



# 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           1.02         Apr 8, 2020         Phase 3 Alpha release           1.03         Apr 21, 2020         Bug fix release           1.04         June 19,2020         Phase 2 Beta Release           1.05         July 24, 2020         Bug fix release			
0.91Nov 11,2019Bug fix release0.92Dec 12,2019Documentation release0.95Jan 09, 2020Release with complete documentation and Bug fix1.00Feb 25, 2020Source only feature complete release1.01Mar 19,2020Phase 2 Alpha release1.02Apr 8, 2020Phase 3 Alpha release1.03Apr 21, 2020Bug fix release1.04June 19,2020Phase 2 Beta Release	REV	DATE	DESCRIPTION OF CHANGE
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 1.02 Apr 8, 2020 Phase 3 Alpha release 1.03 Apr 21, 2020 Bug fix release 1.04 June 19,2020 Phase 2 Beta Release	0.90	Oct 24, 2019	First Web release
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1.00 Feb 25, 2020 Source only feature complete release  1.01 Mar 19,2020 Phase 2 Alpha release  1.02 Apr 8, 2020 Phase 3 Alpha release  1.03 Apr 21, 2020 Bug fix release  1.04 June 19,2020 Phase 2 Beta Release	0.92	Dec 12,2019	Documentation release
1.01       Mar 19,2020       Phase 2 Alpha release         1.02       Apr 8, 2020       Phase 3 Alpha release         1.03       Apr 21, 2020       Bug fix release         1.04       June 19,2020       Phase 2 Beta Release	0.95	Jan 09, 2020	Release with complete documentation and Bug fix
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1.03       Apr 21, 2020       Bug fix release         1.04       June 19,2020       Phase 2 Beta Release	1.01	Mar 19,2020	Phase 2 Alpha release
1.04 June 19,2020 Phase 2 Beta Release	1.02	Apr 8, 2020	Phase 3 Alpha release
	1.03	Apr 21, 2020	Bug fix release
1.05 July 24, 2020 Bug fix release	1.04	June 19,2020	Phase 2 Beta Release
	1.05	July 24, 2020	Bug fix 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.

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

### 2 Release notes

### 2.1 Version 1.05

Release date	24-July 2020
Release Type	Bug fix release
Pre-requisites (if any)	PSF EVB
Source Tag	Tag: PSF_STACK_V1.05

# 2.1.1 Not implemented / Limited functionality requirements

Source existing issues:

- 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-86: [Field] VBUS drop observed during Voltage transitions when the sink load is higher
- 3. PSF-79: Clarification on VSEL Configuration
- 4. PSF-90: Continuous PD re-negotiation when number of source PDOs is 7
- 5. PSF-134: [Field] VCONN Swap not working with HP laptop
- 6. PSF-21: VBUS OCS Power fault handling not working
- 7. PSF-85: [MPQ]Ellisys Compliance fails when INCLUDE\_POWER\_MANAGEMENT\_CTRL = 1
- 8. PSF-135: PSF Control/Status Data Memory Management
- 9. PSF-136: Dynamic Port Control(Port Enable/Disable) Client request

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- 10. PSF-137: Power Delivery Disabled notification
- 11. PSF-94: [MPQ] Handle I2C read/write failures
- 12. PSF-78: Clarification On MCU Idle Timeout Configuration
- 13. PSF-95: PSF 8-bit MCU porting Feedback
- 14. PSF-118: Phase 2 FW does not support PB and PT on PPS Ports
- 15. PSF-98: [Field]Implement the requested software hooks
- 16. PSF-64: [Field] Un explained 20V toggling plus 5V,14V steps on the way to reaching 20V
- 17. PSF-153: VBUS Discharge handling inside Type C ISR
- 18. PSF-147: Discover identity support for Teton PSF
- 19. PSF-18: CLONE Absence of power negotiation on ports of the DUT when VDD33 is set to 2.80V
- 20. PSF-156: Client notification to be added to indicate port powered off due to power fault
- 21. PSF-154: CLONE Workaround for OLYMPUS\_DEV-3217
- 22. PSF-155: PSF does not respond to VDM: Disc Identity command from port partner

### Sink existing issues:

- 1. PSF-55: [Sink][Ellisys] Errors Encountered while Executing TD.4.3.1 Sink Connect Source Test Case
- 2. PSF-54: [Sink][Ellisys] TD.4.1.2 Unpowered CC Voltage Test fails when PUT Configured as Sink
- 3. PSF-51: [Sink][LeCroy] TD.4.10.2 Sink Power Precedence Test Fails When PUT configured as Sink
- 4. PSF-50: [Sink][LeCroy] TDA 2.3.3.1 PDO Transition, Current Draw and Suspend Test Sink, Consumer or Consumer/Provider Test Fails when PUT acts as Sink Partner
- 5. PSF-49: [Sink][LeCroy] TDA 2.1.3.2 BMC PHY Level Message Test Fails when PUT is Configured as sink
- 6. PSF-132: [SNK][Phase3] List of features not tested for PSF phase 3 alpha release
- 7. PSF-109: [SINK] When Gotomin was issued from source, sinkoperating current does not retain minimum operating current.

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8. PSF-150: [Ellisys] [Sink] Ellisys compliance tests failed with sink demo firmware

# 2.1.2 Bug Fixes

- 1. PSF-140: [PPS] TD.PD.SRC.E16 PDO Transition Failure
- 2. PSF-144: [PPS] More than one alert sent for cable limitation
- 3. PSF-142: [CSR] Advertised PDOs to be cleared after detach
- 4. PSF-151: Hooks to notify PSF stack Idle waiting for an event
- 5. PSF-149: [Sink] Evaluating source capabilities needs to be done based on adverised PDOs, not sink PDOs
- 6. PSF-140: [PPS] TD.PD.SRC.E16 PDO Transition Failure
- 7. PSF-146: [Src] Code Review comments
- 8. PSF-152: Orientation pin is not initialised in V1.04 Release
- 9. PSF-121: CONFIG\_DCDC\_CTRL in Sink Mode

### 2.1.3 Features Added

• None.

# 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 with INCLUDE\_POWER\_MANAGEMENT\_CTRL = 0
  - o Power Balancing and Power Throttling are supported only on non-PPS ports.

# 2.2 Version 1.04

Release date	19-June-2020
Release Type	Phase 2 Beta release
Pre-requisites (if any)	PSF EVB Rev A
Source Tag	Tag: PSF_STACK_V1.04

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# 2.2.1 Not implemented / Limited functionality requirements

### Source existing issues:

- 23. PSF-44: TDA 2.3.1.1 Source Dynamic Load Test, Provider or Provider/Consumer Test Fails when PUT is configured as Source.
- 24. PSF-86: [Field] VBUS drop observed during Voltage transitions when the sink load is higher
- 25. PSF-79: Clarification on VEL Configuration
- 26. PSF-90: Continuous PD re-negotiation when number of source PDOs is 7
- 27. PSF-134: [Field] VCONN Swap not working with HP laptop
- 28. PSF-21: VBUS OCS Power fault handling not working
- 29. PSF-85: [MPQ]Ellisys Compliance fails when INCLUDE\_POWER\_MANAGEMENT\_CTRL = 1
- 30. PSF-135: PSF Control/Status Data Memory Management
- 31. PSF-136: Dynamic Port Control(Port Enable/Disable) Client request
- 32. PSF-137: Power Delivery Disabled notification
- 33. PSF-121: CONFIG\_DCDC\_CTRL in Sink Mode
- 34. PSF-94: [MPQ] Handle I2C read/write failures
- 35. PSF-78: Clarification On MCU Idle Timeout Configuration
- 36. PSF-95: PSF 8-bit MCU porting Feedback
- 37. PSF-118: Phase 2 FW does not support PB and PT on PPS Ports
- 38. PSF-98: [Field]Implement the requested software hooks
- 39. PSF-64: [Field] Un explained 20V toggling plus 5V,14V steps on the way to reaching 20V
- 40. PSF-140: [PPS] TD.PD.SRC.E16 PDO Transition Failure
- 41. PSF-141: [Document] Source Pro Demo Read Me Limitations

### Sink existing issues:

- 9. [Sink][Ellisys] Errors Encountered while Executing TD.4.3.1 Sink Connect Source Test Case
- 10. [Sink][Ellisys] TD.4.1.2 Unpowered CC Voltage Test fails when PUT Configured as Sink
- 11. [Sink][LeCroy] TD.4.10.2 Sink Power Precedence Test Fails When PUT configured as Sink

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- 12. [Sink][LeCroy] TDA 2.3.3.1 PDO Transition, Current Draw and Suspend Test Sink, Consumer or Consumer/Provider Test Fails when PUT acts as Sink Partner
- 13. [Sink][LeCroy] TDA 2.1.3.2 BMC PHY Level Message Test Fails when PUT is Configured as sink
- 14. [SNK][Phase3] List of features not tested for PSF phase 3 alpha release
- 15. [SINK] When Gotomin was issued from source, sinkoperating current does not retain minimum operating current.

# 2.2.2 Bug Fixes

- 10. PSF-83: Complete the listed tasks in CSR, I2C DC/DC, PPM and PB modules
- 11. PSF-88: Complete the listed tasks in Control and Status registers implementation
- 12. PSF-30: [Sink]PD Sink Negotiation was not Proper for Certain PDO
- 13. PSF-120: Negotiation is inconsistent when INCLUDE\_POWER\_FAULT\_HANDLING = 1
- 14. PSF-119: 20V Negotiation fails with I2C DC/DC
- 15. PSF-114: Negotiation fails with I2C DC/DC from FW commit #1a020c212d5
- 16. PSF-138: Source Lite and Pro Inconsistent behaviour observed
- 17. PSF-110: [MPQ] Port Power is not driven when PDO Count > 4
- 18. PSF-96: PC Lint for Alpha FW v1.01
- 19. PSF-97: [CSR] Struct and Stack versions should be updated by the stack, not by user application
- 20. PSF-112: [CSR]gasCfgStatusData to be passed as an argument in Configuration APIs of all the sample applications
- 21. PSF-117: Source Pro FW with Debug messages is non functional
- 22. PSF-116: [CSR] Following parameters are not getting updated during a valid PD contract
- 23. PSF-105: [CSR] New PDO registers should be cleared after a successful explicit contract is established
- 24. PSF-103: [CSR] EN\_VBUS status bit should be updated for I2C based DC/DC controllers also
- 25. PSF-91: Build failure when INCLUDE\_UPD\_PIO\_OVERRIDE\_SUPPORT is set to 0

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- 26. PSF-71: PSF feedback for porting to 16-bit MCUs
- 27. PSF-87: Handle Unexpected message when Sink capabilities message is received in wrong PE State
- 28. PSF-115: Implement DPM Client Request Handler based on Configuration Register settings

### 2.2.3 Features Added

- Power Throttling
- Source only Programmable Power Supply

### 2.2.4 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 with INCLUDE\_POWER\_MANAGEMENT\_CTRL = 0
  - o Power Balancing and Power Throttling are supported only on non-PPS ports.

### 2.3 Version 1.03

Release date	21-April-2020
Release Type	Bug fix release
Pre-requisites (if any)	PSF EVB Rev A
Source Tag	Tag: PSF_STACK_V1.03

# 2.3.1 Not implemented / Limited functionality requirements

### **Source existing Issues:**

- 42. PSF-44: TDA 2.3.1.1 Source Dynamic Load Test, Provider or Provider/Consumer Test Fails when PUT is configured as Source.
- 43. PSF-85: Ellisys Compliance fails with MPQ4230 I2C DC/DC Converter when INCLUDE\_POWER\_MANAGEMENT\_CTRL = 1
- 44. PSF-86: VBUS drop observed during Voltage transitions when the sink load is higher
- 45. PSF-89: No activity seen on Port 2 when MPQ I2C DC/DC controller is used with PSF
- 46. PSF-90: Continuous PD re-negotiation when number of source PDOs is 7

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- 47. PSF-88: u16PortIntMask and u16PortStatusChange of Status registers need to be implemented.
- 48. PSF-110 [MPQ DC/DC] Port Power is not driven when PDO Count > 4
- 49. PSF-112 gasCfgStatusData to be passed as an argument in Configuration APIs of all the sample applications
- 50. PSF-97 Struct and Stack versions should be updated by the stack, not by user application
- 51. PSF-114 Negotiation fails with I2C DC/DC from FW commit #1a020c212d5
- 52. PSF-115 Implement DPM Client Request Handler based on Configuration Register settings

### **Sink Issues:**

Due to lack of Lecroy and Ellisys availability following JIRAs could not be tested

- 1. PSF-49 [Sink][LeCroy] TDA 2.1.3.2 BMC PHY Level Message Test Fails when PUT is Configured as sink
- 2. PSF-50 [Sink][LeCroy] TDA 2.3.3.1 PDO Transition, Current Draw and Suspend Test Sink, Consumer or Consumer/Provider Test Fails when PUT acts as Sink Partner
- 3. PSF-51[Sink][LeCroy] TD.4.10.2 Sink Power Precedence Test Fails When PUT configured as Sink
- 4. PSF -53 [Sink][Ellisys] TD.4.1.2 Unpowered CC Voltage Test fails when PUT Configured as Sink
- 5. PSF-55 [Sink][Ellisys] Errors Encountered while Executing TD.4.3.1 Sink Connect Source Test Case
- 6. PSF-109 [SINK] When Gotomin was issued from source, sinkoperating current does not retain minimum operating current.

### Sink Board issue:

1. PSF – 99 [SNK] [Hades] SAMD20 code does not boot when board is configured for buspower

# 2.3.2 Bug Fixes

1. PSF-111 - [SYS\_DOS] [SINK] EN\_SNK, DC\_DC\_EN and VBUS\_EN functionality clarification

### 2.3.3 Features added

1. Functional implementation for EN\_SINK pin.

Sink demo project can be found under Demo folder in the name PSF\_EVB\_Sink.

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### 2.3.4 Notes

The release is only for Sink application. For Source and Source Pro application use the V1.01 version of PSF.

### 2.4 Version 1.02

Release date	8-April-2020
Release Type	PSF Phase 3 Alpha release
Pre-requisites (if any)	PSF EVB Rev A
Source Tag	Tag: PSF STACK V1.02

# 2.4.1 Not implemented / Limited functionality requirements

### **Source existing Issues:**

- 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-88: u16PortIntMask and u16PortStatusChange of Status registers need to be implemented.
- 7. PSF-110 [MPQ DC/DC] Port Power is not driven when PDO Count > 4
- 8. PSF-112 gasCfgStatusData to be passed as an argument in Configuration APIs of all the sample applications
- 9. PSF-97 Struct and Stack versions should be updated by the stack, not by user application

### **Sink Issues:**

Due to lack of Lecroy and Ellisys availability following JIRAs could not be tested

- 1. PSF-49 [Sink][LeCroy] TDA 2.1.3.2 BMC PHY Level Message Test Fails when PUT is Configured as sink
- 2. PSF-50 [Sink][LeCroy] TDA 2.3.3.1 PDO Transition, Current Draw and Suspend Test Sink, Consumer or Consumer/Provider Test Fails when PUT acts as Sink Partner
- 3. PSF-51[Sink][LeCroy] TD.4.10.2 Sink Power Precedence Test Fails When PUT configured as Sink

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- 4. PSF -53 [Sink][Ellisys] TD.4.1.2 Unpowered CC Voltage Test fails when PUT Configured as Sink
- 5. PSF-55 [Sink][Ellisys] Errors Encountered while Executing TD.4.3.1 Sink Connect Source Test Case
- 6. PSF-109 [SINK] When Gotomin was issued from source, sinkoperating current does not retain minimum operating current.
- 7. PSF-111 [SYS\_DOS] [SINK] EN\_SNK, DC\_DC\_EN and VBUS\_EN functionality clarification

### Sink Board issue:

1. PSF – 99 [SNK] [Hades] SAMD20 code does not boot when board is configured for buspower

# 2.4.2 Bug Fixes

### Sink Bug fixes:

- 1. PSF-36: CONFIG\_PORT\_n\_SINK\_USB\_SUSPEND Field is not there in Fixed PDO fields of Sink Port Removed CONFIG\_PORT\_n\_SINK\_USB\_SUSPEND configuration which is not required and added NO\_USB\_SUSPEND flag implementation in u8SinkConfigSel.
- 2. PSF-30: PD Sink Negotiation was not proper for certain PDO There was logical comparison error while comparing source an sink PDO list.
- 3. PSF-46 [Sink][Ellisys] TD.PD.PHY.E16 Valid Hard Reset Framing Test Fails When PUT is Configured as sink Hardreset handling in sink state machine had issue.
- 4. PSF-47 -[Sink][Ellisys] TD.PD.SNK.E1 SinkWaitCapTimer Deadline Test Fails When PUT Configured as Sink Due to timer precision issue
- 5. PSF-54 [Sink][Ellisys] Errors Encountered while Executing TD.PD.LL.E4 Hard Reset Usage Test Case Failure due to hard reset handling

### **Source Bug fixes:**

- 1. PSF-91: Build failure when INCLUDE\_UPD\_PIO\_OVERRIDE\_SUPPORT is set to 0
- 2. PSF-108: UART needs to be added in SAMD20\_PSFHarmonyConfiguration.xml in sink, source lite and source pro projects

### **Common to Source and Sink:**

1. PSF-93 - Precision of software timers(PDTIMER) is erroneous to a max of 0.5ms time difference – Precision is fixed by timer providing value of Time value or +0.5ms.

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### 2.4.3 Features added

New Demo USB PD Sink functionality is added with following supports

- Mode A (High Wattage with high voltage)
- Mode B (High wattage with low voltage)
- Goto\_Min support
- VCONN swap support
- DAC and GPIO current indicators.

Sink demo project can be found under Demo folder in the name PSF\_EVB\_Sink.

### 2.4.4 Notes

The release is only for Sink application. For Source and Source Pro application use the V1.01 version of PSF.

### 2.5 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

# 2.5.1 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.

## 2.5.2 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.

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- 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.

### 2.5.3 Features added

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

### 2.5.4 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.

### 2.6 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

# 2.6.1 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

# 2.6.2 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.

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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

### 2.6.3 Features added

NA

### 2.6.4 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.

# 2.7 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

# 2.7.1 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

# 2.7.2 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.

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### 2.7.3 Features added

NA

### 2.7.4 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.

### 2.8 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

# 2.8.1 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.

# 2.8.2 Bug Fixes

No Bug fixes made

### 2.8.3 Features added

This release is made to mark the release of following documents

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

### 2.8.4 Notes

None.

### 2.9 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

# 2.9.1 Not implemented / Limited functionality requirements

1. PSF-7 - HiByte has potential error

### 2.9.2 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

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- 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

### 2.9.3 Features added

NA

### 2.9.4 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

### 2.10 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

# 2.10.1 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

# 2.10.2 Bug Fixes

Not Applicable

### 2.10.3 Features added

Initial revision of PSF for Source only operation.

# 2.10.4 Notes

Not Applicable

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