



## How to debug with Serial Wire Viewer tracing on STM32MP15

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This article does not intend to cover all STM32CubeIDE Serial Wire Viewer (SWV) capabilities; complete information is available in (UM2609), chapter 4. It only provides some setup information for STM32MP15 serie, debugging Cortex-M in *Production Mode*.

In that mode, the available console on the board (UART4) is used by Cortex-A Linux. The clock tree is managed by Linux and 'Trace clock' needed to setup SWO is available from Linux console with command:

```
awk '/ck_trace/{print $5}' /sys/kernel/debug/clk/clk_summary
```

In order to test, let's modify main.c file from a generated project with a looping variable 'i', as depicted hereafter.

```

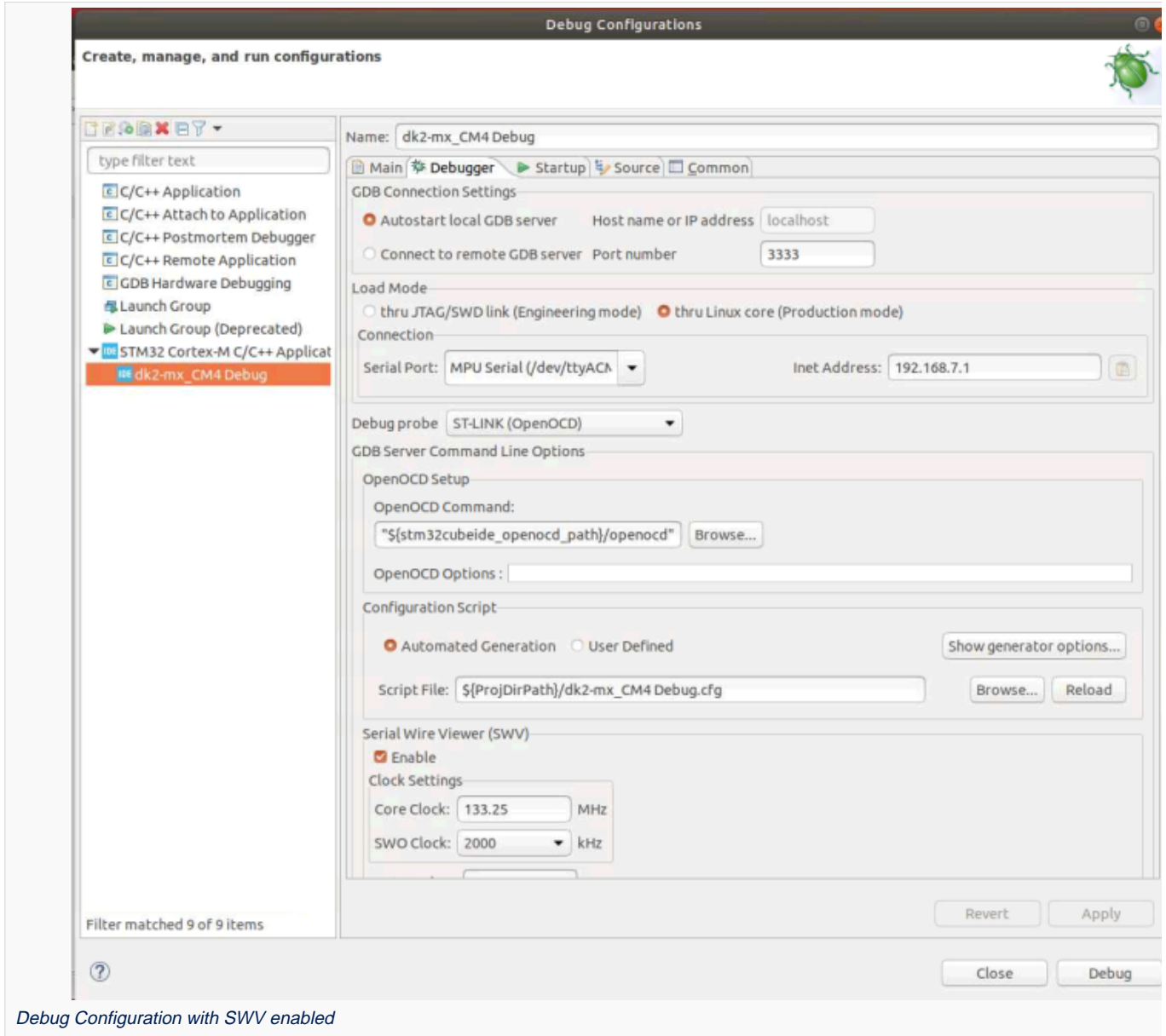
workspace_0.0.0.0-gerrit186909-p1 - dk2-mx_CM4/Core/Src/main.c - STM32CubeIDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug Project Explorer main.c
dk2-mx
├── Common
├── dk2-mx_CA7 (in CA7)
├── dk2-mx_CM4 (in CM4)
│   ├── Binaries
│   ├── Includes
│   ├── Common
│   ├── Core
│   │   ├── Inc
│   │   └── Src
│   │       └── main.c
│   │           ├── stm32mp1xx_hal_msp.c
│   │           ├── stm32mp1xx_it.c
│   │           ├── syscalls.c
│   │           └── systemem.c
│   ├── Startup
│   ├── Drivers
│   ├── Middlewares
│   ├── OPENAMP
│   ├── Debug
│   ├── RemoteProc
│   │   ├── dk2-mx_CM4.cfg
│   │   ├── dk2-mx_CM4.launch
│   │   └── STM32MP157CACX_RAM.ld
│   ├── Drivers
│   ├── Middlewares
│   └── dk2-mx.loc
main.c
100
101 /* USER CODE BEGIN SysInit */
102
103 /* USER CODE END SysInit */
104
105 /* Initialize all configured peripherals */
106 MX_GPIO_Init();
107 /* USER CODE BEGIN 2 */
108
109 /* USER CODE END 2 */
110
111 /* Infinite loop */
112 /* USER CODE BEGIN WHILE */
113 while (1)
114 {
115     /* USER CODE END WHILE */
116     i++;
117     i++;
118     i++;
119     i++;
120     HAL_Delay(300);
121     if (i>35)
122         i=0;
123     /* USER CODE BEGIN 3 */
124 }
125 /* USER CODE END 3 */
126 }
127
128 /**
129 * @brief System Clock Configuration
130 * @retval None
131 */
Console Problem Executa Debugge Memory SWV Tra SWV Da
MPU Serial (CONNECTED)
root@stm32mp1:~# awk '/ck_trace/{print $5}' /sys/kernel/debug/clk/clk_summary
133250000
root@stm32mp1:~#
/dk2-mx_CM4/Core/Src/main.c Addr: 192.168.7.1

```

Trace clock from Linux console



Then, setup debug configuration, enabling SWV and setting the clock: 133.25MHz here.

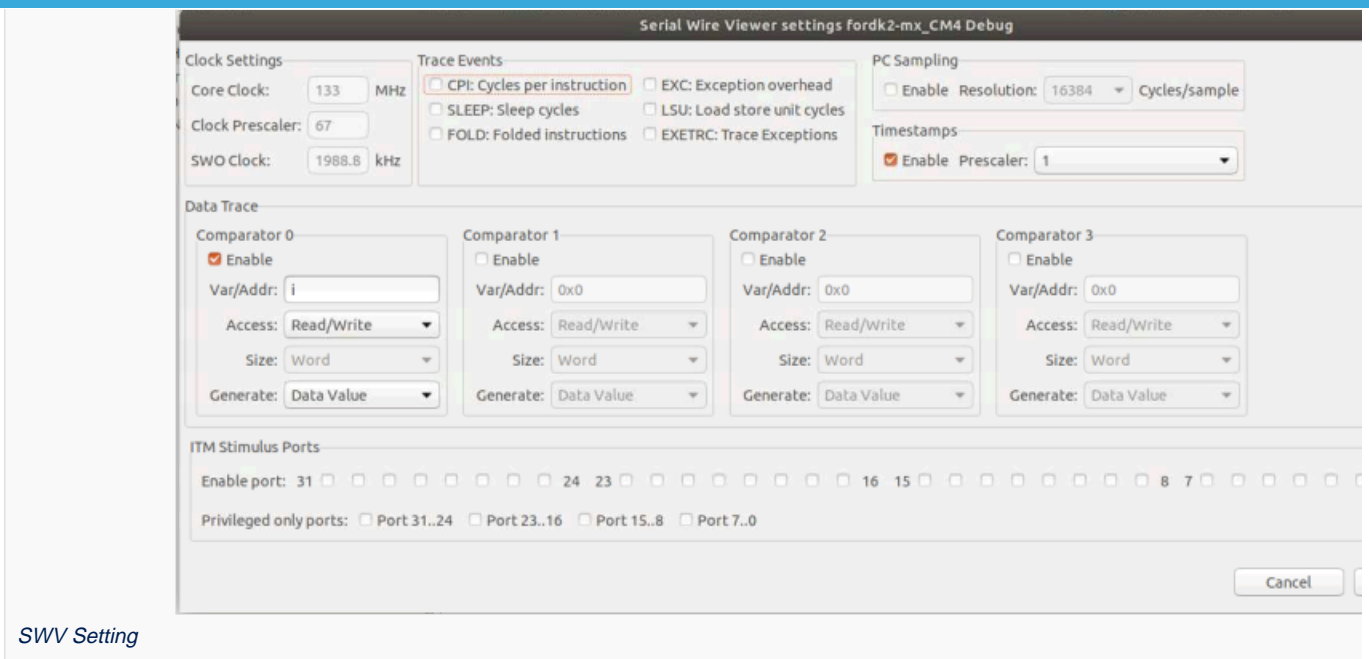


Debug Configuration with SWV enabled

Stopping Debug session, open Serial Wire Views: *Window > Show View > Other... > SWV > SWV Trace Log & SWV Data Trace*.

In *SWV Trace Log > Configure Trace* menu, setup *Comparator 0* in order to spy variable 'i'.



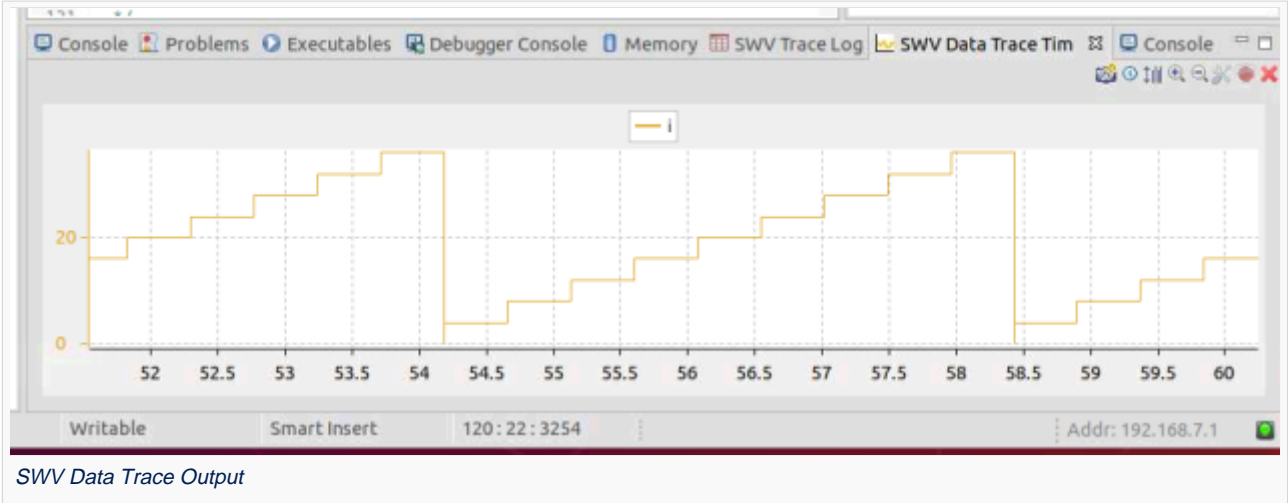


SWV Setting

Then start the trace



Resuming debug session gives inside SWV Data Trace view the corresponding graphic.



SWV Data Trace Output

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