1. Description

1.1. Project

Project Name	SinglePendulumDMP
Generated with:	STM32CubeMX 4.6.0
Date	08/07/2015

1.2. MCU

MCU Serie	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407VGTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration
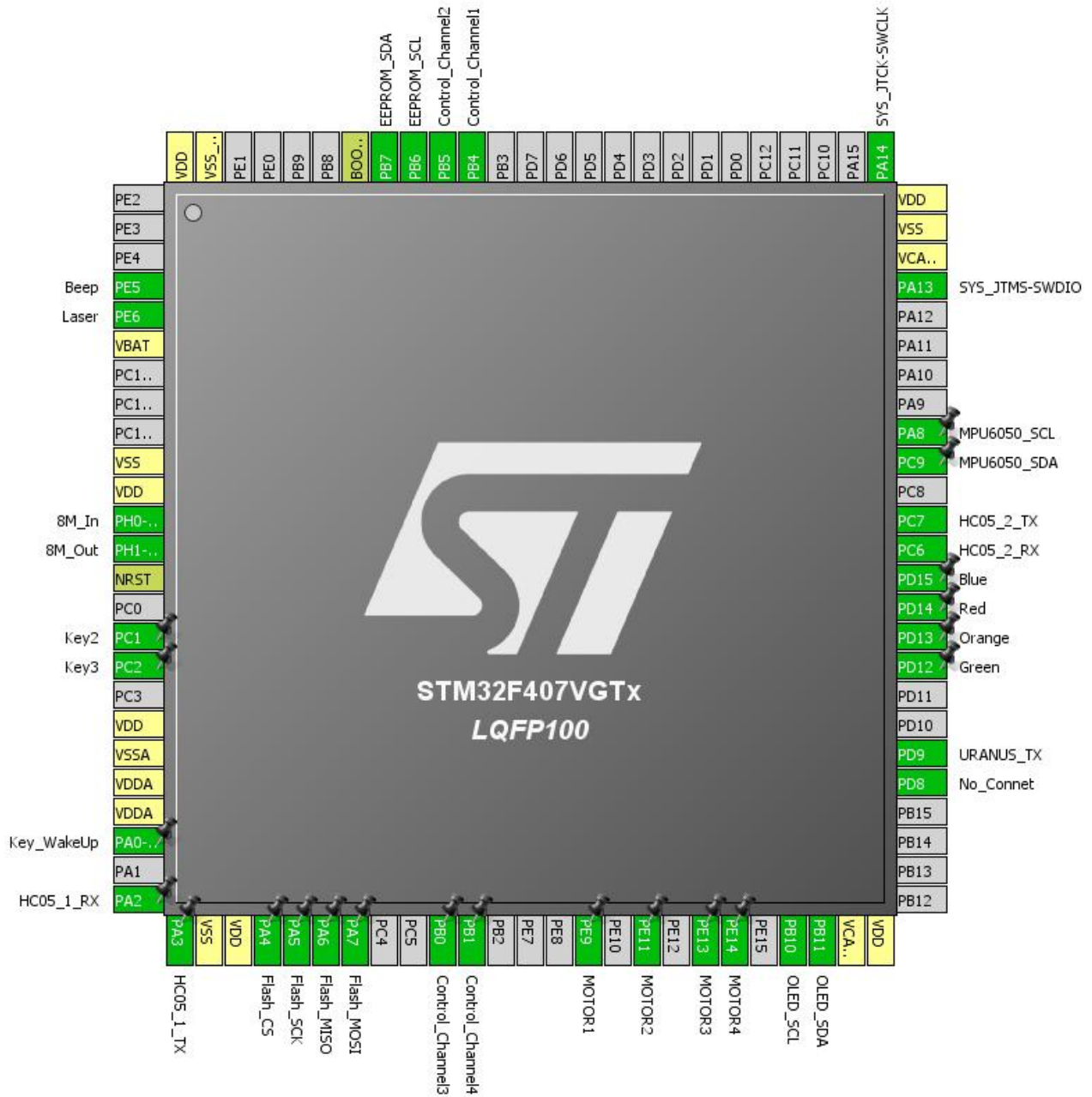
3. IPs and Middlewares Configuration

IP	Mode	Fonction	Pin
I2C1	I2C: I2C	I2C1_SCL	PB6
		I2C1_SDA	PB7
I2C2	I2C: I2C	I2C2_SCL	PB10
		I2C2_SDA	PB11
RCC	High Speed Clock (HSE): Crystal/Ceramic Resonator	RCC_OSC_IN	PH0-OSC_IN
		RCC_OSC_OUT	PH1-OSC_OUT
SPI1	Mode: Full-Duplex Master	SPI1_MISO	PA6
		SPI1_MOSI	PA7
		SPI1_SCK	PA5
SYS	Debug: Serial Wire Debug (SWD)	SYS_JTCK-SWCLK	PA14
		SYS_JTMS-SWDIO	PA13
TIM1	Clock Source : Internal Clock	N/A	N/A
	Channel1: PWM Generation CH1	TIM1_CH1	PE9
	Channel2: PWM Generation CH2	TIM1_CH2	PE11
	Channel3: PWM Generation CH3	TIM1_CH3	PE13
	Channel4: PWM Generation CH4	TIM1_CH4	PE14
TIM3	Clock Source : Internal Clock	N/A	N/A
	Channel1: Input Capture direct mode	TIM3_CH1	PB4
	Channel2: Input Capture direct mode	TIM3_CH2	PB5
	Channel3: Input Capture direct mode	TIM3_CH3	PB0
	Channel4: Input Capture direct mode	TIM3_CH4	PB1
TIM6	Activated	N/A	N/A
TIM7	Activated	N/A	N/A
TIM9	Clock Source	N/A	N/A
	Channel1: PWM Generation CH1	TIM9_CH1	PE5
	Channel2: PWM Generation CH2	TIM9_CH2	PE6
TIM10	Activated	N/A	N/A
TIM11	Activated	N/A	N/A
TIM13	Activated	N/A	N/A
TIM14	Activated	N/A	N/A

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IP	Mode	Fonction	Pin
USART2	Mode: Asynchronous	USART2_RX	PA3
USART2	Mode: Asynchronous	USART2_TX	PA2
USART3	Mode: Asynchronous	USART3_RX	PD9
USART3	Mode: Asynchronous	USART3_TX	PD8
USART6	Mode: Asynchronous	USART6_RX	PC7
USART6	Mode: Asynchronous	USART6_TX	PC6

4. Pins Configuration

Pin	Pos	Function(s)	Label
PE5	4	TIM9_CH1	Beep
PE6	5	TIM9_CH2	Laser
PH0-OSC_IN	12	RCC_OSC_IN	8M_In
PH1-OSC_OUT	13	RCC_OSC_OUT	8M_Out
PC1	16	GPIO_EXTI1	Key2
PC2	17	GPIO_EXTI2	Key3
PA0-WKUP	23	GPIO_EXTI0	Key_WakeUp
PA2	25	USART2_TX	HC05_1_RX
PA3	26	USART2_RX	HC05_1_TX
PA4 *	29	GPIO_Output	Flash_CS
PA5	30	SPI1_SCK	Flash_SCK
PA6	31	SPI1_MISO	Flash_MISO
PA7	32	SPI1_MOSI	Flash_MOSI
PB0	35	TIM3_CH3	Control_Channel3
PB1	36	TIM3_CH4	Control_Channel4
PE9	40	TIM1_CH1	MOTOR1
PE11	42	TIM1_CH2	MOTOR2
PE13	44	TIM1_CH3	MOTOR3
PE14	45	TIM1_CH4	MOTOR4
PB10	47	I2C2_SCL	OLED_SCL
PB11	48	I2C2_SDA	OLED_SDA
PD8	55	USART3_TX	No_Connet
PD9	56	USART3_RX	URANUS_TX
PD12 *	59	GPIO_Output	Green
PD13 *	60	GPIO_Output	Orange
PD14 *	61	GPIO_Output	Red
PD15 *	62	GPIO_Output	Blue
PC6	63	USART6_TX	HC05_2_RX
PC7	64	USART6_RX	HC05_2_TX
PC9 *	66	GPIO_Output	MPU6050_SDA
PA8 *	67	GPIO_Output	MPU6050_SCL
PA13	72	SYS_JTMS-SWDIO	
PA14	76	SYS_JTCK-SWCLK	
PB4	90	TIM3_CH1	Control_Channel1
PB5	91	TIM3_CH2	Control_Channel2
PB6	92	I2C1_SCL	EEPROM_SCL
PB7	93	I2C1_SDA	EEPROM_SDA

* The pin is affected with an I/O function

5. Power Plugin report

5.1. Microcontroller Selection

Serie	STM32F4
Line	STM32F407/417
MCU	STM32F407VGTx
Datasheet	022152_Rev5

5.2. Parameter Selection

Temperature	25
Vdd	3.3

6. Software Project

6.1. Project Settings

Name	Value
Project Name	SinglePendulumDMP
Project Folder	H:\stm32\STM32F407\SinglePendulumDMP
Toolchain / IDE	MDK-ARM 4.73
Firmware Package Name and Version	STM32Cube FW_F4 V1.4.0

6.2. 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	Yes
Delete previously generated files when not re-generated	No
Set all free pins as analog (to optimize the power consumption)	No

6.3. Toolchains Settings

Name	Value
Compiler Optimizations	Balanced Size/Speed