

STM32H750B-DK Discovery Kit

Predstavitev

STM32H750B-DK Discovery razvojni sistem

- Arm® Cortex® core-based microcontroller with 128 Kbytes (STM32H750XBH6) of Flash memory and 1 Mbyte of RAM, in TFBGA240+25 package

- 4.3" RGB interface LCD with touch panel connector

- Ethernet compliant with IEEE-802.3-2002, and POE

- USB OTG FS with Micro-AB connector

- SAI audio codec

- One ST-MEMS digital microphone

- 2 x 512-Mbit Quad-SPI NOR Flash memory

- 128-Mbit SDRAM

- 4-Gbyte on-board eMMC

- 1 user and reset push-button

- Fanout daughterboard

- 2 x FDCANs

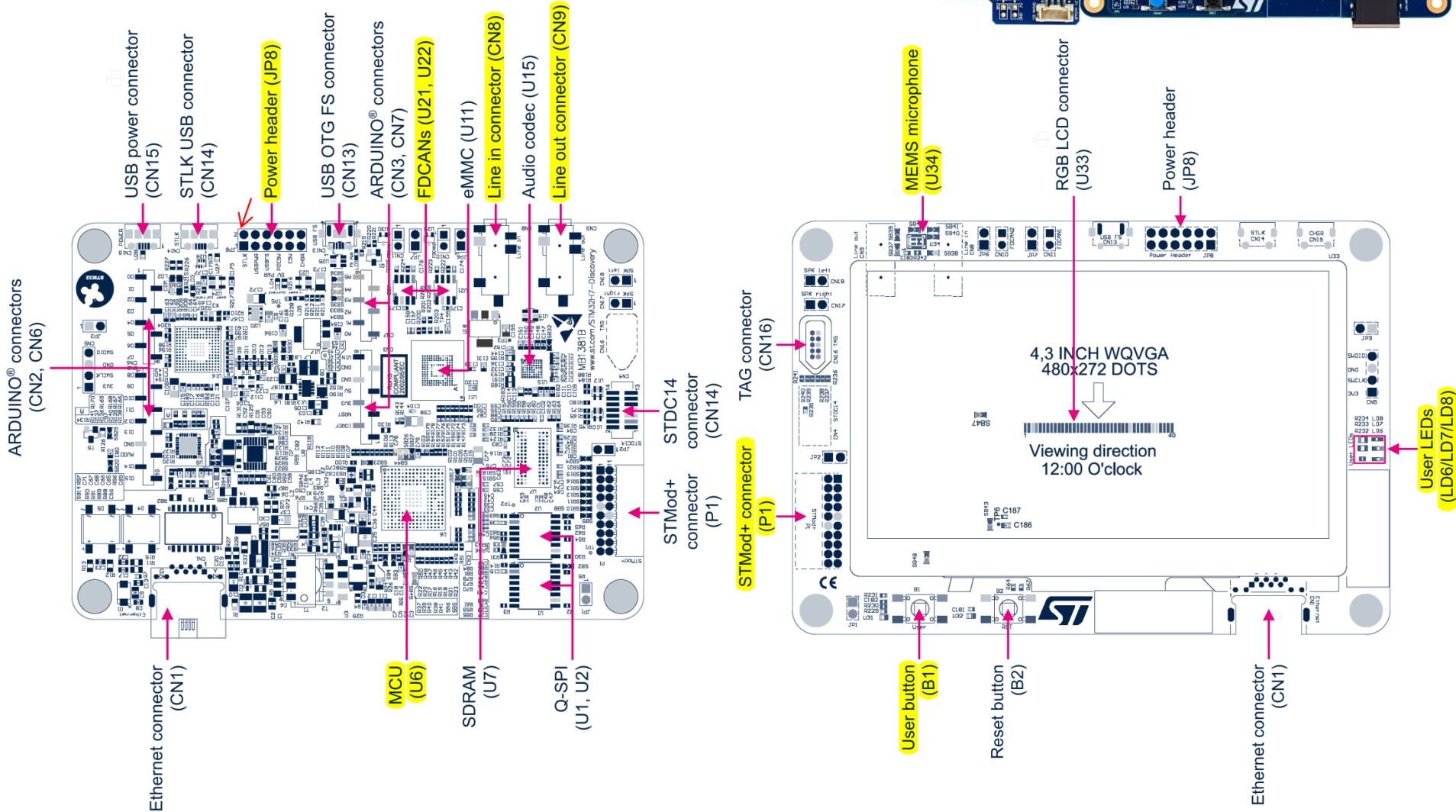
- Board connectors:

- USB FS Micro-AB connectors
- ST-LINK Micro-B USB connector
- USB power Micro-B connector
- Ethernet RJ45
- Stereo headset jack including analog microphone input
- Audio header for external speakers
- Arduino™ Uno V3 expansion connectors
- STMod+

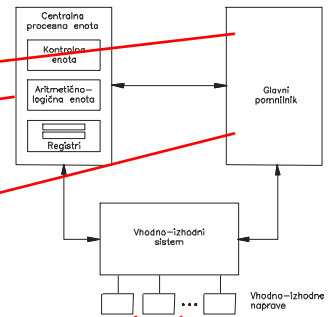
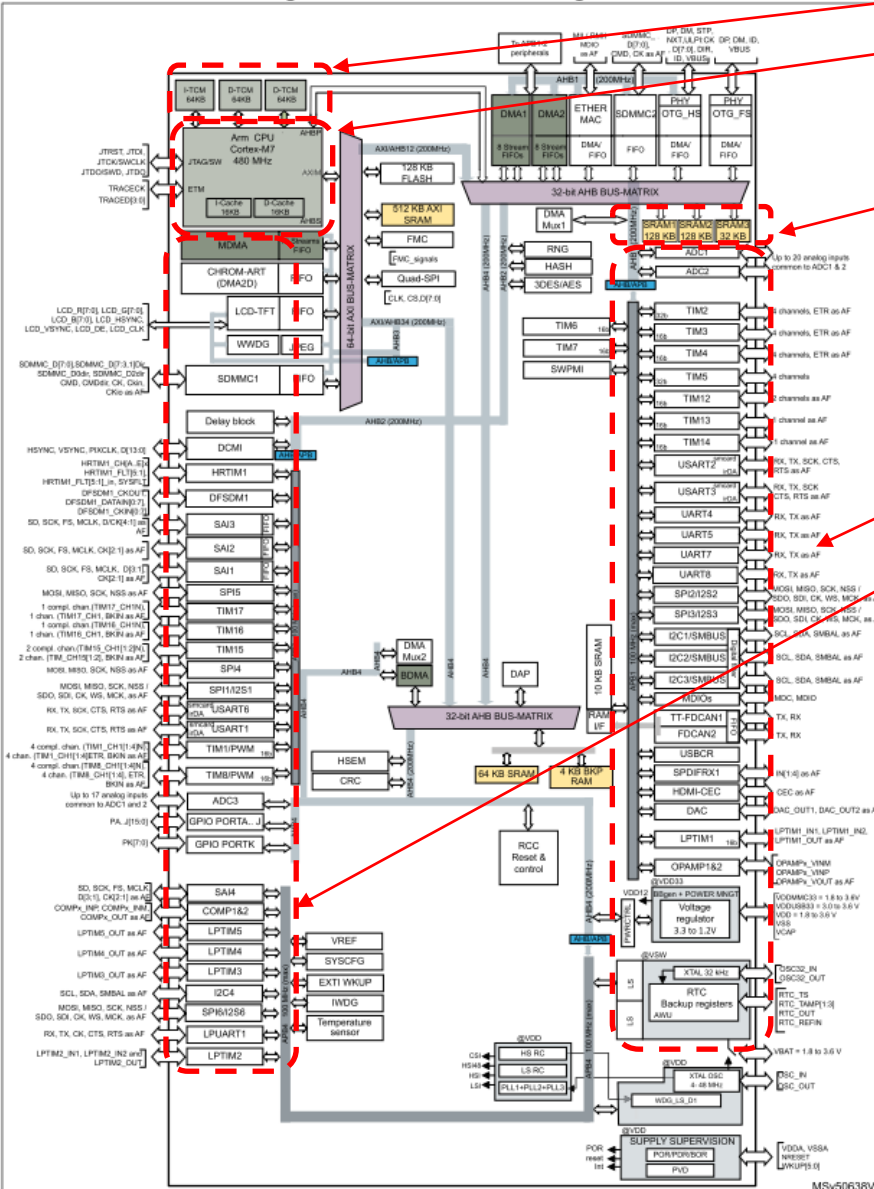


<https://www.st.com/en/evaluation-tools/stm32h750b-dk.html>

STM32H750B-DK Discovery razvojni sistem



STM32H750XB



ARM Cortex M – ISA

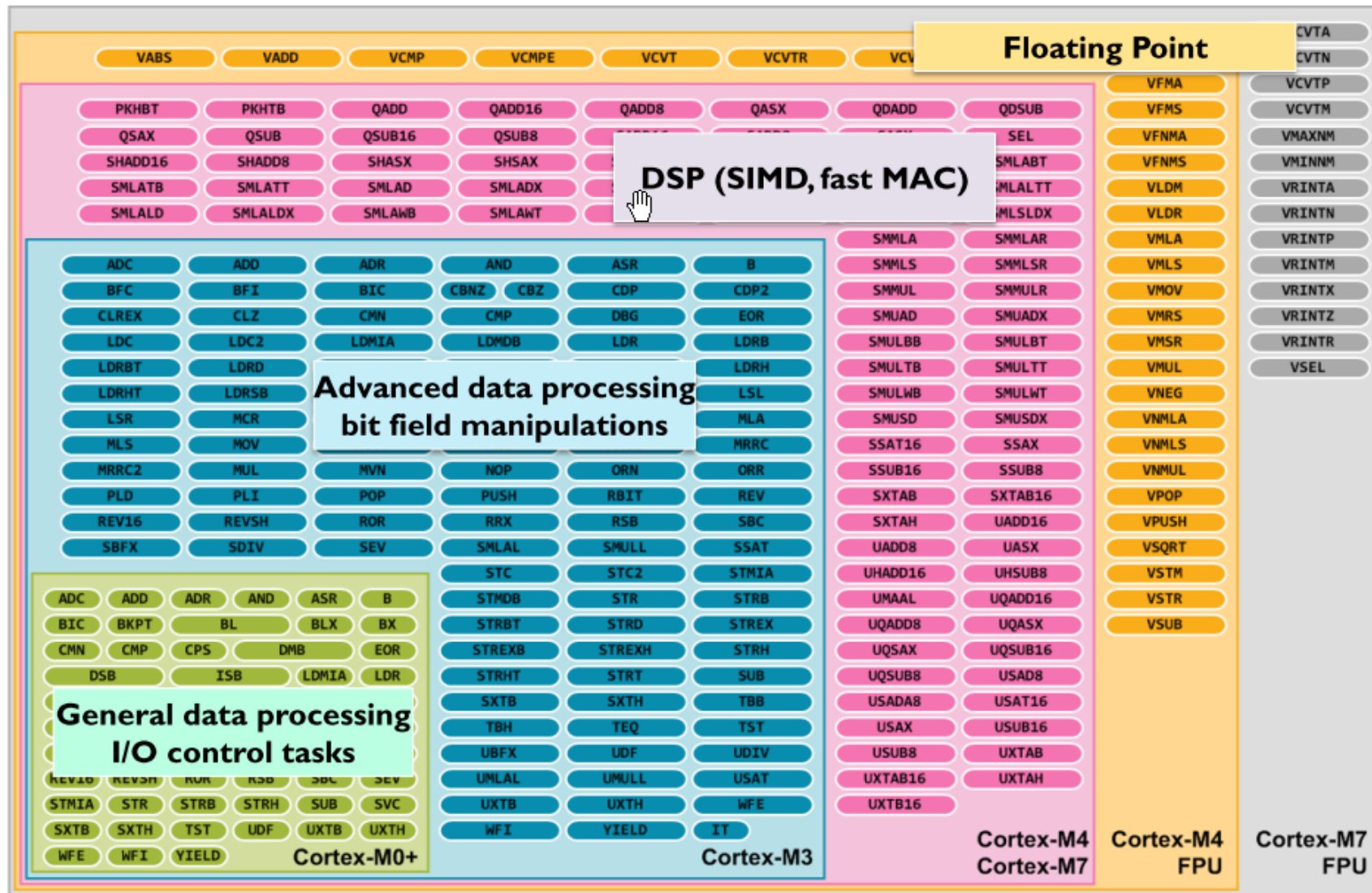


Figure 3: Instruction Set support in the Cortex-M processors

Delo na STM32H7 razvojnem sistemu

Priključitev :

- **Mikro USB** priklp na **daljši stranici** (nad LCD, srednji !!!)

Poseben začetni projekt (github) in info za STM32H7 (e-učilnica):

- **dodajanje vsebine (Main.s):**



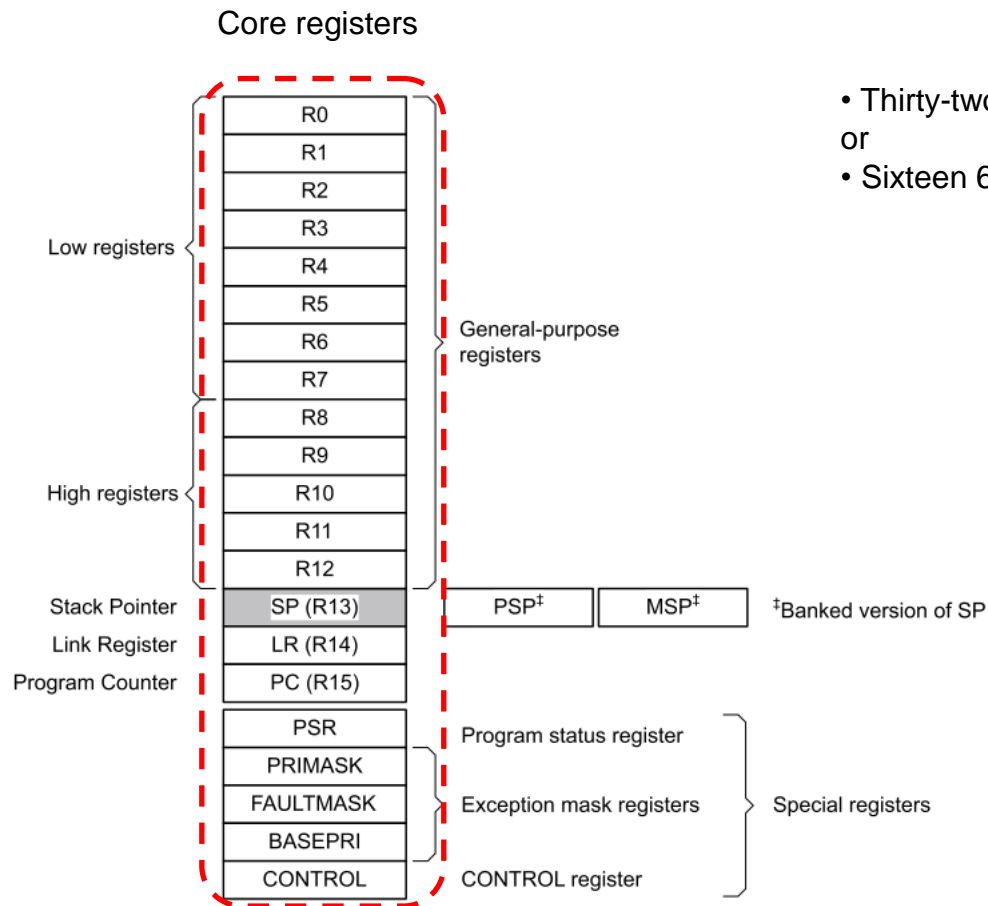
```
CubelDEWorkspace - stm32h7-asm/Core/Src/Main.s - STM32CubelDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer x
CubelDE_Workspace
  stm32f4-asm-qemu
  Delo
    ARM9Template
    stm32f4-asm (in STM32AsmTemplate)
    ARM9Template.zip
    Node_V4 (in node_v4)
    Sluzba
      CAN_IEX_Module
      ORLab-STM32H7
        stm32h7-asm
          Binaries
          Includes
          Core
            Src
              Main.s
            Startup
              startup_stm32h750xbhx.s
          Debug
          out
          makefile
          README.md
          STM32H750X.svd
          STM32H750XBHX_FLASH.ld
          STM32H750XBHX_RAM.ld
          README.md
      RALab-STM32H7
        stm32h7-asm_RA_LED
          README.md
      STM32_USB_Key_AdvDebug
      STM32_USB_Key_FreeRTOS_AdvDebug
      STM32CubelDE_Adv_Debug
      STM32F4_Discovery_VIN_Projects

Main.s x startup_stm32h750xbhx.s
12
13 ///////////////////////////////////////////////////////////////////
14 // Definitions
15 ///////////////////////////////////////////////////////////////////
16 // Definitions section. Define all the registers and
17 // constants here for code readability.
18
19 // Constants
20
21
22 // Start of data section|
23     .data
24
25     .align
26
27 STEV1: .word  0x10 // 32-bitna spr.
28 STEV2: .word  0x40 // 32-bitna spr.
29 VSOTA: .word  0 // 32-bitna spr.
30
31
32 // Start of text section
33     .text
34
35     .type main, %function
36     .global main
37
38     .align
39 main:
40     ldr r0, =STEV1 // Naslov od STEV1 -> r0
41     ldr r1, [r0] // Vsebina iz naslova v r0 -> r1
42
43     ldr r0, =STEV2 // Naslov od STEV1 -> r0
44     ldr r2, [r0] // Vsebina iz naslova v r0 -> r2
45
46     add r3,r1,r2 // r1 + r2 -> r3
47
48     ldr r0, =VSOTA // Naslov od STEV1 -> r0
49     str r3,[r0] // iz registra r3 -> na naslov v r0
50
51 __end: b __end
52
```

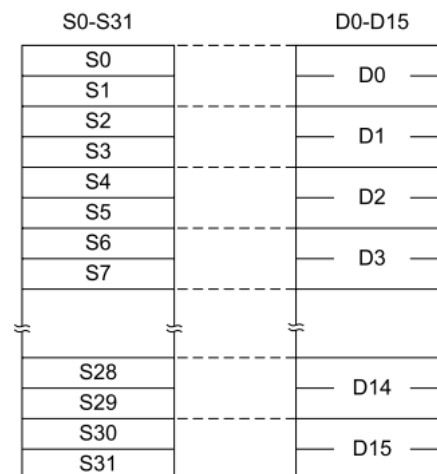
----- Razvojni sistem STM32H750-DK -----

- STM32H750B-DK Discovery kit with STM32H750XB MCU
- ORLab-STM32H7 - GitHub repozitorij
- User Manual Discovery kit stm32h750xb Uploaded 11/11/22, 10.15
- DataSheet_stm32h750xb Uploaded 11/11/22, 10.16
- Reference Manual rm0433-stm32h750xb Uploaded 11/11/22, 10.17
- Programming_Manual_pm0253-stm32h750xb Uploaded 11/11/22, 10.17
- Errata_es0396-stm32h750xb Uploaded 11/11/22, 10.19

ARM Cortex M7 – Programski model



- Thirty-two 32-bit single-precision registers, S0-S31 or
- Sixteen 64-bit double-precision registers, D0-D15.



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ARM Cortex M7 – Naslovni prostor

Figure 8. Processor memory map

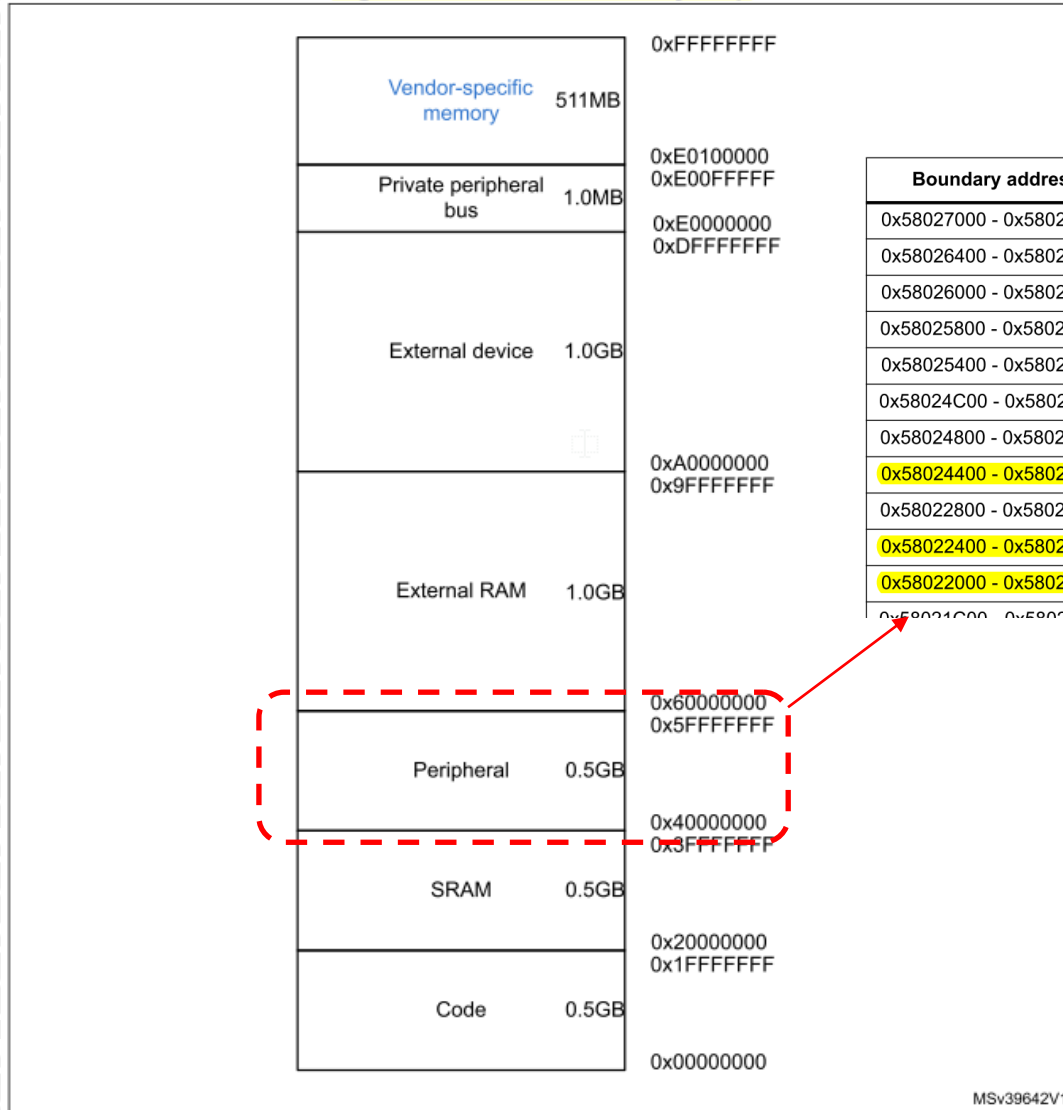


Table 8. Register boundary addresses⁽¹⁾

Boundary address	Peripheral	Bus	Register map
0x58027000 - 0x580273FF	RAMECC3		Section 3.4: RAMECC registers
0x58026400 - 0x580267FF	HSEM	AHB4 (D3)	Section 10.4: HSEM registers
0x58026000 - 0x580263FF	ADC3		Section 25.7: ADC common registers
0x58025800 - 0x58025BFF	DMAMUX2		Section 17.6: DMAMUX registers
0x58025400 - 0x580257FF	BDMA		Section 16.6: BDMA registers
0x58024C00 - 0x58024FFF	CRC		Section 21.4: CRC registers
0x58024800 - 0x58024BFF	PWR		Section 6.8: PWR register description
0x58024400 - 0x580247FF	RCC		Section 8.7: RCC register description
0x58022800 - 0x58022BFF	GPIOK		Section 11.4: GPIO registers
0x58022400 - 0x580227FF	GPIOJ		Section 11.4: GPIO registers
0x58022000 - 0x580223FF	GPIOI		Section 11.4: GPIO registers

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ARM Cortex M – Vektorska tabela

Vector Table	Vector address (initial)
Interrupt#239 vector <input type="checkbox"/>	0x000003FC
Interrupt#31 vector <input type="checkbox"/>	0x000000BC
Interrupt#1 vector <input type="checkbox"/>	0x00000044
Interrupt#0 vector <input type="checkbox"/>	0x00000040
SysTick vector <input type="checkbox"/>	0x0000003C
PendSV vector <input type="checkbox"/>	0x00000038
Not used	0x00000034
Debug Monitor vector <input type="checkbox"/>	0x00000030
SVC vector <input type="checkbox"/>	0x0000002C
Not used	0x00000028
Not used	0x00000024
Not used	0x00000020
SecureFault (ARMv8-M Mainline) <input type="checkbox"/>	0x0000001C
Usage Fault vector <input type="checkbox"/>	0x00000018
Bus Fault vector <input type="checkbox"/>	0x00000014
MemManage vector <input type="checkbox"/>	0x00000010
HardFault vector <input type="checkbox"/>	0x0000000C
NMI vector <input type="checkbox"/>	0x00000008
Reset vector <input type="checkbox"/>	0x00000004
MSP initial value	0x00000000

