Sidekick
TWAIN Driver User Interface Specification

Model 1200/1400/1400u
Part Number S006965 – Rev A
Please read this manual for proper operation and maintenance of the scanner. Keep this documentation in a safe place for future reference.

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1 Introduction

Purpose
The purpose of this document is to define and describe the graphical user interface (GUI) of an imaging scanner TWAIN driver.

2 Scope
This document applies to the TWAIN drivers developed for the following document imaging scanner(s):
- Böwe Bell and Howell 1200
- Böwe Bell and Howell 1400
- Böwe Bell+Howell 1400u
3 Specification

This driver was developed for use with the Microsoft Windows (“Windows”) family of operating systems. Its user interface (“UI”) consists of multiple standard Windows dialog boxes (“dialogs”) each of which is described in detail below.

3.1 Dialog Descriptions

The controls used to operate the scanner are grouped into dialogs as follows:

**Main Dialog** This dialog contains controls for “standard” scanner functionality such as resolution, page size, contrast/threshold, simple/duplex, etc.

**Advanced Settings Dialog** This dialog contains controls that are specific to the scanner for which it was designed. In this device, this dialog contains Drop Out, Feeding Features, Image Options and more.

**Imprinter Dialog** This dialog contains controls that manipulate and configure the imprinter device attached to the scanner (if available).

3.2 Hierarchy

There is a dialog tree employed within this driver.

- With an entry point into the Main dialog.
3.3 Initialization

3.3.1 Model Detection

When loading, the driver shall detect the device model. This information shall be used to verify that the driver matches the device and, if a match is found, configure the driver based on feature support of that model. If the device does not match the driver, the driver shall not finalize the load.

The driver shall use the INQUIRY command to recognize the device by checking the 16-byte value stored in the Product Identification member of the inquiry data block and comparing it to the following table of known devices:

**Product Identification Device Model**
- B+H 1200 Böwe Bell and Howell 1200
- B+H 1400 Böwe Bell and Howell 1400
- B+H 1400U Böwe Bell+Howell 1400u

**NOTE:** 1400u model supports Ultrasonic multifeed detection which other models do not support. 1400u model supports only USB connection. Other model support SCSI and USB connection.

3.3.2 TWAIN driver file

Each model has a separate TWAIN Data Source File, as follows.

**Product Identification TWAIN driver file**
- B+H 1200 BBH1200.DS
- B+H 1400 BBH1400.DS
- B+H 1400U BBH1400U.DS
3.4 Main Dialog

![Image of Main Dialog interface]

Figure 1
3.4.1 Mode

**Description:** Used to choose image mode to scan with either binary, grayscale or color.

**Values:**
- Black and White
- 16-level Gray
- 256-level Gray
- 24-bit Color

**Default:** Black and White

**Dependencies:** None.

3.4.2 Dither

**Description:** Selects from available dither patterns.

**Values:**
- **"None"**

**Default:**
- "None"

**Dependencies:** Only available in binary mode.

3.4.3 Dots per inch

**Description:** Sets scan resolution.

**Values:**
- Minimum 100 dpi
- Maximum 600 dpi
- Step 10 dpi

**Default:** 300

**Dependencies:** None.

3.4.4 Brightness

**Description:** Selects mode of brightness control.

**Values:**
- **0 "Manual"**
- 1 "Automatic"

**Default:** 1 "Automatic"

**Dependencies:** [Automatic] is available only when black and white is selected.

**Description:** Sets threshold value.

**Values:**
- Minimum 1
- Maximum 255
- Step 1

**Default:** 128

**Dependencies:** When Automatic is selected, horizontal scroll bar is disabled.

**Description:** Used as quick-sets to adjust the brightness.

**Values:**
- 205 “Lighten”
- 128 “Normal”
- 51 “Darken”

**Default:** N/A

**Dependencies:** None.

3.4.5 Contrast

**Description:** Selects mode of contrast control.

**Values:**
- **0 "Manual"**

**Default:** 0 "Manual"

**Dependencies:** Automatic is to be permanently disabled since this device does not support auto-contrast.

**Description:** Sets contrast value.

**Values:**
- Minimum 1
- Maximum 255
- Step 1

**Default:** 128

**Dependencies:** None.
3.4.6 Paper Source

**Description:** Selects the scan source. Make back side cameras available for selection/configuration.

**Values:**
- “Automatic”
- “Feeder”
- “Duplex”

**Default:** “Automatic”

**Dependencies:** None.

**Description:** Set ScanAhead ON or OFF.

**Values:**
- ScanAhead “Off”
- ScanAhead “On”

**Default:** ScanAhead “On”

**Dependencies:** None

**Description:** Scan single page, Sets if scan only a page or not.

**Values:**
- Scan single page “Off”
- Scan single page “On”

**Default:** Scan single page “Off”

**Dependencies:** None

3.4.7 Side

**Description:** Defines which window to apply settings to.

**Values:**
- Both
- Front
- Back

**Default:** Both

**Dependencies:** Following functions can be set independently by this control.

[Main Dialog]

Brightness, Contrast.

3.4.8 Page Size, Page Layout, Feed

**Description:** Page size. Selects from a predefined set of page sizes. Used to define the scan area.

**Values:**
- A4 - 210 x 297 mm
- A5 - 148 x 210 mm
- A6 - 105 x 148 mm
- A7 - 74 x 105 mm
- A8 - 52 x 74 mm
- B5 (ISO) - 176 x 250 mm
- B5 (JIS) - 182 x 257 mm
- B6 (ISO) - 125 x 176 mm
- B6 (JIS) - 128 x 182 mm
- B7 (ISO) - 88 x 125 mm
- B7 (JIS) - 91 x 128 mm
- B8 (ISO) - 62 x 88 mm
- B8 (JIS) - 64 x 91 mm
- Business Card - 55 x 91 mm
- Legal - 8.5 x 14 in
- Letter - 8.5 x 11 in
- Scanner’s Maximum

**Default:** Regional dependent: Letter for US, A4 for metric

**Dependencies:** The maximum scan size is as follows.

- 8.5 x 25 inches.

**Description:** Selects the orientation of the image after the page is scanned.

**Values:**
- “Portrait”
- “Landscape”

**Default:** “Portrait”

**Dependencies:** If selected page size can not be fed in the scanner, the selection will not be available.

**Description:** This collection of radio buttons determines the orthogonal rotation of the image. Used in conjunction with the page graphic, it indicates to the user which edge of the page should be fed to achieve the orientation of the image. When any of these radio buttons are selected, the arrow contained within the page graphic shall point to the edge to be fed. Used in conjunction with Page Layout to define rotation based on the orientation of the page.

**Values:**
- “Top edge first”
- “Right edge first”
- “Bottom edge first”
- “Left edge first”

**Default:** “Top edge first”

**Dependencies:** If selected page size can not be fed in the scanner, the selection will not be available.
3.4.9 X, Y, Width, and Height

Description: Defines the area to read from the scanner.
Values: Limits are based on the currently selected page size. Values larger than the page size will be modified to match the page size.
Default: N/A
Dependencies: None.

3.4.10 Pixels, Inches, and Centimeters

Description: Defines units for settings in Area.
Values: "Pixels"
        "Inches"
        "Centimeters"
Default: "Inches"
Dependencies: None.

3.4.11 Snap

Description: Enables/disables the snap feature when modifying the image size. When enabled, image coordinates are automatically set to the nearest 1/8".
Values: Cleared
        Checked
Default: Checked
Dependencies: Disabled if Units is set to Pixels.

3.4.12 Preview

Description: Scanning a page and displays in the dialog.
Values: N/A
Default: N/A
Dependencies: None

3.4.13 Firmware Version

Description: It shows scanner firmware version.
Values: N/A
Default: N/A
Dependencies: None.

3.4.14 More…

Description: Opens the More Dialog.
Values: N/A
Default: N/A
Dependencies: None.

3.4.15 Imprinter…

Description: Opens the Imprinter dialog box.
Values: N/A
Default: N/A
Dependencies: Needs to attach actual imprinter kit to scanner to enable this button.

3.4.16 Default

Description: Resets all to their default values. This affects on all other dialogs.
Values: N/A
Default: N/A
Dependencies: None.

3.4.17 About

Description: Opens the About box.
Values: N/A
Default: N/A
Dependencies: None.
Description: Closes the dialog and notifies caller that the user accepts the changes made within the dialog.
Values: N/A
Default: N/A
Dependencies: None.
3.4.19 Cancel

*Description:* Closes the dialog and notifies caller that the user does not accept the changes made within the dialog.
*Values:* N/A
*Default:* N/A
*Dependencies:* None.
3.5 More Settings Dialog

![Advanced Settings Dialog Box](image)

**Figure 2**
3.5.1 Detect Double Feed

*Description:* Enables or disables double feed detection.
*Values:* OFF, ON
*Default:* OFF
*Dependencies:* When this control is disabled, Sensitivity is not available. Default to ON for 1400u mode, OFF to other models.

3.5.2 Sensitivity

*Description:* Select ultrasonic sensitivity.
*Values:* Low, Normal, High
*Default:* N/A
*Dependencies:* This control is available when Detect Double Feed is enabled.

3.5.3 Feeding Speed

*Description:* Select scanning speed.
*Values:* NORMAL, FAST
*Default:* NORMAL
*Dependencies:* This control is available when 24-bit Color is selected.

3.5.4 Image Emphasis

*Description:* Selects the image emphasis.
*Values:* None, Low, Medium, High, Smooth
*Default:* Medium
*Dependencies:* Choices available only when brightness is set to a manual value.

3.5.5 Deskew

*Description:* Enables or disables Deskew.
*Values:* OFF, ON
*Default:* OFF
*Dependencies:* This control is available only when black and white is selected.

3.5.6 Black Border Removal

*Description:* Enables or disables black border removal.
*Values:* OFF, ON
*Default:* OFF
*Dependencies:* This control is available only when black and white is selected.

3.5.7 Length Control

*Description:* When enabled, detects the length of the page.
*Values:* OFF, ON
*Default:* OFF
*Dependencies:* N/A.

3.5.8 Gamma

*Description:* Selects the gamma table.
*Values:* Normal, Gamma for CRT, User Download
*Default:* Normal
*Dependencies:* Choices only available when not scanning binary.
3.5.9 Gamma Select

Description: Selects the gamma table to download to the scanner.
Values: 
Default: 
Dependencies: Only available when Gamma is set to User Download.

3.5.10 Drop Out Color

Description: Sets up the dropout color for front and back sides.
Values: None
Green
Red
Blue
Default: None
Dependencies: This control is not available when color is selected.

3.5.11 Manual Feed Mode

Description: Selects the manual feed mode.
Values: OFF
Start Button
ON
Default: OFF
Dependencies: This control disables Timeout control when OFF is selected.

3.5.12 Manual Feed Mode Timeout

Description: Selects the timeout value for the manual feed mode, measured in seconds.
Values: 1 – 300 seconds.
Default: 300 seconds.
Dependencies: Only available when Manual Timeout is enabled (not Off).

3.5.13 OK

Description: Closes the dialog and notifies caller that the user accepts the changes made within the dialog.
Values: N/A
Default: N/A
Dependencies: None.

3.5.14 Cancel

Description: Closes the dialog and notifies caller that the user does not accept the changes made within the dialog.
Values: N/A
Default: N/A
Dependencies: None.

3.5.15 Default

Description: Resets all the tags on this dialog to their default values.
Values: N/A
Default: N/A
Dependencies: None.
3.6 Imprinter

Figure 3
3.6.1 Enable

**Description:** Enable Endorser functions.

**Values:**
- OFF
- ON

**Default:** OFF

**Dependencies:** The endorser will only be active if there is text in "Imprinter Text"

3.6.2 Bold Font

**Description:** Enables or disables a bold font.

**Values:**
- Normal Font(OFF)
- Bold Font(ON)

**Default:** Normal Font(OFF)

**Dependencies:** N/A.

3.6.3 Imprinter Text

**Description:** Defines the text to imprint on each page. An incremental counter can be printed using a ‘#’ in the text. The date and time can also be printed. See the Imprinter Help dialog for a more complete explanation.

**Values:**
- Any text with the following limits.
  - The text can only be 72 characters long.
  - All characters must have a value between 0x20 and 0x5f or between 0x61 and 0x7e.

**Default:** ""

**Dependencies:** N/A.

3.6.4 Printing Offset

**Description:** Sets the offset from the top of the page for the start of the endorser text. To calculate the actual offset, multiply by 2.38mm and then add 10mm if the Orientation is 90 or 270 or multiply by 3.44mm and then add 10mm if the orientation is 0 or 180.

**Values:**
- 0 – 99

**Default:** 0

**Dependencies:** N/A.

3.6.5 Orientation

**Description:** Selects the orientation of the characters. See the icon on the dialog for a sample.

**Values:**
- 0
- 90
- 180
- 270

**Default:** 90

**Dependencies:** N/A.

3.6.6 Start Value

**Description:** Sets the starting value for an incremental counter.

**Values:**
- 0 – 9999999

**Default:** 0

**Dependencies:** The start value is only used if there is a ‘#’ in the Imprinter Text.

3.6.7 Step Value

**Description:** Sets the increment value for a counter. The value of the counter will be increased by this number for each page.

**Values:**
- 1 – 9

**Default:** 1

**Dependencies:** The start value is only used if there is a ‘#’ in the Imprinter Text.

3.6.8 Ok

**Description:** Closes the dialog and notifies caller that the user accepts the changes made within the dialog.

**Values:** N/A

**Default:** N/A

**Dependencies:** None.
3.6.9  Cancel

Description: Closes the dialog and notifies caller that the user does not accept the changes made within the dialog.
Values: N/A
Default: N/A
Dependencies: None.

3.6.10  Help…

Description: Displays help dialog box.
Values: N/A
Default: N/A
Dependencies: None.
3.7 About Dialog

- Displays the version of this driver.
- Contains certifications status of this driver. Only drivers that have been certified by Pixel Translations will contain the official certification logo.
- Displays the version of QuickDriver used to develop this driver.

About

bbh1400u Version 1.1.10611.21001
Böwe Bell+Howell 1400u
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Created with
QuickDriver Version 1.0.10610.18001

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This sections details elements that are related to the API functions of this driver.

## 4. API

### 4.1 Settings of image mode

Samples per pixel | Bits per samples | WINDOW | Note
--- | --- | --- | ---
Black and White | 1 | 1 | 0
16-Level Gray | 1 | 4 | 0
256-Level Gray | 1 | 8 | 0
24-bit Color | 3 | 8 | 0

### 4.2 Settings of imprinter

The format string can include a combination of format specifies (with modifiers) and messages. Here is help content TWAIN driver support.

**Imprinter Help**

- **Enable** - Imprinter prints on the page if checked.
- **BoldFont** - A bold font is used when printing.
- **Imprinter Text** - The text to print on the page. The following special codes can be used to print dynamic text:
  - Incremental counter: \[%[G(x)]\]
    - Brackets denote optional parameters. \(x\) is a digit and represents the number of digits to use in the counter. \(0\) will left fill numbers with \(0\) instead of spaces. See the examples below:
      - \(#\) -> "\(s\)
      - \(%0#\) -> "000001"
      - \(%3#\) -> "s1" (s = space)
      - \(%05#\) -> "00001"
  - Date: \(%xd\)
    - \(x\) is a digit from 1 to 4 and specifies the date
      - \(%1d\) -> "YY/MM/DD" -> "10/12/99"
      - \(%2d\) -> "YYYY/MM/DD" -> "2001/12/01"
      - \(%3d\) -> "MM/DD/YYYY" -> "12/01/2001"
      - \(%4d\) -> "DD/Abbreviated Month, YYYY" -> "19 Dec., 2001"
  - Time: \(%xt\)
    - \(x\) is 1 or 2 and specifies the time
      - \(%1t\) -> "HH/MM" -> "04:56"
      - \(%2t\) -> "HH:MM:SS" -> "12:04:23"
  - Printing Offset - Vertical offset where printing begins. Use the following formula to determine the value:
    - When the Orientation is 30 or 270, multiply the Printing Offset by 23.9mm. When the Orientation is 0 or 180, multiply the Printing Offset by 34.4mm. Always add 10mm extra.
  - For example, if Printing Offset is 20 and the Orientation is 90, the printing will begin at 57.6mm (23.9mm + 20 + 10mm)
  - Orientation - Specifies the orientation of the characters.
  - Start Value - The starting value for the incremental counter.
  - Step Value - The per page increment for the incremental counter.

**Figure 7**
### 4.3 Supported TWAIN Capabilities

Following TWAIN capabilities are supported by this version of TWAIN driver.

<table>
<thead>
<tr>
<th>Capabilities</th>
<th>Value</th>
<th>Supported</th>
<th>Not Supported</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAP CUSTOMBASE</td>
<td>0x8000</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP XFERCOUNT</td>
<td>0x0001</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>ICAP COMPRESSION</td>
<td>0x0100</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>ICAP PIXELTYPE</td>
<td>0x0101</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>ICAP UNITS</td>
<td>0x0102</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>ICAP XFERMECH</td>
<td>0x0103</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP AUTHOR</td>
<td>0x1000</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP CAPTION</td>
<td>0x1001</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP FEEDERENABLED</td>
<td>0x1002</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP FEEDERLOADED</td>
<td>0x1003</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP TIMEDATE</td>
<td>0x1004</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP_SUPPORTEDCAPS</td>
<td>0x1005</td>
<td></td>
<td>O</td>
<td>Please issue this capability to get all supported capabilities in the driver</td>
</tr>
<tr>
<td>CAP EXTENDEDCAPS</td>
<td>0x1006</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP AUTOFEED</td>
<td>0x1007</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP CLEARPAGE</td>
<td>0x1008</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP FEEDPAGE</td>
<td>0x1009</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP REWINDEPAGE</td>
<td>0x100a</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP INDICATORS</td>
<td>0x100b</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP SUPPORTEDCAPSEXTRA</td>
<td>0x100c</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP PAPERDETECTABLE</td>
<td>0x100d</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>CAP U/CONTROLLABLE</td>
<td>0x100e</td>
<td></td>
<td>O</td>
<td></td>
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<tr>
<td>CAP DEVICEONLINE</td>
<td>0x100f</td>
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<td>O</td>
<td></td>
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<tr>
<td>CAP AUTOSCAN</td>
<td>0x1010</td>
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<td>O</td>
<td></td>
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<tr>
<td>CAP THUMBNAILENABLED</td>
<td>0x1011</td>
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<td>O</td>
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<td>CAP DUPLEX</td>
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<td>CAP DUPLEXENABLED</td>
<td>0x1013</td>
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<td>O</td>
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<tr>
<td>CAP ENABLED'SUONLY</td>
<td>0x1014</td>
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<td>O</td>
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