

1. Description

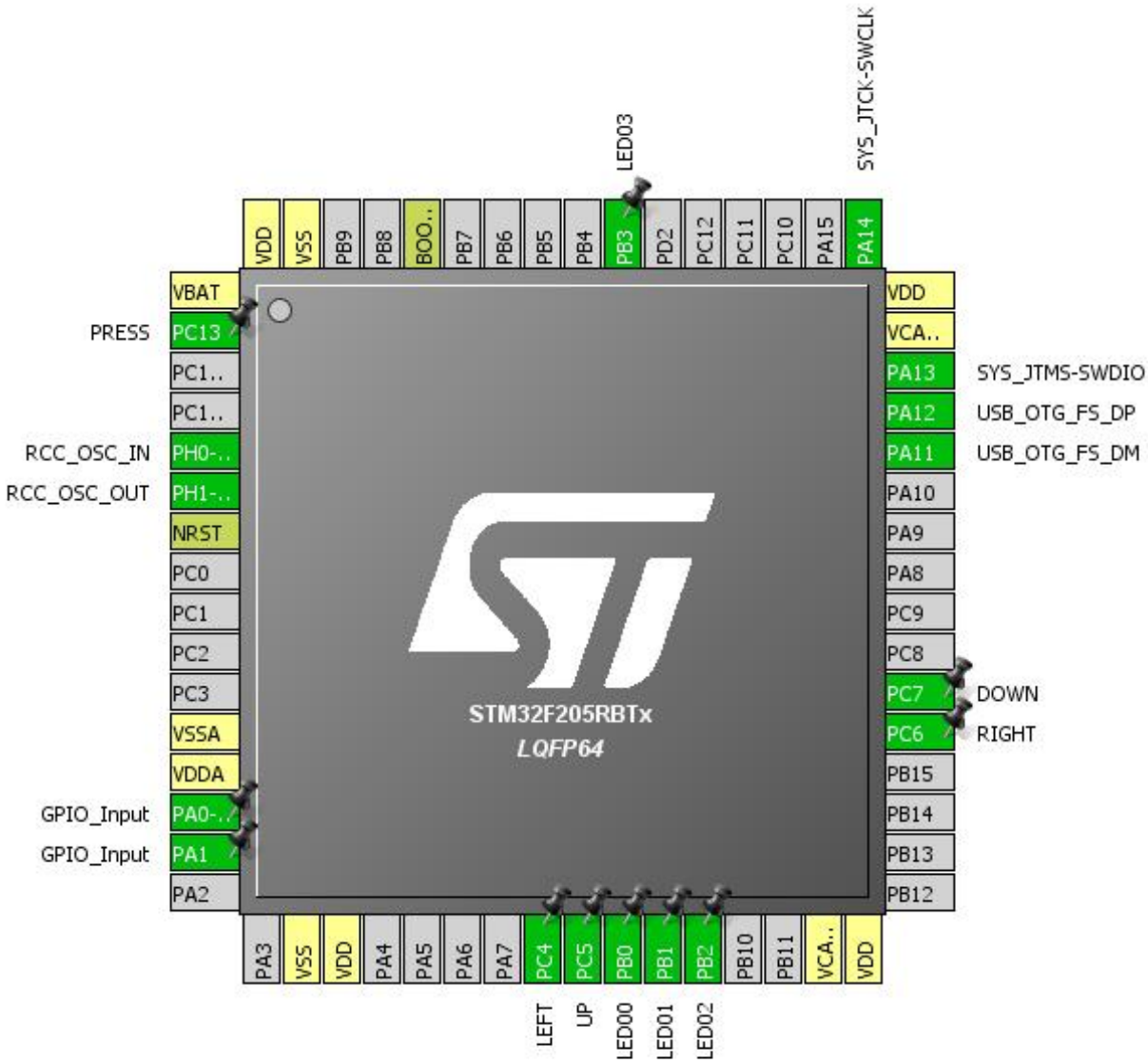
1.1. Project

Project Name	mouse_emu_usb_hid
Board Name	custom
Generated with:	STM32CubeMX 4.27.0
Date	07/11/2019

1.2. MCU

MCU Series	STM32F2
MCU Line	STM32F2x5
MCU name	STM32F205RBTx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration

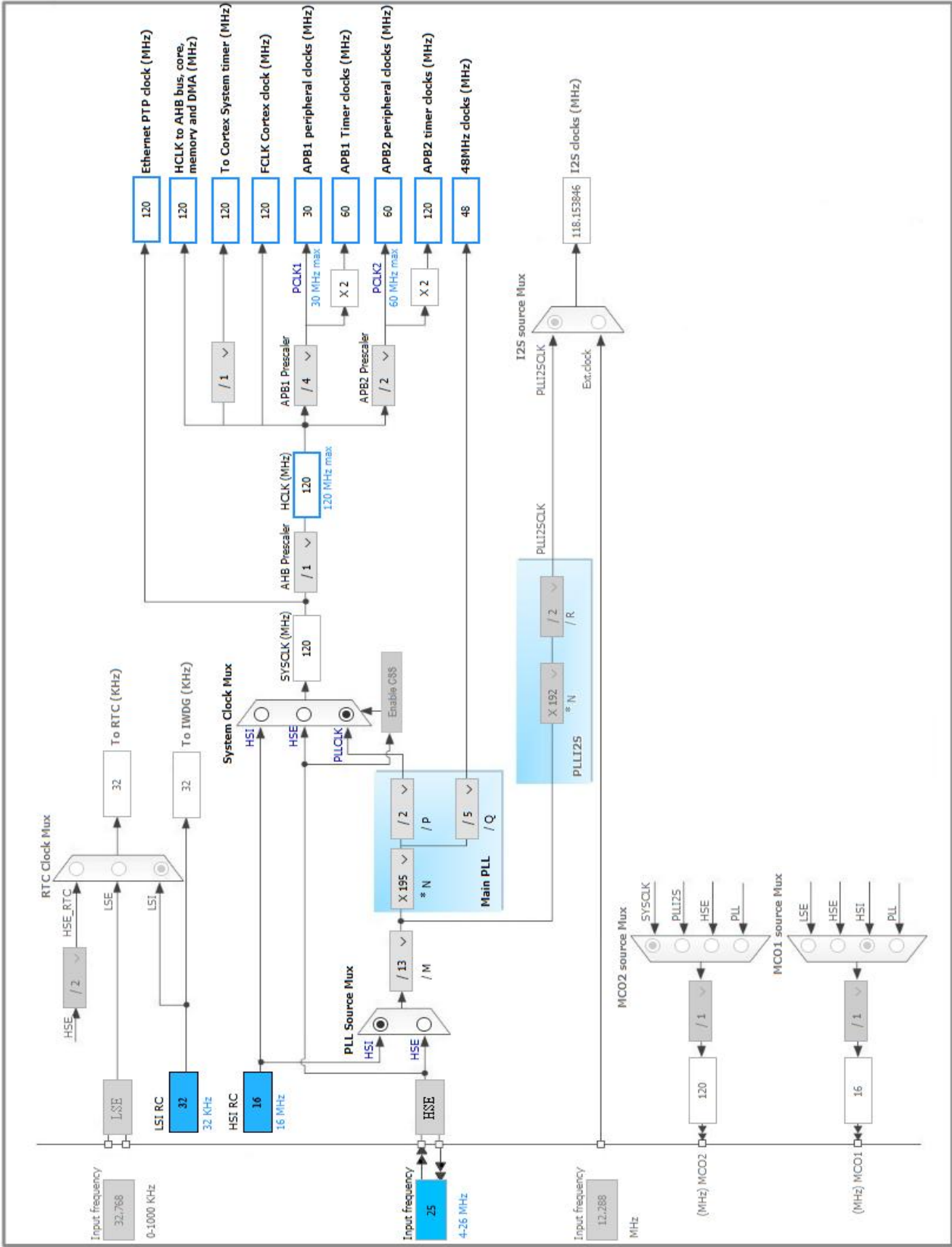


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13 *	I/O	GPIO_Input	PRESS
5	PH0-OSC_IN	I/O	RCC_OSC_IN	
6	PH1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
14	PA0-WKUP *	I/O	GPIO_Input	
15	PA1 *	I/O	GPIO_Input	
18	VSS	Power		
19	VDD	Power		
24	PC4 *	I/O	GPIO_Input	LEFT
25	PC5 *	I/O	GPIO_Input	UP
26	PB0 *	I/O	GPIO_Output	LED00
27	PB1 *	I/O	GPIO_Output	LED01
28	PB2 *	I/O	GPIO_Output	LED02
31	VCAP_1	Power		
32	VDD	Power		
37	PC6 *	I/O	GPIO_Input	RIGHT
38	PC7 *	I/O	GPIO_Input	DOWN
44	PA11	I/O	USB_OTG_FS_DM	
45	PA12	I/O	USB_OTG_FS_DP	
46	PA13	I/O	SYS_JTMS-SWDIO	
47	VCAP_2	Power		
48	VDD	Power		
49	PA14	I/O	SYS_JTCK-SWCLK	
55	PB3 *	I/O	GPIO_Output	LED03
60	BOOT0	Boot		
63	VSS	Power		
64	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	3 WS (4 CPU cycle)

RCC Parameters:

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

5.2. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.3. USB_OTG_FS

Mode: Device_Only

5.3.1. Parameter Settings:

Speed	Device Full Speed 12MBit/s
Endpoint 0 Max Packet size	64 Bytes
Enable internal IP DMA	Disabled
Low power	Disabled
VBUS sensing	Disabled
Signal start of frame	Disabled

5.4. USB_DEVICE

Class For FS IP: Human Interface Device Class (HID)

5.4.1. 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)	512
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

5.4.2. 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)	22315
PRODUCT_STRING (Product Identifier)	STM32 Human interface
SERIALNUMBER_STRING (Serial number)	00000000001A
CONFIGURATION_STRING (Configuration Identifier)	HID Config
INTERFACE_STRING (Interface Identifier)	HID 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
RCC	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-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	
USB_OTG_FS	PA11	USB_OTG_FS_DM	Alternate Function Push Pull	No pull-up and no pull-down	High *	
	PA12	USB_OTG_FS_DP	Alternate Function Push Pull	No pull-up and no pull-down	High *	
GPIO	PC13	GPIO_Input	Input mode	Pull-up *	n/a	PRESS
	PA0-WKUP	GPIO_Input	Input mode	Pull-up *	n/a	
	PA1	GPIO_Input	Input mode	Pull-up *	n/a	
	PC4	GPIO_Input	Input mode	Pull-up *	n/a	LEFT
	PC5	GPIO_Input	Input mode	Pull-up *	n/a	UP
	PB0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED00
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED01
	PB2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED02
	PC6	GPIO_Input	Input mode	Pull-up *	n/a	RIGHT
	PC7	GPIO_Input	Input mode	Pull-up *	n/a	DOWN
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED03

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
Pre-fetch 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 On The Go FS global interrupt	true	0	0
PVD interrupt through EXTI line16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F2
Line	STM32F2x5
MCU	STM32F205RBTx
Datasheet	15818_Rev15

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	mouse_emu_usb_hid
Project Folder	F:\WORK_SPACE\Gen code\4.x\mouse_emu_usb_hid
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F2 V1.7.0

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

9. Software Pack Report