1. Description

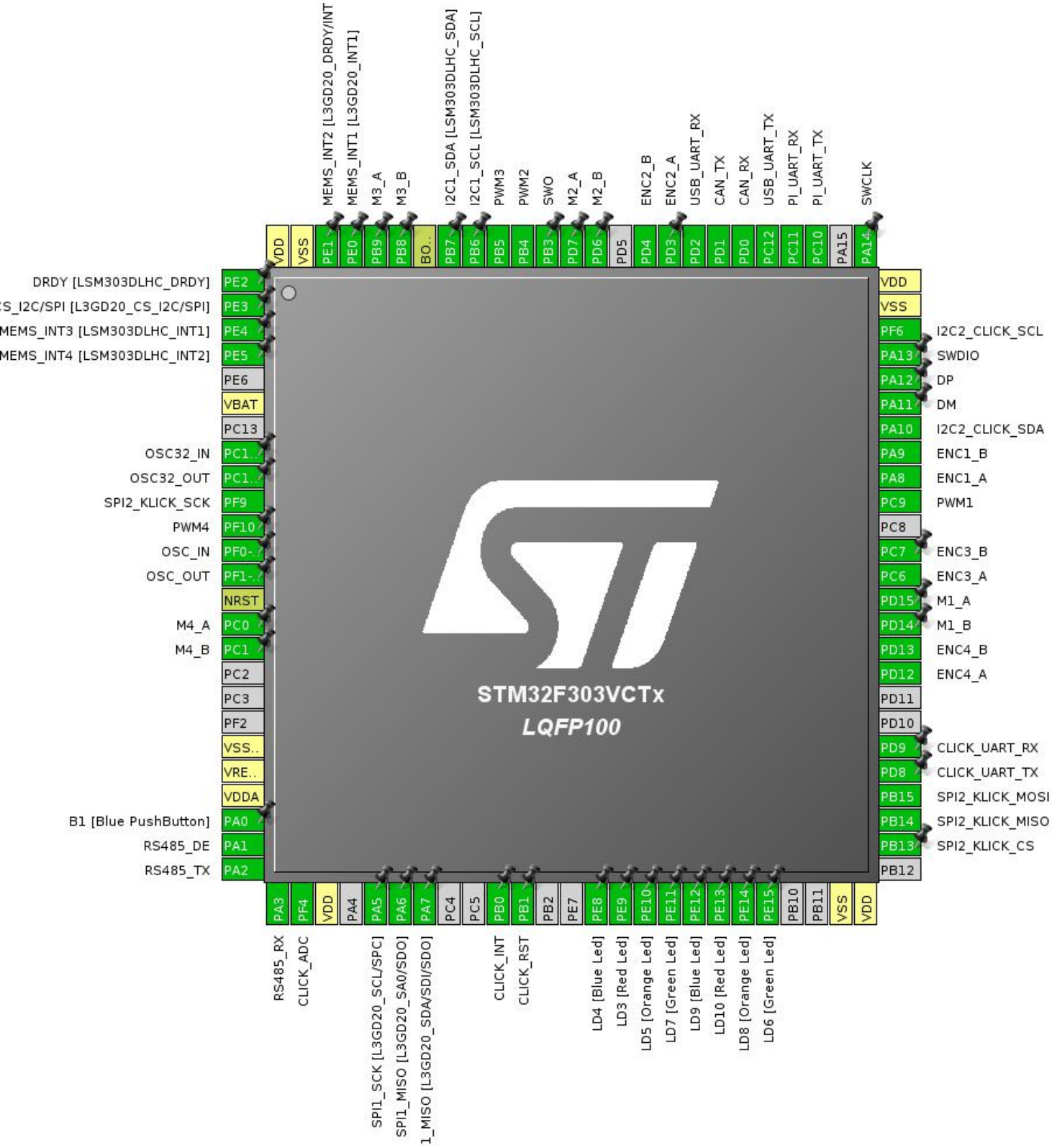
1.1. Project

Project Name	STM32_DAE_BOT
Board Name	STM32F3DISCOVERY
Generated with:	STM32CubeMX 4.22.0
Date	08/17/2017

1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F303
MCU name	STM32F303VCTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration



3. Pins Configuration

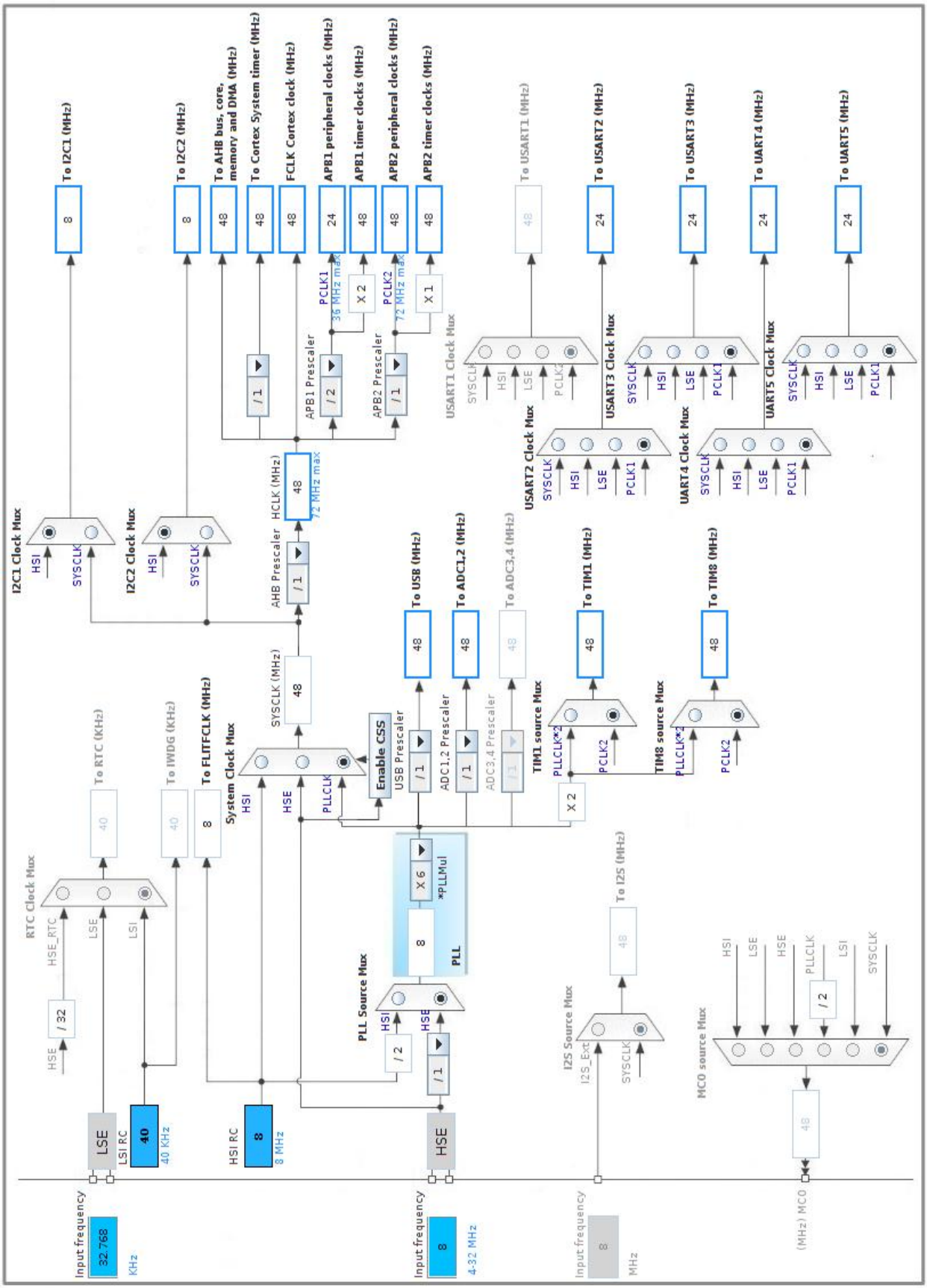
Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2	I/O	GPIO_EXTI2	DRDY [LSM303DLHC_DRDY]
2	PE3 *	I/O	GPIO_Output	CS_I2C/SPI [L3GD20_CS_I2C/SPI]
3	PE4	I/O	GPIO_EXTI4	MEMS_INT3 [LSM303DLHC_INT1]
4	PE5	I/O	GPIO_EXTI5	MEMS_INT4 [LSM303DLHC_INT2]
6	VBAT	Power		
8	PC14-OSC32_IN	I/O	RCC_OSC32_IN	OSC32_IN
9	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	OSC32_OUT
10	PF9	I/O	SPI2_SCK	SPI2_KLICK_SCK
11	PF10	I/O	TIM15_CH2	PWM4
12	PF0-OSC_IN	I/O	RCC_OSC_IN	OSC_IN
13	PF1-OSC_OUT	I/O	RCC_OSC_OUT	OSC_OUT
14	NRST	Reset		
15	PC0 *	I/O	GPIO_Output	M4_A
16	PC1 *	I/O	GPIO_Output	M4_B
20	VSSA/VREF-	Power		
21	VREF+	Power		
22	VDDA	Power		
23	PA0 *	I/O	GPIO_Input	B1 [Blue PushButton]
24	PA1	I/O	USART2_DE	RS485_DE
25	PA2	I/O	USART2_TX	RS485_TX
26	PA3	I/O	USART2_RX	RS485_RX
27	PF4	I/O	ADC1_IN5	CLICK_ADC
28	VDD	Power		
30	PA5	I/O	SPI1_SCK	SPI1_SCK [L3GD20_SCL/SPC]
31	PA6	I/O	SPI1_MISO	SPI1_MISO [L3GD20_SA0/SDO]
32	PA7	I/O	SPI1_MOSI	SPI1_MISO [L3GD20_SDA/SDI/SDO]
35	PB0 *	I/O	GPIO_Input	CLICK_INT
36	PB1 *	I/O	GPIO_Output	CLICK_RST
39	PE8 *	I/O	GPIO_Output	LD4 [Blue Led]
40	PE9 *	I/O	GPIO_Output	LD3 [Red Led]

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
41	PE10 *	I/O	GPIO_Output	LD5 [Orange Led]
42	PE11 *	I/O	GPIO_Output	LD7 [Green Led]
43	PE12 *	I/O	GPIO_Output	LD9 [Blue Led]
44	PE13 *	I/O	GPIO_Output	LD10 [Red Led]
45	PE14 *	I/O	GPIO_Output	LD8 [Orange Led]
46	PE15 *	I/O	GPIO_Output	LD6 [Green Led]
49	VSS	Power		
50	VDD	Power		
52	PB13 *	I/O	GPIO_Output	SPI2_KLICK_CS
53	PB14	I/O	SPI2_MISO	SPI2_KLICK_MISO
54	PB15	I/O	SPI2_MOSI	SPI2_KLICK_MOSI
55	PD8	I/O	USART3_TX	CLICK_UART_TX
56	PD9	I/O	USART3_RX	CLICK_UART_RX
59	PD12	I/O	TIM4_CH1	ENC4_A
60	PD13	I/O	TIM4_CH2	ENC4_B
61	PD14 *	I/O	GPIO_Output	M1_B
62	PD15 *	I/O	GPIO_Output	M1_A
63	PC6	I/O	TIM3_CH1	ENC3_A
64	PC7	I/O	TIM3_CH2	ENC3_B
66	PC9	I/O	TIM8_CH4	PWM1
67	PA8	I/O	TIM1_CH1	ENC1_A
68	PA9	I/O	TIM1_CH2	ENC1_B
69	PA10	I/O	I2C2_SDA	I2C2_CLICK_SDA
70	PA11	I/O	USB_DM	DM
71	PA12	I/O	USB_DP	DP
72	PA13	I/O	SYS_JTMS-SWDIO	SWDIO
73	PF6	I/O	I2C2_SCL	I2C2_CLICK_SCL
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	SWCLK
78	PC10	I/O	UART4_TX	PI_UART_TX
79	PC11	I/O	UART4_RX	PI_UART_RX
80	PC12	I/O	UART5_TX	USB_UART_TX
81	PD0	I/O	CAN_RX	
82	PD1	I/O	CAN_TX	
83	PD2	I/O	UART5_RX	USB_UART_RX
84	PD3	I/O	TIM2_CH1	ENC2_A
85	PD4	I/O	TIM2_CH2	ENC2_B
87	PD6 *	I/O	GPIO_Output	M2_B

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
88	PD7 *	I/O	GPIO_Output	M2_A
89	PB3	I/O	SYS_JTDO-TRACESWO	SWO
90	PB4	I/O	TIM16_CH1	PWM2
91	PB5	I/O	TIM17_CH1	PWM3
92	PB6	I/O	I2C1_SCL	I2C1_SCL [LSM303DLHC_SCL]
93	PB7	I/O	I2C1_SDA	I2C1_SDA [LSM303DLHC_SDA]
94	BOOT0	Boot		
95	PB8 *	I/O	GPIO_Output	M3_B
96	PB9 *	I/O	GPIO_Output	M3_A
97	PE0	I/O	GPIO_EXTI0	MEMS_INT1 [L3GD20_INT1]
98	PE1	I/O	GPIO_EXTI1	MEMS_INT2 [L3GD20_DRDY/INT2]
99	VSS	Power		
100	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. ADC1

IN5: IN5 Single-ended

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	ADC Asynchronous clock mode
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Conversion Mode	Disabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	End of single conversion
Overrun behaviour	Overrun data overwritten
Low Power Auto Wait	Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions	Enable
Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	Channel 5
Sampling Time	1.5 Cycles
Offset Number	No offset
Offset	0

ADC_Injected_ConversionMode:

Enable Injected Conversions	Enable
Number Of Conversions	0

Analog Watchdog 1:

Enable Analog WatchDog1 Mode	false

Analog Watchdog 2:

Enable Analog WatchDog2 Mode	false

Analog Watchdog 3:

Enable Analog WatchDog3 Mode	false

5.2. CAN

mode: Mode

5.2.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	16
Time Quantum	**666.6666666666666 ***
Time Quanta in Bit Segment 1	1 Time
Time Quanta in Bit Segment 2	1 Time
Time for one Bit	**2000 ***
ReSynchronization Jump Width	1 Time

Basic Parameters:

Time Triggered Communication Mode	Disable
Automatic Bus-Off Management	Disable
Automatic Wake-Up Mode	Disable
No-Automatic Retransmission	Disable
Receive Fifo Locked Mode	Disable
Transmit Fifo Priority	Disable

Advanced Parameters:

Operating Mode	Normal

5.3. I2C1

I2C: I2C

5.3.1. Parameter Settings:

Timing configuration:

I2C Speed Mode	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	0
Fall Time (ns)	0
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	0x2000090E

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

5.4. I2C2

I2C: I2C

5.4.1. Parameter Settings:

Timing configuration:

I2C Speed Mode	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	0
Fall Time (ns)	0
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	0x2000090E

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

5.5. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.5.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

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

5.6. SPI1

Mode: Full-Duplex Master

5.6.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**4 ***
Baud Rate	**12.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Enabled
NSS Signal Type	Software

5.7. SPI2

Mode: Full-Duplex Master

5.7.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**12.0 MBits/s ***

Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Enabled
NSS Signal Type	Software

5.8. SYS

Debug: Trace Asynchronous Sw

Timebase Source: TIM7

5.9. TIM1

Combined Channels: Encoder Mode

5.9.1. 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 - 16 bits value)	0
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)
Trigger Event Selection TRGO2	Reset (UG bit from TIMx_EGR)

Encoder:

Encoder Mode	Encoder Mode TI1
____ Parameters for Channel 1 ____	
Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0
____ Parameters for Channel 2 ____	
Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0

5.10. TIM2

Combined Channels: Encoder Mode

5.10.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value)	0
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)

Encoder:

Encoder Mode	Encoder Mode TI1
____ Parameters for Channel 1 ____	
Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0
____ Parameters for Channel 2 ____	
Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0

5.11. TIM3

Combined Channels: Encoder Mode

5.11.1. 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	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)

Encoder:

Encoder Mode	Encoder Mode TI1
____ Parameters for Channel 1 ____	
Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0
____ Parameters for Channel 2 ____	
Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0

5.12. TIM4

Combined Channels: Encoder Mode

5.12.1. 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
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)

Encoder:

Encoder Mode	Encoder Mode TI1
____ Parameters for Channel 1 ____	
Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0

____ Parameters for Channel 2 ____

Polarity	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter	0

5.13. TIM8

Channel4: PWM Generation CH4

5.13.1. 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 - 16 bits value)	0
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)
Trigger Event Selection TRGO2	Reset (UG bit from TIMx_EGR)

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High
BRK Filter (4 bits value)	0

Break And Dead Time management - BRK2 Configuration:

BRK2 State	Disable
BRK2 Polarity	High
BRK2 Filter (4 bits value)	0

Break And Dead Time management - Output Configuration:

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

Clear Input:

Clear Input Source	Disable

PWM Generation Channel 4:

Mode	PWM mode 1
Pulse (16 bits value)	0

Fast Mode	Disable
CH Polarity	High
CH Idle State	Reset

5.14. TIM15

Channel2: PWM Generation CH2

5.14.1. 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

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High
BRK Filter (4 bits value)	0

Break And Dead Time management - Output Configuration:

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

PWM Generation Channel 2:

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

5.15. TIM16

mode: Activated

Channel1: PWM Generation CH1

5.15.1. 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 Filter (4 bits value)	0

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

5.16. TIM17

mode: Activated

Channel1: PWM Generation CH1

5.16.1. 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 Filter (4 bits value)	0

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

5.17. UART4

Mode: Asynchronous

5.17.1. 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:

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

5.18. UART5

Mode: Asynchronous

5.18.1. 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:

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

5.19. USART2

Mode: Asynchronous

mode: Hardware Flow Control (RS485)

5.19.1. Parameter Settings:

Basic Parameters:

Baud Rate	38400
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
Polarity	High
Assertion Time	0
Deassertion Time	0

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

5.20. USART3

Mode: Asynchronous

5.20.1. Parameter Settings:

Basic Parameters:

Baud Rate	38400
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

5.21. USB

mode: Device (FS)

5.21.1. Parameter Settings:

Basic Parameters:

Speed	Full Speed 12MBit/s
Endpoint 0 Max Packet size	64 Bytes
Physical interface	Internal Phy

Power Parameters:

Low Power	Disabled
Battery Charging	Disabled

5.22. FREERTOS

mode: Enabled

5.22.1. Config parameters:

Versions:

FreeRTOS version	9.0.0
CMSIS-RTOS version	1.02

Kernel settings:

USE_PREEMPTION	Enabled
CPU_CLOCK_HZ	SystemCoreClock
TICK_RATE_HZ	1000
MAX_PRIORITIES	7
MINIMAL_STACK_SIZE	128
MAX_TASK_NAME_LEN	16
USE_16_BIT_TICKS	Disabled
IDLE_SHOULD_YIELD	Enabled
USE_MUTEXES	Enabled
USE_RECURSIVE_MUTEXES	Disabled
USE_COUNTING_SEMAPHORES	Disabled
QUEUE_REGISTRY_SIZE	8
USE_APPLICATION_TASK_TAG	Disabled
ENABLE_BACKWARD_COMPATIBILITY	Enabled

USE_PORT_OPTIMISED_TASK_SELECTION	Enabled
USE_TICKLESS_IDLE	Disabled
USE_TASK_NOTIFICATIONS	Enabled

Memory management settings:

Memory Allocation	Dynamic
TOTAL_HEAP_SIZE	3072
Memory Management scheme	heap_4

Hook function related definitions:

USE_IDLE_HOOK	Disabled
USE_TICK_HOOK	Disabled
USE_MALLOC_FAILED_HOOK	Disabled
USE_DAEMON_TASK_STARTUP_HOOK	Disabled
CHECK_FOR_STACK_OVERFLOW	Disabled

Run time and task stats gathering related definitions:

GENERATE_RUN_TIME_STATS	Disabled
USE_TRACE_FACILITY	Disabled
USE_STATS_FORMATTING_FUNCTIONS	Disabled

Co-routine related definitions:

USE_CO_ROUTINES	Disabled
MAX_CO_ROUTINE_PRIORITIES	2

Software timer definitions:

USE_TIMERS	Disabled

Interrupt nesting behaviour configuration:

LIBRARY_LOWEST_INTERRUPT_PRIORITY	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	5

5.22.2. Include parameters:

Include definitions:

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled
vTaskCleanUpResources	Disabled
vTaskSuspend	Enabled
vTaskDelayUntil	Disabled
vTaskDelay	Enabled
xTaskGetSchedulerState	Enabled
xTaskResumeFromISR	Enabled
xQueueGetMutexHolder	Disabled
xSemaphoreGetMutexHolder	Disabled
pcTaskGetTaskName	Disabled

uxTaskGetStackHighWaterMark	Disabled
xTaskGetCurrentTaskHandle	Disabled
eTaskGetState	Disabled
xEventGroupSetBitFromISR	Disabled
xTimerPendFunctionCall	Disabled
xTaskAbortDelay	Disabled
xTaskGetHandle	Disabled

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PF4	ADC1_IN5	Analog mode	No pull up pull down	n/a	CLICK_ADC
CAN	PD0	CAN_RX	Alternate Function Push Pull	No pull up pull down	**High ***	
	PD1	CAN_TX	Alternate Function Push Pull	No pull up pull down	**High ***	
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	Pull up	Low	I2C1_SCL [LSM303DLHC_SCL]
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull up	Low	I2C1_SDA [LSM303DLHC_SDA]
I2C2	PA10	I2C2_SDA	Alternate Function Open Drain	Pull up	**High ***	I2C2_CLICK_SDA
	PF6	I2C2_SCL	Alternate Function Open Drain	Pull up	**High ***	I2C2_CLICK_SCL
RCC	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	OSC32_IN
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	OSC32_OUT
	PF0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	OSC_IN
	PF1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	OSC_OUT
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull up pull down	Low	SPI1_SCK [L3GD20_SCL/SPC]
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull up pull down	Low	SPI1_MISO [L3GD20_SA0/SDO]
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull up pull down	Low	SPI1_MISO [L3GD20_SDA/SDI/SDO]
SPI2	PF9	SPI2_SCK	Alternate Function Push Pull	No pull up pull down	**High ***	SPI2_KLICK_SCK
	PB14	SPI2_MISO	Alternate Function Push Pull	No pull up pull down	**High ***	SPI2_KLICK_MISO
	PB15	SPI2_MOSI	Alternate Function Push Pull	No pull up pull down	**High ***	SPI2_KLICK_MOSI
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	SWDIO
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	SWCLK
	PB3	SYS_JTDO-TRACESWO	n/a	n/a	n/a	SWO
TIM1	PA8	TIM1_CH1	Alternate Function Push Pull	No pull up pull down	Low	ENC1_A
	PA9	TIM1_CH2	Alternate Function Push Pull	No pull up pull down	Low	ENC1_B

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
TIM2	PD3	TIM2_CH1	Alternate Function Push Pull	No pull up pull down	Low	ENC2_A
	PD4	TIM2_CH2	Alternate Function Push Pull	No pull up pull down	Low	ENC2_B
TIM3	PC6	TIM3_CH1	Alternate Function Push Pull	No pull up pull down	Low	ENC3_A
	PC7	TIM3_CH2	Alternate Function Push Pull	No pull up pull down	Low	ENC3_B
TIM4	PD12	TIM4_CH1	Alternate Function Push Pull	No pull up pull down	Low	ENC4_A
	PD13	TIM4_CH2	Alternate Function Push Pull	No pull up pull down	Low	ENC4_B
TIM8	PC9	TIM8_CH4	Alternate Function Push Pull	No pull up pull down	Low	PWM1
TIM15	PF10	TIM15_CH2	Alternate Function Push Pull	No pull up pull down	Low	PWM4
TIM16	PB4	TIM16_CH1	Alternate Function Push Pull	No pull up pull down	Low	PWM2
TIM17	PB5	TIM17_CH1	Alternate Function Push Pull	No pull up pull down	Low	PWM3
UART4	PC10	UART4_TX	Alternate Function Push Pull	Pull up	**High ***	PI_UART_TX
	PC11	UART4_RX	Alternate Function Push Pull	Pull up	**High ***	PI_UART_RX
UART5	PC12	UART5_TX	Alternate Function Push Pull	Pull up	**High ***	USB_UART_TX
	PD2	UART5_RX	Alternate Function Push Pull	Pull up	**High ***	USB_UART_RX
USART2	PA1	USART2_DE	Alternate Function Push Pull	No pull up pull down	**High ***	RS485_DE
	PA2	USART2_TX	Alternate Function Push Pull	Pull up	**High ***	RS485_TX
	PA3	USART2_RX	Alternate Function Push Pull	Pull up	**High ***	RS485_RX
USART3	PD8	USART3_TX	Alternate Function Push Pull	Pull up	**High ***	CLICK_UART_TX
	PD9	USART3_RX	Alternate Function Push Pull	Pull up	**High ***	CLICK_UART_RX
USB	PA11	USB_DM	Alternate Function Push Pull	No pull up pull down	**High ***	DM
	PA12	USB_DP	Alternate Function Push Pull	No pull up pull down	**High ***	DP
GPIO	PE2	GPIO_EXTI2	**External Event Mode with Rising edge trigger detection ***	No pull up pull down	n/a	DRDY [LSM303DLHC_DRDY]
	PE3	GPIO_Output	Output Push Pull	No pull up pull down	Low	CS_I2C/SPI [L3GD20_CS_I2C/SPI]
	PE4	GPIO_EXTI4	**External Event Mode with Rising edge trigger detection ***	No pull up pull down	n/a	MEMS_INT3 [LSM303DLHC_INT1]
	PE5	GPIO_EXTI5	**External Event Mode with Rising edge trigger detection ***	No pull up pull down	n/a	MEMS_INT4 [LSM303DLHC_INT2]
	PC0	GPIO_Output	Output Push Pull	No pull up pull down	Low	M4_A
	PC1	GPIO_Output	Output Push Pull	No pull up pull down	Low	M4_B
	PA0	GPIO_Input	Input mode	No pull up pull down	n/a	B1 [Blue PushButton]
	PB0	GPIO_Input	Input mode	No pull up pull down	n/a	CLICK_INT
	PB1	GPIO_Output	Output Push Pull	No pull up pull down	Low	CLICK_RST
	PE8	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD4 [Blue Led]

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PE9	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD3 [Red Led]
	PE10	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD5 [Orange Led]
	PE11	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD7 [Green Led]
	PE12	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD9 [Blue Led]
	PE13	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD10 [Red Led]
	PE14	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD8 [Orange Led]
	PE15	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD6 [Green Led]
	PB13	GPIO_Output	Output Push Pull	No pull up pull down	Low	SPI2_KLICK_CS
	PD14	GPIO_Output	Output Push Pull	No pull up pull down	Low	M1_B
	PD15	GPIO_Output	Output Push Pull	No pull up pull down	Low	M1_A
	PD6	GPIO_Output	Output Push Pull	No pull up pull down	Low	M2_B
	PD7	GPIO_Output	Output Push Pull	No pull up pull down	Low	M2_A
	PB8	GPIO_Output	Output Push Pull	No pull up pull down	Low	M3_B
	PB9	GPIO_Output	Output Push Pull	No pull up pull down	Low	M3_A
	PE0	GPIO_EXTI0	**External Event Mode with Rising edge trigger detection ***	No pull up pull down	n/a	MEMS_INT1 [L3GD20_INT1]
	PE1	GPIO_EXTI1	**External Event Mode with Rising edge trigger detection ***	No pull up pull down	n/a	MEMS_INT2 [L3GD20_DRDY/INT2]

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	15	0
System tick timer	true	15	0
TIM7 global interrupt	true	0	0
PVD interrupt through EXTI line16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 interrupts	unused		
USB high priority or CAN_TX interrupts	unused		
USB low priority or CAN_RX0 interrupts	unused		
CAN RX1 interrupt	unused		
CAN SCE interrupt	unused		
TIM1 break and TIM15 interrupts	unused		
TIM1 update and TIM16 interrupts	unused		
TIM1 trigger, commutation and TIM17 interrupts	unused		
TIM1 capture compare interrupt	unused		
TIM2 global interrupt	unused		
TIM3 global interrupt	unused		
TIM4 global interrupt	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		
I2C1 error interrupt	unused		
I2C2 event global interrupt / I2C2 wake-up interrupt through EXTI line 24	unused		
I2C2 error interrupt	unused		
SPI1 global interrupt	unused		
SPI2 global interrupt	unused		
USART2 global interrupt / USART2 wake-up interrupt through EXTI line 26	unused		
USART3 global interrupt / USART3 wake-up interrupt through EXTI line 28	unused		
TIM8 break global interrupt	unused		
TIM8 update interrupt	unused		
TIM8 trigger com interrupt	unused		

Interrupt Table	Enable	Preenmption Priority	SubPriority
TIM8 capture compare interrupt	unused		
UART4 global interrupt / UART4 wake-up interrupt through EXTI line 34	unused		
UART5 global interrupt / UART5 wake-up interrupt through EXTI line 35	unused		
USB high priority interrupt remap	unused		
USB low priority interrupt remap	unused		
Floating point unit interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F3
Line	STM32F303
MCU	STM32F303VCTx
Datasheet	023353_Rev13

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	STM32_DAE_BOT
Project Folder	/home/hector/Documents/EclipseWorkspace/STM32_DAE_BOT
Toolchain / IDE	Makefile
Firmware Package Name and Version	STM32Cube FW_F3 V1.9.0

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	No
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