1. Description

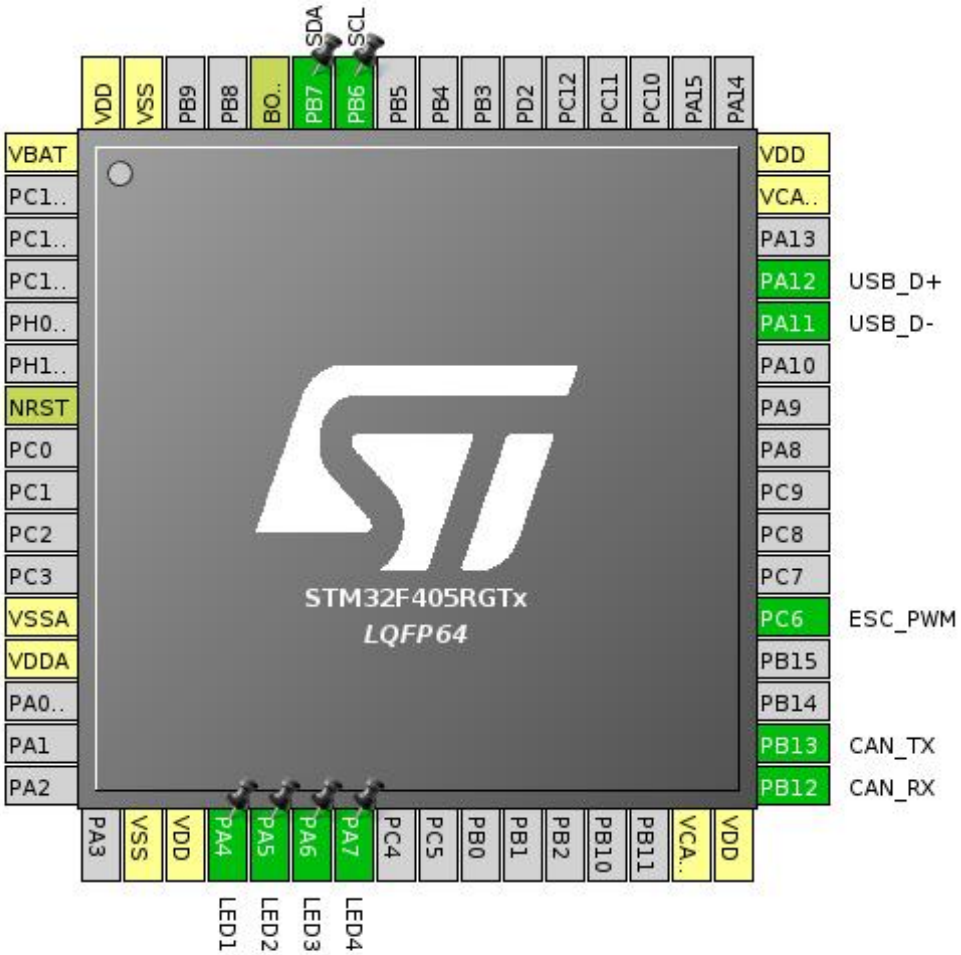
1.1. Project

Project Name	Power-Bricks-Board-Pinouts
Board Name	Power-Bricks-Board-Pinouts
Generated with:	STM32CubeMX 4.11.0
Date	12/10/2015

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F405/415
MCU name	STM32F405RGTx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration

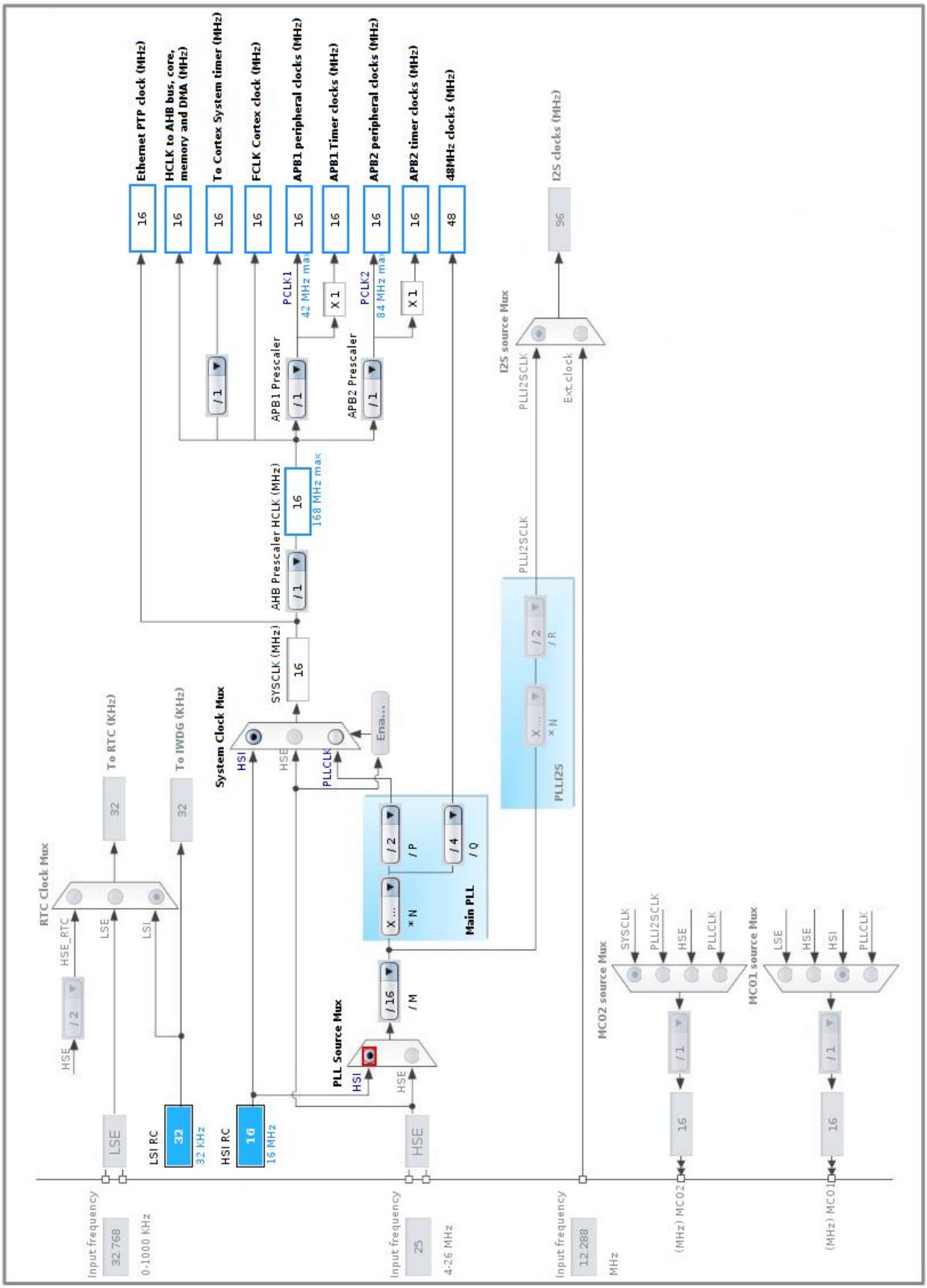


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
18	VSS	Power		
19	VDD	Power		
20	PA4 *	I/O	GPIO_Output	LED1
21	PA5 *	I/O	GPIO_Output	LED2
22	PA6 *	I/O	GPIO_Output	LED3
23	PA7 *	I/O	GPIO_Output	LED4
31	VCAP_1	Power		
32	VDD	Power		
33	PB12	I/O	CAN2_RX	CAN_RX
34	PB13	I/O	CAN2_TX	CAN_TX
37	PC6	I/O	TIM3_CH1	ESC_PWM
44	PA11	I/O	USB_OTG_FS_DM	USB_D-
45	PA12	I/O	USB_OTG_FS_DP	USB_D+
47	VCAP_2	Power		
48	VDD	Power		
58	PB6	I/O	I2C1_SCL	SCL
59	PB7	I/O	I2C1_SDA	SDA
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. CAN2

mode: Mode

5.1.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	16
Time Quantum	**1000.0 ***
Time Quanta in Bit Segment 1	1 Time
Time Quanta in Bit Segment 2	1 Time
Time for one Bit	**3000 ***
ReSynchronization Jump Width	1 Time

Basic Parameters:

Time Triggered Communication Mode	Disable
Automatic Bus-Off Management	Disable
Automatic Wake-Up Mode	Disable
No-Automatic Retransmission	Disable
Receive Fifo Locked Mode	Disable
Transmit Fifo Priority	Disable

Advanced Parameters:

Operating Mode	Normal

5.2. I2C1

I2C: I2C

5.2.1. Parameter Settings:

Master Features:

I2C Speed Mode	Standard Mode
I2C Clock Speed (Hz)	100000

Slave Features:

Clock No Stretch Mode	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled

Primary slave address	0
General Call address detection	Disabled

5.3. TIM3

Channel1: PWM Generation CH1

5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	0
Fast Mode	Disable
CH Polarity	High

5.4. USB_OTG_FS

Mode: Device_Only

5.4.1. Parameter Settings:

Speed	Device Full Speed 12MBit/s
Endpoint 0 Max Packet size	64 Bytes
Enable internal IP DMA	Disabled
Low power	Disabled
Link Power Management	Disabled
VBUS sensing	Enabled

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
CAN2	PB12	CAN2_RX	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	CAN_RX
	PB13	CAN2_TX	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	CAN_TX
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	Pull-up	**High ***	SCL
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull-up	**High ***	SDA
TIM3	PC6	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	ESC_PWM
USB_OTG_FS	PA11	USB_OTG_FS_DM	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	USB_D-
	PA12	USB_OTG_FS_DP	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	USB_D+
GPIO	PA4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED1
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED2
	PA6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED3
	PA7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED4

6.2. DMA configuration

nothing configured in DMA service

6.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	0
Non maskable interrupt	unused		
Memory management fault	unused		
Pre-fetch fault, memory access fault	unused		
Undefined instruction or illegal state	unused		
Debug monitor	unused		
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM3 global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
CAN2 TX interrupts	unused		
CAN2 RX0 interrupts	unused		
CAN2 RX1 interrupt	unused		
CAN2 SCE interrupt	unused		
USB On The Go FS global interrupt	unused		

*** User modified value**

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F405/415
MCU	STM32F405RGTx
Datasheet	022152_Rev5

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	Power-Bricks-Board-Pinouts
Project Folder	/home/lukeinator/Documents/Power-Bricks-Board-Pinouts
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F4 V1.9.0

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	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