1. Description

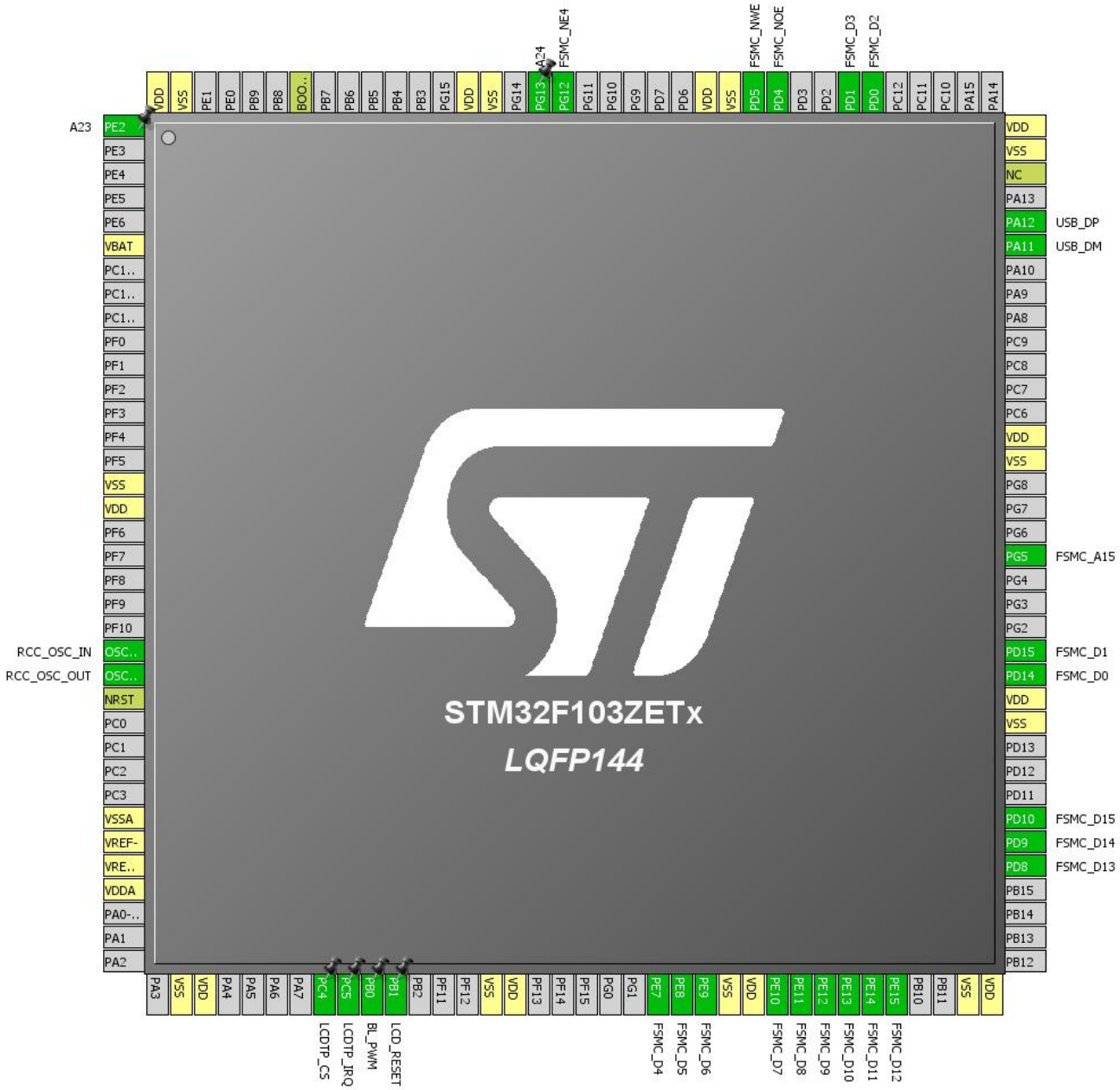
1.1. Project

Project Name	CDC_Standalone
Board Name	CDC_Standalone
Generated with:	STM32CubeMX 4.17.0
Date	12/12/2016

1.2. MCU

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

2. Pinout Configuration



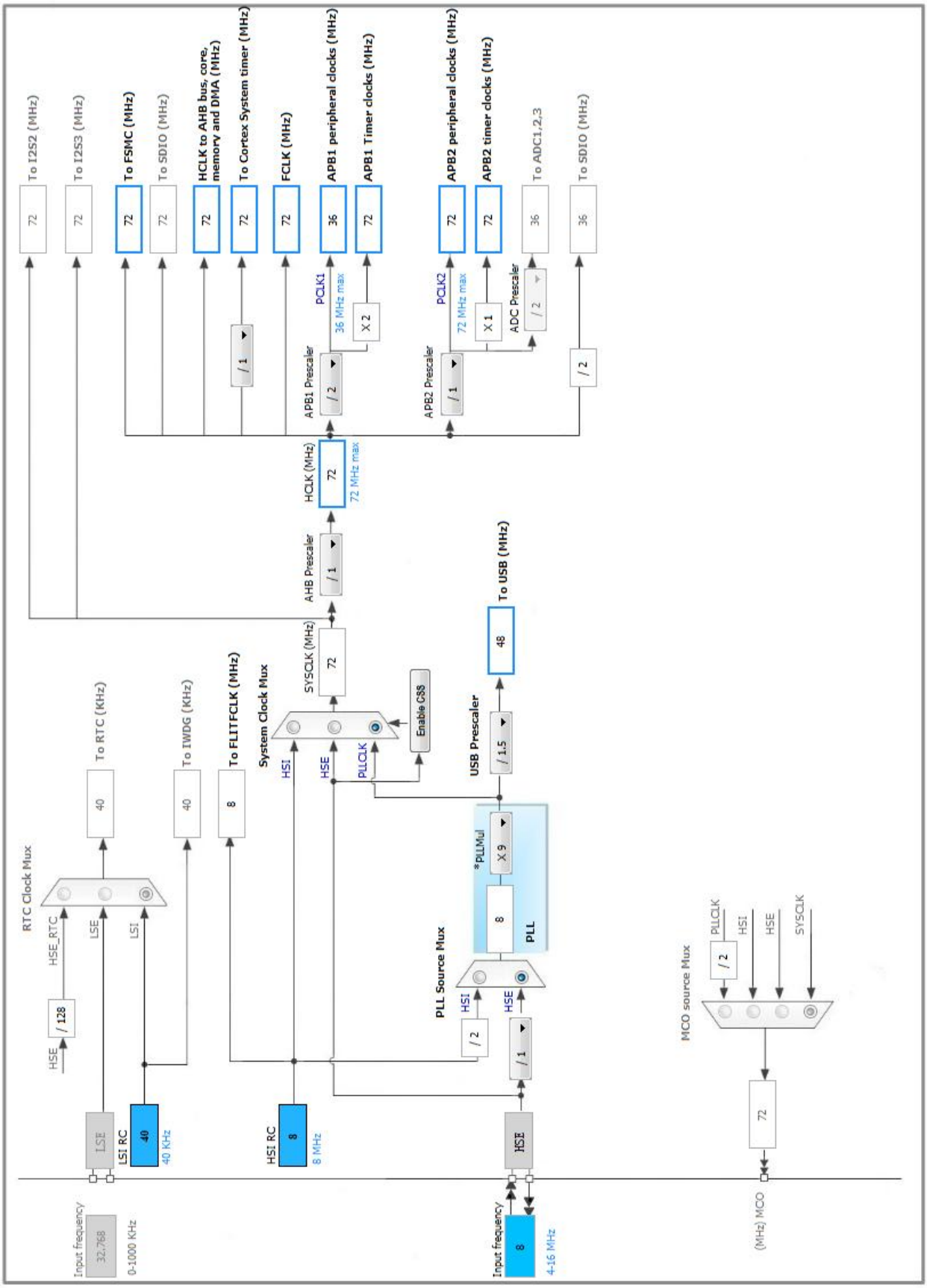
3. Pins Configuration

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2 *	I/O	GPIO_Output	A23
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		
38	VSS	Power		
39	VDD	Power		
44	PC4 *	I/O	GPIO_Output	LCDTP_CS
45	PC5 *	I/O	GPIO_Input	LCDTP_IRQ
46	PB0 *	I/O	GPIO_Output	BL_PWM
47	PB1 *	I/O	GPIO_Output	LCD_RESET
51	VSS	Power		
52	VDD	Power		
58	PE7	I/O	FSMC_D4	
59	PE8	I/O	FSMC_D5	
60	PE9	I/O	FSMC_D6	
61	VSS	Power		
62	VDD	Power		
63	PE10	I/O	FSMC_D7	
64	PE11	I/O	FSMC_D8	
65	PE12	I/O	FSMC_D9	
66	PE13	I/O	FSMC_D10	
67	PE14	I/O	FSMC_D11	
68	PE15	I/O	FSMC_D12	
71	VSS	Power		
72	VDD	Power		
77	PD8	I/O	FSMC_D13	
78	PD9	I/O	FSMC_D14	
79	PD10	I/O	FSMC_D15	
83	VSS	Power		

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
84	VDD	Power		
85	PD14	I/O	FSMC_D0	
86	PD15	I/O	FSMC_D1	
90	PG5	I/O	FSMC_A15	
94	VSS	Power		
95	VDD	Power		
103	PA11	I/O	USB_DM	
104	PA12	I/O	USB_DP	
106	NC	NC		
107	VSS	Power		
108	VDD	Power		
114	PD0	I/O	FSMC_D2	
115	PD1	I/O	FSMC_D3	
118	PD4	I/O	FSMC_NOE	
119	PD5	I/O	FSMC_NWE	
120	VSS	Power		
121	VDD	Power		
127	PG12	I/O	FSMC_NE4	
128	PG13 *	I/O	GPIO_Output	A24
130	VSS	Power		
131	VDD	Power		
138	BOOT0	Boot		
143	VSS	Power		
144	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. FSMC

NOR Flash/PSRAM/SRAM/ROM/LCD 1

Chip Select: NE4

Memory type: LCD Interface

LCD Register Select: A15

Data: 16 bits

5.1.1. NOR/PSRAM 1:

NOR/PSRAM control:

Memory type	LCD Interface
Bank	Bank 1 NOR/PSRAM 4
Write operation	Enabled
Extended mode	Disabled

NOR/PSRAM timing:

Address setup time in HCLK clock cycles	15
Data setup time in HCLK clock cycles	255
Bus turn around time in HCLK clock cycles	15

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.2.1. 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

5.3. SYS

Debug: No Debug

Timebase Source: SysTick

5.4. USB

mode: Device (FS)

5.4.1. Parameter Settings:

Basic Parameters:

Speed	Full Speed 12MBit/s
Endpoint 0 Max Packet size	8 Bytes

Power Parameters:

Low Power	Disabled
Link Power Management	Disabled
Battery Charging	Disabled

5.5. USB_DEVICE

Class For FS IP: Communication Device Class (Virtual Port Com)

5.5.1. Parameter Settings:

Basic Parameters:

USBD_MAX_NUM_INTERFACES (Maximum number of supported interfaces)	1
USBD_MAX_NUM_CONFIGURATION (Maximum number of supported configuration)	1
USBD_MAX_STR_DESC_SIZ (Maximum size for the string descriptors)	**48 ***
USBD_SUPPORT_USER_STRING (Enable user string descriptor)	Disabled
USBD_SELF_POWERED (Enabled self power)	Enabled
USBD_DEBUG_LEVEL (USBD Debug Level)	0: No debug message

Class Parameters:

USBD_CDC_INTERVAL (Number of micro-frames interval)	**5 ***

5.5.2. Device Descriptor:

Device Descriptor:

VID (Vendor IDentifier)	1155
LANGID_STRING (Language Identifier)	English(United States)
MANUFACTURER_STRING (Manufacturer Identifier)	STMicroelectronics

Device Descriptor FS:

PID (Product IDentifier)	22336
PRODUCT_STRING (Product Identifier)	STM32 Virtual ComPort
SERIALNUMBER_STRING (Serial number)	00000000001A
CONFIGURATION_STRING (Configuration Identifier)	CDC Config
INTERFACE_STRING (Interface Identifier)	CDC Interface

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
FSMC	PE7	FSMC_D4	Alternate Function Push Pull	n/a	High	
	PE8	FSMC_D5	Alternate Function Push Pull	n/a	High	
	PE9	FSMC_D6	Alternate Function Push Pull	n/a	High	
	PE10	FSMC_D7	Alternate Function Push Pull	n/a	High	
	PE11	FSMC_D8	Alternate Function Push Pull	n/a	High	
	PE12	FSMC_D9	Alternate Function Push Pull	n/a	High	
	PE13	FSMC_D10	Alternate Function Push Pull	n/a	High	
	PE14	FSMC_D11	Alternate Function Push Pull	n/a	High	
	PE15	FSMC_D12	Alternate Function Push Pull	n/a	High	
	PD8	FSMC_D13	Alternate Function Push Pull	n/a	High	
	PD9	FSMC_D14	Alternate Function Push Pull	n/a	High	
	PD10	FSMC_D15	Alternate Function Push Pull	n/a	High	
	PD14	FSMC_D0	Alternate Function Push Pull	n/a	High	
	PD15	FSMC_D1	Alternate Function Push Pull	n/a	High	
	PG5	FSMC_A15	Alternate Function Push Pull	n/a	High	
	PD0	FSMC_D2	Alternate Function Push Pull	n/a	High	
	PD1	FSMC_D3	Alternate Function Push Pull	n/a	High	
	PD4	FSMC_NOE	Alternate Function Push Pull	n/a	High	
	PD5	FSMC_NWE	Alternate Function Push Pull	n/a	High	
	PG12	FSMC_NE4	Alternate Function Push Pull	n/a	High	
RCC	OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
USB	PA11	USB_DM	n/a	n/a	n/a	
	PA12	USB_DP	n/a	n/a	n/a	
GPIO	PE2	GPIO_Output	Output Push Pull	n/a	Low	A23
	PC4	GPIO_Output	Output Push Pull	n/a	Low	LCDTP_CS
	PC5	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	LCDTP_IRQ
	PB0	GPIO_Output	Output Push Pull	n/a	Low	BL_PWM
	PB1	GPIO_Output	Output Push Pull	n/a	Low	LCD_RESET
	PG13	GPIO_Output	Output Push Pull	n/a	Low	A24

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
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
USB low priority or CAN RX0 interrupts	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
USB high priority or CAN TX interrupts	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103ZETx
Datasheet	14611_Rev12

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	CDC_Standalone
Project Folder	D:\Open103Z-Demo-HAL\22.USB_FS\USB_Device\CDC_Standalone
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F1 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