1. Description

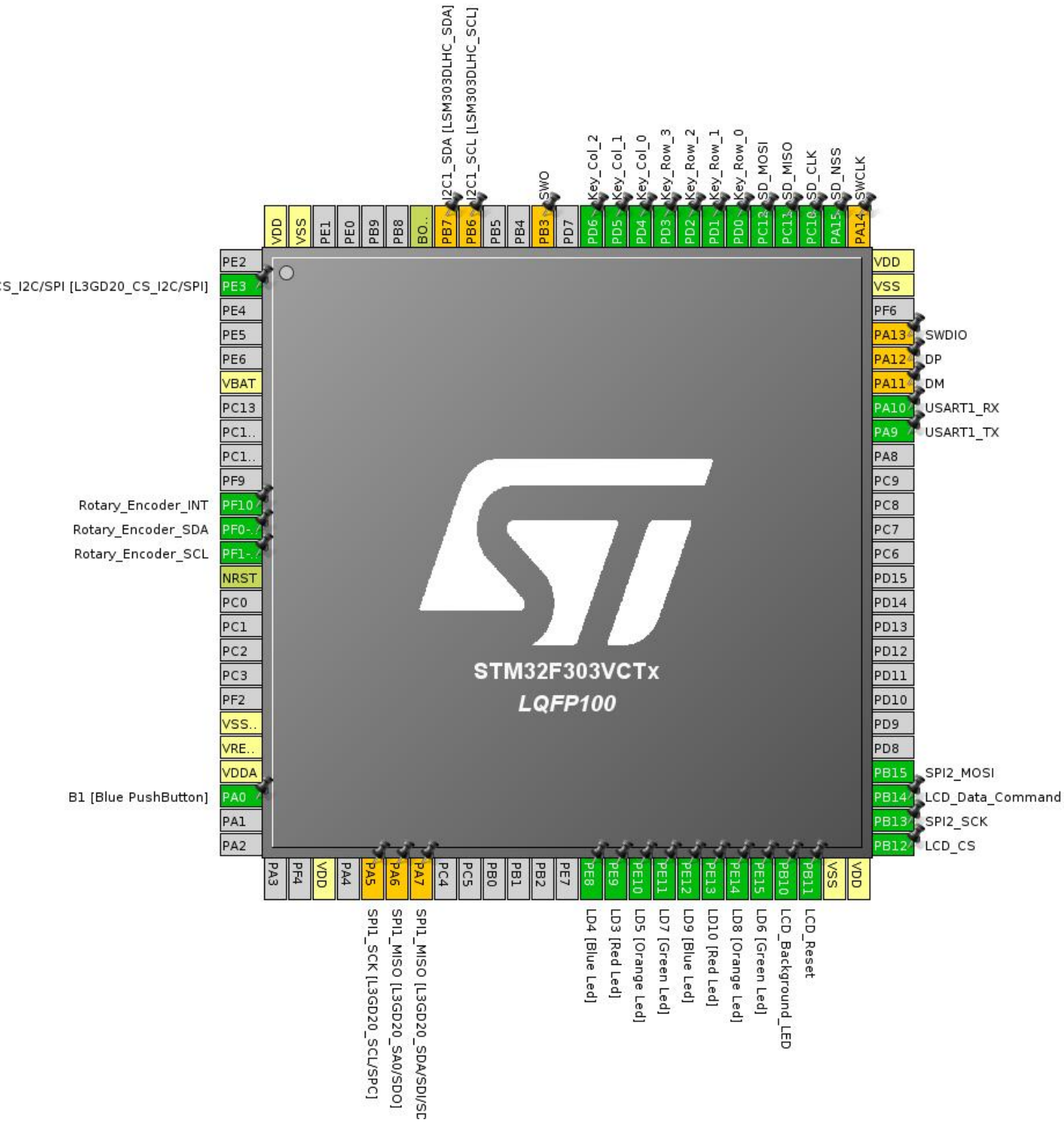
1.1. Project

Project Name	cube
Board Name	STM32F3DISCOVERY
Generated with:	STM32CubeMX 4.14.0
Date	12/31/2016

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

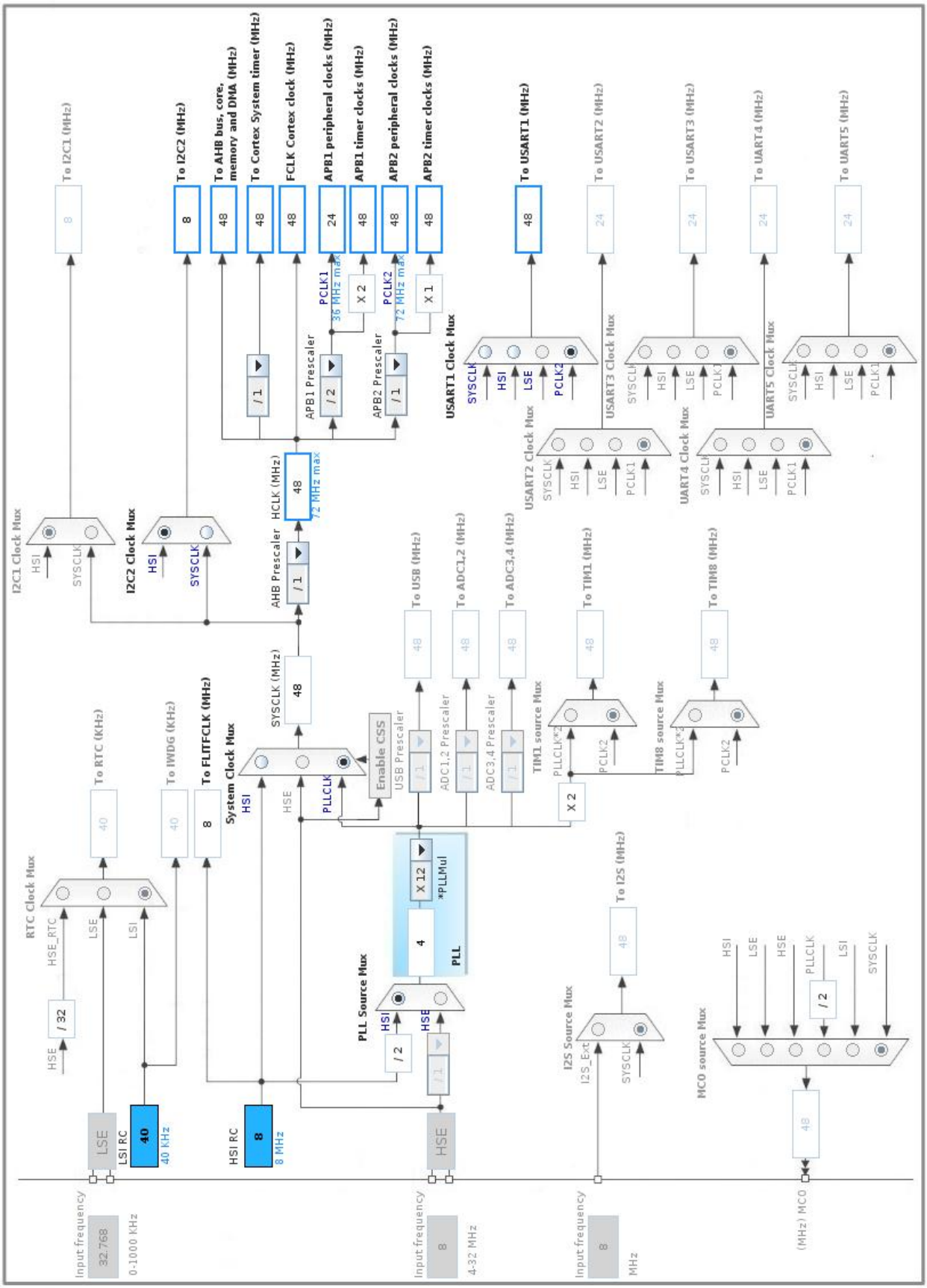
Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
2	PE3 *	I/O	GPIO_Output	CS_I2C/SPI [L3GD20_CS_I2C/SPI]
6	VBAT	Power		
11	PF10	I/O	GPIO_EXTI10	Rotary_Encoder_INT
12	PF0-OSC_IN	I/O	I2C2_SDA	Rotary_Encoder_SDA
13	PF1-OSC_OUT	I/O	I2C2_SCL	Rotary_Encoder_SCL
14	NRST	Reset		
20	VSSA/VREF-	Power		
21	VREF+	Power		
22	VDDA	Power		
23	PA0 *	I/O	GPIO_Input	B1 [Blue PushButton]
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]
39	PE8 *	I/O	GPIO_Output	LD4 [Blue Led]
40	PE9 *	I/O	GPIO_Output	LD3 [Red Led]
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]
47	PB10 *	I/O	GPIO_Output	LCD_Background_LED
48	PB11 *	I/O	GPIO_Output	LCD_Reset
49	VSS	Power		
50	VDD	Power		
51	PB12 *	I/O	GPIO_Output	LCD_CS
52	PB13	I/O	SPI2_SCK	
53	PB14 *	I/O	GPIO_Output	LCD_Data_Command
54	PB15	I/O	SPI2_MOSI	
68	PA9	I/O	USART1_TX	
69	PA10	I/O	USART1_RX	

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
70	PA11 **	I/O	USB_DM	DM
71	PA12 **	I/O	USB_DP	DP
72	PA13 **	I/O	SYS_JTMS-SWDIO	SWDIO
74	VSS	Power		
75	VDD	Power		
76	PA14 **	I/O	SYS_JTCK-SWCLK	SWCLK
77	PA15	I/O	SPI3_NSS	SD_NSS
78	PC10	I/O	SPI3_SCK	SD_CLK
79	PC11	I/O	SPI3_MISO	SD_MISO
80	PC12	I/O	SPI3_MOSI	SD_MOSI
81	PD0	I/O	GPIO_EXTI0	Key_Row_0
82	PD1	I/O	GPIO_EXTI1	Key_Row_1
83	PD2	I/O	GPIO_EXTI2	Key_Row_2
84	PD3	I/O	GPIO_EXTI3	Key_Row_3
85	PD4 *	I/O	GPIO_Output	Key_Col_0
86	PD5 *	I/O	GPIO_Output	Key_Col_1
87	PD6 *	I/O	GPIO_Output	Key_Col_2
89	PB3 **	I/O	SYS_JTDO-TRACESWO	SWO
92	PB6 **	I/O	I2C1_SCL	I2C1_SCL [LSM303DLHC_SCL]
93	PB7 **	I/O	I2C1_SDA	I2C1_SDA [LSM303DLHC_SDA]
94	BOOT0	Boot		
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. CRC

mode: Activated

5.1.1. 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	Bytes

5.2. I2C2

I2C: I2C

5.2.1. 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	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

5.3. SPI2

Mode: Transmit Only Master

5.3.1. Parameter Settings:

Basic Parameters:

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

Clock Parameters:

Prescaler (for Baud Rate)	**4 ***
Baud Rate	**6.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	**Disabled ***
NSS Signal Type	Software

5.4. SPI3

Mode: Full-Duplex Master
Hardware NSS Signal: Hardware NSS Output Signal

5.4.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	**8 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	Output Hardware

5.5. SYS

Timebase Source: SysTick

5.6. USART1

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
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

5.7. FATFS

mode: User-defined

5.7.1. Set Defines:

Version:

FATFS version	R0.11

Function Parameters:

FS_TINY (Tiny mode)	Disabled
FS_READONLY (Read-only mode)	Disabled
FS_MINIMIZE (Minimization level)	Disabled
USE_STRFUNC (String functions)	Enabled with LF -> CRLF conversion
USE_FIND (Find functions)	Disabled
USE_MKFS (Make filesystem function)	**Disabled ***
USE_FORWARD (Forward function)	Disabled
USE_LABEL (Volume label functions)	Disabled
USE_FASTSEEK (Fast seek function)	Enabled

Locale and Namespace Parameters:

CODE_PAGE (Code page on target)	Latin 1 (Windows)
USE_LFN (Use Long Filename)	Disabled
MAX_LFN (Max Long Filename)	255
LFN_UNICODE (Enable Unicode)	ANSI/OEM
STRF_ENCODE (Character encoding)	UTF-8
FS_RPATH (Relative Path)	Disabled

Physical Drive Parameters:

VOLUMES (Logical drives)	1
MAX_SS (Maximum Sector Size)	512
MIN_SS (Minimum Sector Size)	512
MULTI_PARTITION (Volume partitions feature)	Disabled
USE_TRIM (Erase feature)	Disabled
FS_NOFSINFO (Force full FAT scan)	0

System Parameters:

FS_NORTC (Timestamp feature)	**Fixed timestamp ***
NORTC_YEAR (Year for timestamp)	**2016 ***
NORTC_MON (Month for timestamp)	**5 ***
NORTC_MDAY (Day for timestamp)	**23 ***
WORD_ACCESS (Platform dependent access option)	Byte access
FS_REENTRANT (Re-Entrancy)	Disabled
FS_TIMEOUT (Timeout ticks)	1000
SYNC_t (O/S sync object)	osSemaphoreId
FS_LOCK (Number of files opened simultaneously)	2

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C2	PF0-OSC_IN	I2C2_SDA	Alternate Function Open Drain	**No pull up pull down ***	**High ***	Rotary_Encoder_SDA
	PF1-OSC_OUT	I2C2_SCL	Alternate Function Open Drain	**No pull up pull down ***	**High ***	Rotary_Encoder_SCL
SPI2	PB13	SPI2_SCK	Alternate Function Push Pull	No pull up pull down	**High ***	
	PB15	SPI2_MOSI	Alternate Function Push Pull	No pull up pull down	**High ***	
SPI3	PA15	SPI3_NSS	Alternate Function Push Pull	No pull up pull down	**High ***	SD_NSS
	PC10	SPI3_SCK	Alternate Function Push Pull	No pull up pull down	**High ***	SD_CLK
	PC11	SPI3_MISO	Alternate Function Push Pull	No pull up pull down	**High ***	SD_MISO
	PC12	SPI3_MOSI	Alternate Function Push Pull	No pull up pull down	**High ***	SD_MOSI
USART1	PA9	USART1_TX	Alternate Function Push Pull	Pull up	**High ***	
	PA10	USART1_RX	Alternate Function Push Pull	Pull up	**High ***	
Single Mapped Signals	PA5	SPI1_SCK	Alternate Function Push Pull	No pull up pull down	*	SPI1_SCK [L3GD20_SCL/SPC]
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull up pull down	*	SPI1_MISO [L3GD20_SA0/SDO]
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull up pull down	*	SPI1_MISO [L3GD20_SDA/SDI/SDO]
	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
	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
	PB6	I2C1_SCL	Alternate Function Open Drain	Pull up	*	I2C1_SCL [LSM303DLHC_SCL]
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull up	*	I2C1_SDA [LSM303DLHC_SDA]
GPIO	PE3	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	CS_I2C/SPI [L3GD20_CS_I2C/SPI]
	PF10	GPIO_EXTI10	**External Interrupt Mode with Falling**	**Pull up ***	**n/a**	Rotary_Encoder_INT

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
			edge trigger detection			
	PA0	GPIO_Input	Input mode	No pull up pull down	**n/a**	B1 [Blue PushButton]
	PE8	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD4 [Blue Led]
	PE9	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD3 [Red Led]
	PE10	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD5 [Orange Led]
	PE11	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD7 [Green Led]
	PE12	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD9 [Blue Led]
	PE13	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD10 [Red Led]
	PE14	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD8 [Orange Led]
	PE15	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LD6 [Green Led]
	PB10	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LCD_Background_LED
	PB11	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LCD_Reset
	PB12	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LCD_CS
	PB14	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	LCD_Data_Command
	PD0	GPIO_EXTI0	**External Interrupt Mode with Falling edge trigger detection**	**Pull up ***	**n/a**	Key_Row_0
	PD1	GPIO_EXTI1	**External Interrupt Mode with Falling edge trigger detection**	**Pull up ***	**n/a**	Key_Row_1
	PD2	GPIO_EXTI2	**External Interrupt Mode with Falling edge trigger detection**	**Pull up ***	**n/a**	Key_Row_2
	PD3	GPIO_EXTI3	**External Interrupt Mode with Falling edge trigger detection**	**Pull up ***	**n/a**	Key_Row_3
	PD4	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	Key_Col_0
	PD5	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	Key_Col_1
	PD6	GPIO_Output	Output Push Pull	No pull up pull down	**High ***	Key_Col_2

6.2. DMA configuration

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

USART1_TX: DMA1_Channel4 DMA request Settings:

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

USART1_RX: DMA1_Channel5 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
Pre-fetch fault, memory access fault	true	0	0
Undefined instruction or illegal state	true	0	0
Debug monitor	true	0	0
System tick timer	true	0	0
RCC global interrupt	true	0	0
EXTI line0 interrupt	true	15	0
EXTI line1 interrupt	true	15	0
EXTI line2 and Touch Sense controller	true	15	0
EXTI line3 interrupt	true	15	0
DMA1 channel4 global interrupt	true	10	0
DMA1 channel5 global interrupt	true	0	0
SPI2 global interrupt	true	15	0
USART1 global interrupt / USART1 wake-up interrupt through EXTI line 25	true	10	0
EXTI line[15:10] interrupts	true	14	0
SPI3 global interrupt	true	15	0
PVD interrupt through EXTI line16	unused		
Flash global interrupt	unused		
I2C2 event global interrupt / I2C2 wake-up interrupt through EXTI line 24	unused		
I2C2 error interrupt	unused		

*** User modified value**

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F3
Line	STM32F303
MCU	STM32F303VCTx
Datasheet	023353_Rev12

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	cube
Project Folder	/home/harald/git/Power_Supply/cube
Toolchain / IDE	Other Toolchains (GPDSC)
Firmware Package Name and Version	STM32Cube FW_F3 V1.4.0

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	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