PRODUCT NEWS

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Product: LVS-95XX
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LVS-95XX Software 4.5.0.3021 – Release Notes

Summary:

LVS-95XX Software, Omron Microscan's proprietary 1D and 2D symbol verification software for use with all LVS-95XX products, provides an intuitive way to verify virtually any AIDC symbol in compliance with ISO/IEC and a wide variety of application standards.

Note: It is recommended to first uninstall previous versions of LVS-95XX Software before installing version 4.5.0.3021. If installing on a new PC then the database file (.mdb) must be copied from the existing PC to the new PC LVS-95xx program folder – see the user manuals for further information.

NEW FEATURES

Conformance to GS1 General Specification 2022 & 2023.

- Adds support for AIs 4309 and 715.
- Integrated support for GS1 syntax engine
- Other updates to reporting, wording and others.

Report image resolution is user configurable.

A setting has been added to allow the operator to change the resolution of images saved on reports.

Application standard ISO/IEC 15434 added.

ISO/IEC 15434 has been added as a standalone application standard for use cases where the 15434 rules are required but no additional application rules are specified.

Application standard DEF-STAN-05-132 added

Defence Standard 05-132+UII has been added to the application standards supported by the LVS-95XX software.

GS1 AI dependency checks

If an AI can only be used in conjunction with a different AI, that is checked. If an AI cannot be used with a different AI, that is checked.

ENHANCED FEATURES

Aperture override warning not shown for 50% or 80% aperture selection.

When using the ISO/IEC 15415/15416 standard to verify symbols, no warning message will be displayed if the aperture is specified to be either 50% or 80%. These two aperture settings are referenced in the standards and should not be treated as potential caveats.

Language selection is persistent.

The application language is now persistent across an application restart.

MailMark Application Standard updated.

The MailMark application standard has been updated to the latest specification and some notifications updated.

Additional Data Identifiers recognized and analyzed.

Over 100 additional DIs are now recognized and properly analyzed by the LVS-95XX software.

GS1 Decodability rules for ITF-14 have been added

When ITF-14 symbols are used for a GS1 application, the Decodability parameter will be evaluated according to the rules specified by GS1.

Error when verifying a DMRE code using the GS1 standard.

When grading a DMRE code using the GS1 standard an error will be generated, GS1 does not allow DMRE symbols.

Composite Code grading improvements

- The Codeword Yield grading algorithm has been improved. Impacts CC-A symbols only.
- The StackedSRP grading algorithm has been refined. This improvement impacts all PDF, MicroPDF, CC-A, CC-B and CC-C symbol grading.

Non-English language improvements

Various translation errors have been fixed.

Usability improvements

- In DPM grading mode, lights no longer cycle when image is moving.
- In DPM grading mode, image updates occur in a more predictable fashion.
- Data structure analysis formatting improved to make errors more clear.

Permormance improvements

- Grading speed improved when using Automatic or Manual grading modes.

DEFECTS RESOLVED

Schweiz (CH) language setting fixed

The Schweiz language is now working correctly.

Apertures reported as whole numbers

The aperture is now reported as a whole number as specified in the standards.

Angle of light report on 9510 fixed

The angle of light was reported incorrectly on the LVS-9510. The angle is now reported as 45°.

Various cosmetic issues fixed.

A variety of cosmetic enhancements have been implemented. These include:

- Making font sizes consistent with dialog boxes,
- Spelling and punctuation corrections,
- Precision of values reported on-screen.
- Need to double-click Auto-save failed message resolved.
- Persistence of certain warning messages has been made more consistent.

DI analysis improvements

- The data identifier ‘P’ is now analyzed correctly when using the AIAG application standard.
- Format errors in the ‘D’ (date) DI are now correctly identified.
- Value length checking for DIs 96S, 12E and REM improved.
- Maximum size checking for DIs 15H and 96S has been corrected.
- Check for invalid <space> character the DI added.

AI analysis improvements

- AIs 3nnn and 723 are correctly recognized.
- AI 7011 now included in the analysis as a valid AI.

UPC-E with CCA now graded correctly

Analysis of UPC-E symbols that include a CCA component now correctly grade both the 1D and 2D portions of the symbol.

Blemish error for Databar Expanded Stacked symbols fixed.

Analysis of Databar Expanded Stacked symbols now reports blemish errors correctly.

On-screen calibration results match calibration history

The discrepancies between the on-screen calibration results and the values recorded in the calibration history have been fixed.

Bar height calculations improved

The bar height calculation for 1D symbols has been improved to avoid bar height warnings for symbols that are very close to the maximum bar height.

Software crash when analyzing certain MailMark symbol fixed

Certain MailMark symbols containing a Stop statement could cause the software to crash. This has been fixed.

Module size checks for MailMark symbols improved.

Module size checks for 2D MailMark symbols have been added.

HIBC intermittent structure error eliminated.

The erroneous structure error that was sometimes observed when grading HIBC symbols has been eliminated.

DMRE 8x144 symbols now decoded properly.

8x144 DMRE symbols are now decoded properly when grading using the ISO standard.

GS1 improvements

- Incorrect warnings associated with various AIs have been fixed.

MIL-STD-130N improvements

- <R/S> in “07” formatted free text now identified as a terminator for the message envelope.
- MIL-STD-130N application standard now identified as MIL-STD-130N1 to reflect that the LVS-95XX implementation includes the updates from Change 1 of the standard.
- Parsing of second message envelope improved.
- Error identified when FNC1 is found in first position of MIL-STD-130N symbol.
- Issue with repeated DIs in the structure analysis has been fixed.

Reported aperture consistent with x-dimension

In some cases, the reported aperture was inconsistent with respect to the measured x-dimension. Reported apertures (i.e. the aperture used to obtain the grade reported) is now consistent with the reported x-dimension.

Incorrect ‘Extraneous Error’ error eliminated.

The erroneous Extraneous Error reported when grading certain symbols has been eliminated.

NOTES

Audit Trail information

There have been some questions about information in the Audit Trail. These questions require some clarification of what is seen in the Audit Trail.

MISSING OPERATOR ID: Some system events are recorded in the audit trail. For these events, the Operaror ID field is left blank.

ENTRIES CHANGING: Entries are stored in the Audit Trail and tagged with the time of entry. Time is recorded to the minute. In some cases, multiple entries are created in the same minute. When the audit trail is extracted to a report, these entries may appear in random order within the minute boundaries, giving the appearance that the Audit Trail entries are rearranged.

Grading DPM symbols using the GS1 application standard (Table 7.3 and 7.4).

The rules for determining aperture that are provided in the GS1 standard for tables 7.3 and 7.4 are not realistic. The issue has been raised to GS1 US. Until GS1 resolves this issue in an upcoming General Specification release, the LVS-95XX software follows the aperture selection guidelines specified by the ISO/IEC 29158 standard when using GS1 Table 7.3 or GS1 Table 7.4.

Compressed GS1 Digital Link Symbols not supported.

Support for Compressed GS1 Digital Link symbols has not yet been added to the LVS-95XX software.

KNOWN CAVEATS

LVS-9570 Decodability

Variations in the decodability scores have been observed when grading the same symbol in ladder versus picket fence orientation using an LVS-9570.

WORKAROUND: Determine the preferred orientation for scanning symbols with the LVS-9570 and use that orientation consistently.

DPM Grading Perfomance

On some DPM symbols, it may take longer to stabilize on a grade than expected. This is due to the implementation of the ISO/IEC 29158:2020 grading algorithms and new LVS search features. In general, the new software is expected to grade a wider range of symbols than versions prior to v4.4.3.4102, although results may vary for specific symbols.

WORKAROUND: Be persistent. Grading of the most challenging DPM symbols will typically stabilize within one minute.

Red line when using LVS-9585

A red line may intermittently occur when grading a 1D barcode with the ISO/IEC 15415/15416 standard using an LVS-9585. The red line is a display artifact that does not impact the symbol grade. This issue has been observed only rarely.

WORKAROUND: Ignore the red line, or realign the symbol in the verifier viewfinder so that the symbol and viewfinder are more square with each other.

Red bar when grading DPM symbols

A red bar has been observed to appear when grading a QR code and selecting Modulation in the Vew second of the Grading screen. This bar is a display artifact. It conveys no meaning and is not a factor in the symbol grade. This issue has been observed only rarely.

WORKAROUND: Ignore the red bar.

Incorrect image showing on report for "No Valid Barcode Found"

When grading a DPM symbol is unsuccessful ("No Valid Barcode Found" message is displayed), a report will be generated that includes the image of the previously graded symbol. The report should not include a symbol image.

WORKAROUND: Ignore the image include in the report if there is no symbol data.

Recalibrate 958X HD after grading DPM symbols

If switching to a non-DPM application standard after grading DPM symbols using an LVS-958x-DPM-HD unit, it is necessary to recalibrate the device.

WORKAROUND: Recalibrate an LVS-958x-DPM-HD unit if switching from grading DPM symbols to grading non-DPM symbols.

Missing information in Audit Trail

The Program Stopped message is occasionally missing from the Audit Trail.

WORKAROUND: A Program Stopped message should be assumed prior to a subsequent Program Started message.

Application Standard not persisting over an application restart

This issue occurs when running the LVS-95XX software under Japanese regional settings. After restarting the LVS-95XX application, the application standard appears to revert to the ISO/IEC 15415/15416 standard, regardless of the standard in use when the application was last shut down. In addition, the application standard name is not reflected in the title bar of the Grading screen where it should be.

WORKAROUND: When running the LVS-95XX application under Japanese settings and using an application standard other than ISO/IEC 15415/15416, navigate to the Settings screen and select the desired application standard before attempting to grade symbols.

Custom Reports missing information

The Average Grade value is not transferring to Custom Reports.

WORKAROUND: Before relying on the Custom Reports feature, verify that all the information needed transfer to the report correctly.

Active Diretory username character limitations

Usernames that include the dash (-) or the underscore (_) character cannot be authenticated using Active Directory.

WORKAROUND: If Active Directory is used to authenticate users, create accounts for the LVS-95XX users that do not include either the dash (-) or underscore (_) character.

Decodability values in the SRP screen

Decodability is reported as 100% in the SRP screen regardless of the actual value of Decodability.

WORKAROUND: Do not rely on the Decodability value shown in the SRP screen. Decodability reported on the Grading screen is correct.

Codabar symbols

Codabar symbols sometimes receive a 0.0 grade when they shouldn't.

WORKAROUND: When grading Codabar symbols, manually draw the region of interest so that it does not include the human readable information.

Missing warning message for DPM

The LVS-95XX software displays a warning message when not using the GS1 application standard and a GS1 symbol is graded. This message does not appear when grading a symbol that has GS1 structure when using the DPM grading standard.

WORKAROUND: When grading GS1 DPM symbols, use the GS1 application standard and Table 7.

Incorrect "The Symbology is not valid for GS1 Table 1" message

There is a banner being displayed indicating that "The Symbology is not valid for GS1 Table 1". This occurs for all GS1 Tables. This message appears any time a symbol cannot be decoded or there is no symbol in the field of view.

WORKAROUND: Ignore this message if there is no symbol in the field of view.

Incorrect "This symboloby does not support overwrite aperture 80%" message

A warning banner stating "This symbology does not support overwrite aperture 80%" occurs when there is no barcode in the field of view or if the region of interest is drawn too small.

WORKAROUND: Ignore this message if there is no symbol in the field of view or if the region of interest is smaller than the symbol.

Missing "Live Video Has Been Turned Off" message

After calibrating the LVS-95XX system, then going to the Settings screen to turn off the camera, when returning the to Grading screen, the "Live Video Has Been Turned Off" message should appear. Depending the Application Standard selected, the message may not appear.

WORKAROUND: After system calibration, verify the camera is on and the correct application standard is selected before attempting to grade any symbols.

Verifying AIAG PDF symbols

This version of LVS-95XX software has not been updated for recent changes to the AIAG guidelines regarding quiet zone and aperture for PDF symbols.

WORKAROUND: To get an accurate ISO/IEC numeric grade for a PDF symbol, grade the symbol using the ISO/IEC 15415/15416 application standard, then regrade the symbol using the AIAG standard to check for syntax.

SeparateDecodedText

The description for the setting SeparateDecodedText that appears in Appendix G is incorrect.

WORKAROUND: Use "update settings set settingvalue = "-1" where settingname = "IncludePrintStructure"" and "update settings set settingvalue = "1" where settingname = "SeparateDecodedText"" to display the structure table in the report.

Color Scale The color scale at the bottom of the Grading screen is not being updated with the regional format.

WORKAROUND: None. The period (.) is being used as a decimal separator in the color scale regardless of the regional settings.

Unplugging device while on Calibration screen

Unplugging the LVS-95XX device from the host computer while on the Calibration screen will cause a Run-time error.

WORKAROUND: Exit the LVS-95XX software before unplugging the hardware from the host computer.

Grading variation on 2D symbols

If poor quality 2D symbols are graded multiple times, variation in the grades may be observed.

WORKAROUND: Accept the lowest grade received by the symbol.

The letter grade shown in the verification report does not match with the overall grade

This complaint is typically caused by the misperception that the colors shown on the Grading screen correspond to letter grades. This is incorrect. The colors are based on historical precedent. With the advent of decimal grading for 1D barcodes, the correspondence of colors to letter grades is broken. Letter grades are no longer part of the ISO/IEC grading scheme and are not represented on the Grading screen.

WORKAROUND: If letter grades are required, the letter grades provided in the reports represent the current ISO/IEC score to letter grade mapping recommendations provided in ISO/IEC 15416.

Superfluous “Value” row in special feature reports

When customizing reports as described in Appendix G, extra rows can be inserted into the report tables, These rows will have no label in the left column, and the word “Value” in the right column. These extra rows appear when IncludePrintStructure=2 and SeparateDecodedText=0 or when IncludePrintStructure=3 and SeparateDecodedText=0.

WORKAROUND: The extra rows do not indicate missing information. They are truly extra rows and can be ignored.

Effective aperture setting not updating

The effective aperture setting field does not update when calibration completes or when the software is shut down and restarted.

WORKAROUND: This issue does not impact functionality, but may be confusing. Ignore the effective aperture setting after calibration and before grading a symbol.

Missing column headings in Export Reference report

The column headings are missing in Export Reference report when “ExcludeAllOnExport=1”.

WORKAROUND: Do not use the "ExcludeAllOnExport=1" setting. Sector IDs will be shown on the report.

Unexpected reports generated.

When using the Auto Save reports feature, an unexpected report may be generated when transitioning to the Grading screen. The report will not contain any verification data.

WORKAROUND: Delete extraneous grading reports.

Multi-Sector Printing not functioning

When attempting to print a verification report for multiple symbols, the generated report only shows data for the sector in focus.

WORKAROUND: Print verification reports individually for each symbol.

Issue with MySQL Connect/ODBC drive v8.0.33

When connecting to a MySQL database, avoid using the ODBC driver v8.0.33. This driver will cause the connection to crash and no data will be saved to the database.

WORKAROUND: Use MySQL Connect/ODBC driver v8.0.32.

LVS-95XX Software Version History

A summary of important software changes prior to version 4.4.3 is shown below. This version history is limited to software builds that were distributed to customers and partners.

Version	Release Date	Changes

4.4.3.4102	Jan 17, 2022	• New features
		  ○ Conformance to GS1 General Specification 2021
		  ○ Support for ISO/IEC 29158:2020
		  ○ Auto-save reports in PDF format
		• Enhanced features
		  ○ Grading DMRE codes per ISO/IEC 21471:2020
		  ○ PDF and Micro-PDF grading improvements
		  ○ Clarification of AI 7003 reporting
		  ○ DataBar guard pattern reporting
		  ○ New FAQs available
		  ○ Decimal grading for 2D matrix symbols
		  ○ MIL-STD-130N improvements
		  ○ USPS Code 128 Intelligent Mail Barcodes for Containers
		  ○ Grades are reported for GS1 symbols when using ISO/IEC 15415/15416 application standard
		  ○ FPMAJ symbols default to GS1 Table 6
		  ○ Text sizing in UI
		• Defects resolved
		  ○ Aperture size for 2D symbols
		  ○ AutoSector with QR Codes and quiet zone > 1X
		  ○ Non-English text corrections
		  ○ Non-English regional settings improvements
		  ○ Text wrapping improvements
		  ○ Chinese text in reference field
		  ○ Improved descriptions
		  ○ Code 39 orientation
		  ○ HIBC data checks
		  ○ Superfluous FNC1 reporting
		  ○ Missing parenthesis on Ais
		  ○ Aperture size when grading GS1-128 symbols
		  ○ Databar Stacked Omnidirectional codes for GS1
		  ○ ITF-14 for GS1
		  ○ Composite Codes for GS1 applications
		  ○ Switching between the DPM GS1 and non-DPM GS1
		  ○ MIL-STD-130N structure errors
		  ○ Incorrect symbologies identified in MIL-STD-130N
		  ○ UII with Base256 encodation
		  ○ Code 128 quiet zone enforcement for AIAG application standard
		  ○ USPS code 128 grading refinements
		  ○ Run-time error 2
		  ○ Image exposure when using with an LVS-958X DPM HD unit
		  ○ Export reference data / Export all working correctly
		  ○ Structure reporting

4.4.2.3008	September 4, 2020	• GS1 related changes
		  ○ Table 2 and Table 5 updated to allow Data Matrix symbols
		  ○ Data Matrix aperture error in GS1 Table 6 resolved
		  ○ Incorrect Extraneous FNC1 error when grading GS1 QR codes eliminated
		  ○ Added reporting for AI(10) Batch or Lot number for GS1-128 codes
		  ○ Updated aperture size per Gen Spec v20 for QR codes when using Table 1
		  ○ Correct error message displayed when encountering an NTIN with an incorrect check digit
		  ○ Support new AIs in Gen Spec V20: 235, 417, 7040 and 7240
		  ○ Corrected element errors in AI 253, 394 and 421
		  ○ Corrected isolated MinHeight errors in GS1 tables
		  ○ Quiet zone checking when using GS1 Databar codes has been corrected
		  ○ Residual warnings when switching from GS1 Table 1.8200 to ISO/IEC 15415/15416 applications standards has been eliminated
		  ○ An extra FUNC1 or <GS> placed after a data string is ALLOWED per GS1 v20. The software was updated to generate a warning but not to fail in this situation.
		  ○ Updated Table 12 to use minimum passing score of 3.5 per Gen Spec v20
		  ○ Residual grading banners when using GS1 tables are eliminated
		  ○ Minimum x-dimension banner when using GS1 Table 4 has been eliminated
		• DPM related issues
		  ○ Defects and Modulation View displays are corrected
		  ○ Re-drawing region of interest prevented in DPM mode
		  ○ Added Minimum Reflectance to grading report
		  ○ Eliminated inappropriate application of MIL-STD-130 criteria when grading non-MIL-STD-130 symbols
		  ○ Allow multiple format (06, 07) when using MIL-STD-130 + UII
		  ○ Grade changes after releasing the trigger eliminated
		  ○ StrictISO15415IntegerGrading option created to eliminate decimal grading for 2D and DPM symbols
		  ○ Corrected MIL-STD_130N grading errors for PDT and REM
		  ○ Added DPM application standard for HIBC
		  ○ Issue identifying QR codes as Data Matrix when using DPM TR29158 resolved
		• MIL-STD-130N
		  ○ Allow multiple format (06, 07) when using DPM + MIL-STD-130 + UII
		  ○ Use only 5 mil aperture when MIL-STD-130N + UII application standard is selected
		  ○ Remove “Construct 1” / “Construct 2” labelling for DI25S

		○ Fixed duplicate data issue for unknown TEI • Grading Consistency ○ Variations observed when grading the same symbol multiple times have been reduced ○ Tolerances are tightened for ▪ Contrast Uniformity ▪ Fixed Pattern Damage • Audit Trail ○ Action of removing a report from Recent Reports now logged to Audit Trail • UI Issues ○ Missing verification parameter descriptions provided ○ Display distortion in Zoom screen when grading a DPM symbol has been corrected ○ Transition Ratio display when in non-US regional settings has been fixed ○ Grade reporting when in non-US regional settings corrected ○ HIBC date display in 1D structure report properly formatted ○ When in Japanese language, the (非対応) notation after OCR on Grading tab was removed ○ Mixed Japanese and English language text when running in Japanese has been improved – only specific dialog boxes were addressed and this condition may still exist in other locations ○ Bar height reporting in inches corrected • Symbologies ○ Mailmark Type D decoding issues fixed ○ Codabar identification fixed ○ Quiet zone errors now correctly reported for Databar Limited using FPMAJ application standard regardless of read direction ○ CC portion of Databar Limited with CC now recognized ○ 2x Quiet Zone check for PDF-417 corrected ○ Allow missing start or stop characters in PDF-417, but don't allow both to be missing • Propeller firmware ○ Issue upgrading Propeller firmware when using Japanese regional settings is corrected • Calibration ○ Issues encountered when re-calibrating an existing system using a new GS1-128 Conformance Calibration Standard Test Card have been resolved ○ Automatic aperture override to 80% applied when using Data Matrix CCSTC with 958X HD units
4.4.1.4002	May 03, 2019	• Fixed issue with non-US decimal & thousands separators • Improved analysis of GS1 QR codes
4.4.1.3013	Not released	• GS1 2019 General Specification updates, including new Application Identifiers.

		• Micro QR code decoding errors corrected • QR Code 2D Analysis reporting improved when using DPM TR-29158 as application standard • Grid Nonuniformity round-off fixed • Axial Nonuniformity round-off fixed • MySQL memory handling improved when selecting all reports • OCR tip presentation for non-English languages enhanced • “Type mismatch error” during calibration caused by regional settings fixed • Data archives when analyzing composite codes fixed – both 1D and 2D data is saved • Shortcut keys to change form tabs run-time error fixed • Reference Data Export using SQL • Grading Data Matrix with DPM TR-29158 fixed issue with embedded <GS> character • Text wrapping when printing multi-sector report • Verification reports include Pass/Fail indication based on minimum passing score • External trigger (CTRL+SHIFT) • Aperture setting for non-GS1 Data Matrix codes • Quiet zone reporting in 2D analysis screen • Transition Ratio measurement color coding (clarifies FPD grading, helping to understand grading of Data Matrix codes created using dots) • 1 decimal place display of data in calibration screen • Both 1D and 2D parameters included in export reference report when appropriate • “Machine not authorized” error message • GS1 Stacked Databar analysis no longer reports missing <FNC1> when <FNC1> is implied • Rounding when grading Symbol Contrast for Data Matrix improved • Stitching function automatically turns on camera as appropriate • 2D analysis of reflectance values on Analysis Screen exclude 20Z white space analysis • Full and compact Aztec codes grading and reading • Data Matrix structure analysis error that caused dropped characters from reported data fixed • MicroPDF codes read if only one of either the stop or start pattern is valid • Xdim and Symbol Height warning flag (on Setup tab) configurable for all application standards • Ability to delete an old report on the Archive screen restricted to users who have “Allow change archive file” permission • Software installation guide and Readme.txt added to root of LVS-95XX software download • Auto-logoff inhibited if user is grading symbols but not using mouse

		• Warnings about minimum X dimensions when near the specification limits • Accuracy of aperture size reporting for Data Matrix codes • Inverted PDF417 and MicroPDF417 reading • Data Matrix and DPM symbol reading • 9510 1.75” field of view • Erroneous non-printable characters included in barcode data • Updated contact reference when using Japanese language • Czech language • Hungarian language • “Suomi-Svenska” removed from the translation table • Default directory cleanup after installation
4.4.0.5101	Jun 27, 2018	• Update data identifier database to avoid incorrect structure errors
4.4.0.4106	Jun 27, 2018	• Update to Japanese translation file
4.4.0.4105	May 30, 2018	• Increase camera watchdog timeout to avoid unnecessary camera reset • Fix type mismatch error during calibration when goals don't match regional settings • Fix communications issue with 9580s
4.4.0.4102	May 18, 2018	• Improved ability to communicate with and upgrade older 9570 units
4.4.0.4101	May 17, 2018	• Fixed regional setting conflict with SQL • Updated PCB software to support 7.5MHz crystals • Added missing FAQ files • Improved French translations • Fixed translation issue when displaying “GS1”
4.4.0.3009	Apr 30, 2018	• Add dynamic baud rate adjustment for 9570 units • Show correct mils on calibrate screen for 1.3" FOV • Add word break option to avoid truncated display of decoded text • Fix problem displaying (9580HD) when applicable • Fix signing conflict with new Atmel 1.2.6 driver • Record minimum passing grade when pass/fail option used • Fix dome light correction for 1.3" FOV • Fix incorrect Invalid AI warning • Show (9580HD) on setup screen if applicable • Solve issue with synthetic aperture aligning with 6 mil aperture on 1.3" FOV • Fix issue with AI calibration card • Add new AI 22 • Change report label from GS1 Pass/Fail to be GS1 Data Structure Pass/Fail • Change Symbol ANSI X3.182 Letter Grade scaling • Fix 9585-HD calibration issue • Fix incorrect Extraneous FNC1 warning • Allow 9585 HD white balance calibration without factory override • Check HIBC dates for validity • Correct 9585 HD dome light correlation • Enable pulldown for FPMAJ so height warnings can be made optional

		• Fix bug in trapezoidal correction logic which would occasionally cause a crash • Improve logic for for non-breakable spaces in HTML reports • Recompute Data Matrix error correction codewords when correcting pseudo-random padding errors • Show (9585HD) if camera model is 9585HD • Update manuals • Attempt to mitigate issues with serial number zero • Fix issue with Ctrl + Shift trigger timeout • Remove problematic translation file 040B.dat • Update Atmel drivers to 1.2.6 • Update for modified LVS-9570 driver PCB • Record minimum passing grade when pass/fail option used • Fix incorrect Invalid AI warning shown after <GS>. • Change report label from GS1 Pass/Fail to be GS1 Data Structure Pass/Fail • Fix incorrect Extraneous FNC1 warning • Fix issue with Ctrl + Shift trigger timeout • Restore ability for LVS-9570 to use automatic sector • Allow either <GS> or <232> as separators in GS1 Data Matrix codes • Update max Xdim for Table 6 GS1 Data Matrix (per Gen Spec 18) • Add 2018 GS1 Gen Spec AIs; 714, 8013. New AI for NHRN Portugal and New GS1 identification key: Global Model Number (GMN) • Resolve Run Time error when connecting to an existing MS SQL database • Add new standards for non-DPM versions of Mil-130 • Allow 9510 factory calibration via phone support
4.3.0.3006	08-Nov-2017	• Updated to comply with ISO 15416:2016 • Updated for changes to GS1 General Specification v17, dated 1 July 2017 • Allow user to disable decimal grading without using password of the day. • Default setting that provides decimal grading as default for grading parameters. • Improvements to DPM grading • Streamlined software installation process, with fewer driver installation steps. • Removed support for Lumenera cameras used in LVS-9570 serial # 14139 and lower (Dec. 2013 and earlier), LVS-9500, LVS-9505, and LVS-9510 serial # 12906 and lower (June 2012 and earlier). • Added Traditional Chinese language (Taiwan) and character set.
4.3.0.3003	20-Oct-2017	• Extend maximum length of AIs 91 through 99 to be 90 characters. • Include decimal for Rmin, Rmax, and GT.
4.3.0.1001	18-Oct-2017	• Implement ISO/IEC 15416:2016(E)interpolation rule
4.2.0.3021	16-Sep-2017	• Automatically detect and draw blue sector box around symbol in DPM mod.
4.2.0.3019	08-Sep-2017	• Implement ability to read QR Codes when set for DPM.
4.2.0.3016	23-Aug-2017	• Fix HIBC error when code switch occurs inside $$+7 format. • Update Japanese Translation File.

4.2.0.3003	06-Jul-2017	• Fix error in PZN check digit calculation for 2D symbols. • Implement new clock track tracking algorithm for DPM. • Show additional lighting information. • Drop support of Lumenera cameras. • Implement more sophisticated event handler. • Improve build info displayed when double-clicking version. • Include changes from GS1 General Specifications V17. • Show HIBC structure if DPM and first character is a '+'. • Support Taiwan language and character set. • Upgrade to Visual Studio 2015 runtime. • Use dfu-programmer instead of Atmel Flip. • Use Inno Setup instead of InstallShield.
4.2.0.3002	03-Jul-2017	• Always show first decoded scan line as line 1 in dimensional analysis • Copy recovery MDB to correct folder • Don't include stale structure information in report of newer code • Don't misidentify 9585 as 9580 on setup screen and reports • Fix canceling calibration
4.1.0j	23-Jan-2017	• Fix overly bright images when upgrading which only affects certain LVS-9580s.
4.1.0i	13-Jan-2017	• Fix bug related to blank passwords and ActiveDirectory. • Remove logic to detect contrast label during calibration, as it is unreliable. • Update Polish translation file.
4.1.0h	10-Jan-2017	• Fix exposure decimal places.
4.1.0g	27-Dec-2016	• Accept GS1-128 calibration card. • Avoid overflow error while minimized. • Avoid overly bright images when upgrading from older versions. • Fix problem with calibration with bright images. • Fix symbology errors on tables 7.2, 7.3, and 7.4. • Improve system responsiveness during focus calibration.
4.1.0f	07-Nov-2016	• Fix calibration not being reloaded when shortcut key used to change application standard. • Update 0410 Italian translation.
4.1.0e	04-Nov-2016	• Don't report 'D' for dome lighting on non-LVS-9580 systems. • Eliminate image jumping once image is stable. • Fix problem with reference reports and SQL Server. • Fix update problem with MySQL. • Reload calibration when changing application standards. • Update manuals.
4.1.0d	20-Oct-2016	• Don't allow Data Matrix when set for MIL-STD-130N Linear (1D). • Fix stitching with LVS-9510/ LVS-9580/ LVS-9585. • Update CompactLvsDB to include Microscan in search.
4.1.0c	18-Oct-2016	• Fix comma vs. period for GS1SpecificationTables. • Fix MicroPDF vs. Interleaved 2 of 5 misread. • Record structure information in database so it can be recalled and reprinted. • Try to read QR Code when set for DPM.
4.1.0b	11-Oct-2016	• Grade tilted DPM but issue warning if applicable. • Implement non-integral exposure.
4.1.0a	05-Oct-2016	• Avoid error when review report earlier than the latest report.

		• Don't accept Defects symbol in calibration mode. • Fix calibration not working in Manual grading mode. • Plot Micro QRCode format cells properly. • Show LVS-9585 as a choice on optional features. • Show green crosshair on LVS-9580 while moving. • Show yellow border while trigger is held.
4.1.0	27-Sep-2016	• Fix problems when interrupting processing. • Fix problems when switching cameras. • Instead of beeping, delay operations where possible.
4.0.0n	23-Sep-2016	• Implement GS1 Table 7.
4.0.0m	19-Sep-2016	• Finish DPM2 implementation. • Fix HIBC link character. • Implement new background/multithread model for slower operations. • Remember AutoPrint setting and don't reset when changing tabs.
4.0.0L	02-Sep-2016	• Placeholder for unreleased version.
4.0.0k	26-Aug-2016	• Changes to Speedup creation of users from Active Directory. • Fix HIBC issue - Unrecognized data identifier.
4.0.0j	07-Jun-2016	• Fixed issue with SQL dB, file access error 75 for Windows users without admin rights.
4.0.0h	25-Apr-2016	• Add 2D symbologies to GS1 table 4. • Add 2D symbologies to GS1 table 7. • Added AI (394) Percentage discount of a coupon. • Added AI (8012) Software version. • Added AI (8111) Loyalty points of a coupon. • Change GS1-128 Table 11 aperture to 5. • Clean up and sort translation files. • Fix Active Directory bug when there are no users in the LVS All Users group. • Fix problem misidentifying older LVS-9580 units. • Fixed incorrect error about missing leader bars in Data Matrix codes. • Fixed missing AI (30) in AI report. • Remove obsolete manuals. • Try more persistently to read UPC/EAN codes with a wrong check digit. • Use data identifiers for MIL-STD-130N.
4.0.0g	10-Mar-2016	• Fix ConfirmEngineType to catch Microsoft SQL 2014. • Fix MySQL MaxValue is reserved keyword; add delimiters when engine type is MySQL. • Fix SQL Stmt. error in ActiveDirectoryIntegration. Use UPPER for MySQL and MSSQL. • Fix error in ExportReferenceCommand by using MSSQL Database. • Improve Microscan logo.
4.0.0g	10-Mar-2016	• Include rebranded manuals. • Restore internal designations of Atmel-based LVS-9570 units. • Revert translation files pending redesign.
4.0.0f	04-Feb-2016	• Bump revision letter.
4.0.0e	02-Feb-2016	• Include proper AIs in report for composite symbols. • Include separate structure reports for 1D and 2D if applicable. • Preserve ActiveDirectory settings when copying database.

4.0.0d	27-Jan-2016	• Change default exposure for LVS-9580 from 40 to 70 ms. • Support new red/white lighting for LVS-9580 camera.
4.0.0c	24-Jan-2016	• Add ActiveDirectory Log file and form setting to enable. • Add progress bar when creating operators from Active Directory. • Correct bug in Active Directory CreateUsersFromAD. • Fix HTML characters in “Manufactured By” field. • Rename old registry values.
4.0.0b	18-Jan-2016	• Add ActiveDirectory Log file and form setting to enable. • Add progress bar with creating operators from Active Directory. • Correct bug in Active Directory CreateUsersFromAD. • Correct bug in new Data Matrix locator algorithm.
4.0.0a	13-Jan-2016	• Improve Data Matrix locator algorithm.
4.0.0	06-Jan-2016	• Rebrand as Microscan. • Set modulation to 0 for scan lines which fail edge determination.