1. Description

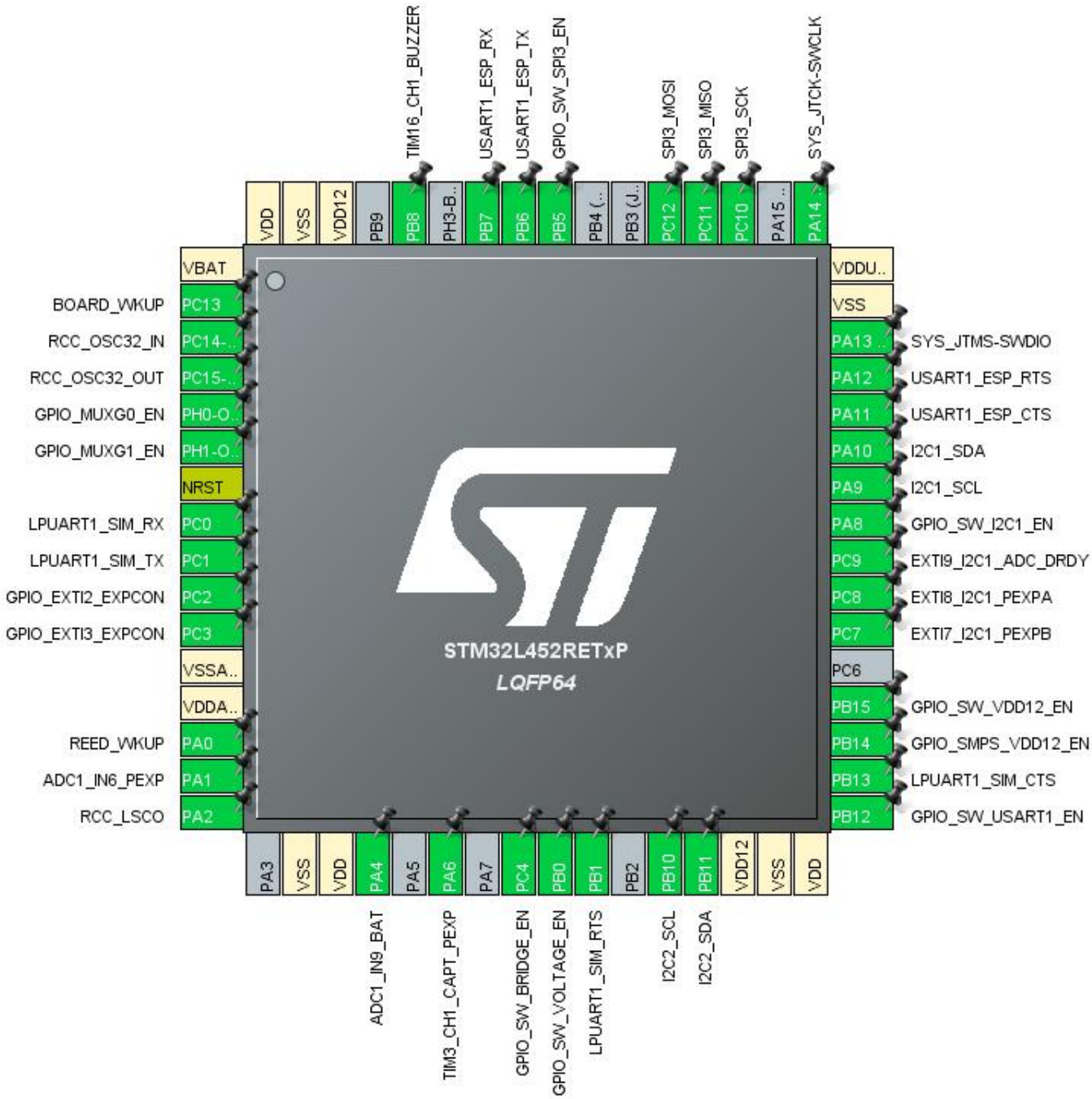
1.1. Project

Project Name	IoT4Bees-Ctrl
Board Name	custom
Generated with:	STM32CubeMX 5.2.0
Date	05/22/2019

1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4x2
MCU name	STM32L452RETxP
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration



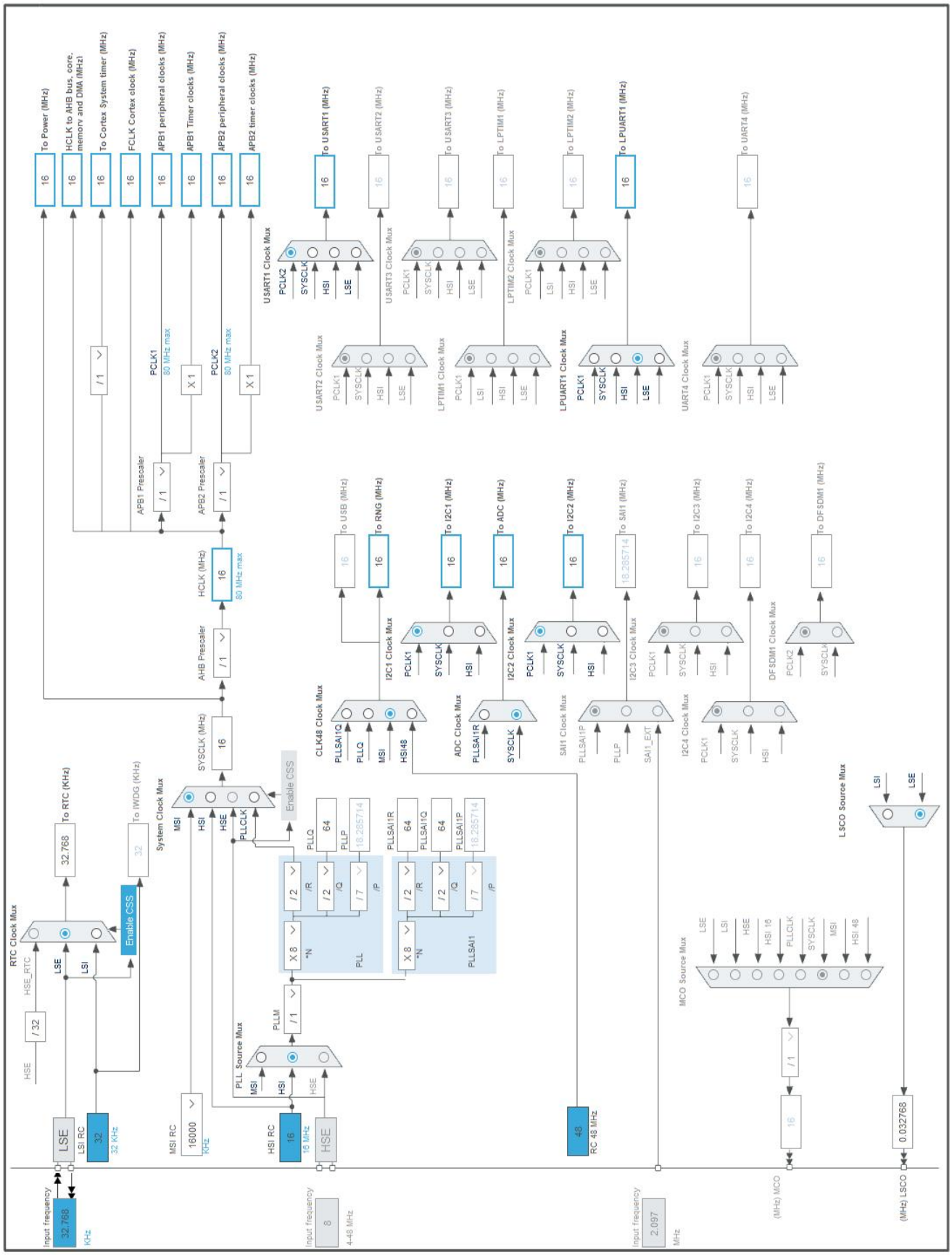
3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13	I/O	SYS_WKUP2	BOARD_WKUP
3	PC14-OSC32_IN (PC14)	I/O	RCC_OSC32_IN	
4	PC15-OSC32_OUT (PC15)	I/O	RCC_OSC32_OUT	
5	PH0-OSC_IN (PH0) *	I/O	GPIO_Output	GPIO_MUXG0_EN
6	PH1-OSC_OUT (PH1) *	I/O	GPIO_Output	GPIO_MUXG1_EN
7	NRST	Reset		
8	PC0	I/O	LPUART1_RX	LPUART1_SIM_RX
9	PC1	I/O	LPUART1_TX	LPUART1_SIM_TX
10	PC2	I/O	GPIO_EXTI2	GPIO_EXTI2_EXPCON
11	PC3	I/O	GPIO_EXTI3	GPIO_EXTI3_EXPCON
12	VSSA/VREF-	Power		
13	VDDA/VREF+	Power		
14	PA0	I/O	SYS_WKUP1	REED_WKUP
15	PA1	I/O	ADC1_IN6	ADC1_IN6_PEXP
16	PA2	I/O	RCC_LSCO	
18	VSS	Power		
19	VDD	Power		
20	PA4	I/O	ADC1_IN9	ADC1_IN9_BAT
22	PA6	I/O	TIM3_CH1	TIM3_CH1_CAPT_PEXP
24	PC4 *	I/O	GPIO_Output	GPIO_SW_BRIDGE_EN
25	PB0 *	I/O	GPIO_Output	GPIO_SW_VOLTAGE_EN
26	PB1	I/O	LPUART1_RTS	LPUART1_SIM_RTS
28	PB10	I/O	I2C2_SCL	
29	PB11	I/O	I2C2_SDA	
30	VDD12	Power		
31	VSS	Power		
32	VDD	Power		
33	PB12 *	I/O	GPIO_Output	GPIO_SW_USART1_EN
34	PB13	I/O	LPUART1_CTS	LPUART1_SIM_CTS
35	PB14 *	I/O	GPIO_Output	GPIO_SMPS_VDD12_EN
36	PB15 *	I/O	GPIO_Output	GPIO_SW_VDD12_EN
38	PC7	I/O	GPIO_EXTI7	EXTI7_I2C1_PEXPB
39	PC8	I/O	GPIO_EXTI8	EXTI8_I2C1_PEXPA
40	PC9	I/O	GPIO_EXTI9	EXTI9_I2C1_ADC_DRDY
41	PA8 *	I/O	GPIO_Output	GPIO_SW_I2C1_EN

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
42	PA9	I/O	I2C1_SCL	
43	PA10	I/O	I2C1_SDA	
44	PA11	I/O	USART1_CTS	USART1_ESP_CTS
45	PA12	I/O	USART1_RTS	USART1_ESP_RTS
46	PA13 (JTMS/SWDIO)	I/O	SYS_JTMS-SWDIO	
47	VSS	Power		
48	VDDUSB	Power		
49	PA14 (JTCK/SWCLK)	I/O	SYS_JTCK-SWCLK	
51	PC10	I/O	SPI3_SCK	
52	PC11	I/O	SPI3_MISO	
53	PC12	I/O	SPI3_MOSI	
56	PB5 *	I/O	GPIO_Output	GPIO_SW_SPI3_EN
57	PB6	I/O	USART1_TX	USART1_ESP_TX
58	PB7	I/O	USART1_RX	USART1_ESP_RX
60	PB8	I/O	TIM16_CH1	TIM16_CH1_BUZZER
62	VDD12	Power		
63	VSS	Power		
64	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. Software Project

5.1. Project Settings

Name	Value
Project Name	IoT4Bees-Ctrl
Project Folder	C:\Users\espero\git\IoT4Bees-Ctrl\SW
Toolchain / IDE	TrueSTUDIO
Firmware Package Name and Version	STM32Cube FW_L4 V1.14.0

5.2. 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. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4x2
MCU	STM32L452RETxP
Datasheet	029968_Rev3

6.2. Parameter Selection

Temperature	25
Vdd	3.0

6.3. Sequence

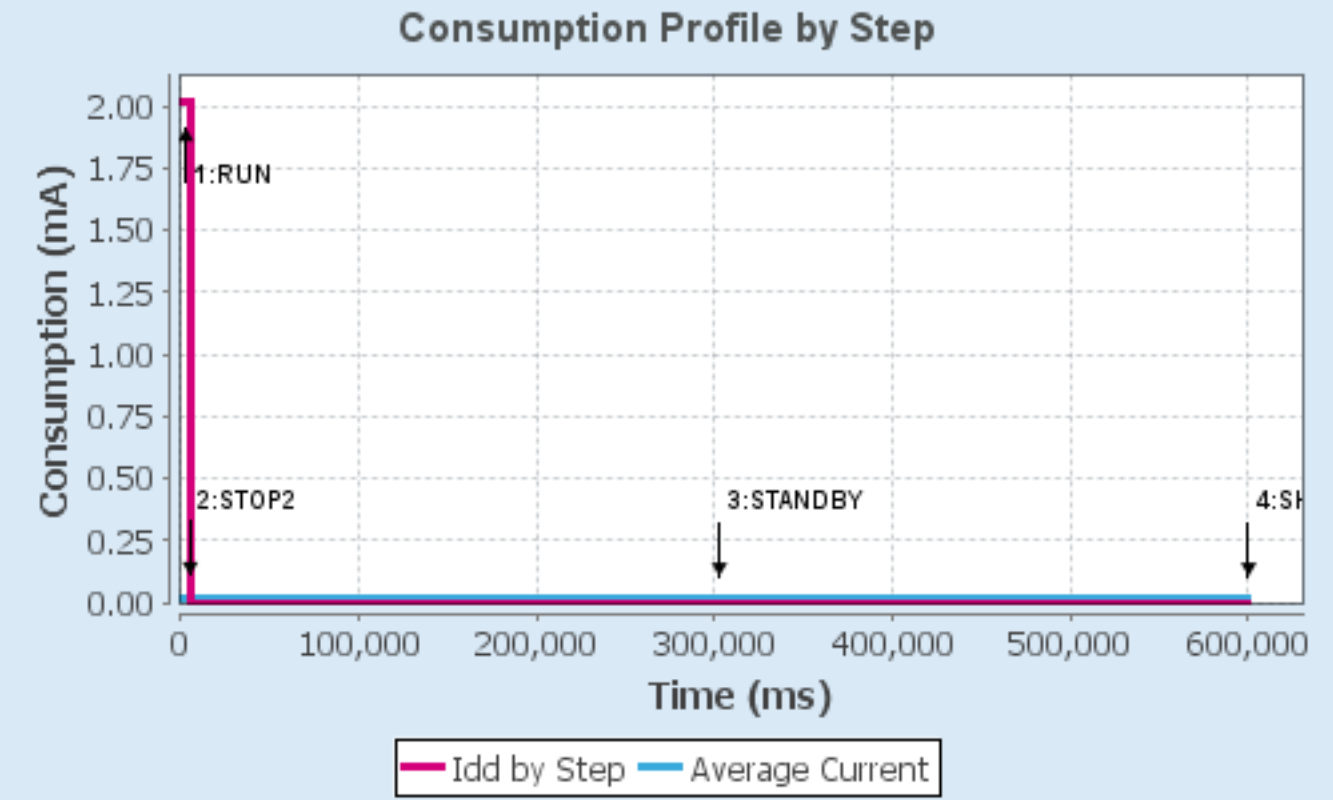
Step	Step1	Step2	Step3	Step4
Mode	RUN	STOP2	STANDBY	SHUTDOWN
Vdd	3.0	3.0	3.0	3.0
Voltage Source	Battery	Battery	Battery	Battery
Range	Range2-Medium	NoRange	NoRange	NoRange
Fetch Type	FLASH	n/a	n/a	n/a
Clock Configuration	HSE BYP ART	LSE BYP RTC	LSE BYP RTC	LSE BYP RTC
Clock Source Frequency	16 MHz	32.768 kHz	32.768 kHz	32.768 kHz
CPU Frequency	16 MHz	0 Hz	0 Hz	0 Hz
Peripherals	ADC1:fs_10_ksps AHB_APB1_Bridge AHB_APB2_Bridge CRC DMA1 DMA2 GPIOA GPIOB GPIOC GPIOH I2C1 LPUART1 RNG RTC SPI3 SYS-VREFBUF/COM	RTC*	BOR* RTC*	RTC*

	P1:COMP_High_Speed-Square_VREFBUF_OFF TIM16 USART1			
Additional Cons.	0 mA	0 mA	0 mA	0 mA
Average Current	2.02 mA	2.8 µA	625 nA	255 nA
Duration	5 s	1 ms	595 s	1 ms
DMIPS	20.0	0.0	0.0	0.0
Ta Max	104.72	105	105	105
Category	In DS Table	In DS Table	In DS Table	In DS Table

6.4. RESULTS

Sequence Time	600 s	Average Current	17.45 µA
Battery Life	0	Average DMIPS	20.0 DMIPS

6.5. Chart



7. IPs and Middleware Configuration

7.1. ADC1

IN6: IN6 Single-ended

IN9: IN9 Single-ended

mode: Vbat Channel

mode: Vrefint Channel

7.1.1. Parameter Settings:

ADC_Settings:

Clock Prescaler	Asynchronous clock mode divided by 1
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Conversion Mode	Enabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	**End of sequence of conversion ***
Overrun behaviour	Overrun data preserved
Low Power Auto Wait	Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions	Enable
Enable Regular Oversampling	Disable
Number Of Conversion	**4 ***
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	**Channel Vrefint ***
Sampling Time	**12.5 Cycles ***
Offset Number	No offset
Rank	**2 ***
Channel	**Channel Vbat ***
Sampling Time	**12.5 Cycles ***
Offset Number	No offset
Rank	**3 ***
Channel	**Channel 9 ***
Sampling Time	**12.5 Cycles ***
Offset Number	No offset
Rank	**4 ***

Channel	Channel 6
Sampling Time	**12.5 Cycles ***
Offset Number	No offset

ADC_Injected_ConversionMode:

Enable Injected Conversions	Disable

Analog Watchdog 1:

Enable Analog WatchDog1 Mode	false

Analog Watchdog 2:

Enable Analog WatchDog2 Mode	false

Analog Watchdog 3:

Enable Analog WatchDog3 Mode	false

7.2. CRC

mode: Activated

7.2.1. Parameter Settings:

Basic Parameters:

Default Polynomial State	Enable
Default Init Value State	Enable

Advanced Parameters:

Input Data Inversion Mode	None
Output Data Inversion Mode	Disable
Input Data Format	**Words ***

7.3. I2C1

I2C: I2C

7.3.1. Parameter Settings:

Timing configuration:

I2C Speed Mode	**Fast Mode ***
I2C Speed Frequency (KHz)	400
Rise Time (ns)	**150 ***
Fall Time (ns)	**120 ***
Coefficient of Digital Filter	**2 ***
Analog Filter	Enabled
Timing	

	0x00300414 *

Slave Features:

Clock No Stretch Mode	Disabled
General Call Address Detection	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled
Primary slave address	0

7.4. I2C2

I2C: I2C

7.4.1. Parameter Settings:

Timing configuration:

I2C Speed Mode	**Fast Mode ***
I2C Speed Frequency (KHz)	400
Rise Time (ns)	**150 ***
Fall Time (ns)	**120 ***
Coefficient of Digital Filter	**2 ***
Analog Filter	Enabled
Timing	**0x00300414 ***

Slave Features:

Clock No Stretch Mode	Disabled
General Call Address Detection	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled
Primary slave address	0

7.5. LPUART1

Mode: Asynchronous

Hardware Flow Control (RS232): CTS/RTS

7.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	**115200 ***
Word Length	**8 Bits (including Parity) ***
Parity	None

Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Single Sample	Disable

Advanced Features:

Auto Baudrate Mode	Disable
TX Pin Active Level Inversion	Disable
RX Pin Active Level Inversion	Disable
Data Inversion	Disable
TX and RX pins Swapping	Disable
Overrun	Enable
DMA on RX Error	Enable
MSB First	Disable

7.6. RCC

Low Speed Clock (LSE) : Crystal/Ceramic Resonator
mode: LSCO Clock Output
7.6.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Disabled
Data Cache	Enabled
Flash Latency(WS)	2 WS (3 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
MSI Calibration Value	0
MSI Auto Calibration	Enabled
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000
LSE Drive Capability	LSE oscillator low drive capability

Power Parameters:

Power Regulator Voltage Scale	**Power Regulator Voltage Scale 2 ***

7.7. RNG

mode: Activated

7.8. RTC

mode: Activate Clock Source
WakeUp: Internal WakeUp

7.8.1. Parameter Settings:

General:

Hour Format	Hourformat 24
Asynchronous Predivider value	127
Synchronous Predivider value	255

Wake UP:

Wake Up Clock	**1 Hz ***
Wake Up Counter	**600 ***

7.9. SPI3

Mode: Full-Duplex Master

7.9.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	**8 Bits ***
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**16 ***
Baud Rate	**1000.0 KBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Enabled
NSS Signal Type	Software

7.10. SYS

Debug: Serial Wire
mode: System Wake-Up 1
mode: System Wake-Up 2
Power Voltage Detector In: Power Voltage Detector In (Internal analog voltage)
Timebase Source: TIM2
7.10.1. Parameter Settings:

Programmable_Voltage_Detector_Settings:

PVD detection Level	PWR PVD LEVEL 0 (2.0 V)
PWR PVD Mode	basic mode is used

7.11. TIM3

mode: Clock Source
Channel1: Input Capture direct mode
7.11.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)

Input Capture Channel 1:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

7.12. TIM16

mode: Activated
Channel1: PWM Generation CH1
7.12.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0
auto-reload preload	Disable

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High
BRK Sources Configuration	
- Digital Input	Disable
- COMP1	Disable
- COMP2	Disable
- DFSDM	Disable

Break And Dead Time management - Output Configuration:

Automatic Output State	Disable
Off State Selection for Run Mode (OSSR)	Disable
Off State Selection for Idle Mode (OSSI)	Disable
Lock Configuration	Off

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	0
Fast Mode	Disable
CH Polarity	High
CH Idle State	Reset

7.13. USART1

Mode: Asynchronous

Hardware Flow Control (RS232): CTS/RTS

7.13.1. Parameter Settings:

Basic Parameters:

Baud Rate	115200
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples
Single Sample	Disable

Advanced Features:

Auto Baudrate	Disable
TX Pin Active Level Inversion	Disable
RX Pin Active Level Inversion	Disable
Data Inversion	Disable
TX and RX Pins Swapping	Disable
Overrun	Enable
DMA on RX Error	Enable
MSB First	Disable

7.14. FREERTOS

Interface: CMSIS_V1

7.14.1. Config parameters:

API:

FreeRTOS API	CMSIS v1

Versions:

FreeRTOS version	10.0.1
CMSIS-RTOS version	1.02

Kernel settings:

USE_PREEMPTION	Enabled
CPU_CLOCK_HZ	SystemCoreClock
TICK_RATE_HZ	1000
MAX_PRIORITIES	7
MINIMAL_STACK_SIZE	**256 ***
MAX_TASK_NAME_LEN	**32 ***
USE_16_BIT_TICKS	Disabled
IDLE_SHOULD_YIELD	Enabled
USE_MUTEXES	Enabled
USE_RECURSIVE_MUTEXES	Disabled
USE_COUNTING_SEMAPHORES	**Enabled ***
QUEUE_REGISTRY_SIZE	**32 ***
USE_APPLICATION_TASK_TAG	**Enabled ***
ENABLE_BACKWARD_COMPATIBILITY	**Disabled ***
USE_PORT_OPTIMISED_TASK_SELECTION	Enabled
USE_TICKLESS_IDLE	Disabled

USE_TASK_NOTIFICATIONS	Enabled
RECORD_STACK_HIGH_ADDRESS	**Enabled ***

Memory management settings:

Memory Allocation	Dynamic
TOTAL_HEAP_SIZE	**32768 ***
Memory Management scheme	heap_4

Hook function related definitions:

USE_IDLE_HOOK	**Enabled ***
USE_TICK_HOOK	Disabled
USE_MALLOC_FAILED_HOOK	**Enabled ***
USE_DAEMON_TASK_STARTUP_HOOK	Disabled
CHECK_FOR_STACK_OVERFLOW	**Option1 ***

Run time and task stats gathering related definitions:

GENERATE_RUN_TIME_STATS	**Enabled ***
USE_TRACE_FACILITY	**Enabled ***
USE_STATS_FORMATTING_FUNCTIONS	**Enabled ***

Co-routine related definitions:

USE_CO_ROUTINES	Disabled
MAX_CO_ROUTINE_PRIORITIES	2

Software timer definitions:

USE_TIMERS	Enabled
TIMER_TASK_PRIORITY	2
TIMER_QUEUE_LENGTH	**4 ***
TIMER_TASK_STACK_DEPTH	512

Interrupt nesting behaviour configuration:

LIBRARY_LOWEST_INTERRUPT_PRIORITY	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	5

7.14.2. Include parameters:

Include definitions:

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled
vTaskCleanUpResources	**Enabled ***
vTaskSuspend	Enabled
vTaskDelayUntil	**Enabled ***
vTaskDelay	Enabled
xTaskGetSchedulerState	Enabled

xTaskResumeFromISR	Enabled
xQueueGetMutexHolder	**Enabled ***
xSemaphoreGetMutexHolder	**Enabled ***
pcTaskGetTaskName	**Enabled ***
uxTaskGetStackHighWaterMark	**Enabled ***
xTaskGetCurrentTaskHandle	**Enabled ***
eTaskGetState	**Enabled ***
xEventGroupSetBitFromISR	**Enabled ***
xTimerPendFunctionCall	**Enabled ***
xTaskAbortDelay	**Enabled ***
xTaskGetHandle	**Enabled ***

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA1	ADC1_IN6	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	ADC1_IN6_PEXP
	PA4	ADC1_IN9	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	ADC1_IN9_BAT
I2C1	PA9	I2C1_SCL	Alternate Function Open Drain	**No pull-up and no pull-down ***	**High ***	
	PA10	I2C1_SDA	Alternate Function Open Drain	**No pull-up and no pull-down ***	**High ***	
I2C2	PB10	I2C2_SCL	Alternate Function Open Drain	Pull-up	**High ***	
	PB11	I2C2_SDA	Alternate Function Open Drain	Pull-up	**High ***	
LPUART1	PC0	LPUART1_RX	Alternate Function Push Pull	**Pull-up ***	**Medium ***	LPUART1_SIM_RX
	PC1	LPUART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Medium ***	LPUART1_SIM_TX
	PB1	LPUART1_RTS	Alternate Function Push Pull	No pull-up and no pull-down	**Medium ***	LPUART1_SIM_RTS
	PB13	LPUART1_CTS	Alternate Function Push Pull	**Pull-down ***	**Medium ***	LPUART1_SIM_CTS
RCC	PC14-OSC32_IN (PC14)	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT (PC15)	RCC_OSC32_OUT	n/a	n/a	n/a	
	PA2	RCC_LSCO	Analog mode	No pull-up and no pull-down	n/a	
SPI3	PC10	SPI3_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PC11	SPI3_MISO	Alternate Function Push Pull	**Pull-down ***	**Very High ***	
	PC12	SPI3_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
SYS	PC13	SYS_WKUP2	n/a	n/a	n/a	BOARD_WKUP
	PA0	SYS_WKUP1	n/a	n/a	n/a	REED_WKUP
	PA13 (JTMS/SWDIO)	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14 (JTCK/SWC	SYS_JTCK-SWCLK	n/a	n/a	n/a	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	LK)					
TIM3	PA6	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	TIM3_CH1_CAPT_PEXP
TIM16	PB8	TIM16_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	TIM16_CH1_BUZZER
USART1	PA11	USART1_CTS	Alternate Function Push Pull	**Pull-down ***	**Medium ***	USART1_ESP_CTS
	PA12	USART1_RTS	Alternate Function Push Pull	No pull-up and no pull-down	**Medium ***	USART1_ESP_RTS
	PB6	USART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Medium ***	USART1_ESP_TX
	PB7	USART1_RX	Alternate Function Push Pull	**Pull-up ***	**Medium ***	USART1_ESP_RX
GPIO	PH0-OSC_IN (PH0)	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_MUXG0_EN
	PH1-OSC_OUT (PH1)	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_MUXG1_EN
	PC2	GPIO_EXTI2	External Interrupt Mode with Rising edge trigger detection	**Pull-down ***	n/a	GPIO_EXTI2_EXPCON
	PC3	GPIO_EXTI3	External Interrupt Mode with Rising edge trigger detection	**Pull-down ***	n/a	GPIO_EXTI3_EXPCON
	PC4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_SW_BRIDGE_EN
	PB0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_SW_VOLTAGE_EN
	PB12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_SW_USART1_EN
	PB14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_SMPS_VDD12_EN
	PB15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_SW_VDD12_EN
	PC7	GPIO_EXTI7	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	n/a	EXTI7_I2C1_PEXPB
	PC8	GPIO_EXTI8	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	n/a	EXTI8_I2C1_PEXPA
	PC9	GPIO_EXTI9	External Interrupt Mode with Rising edge trigger detection	**Pull-down ***	n/a	EXTI9_I2C1_ADC_DRDY
	PA8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_SW_I2C1_EN
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPIO_SW_SPI3_EN

8.2. DMA configuration

DMA request	Stream	Direction	Priority
I2C1_TX	DMA1_Channel6	Memory To Peripheral	Low
I2C1_RX	DMA1_Channel7	Peripheral To Memory	Low
SPI3_TX	DMA2_Channel2	Memory To Peripheral	Low
SPI3_RX	DMA2_Channel1	Peripheral To Memory	Low
LPUART_TX	DMA2_Channel6	Memory To Peripheral	Low
LPUART_RX	DMA2_Channel7	Peripheral To Memory	Low
ADC1	DMA1_Channel1	Peripheral To Memory	Low
I2C2_TX	DMA1_Channel4	Memory To Peripheral	Low
I2C2_RX	DMA1_Channel5	Peripheral To Memory	Low

I2C1_TX: DMA1_Channel6 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

I2C1_RX: DMA1_Channel7 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

SPI3_TX: DMA2_Channel2 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

SPI3_RX: DMA2_Channel1 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

LPUART_TX: DMA2_Channel6 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

LPUART_RX: DMA2_Channel7 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

ADC1: DMA1_Channel1 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Half Word
Memory Data Width:	Half Word

I2C2_TX: DMA1_Channel4 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

I2C2_RX: DMA1_Channel5 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

8.3. 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
Prefetch 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	15	0
System tick timer	true	15	0
RTC wake-up interrupt through EXTI line 20	true	5	0
EXTI line2 interrupt	true	5	0
EXTI line3 interrupt	true	5	0
DMA1 channel1 global interrupt	true	5	0
DMA1 channel4 global interrupt	true	5	0
DMA1 channel5 global interrupt	true	5	0
DMA1 channel6 global interrupt	true	5	0
DMA1 channel7 global interrupt	true	5	0
ADC1 global interrupt	true	5	0
EXTI line[9:5] interrupts	true	5	0
TIM2 global interrupt	true	0	0
I2C1 event interrupt	true	5	0
I2C1 error interrupt	true	5	0
I2C2 event interrupt	true	5	0
I2C2 error interrupt	true	5	0
USART1 global interrupt	true	5	0
SPI3 global interrupt	true	5	0
DMA2 channel1 global interrupt	true	5	0
DMA2 channel2 global interrupt	true	5	0
DMA2 channel6 global interrupt	true	5	0
DMA2 channel7 global interrupt	true	5	0
LPUART1 global interrupt	true	5	0
PVD/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/35/36/37/38	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM1 update interrupt and TIM16 global interrupt	unused		
TIM3 global interrupt	unused		
RNG global interrupt	unused		

Interrupt Table	Enable	Preenmption Priority	SubPriority
FPU global interrupt	unused		

*** User modified value**

9. Software Pack Report