

Mango-IMX6Q PWM2 제어하기

<http://www.mangoboard.com/>

<http://cafe.naver.com/embeddedcrazyboys>

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Document History

Revision	Date	Change note
Init	2016-02-26	전종인

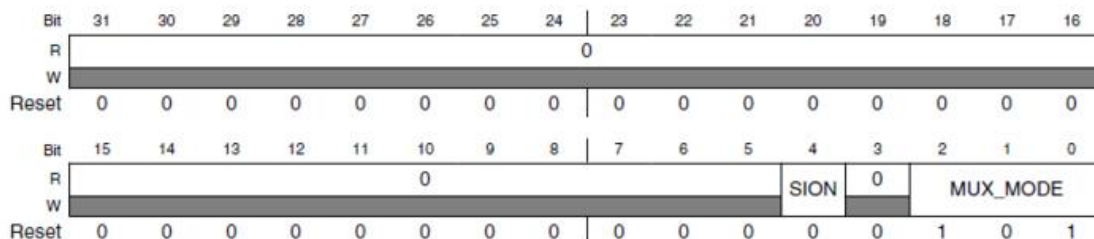
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1. Mango-IMX6Q PWM 2 제어하기

PWM2 는 GPIO_1 를 mux 해서 사용 할 수 있습니다.

36.4.133 Pad Mux Register (IOMUXC_SW_MUX_CTL_PAD_GPIO01)

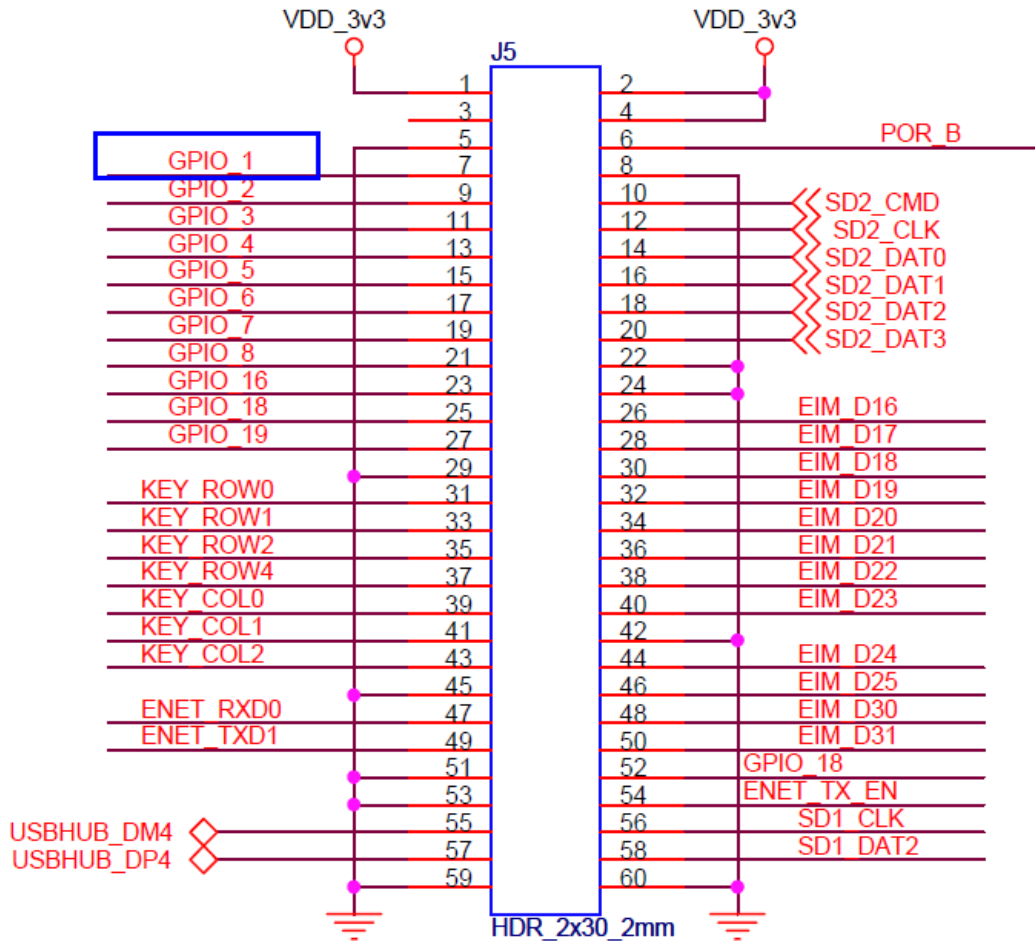
Address: 20E_0000h base + 224h offset = 20E_0224h



IOMUXC_SW_MUX_CTL_PAD_GPIO01 field descriptions

Field	Description
31–5 Reserved	This read-only field is reserved and always has the value 0.
4 SION	Software Input On Field. Force the selected mux mode input path no matter of MUX_MODE functionality. 1 ENABLED — Force input path of pad GPIO_1. 0 DISABLED — Input Path is determined by functionality of the selected mux mode (regular).
3 Reserved	This read-only field is reserved and always has the value 0.
MUX_MODE	MUX Mode Select Field. Select 1 of 7 iomux modes to be used for pad: GPIO_1. NOTE: Pad GPIO_1 is involved in Daisy Chain. 000 ALT0 — Select signal ESAI_RX_CLK. - Configure register IOMUXC_ESAI_RX_CLK_SELECT_INPUT for mode ALT0. 001 ALT1 — Select signal WDOG2_B. 010 ALT2 — Select signal KEY_ROW5. - Configure register IOMUXC_KEY_ROW5_SELECT_INPUT for mode ALT2. 011 ALT3 — Select signal USB_OTG_ID. 100 ALT4 — Select signal PWM2_OUT . 101 ALT5 — Select signal GPIO1_IO01. 110 ALT6 — Select signal SD1_CD_B.

CX-IMX6Q 회로도를 보면, J5 커넥터로 나와 있습니다.



소스는

"arch/arm/boot/dts/imx6qdl-sabresd.dtsi"

정의하면 됩니다.

pwm2 는

```
pwm-backlight {
    compatible = "pwm-backlight";
    pwms = &pwm2 0 500000;
    brightness-levels = <
        0 1 2 3 4 5 6 7 8 9
        10 11 12 13 14 15 16 17 18 19
        20 21 22 23 24 25 26 27 28 29
    >;
}
```

```

        30 31 32 33 34 35 36 37 38 39
        40 41 42 43 44 45 46 47 48 49
        50 51 52 53 54 55 56 57 58 59
        60 61 62 63 64 65 66 67 68 69
        70 71 72 73 74 75 76 77 78 79
        80 81 82 83 84 85 86 87 88 89
        90 91 92 93 94 95 96 97 98 99
        100
        >;
        default-brightness-level = <94>;
};

&pwm2 {
    pinctrl-names = "default";
    pinctrl-0 = <&pinctrl_pwm2_1>;
    status = "okay";
};

```

로 하면 될 것입니다.

“pinctrl_pwm2_1” 정의는
“arch/arm/boot/dts/imx6qdl.dtsi” 에 정의가 되어 있습니다.

```

pwm2 {
    pinctrl_pwm2_1: pwm2grp-1 {
        fsl,pins = <
            MX6QDL_PAD_GPIO_1_PWM2_OUT 0x1b0b1
        >;
    };
};

```

MX6QDL_PAD_DISP0_DAT9_PWM2_OUT 핀 정의는
./arch/arm/boot/dts/imx6dl-pinfunc.h 파일에 정의가 되어 있습니다 .

값 0x1b0b1은

http://cache.freescale.com/files/32bit/doc/ref_manual/IMX6DQRM.pdf?fasp=1&WT_TYPE=Reference%20Manuals&WT_VENDOR=FREESCALE&WT_FILE_FORMAT=pdf&WT_ASSET=Documentation&fileExt=.pdf

에 아래 page를 확인 해 보세요.

36.4.377 Pad Control Register (IOMUXC_SW_PAD_CTL_PAD_GPIO01)

1.1. 테스트 방법

```
echo 5 > /sys/class/backlight/pwm-backlight.0/brightness
```

```
echo 90 > /sys/class/backlight/pwm-backlight.0/brightness
```