1. Description

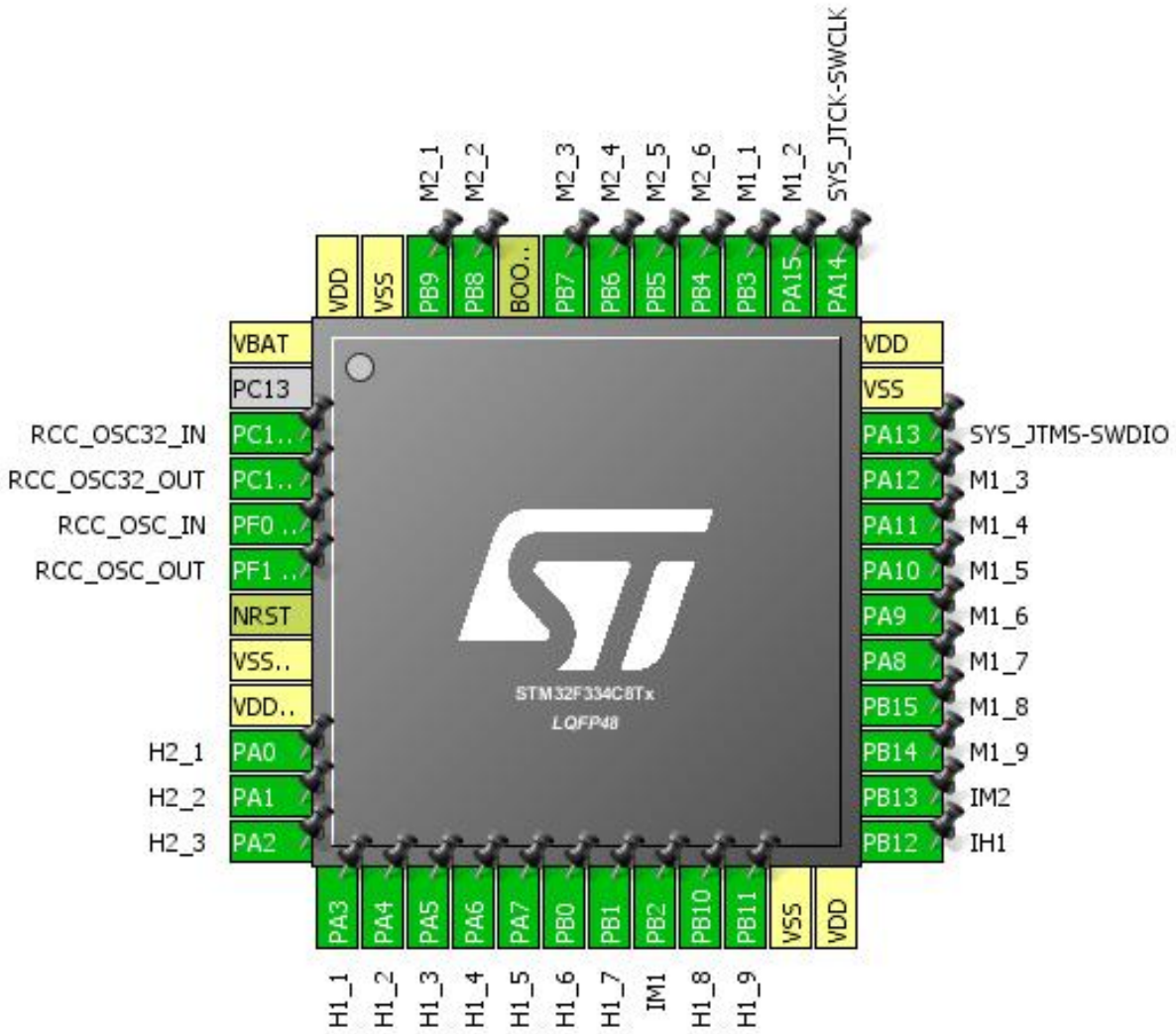
1.1. Project

Project Name	TixClockF334
Board Name	32F3348DISCOVERY
Generated with:	STM32CubeMX 4.27.0
Date	01/26/2020

1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F334
MCU name	STM32F334C8Tx
MCU Package	LQFP48
MCU Pin number	48

2. Pinout Configuration



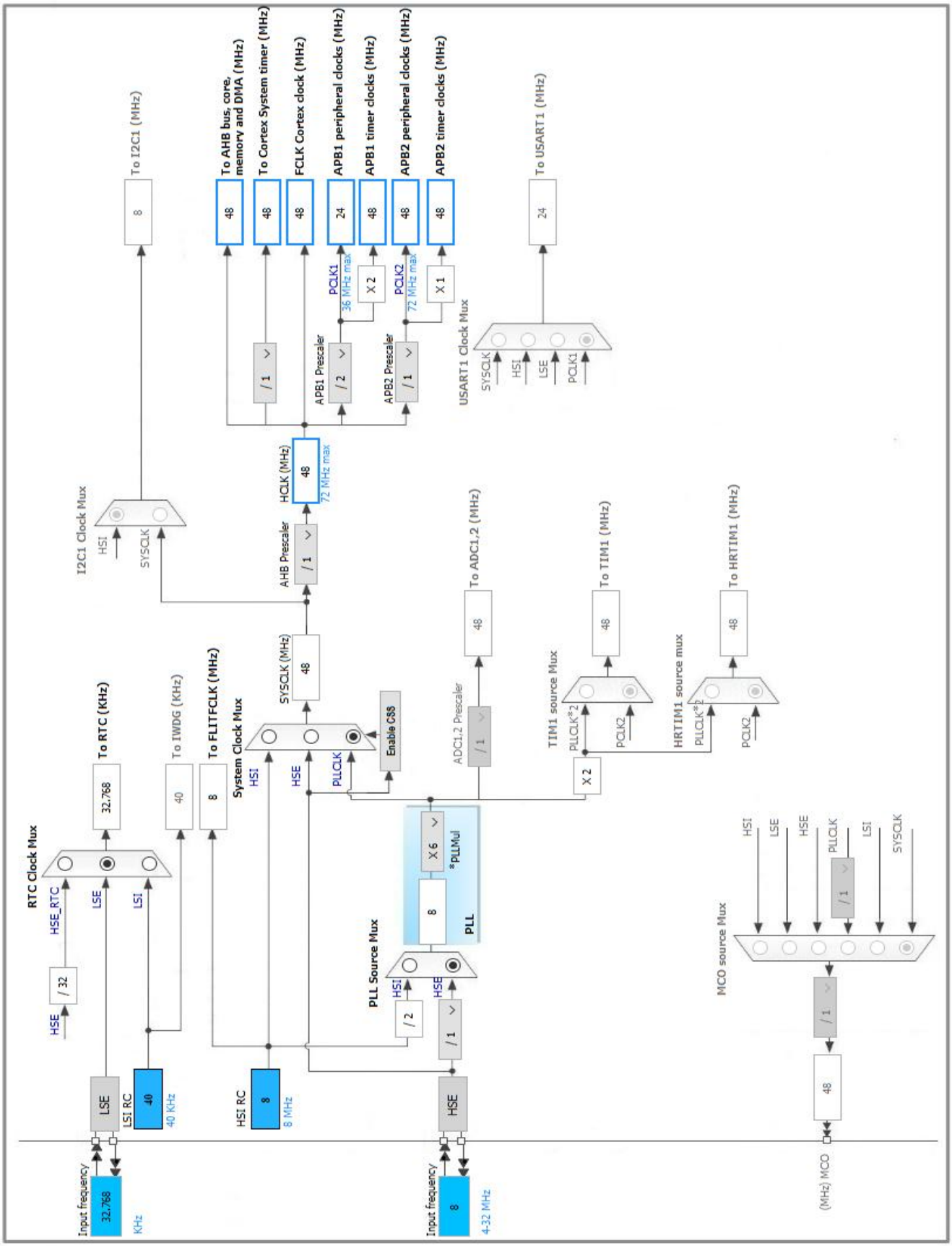
3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
3	PC14 / OSC32_IN	I/O	RCC_OSC32_IN	
4	PC15 / OSC32_OUT	I/O	RCC_OSC32_OUT	
5	PF0 / OSC_IN	I/O	RCC_OSC_IN	
6	PF1 / OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	VSSA/VREF-	Power		
9	VDDA/VREF+	Power		
10	PA0 *	I/O	GPIO_Output	H2_1
11	PA1 *	I/O	GPIO_Output	H2_2
12	PA2 *	I/O	GPIO_Output	H2_3
13	PA3 *	I/O	GPIO_Output	H1_1
14	PA4 *	I/O	GPIO_Output	H1_2
15	PA5 *	I/O	GPIO_Output	H1_3
16	PA6 *	I/O	GPIO_Output	H1_4
17	PA7 *	I/O	GPIO_Output	H1_5
18	PB0 *	I/O	GPIO_Output	H1_6
19	PB1 *	I/O	GPIO_Output	H1_7
20	PB2 *	I/O	GPIO_Input	IM1
21	PB10 *	I/O	GPIO_Output	H1_8
22	PB11 *	I/O	GPIO_Output	H1_9
23	VSS	Power		
24	VDD	Power		
25	PB12 *	I/O	GPIO_Input	IH1
26	PB13 *	I/O	GPIO_Input	IM2
27	PB14 *	I/O	GPIO_Output	M1_9
28	PB15 *	I/O	GPIO_Output	M1_8
29	PA8 *	I/O	GPIO_Output	M1_7
30	PA9 *	I/O	GPIO_Output	M1_6
31	PA10 *	I/O	GPIO_Output	M1_5
32	PA11 *	I/O	GPIO_Output	M1_4
33	PA12 *	I/O	GPIO_Output	M1_3
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
38	PA15 *	I/O	GPIO_Output	M1_2
39	PB3 *	I/O	GPIO_Output	M1_1
40	PB4 *	I/O	GPIO_Output	M2_6
41	PB5 *	I/O	GPIO_Output	M2_5
42	PB6 *	I/O	GPIO_Output	M2_4
43	PB7 *	I/O	GPIO_Output	M2_3
44	BOOT0	Boot		
45	PB8 *	I/O	GPIO_Output	M2_2
46	PB9 *	I/O	GPIO_Output	M2_1
47	VSS	Power		
48	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

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000
LSE Drive Capability	LSE oscillator low drive capability

5.2. RTC

mode: Activate Clock Source

mode: Activate Calendar

5.2.1. Parameter Settings:

General:

Hour Format	Hourformat 24
Asynchronous Predivider value	127
Synchronous Predivider value	255

Calendar Time:

Data Format	**Binary data format ***
Hours	0
Minutes	0
Seconds	0
Day Light Saving: value of hour adjustment	Daylightsaving None
Store Operation	Storeoperation Reset

Calendar Date:

Week Day	Monday
Month	January
Date	1
Year	**1 ***

5.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.4. WWDG

mode: Activated

5.4.1. Parameter Settings:

Watchdog Clocking:	
WWDG counter clock prescaler	**4 ***
WWDG window value	**127 ***
WWDG free-running downcounter value	**127 ***
Watchdog Interrupt:	
Early wakeup interrupt	Disable

*** 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	PC14 / OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15 / OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PF0 / OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PF1 / 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	
GPIO	PA0	GPIO_Output	Output Push Pull	**Pull up ***	Low	H2_1
	PA1	GPIO_Output	Output Push Pull	**Pull up ***	Low	H2_2
	PA2	GPIO_Output	Output Push Pull	**Pull up ***	Low	H2_3
	PA3	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_1
	PA4	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_2
	PA5	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_3
	PA6	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_4
	PA7	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_5
	PB0	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_6
	PB1	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_7
	PB2	GPIO_Input	Input mode	**Pull up ***	n/a	IM1
	PB10	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_8
	PB11	GPIO_Output	Output Push Pull	**Pull up ***	Low	H1_9
	PB12	GPIO_Input	Input mode	**Pull up ***	n/a	IH1
	PB13	GPIO_Input	Input mode	**Pull up ***	n/a	IM2
	PB14	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_9
	PB15	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_8
	PA8	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_7
	PA9	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_6
	PA10	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_5

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PA11	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_4
	PA12	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_3
	PA15	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_2
	PB3	GPIO_Output	Output Push Pull	**Pull up ***	Low	M1_1
	PB4	GPIO_Output	Output Push Pull	**Pull up ***	Low	M2_6
	PB5	GPIO_Output	Output Push Pull	**Pull up ***	Low	M2_5
	PB6	GPIO_Output	Output Push Pull	**Pull up ***	Low	M2_4
	PB7	GPIO_Output	Output Push Pull	**Pull up ***	Low	M2_3
	PB8	GPIO_Output	Output Push Pull	**Pull up ***	Low	M2_2
	PB9	GPIO_Output	Output Push Pull	**Pull up ***	Low	M2_1

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	1	0
Window watchdog interrupt	unused		
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
Floating point unit interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F3
Line	STM32F334
MCU	STM32F334C8Tx
Datasheet	025409_Rev6

7.2. Parameter Selection

Temperature	25
Vdd	3.6

7.3. Battery Selection

Battery	Li-MnO2(CR2032)
Capacity	225.0 mAh
Self Discharge	0.12 %/month
Nominal Voltage	3.0 V
Max Cont Current	3.0 mA
Max Pulse Current	15.0 mA
Cells in series	1
Cells in parallel	1

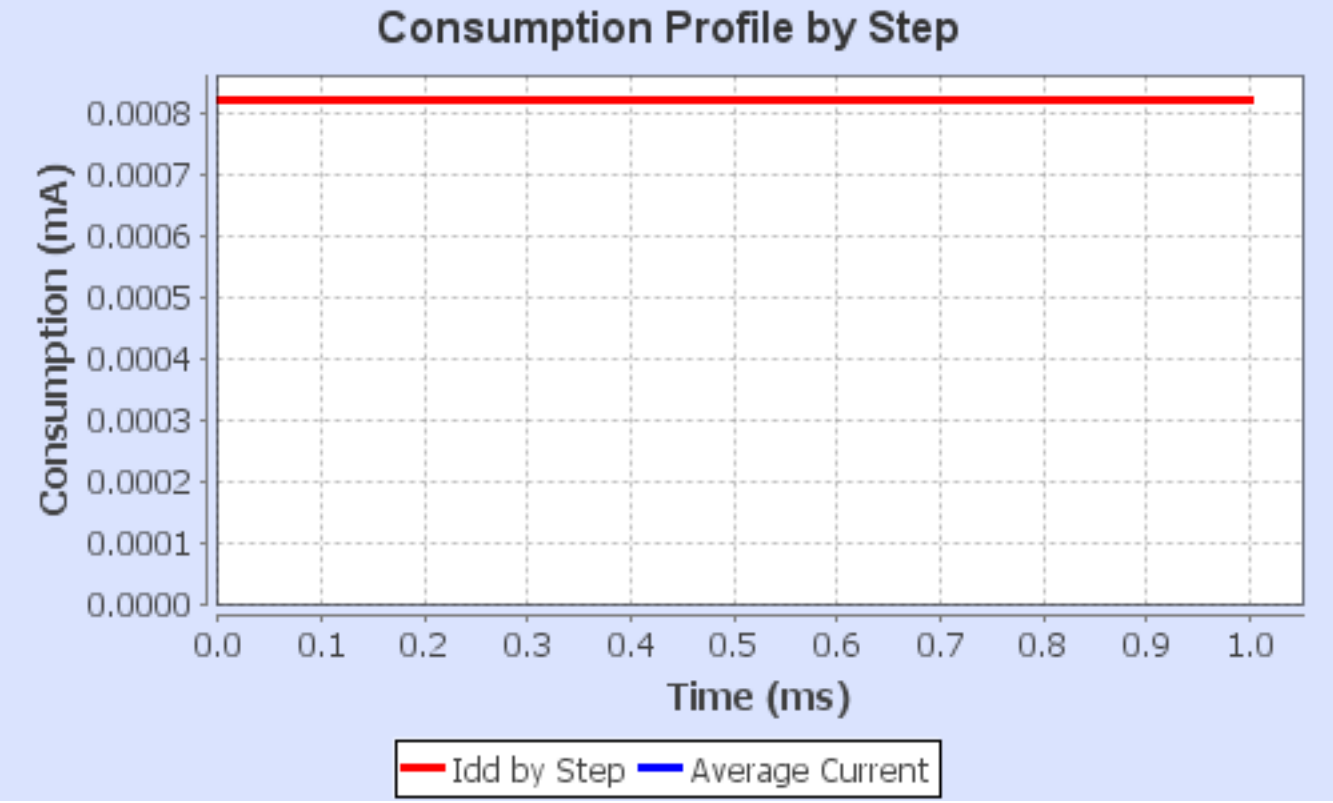
7.4. Sequence

Step	Step1
Mode	VBAT
Vdd	3.6
Voltage Source	Battery
Range	No Scale
Fetch Type	n/a
Clock Configuration	LSE RTC LowDriving
Clock Source Frequency	32.768 kHz
CPU Frequency	0 Hz
Peripherals	RTC*
Additional Cons.	0 mA
Average Current	820 nA
Duration	1 ms
DMIPS	0.0
Ta Max	105
Category	In DS Table

7.5. RESULTS

Sequence Time	1 ms	Average Current	820 nA
Battery Life	21 years, 6 months, 4 hours	Average DMIPS	0.0 DMIPS

7.6. Chart


Consumption Profile by Step
Consumption (mA)
0.0008
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0.0000
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time (ms)
Idd by Step
Average Current

8. Software Project

8.1. Project Settings

Name	Value
Project Name	TixClockF334
Project Folder	C:\Users\EC Lab\Desktop\TixClock\TixClockF334
Toolchain / IDE	EWARM V7
Firmware Package Name and Version	STM32Cube FW_F3 V1.10.0

8.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	Copy only the necessary library files
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)	Yes

9. Software Pack Report