



STM32 CubeMX

1. Description

1.1. Project

| | |
|-----------------|--------------------|
| Project Name | h750lcd |
| Board Name | custom |
| Generated with: | STM32CubeMX 6.14.1 |
| Date | 11/06/2025 |

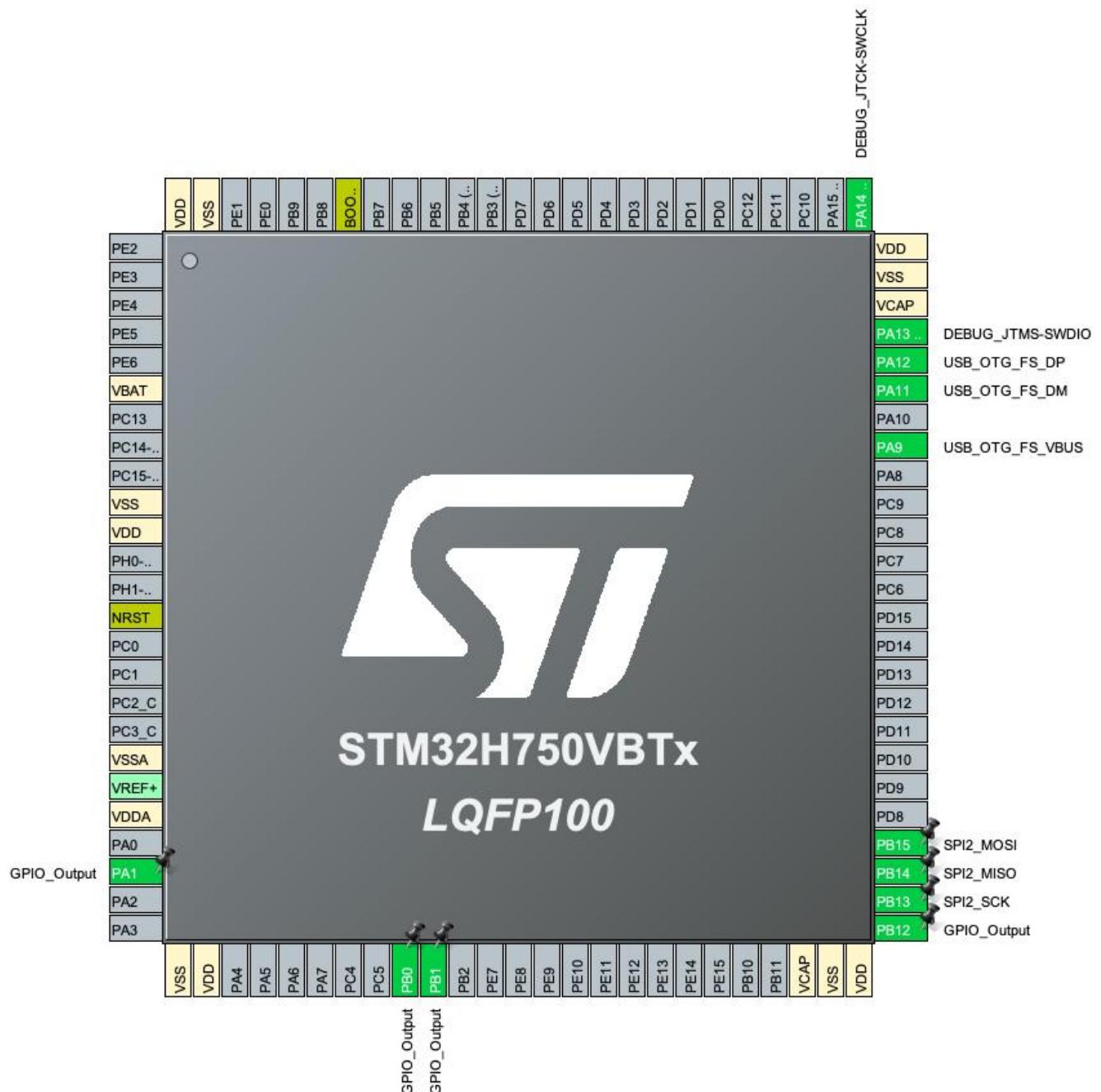
1.2. MCU

| | |
|----------------|----------------------|
| 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

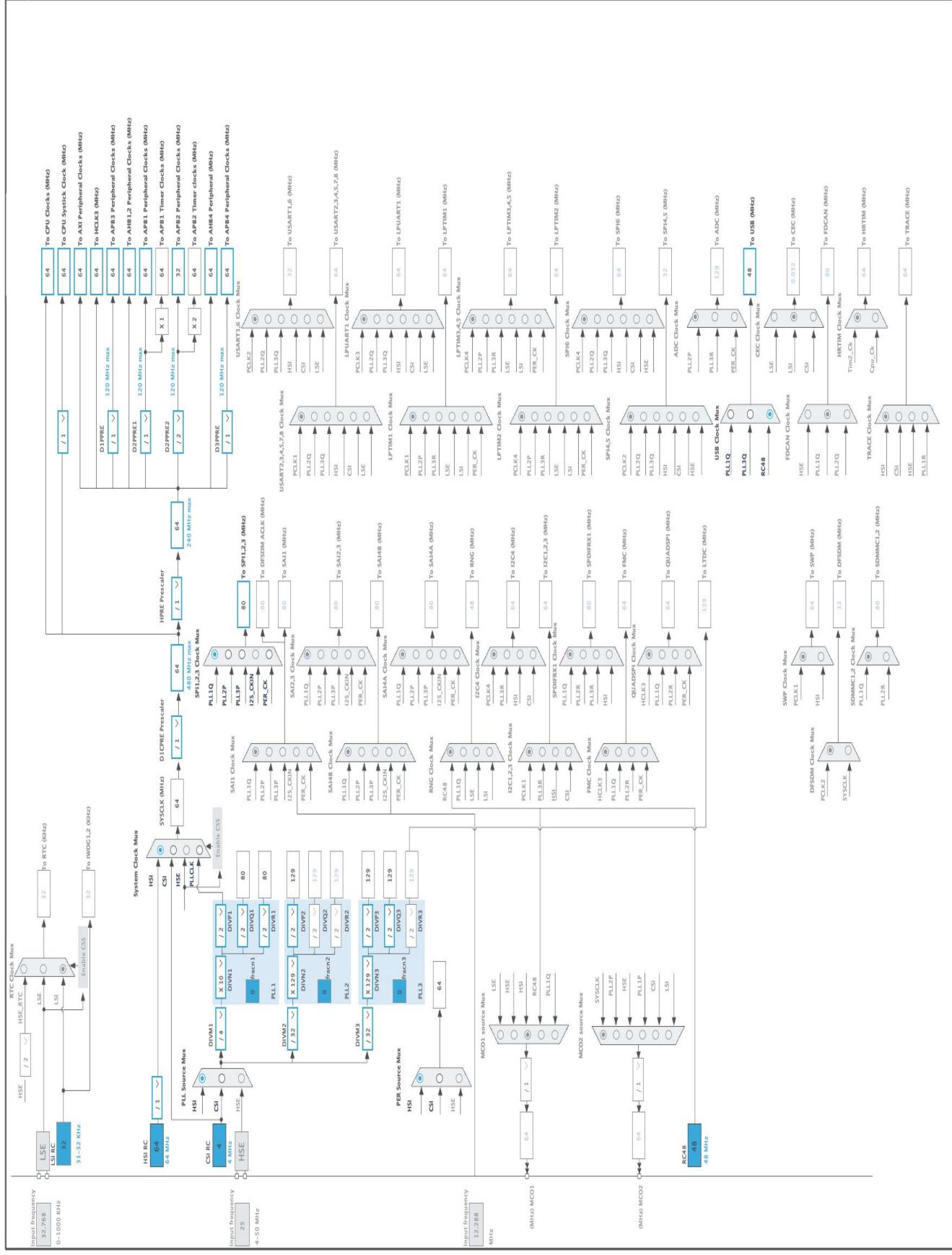


3. Pins Configuration

| Pin Number LQFP100 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|-----------------------|---------------------------------------|----------|--------------------------|-------|
| 6 | VBAT | Power | | |
| 10 | VSS | Power | | |
| 11 | VDD | Power | | |
| 14 | NRST | Reset | | |
| 19 | VSSA | Power | | |
| 21 | VDDA | Power | | |
| 23 | PA1 * | I/O | GPIO_Output | |
| 26 | VSS | Power | | |
| 27 | VDD | Power | | |
| 34 | PB0 * | I/O | GPIO_Output | |
| 35 | PB1 * | I/O | GPIO_Output | |
| 48 | VCAP | Power | | |
| 49 | VSS | Power | | |
| 50 | VDD | Power | | |
| 51 | PB12 * | I/O | GPIO_Output | |
| 52 | PB13 | I/O | SPI2_SCK | |
| 53 | PB14 | I/O | SPI2_MISO | |
| 54 | PB15 | I/O | SPI2_MOSI | |
| 68 | PA9 | I/O | USB_OTG_FS_VBUS | |
| 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 | |
| 94 | BOOT0 | Boot | | |
| 99 | VSS | Power | | |
| 100 | VDD | Power | | |

* The pin is affected with an I/O function

4. Clock Tree Configuration



1. Power Consumption Calculator report

1.1. Microcontroller Selection

| | |
|-----------|----------------------|
| Series | STM32H7 |
| Line | STM32H750 Value line |
| MCU | STM32H750VBTx |
| Datasheet | DS12556_Rev6 |

1.2. Parameter Selection

| | |
|-------------|-----|
| Temperature | 25 |
| Vdd | 3.0 |

1.3. 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 |

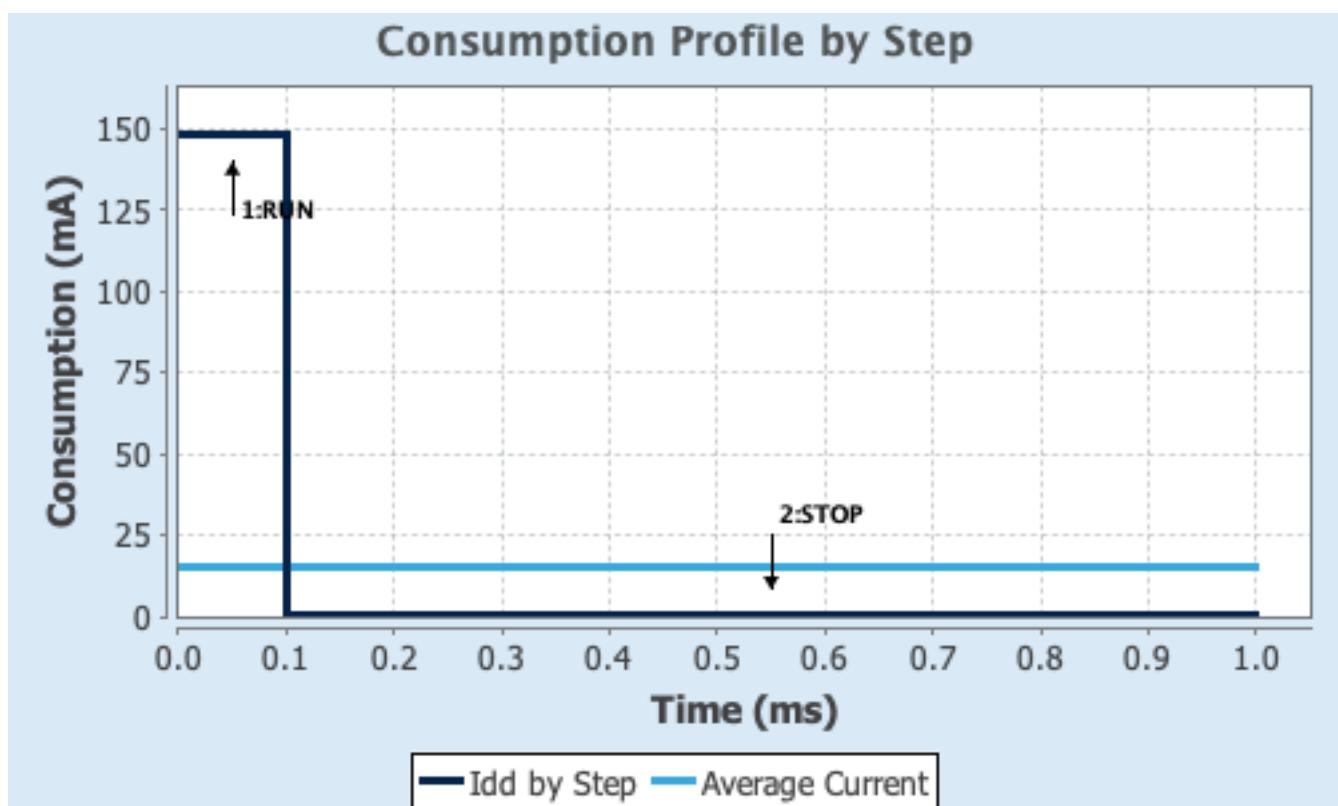
1.4. Sequence

| | | |
|-------------------------------|-------------------|----------------------|
| 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 µA |
| 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 |

1.5. Results

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

1.6. Chart



2. Software Project

2.1. Project Settings

| Name | Value |
|-----------------------------------|---|
| Project Name | h750lcd |
| Project Folder | /Users/bx/Workspace/crosslegcheck/cubeide |
| Toolchain / IDE | STM32CubeIDE |
| Firmware Package Name and Version | STM32Cube FW_H7 V1.12.1 |
| Application Structure | Advanced |
| Generate Under Root | Yes |
| Do not generate the main() | No |
| Minimum Heap Size | 0x200 |
| Minimum Stack Size | 0x400 |

2.2. 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 |

2.3. Advanced Settings - Generated Function Calls

| Rank | Function Name | Peripheral Instance Name |
|------|--------------------|--------------------------|
| 1 | SystemClock_Config | RCC |
| 2 | MX_GPIO_Init | GPIO |
| 3 | MX_SPI2_Init | SPI2 |
| 4 | MX_USB_HOST_Init | USB_HOST |

3. Peripherals and Middlewares Configuration

3.1. CORTEX_M7

3.1.1. Parameter Settings:

Speculation default mode Settings:

Speculation default mode **Enabled ***

Cortex Interface Settings:

CPU ICache **Disabled**

CPU DCache **Disabled**

Cortex Memory Protection Unit Control Settings:

MPU Control Mode **Background Region Privileged accesses only + MPU Disabled during hard fault, NMI and FAULTMASK handlers**

Cortex Memory Protection Unit Region 0 Settings:

MPU Region **Enabled**

MPU Region Base Address **0x0 ***

MPU Region Size **4GB**

MPU SubRegion Disable **0x87 ***

MPU TEX field level **level 0**

MPU Access Permission **ALL ACCESS NOT PERMITTED**

MPU Instruction Access **DISABLE**

MPU Shareability Permission **ENABLE**

MPU Cacheable Permission **DISABLE**

MPU Bufferable Permission **DISABLE**

Cortex Memory Protection Unit Region 1 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 2 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 3 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 4 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 5 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 6 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 7 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 8 Settings:

MPU Region **Disabled**

Cortex Memory Protection Unit Region 9 Settings:

MPU Region Disabled

Cortex Memory Protection Unit Region 10 Settings:

MPU Region Disabled

Cortex Memory Protection Unit Region 11 Settings:

MPU Region Disabled

Cortex Memory Protection Unit Region 12 Settings:

MPU Region Disabled

Cortex Memory Protection Unit Region 13 Settings:

MPU Region Disabled

Cortex Memory Protection Unit Region 14 Settings:

MPU Region Disabled

Cortex Memory Protection Unit Region 15 Settings:

MPU Region Disabled

3.2. DEBUG

Debug: Serial Wire

3.3. MEMORYMAP

mode: Activated

3.4. RCC

3.4.1. Parameter Settings:

Power Parameters:

SupplySource PWR_LDO_SUPPLY
Power Regulator Voltage Scale Power Regulator Voltage Scale 3

RCC Parameters:

TIM Prescaler Selection Disabled
HSE Startup Timeout Value (ms) 100
LSE Startup Timeout Value (ms) 5000
CSI Calibration Value 32
HSI Calibration Value 64

System Parameters:

VDD voltage (V) 3.3
Flash Latency(WS) 1 WS (2 CPU cycle)
Product revision rev.V

PLL range Parameters:

| | |
|-------------------------|----------------------|
| PLL1 clock Input range | Between 8 and 16 MHz |
| PLL1 clock Output range | MEDIUM VCO range |

3.5. SPI2

Mode: Full-Duplex Master

3.5.1. Parameter Settings:

Basic Parameters:

| | |
|--------------|-----------------|
| Frame Format | Motorola |
| Data Size | 8 Bits * |
| First Bit | MSB First |

Clock Parameters:

| | |
|---------------------------|----------------------|
| Prescaler (for Baud Rate) | 16 * |
| Baud Rate | 5.0 MBits/s * |
| Clock Polarity (CPOL) | High * |
| Clock Phase (CPHA) | 2 Edge * |

Advanced Parameters:

| | |
|-------------------------------|------------------------------|
| CRC Calculation | Disabled |
| NSSP Mode | Enabled |
| NSS Signal Type | Software |
| Fifo Threshold | Fifo Threshold 01 Data |
| Tx Crc Initialization Pattern | All Zero Pattern |
| Rx Crc Initialization Pattern | All Zero Pattern |
| Nss Polarity | Nss Polarity Low |
| Master Ss Idleness | 00 Cycle |
| Master Inter Data Idleness | 00 Cycle |
| Master Receiver Auto Susp | Disable |
| Master Keep Io State | Master Keep Io State Disable |
| IO Swap | Disabled |

3.6. SYS

Timebase Source: SysTick

3.7. USB_OTG_FS

Mode: Host_Only

Activate_VBUS: VBUS sensing

3.7.1. Parameter Settings:

| | |
|------------------------|---------------------|
| Speed | Full Speed 12MBit/s |
| Enable internal IP DMA | Disabled |
| Signal start of frame | Disabled |

3.8. USB_HOST

Class for FS IP: Communication Host Class (Virtual Port Com)

3.8.1. Parameter Settings:

| | |
|---------------------|-------|
| NO_SW_VBUS_DRIVE_FS | false |
|---------------------|-------|

Host Configuration:

| | |
|--|---------------------|
| USBH_MAX_NUM_ENDPOINTS (Maximum number of endpoints) | 2 |
| USBH_MAX_NUM_INTERFACES (Maximun number of interfaces) | 2 |
| USBH_MAX_NUM_SUPPORTED_CLASS (Maximun number of supported class) | 1 |
| USBH_MAX_NUM_CONFIGURATION (Maximun number of supported configuration) | 1 |
| USBH_KEEP_CFG_DESCRIPTOR (Keep the configuration into RAM) | Enabled |
| USBH_MAX_SIZE_CONFIGURATION (Maximun size in bytes for the Configuration Descriptor) | 256 |
| USBH_MAX_DATA_BUFFER (Maximun size of temporary data) | 512 |
| USBH_DEBUG_LEVEL (USBH Debug Level) | 0: No debug message |

CMSIS_RTOS:

| | |
|---|----------|
| USBH_USE_OS (Enable the support of an RTOS) | Disabled |
|---|----------|

3.8.2. Platform Settings:

| | |
|---------------|-----|
| Drive_VBUS_FS | PA1 |
|---------------|-----|

* User modified value

4. System Configuration

4.1. 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 | |
| SPI2 | PB13 | SPI2_SCK | Alternate Function Push Pull | No pull-up and no pull-down | Low | |
| | PB14 | SPI2_MISO | Alternate Function Push Pull | No pull-up and no pull-down | Low | |
| | PB15 | SPI2_MOSI | Alternate Function Push Pull | No pull-up and no pull-down | Low | |
| USB_OTG_FS | PA9 | USB_OTG_FS_VBUS | Input mode | No pull-up and no pull-down | n/a | |
| | 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 | PA1 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | |
| | PB0 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | |
| | PB1 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | |
| | PB12 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | |

4.2. DMA configuration

nothing configured in DMA service

4.3. BDMA configuration

nothing configured in DMA service

4.4. MDMA configuration

nothing configured in DMA service

4.5. NVIC configuration

4.5.1. NVIC

| Interrupt Table | Enable | Preenemption 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 |
| 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 | |
| SPI2 global interrupt | | unused | |
| FPU 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 | |
| HSEM1 global interrupt | | unused | |

4.5.2. 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 |
| 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 |
| Pendable request for system service | false | true | false |
| System tick timer | false | true | true |
| USB On The Go FS global interrupt | false | true | true |

* User modified value

5. System Views

5.1. Category view

5.1.1. Current

The screenshot shows the 'Category view' of the System View. At the top, there are two tabs: 'Category view' (which is selected) and 'Power Domain view'. Below the tabs is a toolbar with icons for refresh, search, and refresh, followed by a 'Choose filters ...' dropdown and a '... by Power Domain' dropdown containing options D1, D2, D3, and None, with 'None' selected.

The main area is divided into several sections:

- System Core:** A list of components including BDMA, CORTEX_M7 (checked), DMA, GPIO (checked), MDMA, NVIC (checked), RCC, and SYS (checked).
- Analogs:** No items listed.
- Timers:** No items listed.
- Connectivity:** A list including SPI2 (checked) and USB_FS (checked).
- Multimedia:** No items listed.
- Security:** No items listed.
- Computing:** No items listed.
- Trace and Debug:** A list including DEBUG (checked).
- Power and Thermal:** No items listed.
- Other:** No items listed.

5.1.2. Without filters

Category view Power Domain view

Choose filters by Power Domain
○ D1 ○ D2 ○ D3 None

Middleware

USB_HOST

System Core Analog Timers Connectivity Multimedia Security Computing Trace and Debug Power and Thermal Other

BDMA

CORTEX_M7

DMA

GPIO

MDMA

NVIC

RCC

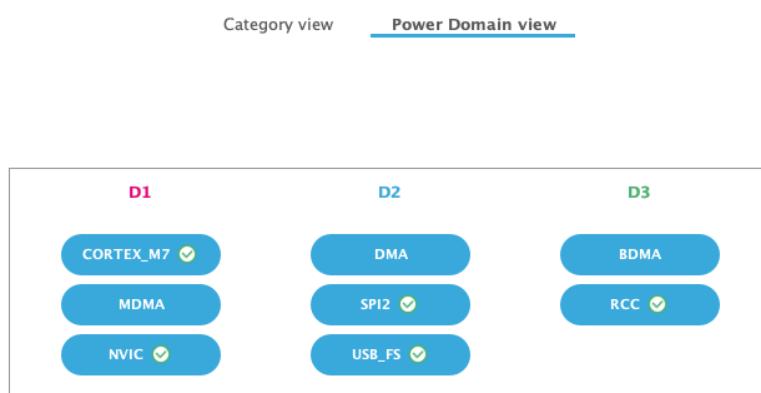
SYS

SPI2

USB_FS

DEBUG

5.2. Power Domain view



6. Docs & Resources

| Type | Link |
|-------------------|---|
| BSDL files | https://www.st.com/resource/en/bsdl_model/stm32h7_bsdl.zip |
| IBIS models | https://www.st.com/resource/en/ibis_model/stm32h7_ibis.zip |
| System View | https://www.st.com/resource/en/svd/stm32h7-svd.zip |
| Description | |
| Presentations | https://www.st.com/resource/en/product_presentation/microcontrollers_stm32h7_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_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 |
| Presentations | https://www.st.com/resource/en/product_presentation/microcontrollers-stm32h7rs-lines-overview.pdf |
| Brochures | https://www.st.com/resource/en/brochure/brstm32h7.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 |
| Flyers | https://www.st.com/resource/en/flyer/flstm32h7rs.pdf |
| Security Bulletin | https://www.st.com/resource/en/technical_note/tn1489-security-bulletin-tn1489stpsirt-physical-attacks-on-stm32-and-stm32cube-firmware-stmicroelectronics.pdf |
| Security Bulletin | https://www.st.com/resource/en/security_bulletin/sb0023-eucleak-protection-statement-for-stmicroelectronics-certified-products- |

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/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/an4221-i2c-protocol-used-in-the-stm32-bootloader-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/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/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/an4839-level-1-cache-on-stm32f7-series-and-stm32h7-series-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4891-stm32h72x-stm32h73x-and-singlecore-stm32h74x75x-system-architecture-and-performance-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/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/an5073-receiving-spdif-audio-stream-with-the-stm32f4f7h7-series-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/an5312-migration-from-rev-y-to-rev-z-for-stm32h743753-and-stm32h750-value-line-microcontrollers-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/an4760-quadspi-interface-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/an5612-esd-protection-of-stm32-mcus-and-mpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4991-how-to-wake-up-an-stm32-microcontroller-from-lowpower-mode-with-the-usart-or-the-lpuart-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/an5927-i3c-protocol-used-in-the-stm32-bootloader-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/an5342--how-to-use-error-correction-code-ecc-management-for-internal-memories-protection-on-stm32-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4938-getting-started-with-stm32h74xig-and-stm32h75xig-mcu-hardware-development-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5537-how-to-use-adc-oversampling-techniques-to-improve-signaltonoise-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/an4992-introduction-to-secure-firmware-install-sfi-for-stm32-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5405-how-to-use-fdcan-bootloader-protocol-on-stm32-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an5690-how-to-use-vrefbuf-peripheral-on-stm32-mcus-and-mpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4230-introduction-to-random-number-generation-validation-using-the-nist-statistical-test-suite-for-stm32-mcus-and-mpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an2867-guidelines-for-oscillator-design-on-stm8afals-and-stm32-mcusmpus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4013-introduction-to-timers-for-stm32-mcus-stmicroelectronics.pdf

- Application Notes https://www.st.com/resource/en/application_note/an4277-how-to-use-pwm-shutdown-for-motor-control-and-digital-power-conversion-on-stm32-mcus-stmicroelectronics.pdf
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