1. Description

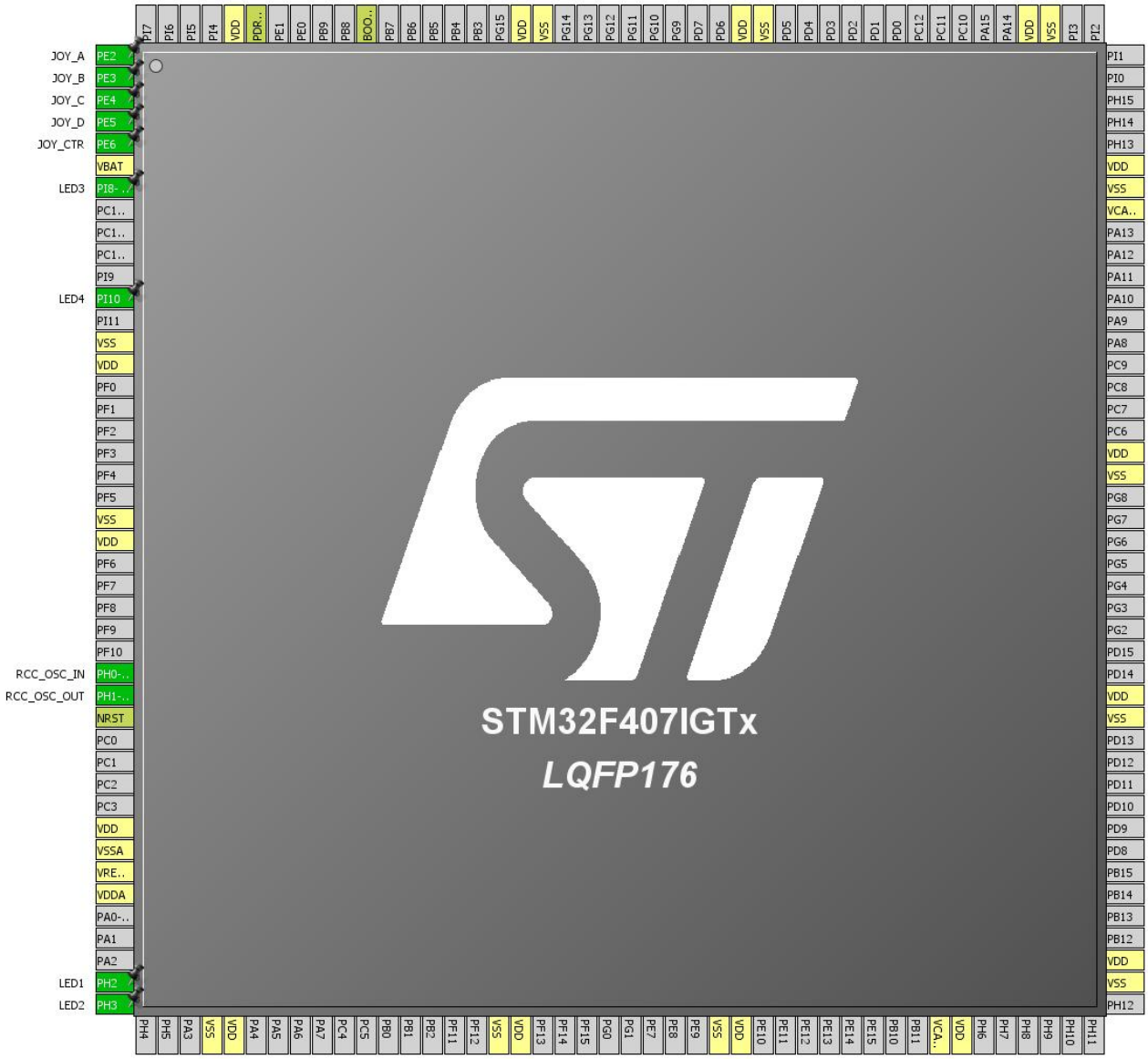
1.1. Project

Project Name	GPIO
Board Name	GPIO
Generated with:	STM32CubeMX 4.19.0
Date	02/18/2017

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407IGTx
MCU Package	LQFP176
MCU Pin number	176

2. Pinout Configuration



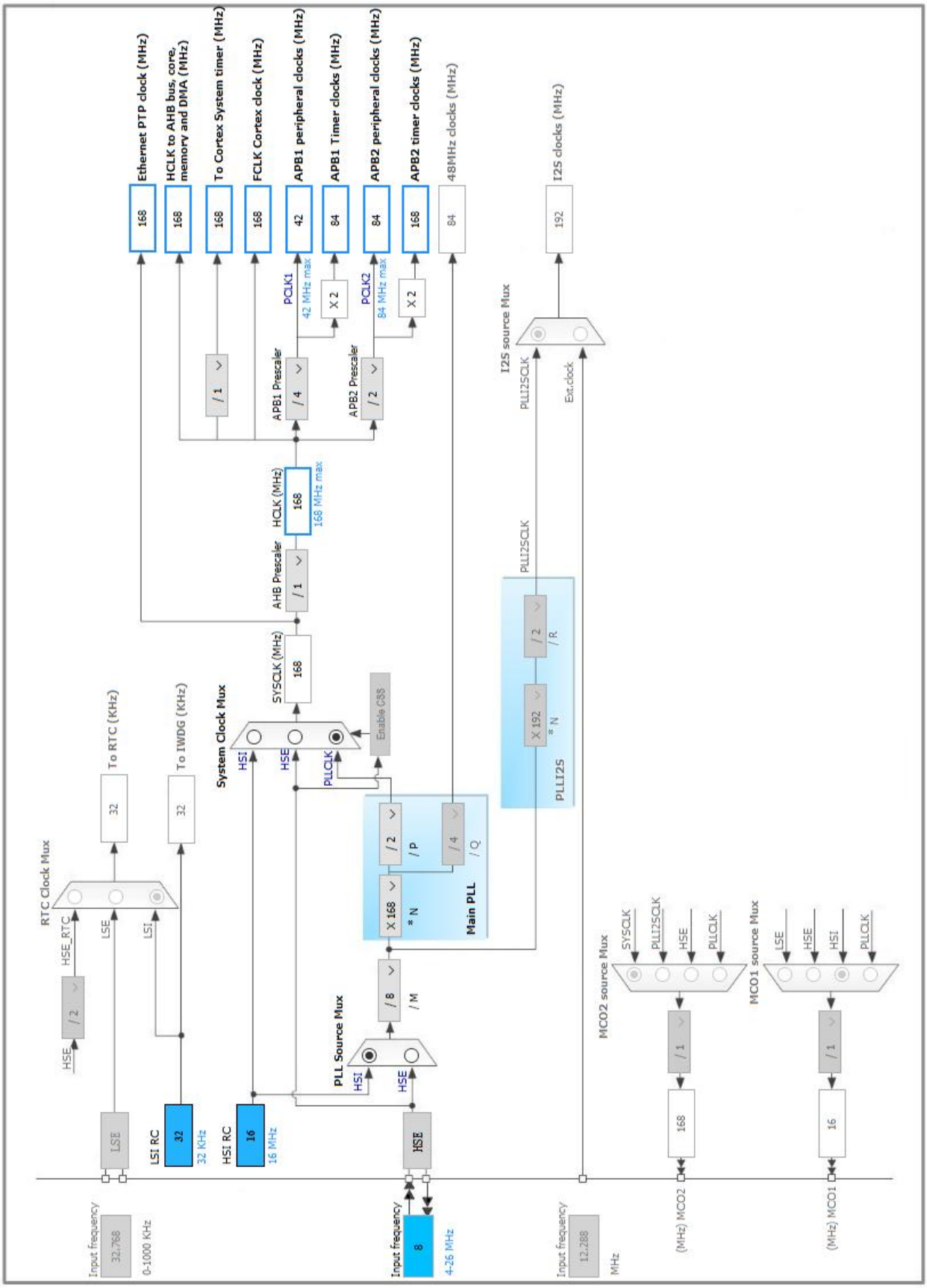
3. Pins Configuration

Pin Number LQFP176	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2 *	I/O	GPIO_Input	JOY_A
2	PE3 *	I/O	GPIO_Input	JOY_B
3	PE4 *	I/O	GPIO_Input	JOY_C
4	PE5 *	I/O	GPIO_Input	JOY_D
5	PE6 *	I/O	GPIO_Input	JOY_CTR
6	VBAT	Power		
7	PI8- ANTI TAMP2 *	I/O	GPIO_Output	LED3
12	PI10 *	I/O	GPIO_Output	LED4
14	VSS	Power		
15	VDD	Power		
22	VSS	Power		
23	VDD	Power		
29	PH0-OSC_IN	I/O	RCC_OSC_IN	
30	PH1-OSC_OUT	I/O	RCC_OSC_OUT	
31	NRST	Reset		
36	VDD	Power		
37	VSSA	Power		
38	VREF+	Power		
39	VDDA	Power		
43	PH2 *	I/O	GPIO_Output	LED1
44	PH3 *	I/O	GPIO_Output	LED2
48	VSS	Power		
49	VDD	Power		
61	VSS	Power		
62	VDD	Power		
71	VSS	Power		
72	VDD	Power		
81	VCAP_1	Power		
82	VDD	Power		
90	VSS	Power		
91	VDD	Power		
102	VSS	Power		
103	VDD	Power		
113	VSS	Power		
114	VDD	Power		
125	VCAP_2	Power		

Pin Number LQFP176	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
126	VSS	Power		
127	VDD	Power		
135	VSS	Power		
136	VDD	Power		
148	VSS	Power		
149	VDD	Power		
158	VSS	Power		
159	VDD	Power		
166	BOOT0	Boot		
171	PDR_ON	Reset		
172	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	5 WS (6 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

Power Parameters:

Power Regulatror Voltage Scale	Power Regulator Voltage Scale 1

5.2. SYS

Timebase Source: SysTick

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
GPIO	PE2	GPIO_Input	Input mode	**Pull-up ***	n/a	JOY_A
	PE3	GPIO_Input	Input mode	**Pull-up ***	n/a	JOY_B
	PE4	GPIO_Input	Input mode	**Pull-up ***	n/a	JOY_C
	PE5	GPIO_Input	Input mode	**Pull-up ***	n/a	JOY_D
	PE6	GPIO_Input	Input mode	**Pull-up ***	n/a	JOY_CTR
	PI8- ANTI TAMP2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED3
	PI10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED4
	PH2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED1
	PH3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED2

6.2. DMA configuration

nothing configured in DMA service

6.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
Non maskable interrupt	true	0	0
Hard fault interrupt	true	0	0
Memory management fault	true	0	0
Pre-fetch fault, memory access fault	true	0	0
Undefined instruction or illegal state	true	0	0
System service call via SWI instruction	true	0	0
Debug monitor	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F407/417
MCU	STM32F407IGTx
Datasheet	022152_Rev7

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	GPIO
Project Folder	E:\EVK407I-Demo-HAL\1.GPIO\GPIO
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F4 V1.14.0

8.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	Copy all used libraries into the project folder
Generate peripheral initialization as a pair of '.c/.h' files	Yes
Backup previously generated files when re-generating	No
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No