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## Explanation of the version changes - RJS Inspector 5000 Firmware

### 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 Webservice –

- 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:

- 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

- 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:

- 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

- 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