

PSA 5.2.02 Release Notes

The PSA 5.2.02 Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

Highlights

On the PowerSync Analyzer side, the PSA 5.2.02 release adds several refinements to the **PSE Conformance Test Suites** (2-Pair and 4-Pair) that are highly recommend to all users of those test suites. Details of those are included below. Additionally, the 2-Pair Test Suite now supports an **EA Mode** of testing for Type-3, 802.bt 2-Pair PSE’s including a new EA GEN2 (2-Pair) Test Report. *This capability has not yet been certified through the Ethernet Alliance.*

On the PhyView Analyzer side, the 5.2.02 release adds 4-Pair **PSE DC Unbalance** test support so that all four powered pairs of and 802.3bt PSE can be evaluated for DC Unbalance tolerance. This unique test capability will be further enhanced by a new (version 2) PVA-DCU unbalance module Sifos is introducing.

PSE Conformance Test Suite Tracking Service

When installing 5.2.02 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 5.2.01 and 5.2.00 releases 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	The pwron_v test is modified to solve a vulnerability that could result in the PSA-3000 instrument returning a falsely-reported “Fan Error” resulting in immediate termination of all testing.
	Important	The pwron_autoclass test is enhanced to respond to an 802.3cv maintenance change whereby autoclass signature loads below 4W are no longer to be treated as autoclass load limits and instead must receive assigned class power. Additionally, the test adds an explicit evaluation of PSE response to a sub-4watt autoclass signature with the addition of a new parameter.
	Moderate	The class_err test is refined to better work with PSE’s that are prone to oscillate when limiting class current (Iclass_lim testing) and to adapt to issues obtaining mark limit current with certain PSE’s.
	Moderate	The pwron_pwracap test is enhanced to determine if a PSE will retain power on one pairset when the other pairset shuts down from overload, and if this behavior is determined, to evaluate that the remaining powered pairset supports Class 4 powering.

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Software Entity	Impact	Feature
	Moderate	The pwron_unbal test is enhanced to evaluate lpeak_2p_unb. This evaluation is performed at the PD requested class power level and adds two new parameters to the test. Previously, the test evaluated just lcon_2p_unb.
	Minor	The det_i test is adapted to handle a corner case that led to artificially high lsc readings.
	Minor	The class_time test is adapted to respond to PSE's that might issue different class event count on each pairset in response to dual signature PD's presenting the same class signature on each pairset. It is also modified to flag any repeating class probes if discovered with single signature powering.
	Minor	The standard 4-Pair PSE Conformance Test report includes refinements to PICS coverage in the Notes 5.x.x tab.
2-Pair PSE Conformance Test Suite	Important	The pwron_v test is modified to solve a potential vulnerability that could result in the PSA-3000 instrument returning a "Fan Error" resulting in immediate termination of all testing.
	Important	The pwron_autoclass test is enhanced to respond to an 802.3cv maintenance change whereby autoclass signature loads below 4W are no longer to be treated as autoclass load limits and instead must receive assigned class power. Additionally, the test adds an explicit evaluation of PSE response to a sub-4watt autoclass signature with the addition of a new parameter.
	Moderate	The det_range test is modified to accept classification pulses, <i>where available</i> , as criteria for valid versus non-valid signatures. This reduces test time and powering cycles with power-managed PSE's that cycle detection and classification repeatedly prior to power-ups.
	Moderate	The pwron_pwracap test was enhanced so that when testing Type-1 PSE's, the Class 4 signature is applied and a scan to assure full Type-1 power (15W) is performed. This adds two new parameters to the test.
	Minor	det_v test is adapted to a couple of corner case detection signaling anomalies observed in recent testing.
	Important	If EA Mode is selected when testing a Type-3, 2-Pair PSE , testing will be done in accordance with 802.3bt 2-Pair PSE requirements and reporting will include a new 2-Pair, 802.3bt (GEN2) standard test report that includes all of the mapping to GEN2 EA test ID's. The new GEN2 2-Pair report uses the exact same limit logic as the standard (non-EA) test report and also includes the upgraded Notes 5.x.x tab as described for the non-EA test report.
	Important	The new 2-Pair PSE Conformance Test Report Notes 5.x.x tab has been enhanced to map both 802.3at and 802.3bt specification clauses and PICS to all 2-Pair tests and parameters.

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Software Entity	Impact	Feature
	Important	The standard EA GEN1 test report has been renamed to reflect GEN1 and has been upgraded to use all of the same exact limit logic as is used in the standard (non-EA) test report. This report also includes the new Notes 5.x.x tab described above.
One-Click Waveforms	Moderate	The standard Detection waveform is adapted to work with a smaller connection check overlap occasionally observed in Dual Signature modes from certain PSE's.
	Moderate	The standard Classification waveform is modified to reduce a small vulnerability that affected processing when more than one class sequence is captured prior to a power-up.
	Minor	The standard Classification waveform is revised to handle a vulnerability to a Port 2 running old test port firmware while Port 1 runs more current version firmware.
	Minor	A minor change was made to improve reliability of the Short Circuit waveform in certain corner cases.
PVA DC Unbalance Test	Important	The PVA DC Unbalance Test (part of the PVA Performance Test Suite) is significantly enhanced so that it will run with both 2-Pair and 4-Pair powering PSE's to assess PSE tolerance to varying levels of DC Unbalance. When testing 4-Pair PSE's, either a PSA-3202 test blade or PSA-3402 Compact PSA is required in conjunction with the PhyView Analyzer. This fully automated test assess 100Base-Tx and 1000Base-T SNR and low frequency PSD (frequency response) with varying DC unbalance currents ranging from 20mA to 80mA.
	Moderate	The PVA DC Unbalance Test is also enhanced to automatically discover whether a PVA-DCU or PVA-DCU-2 current unbalance module is present between the PowerSync Analyzer and the PSE port. The new PVA-DCU-2 enables the DC Unbalance Test to perform testing with better accuracy and repeatability.
PVA Interactive	Minor	The sub-menu to the DC Unbalance Test is modified so that PSE is described as "15W per pairset", "30W per pairset", or "30W per pairset with LLDP". This allows a PSE description that applies to both 2-Pair and 4-Pair powering PSE's.

PSA 5.2.02 Bug Fixes

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Moderate	<p>Corrections to the standard 4-Pair reporting include:</p> <ul style="list-style-type: none"> Altered Pass/Fail status of 802.3bt LLDP TLV parameters from INFO to PASS/FAIL First 2 parameters in class_time were reported as INFO rather than PASS/FAIL. This was corrected.

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Software Entity	Impact	Feature
2-Pair PSE Conformance Test Suite	Moderate	Corrections to the standard 2-Pair reporting templates (non-EA and EA) include: <ul style="list-style-type: none"> Altered Pass/Fail status of 802.3bt LLDP TLV parameters from INFO to PASS/FAIL Corrected limit logic for processing the Event_Count test limit in class_time Inrush_Strategy limit configured to not allow legacy inrush with 802.3bt (Type-3) PSE's

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-3402 Controller: ver 3.18	PSA-3202, PSL-3202, PSA-3402: Test Port ver 4.17 , ALC ver 18
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 5.2 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

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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!