1. Description

1.1. Project

Project Name	Pro
Board Name	Pro
Generated with:	STM32CubeMX 4.25.1
Date	06/14/2018

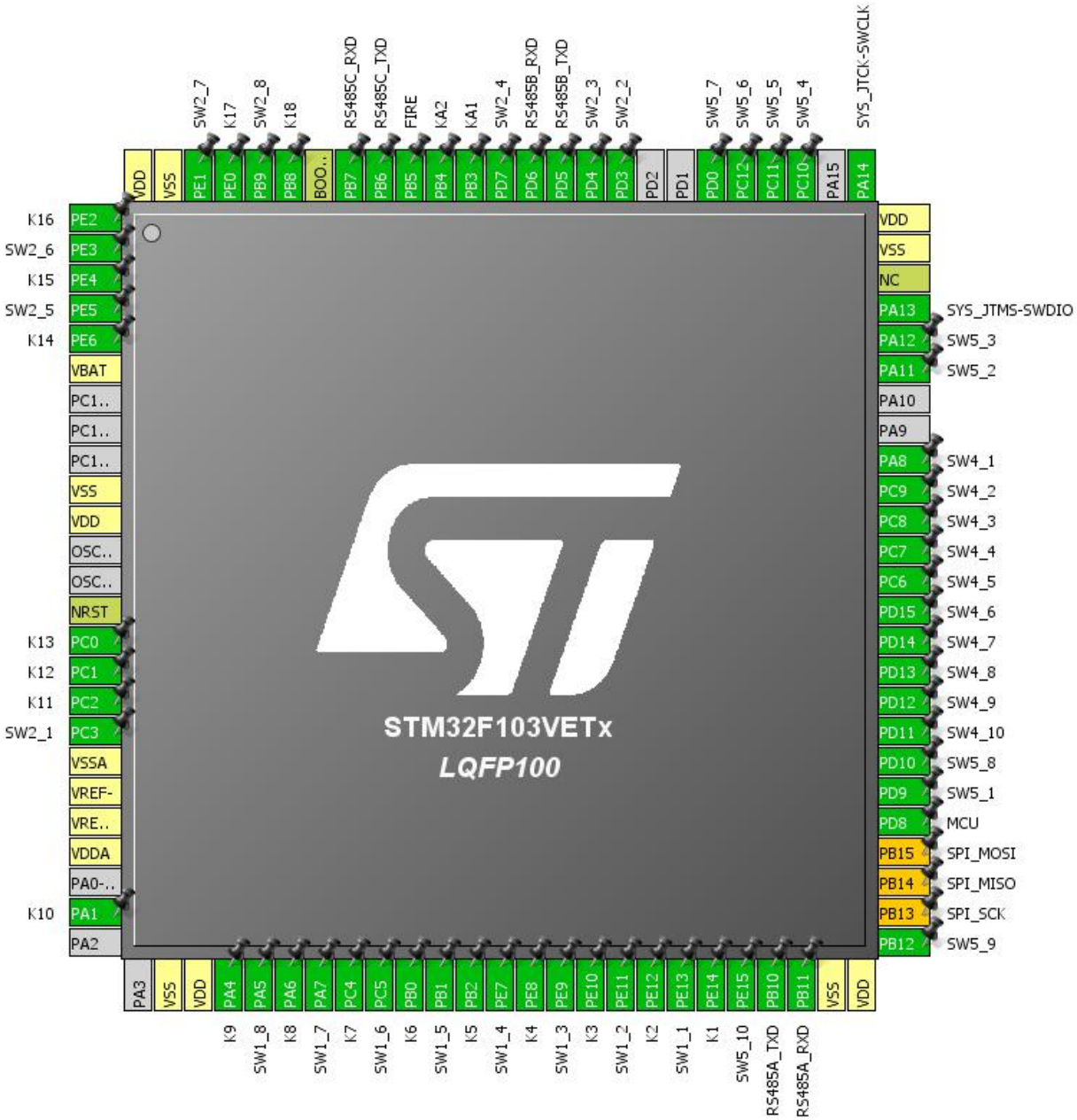
1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103VETx
MCU Package	LQFP100
MCU Pin number	100

1.3. Caution

The report was generated although the configuration was in a modified state. It may be not accurate

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_Output	K16
2	PE3 *	I/O	GPIO_Output	SW2_6
3	PE4 *	I/O	GPIO_Output	K15
4	PE5 *	I/O	GPIO_Output	SW2_5
5	PE6 *	I/O	GPIO_Output	K14
6	VBAT	Power		
10	VSS	Power		
11	VDD	Power		
14	NRST	Reset		
15	PC0 *	I/O	GPIO_Output	K13
16	PC1 *	I/O	GPIO_Output	K12
17	PC2 *	I/O	GPIO_Output	K11
18	PC3 *	I/O	GPIO_Output	SW2_1
19	VSSA	Power		
20	VREF-	Power		
21	VREF+	Power		
22	VDDA	Power		
24	PA1 *	I/O	GPIO_Output	K10
27	VSS	Power		
28	VDD	Power		
29	PA4 *	I/O	GPIO_Output	K9
30	PA5 *	I/O	GPIO_Output	SW1_8
31	PA6 *	I/O	GPIO_Output	K8
32	PA7 *	I/O	GPIO_Output	SW1_7
33	PC4 *	I/O	GPIO_Output	K7
34	PC5 *	I/O	GPIO_Output	SW1_6
35	PB0 *	I/O	GPIO_Output	K6
36	PB1 *	I/O	GPIO_Output	SW1_5
37	PB2 *	I/O	GPIO_Output	K5
38	PE7 *	I/O	GPIO_Output	SW1_4
39	PE8 *	I/O	GPIO_Output	K4
40	PE9 *	I/O	GPIO_Output	SW1_3
41	PE10 *	I/O	GPIO_Output	K3
42	PE11 *	I/O	GPIO_Output	SW1_2
43	PE12 *	I/O	GPIO_Output	K2
44	PE13 *	I/O	GPIO_Output	SW1_1

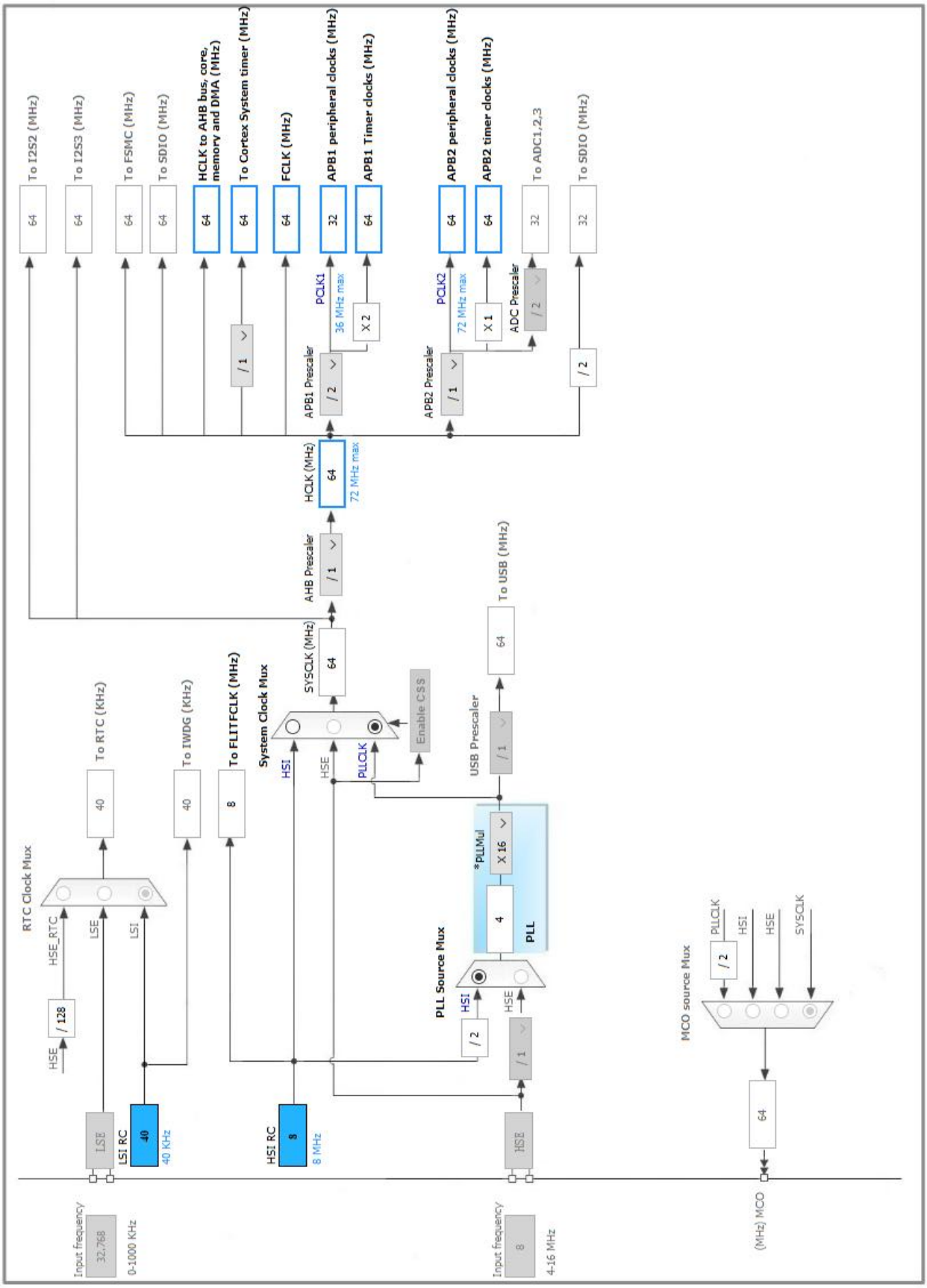
Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
45	PE14 *	I/O	GPIO_Output	K1
46	PE15 *	I/O	GPIO_Output	SW5_10
47	PB10	I/O	USART3_TX	RS485A_TXD
48	PB11	I/O	USART3_RX	RS485A_RXD
49	VSS	Power		
50	VDD	Power		
51	PB12 *	I/O	GPIO_Output	SW5_9
52	PB13 **	I/O	SPI2_SCK	SPI_SCK
53	PB14 **	I/O	SPI2_MISO	SPI_MISO
54	PB15 **	I/O	SPI2_MOSI	SPI_MOSI
55	PD8 *	I/O	GPIO_Output	MCU
56	PD9 *	I/O	GPIO_Output	SW5_1
57	PD10 *	I/O	GPIO_Output	SW5_8
58	PD11 *	I/O	GPIO_Output	SW4_10
59	PD12 *	I/O	GPIO_Output	SW4_9
60	PD13 *	I/O	GPIO_Output	SW4_8
61	PD14 *	I/O	GPIO_Output	SW4_7
62	PD15 *	I/O	GPIO_Output	SW4_6
63	PC6 *	I/O	GPIO_Output	SW4_5
64	PC7 *	I/O	GPIO_Output	SW4_4
65	PC8 *	I/O	GPIO_Output	SW4_3
66	PC9 *	I/O	GPIO_Output	SW4_2
67	PA8 *	I/O	GPIO_Output	SW4_1
70	PA11 *	I/O	GPIO_Output	SW5_2
71	PA12 *	I/O	GPIO_Output	SW5_3
72	PA13	I/O	SYS_JTMS-SWDIO	
73	NC	NC		
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	
78	PC10 *	I/O	GPIO_Output	SW5_4
79	PC11 *	I/O	GPIO_Output	SW5_5
80	PC12 *	I/O	GPIO_Output	SW5_6
81	PD0 *	I/O	GPIO_Output	SW5_7
84	PD3 *	I/O	GPIO_Output	SW2_2
85	PD4 *	I/O	GPIO_Output	SW2_3
86	PD5	I/O	USART2_TX	RS485B_TXD
87	PD6	I/O	USART2_RX	RS485B_RXD
88	PD7 *	I/O	GPIO_Output	SW2_4

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
89	PB3 *	I/O	GPIO_Output	KA1
90	PB4 *	I/O	GPIO_Output	KA2
91	PB5 *	I/O	GPIO_Output	FIRE
92	PB6	I/O	USART1_TX	RS485C_TXD
93	PB7	I/O	USART1_RX	RS485C_RXD
94	BOOT0	Boot		
95	PB8 *	I/O	GPIO_Output	K18
96	PB9 *	I/O	GPIO_Output	SW2_8
97	PE0 *	I/O	GPIO_Output	K17
98	PE1 *	I/O	GPIO_Output	SW2_7
99	VSS	Power		
100	VDD	Power		

* The pin is affected with an I/O function

** The pin is affected with a peripheral function but no peripheral mode is activated

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.2. TIM3

Clock Source : Internal Clock

5.2.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**640-1 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**1000-1 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	**Enable ***

Trigger Output (TRGO) Parameters:

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

5.3. TIM4

Clock Source : Internal Clock

5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**640-1 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**4000-1 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	**Enable ***

Trigger Output (TRGO) Parameters:

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

5.4. TIM5

mode: Clock Source

5.4.1. 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	**Enable ***

Trigger Output (TRGO) Parameters:

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

5.5. USART1

Mode: Asynchronous

5.5.1. 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

5.6. USART2

Mode: Asynchronous

5.6.1. 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

5.7. USART3

Mode: Asynchronous

5.7.1. Parameter Settings:

Basic Parameters:

Baud Rate	**9600 ***
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USART1	PB6	USART1_TX	Alternate Function Push Pull	n/a	**High ***	RS485C_TXD
	PB7	USART1_RX	Input mode	No pull-up and no pull-down	**n/a**	RS485C_RXD
USART2	PD5	USART2_TX	Alternate Function Push Pull	n/a	**High ***	RS485B_TXD
	PD6	USART2_RX	Input mode	No pull-up and no pull-down	**n/a**	RS485B_RXD
USART3	PB10	USART3_TX	Alternate Function Push Pull	n/a	**High ***	RS485A_TXD
	PB11	USART3_RX	Input mode	No pull-up and no pull-down	**n/a**	RS485A_RXD
Single Mapped Signals	PB13	SPI2_SCK	Alternate Function Push Pull	n/a	**High ***	SPI_SCK
	PB14	SPI2_MISO	Alternate Function Push Pull	n/a	**High ***	SPI_MISO
	PB15	SPI2_MOSI	Alternate Function Push Pull	n/a	**High ***	SPI_MOSI
GPIO	PE2	GPIO_Output	Output Push Pull	n/a	Low	K16
	PE3	GPIO_Output	Output Push Pull	n/a	Low	SW2_6
	PE4	GPIO_Output	Output Push Pull	n/a	Low	K15
	PE5	GPIO_Output	Output Push Pull	n/a	Low	SW2_5
	PE6	GPIO_Output	Output Push Pull	n/a	Low	K14
	PC0	GPIO_Output	Output Push Pull	n/a	Low	K13
	PC1	GPIO_Output	Output Push Pull	n/a	Low	K12
	PC2	GPIO_Output	Output Push Pull	n/a	Low	K11
	PC3	GPIO_Output	Output Push Pull	n/a	Low	SW2_1
	PA1	GPIO_Output	Output Push Pull	n/a	Low	K10
	PA4	GPIO_Output	Output Push Pull	n/a	Low	K9
	PA5	GPIO_Output	Output Push Pull	n/a	Low	SW1_8
	PA6	GPIO_Output	Output Push Pull	n/a	Low	K8
	PA7	GPIO_Output	Output Push Pull	n/a	Low	SW1_7
	PC4	GPIO_Output	Output Push Pull	n/a	Low	K7
	PC5	GPIO_Output	Output Push Pull	n/a	Low	SW1_6
	PB0	GPIO_Output	Output Push Pull	n/a	Low	K6
	PB1	GPIO_Output	Output Push Pull	n/a	Low	SW1_5
	PB2	GPIO_Output	Output Push Pull	n/a	Low	K5
	PE7	GPIO_Output	Output Push Pull	n/a	Low	SW1_4

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PE8	GPIO_Output	Output Push Pull	n/a	Low	K4
	PE9	GPIO_Output	Output Push Pull	n/a	Low	SW1_3
	PE10	GPIO_Output	Output Push Pull	n/a	Low	K3
	PE11	GPIO_Output	Output Push Pull	n/a	Low	SW1_2
	PE12	GPIO_Output	Output Push Pull	n/a	Low	K2
	PE13	GPIO_Output	Output Push Pull	n/a	Low	SW1_1
	PE14	GPIO_Output	Output Push Pull	n/a	Low	K1
	PE15	GPIO_Output	Output Push Pull	n/a	Low	SW5_10
	PB12	GPIO_Output	Output Push Pull	n/a	Low	SW5_9
	PD8	GPIO_Output	Output Push Pull	n/a	Low	MCU
	PD9	GPIO_Output	Output Push Pull	n/a	Low	SW5_1
	PD10	GPIO_Output	Output Push Pull	n/a	Low	SW5_8
	PD11	GPIO_Output	Output Push Pull	n/a	Low	SW4_10
	PD12	GPIO_Output	Output Push Pull	n/a	Low	SW4_9
	PD13	GPIO_Output	Output Push Pull	n/a	Low	SW4_8
	PD14	GPIO_Output	Output Push Pull	n/a	Low	SW4_7
	PD15	GPIO_Output	Output Push Pull	n/a	Low	SW4_6
	PC6	GPIO_Output	Output Push Pull	n/a	Low	SW4_5
	PC7	GPIO_Output	Output Push Pull	n/a	Low	SW4_4
	PC8	GPIO_Output	Output Push Pull	n/a	Low	SW4_3
	PC9	GPIO_Output	Output Push Pull	n/a	Low	SW4_2
	PA8	GPIO_Output	Output Push Pull	n/a	Low	SW4_1
	PA11	GPIO_Output	Output Push Pull	n/a	Low	SW5_2
	PA12	GPIO_Output	Output Push Pull	n/a	Low	SW5_3
	PC10	GPIO_Output	Output Push Pull	n/a	Low	SW5_4
	PC11	GPIO_Output	Output Push Pull	n/a	Low	SW5_5
	PC12	GPIO_Output	Output Push Pull	n/a	Low	SW5_6
	PD0	GPIO_Output	Output Push Pull	n/a	Low	SW5_7
	PD3	GPIO_Output	Output Push Pull	n/a	Low	SW2_2
	PD4	GPIO_Output	Output Push Pull	n/a	Low	SW2_3
	PD7	GPIO_Output	Output Push Pull	n/a	Low	SW2_4
	PB3	GPIO_Output	Output Push Pull	n/a	Low	KA1
	PB4	GPIO_Output	Output Push Pull	n/a	Low	KA2
	PB5	GPIO_Output	Output Push Pull	n/a	Low	FIRE
	PB8	GPIO_Output	Output Push Pull	n/a	Low	K18
	PB9	GPIO_Output	Output Push Pull	n/a	Low	SW2_8
	PE0	GPIO_Output	Output Push Pull	n/a	Low	K17
	PE1	GPIO_Output	Output Push Pull	n/a	Low	SW2_7

6.2. DMA configuration

DMA request	Stream	Direction	Priority
USART3_RX	DMA1_Channel3	Peripheral To Memory	Low
USART2_RX	DMA1_Channel6	Peripheral To Memory	Low

USART3_RX: DMA1_Channel3 DMA request Settings:

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

USART2_RX: DMA1_Channel6 DMA request Settings:

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

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
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	0	0
System tick timer	true	0	0
DMA1 channel3 global interrupt	true	0	0
DMA1 channel6 global interrupt	true	0	0
TIM3 global interrupt	true	0	0
TIM4 global interrupt	true	0	0
USART1 global interrupt	true	0	0
USART2 global interrupt	true	0	0
USART3 global interrupt	true	0	0
TIM5 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103VETx
Datasheet	14611_Rev12

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	Pro
Project Folder	H:\\—STM32\KeilCode\Pro
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.1

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

9. Software Pack Report