



INTEGRA 9500/9505 Barcode Quality Station Operations Manual

Version 3.0.6



Integra 9500



Integra 9505

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Overview

This manual covers the operating instructions for the INTEGRA 9500 and 9505 Barcode Verification Systems.

For installation assistance, see the notes below:

- For installation assistance with the INTEGRA 9500, refer to the *INTEGRA 9500 Quick Start Guide*.
- For installation assistance with the INTEGRA 9505 Flat Bed Verifier, refer to the *INTEGRA 9505 (Flat Bed Verifier) Installation Guide*.



IMPORTANT: The INTEGRA 9500/9505 arrives to your site packaged in a specially designed cardboard shipping carton. **DO NOT** discard this shipping carton in case you must ship or store the system for any reason. Failure to use this carton when returning your product to LVS will void warranty.

Important Safety Instructions



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying this unit.

This unit has been carefully designed to provide years of safe, reliable performance. However, as with all electrical equipment, there are some basic precautions that you should follow to avoid personal injury or damage to the system:

- Before using the system, carefully read all the installation and operating instructions.
- Observe all warning instruction labels on the system.
- To protect your system from overheating, make sure no openings on the system are blocked.
- Never insert anything into the openings of the system.
- Do not use the system near water or spill liquid into it.
- All components used to create your system are UL and CE approved. All circuits were designed to incorporate maximum safety. However, any

equipment using electrical voltages may cause personal injury if improperly handled.

- Do not attempt to work on the system with the main power lines connected.
- Ensure that the AC power source matches the ratings listed for the system. If unsure, check with your dealer or local utility provider.
- Do not place the AC power cord where it can be stepped on. If the AC power cord becomes damaged or frayed, replace it immediately.
- Avoid looking directly into any system lights. If you need to examine the lights, or look at any component near the lights, be sure to first turn off the lights. If the lights cannot be turned off, then wear polarized sunglasses while examining the lights.
- To avoid damaging the system, turn off and unplug the system before cleaning.
- If the system ever needs repair, consult Label Vision Systems or your LVS® Distributor.

Software Specifications for the 9500 and 9505

Supported Symbolologies include the following:

SYMBOLGY	SUPPORTED STANDARD(S)
Code 39	ISO 16388
Interleaved 2 of 5	ISO 16390
ITF-14	ISO 16390 & GS1 General Specifications
Code-128	ISO 15417
GS1-128	ISO 15417 & GS1 General Specifications
GS1-128 with CC-A	ISO 15417, ISO 24723 & GS1 General Specifications
GS1-128 with CC-B	ISO 15417, ISO 24723 & GS1 General Specifications
GS1-128 with CC-C	ISO 15417, ISO 24723 & GS1 General Specifications
Code 93	AIM BC5
Codabar	AIM BC3
UPC-A	ISO 15420 & GS1 General Specifications
UPC-A with 2 Digit supplemental	ISO 15420 & GS1 General Specifications
UPC-A with 5 Digit supplemental	ISO 15420 & GS1 General Specifications
UPC-A with CC-A	ISO 15420, ISO 24723 & GS1 General Specifications
UPC-A with CC-B	ISO 15420, ISO 24723 & GS1 General Specifications
UPC-E	ISO 15420 & GS1 General Specifications
UPC-E with 2 Digit supplemental	ISO 15420 & GS1 General Specifications
UPC-E with 5 Digit supplemental	ISO 15420 & GS1 General Specifications
UPC-A with CC-A	ISO 15420, ISO 24723 & GS1 General Specifications
UPC-A with CC-B	ISO 15420, ISO 24723 & GS1 General Specifications
EAN-13	ISO 15420 & GS1 General Specifications
EAN-13 with 2 Digit supplemental	ISO 15420 & GS1 General Specifications
EAN-13 with 5 Digit supplemental	ISO 15420 & GS1 General Specifications
EAN-13 with CC-A	ISO 15420, ISO 24723 & GS1 General Specifications
EAN-13 with CC-B	ISO 15420, ISO 24723 & GS1 General Specifications
EAN-8	ISO 15420 & GS1 General Specifications
EAN-8 with CC-A	ISO 15420, ISO 24723 & GS1 General Specifications
EAN-8 with CC-B	ISO 15420, ISO 24723 & GS1 General Specifications
GS1 Databar – 14	ISO 24724 & GS1 General Specifications
GS1 Databar – 14 with CC-A	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar – 14 with CC-B	ISO 24724, ISO 24723 & GS1 General Specifications

SYMBOLGY	SUPPORTED STANDARD(S)
GS1 Databar – 14 Stacked	ISO 24724 & GS1 General Specifications
GS1 Databar – 14 Stacked with CC-A	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar – 14 Stacked with CC-B	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar Limited	ISO 24724 & GS1 General Specifications
GS1 Databar Limited with CC-A	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar Limited with CC-B	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar Expanded	ISO 24724 & GS1 General Specifications
GS1 Databar Expanded CC-A	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar Expanded CC-B	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar Expanded Stacked	ISO 24724 & GS1 General Specifications
GS1 Databar Expanded Stacked CC-A	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Databar Expanded Stacked CC-B	ISO 24724, ISO 24723 & GS1 General Specifications
GS1 Data Matrix	ISO 16022 & GS1 General Specifications
Data Matrix	ISO 16022
PDF-417	ISO 15438
Micro PDF-417	ISO 15438
QR Code 2005	ISO 18004
Micro QR Code 2005	ISO 18004
Aztec	ISO 24778
Laetus Pharmacode	Laetus
MaxiCode	ISO 16023
Han Xin	Draft AIM Specification

Additional Notes

➤ GS1 General Specifications are downloadable from this link:

http://www.gs1uk.org/EANUCC/WORD_Files/word.html

➤ ISO Symbology Standards can be purchased from this link:

<http://www.iso.org/iso/en/CatalogueListPage.CatalogueList?ICS1=35&ICS2=40&ICS3=&scopelist=>

➤ AIM Symbology Standards can be purchased from this link:

<https://www.aimglobal.org/estore/>

In addition to adherence to the symbology specifications, the INTEGRA 9500/9505 complies with the following standards:

- ISO 15415 - Bar code print quality test specification - Two-dimensional symbols
- ISO 15416 - Bar code print quality test specification - Linear symbols
- ISO 15426-1 - Bar code verifier conformance specifications - Part 1: Linear symbols
- ISO 15426-2 - Bar code verifier conformance specification - Part 2: Two-dimensional symbols

Hardware Specifications for the INTEGRA 9500

Light Source

- White Light
- Red Filter
- 660 nm

Inputs / Outputs

- 3 USB ports
- 1 Serial port
- 1 External VGA port
- External USB mouse
- 10/100 LAN (Ethernet)
- 12 vdc @ 1 amp (nominal)
- 5 vdc @ 2.4 amps (nominal)

Main Power Supply:

- Internal fuse (5A)
- 350 watt ATX power supply
- 50/60 hz 100 to 240 VAC

Monitor

- Built in
- 12.1 inch
- 800 x 600 LCD Display

Video Camera

- Monochrome
- 2.1 or 1.3 Mega-pixel

Operating Temperature

- 10° C (50°F) to 30° C (86°F)

Relative Humidity

- 20% to 70% (non-condensing)

Computer

- Intel-based processor
- 512 MB memory
- 40 GB hard drive (*minimum*)
- CD / DVD Re-writer
- Windows XP Professional
- 12V @ 4.87 A
- 5V @ 12.2 A
- Elastomer keyboard

Physical Properties

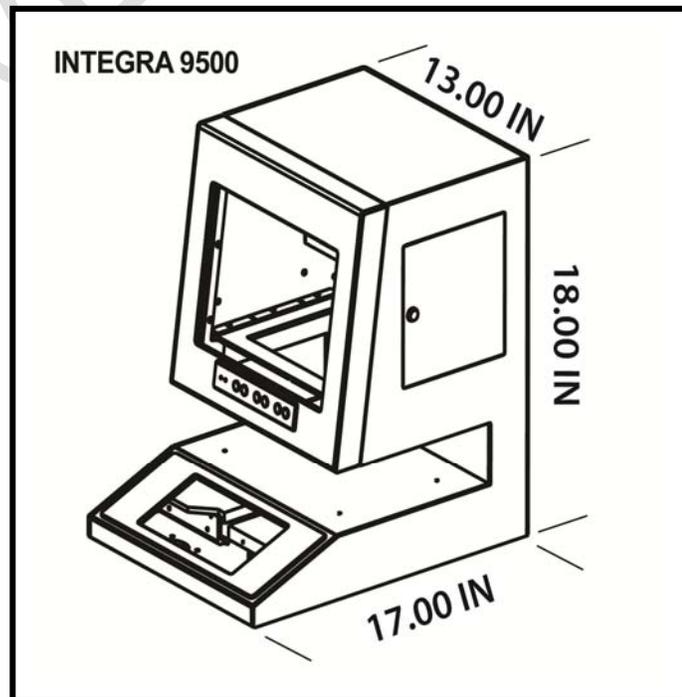
- D = 432 mm (17")
- W = 330 mm (13")
- H = 18 mm (18")
- Weight = 12.5 kg (27.5 lbs)

Storage Temperature

- 0°C (32°F) to 40°C (104°F)

Calibration

- EAN/UPC Test Card
Part Number: LAB0026
OR
- GS1 128 Test Card
Part Number: LAB0033



Specifications are subject to change without notice.

Hardware Specifications for the INTEGRA 9505

Light Source

- White Light
- Red Filter
- 660 nm
- 12 vdc @ 1.6 amps

Inputs / Outputs

- USB 2.0 port
- 12 vdc @ 1.10 amps

Video Camera

- Monochrome
- 2.1 or 1.3 Mega-pixel

Operating Temperature

- 10° C (50°F) to 30° C (86°F)

Relative Humidity

- 20% to 70% (non-condensing)

Storage Temperature

- 0°C (32°F) to 40°C (104°F)

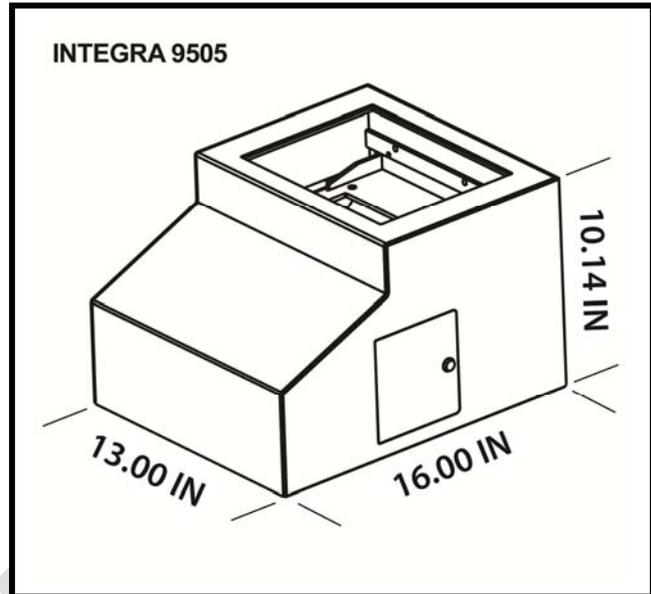
Physical Properties

- D = 406 mm (16")
- W = 330 mm (13")
- H = 258 mm (10.14")
- Weight = 5 kg (11 lbs)

Minimum PC Requirements (PC Not Supplied)

- Windows XP Professional
- Intel Celeron 2.4 Ghz
- 512 MB RAM (1 GIG Recommended)
- 40 GB HDD
- 800 x 600 Resolution
- (2) USB 2.0 ports

Specifications are subject to change without notice.



Calibration

- EAN/UPC Test Card
Part Number: LAB0026
OR
- GS1 128 Test Card
Part Number: LAB0033

Basic Operations

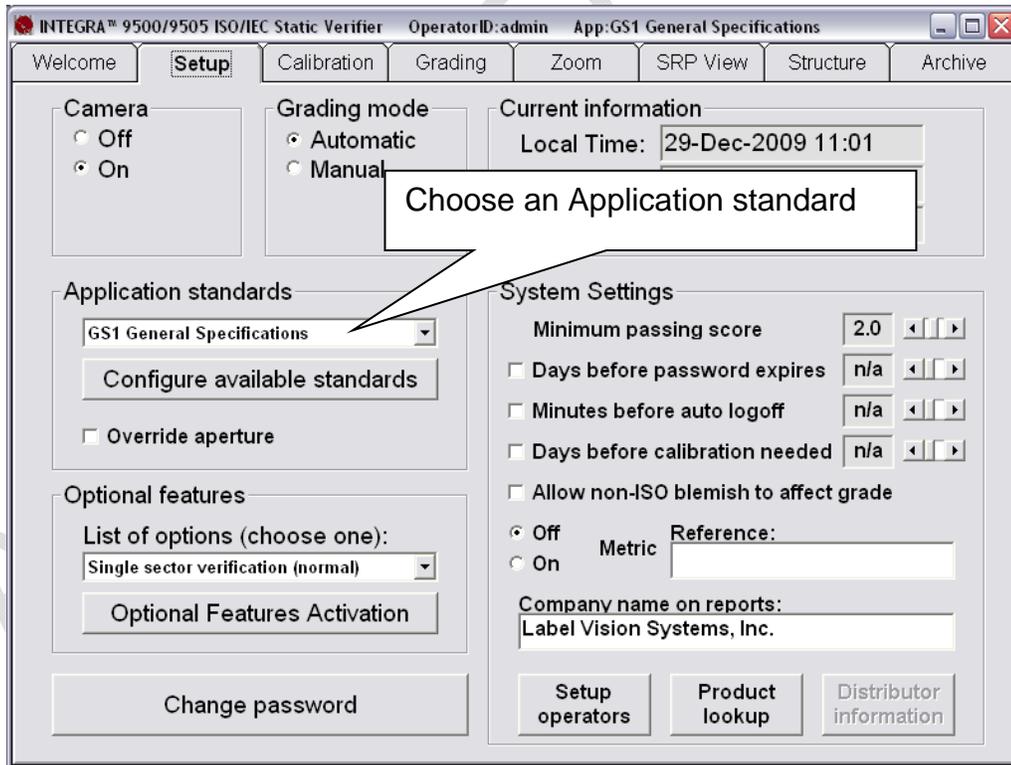
The basic operational procedures for the INTEGRA 9500/9505 are listed below:

1. Turn on the system and wait 2 minutes for the lights to stabilize.
2. The system is setup with tabs located across the top of the screen. Each tab is discussed in this guide.



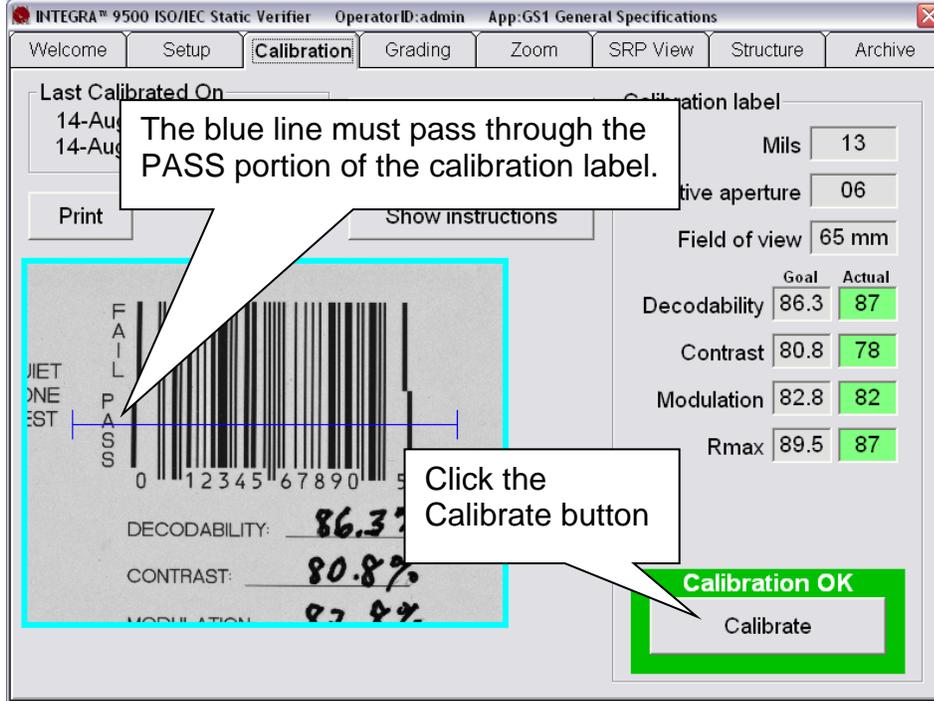
Click the **Setup** tab and choose the desired Application standard (see Figure below).

 **Note:** When prompted for an Operator ID and Password, enter admin for both the Operator ID and Password.



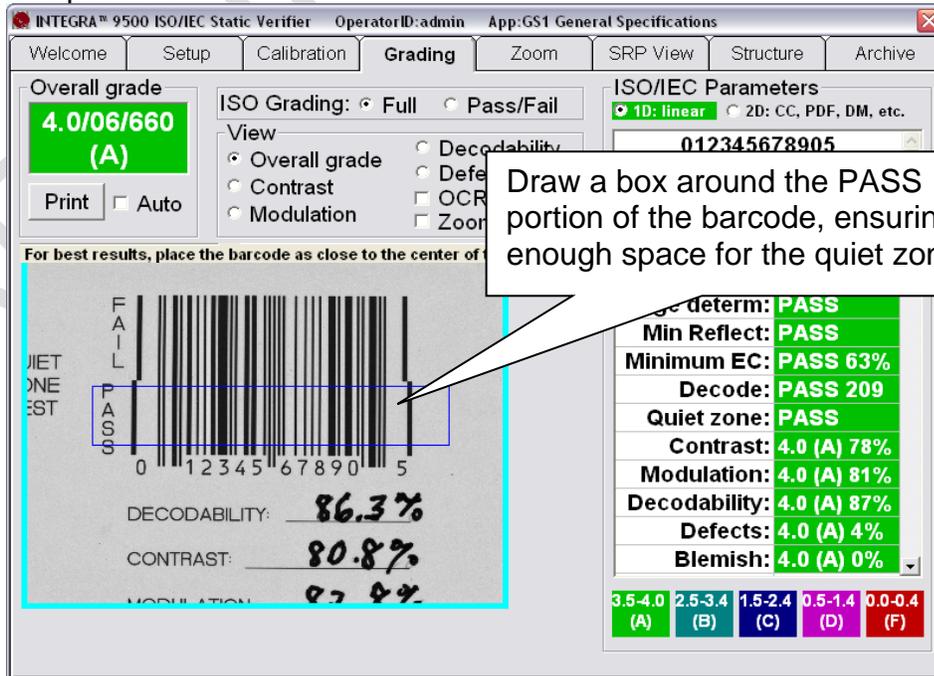
3. Click the **Calibration** tab and calibrate the system by placing either of the Master Grade barcodes (located on the supplied Calibration Test Card) into the center of the field of view, ensuring that the blue line passes

through the “PASS” portion of the calibration label. Then, click the **Calibrate** button (see Figure below).



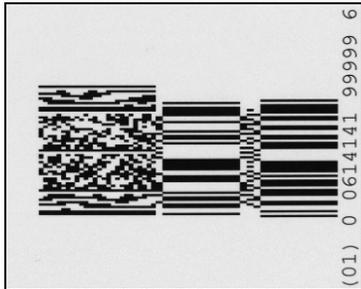
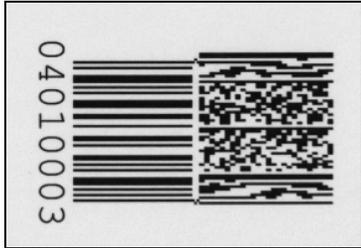
4. Click the **Grading** tab and place a barcode into the field of view and draw a box as shown in the Figure below. The verification results are displayed immediately.

Important: Position the barcode as close to the center of the field of view as possible.



 **IMPORTANT:** Barcodes can be verified in any orientation, which is an integer multiple of 90 degrees. See examples below:

Barcodes Verified Horizontally:



Barcodes Verified Vertically:

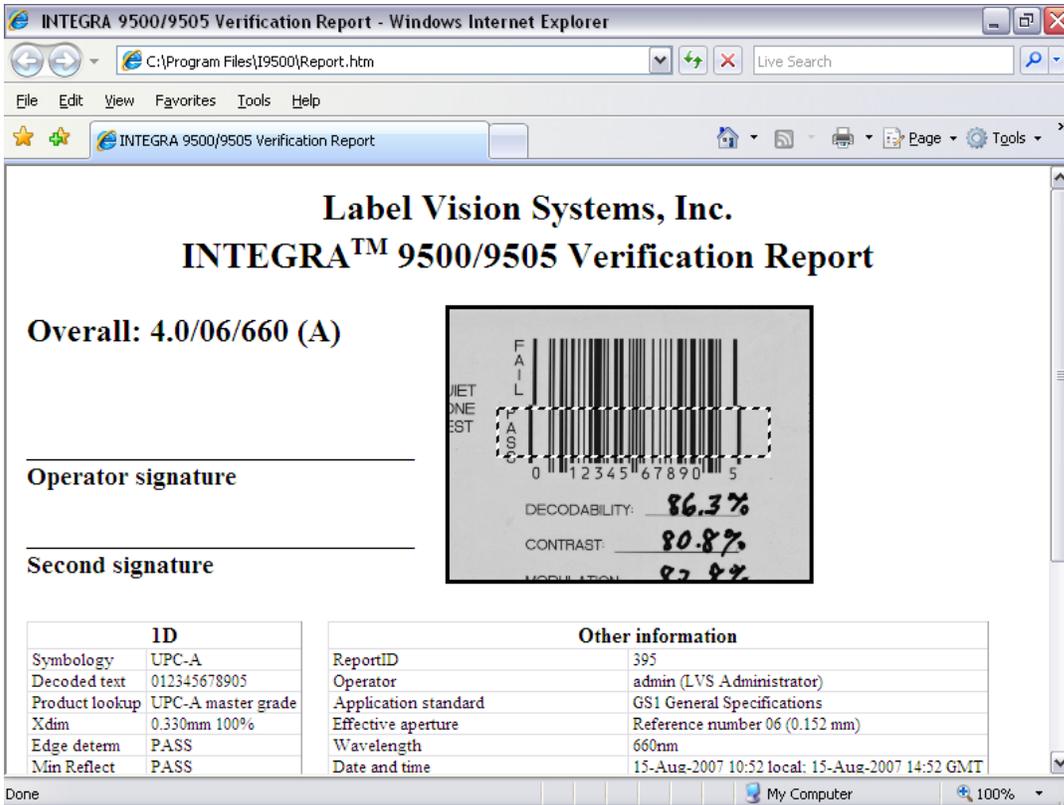


➔ **To Print the Results:**

To print the verification results, click the **Print** button on the top, left corner of the **Grading Tab** screen.

➔ **To View the Report:**

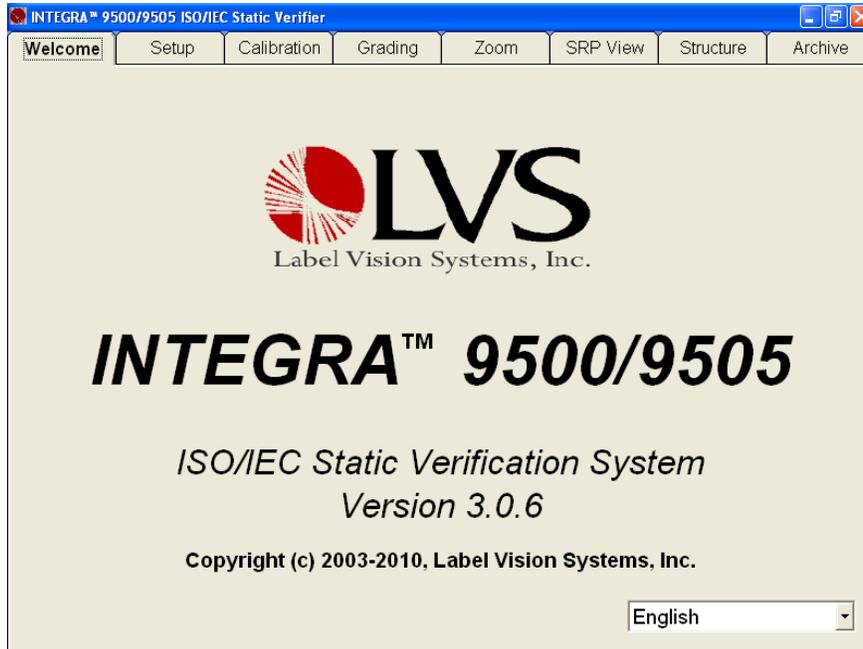
To view the report, right-click on the **Print** button and an HTML document is generated and displayed on the screen (see Figure below).



This concludes the Basic Operations of the INTEGRA 9500/9505. Each tab at the top of the screen is explained in detail in the following sections.

Welcome Tab

The Welcome tab is the first tab to appear when starting the INTEGRA 9500/9505.



Choice of Language

Click the drop-down box in the lower right section of the screen to change the software language (see Figure below).

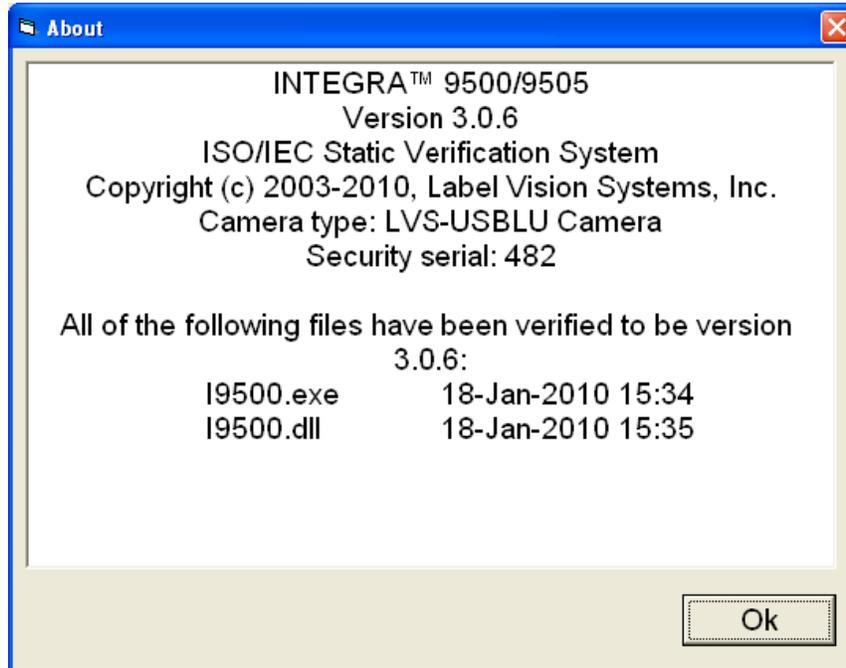


Double-click on the term **Version** to view a complete list of the latest software versions.

Click this drop-down box to select your preferred language.

Current Software Version List

Double-clicking on the term **Version** (see Figure above) allows you to view a complete list of the latest software versions. After double-clicking on this term, the following page appears (see Figure below). This information is important if it is necessary to contact the LVS technical helpline



Password Login

The password Login box (see Figure below) appears when you click on any of the tabs located at the top of the screen.

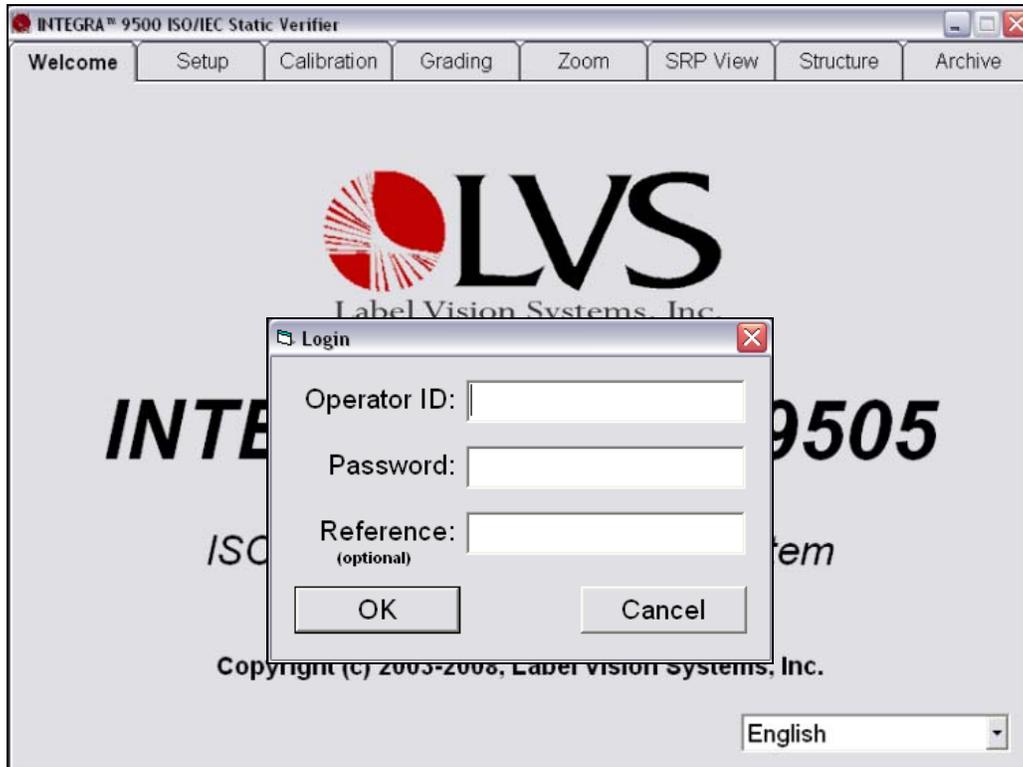
Enter the Operator ID and Password. When the system is used for the first time, the Operator ID is **admin** and the password is **admin**. This enables the administrator to gain access to where the software sets up and maintains all passwords and levels of Permissions for each operator.

The **Reference** field, which is optional, allows operators to enter a reference number for the work they are performing. This number can be used to reference a Job Number, Control Number, Purchase Order, etc.

The reference number can also be entered in the **Reference** field located on the **Setup** tab screen.

IMPORTANT: The last updated **Reference** field overrides the secondary **Reference** field. For example, a user updating the **Reference** field on the **Setup** tab screen overrides the reference number entered in the Login box.

Passwords and permission levels are explained in the next chapter under the **Setup Operators** section.



Setup Tab

The Setup tab contains the following sections:

- Camera
- Grading Mode
- Application Standards
- Current Information
- System Settings
- Optional Features
- Change Password button

Each of the aforementioned sections is listed below:

Camera

- **On** – This option is selected for nearly all activities.
- **Off** – The camera automatically turns **Off** when the following occurs:
 - When an imported image is reviewed (see the **Archive Tab** section for more information).

- After performing a “stitching” operation (see the **BarCode Too Wide for Field of View (Stitching Function)** section for more information).

After you have finished inspecting either of the above images, the camera must be turned back **On** to see live images again.

Grading Mode

The “Grading mode” section allows you to choose one of two ways to grade barcodes after a sector has been drawn.

- **Automatic:** After a sector has been established, you can remove the barcode and place another barcode into the field of view and the new barcode is graded automatically.
- **Manual:** After a sector has been established, you can remove the barcode and place another barcode into the field of view and the new barcode is graded after the **Click to grade** button is pushed or if a new box is drawn. When choosing to manually grade an image, the software also archives the verification data.

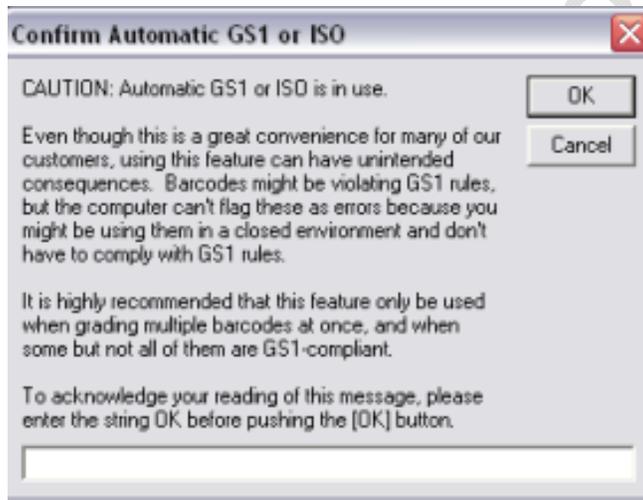
Application Standards

An Application standard is a specific protocol established by a group or industry, such as the military, hospitals, FDA, etc. Currently, the INTEGRA 9500/9505 supports the following Application standards:

1. AIAG / JAMA / JAPIA / ODETTE
 2. ALDI
 3. AS9132-A / AIM DPM Cat 0
 4. Automatic GS1 or ISO (read important note below)
 5. Chinese Sensible (Han Xin) Code
 6. DHL
 7. French CIP
 8. GS1 General Specifications
 9. GS1 Report.doc (requires the use of Microsoft Word)
-  **Note:** GS1 Report.doc is the default custom report. You can create your own custom report(s) by following the steps outlined in Appendix G: Custom Report.
10. IFAH
 11. ISO/IEC 15415/15416
 12. Italian Pharmacode
 13. Japan Post
 14. Japanese Codabar

- 15. Laetus Pharmacode
- 16. MIL-STD-130M
- 17. Miniature Pharmacode
- 18. Multi-rotation Data Matrix
- 19. Multi-rotation QR Code
- 20. PZN-big (German Pharmacode)
- 21. PZN-normal (German Pharmacode)
- 22. PZN-small (German Pharmacode)

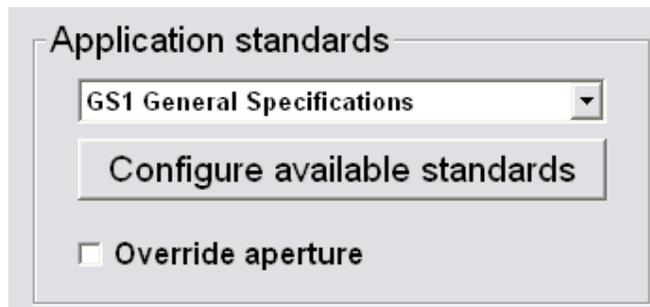
 **Important note about Automatic GS1 or ISO Application standard:**
 When selecting the Automatic GS1 or ISO standard, the following message appears. You must read the message, enter OK in the text field, and then click OK.



The aforementioned Application standards vary according to specific industry norms. Failure to use the correct standard causes the final grade to be incorrect. When no Application standard is specified, the ISO/IEC 15415/15416 should be used.

Selecting an Application Standard

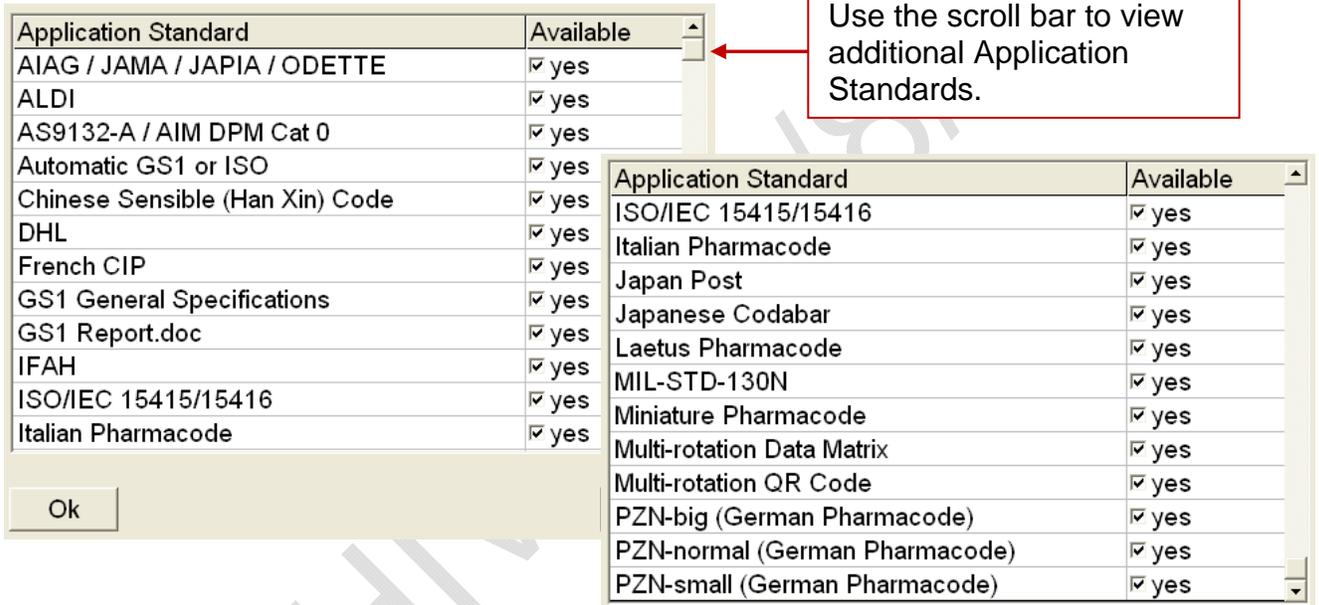
1. Select an Application standard from the drop-down box, or click the **Configure available standards** button to view the entire list of Application standards (see Figure below).



 **Note:** The Application standards appearing in the drop-down list are the standards marked **Yes** in the main Application standards window; this window appears after clicking the **Configure available standards** button (see next step for more information about this feature).

2. If you select the **Configure available standards** button, select the **Yes** checkbox for each desired Application standard (see Figure below). Each selected Application standard appears in the Application standards drop-down list.

 **Note:** Clicking the **Available** column header toggles all Application standards between Yes or No options.



Application Standard	Available
AIAG / JAMA / JAPIA / ODETTE	<input checked="" type="checkbox"/> yes
ALDI	<input checked="" type="checkbox"/> yes
AS9132-A / AIM DPM Cat 0	<input checked="" type="checkbox"/> yes
Automatic GS1 or ISO	<input checked="" type="checkbox"/> yes
Chinese Sensible (Han Xin) Code	<input checked="" type="checkbox"/> yes
DHL	<input checked="" type="checkbox"/> yes
French CIP	<input checked="" type="checkbox"/> yes
GS1 General Specifications	<input checked="" type="checkbox"/> yes
GS1 Report.doc	<input checked="" type="checkbox"/> yes
IFAH	<input checked="" type="checkbox"/> yes
ISO/IEC 15415/15416	<input checked="" type="checkbox"/> yes
Italian Pharmacode	<input checked="" type="checkbox"/> yes

Application Standard	Available
ISO/IEC 15415/15416	<input checked="" type="checkbox"/> yes
Italian Pharmacode	<input checked="" type="checkbox"/> yes
Japan Post	<input checked="" type="checkbox"/> yes
Japanese Codabar	<input checked="" type="checkbox"/> yes
Laetus Pharmacode	<input checked="" type="checkbox"/> yes
MIL-STD-130N	<input checked="" type="checkbox"/> yes
Miniature Pharmacode	<input checked="" type="checkbox"/> yes
Multi-rotation Data Matrix	<input checked="" type="checkbox"/> yes
Multi-rotation QR Code	<input checked="" type="checkbox"/> yes
PZN-big (German Pharmacode)	<input checked="" type="checkbox"/> yes
PZN-normal (German Pharmacode)	<input checked="" type="checkbox"/> yes
PZN-small (German Pharmacode)	<input checked="" type="checkbox"/> yes

Additional Application Standards

3. Click **OK** to save your changes or **Cancel** to discard your changes.

Override Aperture

ISO 15415 and ISO 15416 outline rules regarding what aperture should be used based on symbology and cell size / x-dimension. ISO 15415 and ISO 15416 also state that apertures can be overridden by an Application Standard and that the Application Standard rules shall take precedence over the ISO standards. While the INTEGRA 9500/9505 supports a number of common Application Standards, it is conceivable that an aperture other than those stated either in the ISO standards or the supported Application Standards may be desired.

If an Application standard other than those specified is desired, you may override the aperture by clicking the **Override aperture** checkbox. Enter the diameter of the aperture expressed in one thousandths of an inch (.0254 mm); use this value

even when using metric. If the aperture has been overridden, a clear warning is displayed on the Grading screen as well as on the Grading Report.

Creating Custom Reports

GS1 General Specifications is the default custom report. You can create your own custom report(s) by following the steps outlined in Appendix G: Custom Report.

 **Note:** Appendix G is not included in this manual; it is included on the installation CD that arrives with your INTEGRA 9500 or 9505.

Current Information

The top-right of the **Setup Tab** screen contains a box of information indicating the local time of day, date, Greenwich Mean Time (GMT), and time zone (see below).

Current information	
Local Time:	29-Dec-2009 11:01
GMT:	29-Dec-2009 16:01
Time Zone:	GMT -5

GMT is defined as the local time at the 0 meridian passing through Greenwich, England and is the same as UT (Universal Time). GMT remains the same throughout the year and does not change in the Spring or Autumn. This information is attached to all Calibration Reports.

Change the Time Zone:

- Minimize the INTEGRA 9500/9505 screen and right click on the time box at the lower right corner of the computer screen.
- Choose **Adjust Date/Time**.
- Click the **Time Zone** tab and change the time zone to the correct time zone.
- Push the **Apply** button.

System Settings

The screenshot shows the 'Setup' window for the INTEGRA 9500/9505 ISO/IEC Static Verifier. The 'System Settings' section is highlighted with a callout box. The settings are as follows:

Setting	Value
Minimum passing score	2.0
Days before password expires	n/a
Minutes before auto logoff	n/a
Days before calibration needed	n/a
Allow non-ISO blemish to affect grade	Off
Metric Reference	
Company name on reports	Label Vision Systems, Inc.

Minimum Passing Score

There is a PASS/FAIL mode of operation used to simplify barcode verification (this is explained in more detail in the section entitled **Pass / Fail ISO Grading** in the **Grading Tab** section). This is where the minimum passing score is selected.

Days before password expires

Use the arrow keys to select the number of days before the current password expires. As soon as you use the arrow keys, the checkbox will automatically be enabled.

Minutes before auto logoff

An automatic “Logoff” feature is set by clicking on the box and then choosing a period of time desired to make the system automatically log off after that period of time. Choosing *n/a* causes this feature to be turned off.

Recalibration Cycle

It is important to calibrate the system over a period of time. This feature sets up the desired number of days between system calibration. When the period of time has been reached, the software will not allow you to continue until calibration has been completed.

Allow Non-ISO blemish to affect grade

If this option is not checked, a barcode where many lines are not decodable will not be penalized since the ISO standard does not mandate how long decoded lines should be handled.

If this option is checked, non-decoded lines will degrade the overall ISO grade.

Metric

The Metric option allows you to choose between measurements being reported in inches or metric units (mm/microns).

Reference Box

You can choose to add a reference number to a final verification report by entering a number in this box, such as a Job Number, Control Number, Purchase Order Number, etc; this allows you to sort results by reference.

A reference number can also be entered in the Login box when a user logs onto the system. Note that the last updated **Reference** field overrides the secondary **Reference** field. For example, a user updating the **Reference** field in the Login box overrides the reference number entered on the Setup tab screen.

Company Name on Reports

This feature gives you the ability to place your company name on all final verification reports. Delete the **Label Vision Systems, Inc** name from the field and type in your company name.

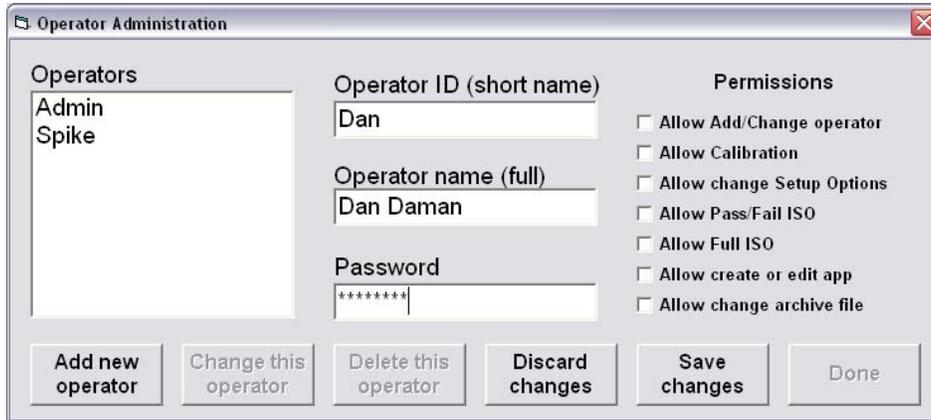
Setup Operators

Many national and international standards stipulate that the operator of a verification system must be identified in order for the verification process to be valid. To set this up, push the **Setup operators** button.

The administrator of the system can now choose to add, delete, or change an operator's name and password (see Figure below).

 **IMPORTANT: A password must have a minimum number of 8 characters and must contain at least (1) alpha character and (1) numeric character.**

This is also where the administrator of the system chooses which operator's have permission to perform the listed tasks (see Figure on next page). Be sure to push the **OK** button when you are finished entering new users or updating levels of permissions. Following is a list of permissions and descriptions:



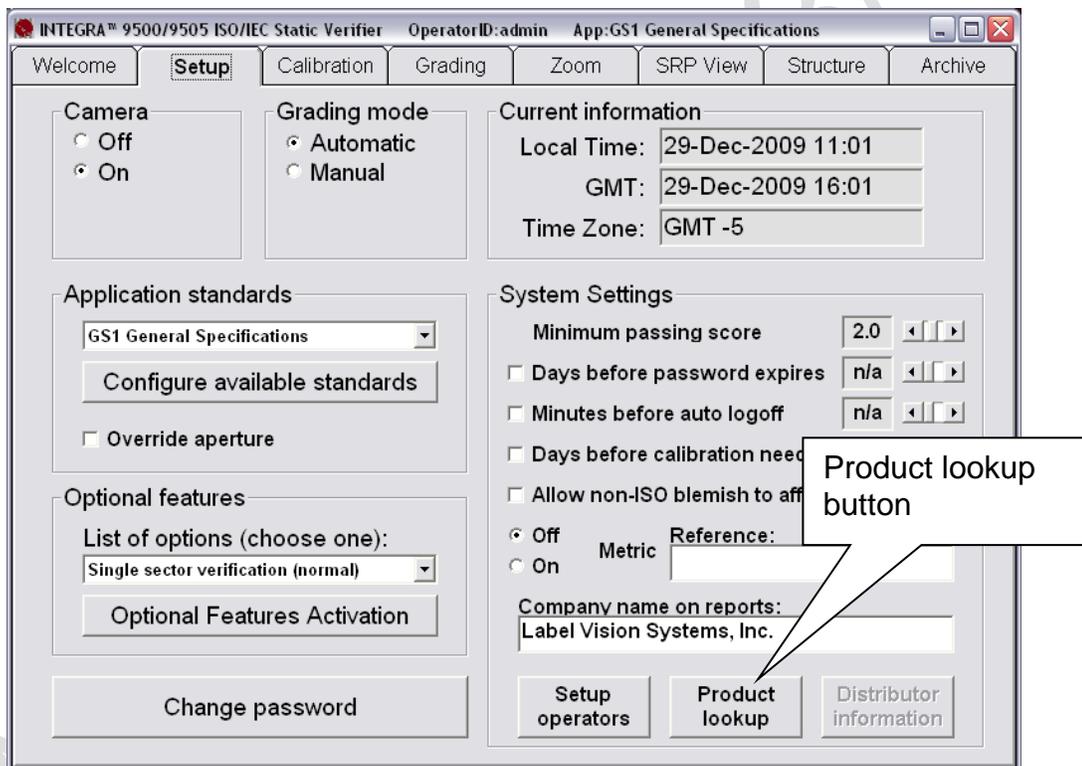
PERMISSION	DESCRIPTION
Allow Add/Change operator	Allows the administrator to assign Permission levels for all other system users. All new systems are shipped with the User Name and Password set to admin .
Allow Calibration	Allows the operator to calibrate the system.
Allow Change Setup Options	Allows the operator access to set any of the Setup Tab screen parameters.
Allow Pass / Fail ISO	On the Grading Tab , there is a section entitled ISO Grading in which you can choose between Full or Pass/Fail . This permission allows the user to set different Pass / Fail levels. For more information, refer to the section entitled Pass / Fail ISO Grading in the Grading Tab section.
Allow Full ISO	On the Grading Tab , there is a section entitled ISO Grading in which you can choose between Full or Pass/Fail . This permission allows the user to set different Pass / Fail levels. For more information, refer to the section entitled Pass / Fail ISO Grading in the Grading Tab section.
Allow Create or Edit App	<i>This feature is enabled only with a purchase upgrade.</i> Allows the user to create or edit special features, such as allowing the user to verify multiple barcodes simultaneously within the field of view. See the Optional Features – Multi-Barcode Verification section for more information.
Allow Change Archive File	Allows the user to change the archive file located on the Archive Tab .

Product Lookup

The **Product Lookup** button (see Figure below) is a product identification feature used for EAN-8, EAN-13, UPC-A, and UPC-E symbologies. It allows you to enter a product code and description into a database table that reports the information each time the software decodes that string of data.

The Product Identification Data appears below the barcode data on the **Grading Tab** screen. The software groups this data within special characters < and >.

The software is setup to accept manual entry of data and the ability to import a CSV (comma separated values) file. The first field contains the barcode data and the next field contains its description.



Distributor Information

The **Distributor Information** button allows the distributor of this INTEGRA 9500/9505 Verification System to enter his/her name, address, and phone number so that it appears on the Final Verification Report.

Optional Features - Multi-Barcode Verification

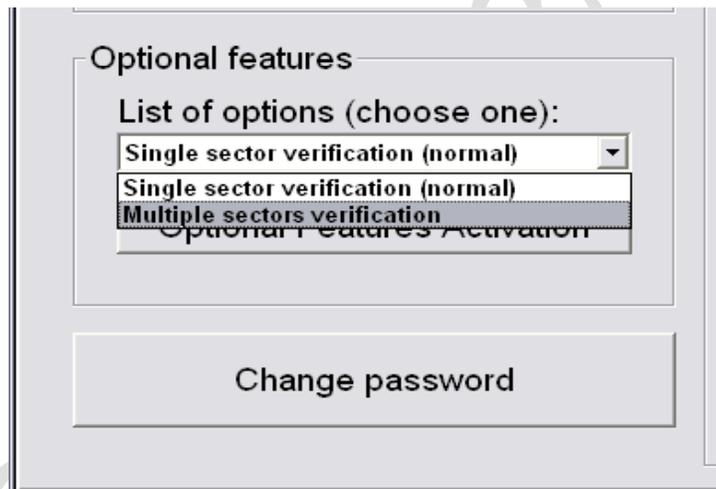
Many application-specific labels have more than one barcode symbol printed on it, such as shipping labels, blister packs, etc. The INTEGRA 9500/9505 has a special optional feature designed to allow the user to verify multiple barcode images in the field of view at the same time. These multiple barcode images can all be the same symbology or they can all be different.

 **Important:** Multi-Barcode Verification is to be used as a process control tool only and not for primary verification of barcodes.

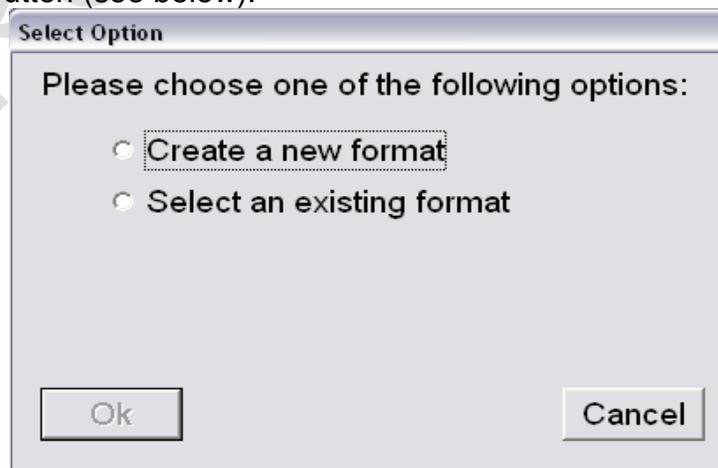
After a specific multi-barcode label has been set up, the software automatically saves the template to be reloaded at another time.

Verify Multi-BarCode Symbols:

Step 1: Go to the **Setup Tab** screen and choose “Multiple sectors verification” under the “Optional features” section (see below).



Step 2: Choose to “Select an existing format” or “Create a new format”. Then push the **OK** button (see below).



□ **Step 3:** Choose one of the listed application standards, and then push the **OK** button (see below).



□ **Step 4:** If you selected to **Create a New Format**, enter the name of the new format in the field (see Figure below). The software now proceeds to the **Grading Tab** screen.

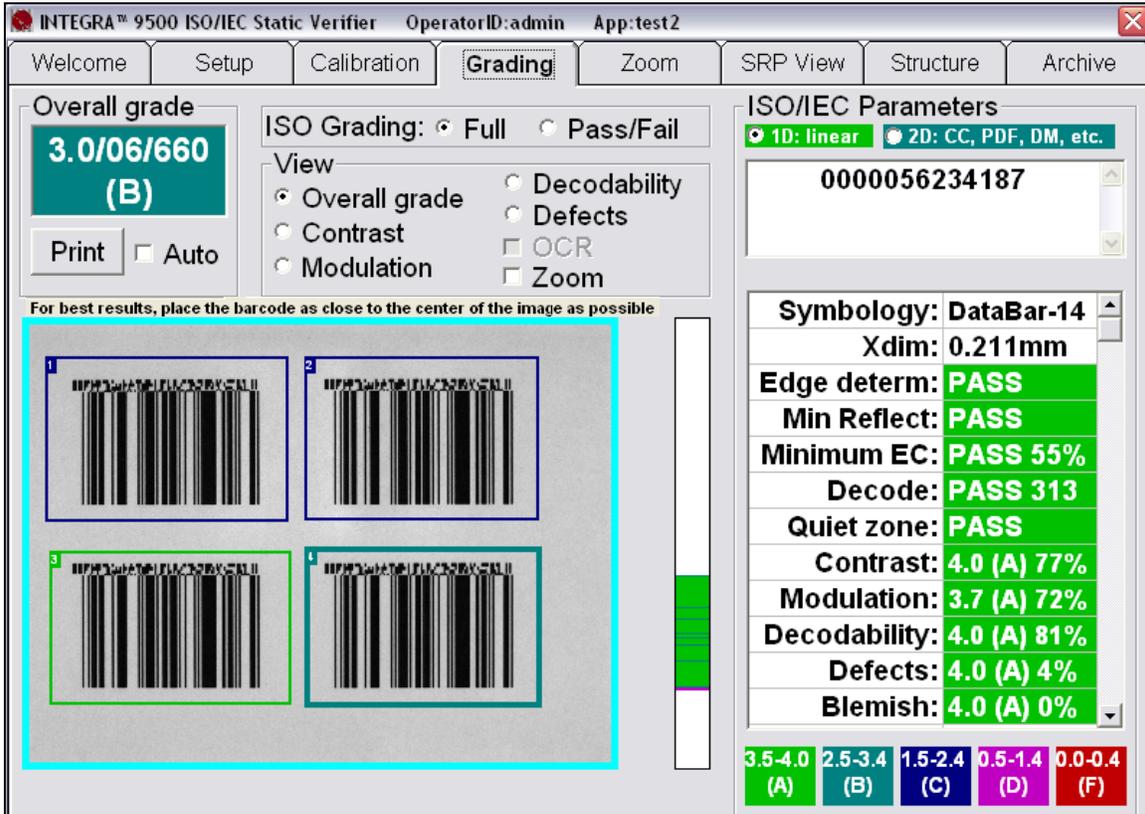
If you choose to **Select an Existing Format**, select a format from the format list. The software now proceeds to the **Grading Tab** screen.



□ **Step 5:**

- Place the multi-sector label into the field of view.
- Draw a box around the first sector, leaving room for the quiet zone.
- While holding down the left-click button on the mouse, push the “shift” key and draw another sector around the next barcode symbol. When the square is complete, release both buttons. The software automatically flags this new sector with another ID number.
- Repeat this process for the remaining barcode symbols.

After a custom template has been designed, this application is saved for future use (see below):



Draw multiple sectors by pushing down on the “shift key” while holding down the left-click button on the mouse.

Redrawing a Sector:

- Click on the sector you wish to change or delete and wait for the sector outline to become bold (this might take some time due to the system trying to verify multiple sectors).
- Push the **Delete** button on the keyboard.
- Redraw the sector as indicated in Step 5. The process of redrawing a sector is only available when creating a new custom template. In other words, the delete function DOES NOT WORK with an existing custom format.

Printing a Multiple Sector Verification Report: A multiple sector report can be generated for all drawn sectors. Push **Print** along with the **shift** key and the software generates this multi-sector report. Because there is a lot of data involved, it may take time to print the report.

Printing a Single Sector Verification Report: The verification parameters on the INTEGRA 9500/9505 screen are reported for the sector outlined in bold. Click on any sector to view the parameters for that sector on the monitor. Push the **Print** button and the report is sent to the printer for that single sector only.

Optional Features Activation: Clicking this button allows you to view a list of features and the status of each feature (see Figure below):

Feature	Status
INTEGRA 9500/9505 base product	security serial number 80
Custom applications (multi-sector)	activated

Available options include:

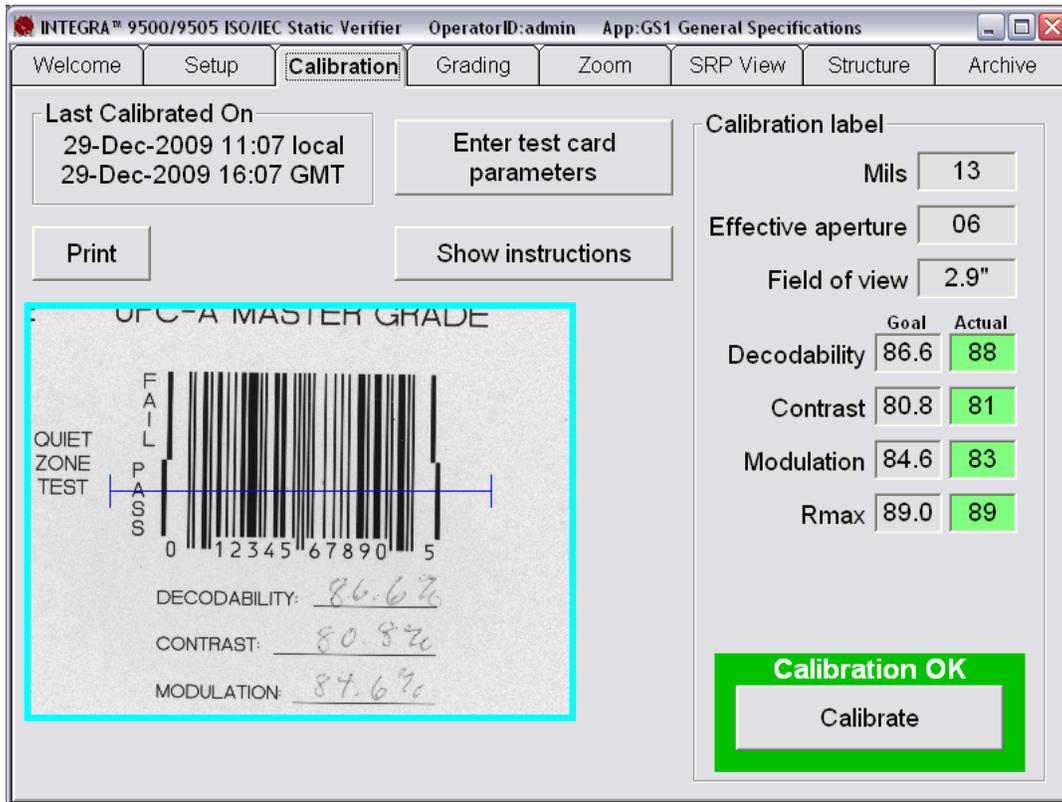
Feature	Function	Status
INTEGRA 9500/9505 base product	Initial activation of software.	This feature is enabled by default.
Custom applications (multi-sector)	Allows you to draw multiple sectors at one time on the Grading Tab screen.	This feature is enabled only with purchase upgrade.

Change Password

Click the Change Password box to change a password.

Calibration Tab

The Calibration tab (see Figure below) is where the calibration of the system occurs.



One of the following two Calibrated Conformance Standard Test Cards were supplied with your INTEGRA 9500/9505. Note that the Test Card you receive depends on your field of view.

- GS1-128
- EAN/UPC Symbol Verifiers

The Calibrated Conformance Standard Test Cards are used to certify that the system is calibrated according to the ISO/IEC 15416:2000(E) and is traceable to NIST standards. It is specially printed to have certain reflective values. **Note that the INTEGRA 9500/9505 recognizes only these cards for calibration.**

The upper left corner of the **Calibration Tab** screen shows the date/time stamp that is placed on an internal log designed to archive all calibration activities. It lists a date/time stamp along with the person who performed the calibration. This report can be viewed or printed. The log is a “read-only” file and cannot be altered or deleted. To view the calibration log, go to the **Archive Tab** screen. Clicking the **Print** button prints a copy of this screen.

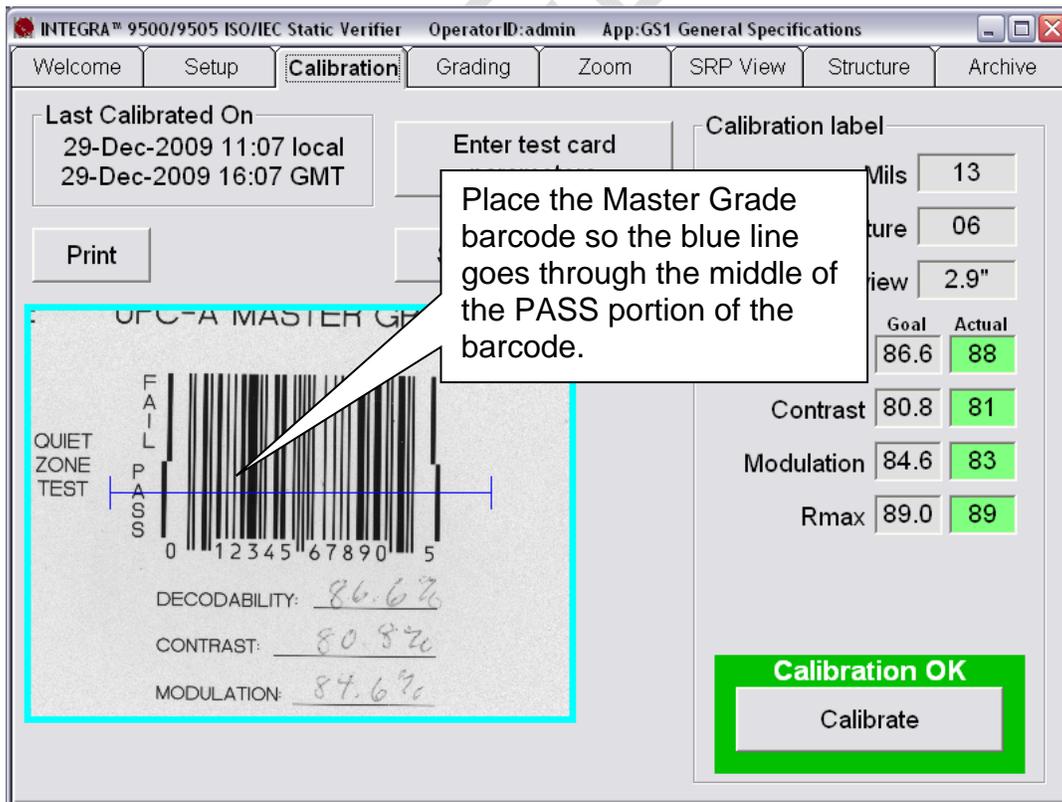
Calibrate the System

❑ **STEP 1:** To calibrate the system, click the **Calibration** tab. A Login pop-up window appears prompting for a user name and password. Enter your user name and password, and then click the **OK** button.

 **Note:** If the user has not been granted permission rights to calibrate the system, an error message appears indicating that the user is not able to access the Calibration tab.

❑ **STEP 2:** Locate the Calibrated Conformance Standard Test Card assigned to your system. Choose one of the Master Grade barcodes and place it so the blue line goes through the middle of the PASS portion of the barcode (see Figure below). The blue line helps you align the calibration label to the field of view; it does not mean that only one line is being used to calibrate the system.

 **Note:** After placing the calibration card in position, check to be sure the goal values match the values printed on the calibration card. If they do not match you have the wrong calibration card for the system or you have to change the goal values. See section “Replacement of Calibrated Conformance Standard Test Card.”



CALIBRATED CONFORMANCE STANDARD
TEST CARD
FOR EAN/UPC SYMBOL VERIFIERS
USING 6 MIL APERTURES

EAN-13 MASTER GRADE UPC-A MASTER GRADE

DECODABILITY: 85.6 %
CONTRAST: 82.6 %
MODULATION: 83.7 %

DECODABILITY: 84.3 %
CONTRAST: 82.7 %
MODULATION: 85.1 %

DEFECTS (VOID) 22.1 %

DECODABILITY (BAR) 43.2 %

CALIBRATION #: UPC2-3350
WAVE LENGTH: 670 nm
EFF. APER: 0.006 in.

BarCodes and eCom™
US

DATE ISSUED: _____
THE STANDARD IS CERTIFIED FOR 2 YEARS FROM A SERVICE DATE AFTER HANDLED IN ACCORDANCE WITH USE OF CALIBRATED CONFORMANCE STANDARDS DOCUMENTATION.
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PART NO. CCSV-1 REV Q-2

EAN/UPC Calibrated Conformance Standard Test Card

CALIBRATED CONFORMANCE STANDARD
TEST CARD
(for Use with 10 mil Apertures and GSI-128 Symbols Only)

GSI-128 Master Grade

(00) 006141411234567890
DECODABILITY: 87.8 %
CONTRAST: 83.6 % Rmin: 43 %
MODULATION: 88.6 % Rmax: 87.9 %

DEFECTS (SPOT) 21.8 %

LOW DECODABILITY: 42.9 %

CONTRAST: 50.0 %

CALIBRATION #: 128-0172
WAVE LENGTH: 670 nm
EFFECTIVE APERTURE: 0.010 in. (0.250 mm)

BarCodes and eCom™
US

DATE ISSUED: _____
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PART NO. CCSV-128 REV B

GSI-128 Calibrated Conformance Standard Test Card



WARNING: The Calibration Test Card is used to calibrate the light source to a known level of white and black. There cannot be any other item in the field of view when calibration takes place. Failure to comply with these instructions will distort the final verification grade.

To correctly calibrate, the Calibration Test Card must be flat. Use magnets or weights, if necessary, to hold the card down flat. The magnets or weights must not appear in the field of view.

The image may appear too light or too dark; this is to be expected. Please do not attempt to make any adjustments on the lens assembly; it has already been set at the factory and does not require adjustment. The software automatically adjusts to the proper brightness level.

STEP 3: Press the **Calibrate** button. The system begins the calibration process. The calibration result could be either of the following:

➤ **Calibration OK**

Calibration is correct and the system is ready to use. You can recalibrate if you like, but the new values are very close to the existing ones.

➤ **Calibration Failed**

The system is too dark or too bright for calibration. When this message is displayed, try to calibrate again. It may be necessary to recalibrate a couple of times as the software is trying to adjust to the current ambient light conditions. Be sure there is no direct light shining on the viewing stage. If the message “Unable to Calibrate” continues to be reported, call LVS.

Replacement of the Calibrated Conformance Standard Test Card

It is important to place the Calibration Test Card in a clean place and away from direct sunlight. If the test card is nicked, soiled, or damaged in any way, it must be replaced. Also, it is recommended to replace this Test Card every two years.

Each calibration card has been tested by a NIST traceable test device and the values for Decodability, Contrast, Modulation and Rmax are recorded on the card.

➤ **Enter Test Card Parameters for a Replacement Card**

- Click the **Enter test card parameters** button on the **Calibration Tab** screen. Click the **OK** button when a warning box appears.
- Enter the values for Decodability, Contrast, Modulation and Rmax in the gold fields located under the column entitled “Actual”.
- Place the new Test Card into the field of view and push the **Calibrate** button. If calibration fails, push the **Calibrate** button again. If calibration fails repeatedly, call LVS.

Data Matrix Calibrated Conformance Test Card

The ISO/IEC Data Matrix and GS1 Data Matrix Calibrated Conformance Test Card was developed as part of the overall development of the “2D Judge”; **IT IS NOT A CALIBRATION CARD**. The purpose of the card is to “verify the verifier” in order to prove that the verifier correlates with the results reported by the “2D Judge” within the tolerances stated in ISO 15426-2.

The purchase of the Data Matrix Calibrated Conformance Test Card is optional. If you wish to purchase a card, please contact Label Vision Systems or an LVS® representative.

Purchased cards are certified for up to 2 years from the “in service” date and no more than 4 years from the “date processed”, both of which are shown on the card (see sample card image below).

ISO/IEC Data Matrix & GS1 DataMatrix
CALIBRATED CONFORMANCE STANDARD TEST CARD



1. SC, ANU, GNU - 4 (A)
X=0,500 mm (0.0197 in)



2. ANU - 1 (D)
X=0,900 mm (0.0197 in)



3. GNU - 1 (D)
X=0,500 mm (0.0197 in)



4. SC - 1 (D)
X=0,500 mm (0.0197 in)



5. Contrast Uniformity
X=0,360 mm (0.0142 in)



6. UEC - 2 (C)
X=0,360 mm (0.0142 in)



7. FPD - 2 (C)
X=0,360 mm (0.0142 in)

Serial Number: 1211
Date Processed: 14-Dec-2009
 Wavelength: 660 nm
 Synthetic Aperture: 0.8 x-Dim

<p>Symbol 1: 4.0 (A) SC - 79.2 % Rmax - 82.6 % Rmin - 3.4 % ANU - 0.1 % GNU - 3.3 %</p> <p>Symbol 2: 1.0 (D) ANU - 11.0 %</p> <p>Symbol 3: 1.0 (D) GNU - 69.0 %</p>	<p>Symbol 4: 1.0 (D) SC - 32.3 % Rmax - 35.5 % Rmin - 3.2 %</p> <p>Symbol 5: 4.0 (A) Contrast Uniformity - 31.6 %</p> <p>Symbol 6: 2.0 (C) UEC - 0.43</p> <p>Symbol 7: 2.0 (C) FPD - 2.0</p>
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2D JUDGE™ CERTIFIED

PCN: 134612013523

THIS STANDARD IS CERTIFIED FOR UP TO 2 YEARS FROM THE IN-SERVICE DATE BUT NO MORE THAN 4 YEARS FROM THE DATE PROCESSED. THIS IS SHOWN ON THE CARD. YOU MUST MAINTAIN THE ACCURATE CONFORMANCE WITH US CALIBRATED CONFORMANCE STANDARDS DOCUMENTATION.

PROMOTIONAL SAMPLE FOR LVS
 IN-SERVICE DATE: _____ EXP. DATE: _____

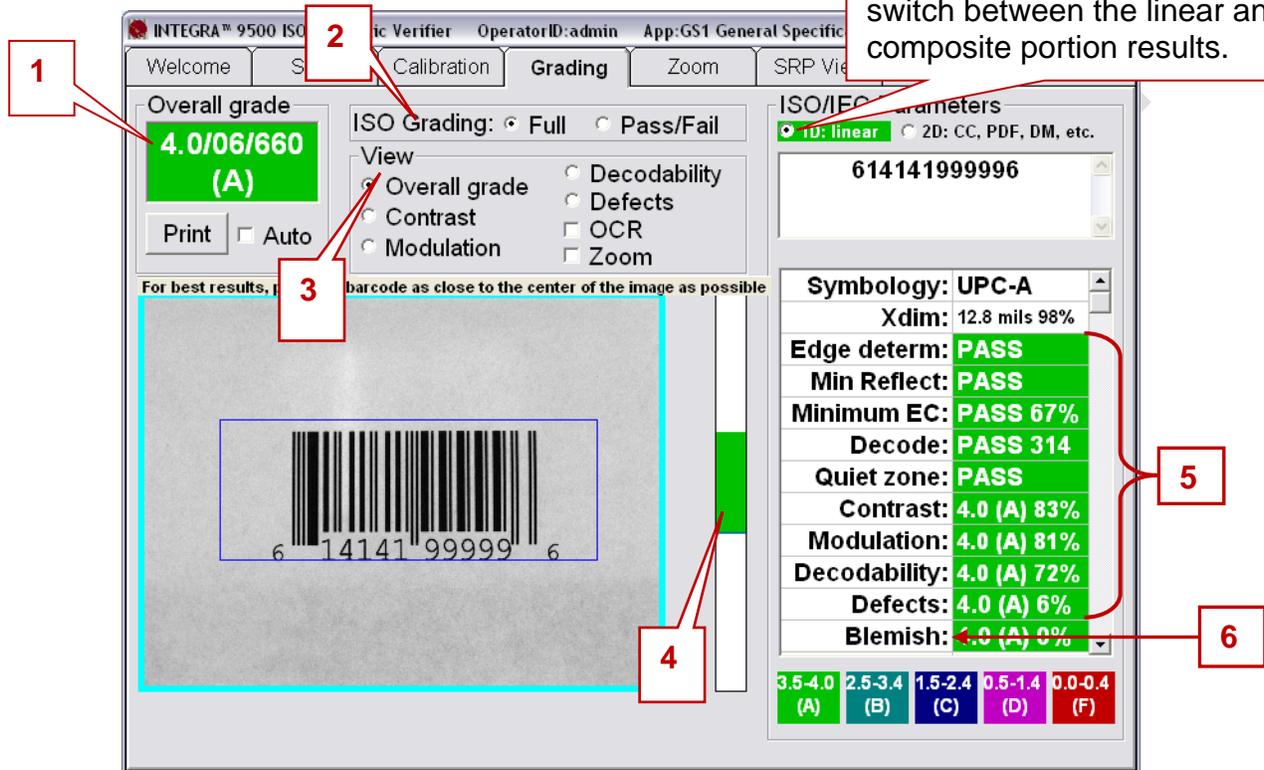
ISO/IEC Data Matrix and GS1 Data Matrix Calibrated Conformance Test Card

Grading Tab

Because parameters are different for each of the families of codes, please refer to the separate sections that follow in this manual.

Section 1: 1D Codes

If a barcode has 2 components, click either the 1D or 2D radio buttons to switch between the linear and composite portion results.



The Grading tab (see Figure above) is divided into the following sections:

1. Overall Grade
2. ISO Grading
3. View
4. Grade bar graph
5. ISO/IEC Parameters
6. Blemish (note that Blemish is not an ISO grade and is for informational purposes only).

Each section is described in the following pages.

1. Overall Grade

The Overall Grade box represents the final results obtained from all the data listed on the screen. Options include:

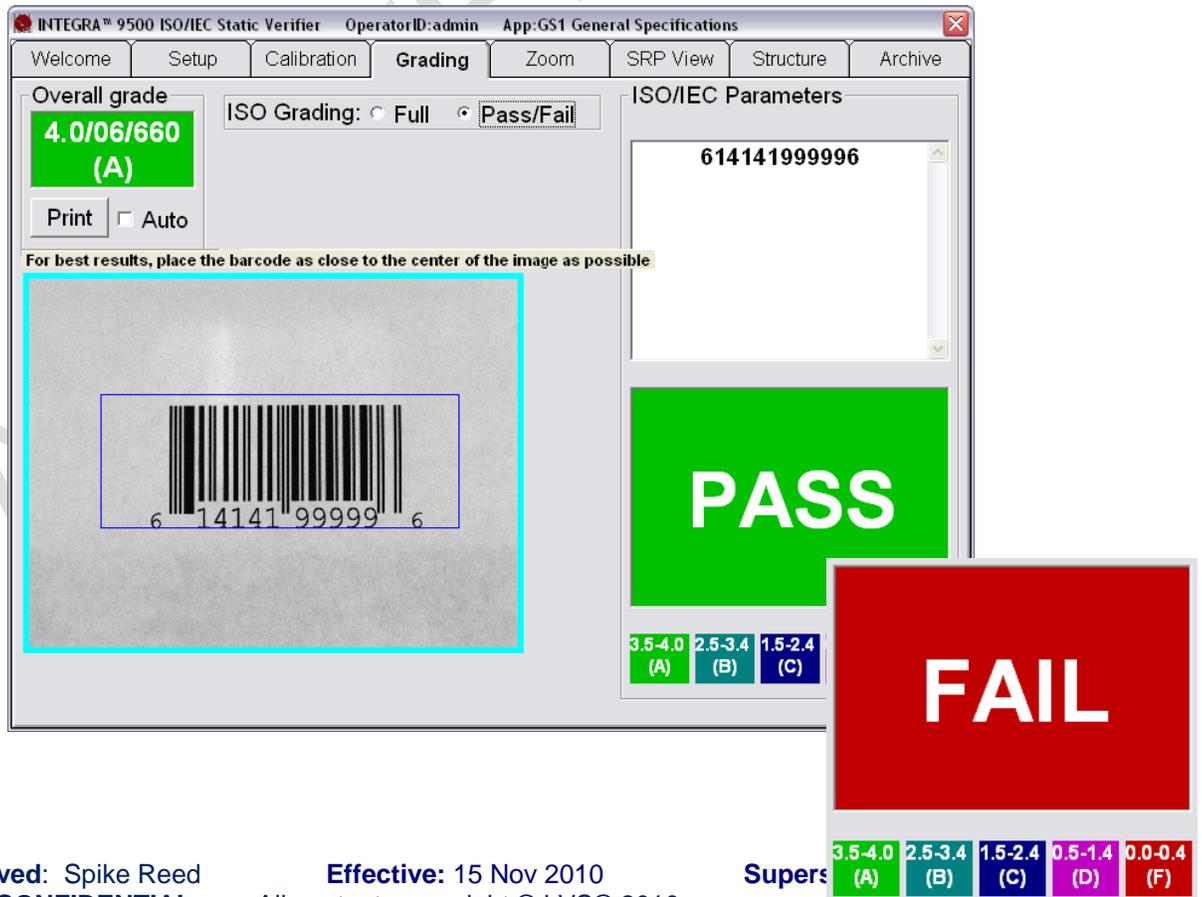
- Print Button:** Clicking this button sends the Grading report to the default printer.
 - Note:** Right-clicking on the **Print** button allows an HTML version of the final Verification report to be generated on the screen.
- Auto checkbox:** Selecting this option automatically sends the Grading report to the default printer each time a new barcode is graded.

2. ISO Grading

Two ways to verify a barcode include:

- Full** – Select this option to analyze a barcode in detail. This option displays the ISO parameters in detail.
- Pass/Fail** – Select this option if you are not interested in the detailed analysis of the barcode. This option indicates whether the barcode meets your company’s minimum ISO grade requirements. In other words, this option indicates whether the barcode is good or bad.

A PASS and FAIL screen is displayed instead of the ISO parameters (see Figure below).

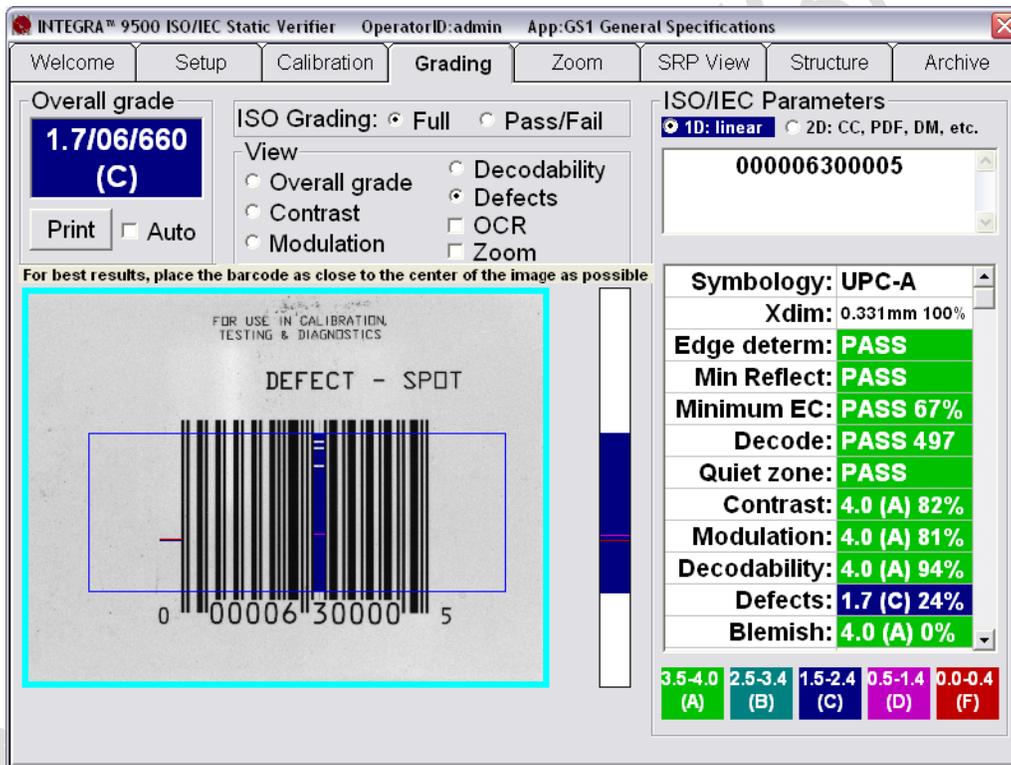


The minimum passing score for Pass / Fail is password-protected and setup on the **Setup Tab** | **Minimum passing score** option.

3. View Box

To better understand where a print quality problem is located, the software is designed to superimpose a color mark at the position of the problem (see Figure below). At the bottom right of the **Grading Tab** screen is a chart indicating what the different colors indicate.

There are 4 parameters that can be highlighted: Contrast, Modulation, Decodability and Defects. Click on the desired parameter.



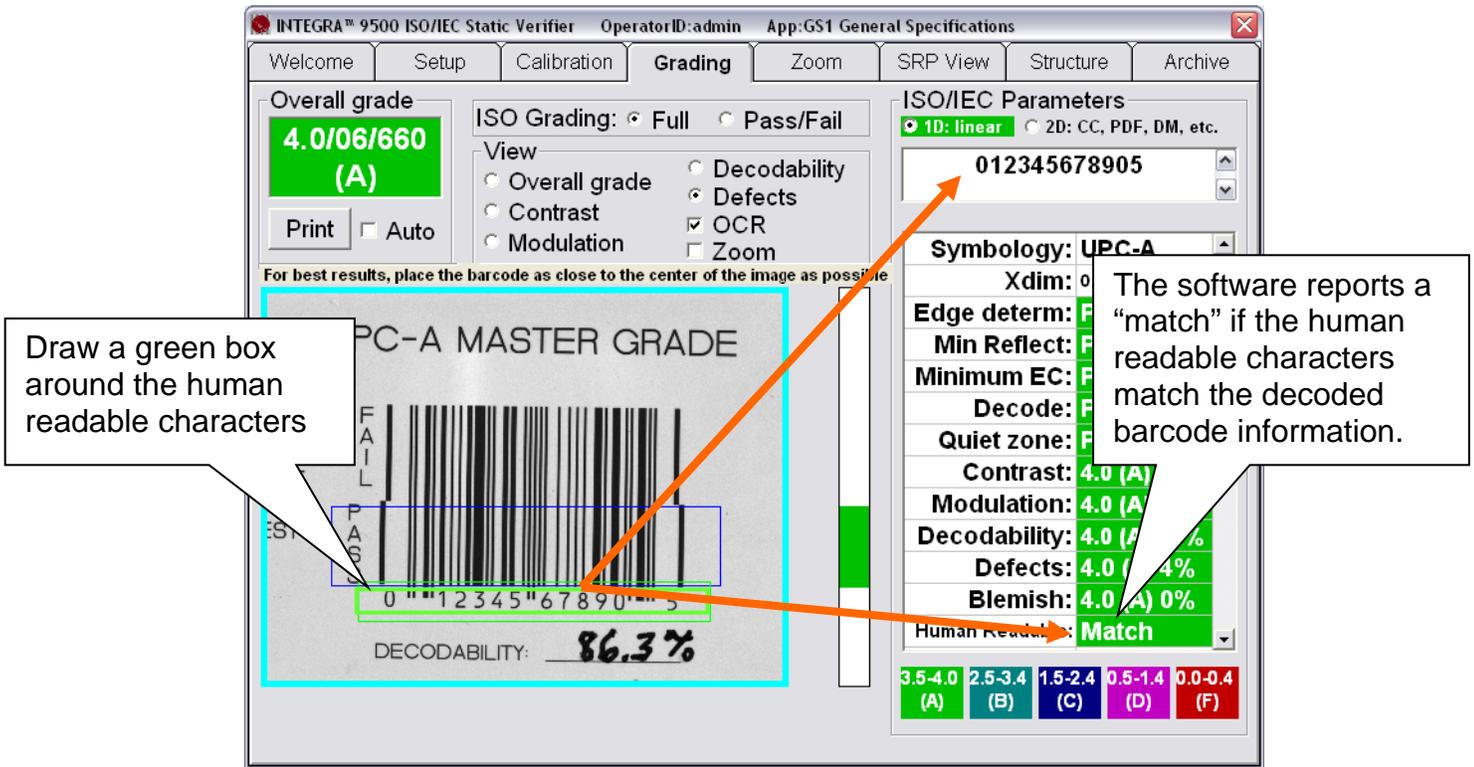
Position of problem superimposed on the barcode image.

Within the View Box there are two additional features that can be checked: OCR and Zoom.

OCR (Human Readable Character Check)

This system is capable of verifying the Human Readable portion of a barcode. To check the human readable characters, right-click on the mouse and draw a green box around the human readable characters (see

Figure below). If it matches the decoded barcode information, the software reports a “Match”.



The green box used to identify what OCR characters are to be validated.

The system supports OCR-A, OCR-B, Times New Roman, Arial, Courier, and most Sans-serif fonts. Upper case only. Special characters are not supported.

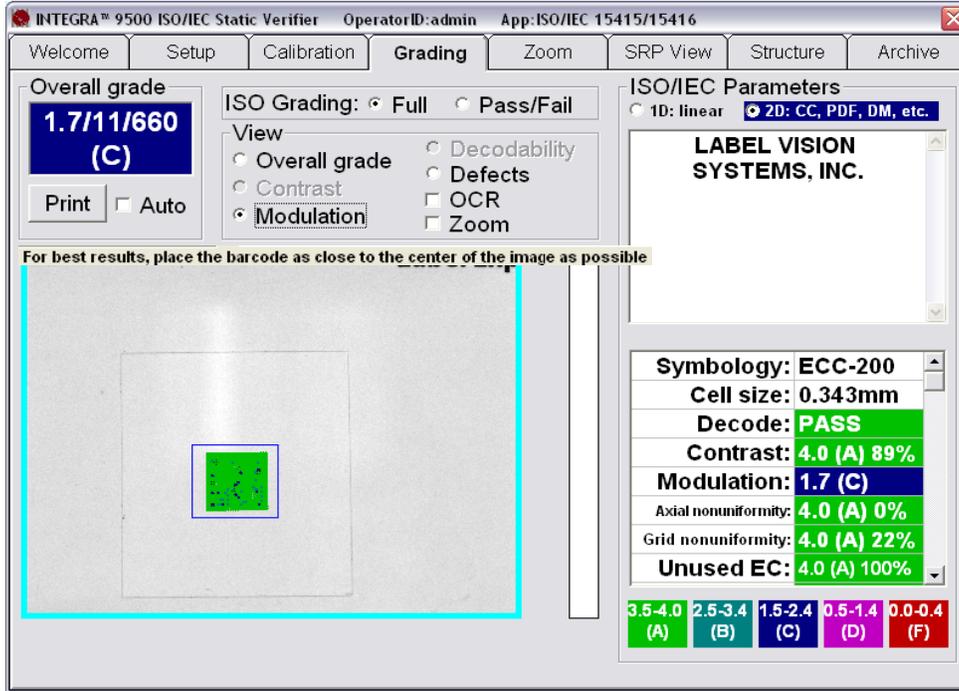
If the software cannot read the characters correctly, place the mouse cursor over the Human Readable box and click on the mouse. The software then reports what it sees in a small pop-up window. Since the software was unable to read the characters, it would have no idea if the characters were alpha or numeric. Thus, the software shows the user both alpha and numeric data.

The human readable of a barcode can be checked most of the time provided the characters do not touch each other. The characters must also be large enough to read and in a straight line. The system is limited to reading up to 24 characters.

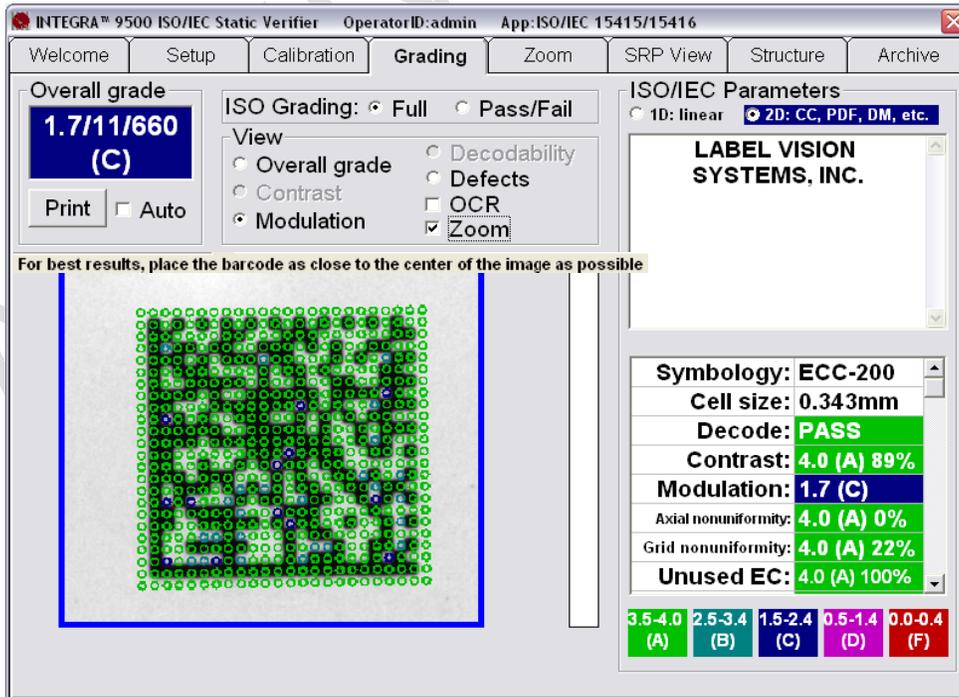
Zoom

The Zoom option allows you to view small labels. The screenshots below show labels with the zoom turned off and on.

➔ **Zoom Turned OFF:**



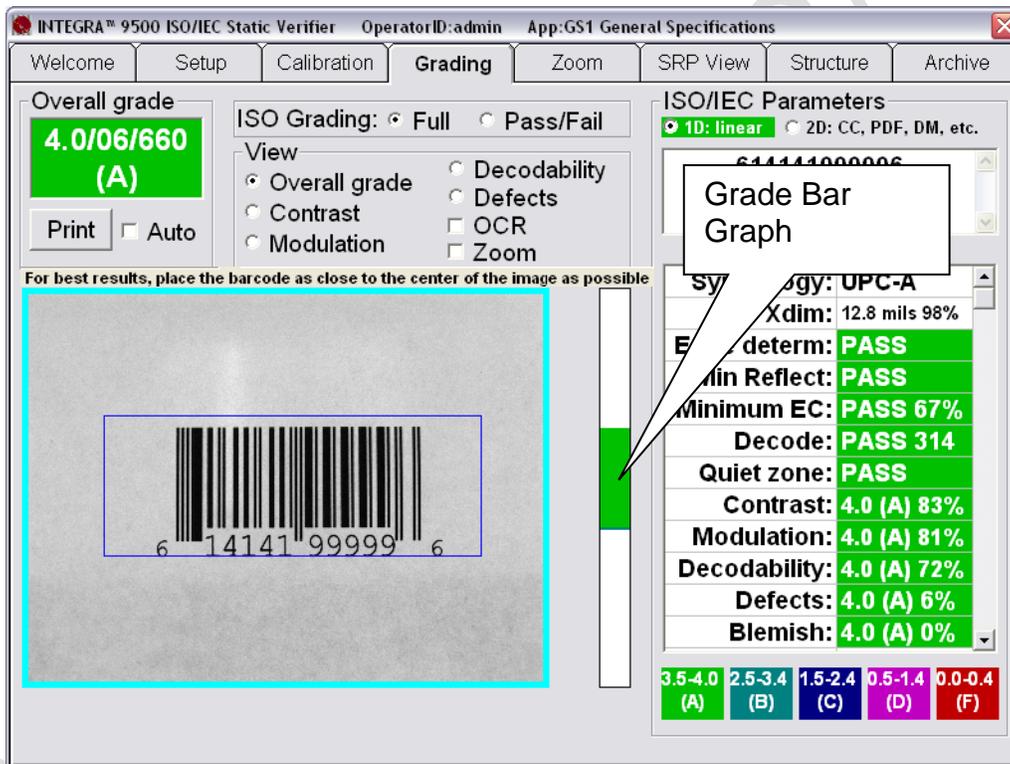
➔ **Zoom Turned ON:**



4. Grade Bar Graph

To the right of the barcode image is a graph representing the ISO grade for every scan line. It is called the Grade Bar Graph and displays whatever ISO parameter is checked in the View section. For 1D symbologies, there are 4 parameters to choose from: Contrast, Modulation, Decodability, and Defects. This helps you to identify what parts of the barcode have quality issues. The color refers to the grade in terms of the legend on the bottom right of the screen.

The Grade Bar Graph displays line-for-line grade information for every line of the bar height (see Figure below). If there is no color code indicated for a specific line, then the line was not decodable. This would be counted as a blemish.



Bar Height Measurement

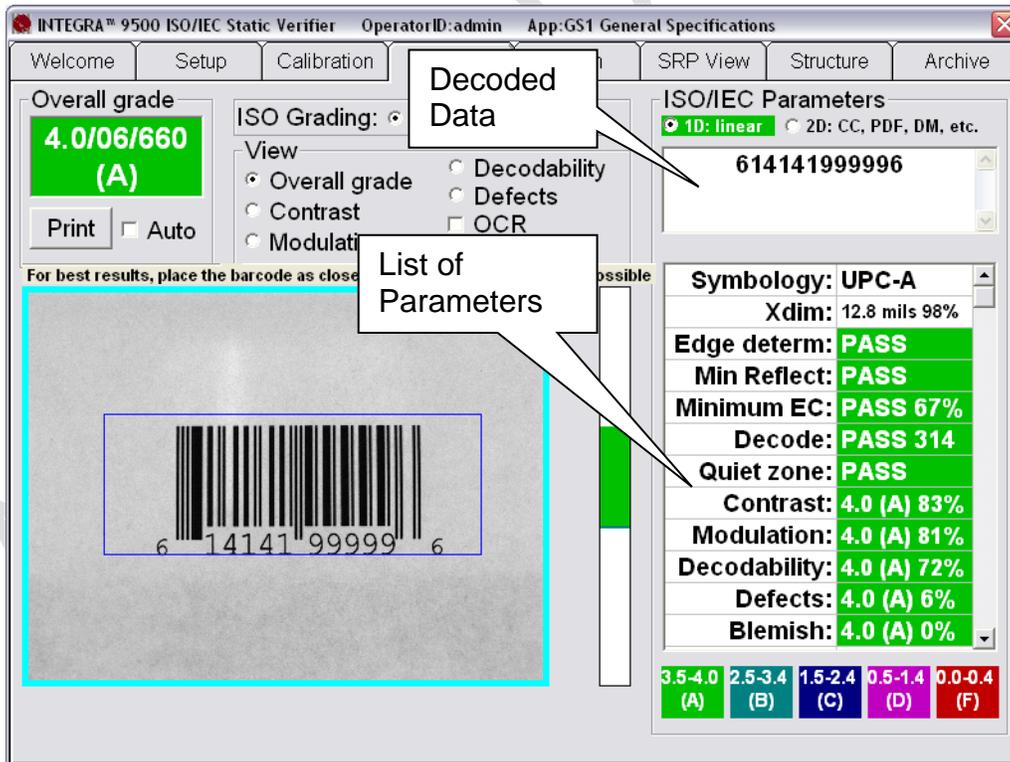
The method of determining the height of a barcode is based on the number of lines decoded within the height. The software takes the first decoded line and decodes all lines until the end of the barcode; and, because we know the size of one pixel, the height of the barcode can be calculated. If some lines either at the top or bottom of the sector could not be decoded, the height calculation will be incorrect.

5. ISO/IEC Parameters Section

This section lists all of the measured parameters individually. These parameters are used to determine why a barcode has a certain grade. There are numerous parameters listed, depending on the symbology. Use the scroll bar to view the entire list of parameters (see Figure below).

At the top of this section is an information box that displays the decoded data. This data does not contain any stop, start, or control (non-printable) characters. Check digits may or may not be displayed depending on the symbology. For example, Code 128 mandates that they not be transmitted. The software always displays the check digit for symbologies that make the transmission of check digits optional. To see special characters or check digits, refer to the **Structure** tab chapter covered later in this manual.

Below the encoded barcode data, but still within the information box, is a Product Identification name for all UPC-A, UPC-E, EAN-8 and EAN-13 barcodes that are contained within the Product Identification data file (see **Setup Tab | System Settings | Product Identification (Lookup) File** for more information).



6. Blemish (Non-ISO Parameter)

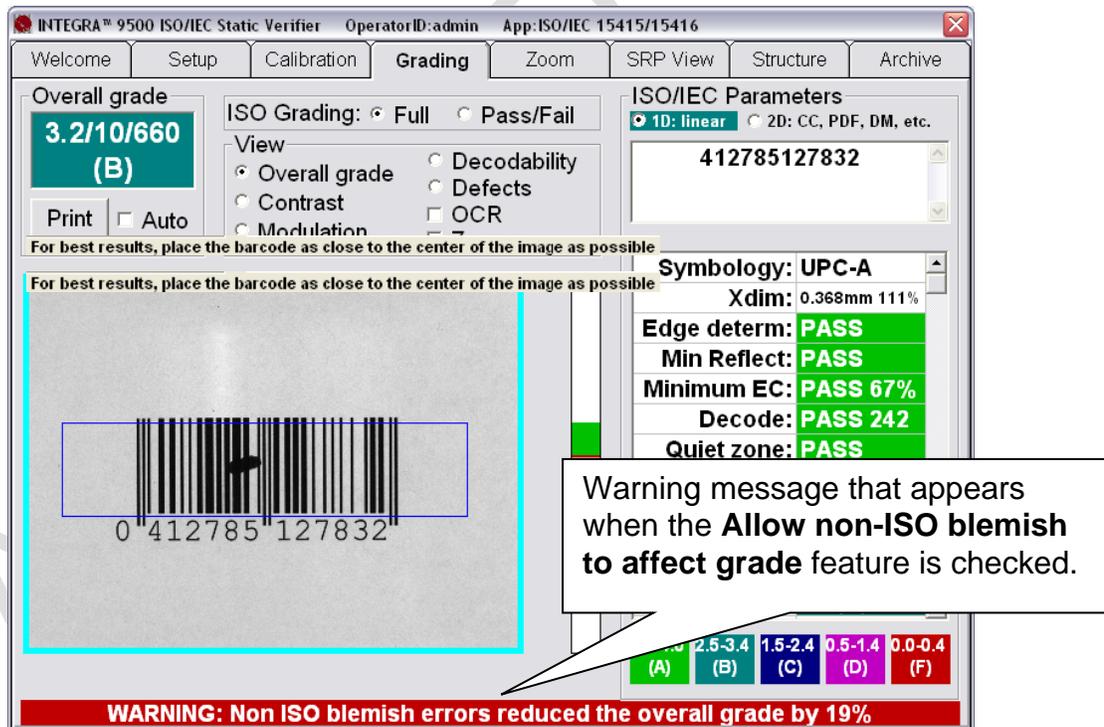
A blemish error is defined as any mark or artifact that destroys the decode on any part of the barcode symbol (see Figure below).

Within the *ISO/IEC parameters* box, there is a *Blemish* measurement. Although a blemish error is not considered to be a part of the ISO standards, it is an extremely useful tool when troubleshooting printing problems. The Blemish parameter is not figured into the Overall grade unless the **Allow non-ISO blemish to affect grade** feature is checked on the **Setup Tab** screen.

A Blemish is also a measurement of bar height consistency. Be sure to position the blue box so that it represents the actual height of the barcode image.

 **Note:** A blemish can only be measured where there are decodable lines above and below the offending mark.

 Screenshot with the **Allow non-ISO blemish to affect grade** feature checked:



Overall grade: **3.2/10/660 (B)**

ISO Grading: Full Pass/Fail

View: Overall grade Decodability Defects Contrast OCR Modulation

ISO/IEC Parameters: 1D: linear 2D: CC, PDF, DM, etc.

412785127832

Symbology: **UPC-A**

Xdim: 0.368mm 111%

Edge determ: **PASS**

Min Reflect: **PASS**

Minimum EC: **PASS 67%**

Decode: **PASS 242**

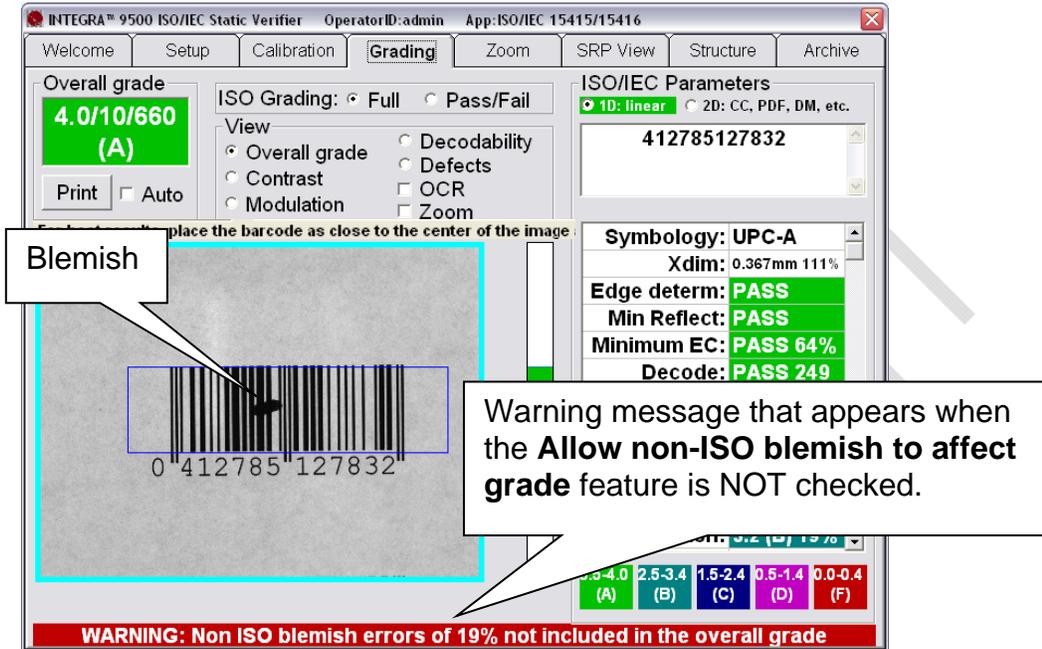
Quiet zone: **PASS**

0 412785 127832

WARNING: Non ISO blemish errors reduced the overall grade by 19%

Warning message that appears when the **Allow non-ISO blemish to affect grade** feature is checked.

- Screenshot with the **Allow non-ISO blemish to affect grade** feature NOT checked:



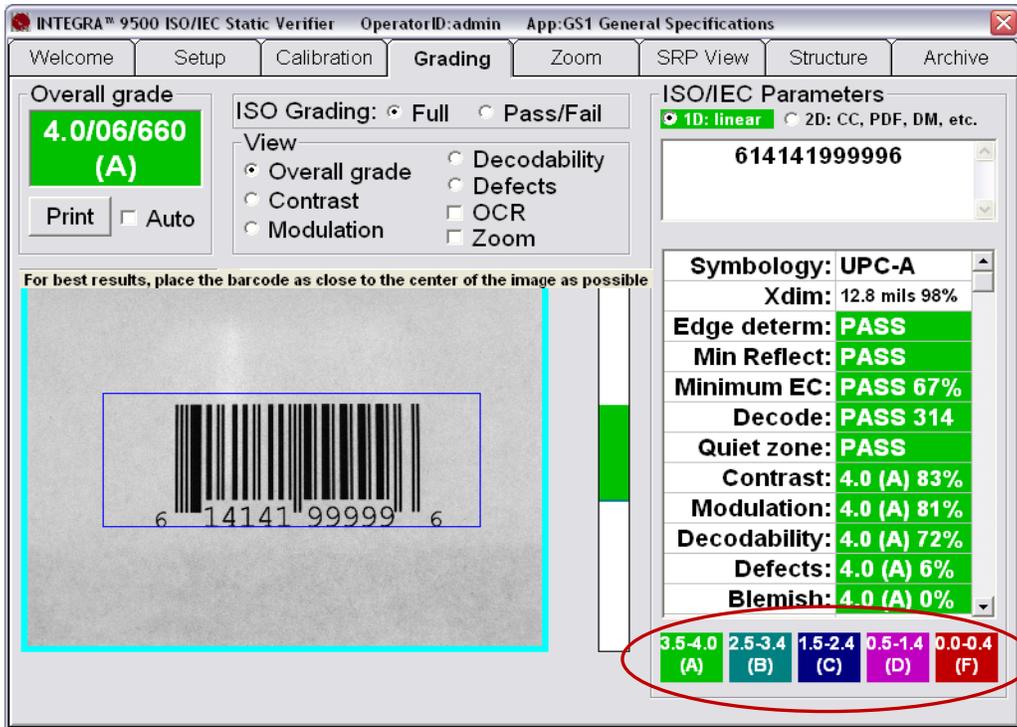
Other Grading Screen Tools

Check for Opacity

The image stage of this system is black. Often, a barcode is less opaque than is desired (that is the substrate is semi-translucent). If this is the case, it is recommended that a sheet of paper be placed onto the image stage. Typically the color of this paper would be white. But, if the barcode label being evaluated is even slightly translucent, the background color should match the background of the product to which the barcode label will ultimately be attached. This is how the INTEGRA 9500/9505 checks for opacity.

Color Codes

The system reports ISO/IEC grades by a color code. The bottom right of the **Grading Tab** screen shows a legend of these color codes which correspond to the ISO/ANSI grading system (see figure on next page). This color code is also used on the **SRP View Tab** screen.



Height and Width Measurement

Any time the mouse is held down to draw a sector, the bottom of the screen displays the actual measurement of the sector being drawn (see Figure below). This helps to measure the height and width of the actual barcode.

Remember: This measurement is NOT a measurement of the barcode; it is a measurement of the box being drawn.

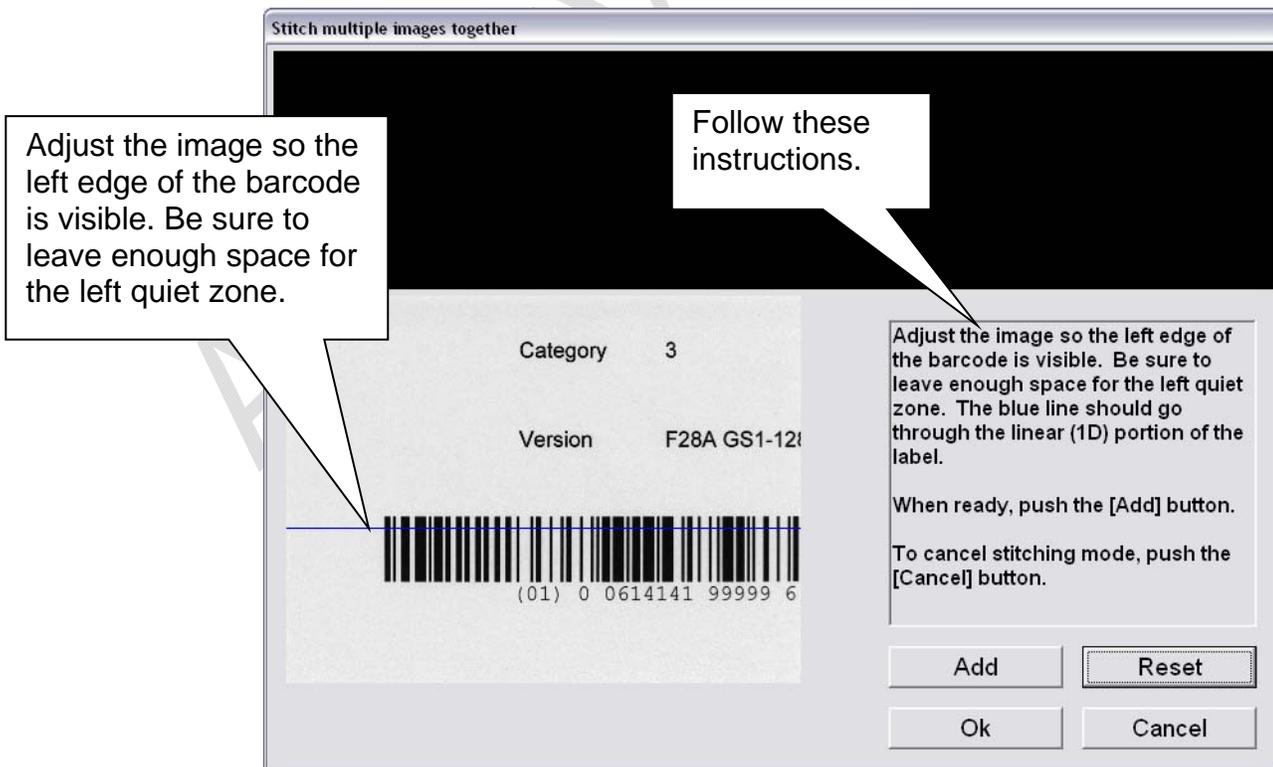


BarCode Too Wide for Field of View (Stitching Function)

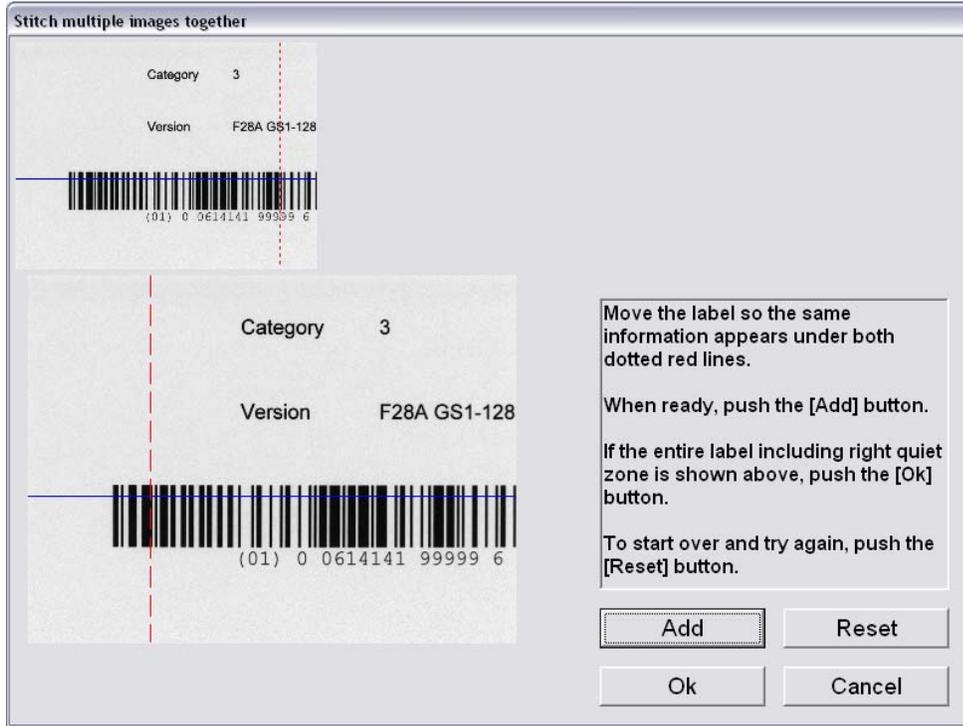
If the barcode is too wide for the field of view, you must “stitch” pieces of the barcode together to capture the full barcode image. Follow the steps below to stitch barcodes.

➤ **IMPORTANT:** This method of verification should be used for low volume applications as it is time consuming and could be problematic with poor quality bar codes, or bar codes with repetitive information within the bar code.

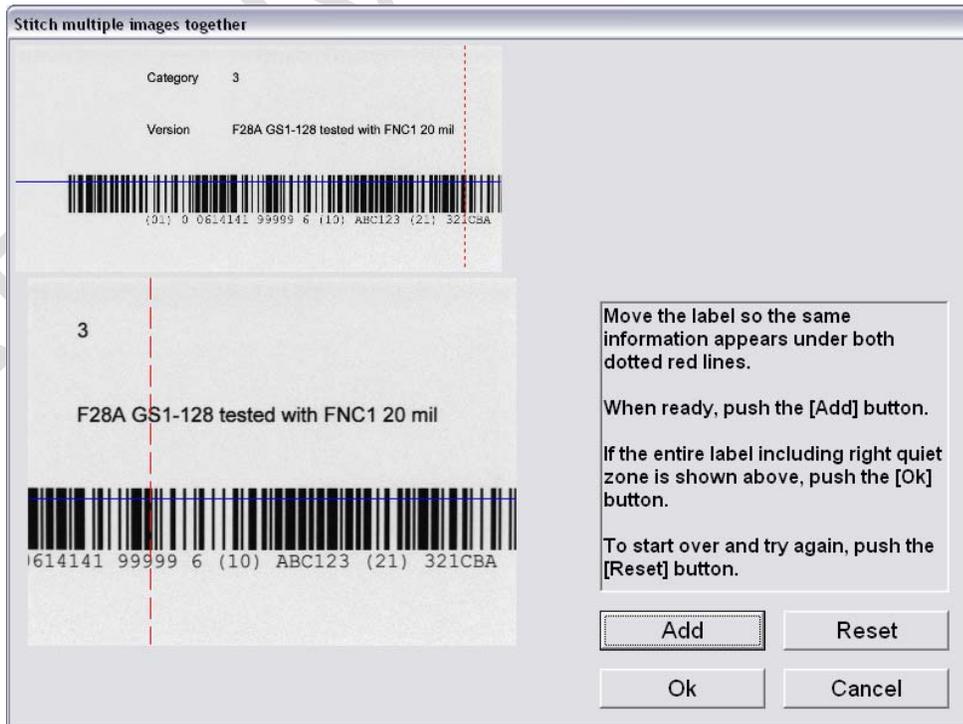
1. Click the **Grading** tab.
2. Click the **Ctrl + S** buttons on your keyboard to initiate the stitching function.
 - 📌 **Note:** You may stitch a barcode as many times as needed. Extremely wide barcodes may require multiple stitching steps.
3. Adjust the image so the left edge of the barcode is visible. Be sure to leave enough space for the left quiet zone. The blue line should go through the linear (1D) portion of the label (see Figure below).
 - 📌 **Note:** Instructions for each step are always located in the window on the right side of the screen.
4. When the barcode is in its appropriate place, click the **Add** button (see Figure below).
 - 📌 **Note:** If the barcode fails to stitch, click the **Reset** button. Place the barcode in a different start position and repeat the aforementioned step.



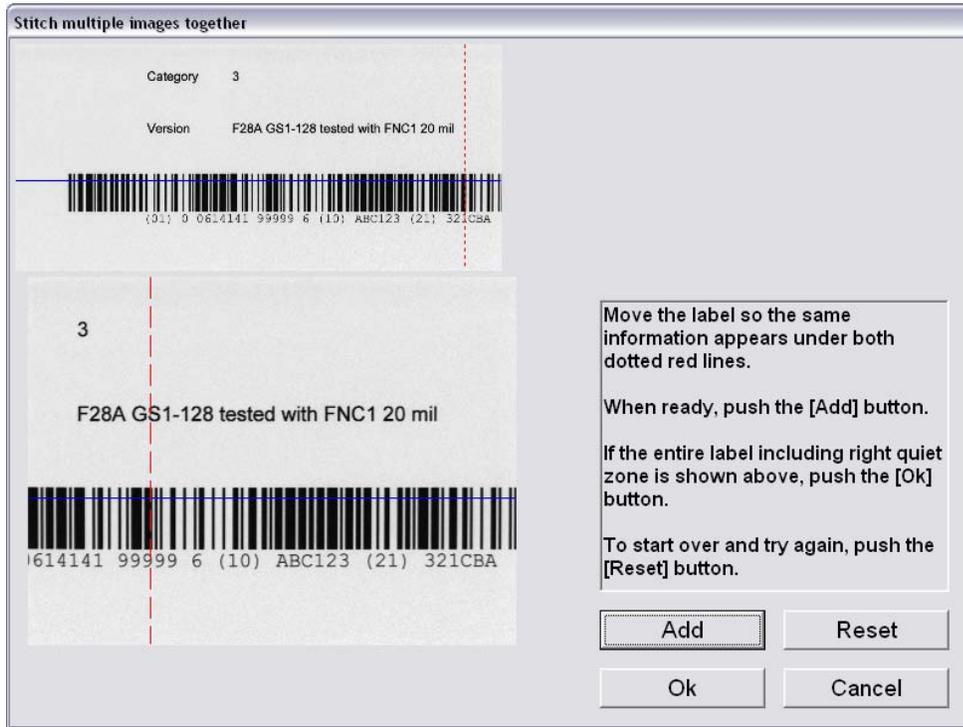
5. Move the barcode so the same information appears under both dotted red lines, and then click the **Add** button (see Figure below).



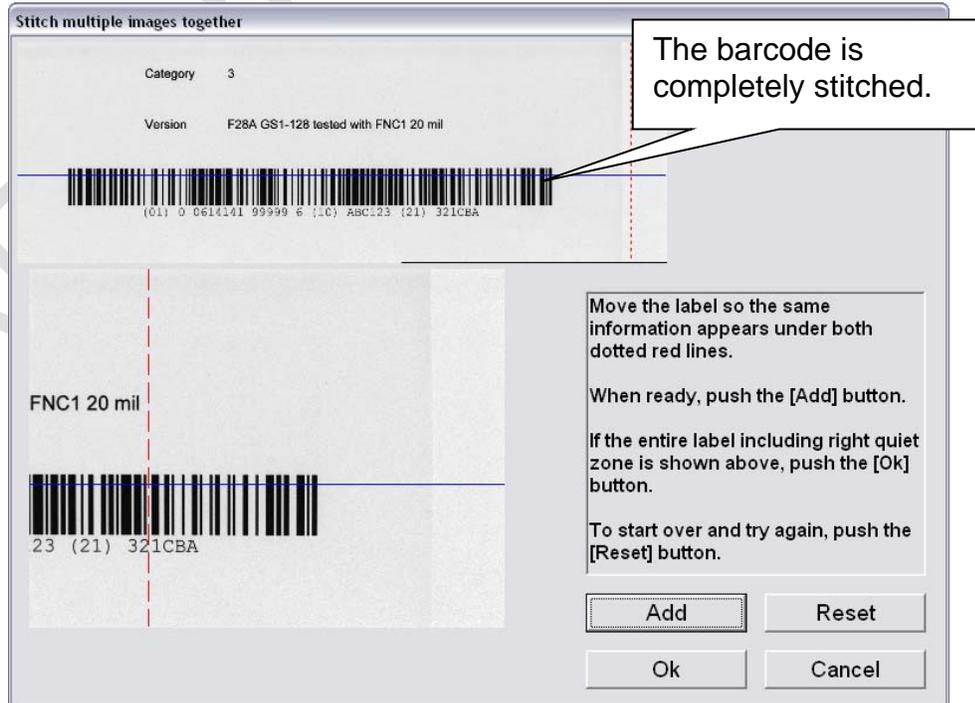
6. Move the label so that the same information appears under both dotted red lines. Click the **Add** button.



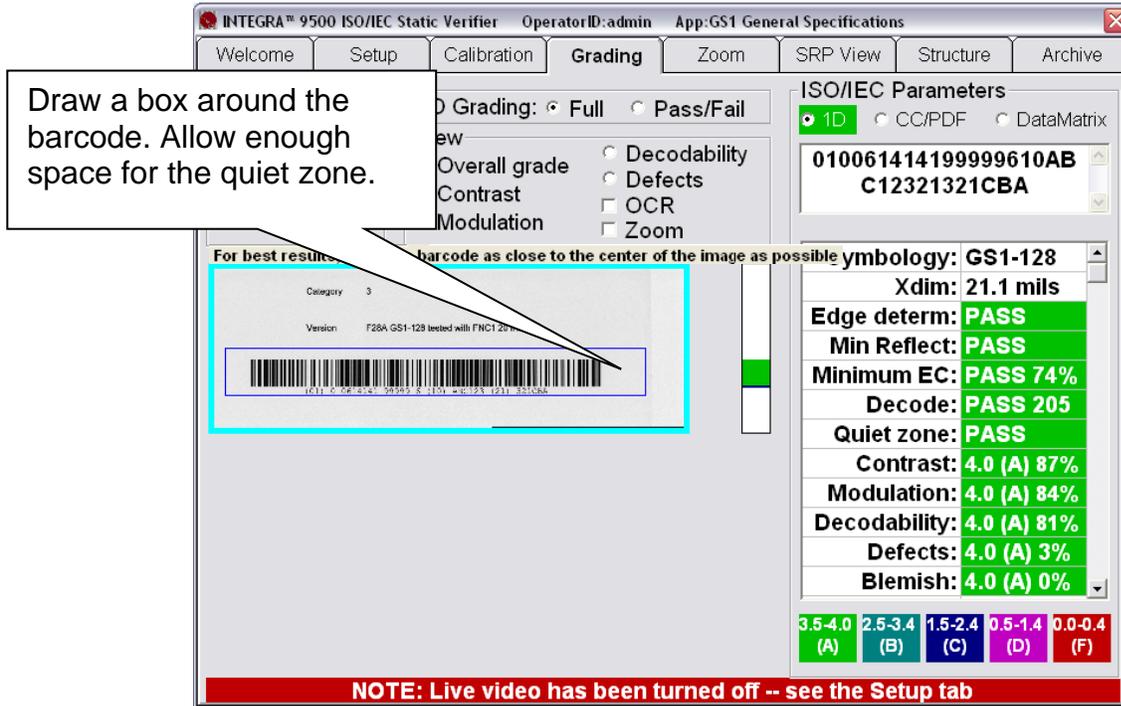
7. Move the label so that the same information appears under both dotted red lines. Click the **Add** button. Note that the stitched barcode appears in the top half of the screen (see Figure below).



8. Follow the steps above until the entire barcode is stitched. The example below shows a completely stitched barcode.



9. After the barcode, including the right and left quiet zones, is completely stitched, click the **Ok** button. The **Grading** tab screen appears.
10. With your mouse, draw a box around the entire barcode, ensuring enough space on either side of the barcode for the quiet zone (see Figure below).

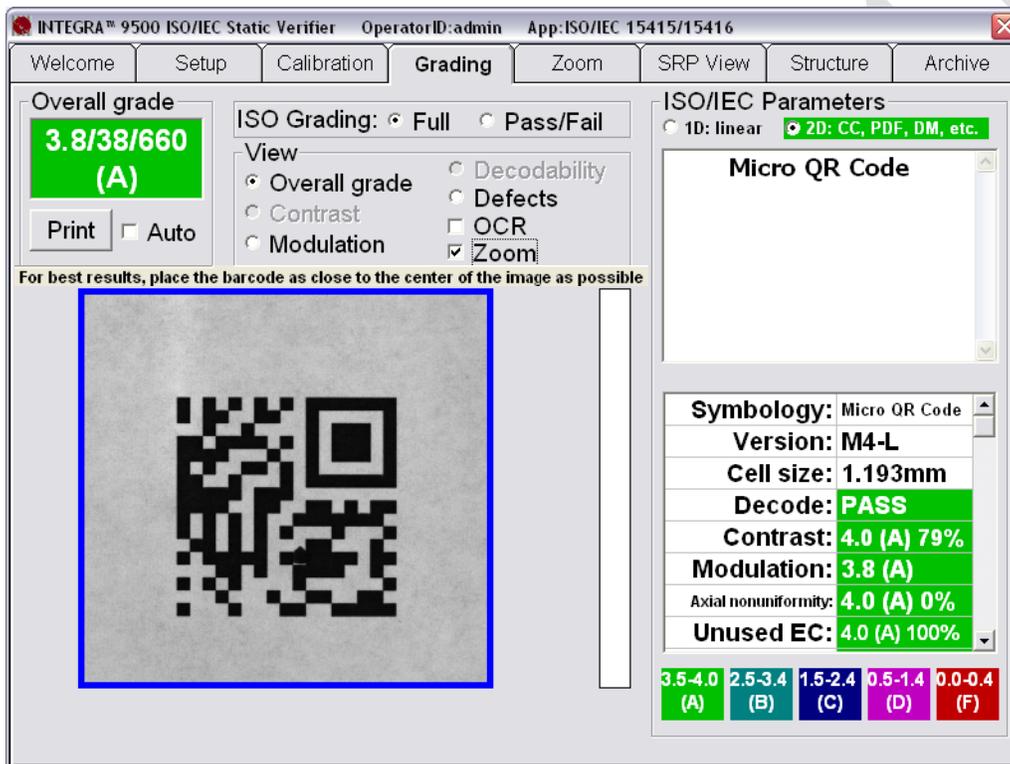


IMPORTANT: The camera is switched off automatically. To continue, you must switch it back on; this is performed on the **Setup** tab | **Camera** section.

Section 2: Matrix Codes

The INTEGRA 9500/9505 verifies the following matrix codes:

- Data Matrix ECC 200 (both square and rectangular symbols)
- QR Code
- Micro QR Code
- Aztec Code
- Chinese Sensible (Han Xin) Code
- MaxiCode



Verify a Matrix Code

Place the code into the field of view and draw a blue square around the image by clicking the mouse and holding it down (see above Figure). There should not be any other marks or characters within this quiet zone. The code can be placed at any desired angle.

View Section

At the top center of the **Grading Tab** screen is the View box. There are 5 features available for Data Matrix: Overall Grade, Defects, Zoom, OCR, and Modulation.

1. Overall Grade

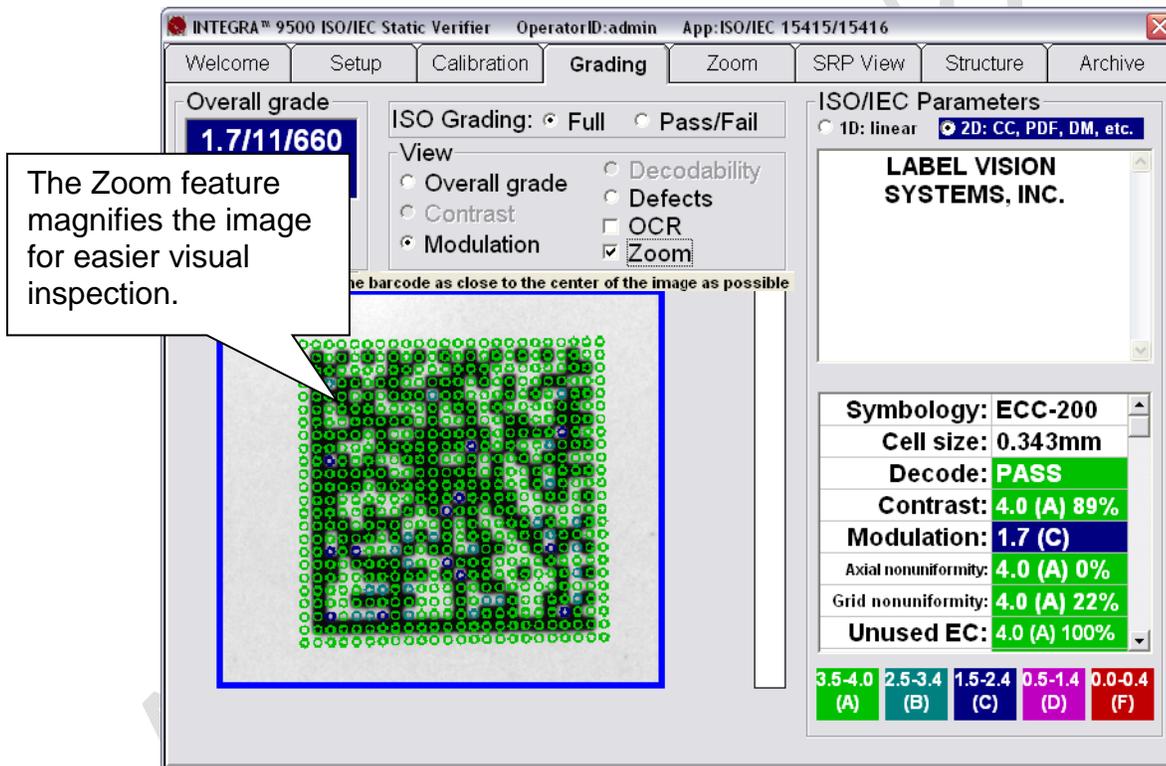
The system is defaulted to show the Overall Grade.

2. Defects

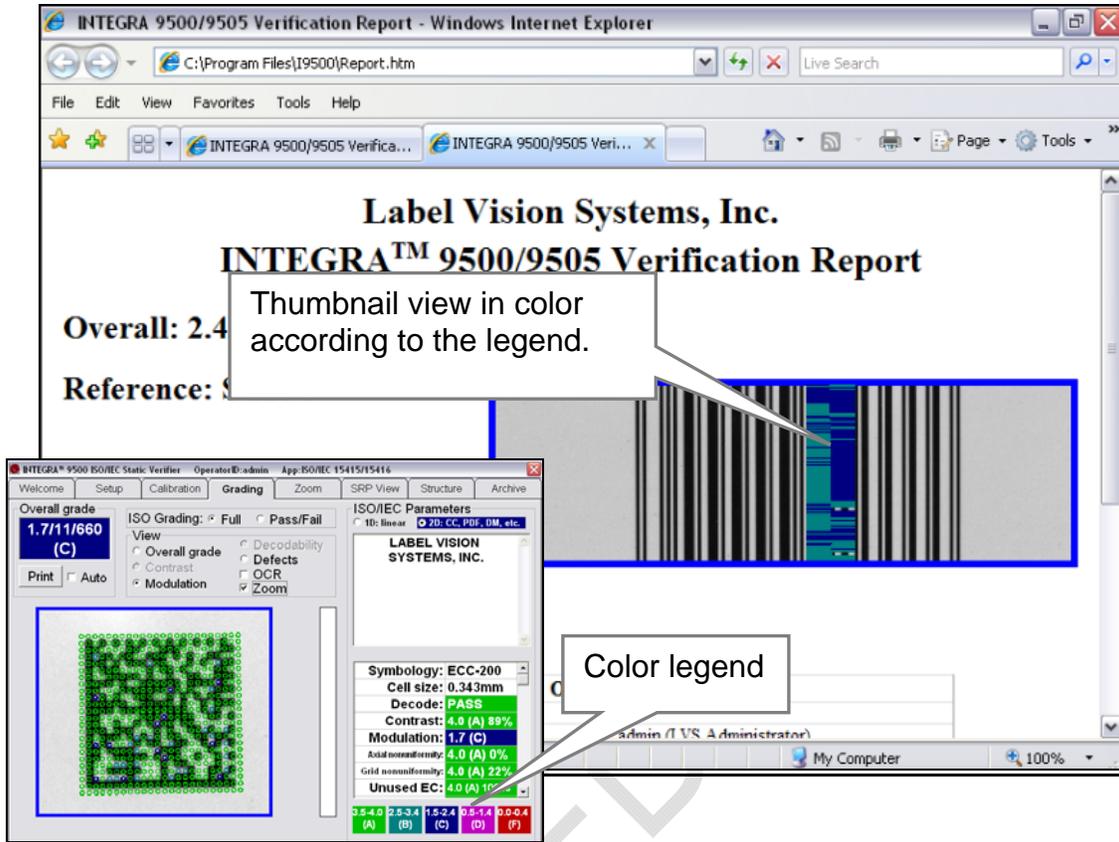
This feature indicates cells that are the wrong side of the global threshold (i.e. a cell intended to be white is interpreted as black; a cell intended to be black is interpreted as white). The software also detects cells that are not in the correct spot or have a blemish. When this occurs, error correction is used and causes the software to highlight the cells in red where error correction was applied.

3. Zoom

Data Codes are often very small. The Zoom feature is used to magnify the image for easier visual inspection (see Figure below).



Note: If the Zoom feature, along with either the Modulation, Defects, or OCR feature, are checked and a Verification Report is printed, the thumbnail view on the report shows the results in color according to the legend at the bottom of the screen (see Figure below).



4. OCR

To check the human readable characters, right-click on the mouse and draw a box around the human readable characters; the box appears in green. The software reports a “match” if it matches the decoded barcode information.

The system supports OCR-A, OCR-B, Times New Roman, Arial, Courier, and most San-serif fonts. Upper case only. Special characters are not supported.

The human readable of a barcode label can be checked most of the time provided the characters do not touch each other. The characters must also be large enough to read and in a straight line. The system is limited to reading up to 24 characters.

5. Modulation

To view a modulation error, click the **Modulation** option. It is recommended to activate the Zoom button along with the Modulation button so that the image is large enough to see the details.

When viewing Modulation errors, the software may use a “yellow” mark. A yellow mark indicates that the Modulation measurement for that cell was less

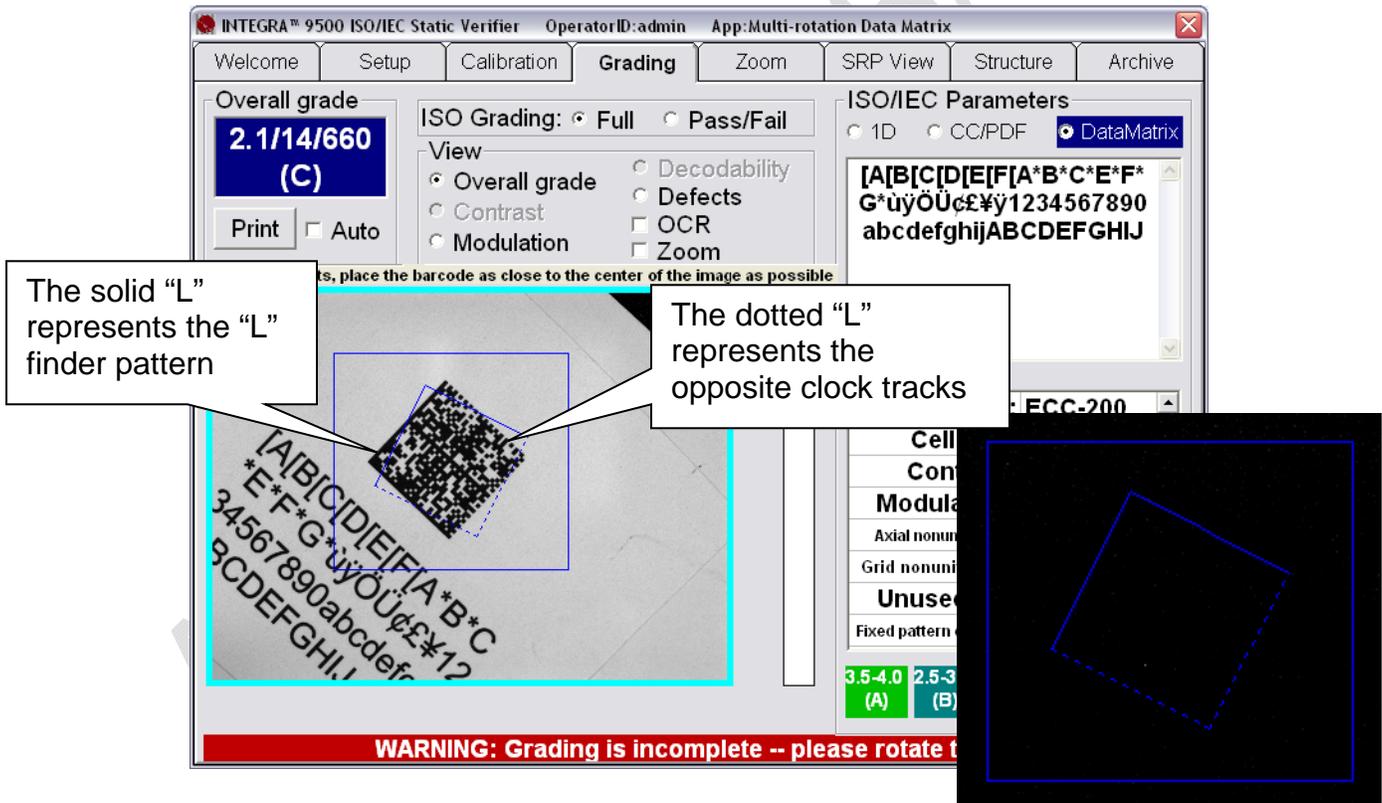
than 20 percent. In fact, what should have been black or white was actually measured to be the opposite of what it should have been.

Multi-Rotation Codes

DataMatrix

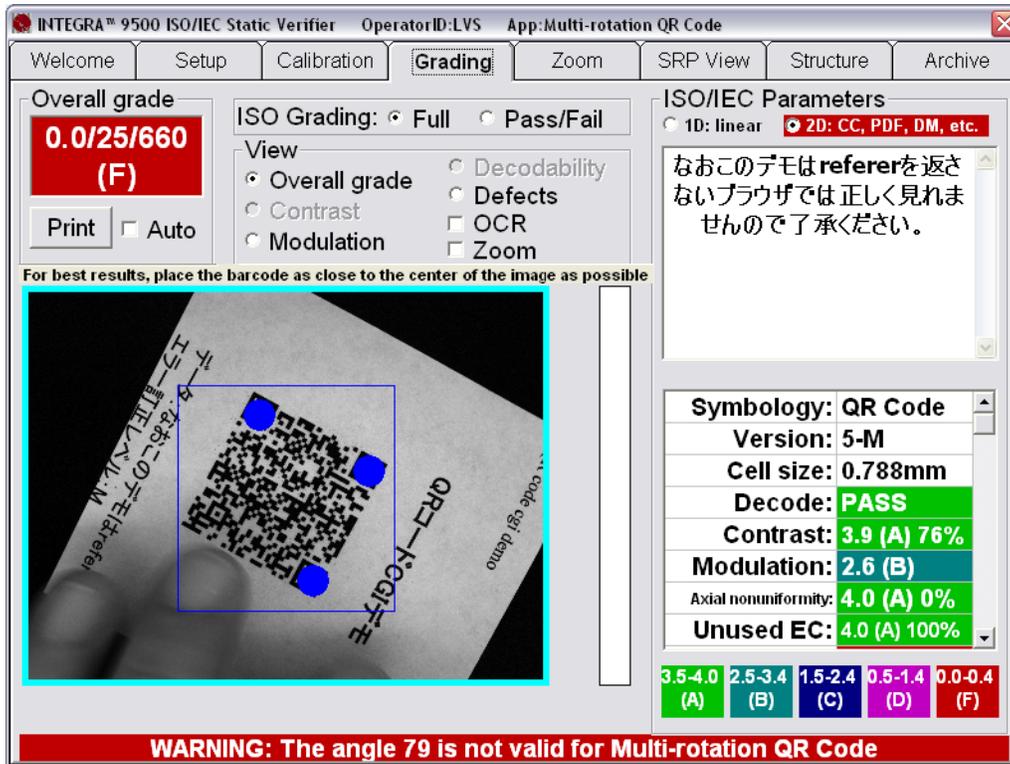
If **Multi-Rotation Codes** is selected as the preferred Application standard on the **Setup Tab** screen, you are prompted to rotate the code after drawing the box. Ensure that the box is large enough to accommodate the symbol at all rotation angles. An overlay will assist you to place the symbol at the desired angle; it consists of a solid “L” and a dotted “L” (see Figure below).

- The solid portion represents the “L” finder pattern
- The dotted portion represents the opposite clock tracks



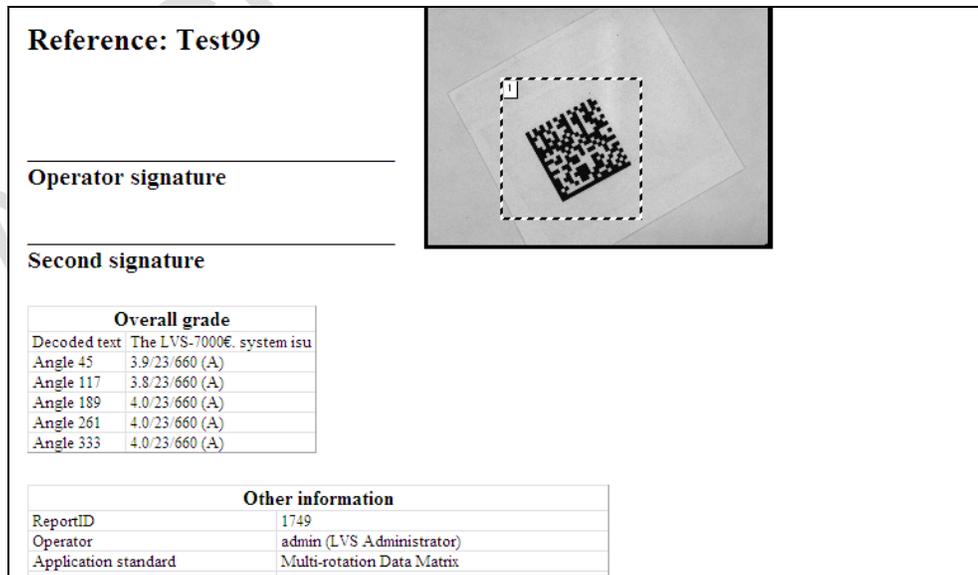
QR Code

For correct placement for QR Code, position the finder patterns on the blue dots (see Figure below).



After grading all five rotations, a report appears showing the average grade of all rotations (see example report below):

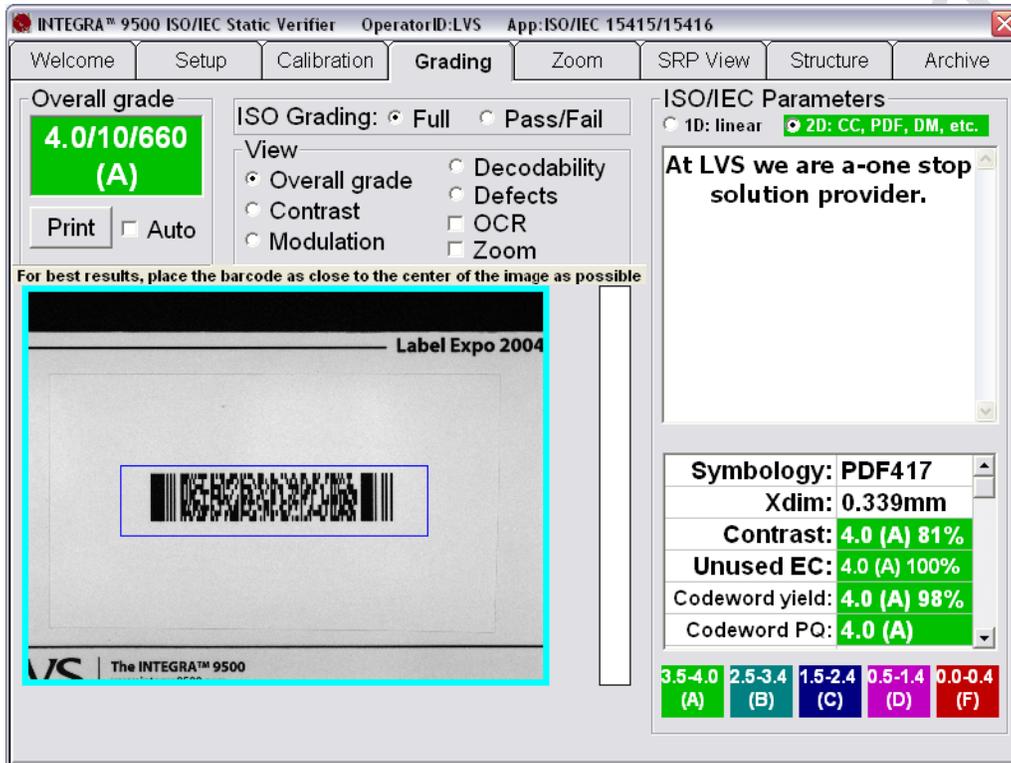
Note: To view the individual details for each angle of rotation, click the **Archive** tab | **Recent reports (last 30 days)**.



Section 3: Two-Dimensional Multi-Row Codes

The family includes:

- PDF 417
- Micro PDF 417
- GS1 Databar CC-A
- GS1 Databar CC-B
- GS1 Databar CC-C



Grading Screen with PDF 417

Verify a PDF 417 or Micro PDF 417 Code

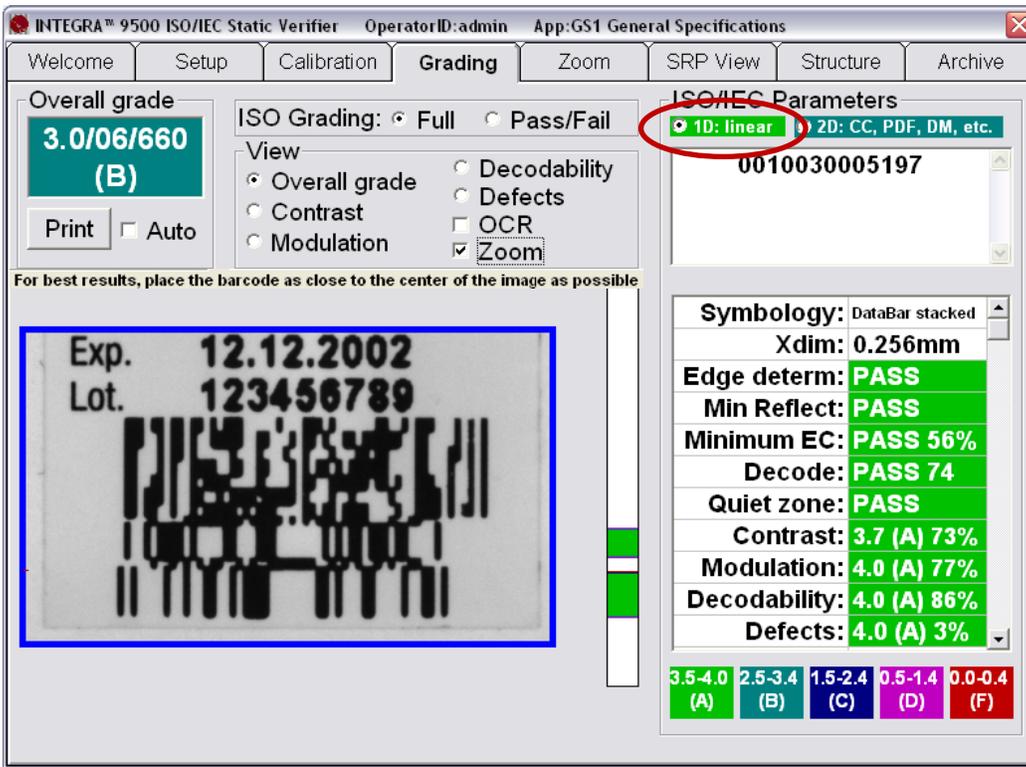
Place the symbol into the field of view squarely and with the right and left alignment bars positioned straight up and down (see above Figure). The symbol can have no more than a 2 degree tilt. While placing the cursor on the video image, hold down the mouse and draw a box around the barcode image; the box appears as a blue box.

The system now reports its grade. There may be a few seconds delay in displaying the verification results depending on how much data is encoded within the symbol.

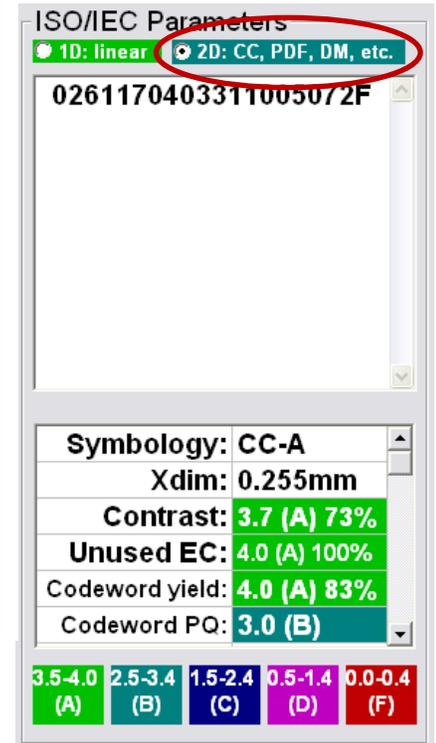
PDF417 Parameters

There are a total of 8 reported parameters. Use the scroll bar to view all of these parameters.

GS1 Databar Composite Verification



GS1 Databar Composite Verification – 1D



GS1 Databar Composite Verification – 2D

The INTEGRA 9500/9505 supports the following GS1 Databar Composite codes:

- GS1 Databar-14 (linear)
- GS1 Databar-(stacked)
- GS1 Databar-(limited)
- GS1 Databar-(expanded)
- GS1 Databar-CCA
- GS1 Databar-CCB
- GS1 Databar-CCC

Verify a Composite Code

A Composite code contains two basic sections: The 1D and 2D parts. Hold down the mouse button and draw a blue box around the barcode image. Since there are no quiet zones for GS1 Databar, make the box tight. Also, the barcode image must be square to the field of view. The symbol can have no more than a 2 degree tilt.

 **Important:** Always position the barcode as close to the center of the field of view as possible.

On the upper right side of the **Grading Tab** screen there are two boxes marked 1D and 2D (see above Figure). Choose which section of the code you wish to view.

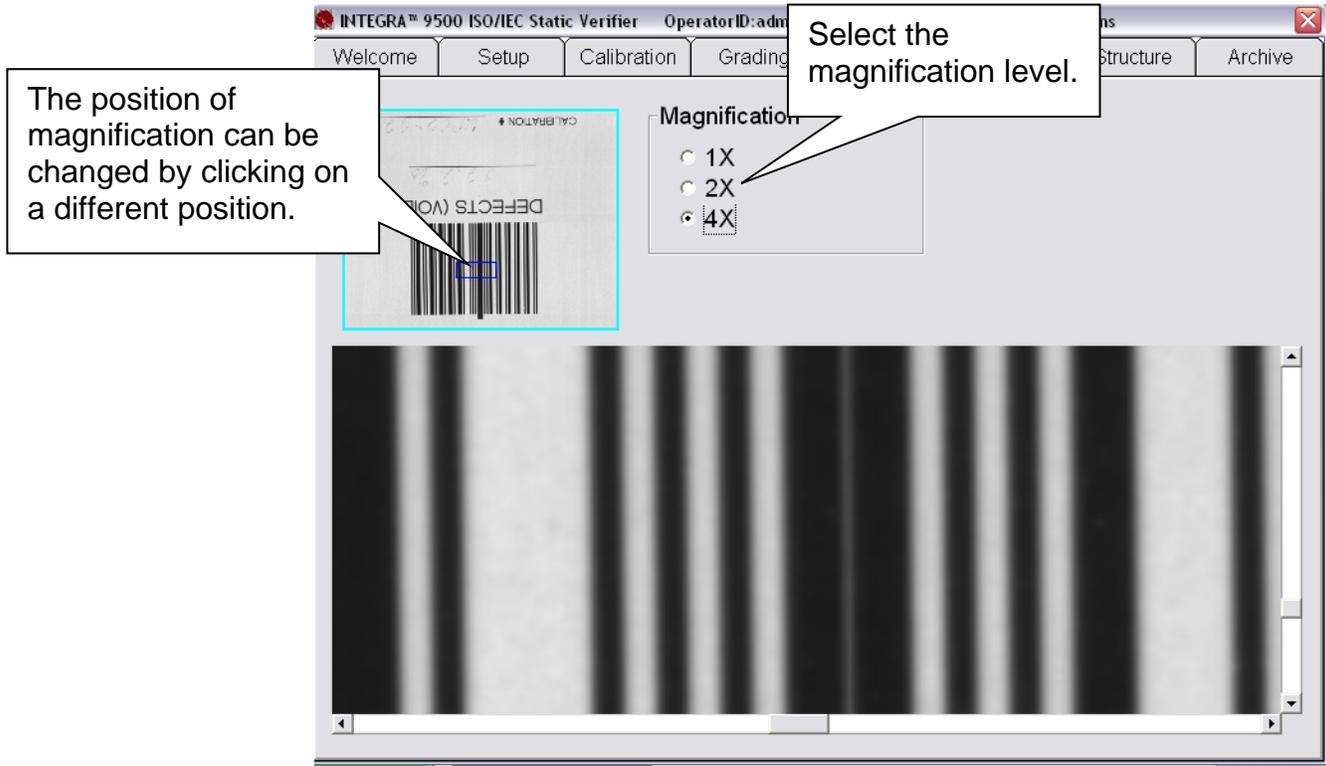
- The 1D section contains the linear or 1D verification data.
- The 2D section contains the composite portion of the code.

The box at the top of the screen shows the encoded data.

 **Note:** Blemish percentage has been turned off for all GS1 Databar Composite codes.

 **Note:** All Linear codes that require a composite code component require a linkage flag indicating the requirement, with the exception of EAN-13, UPC-A and UPC-E. The GS1 Databar family of Linear codes have a linkage flag as part of the encodation method. GS1-128 codes have a linkage flag based on a superfluous code set switch immediately prior to the eternal, non-transmittable check digit.

Zoom Tab

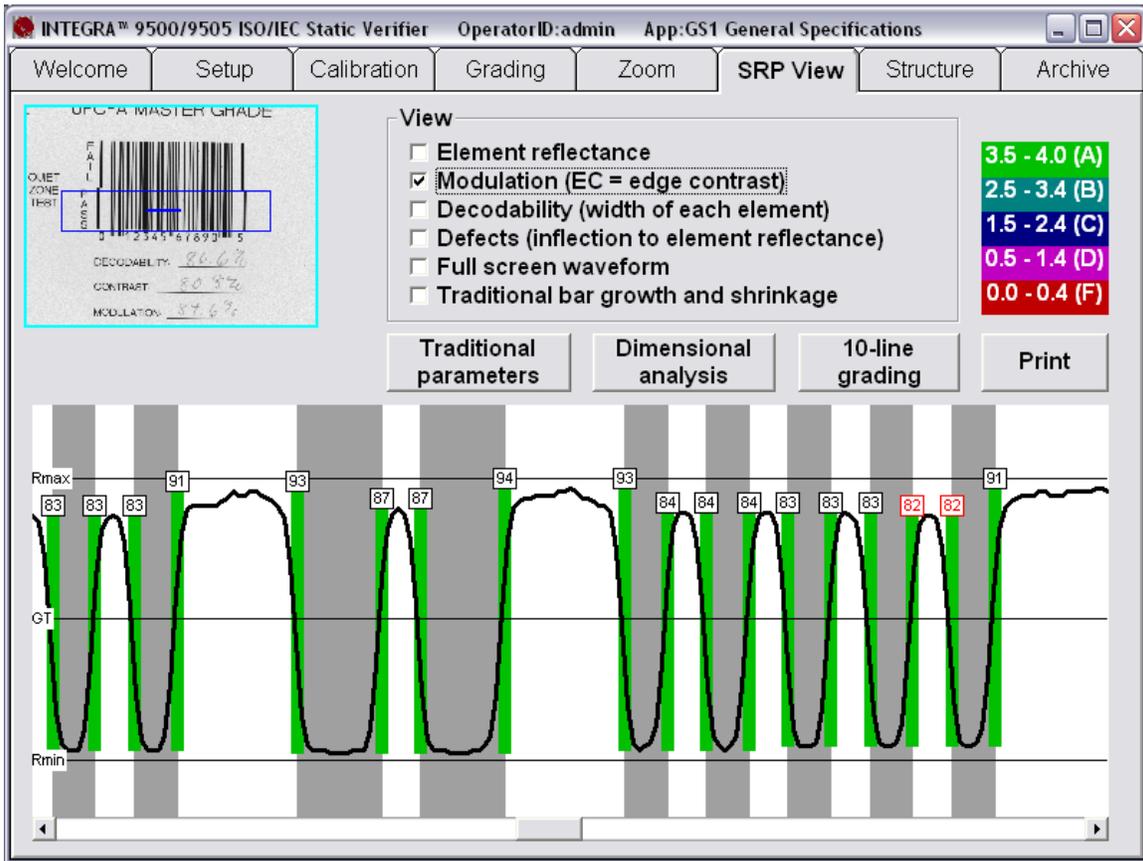


To further evaluate the quality of barcode symbols, the **Zoom Tab** screen allows you to magnify the barcode image up to 4 times (see above Figure).

The position of magnification can be changed by clicking to a different position on the image box located on the upper left corner of the screen.

There are scroll bars located at the side and at the bottom of the screen that allow the user the ability to change its horizontal and vertical position.

SRP View Tab



SRP View Screen showing a defect error

To further evaluate a barcode error, you may wish to see the Scan Reflectance Profile (SRP). Select the **SRP View** tab (see above Figure). The SRP is displayed for the selected area as determined by the blue line overlaying the image of the barcode on the top left side of the screen.

You can look at the SRP for any part of the barcode by simply clicking on another part of the image in the box located on the upper left corner of the **SRP View Tab** screen.

View Section

Under the View section, you can select what kind of error will be super-imposed onto the SRP graph. Rmax and Rmin numbers are also displayed.

Options include:

- Element reflectance
- Modulation (EC = Edge Contrast)

 **Note:** If “Modulation” is selected, the modulation for each dark/white transition is displayed. The lowest modulation for that scan line is displayed in red.

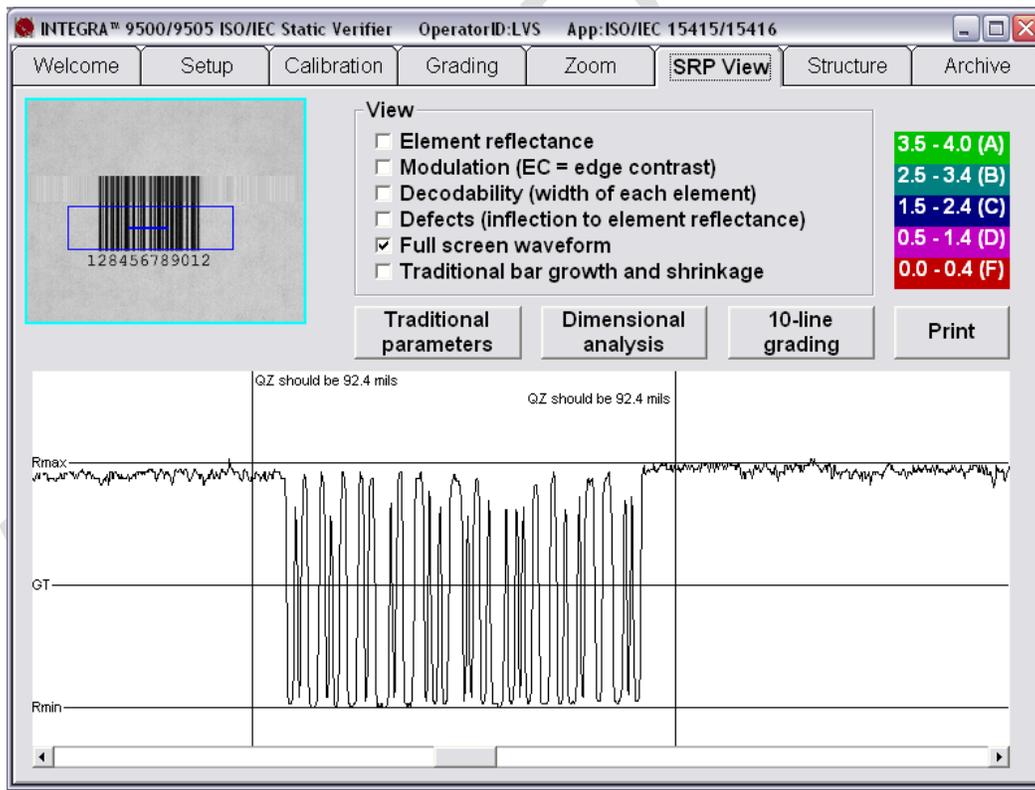
- Decodability (width of each element)
- Defects (inflection to element reflectance)
- Full screen waveform
- Traditional bar growth and shrinkage

The background of the **SRP View Tab** screen represents the bars and spaces of the actual barcode symbol. The global threshold is also displayed.

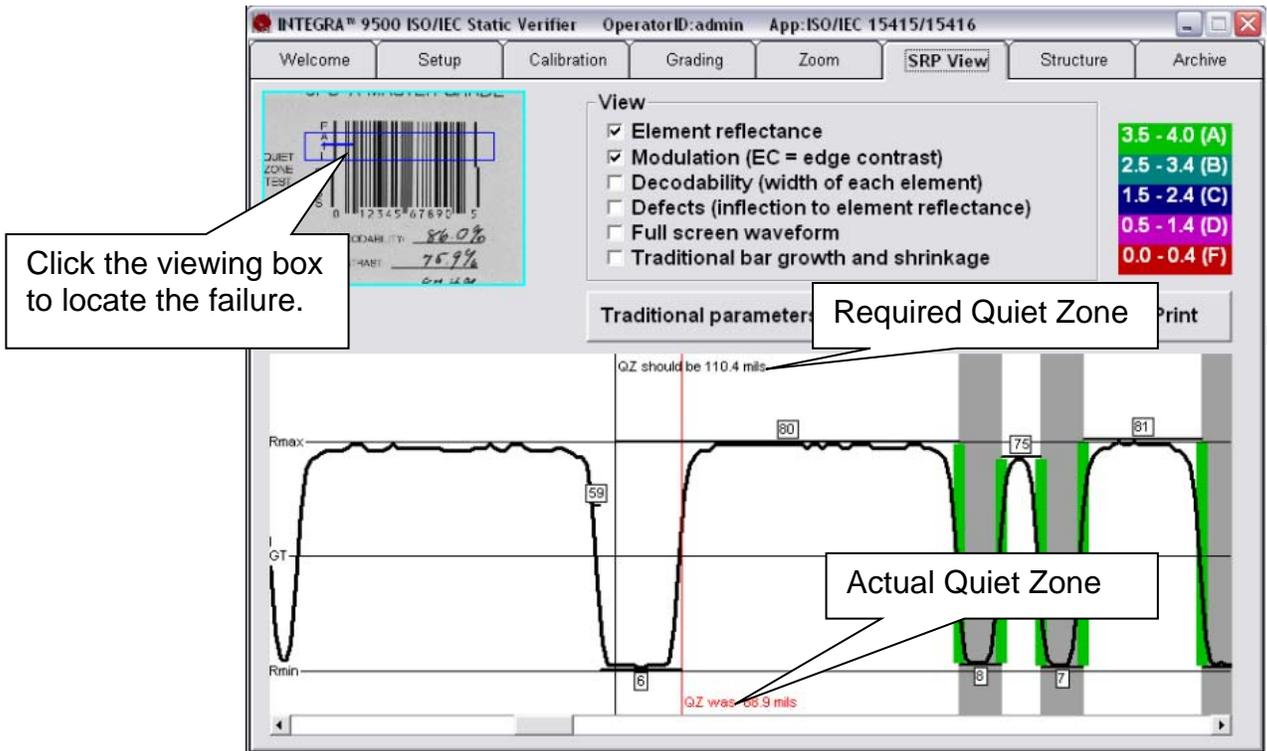
The PgUp and Pgdn arrows on the keyboard allow you to inspect every scan line. Each scan line is approximately 0,05 mm (.002”) apart.

Full Screen Waveform

The Full Screen Waveform feature allows you to view the entire Scan Reflectance Profile at one time (see Figure below).

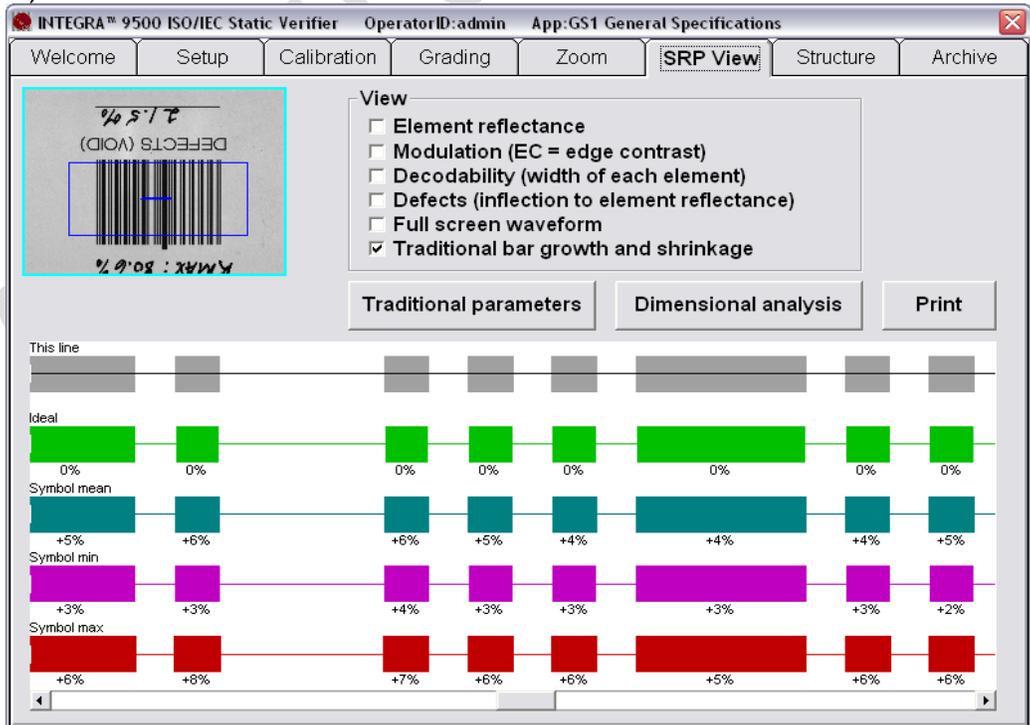


 **Note:** If a quiet zone failure occurs, click the viewing box to locate the failure. The SRP window will show the actual quiet zone and required quiet zone (see Figure below).



Traditional Bar Growth and Shrinkage

Select this option to view bar growth and shrinkage information (see Figure below).



Traditional Parameters Button

Click the **Traditional parameters** button to view a graphical representation of the barcode. After clicking this button, the following page appears:

Bar	1	2	3	4	5
Ideal size in X	1	1	2	1	2
Ideal size in mils	13	13	26	13	26
Mean size in mils	13.8	13.8	26.7	13.7	25.8
Print growth in mils	0.8	0.8	0.7	0.7	-0.2
Minimum size in mils	13.7	13.6	26.6	13.6	25.7
Maximum size in mils	13.9	13.9	26.8	13.9	26
Growth	+6%	+6%	+5%	+6%	-1%
<end of file>					

The barcode size is measured in Mil or Micron units; this is determined by selecting **English** or **Metric** on the **Setup** tab | **System Settings** section.

Note:

- **Mil** - thousands of an inch (.001)
- **Micron** (also known as micrometer) – 1 millionth of a meter

Options on this page include:

Option	Description
Previous page	Click this button to access the previous page.
Next page	Click this button to access the next page.
Print	Clicking this button prints the barcode parameters.
Save	Clicking this button saves your changes. After clicking this button, enter a file name and click the Save button.
Exit	Clicking this button exits the screen. The SRP View Tab main screen appears.

Dimensional Analysis Button

Click the **Dimensional analysis** button to view the measurement of each bar and space in the barcode.

10-Line Grading Button

Because the INTEGRA 9500/9505 uses camera-based technology, LVS® is able to analyze many lines throughout the height of a code. The software averages all parameters for each line and reports the overall grade as being the lowest of the averages of all parameters.

The 10-Line Grading button is available to mimic a laser-based or CCD-based verifier where only 10 lines are assessed. These types of verifiers do not average each parameter; they simply average the overall grade for each line.

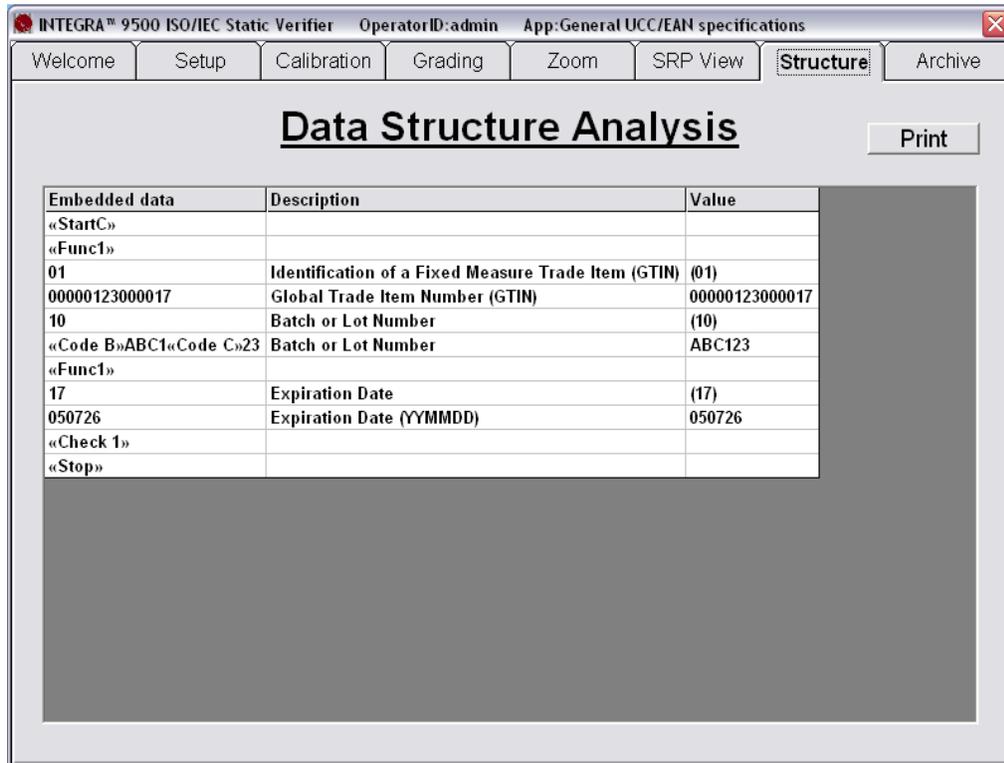
 **Note:** It is possible you may notice differences between the grades using the multiple line grade (normal mode) and the 10-line grading method.

Print Button

Click the **Print** button to print the Scan Reflectance Profile (SRP). If a certain View is selected, the printer creates a color-coded SRP.

 **Note:** All files are saved as delimited files using the vertical bar (|) as the record separator.

Structure Tab



Many companies and organizations throughout the world create barcode labels according to a set of rules used to standardize how barcode data is to be structured in order to easily transfer trade-related information between two parties. For the most part, these rules were created and governed by an international group called ISO/IEC. These rules can be found in a publication entitled ISO/IEC 15434 and are commonly called the syntax or semantics of the data.

Currently, the INTEGRA 9500/9505 is capable of analyzing the data structure of all barcode symbologies. The above example (see above Figure) is for a GS1-128 barcode symbol.

Printing

- Click the **Print** button to send the report to a printer.
- To view an HTML image of the final Verification Report, right-click on the **Print** button.

Use the Data Structure Analysis

Step 1: Go to the **Grading Tab** screen and grade the target label as you normally would (certain labels have two parts to their barcode: **1D** (the linear part) and **2D** (the composite part)). The Data Structure Analysis software analyzes only which part you have selected.

Step 2: After a grade has been established, select the **Structure Tab**. The analysis will be completed shortly.

Generally speaking, the **Structure Tab** screen is used by personnel who are familiar with Application Identifiers and with data semantics. It is not the intention of this manual nor Label Vision Systems, Inc. to educate an operator how to translate the meaning of the structure analysis. It is only LVS's intention to divide the information into sections in accordance with industry standards.

The screenshot displays the software interface for the INTEGRA 9500 ISO/IEC Static Verifier. The window title is "INTEGRA™ 9500 ISO/IEC Static Verifier OperatorID:admin App:GS1 General Specifications". The interface is divided into several sections:

- Overall grade:** 3.3/10/660 (B). Includes a "Print" button and an "Auto" checkbox.
- ISO Grading:** Radio buttons for "Full" (selected) and "Pass/Fail".
- View:** Radio buttons for "Overall grade" (selected), "Contrast", and "Modulation". Checkboxes for "Decodability", "Defects", "OCR", and "Zoom".
- ISO/IEC Parameters:** Radio buttons for "1D: linear" (selected) and "2D: CC, PDF, DM, etc.". A text field contains the barcode data: "010061414199999610AB C12321321CBA".
- Barcode Analysis Results:**
 - Symbology: GS1-128
 - Xdim: 0.283mm
 - Edge determ: PASS
 - Min Reflect: PASS
 - Minimum EC: PASS 50%
 - Decode: PASS 317
 - Quiet zone: PASS
 - Contrast: 3.7 (A) 73%
 - Modulation: 3.3 (B) 68%
 - Decodability: 4.0 (A) 75%
 - Defects: 4.0 (A) 6%
 - Blemish: 4.0 (A) 0%
- Grade Legend:** A row of five colored boxes representing grade ranges: 3.5-4.0 (A) in green, 2.5-3.4 (B) in blue, 1.5-2.4 (C) in purple, 0.5-1.4 (D) in red, and 0.0-0.4 (F) in yellow.

Example of an EAN/UCC barcode label using an Application Identifier.

Data Structure Analysis Example

The above Figure is a screenshot of the **Grading** Tab verifying an EAN/UCC barcode label. The transmitted encoded data is displayed in the upper right box. Clicking on the **Structure** Tab, the data is divided into its data structural format (see Figure below).

Embedded data	Description	Value
<StartC>		
<Func1>		
01	Identification of a Fixed Measure Trade Item (GTIN)	(01)
00614141999996	Global Trade Item Number (GTIN)	00614141999996
10	Batch or Lot Number	(10)
<Code B>ABC1<Code C>23	Batch or Lot Number	ABC123
<Func1>		
21	Serial Number	(21)
32<Code B>1CBA	Serial Number	321CBA
<Check 47>		
<Stop>		

Structure Tab showing the barcode data divided into its data structure format.



The checking of Data Structure is complex and extensive. LVS is attempting to define all Data Structures but we may make an occasional error or may not have a Data Structure defined that you require. If this is the case, please contact LVS and we will make the needed changes and/or additions in a future release of the software. We thank you in advance for your help and cooperation.

Import Image from File

A saved image can be reloaded into the system by choosing the **Import Image from file** button. You can then go to the **Grading Tab** screen or any other screen and work with the image.

WARNING: When loading an imported image, the system's internal camera is automatically turned Off. After work is completed with the imported image, the internal camera must be manually turned back on. Go to the Setup Tab Screen and turn the internal camera back On (see Figure to the right).



Camera switch located on the Setup Tab Screen.

Export Image to File

The actual image used to generate a verification report is not saved. A thumbnail image, however, is saved with the report. Sometimes it is important to save the actual image. This can be done by placing a barcode label into the field of view, verify the label, then go to the **Archive Tab** screen and push the **Export Image to File** button. The image is now saved.

Recent Reports (Last 30 Days)

You can recall any report from the archive. When you do, the data is the same as it was when the report was generated with the exception of the current date/time being attached on the bottom of the report.

For reports older than 30 days, you must enter the proper software commands using SQL language into the "Query" box. For those who may not be accustomed to SQL commands, the software has made it easy to use. For instance, by choosing "Recent Reports" the Query box might contain the following command:

Select ReportsID.ImageID.LocalTime From Reports Where LocalTime>=#23-Apr-2005 11:25# Order By ReportID



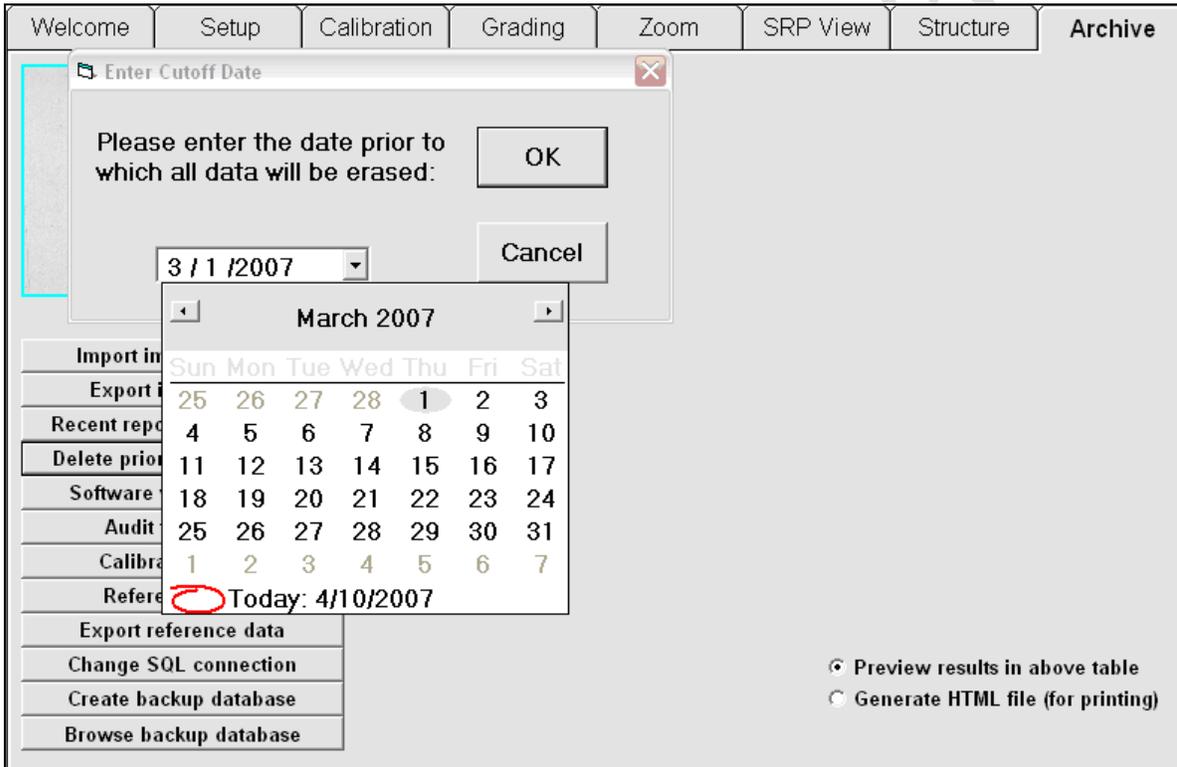
The Query box and Execute Query Box

Use this same command but change the “23-Apr-2005” date to a desired period of time. Then press the **Execute query** button. The software remembers the original command string as well as the modified command string. All of the different files and reports can be altered in the same manner.

Delete Prior to Specific Date

To delete old files, click this button. Use the calendar feature to select the desired date, and then click the **OK** button (see Figure below).

 **Note:** The date will display according to your Regional settings.



The screenshot shows the 'Enter Cutoff Date' dialog box with the text: 'Please enter the date prior to which all data will be erased:'. Below the text is a date input field showing '3 / 1 /2007' and buttons for 'OK' and 'Cancel'. A calendar for 'March 2007' is open, showing a grid of dates from 25 to 31. The date '1' is highlighted. Below the calendar, the text 'Refer Today: 4/10/2007' is visible, with '4/10/2007' circled in red. The main interface has a menu bar with 'Welcome', 'Setup', 'Calibration', 'Grading', 'Zoom', 'SRP View', 'Structure', and 'Archive'. The 'Delete prior' button is highlighted in the main menu.

 **Warning:** A full database causes the INTEGRA 9500/9505 software to stop functioning. A warning message, along with further instructions, appears when the database reaches 50% capacity, and every 5% thereafter. For example, at 50% capacity, a warning message appears and if ignored, the message re-appears at 55% capacity, and then at 60% capacity.

Software Version History

This report historically lists all software changes generated by the factory throughout the years. It lists when the change was performed, the software version number, and a simplified explanation of what was performed.

Audit Trail Report

This report lists the Operator ID along with the date/time and states what action was being taken. The Audit trail is updated every time the software detects an administrative change; this includes the following:

- When an operator logs on or off
- When the entire program is started or stopped
- Changes to the configuration of the **Setup Tab** screen (such as time-outs)
- Database changes
- Calibration time outs
- Changes in permission levels
- Calibration
- Creation or deletion of an operator

Calibration Report

This report lists every time calibration was achieved along with a date/time stamp and who performed it. If there are any problems or questions, this report allows the operator to see exactly what the calibration process did and why.

Reference Report

This report contains all verification reports for a given reference. The reference name (free form text) is entered in the Reference box located on the Setup Screen.

After clicking this button, only the reports for that reference are displayed and can be exported by clicking the Export reference data button.

Export Reference Data

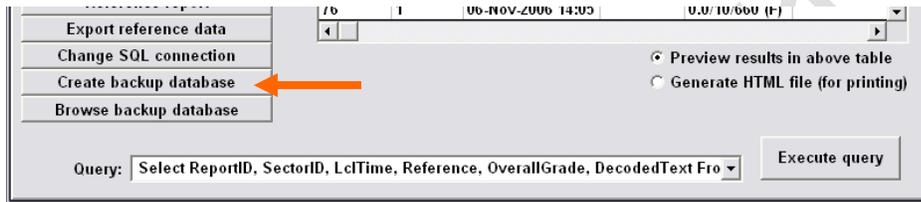
The Reference report is a text file that can be placed into another database file if desired. Clicking this button sends the Reference report to another file.

After clicking this button, the **Save As** window appears. Select the desired file location and name, and then click the **Save** button.

 **Note:** Within this report a vertical bar, instead of a comma, is used to separate the data.

Change SQL Connection

The default location for all archived databases are stored on the INTEGRA 9500/9505 hard drive. However, sometimes a company would like to send these reports to an external drive. At the bottom left of the **Archive Tab** screen (see Figure to the right) is the **Change SQL connection** button. Using standard protocol, change this button to any desired path.

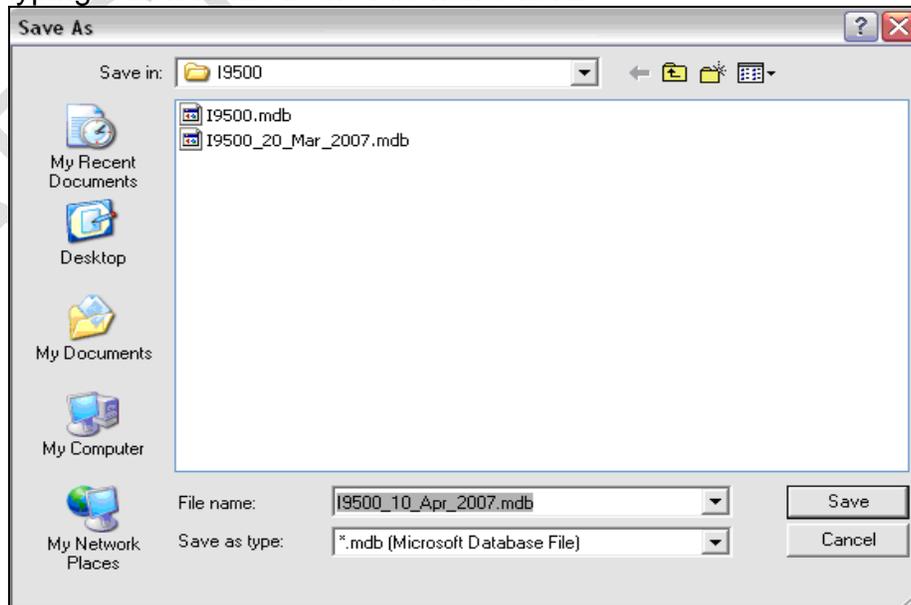


Change SQL connection

Create Backup Database

- To create a backup database, click this button. The **Save As** window appears (see Figure below).
- Select the desired location to store the database, then click the **Save** button.

 **Note:** A default file name appears in the File name field (for example: I9500_10_Apr_2007.mdb). If desired, change the name of the file name by typing a new name in the File name field.



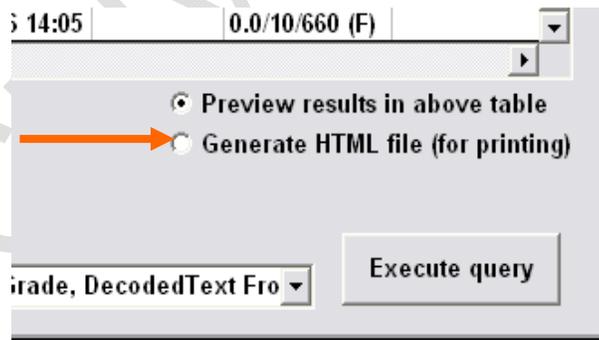
Browse Backup Database

- To locate and browse a backup database, click the **Browse Backup Database** button.
- Select the database from the list of backup databases.
- Available options include:
 - Recent reports (last 30 days)
 - Software version history
 - Audit trail report
 - Calibration report
 - Reference report
 - Export reference data
 - Cancel browse backup



Print an Archived Report

At the bottom right of the **Archive Tab** screen (see Figure below) is the **Generate HTML file (for printing)** option. When this option is activated, the Archived Report will print.



Printing a Report

Optional Accessories & Spare Parts

LVS PART #	DESCRIPTION
SHIPPING CASES / CARTONS	
LVS0080	LVS 9500 Black Plastic Shipping Case with wheels (for plastic 9500 only)
LVS0074	LVS 9500 Cardboard Shipping Carton (for plastic or metal 9500)
LVS0082	LVS 9505/Auxiliary Black Plastic Shipping Case with wheels
LVS0102	LVS 9505/Auxiliary Cardboard Shipping Carton
CAMERA AND LENS OPTIONS	
CAM0079	LVS 9500 & 9505 Camera Lens 25mm (locking)
CAM0080	LVS 9500 & 9505 Camera Lens 12.5mm (locking)
CAM0076	LVS 9500 & 9505 Camera Lens 16mm (locking)
CAM0077	LVS 9500 & 9505 Camera Lens Red Filter
CAM0123	LVS 9500 USB 1.3 Mega Pixel Camera
CAM0078	LVS 9500 USB 2.1 Mega Pixel Camera
HAR0547	LVS 9500 Lens Slide
CALIBRATION CARDS	
LAB0118	LVS 9500 & 9505 Calibration Card GS1 Data Matrix (2D)
LAB0026	LVS 9500 & 9505 Calibration Card UPC-A
LAB0033	LVS 9500 & 9505 Calibration Card Code 128
LAB0036	LVS 9500 & 9505 Calibration Card EAN RSS
LAB0041	LVS 9550 Calibration Card for INTEGRA 9550
ADDITIONAL OPTIONS / PARTS	
SOF0039	LVS Multi-Section Option for 9500/9505
SOF0049	LVS 9500/9505 software and USB dongle; sold only with LVS system.
LCD0009	LVS 9500 12.1" LCD Display
COA0159	LVS 9500 DVD Read/Re-Write
COA0176	LVS 9500 USB Keyboard
COA0085	LVS 9500 PS/2 Keyboard
COA0184	LVS 9500 350 Watt Power Supply

LVS PART #	DESCRIPTION
COA0178	LVS 9500 Hard Drive 80GB - 7200RPM. Hard drive fits in 9500 models CG to present.
COA0038	LVS 9500 Hard Drive 40GB - 7200RPM; Hard drive fits only in metal AA – BD models.
COA0177	LVS 9500 8890 Mother Board for units purchased prior to January 1, 2010.
COA0259	LVS 9500 Mother Board for units with the following part numbers: INTEGRA9500-1-1 or INTEGRA9500-1-2
COA0129	LVS 9500 Internal Case Fan 60mm
COA0180	LVS 9500 CPU Fan 60mm x 15mm
HAR0925	LVS 9500 Heatsink CF512RS for 8890 mother board (heatsink and fan combo). Please contact LVS with serial number of unit to ensure correct fan and heatsink are ordered.
HAR0926	LVS 9500 Heatsink CF518RS for 8450 motherboard (heatsink and fan combo); Please contact LVS with serial number of unit to ensure correct fan and heatsink are ordered.
HAR0473	LVS 9500 & 9505 Mini circular lock w/keys
PCB0180	LVS 9500 LED Light Tray PCB (Printed Circuit Board) for INTEGRA 9500; Full LED light tray replacement (no enclosure)
PCB0120	LVS 9505/Auxiliary LED Light Tray PCB (Printed Circuit Board) for INTEGRA 9505/Auxiliary; Full LED light tray replacement (no enclosure)
PCB0166	LVS 9505 Internal Dongle Board
PCB0136	LVS 9500 Push Button LCD Board for units purchased prior to January 1, 2010.
PCB0188	LVS 9500 Push Button LCD Board for units purchased after January 1, 2010.
PCB0092	LVS 9500 Internal “L” Shaped PCB
PCB0088	LVS 9500 Internal USB Board for units purchased prior to January 1, 2010.
PCB0186	LVS 9500 Internal USB Board for units purchased after January 1, 2010.
PCB0090	LVS 9500 Internal Video In Board
PCB0138	LVS 9500 Internal Carrier Board for 8450
PCB0122	LVS 9500 Internal Carrier Board for 8890
PCB0096	LVS 9500 Internal LCD Control Board
CAB0384	LVS 9500 25” Keyboard Cable for units purchased prior to January 1, 2010.
CAB0525	LVS 9500 25” Keyboard Cable for units purchased after January 1, 2010.
CAB0392	LVS 9500 37” USB to Camera Cable for units purchased prior to January 1, 2010.
CAB0526	LVS 9500 37” USB to Camera Cable for units purchased after January 1, 2010.
CAB0398	LVS 9500 6" USB to Carrier Board

LVS PART #	DESCRIPTION
HAR0580	INTEGRA 9505 (6" x 10") Mirror (152 mm x 254 mm)
HAR0994	INTEGRA 9505 (5" x 7") Mirror (127 mm x 178 mm)
HAR0586	Metal Base Plate (13" x 9.31")
HAR0860	LVS 9505 AR Coated Window

Important: Part numbers and the content of this list may be changed without notice.

Preventive Maintenance Schedule

WEEKLY	There is no weekly Preventive Maintenance Schedule.
MONTHLY (Applies only to the INTEGRA 9500)	<ul style="list-style-type: none"> Using 60 to 80 PSI (400-480 kPa) of positive air flow, clean the lens mounted inside the 9500 housing. This ensures the removal of small particles on the surface of the lens. Vacuum the 2 air intake holes located under the main housing; this removes any build-up of particles trapped in the 2 filters.
ANNUALLY	There is no annually Preventive Maintenance Schedule.
BI-ANNUALLY	<p>For Systems Using a DC Fluorescent Light Tray:</p> <ul style="list-style-type: none"> Replace the DC Fluorescent Light Tray every two years. These special lights diminish in brightness over the course of several years. Replacing the Light Tray every two years ensures continuous calibration levels. Replace the Calibration Conformance Test Card every two years. <p>For Systems Using an LED Light Tray:</p> <ul style="list-style-type: none"> Replace the Calibration Conformance Test Card every two years.

Documentation

This section contains the following forms:

- Declaration of Conformity
- Compliance Statement for ISO/IEC:2000(E) and NIST Traceability
- Declaration of CE Certification for the INTEGRA 9500/9505 Barcode Quality Station
- GS1 US BarCodes and eCom Solution Partner Program Certificate



Declaration of Conformity

Label Vision Systems, Inc. declares under its sole responsibility that the

INTEGRA 9500/9505 Barcode Quality Station

Serial Number: _____

Manufactured at 101 Auburn Court, Peachtree City, GA, USA 30269, on

(Day / Month / Year)

has been tested in accordance with and conforms to the following standards:

ISO/IEC 15416:2000(E)	Linear Verification Methodology
ISO/IEC 15415:2004(E)	2-Dimensional Verification Methodology
ISO/IEC 15415 Tec.Cor. 1 2008	Technical Corrigendum
ISO/IEC 15426-1:2006(E)	Linear Verifier Conformance Specifications
ISO/IEC 15426-2:2005(E)	2-Dimensional Verifier Conformance Specifications
ISO/IEC 15426-2 Tec.Cor. 1 2008	Technical Corrigendum
GS1 General Specifications	Application Standard
21 CFR Part 11 Compliant Ready	Electronic Records and Signatures

Authorized Signature

Day / Month / Year

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Internet: www.lvs-inc.com



Declaration of CE Certification

INTEGRA 9500/9505 Barcode Quality Station

Label Vision Systems, Inc. declares that this product complies with the following directives to be observed for CE Marking.

93/68/EEC	CE Marking Directive
89/336/EEC	EMC Directive
2006/95/EC	Low Voltage Directive
EN 60950	Electrical Safety
EN 55022 B	EMC / Radio Disturbances
EN 50082-1	EMC / Immunity

CE Marking is the responsibility of Label Vision Systems, Inc., 101 Auburn Court, Peachtree City, GA 30269 USA.

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Internet: www.lvs-inc.com



Compliance Statement for ISO/IEC 15416:2000(E) and NIST Traceability

The INTEGRA 9500/9505 is calibrated with Applied Image certified EAN/UPC Symbology Calibration Standard Test Cards. The Test Cards are manufactured to specifications set by Applied Image and the collaboration of GS1 US and GS1 Global using ISO/IEC 15416:2000(E) methodology and are calibrated using standards traceable to the National Institute of Standards and Technology (NIST).

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