- STM32F407VGT6

- Core: ARM®32-bit Cortex®-M4 CPU with FPU

- 168 MHz microcontroller, 1 MB of Flash memory, 192 KB of RAM

- On-board ST-LINK/V2 (SWD connector for programming and debugging)

- Hareker sensörü 3-eksek dijital ivme ölçer

- Audio sensor, Dijital mikrofon

- 4 Kullanıcı LEDi, 2 Kullanıcı butonu

- A, B, C, D, E Portları, her portta 16 pin

Gömülü Sistemler Ders-2

STM32 F4 DISCOVERY

LD3: orange LED is a user LED connected to the I/O PD13.

LD4: green LED is a user LED connected to the I/O PD12

LD5: red LED is a user LED connected to the I/O PD14

LD6: blue LED is a user LED connected to the I/O PD15
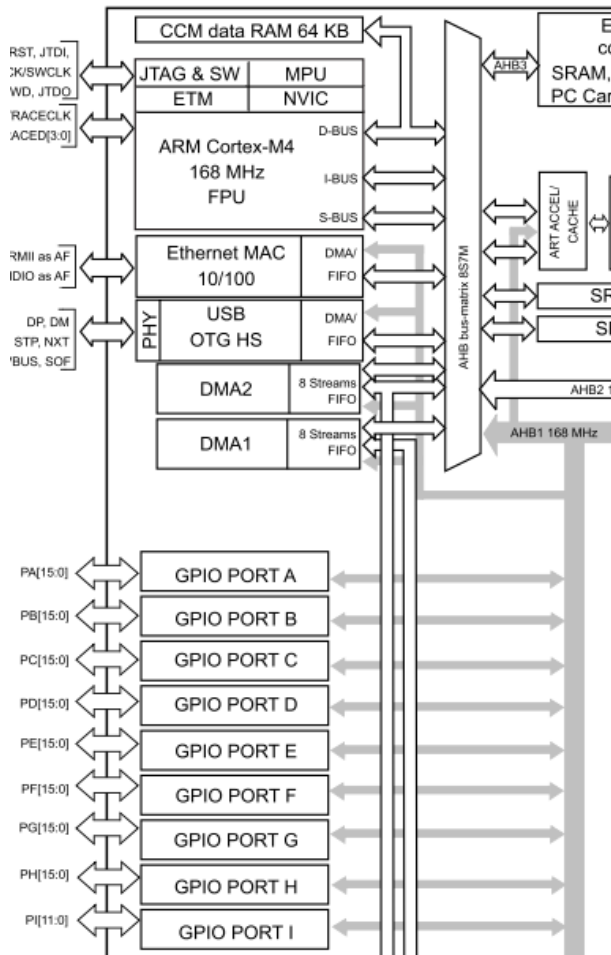
B1: User button is connected to the I/O PA0

Memory map

0x4002 3800 - 0x4002 3BFF	RCC

Reset and Clock Controller (RCC): Sistem ve Çevre birim (peripheral) çevrimlerini (clock) kontrol eder.

RCC AHB1 peripheral clock register (RCC_AHB1ENR)

Address offset: 0x30

10	9	8	7	6	5	4	3	2	1	0
GPIOK EN	GPIOJ EN	GPIOIE N	GPIOH EN	GPIOG EN	GPIOFE N	GPIOEEN	GPIOD EN	GPIOC EN	GPIO BEN	GPIO AEN
rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw

Bit 3 **GPIODEN:** IO port D clock enable
This bit is set and cleared by software.
0: IO port D clock disabled
1: IO port D clock enabled

Bit 2 **GPIOCEN:** IO port C clock enable
This bit is set and cleared by software.
0: IO port C clock disabled
1: IO port C clock enabled

Bit 1 **GPIOBEN:** IO port B clock enable
This bit is set and cleared by software.
0: IO port B clock disabled
1: IO port B clock enabled

Memory map

0x4002 1000 - 0x4002 13FF	GPIOE
0x4002 0C00 - 0x4002 0FFF	GPIOD
0x4002 0800 - 0x4002 0BFF	GPIOC
0x4002 0400 - 0x4002 07FF	GPIOB
0x4002 0000 - 0x4002 03FF	GPIOA

GPIO registers
GPIO port mode register (GPIOx_MODER) (x = A..I/J/K)

Address offset: 0x00

Reset values:

- 0xA800 0000 for port A
- 0x0000 0280 for port B
- 0x0000 0000 for other ports

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
MODER15[1:0]		MODER14[1:0]		MODER13[1:0]		MODER12[1:0]		MODER11[1:0]		MODER10[1:0]		MODER9[1:0]		MODER8[1:0]	
rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
MODER7[1:0]		MODER6[1:0]		MODER5[1:0]		MODER4[1:0]		MODER3[1:0]		MODER2[1:0]		MODER1[1:0]		MODER0[1:0]	
rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw

MODERy[1:0]: Port x configuration bits (y = 0..15)

These bits are written by software to configure the I/O direction mode.

00: Input (reset state)
01: General purpose output mode
10: Alternate function mode
11: Analog mode

GPIO registers

GPIO port input data register (GPIOx_IDR) (x = A..I/J/K)

Address offset: 0x10

Reset value: 0x0000 XXXX (where X means undefined)

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
Reserved															

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
IDR15	IDR14	IDR13	IDR12	IDR11	IDR10	IDR9	IDR8	IDR7	IDR6	IDR5	IDR4	IDR3	IDR2	IDR1	IDR0
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r

GPIO registers

GPIO port output data register (GPIOx_ODR) (x = A..I/J/K)

Address offset: 0x14

Reset value: 0x0000 0000

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
Reserved															

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ODR15	ODR14	ODR13	ODR12	ODR11	ODR10	ODR9	ODR8	ODR7	ODR6	ODR5	ODR4	ODR3	ODR2	ODR1	ODR0
rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw	rw