

EPSON OPOS ADK MANUAL

User's Manual

(SetupPOS)

Version 3.00

Notes

- (1) Reproduction of any part of this documentation by any means is prohibited.
- (2) The contents of this documentation are subject to change without notice.
- (3) Comments and notification of any mistakes in this documentation are gratefully accepted.
- (4) This software cannot be used with other equipment that the specified.
- (5) EPSON will not be responsible for any consequences resulting from the use of any information in this documentation.

Trademarks

Microsoft®, Windows®, Windows Server®, Visual Basic® and Visual C++® are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.

EPSON® and ESC/POS® are registered trademarks of Seiko Epson Corporation.

Other product and company names used herein are for identification purposes only and may be trademarks or registered trademarks of their respective companies.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Seiko Epson is under license. Other trademarks and trade names are those of their respective owners.

Copyright © 2000 Seiko Epson Corporation

Contents

SECTION 1. INTRODUCTION	1
SECTION 2. DEVELOPMENT OUTLINE	2
2.1 Features	2
2.2 Operating Environment	2
SECTION 3. SETUPPOS UTILITY	4
3.1 Starting	4
3.1.1 <i>Starting SetupPOS</i>	4
3.2 Basic Operations (MAIN WINDOW)	5
3.2.1 <i>Menu</i>	6
3.2.2 <i>Tool Bar</i>	18
3.2.3 <i>Left Pane</i>	18
3.2.4 <i>Right Pane</i>	19
3.2.5 <i>Pop-up Menus</i>	21
3.3 Using Wizards	22
3.3.1 <i>Using the Add Device wizard</i>	22
3.4 Using Devices	31
3.4.1 <i>Setting up a Device</i>	31
3.3.2 <i>Removing a Device</i>	33
3.5 Glossary	34
SECTION 4. WARNINGS	36
4.1 Precautions for Connecting with USB I/F	36
4.2 Other precautions	36
SECTION 5. SETUPPOS UTILITY	37

Section 1. Introduction

This manual contains an outline of the EPSON OPOS ADK program and provides installation and setup instructions for the OPOS Setup program.

EPSON OPOS ADK contains software with API functions that can be used easily through ActiveX controls supported by Visual Basic on the using OS platforms. Application developers without any concern for attached peripherals type or protocol, can develop real-time, multitasking, GUI-based, POS applications with lots of functionality.

Section 2, Development Outline, describes the requirements and uses of EPSON OPOS ADK, and lists what is included in the package.

Section 3, SetupPOS Utility, describes how to use the program to record information about OPOS devices in the system registry.

Section 4, Warnings, describes the matters that demand attention.

The "UPOS Specification", created by the OPOS committee, describes API functions in detail. The Application Development Guide describes application development. Please refer to these manuals for information on these subjects.

Section 2. Development Outline

This section describes development outline for the EPSON OPOS ADK.

2.1 Features

EPSON OPOS ADK offers standardized API functions that interface with peripherals used in POS systems through ActiveX controls that can be run in Visual Basic, operating on the using OS platforms. Through these standardized API functions, you can develop powerful, open POS systems easily.

2.2 Operating Environment

The EPSON OPOS ADK operates under the following environment.

- Computer Hardware
 - IBM PC/AT or compatible
 - * Please follow the specifications recommended by your OS for system requirements (CPU, RAM, etc.).
 - * At least 60M bytes hard disk capacity is needed except for recommended blank capacity of using OS.
- Operating Systems
 - For details, please refer to Release notes ("Relnote.txt") .
- Accessible Serial Ports
 - COM1, COM2, COM3, COM4 (extended port functions allow use of COM5 though COM10)
- Accessible Parallel Ports
 - LPT1, LPT2, LPT3 (operation is unverified in LPT3)
- Accessible USB ports
 - USB equipment must be connected to the IBM PC/AT compatible machines that are equipped with USB connectors or use USB expansion cards.

- Accessible Network

Ethernet and IEEE802.11 support applies to TCP/IP compliant networks.

- Accessible Bluetooth

When using a Bluetooth connection, please use the standard Windows Bluetooth stack.

Section 3. SetupPOS Utility

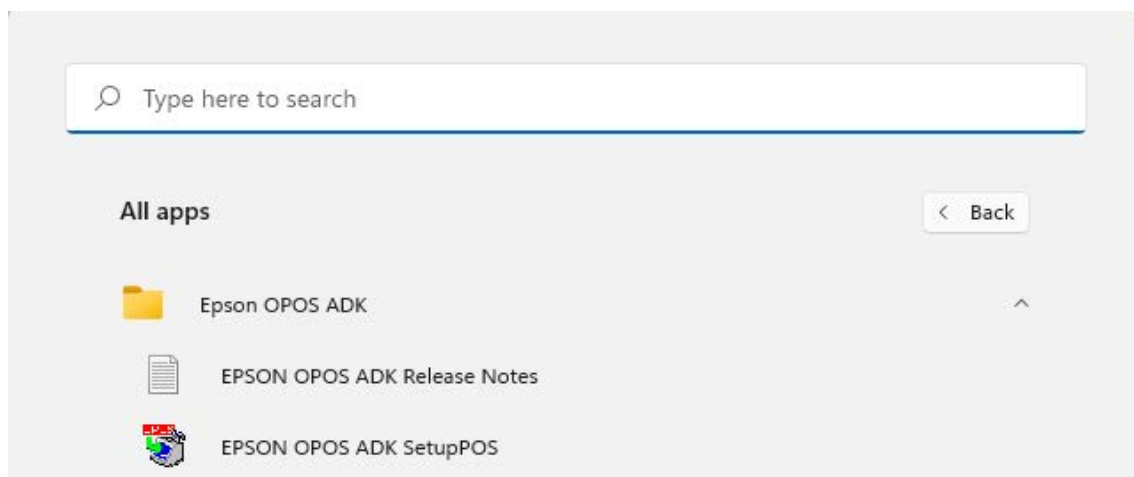
SetupPOS is a setup utility for registering, modifying, or deleting devices and port environments of EPSON OPOS ADK to the system registry.

Depending on the permissions of the user, the user may only be able to view the settings but does not have the ability to register or modify the settings without a few exceptions.

3.1 Starting

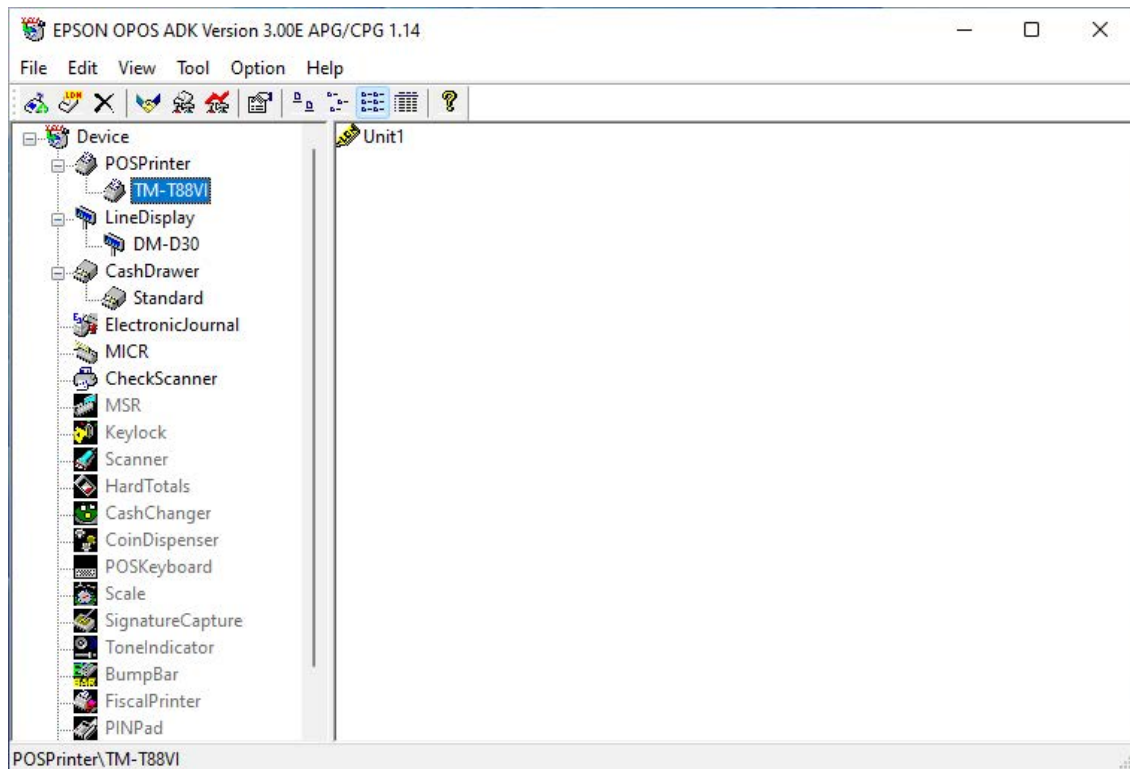
3.1.1 Starting SetupPOS

From the Windows OS Start menu, select Epson OPOS ADK > EPSON OPOS ADK SetupPOS and launch it.



3.2 Basic Operations (MAIN WINDOW)

When SetupPOS runs, its main window appears as shown below. In this window, it is possible to add or delete devices, and make the settings by the explorer-like operations.



The following sections describe each item one by one.

3.2.1 Menu

1. File

This menu contains commands to display properties and exit SetupPOS.

i. Property

Use this menu command to display properties of the item selected in the left or right pane. The properties can only be viewed but not modified.

ii. Exit

Use this menu command exits SetupPOS.

2. Edit

This menu contains commands for setting and editing devices.

i. Add New Device

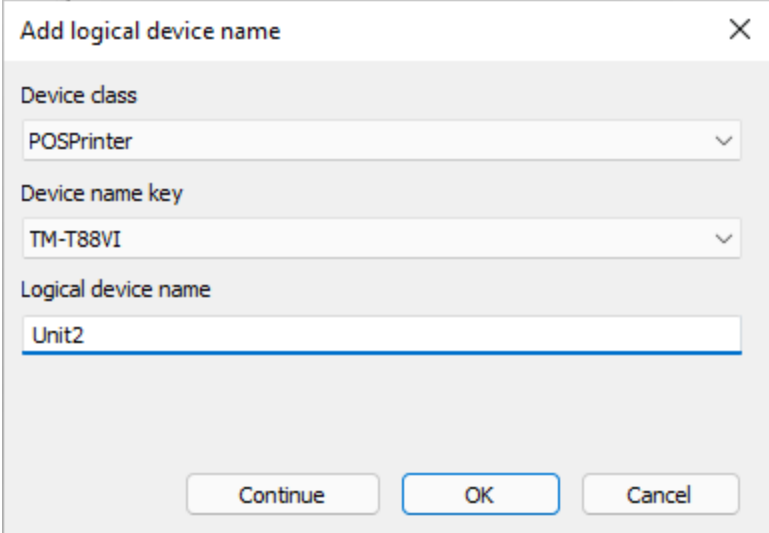
Use this menu command to display the Add Device wizard and add a new device to the device class. The device class displayed here refers to devices prepared by the install program. For details, refer to ["3.3.1 Add Device Wizard"](#) in this manual.

The user must have the administrative permissions to use this function.

ii. Add Logical Device Name

Use this menu command to display the "Add Logical Device Name" dialog box and add a logical device name to a device. A logical device name that has already been used by the same device class cannot be specified.

The user must have the administrative permissions to use this function.



The screenshot shows a dialog box titled "Add logical device name" with a close button (X) in the top right corner. The dialog contains three input fields: "Device class" with a dropdown menu showing "POSPrinter", "Device name key" with a dropdown menu showing "TM-T88VI", and "Logical device name" with a text input field containing "Unit2". At the bottom of the dialog, there are three buttons: "Continue", "OK", and "Cancel".

<About the dialog box for adding logical device name>**"DeviceClass" drop-down list**

Select a device class for adding the logical device name. If the device class has already been selected in the window, then it appears in the drop-down list by default. Also, only device classes which the control objects (CO) supporting the device is installed are listed in the drop-down list.

"Device name key" drop-down list

Select a device name key for adding the logical device name. If the device name key has already been selected in the window, then it appears in the drop-down list by default. If no device exists for the device class, then the drop-down list becomes empty.

"Logical device name" edit field

Enter a logical device name to be added. The name can be up to 255 characters, but it cannot contain the "\" character. If the logical device name is invalid or is already registered, then the Continue or the [OK] button becomes disabled.

[Continue] button

Use this button to set up the logical device name and then continue to add more logical device names.

Adding a logical device name

In the window, select a device name key for adding the logical device. From the Edit menu, select "Add New Logical Device Name " and then enter the logical device name. Another method is to select a device name key for adding the logical device and right-click it. From the pop-up menu, select "Add New Logical Device Name " and then enter the logical device name.

iii. Delete

Use this menu command to delete a device selected in the current window. Before deleting, a confirmation message box appears; when clicking the [Yes] button, the device is deleted.

When deleting a Primary device of Hydra connection, a confirmation message box appears that is whether to delete the Secondary devices as well. It is possible to select to delete the Primary device only or all including the Secondary devices.

To delete a device, use one of the following methods:

- 1) In the main window, select a device name key or the LDN to be deleted. From the Edit menu, select Delete.
Or, in the main window, select a device name key or the LDN to be deleted. Right-click to bring up a pop-up menu and select Delete.
- 2) In the main window, select a device or the LDN to be deleted, and then press the Delete key.
- 3) In the main window, select a device or the LDN to be deleted, and then click the [Delete] icon in the tool bar.

iv. Rename Logical Device Name

Use this menu command to rename the logical device currently selected in the window. The name can be up to 255 characters, but it cannot contain the "\" character. Also, the same logical device name cannot be used again in the same device class.

The user must have the administrative permissions to use this function.

To rename a logical device:

While in the main window, select a device name. From the Edit menu, select "Rename Logical Device Name". The name is ready for editing now. Change the device's name and then press the Enter key.

v. Communication Setting

Use this menu command to display the "Communication Setting" dialog box and change the communication settings of the selected device. This function works only on the EPSON devices.

Communication Setting of Secondary devices with Hydra connection cannot be modified. Also, Communication Setting of device with Hydra connection can only be performed from the Primary device. When the Primary device is changed, settings of all of its Secondary devices are changed as well.

The user must have the administrative permissions to use this function.

3. View

Use this menu to control display of the main window.

i. Toolbar

Use this menu command to hide or display the tool bar.

With a check mark	:	The tool bar is displayed.
With no check mark	:	The tool bar is hidden.

Once changed, the setting remains effective even when restarting the system. As the default, the tool bar is displayed.

What is the tool bar?

The tool bar appears below the menu bar of the main window and contains a list of frequently used menu commands. Clicking a button easily run a menu command associated with the button.

ii. Status Bar

Use this menu command to hide or display the status bar.

With a check mark	:	The status bar is displayed.
With no check mark	:	The status bar is hidden.

Once changed, the setting remains effective even when restarting the system. As the default, the status bar is displayed.

What is the status bar?

The status bar displays various information of the main window. For example, when a menu bar item is displayed, its description appears on the status bar.

iii. Large Icons

Use this menu command to display items in the right pane in large icons.

It is possible to display information using one of the following menu commands: [Large Icons], [Small Icons], [List], or [Details]. When selecting [Large Icon], a check mark appears together with the command.

Once selected, the setting remains effective even when restarting the system.

iv. Small Icons

Use this menu command to display items in the right pane in small icons. It is possible to display information using one of the following menu commands: [Large Icons], [Small Icons], [List], or [Details]. When selecting [Small Icon], a check mark appears together with the command. Once selected, the setting remains effective even when restarting the system.

v. List

Use this menu command to display items in the right pane as a list. It is possible to display information using one of the following menu commands: [Large Icons], [Small Icons], [List], or [Details]. When selecting [List], a check mark appears together with the command. Once selected, the setting remains effective even when restarting the system. As the default, items in the right pane are displayed as a list.

vi. Details

Use this menu command to display items in the right pane as a detailed list. In the Details view, "Device " and "Connection information" are displayed. It is possible to display information using one of the following menu commands: [Large Icons], [Small Icons], [List], or [Details]. When selecting [Details], a check mark appears together with the command. Once selected, the setting remains effective even when restarting the system.

vii. View by Port

Use this menu command to change the display of devices in the left window. If "View by Port" is selected, devices in the left window will be displayed by the connected port. If the checkbox is not selected, devices in the left window will be displayed by device class. When "View by Port" is selected, a checkmark will appear. Once set, the setting remains effective even when restarting the system.

viii. Sort by Name

Use this menu command to change the sort order of the device classes in "Sort by Name". If " Sort by Name " is selected, then device classes are sorted alphabetically. If the checkbox is not selected, then device classes supported by EPSON have the priority in the display. Once set, the setting remains effective even when restarting the system.

ix. View Available only

Use this menu command to display only the device classes supported by EPSON OPOS ADK. By default, this checkbox is checked. Once set, the setting remains effective even when restarting the system.

x. View all

Use this menu command to expand the view of the left pane. After selecting "View all", all device information is not always displayed, but right after "View all" is selected. Using this menu command enables to check the details of the device currently set.

4. Tool

Use this menu to display items for supplementary tools of devices.

i. Interactive CheckHealth

This menu command calls the CheckHealth method using Level = OPOS_CH_INTERACTIVE for the device (key of the device name) currently selected in the window. If the call succeeds, the result is displayed in CheckHealthText. If error occurs during the call, then an error API is called, and ResultCode and ResultCodeExtended are displayed.

This menu command becomes disabled if no device name key is selected in the window.

What is " Interactive CheckHealth (OPOS_CH_INTERACTIVE)"?

Interactive CheckHealth executes an interactive test with device. The supported service object usually provides a dialog box to display the test options as well as test results.

ii. Device Specific Settings

Use this menu command to perform device specific settings for the device currently selected in the window. If no device name key is selected in the window, then this operation becomes disabled. Also, if the selected device does not support device specific settings, then this operation becomes disabled.

The user must have the administrative permissions to use this function.

iii. Export Registry

Use this menu command to display the "Export Registry" dialog box and export the current OPOS registry settings to a registry data file. The saved file can then be used to recover, copy, or install the OPOS environment.

In the "Save As" dialog box, specify a file name to export the registry. If the file already exists, then a message box appears to confirm to overwrite the existing file. Select the [Yes] button to overwrite, or the [No] button to append. If the existing file is overwritten, then all existing registry data is deleted; if the existing file is appended, then the new settings are appended to the end of the file. It is possible to specify the extent of the export from the following options: Register All, Selecting Object, and Hydra.

<Export registry dialog box>**[All] button**

Use this button to export all OPOS registry settings to a registry data file. All settings below the ADK configuration key of the registry are always saved.

[Selected] button

Use this button to export only the OPOS registry settings for the item currently selected in the window, to a registry data file. If multiple items are selected, then multiple registry settings are exported. This button becomes disabled if no item with registry settings is selected in the window.

[Hydra] button

This button becomes enabled if the device currently selected in the window is a Hydra device, and then the Hydra-related settings of the device are exported. This button becomes disabled if the device currently selected in the window is not a Hydra device.

5. Option

This menu contains commands for maintenance.

i. Confirm the Hydra Setting closely

Use this menu command to add devices of the same device class to the same port and to build multiple hydra configurations.

If checked	:	Hydra settings will be checked strictly.
If unchecked	:	Only minimal checking will be performed.

The user must have the administrative permissions to use this function.

ii. Port Range Settings

Use this menu command to display the "Port Range Settings" dialog box and set the maximum numbers of the serial or parallel ports according to the hardware configuration. Usually, if the port configuration is not changed, it is not necessary to use this dialog box. The default range depends on the PC, but the acceptable range are as follows:

COM port	:	10
LPT port	:	3

The user must have the administrative permissions to use this function.

<Port range dialog box>**"Maximum COM ports" edit field with spin buttons**

Set the largest number of serial (COM) ports that can be used. The range that can be chosen is 1 to 10.

[Default value] button

Use this button to set the default value (10) as the maximum number of serial (COM) ports.

"Maximum LPT ports" edit field

Set the largest number of parallel (LPT) ports that can be used. The range that can be chosen is 1 to 3.

[Default value] button

Use this button to set the default value (3) as the maximum number of parallel (LPT) ports.

iii. OPOS API Trace Settings

Use this menu command to display the "OPOS API trace settings" dialog box and set the trace settings of OPOS ADK. Note that for version 1.xx, the trace function can be used only if an EPSON OPOS ADK supporting trace is installed.

The trace (log) function provides support for application development. Usually, this function is used only for debugging OPOS applications; it is not used for other purposes.

The user must have the administrative permissions to use this function.

<OPOS API Trace setting dialog box>**[Tracing mode] radio buttons**

Select a tracing mode from the following options:

- | | | |
|-----------------|---|---|
| "No Trace" | : | Disable the OPOS API trace function.
This option is selected as the default. |
| "Global Trace" | : | Trace all OPOS devices (EPSON devices only). |
| "Private Trace" | : | Trace only the specified valid device(EPSON devices). |

Usually, select "No Trace".

When the OPOS API trace is turned on, all OPOS API calls (all property access and all method calls) are traced, with the trace result recorded in the trace log file. Note that the "Global Trace" option takes priority over the "Private Trace" option, but when the "Private Trace" option is used, the "Global Trace" settings are deleted. For example, if "Global Trace" has been set to the POS printer and the user uses the line display to set trace to "Private Trace", the POS printer will be excluded from the target of trace.

To avoid this problem, use the "Private Trace" option for the device to trace.

"Device" drop-down list

Use this drop-down list to specify the device name for which the OPOS API trace function will be enabled when [Private Trace] is selected.

"Enable trace of selected device" checkbox

Use this checkbox to enable the OPOS API trace function for the selected device.

"Trace log file path" edit field

Use this edit field to specify a specific trace log file. When cleared, the trace log file name is automatically set.

If a special trace log file is specified, please be careful of the access privileges for both the specified file, and for the save location.

If there is an insufficient access privilege for the specified location, the trace log file will not be created.

"Notify when trace log file becomes full " checkbox

To receive notification when the trace log file has exceeded the maximum size, select this checkbox.

iv. Sleep Time Settings

Use this menu command to display the "Sleep Time Settings" dialog box and set the Sleep time of Win32 API.

In the programs for waiting for input from device inside the driver or long processing programs, to keep the CPU time use exclusively, EPSON OPOS ADK calls Sleep (a WIN32 API) and specifies the time to pass control to other programs.

By using this dialog box, it is possible to set the length of the Sleep time for processing long programs.

By modifying the sleep time, it is possible to change the ratio of the CPU time used by a particular device. For the sleep time of input-waiting programs, refer to the port details of the device to learn to how to change it. Because the settings have been optimized, usually it is not necessary to modify them.

The user must have the administrative permissions to use this function.

<Sleep Time Settings dialog box>

"Device" drop-down list

Use this drop-down list to select a device for setting the sleep time.

If a device name is currently selected in the window, the device appears as the default name in the drop-down list.

To change the sleep time of the other device, select the device name from the list.

"Setting value (msec)" edit field

Use the edit field to specify the sleep time for the Sleep API. The acceptable range is 0 to 999.

v. Operation Settings

Use this menu command to display the "Operation Settings" dialog box and set the Message Handling, Version Compatibility and Communication Capability.

Message handling

"Message is processed during synchronous" check box

Enables/disables compatibility of message processing to be executed during synchronization when this checkbox is selected.

By default, this checkbox is unchecked.

What is message handling?

Some application needs to extract a message while a method requiring much time is being processed. In this case, use this command. If "Message is processed during synchronous" is selected, then OPOS methods or properties are not executed while an OPOS method requiring much time is being processed.

(For example, during synchronization, if the Close method is executed, this may result in fatal errors such as causing the PC to hang.)

Version compatibility

"Enable OPOS Ver2.50 compatibility" check box

Enables/disables compatibility of the 'initialization process,' 'Hydra error code switching,' and 'error event processing' to operate according to the specifications of EPSON OPOS ADK Ver2.50 or earlier.

By default, this checkbox is unchecked.

Communication compatibility

"Use operations in serial connection for USB connection" check box

Enables/disables compatibility of USB connection and serial connection communication. If this checkbox is selected when a device is connected by USB, operation will be equivalent to a serial connection. When a device that has been used in a serial connection is changed to a USB connection, this allows you to use the device without changing the application.

By default, this checkbox is unchecked.

6. Help

This menu contains commands on help.

i. Help Topics

Use this menu command to search help by topic and keyword.

ii. About

Use this menu command to display the version information dialog box and view the EPSON OPOS ADK, control object information (CO) as well as the version information of SetupPOS.

<About SetupPOS dialog box>

The version and copyright of the SetupPOS utility are displayed in this dialog box.

*** EPSON OPOS ADK version**

"EPSON OPOS ADK version" edit field

The version of EPSON OPOS ADK appears in the edit field.

*** Version information of control object**

If multiple CO exists, then the version information of the CO found first is displayed.

"Device class" drop-down list

Use this drop-down list to select a device class for display of the version information of a control object.

"Version number" edit field

The version information of a control object appears in the format of "X.Y.Z".

"Description" edit field













Description of the control object appears in the edit field.

3.2.2 Tool Bar

It is possible to operate the main function of the menu bar by clicking a button.

The following tool bar buttons are available:

For the function, refer to the appropriate explanation of the menu bar.

1.  Add device
2.  Add logical device name
3.  Delete
4.  Interactive CheckHealth
5.  Device specific
6.  Communication setting
7.  Property
8.  Large Icons
9.  Small Icons
10.  List
11.  Details
12.  Help

3.2.3 Left Pane

The left pane of the window displays a tree structure of devices.

- From the View menu, it is possible to select "Device Class View" or "Port Connection View" to change the way devices are displayed.
- Menu commands can be applied to a selected item on the tree structure.
- The pop-up menu can be used with each item.
- The user must have the administrative permissions in order to modify the settings.

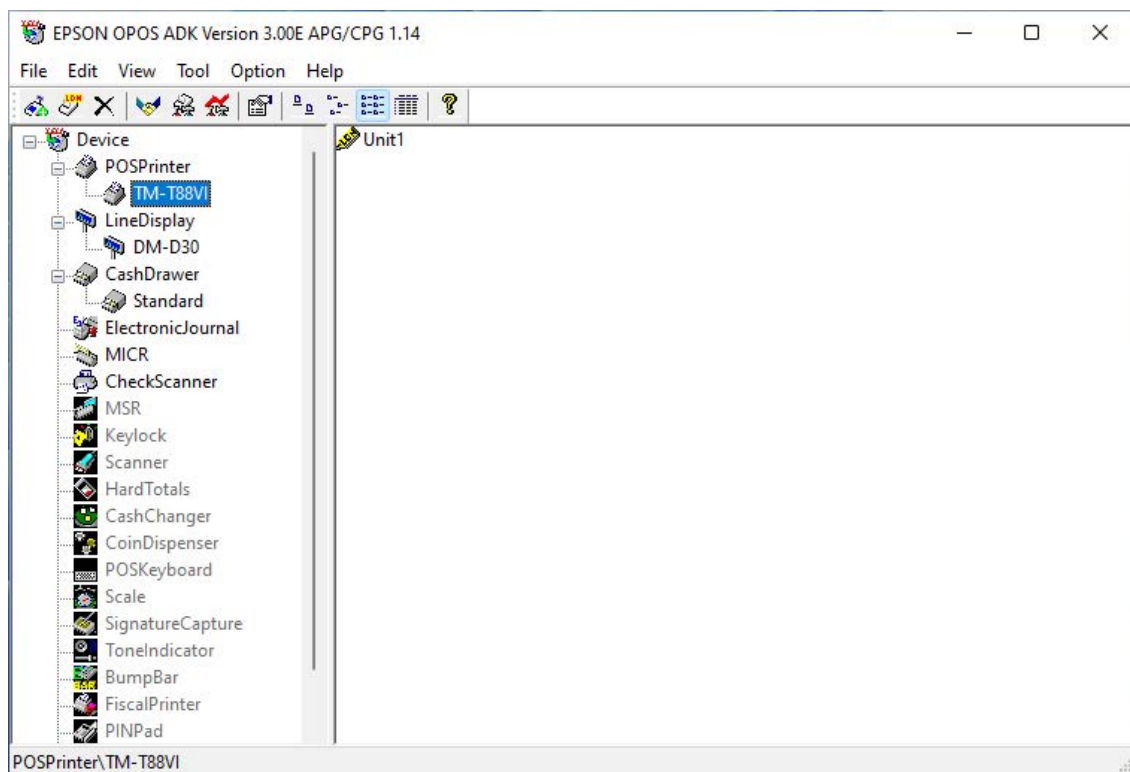
3.2.4 Right Pane

The right window displays the detailed information on the selected item in the left window.

(1). "Device Class View"

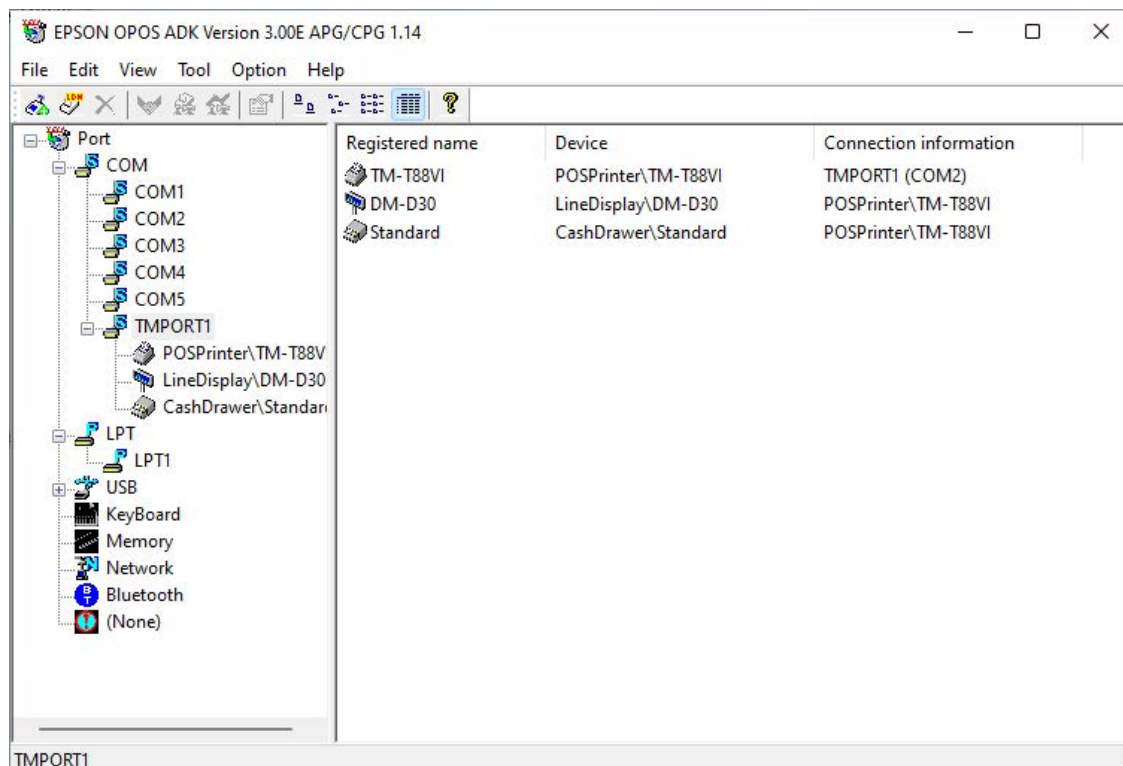
- Device class appears below "Device".
- Device name key for each device appears beneath the device.
- When selecting a device name key in the left pane, the logical device name which belongs to that device appears in the right pane. Note that logical device names always appear in the right pane; they never appear in the left pane.
- A device class is also displayed even if any corresponding device is registered.

However, icons of installed devices not from EPSON are dimmed.



(2). "Port Connection View"

- The port type appears below "Port".
- Below the port type, port names (only those which can be set) are displayed.
- Device name key for each device is displayed below each port name.

**What is COM?**

It displays devices connected to the serial port.

What is LPT?

It displays devices connected to the parallel port.

What is USB?

It displays devices connected to the USB port.

What is Network?

It displays devices connected through Ethernet.

What is Bluetooth?

It displays devices connected through Bluetooth.

What is "(None)"

It displays devices with undefined port settings.

3.2.5 Pop-up Menus

Items in the left and right panes of the window support pop-up menus.

What is a pop-up menu?

When clicking an item and then right-clicking the mouse, a menu appears. This menu is a pop-up menu.

The following pop-up menus are available to items selected in the window.

Selected Item	Pop-up Menu	Description
Device	Add New Device	Use this menu command to display the "Add Device" wizard.
	Export Registry	Use this menu command to display the "Export registry" dialog box.
class name	Add New Device	Use this menu command to display the "Add Device" wizard.
	Export Registry	Use this menu command to display the "Export registry" dialog box.
Device name key	Interactive CheckHealth	Use this menu command to start interactive CheckHealth.
	Device Specific Settings	Use this menu command to display the "Device Specific Settings" dialog box. If the selected device does not support device specific settings, then this command is disabled.
	Add Logical Device Name	Use this menu command to display the "Add logical device name" dialog box. The key to the selected device name appears as the default.
	Communication Settings	Use this menu command to display the "Communication Settings" dialog box. If the selected device is not from EPSON, then this command is disabled.
	Delete	Use this menu command to delete a device.
	Export Registry	Use this menu command to display the "Export registry" dialog box.
	Property	Use this menu command to display the following setting tabs: "Details information", "Communication setting", "Other setting".
Logical device name	Add Logical Device Name	Use this menu command to add the logical device name.
	Delete	Use this menu command to delete the logical device name.
	Rename Logical Device Name	Use this menu command to change the mode to the edit mode for modifying the logical device name.

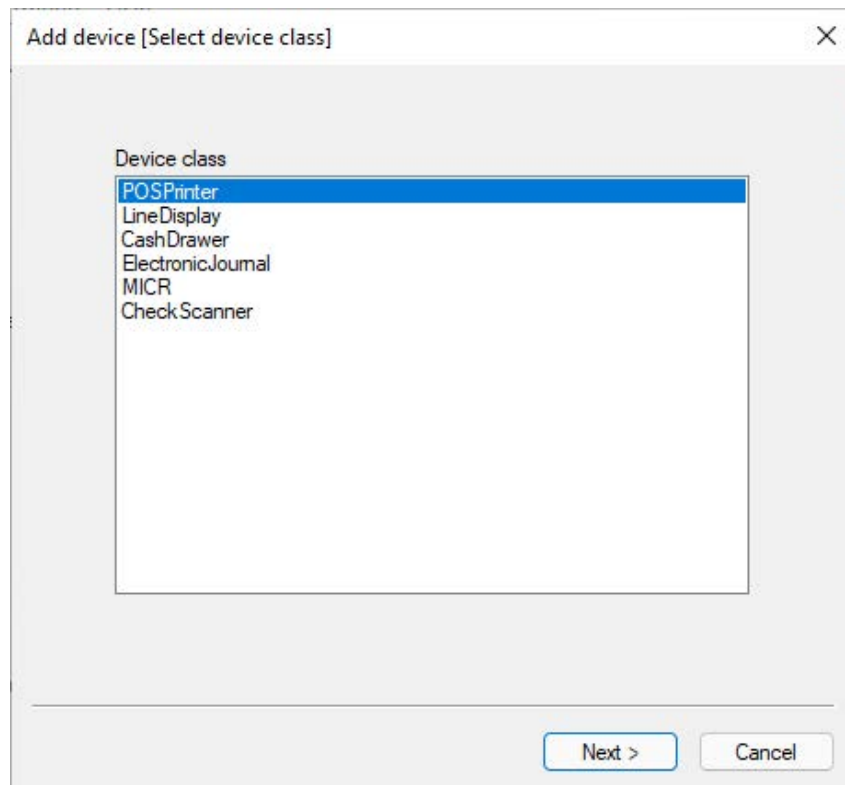
3.3 Using Wizards

3.3.1 Using the Add Device wizard

This wizard adds devices and performs communication settings. Follow the instructions on the screen to perform the operations.

3.3.1.1 Device Class Selection Screen

In this screen, select a device class to be added.



If a device class has been already selected in the main window before starting this wizard, this screen does not appear; instead, the next screen will appear.

"Device Class" list box

Use this list box to display a list of device classes to be selected. Click to select the device class of a device to be added.

Note that the list displays only device classes that are installed control object (CO) that supports the device.

If the necessary device classes are not listed in the list, re-install OPOS ADK, or update it to the appropriate version.

[Next] button

Use this button to move to the device selection screen.

3.3.1.2 Device Selection Screen

In this screen, set the details of the device to add.

Add device [Select device]

Add device

Device: TM-T88VI

Connection: TMPORT

Name: TM-T88VI

Description: EPSON TM-T88VI POS Printer

Add LDN(Logical Device Name)

Set up a logical device name if necessary.(maximum 255 characters)

* A logical device name isn't indispensable.
A logical device name isn't set up in the case as the blank.
And, a logical device name can be set up even later.

< Back Next > Cancel

"Device" drop-down list

Use this drop-down list to display a list of selectable devices and select a device from the list. When the selected device has multiple connection types, select the appropriate type on the right under [Connection].

"Connection" drop-down list

Use this drop-down list to connection type for the device.

The available connection types differ based on the device class and the specific device.

For POSPrinter, some devices support only TMPORT, while others allow selection from COM, LPT, USB, or Network, depending on what the device supports.

For LineDisplay, you can choose the appropriate connection type based on the actual connection method from Printer Connection, Standalone, or Pass-through, depending on the supported options of the selected device.

For CashDrawer and Scanner, only Printer Connection is available, and for ElectronicJournal, only TMPORT is supported.

"Name" edit field

The name of the device selected under [Device] is displayed.

The displayed device name may change depending on the connection type.

"Description" edit field

This edit field displays description of the device selected in the "Device" list.

"Add LDN(Logical Device Name)" edit field

Enter a logical device name for the selected device.

The name can be up to 255 characters, but it cannot contain the "\" character.

In addition, the same logical device name cannot be used again in the same device class.

If the logical device name is invalid, then the [Next] button appears dimmed, and it is impossible to proceed to the next step.

3.3.1.3 Select connection device

In this screen, select the connection condition and connection device.

The connection type and/or connected device must be selected when registering a LineDisplay or Cashdrawer.

Select connection device

Device	Connection
EU-m30	TMPORT

Name

EU-m30

Description

EPSON EU-m30 POS Printer

OK Cancel

"Device" drop-down list

Use this drop-down list to display a list of selectable devices and select a device from the list. When the selected device has multiple connection types, select the appropriate type on the right under [Connection].

"Connection" drop-down list

Use this drop-down list to connection type for the device.

The available connection types differ based on the device class and the specific device.

"Name" edit field

The name of the device selected under [Device] is displayed.

The displayed device name may change depending on the connection type.

"Description" edit field

This edit field displays description of the device selected in the "Device" list.

3.1.1.3 Communication Settings Screen

In this screen, set a port to connect and its details.

Port Setting (for serial, parallel, or USB)

Add device [Communication setting]

Port setting

Port: COM1 Port is being used by: (None)

Detailed setting

Baud rate: 19200 bps Bit length: 8-bit Parity: None Stop bit: 1-bit Hand shaking: DTR/DSR

Input buffer: Output buffer: 1024 Output interval time: 2500 msec Input sleep time: msec

Port Setting

"Port number" drop-down list

Depending on the type of port of the selected device, the following drop-down list are available.

- For serial port : "COM Port Settings"
- For parallel port : "LPT Port Settings"
- For USB port : "USB Port Settings"

From the drop-down list, select a port number for the serial, parallel, or USB port.

If "None" is selected, then the port settings will be deleted.

For serial and parallel ports, it is possible to use the port range dialog box to change their port ranges.

For USB port, when the communication settings screen appears, all the USB driver's connectable ports become the selectable range.

"Port is being used by" drop-down list

Use this drop-down list to display a list of devices that has been already set up for the selected port number.

Detailed Setting

"Baud rate" drop-down list

Use this drop-down list to display and select the communication speed for the serial port.

The values that can be used limited to the supported values of the device.

For details, refer to the hardware manual of the device.

If the port selection is parallel, USB, or "None", then this drop-down list cannot be used to change the setting.

"Bit length" drop-down list

Use this drop-down list to display and select the data bit length of the serial port.

The values that can be used limited to the supported values of the device.

For details, refer to the hardware manual of the device.

If the port selection is parallel, USB, or "None", then this drop-down list cannot be used to change the setting.

"Parity" drop-down list

Use this drop-down list to display and select the parity bit of the serial port.

The values that can be used limited to the supported values of the device.

For details, refer to the hardware manual of the device.

If the port selection is parallel, USB, or "None", then this drop-down list cannot be used to change the setting.

"Stop bit" drop-down list

Use this drop-down list to display and select the stop bit of the serial port.

The values that can be used limited to the supported values of the device.

For details, refer to the hardware manual of the device.

If the port selection is parallel, USB, or "None", then this drop-down list cannot be used to change the setting.

"Hand shaking" drop-down list

Use this drop-down list to display and select the handshake type of the serial port.

The values that can be used limited to the supported values of the device.

For details, refer to the hardware manual of the device.

If the port selection is parallel, USB, or "None", then this drop-down list cannot be used to change the setting.

"Input buffer" edit field

This edit field supports only Version 1.xx devices.

Use this edit field to display and set the input buffer size of the serial port.

The acceptable range is 32 to 8192.

For details, refer to the hardware manual of the device.

If the port selection is parallel, USB, or "None", then this edit field cannot be used to change the setting.

"Output buffer" edit field

Use this edit field to display and set the output buffer size of the serial or parallel port.

The acceptable range is 32 to 1024, but restrictions apply to some devices...

This setting is valid for parallel port, and it is possible to specify the size of data to output.

For details, refer to the hardware manual of the device.

If the port selection is USB or "None", then this edit field cannot be used to change the setting.

"Output interval time" edit field

Use this edit field for set the retry time to use when output fails. For details of output interval time, please refer to the "[3.7 Glossary](#)" of this manual. The acceptable range is 0 to 9999. For details, refer to the hardware manual of the device.

If the port setting is "None", this field cannot be used to change the setting.

"Input sleep time" edit field

This edit field supports only Version 1.xx devices.

Use this edit field to display and set the sleep time to use by the Sleep API in input.

The acceptable range is 0 to 99.

For details, refer to the hardware manual of the device.

If the port selection is USB or "None", then this edit field cannot be used to change the setting.

[Interactive CheckHealth] button

Use this button to call the CheckHealth method for the selected device using Level = OPOS_CH_INTERACTIVE.

If the port setting is "None", then this button is disabled and afterwards interactive CheckHealth is not executed.

[Device specific setting] button

Use this button to display the "Device Specific Settings" dialog box and change the device specific settings for the selected device.

If the port setting is "None" or the selected device does not support device specific settings, then this button becomes dimmed and disabled.

[Back] button

Use this button to return to the device selection screen.

[Finish] button

Use this button to save the current settings to the registry and exit the Add Device wizard.

[Cancel] button

Use this button to stop registering the device and exit the Add Device wizard.

Port Setting (Network)

Add device [Communication setting]

Port setting

0.0.0.0 Port is being used by

Update (None)

Detailed setting

Baud rate Input buffer

Bit length Output buffer 1024

Parity Output interval time 2500 msec

Stop bit Input sleep time msec

Hand shaking

Interactive Check Health... Device specific setting...

< Back Finish Cancel

Port Setting**"IP address" edit field**

Use the edit field to specify a network or a wireless device's IP address or host name.

If an IP address or host name is already set up, the address or name appears in the edit field.

[Update] button

The network settings set the input value by pushing the [Update] button.

If the device that has been set is on the port to be set, depending on the capability of the device and selected device, a message not to set the device to the port appears. In this case, the port setting is invalid.

"Port is being used by" drop-down list

Use this drop-down list to display a list of devices that has been already set up for the selected port number.

Detailed Setting

This is the same as the description for "Port Setting(for serial, parallel, or USB)".

Port Setting (TMPORT)

Communication setting

Port setting

TMPORT1 (COM1) Port is being used by

New port... Update port POSPrinter\TM-T88IV

Detailed setting

Baud rate 38400 bps

Bit length 8-bit

Parity None

Stop bit 1-bit

Hand shaking DTR/DSR

Interactive CheckHealth... Device specific setting...

Finish Cancel

Use this drop-down list to select the TMPORT port to connect to.

Port Setting

"Port is being used by" drop-down list

Use this drop-down list to display a list of devices that has been already set up for the selected port number.

[New Port] button

Use this button to display the Create TMPORT dialog box.

[Update Port] button

Use this button to display the Create TMPORT dialog box.

"Port is being used by" drop-down list

Use this drop-down list to display already configured for the selected port number.

Detailed Setting

This is the same as the description for "Port Setting(for serial, parallel, or USB)".However, in Port Setting (TMPORT), only the items "Baud rate," "Bit length," "Parity," "Stop bit," and "Hand shaking" are displayed.

3.3.1.4 TMPort Making

In this screen, creates a port of TMPort.

The screenshot shows a dialog box titled "TMPort Making". It has a close button (X) in the top right corner. The dialog contains the following fields:

- Port type:** A dropdown menu with "COM" selected.
- Physical port (COM, LPT only):** A dropdown menu with "COM2" selected.
- Physical port (NET only):** A text input field containing "0 . 0 . 0 . 0".
- Connect device (USB only):** An empty dropdown menu.

At the bottom of the dialog are two buttons: "OK" and "Cancel".

"Port type" drop-down list

Displays a port type that can be created.

When the "COM", "LPT", or "Bluetooth" is selected:

Chooses a port in the "Physical port (COM, LPT only)" drop-down list.

When the "USB" is selected:

Chooses a device in the "Connect device" drop-down list.

When the "NET" is selected:

Inputs an IP address in the "Physical port (NET only)" drop-down list.

"Physical port (COM, LPT only)" drop-down list

This setting only becomes effective when you select COM, LPT or Bluetooth in the "Port type" drop-down list. Only the port recognized by the system is displayed.

You cannot create a new port at the physical port which has already registered in TMPort.

When using a Bluetooth device, select the COM port of the Bluetooth device.

Before registering a Bluetooth-connected device in SetupPOS, configure the COM port of the Bluetooth device. Refer to the "Product Manual" for instructions.

When using the "TM Bluetooth connector Utility," select "COMx."

"Physical port (NET only)" edit field

This setting only becomes effective when you select NET in the "Port type" drop-down list. As the default, "0.0.0.0" is displayed.

You cannot create a new port at the IP address which has already registered in TIMPORT.

You cannot specify the host name.

"Connect device (USB only)" drop-down list

This setting only becomes effective when you select USB in the "Port type" drop-down list. The connectable ports are displayed.

"Make Port Name" edit field


Displays the name of port that is created.

3.4 Using Devices

This section explains how to set up or delete a device, using POSPrinter TM-T88VIM as an example.

3.4.1 Setting up a Device

To set up POSPrinter TM-T88VI as a device, use the "Add Device" wizard of SetupPOS.

Start the wizard either by selecting "Add New Device" from the Edit view, or clicking the  [Add Device] button on the tool bar.

Or, select the POSPrinter in the left pane of the main window, and then right-click to bring up a pop-up menu and select Add New Device. (In this case the step starts from **<Select device screen>**.)

Following the instructions in each screen of the wizard, set up the device as described in the following procedure.

(Operations in each screen)

- | | | |
|-----------------|---|--|
| [Next] button | : | Click this button to accept the changes in the current screen and then proceed to the next screen. |
| [Back] button | : | Click this button to clear the current settings and go back to the previous screen. |
| [Cancel] button | : | Click this button to cancel the operation. |
| [Help] button | : | Click this button to display appropriate help. |

Perform these operations as required in each screen.

<Device class selection screen>

For device class: Select POSPrinter and then click the [Next] button.

<Device selection screen>

Device : Select "TM-T88VI".
 Connection : "TMPORT" is displayed.
 Name : "TM-T88VI" is displayed.
 Description : "EPSON TM-T88VI POS Printer" is displayed.
 Add New Logical Device Name : If necessary, enter "Unit1."

(It is possible to enter this information after the wizard ends. From the Edit menu, select "Add New LDN." Another method is to select a device name key and right-click it. From the pop-up menu, select "Add New Logical Device Name.")

Click the [Next] button.

If no assignable ports are available, a dialog box prompting port creation will appear. Select the [Yes] button.

The " TMPORT Making" dialog will then be displayed, where the port type and other details can be entered to create the TMPORT.

<Communication settings screen>**Port Setting**

Select the target TMPORT for the connection.

If the desired TMPORT is not listed, click the [New Port] button to create a new TMPORT.

Detail Setting

"Setup of details of the port." * Set the following items.

BaudRate : 38400 dps
 Bit length : 8 bits
 Parity : NONE
 Stop bit : 1 bit
 Handshake : DTR/DSR

[Interactive CheckHealth] button:

Click this button and make sure this setting allows for normal communication and printing.

[Device Specific Settings] button:


If necessary, click this button to change the device specific settings.

Click the [Finish] button

The window displays the settings of TM-T88VI.

3.3.2 Removing a Device

Delete a device using one of the following three methods.

- (1) In the main window, select the device name key to be deleted (in this case TM-T88VI). From the Edit menu, select Delete. When a confirmation message box appears, select Yes to delete the device.
- (2) Select the device name key to be deleted (in this case TM-T88VI). Right-click to bring up a pop-up menu and select Delete. When a confirmation message box appears, select Yes to delete the device.
- (3) In the main window, select the key of the device name to be deleted (in this case TM-T88VI). Then click the [Delete]  icon on the tool bar. When a confirmation message box appears, select Yes to delete the device.

3.5 Glossary

Device Class	<p>In the Device Class view of the main window, device class is the device type displayed below Device. Device classes used in EPSON OPOS ADK are as follows:</p> <p>CashDrawer, LineDisplay, MICR, CheckScanner, POSPrinter and ElectronicJournal.</p> <p>For detailed explanations of the devices available, refer to the "OPOS Registry Usage" section of the "OPOS Application Programmer's Guide".</p>
Device Name Key	<p>When a device is added, it appears in the Device Class view of the main window below device class. If no device is set for the selected device class, then this information is not displayed.</p> <p>For example, the device name key of POSPrinter's TM-295 is "POSPrinter¥TM295."</p>
Logical Device Name (LDN)	<p>Another name used to identify a device. Each device can have a logical device name. However, a logical device name which is already being used by the same device class cannot be specified.</p> <p>For example, if a logical device name "Unit1" is already assigned to a device called TM-295 of POSPrinter, then "Unit1" cannot be used again as a logical device name for TM-88VI in the same device class (POSPrinter). Using the logical device names does not need to specify the device name key directly and so makes application development versatile.</p>
Registry	<p>OPOS uses the system registry to store and reference device information. Although it is possible to view the information using the REGEDIT utility, do not change the SetupPOS program. For details, refer to the "OPOS Registry Usage" section of the "OPOS Application Programmer's Guide".</p>
Input buffer length	<p>It sets the size of the input buffer (unit in bytes; a area in the PC's memory for temporarily storing input data). Because this preset value has been optimized, usually it is not necessary to modify it.</p> <p>If this value is changed smaller than the preset one, the input response may deteriorate. On the other hand, if the new value is larger than the preset one, input response for large amount of data input would improve. Therefore, adjust this value if the input response is bad.</p>
Output buffer length	<p>It sets the size of the output buffer (unit in bytes; a area in the PC's memory for temporarily storing output data). Because this preset value has been optimized, usually it is not necessary to modify it.</p> <p>If this value is changed larger than the preset one, data loss may occur. On the other hand, if the new value is smaller than the preset one, the output performance may deteriorate. Therefore, unless there is a necessary, do not change the preset value.</p>
Output Interval Time	<p>Time interval for retry in the case output fails. If not even 1 byte is output for the set time, the Timeout error occurs. While this preset value has been optimized, modify it (usually by increasing it rather than decreasing it) if the Timeout error frequently occurs during printing at your environment.</p> <p>On the other hand, timeout errors which occur when communication is not possible due to physical problems such as cover being opened are normal. Change this value for cases where timeout error occurs during printing even though printing is possible.</p>

Input Sleep Time	<p>During the waiting for input, EPSON OPOS ADK can call Sleep (a WIN32 API). The input sleep time is the value (msec) to pass to the Sleep function. This preset value has been optimized and usually it does not need to be changed. Input processing (ReadFile) uses the CPU exclusively.</p> <p>When input process is performed while there is no input data in particular, because data event does not occur, the application looks like it is not running (hangs). To solve this problem, use the Sleep function between input processes so that control (of CPU) can be passed to other applications as much as possible. (Executing the Sleep function passes to other processes.)</p> <p>Try to use the preset input sleep time value, because if changing the value decreases the input response. To change the input sleep time value by all means, change it in a way that strikes a balance between input response and application performance.</p>
Port	EPSON OPOS ADK uses the following types of ports: serial(COM), parallel(LPT), USB, Ethernet, IEEE802.11., and Bluetooth
Trace	<p>The trace (log) function provides support for application development. Usually this function is used only for debugging OPOS applications; it is not used for other purposes. To change the trace settings, use the "OPOS API trace settings" dialog box. Note that for version 1.xx, the trace function can be used only if an EPSON OPOS ADK supporting trace is installed.</p>
Message handling	Depending on the application, some methods may require a lot of time to process. If the application needs to extract a message during the method processing duration, the message handling function is used. Do not use this function.
Sleep time	<p>In the programs for waiting for input from device inside the driver or long programs which keep the CPU time use exclusively, EPSON OPOS ADK can call Sleep (a WIN32 API) to pass control to other programs. The input sleep time is the value (msec) to pass to the Sleep function. Changing the sleep time changes the ratio of CPU time used by a particular device. To change the sleep time for input wait programs, use the port detail settings of each device.</p>
Log file	A file for recording the execution result of the trace.
Primary Device	<p>The device for Hydra connection, the host device will be referred to as "Primary Device".</p> <p>When the Hydra connection: POSPrinter</p> <p>When the Pass-through connection: LineDisplay</p>
Secondary Device	<p>The device for Hydra connection, the destination device will be referred to as "Secondary Device".</p> <p>When the Hydra connection: MICR, CheckScanner, ElectronicJournal, LineDisplay, CashDrawer</p> <p>When the Pass-through connection: POSPrinter, MICR, CheckScanner, ElectronicJournal, CashDrawer</p>
TMPORT	Ports created by OPOS and virtual ports are called TMPORT.

Section 4. Warnings

4.1 Precautions for Connecting with USB I/F

- When connecting a new device, turn on the device before running the “ Add Device” wizard. The disconnected or power-off devices are not recognized.
- If the port number of the device is not indicated on the Port Connection View screen during the connection, select the corresponding device on the Main View, or select [Auto Setting] button on the “Communication Settings” dialog box. The connected devices are recognized.
- When the same type of devices is registered already and some of the devices are turned off, there is a possibility that the turned off device's USB port number is replaced with the new one. Therefore, beware of registering multiple numbers of the same devices.
- Please note the following points when re-assigning USB ports:
 - Turn on the applicable device when doing automatic USB port setting.
 - If using several devices of the same model on different USB ports, only do automatic setting for one device.
 - Editing the registry during automatic USB port setting is not supported.

4.2 Other precautions

- If an installation is not completed successfully and reinstallation also fails, please do the following steps:
 - (1) Uninstall OPOS.
 - (2) Install OPOS version which is originally installed prior to installing this version.
 - (3) Install this version.
- Version 2.80 or older cannot overwrite Version 3.00 or newer.

Section 5. SetupPOS Utility

About the 'JSON for Modern C++' License

The SetupPOS utility includes 'JSON for Modern C++'.

MIT License

Copyright (c) 2013-2022 Niels Lohmann

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.