Software Release Notes
USB Power Delivery Software Framework (PSF)

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REV	DATE	DESCRIPTION OF CHANGE
0.90	Oct 24, 2019	First Web release
0.91	Nov 11,2019	Bug fix release
0.92	Dec 12,2019	Documentation release
0.95	Jan 09, 2020	Release with complete documentation and Bug fix
1.00	Feb 25, 2020	Source only feature complete release
1.01	Mar 19,2020	Phase 2 Alpha release

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1 Introduction

USB Power Delivery Software Framework (PSF) – a software-based Power Delivery stack along with UPD350 Type-C Port Controller (Maverick) is a USB-PD solution. It is a generic user-friendly that can be ported across various hardware platform.

Component Type	USB Power Delivery Software Framework (PSF)
Target Silicon	SAMD20 + UPD350
Where can an end user see the version number	Version number appended with filename ../PSF/Source/include/ProjectVersion.h

2 Release notes

2.1 Version 1.01

Release date	19-Mar-2020
Release Type	PSF Phase 2 Alpha release
Pre-requisites (if any)	**PSF EVB Rev A**
Source Tag	**Tag:** PSF_STACK_V1.01

2.1.1 Not implemented / Limited functionality requirements

1. PSF-44: TDA 2.3.1.1 Source Dynamic Load Test, Provider or Provider/Consumer Test Fails when PUT is configured as Source.
2. PSF-85: Ellisys Compliance fails with MPQ4230 I2C DC/DC Converter when INCLUDE_POWER_MANAGEMENT_CTRL = 1
3. PSF-86: VBUS drop observed during Voltage transitions when the sink load is higher
4. PSF-89: No activity seen on Port 2 when MPQ I2C DC/DC controller is used with PSF
5. PSF-90: Continuous PD re-negotiation when number of source PDOs is 7
6. PSF-91: Build failure when INCLUDE_UPD_PIO_OVERRIDE_SUPPORT is set to 0
7. PSF-88: u16PortIntMask and u16PortStatusChange of Status registers need to be implemented.

2.1.2 Bug Fixes

1. PSF-70: "Data" Configurable Parameter cannot be Configured to Other Options mentioned in the System DOS – Bits 8:6 of u32CfgData in PORT_CFG_STATUS structure holds the option to configure USB Data parameters.

2. PSF-71: PSF feedback for porting to 16-bit MCU – Suggested type casts are taken care and a new Hook function is introduced for enable/disable of DC_DC_EN.

3. PSF-82: tVCONNSourceOn timer value exceeds the Max Limit given in USB PD Specification – VCONN On and Off timer values are updated as per the PD Specification.

4. PSF-87: Handle Unexpected message when Sink capabilities message is received in wrong PE State – Unexpected message handling is fixed by sending soft reset in case sink caps message is received in wrong PE state.

2.1.3 Features added

- Boot time Configuration parameters and Run time Status registers
- Support for MPQ4230 I2C DC/DC controller
- Power Balancing

2.1.4 Notes

- Only 2 Port Source and Sink solution has been tested at 8MHz SPI clock speed.
- System level PD communication between PSF and UPD350 through I2C interface is untested.
- For Source Pro application, Ellisys compliance has been tested only in Port 1 with INCLUDE_POWER_MANAGEMENT_CTRL = 0 and INCLUDE_POWER_BALANCING = 0 whereas for Source Lite application, 2 port Ellisys compliance has been tested.

2.2 Version 1.00

Release date	26-Feb-2020
Release Type	PD Source only feature complete release
Pre-requisites (if any)	**PSF EVB Rev A**
Source Tag	**Tag:** PSF_STACK_V1.00

2.2.1 Not implemented / Limited functionality requirements

1. PSF-44: TDA 2.3.1.1 Source Dynamic Load Test, Provider or Provider/Consumer Test Fails when PUT is configured as Source

2.2.2 Bug Fixes

1. PSF-21: VBUS OCS Power fault handling not working – Max Power Fault Count check is included for implicit contract also.
2. PSF-26: Build Fails When INCLUDE_POWER_FAULT_HANDLING Macro is set to 0 – Fixed the error thrown by the compiler.
3. PSF-43: TD.PD.SRC.E16 PDO Transition Test fails inconsistently in Port 1 Alone when Configured as Source – There was a difference in actual voltage threshold values and those calculated by FW due to the improper float to int conversions handled in FW. This is fixed.

4. PSF-45: TDA 2.3.2.1 PDO Transition Test - Source, Provider or Provider/Consumer Test Fails on both Ports – The fix is same as that of PSF-43

2.2.3 Features added

NA

2.2.4 Notes

- This is PD Source only feature complete release with bug fixes reported in v0.95
- Only 2 Port Source and Sink solution has been tested at 8MHz SPI clock speed.
- System level PD communication between PSF and UPD350 through I2C interface is untested, whereas basic I2C read/writes are tested.

2.3 Version 0.95

Release date	09-Jan-2020
Release Type	Beta Release
Pre-requisites (if any)	**PSF EVB Rev A**
Source Tag	**Tag:** PSF_STACK_V0.95

2.3.1 Not implemented / Limited functionality requirements

1. PSF-44: TDA 2.3.1.1 Source Dynamic Load Test, Provider or Provider/Consumer Test Fails when PUT is configured as Source
2. PSf-41: SPT.5 Over Current QuadraMAX Test Fails on Both Ports

2.3.2 Bug Fixes

1. PSF-21: VBUS OCS Power fault handling not working – DC_DC_EN was toggled twice to reset the fault occurred. Since DC_DC was set and reset immediately, DC-DC controller did not have enough time to reset itself. PIO Override drive was not reset after a Fault. Both the issues are fixed.

2. PSF-7: HiByte has potential error – Fixed the warning generated by PC Lint

3. PSF-65: PD Source tests in Ellisys compliance fails when MchpPSF_Run() is called for every 3ms – This issue is fixed by setting PE_PDCONNECTED_STS_MASK in ePE_SRC_NEGOTIATE_CAPABILITY state.

4. PSF-61: Unable to charge HP-Laptop - Possible Bug with VCONN SWAP response (Reject/Not Supported) - For source only operation,INCLUDE_VCONN_SWAP_SUPPORT should be defined as '1'. Same is updated in the PSF_Config.h file description.

5. PSF-69: When INCLUDE_UPD_PIO_OVERRIDE_SUPPORT defined as 0, negotiation is not happening - Undervoltage was detected by FW without considering whether under voltage power fault detection was enabled; Which caused undervoltage detection and follow up power shutdown. It is fixed now.

2.3.3 Features added

NA

2.3.4 Notes

- Only 2 Port Source and Sink solution has been tested at 8MHz SPI clock speed.
- System level PD communication between PSF and UPD350 through I2C interface is untested, whereas basic I2C read/writes are tested.

2.4 Version 0.92

Release date	12-Dec-2019
Release Type	Documentation Release
Pre-requisites (if any)	**PSF EVB Rev A**
Source Tag	**Tag:** PSF_STACK_V0.92

2.4.1 Not implemented / Limited functionality requirements

Firmware Bug fixes are not made for this release. All the bugs observed with V0.91 release is applicable for V0.92 release too.

2.4.2 Bug Fixes

No Bug fixes made

2.4.3 Features added

This release is made to mark the release of following documents

- PSF User Guide
- Getting Started with PSF
- Demo Read me

2.4.4 Notes

None.

2.5 Version 0.91

Release date	11-Nov-19
Release Type	Bug fix release
Pre-requisites (if any)	**PSF EVB Rev A**
Source Tag	**Tag:** PSF_STACK_V0.91

2.5.1 Not implemented / Limited functionality requirements

1. PSF-7 - HiByte has potential error

2.5.2 Bug Fixes

1. PSF-19 -FW has build issue when CONFIG_PD_PORT_COUNT set to 1
2. PSF-21 - VBUS OCS Power fault handling not working

3. PSF-26 - Build Fails When INCLUDE_POWER_FAULT_HANDLING Macro is set to 0
4. PSF-31 - Build Fails When INCLUDE_PDFU Macro is set to 1
5. PSF-32 - Configuring CONFIG_PORT_n_SINK_USB_COM macro Field is not Effective
6. PSF-33 - Configuring CONFIG_PORT_n_SINK_UNCONSTRAINED_PWR macro Field is not Effective
7. PSF-34 - Build Fails When INCLUDE_PD_3_0 Macro is set to 0

2.5.3 Features added

NA

2.5.4 Notes

Following JIRA reported marked invalid after developing from developer's side:

1. PSF-22 -VCONN OCS handling not working
2. PSF 23 - PD Negotiation Fails when PDOs are Configured more than 5 with certain values
3. PSF-25 - The PUT is not Disabled Even After the Under Voltage Count Exceeds the Maximum Fault Count

2.6 Version 0.90

Release date	24-Oct-2019
Release Type	Initial Web release
Pre-requisites (if any)	**PSF EVB Rev A**
Source Tag	**Tag:** PSF_STACK_V0.91

2.6.1 Not implemented / Limited functionality requirements

1. PSF-7 - HiByte has potential error
2. PSF-21 - VBUS Power fault handling not working
3. PSF-22 - VCONN OCS handling not working
4. PSF-23 - PD Negotiation Fails when PDOs are Configured more than 5 with certain values
5. PSF-25 - The PUT is not Disabled Even After the Under Voltage Count Exceeds the Maximum Fault Count

2.6.2 Bug Fixes

Not Applicable

2.6.3 Features added

Initial revision of PSF for Source only operation.

2.6.4 Notes

Not Applicable