1. Description

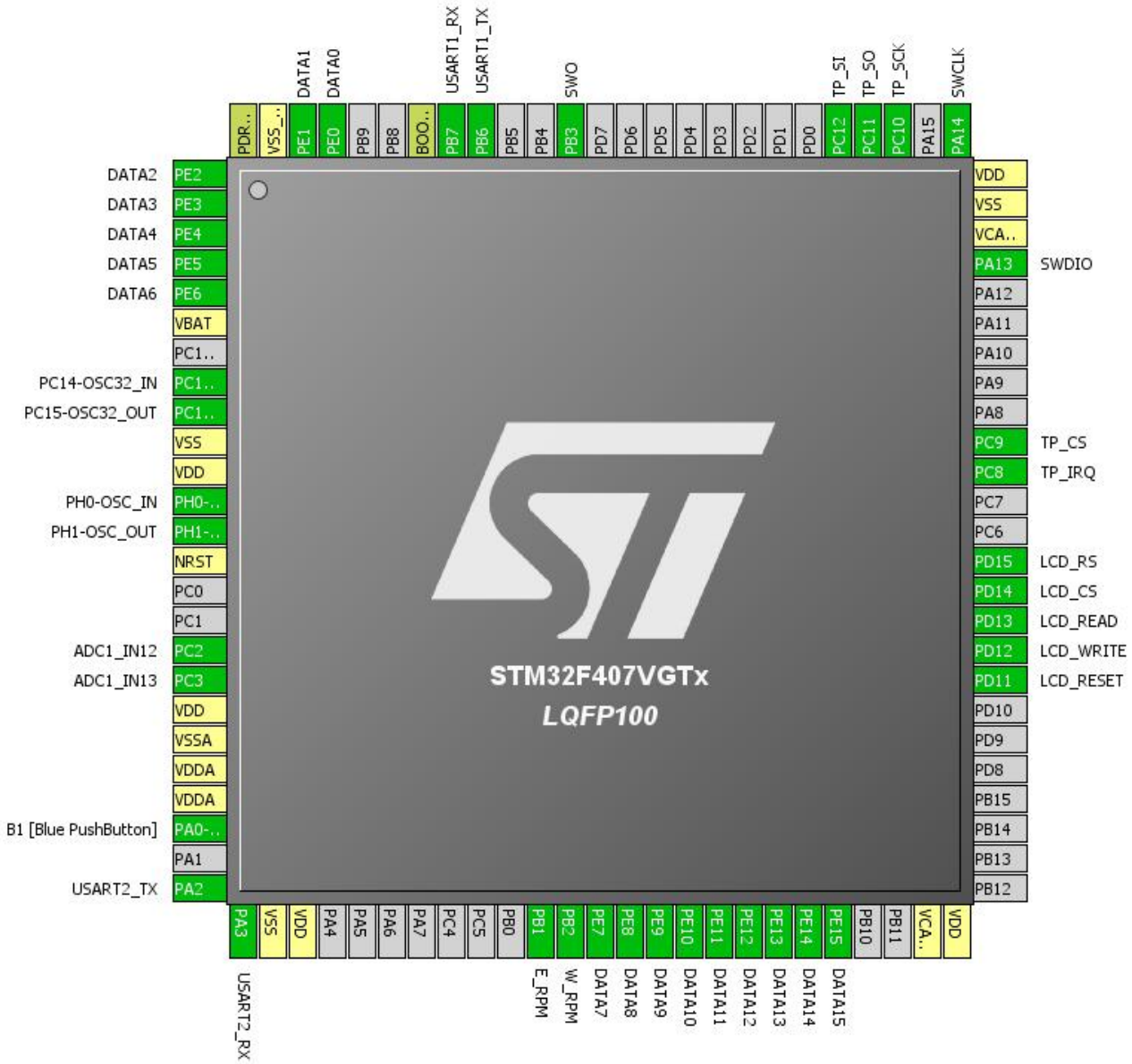
1.1. Project

Project Name	02_Dashboard_CubeProject
Generated with:	STM32CubeMX 4.2.0
Date	07/01/2014

1.2. MCU

MCU Serie	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407VGTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration



3. IPs and Middlewares Configuration

IP	Mode	Fonction	Pin
ADC1	IN12	ADC1_IN12	PC2
	IN13	ADC1_IN13	PC3
	Temperature Sensor Channel	N/A	N/A
	Vrefint Channel	N/A	N/A
	Vbat Channel	N/A	N/A
RCC	High Speed Clock (HSE): Crystal/Ceramic Resonator	RCC_OSC_IN	PH0-OSC_IN
		RCC_OSC_OUT	PH1-OSC_OUT
	Low Speed Clock (LSE) : Crystal/Ceramic Resonator	RCC_OSC32_IN	PC14-OSC32_IN
		RCC_OSC32_OUT	PC15-OSC32_OUT
SYS	Debug: SWD and Asynchronous Trace	SYS_JTMS-SWDIO	PA13
		SYS_JTCK-SWCLK	PA14
		SYS_JTDO-SWO	PB3
TIM2	Clock Source : Internal Clock	N/A	N/A
TIM3	Clock Source : Internal Clock	N/A	N/A
TIM4	Clock Source : Internal Clock	N/A	N/A
USART1	Mode: Asynchronous	USART1_RX	PB7
		USART1_TX	PB6
USART2	Mode: Asynchronous	USART2_RX	PA3
		USART2_TX	PA2

4. Pins Configuration

Pin	Pos	Function(s)	Label
PE2 *	1	GPIO_Output	DATA2
PE3 *	2	GPIO_Output	DATA3
PE4 *	3	GPIO_Output	DATA4
PE5 *	4	GPIO_Output	DATA5
PE6 *	5	GPIO_Output	DATA6
PC14-OSC32_IN	8	RCC_OSC32_IN	PC14-OSC32_IN
PC15-OSC32_OUT	9	RCC_OSC32_OUT	PC15-OSC32_OUT
PH0-OSC_IN	12	RCC_OSC_IN	PH0-OSC_IN
PH1-OSC_OUT	13	RCC_OSC_OUT	PH1-OSC_OUT
PC2	17	ADC1_IN12	
PC3	18	ADC1_IN13	
PA0-WKUP	23	GPIO_EXTI0	B1 [Blue PushButton]
PA2	25	USART2_TX	
PA3	26	USART2_RX	
PB1	36	GPIO_EXTI1	E_RPM
PB2	37	GPIO_EXTI2	W_RPM
PE7 *	38	GPIO_Output	DATA7
PE8 *	39	GPIO_Output	DATA8
PE9 *	40	GPIO_Output	DATA9
PE10 *	41	GPIO_Output	DATA10
PE11 *	42	GPIO_Output	DATA11
PE12 *	43	GPIO_Output	DATA12
PE13 *	44	GPIO_Output	DATA13
PE14 *	45	GPIO_Output	DATA14
PE15 *	46	GPIO_Output	DATA15
PD11 *	58	GPIO_Output	LCD_RESET
PD12 *	59	GPIO_Output	LCD_WRITE
PD13 *	60	GPIO_Input	LCD_READ
PD14 *	61	GPIO_Output	LCD_CS
PD15 *	62	GPIO_Output	LCD_RS
PC8 *	65	GPIO_Input	TP_IRQ
PC9 *	66	GPIO_Output	TP_CS
PA13	72	SYS_JTMS-SWDIO	SWDIO
PA14	76	SYS_JTCK-SWCLK	SWCLK
PC10 *	78	GPIO_Output	TP_SCK
PC11 *	79	GPIO_Output	TP_SO
PC12 *	80	GPIO_Input	TP_SI
PB3	89	SYS_JTDO-SWO	SWO
PB6	92	USART1_TX	

Pin	Pos	Function(s)	Label
PB7	93	USART1_RX	
PE0 *	97	GPIO_Output	DATA0
PE1 *	98	GPIO_Output	DATA1

* The pin is affected with an I/O function

5. Power Plugin report

5.1. Microcontroller Selection

Serie	STM32F4
Line	STM32F407/417
MCU	STM32F407VGTx
Datasheet	022152_Rev5

5.2. Parameter Selection

Temperature	25
Vdd	3.3

5.3. Battery Selection

Battery	Alkaline(9V)
Capacity	625.0 mAh
Self discharge	0.3 %/month
Nominal voltage	9.0 V
Max Cont Current	200.0 mA
Max Pulse Current	0.0 mA
Cells in series	1
Cells in parallel	1

5.4. Sequence

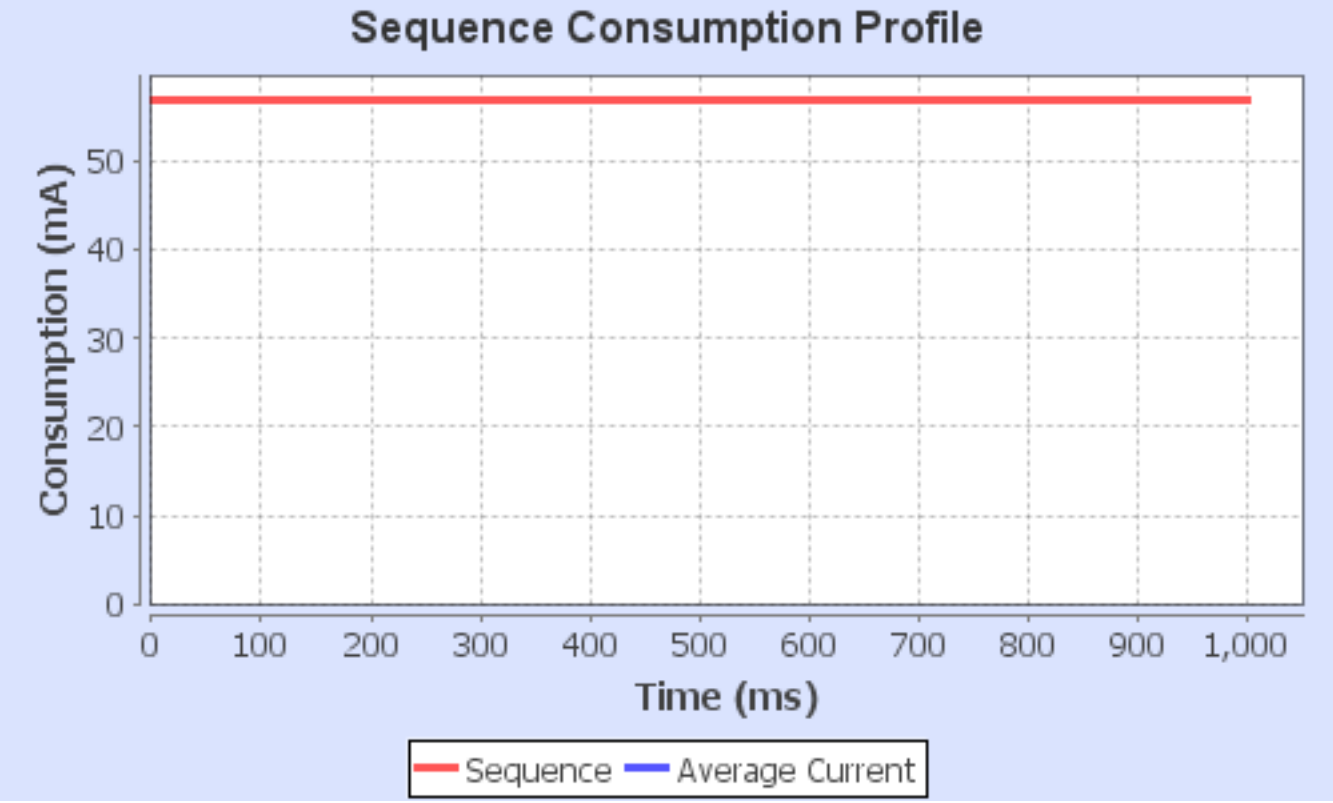
Step	STEP1
Mode	RUN
Range	Scale1-High
Fetch type	FLASH ART_OFF
Clock Config.	HSE PLL_ON

Clock Source Freq.	4.0 MHz
CPU Freq.	168.0 MHz
Periph.	ADC1 DMA1 DMA2 GPIOA GPIOB GPIOC GPIOD GPIOE GPIOH SYSCFG TIM2 TIM3 TIM4 USART1 USART2
Additional Cons.	0 mA
Average Current	56.879383 mA
Duration	1 s
DMIPS	210.0

5.5. Results

Sequence time	1.0 s	Average current	56.879 mA
Battery Life	10 hours	Average DMIPS	210.0 DMIPS

5.6. Chart



6. Software Project

6.1. Project Settings

Name	Value
Project Name	02_Dashboard_CubeProject
Project Folder	D:\ARM_projektek\02_Dashboard_CubeProject\02_Dashboard_CubeProject
Toolchain / IDE	MDK-ARM 4.73
Firmware Package Name and Version	STM32Cube FW_F4 V1.1.0

6.2. 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

6.3. Toolchains Settings

Name	Value
Compiler Optimizations	Balanced Size/Speed