

1. Description

1.1. Project

Project Name	ZHONX_III v2
Generated with:	STM32CubeMX 4.6.0
Date	03/05/2015

1.2. MCU

MCU Serie	STM32F4
MCU Line	STM32F405/415
MCU name	STM32F405RGTx
MCU Package	LQFP64
MCU Pin number	64

3. IPs and Middlewares Configuration

IP	Mode	Fonction	Pin
ADC1	IN4	ADC1_IN4	PA4
	IN7	ADC1_IN7	PA7
	IN14	ADC1_IN14	PC4
	IN15	ADC1_IN15	PC5
	Temperature Sensor Channel	N/A	N/A
	Vbat Channel	N/A	N/A
ADC2	IN5	ADC2_IN5	PA5
	IN6	ADC2_IN6	PA6
	IN10	ADC2_IN10	PC0
	IN11	ADC2_IN11	PC1
ADC3	IN1	ADC3_IN1	PA1
	IN2	ADC3_IN2	PA2
	IN3	ADC3_IN3	PA3
	IN12	ADC3_IN12	PC2
	IN13	ADC3_IN13	PC3
I2C1	I2C: I2C	I2C1_SCL	PB6
		I2C1_SDA	PB7
RCC	High Speed Clock (HSE): Crystal/Ceramic Resonator	RCC_OSC_IN	PH0-OSC_IN
		RCC_OSC_OUT	PH1-OSC_OUT
RTC	Alarm A: Routed to AF1	RTC_AF1	PC13-ANTI_TAMP
SYS	Debug: SWD and Asynchronous Trace	SYS_JTMS-SWDIO	PA13
		SYS_JTCK-SWCLK	PA14
		SYS_JTDO-SWO	PB3
	System Wake-Up	SYS_WKUP	PA0-WKUP
TIM1	Combined Channels: Encoder Mode	TIM1_CH1	PA8
		TIM1_CH2	PA9
TIM2	Clock Source : Internal Clock	N/A	N/A
TIM3	Combined Channels: Encoder Mode	TIM3_CH1	PB4
		TIM3_CH2	PB5
TIM4	Clock Source	N/A	N/A
	Channel4: Output Compare No Output	N/A	N/A
TIM5	Clock Source	N/A	N/A
TIM6	Activated	N/A	N/A
TIM7	Activated	N/A	N/A
	Clock Source : Internal Clock	N/A	N/A

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IP	Mode	Fonction	Pin
TIM8	Channel1: PWM Generation CH1	TIM8_CH1	PC6
	Channel2: PWM Generation CH2	TIM8_CH2	PC7
	Channel3: PWM Generation CH3	TIM8_CH3	PC8
	Channel4: PWM Generation CH4	TIM8_CH4	PC9
TIM11	Activated	N/A	N/A
	Channel1: PWM Generation CH1	TIM11_CH1	PB9
USART3	Mode: Asynchronous	USART3_RX	PC11
		USART3_TX	PC10

4. Pins Configuration

Pin	Pos	Function(s)	Label
PC13-ANTI_TAMP	2	RTC_AF1	PW_LED
PH0-OSC_IN	5	RCC_OSC_IN	
PH1-OSC_OUT	6	RCC_OSC_OUT	
PC0	8	ADC2_IN10	R_DIAG_RX
PC1	9	ADC2_IN11	R_FRONT_RX
PC2	10	ADC3_IN12	LINE_SENSOR_R2
PC3	11	ADC3_IN13	LINE_SENSOR_R1
PA0-WKUP	14	SYS_WKUP	
PA1	15	ADC3_IN1	LINE_SENSOR_F
PA2	16	ADC3_IN2	LINE_SENSOR_L1
PA3	17	ADC3_IN3	LINE_SENSOR_L2
PA4	20	ADC1_IN4	I_BAT
PA5	21	ADC2_IN5	L_DIAG_RX
PA6	22	ADC2_IN6	L_FRONT_RX
PA7	23	ADC1_IN7	GYRO_TEMP
PC4	24	ADC1_IN14	GYRO_RATE
PC5	25	ADC1_IN15	VBAT
PB0 *	26	GPIO_Output	GET_ADC_BAT
PB1 *	27	GPIO_Output	L_FRONT_TX
PB2 *	28	GPIO_Output	EN_IR_LINE
PB10 *	29	GPIO_Output	R_FRONT_TX
PB11 *	30	GPIO_Output	DIAG_TX
PC6	37	TIM8_CH1	L_MOTOR_IN1
PC7	38	TIM8_CH2	L_MOTOR_IN2
PC8	39	TIM8_CH3	R_MOTOR_IN1
PC9	40	TIM8_CH4	R_MOTOR_IN2
PA8	41	TIM1_CH1	L_ENCODER_A
PA9	42	TIM1_CH2	L_ENCODER_B
PA10 *	43	GPIO_Input	MOTORS_FL
PA11 *	44	GPIO_Output	MOTORS_SLEEP
PA12 *	45	GPIO_Input	GPIO_BASE
PA13	46	SYS_JTMS-SWDIO	
PA14	49	SYS_JTCK-SWCLK	
PC10	51	USART3_TX	
PC11	52	USART3_RX	
PC12 *	53	GPIO_Output	WP_EEPROM
PB3	55	SYS_JTDO-SWO	
PB4	56	TIM3_CH1	R_ENCODER_A
PB5	57	TIM3_CH2	R_ENCODER_B

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Pin	Pos	Function(s)	Label
PB6	58	I2C1_SCL	
PB7	59	I2C1_SDA	
PB8 *	61	GPIO_Input	PW_KILL
PB9	62	TIM11_CH1	PIEZZO

* The pin is affected with an I/O function

5. Power Plugin report

5.1. Microcontroller Selection

Serie	STM32F4
Line	STM32F405/415
MCU	STM32F405RGTx
Datasheet	022152_Rev5

5.2. Parameter Selection

Temperature	25
Vdd	3.3

6. Software Project

6.1. Project Settings

Name	Value
Project Name	ZHONX_III v2
Project Folder	/home/zhonx/workspace/ZHONX_III
Toolchain / IDE	TrueSTUDIO 4.3.1
Firmware Package Name and Version	STM32Cube FW_F4 V1.4.0

6.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	Copy only the necessary library files
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)	Yes

6.3. Toolchains Settings

Name	Value
Compiler Optimizations	Balanced Size/Speed