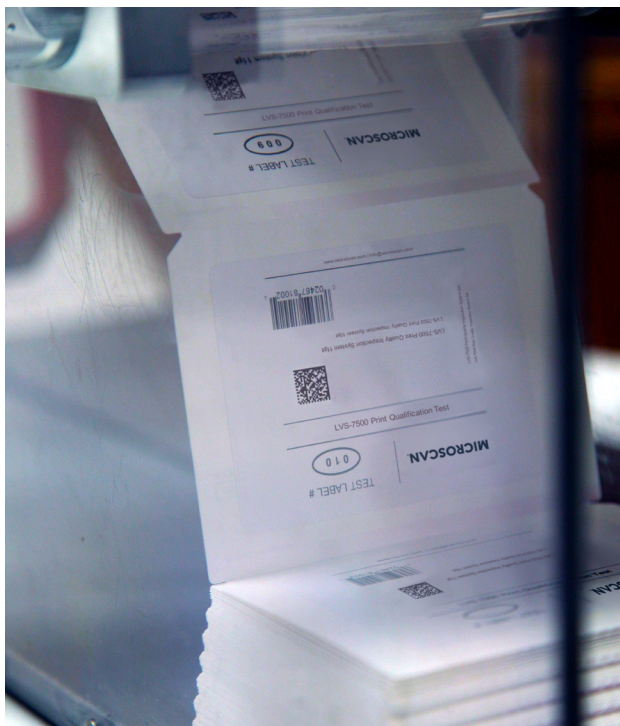


LVS-7500 OVERVIEW SPECIFICATION



LVS[®]-7500

Overview Specification



MICROSCAN[®]

LVS-7500 Overview Specification

IMPORTANT

- While all information contained in this document is believed to be accurate and complete, the continual improvements of Microscan products may cause information in this document to become outdated. Please contact Microscan or your Distributor if you have product questions or to verify you have the most current version of the document.
- The information in this guide is for informational purposes only. It is not intended for use as an Operations Manual.



Table Of Contents

- 1) LVS-7500 OVERVIEW 4**
 - 1.1 General 4**
 - 1.2 Design And Production Mode Flow Chart 5**
- 2) DESIGN MODE 6**
 - 2.1 Design Mode Gui 7**
- 3) PRODUCTION MODE 8**
 - 3.1 Production Mode Gui 9**
 - 3.2 Auto Execution 9**
 - 3.3 Identification Of Non-Conforming Labels 10**
 - 3.4 Run Log Reports Screen. 10**
 - 3.5 Run Log With Images 11**
 - 3.6 Review Audit Trail 12**
 - 3.7 Output Results Of Label Inspection Job 12**
- 4) API CONTROL 15**
- 5) SECURITY AND USER PERMISSIONS 16**
 - 5.1 LVS-7500 Active Directory Configuration Settings 17**
 - 5.2 Active Directory Implementation 18**
- 6) FUNCTIONAL CHARACTERISTICS 18**
 - 6.1 ISO Verification 18**
 - 6.2 Blemish Detection 18**
 - 6.3 Optical Character Verification (OCV) 19**
 - 6.4 Number Validation 19**
 - 6.5 Matching 19**
 - 6.6 Match To File. 19**
- 7) SUPPORTED SYMBOLOGIES 19**
- 8) INTERNATIONAL STANDARDS 19**



LVS-7500 System Outline

This document outlines the product detail and interface to the LVS-7500 inspection system for thermally printed labels.

1) LVS-7500 OVERVIEW

1.1) 1.1 General

The LVS-7500 offers 100% print quality inspection and ISO verification of 1D and 2D barcodes for thermal and thermal transfer printers. LVS-7500 features include:

- Barcode Validation (Reading of 1D and 2D codes)

- Barcode Verification (Grading of 1D and 2D codes to ISO/IEC Standards)
- Master-to-Label Comparison (Blemish Detection)
- Optical Character Recognition (OCR)
- Optical Character Verification (OCV)
- Number Validation
- Data and Code Matching

The LVS-7500 software is highly configurable through settings in an integrated configuration editor. Two operation

modes are available: Design mode and Production mode.

The reason for the different modes is to support the segregation of duties and provide a productive and secure environment for label production and validation. The option of using one LVS-7500 system for Design and Production and switching modes is available; this dual mode system would require a specific software license before the functionality is enabled. In dual mode, there is separation of duties with the ability to switch

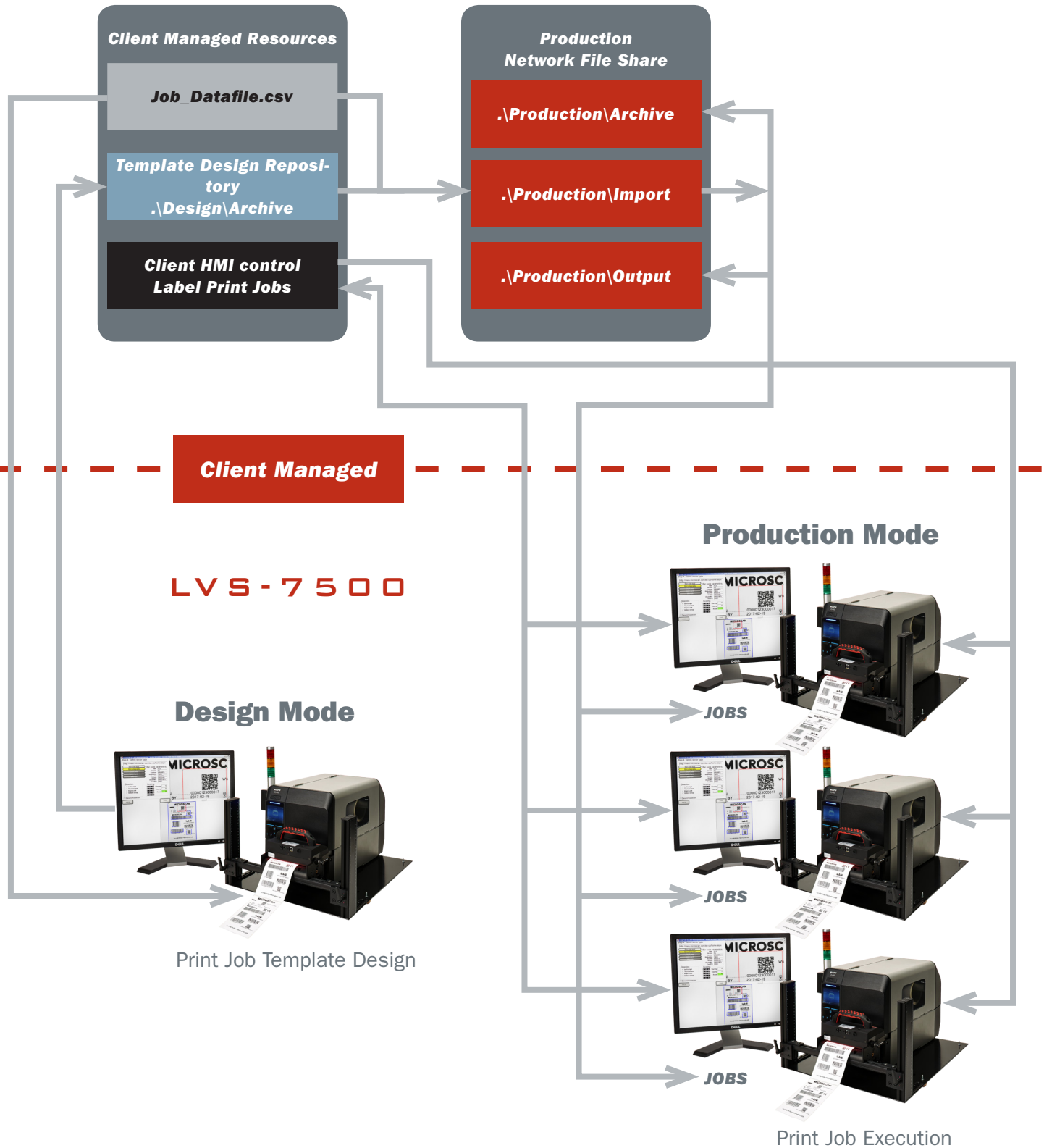
between Design and Production modes within the LVS-7500 software.

Design and Production mode units are normally separate physical systems. The primary difference between the two modes is that job templates are created in **Design mode** only. The job templates are then imported and become executable jobs in **Production mode**. Highlights of each mode are listed below.

Design Mode	Production Mode
<ul style="list-style-type: none"> • Create a new job template (Design mode only!) • Load an existing or unfinished job template • Retrieve a job template from archive • Copy an existing job template • Fully test production job templates as a pre-press process • Closeout and clear job templates that are ready for production • Promote a job template to production 	<ul style="list-style-type: none"> • Reusable job templates are imported and become executable jobs (Production mode only!) • Variable data files assigned to reusable templates if required • Load an existing or unfinished job • Automation options – using LVS-TCP I/P HMI interface • Retrieve a job from archive to create replacements • Login credentials create an audit trail of operator actions • Operator administration and permissions controlled through Microsoft Active Directory • Summary data reports combine data from multiple runs

1.2) Design and production mode flow chart

LVS-7500 Implementation Showing Flow of Print Job Design and Production Execution



LVS-7500 OVERVIEW SPECIFICATION

2) DESIGN MODE

In Design mode, the label verification template is created as a separate process in a pre-press or off-line environment. The design process is as it sounds – the label templates are created and golden images of the actual labels are captured in an off-line process. The inspection points are all set in Design mode so the production process can remain as automated as possible.

Label areas or sectors that require vision inspection/validation are defined and the details of the type of validation are stored in the job template.

The following sector types are available:

Barcode Read

This sector type is used to validate a 1D (linear) or 2D (two-dimensional) barcode label. The

LVS-7500 inspects the barcode image to determine if it is “readable.” Expected data can be fixed or variable.

Barcode Grade

This sector type is used to verify (decode and grade) a 1D or 2D barcode image according to ISO/IEC standards. The passing grade is user configurable for each sector. The LVS-7500 verifies 1D and 2D codes including GS1 symbologies according to the internationally accepted rules of the applicable symbology specifications and ISO 15415 and 15416.

Barcode Grade

This sector type is used to verify (decode and grade) a 1D or 2D barcode image according to ISO/IEC standards. The passing grade is user configurable for each sector. The LVS-7500 verifies 1D and 2D codes

including GS1 symbologies according to the internationally accepted rules of the applicable symbology specifications and ISO 15415 and 15416.

OCR Read

The Optical Character Recognition (OCR) sector type is used to “read” the human readable characters located within a drawn sector; this data can be variable or static. Variable data, such as Lot Number and Expiration Date, is passed to the LVS-7500 using one of two options:

- **Option 1:** Use a data file in a csv format that contains the variable data. This data file and the job template are sent to the LVS® Production system at run time.
- **Option 2:** Send the data over TCP/IP to the LVS-7500 Produc-

tion system after the job template is loaded (see “API Control” section for more information).

OCV Verify

The Optical Character Verification (OCV) sector type is used to score the print quality of the human readable characters within a drawn sector. This sector type provides 100% OCV to matching text validation. The passing score is user configurable for each sector.

Blemish

This sector type is learned and stored as a golden image to the job and used as non-variable compare for all labels. The LVS-7500 identifies and tracks potential print errors such as die cut errors, broken letters, skews, smears, spots, voids, wrinkles, missing copy, and other print quality defects.

Process	Description
Load an Existing Template	The designer can have several job templates in process at one time. By selecting “Load an Existing template,” the designer is prompted to select from a list of in-progress templates located in the Design\Templates folder. From the view screen of existing templates, the designer also has the following options: <ul style="list-style-type: none"> • Create new template • Delete template • Save as
Closeout and Clear Job	After design is complete, the designer will select to “Closeout and clear job.” This process creates a job template by zipping up all files for the job and stores the templatename.zip file in the Design\Archive folder of the Design mode LVS-7500 or a mapped location on the client’s server.
Save As	The designer has the option to reuse an existing completed template. From the list of Archived templates, the designer selects “Save As” and will then be prompted for the new template name. The new template will be renamed and other required files renamed to match. The newly created template folder will be moved to the Design\Templates folder.
Retrieve from Archive	Job templates previously created during the “Closeout and Clear Job” process can be retrieved from the Microscan Design\Archive folder to allow additional design changes. Retrieved templates are unzipped into a templatename subfolder of the Design\Template folder.
Promote to Production	While viewing Job templates in the Design\Archive folder, the designer has the option to “Promote to Production.” This option copies the template to the Production\Import folder making it available for execution by a Production mode operator.
Job Template Create/Edit	New job templates can be created from scratch or from an existing template. The new job template is created with the LVS-7500 job editor. The template is fully tested in Design mode until it is ready to promote to a Production template.

In Design mode, the LVS-7500 utilizes the following job template related file folders for a specific purpose. The naming of the folders below is based on their purpose but can be changed to suite the client. All folders can be on a mapped network drive or local drive for each LVS-7500 system.

• **Design\Templates folder:**

- In Design mode, this is where new templates are created and designed. Multiple templates under development are allowed; each is contained in a subfolder of the Microscan Design\Templates folder.
- New templates initiated using the “Create a New Job” process are created in the Design\Templates folder as described above.

• **Design\Archive folder:**

Send the data over TCP/IP to the LVS-7500 Production system after the job

template is loaded (see “API Control” section for more information).

Design mode is intended to eliminate the set-up process on the production line. Design mode systems can be setup anywhere on the client’s network. The Design mode system is a complete system that includes the LVS-7500 inspection unit, computer and client printer. The process of capturing a Golden Image is through a physical printout of the mock production run labels. The mock production labels are printed and variable data attributes are tested in the Design mode. Once a golden image is captured from an actual label print, the Design operator can compare that image against an approved PDF using the supplied PDF comparison software on the Design system. The comparison process is as simple as loading an approved PDF from a folder location on the network and clicking “Play.” The software runs a comparison against the

captured golden image and highlights any differences for the operator to review. Once satisfied that the PDF and Golden image match, the operator clicks “Accept” and a report is stored with the job for any future reference. If the operator finds any discrepancies, he/she simply reprints a new image on the LVS-7500 and runs the comparison again. The Design system is a sophisticated software package with many inspection capabilities. It is best operated by a well-trained individual or group to ensure the final production process runs as automated as possible with as little operator interference as possible.

2.1) DESIGN MODE GUI

After the LVS-7500 user Login, the Design mode initial screen will display two option buttons: “Retrieve from Archive” and “Load an Existing job.”

- **Retrieve from Archive:** This button opens a view screen displaying the contents of the folder defined in the LVS-7500 set-

tings for \Design\Archive. A job template is selected by double-clicking the template name. Job templates are placed in this folder by the “Closeout and Clear Job” process in the Design mode system. In the job template view screen, the operator has options to “Delete,” “Save as” and “Promote to production.” The “Promote to production” option will copy the job template to the \Production\Template folder, making it available to an LVS-7500 Production mode system.

• **Load an Existing Job:**

This button opens a view screen displaying the contents of the folder defined in the LVS-7500 settings for \Design\Template. A template is selected by double-clicking the desired templatenam.zip file. From the view screen, the following options are available: “Create new template,” “Delete template,” and “Save as.”

Button	Description
Closeout and Clear job	Select this button when the active job template design is complete. The current template files are zipped and become a new job templates and are moved to the \Design\Archive folder. The designer has the option of removing the data file or including the data file in the new template prior to zipping. The template files in the \Design\Template folder are not deleted and remain available to the designer.
Delete job	Current job is deleted from the \Design\Template folder.
View logs	Displays the print job results for the current run.
Edit job	Opens the LVS-7500 job editor allowing modifications to the print job template.
Exit to Main	LVS-7500 returns to initial screen. The current job template remains in the Design\Templates folder.
MakeReady	Selected when operator needs to test the printing process to ensure printer setting are correct to produce labels.
Continue last run	Selected when current job has an active run but job is not completed. The LVS-7500 will hold the printer output until this button is selected.
Start new run	Selected when a new job is loaded and ready to begin label validation. The LVS-7500 will hold the printer output until this button is selected.

LVS-7500 OVERVIEW SPECIFICATION

3) PRODUCTION MODE

In Production mode, the LVS-7500 can be configured based upon the printer implementation and level of operator interaction desired. Some printers allow failing labels to be pulled back into the printer and over struck, effectively destroying the failing label. While other printers that do not have this overstrike feature are paused by the LVS-7500 for the operator to take action to remove and destroy a failing label. The LVS-7500 software can be configured to accommodate the level of user interaction desired by a customer.

Production mode systems are designed to simplify the print job verification process. The client can choose what

level of automation they prefer for their production environment: from a basic HMI provided by the client to handle the movement of job folders from the client server to LVS-7500 local production systems – to a fully controlled client-created HMI running and controlling the LVS-7500.

Microscan has options for most client's needs. Our logic for splitting Design mode and Production mode is to simplify the inspection process for the production operators. We offer some simplistic interface functions that most, if not all clients should be able to access and utilize to painlessly integrate the LVS-7500 into your existing label production process.

- **Standard User Interface:** The operator selects the "Import a Job" button on the main LVS-7500 "Welcome" screen and selects a job template from the designated Production\Import folder. If the template requires a match-to data file, the operator is prompted to select a data file. The operator is then prompted to provide a new job name to be given to the reusable template.

- **Auto Load Setting:** The Auto Load configuration setting allows clients to drop a job file into the active Production\Jobs folder and the LVS-7500 will take over from there. If the template requires a match-to data file, the file will also be

dropped into the Jobs folder. The LVS-7500 loads the new template, preps any data elements for inspection and controls the printer, awaiting a signal from the LVS-7500 to start the inspection process.

- **Custom HMI using TCP I/P:** The client has access to the LVS-7500 API through the use of TCP I/P commands. Clients or integrators can create a custom HMI to integrate the LVS-7500 into a client's label production process.

In Production mode, the LVS-7500 utilizes the following logical folder types. The physical location and naming of these folders is configured in the LVS-7500 software settings:

Folder Type	Description
Production\Jobs	The folder where the currently loaded and active job is located. Only one active job is allowed, which is verified by the LVS-7500 software. Jobs are moved into this folder when the operator selects a job from the "Production\Import" folder. The LVS-7500 Auto Execution setting will cause the system to monitor the "Production\Jobs" folder and when a job is moved into this folder, the system will automatically open and load the job into the Microscan computer. When "Closeout and Clear Job" is executed, the job files are zipped and moved to the Archive folder and the jobname.zip file is removed from the Import folder. If Auto Load is enabled, once the active job is cleared, the system automatically begins monitoring the Jobs folder for any new job files.
Production\Import	This folder contains new jobs templates available for execution. Each template is contained in a single templatename.zip file created in Design mode. Templates selected for execution are unzipped into a jobname folder in the "Production\Jobs" folder location previously described. If the template requires a match-to data file, the operator is prompted to select a data file. The operator is prompted to provide a new job name to be given to the reusable template. When a "Closeout and Clear Job" is executed, the active job files are zipped and moved to the Archive folder. The templatename.zip template file remains in the Production\Import folder to be reused.
Production\Output	For a completed job, the "Closeout and Clear Job" process causes the output reporting and summary files to be written to this folder path.
Production\Archive	If the job is closed out and cleared, the job is zipped up and moved from the Jobs folder to the Archive folder. Jobs can be retrieved from Archive so that an unfinished job can be completed or replacement labels printed.

3.1) PRODUCTION MODE GUI

After logging in to the LVS-7500, the Production mode initial screen

will display two option buttons: The “Retrieve from Archive” button is always displayed on the screen. The other button

will either be “Load an Existing job” or “Import a New Template.” See below for full button descriptions.

Folder Type	Description
Retrieve from Archive	Clicking this button opens a view screen displaying the contents of the folder defined in the LVS-7500 settings for \Production\Archive. A job is selected by double-clicking the job name.
Load an Existing Job	This button is displayed if there is an existing job loaded in the Jobs folder. Selecting this button opens a view screen displaying the contents of the folder defined in the LVS-7500 settings for \Production\Jobs. A job is selected by double-clicking the job name. If an existing job is loaded, the “Closeout and Clear Job” process must be executed before the operator has the option to “Import a New Job.”
Import a New Template	This button is displayed if there is no currently loaded job in the \Production\Jobs folder. Selecting this button opens a view screen displaying the contents of the folder defined in the LVS-7500 settings for \Production\Import. A job template is selected by double-clicking the template name. The operator will be prompted to provide a job name to be created from the selected template. If the template requires a match-to data file, the system will prompt for selection of the data file. The data files are also located in the \Production\Import folder

After a template is selected, the LVS-7500 “Ready to Run” screen opens and is now considered to be

an executable job. The option buttons displayed along the left side of the display will depend upon the LVS-7500 software

configuration setting and the current state of the loaded job. The following “Ready to Run” buttons are available:

Folder Type	Description
Edit job	User must provide login credentials with the Edit permission. Opens the LVS-7500 job editor allowing modifications to the print job.
Exit to Main	The LVS-7500 returns to the initial screen. The current job remains in the Production\Jobs folder.
MakeReady	Selected when the operator needs to test the printing process to ensure printer settings are correct to produce labels. Labels printed are not included in the Pass/Fail totals of the print job reports.
Continue last run	Selected when current job has an active run but job is not completed. The LVS-7500 will hold the printer output until this button is selected.
Start new run	Selected when a new job is loaded and ready to begin label validation. The LVS-7500 will hold the printer output until this button is selected.
Replacement	Selected when the current job is completed and a replacement is needed for a previously printed label. Replacement is only available if there is a match-to data file associated with the job and all labels in the data file have been processed.

3.2) AUTO EXECUTION

The LVS-7500 can be set to a state of actively waiting for a print inspection job. When a new job is placed into the “Production\Jobs” folder, the job would be opened, loaded and the LVS-7500 placed into a ready to run state. Sending the appropriate label

print job to the printer and monitoring the state of the printer would be managed outside of the LVS-7500. The LVS-7500 software can hold the printer and not allow labels to be printed until approval via an operator input or from a client developed HMI.

During the Inspection process of the job, if the LVS-7500 identifies a non-conforming label the printer is stopped by the LVS-7500 and a light bar is activated both visually and audibly to indicate the error. The suspect label is presented to the operator in a known consistent location via

an I/O interface Microscan provides with the system.

LVS-7500 OVERVIEW SPECIFICATION

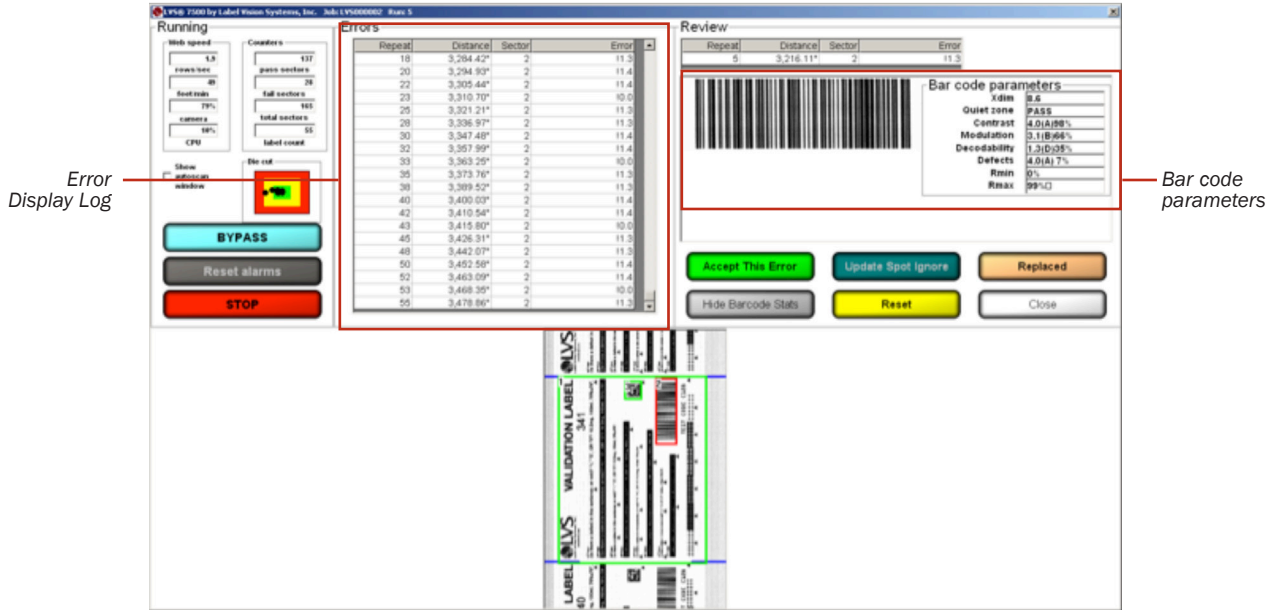
3.3) IDENTIFICATION OF NON-CONFORMING LABELS

During the job inspection process, any errors are

displayed in the Error Display log provided on the Operate screen while you are running the job. Click on an error to view

the barcode image and barcode graded parameters. The non-conforming label results are also stored for analysis post

job inspection on the Run Log Reports Screen.



3.4) RUN LOG REPORTS SCREEN

The Reports screen displays a report for

each sector. Each line of data starts with the label repeat number followed by a date/time stamp,

decoded string, error code (if any), and other data associated with the image being inspected

Repeat	Time	Distance	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	
37	30-Mar-2012 16:03:01	178.19"	0.074"IFG	0"	0"	1.2	0.6	0.3	300780438155	
38	30-Mar-2012 16:03:01	182.61"	0.027"IFG	0"	0"	0.5	0.4	0.7	300780438155	
39	30-Mar-2012 16:03:01	187.04"	0.051"IFG	0"	0"	0.8	0.2	1.1	300780438155	
40	30-Mar-2012 16:03:02	191.43"	0.055"IFG	0"	0.344"IBG	0.5	0.2	0.5	300780438155	
41	30-Mar-2012 16:03:02	195.83"	0.027"IFG	0"	2.242"IFG	0.6	1.6	2.0	300780438155	
42	30-Mar-2012 16:03:02	200.25"	0.047"IFG	0.141"IBG	2.242"IFG	0.5	0.9	1.1	300780438155	
43	30-Mar-2012 16:03:02	207.43"	0"	0"	0"	0.1	0.4	0.4	300780438155	
44	30-Mar-2012 16:03:02	211.86"	0.035"IFG	0"	0"	1.7	1.2	0.8	300780438155	
45	30-Mar-2012 16:03:03	216.29"	0.098"IFG	0"	0"	0.9	0.6	0.3	300780438155	
46	30-Mar-2012 16:03:03	220.71"	0.023"IFG	0"	0"	0.6	0.5	0.6	300780438155	
47	30-Mar-2012 16:03:03	225.14"	0.055"IFG	0"	0"	0.9	0.1	0.8	300780438155	
48	30-Mar-2012 16:03:03	229.54"	0.047"IFG	0"	0.145"IBG	0.2	0.3	0.3	300780438155	
49	30-Mar-2012 16:03:04	233.93"	0.039"IFG	0"	2.242"IFG	0.3	1.3	1.7	300780438155	
50	30-Mar-2012 16:03:04	238.35"	0.039"IFG	0.078"IBG	2.242"IFG	0.5	0.8	0.8	300780438155	
51	30-Mar-2012 16:03:04	245.53"	0"	0"	0"	0.0	0.4	0.1	300780438155	
52	30-Mar-2012 16:03:05	249.96"	0"	0"	0"	0.0IDE	0.0IDE	0.0IDE	300780438155	
53	30-Mar-2012 16:03:05	254.39"	0"	0"	0"	0.6	0.8	1.1	300780438155	
54	30-Mar-2012 16:03:05	258.82"	0"	0"	0"	1.3	0.6	1.4	300780438155	
55	30-Mar-2012 16:03:05	263.24"	0"	0"	0"	1.0	1.2	0.3	300780438155	
56	30-Mar-2012 16:03:05	267.64"	0"	0"	0"	1.9	1.5	1.0	300780438155	
57	30-Mar-2012 16:03:06	272.03"	0"	0"	2.238"IBG	1.5	0.5	0.9	300780438155	
58	30-Mar-2012 16:03:06	276.45"	0"	0"	2.238"IBG	1.1	0.4	0.0	300780438155	
59	30-Mar-2012 16:03:06	283.63"	0.082"IBG	0"	0"	1.8	0.9	0.8	300780438155	
60	30-Mar-2012 16:03:06	288.06"	0"	0"	0"	0.4	0.3	0.3	300780438155	
61	30-Mar-2012 16:03:06	292.49"	0"	0"	0"	0.9	0.8	1.1	300780438155	
62	30-Mar-2012 16:03:06	296.92"	0"	0"	0"	1.3	0.6	1.1	300780438155	
63	30-Mar-2012 16:03:07	301.34"	0"	0"	0"	0.9	1.2	0.3	300780438155	
64	30-Mar-2012 16:03:07	305.74"	0"	0"	0"	1.9	1.5	1.0	300780438155	
65	30-Mar-2012 16:03:07	310.13"	0"	0.004"	0.309"IFG	1.5	0.4	0.8	300780438155	
66	30-Mar-2012 16:03:07	314.55"	0"	0"	0.555"IBG	2.238"IBG	1.3	0.5	1.3	300780438155
67	30-Mar-2012 16:03:07	321.73"	0.088"IBG	0"	0"	1.7	0.8	0.5	300780438155	
68	30-Mar-2012 16:03:08	326.16"	0"	0"	0"	0.4	0.4	0.3	300780438155	
69	30-Mar-2012 16:03:08	330.59"	0"	0"	0"	0.8	0.8	1.3	300780438155	
70	30-Mar-2012 16:03:08	335.02"	0"	0"	0"	1.3	0.9	1.5	300780438155	
71	30-Mar-2012 16:03:08	339.43"	0"	0"	0"	0.9	1.2	0.3	300780438155	
72	30-Mar-2012 16:03:09	343.84"	0"	0"	0"	1.9	1.4	1.0	300780438155	
73	30-Mar-2012 16:03:09	348.23"	0"	0"	0.309"IFG	1.2	0.3	1.1	300780438155	
74	30-Mar-2012 16:03:09	352.65"	0"	0.484"IBG	2.238"IBG	1.1	0.4	1.9	300780438155	
75	30-Mar-2012 16:03:09	359.84"	0.07"IBG	0"	0"	1.7	1.0	0.8	300780438155	
76	30-Mar-2012 16:03:09	364.27"	0"	0"	0"	0.3	0.3	0.1	300780438155	
77	30-Mar-2012 16:03:10	368.70"	0"	0"	0"	0.6	0.8	1.1	300780438155	

3.5) RUN LOG WITH IMAGES

Blemish, barcode, and OCR/OCV error images

can be viewed by clicking on the red cell in the log file. An error display screen will then appear.

If the error is a blemish, the Golden Image will show on the Left; a Toggle between Golden

and Actual in the center; and the Actual Blemish image is on the right.

The screenshot shows the LVS 7500 software interface. On the left, there are control buttons: 'Closeout and clear work', 'View logs', 'Edit job', 'Exit to Main', 'MAKEREADY', 'CONTINUE last run', and 'START new run'. The main area is divided into 'Errors' and 'Review' sections.

Errors Table:

Repeat	Distance	Sector	Error
8	1,783.26"	1a	0.125"FG
8	1,783.27"	1b	0.085"FG
8	1,786.33"	1c	0.04"FG
8	1,786.33"	1d	0.03"FG
9	1,787.39"	1a	0.12"FG
9	1,787.39"	1b	0.11"FG
9	1,787.06"	1c	0.035"FG
9	1,787.87"	1d	0.035"FG
10	1,791.50"	1a	0.125"FG
10	1,791.50"	1b	0.12"FG
10	1,791.58"	1c	0.035"BG
10	1,792.97"	1d	0.025"FG
11	1,795.62"	1a	0.13"FG
11	1,795.67"	1b	0.095"FG
11	1,796.81"	1c	0.045"FG
11	1,796.15"	1d	0.04"FG
12	1,799.75"	1a	0.12"FG
12	1,800.30"	1b	0.03"FG
12	1,799.35"	1c	0.025"FG
12	1,799.83"	1d	0.025"BG

Review Window:

The 'Review' window shows a comparison of three images: 'Golden', 'Toggle', and 'Actual'. The 'Golden' image shows a digit '1' with a red box highlighting a blemish. The 'Toggle' image shows the same digit '1' with the blemish removed. The 'Actual' image shows a digit '3' with a red box highlighting a blemish. Below the images are buttons for 'Update Spot Ignore' and 'Close'. There are also 'Print Job' and 'Form Feed' buttons at the top right of the window.

Toggle screens of Golden image as compared to the actual image. This is a duplicate of the Operate screen's error presentation methodology.

Toggle screens of Golden image as compared to the actual image. This is a duplicate of the Operate screen's error presentation methodology.

3.6) REVIEW AUDIT TRAIL

The Review Audit Trail feature allows you to

monitor user activity in Production mode. The level of activity logging is configured in the

LVS-7500 software settings. When enabled, user activity must be confirmed by entering

user login credentials. User actions are logged and saved in the output report files.

Date	Time	Operator	Action
30-Mar-2012	11:19:20	Admin (Administrator)	Loading information for job LVS000019
30-Mar-2012	11:19:44	Admin (Administrator)	Program stopped
30-Mar-2012	11:19:56		Program started
30-Mar-2012	11:20:05	Admin (Administrator)	Logged in
30-Mar-2012	11:20:06	Admin (Administrator)	Load EXISTING Job selected
30-Mar-2012	11:20:18	Admin (Administrator)	Program stopped
30-Mar-2012	13:37:19		Program started
30-Mar-2012	13:37:30	Admin (Administrator)	Logged in
30-Mar-2012	13:37:32	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:37:42	Admin (Administrator)	Program stopped
30-Mar-2012	13:38:15		Program started
30-Mar-2012	13:38:24	Admin (Administrator)	Logged in
30-Mar-2012	13:38:26	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:44:35	Admin (Administrator)	Program stopped
30-Mar-2012	13:46:22		Program started
30-Mar-2012	13:46:30	Admin (Administrator)	Logged in
30-Mar-2012	13:46:36	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:47:19	Admin (Administrator)	Saved configuration for job test
30-Mar-2012	13:47:21	Admin (Administrator)	Starting run 5 of job test
30-Mar-2012	13:48:18	Admin (Administrator)	Stopping run
30-Mar-2012	13:48:28	Admin (Administrator)	Saved configuration for job test
30-Mar-2012	13:48:31	Admin (Administrator)	Load EXISTING Job selected
30-Mar-2012	13:48:33	Admin (Administrator)	Loading information for job test
30-Mar-2012	13:48:46	Admin (Administrator)	Program stopped
30-Mar-2012	13:48:52		Program started
30-Mar-2012	13:48:59	Admin (Administrator)	Logged in
30-Mar-2012	13:49:01	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:49:54	Admin (Administrator)	Saved configuration for job test
30-Mar-2012	13:49:55	Admin (Administrator)	Starting run 6 of job test
30-Mar-2012	13:50:55	Admin (Administrator)	Stopping run
30-Mar-2012	13:54:58	Admin (Administrator)	Calibration selected
30-Mar-2012	13:55:55		Program started
30-Mar-2012	13:56:03	Admin (Administrator)	Logged in
30-Mar-2012	13:56:06	Admin (Administrator)	Calibration selected
30-Mar-2012	13:58:13		Program started
30-Mar-2012	13:58:22	Admin (Administrator)	Logged in
30-Mar-2012	13:58:31	Admin (Administrator)	Calibration selected
30-Mar-2012	13:59:08	Admin (Administrator)	Program stopped
30-Mar-2012	14:02:07		Program started
30-Mar-2012	14:02:18	Admin (Administrator)	Attempt to log in using an invalid password for Admin (Administrator)
30-Mar-2012	14:02:21	Admin (Administrator)	Logged in

Print all

Exit

3.7) OUTPUT RESULTS OF LABEL INSPECTION JOB

In Production mode, the complete execution of a job may consist of multiple job runs. An operator may start and stop a job multiple times before completion of the job. The LVS-7500 captures and stores the results from all of these runs. For a completed job, when the “Closeout and Clear Job” process is executed, the data for the multiple runs is

combined and output as a set of output summary files. If the job has a match-to data file with a serialized Unique per job data field, this information can be used to closely control the job completion progress. The pass or fail status of each label can be accounted for and the completion of the job recorded when all labels in the match-to data file have been processed.

When a print job is closed out, the

LVS- 7500 creates a set of Output Summary Files and writes these files to the shared network path location for the unit. Five Output Summary Files are created in the Production\Output path defined in each LVS-7500 configuration settings. The jobname will be the prefix on all files. The files can be stored on a central location file share or network mapped location as required by the client. The five Output Summary Files include:

1. jobname_SUMMARYREPORT_1.htm
2. jobname_SUMMARY_1.csv
3. jobname_REPLACEMENT_1.csv
4. jobname_PRODUCTION_1.csv
5. jobname_AUDIT-TRAIL_1.txt

Refer to the next page for examples of each Output Summary File.

LVS 7X00 Summary Report

23-Jan-2015 14:37:36



Job name	LVS7500ValidationPG30_SNI
Operator	Admin (Administrator)
Start time	23-Jan-2015 14:36:17
End time	23-Jan-2015 14:37:36



Sector1	Bar code 2D grade
Minimum passing score	1.5
okay	33 / 33 - 100%
DecodedText	50000-0.1MG DOSE CARTON to 50029-0.1MG DOSE CARTON
Overall	B:11 (33%), C:22 (67%)
Symbology	Data Matrix
Xdim	22.2 to 22.4; average was 22.3
Contrast	B:23 (70%), C:10 (30%)
Modulation	B:1.5 (45%), C:1.8 (55%)
AxisNonUniform	A:33 (100%)
GridNonUniform	A:33 (100%)
UnreadEC	A:33 (100%)
FixedPat	A:31 (94%), B:2 (6%)



Sector2	Bar code 1D grade
Minimum passing score	0.8
okay	33 / 33 - 100%
DecodedText	50000-4 to 50029-4
Overall	C:13 (39%), D:20 (61%)
Symbology	Code 128
Xdim	13.8 to 13.9; average was 13.8
EdgeDeterm	33 / 33 - 100% PASS
MinReflect	33 / 33 - 100% PASS
MinEC	33 / 33 - 100% PASS
QuietZone	33 / 33 - 100% PASS
Contrast	B:26 (79%), C:7 (21%)
Modulation	C:31 (94%), D:2 (6%)
Decodability	C:1.5 (45%), D:1.8 (55%)
Defects	A:33 (100%)
Rmin	35% to 37%; average was 36.2
Rmax	93% to 94%; average was 93.7

50000

Sector3	OCR read
Minimum passing score	1
FontFile	OCR_B_MT_8.kmp
okay	33 / 33 - 100%

23-Jan-2015 16:35:13 to 23-Jan-2015 16:36:41: Admin (Administrator) Started run and printed 30 labels with 0 reprints
 23-Jan-2015 16:36:43 to 23-Jan-2015 16:37:07: testuser2 (test user 2) Replaced 0 labels with 0 reprints
 23-Jan-2015 16:37:23 to 23-Jan-2015 16:37:47: Admin (Administrator) Replaced 3 labels with 0 reprints

jobname_SUMMARYREPORT_1.htm

Good labels, Reprinted labels, Replaced labels, Job 30,0,4,"LVS7500ValidationPG30"

QC File Viewer

Good labels	Reprinted labels	Replaced labels	Job
30	0	4	LVS7500ValidationPG30_SNI

Previous error

Next error

Previous warning

Next warning

Summary report

Print errors

Print all

Exit

jobname_REPLACEMENT_1.csv

(csv data shown as example)

Repeat,Time,Distance,Sector 1,Sector 2,Sector 3
 1,02-Feb-2015 12:59:04,"4,827.46","50000-0.1MG DOSE CARTON-2.7,50000-4-1.5,50000
 2,02-Feb-2015 12:59:05,"4,831.59","50001-0.1MG DOSE CARTON-2.5,50001-4-1.2,50001
 3,02-Feb-2015 12:59:06,"4,835.71","50002-0.1MG DOSE CARTON-1.9,50002-4-1.5,50002
 4,02-Feb-2015 12:59:06,"4,839.83","50003-0.1MG DOSE CARTON-2.5,50003-4-1.5,50003

QC File Viewer

Repeat	Time	Distance	Sector 1	Sector 2	Sector 3
1	02-Feb-2015 12:59:04	4,827.46"	50000-0.1MG DOSE CARTON-2.7	50000-4-1.5	50000
2	02-Feb-2015 12:59:05	4,831.59"	50001-0.1MG DOSE CARTON-2.5	50001-4-1.2	50001
3	02-Feb-2015 12:59:06	4,835.71"	50002-0.1MG DOSE CARTON-1.9	50002-4-1.5	50002
4	02-Feb-2015 12:59:06	4,839.83"	50003-0.1MG DOSE CARTON-2.5	50003-4-1.5	50003

Previous error

Next error

Previous warning

Next warning

Summary report

Print errors

Print all

Exit

LVS-7500 OVERVIEW SPECIFICATION

jobname_PRODUCTION_1.csv

(only first 5 rows of data shown as example)

1,23-Jan-2015 14:36:17,4.14",50000-0.1MG DOSE CARTON-2.7,50000-4-1.5,50000
 2,23-Jan-2015 14:36:18,8.26",50001-0.1MG DOSE CARTON-2.5,50001-4-1.2,50001
 3,23-Jan-2015 14:36:19,12.38",50002-0.1MG DOSE CARTON-1.9,50002-4-1.5,50002
 4,23-Jan-2015 14:36:19,16.50",50003-0.1MG DOSE CARTON-2.5,50003-4-1.5,50003
 5,23-Jan-2015 14:36:20,20.63",50004-0.1MG DOSE CARTON-2.5,50004-4-1.4,50004

QC File Viewer					
Repeat	Time	Distance	Sector 1	Sector 2	Sector 3
1	02-Feb-2015 12:40:43	127.81"	50000-0.1MG DOSE CARTON-2.7	50000-4-1.5	50000
2	02-Feb-2015 12:40:44	131.94"	50001-0.1MG DOSE CARTON-2.5	50001-4-1.2	50001
3	02-Feb-2015 12:40:45	136.06"	50002-0.1MG DOSE CARTON-1.9	50002-4-1.5	50002
4	02-Feb-2015 12:40:46	140.18"	50003-0.1MG DOSE CARTON-2.5	50003-4-1.5	50003
5	02-Feb-2015 12:40:47	144.30"	50004-0.1MG DOSE CARTON-2.5	50004-4-1.4	50004
6	02-Feb-2015 12:40:47	148.43"	50005-0.1MG DOSE CARTON-2.6	50005-4-1.5	50005
7	02-Feb-2015 12:40:48	152.55"	50006-0.1MG DOSE CARTON-2.8	50006-4-1.5	50006
8	02-Feb-2015 12:40:49	156.67"	50007-0.1MG DOSE CARTON-2.7	50007-4-1.2	50007
9	02-Feb-2015 12:40:50	160.79"	50008-0.1MG DOSE CARTON-1.9	50008-4-1.4	50008
10	02-Feb-2015 12:40:51	164.91"	50009-0.1MG DOSE CARTON-2.5	50009-4-1.4	50009
11	02-Feb-2015 12:40:52	169.04"	50010-0.1MG DOSE CARTON-2.5	50010-4-1.5	50010
12	02-Feb-2015 12:40:53	173.16"	50011-0.1MG DOSE CARTON-2.5	50011-4-1.1	50011
13	02-Feb-2015 12:40:53	177.28"	50012-0.1MG DOSE CARTON-2.6	50012-4-1.3	50012
14	02-Feb-2015 12:40:54	181.41"	50013-0.1MG DOSE CARTON-2.3	50013-4-1.3	50013
15	02-Feb-2015 12:40:55	185.53"	50014-0.1MG DOSE CARTON-2.6	50014-4-1.2	50014
16	02-Feb-2015 12:40:56	189.65"	50015-0.1MG DOSE CARTON-1.9	50015-4-1.4	50015
17	02-Feb-2015 12:40:57	193.77"	50016-0.1MG DOSE CARTON-1.9	50016-4-1.3	50016
18	02-Feb-2015 12:40:58	197.90"	50017-0.1MG DOSE CARTON-2.2	50017-4-1.5	50017
19	02-Feb-2015 12:40:58	202.02"	50018-0.1MG DOSE CARTON-2.7	50018-4-1.5	50018
20	02-Feb-2015 12:40:59	206.14"	50019-0.1MG DOSE CARTON-2.6	50019-4-1.5	50019
21	02-Feb-2015 12:41:00	210.26"	50020-0.1MG DOSE CARTON-1.9	50020-4-1.5	50020
22	02-Feb-2015 12:41:01	214.39"	50021-0.1MG DOSE CARTON-2.1	50021-4-1.2	50021
23	02-Feb-2015 12:41:02	218.51"	50022-0.1MG DOSE CARTON-1.9	50022-4-0.9	50022
24	02-Feb-2015 12:41:03	222.63"	50023-0.1MG DOSE CARTON-2.6	50023-4-1.3	50023
25	02-Feb-2015 12:41:04	226.75"	50024-0.1MG DOSE CARTON-2.5	50024-4-1.2	50024
26	02-Feb-2015 12:41:04	230.87"	50025-0.1MG DOSE CARTON-2.2	50025-4-1.3	50025
27	02-Feb-2015 12:41:05	235.00"	50026-0.1MG DOSE CARTON-1.8	50026-4-1.5	50026
28	02-Feb-2015 12:41:06	239.13"	50027-0.1MG DOSE CARTON-2.6	50027-4-1.2	50027
29	02-Feb-2015 12:41:07	243.24"	50028-0.1MG DOSE CARTON-2.4	50028-4-1.3	50028
30	02-Feb-2015 12:41:08	247.36"	50029-0.1MG DOSE CARTON-2.6	50029-4-1.2	50029

Key

- Sector error
- Sector warning
- Splice requested
- Splice performed
- Replaced

jobname_AUDITTRAIL_1.txt

23-Jan-2015 14:34:49 Admin (Administrator) Imported LVS7500ValidationPG30_SN.zip
 23-Jan-2015 14:35:40 Admin (Administrator) Entered credentials prior to START new run
 23-Jan-2015 14:35:40 Admin (Administrator) Starting run 1 of job LVS7500ValidationPG30_SN
 23-Jan-2015 14:36:41 Admin (Administrator) Stopping run
 23-Jan-2015 14:36:41 Admin (Administrator) Started run and printed 30 labels with 0 reprints
 23-Jan-2015 14:36:56 testuser2 (test user 2) Entered credentials prior to REPLACEMENT
 23-Jan-2015 14:36:56 testuser2 (test user 2) Starting run 2 of job LVS7500ValidationPG30_SN
 23-Jan-2015 14:37:07 testuser2 (test user 2) Entered credentials prior to STOP
 23-Jan-2015 14:37:07 testuser2 (test user 2) Stopping run
 23-Jan-2015 14:37:07 testuser2 (test user 2) Replaced 0 labels with 0 reprints
 23-Jan-2015 14:37:29 Admin (Administrator) Entered credentials prior to REPLACEMENT
 23-Jan-2015 14:37:29 Admin (Administrator) Starting run 2 of job LVS7500ValidationPG30_SN
 23-Jan-2015 14:37:47 Admin (Administrator) Entered credentials prior to STOP
 23-Jan-2015 14:37:47 Admin (Administrator) Stopping run
 23-Jan-2015 14:37:47 Admin (Administrator) Replaced 3 labels with 0 reprints
 23-Jan-2015 14:38:02 testuser2 (test user 2) Entered credentials prior to Closeout and clear job

4) API CONTROL

Basic Production mode functionality of the LVS-7500 can be controlled using aTCP/IP command set. This is available to third party software providers in order to remotely operate and communicate with LVS-7500 systems. These are the TCP/IP commands currently supported.

4.1.1) Load Job

The “Load Job” command will load the desired job on all connected LVS-7500 systems.

4.1.2) Start Running

The “Start Running” command will start the currently loaded job on the LVS-7500 system.

4.1.3) Stop Running

The “Stop Running” command will stop the desired job on the LVS-7500 system.

4.1.4) Continue Last Run

The “Continue Last Run” command is valid only after a job has been loaded. Sending this command will initiate inspections and the results will be appended to the most recent run file (CSV file) instead of creating a new run.

4.1.5) Make Ready

The “Make Ready” command is valid only after a job has been loaded. Sending this command will load initiate Make

Ready mode for the currently loaded job.

4.1.6) Start Bypass

The “Start Bypass” command is valid only after a job has been loaded and is currently running. Sending this command will put the LVS-7500 system into Bypass mode.

4.1.7) End Bypass

The “End Bypass” command is valid only after a job has been loaded and is currently running in Bypass mode. Sending this command will take the LVS-7500 system out of Bypass mode and back into normal run mode.

4.1.8) Reset Alarms

The “Reset Alarms” command is the equivalent of clicking the “Reset alarms” button on the LVS-7500 system.

4.1.9) Set Match To

The “Set Match To” command sets the “Match this text” string of OCR, OCV, barcode grade or barcode read sectors. To use this feature, a field designator text string is entered into the “Match this text” setting in each sector. The field designator is a unique string identifier that is replaced at runtime when the “Set Match To” command is sent to the LVS-7500 system. Multiple sectors may have the same field designator entered in the

“Match this text” field.

Example:

The field designator “REF_NBR” has already been entered in the “Match this text” field for the desired sectors in the job.

The screenshot shows a dialog box titled "Step 5: Setup matching". At the top, there are two options: "Number of characters: any" and a checked "Variable" checkbox. Below that is a "Field mask:" input field. The main section contains several radio button options: "Accept everything (do not match)", "Match this text:" (which is selected and has a red box around the text "REF_NBR" in its input field), "Match data in sector:" (with a "Majority" dropdown and "at position" input), "Ascending" (with a "base:" dropdown set to "Numeric"), "Descending" (with a "step:" dropdown set to "1"), "Prompt when run is started:" (with an empty input field), "Match to file" (with an "Enter location" button and a dropdown set to "Unique per sector"), and "Check for duplicates" (with a dropdown set to "Unique per sector").

To replace the field designator “REF_NBR” with “ABC123” at run time send the following “Set Match To” command:

```
<0x01c hex><"REF_NBR|ABC123">
```

4.1.10) Exit to Main

The “Exit to Main” command exits from the job “Ready to run” screen back to the LVS-7500 system Welcome screen.

LVS-7500 OVERVIEW SPECIFICATION

5) SECURITY AND USER PERMISSIONS

Two options are available for the management of user permissions:

- **Option one:** Manage permissions of operators completely within the LVS-7500 software. Users with LVS-7500 administra-

tor access can create and manage permissions of other operators completely within each LVS-7500.

- **Option two:** Use Microsoft Active Directory to manage LVS-7500 operator authentication and authorization.

The LVS-7500 software will integrate with Microsoft Active Directory. LVS-7500 users will be granted user privileges based Microsoft authentication and LVS-7500 permissions are assigned based on group membership in Microscan specific

Active Directory groups.

Below are the available LVS-7500 user permissions. LVS-7500 operators can have a combination of permissions to allow a security design that fits business requirement needs.

Permission	Description
Allow Create / Edit NEW Job	Allows the operator to create/edit/delete a job.
Allow Load EXISTING Job	Allows the operator to load and execute existing jobs. Note this permission does not allowed to user to edit existing jobs.
Allow Calibration	Allows the operator to perform calibration.
Allow Administration	Allows the operator access to the "Administration" menu bar feature where operators and operator permissions are set up. Allow the operator to access the "Settings" menu bar feature where LVS-7500 software configuration settings are selected.
Allow Accept / Replace Errors	Allows the operator to accept or replace errors. Allow operator to print Replacement labels.
Allow Bypass / MakeReady	Allows the operator the ability to use the "Bypass" and "MakeReady" buttons on the "Operate Screen: Running the Job."
Allow Abort	Allow the operator the ability to Abort the execution of a job after a validation error is detected and Printing stop message is displayed
Allow Ignore	Allow the operator the ability to Ignore a label validation error after the printing stop message is displayed. Printing will continue with the next label in the job.
Allow Reset Printer	Allow the operator to send a reset printer signal from LVS-7500 to the connected printer.

5.1) LVS-7500 active directory configuration settings

Permission	Description	
ActiveDirectoryAuthentication	Setting that enables Active Directory control of Users and user permissions.	1=ON, 0=OFF
ActiveDirectoryDomain	Name of the Microsoft AD Domain	Example value: lvs-inc.com
ActiveDirectoryLVSOrgUnit	Logical Organizational Unit (OU) that contains all of the LVS-7500 Permission Groups	AD Organizational Unit will contains all of the other LVS-7500 Permission Groups. Example: LVS7500Permissions
ActiveDirectoryLVSAIUsers	Group containing all domain users to be granted permissions on this LVS7500. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be created on the LVS-7500 Example: LVS7500Users
ActiveDirectoryLVSAIAllowCreateEdit	Allows the operator to create, edit and delete a job. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Create Edit permission on the LVS-7500 Example: LVSAIAllowCreateEdit
ActiveDirectoryLVSAIAllowLoadExisting	Allows the operator to load and execute existing jobs. Note this permission does not allowed to user to edit existing jobs. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Load Existing permission on the LVS-7500 Example: LVSAIAllowLoadExisting
ActiveDirectoryLVSAIAllowCalibration	Allows the operator to perform calibration. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Calibration permission on the LVS-7500 Example: LVSAIAllowCalibration
ActiveDirectoryLVSAIAllowAdministration	Allows the operator access to the “Administration” menu bar feature where operators and operator permissions are set up. See the “Administration” section for more information. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Administration permission on the LVS-7500 Example: LVSAIAllowAdministration
ActiveDirectoryLVSAIAllowAcceptReplace	Allows the operator to accept or replace errors. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Accept Replace permission on the LVS-7500 Example: LVSAIAllowAcceptReplace
ActiveDirectoryLVSAIAllowBypassMakeReady	Allows the operator the ability to use the “Bypass” and “MakeReady” buttons on the “Operate Screen: Running the Job.” Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Make Ready permission on the LVS-7500 Example: LVSAIAllowResetPrinter
ActiveDirectoryLVSAIAllowAbort	Allow the operator the ability to Abort the execution of a job after a validation error is detected and Printing stop message is displayed. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Abort permission on the LVS-7500 Example: LVSAIAllowAllowAbort
ActiveDirectoryLVSAIAllowIgnore	Allow the operator the ability to Ignore a label validation error after the printing stop message is displayed. Printing will continue with the next label in the job. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Ignore permission on the LVS-7500 Example: LVSAIAllowIgnore
ActiveDirectoryLVSAIAllowResetPrinter	Allow the operator to send a reset printer signal from LVS-7500 to the connected printer. Should be a member of the ActiveDirectoryLVSOrgUnit	AD Security Group containing all users to be granted Allow Reset Printer permission on the LVS-7500

LVS-7500 OVERVIEW SPECIFICATION

5.2) Active directory implementation

When Active Directory (AD) is enabled, on each start of the LVS-7500 software, the system will connect over the network to the specified Microsoft Active Directory domain controller. The LVS-7500 will create a local file Operators.dat containing all of the LVS-7500 users and their

permissions. All of the users created are in the AD Group specified in the LVS-7500 configuration setting: ActiveDirectoryLVSAllUsers. The user passwords are not stored locally in the Operators.dat file. When a user enters a username and password into the LVS-7500, the credentials are verified with the current user name and password

in the AD. The LVS-7500 Operator Administration window can be used to view the current users and their permissions, but the "Add new operator," "Change this operator," "Delete this operator" and "Delete this operator" are disabled. When users are disabled or deleted from AD, their access to LVS-7500 login is immediately disabled, even if the LVS-7500 has

not been restarted.

Active Directory control of LVS-7500 users provides a single, secure record of authentication and authorization. Control of all AD changes is managed through AD Group policy and ownership.

6) FUNCTIONAL CHARACTERISTICS

The characteristics listed below apply to the LVS-

7500 5.4" (137 mm) and 8.5" (216 mm) readheads.

Line Scan Camera:	400 DPI. Floating Sensor Head
Light Source:	Red Light. 660 nm
Inputs / Outputs:	USB 2.0 port. 5-Volt Power Supply
Maximum System Speed:	10 inches (300 mm) per second

6.1) Functional Characteristics

Verify	Any combination of linear, matrix or stacked codes to ISO print quality standards including: <ul style="list-style-type: none"> • Linear (1D) Verifier Conformance (ISO/IEC 15416) • 2-Dimensional (2D) Verifier Conformance (ISO/IEC 15415)
Orientation & Number	Any orientation and number of codes on a label.
Read and Analyze	1D and 2D to published International specifications, with an overall ISO (ANSI) grade.
Minimum Linear (1D) Narrow Bar Width	<ul style="list-style-type: none"> • Read only: 6.3 Mils (.0063") (.160 mm) • Verification: 8.8 Mils (.0088") (.223 mm)
Minimum 2D Cell Size	<ul style="list-style-type: none"> • Read only: 10.0 Mils (.0100") (.254 mm) • Verification: 12.5 Mils (.0125") (.317 mm)
Reporting	Detailed data to be reported is in .csv format for extraction by the end user. Immediate reporting is available for viewing via the monitor and Light Tower if utilized.

6.2) Blemish Detection

Print faults	Detects skew, smear, print registration, die-cut errors, edge determination and missing information.
Variable Data	Allows user specified variable data within a pattern matching zone.
Red Light (660 nm)	The LVS-7500 uses red light (660 nm) to detect blemishes; thus, color blemishes in the red spectrum may not be properly detected.
Minimum Point Size	Blemish Inspection: 5 Mils / .005 inches / .126 mm Missing Period: 5 Mils / .005 inches / .126 mm

6.3) Optical Character Verification (OCV)

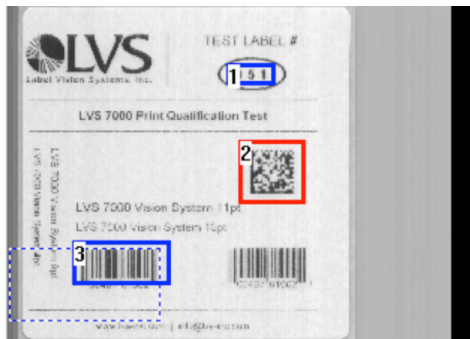
Permission	Description
Minimum Human Readable	.083 inches / 2.12 mm / 6 Printer Points
Read or Verify	Sequential string of alphanumeric characters (numbers 0 to 9 and letters A to Z) against known field or database. Lowercase characters can be distinguished in OCR-B MT font only. Characters cannot touch or overlap.
Data	Verifies variable and fixed data ascending, descending or from a file.

6.4) Number Validation

- Any numerical order requirements such as ascending, descending, or algorithmic series to ensure the numbers are in the expected order
- Use external data file for the validation of random number sequence
- Detects duplicate numbers

Any number of sectors can be set to use “match to file”. The following shows an LVS-7500 in design mode, editing a job to create inspection sectors.

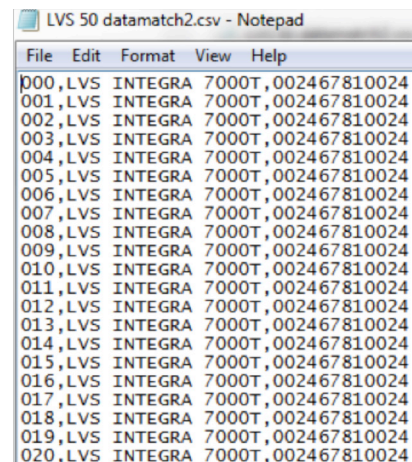
This example shows 3 sectors defined, numbered 1-3.



6.5) Matching

- Matches decoded data from a barcode to human readable text of that barcode
- Matches multiple fields of data within the label area being inspected

Below is an example data file, showing three columns of csv data corresponding to the three sectors. Sector 1 would be defined as being unique for the job allowing the LVS-7500 to determine when a job was completed.



6.6) Match To File

This feature compares the data decoded within a sector to the data in a file created by the user. Note the format of the file must be as follows:

- The format of the file must be a comma-separated values (CSV) file.
- The order in which the data is stored is matched to the sector number in lowest to highest order that has been selected to “Match to file”.
- Headers are not allowed.

7) SUPPORTED SYMBOLOGIES

Below are a few of the symbologies supported by the LVS-7500. Contact Microscan for a full list of supported symbologies.

- | | |
|-------------------------------|---|
| Aztec | GS1 Databar-14 |
| Codabar | GS1 Data Matrix |
| Code 128 | GS1 QR Code |
| Code 39 | Interleaved 2 of 5 (ITF) |
| Code 93 | Laetus Pharmacode |
| Data Matrix | Micro QR Code |
| DataBar expanded | MicroPDF417 |
| EAN-13 | PDF417 |
| EAN-13 (2-digit supplemental) | QR Code |
| EAN-13 (5-digit supplemental) | UPC-A |
| EAN-8 | UPC-A (2 digit supplemental) |
| ECC-200 Data Matrix | UPC-A (5 digit supplemental) |
| GS1-128 | UPC-E |
| GS1 Databar Limited | UPC-E (2 digit supplemental) |
| GS1 Databar Stacked | UPC-E (5 digit supplemental) |
| | All applicable GS1 composite components |

8) INTERNATIONAL STANDARDS

- ISO/IEC 15415
- ISO/IEC 15416
- ISO/IEC 15426 – 1 and 2
- All supported ISO/IEC symbology specifications

SAFETY CERTIFICATIONS

DESIGNED FOR
FCC, CE, UL (Pending)

ROHS COMPLIANT

QMS CERTIFICATION

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Warranty – For current warranty information about this product, please visit www.microscan.com/warranty.



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