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digitalWrite vs REG_WRITE on pin13 - why is it different? #1901

🔒 Closed OhSoGood opened this issue on Sep 26, 2018 · 4 comments**OhSoGood** commented on Sep 26, 2018 • edited ▼

Hi,

Can anybody explain me why digitalWrite and REG_WRITE have different behavior on some pin?

On my devkit1, if I do "pinMode(13, OUTPUT); digitalWrite(13, HIGH);", I observe 3.3V on pin13.
But if I do "REG_WRITE(GPIO_ENABLE_REG, BIT13); REG_WRITE(GPIO_OUT_REG, BIT13);" (or REG_WRITE(GPIO_OUT_W1TS_REG, BIT13)), pin13 stays at 0V

On the contrary, if I try the same on BIT27, pin27 gets 3.3V with REG_WRITE.

What is the reason for this? I looked at the board pin layout, but got no concrete clue.

Thank you!

francescolavra commented on Oct 27, 2018

The reason is that some pins are not assigned to the GPIO function by default, so if you want to use a pin as a GPIO you have to make sure first that the pin multiplexer is configured correctly for that pin to function as a GPIO. That's what the `pinMode()` function does. If you call `REG_WRITE(GPIO_OUT_REG, BIT13)` after `pinMode(13, OUTPUT)`, you will see that the pin is correctly set at 3.3V.

OhSoGood commented on Oct 27, 2018

Author

Oh... You mean that the initialization I thought I was doing with `REG_WRITE(GPIO_ENABLE_REG, BIT13)` is not equivalent to `pinMode(13, OUTPUT)` ?

If so, what is the purpose of `REG_WRITE(GPIO_ENABLE_REG, xx=)` and should I do it in addition to `pinMode(13, OUTPUT)` ?

Thank you

francescolavra commented on Oct 27, 2018


`pinMode(13, OUTPUT)` does other stuff in addition to setting bit 13 in `GPIO_ENABLE_REG`, and is not equivalent to `REG_WRITE(GPIO_ENABLE_REG, BIT13)`.



The purpose of `REG_WRITE(GPIO_ENABLE_REG, xx=)` is to configure GPIOs as inputs or outputs; you don't need to call it after `pinMode()`, because `pinMode()` already does all that's needed to configure a GPIO as output.

OhSoGood commented on Oct 27, 2018

Author

Thank you!

 OhSoGood closed this as completed on Oct 27, 2018

  rei-vilo mentioned this issue on Jan 24, 2020

ESP32-Pico - Which pins support digitalWrite()? #3662

 Closed

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

No branches or pull requests

2 participants

