

PSA 5.2.05 Release Notes

The PSA **5.2.05** Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

Highlights

The PSA 5.2.05 release will have impact primarily for those running the **4-Pair PSE Conformance Test Suite** for 802.3bt. The 4-Pair PSE Conformance Test Suite migrates from version 5.2.67 to version 5.2.76 and includes many minor adaptations and enhancements that have targeted benefit across a variety of applications and unique PSE behaviors.

Beginning with the PSA 5.2.05 release, all standard spreadsheet test reports (PSE Conformance Test, PSE Multi-Port Test, PHY Performance Test, PSA Waveform traces, etc.) open as and will save as **.xlsx** files with the Excel macro logic removed. This prevents problems that have been progressively encountered in transmitting report files through email servers given increased security measures.

PSA release 5.2.05 removes all special handling for the now obsolete PSA-3248 (and older PSA-3048) RackPack instruments. Individual chassis' that comprised the 2-chassis RackPack may be operated fully independently in different locations and/or IP subnets as if they were PSA-3000 instruments.

PSA release 5.2.05 also establishes the software foundation for a new instrument platform from Sifos, the **PSL-3424** Programmable Load. This platform is the first Sifos instrument to support simultaneous 4-Pair PSE loading on 24 ports up to 100 watts/per port. There are many "behind-the-scenes" enhancements to PSA Interactive and PowerShell PSA that enable seamless operation of the PSL-3424 alongside other Sifos instruments. The PSL-3424 will be the target platform for future generations of Multi-Port System Testing applications such as Live PD Emulation and the Multi-Port Power Management test suite.

PSE Conformance Test Suite Tracking Service

When installing PSA 5.2.05 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 Conformance Test Product Keys are revised relative to the earlier 5.2.04 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.

EA Gen1 and Gen2 Certification Testing

PSA software version **5.2.03** was EA certified for 1st party Gen1 (802.3at) and Gen2 (802.3bt) certification testing. Sifos will be applying to re-certify the version **5.2.05** release for future EA Gen1 and Gen2 certification testing during April/May 2022 time frame. PSA version 5.2.03 will be available on the Sifos website until 5.2.05 is approved.

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PSA 5.2.05 Enhancements

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Important	pwron_v modified to further mitigate possibility of a PSA-3000 instrument producing a “fan error” condition during the Ripple and Noise measurements under high load. The “fan error” condition causes a complete shutdown of the instrument and termination of any testing sequence. It would occur only in a small subset of the instrument population.
	Important	pwron_v also modified to improve the Vpse_diff measurement utilizing the Vdiff stored calibration. A subset of the PSA-3202 test blade population possessed meter calibration characteristics that were reducing the benefit of the Vdiff calibration and causing Vpse_diff false negative results exceeding the 65mV test limit.
	Moderate	Several tests including det_v , det_cc , det_time , pwrnd_time , and underlying waveform analyses all enhanced and adapted to work with a unique PSE architecture that presents fully isolated pairsets. While underlying changes to work with this PSE were significant, they will have no effect to “ordinary” 4-Pair PSE’s.
	Moderate	Maximum PSE class grant analyzer adapted to work with a (potentially non-compliant) PSE that drops voltage below Vmark(min) during power-up with ordinary inrush currents.
	Moderate	pwrup_time enhanced to more intelligently position Tpon time window for catching all signaling leading to a power-up and to work with PSE’s that take up to 12 seconds to apply power.
	Minor	det_range modified to assure multi-event class signatures are produced following successful detections so that PSE valid responses are reliably detected in all possible cases of detection/classification power management cycling.
	Minor	det_rsource adapted for a future hardware change in the PSA-3202 test blade detection emulation circuitry.
	Minor	pwron_pwrcap adapted to properly respond to a case of a PSE powering only one pairset to a dual signature emulation.
	Minor	mpos_dc_pwrnd further adapted to work with PSE’s that might cut single pairset power under low load more quickly than had been observed previously.
	Minor	pwron_autoclass and pwrnd_time both adapted to solve possible calculation problems that would occur if PowerShell PSA were run with Tcl 8.4. <i>(By default, PSA 5.x software is always installed with Tcl 8.6.)</i>
	Minor	pwrnd_time enhanced to determine and report if a PSE failure to remove power with invalid MPS load impacts a time interval measurement.
	Minor	Test Reports now open as .xlsx files rather than .xlsm files.

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Software Entity	Impact	Feature
2-Pair PSE Conformance Test Suite	Minor	det_resource adapted for a PSE with very low (marginal) detection signal levels given signatures on the low end of the detection range.
	Minor	det_resource adapted for a future hardware change in the PSA-3202 test blade detection emulation circuitry.
	Minor	Detection step resolver signal processing adapted to properly process a PSE that tuned Tdet2det to exactly 400msec, the 802.3bt upper limit for this timing parameter.
	Minor	Tpon signal processing adapted to properly process a PSE that tuned Tpon (dual signature) to exactly 400msec, the 802.3bt upper limit for this parameter.
	Minor	Test Reports now open as .xlsx files rather than .xlsm files.
One-Click Waveforms	Moderate	Standard Detection Waveform adapted in several modes in support of unique PSE with fully isolated pairsets. Connection Check analysis adapted to process smaller pairset overlaps and longer CC calibration pulses than previously observed.
	Moderate	Standard Classification Waveform enhanced to intelligently configure waveform windows needed for observing classification leading into power-ups and to work with PSE's taking up to 12 seconds to apply power.
	Minor	Standard Classification Waveform adapted to handle a PSE that lengthened class events when sensing 55mA invalid signature and to better process a PSE that failed to classify with a mid-range valid detection signature.
	Minor	Inrush Waveform modified to produce more descriptive diagnostics when one pairset fails to power a dual signature emulation.
	Minor	Exported traces now open as .xlsx files rather than .xlsm files.
PSA Interactive	Future	Many adaptations in support of PSL-3424 platform.
PhyView Analyzer PHY Performance Test Suite	Moderate	Enhanced the 1000Base-T transmission testing to catch and report 10/100/1000 ports that adapt 1000Base-T transmit power to perceived cable length. This allows "energy saving" ports to be categorized as either adaptive or fixed low power.
	Minor	DC Unbalance Analyzer removed vulnerability to a PSE that powers low (12Kohm) detection signatures.
	Minor	Test Reports now open as .xlsx files rather than .xlsm files.
LLDP	Moderate	General refinements to the LLDP traces (trace_lldp_pwrup and trace_lldp_change) to overcome certain limitations and behaviors associated with specific hardware versions.
	Minor	LLDP Traces now open as .xlsx files rather than .xlsm files.
	Future	Many adaptations in support of PSL-3424 platform.
PowerShell PSA	Important	All special PowerShell PSA processing for RackPack PSA instruments (PSA-3048, PSA-3248) was removed as the RackPack

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Software Entity	Impact	Feature
		PSA (PSA-3248) was obsoleted over a year ago. This will enable all RackPack chassis' to operate independently and to be separated to different locations and/or IP subnets.
	Moderate	PSA software patching scheme further enhanced to better support patching of modules outside of the test suites.
	Moderate	The psa_enable command was updated to eliminate the RackPack feature key and support a new key for the PSL-3424 instrument. All feature labels have been updated to better reflect their exact meaning.
	Minor	power_port enhanced to enable 2-Pair autotest emulated power-ups to 2-Pair, 802.3bt PSE's.
	Minor	power_bt enhanced to support several new features utilized internally by the 4-Pair PSE conformance test suite and by standardized waveforms.
	Future	Many adaptations in support of PSL-3424 platform.

PSA 5.2.05 Bug Fixes

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Important	det_range : A defect in the det_range test created a circumstance where the Single Signature detection range scan could possibly have been done with Dual Signature configuration rather than Single Signature configuration. Test was modified to assure Single Signature range scan was always performed with Single Signature PD emulation.
	Moderate	The 4-Pair Conformance Test sequencer, when working with a Type-3, autotest-capable PSE would feed the test report a PSE Type (Type-3_ac) that broke test limit logic on a few parameters. That has been corrected so test limit logic is proper.
	Minor	det_range modified to prevent a rare vulnerability where an edge-triggered 4-pair peak voltage measurement returned ARMED+TIMEOUT status on first query attempt.
	Minor	sequence modified to resolve a PowerShell PSA error condition in a case where test report is NOT directed to either a standard (spreadsheet) report nor to a text report.
PSA Interactive	Minor	Fixed bug in the Select Chassis control within the Latency Test menu
	Minor	Removed Help control from the Service Test menu
PowerShell PSA	Minor	Fixed a bug in the psa_temperature command used to monitor test port temperature when accessed in a 4-pair mode. In rare circumstances, this could have been a contributor to the "fan error" issue described under the 4-Pair Test Suite above.

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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 4.18 , ALC ver 19
PSA/PSL-3102 or PSA-3002 Test Port ver 3.2B	PVA-3102 Test Port ver 3.0B

PSA-3202 firmware has been updated from version 4.17 to version 4.18. The firmware change only affects certain timing measurements performed by the **802.3at Multi-Port Test Suite** in assessing time-to-power-up parameters in certain conditions. Updating to version 4.18 is completely optional for systems that primarily run PSE Conformance Tests.

PSA-3202/PSL-3202/PSA-3402 ALC Version 19 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 19** that was introduced with the PSA **5.2.03** release. Any instruments that are used for 802.3bt PSE testing either now or in the future should be updated to this version if they have not already had that update.

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

```
psa_config -alc
```

ALC Version 19 Update Instructions

Updating any PSA/PSL test instrument to ALC version 19 is a very simple task. However, it should be performed when the instrument is not needed for a while as it will consume 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 19 update to all PSA/PSL-3202 test ports:

After installing PSA version 5.2.03 or 5.2.04 software, open PowerShell (Wish or Tcl), connect to instrument that will be updated, and execute:

```
alc_updater_19
```

When the update is completed, look for the indication:

```
alc_updater_19: UPDATES COMPLETED !!!!
```

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