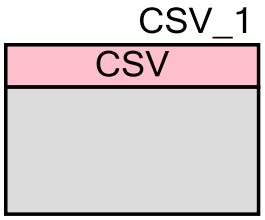
Clock Supervisor Functions (PDL_CSV) 1.0



Features

- Clock Failure Detection
- Anomalous Frequency Detection

General Description

The Peripheral Driver Library (PDL) Clock Supervisor Functions (PDL_CSV) monitors the main and sub clocks. If a rising edge of the monitored clock is not detected within the specified period, this function determines that the oscillator has failed, and outputs a system reset request.

The anomalous frequency detection monitors frequency of the main clock. Within the specified period between an edge and the next edge of the divided clock of high-speed CR, this function counts up the internal counter value using the main clock. If the count value reaches out of the set window range, the function determines that the main clock frequency is anomalous, and outputs an interrupt request to the CPU or a system reset request.

This component uses firmware drivers from the PDL_CSV module, which is automatically added to your project after a successful build.

When to Use a CSV Component

The PDL_CSV component used when high precision of the Main Clock or Sub-clock is needed. When the deviation is detected the component generates system reset request or interrupt request.

Quick Start

1. Drag a PDL_CSV component from the Component Catalog FMx/System/Clock Supervisor Functions folder onto your schematic. The placed instance takes the name CSV_1.
2. There is no need to open Configure dialog. This component doesn't provide any parameters.
3. Build the project to verify the correctness of your design. This will add the required PDL modules to the Workspace Explorer, and generate configuration data for the CSV_1 instance.

4. In the *main.c* file, initialize the peripheral and start the application.

```
Csv_EnableMainCsv();
Csv_EnableSubCsv();
```

5. Build and program the device.

Component Usage

After a successful build, firmware drivers from the PDL_CSV module, are added to your project in the pdl/drivers/csv folder. Pass the generated data structures to the associated PDL functions in your application initialization code to configure the peripheral.

Generated Data

Once the component is initialized, the application code should use the peripheral functions provided in the referenced PDL files. Refer to the PDL documentation for the list of provided API functions. To access this document, right-click on the component symbol on the schematic and choose "**Open API Documentation…**" option in the drop-down menu.

Code Examples and Application Notes

There are numerous code examples that include schematics and example code available online at the Cypress Code Examples web page.

Cypress also provides a number of application notes describing how FMx devices can be integrated into your design. You can access the Cypress Application Notes search web page at www.cypress.com/appnotes.

Resources

The PDL_CSV component uses the Clock Supervisor Function (CSV) peripheral block.

References

- FM0+ Family of 32-bit ARM® Cortex®-M0+ Microcontrollers Peripheral Manuals
- Cypress FM0+ Family of 32-bit ARM® Cortex®-M0+ Microcontrollers

Component Changes

This section lists the major changes in the component from the previous version.

Version	Description of Changes	Reason for Changes / Impact
1.0	Initial Version	