1. Description

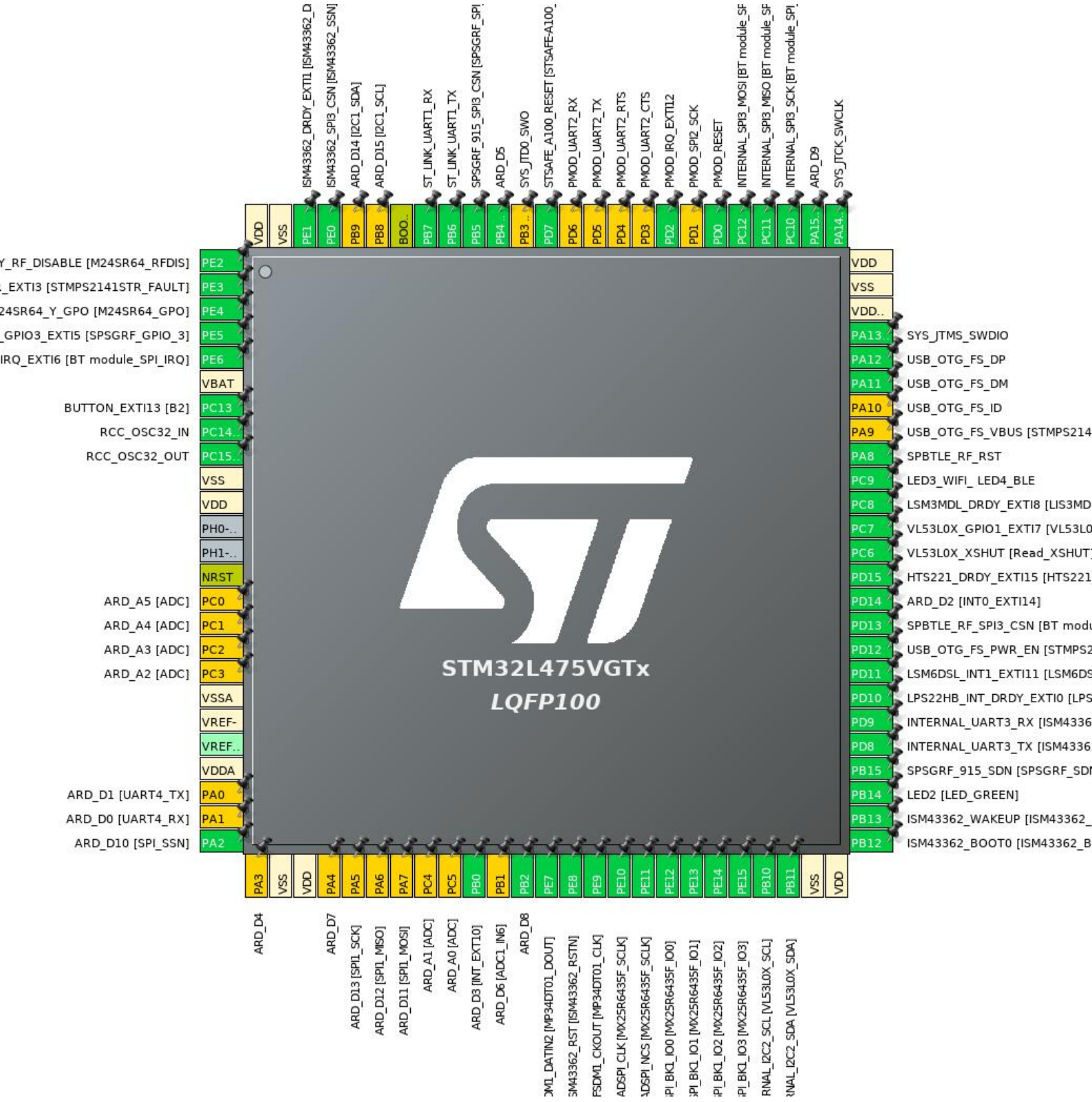
1.1. Project

Project Name	stm32-oficina1
Board Name	B-L475E-IOT01A
Generated with:	STM32CubeMX 5.3.0
Date	08/28/2019

1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4x5
MCU name	STM32L475VGTx
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_Output	M24SR64_Y_RF_DISABLE [M24SR64_RFDIS]
2	PE3	I/O	GPIO_EXTI3	USB_OTG_FS_OVRCR_EXTI3 [STMPS2141STR_FAULT]
3	PE4 *	I/O	GPIO_Output	M24SR64_Y_GPO [M24SR64_GPO]
4	PE5	I/O	GPIO_EXTI5	SPSGRF_915_GPIO3_EXTI5 [SPSGRF_GPIO_3]
5	PE6	I/O	GPIO_EXTI6	SPBTLE_RF_IRQ_EXTI6 [BT module_SPI_IRQ]
6	VBAT	Power		
7	PC13	I/O	GPIO_EXTI13	BUTTON_EXTI13 [B2]
8	PC14-OSC32_IN (PC14)	I/O	RCC_OSC32_IN	
9	PC15-OSC32_OUT (PC15)	I/O	RCC_OSC32_OUT	
10	VSS	Power		
11	VDD	Power		
14	NRST	Reset		
15	PC0 **	I/O	ADC1_IN1	ARD_A5 [ADC]
16	PC1 **	I/O	ADC1_IN2	ARD_A4 [ADC]
17	PC2 **	I/O	ADC1_IN3	ARD_A3 [ADC]
18	PC3 **	I/O	ADC1_IN4	ARD_A2 [ADC]
19	VSSA	Power		
20	VREF-	Power		
22	VDDA	Power		
23	PA0 **	I/O	UART4_TX	ARD_D1 [UART4_TX]
24	PA1 **	I/O	UART4_RX	ARD_D0 [UART4_RX]
25	PA2 *	I/O	GPIO_Output	ARD_D10 [SPI_SSN]
26	PA3 **	I/O	TIM2_CH4	ARD_D4
27	VSS	Power		
28	VDD	Power		
29	PA4 **	I/O	ADC1_IN9	ARD_D7
30	PA5 **	I/O	SPI1_SCK	ARD_D13 [SPI1_SCK]
31	PA6 **	I/O	SPI1_MISO	ARD_D12 [SPI1_MISO]
32	PA7 **	I/O	SPI1_MOSI	ARD_D11 [SPI1_MOSI]
33	PC4 **	I/O	ADC1_IN13	ARD_A1 [ADC]
34	PC5 **	I/O	ADC1_IN14	ARD_A0 [ADC]

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
35	PB0	I/O	GPIO_EXTI0	ARD_D3 [INT_EXT10]
36	PB1 **	I/O	ADC1_IN16	ARD_D6 [ADC1_IN6]
37	PB2 *	I/O	GPIO_Output	ARD_D8
38	PE7	I/O	DFSDM1_DATIN2	DFSDM1_DATIN2 [MP34DT01_DOUT]
39	PE8 *	I/O	GPIO_Output	ISM43362_RST [ISM43362_RSTN]
40	PE9	I/O	DFSDM1_CKOUT	DFSDM1_CKOUT [MP34DT01_CLK]
41	PE10	I/O	QUADSPI_CLK	QUADSPI_CLK [MX25R6435F_SCLK]
42	PE11	I/O	QUADSPI_NCS	QUADSPI_NCS [MX25R6435F_SCLK]
43	PE12	I/O	QUADSPI_BK1_IO0	OQUADSPI_BK1_IO0 [MX25R6435F_IO0]
44	PE13	I/O	QUADSPI_BK1_IO1	QUADSPI_BK1_IO1 [MX25R6435F_IO1]
45	PE14	I/O	QUADSPI_BK1_IO2	QUAD_SPI_BK1_IO2 [MX25R6435F_IO2]
46	PE15	I/O	QUADSPI_BK1_IO3	QUAD_SPI_BK1_IO3 [MX25R6435F_IO3]
47	PB10	I/O	I2C2_SCL	INTERNAL_I2C2_SCL [VL53L0X_SCL]
48	PB11	I/O	I2C2_SDA	INTERNAL_I2C2_SDA [VL53L0X_SDA]
49	VSS	Power		
50	VDD	Power		
51	PB12 *	I/O	GPIO_Output	ISM43362_BOOT0 [ISM43362_BOOT]
52	PB13 *	I/O	GPIO_Output	ISM43362_WAKEUP [ISM43362_WKUP]
53	PB14 *	I/O	GPIO_Output	LED2 [LED_GREEN]
54	PB15 *	I/O	GPIO_Output	SPSGRF_915_SDN [SPSGRF_SDN]
55	PD8	I/O	USART3_TX	INTERNAL_UART3_TX [ISM43362_RX]
56	PD9	I/O	USART3_RX	INTERNAL_UART3_RX [ISM43362_TX]
57	PD10	I/O	GPIO_EXTI10	LPS22HB_INT_DRDY_EXTI 0 [LPS22HB_INT_DRDY]
58	PD11	I/O	GPIO_EXTI11	LSM6DSL_INT1_EXTI11 [LSM6DSL_INT1]

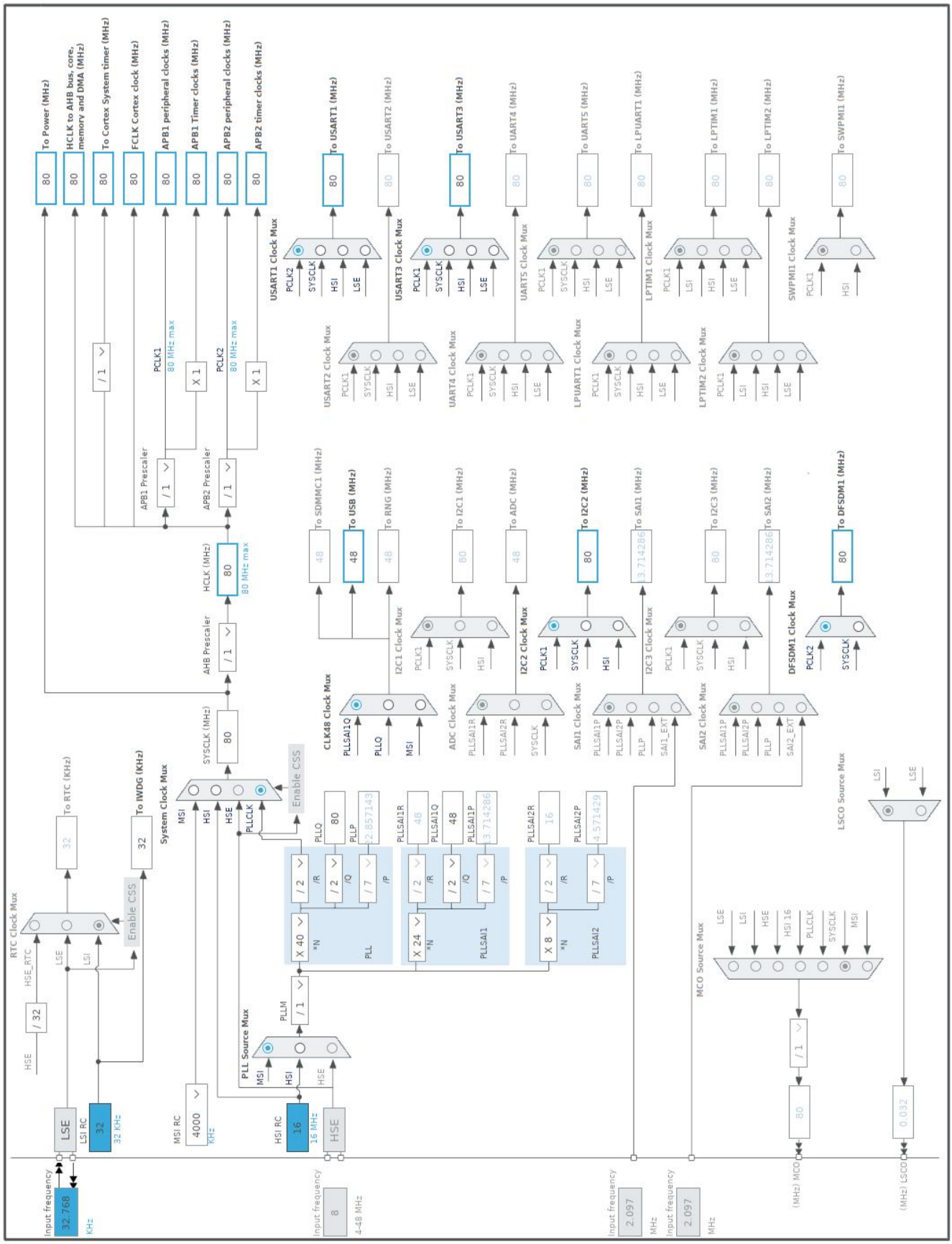
Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
59	PD12 *	I/O	GPIO_Output	USB_OTG_FS_PWR_EN [STMPS2141STR_EN]
60	PD13 *	I/O	GPIO_Output	SPBTLE_RF_SPI3_CSN [BT module_SPI_CS]
61	PD14	I/O	GPIO_EXTI14	ARD_D2 [INT0_EXTI14]
62	PD15	I/O	GPIO_EXTI15	HTS221_DRDY_EXTI15 [HTS221_DRDY]
63	PC6 *	I/O	GPIO_Output	VL53L0X_XSHUT [Read_XSHUT]
64	PC7	I/O	GPIO_EXTI7	VL53L0X_GPIO1_EXTI7 [VL53L0X_GPIO1]
65	PC8	I/O	GPIO_EXTI8	LSM3MDL_DRDY_EXTI8 [LIS3MDL_DRDY]
66	PC9 *	I/O	GPIO_Output	LED3_WIFI_ LED4_BLE
67	PA8 *	I/O	GPIO_Output	SPBTLE_RF_RST
68	PA9 **	I/O	USB_OTG_FS_VBUS	USB_OTG_FS_VBUS [STMPS2141STR_OUT]
69	PA10 **	I/O	USB_OTG_FS_ID	USB_OTG_FS_ID
70	PA11	I/O	USB_OTG_FS_DM	USB_OTG_FS_DM
71	PA12	I/O	USB_OTG_FS_DP	USB_OTG_FS_DP
72	PA13 (JTMS-SWDIO)	I/O	SYS_JTMS-SWDIO	SYS_JTMS_SWDIO
73	VDDUSB	Power		
74	VSS	Power		
75	VDD	Power		
76	PA14 (JTCK-SWCLK)	I/O	SYS_JTCK-SWCLK	SYS_JTCK_SWCLK
77	PA15 (JTDI) *	I/O	GPIO_Output	ARD_D9
78	PC10	I/O	SPI3_SCK	INTERNAL_SPI3_SCK [BT module_SPI_SCLK]
79	PC11	I/O	SPI3_MISO	INTERNAL_SPI3_MISO [BT module_SPI_MISO]
80	PC12	I/O	SPI3_MOSI	INTERNAL_SPI3_MOSI [BT module_SPI_MOSI]
81	PD0 *	I/O	GPIO_Output	PMOD_RESET
82	PD1 **	I/O	SPI2_SCK	PMOD_SPI2_SCK
83	PD2	I/O	GPIO_EXTI2	PMOD_IRQ_EXTI12
84	PD3 **	I/O	USART2_CTS	PMOD_UART2_CTS
85	PD4 **	I/O	USART2_RTS	PMOD_UART2_RTS
86	PD5 **	I/O	USART2_TX	PMOD_UART2_TX
87	PD6 **	I/O	USART2_RX	PMOD_UART2_RX
88	PD7 *	I/O	GPIO_Output	STSAFE_A100_RESET [STSAFE-A100_RESET]

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
89	PB3 (JTDO-TRACESWO) **	I/O	SYS_JTDO-SWO	SYS_JTD0_SWO
90	PB4 (NJTRST) *	I/O	GPIO_Output	ARD_D5
91	PB5 *	I/O	GPIO_Output	SPSGRF_915_SPI3_CSN [SPSGRF_SPI_CS]
92	PB6	I/O	USART1_TX	ST_LINK_UART1_TX
93	PB7	I/O	USART1_RX	ST_LINK_UART1_RX
94	BOOT0	Boot		
95	PB8 **	I/O	I2C1_SCL	ARD_D15 [I2C1_SCL]
96	PB9 **	I/O	I2C1_SDA	ARD_D14 [I2C1_SDA]
97	PE0 *	I/O	GPIO_Output	ISM43362_SPI3_CSN [ISM43362_SSN]
98	PE1	I/O	GPIO_EXTI1	ISM43362_DRDY_EXTI1 [ISM43362_DATARDY]
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. Software Project

5.1. Project Settings

Name	Value
Project Name	stm32-oficina1
Project Folder	/work/STM32-FMW-00017/stm32-oficina1
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_L4 V1.14.0

5.2. Code Generation Settings

Name	Value
STM32Cube MCU packages and embedded software	Copy only the necessary library files
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

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4x5
MCU	STM32L475VGTx
Datasheet	027692_Rev2

6.2. Parameter Selection

Temperature	25
Vdd	3.0

7. IPs and Middleware Configuration

7.1. DFSDM1

mode: PDM/SPI Input from ch2 and Internal Clock

mode: CKOUT

7.1.1. Filter 0:

regular channel selection:

regular channel selection	- None -

injected channel selection:

Channel0 as injected channel	Disable
Channel1 as injected channel	Disable
Channel2 as injected channel	Disable
Channel3 as injected channel	Disable
Channel4 as injected channel	Disable
Channel5 as injected channel	Disable
Channel6 as injected channel	Disable
Channel7 as injected channel	Disable

7.1.2. Filter 1:

regular channel selection:

regular channel selection	- None -

injected channel selection:

Channel0 as injected channel	Disable
Channel1 as injected channel	Disable
Channel2 as injected channel	Disable
Channel3 as injected channel	Disable
Channel4 as injected channel	Disable
Channel5 as injected channel	Disable
Channel6 as injected channel	Disable
Channel7 as injected channel	Disable

7.1.3. Filter 2:

regular channel selection:

regular channel selection	- None -

injected channel selection:

Channel0 as injected channel	Disable
Channel1 as injected channel	Disable

Channel2 as injected channel	Disable
Channel3 as injected channel	Disable
Channel4 as injected channel	Disable
Channel5 as injected channel	Disable
Channel6 as injected channel	Disable
Channel7 as injected channel	Disable

7.1.4. Filter 3:

regular channel selection:

regular channel selection	- None -

injected channel selection:

Channel0 as injected channel	Disable
Channel1 as injected channel	Disable
Channel2 as injected channel	Disable
Channel3 as injected channel	Disable
Channel4 as injected channel	Disable
Channel5 as injected channel	Disable
Channel6 as injected channel	Disable
Channel7 as injected channel	Disable

7.1.5. Output Clock:

Output Clock parameters:

Selection	Source for ouput clock is system clock
Divider	2

7.1.6. Channel 1:

Channel 1 parameters:

Type	SPI with rising edge
Spi Clock	Internal SPI clock
Offset	0
Right Bit Shift	**0x00 ***

Analog watchdog parameters:

Filter Order	FastSinc filter type
Oversampling	1

7.2. I2C2

I2C: I2C

7.2.1. 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	0x10909CEC

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

7.3. IWDG

mode: Activated

7.3.1. Parameter Settings:

Watchdog Clocking:

IWDG counter clock prescaler	**256 ***
IWDG window value	4095
IWDG down-counter reload value	4095

7.4. QUADSPI

Single Bank: Quad SPI Line

7.4.1. Parameter Settings:

General Parameters:

Clock Prescaler	255
Fifo Threshold	1

Sample Shifting	No Sample Shifting
Flash Size	1
Chip Select High Time	1 Cycle
Clock Mode	Low

7.5. RCC

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

7.5.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Disabled
Data Cache	Enabled
Flash Latency(WS)	4 WS (5 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 1

7.6. SPI3

Mode: Full-Duplex Master

7.6.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**40.0 MBits/s ***
Clock Polarity (CPOL)	Low

Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Enabled
NSS Signal Type	Software

7.7. SYS

Debug: Serial Wire

Timebase Source: TIM17

7.8. TIM16

mode: Activated

7.8.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**80-1 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**50 ***
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0
auto-reload preload	Disable

7.9. USART1

Mode: Asynchronous

7.9.1. 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

7.10. USART3

Mode: Asynchronous

7.10.1. 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

7.11. USB_OTG_FS

Mode: Device_Only

7.11.1. Parameter Settings:

Speed	Full Speed 12MBit/s
Low power	Disabled

Link Power Management	Disabled
VBUS sensing	Disabled
Signal start of frame	Disabled

7.12. FREERTOS

Interface: CMSIS_V1

7.12.1. 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	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
RECORD_STACK_HIGH_ADDRESS	Disabled

Memory management settings:

Memory Allocation	Dynamic
TOTAL_HEAP_SIZE	**40960 ***
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	**Option2 ***

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	Disabled

Interrupt nesting behaviour configuration:

LIBRARY_LOWEST_INTERRUPT_PRIORITY	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	5

7.12.2. Include parameters:

Include definitions:

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled
vTaskCleanUpResources	Disabled
vTaskSuspend	Enabled
vTaskDelayUntil	**Enabled ***
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**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
DFSDM1	PE7	DFSDM1_DATIN2	Alternate Function Push Pull	No pull-up and no pull-down	Low	DFSDM1_DATIN2 [MP34DT01_DOUT]
	PE9	DFSDM1_CKOUT	Alternate Function Push Pull	No pull-up and no pull-down	Low	DFSDM1_CKOUT [MP34DT01_CLK]
I2C2	PB10	I2C2_SCL	Alternate Function Open Drain	Pull-up	**Very High ***	INTERNAL_I2C2_SCL [VL53L0X_SCL]
	PB11	I2C2_SDA	Alternate Function Open Drain	Pull-up	**Very High ***	INTERNAL_I2C2_SDA [VL53L0X_SDA]
QUADSPI	PE10	QUADSPI_CLK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	QUADSPI_CLK [MX25R6435F_SCLK]
	PE11	QUADSPI_NCS	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	QUADSPI_NCS [MX25R6435F_SCLK]
	PE12	QUADSPI_BK1_IO0	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	OQUADSPI_BK1_IO0 [MX25R6435F_IO0]
	PE13	QUADSPI_BK1_IO1	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	QUADSPI_BK1_IO1 [MX25R6435F_IO1]
	PE14	QUADSPI_BK1_IO2	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	QUAD_SPI_BK1_IO2 [MX25R6435F_IO2]
	PE15	QUADSPI_BK1_IO3	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	QUAD_SPI_BK1_IO3 [MX25R6435F_IO3]
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	
SPI3	PC10	SPI3_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	INTERNAL_SPI3_SCK [BT module_SPI_SCLK]
	PC11	SPI3_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	INTERNAL_SPI3_MISO [BT module_SPI_MISO]
	PC12	SPI3_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	INTERNAL_SPI3_MOSI [BT module_SPI_MOSI]
SYS	PA13 (JTMS-SWDIO)	SYS_JTMS-SWDIO	n/a	n/a	n/a	SYS_JTMS_SWDIO

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PA14 (JTCK-SWCLK)	SYS_JTCK-SWCLK	n/a	n/a	n/a	SYS_JTCK_SWCLK
USART1	PB6	USART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ST_LINK_UART1_TX
	PB7	USART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ST_LINK_UART1_RX
USART3	PD8	USART3_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	INTERNAL_UART3_TX [ISM43362_RX]
	PD9	USART3_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	INTERNAL_UART3_RX [ISM43362_TX]
USB_OTG_FS	PA11	USB_OTG_FS_DM	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	USB_OTG_FS_DM
	PA12	USB_OTG_FS_DP	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	USB_OTG_FS_DP
Single Mapped Signals	PC0	ADC1_IN1	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	ARD_A5 [ADC]
	PC1	ADC1_IN2	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	ARD_A4 [ADC]
	PC2	ADC1_IN3	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	ARD_A3 [ADC]
	PC3	ADC1_IN4	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	ARD_A2 [ADC]
	PA0	UART4_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ARD_D1 [UART4_TX]
	PA1	UART4_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ARD_D0 [UART4_RX]
	PA3	TIM2_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	ARD_D4
	PA4	ADC1_IN9	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	ARD_D7
	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ARD_D13 [SPI1_SCK]
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ARD_D12 [SPI1_MISO]
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ARD_D11 [SPI1_MOSI]
	PC4	ADC1_IN13	Analog mode for ADC conversion	No pull-up and no pull-down	**n/a**	ARD_A1 [ADC]
	PC5	ADC1_IN14	Analog mode for ADC conversion	No pull-up and no pull-down	**n/a**	ARD_A0 [ADC]
	PB1	ADC1_IN16	Analog mode for ADC	No pull-up and no pull-down	**n/a**	ARD_D6 [ADC1_IN6]

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
			conversion			
	PA9	USB_OTG_FS_VBUS	Input mode	No pull-up and no pull-down	**n/a**	USB_OTG_FS_VBUS [STMPS2141STR_OUT]
	PA10	USB_OTG_FS_ID	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	USB_OTG_FS_ID
	PD1	SPI2_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PMOD_SPI2_SCK
	PD3	USART2_CTS	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PMOD_UART2_CTS
	PD4	USART2_RTS	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PMOD_UART2_RTS
	PD5	USART2_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PMOD_UART2_TX
	PD6	USART2_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PMOD_UART2_RX
	PB3 (JTDO-TRACESWO)	SYS_JTDO-SWO	n/a	n/a	**n/a**	SYS_JTD0_SWO
	PB8	I2C1_SCL	Alternate Function Open Drain	Pull-up	**Very High ***	ARD_D15 [I2C1_SCL]
	PB9	I2C1_SDA	Alternate Function Open Drain	Pull-up	**Very High ***	ARD_D14 [I2C1_SDA]
GPIO	PE2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	M24SR64_Y_RF_DISABLE [M24SR64_RFDIS]
	PE3	GPIO_EXTI3	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	USB_OTG_FS_OVRCR_EXTI3 [STMPS2141STR_FAULT]
	PE4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	M24SR64_Y_GPO [M24SR64_GPO]
	PE5	GPIO_EXTI5	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	SPSGRF_915_GPIO3_EXTI5 [SPSGRF_GPIO_3]
	PE6	GPIO_EXTI6	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	SPBTLE_RF_IRQ_EXTI6 [BT module_SPI_IRQ]
	PC13	GPIO_EXTI13	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	BUTTON_EXTI13 [B2]
	PA2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ARD_D10 [SPI_SSN]
	PB0	GPIO_EXTI0	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	ARD_D3 [INT_EXT10]
	PB2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ARD_D8
	PE8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ISM43362_RST

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
						[ISM43362_RSTN]
	PB12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ISM43362_BOOT0 [ISM43362_BOOT]
	PB13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ISM43362_WAKEUP [ISM43362_WKUP]
	PB14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED2 [LED_GREEN]
	PB15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SPSGRF_915_SDN [SPSGRF_SDN]
	PD10	GPIO_EXTI10	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	LPS22HB_INT_DRDY_EXTI0 [LPS22HB_INT_DRDY]
	PD11	GPIO_EXTI11	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	LSM6DSL_INT1_EXTI11 [LSM6DSL_INT1]
	PD12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	USB_OTG_FS_PWR_EN [STMPS2141STR_EN]
	PD13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SPBTLE_RF_SPI3_CSN [BT module_SPI_CS]
	PD14	GPIO_EXTI14	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	ARD_D2 [INT0_EXTI14]
	PD15	GPIO_EXTI15	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	HTS221_DRDY_EXTI15 [HTS221_DRDY]
	PC6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	VL53L0X_XSHUT [Read_XSHUT]
	PC7	GPIO_EXTI7	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	VL53L0X_GPIO1_EXTI7 [VL53L0X_GPIO1]
	PC8	GPIO_EXTI8	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	LSM3MDL_DRDY_EXTI8 [LIS3MDL_DRDY]
	PC9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED3_WIFI_ LED4_BLE
	PA8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SPBTLE_RF_RST
	PA15 (JTDI)	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ARD_D9
	PD0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PMOD_RESET
	PD2	GPIO_EXTI2	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	PMOD_IRQ_EXTI12
	PD7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	STSAFE_A100_RESET [STSAFE-A100_RESET]
	PB4 (NJTRST)	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ARD_D5
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SPSGRF_915_SPI3_CSN [SPSGRF_SPI_CS]
	PE0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ISM43362_SPI3_CSN [ISM43362_SSN]
	PE1	GPIO_EXTI1	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	ISM43362_DRDY_EXTI1 [ISM43362_DATARDY]

8.2. DMA configuration

DMA request	Stream	Direction	Priority
USART1_RX	DMA1_Channel5	Peripheral To Memory	**Medium ***
USART1_TX	DMA1_Channel4	Memory To Peripheral	**Medium ***

USART1_RX: DMA1_Channel5 DMA request Settings:

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

USART1_TX: DMA1_Channel4 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
DMA1 channel4 global interrupt	true	5	0
DMA1 channel5 global interrupt	true	5	0
EXTI line[9:5] interrupts	true	5	0
TIM1 update interrupt and TIM16 global interrupt	true	5	0
TIM1 trigger and commutation interrupts and TIM17 global interrupt	true	0	0
USART1 global interrupt	true	5	0
USART3 global interrupt	true	5	0
EXTI line[15:10] interrupts	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		
EXTI line0 interrupt	unused		
EXTI line1 interrupt	unused		
EXTI line2 interrupt	unused		
EXTI line3 interrupt	unused		
I2C2 event interrupt	unused		
I2C2 error interrupt	unused		
SPI3 global interrupt	unused		
USB OTG FS global interrupt	unused		
QUADSPI global interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

9. Software Pack Report