PSA 5.2.04 Release Notes

The PSA **5.2.04** Release Note is applicable to the PSA-3000 and PVA-3000 family of test instruments.

Highlights

The PSA 5.2.04 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 5.2.55 to version 5.2.66 and includes many small changes that have targeted benefit across a variety of applications and unique PSE behaviors.

The **2-Pair PSE Conformance Test Suite** is updated from version 5.2.22 to 5.2.27 in this release. Most changes are relatively minor and targeted to specific applications.

PSE Conformance Test Suite Tracking Service

When installing 5.2.04 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 Conformance Test Product Keys are revised relative to the earlier 5.2.03 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** is EA certified for 1st party Gen1 (802.3at) and Gen2 (802.3bt) certification testing.   Version 5.2.04 has not been certified.   Customers performing EA certification testing should continue to use PSA software release 5.2.03.   Sifos will provide notifications when newer releases are re-certified for EA PoE certification testing.

PSA 5.2.04 Enhancements

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Important	PSE's that present up to 0.55Vpp noise during detection and connection check probing will now be "tolerated" in the detection analyses tests such as det_v, det_cc, det_time, and det_rsource. Previously, the maximum tolerated peak-to-peak noise during detection probing was 0.3Vpp.
	Moderate	EA Gen2 test report enhanced to address the case of one or more test <u>errors</u> without any test <u>failures</u>. Previously this could produce a PASS result.
	Moderate	Sequencer modified to assure proper setting for PSE Minimum 4-Pair Power Class is established in all cases.
	Minor	4-Pair sequencing enhanced to specifically recognize and annunciate when the PSE port under test is actually a 2-Pair PSE rather than a 4-pair PSE.

Software Entity	Impact	Feature
	Minor	Detection and Connection Check signal processing logic enhanced to better and more reliably resolve detection step and connection check levels and timing, reducing susceptibility to signaling artifacts.
	Minor	Enhance maximum class capability analysis to accept up to one additional unexpected class event to handle a non-conformance case.
	Minor	det_v enhanced to better resolve detection backoff time
	Minor	det_cc enhanced to work with a new flavor of PSE that performs a cross-pairset connection check
	Minor	det_i enhanced to process a PSE that fails to produce detection probe when a capacitive detection signature is presented.
	Minor	det_rsource modified to handle a case where a PSE powers one of the invalid detection signatures utilized. Also enhanced to better process a PSE that fails to produce detection probes given invalid detection signatures.
	Minor	class_time adapted to override previously measured event counts with PSE's that might glitch voltage significantly at power-up causing a false event count. This allows subsequent tests to work properly with such a PSE.
	Minor	class_lldp modified to more reliably test the PSE ability to transition from the use of AT TLV's back to BT TLV's.
	Minor	pwrup_time modified so that when run stand-alone, it will default to Class 8 rather than Class 5 emulation in order to maximize event count for the Tpon measurement.
	Minor	pwron_pwrcap enhanced to better handle PSE's that are unable to furnish 90% of required Pclass power.
	Minor	pwrdn_time modified to improve consistency of the Cout and Rp measurements by eliminating dependency on current meter accuracy at very low currents.
	Minor	pwrdn_v modified to improve characterization of Ted when PSE's do partial detections or produce voltage glitches following power removal
2-Pair PSE Conformance Test Suite	Moderate	EA Gen1 test report enhanced to address the case of one or more test errors without any test failures. Previously this could produce a PASS result. Report also modified to correct some possible missing Test ID entries that could occur in the EA Summary tab.
	Minor	det_time enhanced to reduce susceptibility to noisy detection signaling in the measurement of detection timing.
	Minor	class_v adapted to work with slow slewing class event trailing edges so that Mark voltages are more accurately reported

Software Entity	Impact	Feature
	Minor	class_lldp adapted to work with a PSE that won't acknowledge a first PD request frame when the link is configured to 10Base-T.
	Minor	pwron_maxi adjusted to overcome corner case test port current metering accuracy in the measurement of Ilim_min.
	Minor	POWER_ON tests: Enhanced tolerance PSE's that invoke > 30 second error delays preventing LAN link-up following overload shutdowns.
	Minor	pwrdn_overld modified to step around application of a 75msec load transient at the calculated value of Icon to prevent ambiguous results with PSE's that barely meet Pclass.
	Minor	pwrdn_time modified to improve consistency of the Cout and Rp measurements by reducing dependency on current meter accuracy at very low currents.
	Minor	sequence modified to compute individual test parameter report rows "on the fly" much like it does for the 4-Pair test suite.
	Minor	In test report, Ilim_Max_* lower limit increased from 0 mA to Ilim_Min_* mA to warn of PSE's that do very rapid and permanent foldback to low current when current exceeds Ilim_min_*.
One-Click Waveforms	Minor	psa_detect_wfm adapted to process an unusual PSE flavor that performs cross-pairset connection check with fully isolated pairsets as opposed to overlapped signaling.
PSA Interactive	Minor	PSE Conformance Test tab menu modified to gracefully present the specific problem of running the 4-Pair conformance test suite on a 2-Pair capable PSE.
PowerShell PSA	Minor	Improved accuracy of st_wait software timer
	Minor	psa_conn_check modified to handle 4-pair PSE connections if all user-furnished ports are in a 4-pair state or to work with 2-Pair PSE connections if all user-furnished ports are in a 2-pair state.
	Minor	Improved ability to recover from ALC firmware update failures

PSA 5.2.04 Bug Fixes

Software Entity	Impact	Feature
4-Pair PSE Conformance Test Suite	Moderate	det_rsource: Fixed a vulnerability in detection analysis signal processing that could in certain rare cases, produce an error condition given a valid signaling sequence.
	Moderate	class_response: Corrected issue with class event counting that could occur when a PSE powers 2-pair on Alt-B.
	Minor	det_time: Corrected a vulnerability in the detection back-off timing measurement that could affect certain PSE's.
PSA Interactive	Minor	With the 2-Pair Test Suite, if specific tests were selected including pwrdn_overld or any of the AC MPS tests, those tests would not be sequenced. Problem corrected.

PSA 5.2.04 Release Notes

Software Entity	Impact	Feature
	Minor	Software hang vulnerability to inadvertent double-clicks on slot-port radio buttons eliminated.
PhyView Analyzer Metering	Minor	Modifed the Rx Power meter to correct meter measurements that are performed with the Line Loss impairment connected. Previously these measurements read 2.7dB too high.
PowerShell PSA	Moderate	mclass command had a vulnerability where if executed multiple times in succession to edit several class events, one or more iterations might get ignored. Problem resolved.
	Minor	psa_set_load command modified to work properly when in 4-Pair mode with a PSE that is 2-pair powered on Alt-B pairset.

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 **19**
PSA/PSL-3102 or **PSA-3002** Test Port ver **3.2B**	**PVA-3102** Test Port ver **3.0B**

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!