



## 1. Description

### 1.1. Project

Project Name	Lflush
Board Name	NUCLEO-F303K8
Generated with:	STM32CubeMX 6.0.0
Date	12/23/2020

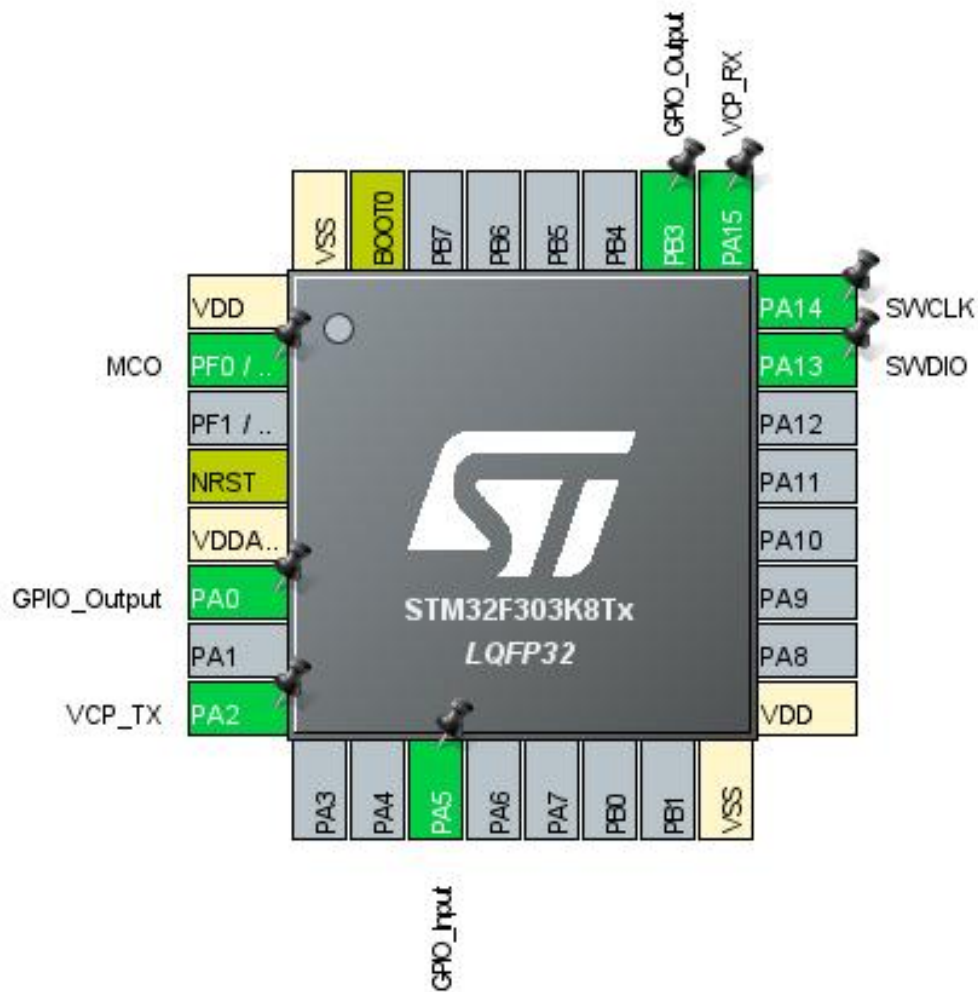
### 1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F303
MCU name	STM32F303K8Tx
MCU Package	LQFP32
MCU Pin number	32

### 1.3. Core(s) information

Core(s)	Arm Cortex-M4
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## 2. Pinout Configuration

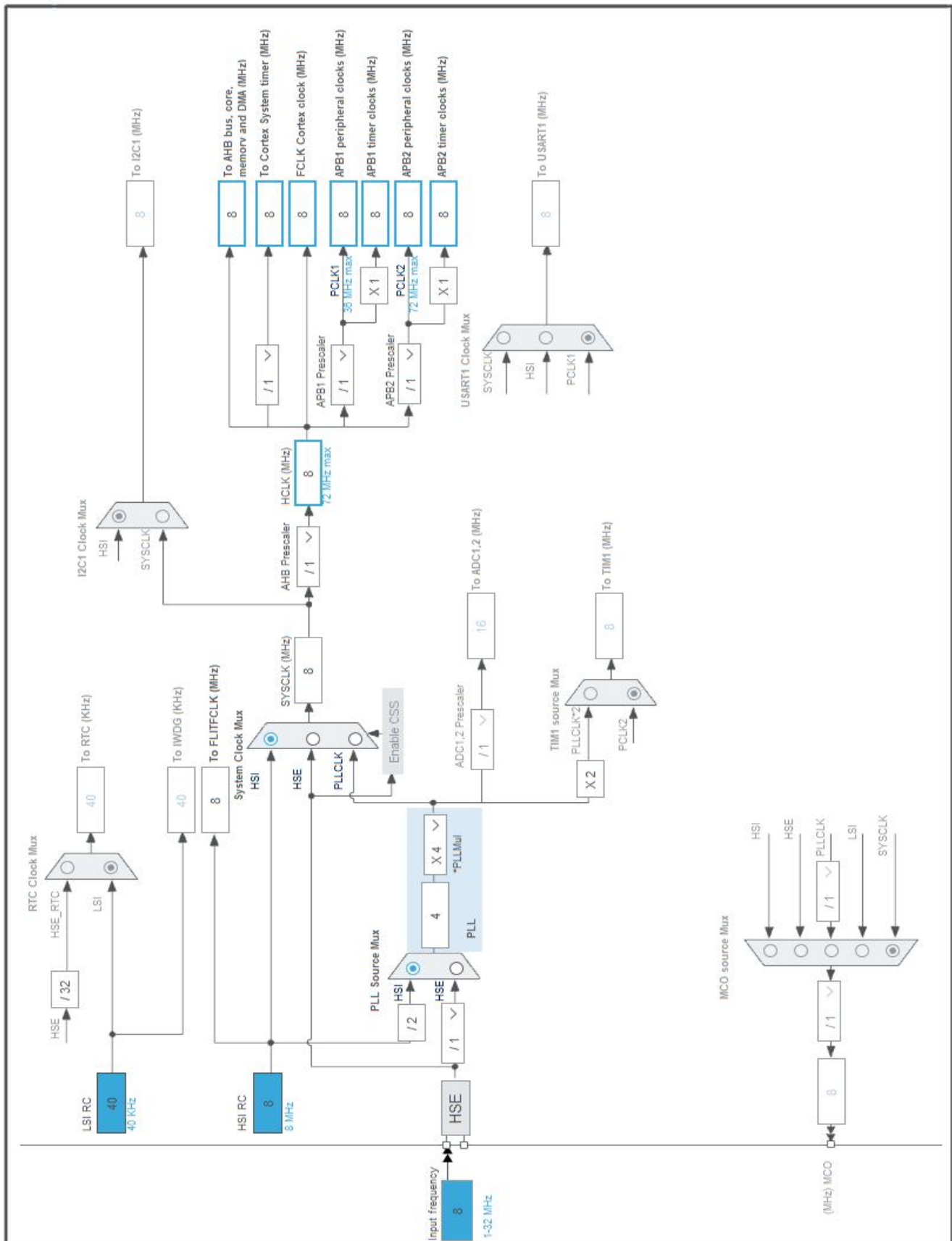


### 3. Pins Configuration

Pin Number LQFP32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
2	PF0 / OSC_IN	I/O	RCC_OSC_IN	MCO
4	NRST	Reset		
5	VDDA/VREF+	Power		
6	PA0 *	I/O	GPIO_Output	
8	PA2	I/O	USART2_TX	VCP_TX
11	PA5 *	I/O	GPIO_Input	
16	VSS	Power		
17	VDD	Power		
23	PA13	I/O	SYS_JTMS-SWDIO	SWDIO
24	PA14	I/O	SYS_JTCK-SWCLK	SWCLK
25	PA15	I/O	USART2_RX	VCP_RX
26	PB3 *	I/O	GPIO_Output	
31	BOOT0	Boot		
32	VSS	Power		

\* The pin is affected with an I/O function

## 4. Clock Tree Configuration



## 5. Software Project

### 5.1. Project Settings

Name	Value
Project Name	Lflush
Project Folder	C:\Users\takashi\Desktop\lec\Lflush
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_F3 V1.11.2
Application Structure	Advanced
Generate Under Root	Yes
Do not generate the main()	No
Minimum Heap Size	0x200
Minimum Stack Size	0x400

### 5.2. Code Generation Settings

Name	Value
STM32Cube MCU packages and embedded software	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
Keep User Code when re-generating	Yes
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No
Enable Full Assert	No

### 5.3. Advanced Settings - Generated Function Calls

Rank	Function Name	IP Instance Name
1	MX_GPIO_Init	GPIO
2	SystemClock_Config	RCC
3	MX_USART2_UART_Init	USART2

## 6. Power Consumption Calculator report

### 6.1. Microcontroller Selection

Series	STM32F3
Line	STM32F303
MCU	STM32F303K8Tx
Datasheet	DS9866_Rev5

### 6.2. Parameter Selection

Temperature	25
Vdd	3.6

### 6.3. Battery Selection

Battery	Li-SOCL2(A3400)
Capacity	3400.0 mAh
Self Discharge	0.08 %/month
Nominal Voltage	3.6 V
Max Cont Current	100.0 mA
Max Pulse Current	200.0 mA
Cells in series	1
Cells in parallel	1

#### 6.4. Sequence

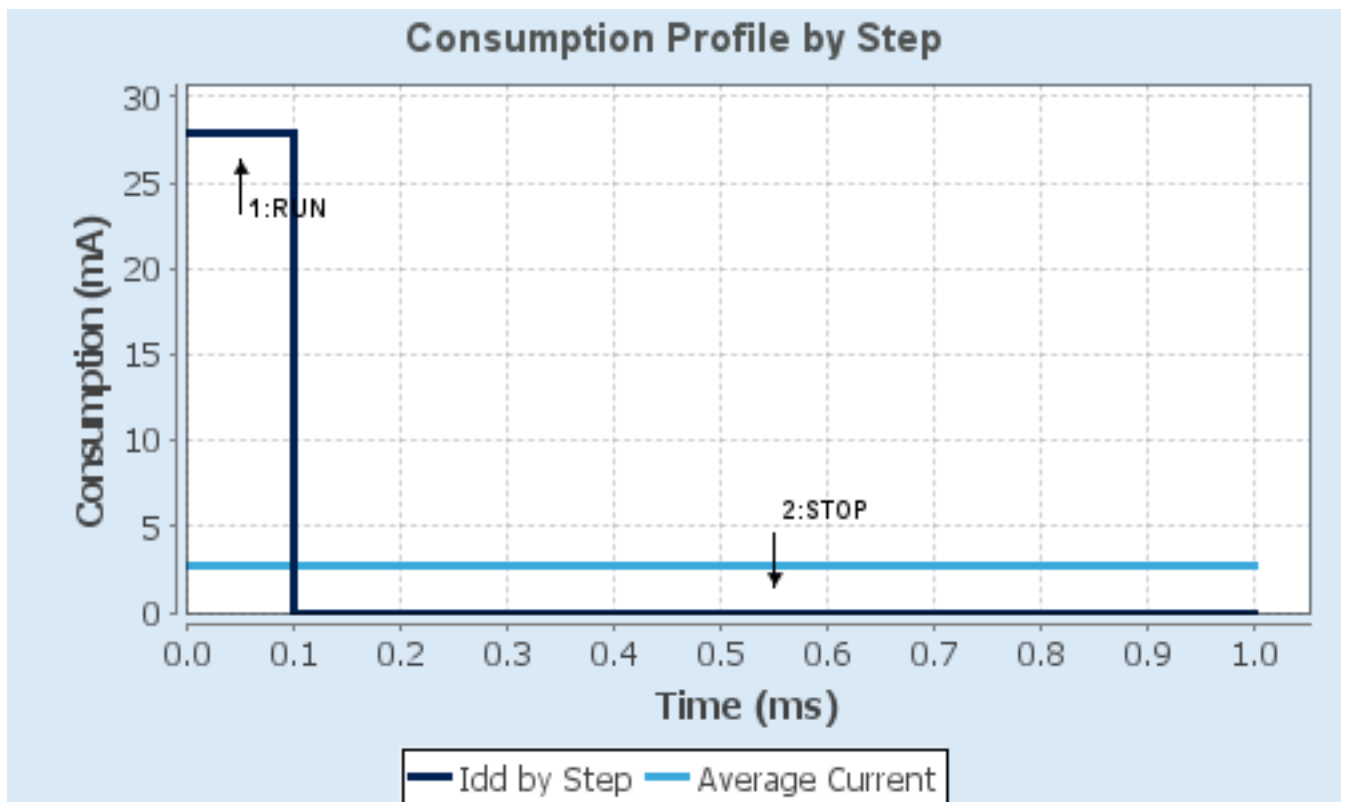
<b>Step</b>	Step1	Step2
<b>Mode</b>	RUN	STOP
<b>Vdd</b>	3.6	3.6
<b>Voltage Source</b>	Battery	Battery
<b>Range</b>	No Scale	No Scale
<b>Fetch Type</b>	RAM	n/a
<b>CPU Frequency</b>	72 MHz	0 Hz
<b>Clock Configuration</b>	HSEBYP PLL	Regulator LP
<b>Clock Source Frequency</b>	8 MHz	0 Hz
<b>Peripherals</b>		
<b>Additional Cons.</b>	0 mA	0 mA
<b>Average Current</b>	27.84 mA	9.55 $\mu$ A
<b>Duration</b>	0.1 ms	0.9 ms
<b>DMIPS</b>	90.0	0.0
<b>Ta Max</b>	98.99	105
<b>Category</b>	In DS Table	In DS Table

#### 6.5. Results

Sequence Time	1 ms	Average Current	2.79 mA
Battery Life	1 month, 20 days, 5 hours	Average DMIPS	90.0 DMIPS

#### 6.6. Chart





## 7. IPs and Middleware Configuration

### 7.1. GPIO

### 7.2. RCC

#### High Speed Clock (HSE): BYPASS Clock Source

##### 7.2.1. Parameter Settings:

###### System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	0 WS (1 CPU cycle)

###### RCC Parameters:

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

### 7.3. SYS

#### Debug: Serial Wire

#### Timebase Source: SysTick

### 7.4. USART2

#### Mode: Asynchronous

##### 7.4.1. Parameter Settings:

###### Basic Parameters:

Baud Rate	38400
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

###### Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples
Single Sample	Disable

###### Advanced Features:

TX Pin Active Level Inversion	Disable
RX Pin Active Level Inversion	Disable
Data Inversion	Disable

TX and RX Pins Swapping	Disable
Overrun	Enable
DMA on RX Error	Enable
MSB First	Disable

**\* User modified value**

## 8. System Configuration

### 8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PF0 / OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	MCO
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	SWDIO
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	SWCLK
USART2	PA2	USART2_TX	Alternate Function Push Pull	No pull up pull down	<b>High *</b>	VCP_TX
	PA15	USART2_RX	Alternate Function Push Pull	No pull up pull down	<b>High *</b>	VCP_RX
GPIO	PA0	GPIO_Output	Output Push Pull	No pull up pull down	Low	
	PA5	GPIO_Input	Input mode	No pull up pull down	n/a	
	PB3	GPIO_Output	Output Push Pull	No pull up pull down	Low	

### 8.2. DMA configuration

nothing configured in DMA service

### 8.3. NVIC configuration

#### 8.3.1. NVIC

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
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
USART2 global interrupt / USART2 wake-up interrupt through EXT line 26	unused		
Floating point unit interrupt	unused		

#### 8.3.2. NVIC Code generation

Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Non maskable interrupt	true	true	false
Hard fault interrupt	true	true	false
Memory management fault	true	true	false
Pre-fetch fault, memory access fault	true	true	false
Undefined instruction or illegal state	true	true	false
System service call via SWI instruction	true	true	false
Debug monitor	true	true	false
Pendable request for system service	true	true	false
System tick timer	true	true	true

\* User modified value

## 9. System Views

### 9.1. Category view

#### 9.1.1. Current

Middleware

System Core

Analog

Timers

Connectivity

Computing

DMA

GPIO 

I2C 

RCC 

SYS 

USART2 

## 10. Docs & Resources

Type	Link
Datasheet	<a href="http://www.st.com/resource/en/datasheet/DM00092070.pdf">http://www.st.com/resource/en/datasheet/DM00092070.pdf</a>
Reference manual	<a href="http://www.st.com/resource/en/reference_manual/DM00043574.pdf">http://www.st.com/resource/en/reference_manual/DM00043574.pdf</a>
Programming manual	<a href="http://www.st.com/resource/en/programming_manual/DM00046982.pdf">http://www.st.com/resource/en/programming_manual/DM00046982.pdf</a>
Errata sheet	<a href="http://www.st.com/resource/en/errata_sheet/DM00109011.pdf">http://www.st.com/resource/en/errata_sheet/DM00109011.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/CD00160362.pdf">http://www.st.com/resource/en/application_note/CD00160362.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/CD00167594.pdf">http://www.st.com/resource/en/application_note/CD00167594.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/CD00211314.pdf">http://www.st.com/resource/en/application_note/CD00211314.pdf</a>
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Application note	<a href="http://www.st.com/resource/en/application_note/DM00042534.pdf">http://www.st.com/resource/en/application_note/DM00042534.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/DM00047998.pdf">http://www.st.com/resource/en/application_note/DM00047998.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/DM00053084.pdf">http://www.st.com/resource/en/application_note/DM00053084.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/DM00070391.pdf">http://www.st.com/resource/en/application_note/DM00070391.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/DM00072315.pdf">http://www.st.com/resource/en/application_note/DM00072315.pdf</a>
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Application note	<a href="http://www.st.com/resource/en/application_note/DM00074240.pdf">http://www.st.com/resource/en/application_note/DM00074240.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/DM00080497.pdf">http://www.st.com/resource/en/application_note/DM00080497.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/DM00083249.pdf">http://www.st.com/resource/en/application_note/DM00083249.pdf</a>
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Application note	<a href="http://www.st.com/resource/en/application_note/DM00087593.pdf">http://www.st.com/resource/en/application_note/DM00087593.pdf</a>
Application note	<a href="http://www.st.com/resource/en/application_note/DM00121474.pdf">http://www.st.com/resource/en/application_note/DM00121474.pdf</a>
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Application note	<a href="http://www.st.com/resource/en/application_note/DM00160482.pdf">http://www.st.com/resource/en/application_note/DM00160482.pdf</a>

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Application note [http://www.st.com/resource/en/application\\_note/DM00220769.pdf](http://www.st.com/resource/en/application_note/DM00220769.pdf)

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