

PSA 5.3.02 Release Notes

The PSA 5.3.02 Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

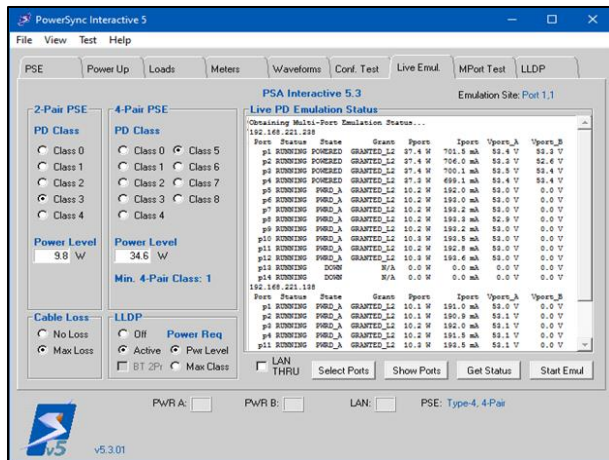
Introducing...

With the PSA 5.3.02 release, Sifos is introducing **N-Pair Live PD Emulation** for the PSL-3424 Programmable Load instrument. This feature enables user description of any combination of 2-pair powered and 4-pair powered PD's connecting up to as many as 96 PSE ports simultaneously. As an example, a Multi-Port configuration could be defined with (8) Class 8 PD's and (16) Class 4 PD's.

Each user-defined PD responds as a fully compliant PD to PSE assigned class with power loading that

can automatically mimic worst case cable losses as a function of the PD load level. Live PD Emulation can include 802.3at and/or 802.3bt LLDP power negotiations when run with the PSL-3424L instrument.

PSA Interactive software is updated with a new Live PD Emulation tab menu applicable to all instruments in the PSA-3000 family. PSA-3000/PSL-3000 instruments licensed to the Multi-Port Suite and PSL-3424 instruments licensed to Live PD Emulation have access to the new menu.



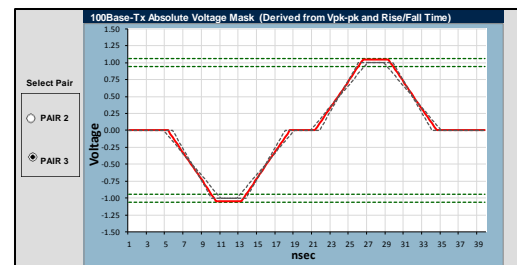
Live PD Emulation Tab Menu

Other Highlights

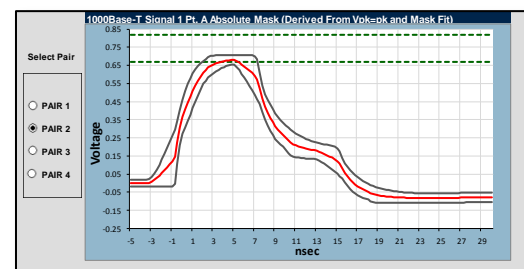
The standard PHY Performance Test Suite report from the PhyView Analyzer has been updated to produce 3 simulated waveforms (test signals) for each port tested. These include:

- 100Base-Tx (MLT-3) Waveform Mask
 - Select Pair 2 or Pair 3
- 1000Base-T (PAM-5) Test Signal 1 Pulse Mask
 - Select Pair 1, 2, 3, or 4
- 1000Base-T (PAM-5) Test Signal 1 Droop Mask
 - Select Pair 1, 2, 3, or 4

Pulse masks are normalized to signal amplitudes and then plotted with respect to absolute voltage levels so that signal amplitude violations can also be observed. The underlying Power Spectral Distortion (PSD) measurements used to synthesize these signals do not require actual test signals. Instead, they are captured from actual 100Base-Tx and 1000Base-T linked ports.



100Base-Tx Absolute Mask



1000Base-T Signal 1 Absolute Pulse Mask

The 5.3.02 release includes a number of minor PSE Conformance Test adaptations and some moderately important bug fixes. These are detailed below.

PSA 5.3.02 Release Notes

PSE Conformance Test Suite Tracking Service

When installing PSA 5.3.02 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.

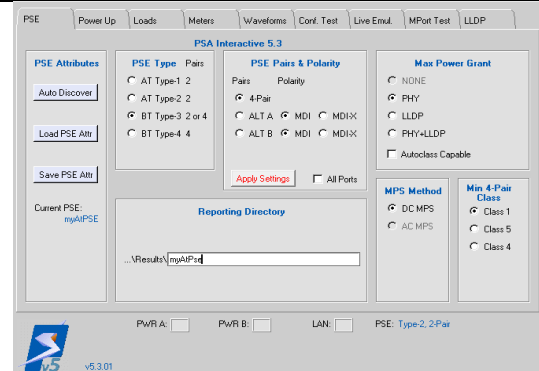
EA Gen1 and Gen2 Certification Testing

PSA software version **5.3.01** was EA certified for 1st party Gen1 (802.3at) and Gen2 (802.3bt) certification testing. Sifos does not plan to re-certify this release as there was only minor impact to the PSE Conformance Test Suites.

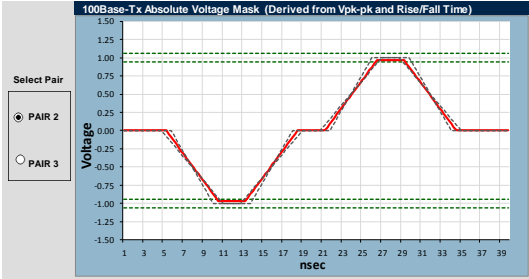
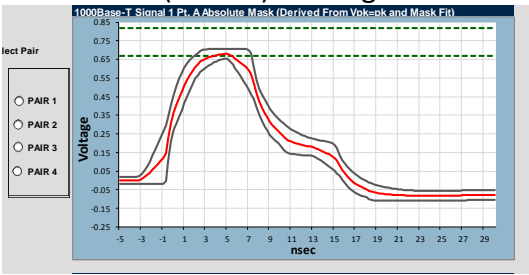
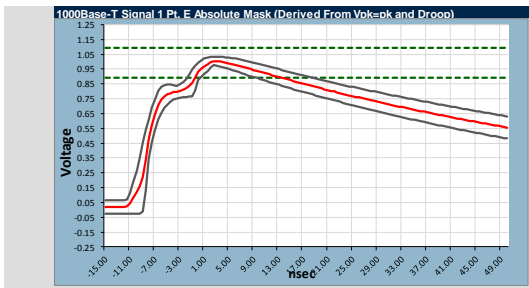
PSA 5.3.02 Enhancements

Software Entity	Impact	Feature
2-Pair PSE Conformance Test Suite	Minor	det_v adapted to better recognize and ignore connection check signaling when run on 4-Pair powering PSE ports.
	Minor	pwron_maxi test adapted to compensate a test port with edge-of-specification current metering (<i>extremely rare condition</i>) that lead to a false failure.
	Minor	pwrndn_v modified to correct a false Ved failure when PSE re-powers at exactly 10 seconds after an overload shutdown.
4-Pair PSE Conformance Test Suite and Associated Waveforms	Moderate	Standard detection waveform and associated processing adapted to several newly observed PSE variants in order to produce correct decisions and analyses for det_v , det_time , and det_resource tests.
	Moderate	Standard Classification waveform adapted to handle PSE's that perform more than one cycle of detection and classification in the 500msec time window preceding power-up. Impact to prevent possible errors from class_v and class_time tests.
	Moderate	det_v test adapted to better tolerate very noisy PSE detection signaling while analyzing detection signaling characteristics.
	Moderate	pwrup_time test removed a vulnerability where if the test is sequenced immediately after certain other tests (e.g. det_v or det_resource), there could be problem with a failed dual signature power-ups when performing power stagger measurements.
	Minor	Standard detection waveform enhanced to remove a very low probability triggering vulnerability when synchronizing to open circuit signaling.

PSA 5.3.02 Release Notes

Software Entity	Impact	Feature
	Minor	det_v was modified to inspect open circuit signaling voltage range and if that is inconsistent with open circuit sync-up threshold, to adjust that threshold. This is very unlikely occurrence.
	Minor	det_rsource test signal processing adapted to better discriminate detection voltage steps with slight slopes.
	Minor	pwrup_inrush test adapted to PSE's that temporarily reset PoE service when first powered pairset of a dual signature PD produces inrush overload.
	Minor	pwrn_maxi test adapted to better recover a Tlim parameter from a PSE that removes power extremely rapidly for PSE under-voltage condition when current limited.
	Minor	Modified text at bottom of Interop and Safety pages to better clarify what constitutes full PSE Conformance and to disclaim that the Interop and Safety scores equate to Specification Conformance.
PSA Interactive	Important	PSA Interactive now includes a re-designed tab menu for Live PD Emulation. The menu supports 2-Pair Live PD Emulation on the PSA-3000/PSL-3000 instrument family and also support N-Pair (2 and/or 4 pair) Live PD Emulation on the PSL-3424 instrument. See "Introducing..." above.
	Important	<p>The PSE tab menu has been modified to allow user setting of the Minimum 4-Pair Class for a PSE. This setting only applies to 4-Pair powering PSE's and it simply indicates the lowest PD class (1-8) that will receive 4-Pair power (versus 2-Pair power). Generally 4-Pair powering PSE's will apply 4-Pair power starting either with a Class 1 PD (i.e. to all PD's) or with a Class 5 PD (i.e. only 802.3bt PD's).</p> <p>The 4-Pair PSE Conformance Test Suite automatically discovers this attribute so previously, there was no need for user selection. However, with the advent of N-Pair Live PD Emulation for the PSL-3424, users must "declare" the PSE attribute properly before running 4-Pair Live PD emulations. The attribute will be saved and recalled with the Save PSE Attr. and Load PSE Attr. buttons.</p>
 <p>The screenshot shows the 'PSA Interactive 5.3' software interface. It features a top navigation bar with tabs: PSE, Power Up, Loads, Meters, Waveforms, Conf. Test, Live Emul., MPot Test, and LLDP. The main window is divided into several sections: <ul style="list-style-type: none"> PSE Attributes: Includes 'Auto Discover', 'Load PSE Attr.', and 'Save PSE Attr.' buttons. PSE Type Pairs: Radio buttons for AT Type-1 2, AT Type-2 2, BT Type-3 2 or 4, and BT Type-4 4. PSE Pairs & Polarity: Radio buttons for 4-Pair, and checkboxes for ALTA, ALTB, MDI, and MDIX. Max Power Grant: Radio buttons for NONE, PHY, LLDP, and PHY+LLDP, with a checkbox for 'Autoclass Capable'. MPS Method: Radio buttons for DC MPS and AC MPS. Min 4-Pair Class: Radio buttons for Class 1, Class 5, and Class 4. Reporting Directory: A text field with the path '..\Results\myAllPsd'. Bottom Bar: Shows 'PWR A', 'PWR B', 'LAN', and 'PSE: Type-2, 2-Pair' indicators, along with a logo and version 'v5.3.01'. </p>		

PSA 5.3.02 Release Notes

Software Entity	Impact	Feature
	Minor	The [Help] [Features] menu adds new licenses for PSL-3424 instrument including N-Pair Live PD Emulation and a future N-Pair Multi-Port Test Suite. [Help] [Version] menu adds information about host PC platform.
PHY Performance Test Suite	Important	Standard PHY Performance Test Suite standard (Excel) report now produces three <u>synthesized</u> “test signal” waveforms that can be viewed for each tested pair. The waveforms include:
		100Base-Tx (MLT-3) Waveform Mask (Pair 2 or 3)
		
		1000Base-T (PAM-5) Test Signal 1 Pulse Mask (Pair 1, 2, 3, or 4)
		
		1000Base-T (PAM-5) Test Signal 1 Droop Mask (Pair 1, 2, 3, or 4)
		
		These are not actual test signals from the PHY transceiver. Instead, they are derived from Power Spectral Distortion (PSD) measurements performed while linked to PVA test ports.
	Minor	Enhanced test report Notes tab to explain the effect of excess packets received during Receiver Tests – i.e. when received packet count well exceeds transmitted packet count.
2-Pair Multi-Port Test Suite	Minor	Extended Multi-Port Resource Configuration to support distinct and separate files retaining PSA/PSL-3000 2-Pair Multi-Port configurations versus PSL-3424 N-Pair Multi-Port resource configurations.
PowerShell PSA	Important	<code>psa_version</code> query modified to add host platform information.

PSA 5.3.02 Release Notes

PSA 5.3.02 Bug Fixes

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Moderate	When det_v test post processed very noisy detection waveforms, there was an error in the determination of the minimum step voltage and step magnitude. This error only affected detection signaling with high common mode noise.
	Moderate	pwrup_time had a logic error that unnecessarily reduced the voltage range used for Trise time interval measurements. This then added a small degree of inaccuracy in Trise measurements on some PSE's.
2-Pair and 4-Pair PSE Conformance Test Suites	Minor	The previous 5.3.01 release included a change that corrupted the name of a text file report, in lieu of the standard spreadsheet report, generated by PSE Conformance Test Suites. That has been remedied to restore a date-time named text file.
PHY Performance Test Suite	Minor	Corrected defect where if 1000Base-T Rx test (pva_rx_1000) was run with the MINIMUM impairment setting with Version 1 or Version 2 hardware, the test would error for undefined variable.
	Minor	Solved vulnerability with PSD graphs in standard test report where if one either the 100Base-T Tx test or the 1000Base-T Tx test produced all -99 data (link drops), the graphs will still scale correctly for the test that did not experience problems.
PSA Interactive	Minor	Corrected issue where a 10 second duration trace would get converted to 20 second duration when loaded into Excel trace template.

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 4.19 , 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	

- 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.

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.

PSA 5.3.02 Release Notes

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!
```