

4 PLC Diagnostics (SJ50s only)

The **PLC Diagnostics** program is used to monitor the state of the PLC.

There are two types of PLC diagnostics.

- Events displayed in the status bar on the GUI.
- Errors messages displayed on the GUI as they occur on the machine.

4.1 *PLC Events*

The following events are displayed in the status bar of the SJ50 GUI as they occur on the SJ50 machine:

- Board Available From Upstream Machine
- Machine Not Busy From Downstream
- Board Entering Left Shuttle
- Left Shuttle Busy
- Left Shuttle Not Busy
- Board Entering Rail
- Rail 1 Busy
- Rail 1 Board Ready For Inspection
- Board Passed Inspection to Rail 1
- Board Failed Inspection to Rail 1
- Board Entering Rail 2 (Dual rail only)
- Rail 2 Busy (Dual rail only)
- Rail 2 Board Ready for Inspection (Dual rail only)
- Board Passed Inspection to Rail 2 (Dual rail only)
- Board Failed Inspection to Rail 2 (Dual rail only)
- Board Entering Right Shuttle
- Good Board Available to Downstream
- Bad Board Available to Downstream

The following illustration shows the event being displayed on the SJ50 GUI:

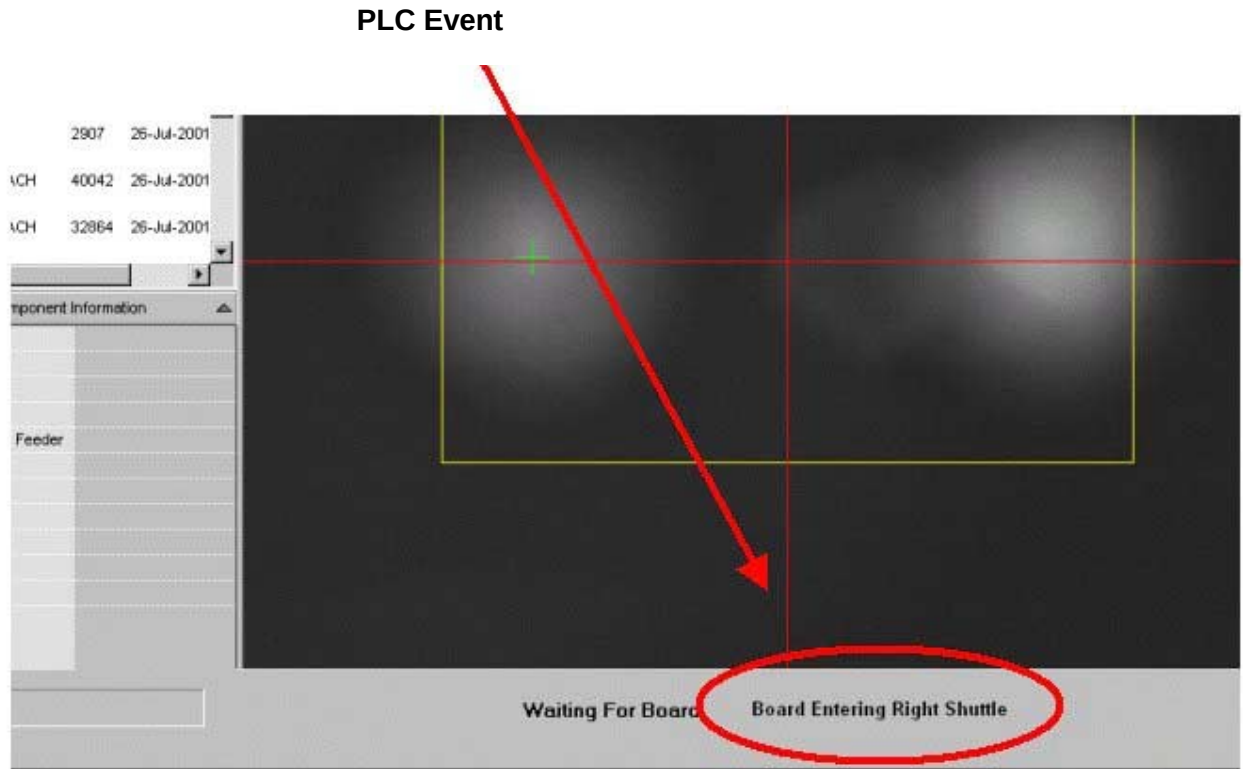


Figure 4-1 PLC Event

4.2 PLC Errors

When one of the following errors occurs, a message box is displayed on the PC screen. The message indicates what error has occurred and a possible fix, as detailed in the following table.

Error	Possible Fix
Left Shuttle Error, Entry Sensor On	Remove Board from Entry sensor, or retune sensor
Left Shuttle Error, Exit Sensor On	Remove board from Exit sensor, or retune sensor
Left Shuttle Error, Not at rail 1 position	Reset PLC Left shuttle
Left Shuttle Error, Shuttle at slow sensor	Reset PLC Left shuttle
Left Shuttle Error, Shuttle at Rail 2 position	Reset PLC Left shuttle
Left Shuttle Error, Shuttle time-out to Rail 2	Reset PLC Left shuttle
Left Shuttle Error, Shuttle time-out from Rail 2	Reset PLC Left Shuttle
Right Shuttle Error Entry Sensor On	Remove Board from Entry sensor, or retune sensor
Right Shuttle Error Exit Sensor On	Remove Board from Exit sensor, or retune sensor
Right Shuttle Error, Not at rail 1 position	Reset PLC Right shuttle
Right Shuttle Error, Shuttle at slow sensor	Reset PLC Right shuttle
Right Shuttle Error, Shuttle at Rail 2 position	Reset PLC Right shuttle

Error	Possible Fix
Right Shuttle Error, Shuttle time-out to Rail2	Reset PLC Right shuttle
Right Shuttle Error, Shuttle time-out from Rail2	Reset PLC Right shuttle
Rail 1 Error, In-position Sensor On	Remove board from In-position sensor, or retune sensor
Rail 1 Error, Stops Up	Check the stops on Fixed Rail 1
Rail 1 Error, Stops Up	Check the stops on Adjustable Rail 1
Rail 1 Error, Clamps Up	Check the clamps on Fixed Rail 1
Rail 2 Error, In-position Sensor On	Remove board from in-position sensor, or retune sensor
Rail 2 Error, Stops up	Check the stops on Fixed rail 2.
Rail 2 Error, Stops up	Check the stops on adjustable rail 2
Rail 2 Error, Clamps Up	Check the clamps on fixed rail 2

The following is an example of a pop-up error message:



Figure 4-2 PLC Error Message

After you fixed the problem, click the **Fault Acknowledge** button on the error message to reset.

To fix individual modules, use the steps provided in 4.3.

4.3 Maintenance IO Menu

To fix individual modules use the following steps

1. Click the **Tools** button on the main toolbar.
2. Select **Machine IO** folder from the **Category** folder of the **Tools** menu. The **Machine IO** menu is illustrated in Figure 4-3:

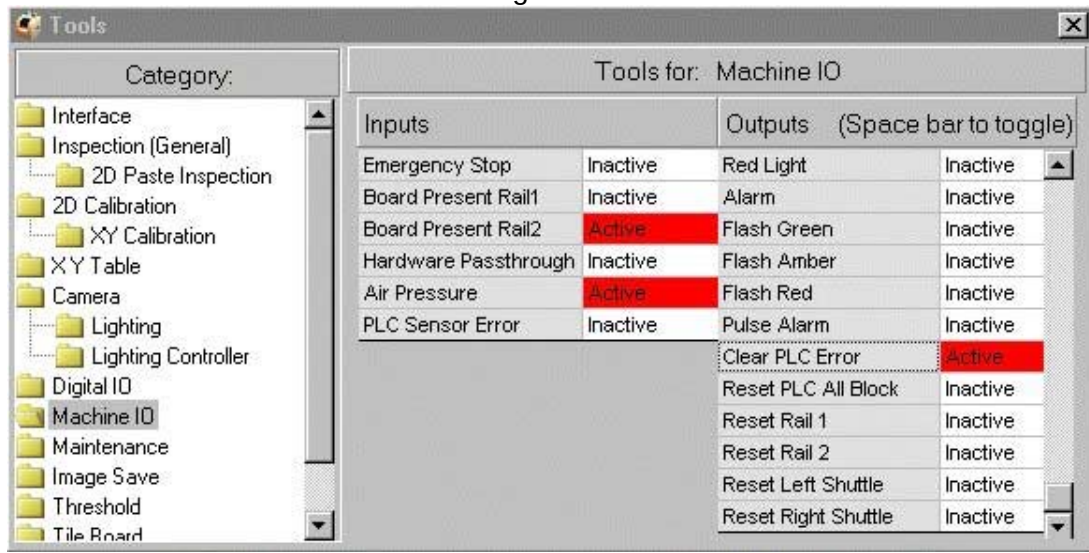


Figure 4-3 Machine IO Menu

To enable the **Machine IO** menu, carry out the steps listed in 4.4.

The Machine IO menu contains the following sections:

- Inputs
- Outputs

4.3.1 PLC Inputs

The **Inputs** section shows what Inputs are active on the SJ50 machine.

There are six inputs:

- Emergency Stop
- Board Present Rail1 (Dual rail only)
- Board Present Rail2 (Dual rail only)
- Hardware Passthrough
- Air Pressure
- PLC Sensor Error

When any of the above PLC inputs are activated (on the SJ50 machine), the status bar changes from **Inactive** to **Active** and turns red.

4.3.2 PLC Outputs

The **Outputs** section contains a list of PLC outputs that can be made active by toggling the status bar, changing it from **Inactive** to **Active**. As with **Inputs** the bar turns red, however in this case an audio alarm is activated as well.

Example

If you have to reset the Left Shuttle to fix a problem, you need to:

1. Make the **Reset Left Shuttle** output **Active** by toggling the space bar
2. Toggle the space bar to make the same output inactive again

The sensor will now be reset

4.4 Enabling the Machine IO menu

The **Machine IO** functionality is enabled in the Registry Editor. This is done using the following steps:

1. Click **Start -> Run**.
2. Type '**regedit**' in the **Open** dialogue box as shown in figure 4-4:



Figure 4-4 Type 'regedit'

3. Click **OK** to open the Registry Editor.
4. Go to **\HKEY_LOCAL_MACHINE\SOFTWARE\MV TECHNOLOGY\GS-1\MachineIO** as shown in Figure 4-5:

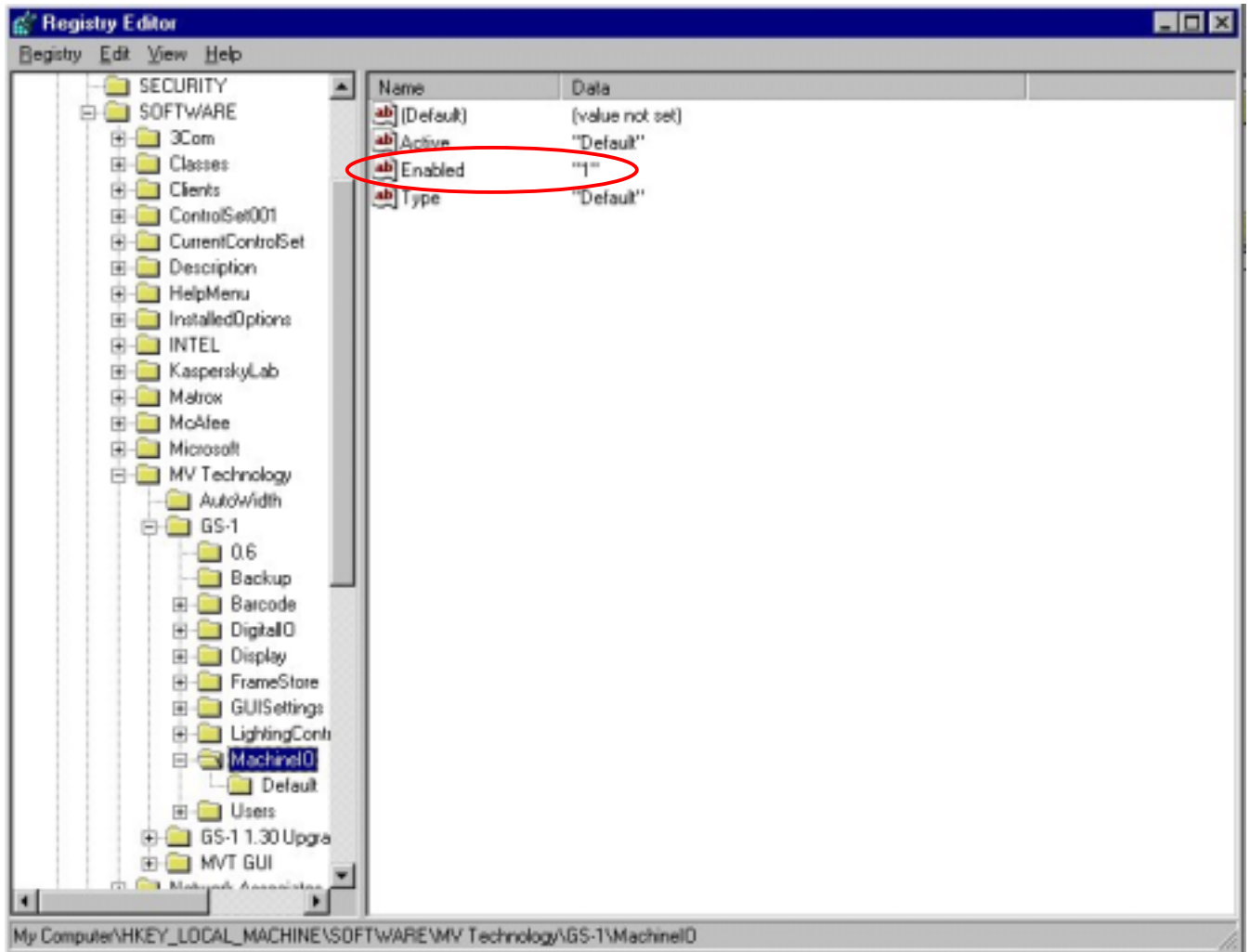


Figure 4-5 Machine IO Registry Editor

- Double-click the '**Enabled**' icon as shown in Figure 4-5.
- Insert **1** in the **Value Data** dialogue box to enable the **Machine IO** functionality. This is illustrated in Figure 4-6:

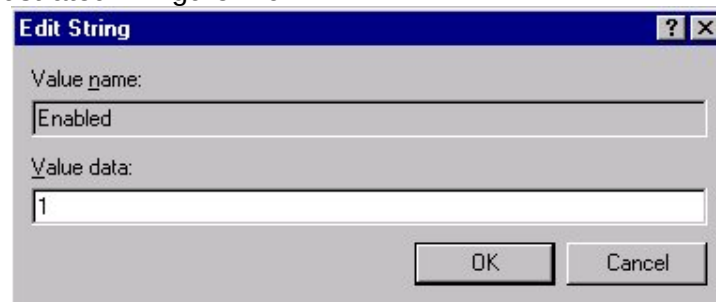
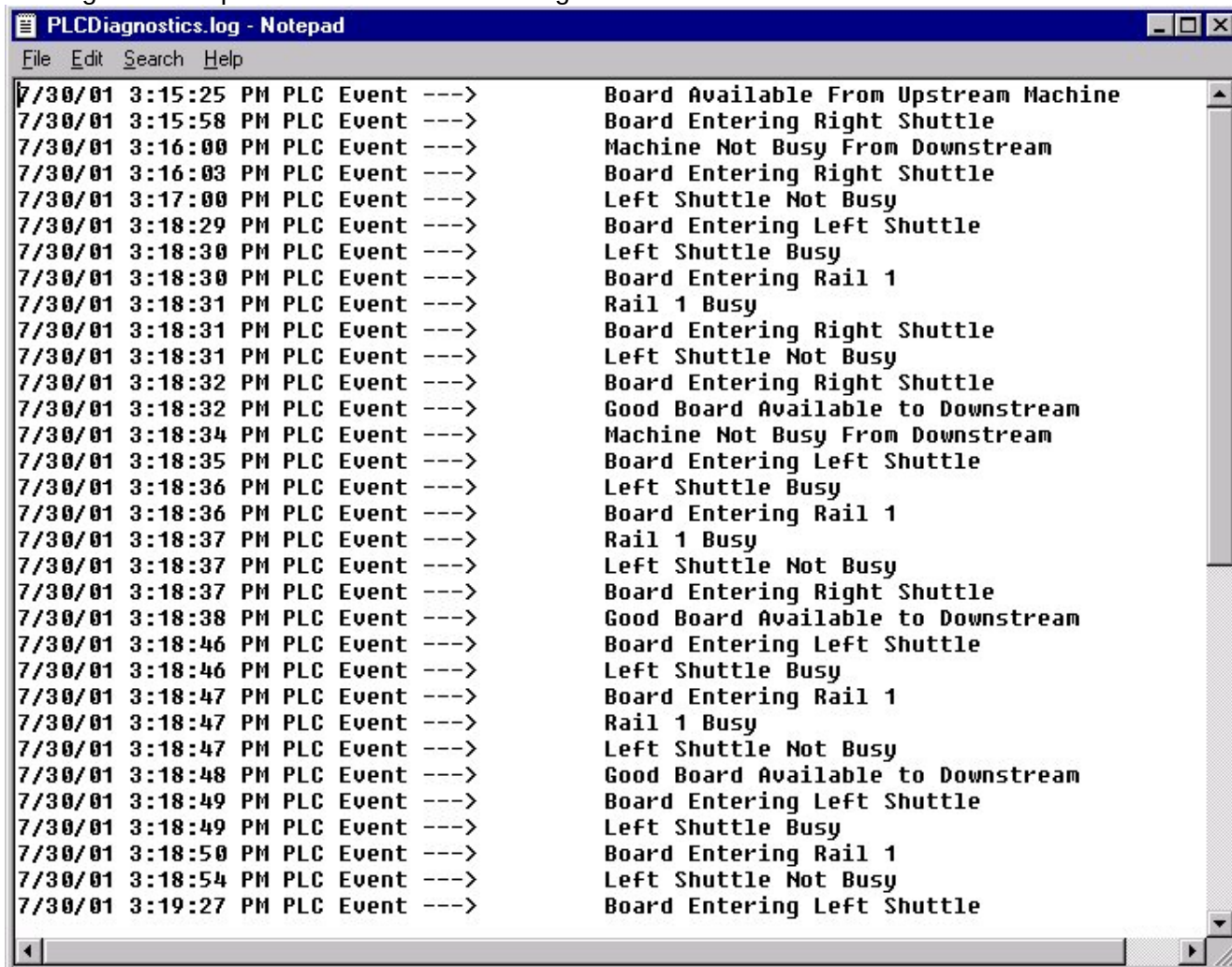


Figure 4-6 Insert '1' in Value Data Box

To disable the **Machine IO** functionality, set to **0** (this is the default value).

4.5 PLC Events and Errors Log File

The PLC Events and Errors Log file is called **PLCDiagnostics.log** and is stored in **C:\cpi\log**. This file contains all events and errors that occur while the machine is running. An example of this file is shown in Figure 4-7:



```

PLCDiagnostics.log - Notepad
File Edit Search Help
7/30/01 3:15:25 PM PLC Event ---> Board Available From Upstream Machine
7/30/01 3:15:58 PM PLC Event ---> Board Entering Right Shuttle
7/30/01 3:16:00 PM PLC Event ---> Machine Not Busy From Downstream
7/30/01 3:16:03 PM PLC Event ---> Board Entering Right Shuttle
7/30/01 3:17:00 PM PLC Event ---> Left Shuttle Not Busy
7/30/01 3:18:29 PM PLC Event ---> Board Entering Left Shuttle
7/30/01 3:18:30 PM PLC Event ---> Left Shuttle Busy
7/30/01 3:18:30 PM PLC Event ---> Board Entering Rail 1
7/30/01 3:18:31 PM PLC Event ---> Rail 1 Busy
7/30/01 3:18:31 PM PLC Event ---> Board Entering Right Shuttle
7/30/01 3:18:31 PM PLC Event ---> Left Shuttle Not Busy
7/30/01 3:18:32 PM PLC Event ---> Board Entering Right Shuttle
7/30/01 3:18:32 PM PLC Event ---> Good Board Available to Downstream
7/30/01 3:18:34 PM PLC Event ---> Machine Not Busy From Downstream
7/30/01 3:18:35 PM PLC Event ---> Board Entering Left Shuttle
7/30/01 3:18:36 PM PLC Event ---> Left Shuttle Busy
7/30/01 3:18:36 PM PLC Event ---> Board Entering Rail 1
7/30/01 3:18:37 PM PLC Event ---> Rail 1 Busy
7/30/01 3:18:37 PM PLC Event ---> Left Shuttle Not Busy
7/30/01 3:18:37 PM PLC Event ---> Board Entering Right Shuttle
7/30/01 3:18:38 PM PLC Event ---> Good Board Available to Downstream
7/30/01 3:18:46 PM PLC Event ---> Board Entering Left Shuttle
7/30/01 3:18:46 PM PLC Event ---> Left Shuttle Busy
7/30/01 3:18:47 PM PLC Event ---> Board Entering Rail 1
7/30/01 3:18:47 PM PLC Event ---> Rail 1 Busy
7/30/01 3:18:47 PM PLC Event ---> Left Shuttle Not Busy
7/30/01 3:18:48 PM PLC Event ---> Good Board Available to Downstream
7/30/01 3:18:49 PM PLC Event ---> Board Entering Left Shuttle
7/30/01 3:18:49 PM PLC Event ---> Left Shuttle Busy
7/30/01 3:18:50 PM PLC Event ---> Board Entering Rail 1
7/30/01 3:18:54 PM PLC Event ---> Left Shuttle Not Busy
7/30/01 3:19:27 PM PLC Event ---> Board Entering Left Shuttle

```

Figure 4-7 PLCDiagnostics.log File

This file is overwritten every time the machine is stopped and started again.

To keep a log file make a copy of it when the machine is stopped, and rename the copy.

5 Barcode Reader Auto Program Select

Where a mix of boards are assembled on each line and are presented to the SJ at random, the system can switch inspection templates based on barcodes.

This allows the system to automatically inspect boards presented to it at random. It can select programs based on one barcode or two barcodes, or either one of two barcodes.

This functionality was implemented for the SJ-10 console.

5.1 How do you Enable this Functionality?

To enable this feature, a file called **barcode_list.txt** needs to be created in **C:\cpildata**. This file contains a list of barcodes, which map to files using barcode-switching parameters.

5.1.1 Barcode List File Syntax

There are three types of entry lines allowed in this file:

- | | |
|--------|--|
| b | This type of line maps barcodes to inspection templates (plx files).
It maps a “reduced” barcode to a file name.
Extenders on the file name should not be used.
For example “venus.vew” is written in as “venus” |
| mode | This line sets the match mode.
There are three match modes: <ul style="list-style-type: none"> ➤ 0 – Matches to the last barcode. ➤ 1 - Matches to the second last barcode (there may be two barcodes; one for a serial number, the other for a product code). ➤ 2 – Match to either of the last two barcodes (i.e. we do not know which comes last). |
| String | This line specifies the match string.
It can be used to specify which characters in the barcode are used to map the inspection template.
There are four types of string: <ul style="list-style-type: none"> ➤ ‘*’ Use this character to map to the inspection template ➤ ‘-’ This is the ONLY character that maps into the mapped string ➤ ‘_’ Don’t use this character ➤ ‘b’ This position will contain a ‘B’ or a ‘G’ that indicates if the bad panel data is useful or not. |

For example, with the match string *****__*****, the barcode **abcdef123** is mapped to **abc123**.

Example File:

```

!
! A test barcode match file.
!
mode 1
string ***____***
!
b bar123 file1
b bar245 file2
b bar367 file3

```

This file specifies the following:

- It instructs the system to read the second last barcode.
- Deletes the middle 3 characters of the 9-character string read from the barcode.
- If the remaining 6-character string is '**bar123**', the system downloads the program for board '**file1**'.
- If the remaining 6-character string is '**bar245**', the system downloads the program for board '**file2**'.
- If the remaining 6-character string is '**bar367**', the system downloads the program for board '**file3**'.

5.2 Error Messages

Error messages are displayed for one of the following reasons:

- The barcode being read by the system does not match the configuration in the **barcode_list.txt** file.
- The plx file that is supposed to be loaded for a barcode does not exist.

There are three error messages:

1. If the system reads in a barcode that is not in the **barcode_list.txt** file, the following error message is displayed:

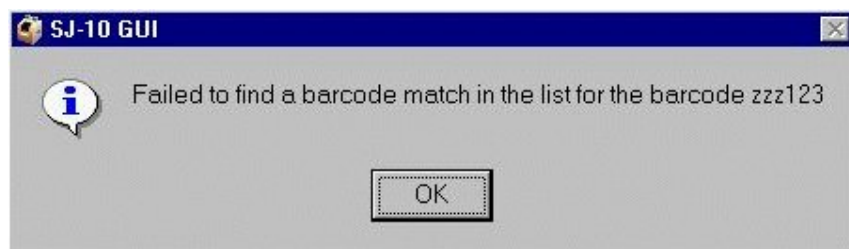


Figure 5-1 Barcode is Missing Error Message

2. If the system reads in 2 barcodes and neither of them are in the ***barcode_list.txt*** file, then the following error message is displayed:

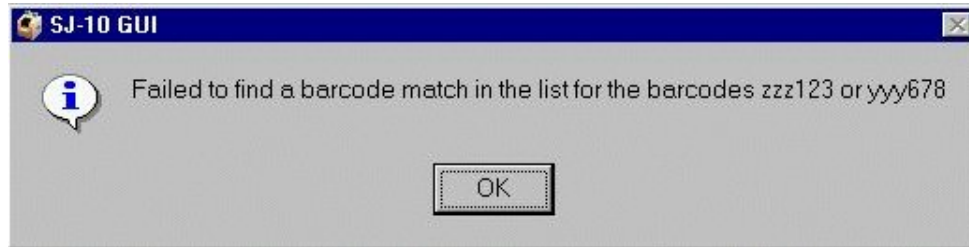


Figure 5-2 Both Barcodes are Missing Error Message

3. If the plx file to be loaded by the system is not found then the following error message is displayed:

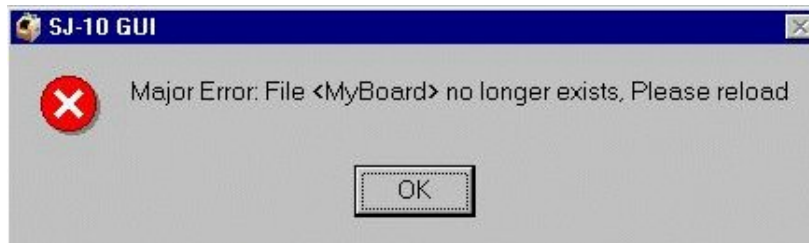


Figure 5-3 PLX File is Missing Error Message

6 Dual File Enhancements

Dual Files functionality is used by the SJ system to inspect the PLX file of an alternate board if the system fails to detect the original board for one of the following reasons:

- Sensor
- Fiducial Failure
- Block Skip Failure
- Fixed Sequence Failure

This functionality is typically used at sites where either the top or bottom side of a board may come down the line at any time. The system automatically toggles between the two PLX files.

In previous releases you could only have one set of dual files (one board) set up at any time in the **Tools** menu, which meant that every time a new board arrived, the operator had to call an engineer to change the setting in the **Dual Files** menu in **Tools**. In this release of Dual Files, you can set up multiple dual files, so that the operator does not need to call an engineer every time a new board arrives.

6.1 How is this Done?

1. Insert the following line in the **config.txt** file to enable the dual files functionality:

```
Dual_file 1
```

2. Open the SJ GUI.
3. Double-click the **Tools** button in the main toolbar to open the **Tools** menu.
4. Click the **Dual Files** option in the **Category** section. The following menu is displayed:

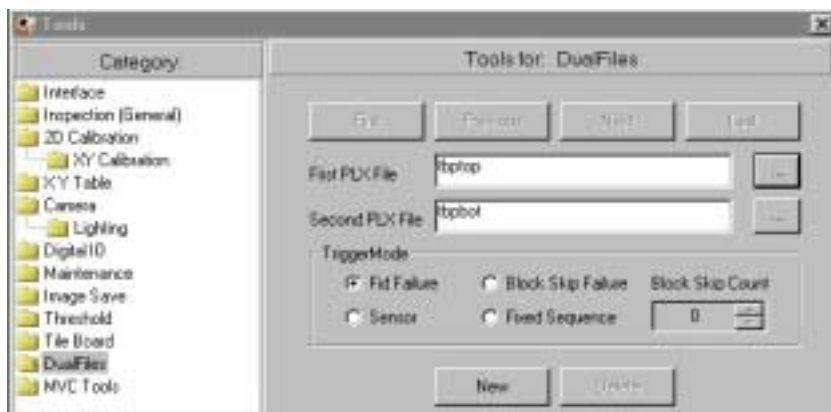


Figure 6-1 Dual Files Menu

- When you first open the menu, the dual files set up in the **DualFiles.xml** file (used to be called **dual_files.txt**) in **C:\cpildata** are displayed in the **First PLX File** and **Second PLX File** fields.

If there is only one set of Dual Files, the buttons **First**, **Previous**, **Next**, **Last** and **Delete** are all disabled.

6.2 Creating New Dual Files

- Click the **New** button to clear the current selection.
- Click the browse button  beside the **First PLX File** field. You are automatically brought to the location **C:\cpilcad** directory where all the PLX files are stored. Select the appropriate file.
- Click the browse button  beside the **Second PLX File** field. Again, you are automatically brought to the **C:\cpilcad** directory. Select the appropriate file.
- Select a **TriggerMode**, which will cause a failed board to change the plx file used and thus be inspected with the proper file in the process.
The settings associated with this field are:
 - Fid Failure
 - Sensor
 - Block Skip Failure
 - Fixed Sequence

For more information on Trigger Modes, refer to the SJ-10 Engineering Mode Manual (Doc 5000-0087).

- If you have not completed all the above tasks, the following error message is displayed if you try to create a new set of Dual Files or move to another set of Dual Files.

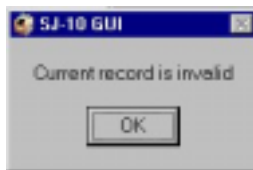


Figure 6-2 Creation of Dual Files Set Incomplete

After you have created a new set of Dual Files, all the buttons (**First**, **Previous**, **Next**, **Last**, **New**, **Delete**) are enabled.

6.3 Deleting Dual File Sets

1. Locate the Dual Files set by using the buttons **First**, **Previous**, **Next**, and **Last**.
2. Click the **Delete** button.
3. If there is only one set of Dual Files, the **Delete** button is disabled.

6.4 Required File

Ensure that the file **DualFiles.xml** is in **C:\cpil\data**. The **DualFiles.xml** file is created when you first run the SJ software and the Dual Files functionality is enabled in the **config.txt** file.

If **DualFiles.xml** is missing, contact the Software Engineering Department.

6.5 Saving Dual Files

When you have finished adding and/or deleting **Dual Files**, click the exit button in the corner of the **Tools** window and the following confirmation message is displayed:

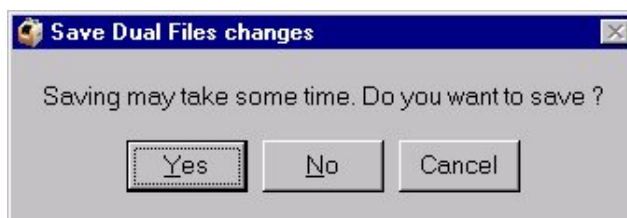


Figure 6-3 Saving Dual Files Message

7 Erratum (Release note GUI 4.03)

There are 2 mistakes in the Customer release note for GUI 4.03, Section 6.1.2 'Configuring the Customer Settings File'.

Page 16:

```
<SETTING>
    <OPERATION>BOARDSELECT</OPERATION>
    <ENABLED>FALSE</ENABLED>
    <ID>1</ID>
</SETTING>
```

The Note section should read:

'Set this to **FALSE** on the third line if you want the board select button to be visible in operator Mode'.

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To set up False Fail so that MVC is enabled but no prompt is displayed, insert the following entry in the XML file

```
<SETTING>
    <OPERATION>FALSEFAILNOREASON</OPERATION>
    <ENABLED>FALSE</ENABLED>
    <ID>2</ID>
</SETTING>
```

GUI 4.03 Release note mentioned a wrong entry: <ID>**S**</ID> which can cause the GUI to crash.

8 Fiducial Failure in Operator Mode

This section describes the new functionality, which facilitates the release of a board after a fiducial failure in **Operator** mode has occurred.

8.1 Setting up Board Release for Fiducial Failure in Operator Mode

Set up board release for fiducial failure by inserting the following line in the **config.txt** file in **C:\cpil\data**:

```
NoFidFailForOperators
```

Note: All entries in the **config.txt** file are case-sensitive.

8.1.1 Outcome

When a fiducial fail occurs during an inspection, the fiducial fail splash screen is not displayed. A blank normal rep file is written to the directory **C:\cpil\rep** and a blank XML rep file is written to **C:\cpil\reports**.

9 Cross-shaped Fiducials

Calculate the correct **Template** parameter value using the following equation:

$$(\text{Outer Radius value} \times 2) + 40 = \text{Template Value}$$

9.1.1.1. Example 1

If you enter a value **500** for the **Outer Radius** and enter a value **600** for the **Template**, the system will automatically change the **Template** value to **1040**, because the **Template** value has to be at least twice the **Outer Radius** value plus **40**.

$$(500 \times 2) + 40 = 1040$$

9.1.1.2. Example 2

If you enter a value **200** for the **Outer Radius** and enter a value **440** for the **Template**, then the system will not automatically change the **Template** value as you have entered the correct value already.

10 Part Numbers and Barcodes

This section describes the maximum number of characters you can have for **Part Numbers** and **Barcodes**.

10.1 Maximum Number of Characters for Part Numbers

The maximum number of characters for Part Numbers is now 127.
In previous releases, the maximum number of characters for Part Numbers was 19.

10.2 Maximum Number of Characters for Barcodes

The maximum number of characters for barcodes is now 256.
In previous releases, the maximum number of characters for barcodes was 50.

11 Enhanced Logging

This section describes the enhanced logging functionality and how to set it up. There are two new types of files associated with this enhancement. They are:

- Crash log file
- General log file

11.1 *Crash Log File*

The **crash log** file is used to log the last **1000** lines of log information relating to system crashes, regardless of whether **General Log** functionality is activated.

Every time a crash occurs a crash log file is created.

Note: There is no restriction on the number of crash log files.

11.1.1 Crash Log File Name

The crash log file is called:

crashLogFile.log _<Year-Month-Day>_<Hour-Min-Sec>.

The following is an example name of a crash log file:

CrashLogFile.log_2001-11-19_19-34-02

The above filename indicates the following:

- A crash occurred at 19:34:02 on 19th November 2001.
- The lines of log (maximum 1000 lines) relating to system crashes that occurred prior to this date and time are recorded in the file as well.

11.1.2 Crash Log File Location

The **crash log** file is stored in **C:\cpillog**.

11.1.3 Crash Log File Configuration Requirements

There are no configuration requirements, these files are automatically created and maintained by the SJ system when you install the **4.06.02** release of the SJ software.

11.1.4 Crash Log File Contents

The default setting for the crash log now contains only the entry and exit points of the functions.

You can also have the function arguments as well as the function names in the crash log file.

11.1.4.1. Enabling crash arguments functionality

Enable crash arguments functionality using the following steps:

1. Open the logConfig.xml file. This is located in **C:\cpilog**.
2. Write the following command in the **logConfig.xml** to enable the crash arguments functionality.

```
<?xml version="1.0"?>

<MVTLog>
  <CrashArguments>true</CrashArguments>
</MVTLog>
```

Note: If the above command is not written into the **logConfig.xml** file, then only the function names and not the function arguments are written to the crash log file.

11.1.5 Disabling the Crash Log File

1. Disable the Crash Log file using the following steps:
2. Open the **logConfig.xml** file. This is located in **C:\cpilog**.
3. Write in the following command to disable the Crash Log file:

```
<?xml version="1.0"?>

<MVTLog>
  <CrashLogActive>false</CrashLogActive>
</MVTLog>
```

Note: If the above command is not written into the **logConfig.xml** file, then the Crash Log functionality is enabled.

4. Close and save the **logConfig.xml** file.

11.2 General Log File

The **generalLog.log** file is used to record different levels of log information relating to the SJ system.

Note: The **generalLog.log** file is used by the Agilent engineering department for debugging purposes. For more information, contact the Agilent Software Engineering Department.

11.2.1 General Log File Name

The general log file is called **generalLog.log**.

11.2.2 General Log File Location

The General Log file is stored in **C:\cpilog**.

11.2.3 Switching on the General Log File before Starting the SJ System

Switch on the **General Log** file before starting the SJ system by inserting any **Level** configuration in the **Log Configuration** file. This is described in more detail in section 13.

11.2.4 Switching on the General Log File after Starting the SJ System

Switch on the General Log file after starting the SJ system using the following steps:

1. Open the SJ system GUI.
2. Click the **Tools** button on the main toolbar.
3. Select the **Inspection General** menu from the **Category** section.
4. Click the **General Log** button as shown:

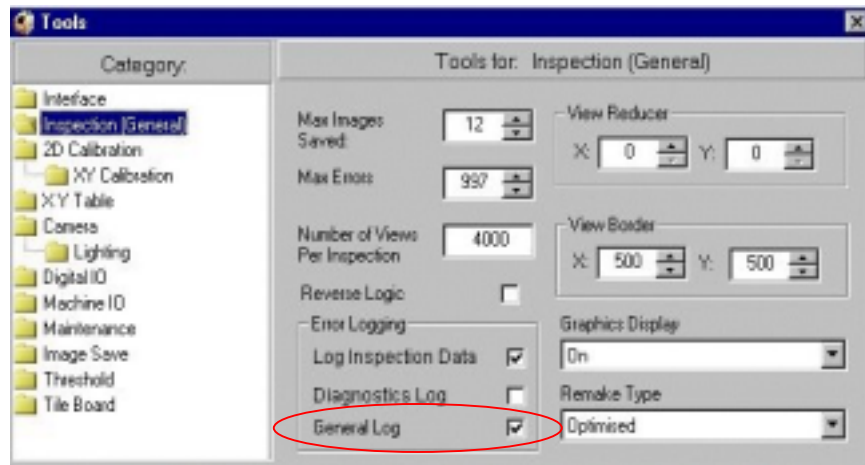


Figure 11-1 General Log Button

11.2.5 General Log File Contents

The General Log file contains levels of information. There are five levels of information in the General Log file. They are:

Level	Description
Initial	The Initial level switches on logging for all events that occur prior to start up i.e. prior to the start-up splash screen disappearing.
General	The General level switches on logging for all events that occur after the start-up splash screen disappears until you shut the system down.
Gui	The Gui level switches on logging for all events that occur on the GUI.
Results	The Results level switches on logging for the parts of code, which are used to write inspection reports.
All	The All level switches on logging for all levels.

You can specify as many of the first four levels (**Initial**, **General**, **Gui**, **Results**) as you want. The logging levels are specified in the XML log configuration file **logConfig.xml**, which is located at **C:\cpilconfig**. More information relating to the XML log configuration file is provided in the following section.

Note: If you want to specify **ALL** levels, use the **All** level in your configuration specification.

12 Log Configuration File

The following section provides information about the log configuration file and how it is used in relation to the crash log and general log files. The Log Configuration file contains the following:

The **logConfig.xml** file contains the following logging configuration options:

- Screen
- FileSize
- Level

12.1 Screen Option

Screen option is used to specify whether you want to print to the console window as well as the **generalLog.log** file. There are two values:

Screen Value	Description
0	If set to 0 , logging information IS NOT printed to the console window as well as the generalLog.log file.
1	If set to 1 , logging information IS printed to the console as well as the generalLog.log file.

12.1.1 Setting the Screen Value

Set the **Screen** value in the **logConfig.xml**, using the following syntax:

```
<?xml version="1.0"?>
<MVLog>
  <Screen>Screen Value</Screen>
  <FileSize>30</FileSize>
  <Level>General</Level>
</MVLog>
```

← Insert **Screen**
value here

12.1.1.1 Example 1

If you want to specify not to log to the console window, but just to the **generalLog.log** file, insert the following line in the **logConfig.xml**:

```
<?xml version="1.0"?>
<MVLog>
  <Screen>0</Screen>
  <FileSize>30</FileSize>
  <Level>General</Level>
</MVLog>
```

12.1.1.2. Example 2

If you want to specify logging to the console window as well as to the **generalLog.log** file, insert the following line in the **logConfig.xml** file:

```
<?xml version="1.0"?>
<MVTLog>
    <Screen>1</Screen>
    <FileSize>30</FileSize>
    <Level>General</Level>
</MVTLog>
```

12.2 FileSize Option

The **FileSize** option is used to specify the maximum size of **generalLog.log** file in **Mb**.

Note: When the maximum size is reached, logging is switched off.

There is a range of size for the **generalLog.log** file. It is:

From....	To....
2MB	1024Mb/1Gb

12.2.1 Setting the FileSize Option

Set the **FileSize** value in the **logConfig.xml**, using the following syntax:

```
<?xml version="1.0"?>
<MVTLog>
    <Screen>Screen Value</Screen>
    <FileSize>Mb</FileSize>
    <Level>General</Level>
</MVTLog>
```

Insert **FileSize**
value here

12.2.1.1. Example

If you want to specify that the FileSize is 30Mb, insert the following line in the **logConfig.xml**:

```
<?xml version="1.0"?>
<MVTLog>
    <Screen>Screen Value</Screen>
    <FileSize>30</FileSize>
    <Level>General</Level>
</MVTLog>
```

12.3 Level Option

The **Level** option is used to set the level of logging information to the **generalLog.log** file.

12.3.1 Specifying One Logging Level

Specify one logging level by using the following syntax in **logConfig.xml**:

```
<?xml version="1.0"?>
<MVTLog>
    <Screen>1</Screen>
    <FileSize>30</FileSize>
    <Level>Level Value</Level>
</MVTLog>
```

Insert
Level value
here

12.3.1.1. Example 1

If you want to specify **All** levels, insert the following in the **logConfig.xml**:

```
<?xml version="1.0"?>
<MVTLog>
    <Screen>1</Screen>
    <FileSize>30</FileSize>
    <Level>All</Level>
</MVTLog>
```

12.3.1.2. Example 2

If you want to specify the **General** level, insert the following in the **logConfig.xml**:

```
<?xml version="1.0"?>
<MVTLog>
    <Screen>1</Screen>
    <FileSize>30</FileSize>
    <Level>General</Level>
</MVTLog>
```

12.3.2 Specifying Multiple Logging Levels

Specify multiple logging levels by using the following syntax in **logConfig.xml**:

```
<?xml version="1.0"?>
<MVTLog>
    <Level>Level1</Level>
    <Level>Level2</Level>
    <Level>Level3</Level>
</MVTLog>
```

Insert level 1 value here
Insert level 2 value here
Insert level 3 value here

12.3.2.1. Example 1

If you want to specify **General**, **Reports** and **Initial** levels, insert the following in the **logConfig.xml** file:

```
<?xml version="1.0"?>
<MVTLog>
    <Level>Initial</Level>
    <Level>General</Level>
    <Level>Reports</Level>
</MVTLog>
```

12.3.2.2. Example 2

If you want to specify **General** and **Gui**, insert the following in the **logConfig.xml** file:

```
<?xml version="1.0"?>
<MVTLog>
    <Level>General</Level>
    <Level>Gui</Level>
</MVTLog>
```

12.3.2.3. Example 3

If you want to specify **Initial** and **Gui** levels, insert the following in the **logConfig.xml** file:

```
<?xml version="1.0"?>
<MVTLog>
    <Level>Initial</Level>
    <Level>Gui</Level>
</MVTLog>
```

13 Dual Files (Dual lane machines)

Now you can inspect a different board on each lane of the Dual Lane system. This is done using the following steps:

1. Insert the following line into the config.txt file in **C: \cpilconfig**:
2. `Dual_files 1`
3. `Two_lines 1`
4. Open the SJ system GUI in **Engineer** mode.
5. Click the **Tools** button in the main toolbar.
6. Select the **DualFiles** option in the **Category** section.
7. Enter the name of the first PLX file in the field '**First PLC File**'.
8. Enter the name of the second PLX file in the field '**Second PLX File**'.
9. Select the **TriggerMode** from the drop down box as shown:

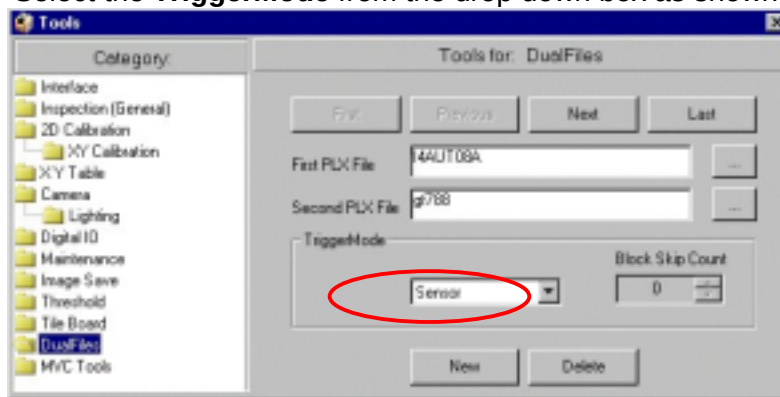


Figure 13-1 TriggerMode Option

10. Close the **Tools** menu to save the changes made.

14 Billboard Check

Enable the Billboard check functionality using the following steps:

1. Select a chip component.
2. Click the right mouse button.
3. Select the **Edit -> Device Type** option to open the **Device Editor**.
4. Enter **1** for the **Do Billboard** parameter to enable the Billboard Check functionality as shown:



Figure 14-1Do Billboard Field

5. To disable the Billboard Check functionality, use the default setting **0**.

15 OCR Change

This section describes the change made to the OCR error information.

15.1 OCR Error Information Change

The OCR error information written to the *.rep files and the **errors.log** file includes the existing output determined prior to this release, and new information relating to the text read from the component.

The OCR error information was changed to allow you to validate the OCR information against any of the OCR data fields from the component inspection, and to prepare for forthcoming improvements within other products.

15.2 OCR Error Information in Previous Releases

Prior to this release, the following OCR information was recorded in the *.rep files and **errors.log** file:

- Error Code.
- Expected OCR text.
- Filter texts by which inspection would pass or fail.

15.3 OCR Error Information in the this Release

In this release the following information is recorded in the *.rep files and **errors.log** file:

- Error Code.
- Expected OCR text.
- Filter texts by which inspection would pass or fail.
- Text read from the component. ****NEW****

15.4 OCR Error Information Syntax

The syntax of the OCR information in the *.rep files and **errors.log** file is as follows:

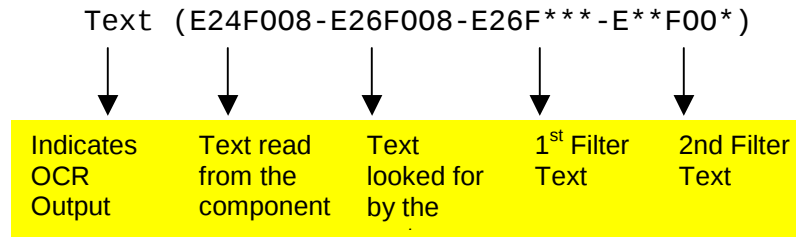
Text (XYZ-ABC-AB* - *BC)

The following table explains the different parts of the syntax:

Part	Description
XYZ	Text read from the component
ABC	Text looked for by the SJ system
AB*	1 st filter text
*BC	2 nd filter text

15.5 Example OCR Error Output to *.rep and errors.log Files

The following is an example of the OCR output in a *.rep file and an **errors.log** file:



16 Bug Fixes

Fail Table File
If the Fail Table File fail_table.txt existed in the C:\cpildata directory, the SJ system crashed during inspection. This bug no longer occurs.
Cross-shaped Fiducials
Prior to this release if you had a cross-shaped fiducial selected and you set the Template parameter to a value lower than twice the Outer Radius value plus 40 , the system crashed. This no longer happens. For more information on calculating the correct template value, refer to section 9.
Fiducial Parameters
Prior to this release, if you made changes to any fiducial parameter and then didn't select another field, the new setting was not saved and remembered the next time you opened the Fiducial Editor . Now the new setting is remembered.
Machine IO
In the previous release, the clamps were down but the buttons on the Maintenance form said Down . Now they correctly say Up .
Fault Acknowledge
Prior to this release, the active/inactive signal sent to the output (with the error) was sent before the error was reset, which resulted in having to click on the ' Fault Acknowledge ' button twice to clear the plc error. This bug no longer occurs.
Auto Train
Prior to this release, you could not auto-train non-elliptical fiducials, for example you could not successfully auto-train cross-shaped fiducials. This bug no longer occurs.
Scales
In previous releases the scales.vsp file was corrupt causing system downtime. Now all core system scaling information is written to the XML file scales.xml in C:\cpildata . Note: When installation of 4.06.02 software is complete, both the scales.xml and scales.vsp files are in C:\cpildata . Note: Scaling information relating to miscellaneous parameters is still written to the scales.vsp file for backwards compatibility.
Dual Files
Prior to this release, the SJ system was unable to inspect anything other than the same board on a Dual Lane system, i.e. you could only inspect the same board on the both lanes. Now you can inspect a different board on each lane of the Dual Lane system. For more information, refer to section 13:

Billboard Check
In previous releases if you selected any Locate Mode other than '8 Post Reflow Waved' in the Device Editor of the Chip algorithm, the Billboard check was not being performed. This caused false accepts. This bug has been fixed. For more information on enabling the Billboard check, refer to section 14.
Post Reflow MVC
There were a number of bugs in relation to B, D and T types. They are: • In very large B type pads, the system would often fail false fail good parts. • In D type parts, which passed for post-reflow MVC, could fail because the original MVC failed them. Hence any transistors (T types) that were trained as D types were failing too much. The above bugs have been fixed. Note: Do not train T types as D types, train them as T types. For more information on post-reflow MVC, refer to the SJ series Post Reflow Algorithm Manual.
Directional Movements for Broken Up Parts
In the previous release, the following bugs were occurring: If S types were broken up into rows, the signs of the X and Y offsets were reversed. Thus an offset of 100, 40 would be reported as 100, -40. If B types were being broken up into separate rulers, the X and Y-axes were switched. Thus an offset of 100, 40 was being reported as being 40, 100. These bugs no longer occur