IMAGE EVALUATION PROCEDURE
FOR
IS450
# TABLE OF CONTENTS

1. **REQUIREMENTS** ........................................................................................................... 1  
   1.1 SYSTEM CONFIGURATION ........................................................................................ 1  
   1.2 TEST CHARTS .............................................................................................................. 1

2. **EVALUATION ITEMS AND SPECIFICATIONS** .................................................. 2  
   2.1 EVALUATION ITEMS ..................................................................................................... 2  
   2.2 EVALUATION SPECIFICATIONS .................................................................................. 3

3. **EVALUATION PROCEDURE** .................................................................................. 16  
   3.1 HARDWARE PREPARATION .......................................................................................... 16  
      3.1.1 PERSONAL COMPUTER ......................................................................................... 16  
      3.1.2 SCANNER ................................................................................................................. 16  
   3.2 ADF PAPER FEED QUALITY ....................................................................................... 17  
   3.3 IMAGE EVALUATION ................................................................................................... 17  
      3.3.1 STARTING UP THE SOFTWARE ............................................................................ 17  
      3.3.2 WHITE LEVEL ADJUSTMENT .............................................................................. 18  
      3.3.3 REGISTRATION ADJUSTMENT ............................................................................ 18  
      3.3.4 IMAGE EVALUATION (BOOK MODE) ................................................................. 19  
      3.3.5 IMAGE EVALUATION (ADF MODE) ................................................................. 22  
      3.3.6 IMAGE CHECK .................................................................................................... 27
1. REQUIREMENTS

1.1 SYSTEM CONFIGURATION

The recommended system configuration is as follows.

<table>
<thead>
<tr>
<th>Host computer:</th>
<th>IBM PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU:</td>
<td>486 or better processor with coprocessor</td>
</tr>
<tr>
<td>Display card:</td>
<td>VGA or better</td>
</tr>
<tr>
<td>Memory:</td>
<td>10 Mbytes or more</td>
</tr>
<tr>
<td>Operating System</td>
<td>DOS 6.x</td>
</tr>
<tr>
<td>Evaluation software:</td>
<td>Ricoh original</td>
</tr>
<tr>
<td>Scanner:</td>
<td>IS450</td>
</tr>
</tbody>
</table>

1.2 TEST CHARTS

The following test charts will be used for image evaluation.

1. RS-12 (A3)
2. RS-13 (A5)
3. RS-13 (A4)
4. RS-13 (A3, 90 kg)
5. RS-13 (A3, 55 kg)
2. EVALUATION ITEMS AND SPECIFICATIONS

2.1 EVALUATION ITEMS

The evaluation items are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Evaluation Items</th>
<th>Test Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Registration</td>
<td>RS13</td>
</tr>
<tr>
<td>2</td>
<td>Reading Area</td>
<td>RS13</td>
</tr>
<tr>
<td>3</td>
<td>Skew</td>
<td>RS13</td>
</tr>
<tr>
<td>4</td>
<td>Jitter</td>
<td>RS13</td>
</tr>
<tr>
<td>5</td>
<td>Image Stretch</td>
<td>RS13</td>
</tr>
<tr>
<td>6</td>
<td>Density</td>
<td>RS12</td>
</tr>
<tr>
<td>7</td>
<td>Binary Density</td>
<td>RS12</td>
</tr>
<tr>
<td>8</td>
<td>Density Unevenness</td>
<td>RS12</td>
</tr>
<tr>
<td>9</td>
<td>Gray Scale</td>
<td>RS12</td>
</tr>
<tr>
<td>10</td>
<td>Even/Odd Sensitivity Unevenness</td>
<td>RS12</td>
</tr>
<tr>
<td>11</td>
<td>Resolution</td>
<td>RS12</td>
</tr>
<tr>
<td>12</td>
<td>ADF Paper Feed Quality</td>
<td>RS13, RS12</td>
</tr>
<tr>
<td>13</td>
<td>Endorser</td>
<td></td>
</tr>
</tbody>
</table>

The following adjustments must be made after the E²PROM on the SCU board has been replaced. These data will be stored in the E²PROM on the SCU board. Also, registration adjustment must be performed after replacing the ADF unit or the lens black assembly.

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Test Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>White Level Adjustment</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Registration Adjustment (Book Mode)</td>
<td>RS13</td>
</tr>
<tr>
<td>3</td>
<td>Registration Adjustment (ADF Mode)</td>
<td>RS13</td>
</tr>
</tbody>
</table>
### 2.2 EVALUATION SPECIFICATIONS

<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Registration</td>
<td><strong>Specification</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Book</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main scan direction: Within 1 ± 1 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub scan direction: Within 1 ± 1 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ADF (Front side):</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main scan direction: Within 0 ± 3 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub scan direction: Within 0 ± 1.5 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ADF (Back side):</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main scan direction: Within 0 ± 3 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub scan direction: Within 1.5 ± 1.5 mm</td>
</tr>
</tbody>
</table>

**Scanning Conditions**

Binary / 400 dpi / $\gamma$ curve: linear

**Measurement Method**

![Measurement Diagram](G411X500.WMF)

**Book:** Main scan direction (A): Within 11.7 ± 1 mm  
Sub scan direction (B): Within 11.7 ± 1 mm

**ADF (Front side):**

Main scan direction (A): Within 12.7 ± 3 mm  
Sub scan direction (B): Within 12.7 ± 1.5 mm

**ADF (Back side):**

Main scan direction: Within 11.7 ± 3 mm  
Sub scan direction: Within 11.2 ± 1.5 mm
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
</table>
| 2   | Reading Area | **Specification**  
Book Main scan direction: Document width ± 1 %  
Sub scan direction: Document length ± 1 %  

**Scanning Conditions**  
Binary / 400 dpi / γ curve: linear  

**Measurement Method**  

![Image of measurement method](G411X501.PCX)  

Formula:  
Main scan (C): -1 ≤ (4277-C) X 100/4277 ≤ 1 (%)  
Sub scan (D): -1 ≤ (6214-D) X 100/6214 ≤ 1 (%)
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Skew</td>
<td></td>
</tr>
</tbody>
</table>

**Specification**
- **Book**
  - Main scan direction: Within ± 0.7 %
  - Sub scan direction: Within ± 0.7 %
- **ADF**
  - Main scan direction: (≥ A4, LT) Within ± 1 %
    - (< A4, LT) Within ± 1.2 %
  - Sub scan direction: (≥ A4, LT) Within ± 1 %
    - (< A4, LT) Within ± 1.2 %

**Scanning Conditions**
- Binary / 400 dpi / γ curve: linear

**Measurement Method**

![Measurement Diagram](image)

**Formula:**
- Main scan: \[
\frac{|E-e|}{284} \times 100 \leq \text{ (Standard value)}
\]
- Sub scan: \[
\frac{|F-f|}{407} \times 100 \leq \text{ (Standard value)}
\]
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
</table>
| 4   | Jitter    | **Specification**  
                                | 2 pixels or less |
|     |           | **Scanning Conditions**         |
|     |           | Binary / 400 dpi / γ curve: linear |
|     |           | **Measurement Method**          |

![Diagram of measurement method: No shift, 1 pixel shift, 4 pixel shift]
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Image</td>
<td>Specified: 200 dots ± 5%</td>
</tr>
<tr>
<td></td>
<td>Stretch</td>
<td>Scanning Conditions: Binary / 400 dpi / ( \gamma ) curve: linear</td>
</tr>
</tbody>
</table>

**Measurement Method**

![Measurement Method Diagram]

Formula:

\[-5(\%) \leq \frac{200 - (X_0 - X_{\alpha - 1}) \times 100}{200} \leq 5\%\]
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Density</td>
<td><strong>Specification</strong>&lt;br&gt;OD 0.1 to 1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Scanning Conditions</strong>&lt;br&gt;Gray scale (8 bit multiple value) / 400 dpi / γ curve: linear</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Measurement Method</strong></td>
</tr>
</tbody>
</table>

The software takes samples from each of areas #1 ~ 22, 24, 28 and 32 of the gray scales, and the average value for each area should meet the specification. Also, the average value of each gray density should increase gradually.
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Binary Density</td>
<td><strong>Specification</strong>&lt;br&gt;45 ± 5 % (Book/ADF - front side)&lt;br&gt;&lt;br&gt;<strong>Scanning Conditions</strong>&lt;br&gt;Gray scale (8 bit multiple value) / 400 dpi / γ curve: linear&lt;br&gt;&lt;br&gt;<strong>Measurement Method</strong>&lt;br&gt;The software takes samples from each of areas #4, 6, 10, 22, and 32 of the gray scales, and the calculated data should meet the specification.</td>
</tr>
<tr>
<td>No.</td>
<td>Test Item</td>
<td>Specification/Measurement method</td>
</tr>
<tr>
<td>-----</td>
<td>----------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>8</td>
<td>Binary Density</td>
<td><strong>Specification</strong>&lt;br&gt;45 ± 5 % (ADF - back side)&lt;br&gt;<strong>Scanning Conditions</strong>&lt;br&gt;Binary / 400 dpi / $\gamma$ curve: linear&lt;br&gt;<strong>Measurement Method</strong>&lt;br&gt;Pattern No. 7 must be pure white and pattern no. 10 must be pure black.</td>
</tr>
</tbody>
</table>
No. | Test Item          | Specification/Measurement method |
---|-------------------|----------------------------------|
 9  | Density Unevenness | Specification: 15 % or less      |
<pre><code> |                   | Scanning Conditions: Gray scale (8 bit multiple value) / 400 dpi / γ curve: linear |
 |                   | Measurement Method |
 |                   | ![Image](G411X505.PCX) |
 |                   | Formula: \[2 \times (\text{max.} - \text{min.}) / (\text{max.} + \text{min.})\] x 100 |
</code></pre>
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Gray Scale</td>
<td><strong>Specification</strong>&lt;br&gt;64 gray scales or more&lt;br&gt;&lt;br&gt;<strong>Scanning Conditions</strong>&lt;br&gt;Gray scale (8 bit multiple value) / 400 dpi / γ curve: linear&lt;br&gt;&lt;br&gt;<strong>Measurement Method</strong>&lt;br&gt;G411X506.PCX&lt;br&gt;&lt;br&gt;Formula:&lt;br&gt;Gray scales = 256 / (S+1)&lt;br&gt;&lt;br&gt;<strong>NOTE:</strong> “S” specifies the standard deviation for each sampling area.</td>
</tr>
<tr>
<td>No.</td>
<td>Test Item</td>
<td>Specification/Measurement method</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>Even/Odd Sensitivity Unevenness</td>
<td></td>
</tr>
</tbody>
</table>

**Specification**
- OD 0.1: 8 or less
- OD 0.4: 4 or less
- OD 1.5: 3 or less

**Scanning Conditions**
- Gray scale (8 bit multiple value) / 400 dpi /
- $\gamma$ curve: linear

**Measurement Method**

The software samples areas #4, 10, and 32 of the gray scales, and the calculated data should meet the specification.

**Gray Scale:**
- #4 $\equiv$ OD 0.1
- #10 $\equiv$ OD 0.4
- #32 $\equiv$ OD 1.5
<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
<th>Specification/Measurement method</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Resolution</td>
<td><strong>Specification</strong>&lt;br&gt;200 dpi or more</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Scanning Conditions</strong>&lt;br&gt;Gray scale (8 bit multiple value) / 400 dpi /&lt;br&gt;( \gamma ) curve: linear / Threshold: 96 (<em>)&lt;br&gt;(</em>): If white is specified as 255.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Measurement Method</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="G411X507.PCX" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The circular radiation patterns highlighted above should be resolved at three-quarters of the radius.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="G411X508.WMF" alt="Diagram" /></td>
</tr>
<tr>
<td>No.</td>
<td>Test Item</td>
<td>Specification/Measurement method</td>
</tr>
<tr>
<td>-----</td>
<td>-----------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>13</td>
<td>Endorser</td>
<td></td>
</tr>
</tbody>
</table>

**Specification**

\[
a = 7 \pm 4 \text{ mm} \\
b = 0 \pm 5 \text{ mm}
\]

**Scanning Conditions**

Select the endorser function

**Measurement Method**

![Diagram showing the measurement method](G411V506.WMF)
3. EVALUATION PROCEDURE

3.1 HARDWARE PREPARATION

3.1.1 PERSONAL COMPUTER

Create a RAMDISK drive
To increase the evaluation speed, add the following command in the “Config.sys” file.

Device = C:\DOS\ramdrive.sys 10000 /e

Path
To set the path of the folder in the image evaluation software, add the following command in the “Autoexec.bat” file.

Path = %path%;c:\[Folder Name];c:\[Folder Name]\bat;

Software
Unzip the contents of the image evaluation software into the appropriate folder or root directory.

The zip file contains the following folders.

HS2P
|-- Bat
|-- Cnf
|-- Gendo
|-- Dat

3.1.2 SCANNER

The SCSI ID# must be set at “4” for performing the image evaluation.
3.2 ADF PAPER FEED QUALITY

1. Turn on DIP switch 8 on the scanner.
2. Set the rotary switch to position 2.
3. Place 50 sheets of paper on the document table in portrait orientation.
   NOTE: Paper size: A4 or 8.5”x11”, weight: 55kg/20lb
4. Turn on the main switch of the scanner.
5. Check that the sheets are fed in and fed out with no problems.
   NOTE: If any problem is found, try to repair the scanner then do the test again.
6. Turn off the main switch of the scanner.
7. Return DIP switch 8 to the off position.

3.3 IMAGE EVALUATION

3.3.1 STARTING UP THE SOFTWARE

1. Make sure that the SCSI rotary switch position is at 4.
   NOTE: Before starting the image evaluation software, the scanner must be set to SCSI #4, because the software has been made so that it will only work if the scanner is at SCSI #4.
2. Connect the scanner to the PC with a SCSI cable.
3. Turn on the main switch of the scanner and then turn on the main switch of the PC.
4. Start the batch file named 0.BAT (zero).
   The following message comes up on the screen.

   Before starting this program, Please set the scanner
   SCSI ID #4.

   Press any key to continue…

Press any key, then the main menu is displayed.
3.3.2 WHITE LEVEL ADJUSTMENT

This adjustment must be performed after the E²PROM on the SCU board has been replaced. The adjusted data will be stored in the E²PROM.

1. Place 10 sheets of paper on the exposure glass.
   **NOTE:** Recommended paper is Xerox 4024
2. Press 1. The software automatically adjusts the white level.

3.3.3 REGISTRATION ADJUSTMENT

This adjustment must be made in the following conditions.

- After replacing the E²PROM on the SCU to new one caused by it defective.
- After replacing the ADF unit or the lens block assembly.

The adjusted data will be stored in the E²PROM.

**Book Mode**

1. Press 2.

   Registration Adjustment (Book Mode)

   Place RS13 test chart (A3 size) on the exposure glass.

   Press any key to continue..

2. Place an RS13 (A3 size) test chart on the exposure glass and press any key.
   **NOTE:** Place the test chart on the glass so that the leading edge and side edge of the chart are against both scales on the glass.
**ADF Mode**

1. Press 3, then the following menu is displayed.

   ![Menu](image)

   Select Number [1,2,Q]?

2. If you wish to perform the ADF registration adjustment for the front side, press 1. If you wish to perform the ADF registration adjustment for the rear side, press 2.

3. Place 3 sheets of RS13 test chart on the document table with face up (for the front side) or with face down (for the rear side), then press any key.

   ![Check](image)

   ADF registration Check (Front side)

   Place 3 sheets of the RS13 test chart (A3 55kg)
   on the document table of the ADF with face-up.

   Press any key to continue..

**3.3.4 IMAGE EVALUATION (BOOK MODE)**

1. Press 4 and an explanation of the test will be shown on the screen as follows:

   ![Evaluation](image)

   Image Evaluation (Book Mode)

   Place the RS13 test chart on the exposure glass.

   The following items will be checked automatically.

   – Reading Area - Registration
   – Skew - Jitter
   – Image Stretch

   Press any key to continue..
2. Place an A3 size RS13 test chart on the exposure glass, then press any key. The scanner starts to read, and the evaluation will be performed automatically. After checking the image, the following message will be displayed.

<table>
<thead>
<tr>
<th>Image Evaluation (Book Mode)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place the RS12 test chart on the exposure glass.</td>
</tr>
<tr>
<td>The following items will be checked automatically.</td>
</tr>
<tr>
<td>– B/W Binary Density - E/O sensitivity Unevenness</td>
</tr>
<tr>
<td>– Density Range - Gray Scale</td>
</tr>
<tr>
<td>– Density Unevenness - Resolution</td>
</tr>
<tr>
<td>Press any key to continue..</td>
</tr>
</tbody>
</table>

3. Place an RS12 test chart on the exposure glass, then press any key. The scanner starts to read, and the evaluation will be performed automatically. After checking the image, the result will be shown on the screen as follows.

<table>
<thead>
<tr>
<th>Item</th>
<th>Result</th>
<th>Data Spec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHUKU</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>GEGIST</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>SKEW</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>JITTER</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>DRANGE</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>BINDENS</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>DRUMA</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>EOSNS</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>DHENDO</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>KAIZO</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>STRETCH</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

Press any key to continue..

If an error was found, a message of following type will be displayed on the screen. Check whether the test chart is dirty. If it is dirty, change the test chart and do the evaluation again.
The meaning of each item is as follows.

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Meaning</th>
<th>Descriptions</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHUKU</td>
<td>Reading Area</td>
<td>DMURA</td>
<td>Density Unevenness</td>
</tr>
<tr>
<td>REGIST</td>
<td>Registration</td>
<td>EOSNS</td>
<td>E/O Sensitivity Unevenness</td>
</tr>
<tr>
<td>SKEW</td>
<td>Skew</td>
<td>DHENDO</td>
<td>Gray Scale</td>
</tr>
<tr>
<td>JITTER</td>
<td>Jitter</td>
<td>KAIZO</td>
<td>Resolution</td>
</tr>
<tr>
<td>DRANGE</td>
<td>Density</td>
<td>STRETCH</td>
<td>Image Stretch</td>
</tr>
<tr>
<td>BINDENS</td>
<td>Binary Density</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.3.5 IMAGE EVALUATION (ADF MODE)

1. Press 5, then the following menu is displayed.

```
********** ADF Evaluation ************************
* *
* 1. Image Evaluation (Front Side)  *
* 2. Image Evaluation (Rear Side) *
* 3. Endorser Test *
* 4. Image Evaluation (Binary/256 level modes) *
* 5. Image Evaluation (Resolution – Front Side) *
* 6. Image Evaluation (Resolution – Rear Side) *
* Q. Return to Menu *
*
********************************************
Select Number [1,2,3,4,5,6,Q]?
```

ADF Image Evaluation (Front Side)

1. Press 1 then the following menu is displayed.

```
********** ADF Image Evaluation (Front Side) **********
* *
* 1. A3 Size *
* 2. A4 Size (Short Edge Feed) *
* 3. A5 Size (Short Edge Feed) *
* Q. Return to Menu *
*
********************************************
Select Number [1,2,3,Q]?
```

2. Press the number of the item which you want to check, then the following message is displayed.
- For A3 Size -

ADF Image Evaluation (Front side)

Place 3 sheets of the RS13 test chart (A3 size) on the document table of the ADF with face-up.

The following items will be checked automatically.

– Reading Area - Registration
– Skew - Jitter
– Image Stretch

Press any key to continue..

3. Place 3 sheets of the appropriate paper size of the RS13 test chart on the document table of the ADF with face up.

4. Press any key. The scanner starts to read and the result of scanning the first document will be displayed.

<table>
<thead>
<tr>
<th>ADF A3 Result - 1</th>
<th>Result</th>
<th>Data</th>
<th>Spec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHUKU</td>
<td>OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REGIST</td>
<td>OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKEW</td>
<td>OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JITTER</td>
<td>OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRETCH</td>
<td>OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRETCH</td>
<td>OK</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Press any key to continue..

5. Press any key to show the result of scanning the next document.
If an error was found, the mechanical operation of the ADF should be checked and the problem repaired.
**ADF Image Evaluation (Rear Side)**

1. Press 2 then the following menu is displayed.

```
************* ADF Image Evaluation (Rear Side) *************
* *
* 1. A3 Size *
* 2. A4 Size (Short Edge Feed) *
* 3. A5 Size (Short Edge Feed) *
* Q. Return to Menu *
* *
*************************************************

Select Number [1,2,3,Q]?
```

2. Press the number of the item which you want to check, then the following message is displayed.

3. Perform the evaluation using the same procedure as for the “ADF Image Evaluation (Front Side)” explained previously. If an error was found, the mechanical operation of the ADF should be checked and the problem repaired.

**Endorser Test**

1. Press 3 and the following message will be displayed.

```
Endorser Test

Place 3 sheets of A4 size paper (long edge feed) on the document table of the ADF.
Press any key to continue..
```

2. Place 3 sheets of A4 size paper (long edge feed) on the document table of the ADF.

3. Press any key. The scanner starts to feed the paper and test the endorser unit. If the characters have not been printed on the paper, check the mechanical operation of the endorser and repair the problem.
**Image Evaluation (Binary/256 level Mode)**

1. Press 4 then the following message is displayed.

   Image Evaluation (Binary/256 level Mode)

   Place the RS12 test chart on the document table of the ADF with face-up.

   The following items will be checked automatically.
   
   – Density range
   – B/W Binary Density
   – Density Unevenness
   – E/O Sensitivity Unevenness
   – Gray Scale

   Press any key to continue..

2. Place the RS12 test chart on the document table of the ADF with face up.

3. Press any key. The scanner starts to read and the result will be displayed as follows. If an error was found, check whether the test chart is dirty. If it is dirty, change the test chart and do the evaluation again.

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<table>
<thead>
<tr>
<th>Item</th>
<th>Result</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRANGE</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>BINDENS</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>DRUMA</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>EOSNS</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>DHENDO</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

   Press any key to continue..
Image Evaluation (Resolution – Front Side)

1. Press 5 then the following message is displayed.

   ADF Resolution Check (Front Side)
   Place the RS12 test chart on the document table
   of the ADF with face-up.
   Press any key to continue..

2. Place the RS12 test chart on the document table of the ADF with face up.

3. Press any key. The scanner starts to read and the result will be displayed as
   follows. If an error was found, check whether the test chart is dirty. If it is dirty,
   change the test chart and do the evaluation again.

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Item   Result  Data  Spec.
-----------------------------------------------
KAIZO   OK      
KAIZO   OK      

Press any key to continue..

Image Evaluation (Resolution – Rear Side)

1. Press 6 then the following message is displayed.

   ADF Resolution Check (Rear Side)
   Place the RS12 test chart on the document table
   of the ADF with face down.
   Press any key to continue..

2. Place the RS12 test chart on the document table of the ADF with face down.

3. Press any key. The scanner starts to read and the result will be displayed. If an
   error was found, check whether the test chart is dirty. If it is dirty, change the
   test chart and do the evaluation again.
3.3.6 IMAGE CHECK

This mode is used only to check the scanned image usually. Note that the scanned image cannot be checked in this way while performing an image evaluation.

**Book Mode (256 Level)**

1. Press 6 in the main menu. Then the following menu is displayed.

```
********** Image Check *********************************
*         *
* 1. Book Mode (256 level) *
* 2. Book Mode (Binary) *
* 3. ADF Mode – Front Side (Binary) *
* 4. ADF Mode – Rear Side (Binary) *
* Q. Return to Menu *
*         *
****************************************************
```

Select Number [1,2,3,4,Q]?

2. Press 1. Then the following message is displayed.

```
Place any test chart (A3 size) on the exposure glass.

Press any key to continue..
```

3. Press any key. The scanner starts to read and after scanning, the following will be displayed.

```
<<<Display Image File>>
  Data file
  1. [WB.IMG^^^^^^]
  2. [^^^^^^^^^^^^]
     15 [^^^^^^^^^^^^]

Enter : enter file name
End : to display          ESC : exit program
    Down : next line       Up : previous line
    Page-Down : next page   Page-Up : previous page

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```

4. Press the End key. The scanned image will be shown on the screen. Scroll the image up, down, left and right by using the arrow keys and check the image.
**Book Mode (Binary)**

1. Press 2. Then the following message is displayed.

   Place any test chart (A3 size) on the exposure glass.

   Press any key to continue..

2. Place any test chart (A3 size) on the exposure glass.

3. Press any key to scan the test chart. Then check the image in the same way as for the 256 level book mode, which was explained on the previous page.

**ADF Mode – Front Side (Binary)**

4. Press 3. Then the following message is displayed.

   Place any test chart (A3 size) on the document table of the ADF with face-up.

   Press any key to continue..

5. Place any test chart on document table of the ADF with face up.

6. Press any key to scan the test chart. Then check the image in the same way as for the 256 level book mode, which was explained on the previous page.

**ADF Mode – Rear Side (Binary)**

1. Press 4. Then the following message is displayed.

   Place any test chart (A3 size) on the document table of the ADF with face down.

   Press any key to continue..

2. Place any test chart on document table of the ADF with face down.

3. Press any key to scan the test chart. Then check the image in the same way as for the 256 level book mode, which was explained on the previous page.