



Agilent Technologies

The Agilent Automated Solder Paste Inspection System Medalist SP50 3.1.6 Software Release Notes

The Agilent SP50 3.1.6 software release demonstrates the continued innovation and commitment to improvement in solder paste inspection by Agilent. As part of our continuing software enhancement and support service, Agilent Technologies is releasing the SP50 3.1.6 software to our valued customers. This is part of Agilent's software update service that provides additional value to the SP50 system by offering new and improved algorithms and improved overall system stability

The highlights of the 3.1.6 software release include:

- **Ease of Calibration**
User often encounters difficulties in performing laser calibration steps which may be resulted in “Bad Calibration” during the calibration testing. Three areas enhancement had been identified to improve the laser setup. This includes Graphical User Interface (GUI): Tool –Laser Setup, Laser Setup Window, and Calibration Result Window.
- **Ease of Programming**
User will have ability to inspect all deposit of single algorithm type and get summarized inspection results by algorithm type. Furthermore, user will be able to run 5.15 sigma repeatability tests on deposits of an algorithm type as guidance to set best thresholds. Along with that, new Database Management window allows user to backup database file and delete database file from GUI and Algorithm (Device) Editor will automatically log changes made to database file at CPI's log directory.
- **Improve Small Deposit Measurement**
Software changes allow the user to reduce the Paste Threshold to the minimum possible value to achieve an accurate A and V measurement while Reported Height is calculated from the peak height region only.
- **For the SP50, Revision 3.1.6 has only been tested to run with an HP XW4300/4400/4600 running Windows XP Professional with Service Pack 3.**
3.1.6 has not been tested or validated to run on Windows NT or any other controller type.

Question: Do you need license?

Answer: No! If you have 3.1 already loaded, you already have a license to install 3.1.6 full release software. If you need to buy additional licenses, please contact Agilent's Technical Support.

Software Reversion Procedure:

To revert to the previously installed version of the SP50 software, you will have to:

- 1) Go to SP Series folder that you previously had save.
- 2) Right click on AOIpEngine.exe and select Register COM Server.
- 3) Double click on the spGUI.exe icon.

Agilent Terms & Conditions:

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The "CR" numbers used below refer to the Change Request numbers in Agilent's software tracking system.

CR21750 - SP-SW: Defect Prioritization on the SP50 Inspection Report

Problem: During an inspection on the SP50 system a board is returning defects for 1 or more paste deposits it will list all the defects detected for each deposit, i.e. pin A = <area, <volume, <height.

Resolution: In the new software, there will be an interface for the user to select the defect priority and those setting will be saved in the InspUnitConfig.xml.

CR23492 - Inspection List Window display incorrect no. of failure.

Problem: The number of failure for second board inspection will add on to the first board inspection failure as seen in the Inspection List window.

Resolution: No. of Failed Component reported in the Inspection List Window (Engineering Mode) is displayed correctly when the "UpdateDuringInspection" option is checked.

CR26593 - ITF images different from SP50 with 3.1.

Problem: ITF images different from SP50 with 3.1.

Resolution: Same images being used from c:\cpi\img.

CR27550 - Celestica SP issues - Possible Paste measurement change for micro BGA.

Problem: For a conical deposit the systems default/recommended setting for the user defined parameter, Paste Threshold, is not correct.

Resolution: Software changes allow the user to reduce the Paste Threshold to the minimum possible value to achieve an accurate A and V measurement while Reported Height is calculated from the peak height region only.

CR27640 - Time stamp for SP code required urgently.

Problem: Delphi is inspecting an automotive board that's quite basic - smallest Pad is 0603. Board size is Panel size is 170x235mm

However their scan times (excluding fiducial inspection) is ~25s at typical settings (23s at max speed). To help determine if this is a SW issue CR requests an enhanced SP build with timestamps to be built and run on site - this will log all processes that are taking place during the inspection and the time it takes them to do this. Something similar to what currently exists for the SJ.

Resolution: auto_timestamp log file created in c:\cpi\log folder.

CR27769 - SP50 Reference plane feature fix - Critical for Celestica AVL.

Problem: Celestica Romania has an issue where they measure paste deposits well above the expected height. To compensate for this the SP50 has a reference plane feature that removes the pad height from the paste height calculation. Customer site visits have revealed that this feature does not effectively remove the pad height from the reported paste height.

Resolution: For reference plane training, Full Scan rectification mode is used instead of ROI rectification. This is because the background is needed for the reference plane to work.

CR27826 - Optimize SP code to meets cycle time time for Delphi.

Problem: Software code changes that are made to the SP50 3.1.1.DelphiEval1 Branch for improvement of the SP50 inspection speed by 2 seconds. This patch will be distributed to Nokia and Delphi customers for evaluation purpose.

Resolution: Laser are now turned on at the beginning of StartAcquiring() instead of after the acquisition loop. The testing of acknowledgement still remains after the acquisition loop. This should reduce the time needed to wait for the acknowledgement by the laser.

CR28100 - Z axis fix for Panelized boards - Timeline urgently required.

Problem: Z axis fix for Panelized boards.

The very first SP Series III install in the US has hit a major SW issue, this is a major source of frustration for the customer and AE's. There is a known software issue with O-line panelized boards in 3.1.1 - Z axis is not functional on the second board.

Resolution: Reinitialise InspectionUnit for every board on a panel, mainly for the purpose of zeroing the Z axis.

CR28219 - Image quality displayed at ART is different than images displayed on the SP.

Problem: Image quality displayed at ART is different than images displayed on the SP.

Resolution: Images currently saved under c:\cpi\img\Raw is not being enhanced. Direct the saving of enhanced image under c:\cpi\img instead. The SP will send the c:\cpi\img to the ITF server. So same enhance images will be used.

CR28295 - Request ease of calibration improvements.

Problem: User often encounters difficulties in performing laser calibration steps which may be resulted in “Bad Calibration” during the calibration testing.

Resolution:

- Wizard will direct user through laser calibration from start to finish.
- Address calibration stumbling blocks by providing these aids:
 - Laser line pass/fail criteria
 - Viewable calibration fail details
 - Comprehensive troubleshooting steps when a bad

CR28297 - Request ease of finetuning improvements.

Problem: To improve the board programming speed.

Resolution:

- Ability to inspect all deposit of single algorithm type and get summarized inspection results by algorithm type.
- Able to run 5.15 sigma repeatability test on deposits of an algorithm type as a guidance to set best thresholds.
- New Database Management.

CR28327 - Cr Raised : ART to display Paste Limits when errors found.

Problem: When an error is discovered by the SJ50 machine the picture and the name of the error is send to the ART tool. There is no additional information available. The operator can only base the decision on the picture. We would like to see the limits and the actual value for all the properties of the paste.

Resolution: Saved image used by ART contains paste limit information including measured paste information.

CR28444 - SP50: Add Scale Min & Max to AREA, VOLUME & HEIGHT chart on result views.

Problem: After an inspection is completed, the result view on the Engineer level displays graphs of AREA, VOLUME and HEIGHT. These graphs did not indicate the scale, the programmer has to make a hard guess about the minimum and maximum range. Please add a MIN & MAX to the graph to aid the programmer. We have received feedback from the customer to include +/- 3 Sigma values

Resolution: Changed on the codes to display the Min, Max, Mean, +/- 3 Sigma values to the charts for Height, Area and Volume.

CR28918 - SP50 "Visit All" feature (like on SJ).

Problem: Prodrive (Customer) is using both SP and SJ AOIs systems. They are using 'visit all' feature on SJ machine, and would like to have this feature available also on SP machine.

Resolution: Include in this CR28297.

CR29281 - Failed deposit showing white image.

Problem: White image shown when is reviewed for failed deposit after inspection.

Resolution: For failed deposit with no data available, displays the real image (black) rather than white image.

CR29305 - Barcode List to work with AWA on SP50.

Problem: AWA from .plx file to work when board program is selected using Barcodelist.txt functionality. Solution needs to be implemented on SJ and SP and to be consistent across both platforms.

Resolution: Barcode will now able to trigger the AWA to change the width according to the width set by AWA.

CR29351 - Disregard top clamps from z axis height compensation.

Problem: Currently at the end of the scan the laser is picking up on the top clamps of the rail and is taking these into account in the Z axis height compensation when it commences a new scan. A feature to fix this has been implemented in the SP code but there is still an issue with it.

Resolution: Z axis height compensation should not take into account for the clamper height.

CR29352 - SP Bad brd signal when brd release without inspection.

Problem: SP to give a bad board signal when board is unexpectedly released without performing inspection for both Single lane and dual lane.

Resolution: This fix is specifically for the SP (Single and dual lane) where if a board is ejected from the system without an inspection taken place its ejected with a Good board system. Fix specifically requests that this is to be ejected with a bad - fix to encompass all scenarios where this can take place. Example - ejecting board on fid failure or board being ejected due to cad being outside stage limits.

CR29353 - Barcode list to work with Dual file switching (fid fail) on SP.

Problem: Dual files and Barcode Read both work separately on the SP. But if the system is setup to load the CAD from the barcode the dual files feature is not seen to load the second CAD on fid failure.

Resolution: The dual files feature can't work properly is due to the plx files name is in uppercase format. Meanwhile the plx name in dual file system is lowercase. To fixed this problem, convert all file name to lowercase.

CR29574 - System Crash at Delphi due to external call of SetBoardTemplateSynch.

Problem: System crash at Delphi SP50 system. Suspects the SetBoardTemplateSynch triggered twice or triggered during inspection process is running.

Resolution: To solve this issue, the SP50 must limit the access of "SetBoardTemplateSynch" from the external script. When the board inspection process is running or another "SetBoardTemplateSynch" is running, the current "SetBoardTemplateSynch" request is not allow to execute.

CR30181 - SW build 3.1.1-DelphiUK-Eval2 is filtering the z-axis anchor points.

Problem: Filtering the z-axis anchor points.

Resolution: Changed on the codes to only enable filtering of profile points in Scan and remove the filtering of profile points for Anchor points.

CR31112 - MSD:AOI:SP50:Calibration Software not being overwritten.

Problem: The cause was laser setup, specifically “Save Laser WOI Settings”, did NOT properly update the window position.

Resolution: The calibration result is save in the current 3.1.6 software.

CR32131 - SP: SP-GUI to display FF% in addition to FTQ

Problem: No number of pass boards by operator was shown in the Operator GUI.

Resolution: In the operator GUI (Graphic User Interface), the Run Summary column contains more information on the number of boards tested. The added information:

- Passed - show the number of pass boards by operator
- Failed - show the number of fail boards by operator
- FTQ (First Time Quality) - show the number of pass boards by the system and operator