EPSON
EXCEED YOUR VISION

ePOS-Print XML
User's Manual

Overview

Describes the features and development environment.

Sample Program

Describes how to use the sample program and how to build a system.

Programming Guide

Describes how to write programs in Web application development.

XML Reference

Describes the ePOS-Print XML.

Device Specifications

Describes specifications of printers and other devices.

Development Information for Customer Displays

Describes the necessary information for controlling customer displays.

Appendix

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ESC/POS® Command System

Epson has embarked on a global initiative to develop ESC/POS, a unique POS printer command system. ESC/POS contains a wealth of unique commands, many of which are patent-protected. Our system enables the configuration of versatile POS systems with a high level of scalability. In addition to being compatible with most Epson POS printers and displays, the flexibility provided by this unique control system facilitates ease of future upgrades. This functionality and convenience of use are appreciated around the world.

For Safety

Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.

	Provides information that must be observed to avoid damage to your equipment or a malfunction.
	Provides important information and useful tips.

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About this Manual

Aim of the Manual

This manual is aimed to provide developers with information required for developing and designing applications using ePOS-Print XML.

In this manual, "ePOS-Print supported printer" is a generic term for the TM-DT series/TM-i series and TM printers that support the ePOS-Print XML.
The TM-DT series in this manual is a generic term for the following printers.

- TM-H6000IV-DT
- TM-T70II-DT
- TM-T88V-DT

The TM-i series in this manual is a generic term for the following printers.

- TM-L90-i
- TM-T20II-i
- TM-T70-i
- TM-T82II-i
- TM-T83II-i
- TM-T88V-i
- TM-T88VI-iHUB
- TM-U220-i

Manual Content

The manual is made up of the following sections:

Contents

Overview

This chapter describes the features of and the specifications for ePOS-Print.

Overview

ePOS-Print is an Epson's unique printing function that uses XML and Web Service.

This function creates request messages in XML format using the application on devices such as computers, smart phones, and tablets, and performs printing to a TM printer on the network using Web Service.

It also allows you to control display of a customer display connected to the printer. The control is available with a specific set of printer and customer display. For the information, refer to XML Supported Printers (p.131).

This document is made up of the following sections:

- XML Print Service (p.10)
- XML Reference (p.19)

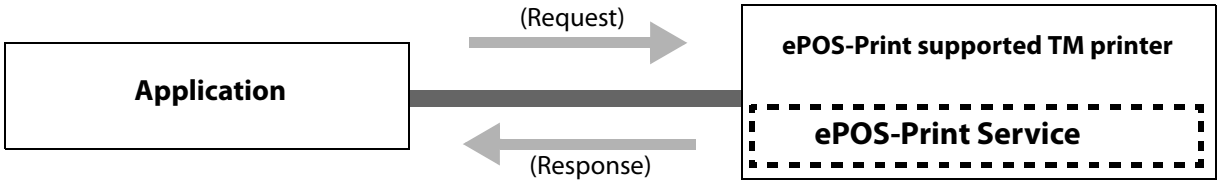
For details about the provided articles, refer to Provided Article (p.21).

Print data can be created in ePOS-Print XML format also with Server Direct Print. For details, refer to XML Reference (p.64).

XML Print Service

ePOS-Print XML allows printing to ePOS-Print supported TM printer from applications in an environment or on OS where HTTP communication is possible. ePOS-Print XML embedded into native applications on smart phones and tablet terminals makes it possible to print from such devices.

When a print document is sent from a host to an ePOS-Print supported TM printer using SOAP/HTTP, the ePOS-Print supported TM printer performs printing and returns a response document.



Features

- ❏ Allows printing from SOAP/HTTP-supported devices. Not OS-dependent.
- ❏ Installation of drivers and plug-ins is not required.
- ❏ No computers or servers are required for printing.
- ❏ In case of TM-DT series/TM-i series, it can print to other TM printer via printer.
- ❏ Automatically checks the status of the TM printer before printing. There is no need for checking the status of the TM printer in advance.
- ❏ Does not respond to a printer's function to automatically send its status (Auto Status Back). Instead, capable of sending an empty print command and checking the status of the TM printer based on the result of command transmission.
- ❏ To change the printer settings, utility programs dedicated to each printer or other utility programs should be used.
- ❏ Capable of obtaining the printer status even when the printer is offline.

Interface Type

- ❏ SOAP/HTTP Interface (p.11)
- ❏ SOAP/HTTP Interface (WSDL supported) (p.11)
- ❏ Interface for FileMaker® (p.11)

SOAP/HTTP Interface

When a print document is sent from an application to ePOS-Print Service using SOAP/HTTP, ePOS-Print Service performs printing and returns a response document.

Specification

Item	Description
End point address	http://[IP address of the ePOS-Print supported TM printer]/cgi-bin/epos/service.cgi?devid=[device ID]&timeout=[timeout time]
Request message	A SOAP message is sent against a HTTP POST method request. One print document is specified in the SOAP body.
Response message	A SOAP message is returned against a HTTP POST method response. A response document is put in the SOAP body.

SOAP/HTTP Interface (WSDL supported)

When a print document is sent from an application to ePOS-Print Service using SOAP/HTTP, ePOS-Print performs printing and returns a response document. Job ID can be specified.

(ePOS-Print Service Ver.4.1 or later versions supported.)

Specification

Item	Description
End point address	http://[IP address of the ePOS-Print supported TM printer]/cgi-bin/epos/service.cgi
Request message	A SOAP message is sent against a HTTP POST method request. In the SOAP header, the device ID, timeout time, and job ID can be specified. One print document is specified in the SOAP body.
Response message	A SOAP message is returned against a HTTP POST method response. A device ID and a job ID are put in the SOAP header. A response document is put in the SOAP body.

Interface for FileMaker®

This interface uses the HTTP POST function of FileMaker for printing.

(ePOS-Print Service Ver.4.1 or later versions supported.)

Specification

Item	Description
End point address	httppost://[IP address of the ePOS-Print supported TM printer]/cgi-bin/epos/service.cgi?printdata=[SOAP message]
Request message	A SOAP message is sent against a request in the HTTP POST function of FileMaker. In the SOAP header, the device ID, timeout time, and job ID can be specified. One print document is specified in the SOAP body.
Response message	A SOAP message is returned against a response in the HTTP POST function of FileMaker. A device ID and a job ID are put in the SOAP header. A response document is put in the SOAP body.

WSDL(Web Services Description Language)

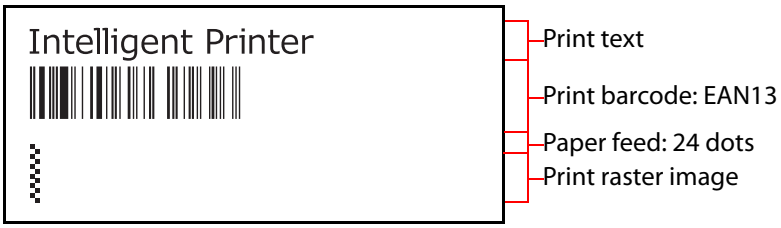
WSDL defines the SOAP/HTTP interface in XML Print Service.

This allows you to generate client codes (proxy class) from WSDL by using the tool provided in the development environment.

File name: epos-print-x.x.x.wsdl
epos-print-x.x.x.xsd

For details, refer to How to Use WSDL (p.61).

Print Image



Operating Environment

Application Environment

An environment in which HTTP communication is possible and XML documents can be handled

- ❏ OS (Example: iOS/ Android™/ Windows CE/ Windows/ Linux/ Mac OS, etc.)
- ❏ HTML5-supported browser, Flex, Silverlight
- ❏ Java, .NET Framework

Device

A device capable of HTTP communication by connecting to the network.

(Example: smart phones, tablet terminals, computers, etc.)

Development Environment

An editor program capable of editing XML documents.

(Example: Visual Studio/Eclipse, etc.)

ePOS-Print Supported Printer

For differences in functions according to printer type, refer to Printer-specific Support Information (p.135).

TM-DT Series

❏ TM-H6000IV-DT (Receipt printer only)
❏ TM-T70II-DT
❏ TM-T88V-DT

TM-i Series

❏ TM-L90-i
❏ TM-T20II-i
❏ TM-T70-i
❏ TM-T82II-i
❏ TM-T83II-i
❏ TM-T88V-i
❏ TM-T88VI-iHUB
❏ TM-U220-i

TM Printer

❏ Wi-Fi/Ethernet enabled models of the following TM printers

- TM-m10
- TM-m30
- TM-P20
- TM-P60II (Receipt)
- TM-P60II (Peeler)
- TM-P80
- TM-T88VI
- TM-H6000V (Receipt printer only)

❏ The following TM printers that are equipped with UB-E04 or UB-R04

You can check the interfaces equipped with the printer by printing a status sheet.
For more information, refer to the Technical Reference Guide of the printer.

- TM-L90
- TM-L90 4xx
- TM-T20
- TM-T20II
- TM-T70
- TM-T70II
- TM-T82II
- TM-T83II
- TM-T88IV
- TM-T88V
- TM-T90
- TM-U220
- TM-U330
- TM-H6000IV (Receipt printer only)

Printer Functions

Functionality available with ePOS-Print XML varies by printer.

Refer to the following for more information.

Printer Name	Network printer control*1	Spooler/Print forwarding	HTTPS Communication
TM-H6000IV-DT	✔	✔*2	✔*4
TM-T70II-DT	✔	✔*2	✔*4
TM-T88V-DT	✔	✔*2	✔*4
TM-L90-i	✔	✔*3	✔*5
TM-T20II-i	✔	✔*3	✔*5
TM-T70-i	✔	✔*3	✔*5
TM-T82II-i	✔	✔*3	✔*5
TM-T83II-i	✔	✔*3	✔*5
TM-T88V-i	✔	✔*3	✔*5
TM-T88VI-iHUB	✔	✔	✔
TM-U220-i	✔	✔*3	✔*5
TM-m10	-	-	✔
TM-m30	-	-	✔
TM-P20	-	-	-
TM-P60II (Receipt)	-	-	-
TM-P60II (Peeler)	-	-	-
TM-P80	-	-	-
TM-T88VI	✔	✔	✔
TM-H6000V	-	-	✔
TM-L90	-	-	✔*6
TM-T20	-	-	✔*6
TM-T20II	-	-	✔*6
TM-T70	-	-	✔*6
TM-T70II	-	-	✔*6
TM-T82II	-	-	✔*6
TM-T83II	-	-	✔*6
TM-T88IV	-	-	✔*6
TM-T88V	-	-	✔*6
TM-T90	-	-	✔*6
TM-U220	-	-	✔*6
TM-U330	-	-	✔*6
TM-H6000IV	-	-	✔*6

*1 Controllable TM printers vary by the version of software and firmware installed in printers.
For details, refer to the Technical Reference Guide of the printer.
*2 TM-DT software Ver.3.0 or later.
*3 TM-i firmware Ver.4.1 or later.
*4 TM-DT software Ver.2.5 or later.
*5 TM-i firmware Ver.4.3 or later.
*6 TM printers equipped with UB-E04.

Check the followings for HTTPS communication.

- Prepare a certificate and secret key for the server, then register them to the printer.
- Self-signed certificates can be created by TM-DT series devices with version 4.0 or later of the TM-DT software, TM-i series devices, and TM-T88VI devices. For instructions on how to create a self-signed certificate, see Technical Reference Guide of the printer. Name and common name of the self-signed certificate are the printer's IP address.
- Common name of the server certificate and the host name of the printer must be the same. Otherwise, HTTPS communication will fail with an error.
- Embed a CA (certificate authority) certificate, which is used to authenticate the CA signature on the server certificate, in your program. Otherwise, HTTPS communication will fail with an error.
- When creating an iOS application, make sure to satisfy the requirements of ATS (App Transport Security).
- Comply with requirements for HTTPS communication of your application development environment.
- To send print data to the printer from an application on a HTTPS Web site, make sure to use HTTPS instead of HTTP to communicate with the printer. Otherwise, the communication will fail with an error.

ePOS-Print Service Versions

Depending on the version of ePOS-Print Service installed on the printer, some functions does not work with ePOS-Print XML. (Usage Restrictions by Firmware Version (p.215))

If XML element of newly added is used on unsupported models, schema error is returned and printing cannot be done. The latest version of the XML Schema is recommended regardless of ePOS-Print Service version installed on a printer. XML Schema is bundled with the sample program. For details, refer to Provided Article (p.21).

How to check the version

TM Printers

You can check it using EPSON TMNet WebConfig. Refer to the Technical Reference Guide of each printer for more information.

TM-DT Series/TM-i Series

The ePOS-Print Service of TM-DT Series and TM-i Series is installed in TM-DT software/TM-i firmware.

The table below shows which ePOS-Print Service version is included in which TM-DT software/TM-i firmware version.

ePOS-Print Service	TM-DT Software	TM-i Firmware
1.2	-	1.2x
2.0	-	2.0x
2.1	-	2.1x
2.2	2.0x	-
3.0	2.2x, 2.5x	3.0x, 3.1x, 4.0x
3.2	-	-
4.1	3.0x, 4.0x	4.1x, 4.3x, 4.4x
5.0	-	-
6.0	-	-

TM-T88VI/TM-T88VI-iHUB/TM-H6000V

Print TM intelligent setting information to check the version.

Follow the procedure below.

1 Close the roll paper cover. Hold down the paper feed button and turn on the printer.
Hold the paper feed button down until printing of operating instruction starts.

> The operating instruction is printed after the printer status is printed.

2 Following the instructions, press the paper feed button six times to select the TM intelligent setting information to be printed.

3 Press the paper feed button again and hold it down until the TM intelligent setting information is printed.

The ePOS-Print Service version is indicated as shown below.

❏ TM-T88VI/TM-T88VI-iHUB

```
ePOS Information
  ePOS-Print Version        : 6.00

ePOS Print
  Use                       : Enable

OFSC Print
  Use                       : Enable
                  .
                  .
                  .
```

❏ TM-H6000V

```
ePOS Information
  ePOS-Print Version        : 6.00
  ePOS-Device Version       : 3.10

ePOS-Print
  Use                       : Enable

ePOS-Device
  Use                       : Enable
                  .
                  .
                  .
```

4 When printing is finished, turn the printer off.

Restrictions

- ❏ The drawer and the buzzer cannot be used together.
- ❏ The buzzer function cannot be used if the printer is not provided with the buzzer.
- ❏ When multiple tones are set for raster images, intermitting printing may occur because the amount of data to print increases and white stripes may appear in the print result.
- ❏ The scan quality of barcodes/2D-codes printed as multiple-tone raster images cannot be guaranteed. Print them as two-tone images.
- ❏ If printing was cancelled, perform the following settings to clear the data left in the printer.
  (in ePOS-Print Service Ver.3.0 and later)
  - In the printer DIP switches (memory switches), configure the Busy condition only for the receive buffer full.
  - Disable the command execution (offline).
- ❏ Messages that contain BOM are not supported.
- ❏ Printing is not possible with a software application for iOS9 built on the Xcode development environment for iOS, because HTTP communication is not allowed by APP Transport Security. We recommend to develop your application on Epson ePOS SDK for iOS.
  https://reference.epson-biz.com/pos/reference/
- ❏ Only UTF-8 character encoding is supported.

XML Reference

ePOS-Print XML is a POS printer command system that defines the major features of the ESC/POS command system using XML.

XML Schemas

The ePOS-Print XML syntax is defined by W3C XML Schemas.

XML schemas help applications strictly validate XML documents using the XML API of the operating environment. In addition, application developers can efficiently create XML documents using the XML document editing support function of the integrated development environment.

File name : epos-print-x.x.x.xsd

Namespace

The ePOS-Print XML namespaces and namespace identifiers used in this document are shown as follows:

Identifier	Namespace
(Default)	http://www.epson-pos.com/schemas/2011/03/epos-print
tns	http://www.epson-pos.com/schemas/2011/03/epos-print
xs	http://www.w3.org/2001/XMLSchema

Command Type

The installed functions vary depending on the model. For details, refer to Printer-specific Support Information (p.135).

Item	Description
Common	Alignment, Rotation, Line Spacing, Page mode
Character	ANK
Character style	Font, Smoothing, Double-width, Double-height , Horizontal scale, Vertical scale, White/Black Reverse, Underline, Emphasized Color, Print position
Paper feed	By Unit, By Line
Raster image	Mono, Multiple-tone
NV logo	Mono, Multiple-tone
Barcode	UPC-A, UPC-E, EAN13(JAN13), EAN8(JAN13), CODE39, ITF,CODABAR(NW-7), CODE93, CODE128, GS1-128, GS1 DataBar
2D-Code	PDF417, QR Code, MaxiCode, GS1 DataBar, Aztec Code, DataMatrix
Line	6 types
Paper cut	No Feed, Feed Cut, Cut Reservation
Drawer Kick-out	Connector, ON Time
Buzzer	7 or 10 Pattern, Repeat
Layout	Paper layout setting
Command	ESC/POS insertion
Response	Print result, Error code, Status
Recovery from an error	Recovery from errors that can be recovered from, Buffer clear
Reset	Printer reset

Provided Article

Package

File name	Description
ePOS-Print_Sample_XML_Vx.x.xE.zip	This is a sample program file.
ePOS-Print_XML_um_en_revx.pdf	This Document.

Manual

❏ ePOS-Print XML User's Manual (This Document)
❏ Each TM printer Technical Reference Guide

Sample Program

ePOS-Print_Sample_XML_Vx.x.xE.zip

Contains the following:

❏ epos-print-x.x.x.wsdl (ePOS-Print XML Print Service)
❏ epos-print-x.x.x.xsd (ePOS-Print XML schemas)
❏ Sample program (HTML5/ Java/ Windows/ Silverlight/ Flash/Android/ iOS/ Windows CE)
❏ editor/index.html (ePOS-Print Editor

Download

❏ For customers in North America, go to the following web site:
http://www.epson.com/support/

❏ For customers in other countries, go to the following web site:
https://download.epson-biz.com/?service=pos

Sample Program

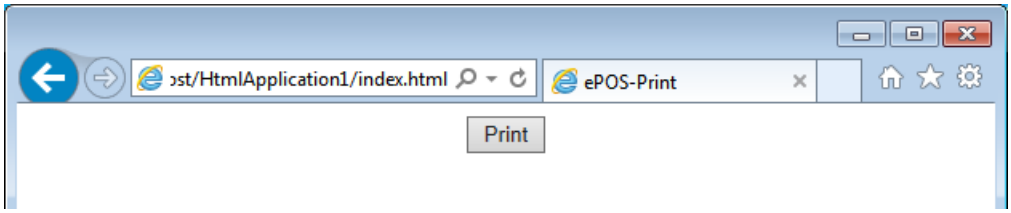
This chapter describes the environment settings for using ePOS-Print and how to use the sample program for printing print data that is created with XML Reference from a printer by using XML Print Service.

In this chapter, descriptions are made mainly based on a HTML5 environment. For an environment other than the above, read such descriptions in ways that suit the relevant environment.

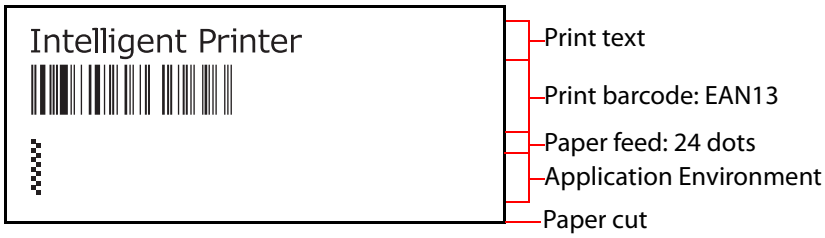
Overview

Sample Program Overview

The following screen appears when the sample program starts. Click the [Print] button to execute.



Sample program execution result



A response message from ePOS-Print supported TM printer

Environment

This section describes the following system: the device's HTML 5-supported browser accesses the sample program uploaded to Web server and then printing is performed. For use in other environments, see "Environment Settings in Other Execution Environments" on page 29.

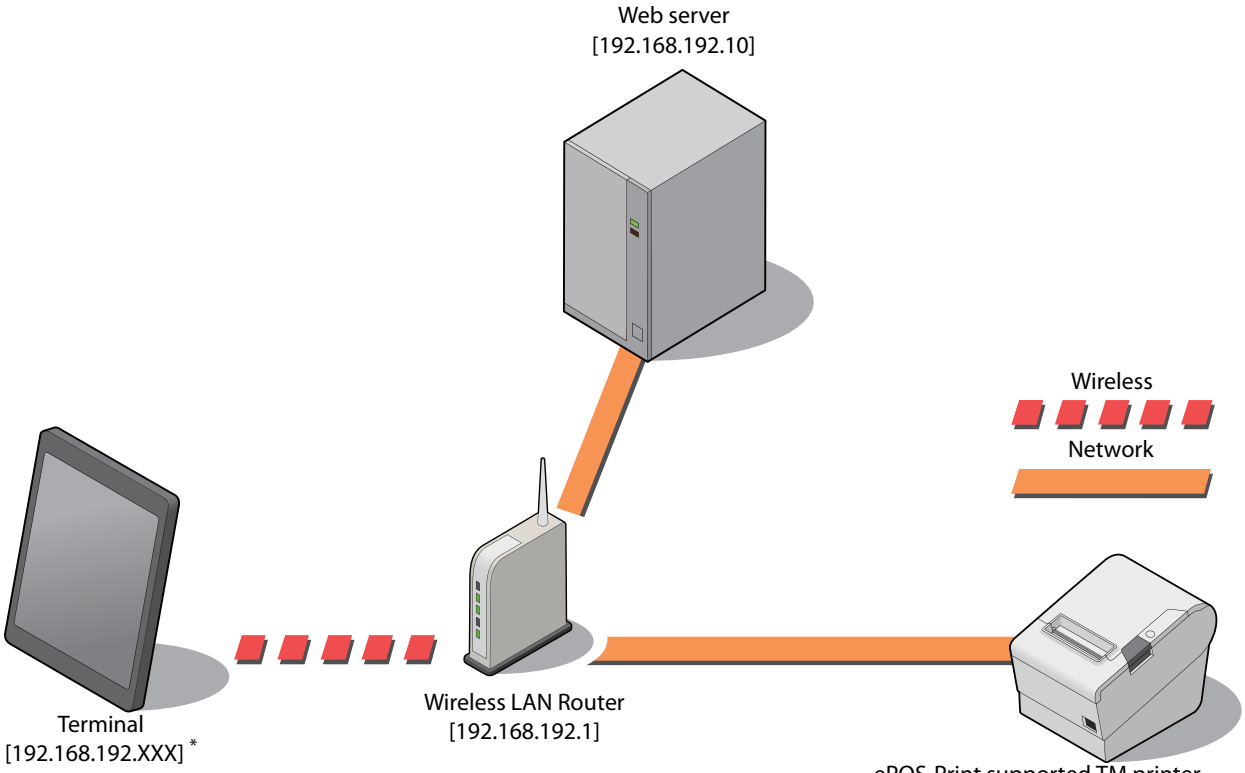
The following environments are provided for the sample program:

Environment	File Name
HTML5-supported Web browser	HtmlApplication1.zip
Java	JavaProject1.zip
Windows (Visual Basic .NET)	WindowsApplication1.zip
Silverlight	SilverlightApplication1.zip, crossdomain.zip
Flash	FlexProject1.zip, crossdomain.zip
Android	AndroidProject1.zip
iOS	iOSDeviceProject1.zip
Windows CE	SmartDeviceProject1.zip
Windows Store Apps	App1.zip

Operating Environment

The system configuration diagram for the sample programs is as below.

> The figure below also describes an example of IP address settings as network settings.



*: When DHCP is used for the terminal

- ❏ Web server
  (Used for HTML5, Silverlight, and Flash sample programs.)
- ❏ Wireless LAN Router
- ❏ ePOS-Print supported TM printer (1 set)
- ❏ Terminal with an HTML5-supported Web browser

Environment Settings

A flow for configuring the environment settings for the sample program is shown as follows:

1. Router Settings

Configure the settings such as SSID, IP address, DHCP, and allocated IP address. For details, refer to the manual for the device you are using.

2. Network Setting of ePOS-Print Supported printer

Configure the network settings such as the IP address of the TM printer. Configuration is done from a Web browser. For details, refer to the Technical Reference Guide for the printer.

3. Network settings for the printer to be controlled

Configure the network settings such as the IP address of the printer to be controlled if the network printer is controlled from the ePOS-Print Supported Printer.
Configure these settings by using the network setting utility. For details, refer to the detailed instruction manual for the printer (these settings are not required in this sample program).

4. Terminal settings

Configure the wireless LAN (Wi-Fi) settings of the terminal to match the router settings so as to enable network connection. For details, refer to the manual for the device you are using.

5. ePOS-Print Settings (p.26)

Configure the ePOS-Print for the TM printer with the ePOS-Print available.
Configuration is done from a Web browser.

6. Editing the Sample Program (p.28)

Write the IP address of ePOS-Print supported TM printer in the source code of the sample program using an editor program.

7. Registering the Sample Program (p.28)

Make registration using a Web browser.
(Required for HTML5, Silverlight, and Flash sample programs.)

ePOS-Print Settings

ePOS-Print settings must be enabled to control printers via ePOS-Print XML.
The setting method varies depending on the printer model.

> ePOS-Print settings are unnecessary for TM-DT and TM-i series devices.

TM-T88VI

Make the settings using TM-T88VI Utility.
Refer to TM-T88VI Utility User's Manual for more information.

TM-H6000V

Make the settings using TM-H6000V Utility.
Refer to TM-H6000V Utility User's Manual for more information.

Other TM Printers

Follow the procedure below to make the settings.

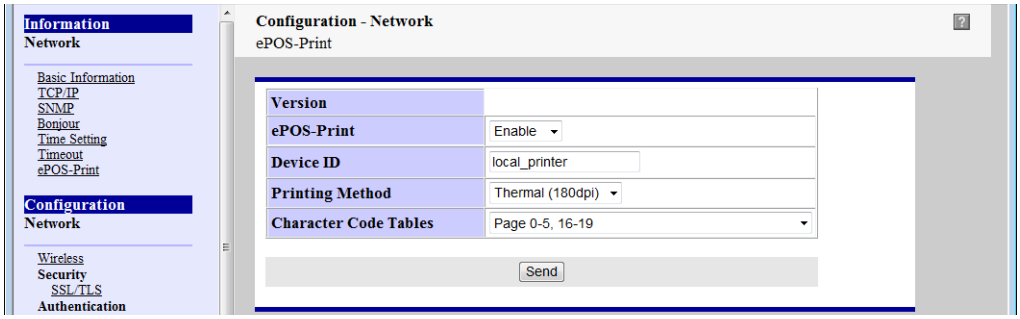
> - Configure the settings via the network. USB connection cannot be used for setting.
> - ePOS-Print settings are enabled by default for the following TM printers.
> * TM-m10
> * TM-m30

1 Connect the TM printer to the network.

2 Start a Web browser and access the following URL.
http://[Printer IP address]/

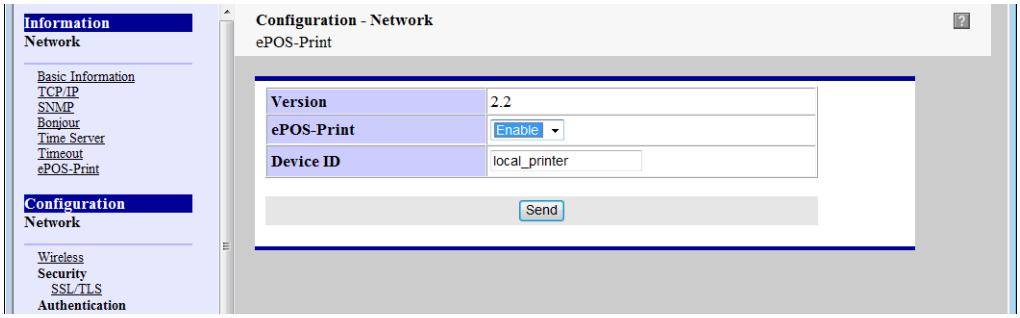
3 Click **ePOS-Print**, then make the settings as described below.

❏ TM printer equipped with UB-E04 or UB-R04



Item	Setting
ePOS-Print	Set to **Enable**. (Default: Disabled)
Device ID	Align with the system settings. (Default: local_printer)
Printing Method	Set in line with the connected TM printer. (For details, see "Printer-specific Support Information" (p.135)).
Character Code Table	Align with the connected TM printer and set the TM printer's code page. (For details, see "Printer-specific Support Information" (p.135) "ePOS-Print Settings").

❏ For mobile printer (Wireless LAN Model)



Item	Setting
ePOS-Print	Set to **Enable**. (Default: Disabled)
Device ID	Align with the system settings. (Default: local_printer)

4 Click [Send].

5 Turn the TM printer's power off and on again.

Editing the Sample Program

Write the IP address of ePOS-Print supported TM printer in the sample program. Edit the program as follows:

1. Expand HtmlApplication1.zip.
2. Open index.html using an editor program.
3. Change the source code portion "// URL of ePOS-Print supported TM printer" in the source file to the IP address of ePOS-Print supported TM printer and the save the source file.

```
// URL of ePOS-Print supported TM printer
var address = 'http://192.168.192.168/cgi-bin/epos/
service.cgi?devid=local_printer&timeout=10000
```

Registering the Sample Program

Register the sample program into the Web server.

Printers equipped with Web server functionality can be used as Web servers. For details, refer to the Technical Reference Guide of the printer.

Register as follows:

1. Start the Web server.
2. Copy the sample program into the following folder:

   Example: Web server configured by using IIS
   System drive:\ Inetpub\wwwroot

Copy the sample program as a user with administrator authority.

Environment Settings in Other Execution Environments

This section describes the setting operation in a development environment up to sample program execution.

HTML5 (To Build a Web Server on Windows/Linux)

Item	Description
Development environment (example)	Microsoft Visual Studio 2010
Required item	IIS (Internet Information Services) or Apache
Sample program file name	HtmlApplication1.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

1. Install IIS.
2. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
3. Extract the sample program and copy the extracted sample program files into the root folder of IIS.
   System drive : **\Inetpub\wwwroot**
4. Open the sample program html file using Visual Studio.

Java

Item	Description
Development environment (example)	Eclipse
Required item	Java SE Development Kit 6
Sample program file name	JavaProject1.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

1. Obtain Java SE 6 and install that program.
2. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
3. Uncompress the sample program into any folder.
4. Import the sample program using Eclipse.

Windows (Visual Basic .NET)

Item	Description
Development environment (example)	Microsoft Visual Studio 2010
Required item	-
Sample program file name	WindowsApplication1.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

1. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
2. Uncompress the sample program into any folder.
3. Open the sample program solution file using Visual Studio.

Silverlight

Item	Description
Development environment (example)	Microsoft Visual Studio 2010
Required item	Microsoft Silverlight 4 Tools for Visual Studio 2010
Sample program file name	SilverlightApplication1.zip, crossdomain.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

When using by registering the Web server of TM intelligent printer, it is necessary to register cross domain policy file (crossdomain.zip). For detail information on registration method, refer to Technical Reference Guide for each printer.

1. Download Microsoft Silverlight 4 Tools for Visual Studio 2010(Silverlight4_Tools.exe) and install that program.
2. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
3. Uncompress the sample program into any folder.
4. Open the sample program solution file using Visual Studio.

Flash

Item	Description
Development environment	Flash Builder 4.5 or later
Required item	Flash Builder 4.5 or later
Sample program file name	FlexProject1.zip, crossdomain.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

When using by registering the Web server of TM intelligent printer, it is necessary to register cross domain policy file (crossdomain.zip). For detail information on registration method, refer to Technical Reference Guide for each printer.

1. Download Adobe Flash Builder from Flash Platform.
2. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
3. Uncompress the sample program into any folder.
4. Start Adobe Flash Builder and read the sample program project.

Android

Item	Description
Development environment	Eclipse
Required item	• Android SDK 1.5 • Java SE Development Kit 6 • ADT (Android Development Tools) Plug-in for Eclipse
Sample program file name	AndroidProject1.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

1. Obtain Android SDK and expand it into any folder.
2. Download Java SE Development Kit 6 and install that program.
3. Start Android SDK Manager and install the Android 1.5(API3) package.
4. Start Android AVD Manager and create [Android Virtual Device].
See "Creating Android Virtual Device" on page 34.
5. Install ADT Plug-in in Eclipse.
See "Installing ADT Plug-in" on page 35
6. Change the settings of Eclipse.
See "Changing the settings of Eclipse" on page 35
7. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
8. Uncompress the sample program into any folder.
9. Import the sample program using Eclipse.

Creating Android Virtual Device

1. Start Eclipse.
2. Select as [Windows]-[Android SDK and AVD Manager].
3. The "Android SDK and AVD Manager" screen appears. Select the [New] button.
4. On [Create new Android Virtual Device], type the name. Alternatively, select the device to use and create a new entry.

Installing ADT Plug-in

1. Start Eclipse.
2. From the menu items, select as [Help]-[Install New Software].
3. The "Install" screen appears. Click the [Add] button.
4. Enter values in the [Name] and [Location] fields and click the [OK] button.

Item	Description
Name	Enter any name.
Location	Enter [https://dl-ssl.google.com/android/eclipse/].

5. Return to the "Install" screen. Tick [Developer Tools] and click the [Next] button.
6. When the installation process finishes, restart Eclipse.

Changing the settings of Eclipse

1. Start Eclipse.
2. Select as [Windows]-[Configuration].
3. The "Setting" screen appears. Select [Android].
   Although a warning dialog box appears, telling you that a path to Android SDK has not been set, there is no problem.
4. Click the [Browse] button.
5. Select the [Android - Android SDK] directory and click the [OK] button.

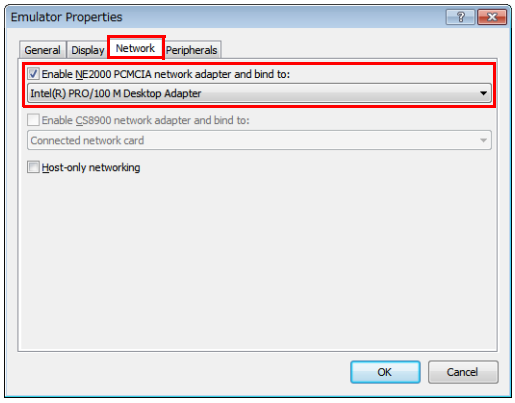
Windows CE

Item	Description
Development environment	Microsoft Visual Studio 2008 SP1
Required item	• Windows Embedded Compact 7 • Virtual PC 2007
Sample program file name	SmartDeviceProject1.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

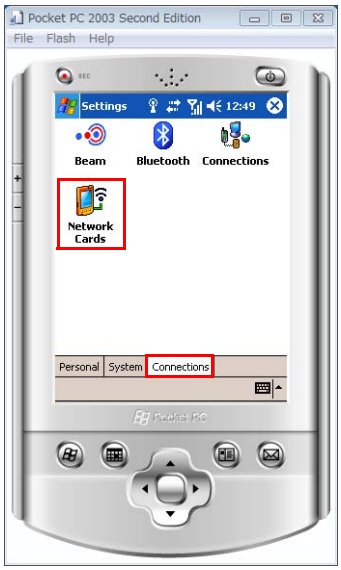
1. Install Visual Studio 2008 SP1.
2. Download Windows Embedded Compact 7 and install that program.
3. Install Virtual PC 2007.
4. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
5. Uncompress the sample program into any folder.
6. Open the sample program solution file using Visual Studio.
7. Execute the sample program using Visual Studio.
8. The Device Emulator starts. In the Device Emulator, select as [File]-[Configure...]-[Network].

9 The "Emulator Properties" dialog box appears. Select [Network].
Tick "Enable NE2000 PCMCIA network adapter and bind to:" and select the computer's network card. Click the [OK] button.

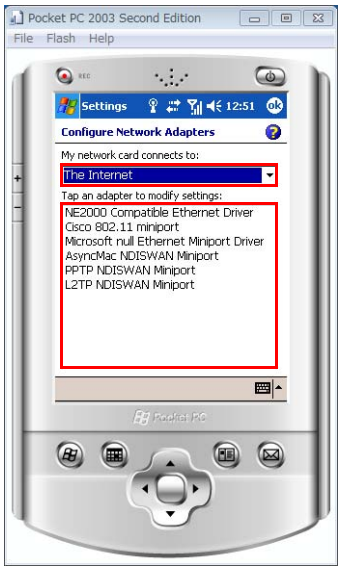


10 In the Device Emulator, select as [Start]-[Settings].

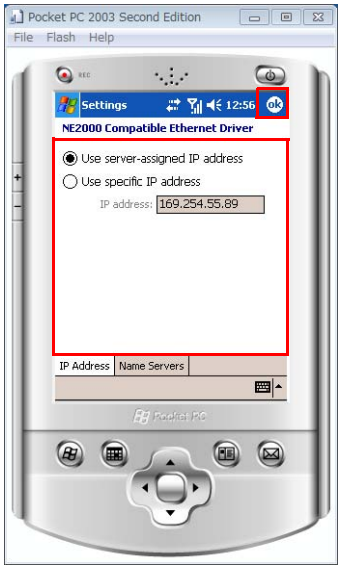
11 In the Device Emulator, select as [Settings]-[Connections]-[Network Cards].



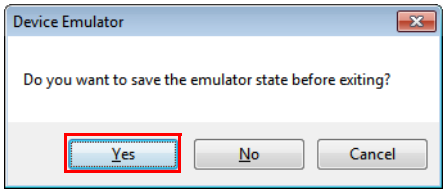
12 In the Device Emulator, select [The Internet] and then select the same network card as that of your computer.



13 Set the IP address and click [OK] at the top right of the screen.



14 A confirmation dialog box appears. Click [Yes].



15 Restart the Device Emulator.

iOS

Item	Description
OS	Mac OS X 10.6.8
Development environment	Apple Xcode 3.2.6
SDK	iOS SDK 4.3
Sample program file name	iOSDeviceProject1.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.
Execution	The sample program can be checked using iOS Simulator.

Environment Setting Procedure

1. Expand iOSDeviceProject1.zip.
2. Start XCode and open the [iOSDeviceProject1.xcodeproj] project file.
3. When the project is opened, the project settings and source files will be displayed.
4. From the options displayed when [Set Active Executable] is selected, select an iPhone or iPad file.

Windows Store Apps

Item	Description
OS	Microsoft Visual Studio 2012
Required item	Windows 8
Sample program file name	App1.zip
Source editing	Edit the IP address of ePOS-Print supported TM printer to suit the network environment.

Environment Setting Procedure

1. Configure your computer and ePOS-Print supported TM printer so that they can connect to the network.
2. Uncompress the sample program into any folder.
3. Open the sample program solution file using Visual Studio.

Programming Guide

This chapter describes how to write programs in the application development using ePOS-Print.

How to Use XML Schemas

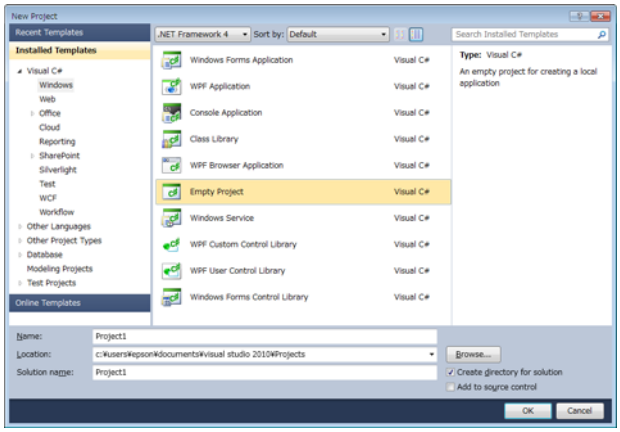
The XML document editing support function in the integrated development environment helps efficiently create XML documents and validate XML documents.

This section describes specific procedures using Visual Studio (p. 41) and Eclipse (p. 44) as examples.

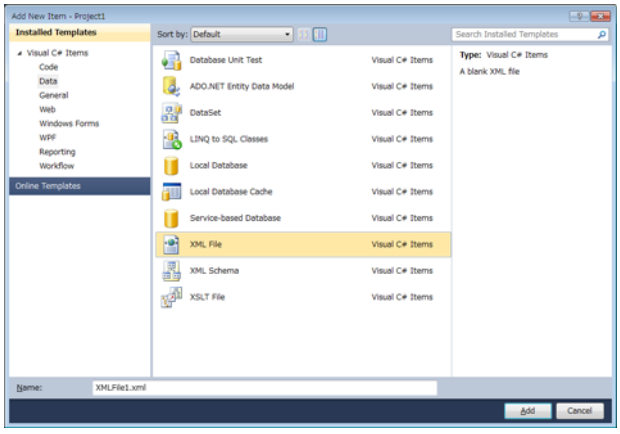
Visual Studio

Setting Procedure

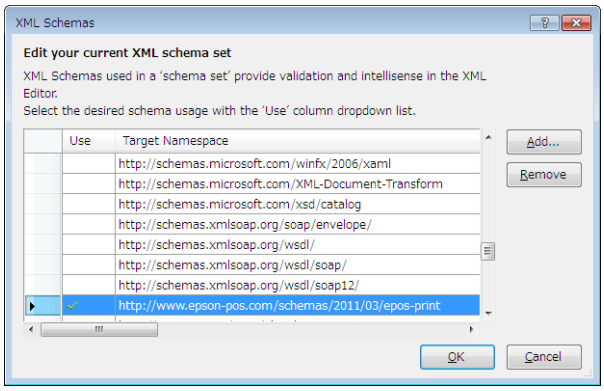
1 Create a new project.
[File]-[New]-[Project...]



2 Add an XML file to the created project.
[Project]-[Add New Item...]



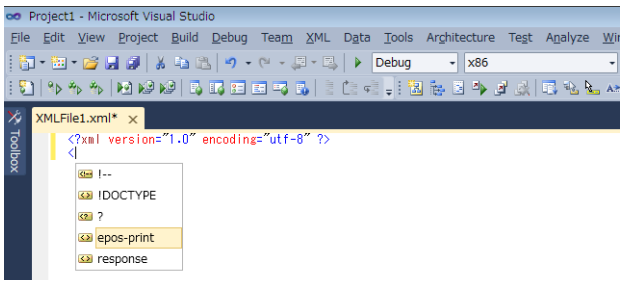
3 Set the XML schema "epos-print-x.x.x.xsd" to the XML file.
[XML]-[Schemas...]-[Add...]



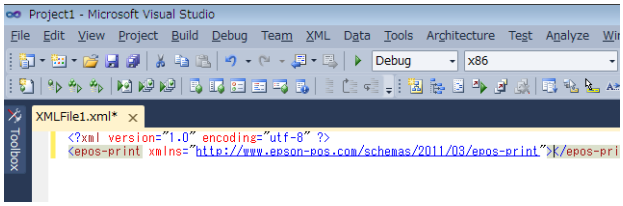
Editing Example

For details on elements, refer to XML Reference (p.64).

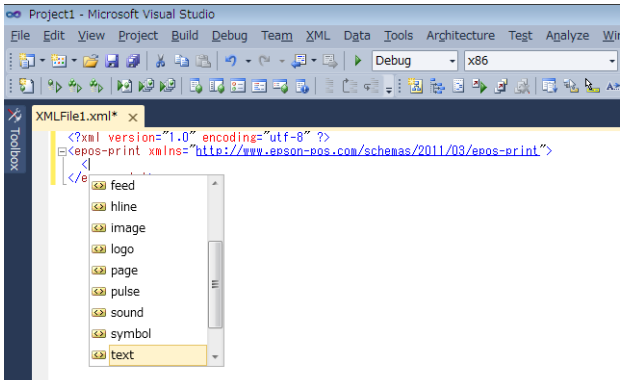
1 Enter the character "<" in the XML file. Then, root element candidates appear.



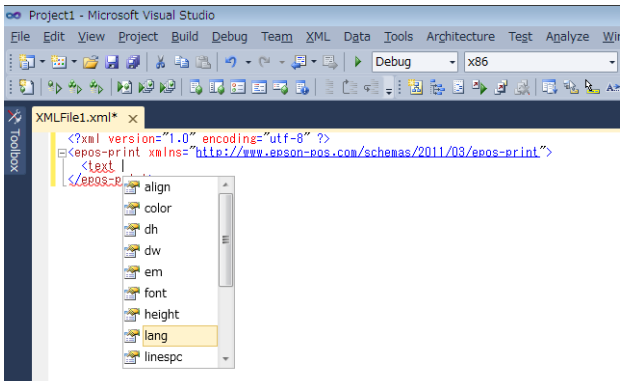
2 Select "epos-print" from the candidates and enter the character ">". Then, the epos-print root element is added.



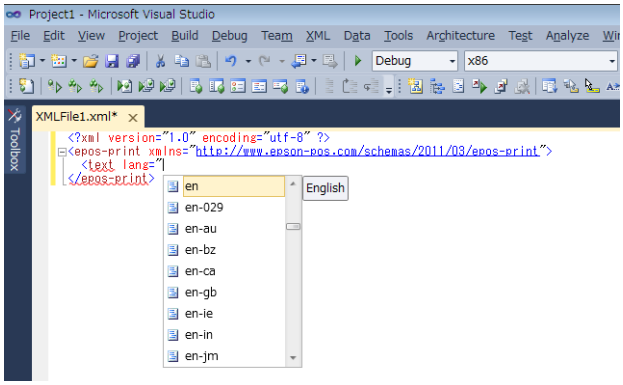
3 Start a new line and enter the character "<". Then, element candidates appear.



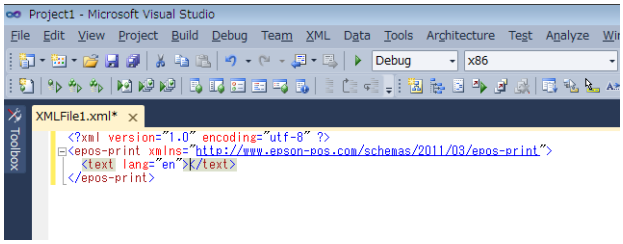
4 Select "text" from the candidates and enter an empty space. Then, attribute candidates appear.



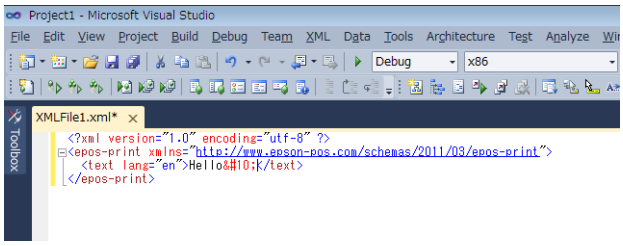
5 Select "lang" from the candidates. Then, attribute value candidates appear.



6 Select "en" from the candidates and enter the character ">". Then, the text element is added.



7 Enter a character string to print for the content of the text element.



Eclipse

Setting Procedure

Create an XML file and set the location of the schema using URL as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<epos-print xmlns:xsi=”http://www.w3.org/2001/XMLschema-instance”
xsi:schemaLocation="http://www.epson-pos.com/schemas/2011/03/epos-print epos-print-x.x.x.xsd"
xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">

<text lang='en'>Hello&#10;</text>

</epos-print>
```

For details on elements, refer to XML Reference (p.64).

Executing Print Service

In this chapter, descriptions are made mainly based on a HTML5 environment. For an environment other than the above, read such descriptions in ways that suit the relevant environment.

Printing Mode of the TM Printer

The TM printer has two printing modes: standard mode and page mode.

Standard mode

In standard mode, characters are printed line by line. The line feed space is adjusted based on the font size and the height of images, barcodes, etc. This mode is suitable for the type of printing such as printing receipts that requires the paper length to change according to the print space.

Page mode

In page mode, you set a print area, lay out data in it, and print the data in a batch operation. Characters, images, and barcodes are laid out in the print positions (coordinates).

Programming Flow

For the ePOS-Print XML, programming is performed based on the following work flow:

1. Print Document Creation (p 46)
   - ❏ To create a text print document: (p 47)
   - ❏ To create a graphic print document: (p 48)
   - ❏ To create a page mode print document: (p 49)

2. Transmission of Print Document (p 50)

3. Reception of Print Result (p 53)

To ensure successful print operation, write a program in such a way that data is sent after checking the printer status. For the above procedure, refer to Checking the Printer Status (p.56).

Print Document Creation

Create a print document using elements in the epos-print root element. For details on elements, refer to XML Reference (p.64).

Refer to the following program for print document creation.

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" />
<title>TITLE</title>
<script type="text/javascript">
   function createDocument() {
      //Start print document creation.
      var request = '<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">';

      //Create a print document
      request += '<text lang="en" smooth="true"/>';
      request += '<text font="font_a"/>';
      request += '<text width="3" height="3">Hello, World!&#10;</text>';
      request += '<cut type="feed"/>';

      //End print document creation.
      request += '</epos-print>';

   }
</script>
</head>
<body>
</body>
</html>
```

With the TM-i Series, the maximum size of printing data you can send at a time is indicated in the table below. If you wish to send larger amounts of data, split it into smaller parts before sending.

These values may change depending on the TM-i firmware version and the printing speed of the printer.

TM-i Firmware Version	Print speed	
	300 mm/s	200 mm/s
Ver.4.0 or earlier	200 KB	133 KB
Ver.4.1	400 KB	267 KB
Ver.4.3 or later	4 MB	2.67 MB

For information about the printing speed, see the Technical Reference Guide for each TM printer.

To create a text print document:

Create a text print document using the text element in the epos-print root element. Configure the settings for the text to print using the attributes of the text element.
Refer to the following program for print document creation.

For the string "Hello World!", to create a print document based on the following settings:

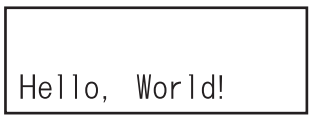
❏ Font: FontA

❏ Scale: x 4 (horizontal) and x 4 (vertical)

❏ Style: Bold

```
<script type="text/javascript">
   function createDocument() {
      //Start print document creation.
      var request = '<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">';

      //Create a print document
      //<Configure the print character settings>
      request += '<text lang="en"/>';
      request += '<text smooth="true"/>';
      request += '<text font="font_a"/>';
      request += '<text width="4" height="4"/>';
      request += '<text em="true"/>';

      //<Specify the character string to print>
      request += '<text>Hello, World!&#10;</text>';

      //<Specify the feed cut>
      request += '<cut type="feed"/>';

      //End print document creation.
      request += '</epos-print>';

   }
</script>
```

Print image



To create a graphic print document:

Create a graphic print document using the image element in the epos-print root element. Set the image size using an attribute of the image element. For graphics, specify raster graphic bit-image data using a base 64 encoded character string.
Refer to the following program for print document creation.

To create a print document with a checkered flag raster image:

```
<script type="text/javascript">
   function createDocument() {
      //Start print document creation.
      var request = '<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">';

      //Create a print document
      //<Specify the raster image>
      request += '<image width="8" height="48">8PDw8A8PDw/w8PDwDw8PD/Dw8PAPDw8P8PDw8A8PDw/w8PDwDw8PD/Dw8PAPDw8P</image>';

      //<Specify the feed cut>
      request += '<cut type="feed"/>';

      //End print document creation.
      request += '</epos-print>';

   }
</script>
```

- This section describes how to print a raster image. In addition, there is also a method of printing graphics registered in the NV memory of the printer. For details, refer to <logo> (p.80).
- For details on how to create raster images, refer to Encoding Graphic Data (p.235).

Print image

To create a page mode print document:

Create a graphic print document using the image element in the epos-print root element. Set the image size using an attribute of the image element. For graphics, specify raster graphic bit-image data using a base 64 encoded character string.
Refer to the following program for print document creation.

For the string "Hello World!", to create a print document based on the following settings:

- ❏ Page mode print area (in dots) Origin of horizontal axis: 100, origin of vertical axis: 50, width: 200, height: 100
- ❏ Page mode print positions (in dots) Horizontal print position: 0, vertical print position: 42
- ❏ Font: FontA
- ❏ Scale: x 2 (horizontal) and x 2 (vertical)
- ❏ Style: Bold

```
<script type="text/javascript">
   function createDocument() {
      //Start print document creation.
      var request = '<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">';

      //Create a print document
      //<The page mode starts>
      request += '<page>';

      //<Specify the page mode print area>
      request += '<area x="100" y="50" width="200" height="100"/>';

      //<Specify the page mode print position>
      request += '<position x="0" y="42"/>';

      //<Set print text>
      request += '<text lang="en"/>';
      request += '<text smooth="true"/>';
      request += '<text font="font_a"/>';
      request += '<text width="2" height="2"/>';
      request += '<text em="true"/>';

      //<Specify the character string to print>
      request += '<text>Hello,</text>';
      request += '<position x="0" y="96"/>';
      request += '<text>World!</text>';

      //<The page mode ends>
      request += '</page>';

      //<Specify the feed cut>
      request += '<cut type="feed"/>';

      //End print document creation.
      request += '</epos-print>';

   }
</script>
```

Print image

Transmission of Print Document

A print document is sent using an ePOS-Print object.
Create an ePOS-Print object using the constructor and specify the end point address for the printer to be used for printing as well as the print document into the send method to send the document.
For the details about the printer end point address, refer to Printer End Point Address (p.52).
Refer to the following program.

ePOS-Print supported TM printer checks the status of the TM printer used for printing and then start printing operation.

To Call SOAP/HTTP Interface

Refer to the following program.

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" />
<title>TITLE</title>
<script type="text/javascript">
  function sendDocument() {
    //Create a print document
    var request = '<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-
print">';
    request += '<text lang="en" smooth="true"/>';
    request += '<text font="font_a"/>';
    request += '<text width="3" height="3">Hello, World!&#10;</text>';
    request += '<cut type="feed"/>';
    request += '</epos-print>';

    //Create a SOAP envelop
    var soap = '<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">' +
               '<s:Body>' + request + '</s:Body></s:Envelope>';

    //Create an XMLHttpRequest object
    var xhr = new XMLHttpRequest();

    //Set the end point address
    var url = 'http://192.168.192.168/cgi-bin/epos/
              service.cgi?devid=local_printer&timeout=10000';

    //Open an XMLHttpRequest object
    xhr.open('POST', url, true);

    //<Header settings>
    xhr.setRequestHeader('Content-Type', 'text/xml; charset=utf-8');
    xhr.setRequestHeader('If-Modified-Since', 'Thu, 01 Jan 1970 00:00:00 GMT');
    xhr.setRequestHeader('SOAPAction', '""');

    // Send print document
    xhr.send(soap);

  }
</script>
</head>
<body>
</body>
</html>
```

To Call SOAP/HTTP Interface (WSDL supported)

Refer to the following program.

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" />
<title>TITLE</title>
<script type="text/javascript">
   function sendDocument() {
      //Create a print document
      var request = '<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-
print">';
      request += '<text lang="en" smooth="true"/>';
      request += '<text font="font_a"/>';
      request += '<text width="3" height="3">Hello, World!&#10;</text>';
      request += '<cut type="feed"/>';
      request += '</epos-print>';

      //Create a print parameter
      var param = '<parameter xmlns="http://www.epson-pos.com/schemas/2011/03/epos-
print">';
      param += '<devid>local_printer</devid>';
      param += '<timeout>10000</timeout>';
      param += '<printjobid>ABC123</printjobid>';
      param += '</parameter>';

      //Create a SOAP envelop
      var soap = '<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">' +
                 '<s:Header>' + param + '</s:Header><s:Body>' + request +
                 '</s:Body></s:Envelope>';

      //Create an XMLHttpRequest object
      var xhr = new XMLHttpRequest();

      //Set the end point address
      var url = 'http://192.168.192.168/cgi-bin/epos/service.cgi';

      //Open an XMLHttpRequest object
      xhr.open('POST', url, true);

      //<Header settings>
      xhr.setRequestHeader('Content-Type', 'text/xml; charset=utf-8');
      xhr.setRequestHeader('If-Modified-Since', 'Thu, 01 Jan 1970 00:00:00 GMT');
      xhr.setRequestHeader('SOAPAction', '""');

      // Send print document
      xhr.send(soap);

   }
</script>
</head>
<body>
</body>
</html>
```

Printer End Point Address

Specify the printer end point address in the following format:

To Call SOAP/HTTP Interface (p.11)

http://[IP address]/cgi-bin/epos/service.cgi?devid=[device ID]&timeout=[timeout time]

To Call SOAP/HTTP Interface (WSDL supported) (p.11)

http://[IP address]/cgi-bin/epos/service.cgi

Items to specify	Description
IP address	Specify either the IP address or the domain name of ePOS-Print supported TM printer.
Device ID	Specify the Device ID registered using the EPSON TMNet WebConfig(EpsonNet Config) of ePOS-Print supported TM printer
Timeout period	Specifies the time to abort the process in milliseconds. The maximum value is 300 seconds (300000). The timeout parameter is optional; when it is omitted, 60 seconds (60000) is set. When the timeout period elapses, the print job is canceled; the data already interpreted by the printer before the start of the print abort process is printed.

For SOAP/HTTP Interface (WSDL supported), the device ID and timeout time are specified in the SOAP header.

Reception of Print Result

Set a callback function using the response root element (p. 68) to receive print results.
The following information is obtained:

- ❏ Print result
- ❏ Error code
- ❏ Printer status
- ❏ Printer's battery status

The printer status can be obtained when communication with the printer is possible.

Refer to the following program. For the details about how to program a callback function in detail, refer to Error handling (p.55).

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" />
<title>TITLE</title>
<script type="text/javascript">
   function sendDocument() {
      //Create a print document
      var request = '<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-
print">';
      request += '<text lang="en" smooth="true"/>';
      request += '<text font="font_a"/>';
      request += '<text width="3" height="3">Hello, World!&#10;</text>';
      request += '<cut type="feed"/>';
      request += '</epos-print>';

      //Create a SOAP envelop
      var soap = '<?xml version="1.0" encoding="utf-8"?>' +
                 '<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
                 <s:Body>' + request + '</s:Body></s:Envelope>';

      //Create an XMLHttpRequest object
      var xhr = new XMLHttpRequest();

      //Set the end point address
      var url = 'http://192.168.192.168/cgi-bin/epos/service.cgi?devid
              =local_printer&timeout=10000';

      //Open an XMLHttpRequest object
      xhr.open('POST', url, true);

      //<Header settings>
      xhr.setRequestHeader('Content-Type', 'text/xml; charset=utf-8');
      xhr.setRequestHeader('If-Modified-Since', 'Thu, 01 Jan 1970 00:00:00 GMT');
      xhr.setRequestHeader('SOAPAction', '""');
```

```
        //Set a callback function
        xhr.onreadystatechange = function () {
        if (xhr.readyState == 4) {
           if (xhr.status == 200) {

              //Obtain the response root element
              var res = xhr.responseXML;
              var success = res.getElementsByTagName('response')[0].getAttribute('success');

              //When the printing is not successful, display a message
              if (!/^(1|true)$/.test(success)) {
                 alert('A print error occurred');
              }
           }
        }

        // Send print document
        xhr.send(soap);
     }
</script>
</head>
<body>
</body>
</html>
```

Error handling

Refer to the following program for the error handling method by a callback function.

```
// Set a response receipt callback function
xhr.onreadystatechange = function () {
            .
            .
            .
   // Obtain the print result and error code
   var res = xhr.responseXML;
   var msg = 'Print' + (res[0].getAttribute('success') ? 'Success' : 'Failure') + '\nCode:' +
res[0].getAttribute('code') + '\nStatus:\n';

   // Obtain the printer status
   var asb = res[0].getAttribute('status');
   if (asb & 0x00000001) {
      msg += ' No printer response\n';
   }
   if (asb & 0x00000002) {
      msg += ' Print complete\n';
   }
   if (asb & 0x00000004) {
      msg += ' Status of the drawer kick number 3 connector pin = "H"\n';
   }
   if (asb & 0x00000008) {
      msg += ' Offline status\n';
   }
   if (asb & 0x00000020) {
      msg += ' Cover is open\n';
   }
   if (asb & 0x00000040) {
      msg += ' Paper feed switch is feeding paper\n';
   }
   if (asb & 0x00000100) {
      msg += ' Waiting for online recovery\n';
   }
   if (asb & 0x00000200) {
      msg += ' Panel switch is ON\n';
   }
   if (asb & 0x00000400) {
      msg += ' Mechanical error generated\n';
   }
   if (asb & 0x00000800) {
      msg += ' Auto cutter error generated\n';
   }
   if (asb & 0x00002000) {
      msg += ' Unrecoverable error generated\n';
   }
   if (asb & 0x00004000) {
      msg += ' Auto recovery error generated\n';
   }
   if (asb & 0x00020000) {
      msg += ' No paper in the roll paper near end detector\n';
   }
   if (asb & 0x00080000) {
      msg += ' No paper in the roll paper end detector\n';
   }
   if (asb & 0x80000000) {
      msg += ' Stop the spooler\n';
   }

   //Display in the dialog box
   alert(msg);
}
```

Checking the Printer Status

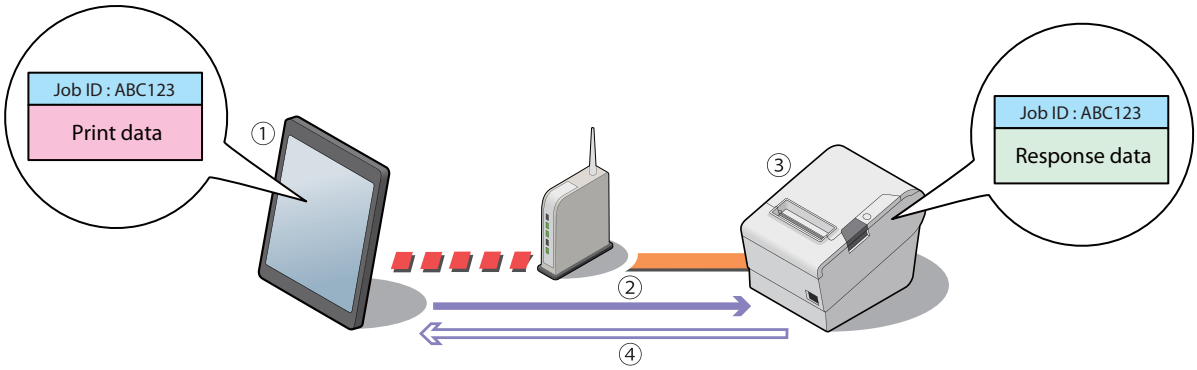
To check the printer status without printing, send empty print data.

Refer to the following program.

```
//Set the end point address
var url = 'http://192.168.192.168/cgi-bin/epos/
service.cgi?devid=local_printer&timeout=10000';

//Create an empty print document to check the printer status
var soap = '<?xml version="1.0" encoding="UTF-8"?>
            <s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/" ><s:Body>
            <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"/>
            </s:Body></s:Envelope>';

//Create an XMLHttpRequest object
var xhr = new XMLHttpRequest();

//<Open an XMLHttpRequest object>
xhr.open('POST', url, true);

//<Header settings>
xhr.setRequestHeader('Content-Type', 'text/xml; charset=utf-8');
xhr.setRequestHeader('If-Modified-Since', 'Thu, 01 Jan 1970 00:00:00 GMT');
xhr.setRequestHeader('SOAPAction', '""');

//Set a response reception callback function for checking
xhr.onreadystatechange = function () {
  if (xhr.readyState == 4){
    if (xhr.status == 200){
      var res = xhr.responseXML;
      var success = res.getElementsByTagName('response')[0].getAttribute('success');
      if (!/^(1|true)$/.test(success)) {
        alert('Success');
      }
    }
  }
};

//Send empty print data
xhr.send(soap);
```

Specifying the Print Job ID from the Application

A response containing the specified print job ID will be returned when sending a request from the application by specifying the print job ID. (ePOS-Print Service Ver.4.1 or later versions)



Programming Example

Request

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <devid>local_printer</devid>
      <timeout>60000</timeout>
      <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <text>Hello, World!&#10;</text>
      <cut />
    </epos-print>
  </s:Body>
</s:Envelope>
```

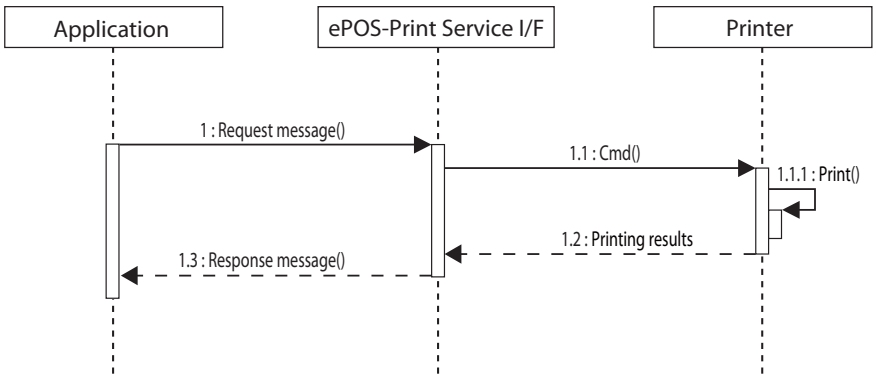
Response

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <devid>local_printer</devid>
      <timeout>60000</timeout>
      <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
              success="true" code="" status="252641302" battery="0" />
  </s:Body>
</s:Envelope>
```

Using the Spooler Function

Refer to Printer Functions (p.14) for more information on printers equipped with spoolers.

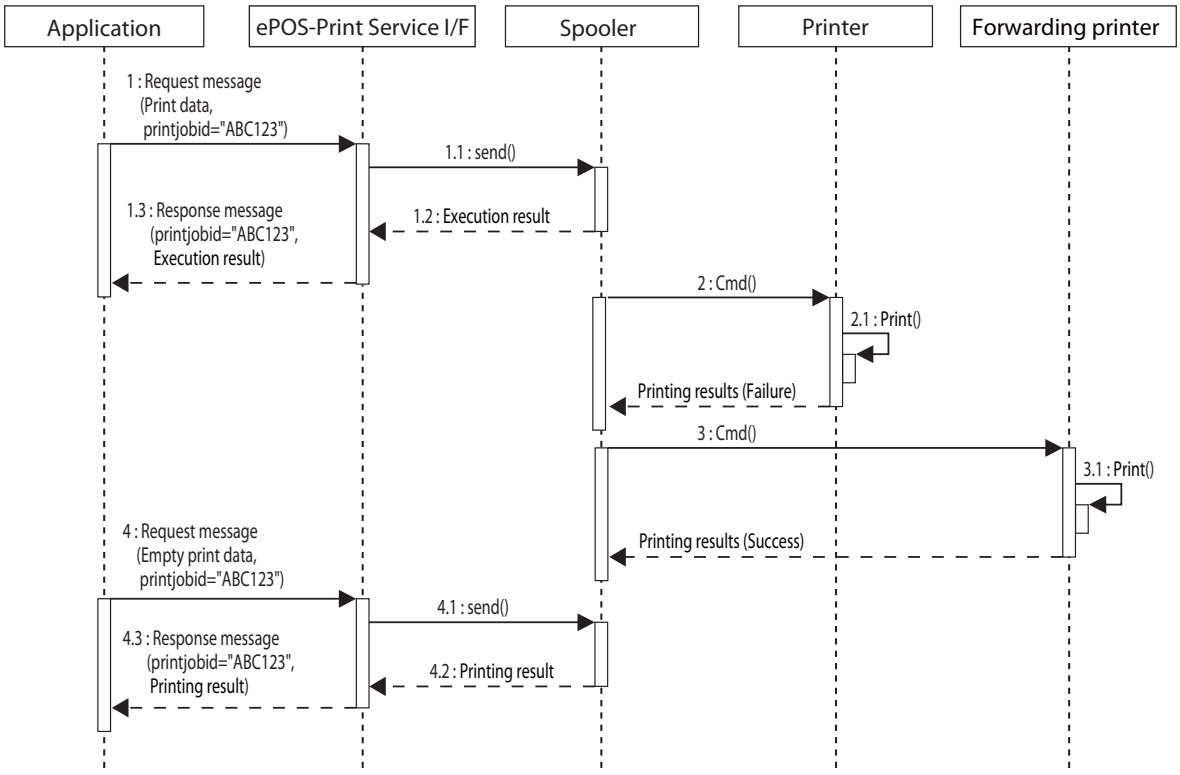
A printing job will be executed immediately and a response will be returned to the application after printing is complete when sending a printing request to ePOS-Print Service I/F from the application when the spooler function is disabled.



The print data job will be added to the queue and a response will be returned to the application without waiting for printing to complete when sending a printing request to ePOS-Print Service I/F from the application when the spooler function is enabled.

Even if the output printer cannot complete the printing task, ePOS-Print Service I/F does not return an error to the application. If print forwarding is enabled, printing from a substitute printer is available.

The application can obtain the print result later by requesting an empty print data with the print job ID specified. Refer to the sequence diagram below.



Programming Example

Printing Process

Request

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <devid>local_printer</devid>
      <timeout>60000</timeout>
      <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <text>Hello, World!&#10;</text>
      <cut />
    </epos-print>
  </s:Body>
</s:Envelope>
```

Response

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <devid>local_printer</devid>
      <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
                        success="true" code="" status="2" battery="0" />
  </s:Body>
</s:Envelope>
```

- When applications do not specify the print job IDs, the ePOS-Print Service I/F assigns print job IDs.
- As the printing process has not been performed at this time, success will be set to "true," code to "" (left empty), status to 0x00000002 or 0x80000000 and battery to "0".

Acquiring the Print Job Status

Request

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" />
  </s:Body>
</s:Envelope>
```

Empty print data is sent when requesting the acquisition of the print job status.
As such, child elements of the <epos-print> element are not specified.

Response

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
      <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
                        success="true" code="" status="252641302" battery="0" />
  </s:Body>
</s:Envelope>
```

How to Use WSDL

This section describes how to generate client codes (proxy class) from WSDL by using the tool provided in the development environment.

This section uses the following cases as examples:

- .NET Framework (p.61)
- Java (p.63)

.NET Framework

Item	Description
Tool	ServiceModel Metadata Utility Tool (Svcutil.exe)
Command	svcutil.exe epos-print-x.x.x.wsdl epos-print-x.x.x.xsd

For details about the Svcutil.exe tool, refer to the following Web site (as of September, 2015):
https://msdn.microsoft.com/en-us/library/aa347733.aspx

Procedure

1 From the command prompt, execute Svcutil.exe and create the following files:

- ❏ ePOSPrint.cs (WCF contract)
- ❏ output.config (application configuration file)

2 Start Visual Studio and create a new project.
(Project example: console application)

3 Add a class file to the project.
(File to be added: ePOSPrint.cs)

4 Add a reference to the project.
(Assembly to be added: System.ServiceModel)

5 Edit the application configuration file.
(File to be edited: App.config)

- ❏ Open output.config and copy the <system.serviceModel> element.
- ❏ Change the end point address in accordance with the printer.

6 Create and execute a program to call XML Print Service.

Editing example (File to be edited: Program.cs)

```
namespace ConsoleApplication1
{
   class Program
   {
      static void Main(string[] args)
      {
         ePOSPrintPortTypeClient client = new ePOSPrintPortTypeClient();

         parameter param = new parameter();
         param.printjobid = "ABC123";
         param.devid = "local_printer";
         param.timeout = "60000";

         eposprint epos = new eposprint();
         text t = new text();
         t.align = align.center;
         t.alignSpecified = true;
         t.dh = true;
         t.dhSpecified = true;
         t.Value = "Hello, World!\n";
         cut c = new cut();
         c.type = cuttype.feed;
         epos.Items = new object[] { t, c };

         response res = client.send(ref param, epos);
         Console.WriteLine(res.success);
         Console.WriteLine(res.code);
         Console.WriteLine(res.status);
         Console.WriteLine(res.battery);
         Console.ReadLine();
      }
   }
}
```

Java

Item	Description
Tool	JAX-WS wsimport tool
Command	> wsimport epos-print-x.x.x.wsdl

For details about the JAX-WS wsimport tool, refer to following Web site (as of September, 2015):
http://docs.oracle.com/javase/8/docs/technotes/tools/windows/wsimport.html

XML Reference

This chapter describes available commands of ePOS-Print XML.

ePOS-Print XML

ePOS-Print XML offers the following commands (elements).
Available elements and parameters vary by printer model. Refer to XML Supported Printers.

XML for Controlling Printer

Route element	Element	Function	Standard mode	Page mode
<epos-print>	<text>	Prints a text	✔	✔
	<feed>	Feeds paper	✔	✔
	<image>	Prints a raster image	✔	✔
	<logo>	Prints an NV logo	✔	✔
	<barcode>	Prints a barcode	✔	✔
	<symbol>	Prints a 2D symbol	✔	✔
	<hline>	Prints a horizontal line	✔	-
	<vline-begin>	Starts to print a vertical line	✔	-
	<vline-end>	Finishes to print a vertical line	✔	-
	<page>	Page mode	✔	-
	<area>	Specifies a print area for the page mode	-	✔
	<direction>	Specifies the printing direction for the page mode	-	✔
	<position>	Specifies a position to start printing for the page mode	-	✔
	<line>	Prints a line in the page mode	-	✔
	<rectangle>	Prints a rectangle in the page mode	-	✔
	<cut>	Cuts paper	✔	-
	<pulse>	Drawer kick-out	✔	-
	<sound>	Sounds a buzzer	✔	-
	<command>	Inserts a command	✔	✔
	<layout>	Paper settings	✔	-
	<recovery>	Recovers from an error	✔	-
	<reset>	Resets the printer	✔	-
<response>		Acquires the execution result.	✔	✔

The table below shows the default for each of the elements.
The default is a factory default configured on the printer.

Element	Attribute	Default value
<text>	lang	"en"
	font	"font_a"
	smooth	"false" / "0"
	dw	"false" / "0"
	dh	"false" / "0"
	width	"1"
	height	"1"
	reverse	"false" / "0"
	ul	"false" / "0"
	em	"false" / "0"
	color	"color_1"
	x	"0"
	y	"21"
	align	"left"
	rotate	"false" / "0"
	linespc	The value differs by printer model. For details, refer to Printer-specific Support Information.
<feed>	linespc	
<image>	color	"color_1"
	align	"left"
	mode	"mono"
<logo>	align	"left"
<barcode>	hri	"none"
	font	"font_a"
	width	"3"
	height	"162"
	align	"left"
	rotate	"false" / "0"

Element	Attribute	Default value
<symbol>	level	The value differs by type of 2D symbol. For details, refer to <symbol>.
	width	
	hight	
	size	
	align	"left"
	rotate	"false" / "0"
<area>	x	"0"
	y	"0"
	width	The value differs by printer model. For details, refer to Printer-specific Support Information..
	height	
<direction>	dir	"left_to_right"
<position>	x	"0"
	y	"21"

XML for Controlling Customer Display

Route element	Element	Function
<epos-display>	<window>	Window settings
	<text>	Displays text
	<cursor>	Displays a cursor
	<blink>	Sets the display to blink
	<brightness>	Sets the brightness of the customer display
	<marquee>	Marquee display settings for text strings
	<clock>	Time display settings
	<clear>	Exits the display of the current window
	<reset>	Resets the display of the customer display
	<command>	Runs an ESC/POS command
<response>		Acquires the execution result.

XML for Controlling Printer

<epos-print>

This is an XML document that is sent from an application to a printer.
It requests the printer to execute the specified function. The <epos-print> provides all elements necessary to control a printer.

Attribute

force

Enters in a forced transmission mode.

In the forced transmission mode, print commands are forcibly transmitted to the printer.

Attribute value	Description
"true" / "1"	Enters in the forced transmission mode
"false" / "0"	Enters in a normal transmission mode

Sample program

❏ Blank print document

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" />
```

❏ Kicks the drawer out while the printer is in an offline status (paper end)

```
<epos-print xmlns= "http://www.epson-pos.com/schemas/2011/03/epos-print"
force="true">
   <pulse />
</epos-print>
```

Supplementary explanation

❏ Use the forced transmission mode while the printer is offline.
Sending it while the printer is online will result in an error.

❏ For TM-H6000V, you need to enable the Command execution during offline settings.
Refer to TM-H6000V Utility User's Manual for details.

❏ The following functions are available in the forced transmission mode:

Function	Element
Opens a cash drawer	<pulse>
Stops a buzzer	<sound>
Recovers from a recoverable error	<recovery>
Reset	<reset>
Sends a real time command	<command>

<response>

This is an XML document that is sent back from a printer to an application.

Attribute

Attribute	Description
success	Print result
code	Error code
status	Status
battery	Battery status

success

Attribute value	Description
"true" / "1"	• Print succeeded • Process succeeded (when the spooler function is enabled)
"false" / "0"	• Failed to print • Process failed (when the spooler function is enabled)

code

Attribute value	Description
"EPTR_AUTOMATICAL"	Automatic recovery error occurred
"EPTR_BATTERY_LOW"	Battery has run out
"EPTR_COVER_OPEN"	Cover open error occurred
"EPTR_CUTTER"	Auto cutter error occurred
"EPTR_MECHANICAL"	Mechanical error occurred
"EPTR_REC_EMPTY"	No paper is left in the roll paper end detector
"EPTR_UNRECOVERABLE"	Unrecoverable error occurred
"SchemaError"	Error exists in the requested document syntax
"DeviceNotFound"	Printer specified by the device ID does not exist
"PrintSystemError"	Error occurred with the printing system
"EX_BADPORT"	An error occurred with the communication port
"EX_TIMEOUT"	Print timeout occurred
"EX_SPOOLER"	Print queue is full
"JobNotFound"	Specified job ID does not exist
"Printing"	Printing in progress

Attribute value	Description
"JobSpooling"	Job is spooling.
"TooManyRequests"	The number of print jobs sent to the printer has exceeded the allowable limit.
"RequestEntityTooLarge"	The size of the print job data exceeds the capacity of the printer.

status

One or more of the following values that represent the printer status are combined using bitwise OR operator, and expressed in decimal notation.

Attribute value	Description
"0x00000001"	No response from TM printer
"0x00000002"	Printing completed
"0x00000004"	• Drawer kick connector pin No.3 status = "H" • Offline status due to the battery level
"0x00000008"	Offline status
"0x00000020"	Cover is open
"0x00000040"	Paper is being fed by the paper feed switch
"0x00000200"	Paper feed switch is held depressed
"0x00000400"	Mechanical error occurred
"0x00000800"	Auto cutter error occurred
"0x00002000"	Unrecoverable error occurred
"0x00004000"	Automatic recovery error occurred
"0x00010000"	Waiting for insertion of a slip sheet for slip printing
"0x00020000"	Roll paper has almost run out
"0x00040000"	Waiting for ejection of a slip sheet for slip printing
"0x00080000"	Roll paper has run out
"0x01000000"	Buzzer is sounding (supported model only)
"0x01000000"	Waiting for labels to be removed (supported model only)
"0x04000000"	No paper is detected with the label peeler sensor (supported model only)
"0x80000000"	Spooler stopped

battery

One or more of the following values that represent the battery status are combined using bitwise OR operator, and expressed in decimal notation.

❏ AC adapter connection status

Attribute value	Description
"0x30XX"	AC adapter is connected
"0x31XX"	AC adapter is not connected

❏ Remaining battery capacity

Attribute value	Description
"0xXX36"	Remaining battery capacity 6
"0xXX35"	Remaining battery capacity 5
"0xXX34"	Remaining battery capacity 4
"0xXX33"	Remaining battery capacity 3
"0xXX32"	Remaining battery capacity 2
"0xXX31"	Remaining battery capacity 1 (almost run out)
"0xXX30"	Remaining battery capacity 0 (run out)

Sample program

❏ When the printer runs out of paper during printing and failed to print

```
<response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
success="false" code="EPTR_REC_EMPTY" status="252641308" battery="0" />
```

❏ When the printer runs out of battery during printing and failed to print

```
<response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
success="false" code="EPTR_BATTERY_LOW" status="251658268" battery="12592" />
```

Supplementary explanation

❏ Timing of the printer response differs by printer status.

Printer status	Description
The power is on	The timing set on the printer
The power is off	The timing when a client timeout occurs
Printing: an error occurs	Before printing
Printing: print succeeded	After printing completed

❏ For a model without battery, 0xXX30 is set to the battery constant.

<text>

This element allows you to specify text string to print and print settings such as character style, print position, line spacing.

Attribute

lang

Attribute value	Description
"en"	English (ANK specification)
"de"	German (ANK specification)
"fr"	French (ANK specification)
"it"	Italian (ANK specification)
"es"	Spanish (ANK specification)
"ja"	Japanese (International character set is also changed to Japanese.)
"ja-jp"	
"ko"	Korean (International character set is also changed to Korean.)
"ko-kr"	
"zh-hans"	Simplified Chinese (International character set is also changed to Chinese.)
"zh-cn"	
"zh-hant"	Traditional Chinese
"zh-tw"	
Language code other than above	English (ANK specification)

Depending on the specified language, some characters are printed as follows:

Language	Characters $(U+0024)	Characters \(U+005C)
Japanese	$	¥
Korean	$	₩
Simplified Chinese	¥	\
Traditional Chinese	$	\

font

Attribute value	Description
"font_a"	Font A
"font_b"	Font B
"font_c"	Font C

Attribute value	Description
"font_d"	Font D
"font_e"	Font E

smooth

Attribute value	Description
"true" / "1"	Enables smoothing.
"false" / "0"	Disables smoothing.

dw

Attribute value	Description
"true" / "1"	Enables double width size.
"false" / "0"	Disables double width size.

dh

Attribute value	Description
"true" / "1"	Enables double height size.
"false" / "0"	Disables double height size.

width

Attribute value	Description
"1" to "8"	Specifies the horizontal scaling factor rate.

height

Attribute value	Description
"1" to "8"	Specifies the vertical scaling factor rate.

reverse

Attribute value	Description
"true" / "1"	Inverts black and white
"false" / "0"	Cancels the black and white inversion

ul

Attribute value	Description
"true" / "1"	Enables the underscore style.
"false" / "0"	Disables the underscore style.

em

Attribute value	Description
"true" / "1"	Enables emphasized style.
"false" / "0"	Disables emphasized style.

color

Attribute value	Description
"none"	No printing
"color_1"	First color
"color_2"	Second color
"color_3"	Third color
"color_4"	Fourth color

x

Attribute value	Description
"0" to "65535"	Specifies the horizontal print start position in units of dots.

y

Attribute value	Description
"0" to "65535"	Specify the vertical print start position in units of dots.

align

Attribute value	Description
"left"	Left alignment
"center"	Center alignment
"right"	Right alignment

rotate

Attribute value	Description
"true" / "1"	Enables text rotation.
"false" / "0"	Disables text rotation.

linespc

Attribute value	Description
"0" to "255"	Specifies paper feed amount per line in units of dots.

Sample program

When printing a text string with the following settings

Item	Value
Language	Japanese
Smoothing	Enabled
Alignment	Center alignment
Font	Font B
Double size	Double height and width size
Underscore	Enabled

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <text lang="ja" />
   <text smooth="true" />
   <text align="center" />
   <text font="font_a" />
   <text dw="true" dh="true" />
   <text ul="true" />
   <text>Hello, World!&#10;</text>
</epos-print>
```

Example of language setting

❏ Korean

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <text lang="ko" />
</epos-print>
```

❏ Simplified Chinese

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <text lang="zh-hans" />
</epos-print>
```

❏ Traditional Chinese

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <text lang="zh-hant" />
</epos-print>
```

Supplementary explanation

❏ To print data other than text after printing text, start a new line or feed paper.

❏ In the page mode, text is printed from the current print position with the base line dot of the characters as the standard. For information on the base line dot, refer to Printer-specific Support Information.

❏ For the character codes available for printing, refer to the Technical Reference Guide of the printer.

❏ Shift JIS code characters can be printed when Japanese is specified as "font".

❏ If "dw" and "width" are set in a single element, the "width" setting is applied.

❏ If "dh" and "length" are set in a single element, the "height" setting is applied.

- ❏ Use "y" in the page mode.
- ❏ The "align" and "rotate" cannot be applied in the page mode.
- ❏ To rotate text string in the page mode, use <direction>.
- ❏ When setting "align" or "rotate", set it at the beginning of a line.
- ❏ When setting "color" for TM-U220 printer, set it at the beginning of a line.
- ❏ The "align" setting specified in this element is also applied to <image>, <logo>, <barcode>, and <symbol>.
- ❏ The "rotate" setting specified in this element is also applied to <barcode> and <symbol>.

<feed>

This element allows you to specify paper feed amount in dots or by the number of lines, line spacing, and paper position after printing a line.
If you do not specify the paper feed amount, paper is advanced one line.

Attribute

unit

Attribute value	Description
"0" to "255"	Specifies paper feed amount in units of dots

line

Attribute value	Description
"0" to "255"	Specifies paper feed amount in lines

linespc

Attribute value	Description
"0" to "255"	Specifies paper feed amount per line in units of dots

pos

Attribute value	Description
"peeling"	Feed the sheet to the peeling position
"cutting"	Feed the sheet to the cut position
"current_tof"	Feed the sheet to the top of the current label
"next_tof"	Feed the sheet to the top of the next label

Sample program

❏ Advances paper three lines

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
  <feed line="3" />
</epos-print>
```

❏ Inserts a line break after printing text string

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
  <text>Hello</text><feed />
  <text>World</text><feed />
</epos-print>
```

❏ Prints labels peeling them one by one from the sheet

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <feed pos="current_tof" />
   <barcode type="code39" hri="below">0001</barcode>
   <feed pos="peeling" />
</epos-print>
```

❏ Prints multiple labels continuously

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <feed pos="current_tof" />
   <barcode type="code39" hri="below">0001</barcode>
   <feed pos="next_tof" />
   <barcode type="code39" hri="below">0002</barcode>
   <feed pos="next_tof" />
   <barcode type="code39" hri="below">0003</barcode>
   <feed pos="next_tof" />
</epos-print>
```

❏ Prints a ticket on a black mark paper

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <feed pos="current_tof" />
   <barcode type="code39" hri="below">0001</barcode>
   <feed pos="cutting" />
   <cut type="no_feed" />
</epos-print>
```

Supplementary explanation

❏ When setting <feed> for label sheet or black mark sheet, set it in the standard mode.

❏ The "pos" setting is ignored in the page mode.

❏ When "30" dots is specified in "linespc", up to 240 lines can be specified in "line".

❏ The line spacing setting is stored for each of the standard mode and the page mode. The "linespc" setting specified in this element affects the linespc setting of <text> and <feed>, which may follow.

❏ If the line spacing for a single line is set smaller than the print character size, paper may be fed for a larger quantity than the set amount to ensure proper printing.

<image>

This element allows you to specify a raster image. (data type xs: base64Binary)
Raster images are composed of pixels arranged in a grid formation. The top left corner is the origin.
Two colors (black and white) uses 1 bit per pixel, and 16 colors uses 4 bits per pixel. The bits are arranged from the highest bit of each byte. Zero padding is needed so that each line of the image is expressed in byte units.

Attribute

- "width" and "height" must be specified.
- If "color" and "mode" are not specified, the values shown below are set.
  - color: color_1
  - mode: mono

width

Attribute value	Description
"0" to "655635"	Specifies the image width in units of dots

height

Attribute value	Description
"0" to "655635"	Specifies the image height in units of dots

color

Attribute value	Description
"none"	No printing
"color_1"	First color
"color_2"	Second color
"color_3"	Third color
"color_4"	Fourth color

align

Attribute value	Description
"left"	Left alignment
"center"	Center alignment
"right"	Right alignment

mode

Attribute value	Description
"mono"	Black and white (2 colors)

Attribute value	Description
"gray16"	Grayscale (16-step)

Sample program

Prints a 8 dots width and 8dots height raster image that is filled with solid color.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <image width="8" height="8">//////////8=</image>
</epos-print>
```

Supplementary explanation

- ❏ Grayscale printing is allowed in the standard mode, not allowed in the page mode.
- ❏ We cannot guarantee the accuracy of reading a barcode or 2D symbol printed in grayscale. Print it in black and white.
- ❏ In order to print a raster image at a high speed, set "align" to "left" and set "width" to a multiple of 8 which does not exceed the sheet width of the printer.
- ❏ In the page mode, set the print position of the image so that the image does not extend beyond the print area.
- ❏ If you set to print a raster image in grayscale, the amount of data of the image increases and may be printed intermittently, which causes white streaks on printout.
- ❏ In the page mode, the bottom left corner of the raster image is aligned with the start position for printing the image. The print start position is not automatically moved.
- ❏ Create a raster image using the ePOS-Print XML generation tool or your application. When using your application, follow the instruction below for 2 colors image or 16 colors image, whichever you want to create.

Attribute value	Description
Black and white	Set the image width to a multiple of 8, or pad the lacked bits with zeros.
16-step grayscale	Set the image width to a multiple of 2, or pad the lacked bits with zeros.

- ❏ The "align" setting is ignored in the page mode.
- ❏ When setting "align" in the standard mode, set it at the beginning of a line.
- ❏ The "align" setting specified in this element is also applied to <text>, <logo>, <barcode>, and <symbol>.

<logo>

This element allows you to print an NV logo registered in the NV memory of the printer.
The NV logo needs to be registered to the printer in advance. For how to register the NV logo, refer to the Technical Reference Guide of the printer.

Attribute

"key1" and "key2" must be specified.

key1

Attribute value	Description
"0" to "255"	Specifies the key code 1 of the NV logo

key2

Attribute value	Description
"0" to "255"	Specifies the key code 2 of the NV logo

align

Attribute value	Description
"left"	Left alignment
"center"	Center alignment
"right"	Right alignment

Sample program

Prints an NV logo whose key code 1 and 2 are stored in 48.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <logo key1="48" key2="48" />
</epos-print>
```

Supplementary explanation

- ❏ Grayscale printing is allowed in the standard mode, not allowed in the page mode.
- ❏ In the page mode, the bottom left corner of the logo is aligned with the start position for printing the logo.
- ❏ The "align" setting is ignored in the page mode.
- ❏ When setting "align" in the standard mode, set it at the beginning of a line.
- ❏ The "align" setting specified in this element is also applied to <text>, <logo>, <barcode>, and <symbol>.

<barcode>

Specifies barcode data as a text string.

Barcode type

Type	Description
UPC-A	If an 11-digit figure is specified, the check digit is automatically appended. If a 12-digit figure is specified, the 12th digit is used as the check digit but verification is not performed.
UPC-E	Specify 0 in the first digit. Specify the manufacturer code in the 2nd to 6th digits. Specify the item code in right justification in the 7th to 11th digits. The number of digits of the item code depends on the manufacturer code. Specify 0 in each unused data. If an 11-digit figure is specified, the check digit is automatically appended. If a 12-digit figure is specified, the 12th digit is used as the check digit but verification is not performed.
EAN13	If an 12-digit figure is specified, the check digit is automatically appended. If a 13-digit figure is specified, the 13th digit is used as the check digit but verification is not performed.
JAN13	
EAN8	If an 7-digit figure is specified, the check digit is automatically appended. If an 8-digit figure is specified, the 8th digit is used as the check digit but verification is not performed.
JAN8	
CODE39	If the first character is * , this character is processed as the start character. Otherwise, the start character is automatically added.
ITF	The start and stop codes are automatically added. Addition and verification of the check digit are not performed.
CODABAR	Specify the start character ((A to D, a to d). Specify the stop character ((A to D, a to d). Addition and verification of the check digit are not performed.
CODE93	The start and stop characters are automatically added. The check digit is automatically calculated and added.

Type	Description
CODE128	Specify the start character (CODE A, CODE B, CODE C). The stop character is automatically added. The check digit is automatically calculated and added. To encode the following characters, specify the corresponding 2-digit code starting with { : FNC1: {1 FNC2: {2 FNC3: {3 FNC4: {4 CODE A: {A CODE B: {B CODE C: {C SHIFT: {S {: {{
GS1-128	The start character, FNC1, check digit, and stop characters are automatically added. To automatically calculate and add the application ID (AI) and the following check digit, specify "*" at the check digit position. The application ID (AI) can be put in parentheses. The parentheses are used as print characters for HRI and not encoded as data. A blank space can be inserted between the application ID (AI) and data. The blank space is used as print characters for HRI and not encoded as data. To encode the following characters, specify the corresponding 2-digit code starting with { : FNC1{1 FNC3{3 ({( ){) *{* {{{
GS1 DataBar Omnidirectional, GS1 DataBar Truncated GS1 DataBar Limited	Specify a 13-digit product ID (GTIN) excluding the application ID (AI) and check digit.
GS1 DataBar Expanded	The application ID (AI) can be put in parentheses. The parentheses are used as print characters for HRI and not encoded as data. To encode the following characters, specify the corresponding 2-digit code starting with { : FNC1: {1 (: {( ): {)

When specifying binary data which cannot be represented as a text string, use the following escape sequences.

Text string	Description
\xnn	Control code
\\	Back slash

Attribute

"type" must be specified.

type

Attribute value	Description
"upc_a"	UPC-A
"upc_e"	UPC-E
"ean13"	EAN13
"jan13"	JAN13
"ean8"	EAN8
"jan8"	JAN8
"code39"	CODE39
"itf"	ITF
"codabar"	CODABAR
"code93"	CODE93
"code128"	CODE128
"gs1_128"	GS1-128
"gs1_databar_omnidirectional"	GS1 DataBar Omnidirectional
"gs1_databar_truncated"	GS1 DataBar Truncated
"gs1_databar_limited"	GS1 DataBar Limited
"gs1_databar_expanded"	GS1 Databar Expanded

hri

Attribute value	Description
"none"	No printing.
"above"	Above the barcode
"below"	Below the barcode
"both"	Both above and below the barcode

font

Attribute value	Description
"font_a"	Font A
"font_b"	Font B
"font_c"	Font C
"font_d"	Font D
"font_e"	Font E

width

Attribute value	Description
"2" to "6"	Specifies the width of a single module in units of dots

height

Attribute value	Description
"1" to "255"	Specifies the height of a single module in units of dots

align

Attribute value	Description
"left"	Left alignment
"center"	Center alignment
"right"	Right alignment

rotate

Attribute value	Description
"true" / "1"	Enables text rotation
"false" / "0"	Disables text rotation

Sample program

Prints multiple types of barcode

```
epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <barcode type="upc_a" width="2" height="64" hri="below">01234567890</barcode>
   <barcode type="upc_e">01234500005</barcode>
   <barcode type="ean13">201234567890</barcode>
   <barcode type="jan13">201234567890</barcode>
   <barcode type="ean8">2012345</barcode>
   <barcode type="jan8">2012345</barcode>
   <barcode type="code39">ABCDE</barcode>
   <barcode type="itf">012345</barcode>
   <barcode type="codabar">A012345A</barcode>
   <barcode type="code93">ABCDE</barcode>
   <barcode type="code128">{Babcde</barcode>
   <barcode type="gs1_128">(01)201234567890*</barcode>
   <barcode type="gs1_databar_omnidirectional">0201234567890</barcode>
   <barcode type="gs1_databar_truncated">0201234567890</barcode>
   <barcode type="gs1_databar_limited">0201234567890</barcode>
   <barcode type="gs1_databar_expanded">(01)2012345678903</barcode>
</epos-print>
```

Supplementary explanation

- ❏ In the page mode, the bottom left corner of the barcode (except HRI) is aligned with the start position for printing the barcode.
- ❏ If your barcode settings are not compliant with the barcode standards, or if the size is larger than the print area, the barcode is not printed with no error returned.
- ❏ When setting "align" or "rotate" in the standard mode, set it at the beginning of a line.
- ❏ The "align" and "rotate" settings are ignored in the page mode.
- ❏ To rotate text string in the page mode, use <direction>.
- ❏ The "align" setting specified in this element is also applied to <text>, <image>, <logo>, and <symbol>.
- ❏ The "rotate" setting specified in this element is also applied to <text> and <symbol>.

<symbol>

This element allows you to specify a 2D symbol using a text string.

2D symbol type

Type	Description
PDF417	Converts the string into UTF-8, processes the escape sequence(s), and encodes the data. The maximum number of code words in the data area is 928, the maximum number of code words in a single stage is 30, and the maximum number of stages is 90.
QR Code Micro QR Code	Converts the string into JIS, processes the escape sequence(s), and encodes the data by choosing the data type from the following: Numeric data: 0 to 9 Alphanumeric data: 0 to 9, A to Z, space, $, %, *, +, -, ., /, : Kanji character: Shift JIS code 8-bit byte data: 0X00 to 0xff
MaxiCode	Converts the string into UTF-8, processes the escape sequence(s), and encodes the data. In Mode 2 or 3, if the first data is [)>\x1e01\x1dyy ("yy" is a 2-digit figure), this is processed as the message header and the second and succeeding data sequence is processed as the primary message. Otherwise, the primary message starts with the first data. Specify the primary message in the following format. • For Mode 2 Postal code: (1- to 9-digit number) GS: (\x1d) ISO country code: (1- to 3-digit number) GS: (\x1d) Service class code (1- to 3-digit number) • For Mode 3 Postal code: (data which can be converted with 1 to 6 code sets A) GS: (\x1d) ISO country code: (1- to 3-digit number) GS: (\x1d) Service class code (1- to 3-digit number)
GS1 DataBar Stacked GS1 DataBar Stacked Omnidirectional	Converts the string into UTF-8, processes the escape sequence(s), and encodes the data. Specify a 13-digit product ID (GTIN) excluding the application ID (AI) and check digit.
GS1 DataBar Expanded Stacked	Converts the string into UTF-8, processes the escape sequence(s), and encodes the data. The application ID (AI) can be put in parentheses. The parentheses are used as print characters for HRI and not encoded as data. To encode the following characters, specify the corresponding 2-digit code starting with { : FNC1: {1 (: {( ): {)

Type	Description
Aztec Code	Converts the string into UTF-8, processes the escape sequence(s), and encodes the data.
DataMatrix	Converts the string into UTF-8, processes the escape sequence(s), and encodes the data.

When specifying binary data which cannot be represented as a text string, use the following escape sequences.

Text string	Description
\xnn	Control code
\\	Back slash

Attribute

"type" must be specified.

type

Attribute value	Type
"pdf417_standard"	Standard PDF417
"pdf417_truncated"	Truncated PDF417
"qrcode_model_1"	QR Code Model 1
"qrcode_model_2"	QR Code Model 2
"qrcode_micro"	Micro QR Code
"maxicode_mode_2"	MaxiCode Mode 2
"maxicode_mode_3"	MaxiCode Mode 3
"maxicode_mode_4"	MaxiCode Mode 4
"maxicode_mode_5"	MaxiCode Mode 5
"maxicode_mode_6"	MaxiCode Mode 6
"gs1_databar_stacked"	GS1 DataBar Stacked
"gs1_databar_stacked_omnidirectional"	GS1 DataBar Stacked Omnidirectional
"gs1_databar_expanded_stacked"	GS1 DataBar Expanded Stacked
"azteccode_fullrange"	Aztec Code Full-Range mode
"azteccode_compact"	Aztec Code Compact mode
"datamatrix_square"	DataMatrix ECC200 Square
"datamatrix_rectangle_8"	DataMatrix ECC200 Rectangle, 8 lines
"datamatrix_rectangle_12"	DataMatrix ECC200 Rectangle, 12 lines

Attribute value	Type
"datamatrix_rectangle_16"	DataMatrix ECC200 Rectangle, 16 lines

level

❏ PDF417

Attribute value	Description
"level_0"	Error correction level 0
"level_1" (default value)	Error correction level 1
"level_2"	Error correction level 2
"level_3"	Error correction level 3
"level_4"	Error correction level 4
"level_5"	Error correction level 5
"level_6"	Error correction level 6
"level_7"	Error correction level 7
"level_8"	Error correction level 8
"default"	Default value (error correction level 1)

❏ QR Code

Attribute value	Description
"level_l"	Error correction level L
"level_m"	Error correction level M
"level_q"	Error correction level Q
"level_h"	Error correction level H
"default"	Default value (error correction level M)

❏ Aztec Code

Attribute value	Description
Integer (5 to 95)	Error correction level
"default"	Default value (error correction level 23)

width

2D symbol type	Valid value	Default value
PDF417	"2" to "8"	"3"
QR Code	"3" to "16"	"3"
MaxiCode	Ignored	

2D symbol type	Valid value	Default value
2D GS1 DataBar	"2" to "8"	"2"
Aztec Code	"2" to "16"	"3"
DataMatrix	"2" to "16"	"3"

height

2D symbol type	Valid value	Default value
PDF417	"2" to "8" (Scaling factor for width)	"3"
QR Code	Ignored	
MaxiCode		
2D GS1 DataBar		
Aztec Code		
DataMatrix		

size

2D symbol type		Default value	Description
PDF417		"0" (auto)	Specifies the number of code words per stage.
QR Code		Ignored	
MaxiCode			
2D GS1 DataBar	Expanded Stacked	"0" (auto)	Specifies the maximum width of the 2D symbol (106 or more).
	Other	Ignored	
Aztec Code		Ignored	
DataMatrix		Ignored	

align

Attribute value	Description
"left"	Left alignment
"center"	Center alignment
"right"	Right alignment

rotate

Attribute value	Description
"true" / "1"	Enables text rotation.

Attribute value	Description
"false" / "0"	Disables text rotation.

Sample program

Prints multiple types of 2D symbols

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <symbol type="pdf417_standard">ABCDE</symbol>
   <symbol type="qrcode_model_2" level="level_q">ABCDE</symbol>
   <symbol type="maxicode_mode_2">908063840\x1d850\x1d001\x1d\x04</symbol>
   <symbol type="gs1_databar_stacked">0201234567890</symbol>
   <symbol type="gs1_databar_stacked_omnidirectional">0201234567890</symbol>
   <symbol type="gs1_databar_expanded_stacked">(01)02012345678903</symbol>
   <symbol type="azteccode_fullrange" level="23">ABCDE</symbol>
   <symbol type="datamatrix_square">ABCDE</symbol>
</epos-print>
```

Supplementary explanation

- ❏ If your 2D symbol settings are not compliant with the 2D symbol standards, or if the size is larger than the print area, the symbol is not printed with no error returned.
- ❏ In the standard mode, a 2D symbol whose height exceeds 831 dots cannot be printed.
- ❏ In the page mode, the bottom left corner of the 2D symbol is aligned with the start position for printing the symbol.
- ❏ Micro QR Code does not support "level_h".
- ❏ Specify the "level" that matches the type of the 2D symbol you specified.
- ❏ Set "default" to "level" if the 2D symbol type is MaxiCode or 2D GS1 DataBar.
- ❏ When setting "align" or "rotate" in the standard mode, set it at the beginning of a line.
- ❏ The "align" and "rotate" settings are ignored in the page mode.
- ❏ To rotate text string in the page mode, use <direction>.
- ❏ The "align" setting specified in this element is also applied to <text>, <image>, <logo>, and <barcode>.
- ❏ The "rotate" setting specified in this element is also applied to <text> and <barcode>.

<hline>

This element allows you to print a horizontal line.

Attribute

- "x1" and "x2" must be specified.
- When "style" is not specified, "thin" is applied.

x1

Attribute value	Description
"0" to "65535"	Specifies the position to start drawing a horizontal ruled line in units of dots.

x2

Attribute value	Description
"0" to "65535"	Specifies the position to finish drawing a horizontal ruled line in units of dots.

style

Attribute value	Description
"thin"	Solid line: Fine
"medium"	Solid line: Middle
"thick"	Solid line: Thick
"thin_double"	Double line: Fine
"medium_double"	Double line: Middle
"thick_double"	Double line: Thick

Sample program

Prints a double line from the 100th dot to the 200th dot, and prints another double line below from the 400th dot to the 500th dot.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <hline x1="100" x2="200" style="thin_double" />
   <hline x1="400" x2="500" style="thin_double" />
</epos-print>
```

Supplementary explanation

This does not work in the page mode.

<vline-begin>

Use this element to start printing a vertical line.

Attribute

- "x" must be specified.
- When "style" is not specified, "thin" is applied.

x

Attribute value	Description
"0" to "65535"	Specifies the position to start drawing a vertical ruled line in units of dots.

style

Attribute value	Description
"thin"	Solid line: Fine
"medium"	Solid line: Middle
"thick"	Solid line: Thick
"thin_double"	Double line: Fine
"medium_double"	Double line: Middle
"thick_double"	Double line: Thick

Sample program

Prints a vertical thin line along each of the 100th dots and the 200th dots from the left edge.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <vline-begin x="100" />
   <vline-begin x="200" />
   <feed unit="100" />
   <vline-end x="100" />
   <vline-end x="200" />
</epos-print>
```

Supplementary explanation

❏ This does not work in the page mode.

❏ Use <line> to draw a vertical line in the page mode.

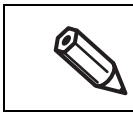
❏ The vertical line continues until stopped by <vline-end>.

❏ Use this element together with <vline-end>.

<vline-end>

Use this element to stop printing a vertical line.

Attribute



- "x" must be specified.
- When "style" is not specified, "thin" is applied.

x

Attribute value	Description
"0" to "65535"	Specifies the position to finish drawing a vertical ruled line in units of dots.

style

Attribute value	Description
"thin"	Solid line: Fine
"medium"	Solid line: Middle
"thick"	Solid line: Thick
"thin_double"	Double line: Fine
"medium_double"	Double line: Middle
"thick_double"	Double line: Thick

Sample program

Prints a vertical thin line along each of the 100th dots and the 200th dots from the left edge.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <vline-begin x="100" />
   <vline-begin x="200" />
   <feed unit="100" />
   <vline-end x="100" />
   <vline-end x="200" />
</epos-print>
```

Supplementary explanation

❏ This API does not work in the page mode.

❏ Use <line> to draw a vertical line in the page mode.

❏ Use <vline-begin> to specify the start position of the vertical line.

❏ Use this method together with <vline-begin>.

<page>

This element allows you to change to the page mode from the standard mode.

Elements of <page>

Element	Description
<text>	Prints a text
<feed>	Paper feed
<image>	Prints a raster image
<logo>	Prints an NV logo
<barcode>	Prints a barcode
<symbol>	Prints a 2D symbol
<area>	Specifies a print area
<direction>	Specifies the printing direction
<position>	Specifies a position to start printing
<line>	Prints a line
<rectangle>	Prints a rectangle
<command>	Inserts a command

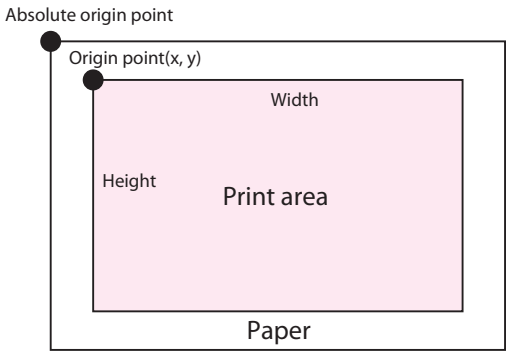
Sample program

Prints a string "ABCDE" in the page mode

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
  <page>
    <text>ABCDE</text>
  </page>
</epos-print>
```

<area>

This element allows you to set a print area by specifying an origin (starting position) relative to the absolute origin, and specifying width and height.
The absolute origin is the top-left dot of the printable area.



Attribute

	The "x", "y", "width" and "height" elements must be specified.

x

Attribute value	Description
"0" to "65535"	Specifies the horizontal origin in units of dots.

y

Attribute value	Description
"0" to "65535"	Specifies the vertical origin in units of dots.

width

Attribute value	Description
"0" to "65535"	Specifies the width in units of dots

height

Attribute value	Description
"0" to "65535"	Specifies the height in units of dots

Sample program

Sets a 200-dots width and 30-dots height print area that starts from x:100 and y:50, and prints a text string "ABCDE".

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
  <page>
    <area x="100" y="50" width="200" height="30" />
    <text>ABCDE</text>
  </page>
</epos-print>
```

Supplementary explanation

- ❏ This does not work in the standard mode.
- ❏ Define the print area in accordance with the contents to print. Any portion of print data outside the print area is not printed.
- ❏ Specify the width and height of the print area in accordance with the print direction setting. If the width and height of the print area do not match the print direction setting, any portion of print data outside the print area will not be printed. Use <direction> to specify the print direction.

<direction>

This element allows you to specify the print direction in the page mode.
Print direction and rotation of the print area can be specified. The starting position of the print area moves in accordance with the rotation.

Attribute

	"dir" must be specified.

dir

Attribute value	Description
"left_to_right"	Prints from left to right (no rotation. The starting position is at the upper left.)
"bottom_to_top"	Prints from bottom to top (Rotate the print area counterclockwise by 90 degrees. The starting position is at the lower left.)
"right_to_left"	Prints from right to left (Rotate the print area by 180 degrees. The starting position is at the lower right.)
"top_to_bottom"	Prints from top to bottom (Rotate the print area clockwise by 90 degrees. The starting position is at the upper right.)

Sample program

Rotates the print area clockwise by 90 degrees and prints a text string "ABCDE".

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
  <page>
    <direction dir="top_to_bottom" />
    <text>ABCDE</text>
  </page>
</epos-print>
```

Supplementary explanation

This does not work in the standard mode.

<position>

This element allows you to specify the print start position (coordinates) within the print area specified by <area> with reference to the starting position of the print area.

Attribute

"x" and "y" must be specified.

x

Attribute value	Description
"0" to "65535"	Specifies the horizontal print start position in units of dots.

y

Attribute value	Description
"0" to "65535"	Specify the vertical print start position in units of dots.

Sample program

Specifies the print start position to 50,30 in the print area specified by <area>, and prints a text string "ABCDE".

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
  <page>
    <area x="100" y="50" width="200" height="100" />
    <position x="50" y="30" />
    <text>ABCDE</text>
  </page>
</epos-print>
```

Supplementary explanation

❏ This does not work in the standard mode.

❏ Define the print start position (coordinates) in accordance with the contents to print.

Print data	Description
Text string	Specify the leftmost position of the baseline for the first character. This can be omitted when printing data with the standard size in left justification. When printing a double-height character, set y to 42 or larger.
Barcode	Specify the lower-left position of the symbol. Specify the height of the barcode in y.
Graphics/logo	Specify the lower-left position of the graphic data. Specify the height of the graphic data in y.

Print data	Description
2D symbol	Specify the upper-left position of the symbol. This can be omitted when printing from the upper-left position.

<line>

This element allows you to draw a line in the page mode.

Attribute

- "x1", "y1", "x2", and "y2" must be specified.
- When "style" is not specified, "thin" is applied.

x1

Attribute value	Description
"0" to "65535"	Specifies the horizontal draw start position in units of dots.

y1

Attribute value	Description
"0" to "65535"	Specifies the vertical draw start position in units of dots.

x2

Attribute value	Description
"0" to "65535"	Specifies the horizontal draw end position in units of dots.

y2

Attribute value	Description
"0" to "65535"	Specifies the vertical draw end position in units of dots.

style

Attribute value	Description
"thin"	Solid line: Fine
"medium"	Solid line: Middle
"thick"	Solid line: Thick
"thin_double"	Double line: Fine
"medium_double"	Double line: Middle
"thick_double"	Double line: Thick

Sample program

Prints a thin line starting from (100,0) and ending at (500,0).

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <page>
      <line x1="100" y1="0" x2="500" y2="0" style="thin" />
   </page>
</epos-print>
```

Supplementary explanation

- ❏ This does not work in the standard mode.
- ❏ A diagonal line cannot be drawn.

<rectangle>

This element allows you to draw a quadrangle in the page mode.

Attribute

- "x1", "y1", "x2", and "y2" must be specified.
- When "style" is not specified, "thin" is applied.

x1

Attribute value	Description
"0" to "65535"	Specifies the horizontal draw start position in units of dots.

y1

Attribute value	Description
"0" to "65535"	Specifies the vertical draw start position in units of dots.

x2

Attribute value	Description
"0" to "65535"	Specifies the horizontal draw end position in units of dots.

y2

Attribute value	Description
"0" to "65535"	Specifies the vertical draw end position in units of dots.

style

Attribute value	Description
"thin"	Solid line: Fine
"medium"	Solid line: Middle
"thick"	Solid line: Thick
"thin_double"	Double line: Fine
"medium_double"	Double line: Middle
"thick_double"	Double line: Thick

Sample program

Prints a quadrangle that starts from (100,0) and ends at (500,200) using a thin double line.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <page>
      <rectangle x1="100" y1="0" x2="500" y2="200" style="thin_double" />
   </page>
</epos-print>
```

Supplementary explanation

- ❏ This does not work in the standard mode.
- ❏ Use <hline>, <vline-begin>, and <vline-end> to draw a quadrangle in the standard mode.

<cut>

This element allows you to cut paper.

Attribute

When "type" is not specified, "feed" is applied.

type

Attribute value	Description
"no_feed"	Cut without feed (cut the sheet without feeding paper)
"feed"	Feed cut (cut the sheet after feeding paper)
"reserve"	Cut reservation (print the following texts and cut the sheet at the cutting position).

Sample program

Feeds paper and then cuts it.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <cut type="feed" />
</epos-print>
```

Supplementary explanation

❏ This does not work in the page mode.

❏ When setting this element, set it at the beginning of a line.

<pulse>

This element allows you to send a signal to the drawer kick connector.

Attribute

If "drawer" and "time" are not specified, the values shown below are set.

- drawer: drawer_1
- time: pulse_100

drawer

Attribute value	Description
"drawer_1"	Drawer kick connector pin No.2
"drawer_2"	Drawer kick connector pin No.5

time

Attribute value	Description
"pulse_100"	100-msec signal
"pulse_200"	200-msec signal
"pulse_300"	300-msec signal
"pulse_400"	400-msec signal
"pulse_500"	500-msec signal

Sample program

Sends a 100 msec pulse signal to pin No.2 of the drawer kick connector.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <pulse drawer="drawer_1" time="pulse_100" />
</epos-print>
```

Supplementary explanation

❏ This does not work in the page mode.

❏ The drawer function cannot be used with the buzzer function.

<sound>

This element allows you to sound buzzer.

Attribute

If "pattern", "repeat" and "cycle" are not specified, the values shown below are set.

- pattern: pattern_a
- repeat: 1
- cycle: 1000

pattern

Attribute value	Description
"none"	Stop
"pattern_a"	Pattern A (optional external buzzer)
"pattern_b"	Pattern B (optional external buzzer)
"pattern_c"	Pattern C (optional external buzzer)
"pattern_d"	Pattern D (optional external buzzer)
"pattern_e"	Pattern E (optional external buzzer)
"error"	Error sound pattern (optional external buzzer)
"paper_end"	Paper empty sound pattern (optional external buzzer)
"pattern_0"	Pattern 0 (built-in buzzer)
"pattern_1"	Pattern 1 (built-in buzzer)
"pattern_2"	Pattern 2 (built-in buzzer)
"pattern_3"	Pattern 3 (built-in buzzer)
"pattern_4"	Pattern 4 (built-in buzzer)
"pattern_5"	Pattern 5 (built-in buzzer)
"pattern_6"	Pattern 6 (built-in buzzer)
"pattern_7"	Pattern 7 (built-in buzzer)
"pattern_8"	Pattern 8 (built-in buzzer)
"pattern_9"	Pattern 9 (built-in buzzer)
"pattern_10"	Pattern 10 (built-in buzzer)

repeat

Attribute value	Description
"0"	Unlimited
"1" to "255"	1 to 255

cycle

Attribute value	Description
"1000" to "25500"	Specifies the buzzer sound cycle in units of milliseconds

Sample program

Sounds the pattern A buzzer three times.

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <sound pattern="pattern_a" repeat="3" />
</epos-print>
```

Supplementary explanation

- ❏ This does not work in the page mode.
- ❏ The buzzer function cannot be used with the drawer function.
- ❏ When "pattern_0" is specified in "pattern", a value that can be set in "repeat" is 1 to 2.
- ❏ When "pattern_0" is specified in "pattern", a value that can be set in "cycle" is 1000 to 6000.
- ❏ You can specify "cycle" only when specifying "pattern_0" to "pattern_10" in "pattern".

<command>

This element allows you to specify ESC/POS commands encoding them in hexadecimal.

Sample program

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <command>41424344450a</command>
</epos-print>
```

Supplementary explanation

- ❏ Refer to the following URL for details of the ESC/POS command.
  https://reference.epson-biz.com/modules/ref_escpos/
- ❏ ePOS-Print Service I/F does not check the commands sent by the <command> XML.
  If the commands interfere with ePOS-Print Service I/F operations, other XML controls may work wrongly or status values may become invalid.
  This XML should be used with a full understanding of ESC/POS commands and the receipt printer specifications.

<layout>

This element allows you to specify the paper settings.
These settings are required when using paper with black mark or die-cut labels.

Attribute

If none of the attributes are specified, the values shown below are set.

- type: receipt
- width: 580
- height: 0
- margin-top: 0
- margin-bottom: 0
- offset-cut: 0
- offset-label: 0

type

Attribute value	Description
receipt	Receipt (without black mark)
receipt_bm	Receipt (with black mark)
label	Label sheet (without black mark)
label_bm	Label sheet (with black mark)

width

Attribute value	Description
"290" to "600"	Specifies the paper width in units of 0.1 mm

height

Paper type	Valid value	Description
Receipt (without black mark)	"0"	No need to specify
Receipt (with black mark)	• "0" (auto) • "284" to "-1550" (manual)	Specifies the distance between the top edges of two consecutive black marks in units of 0.1 mm.
Label sheet (without black mark)		Specifies the distance between the top edges of two consecutive labels in units of 0.1 mm.
Label sheet (with black mark)		Specifies the distance between the bottom edges of two consecutive black marks in units of 0.1 mm.

margin-top

Paper type	Valid value	Description
Receipt (without black mark)	"0"	No need to specify
Receipt (with black mark)	"-150" to "1500"	Specifies the distance from the top edge of a black mark to the next print start position in units of 0.1 mm.
Label sheet (without black mark)	"0" to "1500"	Specifies the distance between the top edge of a label to the next print start position in units of 0.1 mm.
Label sheet (with black mark)	"-15" to "1500"	Specifies the distance between the bottom edge of a black mark to the next print start position in units of 0.1 mm.

margin-bottom

Paper type	Valid value	Description
Receipt (without black mark)	"0"	No need to specify
Receipt (with black mark)	"0"	No need to specify
Label sheet (without black mark)	"-15" to "0"	Specifies the distance between the bottom edge of a label to the bottom of the print area in units of 0.1 mm. (A positive value widens the margin and a negative value narrows it.)
Label sheet (with black mark)	"-15" to "15"	Specifies the distance between the bottom edge of a black mark to the bottom of the print area in units of 0.1 mm. (A positive value widens the margin and a negative value narrows it.)

offset-cut

Paper type	Valid value	Description
Receipt (without black mark)	"0"	No need to specify
Receipt (with black mark)	"-290" to "50"	Distance from the top edge of the black mark to the cut position
Label sheet (without black mark)	"0" to "50"	Distance from the bottom edge of the label to the cut position
Label sheet (with black mark)	"0" to "50"	Distance from the top edge of the black mark to the cut position

offset-label

Paper type	Valid value	Description
Receipt (without black mark)	"0"	No need to specify
Receipt (with black mark)	"0"	No need to specify
Label sheet (without black mark)	"0"	No need to specify
Label sheet (with black mark)	"0" to "15"	Distance from the top edge of the black mark to the bottom edge of a label

Sample program

Changing paper

When changing paper to another type, change the paper setting before starting to print.

❏ 58-mm receipt (without black mark)

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <layout type="receipt" width="580" />
</epos-print>
```

❏ 58-mm receipt (with black mark)

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <layout type="receipt_bm" width="580" height="0" margin-top="15" offset-cut="0" />
</epos-print>
```

❏ 58-mm label sheet (without black mark)

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <layout type="label" width="580" height="0" margin-top="15" margin-bottom="-15"
offset-cut="25" />
</epos-print>
```

❏ 58-mm label sheet (with black mark)

```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <layout type="label_bm" width="580" height="0" margin-top="15" margin-bottom="-15"
offset-cut="25" offset-label = "15" />
</epos-print>
```

Label paper settings for TM-P series

For TM-P series except TM-P60, first you need to specify the label size settings and paper feed setting for feeding the sheet to the top of a label.

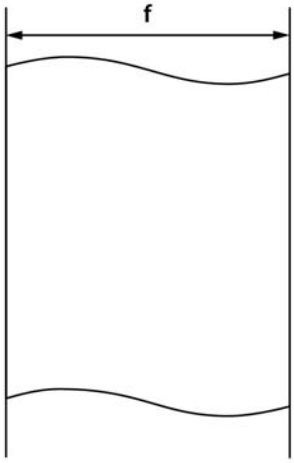
```
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">

   <!-- Specify the paper settings -->
   <!-- Die-cut label, Sheet width: 58.0 mm, Height: Auto -->
   <!-- Top margin: 1.5 mm from the label top edge, Bottom margin: 1.5 mm from the label
bottom edge -->
   <!-- Cut position: 2.5 mm from the label bottom edge -->
   <layout type="label" width="580" height="0" margin-top="15" margin-bottom="-15"
offset-cut="25" offset-label="0"/>

   <!-- Feed the sheet to the label top -->
   <feed pos="next_tof"/>

</epos-print>
```

Supplementary explanation

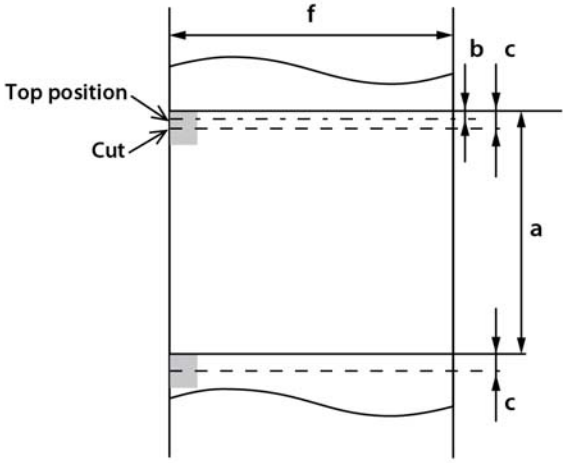
❏ This does not work in the page mode.

❏ Refer to the following for the parameter positions available for each type of paper.

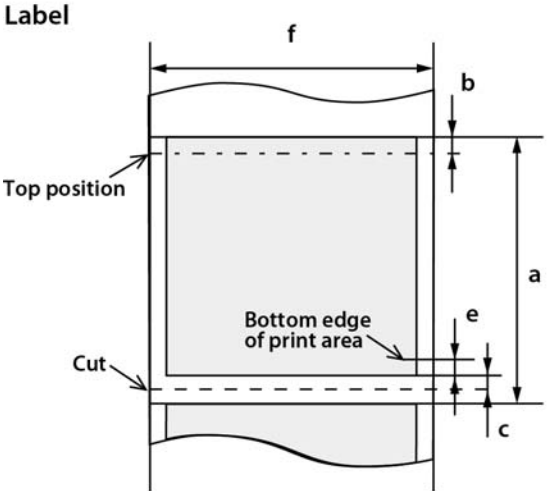
Receipt

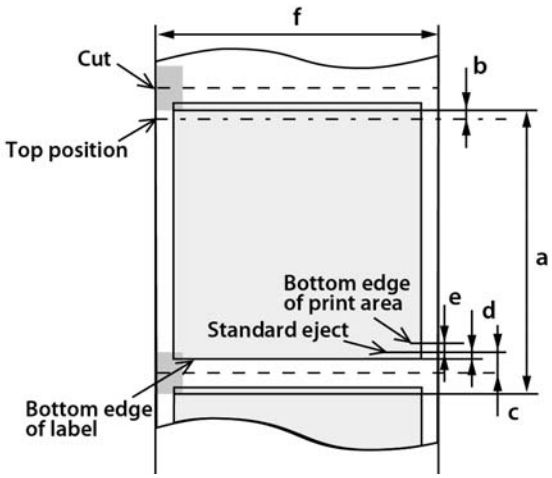


<with Black Mark>



Label





Symbol	Parameter
f	width

Symbol	Parameter
a	height
b	margin_top
e	margin_bottom
c	offset_cut
d	offset_label

<recovery>

This element allows you to set the printer to recover from an error.

Sample program

Recovers from an recoverable error and clears the printer buffer.

```
<epos-print xmlns= "http://www.epson-pos.com/schemas/2011/03/epos-print"
force="true">
   <recovery />
</epos-print>
```

Supplementary explanation

- ❏ This does not work in the page mode.
- ❏ Use this element with the forced transmission mode (force) enabled.
- ❏ After recovering from a recoverable error, the buffer of the printer is reset.

<reset>

This element allows you to reset the printer.

Sample program

Resets the printer.

```
<epos-print xmlns= "http://www.epson-pos.com/schemas/2011/03/epos-print">
   <reset />
</epos-print>
```

Supplementary explanation

- ❏ This does not work in the page mode.
- ❏ Any other print commands included in the document are ignored.

XML for Controlling Customer Display

<epos-display>

This is an XML document that is sent from an application to a customer display. It requests the customer display to execute the specified function. The <epos-display> provides all elements necessary to control a customer display.

Attribute

xmlns

Declares the namespace for epos-display. The namespace is as follows.

http://www.epson-pos.com/schemas/2012/09/epos-display

Sample program

Adds a text tag as a child element.

```
<epos-display xmlns="http://www.epson-pos.com/schemas/2012/09/epos-display">
   <text>Hello world!!</text>
</epos-display>
```

<response>

This is an XML document that is sent back from a customer display to an application.

Attribute

success

Attribute value	Description
"true" / "1"	Display succeeded
"false" / "0"	Display failed

code

Attribute value	Description
"EDSP_NOT_FOUND"	The device was not found.
"EDSP_NOT_OPEN"	Failed to open the device.
"EDSP_INVALID_WINDOW"	An unregistered window was specified.
"EDSP_SYSTEM_ERROR"	An unexpected error occurred.
"EDSP_SCHEMA_ERROR"	An XML structural error occurred.
"EX_BADPORT"	An internal communication error with the device occurred.
"EX_TIMEOUT"	A timeout error occurred during communication with the device.
"EX_INVALID_VALUE"	Invalid parameter was detected.
"EDSP_UNRECOVERABLE"	Unrecoverable error occurred.
"EDSP_CUTTER"	Auto cutter error occurred.
"EDSP_MECHANICAL"	Mechanical error occurred.
"EDSP_COVER_OPEN"	Cover open error occurred.
"EDSP_REC_EMPTY"	No paper is left in the roll paper end detector.
"EDSP_AUTOMATICAL"	Automatic recovery error occurred.

status

Attribute value	Description
"0"	Always

Sample program

❏ When succeeded

```
<response success="true" code="" status="0"/>
```

❏ When failed

```
<response success="false" code="EDSP_NOT_FOUND" status="0"/>
```

Supplementary explanation

When using TM-m30 printer and DM-D30 display, the following codes are not returned.

- ❏ "EDSP_UNRECOVERABLE"
- ❏ "EDSP_CUTTER"
- ❏ "EDSP_MECHANICAL"
- ❏ "EDSP_COVER_OPEN"
- ❏ "EDSP_REC_EMPTY"
- ❏ "EDSP_AUTOMATICAL"

<window>

This element allows you to create or delete a window on the display, and change the current window.

❏ Specify "number", "x", "y", "width", and "height" to create a new window.

❏ Specify "true/1" for "destroy" to destroy the window specified by "number".

❏ To change the current window to another window, specify only "number".

Attribute

number

Attribute value	Description
"1" to "4"	Specifies the window number.

x

Attribute value	Description
"1" to "20"	Specifies the origin of the X coordinate.

y

Attribute value	Description
"1" to "2"	Specifies the origin of the Y coordinate.

width

Attribute value	Description
"1" to "20"	Specifies the window width.

height

Attribute value	Description
"1" to "2"	Specifies the window height.

scrollmode

Attribute value	Description
"overwrite" (default)	When the cursor is at the rightmost position of the upper line, displaying a new character moves the cursor to the leftmost position of the lower line. When the cursor is at the rightmost position of the lower line, displaying a new character moves the cursor to the leftmost position of the upper line.
"v_scroll"	When the cursor is at the rightmost position of the upper line, displaying a new character moves the cursor to the leftmost position of the lower line. When the cursor is at the rightmost position of the lower line, displaying a new character scrolls up the characters on the lower line and clears the lower line.

Attribute value	Description
"h_scroll"	When the cursor is at the rightmost position, displaying a new character scrolls all the characters already displayed on the cursor line to the left by one character and the new character is displayed at the rightmost position.

destroy

Attribute value	Description
"true" / "1"	Destroys the window specified by "number"
"false" / "0" (default)	Not destroy

Error status

Error	Description
"EX_INVALID_VALUE"	The "x", "y", "width", and "height" specified for a new window overlap with those of an existing window.
"EDSP_INVALID_WINDOW"	When changing the current window, the destination window does not exist.

Sample program

❏ Defines "window 1" that has 10 width and 2 height starting from the upper left of the display, and scrolls vertically.

```
<window number="1" x="1" y="1" width="10" height="2" scrollmode="v_scroll"/>
```

❏ Defines "window 2" that has 10 width and 2 height starting from the center of the display, and scrolls vertically.

```
<window number="2" x="11" y="1" width="10" height="2" scrollmode="v_scroll"/>
```

❏ Changes the current window to "window 1"

```
<window number="1"/>
```

❏ Destroys "window 2"

```
<window number="2" destroy="true"/>
```

Supplementary explanation

❏ When adding a new window, make sure that the window area on the customer display does not overlap with that of existing window(s)

❏ If you specify "number", "x", "y", "width", and "height", and specify "true/1" in "destroy", neither of the processes (create and destroy window) is performed.

<text>

This element allows you to specify text display settings to be displayed on a customer display.

Attribute

x

Attribute value	Description
"1" to "20"	Specifies the X coordinate of the display position.

y

Attribute value	Description
"1" to "2"	Specifies the Y coordinate of the display position.

reverse

Attribute value	Description
"true" / "1"	Inverts black and white
"false" / "0"	Cancels the black and white inversion

lang

Attribute value	Description
"en" (default)	English
"ja"	Japanese

Sample program

❏ Displays the text from the upper left.

```
<text x="1" y="1" lang="ja">Carrots \100</text>
```

❏ Displays inverted text (white text on black background) from the current cursor position.

```
<text reverse="true">Welcome!!</text>
```

❏ Changes the current window to "window 2" and displays window 2.

```
<window number="2"/>
<text x="1" y="1" lang="ja">Carrots \100</text>
```

Supplementary explanation

If "x" and "y" are not specified, the text is displayed from the current cursor position.

<cursor>

This element allows you to specify the cursor position and cursor display settings.

❏ Specify "x" and "y" to move the cursor to the specified coordinate on the customer display.

❏ Use "moveto" to move the cursor to a specified position in the current window.

Attribute

x

Attribute value	Description
"1" to "20"	Specifies the X coordinate.

y

Attribute value	Description
"1" to "2"	Specifies the Y coordinate.

moveto

Attribute value	Description
"top_left"	Moves to the leftmost position on the top line.
"top_right"	Moves to the rightmost position on the top line.
"bottom_left"	Moves to the leftmost position on the bottom line.
"bottom_right"	Moves to the rightmost position on the bottom line.

type

Attribute value	Description
"none"	No cursor display
"underline"	Underscore

Sample program

❏ Move the cursor to the upper left of the customer display.

```
<cursor x="1" y="1"/>
```

❏ Moves the cursor to the upper left of the current window.

```
<cursor moveto="top_left" type="underline"/>
```

Supplementary explanation

If "x", "y", and "moveto" are specified at a time, the cursor does not move.

<blink>

This element allows you to specify blink settings of the customer display.

Attribute

interval

Attribute value	Description
"0"	Normal display (light up)
"1" to "12700"	Specifies a time interval between display blinks in units of milliseconds.
"12701" to "12750"	Display is turned off (display data is maintained)

Sample program

❏ Sets the time interval between display blinks to 500 ms.

```
<blink interval="500"/>
```

❏ Sets the display to stop blinking.

```
<blink interval="0"/>
```

❏ Sets the display to turn off. Maintains the display data.

```
<blink interval="12750"/>
<cursor moveto="top_left" type="underline"/>
```

Supplementary explanation

The setting value is rounded to a nearest value in units of 50 milliseconds.

Example: 1 => 50, 51 => 100, 101 => 150

<brightness>

This element allows you to specify the brightness setting of the customer display.

Attribute

value

Attribute value	Description
"20"	Brightness 20%
"40"	Brightness 40%
"60"	Brightness 60%
"100"	Brightness 100%

Sample program

❏ Specifies the brightness to 20%.

```
<brightness value="20"/>
```

❏ Specifies the brightness to 40%.

```
<brightness value="40"/>
```

<marquee>

This element allows you to specify marquee display settings for text strings.
Characters in a text string is displayed one by one at a time interval specified in "uwait". When the last character is displayed, the display of the text string restarts from the top character after the time specified in "rwait" has elapsed.

Attribute

format

Attribute value	Description
"walk" (default)	Displays the text from the rightmost position of the window.
"place"	Displays the text from the leftmost position of the window.

repeat

Attribute value	Description
"0"	Repeats unlimitedly
"1" to "127"	Specifies the number of repeating times (an integer)

uwait

Attribute value	Description
"0" to "2000"	Specifies a time interval (an integer) after displaying one character and before displaying the next character in units of msec.

rwait

Attribute value	Description
"100" to "2000"	Specifies a time period (an integer) to wait after displaying the last character in units of msec.

lang

Attribute value	Description
"en" (default)	English
"ja"	Japanese

Sample program

❏ Displays the characters one by one at 500-msec interval from the right of the display, and repeats the marquee display at 1000-msec interval.

```
<marquee uwait="500" rwait="1000">Welcom!!</marquee>
```

❏ Displays the characters one by one at 500-msec interval from the left of the display, and repeats the marquee display at 1000-msec interval.

```
<marquee uwait="500" rwait="1000" format="place">Welcome!!</marquee>
```

Supplementary explanation

❏ For TM-m30 and DM-D30, and TM-H6000V and DM-D110/DM-D210, "0" is only allowed in repeat.

❏ When controlling DM-D30, its marquee display may be distorted if the interval for displaying text is too short due to the characteristics of the LCD. It is recommended to set uwait and rwait so that the interval for displaying text is 600 msec or longer.

<clock>

This element allows you to display the time at the lower right of a customer display.

Attribute

hour

Attribute value	Description
"0" to "233"	Specifies "hour" using an integer.

minute

Attribute value	Description
"0" to "59"	Specifies "minute" using an integer.

Sample program

❏ Sets the clock time and displays the time.

```
<clock hour="12" minute="34" />
```

❏ Displays the clock time.

```
<clock/>
```

Supplementary explanation

When using TM-m30 printer and DM-D30 display, use this element to set the correct time after turning on and back on the printer, or after executing <reset>.

<clear>

This element allows you to clear contents displayed on the current window.
If no current window exists, all the contents displayed on the customer display are cleared.

Sample program

```
<clear/>
```

<reset>

This element allows you to reset the customer display. The reset brings the display to the following states.

❏ All displayed text and registered windows are discarded.

❏ The cursor setting is reset and the cursor is moved to the origin of the customer display.

❏ Display blinking and brightness settings are reset to their default.

Sample program

```
<reset/>
```

<command>

This element allows you to execute specific ESC/POS commands.
Specify the command using hexadecimal string.

	Detailed information on ESC/POS commands are provided in the specification sheet of each customer display. A separate contract is required to get the specification sheet. For more details, contact the store of your purchase.

Sample program

```
<command>41424344450D0A</command>
```

Supplementary explanation

- ❏ Refer to the following URL for details of the ESC/POS command.
  https://reference.epson-biz.com/modules/ref_escpos_dm_d_en/
- ❏ ePOS-Print Service I/F does not check the commands sent by the <command> XML.If the commands interfere with ePOS-Print Service I/F operations, other XML controls may work wrongly or status values may become invalid.This XML should be used with a full understanding of ESC/POS commands and the customer display specifications.

Device Specifications

This chapter describes the restriction on use of the elements, which depends on the printer model and customer display model, and provides some values for attributes.

Refer to the Technical Reference Guide of each printer for more information on each printer.

XML Supported Printers

The table below shows the printers that support the XML documents.

XML	Supported Printers
XML for Controlling Printer	All printers Availability and restriction on use of the elements differ by printer. Refer to Supported Elements List.
XML for Controlling Customer Display	Can be used for a set of the following printer and customer display. • TM-m30 + DM-D30 • TM-T88VI/TM-T88VI-iHUB + DM-D30/DM-D110 • TM-H6000V+DM-D110/DM-D210

Supported Elements List

This section provides information on which element can be used for which printer.
The meaning of the symbols used in the list is as follows.

- ✔: Supported
- ✔*: Supported but has a restriction on attributes values
- -: Not supported

For information on the "✔*" restrictions, refer to Printer-specific Support Information.

XML for Controlling Printer

TM Printers

Element	TM-L90	TM-L90 4xx	TM-m10	TM-m30	TM-P20	TM-P60II (Receipt)	TM-P60II (Peeler)	TM-P80	TM-T20	TM-T20II	TM-T70	TM-T70II	TM-T82II	TM-T83II	TM-T88IV	TM-T88V	TM-T88VI	TM-T90	TM-U220	TM-U330	TM-H6000IV	TM-H6000V
<epos-print>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔*	✔*	✔	✔
<response>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
<text>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<feed>	✔	✔	✔*	✔*	✔*	✔*	✔	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<image>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<logo>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	✔
<barcode>	✔*	✔*	✔*	✔*	✔	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	-	-	✔*	✔*
<symbol>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	-	-	✔*	✔*
<hline>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<vline-begin>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<vline-end>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<page>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	✔
<area>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	✔
<direction>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	✔
<position>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	✔
<line>	-	-	-	-	✔*	✔*	✔*	✔*	-	-	-	-	-	-	-	-	✔*	-	-	-	-	✔*
<rectangle>	-	-	-	-	✔*	✔*	✔*	✔*	-	-	-	-	-	-	-	-	✔*	-	-	-	-	✔*
<cut>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<pulse>	✔	✔	✔	✔	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
<sound>	-	-	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	-	✔*	✔*	✔*	-	✔*	✔*	-	-	✔*	-	-

Element	TM-L90	TM-L90 4xx	TM-m10	TM-m30	TM-P20	TM-P60II (Receipt)	TM-P60II (Peeler)	TM-P80	TM-T20	TM-T20II	TM-T70	TM-T70II	TM-T82II	TM-T83II	TM-T88IV	TM-T88V	TM-T88VI	TM-T90	TM-U220	TM-U330	TM-H6000IV	TM-H6000V
<command>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
<layout>	-	-	-	-	✔*	-	✔	✔*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<recovery>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	✔
<reset>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

TM-DT Series/TM-i Series

Element	TM-L90-i	TM-T20II-i	TM-T70-i	TM-T82II-i	TM-T83II-i	TM-T88V-i	TM-T88VI-iHUB	TM-U220-i	TM-T70II-DT	TM-T88V-DT	TM-H6000IV-DT
<epos-print>	✔	✔	✔	✔	✔	✔	✔	✔*	✔	✔	✔
<response>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
<text>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<feed>	✔	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<image>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<logo>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
<barcode>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	-	✔*	✔*	✔*
<symbol>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	-	✔*	✔*	✔*
<hline>	-	-	-	-	-	-	-	-	-	-	-
<vline-begin>	-	-	-	-	-	-	-	-	-	-	-
<vline-end>	-	-	-	-	-	-	-	-	-	-	-
<page>	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔
<area>	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔
<direction>	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔
<position>	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔
<line>	-	-	-	-	-	-	✔*	-	-	-	-
<rectangle>	-	-	-	-	-	-	✔*	-	-	-	-
<cut>	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*	✔*
<pulse>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
<sound>	-	✔*	-	✔*	✔*	✔*	✔*	-	✔*	✔*	-
<command>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
<layout>	-	-	-	-	-	-	-	-	-	-	-

Element	TM-L90-i	TM-T20II-i	TM-T70-i	TM-T82II-i	TM-T83II-i	TM-T88V-i	TM-T88VI-iHUB	TM-U220-i	TM-T70II-DT	TM-T88V-DT	TM-H6000IV-DT
<recovery>	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔
<reset>	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Printer-specific Support Information

TM-L90

Printer Specifications

Item		Receipt Specification	Die-cut Label Specification
Amount of initial feed		30 dots	
Initial page mode area	Monochrome printing	576 x 738 dots	560 x 738 dots
	Two-color printing	576 x 369 dots	560 x 369 dots
Maximum page mode area	Monochrome printing	576 x 1476 dots	560 x 1476 dots
	Two-color printing	576x 738 dots	560 x 738 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		ANK: 16 Chinese characters: 15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1" • "color_2"
<image>	color	• "color_1" • "color_2"
	mode	• "mono"

Element	Attribute	Specificable Setting Value
<barcode>	type	• "upc_a" • "upc_e" • "ean13" • "jan13" • "ean8" • "jan8" • "code39" • "itf" • "codabar" • "code93" • "code128"
	font	• "font_a" • "font_b" • "font_c"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode
	height	• PDF417 • QR Code • MaxiCode
	size	• PDF417 • QR Code • MaxiCode
<cut>	type	• "no_feed" • "feed"

TM-L90 4xx

Printer Specifications

Item		Receipt Specification	Die-cut Label Specification
Amount of initial feed		30 dots	
Initial page mode area	Monochrome printing	576 x 738 dots	560 x 738 dots
	Two-color printing	576 x 369 dots	560 x 369 dots
Maximum page mode area	Monochrome printing	576 x 1476 dots	560 x 1476 dots
	Two-color printing	576 x 369 dots	560 x 738 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		ANK: 16 Chinese characters: 15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1"
<image>	color	• "color_1"
<barcode>	font	• "font_a" • "font_b" • "font_c"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "qrcode_micro" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
<cut>	type	• "no_feed" • "feed"

TM-m10

Printer Specifications

Item	Specification
Amount of initial feed	30 dots
Initial page mode area	420 x 2400 dots
Maximum page mode area	420 x 2400 dots
Baseline of Font A	21 dots from the top of the character
Baseline of Font B	21 dots from the top of the character
Baseline of Font C	16 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b" • "font_c"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-m30

Printer Specifications

Item	58mm Specification	80mm Specification
Amount of initial feed	30 dots	
Initial page mode area	420 x 2400 dots	576 x 2400 dots
Maximum page mode area	420 x 2400 dots	576 x 2400 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	21 dots from the top of the character	
Baseline of Font C	16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b" • "font_c"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-P20

Printer Specifications

Item	Specification
Amount of initial feed	30 dots
Initial page mode area	384 x 2400 dots
Maximum page mode area	384 x 2400 dots
Baseline of Font A	21 dots from the top of the character
Baseline of Font B	21 dots from the top of the character
Baseline of Font C	16 dots from the top of the character
Baseline of Font D	21 dots from the top of the character
Baseline of Font E	15 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	color	• "color_1"
<feed>	pos	• "cutting" • "current_tof" • "next_tof"
<image>	color	• "color_1"
	mode	• "mono"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<line>	style	• "thin" • "medium" • "thick"
<rectangle>	style	• "thin" • "medium" • "thick"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_1" • "pattern_2" • "pattern_3" • "pattern_4" • "pattern_5" • "pattern_6" • "pattern_7" • "pattern_8" • "pattern_9" • "pattern_10"
	repeat	• "1" to "255"

Element	Attribute	Specificable Setting Value
<layout>	type	• receipt • receipt_bm
	height	• Receipt (without black mark) • Receipt (with black mark)
	margin-top	• Receipt (without black mark) • Receipt (with black mark)
	margin-bottom	• Receipt (without black mark) • Receipt (with black mark)
	offset-cut	• Receipt (without black mark) • Receipt (with black mark)
	offset-label	• Receipt (without black mark) • Receipt (with black mark)

TM-P60II (Receipt)

Printer Specifications

Item	Receipt Specification	Die-cut Label Specification
Amount of initial feed	30 dots	
Initial page mode area	432 x 1624 dots	400 x 1624 dots
Maximum page mode area	432 x 1624 dots	400 x 1624 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	16 dots from the top of the character	
Baseline of Font C	15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b" • "font_c"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<line>	style	• "thin" • "medium" • "thick"
<rectangle>	style	• "thin" • "medium" • "thick"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_1" • "pattern_2" • "pattern_3" • "pattern_4" • "pattern_5" • "pattern_6" • "pattern_7" • "pattern_8" • "pattern_9" • "pattern_10"
	repeat	• "1" to "255"

TM-P60II (Peeler)

Printer Specifications

Item	Receipt Specification	Die-cut Label Specification
Amount of initial feed	30 dots	
Initial page mode area	432 x 1624 dots	400 x 1624 dots
Maximum page mode area	432 x 1624 dots	400 x 1624 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	16 dots from the top of the character	
Baseline of Font C	15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b" • "font_c"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<line>	style	• "thin" • "medium" • "thick"
<rectangle>	style	• "thin" • "medium" • "thick"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_1" • "pattern_2" • "pattern_3" • "pattern_4" • "pattern_5" • "pattern_6" • "pattern_7" • "pattern_8" • "pattern_9" • "pattern_10"
	repeat	• "1" to "255"

TM-P80

Printer Specifications

Item	Specification
Amount of initial feed	30 dots
Initial page mode area	576 x 1662 dots
Maximum page mode area	576 x 1662 dots
Baseline of Font A	21 dots from the top of the character
Baseline of Font B	16 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<feed>	pos	• "cutting" • "current_tof" • "next_tof"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<line>	style	• "thin" • "medium" • "thick"
<rectangle>	style	• "thin" • "medium" • "thick"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_1" • "pattern_2" • "pattern_3" • "pattern_4" • "pattern_5" • "pattern_6" • "pattern_7" • "pattern_8" • "pattern_9" • "pattern_10"
	repeat	• "1" to "255"

Element	Attribute	Specificable Setting Value
<layout>	type	• receipt • receipt_bm
	height	• Receipt (without black mark) • Receipt (with black mark)
	margin-top	• Receipt (without black mark) • Receipt (with black mark)
	margin-bottom	• Receipt (without black mark) • Receipt (with black mark)
	offset-cut	• Receipt (without black mark) • Receipt (with black mark)
	offset-label	• Receipt (without black mark) • Receipt (with black mark)

TM-T20

Printer Specifications

Item	58mm Specification	80mm Specification
Amount of initial feed	30 dots	
Initial page mode area	420 x 831 dots	576 x 831 dots
Maximum page mode area	420 x 1662 dots	576 x 1662 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-T20II

Printer Specifications

Item	58mm Specification	80mm Specification
Amount of initial feed	30 dots	
Initial page mode area	420 x 831 dots	576 x 831 dots
Maximum page mode area	420 x 1662 dots	576 x 1662 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-T70

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area	ANK model	416 x 1662 dots	512 x 831 dots
	Multiple languages model	416 x 1662 dots	576 x 1662 dots
Maximum page mode area	ANK model	416 x 1662 dots	512 x 1662 dots
	Multiple languages model	576 x 1662 dots	
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"

Element	Attribute	Specificable Setting Value
<barcode>	type	• "upc_a" • "upc_e" • "ean13" • "jan13" • "ean8" • "jan8" • "code39" • "itf" • "codabar" • "code93" • "code128"
	font	• "font_a" • "font_b"
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code
	height	• PDF417 • QR Code
	size	• PDF417 • QR Code
<cut>	type	• "no_feed" • "feed"

TM-T70II

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area	ANK model	416 x 1662 dots	512 x 1662 dots
	Multiple languages model	416 x 1662 dots	576 x 1662 dots
Maximum page mode area	ANK model	416 x 1662 dots	512 x 1662 dots
	Multiple languages model	576 x 1662 dots	
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-T82II

Printer Specifications

Item	Specification
Amount of initial feed	30 dots
Initial page mode area	576 x 831 dots
Maximum page mode area	576 x 1662 dots
Baseline of Font A	21 dots from the top of the character
Baseline of Font B	16 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-T83II

Printer Specifications

Item	Specification
Amount of initial feed	30 dots
Initial page mode area	512 x 1662 dots
Maximum page mode area	512 x 1662 dots
Baseline of Font A	21 dots from the top of the character
Baseline of Font B	16 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-T88IV

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area	Monochrome printing	360 x 831 dots	512 x 831 dots
	Two-color printing	360 x 415 dots	512 x 415 dots
Maximum page mode area	Monochrome printing	360 x 1662 dots	512 x 1662 dots
	Two-color printing	360 x 831 dots	512 x 831 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1" • "color_2"
<image>	color	• "color_1" • "color_2"
	mode	• "mono"

Element	Attribute	Specificable Setting Value
<barcode>	type	• "upc_a" • "upc_e" • "ean13" • "jan13" • "ean8" • "jan8" • "code39" • "itf" • "codabar" • "code93" • "code128"
	font	• "font_a" • "font_b"
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code
	height	• PDF417 • QR Code
	size	• PDF417 • QR Code
<cut>	type	• "no_feed" • "feed"

TM-T88V

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area		360 x 831 dots	512 x 831 dots
Maximum page mode area		360 x 1662 dots	512 x 1662 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B	ANK	16 dots from the top of the character	
	Chinese characters	15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-T88VI

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area		360 x 831 dots	512 x 831 dots
Maximum page mode area		360 x 1662 dots	512 x 1662 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B	ANK	16 dots from the top of the character	
	Chinese characters	15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<line>	style	• "thin" • "medium" • "thick"
<rectangle>	style	• "thin" • "medium" • "thick"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-T90

Printer Specifications

Item		58mm Specification	60mm Specification	80mm Specification
Amount of initial feed		30 dots		
Initial page mode area	Monochrome printing	420 x 738 dots	384 x 831 dots	576 x 738 dots
	Two-color printing	420 x 369 dots	384 x 415 dots	576 x 369 dots
Maximum page mode area	Monochrome printing	420 x 1476 dots	384 x 1662 dots	576 x 1476 dots
	Two-color printing	420 x 738 dots	384 x 831 dots	576 x 738 dots
Baseline of Font A		21 dots from the top of the character		
Baseline of Font B		16 dots from the top of the character		

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1" • "color_2"
<image>	color	• "color_1" • "color_2"
	mode	• "mono"

Element	Attribute	Specificable Setting Value
<barcode>	type	• "upc_a" • "upc_e" • "ean13" • "jan13" • "ean8" • "jan8" • "code39" • "itf" • "codabar" • "code93" • "code128"
	font	• "font_a" • "font_b" • "font_c"
<symbol>	type	• "pdf417_standard" • "pdf417_truncated"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "default"
	width	• PDF417
	height	• PDF417
	size	• PDF417
<cut>	type	• "no_feed" • "feed"

TM-U220

Printer Specifications

Item	76mm Specification	69.5mm Specification	57.5mm Specification
Amount of initial feed	12 dots		

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<epos-print>	force	• "false" / "0"
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1" • "color_2"
<image>	color	• "color_1" • "color_2"
	mode	• "mono"
<cut>	type	• "no_feed" • "feed"

TM-U330

Printer Specifications

Item	76mm Specification	69.5mm Specification	57.5mm Specification
Amount of initial feed	12 dots		

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<epos-print>	force	• "false" / "0"
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hans" • "zh-cn" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1" • "color_2"
<feed>	pos	• "cutting"
<image>	color	• "color_1" • "color_2"
	mode	• "mono"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end" • "pattern_0"
	repeat	• "1" to "255"

TM-H6000IV

Printer Specifications

Item	58mm Specification	80mm Specification
Amount of initial feed	30 dots	
Initial page mode area	360 x 831 dots	512 x 831 dots
Maximum page mode area	360 x 1662 dots	512 x 1662 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

TM-H6000V

Printer Specifications

Item	Receipt
Amount of initial feed	30 dots
Initial page mode area	512 x 1662 dots
Maximum page mode area	512 x 2400 dots
Baseline of Font A	21 dots from the top of the character
Baseline of Font B	21 dots from the top of the character
Baseline of Font C	18 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1"
<image>	color	• "color_1"
<barcode>	font	• "font_a" • "font_b" • "font_c"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked" • "azteccode_fullrange" • "azteccode_compact" • "datamatrix_square" • "datamatrix_rectangle_8" • "datamatrix_rectangle_12" • "datamatrix_rectangle_16"
<line>	style	• "thin" • "medium" • "thick"
<rectangle>	style	• "thin" • "medium" • "thick"
<cut>	type	• "no_feed" • "feed"

TM-L90-i

Printer Specifications

Item		Receipt Specification	Die-cut Label Specification
Amount of initial feed		30 dots	
Initial page mode area	Monochrome printing	576 x 738 dots	560 x 738 dots
	Two-color printing	576 x 369 dots	560 x 369 dots
Maximum page mode area	Monochrome printing	576 x 1476 dots	560 x 1476 dots
	Two-color printing	576x 738 dots	560 x 738 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		ANK: 16 Chinese characters: 15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b" • "font_c"
	color	• "color_1" • "color_2"
<image>	color	• "color_1" • "color_2"
	mode	• "mono"

Element	Attribute	Specificable Setting Value
<barcode>	type	• "upc_a" • "upc_e" • "ean13" • "jan13" • "ean8" • "jan8" • "code39" • "itf" • "codabar" • "code93" • "code128"
	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode
	height	• PDF417 • QR Code • MaxiCode
	size	• PDF417 • QR Code • MaxiCode
<cut>	type	• "no_feed" • "feed"

TM-T20II-i

Printer Specifications

Item	58mm Specification	80mm Specification
Amount of initial feed	30 dots	
Initial page mode area	420 x 831 dots	576 x 831 dots
Maximum page mode area	420 x 1662 dots	576 x 1662 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"

TM-T70-i

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area	ANK model	416 x 1662 dots	512 x 831 dots
	Multiple languages model	416 x 1662 dots	576 x 1662 dots
Maximum page mode area	ANK model	416 x 1662 dots	512 x 1662 dots
	Multiple languages model	416 x 1662 dots	576 x 1662 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"

Element	Attribute	Specificable Setting Value
<barcode>	type	• "upc_a" • "upc_e" • "ean13" • "jan13" • "ean8" • "jan8" • "code39" • "itf" • "codabar" • "code93" • "code128"
	font	• "font_a" • "font_b"
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code
	height	• PDF417 • QR Code
	size	• PDF417 • QR Code
<cut>	type	• "no_feed" • "feed"

TM-T82II-i

Printer Specifications

Item	Specification
Amount of initial feed	30 dots
Initial page mode area	576 x 831 dots
Maximum page mode area	576 x 1662 dots
Baseline of Font A	21 dots from the top of the character
Baseline of Font B	16 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"

TM-T83II-i

Printer Specifications

Item		Specification
Amount of initial feed		30 dots
Initial page mode area		512 x 1662 dots
Maximum page mode area		512 x 1662 dots
Baseline of Font A		21 dots from the top of the character
Baseline of Font B	ANK	16 dots from the top of the character
	Chinese characters	15 dots from the top of the character

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"

TM-T88V-i

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area		360 x 831 dots	512 x 831 dots
Maximum page mode area		360 x 1662 dots	512 x 1662 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B	ANK	16 dots from the top of the character	
	Chinese characters	15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"

TM-T88VI-iHUB

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area		360 x 831 dots	512 x 831 dots
Maximum page mode area		360 x 1662 dots	512 x 1662 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B	ANK	16 dots from the top of the character	
	Chinese characters	15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<line>	style	• "thin" • "medium" • "thick"

Element	Attribute	Specificable Setting Value
<rectangle>	style	• "thin" • "medium" • "thick"
<cut>	type	• "no_feed" • "feed"
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"
	repeat	• "1" to "255"

TM-U220-i

Printer Specifications

Item	76mm Specification	69.5mm Specification	57.5mm Specification
Amount of initial feed	12 dots		

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<epos-print>	force	• "false" / "0"
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1" • "color_2"
<image>	color	• "color_1" • "color_2"
	mode	• "mono"
<cut>	type	• "no_feed" • "feed"

TM-T70II-DT

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area	ANK model	416 x 1662 dots	512 x 1662 dots
	Multiple languages model	416 x 1662 dots	576 x 1662 dots
Maximum page mode area	ANK model	416 x 1662 dots	512 x 1662 dots
	Multiple languages model	416 x 1662 dots	576 x 1662 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B		16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"

TM-T88V-DT

Printer Specifications

Item		58mm Specification	80mm Specification
Amount of initial feed		30 dots	
Initial page mode area		360 x 831 dots	512 x 831 dots
Maximum page mode area		360 x 1662 dots	512 x 1662 dots
Baseline of Font A		21 dots from the top of the character	
Baseline of Font B	ANK	16 dots from the top of the character	
	Chinese characters	15 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "ko" • "ko-kr" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Element	Attribute	Specificable Setting Value
<sound>	pattern	• "none" • "pattern_a" • "pattern_b" • "pattern_c" • "pattern_d" • "pattern_e" • "error" • "paper_end"

TM-H6000IV-DT

Printer Specifications

Item	58mm Specification	80mm Specification
Amount of initial feed	30 dots	
Initial page mode area	360 x 831 dots	512 x 831 dots
Maximum page mode area	360 x 1662 dots	512 x 1662 dots
Baseline of Font A	21 dots from the top of the character	
Baseline of Font B	16 dots from the top of the character	

Parameter Restrictions

Element	Attribute	Specificable Setting Value
<text>	lang	• "en" • "de" • "fr" • "it" • "es" • "zh-hans" • "zh-cn" • "zh-hant" • "zh-tw" • Language code other than above
	font	• "font_a" • "font_b"
	color	• "color_1"
<image>	color	• "color_1"
	mode	• "mono"
<barcode>	font	• "font_a" • "font_b"

Element	Attribute	Specificable Setting Value
<symbol>	type	• "pdf417_standard" • "pdf417_truncated" • "qrcode_model_1" • "qrcode_model_2" • "maxicode_mode_2" • "maxicode_mode_3" • "maxicode_mode_4" • "maxicode_mode_5" • "maxicode_mode_6" • "gs1_databar_stacked" • "gs1_databar_stacked_omnidirectional" • "gs1_databar_expanded_stacked"
	level	• "level_0" • "level_1" (default value) • "level_2" • "level_3" • "level_4" • "level_5" • "level_6" • "level_7" • "level_8" • "level_l" • "level_m" • "level_q" • "level_h" • "default"
	width	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	height	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
	size	• PDF417 • QR Code • MaxiCode • 2D GS1 DataBar
<cut>	type	• "no_feed" • "feed"

Usage Restrictions by Firmware Version

The following shows the elements and their attributes that can be used only for the printers with the specific firmware version.
For instructions on how to check or update the printer firmware version, refer to the Technical Reference Guide of the printer.

❏ Can be used with ePOS-Print Service Ver.2.1 or later

Element	Attribute	Attribute value
<feed>	pos	-

❏ Can be used with ePOS-Print Service Ver.2.2 or later

Element	Attribute	Attribute value
<text>	lang	zh-hans
		zh-hant
<layout>	-	-
<symbol>	type	azteccode_fullrange
		azteccode_compact
		datamatrix_square
		datamatrix_rectangle_8
		datamatrix_rectangle_12
		datamatrix_rectangle_16
	level	Integer (5 to 95)
<sound>	pattern	pattern_1
		pattern_2
		pattern_3
		pattern_4
		pattern_5
		pattern_6
		pattern_7
		pattern_8
		pattern_9
		pattern_10
	cycle	-

❏ Can be used with ePOS-Print Service Ver.3.0 or later

Element	Attribute	Attribute value
<epos-print>	force	-

Element	Attribute	Attribute value
<text>	y	-
<recovery>	-	-
<reset>	-	-

❏ Can be used with ePOS-Print Service Ver.3.2 or later

Element	Attribute	Attribute value
<text>	font	font_d
		font_e
<barcode>	font	font_d
		font_e

❏ Can be used with ePOS-Print Service Ver.4.1 or later

Element	Attribute	Attribute value
<response>	code	EX_SPOOLER
		JobNotFound
		Printing
	status	0x80000000
<symbol>	type	qrcode_micro

❏ Can be used with ePOS-Print Service Ver.5.0 or later

Element	Attribute	Attribute value
<sound>	pattern	pattern_0

ePOS-Print Settings

Printer Model	Printing Method	Character Code Tables
TM-L90	Thermal (203 dpi)	Page 0-5, 16-19
TM-L90 4xx	Thermal (203 dpi)	Page 0-5, 16-19, 20-21, 26, 30-31, 11-15, 32-53
TM-m10	Thermal (203 dpi)	Page 0-5, 16-19, 20-21, 26,30-31, 11-15, 32-53
TM-m30	Thermal (203 dpi)	Page 0-5, 16-19, 20-21, 26,30-31, 11-15, 32-53
TM-T20II	Thermal (203 dpi)	Page 0-5, 16-19, 20-21, 26,30-31, 11-15, 32-53
TM-T70	Thermal (180 dpi)	Page 0-5, 16-19
TM-T70II	Thermal (203 dpi)	Page 0-5, 16-19, 20-21, 26,30-31, 11-15, 32-53
TM-T88IV	Thermal (180 dpi)	Page 0-5, 16-19
TM-T88V	Thermal (180 dpi)	Page 0-5, 16-19, 20-21, 26,30-31, 11-15, 32-53
TM-T90	Thermal (180 dpi)	Page 0-5, 16-19

Development Information for Customer Displays

This chapter describes the necessary information for controlling customer displays.

Overview - Differential Information

This section contains differential information about Chapter 1 "Overview" regarding the control of the customer display. See Chapter 1 if necessary.

Interface

The end point addresses for customer display control on each interface are listed below.

❏ SOAP/HTTP Interface

http://[IP address of the Printer]/cgi-bin/eposDisp/service.cgi?devid=[device ID]&timeout=[timeout time]

❏ SOAP/HTTP Interface (WSDL supported)

http://[IP address of the Printer]/cgi-bin/eposDisp/service.cgi

❏ Interface for FileMaker®

httppost://[IP address of the Printer]/cgi-bin/eposDisp/service.cgi?printdata=[SOAP message]

WSDL(Web Services Description Language)

The files for accessing the customer display are listed below.

File name: epos-display-x.x.x.wsdl
epos-display-x.x.x.xsd

Restrictions

❏ You cannot confirm if a customer display is connected or if it was displayed.

❏ When controlling customer displays using more than one terminals or applications, the last display data sent from one of them is displayed overwriting previous ones.

XML Schemas

The file name of the XML schema for customer display control is given below.

❏ epos-display-x.x.x.xsd

Namespace

The namespaces for customer display control are listed below.

Identifier	Namespace
(Default)	http://www.epson-pos.com/schemas/2012/09/epos-display
tns	http://www.epson-pos.com/schemas/2012/09/epos-display
xs	http://www.w3.org/2001/XMLSchema

Command

The command for customer display control are listed below.

Item	Description
Window	Settings for creating and deleting windows and moving the current window
Character	ANK
Character style	Shading, display position
Cursor	Settings for cursor location and display settings
Blink	Settings for screen blinking
Brightness	Settings for the customer display brightness
Marquee	Settings for character string marquees
Clock	Time display
Clear	Clears the current window display
Reset	Resets the customer display
Command	Executes the ESC/POS command

Provided Article

The following files for customer display control are included in the sample program package.

❏ epos-display-x.x.x.wsdl (ePOS-Print XML Print Service)

❏ epos-display-x.x.x.xsd (ePOS-Print XML Schemas)

Programming Guide (XML Print Service)

This section explains the programing methods for application development with ePOS-Print XML.

Since the end point addresses of the TM printer and the customer display are different, printing with the TM printer and accessing the customer display cannot be carried out for the same document.

How to Use XML Schemas

In XML schemas, the configuration method is the same; only the TM printer files and file names are different. See the How to Use XML Schemas (p.41), change the file name and configure the settings.

❏ XML schema file for TM printer

epos-print-x.x.x.xsd

❏ XML Schema file for customer display

epos-display-x.x.x.xsd

Creating and Sending the Documents to be Displayed

Create a print document using elements in the epos-print root element. For details on elements, refer to XML for Controlling Customer Display (p.116).

Send the document you created with the XMLHttpRequest object.

Use the constructor to create an XMLHttpRequest object, specify the end point address of the customer display to be shown in the send method, specify the document to be displayed and send it.

For details on the end point address of the customer display, see Customer Display End Point Address (p.223).

To Call SOAP/HTTP Interface

Refer to the following program.

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" />
<title>TITLE</title>
<script type="text/javascript">
  function sendDocument() {
    // Create a display document
    var request = '<epos-display xmlns="http://www.epson-pos.com/schemas/2012/09/
    epos-display">';
    request += '<reset/>';
    request += '<cursor type="none"/>';
    request += '<marquee format="place" repeat="0" uwait="500" rwait="2000">Thanks for
    coming!</marquee>';
    request += '</epos-display>';

    // Create display parameters
    var param = '<parameter xmlns="http://www.epson-pos.com/schemas/2012/09/epos-
    display">';
    param += '<devid>local_display</devid>';
    param += '<timeout>10000</timeout>';
    param += '<printjobid>ABC123</printjobid>';
    param += '</parameter>';

    // Create a SOAP envelop
    var soap = '<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">' +
               '<s:Header>' + param + '</s:Header> + '<s:Body>' + request +
               '</s:Body></s:Envelope>';

    // Create an XMLHttpRequest object
    var xhr = new XMLHttpRequest();
    // Set the end point address
    var url = 'http://192.168.192.168/cgi-bin/eposDisp/
    service.cgi?devid=local_display&timeout=10000';
    // Open an XMLHttpRequest object
    xhr.open('POST', url, true);
    // <Header settings>
    xhr.setRequestHeader('Content-Type', 'text/xml; charset=utf-8');
    xhr.setRequestHeader('If-Modified-Since', 'Thu, 01 Jan 1970 00:00:00 GMT');
    xhr.setRequestHeader('SOAPAction', '""');
    //Set a callback function
    xhr.onreadystatechange = function () {
      if (xhr.readyState == 4) {
        if (xhr.status == 200) {
          //Obtain the response root element
          var res = xhr.responseXML;
          var success = res.getElementsByTagName('response')[0].getAttribute('success');
          //When the displaying is not successful, display a message
          if (!/^(1|true)$/.test(success)) {
            alert('A display error occurred');
          }
        }
      }
    }

    // Send display document
    xhr.send(soap);
  }
</script>
</head>
<body>
</body>
</html>
```

To Call SOAP/HTTP Interface (WSDL supported)

Refer to the following program.

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" />
<title>TITLE</title>
<script type="text/javascript">
  function sendDocument() {
    // Create a display document
    var request = '<epos-display xmlns="http://www.epson-pos.com/schemas/2012/09/
    epos-display">';
    request += '<reset/>';
    request += '<cursor type="none"/>';
    request += '<marquee format="place" repeat="0" uwait="500" rwait="2000">Thanks for
    coming!</marquee>';
    request += '</epos-display>';

    // Create a print parameter
    var param = '<parameter xmlns="http://www.epson-pos.com/schemas/2012/09/epos-
    display">';
    param += '<devid>local_display</devid>';
    param += '<timeout>10000</timeout>';
    param += '<printjobid>ABC123</printjobid>';
    param += '</parameter>';

    // Create a SOAP envelop
    var soap = '<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">' +
               '<s:Header>' + param + '</s:Header> + '<s:Body>' + request +
               '</s:Body></s:Envelope>';

    // Create an XMLHttpRequest object
    var xhr = new XMLHttpRequest();
    // Set the end point address
    var url = 'http://192.168.192.168/cgi-bin/eposDisp/service.cgi';
    // Open an XMLHttpRequest object
    xhr.open('POST', url, true);
    // <Header settings>
    xhr.setRequestHeader('Content-Type', 'text/xml; charset=utf-8');
    xhr.setRequestHeader('If-Modified-Since', 'Thu, 01 Jan 1970 00:00:00 GMT');
    xhr.setRequestHeader('SOAPAction', '""');

    //Set a callback function
    xhr.onreadystatechange = function () {
      if (xhr.readyState == 4) {
        if (xhr.status == 200) {
          //Obtain the response root element
          var res = xhr.responseXML;
          var success = res.getElementsByTagName('response')[0].getAttribute('success');
          //When the displaying is not successful, display a message
          if (!/^(1|true)$/.test(success)) {
            alert('A display error occurred');
          }
        }
      }
    }

    // Send display document
    xhr.send(soap);
  }
</script>
</head>
<body>
</body>
</html>
```

Customer Display End Point Address

Specify the customer display end point address in the following format:

To Call SOAP/HTTP Interface

http://[IP address]/cgi-bin/eposDisp/service.cgi?devid=[device ID]&timeout=[timeout time]

To Call SOAP/HTTP Interface (WSDL supported)

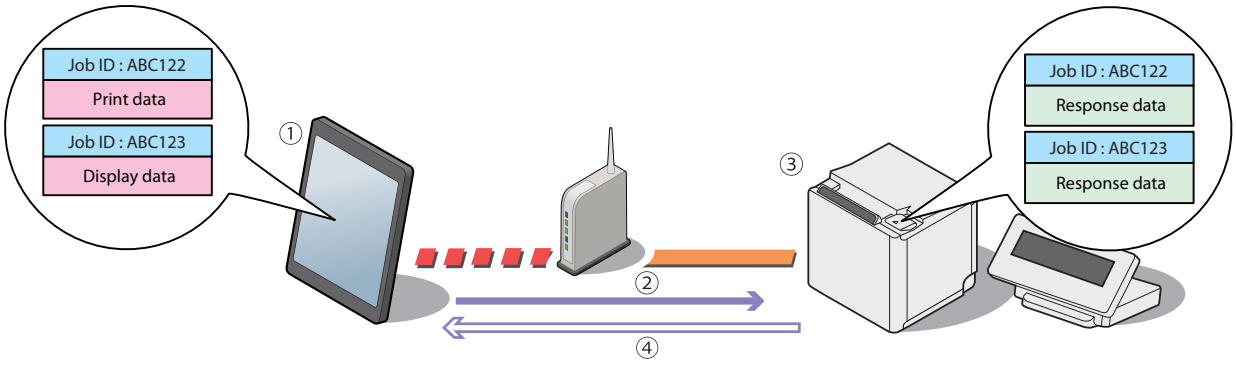
http://[IP address]/cgi-bin/eposDisp/service.cgi

Items to specify	Description
IP address	Specify the IP address or the domain name of the TM printer connected to the customer display.
Device ID	The device ID of the customer display is fixed to "local_display".
Timeout period	Specifies the time to abort the process in milliseconds. The maximum value is 300 seconds (300000). The timeout parameter is optional; when it is omitted, 60 seconds (60000) is set. When the timeout period elapses, the print job is canceled; the data already interpreted by the printer before the start of the print abort process is printed.

For SOAP/HTTP Interface (WSDL supported), the device ID and timeout time are specified in the SOAP header.

Specifying the Print Job ID from the Application

A response containing the specified print job ID will be returned when sending a request from the application by specifying the print job ID.



Programming Example

Request

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2012/09/epos-display">
      <devid>local_display</devid>
      <timeout>60000</timeout>
      <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <epos-display xmlns="http://www.epson-pos.com/schemas/2012/09/epos-display">
      <text>Hello, World!</text>
    </epos-display>
  </s:Body>
</s:Envelope>
```

Response

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <parameter xmlns="http://www.epson-pos.com/schemas/2012/09/epos-display">
      <devid>local_printer</devid>
      <timeout>60000</timeout>
    <printjobid>ABC123</printjobid>
    </parameter>
  </s:Header>
  <s:Body>
    <response xmlns="http://www.epson-pos.com/schemas/2012/09/epos-display"
    success="true" code="" status="0" />
  </s:Body>
</s:Envelope>
```

How to Use WSDL

This section describes how to generate client codes (proxy class) from WSDL by using the tool provided in the development environment.

This section uses the following cases as examples:

- How to use WSDL (p.225)
- Java (p.227)

How to use WSDL

Item	Description
Tool	ServiceModel Metadata Utility Tool (Svcutil.exe)
Command	> svcutil.exe epos-display-x.x.x.wsdl epos-display-x.x.x.xsd

For details about the Svcutil.exe tool, refer to the following Web site (as of September, 2015):
https://msdn.microsoft.com/en-us/library/aa347733.aspx

Procedure

1 From the command prompt, execute Svcutil.exe and create the following files:

- ❏ ePOSDisplay.cs (WCF contract)
- ❏ output.config (application configuration file)

2 Start Visual Studio and create a new project.
(Project example: console application)

3 Add a class file to the project.
(File to be added: ePOSDisplay.cs)

4 Add a reference to the project.
(Assembly to be added: System.ServiceModel)

5 Edit the application configuration file.
(File to be edited: App.config)

- ❏ Open output.config and copy the <system.serviceModel> element.
- ❏ Change the end point address in accordance with the printer.

6 Create and execute a program to call XML Print Service.

Editing example (File to be edited: Program.cs)

```
namespace ConsoleApplication1
{
   class Program
   {
      static void Main(string[] args)
      {
         ePOSDisplayPortTypeClient client = new ePOSDisplayPortTypeClient();

         parameter param = new parameter();
         param.printjobid = "ABC123";
         param.devid = "local_display";
         param.timeout = "60000";

         reset r = new reset();
         cursor c = new cursor();
         c.type = cursortypetype.none;
         c.typeSpecified = true;
         marquee m = new marquee();
         m.format = marqueeformattype.place;
         m.formatSpecified = true;
         m.repeat = "0";
         m.uwait = "500";
         m.rwait = "2000";
         m.Value = "Thanks for coming!";
         object[] epos = new object[] { r, c, m };

         response res = client.send(ref param, epos);
         Console.WriteLine(res.success);
         Console.WriteLine(res.code);
         Console.ReadLine();
      }
   }
}
```

Java

Item	Description
Tool	JAX-WS wsimport tool
Command	wsimport epos-display-x.x.x.wsdlv

For details about the JAX-WS wsimport tool, refer to following Web site (as of September, 2015):
http://docs.oracle.com/javase/8/docs/technotes/tools/windows/wsimport.html

Appendix

ePOS-Print Editor

This section describes how to use ePOS-Print Editor included in the contents in the package.
This tool is a support tool for generating XML data. This tool allows you to create an ePOS-Print XML (p. 64) print document as you like. In addition, the generated XML data can be printed for testing. Use this tool for your application development.

ePOS-Print Editor Operating Environment

Web Browser

- Windows Internet Explorer 9 or later
- Mozilla Firefox 13 or later
- Google Chrome 19 or later
- Apple Safari 5.1.7 or later
- iPad Safari in iOS 5.1 or later

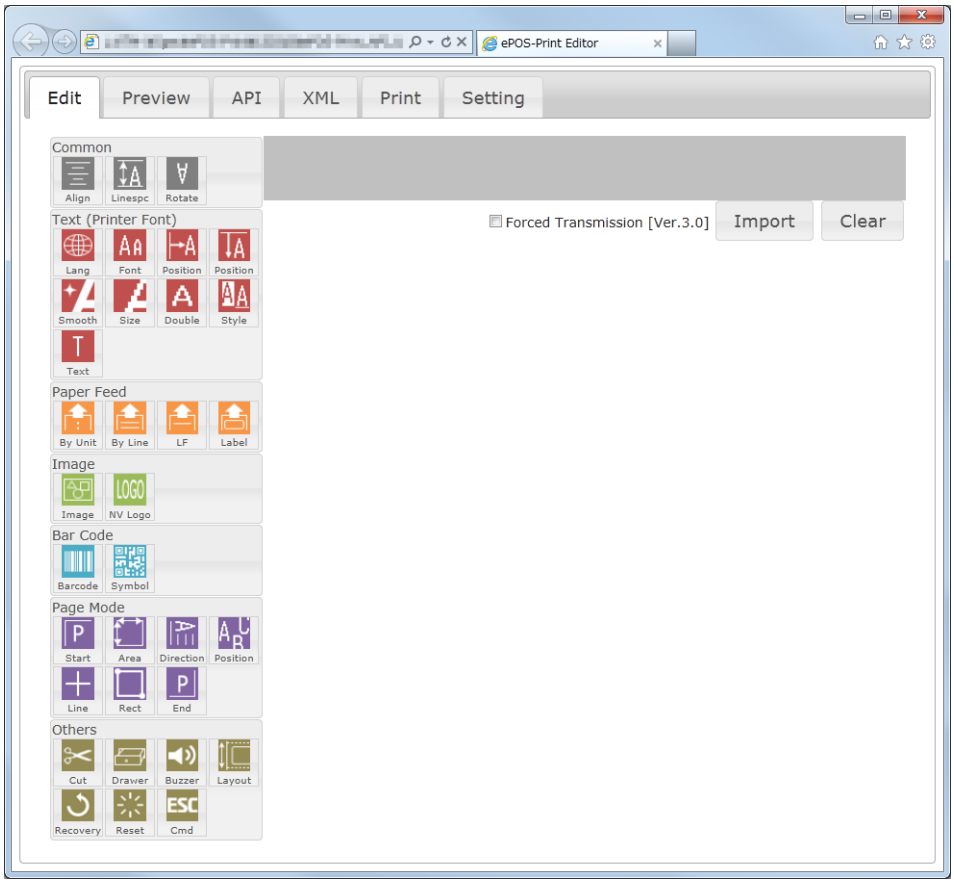
Environment Setting Procedure

	• In Google Chrome, when a preview image including pictures is displayed, a "SECURITY_ERR: DOM Exception 18" error occurs. • In Windows Internet Explorer 9, when printing is performed, a "SCRIPT5: Access is denied." error occurs.
	If opening a page with ePOS-Print Editor's HTML file placed on the local disk, some functionality does not operate due to your Web browser's security policy. Place the HTML file of ePOS Editor to a folder under Web server.

1 Copy the editor folder contained in the sample program to the Web server.

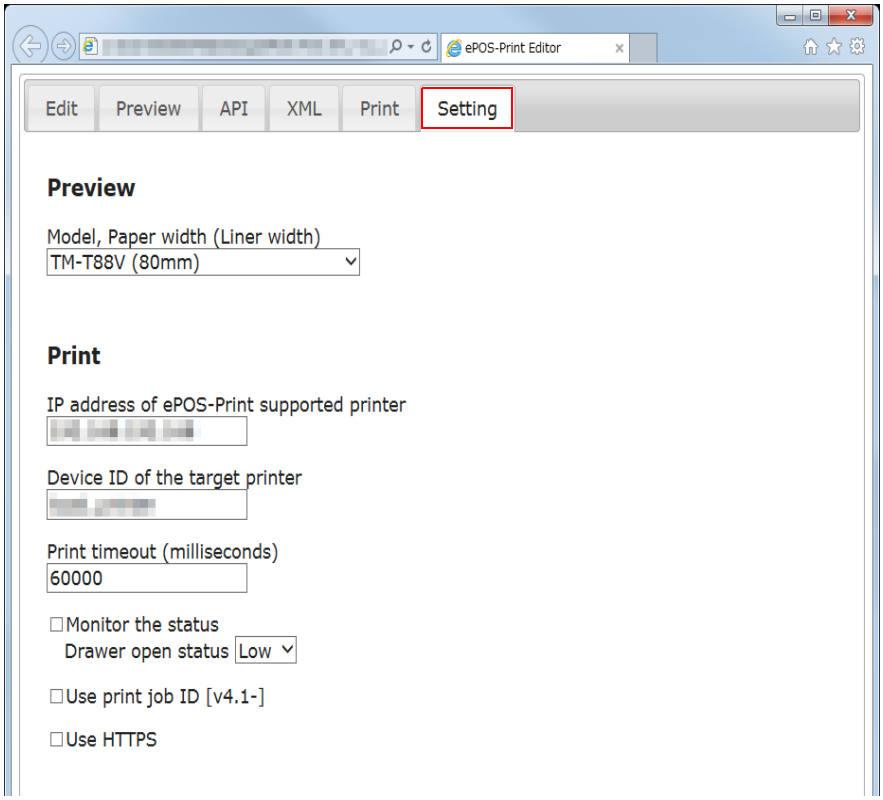
2 Open the following URL page using the Web browser.
http://[Web server IP address]/editor/index.html

3 ePOS-Print Editor appears.



Setting

Perform the print setting and the preview setting. Select the [Setting] tab to display the Setting screen.



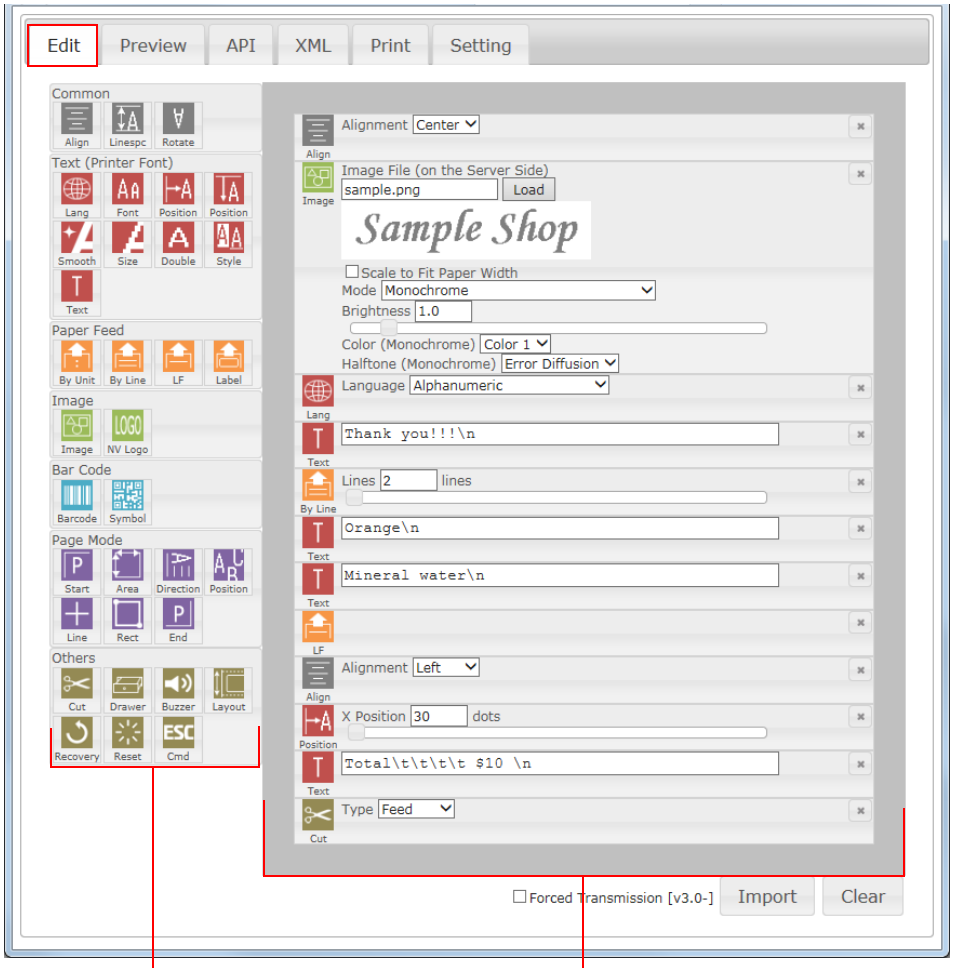
Item	Description
Model	Specify the model of the printer to be used for printing. The Preview screen resizes according to the paper width set to the model.
IP address of ePOS-Print supported TM printer	Specify the IP address of the printer. Be sure to specify this item.
Device ID of the target printer	Specify the device ID of the printer. Be sure to specify this item.
Print timeout (milliseconds)	Specify the print timeout time in milliseconds. The maximum value is 60000 (60 seconds).
Monitor the status	When this checkbox is checked, the printer's status is monitored.
Drawer open status	Change this according to the specifications of the drawer that you are using.
Use print job ID *1	Check this for a print job ID to be assigned when printing.
Use HTTPS *2	Check this to use HTTPS to communicate with the printer to print.

*1 TM-DT Software Ver.3.0 or later/TM-i firmware Ver.4.1 or later/TM-T88VI

*2 Printers that support HTTPS (Printer Functions (p.14))

Creating a Sample Code

Select the [Edit] tab to display the Edit screen. Create an ePOS-Print XML print document in the Edit screen.



Item	Description
Menu area	Displays the available functions. Click an icon to add it to the bottom of the edit area, and drag an icon to insert it anywhere in the edit area.
Edit area	Displays the functions selected in the menu area. Drag an element to change its position. An element can be deleted using the x button located on its right side.
Import	ePOS-Print Editor can import an ePOS-Print XML print document. For details, refer to Import (p.234).
Clear	Deletes the edited details.
Forced Transmission	Sets forced transmission mode.

Create XML data as follows:

1 Click an icon in the menu area to add an element in the edit area.

The position of the added function can be changed by dragging.

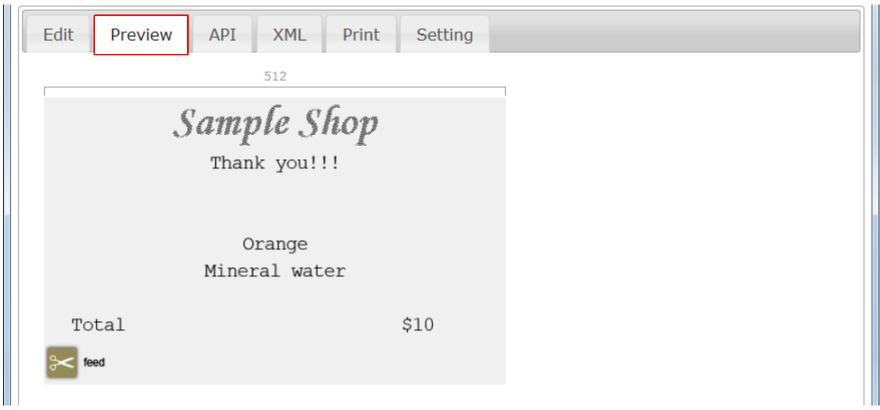
2 Configure the added element.

Example: When the NV logo is added, set the key code.

3 Select the [Preview] tab to check the preview image.

When a printer is connected, you can also check the image by printing.

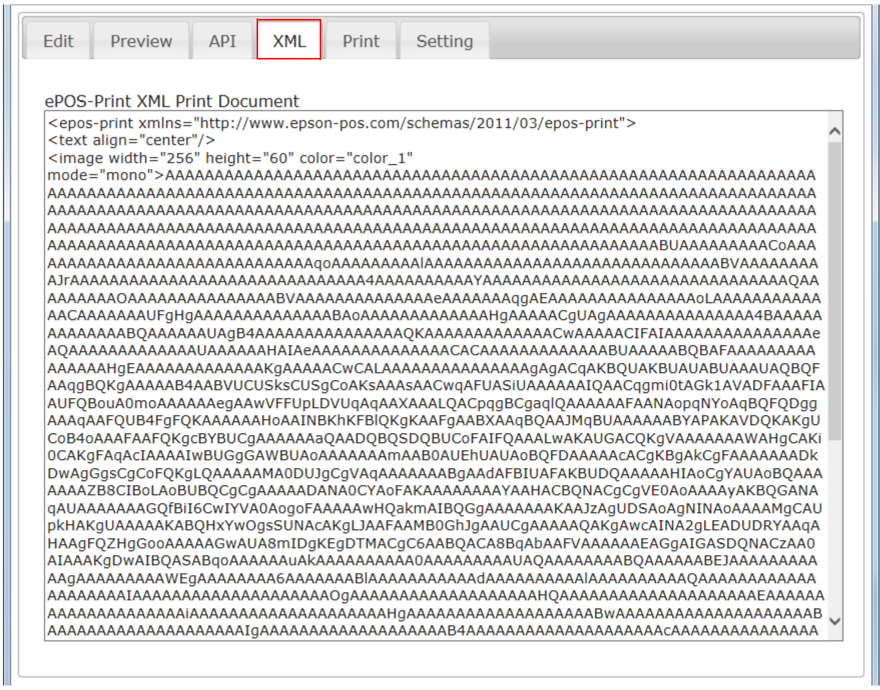
For details, refer to Print (p.233).



- Logo printing, barcode printing, 2D code printing, ESC command, buzzer sound, drawer kick, and paper cut are displayed as icons.
- The layout may change depending on the preview settings. (For details, refer to Setting (p.230)).

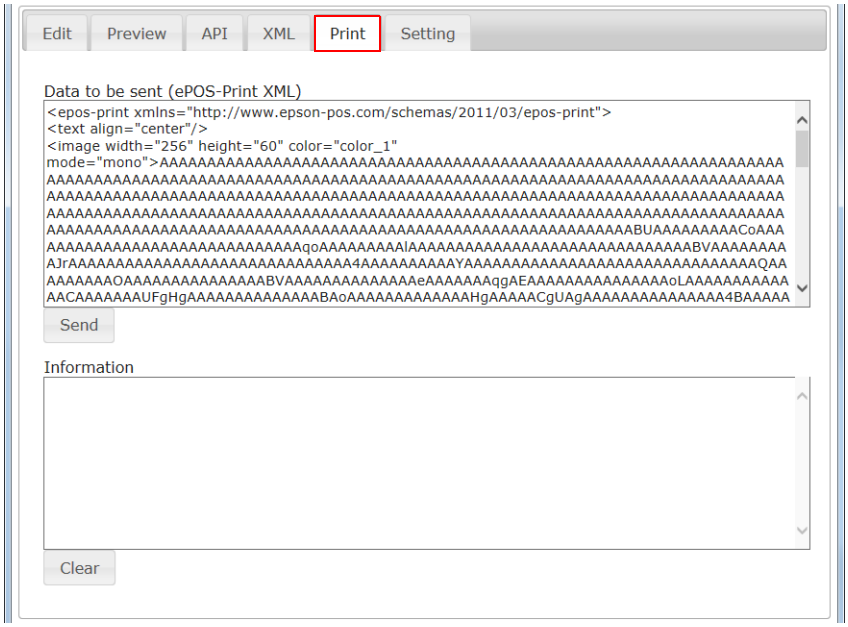
4 Select the [XML] tab. The ePOS-Print XML document is displayed. Use it by copying.

Save the ePOS-Print XML print document, and you can edit it by importing it again.



Print

Using the printer, print the ePOS-Print XML print document according to the printer's settings to perform test printing.
(For details on the printer settings, refer to Setting (p.230)).



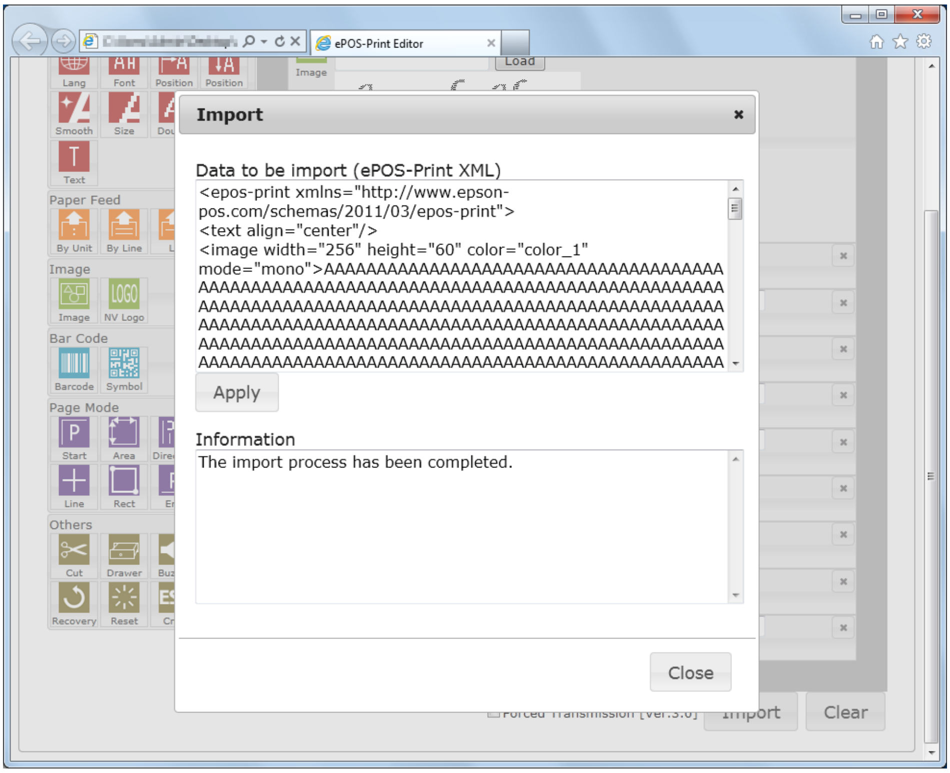
Item	Description
Data to be sent (ePOS-Print XML)	The ePOS-Print XML document is displayed.
Send	Sends data to the printer and performs printing.
Information	Displays the print status.
Clear	Deletes the content in the [Information] box.

Perform printing as follows:

1. Select the [Print] tab.
2. Check the content in the [Data to be sent (ePOS-Print XML)] box and press the [Send] button.
   The ePOS-Print XML print document created using the Edit tab page is displayed in "Data to be sent (ePOS-Print XML)".
3. The print document is printed to ePOS-Print supported TM printer.
   The acquired status is displayed in the Information box.

Import

ePOS-Print Editor can import an ePOS-Print XML print document.
This function is used to edit the already created ePOS-Print XML print document.



Item	Description
Data to be import (ePOS-Print XML)	Pastes the ePOS-Print XML print document.
Apply	Imports the ePOS-Print XML print document.
Information	Displays the import information.
Close	Closes the Import screen.

ePOS-Print Editor can import an ePOS-Print XML print document as follows:

1. Select the [Edit] tab and click the [Import] button.
2. The "Import" screen appears. Paste the ePOS-Print XML print document in the [Data to be import (ePOS-Print XML)] box.
3. Click the [Apply] button.
4. The "Confirmation" screen appears. Click the [Yes] button.

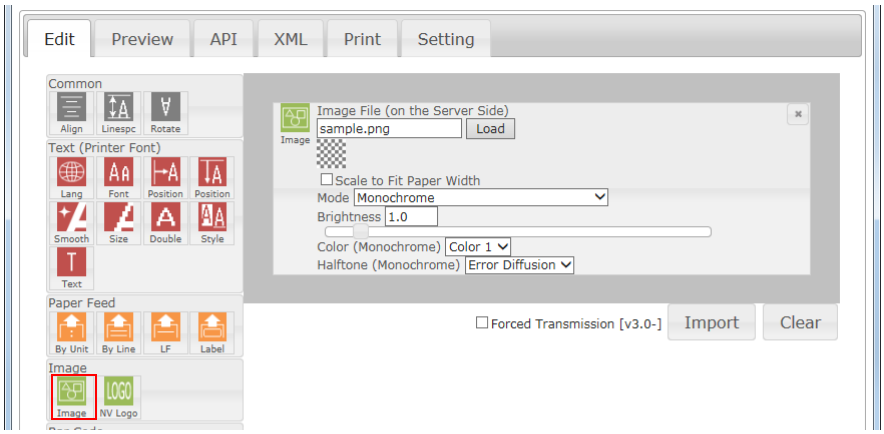
Encoding Graphic Data

Use ePOS-Print Editor to convert raster graphic bit-image data into a base 64 encoded character string.

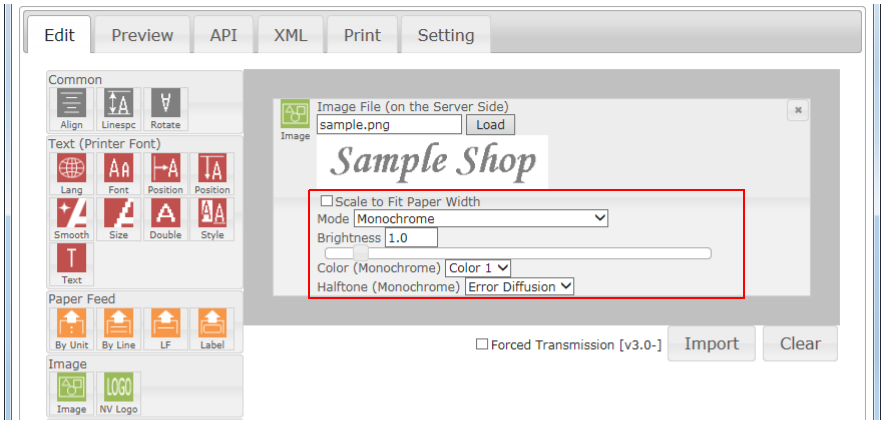
How to Use ePOS-Print Editor

Create data as follows:

1. Store the image file you want to print into the same level as the index of this tool.
2. Start ePOS-Print Editor.
3. Select the [Image] icon in the menu area and add it in the edit area.



4. Specify the name of the stored image file for "Image File (on the Server Side)" and click the [Load] button.
5. Specify values as needed for "Scale to Fit Paper Width", "Mode", "Brightness", "Color", and "Halftone".



6 Select the [XML] tab.

7 Code converted into a base 64 encoded character string is displayed in [ePOS-Print XML Print Document]. Copy the desired character string for use.