



1. Description

1.1. Project

Project Name	mlx90614_driver_library_project
Board Name	custom
Generated with:	STM32CubeMX 6.11.1
Date	06/24/2024

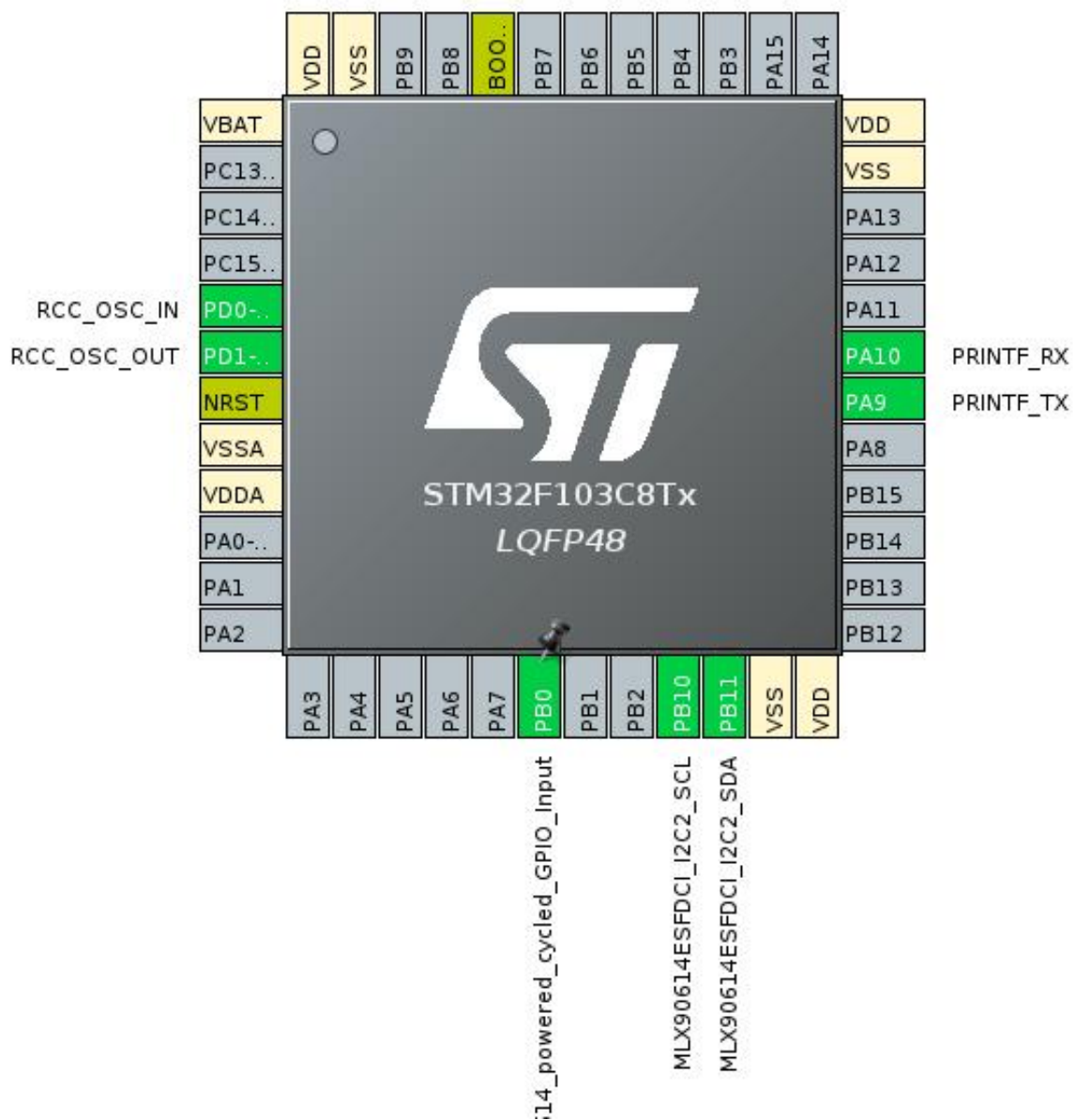
1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103C8Tx
MCU Package	LQFP48
MCU Pin number	48

1.3. Core(s) information

Core(s)	Arm Cortex-M3
---------	---------------

2. Pinout Configuration

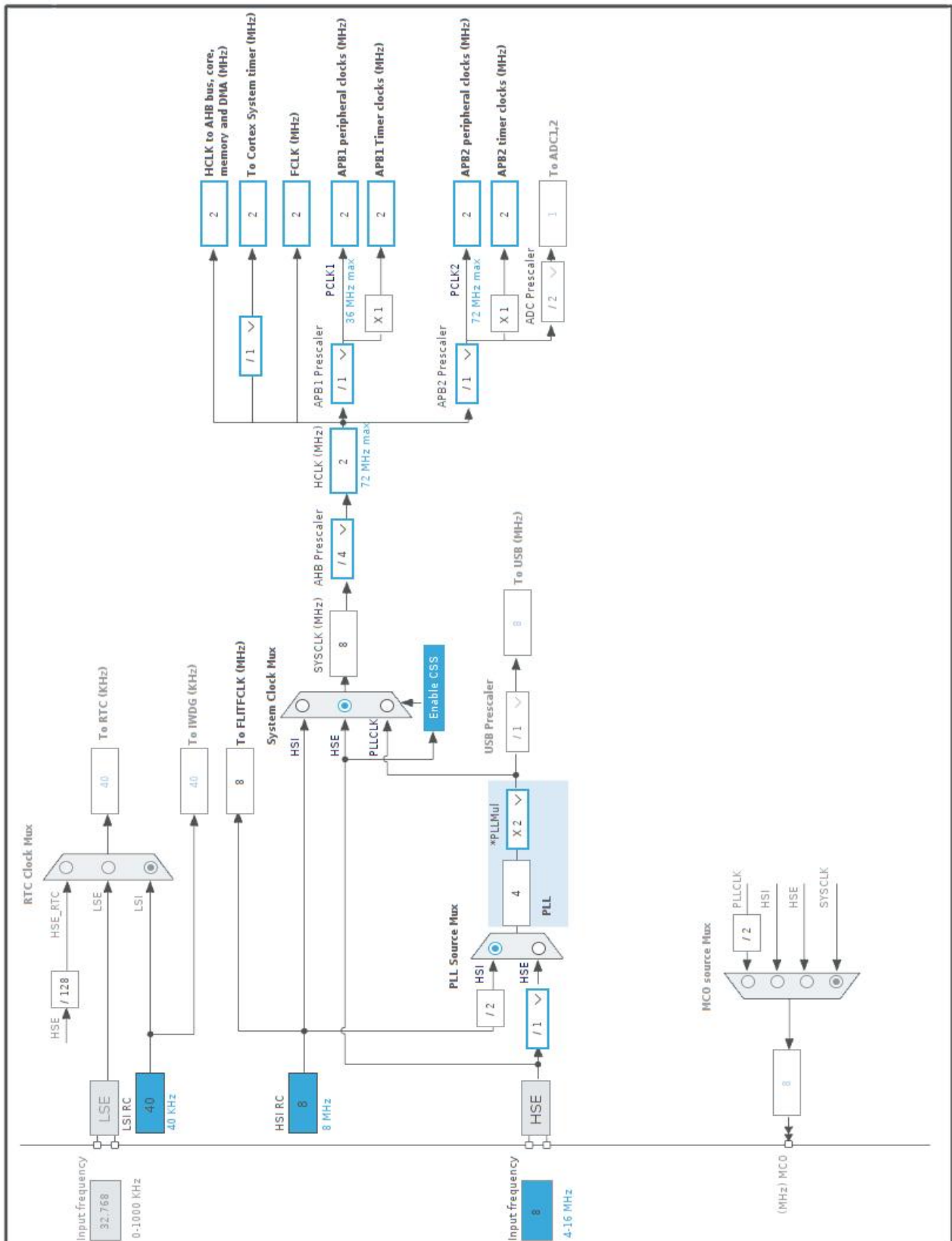


3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
18	PB0 *	I/O	GPIO_Input	is_MLX90614_powered_cycl ed_GPIO_Input
21	PB10	I/O	I2C2_SCL	MLX90614ESFDCI_I2C2_S CL
22	PB11	I/O	I2C2_SDA	MLX90614ESFDCI_I2C2_S DA
23	VSS	Power		
24	VDD	Power		
30	PA9	I/O	USART1_TX	PRINTF_TX
31	PA10	I/O	USART1_RX	PRINTF_RX
35	VSS	Power		
36	VDD	Power		
44	BOOT0	Boot		
47	VSS	Power		
48	VDD	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	mlx90614_driver_library_project
Project Folder	/home/dannyc/Desktp/Mortrack/stm32_projects/mlx90614_driver_library_proje
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_F1 V1.8.5
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	Peripheral Instance Name
1	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO
3	MX_USART1_UART_Init	USART1
4	MX_I2C2_Init	I2C2

2. Peripherals and Middlewares Configuration

2.1. I2C2

I2C: I2C

2.1.1. 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

2.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

2.2.1. 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

2.3. SYS

Debug: No Debug

Timebase Source: SysTick

2.4. USART1

Mode: Asynchronous

2.4.1. Parameter Settings:

Basic Parameters:

Baud Rate	115200
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

* **User modified value**

3. System Configuration

3.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C2	PB10	I2C2_SCL	Alternate Function Open Drain	n/a	High *	MLX90614ESFDCI_I2C2_SCL
	PB11	I2C2_SDA	Alternate Function Open Drain	n/a	High *	MLX90614ESFDCI_I2C2_SDA
RCC	PD0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PD1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	n/a	High *	PRINTF_TX
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	n/a	PRINTF_RX
GPIO	PB0	GPIO_Input	Input mode	Pull-down *	n/a	is_MLX90614_powered_cycled_GPIO_Input

3.2. DMA configuration

nothing configured in DMA service

3.3. NVIC configuration

3.3.1. 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
Prefetch 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	15	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C2 event interrupt	unused		
I2C2 error interrupt	unused		
USART1 global interrupt	unused		

3.3.2. NVIC Code generation

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

* User modified value

4. System Views

4.1. Category view

4.1.1. Current

Middleware

System Core

Analog

Timers

Connectivity

Computing

DMA

I2C2 

GPIO 

USART1 

NVIC 

RCC 

SYS 

5. Docs & Resources

Type	Link
BSDL files	https://www.st.com/resource/en/bsdl_model/stm32f1_bsd.zip
IBIS models	https://www.st.com/resource/en/ibis_model/stm32ibis.zip
System View Description	https://www.st.com/resource/en/svd/stm32f1_svd.zip
Presentations	https://www.st.com/resource/en/product_presentation/stm32-stm8_embedded_software_solutions.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32_eval_tools_portfolio.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32_stm8_functional-safety-packages.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32-stm8_software_development_tools.pdf
Presentations	https://www.st.com/resource/en/product_presentation/microcontrollers-stm32-family-overview.pdf
Brochures	https://www.st.com/resource/en/brochure/products-and-solutions-for-plcs-and-smart-i-os.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32nucleo.pdf
Flyers	https://www.st.com/resource/en/flyer/flstmcsuite.pdf
Flyers	https://www.st.com/resource/en/flyer/fldpstpfc11120.pdf
Product Certifications	https://www.st.com/resource/en/certification_document/1239988349.pdf
Product Certifications	https://www.st.com/resource/en/certification_document/stm32_authentication_can.pdf
Application Notes	https://www.st.com/resource/en/application_note/an1181-electrostatic-discharge-sensitivity-measurement-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an1709-emc-design-guide-for-stm8-stm32-and-legacy-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2586-getting-started-with-stm32f10xxx-hardware-development-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2604-stm32f101xx-and-stm32f103xx-rtc-calibration-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2606-stm32-microcontroller-system-memory-boot-mode-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2639-soldering-recommendations-and-package-information-for-leadfree-ecopack-mcus-and-mpus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2945-stm8s-and-stm32-mcus-a-consistent-832bit-product-line-for-painless-migration-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3070-managing-the-driver-enable-signal-for-rs485-and-iolink-communications-with-the-stm32s-usart-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3095-stevalisv002v1-stevalisv002v2-3-kw-gridconnected-pv-system-based-on-the-stm32f103xx-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3108-stlm75-firmware-library-for-the-stm32f10x-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3126-audio-and-waveform-generation-using-the-dac-in-stm32-products-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3128-stm32-embedded-graphic-objectstouchscreen-library-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3154-can-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3155-usart-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3156-usb-dfu-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3364-migration-and-compatibility-guidelines-for-stm32-microcontroller-applications-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3422-migration-of-

microcontroller-applications-from-stm32f1-to-stm32l1-series-
stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3427-migrating-a-microcontroller-application-from-stm32f1-to-stm32f2-series-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3429-stm32-proprietary-code-protection-overview-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3961-stevalime003v1-demonstration-board-based-on-the-sthv748-ultrasound-pulser-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4013-stm32-crossseries-timer-overview-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4070-250-w-grid-connected-microinverter-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4076-two-or-three-shunt-resistor-based-current-sensing-circuit-design-in-3phase-inverters-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4088-migrating-between-stm32f1-and-stm32f0-series-microcontrollers-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4228-migrating-from-stm32f1-series-to-stm32f3-series-microcontrollers-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4229-how-to-implement-a-vocoder-solution-using-stm32-microcontrollers-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4277-using-stm32-device-pwm-shutdown-features-for-motor-control-and-digital-power-conversion-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4566-extending-the-dac-performance-of-stm32-microcontrollers-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4649-migrating-from-stm32f1-series-to-stm32l4-series--stm32l4-series-micronrollers-stmicroelectronics.pdf

- Application Notes https://www.st.com/resource/en/application_note/an4655-virtually-increasing-the-number-of-serial-communication-peripherals-in-stm32-applications-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4724-stm32cube-firmware-examples-for-stm32f1-series-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4750-handling-of-soft-errors-in-stm32-applications-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4776-generalpurpose-timer-cookbook-for-stm32-microcontrollers-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4803-highspeed-si-simulations-using-ibis-and-boardlevel-simulations-using-hyperlynx-si-on-stm32-mcus-and-mpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4904-migration-of-microcontroller-applications-from-stm32f1-series-to-stm32f4-access-lines-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4908-stm32-usart-automatic-baud-rate-detection-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4989-stm32-microcontroller-debug-toolbox-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5027-interfacing-pdm-digital-microphones-using-stm32-mcus-and-mpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5543-enhanced-methods-to-handle-spi-communication-on-stm32-devices-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4899-stm32-microcontroller-gpio-hardware-settings-and-lowpower-consumption-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5612-esd-protection-of-stm32-mcus-and-mpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5156-introduction-to-stm32-microcontrollers-security-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an2548-using-the-stm32f0f1f3cxgxl-series-dma-controller-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4838-introduction-to-memory-protection-unit-management-on-stm32-mcus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4879-introduction-to-usb-hardware-and-pcb-guidelines-using-stm32-mcus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5225-introduction-to-usb-typec-power-delivery-for-stm32-mcus-and-mpus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2834-how-to-optimize-the-adc-accuracy-in-the-stm32-mcus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5816-how-to-build-stm32-lpbam-application-using-stm32cubemx-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5537-how-to-use-adc-oversampling-techniques-to-improve-signal-to-noise-ratio-on-stm32-mcus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5036-guidelines-for-thermal-management-on-stm32-applications-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an1202_freertos_guide-for_related_Tools_freertos-guide-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/an1602_semihosting_in_for_related_Tools_truestudio-how-to-do-semihosting-in-truestudio-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/an1801_stm32cubeprog_for_related_Tools_rammer_in_truestudio-installing-stm32cubeprogrammer-in-truestudio-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/atollic_editing_keyboard_for_related_Tools_shortcuts-atollic-editing-keyboard-shortcuts-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/iar_to_atollic_truestudio_for_related_Tools_migration_guide-truestudio-for-arm-migration-guide-iar-embedded-workbench-to-truestudio-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/stm32cubemx_installatio

for related Tools n_in_truestudio-stm32cube-mx-installation-in-truestudio-
& Software stmicroelectronics.pdf

Application Notes [https://www.st.com/resource/en/application_note/an2557-stm32f10x-](https://www.st.com/resource/en/application_note/an2557-stm32f10x-inapplication-programming-using-the-usart-stmicroelectronics.pdf)
for related Tools [inapplication-programming-using-the-usart-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2557-stm32f10x-inapplication-programming-using-the-usart-stmicroelectronics.pdf)
& Software

Application Notes [https://www.st.com/resource/en/application_note/an2592-achieving-32bit-](https://www.st.com/resource/en/application_note/an2592-achieving-32bit-timer-resolution-with-software-expansion-for-stm32cube-and-standard-peripheral-library-stmicroelectronics.pdf)
for related Tools [timer-resolution-with-software-expansion-for-stm32cube-and-standard-](https://www.st.com/resource/en/application_note/an2592-achieving-32bit-timer-resolution-with-software-expansion-for-stm32cube-and-standard-peripheral-library-stmicroelectronics.pdf)
& Software [peripheral-library-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2592-achieving-32bit-timer-resolution-with-software-expansion-for-stm32cube-and-standard-peripheral-library-stmicroelectronics.pdf)

Application Notes [https://www.st.com/resource/en/application_note/an2594-eeeprom-](https://www.st.com/resource/en/application_note/an2594-eeeprom-emulation-in-stm32f10x-microcontrollers-stmicroelectronics.pdf)
for related Tools [emulation-in-stm32f10x-microcontrollers-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2594-eeeprom-emulation-in-stm32f10x-microcontrollers-stmicroelectronics.pdf)
& Software

Application Notes [https://www.st.com/resource/en/application_note/an2598-smartcard-](https://www.st.com/resource/en/application_note/an2598-smartcard-interface-with-stm32f10x-and-stm32l1xx-microcontrollers-stmicroelectronics.pdf)
for related Tools [interface-with-stm32f10x-and-stm32l1xx-microcontrollers-](https://www.st.com/resource/en/application_note/an2598-smartcard-interface-with-stm32f10x-and-stm32l1xx-microcontrollers-stmicroelectronics.pdf)
& Software [stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2598-smartcard-interface-with-stm32f10x-and-stm32l1xx-microcontrollers-stmicroelectronics.pdf)

Application Notes [https://www.st.com/resource/en/application_note/an2629-stm32f101xx-](https://www.st.com/resource/en/application_note/an2629-stm32f101xx-stm32f102xx-and-stm32f103xx-lowpower-modes-stmicroelectronics.pdf)
for related Tools [stm32f102xx-and-stm32f103xx-lowpower-modes-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2629-stm32f101xx-stm32f102xx-and-stm32f103xx-lowpower-modes-stmicroelectronics.pdf)
& Software

Application Notes [https://www.st.com/resource/en/application_note/an2656-stm32f10xxx-](https://www.st.com/resource/en/application_note/an2656-stm32f10xxx-lcd-glass-driver-firmware-stmicroelectronics.pdf)
for related Tools [lcd-glass-driver-firmware-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2656-stm32f10xxx-lcd-glass-driver-firmware-stmicroelectronics.pdf)
& Software

Application Notes [https://www.st.com/resource/en/application_note/an2668-improving-](https://www.st.com/resource/en/application_note/an2668-improving-stm32f1-series-stm32f3-series-and-stm32lx-series-adc-resolution-by-oversampling-stmicroelectronics.pdf)
for related Tools [stm32f1-series-stm32f3-series-and-stm32lx-series-adc-resolution-by-](https://www.st.com/resource/en/application_note/an2668-improving-stm32f1-series-stm32f3-series-and-stm32lx-series-adc-resolution-by-oversampling-stmicroelectronics.pdf)
& Software [oversampling-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2668-improving-stm32f1-series-stm32f3-series-and-stm32lx-series-adc-resolution-by-oversampling-stmicroelectronics.pdf)

Application Notes [https://www.st.com/resource/en/application_note/an2739-how-to-use-the-](https://www.st.com/resource/en/application_note/an2739-how-to-use-the-highdensity-stm32f103xx-microcontroller-to-play-audio-files-with-an-external-is-audio-codec-stmicroelectronics.pdf)
for related Tools [highdensity-stm32f103xx-microcontroller-to-play-audio-files-with-an-](https://www.st.com/resource/en/application_note/an2739-how-to-use-the-highdensity-stm32f103xx-microcontroller-to-play-audio-files-with-an-external-is-audio-codec-stmicroelectronics.pdf)
& Software [external-is-audio-codec-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2739-how-to-use-the-highdensity-stm32f103xx-microcontroller-to-play-audio-files-with-an-external-is-audio-codec-stmicroelectronics.pdf)

Application Notes [https://www.st.com/resource/en/application_note/an2784-using-the-](https://www.st.com/resource/en/application_note/an2784-using-the-highdensity-stm32f10xxx-fsmc-peripheral-to-drive-external-memories-stmicroelectronics.pdf)
for related Tools [highdensity-stm32f10xxx-fsmc-peripheral-to-drive-external-memories-](https://www.st.com/resource/en/application_note/an2784-using-the-highdensity-stm32f10xxx-fsmc-peripheral-to-drive-external-memories-stmicroelectronics.pdf)
& Software [stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2784-using-the-highdensity-stm32f10xxx-fsmc-peripheral-to-drive-external-memories-stmicroelectronics.pdf)

Application Notes [https://www.st.com/resource/en/application_note/an2790-tft-lcd-](https://www.st.com/resource/en/application_note/an2790-tft-lcd-interfacing-with-the-highdensity-stm32f10xxx-fsmc-stmicroelectronics.pdf)
for related Tools [interfacing-with-the-highdensity-stm32f10xxx-fsmc-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an2790-tft-lcd-interfacing-with-the-highdensity-stm32f10xxx-fsmc-stmicroelectronics.pdf)
& Software

Application Notes [https://www.st.com/resource/en/application_note/an2820-driving-bipolar-](https://www.st.com/resource/en/application_note/an2820-driving-bipolar-stepper-motors-using-a-mediumdensity-stm32f103xx-microcontroller-)
for related Tools [stepper-motors-using-a-mediumdensity-stm32f103xx-microcontroller-](https://www.st.com/resource/en/application_note/an2820-driving-bipolar-stepper-motors-using-a-mediumdensity-stm32f103xx-microcontroller-)

& Software	stmicroelectronics.pdf
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an2821-clockcalendar-implementation-on-the-stm32f10xxx-microcontroller-rtc-
& Software	stmicroelectronics.pdf
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an2824-stm32f10xxx-ic-optimized-examples-stmicroelectronics.pdf
& Software	
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an2841-led-dimming-implemented-on-stm32-microcontroller-stmicroelectronics.pdf
& Software	
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an2868-stm32f10xxx-internal-rc-oscillator-hsi-calibration-stmicroelectronics.pdf
& Software	
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an2931-implementing-the-adpcm-algorithm-in-highdensity-stm32f103xx-microcontrollers-
& Software	stmicroelectronics.pdf
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an2953-how-to-migrate-from-the-stm32f10xxx-firmware-library-v203-to-the-stm32f10xxx-standard-
& Software	peripheral-library-v300-stmicroelectronics.pdf
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an3012-getting-started-with-uclinux-for-stm32f10x-highdensity-devices-stmicroelectronics.pdf
& Software	
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an3078-stm32-inapplication-programming-over-the-ic-bus-stmicroelectronics.pdf
& Software	
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an3109-communication-peripheral-fifo-emulation-with-dma-and-dma-timeout-in-stm32f10x-
& Software	microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an3116-stm32s-adc-modes-and-their-applications-stmicroelectronics.pdf
& Software	
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an3174-implementing-receivers-for-infrared-remote-control-protocols-using-stm32f10xxx-
& Software	microcontrollers-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3240-ultrasound-hv-pulser-demonstration-board-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an3241-qvga-tftlcd-direct-drive-using-the-stm32f10xx-fsmc-peripheral-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an3307-guidelines-for-obtaining-iec-60335-class-b-certification-for-any-stm32-application-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an3970-plm-smartplug-v2-getting-started-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an3991-how-to-drive-multiple-stepper-motors-with-the-l6470-motor-driver-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an4075-stevalifp016v2-iolink-communication-master-transceiver-demonstration-board-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an4323-getting-started-with-stemwin-library-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an4435-guidelines-for-obtaining-ulcsaiec-607301603351-class-b-certification-in-any-stm32-application-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an4453-implementing-the-adpcm-algorithm-in-stm32l1xx-microcontrollers-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an4499-stm32--nrf51822-bluetooth-low-energy-system-solution-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an4578-16channels-led-driver-with-independent-pwm-dimming-control-based-on-led7708-stmicroelectronics.pdf
for related Tools
& Software

Application Notes https://www.st.com/resource/en/application_note/an4657-stm32-

for related Tools inapplication-programming-iap-using-the-usart-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/an4724-stm32cube-
for related Tools firmware-examples-for-stm32f1-series-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/an4841-digital-signal-
for related Tools processing-for-stm32-microcontrollers-using-cmsis-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/an4903-generating-jerk-
for related Tools limited-move-profiles-with-the-stevalihm042v1-evaluation-board-
& Software stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5054-secure-
for related Tools programming-using-stm32cubeprogrammer-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/an5360-getting-started-
for related Tools with-projects-based-on-the-stm32mp1-series-in-stm32cubeide-
& Software stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5361-getting-started-
for related Tools with-projects-based-on-dualcore-stm32h7-microcontrollers-in-
& Software stm32cubeide-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5394-getting-started-
for related Tools with-projects-based-on-the-stm32l5-series-in-stm32cubeide-
& Software stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5418-how-to-build-a-
for related Tools simple-usbp-d-sink-application-with-stm32cubemx-stmicroelectronics.pdf
& Software

Application Notes https://www.st.com/resource/en/application_note/an5426-migrating-
for related Tools graphics-middleware-projects-from-stm32cubemx-540-to-stm32cubemx-
& Software 550-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5564-getting-started-
for related Tools with-projects-based-on-dualcore-stm32wl-microcontrollers-in-
& Software stm32cubeide-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5698-adapting-the-
for related Tools xcubestl-functional-safety-package-for-stm32-iec-61508-compliant-to-

& Software	other-safety-standards-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5731-stm32cubemx-and-stm32cubeide-threadsafe-solution-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4502-stm32-smbuspmibus-expansion-package-for-stm32cube-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5952-how-to-use-cmake-in-stm32cubeide-stmicroelectronics.pdf
Device Option Lists	https://www.st.com/resource/en/device_option_list/opl_stm32f103_64k.zip
Errata Sheets	https://www.st.com/resource/en/errata_sheet/es096-stm32f101x8b-stm32f102x8b-and-stm32f103x8b-mediumdensity-device-limitations-stmicroelectronics.pdf
Datasheet	https://www.st.com/resource/en/datasheet/cd00161566.pdf
Programming Manuals	https://www.st.com/resource/en/programming_manual/pm0056-stm32f10xxx20xxx21xxx1xxxx-cortexm3-programming-manual-stmicroelectronics.pdf
Programming Manuals	https://www.st.com/resource/en/programming_manual/pm0075-stm32f10xxx-flash-memory-microcontrollers-stmicroelectronics.pdf
Reference Manuals	https://www.st.com/resource/en/reference_manual/rm0008-stm32f101xx-stm32f102xx-stm32f103xx-stm32f105xx-and-stm32f107xx-advanced-armbased-32bit-mcus-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn0516-overview-of-the-stm32f0xf100xxf103xx-and-stm32f2xxf30xf4xx-mcus-pmsm-singledual-foc-sdk-v40-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1163-description-of-wlcsp-for-microcontrollers-and-recommendations-for-its-use-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1204-tape-and-reel-shipping-media-for-stm32-microcontrollers-in-bga-packages-stmicroelectronics.pdf

Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1205-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-fpn-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1206-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-qfp-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1207-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-so-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1208-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-tssop-and-ssop-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1433-reference-device-marking-schematics-for-stm32-microcontrollers-and-microprocessors-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1489-security-bulletin-tn1489stpsirt-physical-attacks-on-stm32-and-stm32cube-firmware-stmicroelectronics.pdf
User Manuals	https://www.st.com/resource/en/user_manual/um1561-stevalisv003v1-firmware-user-manual-stmicroelectronics.pdf
User Manuals	https://www.st.com/resource/en/user_manual/um1573-st7540-power-line-modem-firmware-stack-stmicroelectronics.pdf