1. Description

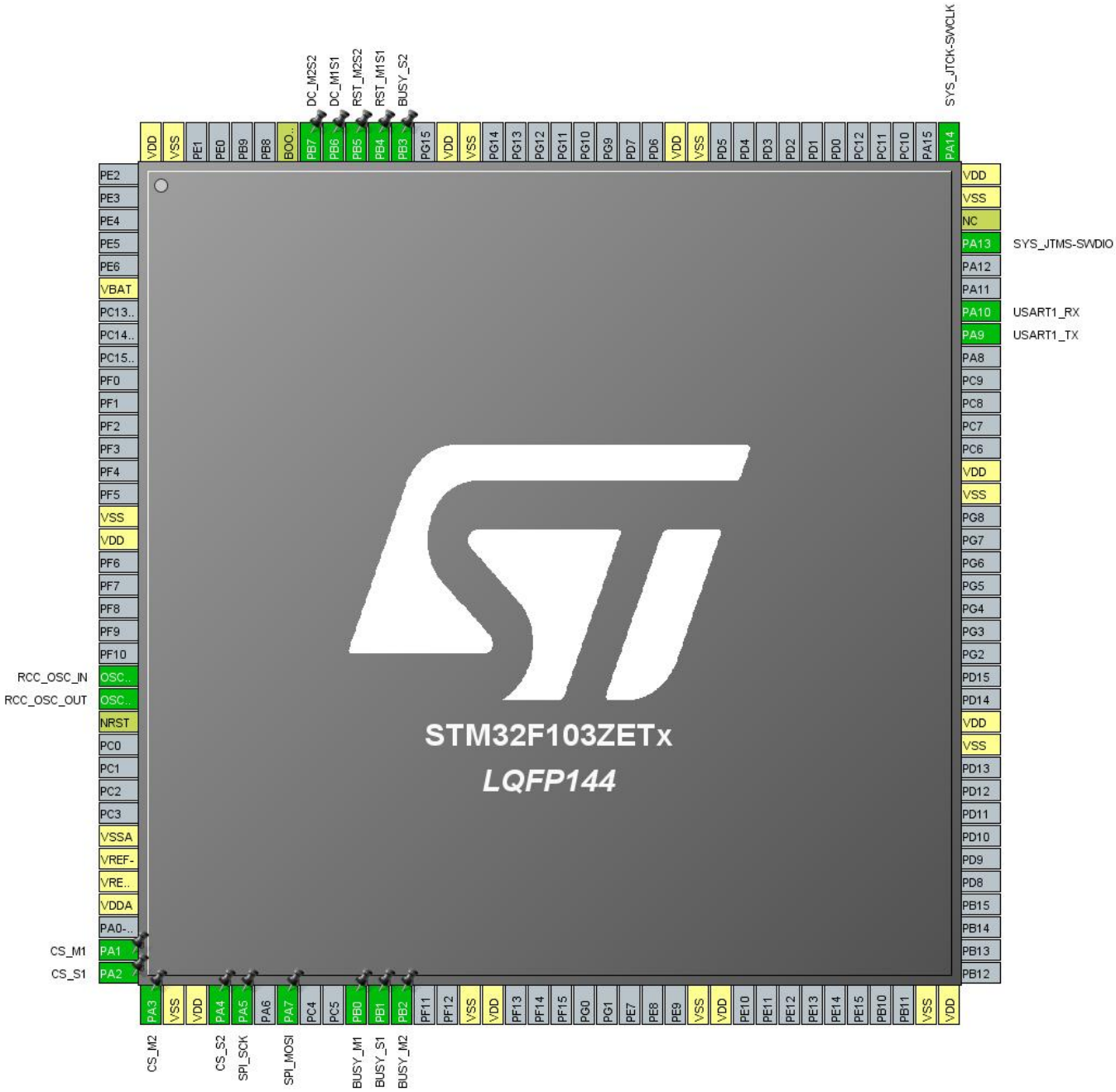
1.1. Project

Project Name	epd-demo
Board Name	epd5in83-demo
Generated with:	STM32CubeMX 5.1.0
Date	03/11/2019

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103ZETx
MCU Package	LQFP144
MCU Pin number	144

2. Pinout Configuration



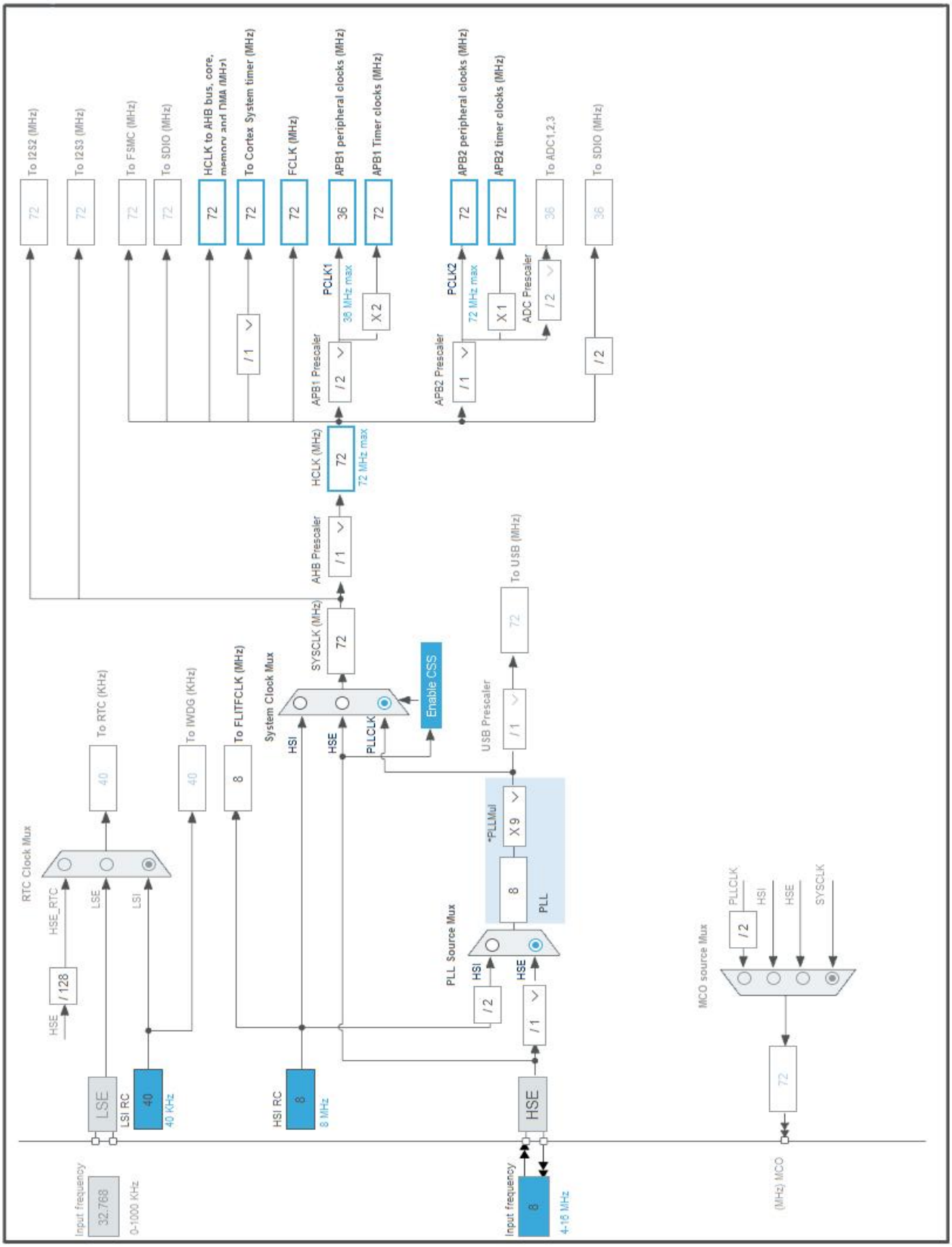
3. Pins Configuration

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
16	VSS	Power		
17	VDD	Power		
23	OSC_IN	I/O	RCC_OSC_IN	
24	OSC_OUT	I/O	RCC_OSC_OUT	
25	NRST	Reset		
30	VSSA	Power		
31	VREF-	Power		
32	VREF+	Power		
33	VDDA	Power		
35	PA1 *	I/O	GPIO_Output	CS_M1
36	PA2 *	I/O	GPIO_Output	CS_S1
37	PA3 *	I/O	GPIO_Output	CS_M2
38	VSS	Power		
39	VDD	Power		
40	PA4 *	I/O	GPIO_Output	CS_S2
41	PA5 *	I/O	GPIO_Output	SPI_SCK
43	PA7 *	I/O	GPIO_Output	SPI_MOSI
46	PB0 *	I/O	GPIO_Input	BUSY_M1
47	PB1 *	I/O	GPIO_Input	BUSY_S1
48	PB2 *	I/O	GPIO_Input	BUSY_M2
51	VSS	Power		
52	VDD	Power		
61	VSS	Power		
62	VDD	Power		
71	VSS	Power		
72	VDD	Power		
83	VSS	Power		
84	VDD	Power		
94	VSS	Power		
95	VDD	Power		
101	PA9	I/O	USART1_TX	
102	PA10	I/O	USART1_RX	
105	PA13	I/O	SYS_JTMS-SWDIO	
106	NC	NC		
107	VSS	Power		

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
108	VDD	Power		
109	PA14	I/O	SYS_JTCK-SWCLK	
120	VSS	Power		
121	VDD	Power		
130	VSS	Power		
131	VDD	Power		
133	PB3 *	I/O	GPIO_Input	BUSY_S2
134	PB4 *	I/O	GPIO_Output	RST_M1S1
135	PB5 *	I/O	GPIO_Output	RST_M2S2
136	PB6 *	I/O	GPIO_Output	DC_M1S1
137	PB7 *	I/O	GPIO_Output	DC_M2S2
138	BOOT0	Boot		
143	VSS	Power		
144	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	epd-demo
Project Folder	G:\Modoule\e-Paper\code\12.48inch_e-paper_code\STM32\STM32-F103ZET6
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F1 V1.7.0

5.2. 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

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103ZETx
Datasheet	14611_Rev12

6.2. Parameter Selection

Temperature	25
Vdd	3.3

7. IPs and Middleware Configuration

7.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

7.1.1. Parameter Settings:

System Parameters:

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

RCC Parameters:

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

7.2. SYS

Debug: Serial Wire

Timebase Source: SysTick

7.3. USART1

Mode: Asynchronous

7.3.1. 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

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	n/a	**High ***	
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	**n/a**	
GPIO	PA1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CS_M1
	PA2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CS_S1
	PA3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CS_M2
	PA4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CS_S2
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SPI_SCK
	PA7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SPI_MOSI
	PB0	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	BUSY_M1
	PB1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	BUSY_S1
	PB2	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	BUSY_M2
	PB3	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	BUSY_S2
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	RST_M1S1
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	RST_M2S2
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DC_M1S1

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DC_M2S2

8.2. DMA configuration

nothing configured in DMA service

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	0	0
System tick timer	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
USART1 global interrupt	unused		

*** User modified value**

9. Software Pack Report