



Seiko Instruments Inc.

SMART LABEL PRINTER
ADMINISTRATION NOTES

7.1

DOCUMENTATION

SLP 100/410
SLP 200/420
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SLP 440/450
SLP 620/650/650SE

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About this Document

This document is intended for system administrators and advanced users to customize the Smart Label Printer to their environment.

Fine Print

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Default Paths

After a normal installation, the Smart Label application program uses the following paths to locate and save files:

PrivateDocuments

Windows special folder ID: CSIDL_PERSONAL

Typical path: C:\Documents and Settings\UserName\My Documents\

Files:

Smart Label Printer\LABELS.SLL	Label Library (Optional – created by end user)
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PrivateData

Windows special folder ID: CSIDL_APPDATA

Typical path: C:\Documents and Settings\UserName\Application Data\

Files:

Smart Label Printer\SlpConfig.xml	Printer and global program settings (primary location)
Smart label Printer\SEIKOSLP.INI	Configuration settings – created by program
Smart Label Printer\SEIKOSLP.SLP	Program default settings – created by program
Smart Label Printer\SLPAdmin.xml	Optional – created by Administrator (see below)

PublicDocuments

Windows special folder ID: CSIDL_COMMON_DOCUMENTS

Typical path: C:\Documents and Settings\All Users\Documents\

Files:

Smart Label Printer\LABELS.SLL	Label Library (data base)
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PublicData

Windows special folder ID: CSIDL_COMMON_APPDATA

Typical path: C:\Documents and Settings\All Users\Application Data\

Files:

Smart Label Printer\SlpConfig.xml	Printer and global program settings (secondary location)
Smart Label Printer\SlpLabels.xml	Label type data
Smart Label Printer*.log	Various log files – created by program

ProgramFiles

Windows special folder ID: CSIDL_PROGRAM_FILES

Typical path: C:\Program Files\Seiko Instruments Inc\Smart Label Printer <version>\

Files:

Default Labels.sll	Factory default Label Library (data base)
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Notes

- 1) Files are installed by the Setup program, except as noted (i.e., “created by ...”).
- 2) If the user does not specify a label library, the application software will look for a file with the default name (LABELS.SLL) in the PrivateDocuments folder. If not found, the software will then look in the PublicDocuments folder.

3) If the path to the label library is changed, the Smart Label program may still look for the file in the original location. This is because the path of the current label library is saved in the SlpConfig.xml file. You may also need to change the path specified in that file.

Specifying Alternate Paths

Some installations may require that files are stored at a specific location (e.g., a different drive, file server, etc.). This may be accomplished by specifying the installation-specific paths in a special file named SLPAdmin.xml.

During startup, the application looks for this file at PrivateData\Smart Label Printer\SLPAdmin.xml. If the file is not found there, it will then look at PublicData\Smart Label Printer\SLPAdmin.xml. If the file is not found in either place, the default paths described above are used.

SLPAdmin.xml is a Unicode file, which can be created using the Windows NotePad utility (be sure to use “Save As”, instead of “Save”, and set “Encoding” to Unicode). The file has the following format:

```
<?xml version="1.0"?>
<SLP_Admin version="1.0">
  <Paths>
    <PrivateDocuments>C:\Documents and Settings\UserName\My Documents</PrivateDocuments>
    <PublicDocuments>C:\Documents and Settings\All Users\Documents</PublicDocuments>
    <PublicData>C:\Documents and Settings\All Users\Application Data</PublicData>
    <PrivateData>C:\Documents and Settings\UserName\Application Data</PrivateData>
  </Paths>
</SLP_Admin>
```

Note that any, or all, of the four paths may be specified in this file. A path specified in this file will override the corresponding default path. Likewise, any path(s) not defined in this file will assume the default setting (as described in “Default Paths”, above). Furthermore, an administrator may place this file in both PrivateData and PublicData folders, so some paths can be specified for individual users, and others paths specified for all users.

Program Configuration Settings

Printer and SmartCapture settings for the Smart Label program (SmartLabel.exe) are stored in a file name SLPConfig.xml. By default, this file is located in PublicData\Smart Label Printer folder (e.g., C:\Documents and Settings\All Users\Application Data\Smart Label Printer\SLPConfig.xml).

Some installations may desire to have these settings saved on a per-user basis. This can be accomplished by copying the SLPConfig.xml file from the PublicData folder to the desired PrivateData folder (e.g., PrivateData \Smart Label Printer\SLPConfig.xml).

Note that the Smart Label program looks for this file in the PrivateData folder and, if not found there, in the PublicData folder. Therefore, any users that do not have a private SLPConfig.xml file will use the “global” settings in the PublicData folder.

External Label Processing

The Smart Label program is capable of executing a user-defined program each time a label is printed. This allows some additional processing to be performed for each printed label (e.g., add to a database, create a form letter, etc.). This feature is implemented by adding a “RunOnPrint” section to the SLPAdmin.xml file:

```
<?xml version="1.0"?>
<SLP_Admin version="1.0">
  <RunOnPrint>
    <Enable>1</Enable>
    <InfoFilePath>C:\Temp</InfoFilePath>
    <ExecuteProgram>C:\Windows\notepad.exe</ExecuteProgram>
    <Wait>0</Wait>
  </RunOnPrint>
</SLP_Admin>
```

There are four settings for Run-On-Print, defined are follows:

Setting	Description
Enable	Set to 1 to enable, or 0 to disable, the Run-On-Print feature.
InfoFilePath	Path to where the Label Information file will be stored. The file name is in the format, “Label_2322022955_0001.xml” and the last four digits (e.g., “0001”) are incremented for each label.
ExecuteProgram	Path to the user program to execute. The program will be executed with a command line that includes the path of the Label Information file. For example, C:\Windows\notepad.exe Label_2322022955_0001.xml
Wait	Set to 0 to allow the Smart Label program to continue while the user program executes. Set to 1 to have the Smart Label program wait until the user program terminates before continuing, effectively preventing multiple instances of the user program.

When executed, the user program will be passed one parameter, which is the name of the Label Information file. The file should be deleted after the contents are read, to prevent the accumulation of obsolete files.

The user program should read the Label Information file, delete the file, process the information, and exit as fast as possible. If another label is printed while the user program is still executing, a second instance of the program will be started. This could cause problems.

Ideally, the user program should be written so that it detects when a second instance is started, and handles the situation gracefully. Alternatively, the Smart Label program can wait for the user program to terminate, by setting Wait to 1. Note that using the wait feature will reduce printer throughput to the extent determined by the execution time of the user program.

Remote Desktop Connection

If users create a printer connection in a Citrix, shared VNC, or similar environment, the printer name may be decorated each time a user creates a new session. The decoration is usually a suffix following the printer name. To delimit the actual printer name from the decoration, SLP will look for a “#” character between the real name and the suffix. If the SLP software is unable to connect to a printer in such an environment, try appending a “#” character to the printer name, so it appears between the printer name and the suffix (e.g., “Smart Label Printer 450# (from P51_MUSTANG) in session 3”). Administrators should give all label printers unique names on their network so the SLP software can find the default printer correctly.

Smart Label Run-time Diagnostic Logging

The Smart Label software is capable of generating a verbose run-time log file, which may be helpful in diagnosing certain problems. Diagnostic logging is turned off, by default. In Smart Label is now installed with a special program to turn debug logging on and off.

Turn driver debugging on

1. Run SLPTechSupport.exe – double click it inside the same folder as Smart Label.
2. Follow the instructions on-screen to turn on debug logging.

Turn driver debugging off

1. Run SLPTechSupport.exe – double click it inside the same folder as Smart Label.
2. Follow the instructions on-screen to turn off debug logging.

After enabling debug logging, run the application and re-create/observe the behavior in question. When you're done, re-run SLPTechSupport.exe. Follow the instructions on-screen to transmit this data directly to Seiko support staff.

System Printer Driver Run-time Diagnostic Logging

Driver debug logging should only be used to capture the state of the driver when a failure is expected. The log file will grow even when the printer is idle, and there is no limit to the size. This will also have a slight impact on system performance.

You must have administrator privileges to perform the following commands. (On Vista, you will need to right-click on the Command Prompt icon, and select "Run as administrator" when opening the prompt to restart the spooler. You will also need to run the .reg files as administrator, which means you either should run regedit as admin and import the .reg file, or run the .reg files from an elevated command prompt.)

The .reg files may be found at C:\Program Files\Seiko Instruments Inc\Smart Label Printer <current version>\Admin\.

Turn driver debugging on

Run SLPDriverDebugOn.reg - either double click, or on Vista, type the name of the file (with path if necessary) in an elevated command prompt.

Agree to the prompts about changing the registry.

Open a command prompt (or use the current elevated prompt if Vista).

Execute the following 2 lines in the command prompt:

```
net stop spooler  
net start spooler
```

The debug file will be written to C:\slp<version_number>.log.

Turn driver debugging off

Run SLPDriverDebugOff.reg - either double click, or on Vista, type the name of the file (with path if necessary) in an elevated command prompt.

Agree to the prompts about changing the registry.

Open a command prompt (or use the current elevated prompt if Vista).

Execute the following 2 lines in the command prompt:

```
net stop spooler  
net start spooler
```

System Printer Driver Polling On or Off

Idiosyncrasies found in some installations of Windows may preclude these systems from printing via the System Printer Driver after waking from Hibernate. Turning off the System Printer Driver's ability to poll for printer status solves this issue. (Printer status can be found in the printer's queue.) The reg files below will enable or disable polling in the System Printer Driver.

The .reg files may be found at C:\Program Files\Seiko Instruments Inc\Smart Label Printer <current version>\Admin\.

Turn driver polling on

Run SLPDriverIdlePollingOn.reg- either double click, or on Vista, type the name of the file (with path if necessary) in an elevated command prompt.

Agree to the prompts about changing the registry.

Open a command prompt (or use the current elevated prompt if Vista).

Execute the following 2 lines in the command prompt:

```
net stop spooler  
net start spooler
```

Turn driver polling off

Run SLPDriverIdlePollingOff.reg- either double click, or on Vista, type the name of the file (with path if necessary) in an elevated command prompt.

Agree to the prompts about changing the registry.

Open a command prompt (or use the current elevated prompt if Vista).

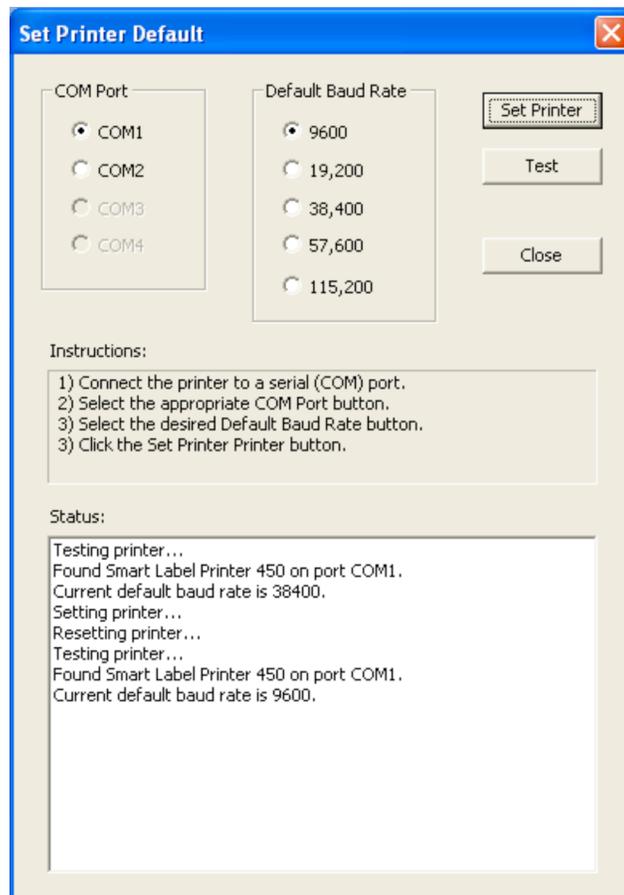
Execute the following 2 lines in the command prompt:

```
net stop spooler  
net start spooler
```

Changing Printer's Serial Baud Rate Settings

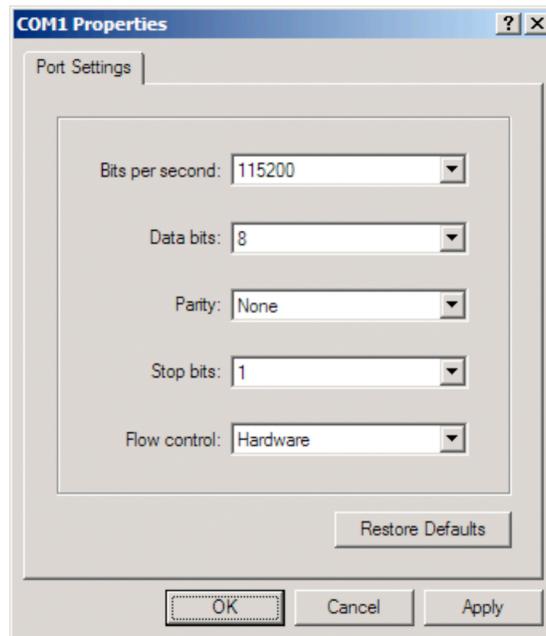
Some embedded systems have serial ports with slow baud rates. And sometimes these baud rates are incompatible with the default baud rates of the Smart Label Printers. The 440 and 450 printers have an EEPROM that can store the default baud rate that the printer should use when it powers up. Within the standard application install is a program called "SlpSelect.exe". Executing SlpSelect.exe as described below will present a private interface for changing the baud rate of attached printers.

1. Attach an SLP 440, 450, or 650SE to the serial port of your computer. (**The USB cable should not be attached.**) If your printer did not come with a serial cable please contact support. You may qualify for a free serial cable from Seiko Instruments Inc.
2. Power on the printer.
3. Execute `SlpSelect.exe /default [port] [baudrate]`
 - a. port is one of COM1, COM2, COM3 or COM4
 - b. baudrate is 9600, 19200, 38400, 57600, 115200For example:
> `SlpSelect.exe /default COM1 9600`
4. Follow the instructions on-screen.



Factory baud rate for the SLP 440 is 115,200. Factory baud rate for early SLP 450 models is 38,400 and 115,200 for later models. To test the baud rate change with the system level printer driver, use the

following settings for serial printing (substituting baud rate) and then print a small page with Notepad.exe.



Launching SmartLabel in another language

When the SmartLabel application launches, the language the user interface appears in is determined by the language preference of your operating system. The choice of language can be overridden.

Launch SLP with a specific language by using the `/Lang=xxx` command line switch, where **xxx** is one of the following:

CNY (Simplified Chinese)
DEU (German)
ENU (US English)
ESP (Spanish)
FRA (French)
ITA (Italian)
JPN (Japanese)
NLD (Dutch)
PTB (Brazilian Portuguese)
RUS (Russian)

Note that, when using this language override switch, text provided directly from Windows will still appear in the current system language. This includes:

Text in most common dialogs (e.g., File Open)
Buttons in message boxes (e.g., OK, Cancel, Yes, No, etc.)
System error text in some error message boxes (e.g., "Access denied.")

Tip: Make a shortcut to the `slpwin.exe` and add the `/LANG=xxx` to the end of the target field in the shortcut properties.

Silent Installation

The SmartLabel Printer Driver can be installed with our installer silently, without a user interface. To do this, utter the following command on the command-line:

```
setupSlpInstaller.exe /s /v"/qn ADDLOCAL=Driver"
```

“Driver” may be replaced by any feature name. Feature names include:

- Application
- Driver
- All (default)

2D Barcodes

Below are the details for the Advanced "Mode" and "Security" settings for 2D barcode formats supported by Smart Label.

Maxicode

Maxicode Mode Settings:

- 4 - Any data up to 84 data characters automatically split between primary and secondary messages.
- 5 - Any data up to 68 data characters automatically split between primary and secondary messages. Enhanced error correction used.

Maxicode Security Settings:

N/A

PDF417

PDF417 Mode Settings:

- 0 - EXC Alpha
- 1 - EXC Lower
- 2 - EXC Mixed
- 3 - EXC Punctuation.
- 4 - Binary/ASCII Plus
- 5 - Numeric mode

- For most applications, the Mode parameter should be set to 0.

- EXC (Extended Alphanumeric Compaction mode) - allows encoding of all printable ASCII characters into about 2 characters per codeword. Within the EXC mode there are several submodes:

- EXC Alpha - starts in upper case
- EXC Lower - starts in lower case
- EXC Mixed - numeric and other punctuation
- EXC Punctuation - punctuation & bracket characters.

- Binary/ASCII Plus mode - allows encoding of 256 international characters including the full ASCII set plus any 8-bit value in the range 0 - 255. This mode allows encoding approximately 1.2 bytes per codeword and so is considerable less efficient than EXC mode.

- Numeric mode - allows encoding of a string of digits with a density of approximately 2.95 digits per codeword. Recommended where more than 13 digits are to be encoded. Numeric mode symbols may not contain non-numeric characters.

- The maximum capacity of PDF417 symbols is approximately as follows:

- Numeric mode - maximum capacity 2700 digits*

- Alphanumeric text - maximum capacity 1800 characters*
- Byte values - maximum capacity 1100 bytes

* Note that capital letters, punctuation, mode shifts and new lines/paragraphs reduce these value.

PDF417 Security Settings:

- 0 - 0
- 1 - 2
- 2 - 6
- 3 - 14
- 4 - 30
- 5 - 62
- 6 - 126
- 7 - 154
- 8 - 510

One of PDF417's most valuable features is its ability to allow correction of errors. This ability is provided by the inclusion of additional codewords within the symbol, so that the data codewords may be reconstructed even if some are defaced or misread.

The number of damaged codewords (Nmax) which may be recovered depends on the security level (which in turn determines the number of additional characters included in the symbol).

Datamatrix

Datamatrix Mode Settings:

- 0 - Square
- 1 - Rectangular

DataMatrix is a two dimensional matrix symbology which is made up of square modules arranged within a finder pattern. DataMatrix symbols may be square or rectangular.

Datamatrix Security Settings:

DataMatrix symbols can include a user-selected amount of error-correction data.

For Square symbols the Security Level setting may be in the range 0 - 24, while for Rectangular symbols the allowed range is 0 - 6.

Notes:

DataMatrix symbols can encode the entire ASCII character set and uses multiple encoding modes which are, in order of efficiency:

- Double digits - maximum capacity 3100 digits
- Alphanumeric text - maximum capacity 2300 characters*

Byte values - maximum capacity 1550 bytes

*Note that capital letters, punctuation and new lines/paragraphs reduce this value.

dLSoft 2D barcode products support only ECC200 symbols - the older ECC140 and below are not supported. Also at this time ECI and Appended symbols are not supported.

If the first data character is FNC1 (ASCII 232) the remaining data is treated as EAN/UCC data; i.e. brackets are removed from the data. Any AIs included in the data that are NOT fixed length should be terminated with a FNC1 character. (The FNC1 character may be entered from the keyboard by holding down the <Alt> key and typing 0232 on the numeric keypad.)

The industry standard Macro sequences []><RS>05<GS> and []><RS>06<GS> are supported (where <RS> represents ASCII 30 and <GS> is ASCII 29).

The following character translations are made for data following the []> start sequence:

String	Converted to
<ET>	ASCII 4
<FS>	ASCII 28
<GS>	ASCII 29
<RS>	ASCII 30
<US>	ASCII 31