



HDP Linux driver



HDP Linux driver

Stable: 04.02.2020 - 07:48 / Revision: 04.02.2020 - 07:40

Contents

1 Article purpose	2
2 Short description	2
3 Configuration	3
3.1 Kernel configuration	3
3.2 Device tree	3
4 How to trace and debug	4
4.1 How to monitor	4
4.1.1 How to monitor with debugfs	4
5 Source code location	4
6 References	4

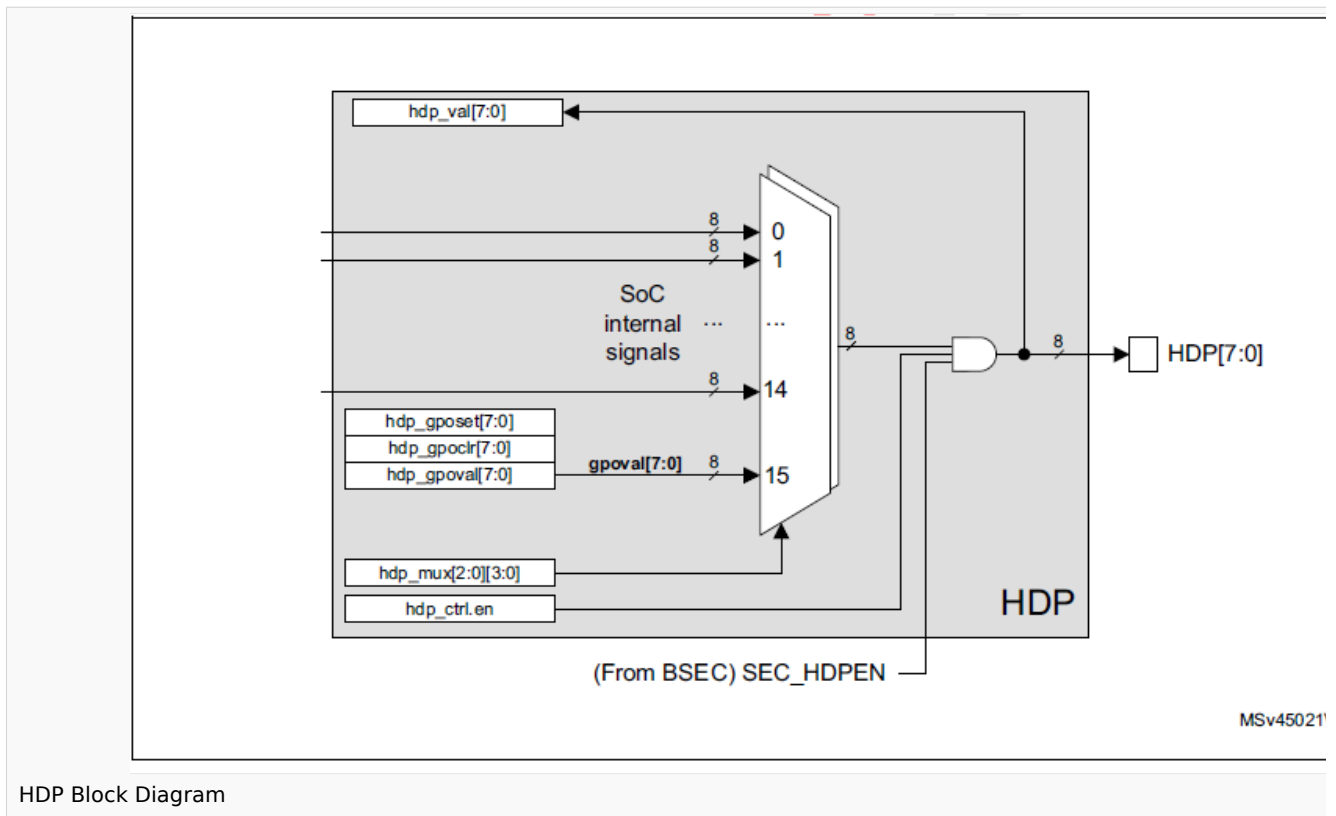
1 Article purpose

This article introduces the **Hardware Debug Port** which allows the observation of internal signals. By using multiplexers, up to 16 signals of each of 8-bit output can be observed. The article explains:

- How to configure, use and debug the driver
- The driver structure, and where the source code can be found.

2 Short description

- 8 output signals
- One of 16 internal signals with individual control
- 8 software-programmable signals for pinout agnostic code debugging
- Output disabling by security signal



3 Configuration

3.1 Kernel configuration

The **HDP** is enabled and ready to be used in all STM32MPU Embedded Software Distributions, via the Linux[®] kernel configuration `CONFIG_STM32_HDP`, set to disabled by default.

Symbol: **STM32_HDP**
 Location:
 Device Drivers
 [*] SOC (System On Chip) specific Drivers
 [*] STMicroelectronics STM32MP157 Hardware Debug Port (HDP) pin control

Please refer to the [Menuconfig](#) or [how to configure kernel](#) article for instructions on modifying the configuration, and recompiling the Linux kernel image in the Distribution Package context.

3.2 Device tree

Refer to the [HDP device tree configuration](#) article when configuring the HDP Linux kernel driver.



4 How to trace and debug

4.1 How to monitor

4.1.1 How to monitor with debugfs

`sysfs` entry can be used to browse HDP registers.

```
Board $> /sys/kernel/debug/hdp# ls
ctrl gpoclr gposet gpoval mux val
```

See the HDP chapter in the reference manual ^[1] for further register details.

5 Source code location

The HDP Linux driver source code is composed of:

- “<Linux kernel directory>/drivers/soc/st/stm32_hdp.c” to handle common resources: registers, clock.



Please note that the upstreaming of the HDP Linux driver source code is in progress

6 References

- [STM32MP15 reference manuals](#)

Hardware Debug Port

Debug File System (See <https://en.wikipedia.org/wiki/Debugfs> for more details)

System File System (See <https://en.wikipedia.org/wiki/Sysfs> for more details)