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Explanation of the version changes - RJS Inspector 5000 Firmware

The Inspector 5000 firmware 1.220 changes from the previous 1.212 (1.213 through 1.219 not released):

Display change

- Added ***Setup*** menu option which when enabled will display the **Number of Encoded Characters** near the top of the Grading screen

2D Bar Codes

- Increased the allowable rotation from 3 degrees to 10 degrees

QR Code

- Corrected a no decode issue with QR code formats 6-Q, 25-M, 30-L, 38-M

Printed Reports

- For the TP140B, removed extraneous characters

Networking

- Ethernet support is only active for the first 60 seconds after power up

The Inspector 5000 firmware 1.212 changes from the previous 1.209 (1.210 and 1.211 not released):

Linear Bar Codes

- Implemented ISO/IEC 15416:2025 Linear Quality testing
- Standardized printed reports to match 2D symbology formatting
- Corrected an issue where the **Global Threshold** could be incorrectly calculated when using the ***Auto Optic*** scanner

2D Bar Codes

- On the ***Grading*** tab, colorized numeric grade fields for **Print Growth**
- Added ***Setup*** menu option for new **Aperture** selection of “Auto 50% of module size”, resulting in the following options:
  - 5-96 mils (manually selected)
  - Auto 50% of module size
  - Auto 80% of module size *default

Datamatrix Bar Codes

- Implemented **RMin**, **RMax** and **Threshold** calculations for ISO/IEC 16022:2015 Datamatrix code

QR Bar Codes

- Released QR code bar code inspection (complying with ISO/IEC 18004:2024 QR code and ISO/IEC 15415:2025 2D Quality testing)
- Added ***Setup*** menu option to allow for the minimum exterior ***Quiet Zone*** of 1 module wide, resulting in the following options:
  - 1X Module **Quiet Zone**
  - 4X Module **Quiet Zone** *default

The Inspector 5000 firmware 1.209 changes from the previous 1.206 (1.207 and 1.208 not released):

Linear Bar Codes

- Implemented Minimum Percent Decode functionality
- Implemented Minimum Vertical Gap functionality
- Corrected issue where some Codabar bar codes were not detected
- Corrected issue where some Code 3 of 9 bar codes were not detected

User Interface

- Added the following parameters to the Setup tab:
  - Min Percent Decode
  - Min Vertical Gap
- Created a character for the LCD display for the GS1 GS control character
- Renamed scanner from "Laser" to "CR2/CR3"

The Inspector 5000 firmware 1.206 changes from the previous 1.205:

Linear Bar Codes

- When using the 2D Camera scanner, implemented a new bar code location methodology that scans the entire field of view and if multiple bar codes are detected the system will select the bar code with the higher ***Decodability*** percentage and if there are unreadable areas in a bar code allow up to a 0.05" (1.3mm) gap to be considered a single bar code
- Added ***Min % Decode*** to the ***Setup*** menu, this parameter is used with the CR2 or CR3 scanner. When using ***Continuous Scan*** mode if the percent of scans that are decoded versus undecoded drops below this percentage the overall grade will be set to 0.0/F
- Improved ***Code 3 of 9*** detection and ***Quiet Zone*** validation to eliminate incorrectly detecting a ***Code 3 of 9*** symbol as an ***Interleaved 2 of 5*** symbol

The Inspector 5000 firmware 1.205 changes from the previous 1.204:

User Interface

- For ***Rotation Error*** pop-up message, added Symbology and Sub-symbology information
- Check for Calibration Expiration date after users modifies the ***Date*** or ***Days Between Calibration***
- If expired, on power up display Factory Calibration pop-up message
- Increase time out for the ***Setup*** menu to 30 seconds
- Added ***NBW grading*** to Setup menu
- Changed ***Narrow Bar Width*** rounding from 1 mil to 1/10th mil
- For ***Overall Grade, Application Compliance, and Reference Decode*** grades are rounded to the nearest tenth
- Change keystroke sequence to exit ***Calibration*** screen
- Modified TP140B and VCIR report format to use the header "I-5000-2D" when a report is printed from a scan captured by the 2D camera
- Add Setup option to require AI01 at start of GS1 symbols (default is not required)
- Add Setup option ***Req AI01 for AI21*** (default is Required)
- Modified Webserver –
    - Create new group titled ***System***
    - Moved ***Info*** underneath ***System***
    - Create new ***Log*** option to export ***System Log*** underneath ***System***

Linear Bar Codes

- Corrected issue with ***Defect*** calculation which was incorrectly reporting higher than actual percentage
- Corrected issue with GS1-128 symbols with a ***<FNC1>*** as a check digit which would result in a system crash
- Reduced the minimum required ***Quiet Zone*** from 5X to 3X (2D Camera only)
- Corrected rare case where location of the ***Worst Defect*** position was incorrect displayed on the ***Profile*** tab

Datamatrix Bar Codes

- Improved algorithm for corner location finding
- Decrease search time for Codeword search
- Add support for inverse Datamatrix symbols
- For multi-sector symbols, correction for logic errors in **Modulation** and **Reflectance Margin**
- Reformatted TP140B and VCIR reports
- Corrected wavelength on TP140B and VCIR reports

The Inspector 5000 firmware 1.204 changes from the previous 1.202:

Linear

- Corrected issue in calculating linear bar code Defects grading that could cause excessively higher Defect percentage on some bar codes
- Improvement to image capture and processing to correct for potential buffer overflow conditions that could create random singular black pixels when high reflective substrates were captured
- Fixed issue with “Day Light Savings” setting from the I-5000 was connected to the Web interface

Datamatrix Bar Codes

- Corrected bug that caused TP140A/B printing to fail on the first printout after power reset (subsequent attempts would successfully print)

The Inspector 5000 firmware 1.202 changes from the previous 1.110:

Linear

- Modify bar code find process to increase priority of centered bar codes over 1D or 2D search order selected on the Setup menu
- Corrected bug in Code 93 check digit calculation
- Improved error handling for Code 128 and Code 93 decoders
- During calibration process, removed displayed calibration reflectance values used by the system during calibration

Datamatrix Bar Codes

- Improve bar code location when quiet zones have excessive graphics (including halftones)
- Modify displayed Grading tab parameters for Datamatrix symbols and added functionality to grey out unused parameters
- Set maximum aperture to 60 mil (75mil module size)
- Improve L pattern line determination to support ignoring extraneous pixels adjacent to the L pattern
- Modified Reflectance Margin center pixel calculation

The Inspector 5000 firmware 1.110 changes from the previous 1.109:

- Allow for AI(30) – variable count to be encoded without the requirement of AI(00), AI(01), or AI(02) at a prefix
- Improve handling of quiet zones for UPC-A with addendums
- Add firmware to handle corner cases

The Inspector 5000 firmware 1.110 changes from the previous 1.109:

- Allow for AI(30) – variable count to be encoded without the requirement of AI(00), AI(01), or AI(02) at a prefix
- Improve handling of quiet zones for UPC-A with addendums
- Add firmware to handle corner cases

The Inspector 5000 firmware 1.109 changes from the previous 1.108:

- Integrated GS1 Datamatrix to library and standardized with GS1-128 library
- Corrected communication string header for TP140A/B
- Corrected decode error when a partial scan of a Shipping Container Code occurs
- Removed extraneous <null> characters in Bar/Space printout
- Changed "USS 93" to "Code 93" on Grade tab
- Fixed coloring issues on the Profile tab
- Fixed Auto Optic and CR3 Scanner orientation after backward scan on the Profile tab
- Removed Erase DB Date Range menu item on the Setup tab
- Modified Erase DB menu item to clear entire database on the Setup tab

The Inspector 5000 firmware 1.108 changes from the previous 1.005 (1.004 through 1.107 not released):

- New Setup option for re-grading for ITF-14 and Code 128
- Show numeric grade for parameters on Grade tab when Metric is selected from the Setup menu
- Implement latest ISO/IEC specification Defects determination.
- Application Compliance history display shows details when the cursor is on the first line
- Added ITF-14 message pop ups
- Change to a special font character to reduce previous the four character message “<F1>” to a single character F1
- Change to a special font character to reduce previous the four character message “<SP>” to a single character Sp
- Corrected Encode tab display issue with EAN-13 bar codes, check digit was displayed twice (once as data and once as the check digit)

The Inspector 5000 firmware 1.105 changes from the previous 1.008 (1.009 through 1.104 not released):

- When a Code 128 or GS1-128 bar code is scanned, if different type (as compared to the Setup parameter) user is given the option to modify the Setup parameter
- Display Pass/Fail screen after final scan when set to multi-scan (2-10 scan average)
  For single scan or Continuous scan (CR2/CR3) the Pass/Fail Setup parameter determines if the Pass/Fail screen is displayed
- Increased Bar/Space count value on Grading tab to 3 digits
- For Pass/Fail parameters, use the Setup value for “Minimum Passing Grade” when calculating the average parameter result
- Changed the calibration instructions and added an end-of-calibration screen
- Changed Application Compliance results to add “W” (warning) in history for narrow bar width
- Added the total number of combined Bars and Spaces to the Grading tab
- Corrected Code 93 bus for “too few characters error” with bar codes encoding 5 or less digits for an issue if last encoded character was a stop character
- Corrected “Intercharacter gap” to use all scans in the averaging for the displayed parameter result
- Corrected Decode and Edge Determination error as part of Reference Decode error
- When scanner is changed, system displays the Grade screen and the Profile is cleared
- Added calibration dates to Status/Instruction screen
- 2D Camera with support for 1D verification only
- Added the ability to log off from the I-5000 web server interface

The Inspector 5000 firmware 1.008 changes from the previous 1.007:

- Correct erroneous calibration expired messages displayed when in Laser (partial ISO/ANSI) mode

The Inspector 5000 firmware 1.007 changes from the previous 1.004 (1.005 and 1.006 not released):

- Allow Setup Parameters, Minimum Passing Grade and Minimum Marginal Grade to be within 0.1 of each other
- Bar code inspections when field calibration is expired:
  - Calibration warning after every scan
  - Non-calibrated scans are not saved in Reports
  - Printing options are disabled for non-calibrated scans

The Inspector 5000 firmware 1.004 changes from the previous 1.003:

- Printer output modified to enable use of the printer feed button on the TP140A printer
- Allow for bar code inspection when field calibration is expired:
    - Pop-up message that inspection results were captured with an out of date calibration
    - Grade tab displays yellow bars around the overall grade results to indicate inspection data may be invalid
    - Prohibit printing of inspection results for inspection results were captured with an out of date calibration
    - Reorganize Setup screen items into logical groups

The Inspector 5000 firmware 1.003 changes from the previous 1.001 (1.002 not released):

- Allow for an unnecessary FNC1 character at the end of GS1-128 bar codes
- Add a Setup option “GS1-128 END FNC1” to *allow* or *not allow* an unnecessary FNC1 character at the end of GS1-128 bar codes

The Inspector 5000 firmware 1.001 changes from the previous 0.999 (1.000 not released):

- Optimize ISO15416 (2016) verification library for Defects and Decodability

The Inspector 5000 firmware 0.999 changes from the previous 0.986:

- Correct quiet zone rounding issue for ITF-14 symbology
- Updates to the Grading tab
- Updates to verification library for scan averaging
- Automated recovery to resolve back light failure
- Implement requirements for forced calibration of Auto Optic and 2D Scanners

The Inspector 5000 firmware 0.986 changes from the previous 0.985:

- Changed detection threshold used to detect CR2/CR3 Laser scanners
- Added support for using the Laser trigger to exit low-power mode - if trigger is held scan mode starts after a small startup delay
- Changed NBW calculator from a popup to a primary screen to be consistent with other sub-screens