

PSA 5.3.00 Release Notes

The PSA 5.3.00 Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

Highlights

PSL-3424 Programmable Load

With the PSA 5.3 software release, Sifos is introducing a new member of the PowerSync Analyzer family, the PSL-3424 Programmable Load. The PSL-3424 is the first member of the PSA-3000 family that supports continuous and simultaneous 4-Pair PSE loading up to 100W on 24 ports. Each test port flexibly emulates any 802.3at or 802.3bt PSE independently. PSA 5.3 software supports two models of the PSL-3424:



- **PSL-3424A:** Basic Programmable Load
- **PSL-3424L:** Programmable Load with PoE LLDP Emulation and Analysis

While the PSL-3424 hardware architecture differs significantly from other PSA-3000/PSL-3000 family members, PSA 5.3 Software (PSA Interactive and PowerShell PSA) seamlessly adapt to present a user interface that is very familiar to existing PSA-3000/PSL-3000 users. Both models support a feature option (**PSL-3424-QT**) that provides fully automated Quick Inspection Testing of 802.3at and 802.3bt PSE ports and supports efficient configuration and management of chained (snaked) data path setups for PSE system traffic testing with PoE loads.

Single Pass 2-Pair PSE Conformance Testing

In all prior versions of PSA software, testing of 2-Pair, 30 Watt (Type-2 or Type-3) PSE's required sequencing the 2-Pair PSE Conformance Test Suite twice: Once with **Type-1** PD emulations, and a second time with **Type-2** PD emulations. Starting with the PSA 5.3 release, testing of 30 Watt capable PSE's only requires a single pass that will automatically combine all of the required Type-1 and Type-2 PD emulations as needed and present results in a single test report. This change puts the 2-Pair PSE Conformance Test Suite on equal footing with the 4-Pair PSE Conformance Test Suite that was designed from the start to support single pass testing regardless of PSE powering capability.

PVA-3002 Bug Fix

An important bug fix concerning compact PhyView Analyzers (**PVA-3002**) shipped with controller firmware version **3.18** during 2021 and 2022 is described under PSA 5.3.00 Bug Fixes on page 5.

PSE Conformance Test Suite Tracking Service

When installing PSA 5.3.00 software, customers who are licensed for the **2-Pair** 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 earlier software 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.

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EA Gen1 and Gen2 Certification Testing

PSA software version 5.2.05 was EA certified for 1st party Gen1 (802.3at) and Gen2 (802.3bt) certification testing. PSA 5.3.00 software version is not (yet) EA certified, so if doing EA PSE certification testing, users should not update to PSA 5.3 until re-certification is performed. At this time, there is no time table for that.

PSA 5.3.00 Enhancements

Software Entity	Impact	Feature
2-Pair PSE Conformance Test Suite	Important	<p>Many of the 2-Pair PSE Conformance Tests are modified to support the Single Pass testing of 30W capable (Type-2 or Type-3) PSE's. In some tests, certain (non-conformance) parameters were removed. In some other tests, certain parameters were renamed although there were no change in the underlying measurements. Many tests, when applied to a 30W capable PSE, will output more test parameters reflecting emulations of both Type-1 and Type-2 PD's. Impacted tests are shown below.</p> <p>IMPORTANT! Proper operation of the 2-Pair test suite is dependent upon proper declaration of the PSE High Power Grant attribute (NONE, PHY, LLDP, or PHY+LLDP) and PSE Type.</p> <p>det_v: Removed Non_802_Step_V and High_Sig_MaxV (non-conformance) parameters.</p> <p>det_range: Removed class argument – test only uses Class 0 / 1.</p> <p>det_rsource: Eliminated parameter Regulated_Vstep_Zout and replaced with PSE_Detect_Source indicating if PSE detection uses a voltage or current source. Output_Impedance_Zout is then calculated if current source.</p> <p>class_v: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise run Class 4 emulation. Changed parameter name from Class_Voltage_Vclass to Vclass_Max.</p> <p>class_time: Set default to run Class 0 and Class 4 regardless of PSE power capability. Reports Event Count for both classes. Other reported parameters respond to PSE attribute High Power Grant Type. Improve handling of PSE that does not classify at all.</p> <p>class_err: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise run Class 4 emulations. Reported parameters respond to PSE attribute High Power Grant Type. Assure PSE that powers an invalid signature gets powered down at end of test.</p> <p>class_lldp: Set default to run Class 3 emulation if PSE is 15W capable (e.g. Type-1), otherwise emulate both Class 3 and Class 4 PD's. Parameters are produced for each emulation utilized.</p> <p>pwrup_time: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise emulate both Class 0 and Class 4 PD's. Parameters are produced for each emulation utilized.</p>

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Software Entity	Impact	Feature
	Important	<p>pwrup_inrush: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise emulate both Class 0 and Class 4 PD's. Max_Inrush and Inrush_Strategy parameters are produced for each emulation utilized. Removed Max_Init_Inrush measurement (not used in PSE conformance).</p> <p>pwrn_v: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise Class 4 PD emulation. Max power draw utilized based on PD emulation utilized.</p> <p>pwrn_pwr cap: Emulates Class 0, 1, 2, 3, and 4 regardless of PSE power capability (15W or 30W). If Type-1 PSE doesn't power class 4 test will now return 0.0 W for Pcon_c4 and 0.0% for Icon_%_c4 rather than error out.</p> <p>pwrn_maxi: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise emulate both Class 0 and Class 4 PD's. Parameters are produced for each emulation utilized. Removed lilm_Low_V_Tol (non-PSE conformance) parameter.</p> <p>pwrn_overld: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise emulate both Class 0 and Class 4 PD's. Parameters are produced for each emulation utilized.</p> <p>pwrn_autoclass: Set default to run Class 3 emulation if PSE is 15W capable (e.g. Type-1), otherwise emulate both Class 3 and Class 4 PD's.</p> <p>m��_dc_valid: Test modified to respond to the PSE Attribute for PSE_Class (AT or BT) rather than using input argument for Tmps testing.</p> <p>m��_dc_pwr dn: Removed Max_Voltage_Vopen_max (non-PSE conformance) parameter.</p> <p>pwr dn_overld: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise emulate both Class 0 and Class 4 PD's. Parameters are produced for each emulation utilized.</p> <p>pwr dn_time: Adapted the discharge timing measurement to allow for PSE's that have higher IDLE voltages (e.g. > 6V).</p> <p>pwr dn_v: Set default to run Class 0 emulation if PSE is 15W capable (e.g. Type-1), otherwise Class 4 PD emulation. Overload applied is based upon PD emulation utilized.</p> <p>2-Pair Conformance Test Sequencer: Various changes to support the Single Pass model for both 15W and 30W capable PSE's. Arguments defining PD emulation are no longer furnished to individual tests. Revised method to sequence the class_ildp test to a PSE that is declared as 15W capable.</p>

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Software Entity	Impact	Feature
	Moderate	psa_trapper : Eliminated requirement to specify a PD class emulation as each individual test determines PD emulations based upon PSE attributes.
	Moderate	Revised the standard 2-Pair PSE Conformance Test Report to support the Single Pass testing of 30W capable PSE's with revised parameter names and increased report lengths (i.e. parameter counts). Removed all obsoleted parameters from limits table.
	Moderate	Revised the EA Gen1 (2-Pair) PSE Conformance Test Report with comparable changes as were required in the standard 2-Pair test report.
4-Pair PSE Conformance Test Suite	Moderate	Tpon Analyzer utility (used by pwrup_time) adapted and refined to be more versatile and a bit more accurate in the assessment of Tpon for both Single and Dual Signature emulations.
	Minor	Revised a utility used by the det_range test to prevent a very rare occurrence of triggered 4-pair metering reporting a TIMEOUT condition at the start of a measurement.
	Minor	class_err : Adapted Treset measurement to better handle a PSE that powers the invalid 55mA class signature.
	Minor	pwrup_time : Adapted so that if a PSE behavior interferes with normal Tpon analysis, the Trise measurement will still be completed.
	Moderate	pwrn_unbal : Adapted the Class 4 test case to relax the low side load requirement from 0mA (100% unbalance) to 9mA (almost 100% unbalance).
	Minor	pwrn_v : Adapted to work with PSE that fails to remove power below 100W loading.
	Minor	IN the 4-Pair PSE Conformance Test Reports (including Gen2 EA version), revised upper limit for Pcon_c* from 99W to 99.9W for Single Signature and from 99W to 49.9W for Dual Signature. Also revised class_lldp2 parameter limit for PSE_Alloc_LowPwr_1DS* to maximum of 35.6W rather than 71.3W.
PSA Interactive	Important	Revised the PSE Conformance Test tab menu so when running 2-Pair Conformance Tests with the Single Pass model described above, the Type-1 (15W) and Type-2 (30W) radio buttons are no longer selectable but are automatically set in accordance with the PSE power capability as defined by PSE attribute for High Power Grant Method. Both buttons are automatically selected when testing 30W (Type-2 or Type-3) PSE's.

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PSA 5.3.00 Bug Fixes

Software Entity	Impact	Feature
PSA Interactive	Moderate	Under certain conditions, when selecting Port 1 of a PSA/PSL-3102 test slot, the menu operations invoked would be applied to Port 2 of that slot rather than Port 1. Remedied that problem.
	Minor	Solved a problem where PSA Interactive could hang when the Stop Test (termination) command was issued during PSE Conformance Testing. Improved overall processing of the Stop Test function.
	Minor	Corrected problem in the PSE Conformance Test tab menu where a test was named mps_ac_valid in the menu - this is a non-existent test. This would only affect testing of an AC MPS PSE where selected tests rather than All Tests are sequenced.
PowerShell PSA	Major	PVA-3002 compact PhyView Analyzers shipped with Version 3.18 controller firmware fail to connect after power cycling the instrument with the Power On/Off switch. PSA 5.3 software includes a fix to prevent this problem. This would also affect any PVA-3002 or older PSA-3002 instrument that upgraded controller firmware to 3.18 in the field.
	Minor	psa_poe_monitor : Fixed a problem where the utility would malfunction as a result of an earlier change to the psa_auto_port command.
	Minor	psa_ldap_trace : Corrected problems in variable assignments when certain arguments were not provided.

PSA/PVA Firmware Versions

PSA 5.3 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 3.1C PSA-3402 Controller: ver 3.1C PSA-3424 Controller: ver 3.1C PSA-3002 Controller: ver 3.14 ¹	PSA-3202, PSL-3202, PSA-3402: Test Port ver 4.18 , ALC ver 19	PSL-3424 Test Port: ver 5.02
PSA/PSL-3102 or PSA-3002 Test Port ver 3.2B	PVA-3102 Test Port ver 3.0B	

PSA Controller firmware has been updated from version 3.18 to version 3.1C. Most of the changes made will have no impact to existing instruments in the field. Version 3.1C includes changes so that it can be installed to the new PSL-3424 programmable load and further, so that it can work with alternative chassis fans that Sifos is deploying to overcome component shortages with our suppliers. There should be no adverse effects when installing this firmware on existing PSA-3000 instruments.

¹ PVA-3002 compact PhyView Analyzers can run firmware versions later than 3.14 if the host software is version 5.3.00 or later. If software is before version 5.3.00, then controller firmware 3.14 should be installed.

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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!
```