

PSA 5.1.04 Release Notes

The PSA 5.1.04 Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

Highlights

The PSA 5.1.04 Release includes important enhancements in the following areas:

4-Pair PSE Conformance Test Suite

Three new tests are added to the 4-Pair PSE Conformance Test Suite.

Test	Description
class_lldp2	This test emulates Dual Signature PD's as it evaluates 802.3bt LLDP Protocols and Negotiations in PSE's that utilize LLDP either for initial power allocation (LLDP) or for refined power allocation following multi-event power-ups (PHY+LLDP).
pwron_maxi	<p>This test evaluates PSE responses to large current surges as it evaluates PSE compliance to upperbound and lowerbound current templates for Type-3 and Type-4 PSE's in the 802.3bt specification.</p> <p>The test initially probes for current limiting thresholds and Tlim shutdown times in the POWER_ON state given PD class emulations at the maximum single and dual signature classes supported by the PSE.</p> <p>The test also verifies compliance to Ilim_min_2p / Tlim_min load transients verifying that power is maintained for each assigned class the PSE is capable of issuing to single and dual signature PD's.</p> <p>The test further probes the Type-3 850mA upperbound current limit, the 1.3A Type-4 upperbound current limit, and the Type-4 I_{LPS} upperbound current limit, assuring power is removed in all of these cases.</p>
pwron_overld	<p>The pwron_overld tests evaluates PSE ability to support Ipeak and Ipeak_2p, verifying that power is maintained for each assigned class the PSE is capable of issuing to single and dual signature PD's.</p> <p>The test further evaluates port voltage during Ipeak transients to assure voltage is within the specified PSE Type Vpse range.</p> <p>The test also evaluates PSE power maintenance given a succession of Ipeak overload transients applied at a 5% duty cycle.</p>

The [pwron_maxi](#) and [pwron_overld](#) tests round out all of the power capacity and high load tolerance tests for 4-pair, 802.3bt PSE's. Looking ahead, 4 tests affecting all PSE's remain to be available in future releases:

[mps_dc_valid](#), [mps_dc_pwrtn](#), [pwrtn_time](#), and [pwrtn_v](#)

Thereafter, specialized testing for autotest will be added to the suite.

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LLDP Protocol Traces for Dual Signature Emulations

The PSA 5.1.04 release adds LLDP protocol traces using Dual Signature PD emulations. As with all 802.3bt LLDP protocol traces, these are only available from the PowerShell PSA command line using the `trace_lddp_pwrup` and `trace_lddp_change` commands. A future release will enhance PSA Interactive to support all forms of LLDP protocol traces.

There is not yet a spreadsheet test report with pass/fail criteria for the Dual Signature LLDP protocol trace – that will be available in the next release.

PSE Conformance Test Suite Tracking Service

When installing 5.1.04 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 identical to those used with the PSA 5.1.01 through PSA 5.1.03 releases. 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.



New PSA 5.0.00 Installer Dialog

PSA 5.0.04 Enhancements

Software Entity	Impact	Feature
PSA Interactive 5.0	Moderate	Revised graphic library to permit up to 15 total traces on the screen when Show Traces selected during PSE conformance testing.
	Moderate	In the Power Up tab menu, the pair-to-pair current unbalance controls modified to work similarly to the <code>pwrn_unbal</code> test using a 90% Icon total load.
	Minor	Modified the <code>power_bt</code> utility to activate the LAN LED in PSA Interactive when LAN is connected for LLDP power-ups.
4-Pair PSE Conformance Test Suite	Important	Added new <code>class_lddp2</code> , <code>pwrn_maxi</code> , and <code>pwrn_overld</code> tests to the test suite and reporting. See highlights above.
	Moderate	Modified <code>class_lddp</code> logic when using transmitted PD frames to induce the 802.3bt TLV's from the PSE port. Re-named allocated power parameters to differentiate initial and re-negotiated power levels. Similar features applied to new <code>class_lddp2</code> test.
	Moderate	Modified <code>pwrup_time Tpon</code> measurement for Dual Signature power-ups to handle special case for CC_DET_SEQ= 2 combined with simultaneous Dual Signature powering. (Both pairsets reference <code>Tpon</code> to the same point in time rather than to pairset detection.)

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Software Entity	Impact	Feature
	Moderate	Modified <code>psa_auto_port</code> to update the Slot-Port panel when running under the Auto-Discover menu in PSA Interactive so that the pair states are accurate following Auto-Discover completion.
	Moderate	Modified limit processing for <code>pwrup_time Trise</code> parameter to report INFO rather than FAIL if the parameter measures below 15µsec. This is result of the technicality that, as specified in 802.3bt, Trise is unmeasurable because the 10% Vpse start point would be below Vmark_min that precedes power-up.
	Minor	Tweaks to detection step resolver utility to adapt a new PSE implementation.
	Minor	Modified the Test Report page header to display PSE Type and connection Polarity, and further to limit check Polarity to be MDI-X+MDI for all Type-4 PSE's.
	Minor	Revised and renamed the 'psa_det_char' utility to 'psa_4p_pse_chars' and added logic to conditionally discover PSE Maximum Assigned Class capability for Single and Dual Signature PD's.
2-Pair PSE Conformance Test Suite	Moderate	Modified limit processing for <code>pwrup_time Trise</code> parameter to report INFO rather than FAIL if the parameter measures below 15µsec. This is result of the technicality that, as specified in 802.3bt, Trise is unmeasurable because the 10% Vpse start point would be below Vmark_min that precedes power-up.
One-Click Waveforms	Moderate	Inrush, Peak Transient, Short Circuit, Tmps, Disconnect, and Error Delay waveforms all modified to produce combined Alt-A/Alt-B voltage traces (given Tcl 8.6 installations) and to accept argument to enable a waveform display mode that does not erase previously displayed waveforms.
PowerShell PSA	Important	Added Dual Signature LLDP traces for negotiated power-up (<code>trace_lldp_pwrup</code>) and for re-negotiated power levels (<code>trace_lld_change</code>). These utilities now support 802.3at, Single Signature 802.3bt, and Dual Signature 802.3bt protocol testing and analysis. 802.3bt traces require PSA/PSL-3202 hardware.
	Moderate	Adapted <code>psa_auto_port</code> and <code>psa_conn_check_4p</code> to better address 4-pair PSE's that may only signal on one pairset prior to valid detection on that pairset.
	Minor	Modified <code>power_bt</code> utility so that the initial PD request / echo'd PSE allocation power is only determined from the assigned class (power) resulting from event count. 1-event sets this to 13W, 2 or 3-event to 25.5W, etc.
	Minor	Enhanced the 802.3bt LLDP Trace Report to properly analyze power request echo times and annunciate failures for this.
	Minor	Removed any physical power loading adjustments performed in <code>trace_lldp_change</code> as actual load power testing is not an

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Software Entity	Impact	Feature
		objective of the protocol traces.
	Minor	Added binary libraries to support 64-bit versions of Tcl/Tk that are not part of the Sifos distribution but have been present in a few host environments.

PSA 5.0.04 Bug Fixes

Software Entity	Impact	Feature
PSA Interactive	Minor	In Conf Test tab menu, corrected issue where pwron_unbal radiobutton remained enabled when All Tests was selected.
	Minor	Assure that the Auto-Discover menu does not hide behind other windows after anomalies or error conditions arise during Auto-Discover.
One-Click Waveforms	Minor	Corrected a problem in Peak Transient waveform where the llim_min value for Class 5 was low by 20mA.
PowerShell PSA	Moderate	Corrected issue with power_bt performing dual signature LLDP negotiated power-ups where signatures were not uniform between the pairsets.
	Moderate	Corrected a couple of problems with LLDP power allocation testing given Dual Signature PD emulation in cases were pairset classifications and power requests differed.

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-3202, PSL-3202 , PSA-3402:
PSA-3402 Controller: ver 3.18	Test Port ver 4.15 , ALC ver 16
PSA/PSL-3102 or PSA-3002	PVA-3102
Test Port ver 3.2A	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.

Important! PSx-**3202** firmware **4.14** or later and PSx-**3102** firmware **3.2A** 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.

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PSA-3202/PSL-3202/PSA-3402 ALC Version 16 Update

NOTE! The following information was included in earlier PSA 5.0.00 and PSA 5.1.00 Release Notes.

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 16**. Any instruments that are used for 802.3bt PSE testing either now or in the future must 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 Update Instructions

Updating any PSA/PSL test instrument to ALC version 16 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 16 update to all PSA/PSL-3202 test ports:

Obtain the .zip file **ALCv16.zip** from the Sifos Installation CD Firmware directory or from the PSA/PSL-3000 download page at www.sifos.com. Unzip (install) the 3 files in **ALCv16.zip** to:

PC OS	PSA Software Release	Installation Directory
Windows 10, 8, 7, Vista	PSA 4.2	C:\Users\Public\Sifos\PSA1200\Contrib\
	PSA 5.0	C:\Users\Public\Sifos\PSA3000\Contrib\
Windows Xp	PSA 4.2	C:\Program Files\Sifos\PSA1200\Contrib\
	PSA 5.0	C:\Program Files\Sifos\PSA3000\Contrib\

Open PowerShell (Wish or Tcl), connect to instrument that will be updated, and execute:

```
alc_updater_16
```

When the update is completed, look for the indication:

```
alc_updater_16: UPDATES COMPLETED !!!!
```

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