

PSA 5.2.01 Release Notes

The PSA 5.2.01 Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

Highlights

The PSA 5.2.01 release includes a number of enhancements and bug fixes to the prior PSA 5.2.00 software release. This release is recommended especially to all PSA-3000 users who run the 2-Pair and 4-Pair PSE Conformance Test Suites and to the PSA/PSL-3000 users who run the 2-Pair Multi-Port Test Suite.

The PSA 5.2.01 release adds the new **pwron_autoclass** PSE conformance test to the 4-Pair Conformance Test Suite testing Type-3/4 802.3bt 4-pair PSE's and to the 2-Pair Conformance Test Suite testing Type-3, 2-pair PSE's. While the test will run with any PSE, it is only recommended for testing PSE's with autoclass capability.

PSE Conformance Test Suite Tracking Service

When installing 5.2.01 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 revised relative to earlier 5.2.00 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 5.2.01 Enhancements

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Important	pwron_autoclass - new test to assess 4-Pair PSE autoclass behaviors added. The test evaluates general response to the autoclass signature then evaluates autoclass power margins at a variety of PD classifications and power draws. 4-Pair sequencer modified to include new pwron_autoclass test for Non-LLDP granting PSE's.
	Important	Standard Report - Added test parameters and limits for new pwron_autoclass test and associated parameter description to the Notes 5.x.x tab.
	Moderate	pwrup_time - revised dual signature Tpon measurement to test BOTH class 2D and, if supported, class 5D, then take the longer Tpon result of the two cases. Also, modified to allow Tpon measurements between 400 msec and 403.9 msec to be reported as 400msec to account for maximum measurement uncertainty.
	Moderate	pwrup_time - adapted to better tolerate PSE's with class pulse edge glitches up to 2.5V when performing Trise measurements. Previously, such glitches could lead to incorrect Trise results.

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	Moderate	pwron_v - added logic to better assure PSA-3000 fans are shut down during ACpk-pk measurements
	Moderate	pwron_maxi - improved measurement of lport_max_type3 , lport_max_type4 , and lpls_Type4 . All three were vulnerable to producing possible false failures in PSA 5.2.00 release.
	Moderate	pwron_maxi - improved measurement of llim_2p_max parameters to better account for rapid and very rapid foldback cases. Improved repeatability of measured values.
	Moderate	Standard Report - Reduced Interop weighting of Tlim parameters because of vague treatment of Tlim (<i>versus low voltage shutdown</i>) in 802.3bt spec.
	Minor	pwron_pwrcap - improve diagnostic error message when PoE service shuts down
	Minor	Detection Signaling Analysis: Removed vulnerability to an error condition with Tcl8.4 and also to better adapt to small voltage glitches during detection steps and detection step transitions
	Minor	Standard Report - added ALC firmware version for PSA-3202 test ports to report footer
	Minor	Standard Report - Notes 5.x.x tab - added detail in class_err test
2-Pair PSE Conformance Test Suite	Important	pwron_autoclass - added new test to evaluate 802.3bt 2-Pair (Type-3 PSE) autoclass behaviors. The test evaluates general response to the autoclass signature then evaluates autoclass power margins using class 3 emulations (with Type-1 and Type-2) and class 4 emulations (Type-2 only) with two power levels at each class. Extended PSE attribute PSE_4Pair_Type to encode 2-pair autoclass capable attribute.
	Moderate	Standard Report – Expanded to incorporate pwron_autoclass test limits and associated parameter descriptions.
	Moderate	pwron_maxi - Adapt to llim_min measurement to better account for PSA test ports with current meter accuracy at the lower bound of the PSA-3000 datasheet specification in order to prevent a false failure.
	Moderate	pwron_maxi - when testing Type-3 2-Pair PSE's, add foldback suppression for measurement of llim_Max_2 upperbound limit.
	Minor	class_err - minor refinement to lclass_lim waveform analysis to remove effect of class transition glitches.
	Minor	Standard Report - added ALC firmware version for PSA-3202 test ports to report footer and added new pwron_maxi parameters for 2-Pair Type-3 PSE's to Notes 5.x.x tab
One-Click Waveforms	Moderate	psa_detect_wfm - adapted to work with CC_DET_SEQ=1 PSE that idles slightly above 1.5V prior to connection check

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	Moderate	psa_shckt_wfm – enhanced to be less susceptible to deep voltage spikes during load transient llim_max scans and to better process a corner case of low llim_max_2p (< 950mA) with high foldback current (up to 675mA). Additionally, llim_max measured during scan is escalated slightly for waveform capture to avoid llim_max transients that are right at the llim threshold.
	Minor	psa_2p_discx_wfm - remove mark load current during disconnect shutdown waveform so there is no active discharge below 14V
PSA Interactive	Moderate	Enhanced to add the new pwrn_autoclass test in the Conf Test tab menu and to manage availability of that test according to PSE Autoclass capability configured in the PSE tab menu.
	Moderate	PSE tab menu extended to support and retain Autoclass capability selection for Type-3 2-pair PSE's.
LLDP Emulation & Analysis	Moderate	psa_mac_init - Improved test port address screening logic to reject command to single disconnected 4-pair port but to accept broadcast addresses
	Minor	psa_default_lldp - added logic to require a connected 4-pair test port in 4-pair modes to prevent error in calls to 'pd_frame'
PowerShell PSA	Moderate	power_bt – adapted to improve odds of capturing very slow (> 7.5 second) power-ups in voltage/current traces
	Moderate	psa_saveConfig – modified to store PSE-specific Results (reporting) path using the \$psaHomePath global rather than hardcoded path
	Minor	psa_info – added recovery of test blade serial numbers
	Minor	Removed the PSE Conformance Test name lists from the system environment file “psa_env.txt” as those lists were never used.

PSA 5.1.06 Bug Fixes

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Moderate	pwrup_time – corrected vulnerability in processing Trise measurements when PSE class pulses have edge glitches exceeding 1V. In these cases, the Trise measurement may have been mis-reported.
	Minor	pwrn_maxi – corrected issue where a PSE that did not remove power during llim_max_DS* measurement for dual signature reported -1 rather than 9999 for Tlim_DS* .
	Minor	Standard Report - Corrected some missing conditional formats in several of the bottom rows of report page
	Minor	Standard Report - Corrected vulnerability in sequencer when multiple sequence cycles are run on one port and on one or more cycles there is an Error condition from a specific test

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	Minor	Standard Report - Corrected units of 2 parameters in det_cc that were reported as 'steps' but should have been 'volts'
	Minor	Standard Report - Corrected computation of parameter count to exclude test port version rows at bottom of report
2-Pair PSE Conformance Test Suite	Moderate	pwrn_maxi – Correct issue where when testing a Type-3, 2-Pair PSE, the Ktrans_lo_* parameter may be excluded from the test report.
	Moderate	Standard Report - Corrected upper limit of Event2_Tcle2 to be 20 msec for 802.3bt Type-3 PSE's
	Minor	Standard Report - Corrected missing formulas in statistics sections of final few rows of test report
	Minor	EA 2-Pair Test Report: Corrected minor issue where if more than one port is tested, the hardware/firmware versions of final port are not formatted properly
One-Click Waveforms	Minor	psa_detect_wfm – corrected issue with the high signature connection check that could lead to a false failure in det_cc
2-Pair Multi-Port Test Suite	Moderate	mp_cap_stress – corrected problem where the power drop counts could miss one power drop per powered test port in multi-port configuration
LLDP Emulation & Analysis	Minor	pd_req - Solved issue with configuration query reporting of the 'powerdown' field.
PVA PHY Performance Test Suite	Minor	Standard Report - Corrected macro problem processing reports with no line loss applied during Rx tests.
PowerShell PSA	Important	power_bt - solved critical bug that produced error with PSL-3000 ports running with ALC versions prior to ALC v18
	Moderate	psa_auto_port - fixed critical bug that produced error in PVA DC Unbalance application when run from PVA Interactive
	Moderate	passive - fixed a defect that would produce error if software opened to Demo Mode
	Minor	power_bt - solved issue configuring autoclass power-ups to PD Classes 1-4

PSA/PVA Firmware Versions

PSA 5.2 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-3202, PSL-3202 , PSA-3402:
PSA-3402 Controller: ver 3.18	Test Port ver 4.17 , ALC ver 18
PSA/PSL-3102 or PSA-3002	PVA-3102
Test Port ver 3.2B	Test Port ver 3.0B

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Important! **PSA-3000 Controller** firmware **3.18** or later is required in order for PSA 5.2 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 18 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 18**. 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 18 Update Instructions

Updating any PSA/PSL test instrument to ALC version 18 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 18 update to all PSA/PSL-3202 test ports:

After installing PSA version 5.2.00 software, open PowerShell (Wish or Tcl), connect to instrument that will be updated, and execute:

```
alc_updater_18
```

When the update is completed, look for the indication:

```
alc_updater_18: UPDATES COMPLETED !!!!
```

```
Ports **** Updated Successfully!
```