

**KPU-S Series Printer**  
**Setup Utility and Library for Communication**  
**Reference Manual**

U00071620700

KPU-S Series Printer Setup Utility and Library for Communication  
Reference Manual

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## 1. INTRODUCTION

This package (hereinafter referred to as “Software”) includes a printer utility software to enable setup of the KPU-S Series printer (hereinafter referred to as “printer”) made by Seiko Instruments Inc. (hereinafter referred to as “SII”) and a communication software for the printer, which works with the English version of Microsoft Windows (hereinafter referred to as “Windows”).

This utility software enables printer hardware setting on the computer, test printing, hardware resetting, function setting for status indication and automatic paper collection time setting of the presenter.

When the library for communication (hereinafter referred to as “communication DLL”) supplied with this package is incorporated in the applications you develop, it is easily possible to get the status from the printer and send data to the printer.

This Software operates on the dedicated printer driver (ver.1.24 or later) for this printer (hereinafter referred to as “printer driver”). Therefore, be sure to check that such printer driver is already installed before installing this Software.

## 2. SYSTEM REQUIREMENTS

### 2.1. Host Computer

PC-AT Compatible (DOS/V)

### 2.2. Operating System

Microsoft Windows 2000 Professional English version (Service Pack 2 or later)

### 2.3. Printer Driver

- Dedicated printer driver for the KPU-S Series printer (ver.1.24 or later)
- The port to be used with this printer driver must not be occupied by another application.

## 3. OPERATION CONDITIONS WHEN USING THIS SOFTWARE

- To execute this Software, the printer driver must be installed. If the printer driver is not installed, install the printer driver before installing this Software.
- In serial communication, when the printer's communication settings are different from the computer, this Software does not operate properly. In this case, when the printer is turned on while pressing the printer's [Feed] button, test print will start.  
Confirm serial communication conditions on the printer side, and then execute this Software after making the same settings on the computer side.
- In some cases, this Software may not be usable due to the settings of the software DIP switch on the printer side. The settings for which this Software cannot be used are as follows.
  - A) Busy: Full/Offline (Full when initialized)
  - B) Status: Disable (Disable when initialized) \* Only during parallel connection
  - C) Bit Length: 8 bits (8 bits when initialized) \* Only during serial connection
  - D) Driver (SII when initialized)

For the settings change operation on the printer side without using this Software, refer to the KPU-S347/KPU-S447 Thermal Printer Unit Technical Reference.

- The printer must be turned on and communication must be enabled.

#### **4. INTERFACES**

- Serial (RS-232C)
- Parallel (IEEE1284)
- USB (Universal Serial Bus)

#### **5. PRINTER MODELS**

- KPU-S347S/KPU-S447S: for serial communication
- KPU-S347P/KPU-S447P: for parallel communication
- KPU-S347U/KPU-S447U: for USB communication

#### **6. SOFTWARE SUPPLIED WITH THIS PACKAGE**

##### **6.1. Setup Utility**

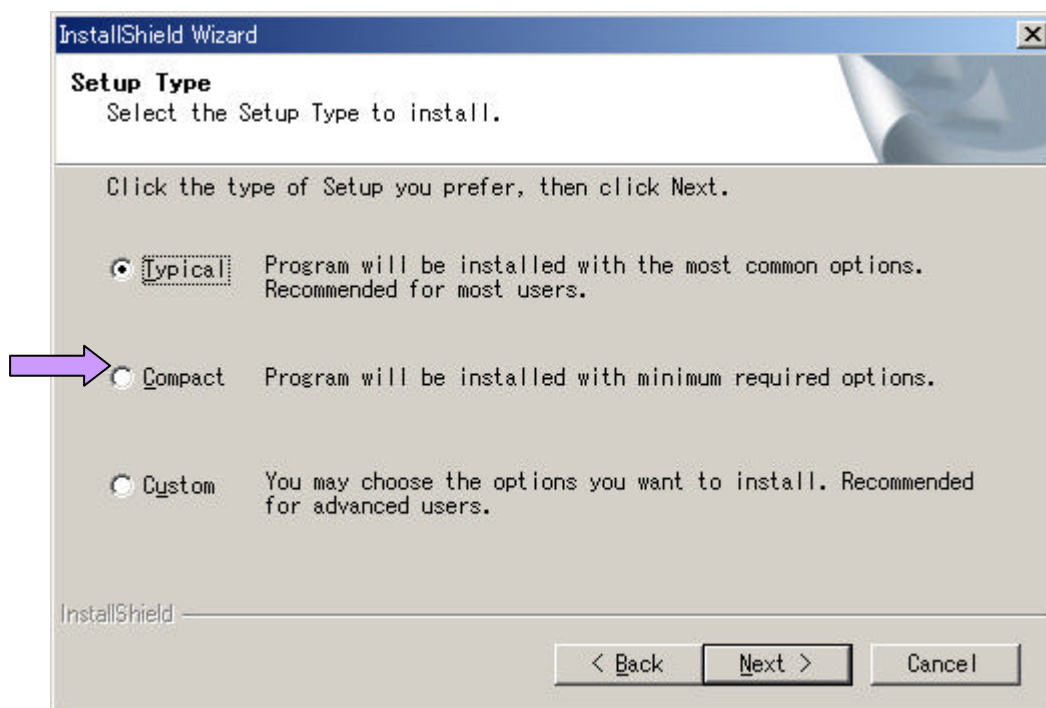
- Hardware setting software  
It changes the settings of the software DIP switch on the printer. For details of the software DIP switch, refer to the KPU-S347/KPU-S447 Thermal Printer Unit Technical Reference.
- Status setting software  
It changes the settings of a status dialog indication.
- Presenter automatic paper collection time setting software  
It changes the settings of automatic collection time of paper when the presenter is mounted.

##### **6.2. DLL for Communication**

- Library module for communication  
Dynamic library (DLL) that provides the function for communicating between application and printer
- Sample program  
Sample program for status monitoring using communication DLL

## 7. INSTALLATION

- (1) Install a printer driver of ver. 1.24 or later. If a printer driver of ver. 1.23 or before is already installed, click the [New Driver] button in the [Details] tab from the properties of the printer driver to update the printer driver.
- (2) Execute Setup\*.exe. However, if the utility software for the printer is already installed, uninstall of existing version will be started. In this case, after uninstall of the existing version is completed, execute the Setup\*.exe again and install this Software.
- (3) In the Install Wizard, the Setup type dialog will be displayed after the Software License Agreement appears. Then, specify the type of installation you prefer.
  - Typical: All other than the sample program are installed.
  - Compact: Only the communication DLL is installed.
  - Custom: Installation setup you prefer
- (4) When Typical is selected and installation is completed, [SII Printer Software] is provided in [Program(P)] from Windows [Desktop] - [Start] - [Start Menu]. In the [SII Printer Software], the "Printer Hardware Settings", "Status Settings" and "Presenter Automatic Paper Collection Time Settings" programs are registered.



Setup Type Dialog

## 8. Uninstall

Select [SII Printer Software] from the [Control Panel] - [Add/Remove Programs] dialog, click the [Add/Remove] button and uninstall this Software according to the instructions of the wizard.

## **9. SETUP PROGRAM**

### **9.1. Outline**

Three setup utility software are provided with this Software: the “Printer Hardware Setting” software to change the printer hardware settings, the “Printer Status Setting” software to select enable/disable of print status indication and “Presenter Automatic Paper Collection Setting” software to set automatic paper collection time of presenter.

Use these software when it is necessary to change printer settings, status indication and automatic paper collection time of presenter.

### **9.2. Printer Hardware Settings**

#### Changeable Hardware Settings

The software DIP switch settings (excluding some settings) of the printer from the computer can be changed by using the printer hardware setting software.

**Software DIP switch settings that can be changed are as follows.**

- Presenter setup
- Presenter paper feed position
- Autocutter setup
- Auto online setup
- Font type
- Character font table type
- Printer driver type
- Printing density
- Printing speed
- Katakana font type
- Paper width
- Paper type
- With/without marked papers
- Communication settings

For details of each setting, refer to the KPU-S347/KPU-S447 Thermal Printer Unit Technical Reference.

### Changing Hardware Settings

1. Select [Programs (P)] - [SII printer software] - [Printer hardware setup] from [Desktop]-[Start] - [Start Menu] in Windows, and start the "SII printer hardware setup" program to change hardware settings.
2. The printer's current setting status is displayed once the program is started.
3. Select [Load] - [Load Default] from the menu to restore the default values. At this time, select the printer type name displayed on the right.
4. Change the settings for each item shown in 9.2, if needed.
5. Select [Set] - [Write setting data to the printer] from the menu, and write in the set values in the printer.
6. If you want to save the current settings in a file, select [Load] - [Save As], specify a file name and save it.

### Test Print

Select [Test] - [Test Print...] from the menu to execute test print.

### Printer Hardware Resetting

When [Test] - [Printer hardware reset...] are selected from the menu, the printer's hardware is reset. However, if the cutter function is disabled, the printer may not operate at execution.

### Precautionary Information

1. If starting this Software is attempted while the printer is printing, the warning "printing" is displayed and this Software does not start. If the warning "printing" is displayed although the printer has stopped printing, perform the evasive operations described below.
  - Open [General] from the properties of the printer driver and execute test printing with the "Print Test Page" button.
  - Reboot the computer
2. Some setting items of the software DIP switch are not selectable.

These unselectable items are the items that depend on the printer's configuration and cannot be changed from this Software.

When such items need to be changed, change them through operation on the printer side. For the settings change operation on the printer side, refer to the KPU-S347/KPU-S447 Thermal Printer Unit Technical Reference.

## **9.3. Status Indication Settings**

### Status indication

This status indication function displays the status of the printer using a dialog format when printing starts. This function can inform the user of errors using a dialog display when errors occur in the printer during printing from an application.

However, note that this status indication function is different from the function to get the status from the printer (GetSiiPrinterStatus) that is described from Chapter 10.



### Changing Status Indications

1. Select [Programs (P)] - [SII Printer Software] - [Status setup] from [Desktop] - [Start] - [Start Menu] in Windows, and start the Status setup to select enable/disable of printer status indication.
2. The current printer status indication settings are displayed once the program is started.
3. Check [Use the status indications] to perform status indication, and among the status indication items displayed under the [Use the status indications] box, check the item you wish to display.
4. Click the [Renew] button to complete status indication change. If you do not want to make any changes, click the [Close] button.
5. If the status indication icon is displayed in a tasktray, display the menu by right-clicking the icon, select Exit from the menu, and close the status indication function.
6. Change has been completed. The settings will be valid from the next printing job.

#### **[[Printer status settable items]]**

- Offline (A printer is off-line condition.)
- Head cover open error (Cover of the printer-head is open.)
- Paper jam (Paper is jammed in the printer.)
- Autocutter error (Printer is in an auto cutter error state.)
- Unrecoverable error (A printer is in a fatal error state.)
- Paper roll near-end detection (A printer is near end of paper.)
- Paper roll end detection (A printer is out of paper.)

\* For each printer status, the message above ( ) will be displayed.

### Precautionary Information

The status indication function and the communication DLL function that are described in Chapter 9 or later, cannot be used simultaneously. When the communication DLL function is used, use it after setting all status indication functions to disable.

## **9.4. Presenter Automatic Paper Collection Time Settings**

### Changing Presenter Automatic Collection Time

1. Select [Programs (P)] - [SII Printer Software] - [Presenter collection time setup] from [Desktop] - [Start] - [Start Menu] in Windows, and start the "SII Presenter collection time setup" program.
2. Input the presenter automatic collection time. The unit of input value is 1 per 0.1 seconds. The default time is 5 seconds (input value is 50).
3. Click the [Set] button to complete presenter automatic collection time change. If you do not want to make any changes, click the [Close] button.
4. Change has been completed.

### **Precautionary Information**

1. The set value remains valid even after turning the printer off.
2. When no presenter is mounted, only change of accepted collection time will be executed.
3. When more than one printer driver are installed on the computer, a screen to select the printer driver for use will be displayed. Therefore, specify the name of the printer you wish to use.

## 10. COMMUNICATION DLL

### 10.1. Overview

The communication DLL is a dynamic library that provides the function used when the application wishes to get status information of the printer or send arbitrary data to the printer directly. The communication DLL has the functions listed below and operates on the printer driver.

### 10.2. Communication DLL Interface Function List

The following shows a list of functions that the communication DLL has. For details on interface functions, refer to Chapter 11.

Function name	Function
OpenSiiPrinterA	Reports start of communication with printer. This function can be used when printer name is defined with ANSI code.
OpenSiiPrinterW	Reports start of communication with printer. This function can be used when printer name is defined with UNICODE.
CloseSiiPrinter	Reports the end of the communication with printer.
GetSiiPrinterStatus	Obtains status from printer.
SetSiiPrinterData	Sends data (commands) directly to printer.

### 10.3. Communication DLL Work Flow

The following shows one working procedure that gets the status from the printer via the communication DLL or sends the data to the printer.

- (1) Load the communication DLL in dynamic and get the pointer of the interface functions.
- (2) Call OpenSiiPrinterA() or OpenSiiPrinterW() when starting the communication.
- (3) Call GetSiiPrinterStatus() when getting the status.
- (4) Call SetSiiPrinterData() when sending the data.
- (5) Call CloseSiiPrinter() when closing the communication.
- (6) Unload communication DLL when ending the application.

**NOTE:**

The above is an example of the work flow, where (3) and (4) can be interchanged or omitted. Since the sample program using the communication DLL is provided in the following directory, refer to it.

The drive that (Windows(Winnt) folder exists:\Program Files\Seiko Instruments Inc\SII Printer Software\SampleProgram. However, to use this program, it must be installed by selecting [Custom] - [Sample program] during installation.

## 11. INTERFACE FUNCTION REFERENCE

The details of each function are as follows.

### 11.1. int OpenSiiPrinterA (LPCSTR pszName, LPDWORD pdwSessionId)

Return value

Failure 0, Success = 0

Parameters

- pszName:  
Printer name (logic printer name that is displayed on a printer holder). Specify this printer name with Ascii (MultiByte) characters.
- pdwSessionId:  
Pointer that points out the buffer for storing the session ID to distinguish a session with the printer driver.

Caution

After calling this function, when this function is called again before calling CloseSiiPrinter(), it returns an error code (function failure) as the return value.

### 11.2. int OpenSiiPrinterW (LPCTSTR pszName, LPDWORD pdwSessionId)

Return value

Failure 0, Success = 0

Parameters

- pszName:  
Printer name (logic printer name that is displayed on a printer holder). Specify this printer name with UNICODE characters.
- pdwSessionId  
Pointer that points out the buffer for storing the session ID to distinguish a session with the printer driver.

Caution

When the "Print directly to the printer" is selected in the printer properties, this function returns an error code (function failure) as the return value.

After calling this function, when this function is called again before calling CloseSiiPrinter(), it returns an error code (function failure) as the return value.

### 11.3. int CloseSiiPrinter(DWORD dwSessionId)

Return value

Failure 0, Success = 0

Parameters

dwSessionId

Session ID that was obtained with OpenSiiPrinter function.

### 11.4. int GetSiiPrinterStatus (DWORD dwSessionId, LPDWORD pdwStatus, BOOL bNewest)

Return value

Failure 0, Success = 0

Parameters

- dwSessionId

Session ID that was obtained with OpenSiiPrinter function

- pdwStatus

Pointer that points out the buffer for receiving 32-bit status flag data

- bNewest

It must be set to TRUE. For details, see item 2 of 11.6.

Caution

For the status data to be returned, refer to the status data bit table.

### 11.5. int SetSiiPrinterData (DWORD dwSessionId, LPBYTE pCmd, DWORD dwSize, LPDWORD pdwWritten)

Return value

Failure 0, Success = 0

Parameters

- dwSessionId

Session ID that was obtained with OpenSiiPrinter function.

- pCmd

Pointer that points out the buffer that contains the data (command group) that should be written to the printer.

- dwSize

Size of the data (command group) that pCmd points out. (in bytes)

- pdwWritten

Pointer that points out the buffer that receives the number of bytes of data that are written to the printer.

Caution

Since the contents of data output are not guaranteed when the function is executed during printing, do not use it during printing.

## 11.6. Precautionary Information

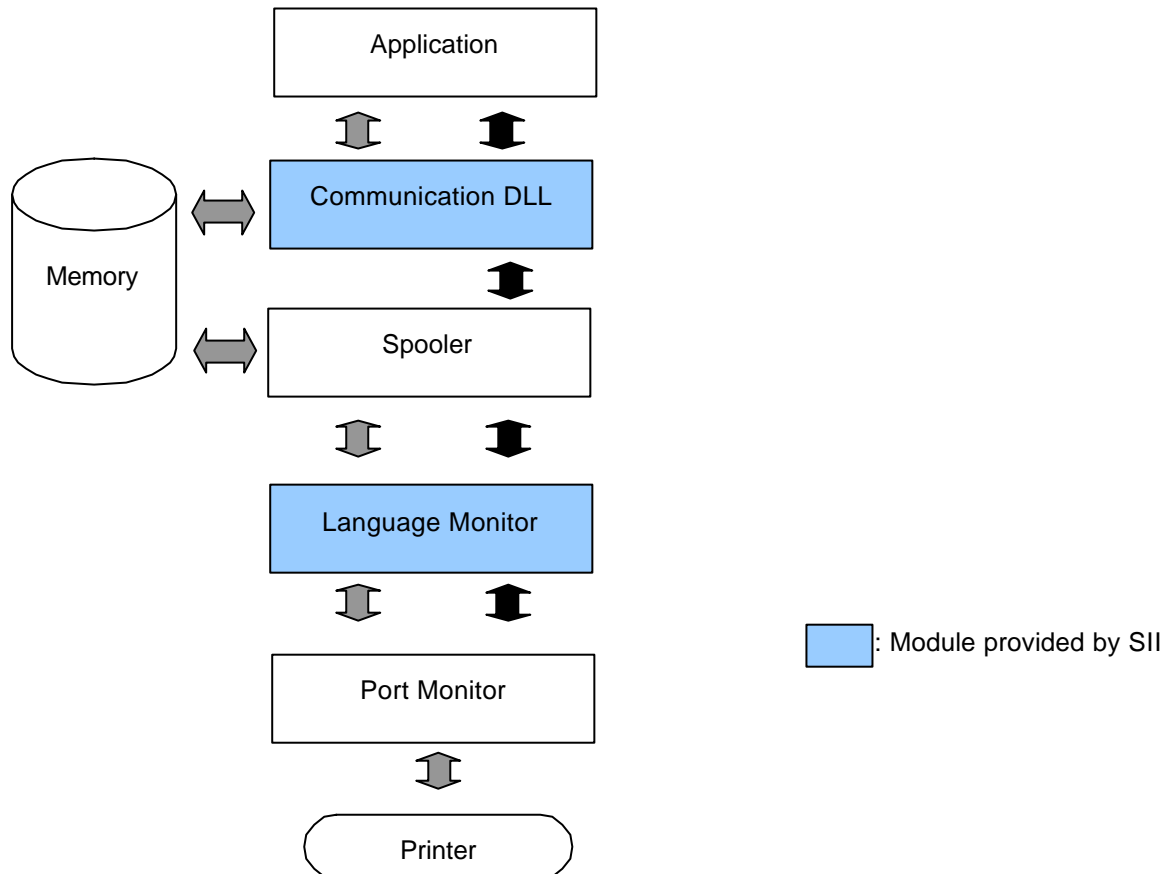
Precautionary information when calling communication DLL function is shown below.

- The status dialog must be disabled.  
Select [Program (P)] - [SII Printer Software] - [Status setup] from [Desktop] - [Start] - [Start Menu] in Windows, and start the Status setup. Then, make sure that [Use the status indications] to perform status indication is not checked.
- The OpenSiiPrinter/SetSiiPrinterData functions do not work unless the printer is turned on and communication is enabled. However, the GetSiiPrinterStatus function can be executed even if the printer is not connected.
- In the "Security" tab of the printer properties, "Manage printer" must be set to "Allow". However, it is automatically set during installation.
- All functions cannot be called in multiple.
- In case the OpenSiiPrinterA( ) or OpenSiiPrinterW( ) is called, if it is called again before calling the CloseSiiPrinter( ), the second call fails.
- When "Print directly to the printer" is selected in the printer properties, the OpenSiiPrinterA( ) or OpenSiiPrinterW( ) returns a failure.
- When the SetSiiPrinterData( ) function was executed during printing, the contents of the data output cannot be guaranteed. Do not execute this function during printing.
- The status during printing is synchronized with the print status on the computer side. Therefore, be careful because it is not synchronized with actual printout.

## 12. COMMUNICATION DLL FLOW CHART

The following shows the configuration of modules relevant to communication DLL.

The gray arrow means data flow and the black arrow means command flow.



### 13. STATUS BIT TABLE

The following table shows the breakdown of the status data (correspondence bit table) that can be obtained by GetSiiPrinterStatus.

Event	pdwStatus value (corresponding bit)
Paper Low error/fixed	0x40000000
Cutter error/fixed	0x20000000
Printer connection error	0x08000000
Automatic paper collection enable/disable	0x04000000
Paper is in presenter/is not in presenter	0x02000000
Presenter cover open/close	0x00400000
Normal error/fixed	0x00002000
Printing/no printing	0x00000400
Online/offline	0x00000080
Feed switch ON/OFF	0x00000020
Paper out error/fixed	0x00000010
Jam error/fixed	0x00000008
Critical error/fixed	0x00000002
Unable to communicate or disconnect	0x80000000

## 14. FUNCTION RETURN VALUE (ERROR) CODE LIST

The following table indicates a return value code for all functions.

If the return value is 0(000000), the function call was completed successfully. If not, it means error. (See the table below.)

Error code from 1 to 100000 is the return value of the GetLastError( ) function of Windows API. For details on errors, refer to the Microsoft Corporation documentation.

The error code is represented in decimal.

Error code	Description
0 (000000)	Function call was successful.
1 to 100000	Return value of GetLastError( ). For details, refer to the Microsoft Corporation documentation.
100001	Not the printer driver for SII KPU-S Series printer.
100002	Printer driver open error
100003	Language monitor open error
100004	Bi-directional communication is not selected in the printer driver.
100005	Incorrect value of the pdwSessionId
100006	Function parameter incorrect
100007	Incorrect parameter name
100008	OpenSiiPrinter is already executed in the working process.
100009	OpenSiiPrinter is already executed in another process.
100010	Timeout error
100011	Thread open error
100012	Port open error
100013	Printer connection error
100014	Language Monitor closing error
100015	Printer driver closing error
100016	Now calling GetSiiPrinterStatus
100017	Now calling SetSiiPrinterData
100018	Reserve
100019	Now calling GetSiiPrinterStatus with another process
100020	Now calling SetSiiPrinterData with another process
100021	Reserve
100022	Memory allocation error
100099	Unknown error



## **15. RESTRICTIONS RELATED TO THIS SOFTWARE**

The following operations and settings are not covered by this Software for the printer.

- When this Software is used, communication settings must be bi-directional. Warranty will not apply if it is not set to bi-directional.
- This Software supports printing via the spooler. Warranty will not apply if the "Print directly to the printer" is selected in the printer properties.
- This Software enables only local connections including parallel, serial and USB connections. Printing through a network connection is not supported.
- This Software is for use with Windows applications, and cannot be used for printing with DOS commands.

## **16. EXEMPTION FROM RESPONSIBILITY**

SII has designed this product with great care to ensure that it is problem-free.

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