PSA 5.1.06 Release Notes

The PSA **5.1.06** Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

Highlights

The 5.1.06 Release is essentially a pre-release of PSA 5.2 software. The PSA 5.2 software release will soon follow after all applicable documentation is completed.

The PSA 5.1.06 Release includes important enhancements in the following areas:

4-Pair PSE Conformance Test Suite

The 4-Pair PSE Conformance Test Suite is now versioned to **5.2.07**.

Since the **PSA 5.1.05** software release, the 4-Pair test suite has experienced extensive rounds of QA testing with an increased population of PSE types. Most of the changes are relatively minor and will have only a statistical impact on specific PSE types. In combination with the ALC firmware update discussed below, overall reliability and repeatability of this test suite is improved.

ALC Firmware Update

As part of the extensive 4-Pair test suite QA, a couple of issues were resolved to be features of PSA-3202 ALC (automatic load control) firmware. So this release includes ALC version 17 and it is **HIGHLY RECOMMENDED** that PSA-3202 test ports all be updated to version 17. See **PSA-3202/PSL-3202/PSA-3402 ALC Version 17 Update** near the end of this Release Note.

New LLDP Tab Menu for PSA Interactive

The PSA 5.1.06 release replaces the PSA Interactive LLDP tab menu with a new menu that will enable LLDP protocol tracing and analysis with:

- 802.3at PSE's
- 802.3bt Type-3 2-Pair PSE's
- 802.3bt 4-Pair Type-3 and Type-4 PSE's including both Single and Dual Signature PD emulations

PSE Conformance Test Suite Tracking Service

When installing 5.1.06 software, customers who are licensed for the **2-Pair** (formerly 802.3at) PSE Conformance Test Suite and are active on Conformance Test Suite Tracking Service must enter the 2Pair CTS Key in order to retain the PSE Conformance Test Suite after the software update. Customers who are licensed for the **4-Pair** test suite must enter the 4Pair CTS Key to maintain that test suite.

Both Product Keys are equivalent to those issued for the PSA 5.1.05 release and may be obtained by registering / logging into the Sifos website for product downloads. Customers who are active on Conformance Test Suite Tracking Service and have accounts at www.sifos.com may obtain product keys from the Product Download area.

PSA 5.1.06 Release Notes

PSA 5.1.06 Enhancements

Software Entity	Impact	Feature
PSA Interactive 5	Important	The LLDP tab menu was redesigned to support testing and analysis of all **Type-1**, **Type-2**, **Type-3**, and **Type-4** PSE's that support PoE LLDP. 4-Pair Type-3 and Type-4 PSE's may be tested using both **Single Signature** and **Dual Signature** PD emulations. All traces involving Type-1 and Type-2 PSE's will utilize the **802.3at** PoE LLDP protocol and all traces involving Type-3 and Type-4 PSE's will by default utilize the **802.3bt** PoE LLDP protocol. 802.3bt PSE's may also be analyzed using the 802.3at PoE LLDP protocol if desired. User specified PD Class emulations that were originally shared between the **Power Up** and **Waveforms** tab menus are now also shared with the **LLDP** tab menu.
4-Pair PSE Conformance Test Suite	Moderate	The **pwron_maxi** test was adapted to work with wider range of test port current meter accuracy tolerances in the production of **Ilim_min** parameters.
	Minor	The **det_cc** test was adapted to better handle PSE's that present low connection check voltages on at least one pairset given dual signature emulations.
	Minor	The **cc_response** test was adapted to better handle PSE's that switch from 4-pair powering to 2-pair powering to Class 1-4 PD's when load on one pairset drops to 0mA
	Minor	The **cc_response** test was adapted to clear out any LLDP "history" in the PSE that could interfere with subsequent 4-Pair power negotiations.
	Minor	The **class_lldp** test was tweaked to assure that advertised PD class was not altered when a power request was altered.
	Minor	The **class_lldp** and **class_lldp_2** tests were modified to improve robustness processing the PSE Max Available Power TLV as related to the PSE assigned class TLV(s).
	Minor	Tweaked the **pwron_overld** test to assure **Ipeak** transient does not exceed 950mA per pairset in order to prevent an error condition. This would only potentially occur with Type-4 PSE's that are operating well below **Vport_pse**(min).
2-Pair Conformance Test Suite	Moderate	Modified the **psa_tdet_analyzer** utility to remove a remnant that caused it to unnecessarily cycle measurements with certain PSE types and potentially produce an inaccurate **Tdet** reading.
	Moderate	Modified **pwron_maxi** to clear out potential instability in ALC version 16 firmware that might develop after the maximum current transient was applied. (*Note: ALC version 17 permanently resolves this issue*.)
	Minor	The **class_lldp** test was tweaked to assure that advertised PD class was not altered when a power request was altered.

Software Entity	Impact	Feature
One-Click Waveforms	Minor	Enhance the Connection Check waveform so that residual "glitches" not related to connection check that could form at end of trace were properly eliminated.
		Modified Short Circuit waveform (**psa_shckt_wfm**) to clear out potential instability in ALC version 16 firmware that might develop after the maximum current transient was applied. (*Note: ALC version 17 permanently resolves this issue*.)
LLDP Emulation & Analysis	Moderate	Modified LLDP trace utilities to more carefully manage PD class values in transmitted PD messages so that alterations in PD power request don't affect the emulated PD class.
	Minor	Modified LLDP trace utilities to more frequently update the powering status to PSA Interactive "LED" power indicators.
	Minor	Altered the title of the traditional 802.3at LLDP trace report to "PSA-3000 802.3at LLDP Trace".
PowerShell PSA	Moderate	Modified **power_bt** to temporarily block the usage of **autoclass** with PD classes 0-4 because it is not actually supported. Support for **autoclass** given PD class 1-4 will be added in upcoming PSA 5.2 release.
	Moderate	Revised 4-Pair test port connection checker (**psa_conn_check_4p**) to work more reliably and efficiently across the full population of 4-Pair PSE's tested thus far.
	Minor	Modify **power_bt** to automatically clear out a very rare condition where state processing in the test port ALC potentially got wedged during a prior PSE power-up.
	Minor	Modify **power_bt** to assure that emulated PD class conveyed in LLDP messages during LLDP power-ups is retained when requested power level is altered.
	Minor	Modify **power_port** to assure that emulated PD class conveyed in LLDP messages during LLDP power-ups is retained when requested power level is altered.
	Minor	Adapted **psa_auto_port** to more reliably work with certain PSE open circuit signaling variants

PSA 5.1.06 Bug Fixes

Software Entity	Impact	Feature
PSA Interactive 5	Minor	Previously, when the **Stop Test** button was used to terminate a conformance test sequence in the **Conf Test** menu, there was a vulnerability to an error condition if that button was pressed too soon after initiating a sequence. This has been remedied.
4-Pair PSE Conformance Test Suite	Important	Corrected defect in the 4-Pair sequencer that required the 2-Pair Conformance Test Suite to be licensed and activated in order for the 4-Pair Conformance Test sequencer to run.

Software Entity	Impact	Feature
	Moderate	Corrected vulnerability in detection waveform signal processing affecting cases where there are multiple exactly simultaneous edge transitions between pairsets A & B. This in turn could cause unexpected errors or bad results in **det_cc** and other detection tests.
	Moderate	Corrected a sequencer problem where a couple of PSE port-specific parameters used globally through various tests were not properly collected at the start of the sequence for every port in that sequence.
	Minor	Corrected vulnerability in the PSE Max Assigned Class search utility affecting PSE's that use LLDP to grant max power whereby an incorrect value could be obtained.
2-Pair Conformance Test Suite	Minor	In **class_lldp** test, corrected a defect affecting PSE's that use both 2-Event and LLDP to grant power to Type-2 PD's whereby the wrong initial power request was formulated.
One-Click Waveforms	Moderate	Corrected flaw in **psa_minilim_wfm** where **Tlim_min** was set according to emulated PD class rather than to PSE Type (3 or 4). So Type-4 PSE's were exposed to 10msec transients if class was 1-6 or 1D-4D.
PowerShell PSA	Minor	Corrected issue in **psa_pse** where a PSE attribute setting could be improperly formatted to an all caps value.
	Minor	Corrected problem in ALC firmware update utility that would lead to global ALC version code for each test port to be improperly set.
	Minor	Corrected waveform title for a combined Alt-A/Alt-B voltage trace produced by **power_bt**.
LLDP Emulation & Analysis	Minor	Corrected conditional formatting issue in Dual Signature LLDP trace report affecting power level limit checks.

PSA/PVA Firmware Versions

PSA 5.1 software requires certain minimum versions of PSA/PSL test port firmware. The following versions are the current versions for each product. Sifos recommends updating firmware to these.

PSA-3000 Controller: ver **3.18** **PSA-3402 Controller**: ver **3.18**	**PSA-3202**, **PSL-3202** , **PSA-3402**: Test Port ver **4.17**, ALC ver **17**
PSA/PSL-3102 or **PSA-3002** Test Port ver **3.2B**	**PVA-3102** Test Port ver **3.0B**

Important! **PSA-3000 Controller** firmware **3.18** or later is required in order for PSA 5.1 software to speed up host-to-test-port communications. Without this firmware version, there will be no change in communications bandwidth.

Important! The **4-Pair** PSE Conformance Test Suite requires PSA-3202 firmware version **4.14** or later. This version implements a trace capture feature that enables better resolution of PSE classification timing. Version **4.17** is recommended.

Important! PSx-**3202** firmware **4.17** or later and PSx-**3102** firmware **3.2B** addresses an extremely subtle and rare problem that develops when running PSE conformance tests with **LLDP power-granting PSE's**. The problem can manifest as either an I/O timeout to the PSA instrument or as an LLDP LAN interface that fails to auto-negotiate with the PSE port under test. Only PSx-3202 and PSx-3102 **hardware versions 8** and **9** are impacted by this problem. These versions also address another rare problem that manifests in the **pwruptrace** meter used by the **2-Pair PSE Conformance Test Suite** where early portions of a voltage trace may have corrupted values.

PSA-3202/PSL-3202/PSA-3402 ALC Version 17 Update

The ALC firmware within a PSA-3202/PSL-3202/PSA-3402 is a vital element affecting the instrument's ability to reliably emulate all **802.3bt** PD's and to test **802.3bt** PSE's under a wide variety of conditions. The current version of ALC firmware is **version 17**. Any instruments that are used for 802.3bt PSE testing either now or in the future should be updated to this version.

To examine current ALC firmware version, simply open **PowerShell Tcl** or **Wish** and execute the command:

psa_config -alc

ALC Version 17 Update Instructions

Updating any PSA/PSL test instrument to ALC version 17 is a very simple task. However, it should be performed when the instrument is not needed for a while as it may take from 3 to 10 minutes PER TEST PORT to complete. It is recommended to simply run this update overnight from a PC that is not busy performing other tasks.

To perform the ALC version 17 update to all PSA/PSL-3202 test ports:

After installing PSA version 5.1.06 software, open PowerShell (Wish or Tcl), connect to instrument that will be updated, and execute:

alc_updater_17

When the update is completed, look for the indication:

alc_updater_17: UPDATES COMPLETED !!!!

Ports **** Updated Successfully!