

NanoScan v2 Readme
Version 2.9

Change log

v2.9

- Improved scan head motor stability algorithm in all scan head models for reduced speed variance and improved measurement accuracy.

v2.8.1

- Firmware change to version 1.1.1.16. Some customers report new instability in the motor speed with v2.8 release. This update reverts to a firmware version that restores the previous motor stability algorithm. There is no need to install this version if v2.8 performs satisfactorily.

v2.8

- Updated scan head motor stability algorithm for reduced speed variance, improving measurement accuracy.
- Modified the scan head automatic reset added in v2.6 to the following behavior:
 - o The feature is disabled by default on scan head boot up.
 - o The feature is enabled by the automation interface constructor with a default timeout of 5 seconds.
 - o The first time the application is run after installing this update a dialog will appear advising you to update to the latest firmware (Firmware 1.1.0.15). You must agree to the update to enable the new automatic scan head reset.
- Added new signed driver for Windows 10. This will eliminate driver authentication problems during installation on Windows 10 computers.

v2.7

- Added information for new product Pyro/9/5-MIR.

v2.6

- Redesigned Messages window.
 - o Improved readability and ease of use.
 - o Moves almost all pop up message boxes into the Messages window.
 - o Fixes message boxes popping up during automation runs with GUI hidden.
- Fixed an issue where an interruption of the input laser would reset the results statistics and positional stability data.
- Fixed an issue where a licensing message box was displayed incorrectly when starting a second instance of the application. [Firmware 1.1.0.12]
- Added a feature that will reset the scan head when communication is lost while the scan head is stuck sending data.
- Fixed an issue introduced in firmware v1.0.1.0 for NanoScan 2 and 2s devices where the scan head would not properly park to a safe location when connected.

v2.5

- Fixed a problem where the application window would jump to the top of the desktop stack any time a message was posted to the Messages view.
- Fixed a problem when loading .nsdx data files where the results would reset.
- Result parameters on loaded scan data is now recomputed any time a result parameter is enabled/disabled.
- Result parameters that were not enabled when scan data was saved can now be enabled after the scan data is loaded.
 - o In a single scan file, enabling a new result parameter will reset the statistical results that were loaded with the file.
 - o In a multiple scan file, will reset the statistical results, but can now be recomputed with the new result by incrementing through the scans using the Data Recorder panel on the Capture ribbon.
- Added hardware uptime and diagnostic statistics in the factory only Debug view for firmware version 1.0.1.0. Statistics are saved to the scan head when NanoScan v2 is closed.
- Added official support for NanoScan I scan heads.
 - o NanoScan I scan heads can be identified by their hardwired serial cables.
 - o Users previously using v2.1 for this hardware may now upgrade to v2.5 for all scan heads.
 - o Fixed an issue where the scan heads were not allowed enough time to stabilize a scan rate change.
- Added automatic firmware update for NanoScan II scan heads.
 - o With this and future releases, users will be prompted the first time that a scan head is connected with older firmware than what is included with the application.
 - o Users may opt out of the upgrade by pressing Cancel.
 - o Users may apply the update at a later date via the About dialog from the NanoScan main menu.
- Renamed installation folder, previously NanoScan v2.0
 - o e.g. C:\Program Files\Photon\NanoScan v2

v2.4.2.0

- Fixed a problem with automatic gain operation in pulsed, short mode where the gain was not being set correctly.
- Fixed a problem in the Automation examples DLLImport.cs file where NSInteropGetHeadGainTable and NSInteropGetHeadScanRates had improper parameters.

v2.4.1.0

- Fixed a problem with display of calibrated power values after beam was blocked.
- Fixed a problem with retention of calibrations when switching between heads. The calibration list was not being cleared when the new head was selected.

v2.4.0.0

- Added ability to measure power in Pyro heads
- Fixed a bug in AutoFind feature.
- Fixed a bug in Notes printing output

v2.3.0.0

- Added the ability to increase and decrease the font size in the results list (must click on results window)
 - o Increase by pressing <ctrl>+ or <ctrl>mouse wheel forward
 - o Decrease by pressing <ctrl>- or <ctrl>mouse wheel back
- Slight performance improvement

v2.2.0136.1217

Hardware support

- New NanoScan II hardware supported.
- Upgraded data processing to support 16-bit data from NanoScan II scan heads instead of 12-bit of data.
- Updated to support higher sampling resolutions of NanoScan II scan heads.
- Users will see less noise at the lower to mid gain levels when using NanoScan II scan heads.
- The Track Filter and Auto Find features will no longer be automatically set to values lower than 6. Manually set values can be set as low as 2.
- When using silicon based scan heads, the software gain range from 104-123 has been removed due to diminished usability, while the hardware gain range of 0-103 is still available.

Data Acquisition

- Sampling Resolution can now be changed the while acquiring data.
- Pulse Rate can now be changed while acquiring data.
- The Recording Data feature will now display the last sample collected when recording ends.

User Interface

- Auto ROI has been updated to determine size and placement more smoothly, and should “bounce” around less than before.
- In the 3D Profile view, the mouse controls have been updated for better usability. Rolling up on the mouse wheel now zooms in, and rolling down zooms out.
- Fixed an issue where the Beam Width result displayed in the Profile view was displaying the beam width of the previous sample. This result now stays in sync with the Results view.
- Fixed an issue where loading an .nsdx file now properly restores the Logarithmic setting for the Profile windows.
- Error messages in the message window should only display once unless the problem is, in fact, recurring.
- Fixed a crash with Reset Window Layout.

Automation

- Fixed an issue in the Excel automation example where the Read Power Calibrations button would not work.
- Fixed an issue where the NsAsSetAveraging automation method did not update the UI properly.
- Fixed an issue where the Filter Tracking would not adjust properly when using NsAsAcquireSync1Rev with NsAsRunComputation (automation methods) and Filter Tracking is enabled.

v2.1.0063.2319

- Added the ability to save a frame of data as an ASCII text file. This is accessible via File | Save As. This has also been optimized for speed.

- Added a dockable Messages display window. Removed pop up notifications.
- Added the ability to reset the window layout to the default. This also fixes the case of a display window being “lost” when left on a monitor that is no longer connected. This is accessible via File | Reset Window Layout.
- Added three new automation methods as substitutes for use in languages that do not support the use of Variants.
- Added a C# automation example. This also illustrates how to use the newly added automation methods.
- Added the ability to reset the Zoom and rotation of the 3D window to the default values.
- Reverted ActiveX TypeLib to MkTypLib legacy compiler to provide seamless compatibility with NanoScan v1 automation clients. This will cause a required update to any existing NanoScan v2 automation clients, where some properties were treated differently than VT_BOOL in certain programming languages.
- Fixed various minor bugs.

v2.0.0367.4216

- Service Release: Fixed an issue where scan head licensing would not work properly.

v2.0.0058.0132

- Initial Release.
- Added new Beam Width Basis feature accessible in the Computations ribbon. Refer to the User Guide for more information on this feature.

Errata and Workarounds

We work hard to find and correct any bugs in this software product. However, as of this release we still have a few tough bugs for which we have not found complete solutions. The following list details these bugs and offers recovery and work-around methods if available:

- It is possible to over-filter the beam profile. Doing so may cause the appearance of a smoother beam profile, while valuable beam data is being excluded from measurement. This may also cause a problem where Track Gain will be unable to identify a proper gain value. This sometimes can be seen by a gain value being set near the maximum of the gain range.
 - o Consider increasing the Filter value to where the amount of filtering applied is reduced.
- When the gain is set to extreme values where the beam profile can begin to saturate, the peak of the beam profile sometimes oscillates up and down.
 - o Consider reducing the gain value until this effect is no longer present.
- NanoScan v2 cannot reconnect to scan head if the head has been disconnected then reconnected.
 - o Close and re-open NanoScan v2 to connect to the newly connected scan head.
- NanoScan v2 does not successfully connect to a scan head following a forcible close or crash
 - o “Power-cycle” the scan head by disconnecting the USB cable from the device, waiting ten seconds, and then reconnecting the device.

NanoScan v2 Notes

Supported Operating Systems:

- Windows 7 (32-bit & 64-bit)
- Windows 8 (32-bit & 64-bit)
- Windows 10 (64-bit)

While NanoScan v2 is a Windows 7, Windows 8, and Windows 10 product, full NanoScan v2 operation is expected in earlier Windows operating systems. Extensive testing has not and will not be performed in earlier operating systems; however, we have yet to encounter any major operational problems.

Documentation:

- A PDF version of the User Guide is included with the installation. You must have Adobe Acrobat Reader DC in order to view this file. You can download the current version of Adobe Acrobat Reader DC from the Adobe website.

Installation:

- It is recommended that all users are fully updated to the latest Windows Updates. If all updates are not applied to your system this may cause problems with NanoScan v2.
- Under Windows 7, Windows 8, and Windows 10 you must have Administrative privileges in order to fully install NanoScan v2 and the required driver packages.

If you suspect you have found a bug in our software please help us identify it by sending 1) the actions that reproduce it and 2) the .nsd file you were using at the time, to softwareqa@ophir-spiricon.com. The more information you can provide, the more likely we can reproduce it in our lab, and fix it.

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