

1. Description

1.1. Project

Project Name	H750_usb_audio
Board Name	custom
Generated with:	STM32CubeMX 6.5.0
Date	11/21/2022

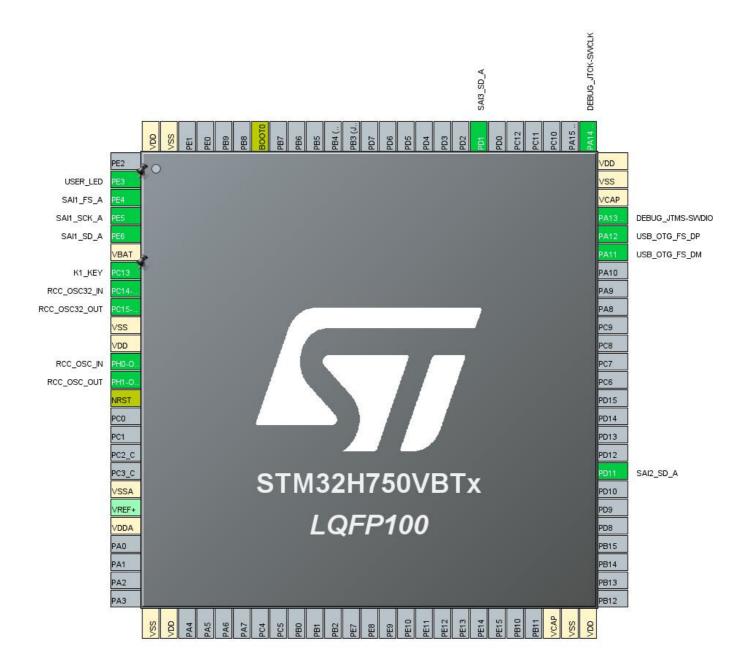
1.2. MCU

MCU Series	STM32H7
MCU Line	STM32H750 Value line
MCU name	STM32H750VBTx
MCU Package	LQFP100
MCU Pin number	100

1.3. Core(s) information

Core(s)	ARM Cortex-M7

2. Pinout Configuration

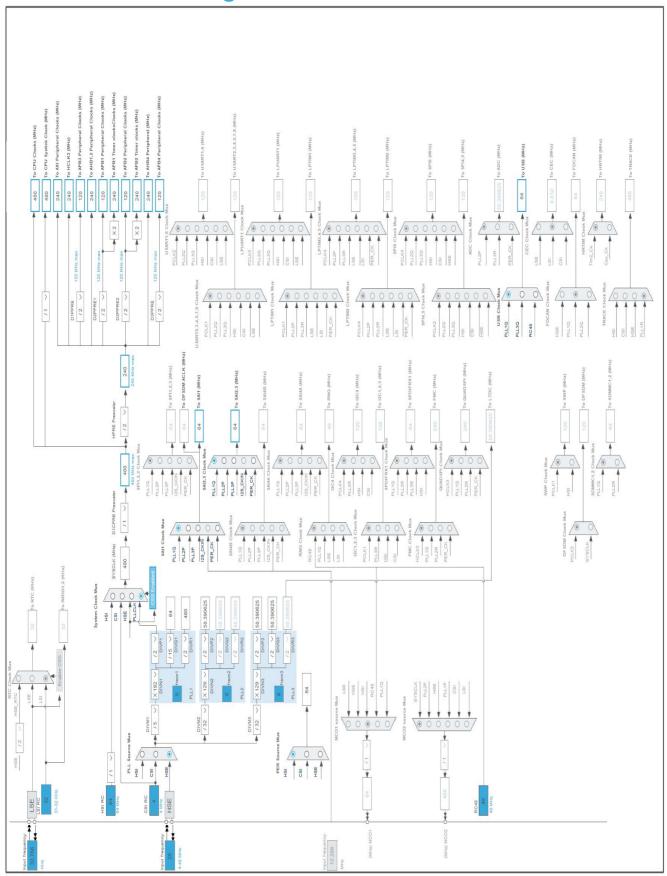


3. Pins Configuration

Pin Number	Pin Name	Pin Type	Alternate	Label
LQFP100	(function after		Function(s)	
	reset)			
2	PE3 *	I/O	GPIO_Output	USER_LED
3	PE4	I/O	SAI1_FS_A	
4	PE5	I/O	SAI1_SCK_A	
5	PE6	I/O	SAI1_SD_A	
6	VBAT	Power		
7	PC13 *	I/O	GPIO_Input	K1_KEY
8	PC14-OSC32_IN (OSC32_IN)	I/O	RCC_OSC32_IN	
9	PC15-OSC32_OUT (OSC32_OUT)	I/O	RCC_OSC32_OUT	
10	VSS	Power		
11	VDD	Power		
12	PH0-OSC_IN (PH0)	I/O	RCC_OSC_IN	
13	PH1-OSC_OUT (PH1)	I/O	RCC_OSC_OUT	
14	NRST	Reset		
19	VSSA	Power		
21	VDDA	Power		
26	VSS	Power		
27	VDD	Power		
48	VCAP	Power		
49	VSS	Power		
50	VDD	Power		
58	PD11	I/O	SAI2_SD_A	
70	PA11	I/O	USB_OTG_FS_DM	
71	PA12	I/O	USB_OTG_FS_DP	
72	PA13 (JTMS/SWDIO)	I/O	DEBUG_JTMS-SWDIO	
73	VCAP	Power		
74	VSS	Power		
75	VDD	Power		
76	PA14 (JTCK/SWCLK)	I/O	DEBUG_JTCK-SWCLK	
82	PD1	I/O	SAI3_SD_A	
94	BOOT0	Boot		
99	VSS	Power		
100	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	H750_usb_audio	
Project Folder	C:\Users\edward\STM32CubeIDE\workspace_1.9.0\H750_usb_audio	
Toolchain / IDE	STM32CubeIDE	
Firmware Package Name and Version	STM32Cube FW_H7 V1.10.0	
Application Structure	Advanced	
Generate Under Root	Yes	
Do not generate the main()	No	
Minimum Heap Size	0x4000	
Minimum Stack Size	0x4000	

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	Yes
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_DMA_Init	DMA
4	MX_SAI1_Init	SAI1
5	MX_USB_DEVICE_Init	USB_DEVICE
6	MX_SAI3_Init	SAI3
7	MX SAI2 Init	SAI2

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32H7
Line	STM32H750 Value line
мси	STM32H750VBTx
Datasheet	DS12556_Rev6

6.2. Parameter Selection

Temperature	25
Vdd	3.0

6.3. 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	

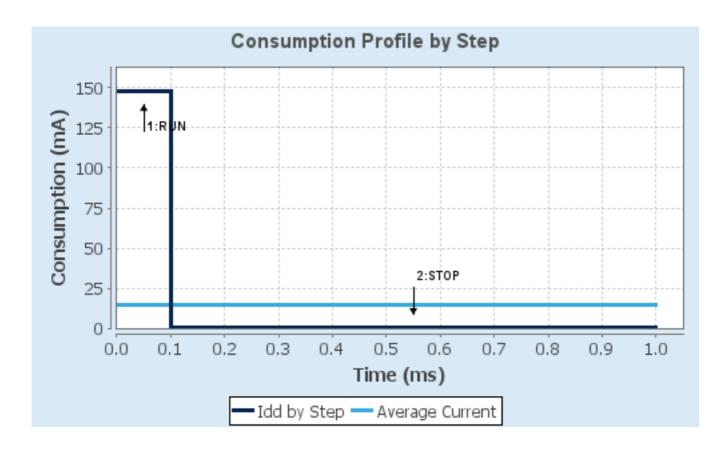
6.4. Sequence

	T	1
Step	Step1	Step2
Mode	RUN	STOP
Vdd	3.0	3.0
Voltage Source	Battery	Battery
Range	VOS0: Scale0-High	SVOS5: System-Scale5
D1 Mode	DRUN/CRUN	DSTANDBY
D2 Mode	DRUN	DSTANDBY
D3 Mode	DRUN	DSTOP
Fetch Type	ITCM	NA
CPU Frequency	480 MHz	0 Hz
Clock Configuration	HSE BYP PLL	Flash-OFF
Clock Source Frequency	24 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	148 mA	150 μΑ
Duration	0.1 ms	0.9 ms
DMIPS	1027.0	0.0
Ta Max	105.02	124.98
Category	In DS Table	In DS Table

6.5. Results

Sequence Time	1 ms	Average Current	14.94 mA
Battery Life	1 day, 17 hours	Average DMIPS	1027.2001
	-	-	DMIPS

6.6. Chart



7. Peripherals and Middlewares Configuration

7.1. DEBUG

Debug: Serial Wire

7.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator Low Speed Clock (LSE): Crystal/Ceramic Resonator

CRS SYNC: USB_FS

7.2.1. Parameter Settings:

Power Parameters:

SupplySource PWR_LDO_SUPPLY

Power Regulator Voltage Scale Power Regulator Voltage Scale 0

RCC Parameters:

TIM Prescaler Selection Disabled
HSE Startup Timout Value (ms) 100
LSE Startup Timout Value (ms) 5000
CSI Calibration Value 16
HSI Calibration Value 32

System Parameters:

VDD voltage (V) 3.3

Flash Latency(WS) 4 WS (5 CPU cycle)

Product revision rev.Y

PLL range Parameters:

PLL1 clock Input range Between 4 and 8 MHz
PLL1 clock Output range Wide VCO range

CRS Parameters:

CRS Synchro Divider 1

CRS Synchro Polarity Active on rising edge

CRS Synchro Reload Value Type Automatic
CRS Synchro frequency (Hz) 1000
Error limit Value 34
HSI48 Calibration Value 32

7.3. SAI1

Mode: Master

7.3.1. Parameter Settings:

SAI A:

Synchronization Inputs Asynchronous

Protocol Free

Audio Mode Master Receive *

Frame Length 8 bits
Data Size 8 Bits
Slot Size DataSize
Output Mode Stereo

Companding Mode No companding mode

First Bit MSB First

Frame Synchro Active Level Length

Frame Synchro Definition

Frame Synchro Polarity

Frame Synchro Offset

First Bit

First Bit Offset

Number of Slots

Start Frame

Active Low

First Bit

1

Slot Active Final Value 0x00000000 Slot Active Neither SAI PLL Clock Clock Source Master Clock No Divider Enabled Audio Frequency 48 KHz * Real Audio Frequency 62.5 KHz * Error between Selected 30.2 % * Clock Strobing Falling Edge Fifo Threshold **Empty Output Drive** Disabled

7.4. SAI2

Mode: Synchronous Slave

7.4.1. Parameter Settings:

SAI A:

Synchronization Inputs Synchronous with other block of same SAI

Protocol Free

Audio Mode Slave Receive

Frame Length (only Even Values) 8

Data Size 8 Bits

Slot Size DataSize
Output Mode Stereo

Companding Mode No companding mode

SAI SD Line Output Mode Driven
First Bit MSB First

Frame Synchro Active Level Length 1

Frame Synchro Definition Start Frame
Frame Synchro Polarity Active Low
Frame Synchro Offset First Bit
First Bit Offset 0
Number of Slots 1

Slot Active Final Value 0x00000000
Slot Active Neither
Clock Strobing Falling Edge
Fifo Threshold Empty
Output Drive Disabled

7.5. SAI3

Mode: Synchronous Slave

7.5.1. Parameter Settings:

SAI A:

Synchronization Inputs Synchronous with other block of same SAI

Protocol Free

Audio Mode Slave Receive

Frame Length (only Even Values) 8

Data Size 8 Bits

Slot Size DataSize

Output Mode Stereo

Companding Mode No companding mode

SAI SD Line Output Mode Driven
First Bit MSB First

Frame Synchro Active Level Length

Frame Synchro Definition

Frame Synchro Polarity

Frame Synchro Offset

First Bit

First Bit Offset

0

Number of Slots

Start Frame

Active Low

First Bit

0

Slot Active Final Value 0x00000000
Slot Active Neither
Clock Strobing Falling Edge

Fifo Threshold Empty
Output Drive Disabled

7.6. SYS

Timebase Source: SysTick

7.7. USB_OTG_FS

Mode: Device_Only

7.7.1. Parameter Settings:

Speed Full Speed 12MBit/s

Enable internal IP DMA

Low power

Disabled

Battery charging

Disabled

Link Power Management

Disabled

Use dedicated end point 1 interrupt

VBUS sensing

Disabled

Signal start of frame

Disabled

7.8. USB DEVICE

Class For FS IP: Communication Device Class (Virtual Port Com)

7.8.1. Parameter Settings:

Basic Parameters:

USBD_MAX_NUM_INTERFACES (Maximum number of supported interfaces)

USBD_MAX_NUM_CONFIGURATION (Maximum number of supported configuration)

USBD_MAX_STR_DESC_SIZ (Maximum size for the string descriptors)

512

USBD_SELF_POWERED (Enabled self power)

Enabled

USBD_DEBUG_LEVEL (USBD Debug Level) 0: No debug message

Class Parameters:

USB CDC Rx Buffer Size 2048
USB CDC Tx Buffer Size 2048

7.8.2. Device Descriptor:

Device Descriptor:

VID (Vendor IDentifier) 1155

LANGID_STRING (Language Identifier) English (United States)

MANUFACTURER_STRING (Manufacturer Identifier) STMicroelectronics

Device Descriptor FS:

PID (Product IDentifier) 22336

PRODUCT_STRING (Product Identifier) STM32 Virtual ComPort

CONFIGURATION_STRING (Configuration Identifier)

INTERFACE_STRING (Interface Identifier)

CDC Interface

^{*} User modified value

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
DEBUG	PA13 (JTMS/SWDI O)	DEBUG_JTMS- SWDIO	n/a	n/a	n/a	
	PA14 (JTCK/SWC LK)	DEBUG_JTCK- SWCLK	n/a	n/a	n/a	
RCC	PC14- OSC32_IN (OSC32_IN)	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15- OSC32_OU T	RCC_OSC32_O UT	n/a	n/a	n/a	
	PH0- OSC_IN (PH0)	RCC_OSC_IN	n/a	n/a	n/a	
	PH1- OSC_OUT (PH1)	RCC_OSC_OUT	n/a	n/a	n/a	
SAI1	PE4	SAI1_FS_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE5	SAI1_SCK_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE6	SAI1_SD_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
SAI2	PD11	SAI2_SD_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
SAI3	PD1	SAI3_SD_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
USB_OTG_ FS	PA11	USB_OTG_FS_ DM	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA12	USB_OTG_FS_ DP	Alternate Function Push Pull	No pull-up and no pull-down	Low	
GPIO	PE3	GPIO_Output	Output Push Pull	Pull-down *	Medium *	USER_LED
	PC13	GPIO_Input	Input mode	Pull-down *	n/a	K1_KEY

8.2. DMA configuration

DMA request	Stream	Direction	Priority
SAI1_A	DMA1_Stream1	Peripheral To Memory	Low
SAI2_A	DMA1_Stream2	Peripheral To Memory	Low
SAI3_A	DMA1_Stream3	Peripheral To Memory	Low

SAI1_A: DMA1_Stream1 DMA request Settings:

Normal Mode: Use fifo: Enable * FIFO Threshold: Full

Peripheral Increment: Disable Memory Increment: Enable *

Half Word * Memory Data Width: Half Word *

Peripheral Burst Size: Single Memory Burst Size: Single

Peripheral Data Width:

SAI2_A: DMA1_Stream2 DMA request Settings:

Normal

Mode: Use fifo: Enable *

FIFO Threshold: Full Peripheral Increment: Disable Memory Increment: Enable *

Peripheral Data Width: Half Word * Memory Data Width: Half Word *

Peripheral Burst Size: Single Memory Burst Size: Single

SAI3_A: DMA1_Stream3 DMA request Settings:

Mode: Normal Use fifo: Enable * Full FIFO Threshold: Peripheral Increment: Disable Memory Increment: Enable * Peripheral Data Width: Half Word *

Memory Data Width: Half Word *

Peripheral Burst Size: Single
Memory Burst Size: Single

8.3. BDMA configuration

nothing configured in DMA service

8.4. MDMA configuration

nothing configured in DMA service

8.5. NVIC configuration

8.5.1. 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	15	0	
DMA1 stream1 global interrupt	true	0	0	
DMA1 stream2 global interrupt	true	0	0	
DMA1 stream3 global interrupt	true	0	0	
USB On The Go FS global interrupt	true	0	0	
PVD and AVD interrupts through EXTI line 16	unused			
Flash global interrupt	unused			
RCC global interrupt	unused			
FPU global interrupt	unused			
SAI1 global interrupt	unused			
SAI2 global interrupt	unused			
USB On The Go FS End Point 1 Out global interrupt	unused			
USB On The Go FS End Point 1 In global interrupt	unused			
SAI3 global interrupt	unused			
HSEM1 global interrupt	unused			
CRS global interrupt	unused			

8.5.2. NVIC Code generation

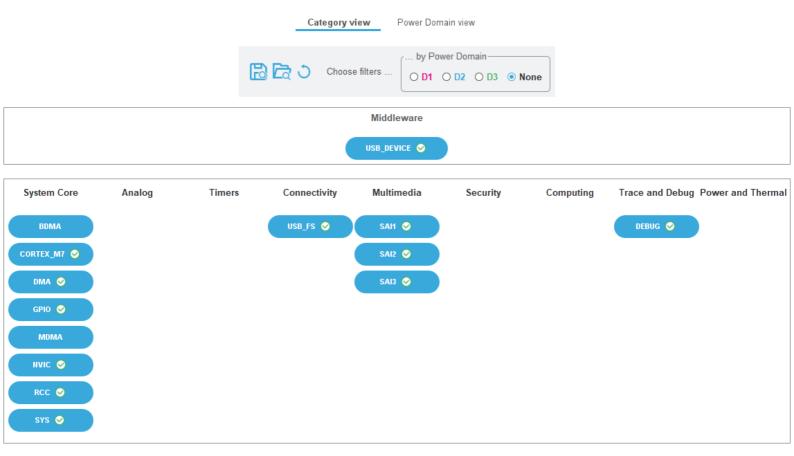
Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
	sequence ordening	Hariulei	
Non maskable interrupt	false	true	true
Hard fault interrupt	false	true	false
Memory management fault	false	true	false
Pre-fetch fault, memory access fault	false	true	false
Undefined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

Enabled interrupt Table	Select for init	Generate IRQ	Call HAL handler
	sequence ordering	handler	
Pendable request for system service	false	true	false
System tick timer	false	true	true
DMA1 stream1 global interrupt	false	true	true
DMA1 stream2 global interrupt	false	true	true
DMA1 stream3 global interrupt	false	true	true
USB On The Go FS global interrupt	false	true	true

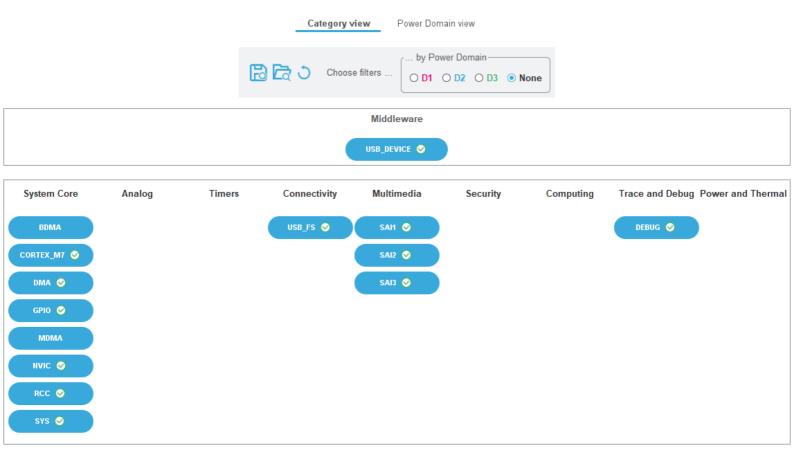
^{*} User modified value

9. System Views

- 9.1. Category view
- 9.1.1. Current



9.1.2. Without filters



9.2. Power Domain view

Category view Power Domain view



10. Docs & Resources

Type Link

Presentations https://www.st.com/resource/en/product_presentation/microcontrollers_st

m32h7_series_product_overview.pdf

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_functi

onal-safety-packages.pdf

Presentations https://www.st.com/resource/en/product_presentation/stm32-

stm8_software_development_tools.pdf

Training Material https://www.st.com/resource/en/sales_guide/sg_sc2154.pdf

Training Material https://www.st.com/resource/en/training_certification/faecp_stm32h7_dual

core_edr.pdf

Training Material https://www.st.com/resource/en/training_certification/faecp_stm32h7_edr.

pdf

Brochures https://www.st.com/resource/en/brochure/brstm32h7.pdf

Brochures https://www.st.com/resource/en/brochure/brstm32h7vl.pdf

Flyers https://www.st.com/resource/en/flyer/flnucleolrwan.pdf

Flyers https://www.st.com/resource/en/flyer/flstm32nucleo.pdf

Flyers https://www.st.com/resource/en/flyer/flstm32trust.pdf

Flyers https://www.st.com/resource/en/flyer/flstm32f7h7.pdf

Flyers https://www.st.com/resource/en/flyer/flstm32h7vl.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/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/an2834-how-to-get-the-best-adc-accuracy-in-stm32-microcontrollers-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an2867-oscillator-design-guide-for-stm8afals-stm32-mcus-and-mpus-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/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/an4013-stm32-crossseries-timer-overview-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4221-i2c-protocol-used-in-the-stm32-bootloader-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/an4230-stm32-microcontroller-random-number-generation-validation-using-the-nist-statistical-test-suite-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4286-spi-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4539-hrtim-cookbook-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/an4635-minimization-of-power-consumption-using-lpuart-for-stm32-microcontrollers-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/an4750-handling-of-soft-errors-in-stm32-applications-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4759-using-the-hardware-realtime-clock-rtc-and-the-tamper-management-unit-tamp-with-stm32-microcontrollers-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/an4838-managing-memory-protection-unit-in-stm32-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4839-level-1-cache-on-stm32f7-series-and-stm32h7-series-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4861-lcdtft-display-controller-ltdc-on-stm32-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4879-usb-hardware-and-pcb-guidelines-using-stm32-mcus-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/an4938-getting-started-with-stm32h74xig-and-stm32h75xig-hardware-development-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/an4990-getting-started-with-sigmadelta-digital-interface-on-applicable-stm32-microcontrollers-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4996-hardware-jpeg-codec-peripheral-in-stm32f7677xxx-and-

- stm32h743534555475750a3b3b0xx-microcontrollers-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/an5033-stm32cube-mcu-package-examples-for-stm32h7-series-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5036-thermal-management-guidelines-for-stm32-applications-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5073-receiving-spdif-audio-stream-with-the-stm32f4f7h7-series-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/an5188-external-memory-code-execution-on-stm32f7x0-value-line-stm32h750-value-line-stm32h7b0-value-line-and-stm32h730-value-line-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5200-getting-started-with-stm32h7-series-sdmmc-host-controller-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5224-stm32-dmamux-the-dma-request-router-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5225-usb-typec-power-delivery-using-stm32-mcus-and-mpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5312-migration-from-revy-to-revv-for-stm32h743753-and-stm32h750-value-line-microcontrollers-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5337-stm32h7-series-lifetime-estimates-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5342-error-correction-code-ecc-management-for-internal-memories-protection-on-stm32h7-series-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5348-fdcan-peripheral-on-stm32-devices-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5354-getting-started-

with-the-stm32h7-series-mcu-16bit-adc-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5405-fdcan-protocol-used-in-the-stm32-bootloader-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/an5690-vrefbuf-peripheral-applications-and-trimming-technique-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4760-quadspiinterface-on-stm32-microcontrollers-and-microprocessors-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/an5507-cyclic-redundancy-check-in-stm32h7-series-flash-memory-interface-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an1202_freertos_guidefor 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

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/stm32cubemx_installatio for related Tools n_in_truestudio-stm32cubemx-installation-in-truestudio-

& Software stmicroelectronics.pdf

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

& Software

Application Notes https://www.st.com/resource/en/application_note/an4323-getting-started-

for related Tools with-stemwin-library-stmicroelectronics.pdf

& Software

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

& Software application-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4502-stm32-for related Tools smbuspmbus-embedded-software-expansion-for-stm32cube-

& Software stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4635-minimization-of-

for related Tools power-consumption-using-lpuart-for-stm32-microcontrollers-

& Software stmicroelectronics.pdf

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/an4759-using-the-

for related Tools hardware-realtime-clock-rtc-and-the-tamper-management-unit-tamp-with-

& Software stm32-microcontrollers-stmicroelectronics.pdf

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/an4891-stm32h72x-for related Tools stm32h73x-and-singlecore-stm32h74x75x-system-architecture-and-

& Software performance-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5001-stm32cube-for related Tools expansion-package-for-stm32h7-series-mdma-stmicroelectronics.pdf

& Software

Application Notes https://www.st.com/resource/en/application_note/an5014-stm32h7x3-

for related Tools smart-power-management-expansion-package-for-stm32cube-

& Software stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an5033-stm32cube-for related Tools mcu-package-examples-for-stm32h7-series-stmicroelectronics.pdf

& Software

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/an5056-integration-

for related Tools guide-for-the-xcubesbsfu-stm32cube-expansion-package-

& Software stmicroelectronics.pdf

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-usbpd-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/an5534-stm32h735gdk-

for related Tools firmware-upgrade-for-atbased-emw3080-wifi-module-

& Software 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/an4865-lowpower-timer-

for related Tools
Iptim-applicative-use-cases-on-stm32-mcus-and-mpus-

& Software 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 https://www.st.com/resource/en/application_note/an5731-stm32cubemx-

for related Tools and-stm32cubeide-threadsafe-solution-stmicroelectronics.pdf

& Software

Design Notes & https://www.st.com/resource/en/design_tip/dt0117-microphone-array-

Tips beamforming-in-the-pcm-and-pdm-domain-stmicroelectronics.pdf

Errata Sheets https://www.st.com/resource/en/errata_sheet/es0396-stm32h750xb-and-

stm32h753xi-device-limitations-stmicroelectronics.pdf

Datasheet https://www.st.com/resource/en/datasheet/dm00496677.pdf

Programming https://www.st.com/resource/en/programming_manual/pm0253-stm32f7-

Manuals series-and-stm32h7-series-cortexm7-processor-programming-manual-

stmicroelectronics.pdf

Reference https://www.st.com/resource/en/reference_manual/rm0433-stm32h742-

Manuals stm32h743753-and-stm32h750-value-line-advanced-armbased-32bit-

mcus-stmicroelectronics.pdf

Technical Notes https://www.st.com/resource/en/technical_note/tn1163-description-of-

& Articles wlcsp-for-microcontrollers-and-recommendations-for-its-use-

stmicroelectronics.pdf

Technical Notes https://www.st.com/resource/en/technical_note/tn1204-tape-and-reel-

& Articles shipping-media-for-stm32-microcontrollers-in-bga-packages-

stmicroelectronics.pdf

Technical Notes https://www.st.com/resource/en/technical_note/tn1205-tape-and-reel-

& Articles shipping-media-for-stm8-and-stm32-microcontrollers-in-fpn-packages-

stmicroelectronics.pdf

Technical Notes https://www.st.com/resource/en/technical_note/tn1206-tape-and-reel-

& Articles shipping-media-for-stm8-and-stm32-microcontrollers-in-qfp-packages-

stmicroelectronics.pdf

Technical Notes https://www.st.com/resource/en/technical_note/tn1207-tape-and-reel-

& Articles shipping-media-for-stm8-and-stm32-microcontrollers-in-so-packages-

stmicroelectronics.pdf

Technical Notes https://www.st.com/resource/en/technical_note/tn1208-tape-and-reel-

& Articles shipping-media-for-stm8-and-stm32-microcontrollers-in-tssop-and-ssop-

packages-stmicroelectronics.pdf