



How to debug with Serial Wire Viewer tracing on STM32MP15

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A quality version of this page, approved on 19 April 2021, was based off this revision.

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

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.

File:Swv-traceclk-linux-main.png
Trace clock from Linux console

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

File:Swv-dbg-cfg.png
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'.

File:SWVConfigureTraceButton.png

File:Swv-settings.png
SWV Setting

Then start the trace

File:SWVStartTraceButton.png

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

File:Swv-data-trace.png
SWV Data Trace Output

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Stable: 17.11.2020 - 17:06 / Revision: 10.11.2020 - 07:49

A quality version of this page, approved on 17 November 2020, was based off this revision.

All the resources for the STM32MP1 Series are located in the Resources area of the [STM32MP1 Series web page](#).

The resources below are referenced in some of the articles of this user guide.

Information

The different **STM32MP15** microprocessor **part numbers** available (with their corresponding internal




peripherals, security options and packages) are described in the **STM32MP15 microprocessor part numbers**.




NEW means that the document (or its version) is new compared to what was delivered within the previous ecosystem release.

Reference	Name	Link	Version
Application notes			
AN4803	High-speed SI simulations using IBIS and board-level simulations using HyperLynx® SI on STM32 MCUs and MPUs	AN4803.pdf	v2.0
AN5027	Interfacing PDM digital microphones using STM32 MCUs and MPUs	AN5027.pdf	v2.0
AN5031	Getting started with STM32MP15 Series hardware development	AN5031.pdf	v2.0
AN5036	Thermal management guidelines for STM32 applications	AN5036.pdf	v3.0
AN5109	STM32MP1 Series using low-power modes	AN5109.pdf	NEW v4.0
AN5122	STM32MP1 Series DDR memory routing guidelines	AN5122.pdf	v3.0
AN5168	STM32MP1 series DDR configuration	AN5168.pdf	v1.0
AN5225	USB Type-C™ Power Delivery using STM32xx Series MCUs and STM32xxx Series MPUs	AN5225.pdf	NEW v3.0
AN5253	Migration of microcontroller applications from STM32F4x9 lines to STM32MP151, STM32MP153 and STM32MP157 lines microprocessor	AN5253.pdf	v1.0
AN5256	STM32MP151, STM32MP153 and STM32MP157 discrete power supply hardware integration	AN5256.pdf	v2.0
AN5260	STM32MP151/153/157 MPU lines and STPMIC1B integration on a battery powered application	AN5260.pdf	v1.0
AN5275	USB DFU/USART protocols used in STM32MP1 Series bootloaders	AN5275.pdf	v1.0
AN5284	STM32MP1 series system power consumption	AN5284.pdf	v1.0
AN5348	FDCAN peripheral on STM32 devices	AN5348.pdf	v1.0
AN5431	The STPMIC1 PCB layout guidelines	AN5431.pdf	v1.0




Reference	Name	Link	Version
Application notes			
AN5438	STM32MP1 Series lifetime estimates	AN5438.pdf	v1.0
AN5510	Overview of the secure secret provisioning (SSP) on STM32MP1 Series	AN5510.pdf	v1.0
Datasheets^[1]			
DS12505	STM32MP157C/F datasheet (secure)	DS12505.pdf	 v4.0
DS12504	STM32MP157A/D datasheet (basic)	DS12504.pdf	 v4.0
DS12503	STM32MP153C/F datasheet (secure)	DS12503.pdf	 v4.0
DS12502	STM32MP153A/D datasheet (basic)	DS12502.pdf	 v4.0
DS12501	STM32MP151C/F datasheet (secure)	DS12501.pdf	 v4.0
DS12500	STM32MP151A/D datasheet (basic)	DS12500.pdf	 v4.0
DS12792	STPMIC1 datasheet	stpmic1.pdf	 v5.0
Errata sheets			
ES0438	STM32MP15xx device errata	ES0438.pdf	v5.0
Reference manuals^[1]			
RM0436	STM32MP157 reference manual (STM32MP157xxx advanced Arm [®] -based 32-bit MPUs)	RM0436.pdf	v4.0
RM0442	STM32MP153 reference manual (STM32MP153xxx advanced Arm [®] -based 32-bit MPUs)	RM0442.pdf	v4.0
RM0441	STM32MP151 reference manual (STM32MP151xxx advanced Arm [®] -based 32-bit MPUs)	RM0441.pdf	v4.0
Boards schematics			
MB1262 schematics	STM32MP157C-EV1 motherboard schematics MB1262-C01 board schematic (Evaluation board)	MB1262-C01.pdf	v1.0
MB1263 schematics	STM32MP157C-EV1 daughterboard schematics MB1263-C01 board schematic (Evaluation board)	MB1263-C01.pdf	v1.0



Reference	Name	Link	Version
Application notes			
 MB1263 schematics	STM32MP157F-EV1 daughterboard schematics MB1263-C04 board schematic (Evaluation board)	MB1263-C04.pdf	v4.0
MB1230 schematics	DSI 720p LCD display daughterboard schematics MB1230-C board schematic (Evaluation board)	MB1230-C.pdf	v1.1
MB1379 schematics	Camera daughterboard schematics MB1379-A01 board schematic (Evaluation board)	MB1379-A01.pdf	v1.0
MB1272 schematics	STM32MP157x-DKx motherboard schematics MB1272-DK2-C01 board schematic (Discovery kit)	MB1272-C01.pdf	v1.0
MB1407 schematics	STM32MP157x-DKx daughterboard schematics MB1407-LCD-C01 board schematic (Discovery kit)	MB1407-C01.pdf	v1.0
Boards user manuals			
UM2535	STM32MP157x-EV1 evaluation board user manual	UM2535.pdf	v2.0
UM2534	STM32MP157x-DKx discovery board user manual	UM2534.pdf	v1.0
Tools user manuals			
UM2563	STM32CubeIDE installation guide	UM2563.pdf	v1.0
UM2579	Migration guide from System Workbench to STM32CubeIDE	UM2579.pdf	v1.0
UM2553	STM32CubeIDE quick start guide	UM2553.pdf	v1.0
AN5360	Getting started with projects based on the STM32MP1 Series in STM32CubeIDE	AN5360.pdf	v1.0
UM2609	Description of the integrated development environment for STM32 products	UM2609.pdf	v1.0
UM1718	STM32CubeMX user manual	UM1718.pdf	 v32.0
UM2237	STM32CubeProgrammer tool user manual	UM2237.pdf	 v12.0
		UM22	



Reference	Name	Link	Version
Application notes			
UM2238	STM32 Trusted Package Creator tool user manual	38.pdf	 v7.0
UM2542	STM32 Series Key Generator tool user manual	UM2542.pdf	v1.0
UM2543	STM32 Series Signing tool user manual	UM2543.pdf	v1.0

- 1.01.1 The part numbers are specified in STM32MP15 microprocessor part numbers



Archives

STM32MP15 release	ST documentation
STM32MP15-Ecosystem-v2.0.0	STM32MP15 resources - v2.0.0
STM32MP15-Ecosystem-v1.2.0	STM32MP15 resources - v1.2.0 page for the v1 ecosystem releases (in archived wiki)
STM32MP15-Ecosystem-v1.1.0	STM32MP15 resources - v1.1.0 page for the v1 ecosystem releases (in archived wiki)
STM32MP15-Ecosystem-v1.0.0	STM32MP15 resources - v1.0.0 page for the v1 ecosystem releases (in archived wiki)

Doubledata rate (memory domain)

USB port or connector

Microprocessor Unit

Device Firmware Upgrade

Universal Synchronous/Asynchronous Receiver/Transmitter

Printed Circuit Board

Secure Secret Provisioning

Secure secrets provisioning

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Display Serial Interface (MIPI® Alliance standard)