 GPIO GPIO1 GPIO5 32

GPIO1 32 GPIO1_I00~GPIO1_I031

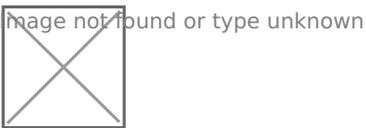
GPIO2 22 GPIO2_I00~GPIO2_I021

GPIO3 29 GPIO3_I00~GPIO3_I028

GPIO4 29 GPIO4_I00~GPIO4_I028

GPIO5 12 GPIO5_I00~GPIO5_I011

GPIO 4 CCM IOMUXC GPIO

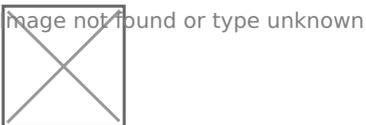


4.3.2 CCM GPIO

Chapter 18: Clock Controller Module (CCM)

GPIOx CCM_CCGRy 2 GPIO GPIO CCM_CCGR

CCM_CCGR 2



① 00 GPIO

② 01 GPIO CPU run mode WAIT STOP

③ 10

④ 11 GPIO

GPIO2

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GPIO1 GPIO5

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GPIO3

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GPIO4

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4.3.3 IOMUXC (Mode)

Chapter 32: IOMUX Controller (IOMUXC)

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/ IOMUXC 2

①

IOMUXC_SW_MUX_CTL_PAD_< PADNAME > Mux pad xxx pad

IOMUXC_SW_MUX_CTL_GRP_< GROUP NAME > Mux grp xxx

8 (alternate (ALT) MUX_MODE)

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②

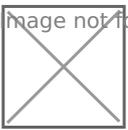
IOMUXC_SW_PAD_CTL_PAD_< PAD_NAME > pad pad xxx pad

IOMUXC_SW_PAD_CTL_GRP_< GROUP NAME > pad grp xxx

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4.3.4 GPIO

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3

① GPIOx_GDIR 1-output 0-input

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② GPIOx_GDIR 1- 0-

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③ GPIOx_PSR 1- 0-

Revision #1

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