

EXTI

namontoy

EXTI

¿Qué es?

Implementación

IRQs

Cortex-Mx

Buttons

Encoders

Bounce

Schmitt Trigger

External Interrupt Controller

- EXTI -

Profesor: Nerio Andrés Montoya, namontoy@unal.edu.co

Universidad Nacional de Colombia

2023

Agenda

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¿Qué es el EXTI?

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Cortex-Mx

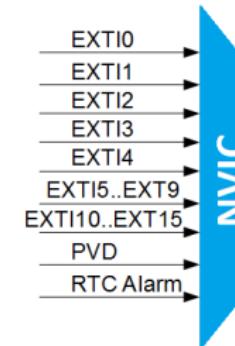
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“The external interrupt/event controller consists of up to 23 edge detectors for generating event/interrupt requests. Each input line can be independently configured to select the type (interrupt or event) and the corresponding trigger event (rising or falling or both). Each line can also be masked independently. A pending register maintains the status line of the interrupt requests. ”



Implementación

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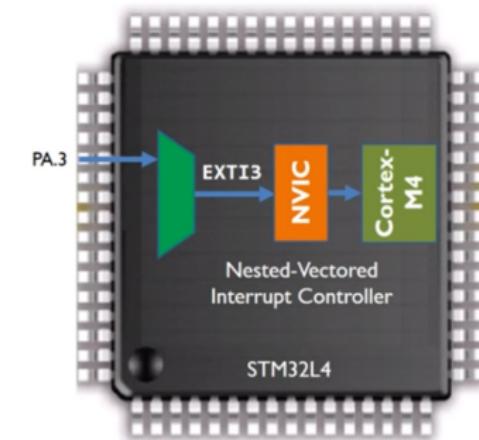
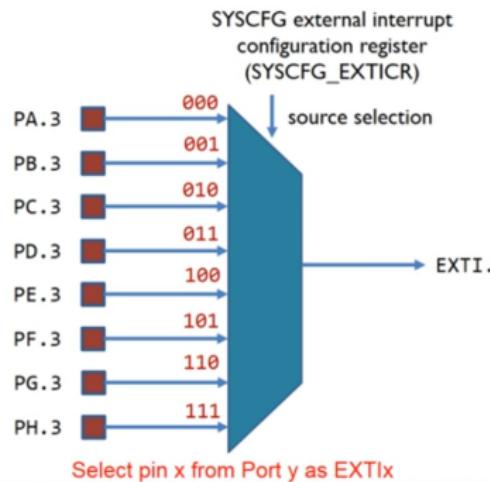
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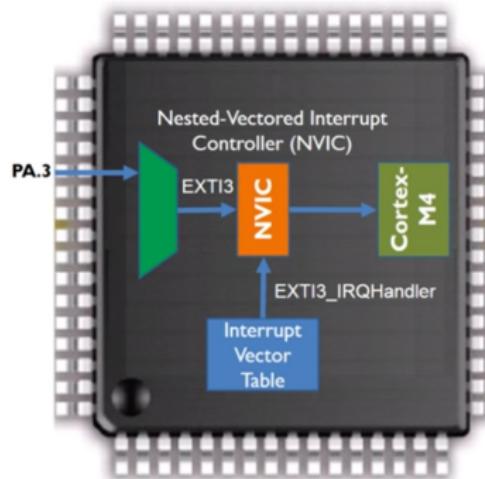
Schmitt Trigger

External Interrupt (EXTI) Sources



IRQs del EXTI

Interrupt Vector Table



Interrupt Vector Table

Interrupt Number (8 bits)	Memory Address of ISR (32 bits)
...	...
EXTI0_IRQHandler = 6	EXTI0_IRQHandler
EXTI1_IRQHandler = 7	EXTI1_IRQHandler
EXTI2_IRQHandler = 8	EXTI2_IRQHandler
EXTI3_IRQHandler = 9	EXTI3_IRQHandler
EXTI4_IRQHandler = 10	EXTI4_IRQHandler
...	...
EXTI9_5_IRQHandler = 23	EXTI9_5_IRQHandler
...	...
EXTI15_10_IRQHandler = 40	EXTI15_10_IRQHandler
...	...

¿Cómo funciona en los ARM Cortex-M4?

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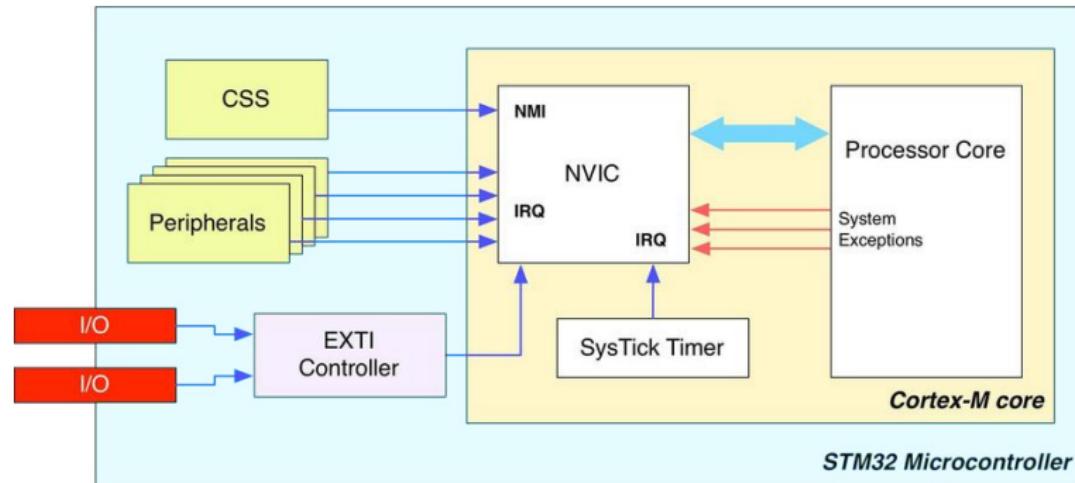
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Hardware para generar Int. Externas

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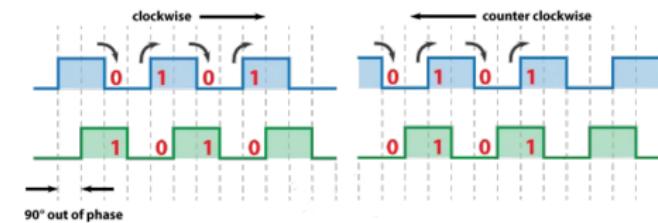
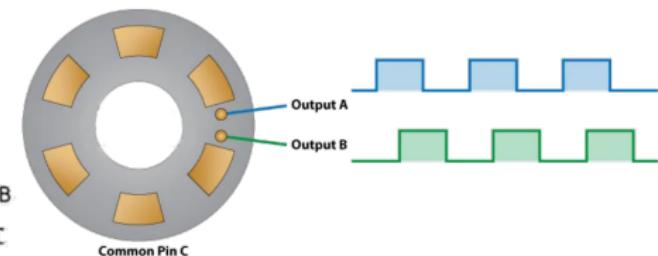
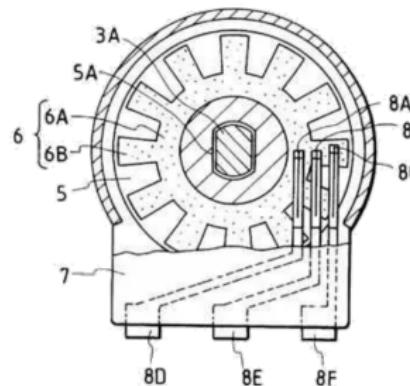
Cortex-Mx

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Bouncing - El Problema

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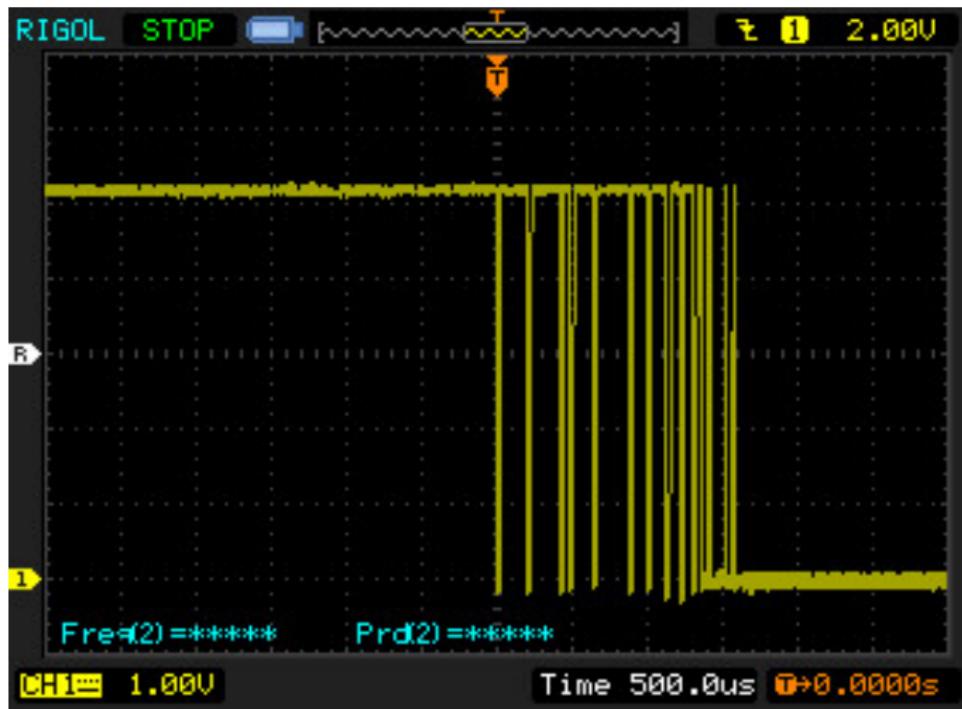
Cartes

Buttons

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Schmitt trigger



Schmitt Trigger

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