

Device Data Notification User's Manual

Overview

Describes the operating environment and system configuration for Device Data Notification.

Sample Program

Describes how to use the sample program and how to configure the system.

Request and Response

Describes the requests and responses in Device Data Notification.

Cautions

- No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Seiko Epson Corporation.
- The contents of this document are subject to change without notice. Please contact us for the latest information.
- While every precaution has been taken in the preparation of this document, Seiko Epson Corporation assumes no responsibility for errors or omissions.
- Neither is any liability assumed for damages resulting from the use of the information contained herein.
- Neither Seiko Epson Corporation nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by the purchaser or third parties as a result of: accident, misuse, or abuse of this product or unauthorized modifications, repairs, or alterations to this product, or (excluding the U.S.) failure to strictly comply with Seiko Epson Corporation's operating and maintenance instructions.
- Seiko Epson Corporation shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original Epson Products or Epson Approved Products by Seiko Epson Corporation.

Trademarks

EPSON is a registered trademark of Seiko Epson Corporation.

Exceed Your Vision is a registered trademark or trademark of Seiko Epson Corporation.

XAMPP is registered trademark of BitRock.



All other trademarks are the property of their respective owners and used for identification purpose only.

© Seiko Epson Corporation 2014-2019. All rights reserved.

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.

Restriction of Use

When this product is used for applications requiring high reliability/safety such as transportation devices related to aviation, rail, marine, automotive etc.; disaster prevention devices; various safety devices etc; or functional/precision devices etc, you should use this product only after giving consideration to including fail-safes and redundancies into your design to maintain safety and total system reliability. Because this product was not intended for use in applications requiring extremely high reliability/safety such as aerospace equipment, main communication equipment, nuclear power control equipment, or medical equipment related to direct medical care etc, please make your own judgment on this product's suitability after a full evaluation.

About this Manual

Aim of the Manual

The aim of this manual is to provide development engineers with the information necessary to develop and design applications using the device data notification function.

Manual Content

The manual is made up of the following sections:

- Chapter 1 [Overview](#)
- Chapter 2 [Sample Program](#)
- Chapter 3 [Request and Response](#)

Contents

■ For Safety	3
Key to Symbols	3
■ Restriction of Use	3
■ About this Manual	3
Aim of the Manual	3
Manual Content	3
■ Contents	4

Overview..... 6

■ Overview of Device Data Notification	6
Acquisition of a Device Control Result if Spooler/Print Forwarding is Enabled	7
Features	8
■ Operating Environment	9
TM printers with DDN support	9
Input Device	9
Control Device	10
How to Access the Web server	10
ePOS-Device Service Versions	11
■ Contents In the Package	12
Manual	12
Sample Program	12
Download	12
■ Restrictions	13

Sample Program 14

■ Overview	14
Hardware Configuration	14
File Configuration	15
Printing Result	15
Program Flow	16
■ Environment Settings	17
Sample Program Configuration	18
TM printers with DDN support	18
■ Execution of Sample Program	25

Request and Response26

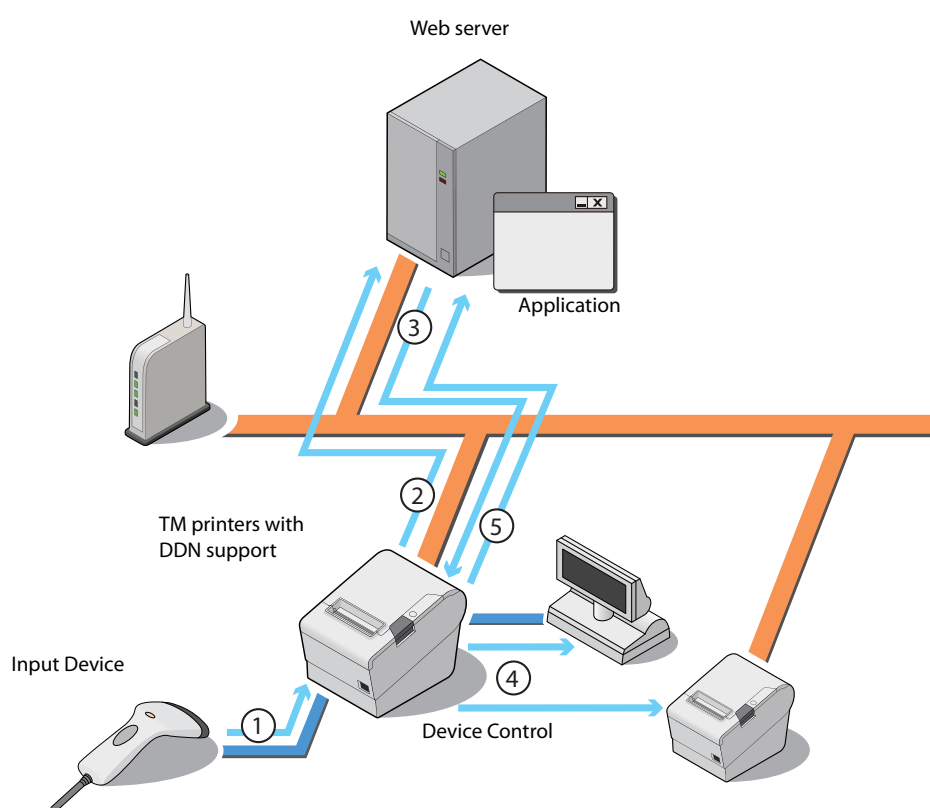
■ Request (Device Use Rights Acquisition Result Notification)	27
■ Response (Device Use Rights Acquisition Result Notification)	28
■ Request (Communication Box Preparation Notification)	29
■ Response (Communication box preparation notification)	30
■ Request (Input Data)	31
■ Response (Input Data).....	32
■ Request (Device Control Execution Result).....	33
■ Response (Device Control Execution Result)	34
■ Response to Disable Device Control	35
■ Requests and Responses if Using a Communication Box.....	36

Overview

This chapter provides the overview of Device Data Notification.

Overview of Device Data Notification

Device Data Notification is a function used to post the data input from the input device that is connected to the TM printers with DDN (Device Data Notification) support to the designated URL of the Web server. The Web server application performs device control, such as printing and displaying information on the customer display, by including print data in ePOS-Device XML format and device control into the response to a request from the TM printers with DDN support.



Before turning on the TM printer power, make sure that all devices are connected to the printer.

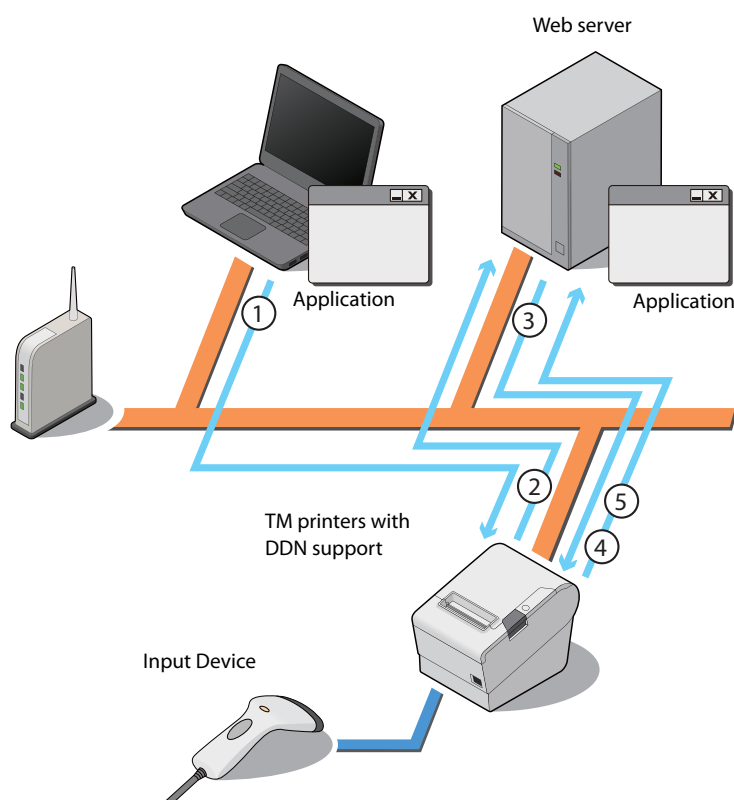
- 1: When a data input occurs, for example, when an operator reads a barcode with the barcode reader, the input device sends the input data to the TM printers with DDN support.
- 2: The TM printers with DDN support formats the input data received from the input device and sends the data to the Web server application (POST).
- 3: Triggered by the input data, the Web server application generates device control data in ePOS-Device XML format from database or other system and returns a response to the request from the TM printers with DDN support.
- 4: The TM printers with DDN support sends the device control data to the device.
- 5: The TM printers with DDN support sends the result of device control to the Web server.

Acquisition of a Device Control Result if Spooler/Print Forwarding is Enabled

If using a spooler or print forwarding, the control result is sent to the Web server when data is saved in the spooler. Printing and other device control is executed after that. (["Requests and Responses if Using a Communication Box" on page 36](#))

It is necessary to output a request to the Web server by some method in order to acquire an accurate device control result.

For example, you could develop an application that sends messages to the communication box of TM printers with DDN support in order to be able to acquire a device control result.



- 1: Messages are sent from the application to the communication box of TM printers with DDN support.
- 2: TM printers with DDN support send a request to the Web server.
- 3: The Web server application returns a response that does not contain any data.
- 4: TM printers with DDN support send the device control result from the spooler to the Web server.
- 5: If there are multiple device control results in the spooler, all control results are sent to the Web server.

Features

- Input from a device such as a barcode scanner or a communication box can be used as a trigger to start the application.
- Printing requests can be made to the printer by specifying the printing job ID *.
- Printing data can be sent to the printer without waiting for a printing complete response from the printer *. (Spooler)
- Print data can be sent to another printer if the printer sends an error response (PAPER END, COVER OPEN, etc.) or does not return a response *. (Print forwarding)

*: ePOS-Device Service Ver.2.6 or later.

Operating Environment

TM printers with DDN support

- TM-i series
 - TM-T20II-i (TM-i firmware Ver.4.3 or later)
 - TM-T70-i (TM-i firmware Ver.4.1 or later)
 - TM-T82II-i (TM-i firmware Ver.4.1 or later)
 - TM-T83II-i (TM-i firmware Ver.4.1 or later)
 - TM-T88V-i (TM-i firmware Ver.4.1 or later)
 - TM-U220-i
- TM-DT series
 - TM-H6000IV-DT (TM-DT software Ver.3.0 or later)
 - TM-T70II-DT (TM-DT software Ver.3.0 or later)
 - TM-T88V-DT (TM-DT software Ver.3.0 or later)
- TM-DT2 series
 - TM-T70II-DT2
 - TM-T88VI-DT2
- TM-T88VI-iHUB



For details about how to check the version of Software, refer to the Technical Reference Guide for each printer.

Input Device

The following devices can be designated as the input device for Device Data Notification:

- Key input device (keyboard, barcode scanner, etc.)
- Serial communication device
- USB serial conversion cable



- Control from other applications is not possible because the input device is locked with an exclusive lock by Device Data Notification.
- Turn off the printer power before connecting input devices other than a serial communication device.

Control Device

The following devices can be designated as the control device for Device Data Notification:

- TM printers with DDN support
- TM printer ^{*1}
- Customer display
- Serial communication device
- USB serial conversion cable
- Other device ^{*2}

^{*1}: Available TM printers are different depending on the TM printers with DDN support. For details, refer to Technical Reference Guide for each printer.

^{*2}: You can use this for the TM-DT2 Series and the TM-DT series.



Control from other applications is not possible because any devices other than printers are locked with an exclusive lock by Device Data Notification.

How to Access the Web server

How to access	TM-i series	TM-DT series	TM-DT2 series/ TM-T88VI-iHUB
Proxy server	Available	TM-DT software Ver.3.0 or later	Available
Proxy authentication		TM-DT software Ver.3.0 or later	
Digest authentication		TM-DT software Ver.2.2 or later	
HTTPS communication		TM-DT software Ver.2.2 or later	
HTTPS communication with server authentication		TM-DT software Ver.3.0 or later	
TLS 1.2 support	TM-i Firmware Ver.4.4 or later	TM-DT software Ver.3.0 or later	

ePOS-Device Service Versions

The versions of the ePOS-Device service support the following TM-DT Software version and TM-i firmware version.

ePOS-Device Service	TM-DT Software	TM-i Firmware	TM-T88VI-iHUB
1.0	1.0	-	-
2.0	2.0	-	-
2.2	2.2	-	-
2.5	2.5	4.0	-
2.6	-	4.1, 4.3	1.0
3.0	3.0	-	-



For details about how to check the version of software, refer to the Technical Reference Guide for each printer.

Contents In the Package

Manual

- Device Data Notification User's Manual (This Document)
- Technical Reference Guide for each printer
- ePOS-Device XML User's manual

Sample Program

File name	Description
DDN_Sample_Vxxx.zip	Sample program for Device Data Notification
Test_DeviceData.php	Sample program file
README.txt	Readme file

Download

For customers in North America, go to the following web site:

www.epson.com/support/ and follow the on-screen instructions.

For customers in other countries, go to the following web site:

<https://download.epson-biz.com/?service=pos>

Restrictions

- If power is restored the device or the cover is open during printing, printing may not occur properly.
- To turn the device power off and on, be sure to allow an interval of five seconds or more between power off and on.
- Use a switching hub to connect the device.
If no switching hubs are used, the device in online status is more likely to be judged as offline depending on the traffic condition.
- Use forced transmission mode of ePOS-Device XML to perform drawer open while the printer is offline.
For details, see the “ePOS-Device XML User's Manual”.
- When the specified timeout time has passed after printing starts, the printing is canceled, but the data recognized by the printer before print canceling process starts is printed.
- Messages that contain BOM are not supported.
- Only UTF-8 character encoding is supported.
- The maximum sizes for data the server sends to the printer are as shown below.

Printer	Size
TM-i series	200 KB
TM-DT series	200 KB
TM-DT2 series	200 KB
TM-T88VI-iHUB	4 MB

- 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 a 2D-code scanner is used, multibyte characters such as Japanese cannot be obtained properly.
- When 2D-code data contains an ASCII control code (0x00 to 0x1F), control codes cannot be obtained.

Sample Program

This chapter describes how to use the sample program for Device Data Notification.

Overview

The sample program for Device Data Notification is described in PHP. You can register it in the Web server and execute it.

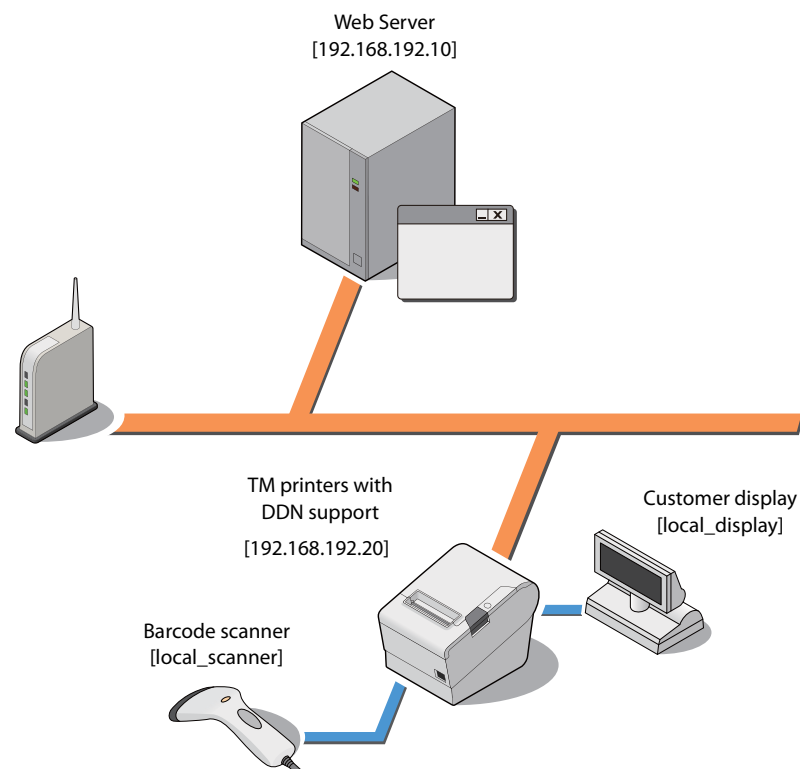
When a barcode is read with the barcode scanner, the TM printers with DDN support sends a request containing barcode data to the sample program in the Web server. The sample program sends response data containing print data in ePOS-Device format and display data. The main printer of the TM printer with DDN support prints a coupon and displays a message on the customer display.

Hardware Configuration

The system configuration of the sample program is as shown below.



The figure below also shows IP address examples for the network settings.



- Web Server
- Router
- TM printers with DDN support
- Barcode scanner
- Customer display (Use of the customer display is optional.)

File Configuration

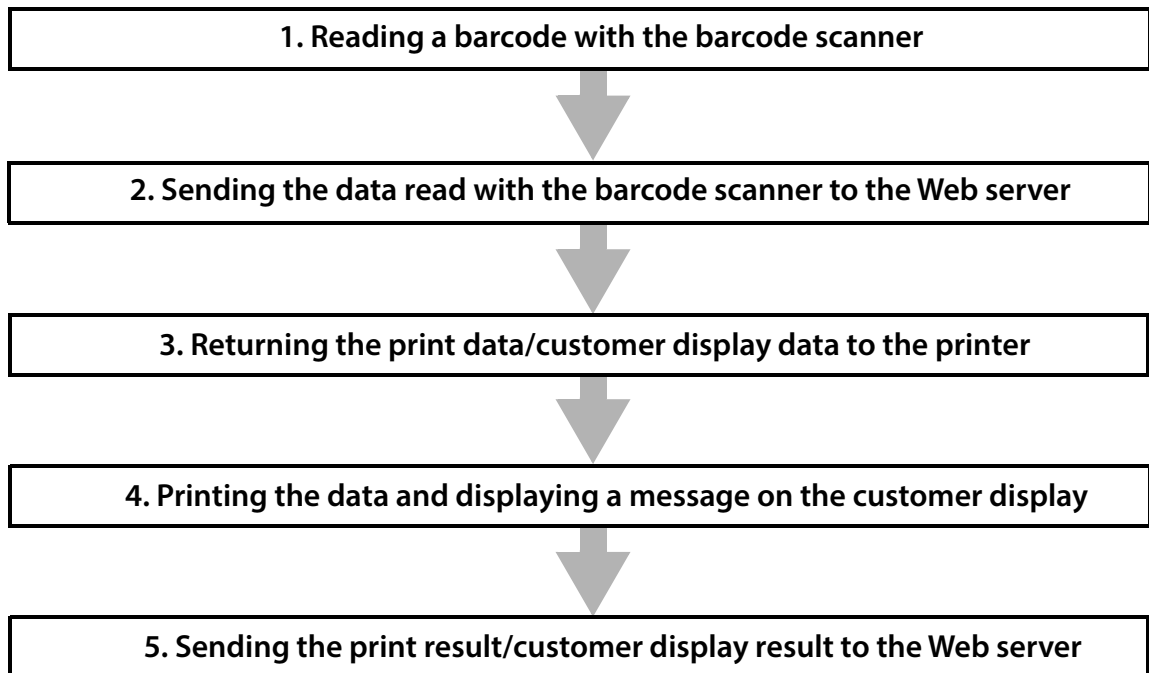
File Name	Description
Test_DeviceData.php	The server returns a response containing print data when the printer sends a request.

Printing Result



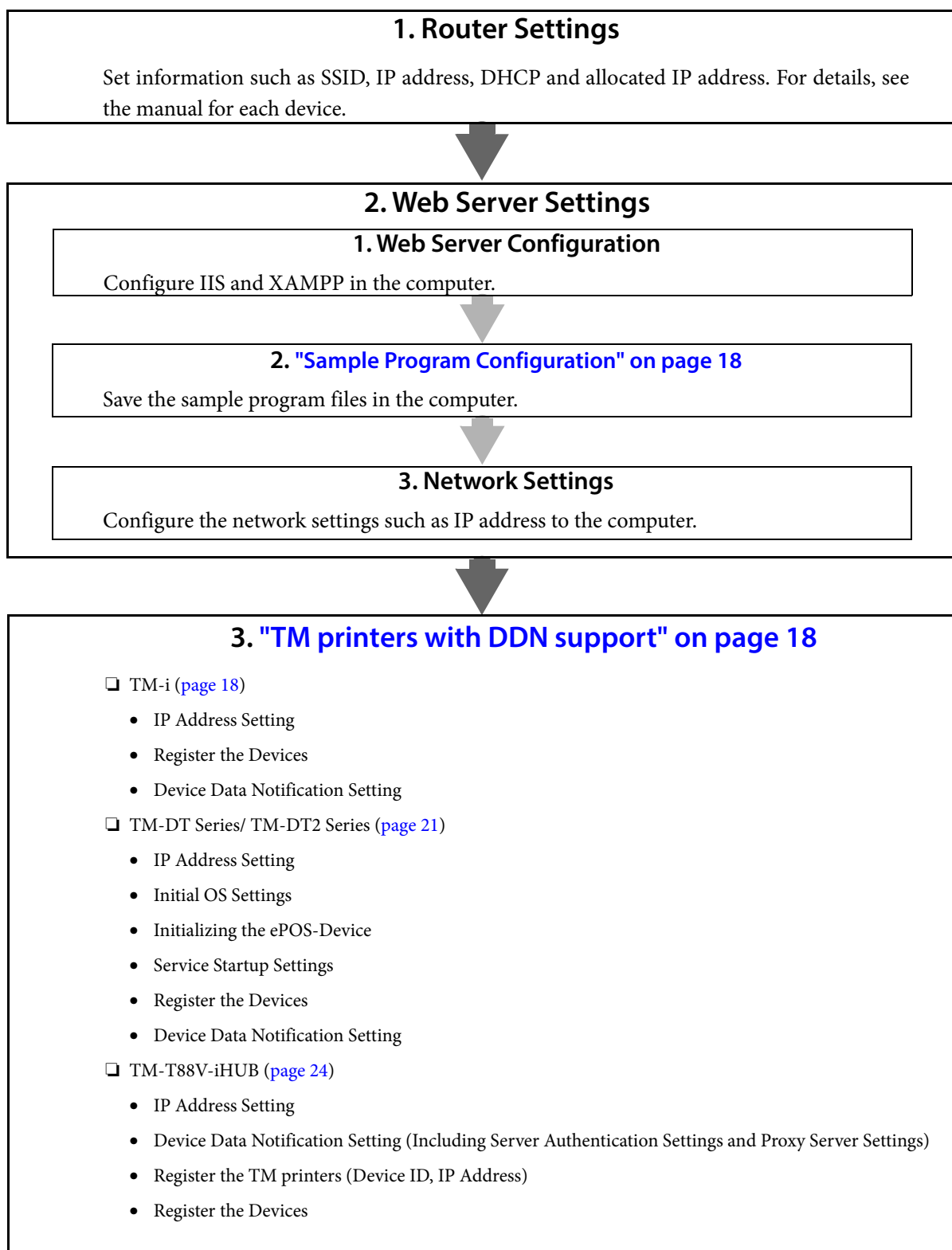
Program Flow

The flow from the initial display to the print completion of the sample program is as shown below.



Environment Settings

The environment setting flow of the sample program is as shown below.



Sample Program Configuration

Save the sample program files to the Web server.

Save the files directly under the following folders:

Environment	Folder	Saved File
IIS	inetpub\wwwroot	Test_print.php
XAMPP	xampp\htdocs	

TM printers with DDN support

- TM-i Series ([page 18](#))
- TM-DT Series/ TM-DT2 Series ([page 21](#))
- TM-T88V-iHUB ([page 24](#))

TM-i Series

Configure the following settings to printer.

- IP Address Setting : Refer to the Technical Reference Guide for each printer.
- Register the devices : [page 18](#)
- Device Data Notification Setting : [page 20](#)

Register the Devices

Register the barcode scanner and customer display using Epson TMNet WebConfig.

- 1** Turn off the TM printers with DDN support and connect the barcode scanner and customer display.
- 2** Then, turn on the TM printers with DDN support.
- 3** Start the Web browser on the setup computer and enter as follows:
http://<IP address of the printer>/webconfig/
- 4** Epson TMNet WebConfig starts.
- 5** Register the barcode scanner.
Select [Web Service Settings] - [Device Admin] - [Device Registration] - [Key Input Device].

- 6** The "Key Input Device" screen appears.
Set the following items and click [Apply].

Item	Description
Device ID	Set the device ID. Enter "local_scanner".
Device name	Confirm that the connected barcode scanner is selected.
Control script	Set the control script. Select "Scanner_Generic.js".

- 7** The barcode scanner is added to the registered key input devices.
Click [Operating test] and check whether the registered barcode scanner operates properly.

- 8** Register the customer display.
Select [Web Service Settings] - [Device Admin] - [Device Registration]
- [Customer Display].

- 9** The "Customer Display" screen appears. Set the following items and click [Apply].

Item		Description
Customer Display		Select [Use].
Communication settings	Communication speed (bps)	Set the communication speed. Select the communication speed according to the customer display.
	Data bit	Set the data bit. Select the data bit according to the customer display.
	Parity	Set the parity. Select the parity according to the customer display.
Brightness setting		Set the brightness. Select the brightness as desired.

- 10** The customer display is registered.
Click [Test display] and check whether the registered customer display operates properly.



The device ID of the customer display is "local_display".

Device Data Notification Settings

Configure the Device Data Notification settings using Epson TMNet WebConfig as follows:

1 Epson TMNet WebConfig starts.

Select [Web Service Settings] - [Server Access] - [Device Data Notification].

2 The "Device Data Notification" screen appears. Set the following items and click [Apply].

Item		Description
settings		
Device Data Notification	Device Data Notification	Select [Enable].
	Server Access	ID
		Set ID for the server-side program to identify the main printer. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
		Password
		Set Password for ID. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
		URL
		Enter the URL of the Device Data Notification destination (sample program). Enter as follows: http://[IP address of the Web server]/Test_DeviceData.php After entry, check whether the URL is correct. Click [Access Test].
		Server Authentication
		Set this item to perform server authentication with the registered certificate during access with https. Not required for the sample program.
		Box ID
		Specify the box ID of the communication box to be controlled by the Device Data Notification function. To use the communication box by the Device Data Notification function, set the member ID for sending data to the communication box as ""(null). Not required for the sample program.
POST Error	Print Message	To print an error message when POST to the server fails, select [Enable].
	Message Text	Enter the character string to be printed when POST to the server fails.
	Text Attributes	Set the character decoration for message. Select the character decoration to be used. The following decorations are available: Bold /Underline /Double width /Double height /Reverse black and white /Upside down
	Cut	To cut the paper after printing an error message, select [Enable].
Capture Device		
Device		Select the device to be used. For the sample program, select the following items: <ul style="list-style-type: none"> • local_printer • local_display • local_scanner

TM-DT Series/ TM-DT2 Series

Configure the following settings to printer.

- IP Address Setting : Refer to the Technical Reference Guide for each printer.
- Initial OS Settings : Refer to the Technical Reference Guide for each printer.
- Initializing the ePOS-Device : Refer to the Technical Reference Guide for each printer.
- Service Startup Settings : [page 21](#)
- Register the devices : [page 22](#)
- Device Data Notification Setting : [page 23](#)

Service startup settings

To make service startup settings, use Epson TMNet WebConfig and the following procedure.

1 Turn off the TM printers with DDN support, and then connect the following to the TM printers with DDN support.

- Display
- Keyboard
- Barcode scanner
- Customer display

2 After connecting it, turn on the TM printers with DDN support.

3 Start Epson TMNet WebConfig from the shortcut on the desktop.

Epson TMNet WebConfig starts.



If you are making settings from an external device, set the printer IP address in the address for the Web browser. The default IP address for printer is 192.168.192.168.
http://[IP address of the printer]/webconfig/

4 Select as [Settings]-[Web service settings]-[Startup settings].

5 The "Startup settings" screen appears. Set the following to [On], and the click [Apply].

- Device control (Default: On)
- Device Data Notification (Default: Off)

Register the Devices

Register the barcode scanner and customer display using Epson TMNet WebConfig.

1 Epson TMNet WebConfig starts.

2 Register the barcode scanner.

Select [Setting] - [Web service settings] - [Device Admin] - [Device registration] - [Key input device].

3 The "Key Input Device" screen appears. Set the following items and click [Add].

Item	Description
Device ID	Set the device ID. Enter "local_scanner".
Device name	Confirm that the connected barcode scanner is selected.
Control script	Set the control script. Select "Scanner_Generic.js".

4 The barcode scanner is added to the registered key input devices. Click [Operating test] and check whether the registered barcode scanner operates properly.

5 Register the customer display.

Select [Setting] - [Web service settings] - [Device Admin] - [Device registration] - [Customer display].

6 The "Customer Display" screen appears. Set the following items and click [Apply].

Item		Description
Customer Display		Select [Use].
Communication settings	Communication speed (bps)	Set the communication speed. Select the communication speed according to the customer display.
	Data bit	Set the data bit. Select the data bit according to the customer display.
	Parity	Set the parity. Select the parity according to the customer display.
Brightness setting		Set the brightness. Select the brightness as desired.

7 The customer display is registered. Click [Test display] and check whether the registered customer display operates properly.



The device ID of the customer display is "local_display".

Device Data Notification Settings

Configure the Device Data Notification settings using Epson TMNet WebConfig as follows:

- 1 Epson TMNet WebConfig starts.**
Select [Settings] - [Web service settings] - [Server access] - [Device Data Notification].
- 2 The "Device Data Notification" screen appears.**
Set the following items and click [Apply].

Item		Description
settings		
Server Access	ID	Set this item to use HTTP digest authentication or to identify the main printer from the server. Not required for the sample program.
	Password	Set this item to use HTTP digest authentication. Not required for the sample program.
	URL	Enter the URL of the Device Data Notification destination (sample program). Enter as follows: http://[IP address of the Web server]/Test_DeviceData.php After entry, check whether the URL is correct. Click [Access Test].
	Server Authentication	Set this item to perform server authentication with the registered certificate during access with https. Not required for the sample program.
	Box ID	Specify the box ID of the communication box to be controlled by the Device Data Notification function. To use the communication box by the Device Data Notification function, set the member ID for sending data to the communication box as ""(null). Not required for the sample program.
POST Error	Print Message	To print an error message when POST to the server fails, select [Enable].
	Message Text	Enter the character string to be printed when POST to the server fails.
	Text Attributes	Set the character decoration for message. Select the character decoration to be used. The following decorations are available: Bold /Underline /Double width /Double height /Reverse black and white /Upside down
	Cut	To cut the paper after printing an error message, select [Enable].
Capture Device		
Device		Select the device to be used. For the sample program, select the following items: <ul style="list-style-type: none"> • local_printer • local_display • local_scanner

TM-T88VI-iHUB Settings

Configure the following settings to printer.

- IP Address Setting : Refer to the Technical Reference Guide.
- Register the Devices : [page 24](#)
- Device Data Notification Settings : [page 24](#)

Register the Devices

Connect the barcode scanner and the customer display and set them using TM-T88VI Utility.

Connect the barcode scanner and the customer display when the power for the TM-T88VI-iHUB is on.

The sample program uses these settings.

- Customer display: local_display
- Barcode scanner: local_scanner

Use TM-T88VI Utility to confirm the device IDs and the customer display connection.

Device Data Notification Settings

Configure the Device Data Notification settings using TM-T88VI Utility.

- 1 Starting the TM-T88VI Utility.**
- 2 After TM-T88VI Utility starts, click [TM-Intelligent] - [Server Access] - [Device Data Notification].**
- 3 The Device Data Notification screen appears.**
Set the following items and click [Set].

Item		Description
Device Data Notification		Enable Device Data Notification.
Notification Server	URL	Specifies the Web server URL and the application path. Example: http://[IP address of Web server]/Test_print.php
	ID	This ID will be the user ID used for Digest authentication. Not required for the sample program.
	Password	This password will be the password used for Digest authentication. Not required for the sample program.
Box ID		Specify the box ID of the communication box to be controlled by the Device Data Notification function. Not required for the sample program.
Device List		Select the device you want to use, and select the corresponding check box. Place a check in "local_printer", "local_display" and "local_scanner".
URL Encode		Select [Enabled].
Identifier		Not required for the sample program.
Server Authentication		Select [Disabled].

Execution of Sample Program

- 1** Confirm that Device Data Notification is enabled of the TM printers with DDN support.
- 2** Read a barcode using the barcode scanner connected to the TM printers with DDN support.
- 3** To the request from the TM printers with DDN support, print data is returned as a response and a coupon is printed from the printer. A message is displayed on the customer display.

Request and Response

This chapter describes data inputs from the input device, requests from the TM printers with DDN support, and responses from the Web server.

When settings are changed when the power of the TM printers with DDN support is turned on.

Spooler and print forwarding are disabled

- ["Request \(Device Use Rights Acquisition Result Notification\)" on page 27](#)
- ["Response \(Device Use Rights Acquisition Result Notification\)" on page 28](#)

Spooler and print forwarding are enabled

- ["Request \(Device Use Rights Acquisition Result Notification\)" on page 27](#)
- ["Response \(Device Use Rights Acquisition Result Notification\)" on page 28](#)
- ["Request \(Communication Box Preparation Notification\)" on page 29](#)
- ["Response \(Communication box preparation notification\)" on page 30](#)

Normal use of Device Data Notification

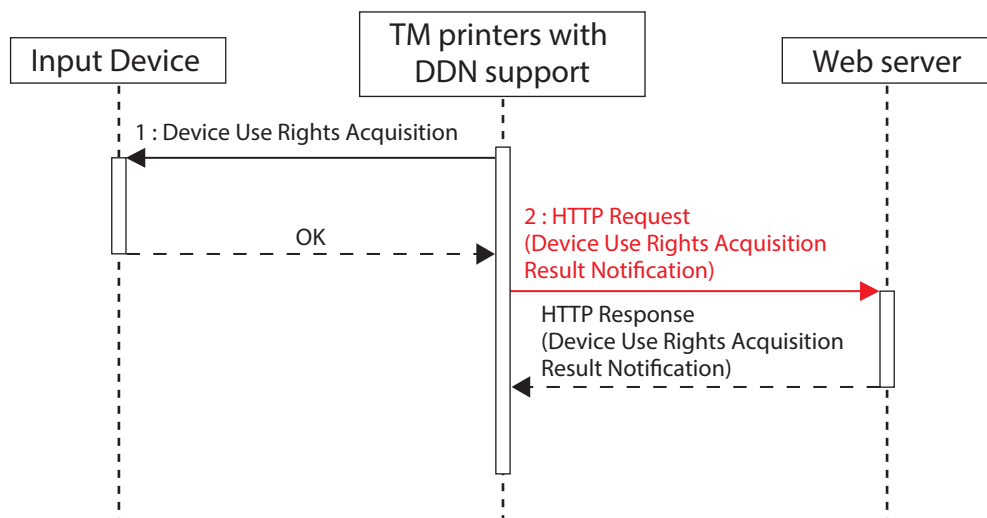
Spooler and print forwarding are disabled

- ["Request \(Input Data\)" on page 31](#)
- ["Response \(Input Data\)" on page 32](#)
- ["Request \(Device Control Execution Result\)" on page 33](#)
- ["Response \(Device Control Execution Result\)" on page 34](#)
- ["Response to Disable Device Control" on page 35](#)

Spooler and print forwarding are enabled

- ["Request \(Input Data\)" on page 31](#)
- ["Response \(Input Data\)" on page 32](#)
- ["Request \(Device Control Execution Result\)" on page 33](#)
- ["Response \(Device Control Execution Result\)" on page 34](#)
- ["Response to Disable Device Control" on page 35](#)
- ["Requests and Responses if Using a Communication Box" on page 36](#)

Request (Device Use Rights Acquisition Result Notification)



When the TM printer with DDN support is turned on, or when the Device Data Notification settings are changed with Epson TMNet WebConfig, the TM printer with DDN support executes <open_device> in ePOS-Device XML to enable the device designated as the input/control device, formats the result in ePOS-Device XML format, and sends a HTTP POST request as shown below.

The format of request message is URL-encoded form data (application/x-www-form-urlencoded). Set the sending destination according to "Device Data Notification" ([page 18](#)).

Parameter	Value
ID	ID set for the printer (page 18)
Data	ePOS-Device XML format

Header

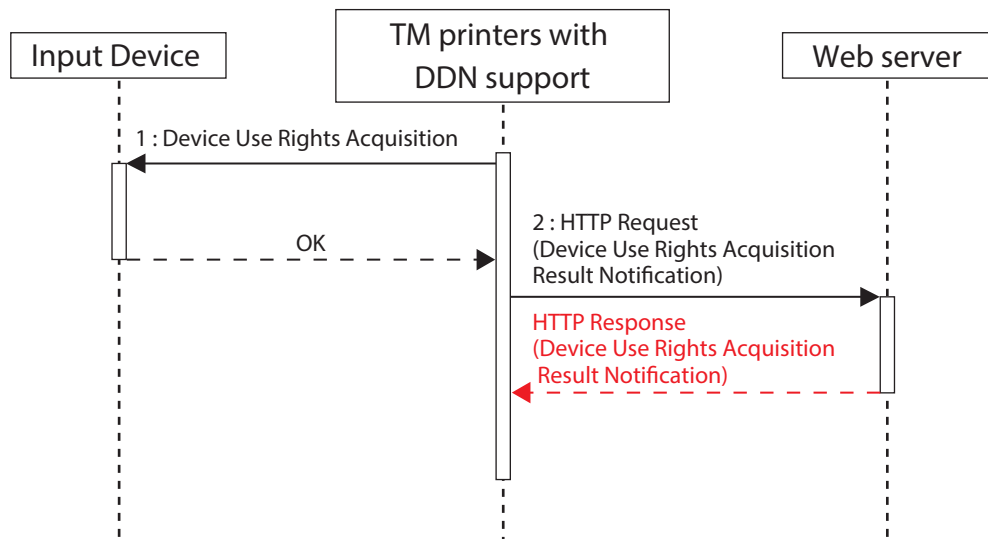
```

POST /Test_DeviceData.php HTTP/1.1
Host: 192.168.192.10
Content-Type: application/x-www-form-urlencoded
Content-Length: xxx

ID=&Data=<open_device><device_id>local_printer</device_id><code>OK</code>
<data_id>1</data_id></open_device>
  
```

TM printer with DDN support sends one HTTP request (Device Use Rights Acquisition Result Notification) to the Web server for each device. Therefore, when multiple devices are set as the target device for Device Data Notification, multiple HTTP requests (Device Use Rights Acquisition Result Notification) are sent to the Web server.

Response (Device Use Rights Acquisition Result Notification)



The Web server application creates response data as shown below to a HTTP request (Device Use Rights Acquisition Result Notification) and returns it to the TM printers with DDN support.

Specify the following responses for each device.

Barcode scanner: Return with empty data. (["Response to Disable Device Control" on page 35](#))

Keyboard: Return the data shown below if necessary to specify a setting such as "setprefix".

The format of response message is ePOS-Device XML(text/xml).

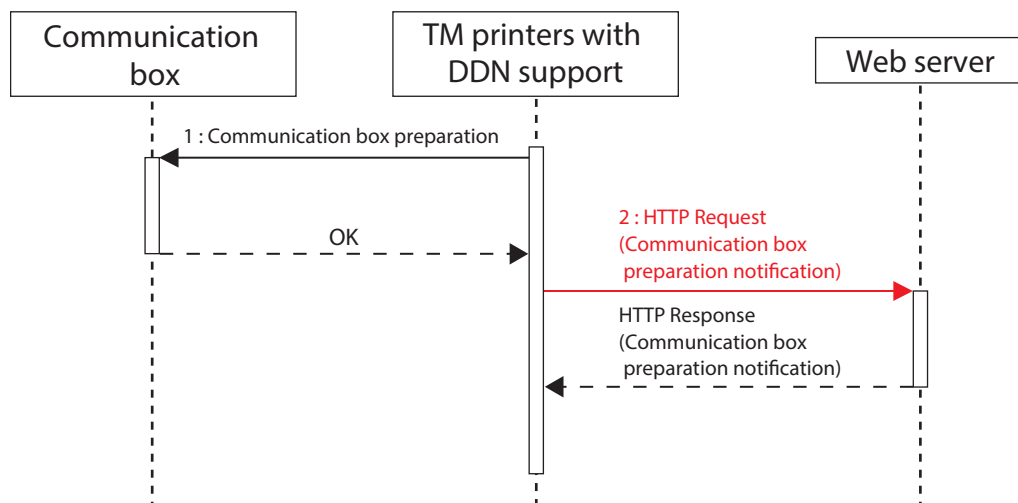
```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<device_data>
  <device_id>local_keyboard</device_id>
  <data>
    <type>setprefix</type>
    .
  </data>
</device_data>\0
```

*** For the <device_data> tag, be sure to end the message with "\0".**

Request (Communication Box Preparation Notification)

If using a communication box, the sequence is as shown below when the power of the TM printers with DDN support is turned on. This section describes the corresponding request (Communication Box Preparation Notification).



<open_commbox> of ePOS-Device XML is executed, the result is formatted into ePOS-Device XML, and the HTTP POST request shown below is sent.

The format of request message is URL-encoded form data (application/x-www-form-urlencoded).

Parameter	Value
ID	ID set for TM printers with DDN support (page 18)
Data	ePOS-Device XML format

Header

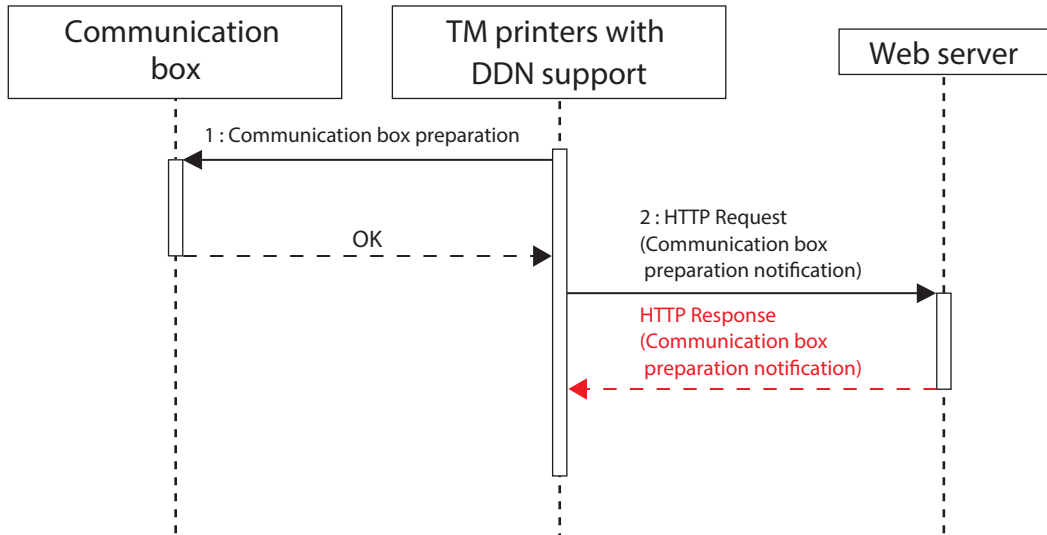
```

POST /Test_DeviceData.php HTTP/1.1
Host: 192.168.192.10
Content-Type: application/x-www-form-urlencoded
Content-Length: xxx

ID=&Data=<open_commbox><box_id>local_commbox</box_id><code>OK</code></open_commbox>
    
```

Response (Communication box preparation notification)

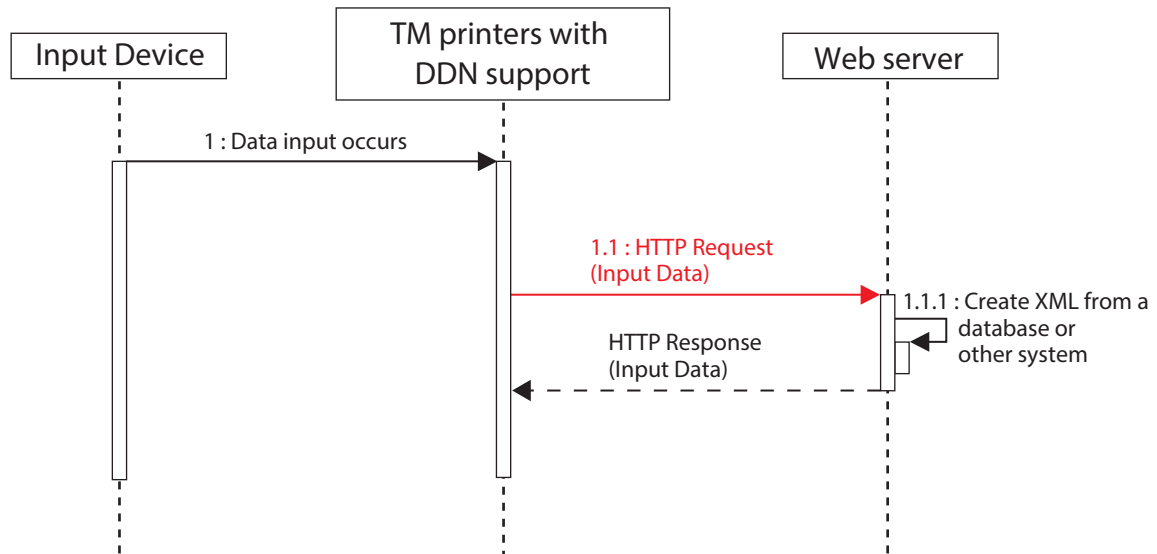
If using a communication box, the sequence is as shown below when the power of the TM printers with DDN support is turned on. This section describes the corresponding response (Communication Box Preparation Notification).



The Web server application creates empty response data in response to the HTTP request (Communication Preparation Notification) and sends it back to the TM printers with DDN support. This data contains device control data.

For sample responses, refer to ["Response to Disable Device Control" on page 35](#).

Request (Input Data)



When data is input from the input device, the TM printers with DDN support formats the input data received from the input device in ePOS-Device XML format and sends a HTTP POST request as shown below to the Web server.

The format of request message is URL-encoded form data (application/x-www-form-urlencoded). Set the sending destination according to "Device Data Notification" ([page 18](#)).

Parameter	Value
ID	ID set for the printer (page 18)
Data	ePOS-Device XML format

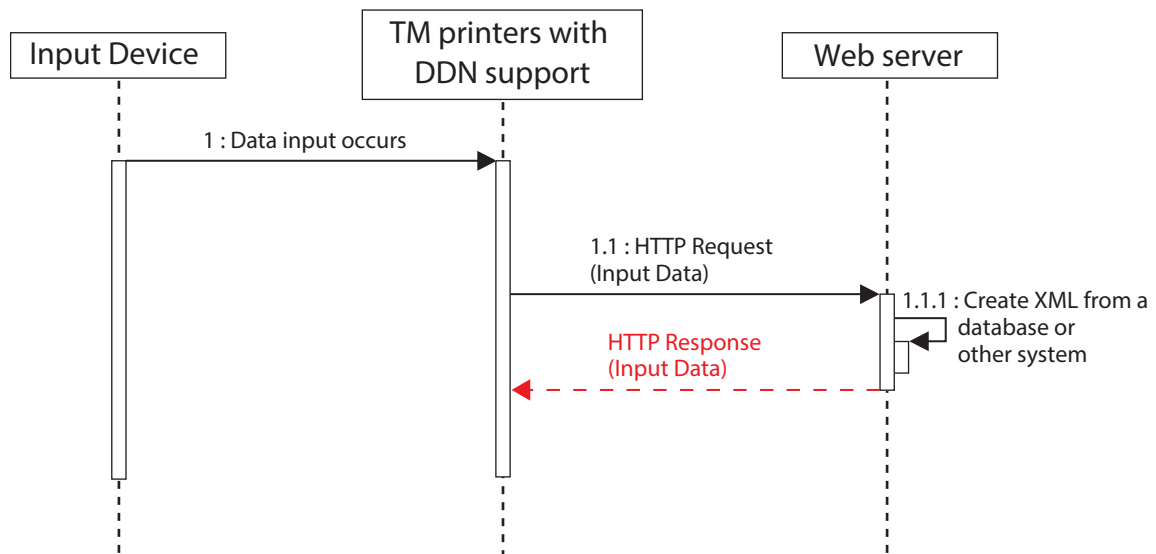
Header

```

POST /Test_DeviceData.php HTTP/1.1
Host: 192.168.192.10
Content-Type: application/x-www-form-urlencoded
Content-Length: xxx

ID=&Data=<device_data><sequence>0</sequence>
<device_id>local_scanner</device_id><data><input>XXXXXX</input>
<type>ondata</type></data><data_id>X</data_id></device_data>
  
```

Response (Input Data)



The Web server application creates response data as shown below to a HTTP request (Input Data) and returns it to the TM printers with DDN support. This data contains device control data.

The format of response message is ePOS-Device XML(text/xml).

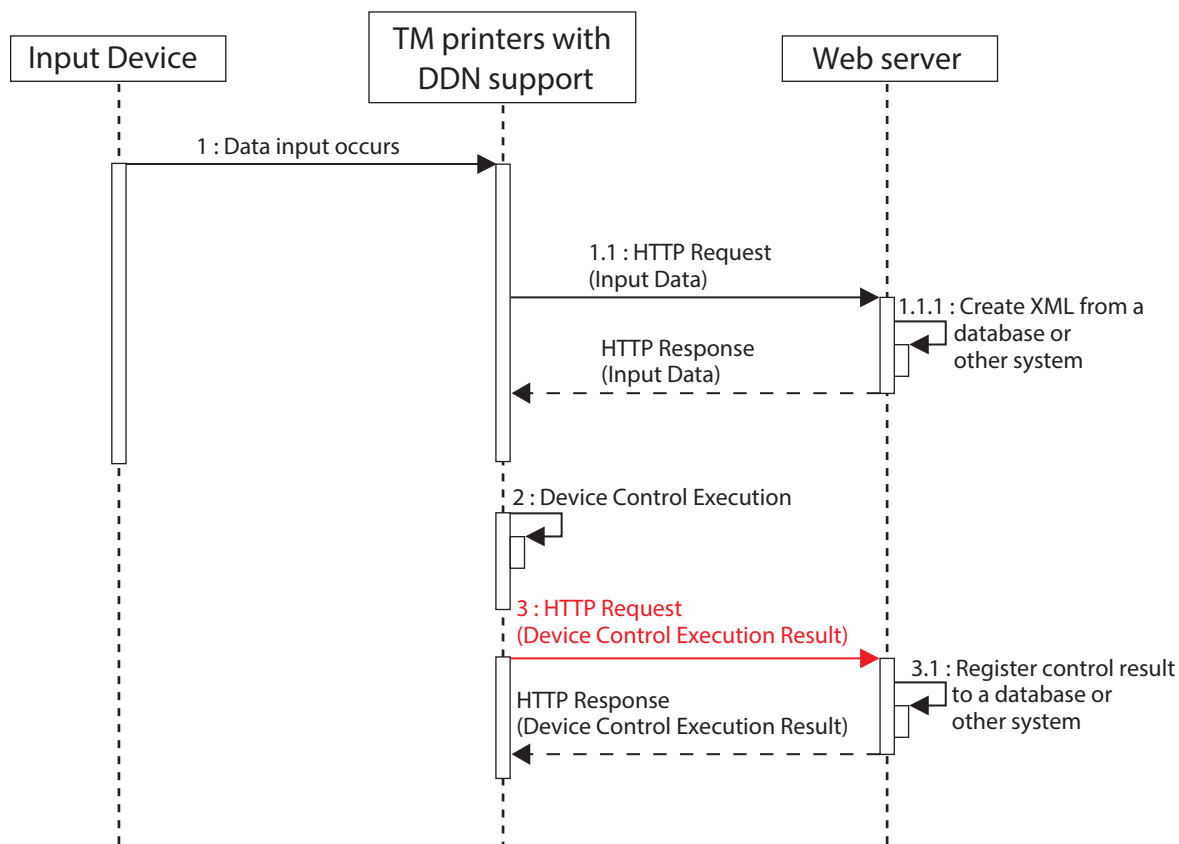
```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<device_data>
  <device_id>local_keyboard</device_id>
  <data>
    <type>print</type>
    <Timeout>10000</Timeout>
    <printdata>
      <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
        .
        .
      </epos-print>
    </printdata>
  </data>
</device_data>\0
<device_data>
  <device_id>local_display</device_id>
  <data>
    <type>display</type>
    <Timeout>10000</Timeout>
    <displaydata>
      <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
        .
        .
      </epos-print>
    </displaydata>
  </data>
</device_data>\0
```

*** For the <device_data> tag, be sure to end the message with "\0".**

When no device control is required, refer to ["Response to Disable Device Control" on page 35.](#)

Request (Device Control Execution Result)



The TM printer with DDN support executes device control according to the device control data (ePOS-Device XML) received from the Web server, formats the result in ePOS-Device XML format, and sends a HTTP POST request as shown below.

The format of request message is URL-encoded form data (application/x-www-form-urlencoded). Set the sending destination according to "Device Data Notification" ([page 18](#)).

Parameter	Value
ID	ID set for the printer (page 18)
Data	ePOS-Device XML format

Header

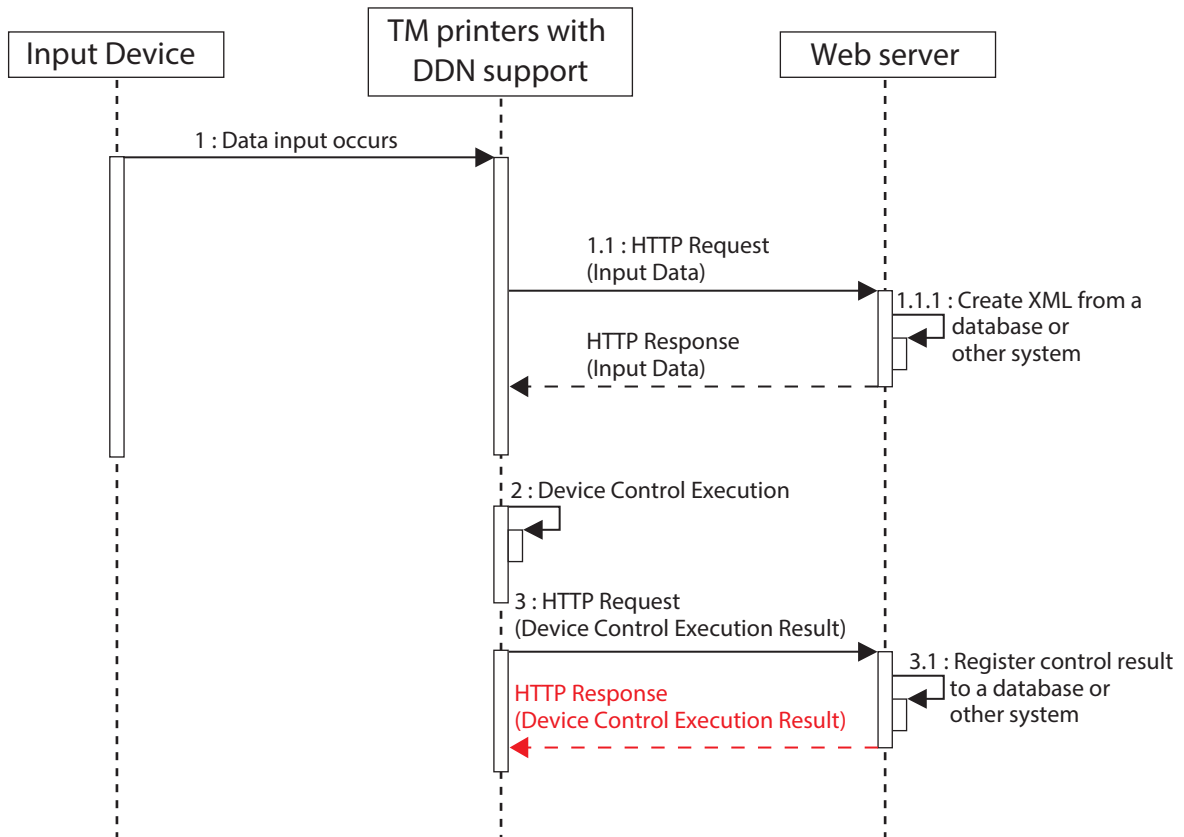
```

POST /Test_DeviceData.php HTTP/1.1
Host: 192.168.192.10
Content-Type: application/x-www-form-urlencoded
Content-Length: xxx

ID=&Data=<device_data><sequence>0</sequence>
<device_id>local_scanner</device_id><data><resultdata>
<response success="true" code="" status="251658262" battery="0" xmlns="http://www.epson-
pos.com/schemas/2011/03/epos-print"/></resultdata>
<type>onxmlresult</type></data><data_id>5</data_id></device_data>
  
```

When the TM printer with DDN support receives multiple device control data items from the Web server, the TM printer with DDN support executes each device control result separately. The device control execution result is sent as one HTTP request (Device Control Execution Result) to the Web server for each device control.

Response (Device Control Execution Result)



The Web server application creates response data to a HTTP request (Device Control Execution Result) and returns it to the TM printers with DDN support. For the responses, refer to ["Response to Disable Device Control" on page 35](#).

Response to Disable Device Control

When no device control is required, notifies that there is no device control data by returning the response as shown below to a HTTP request from the TM printers with DDN support.

Refer to Test_DeviceData.php in the sample program.

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: 0
```

Requests and Responses if Using a Communication Box

If the spoolers of the TM printers with DDN support are enabled, a request (Device Control Execution Result) is sent to the Web server when a spooler saves device control data. However, the result is one saved in the spooler and is not the device control result.

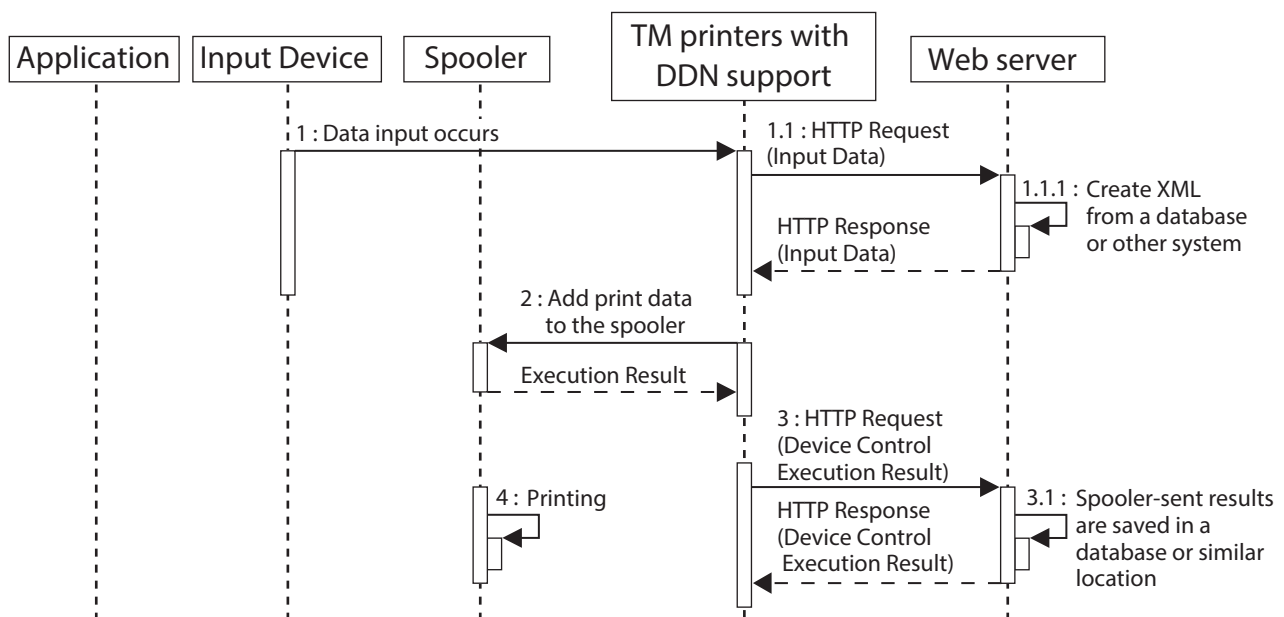
To acquire a device control result, a response without data is returned to the TM printers with DDN support to acquire a request that includes a device control result from the TM printer. To acquire a request input from a device other than an input device, you can use the communication boxes of TM printers with DDN support and develop an application that sends messages to communication boxes.

This section explains the sequence of the Device Data Notification system if the spooler is enabled and the sequence to acquire a device control result by sending a message to a communication box.



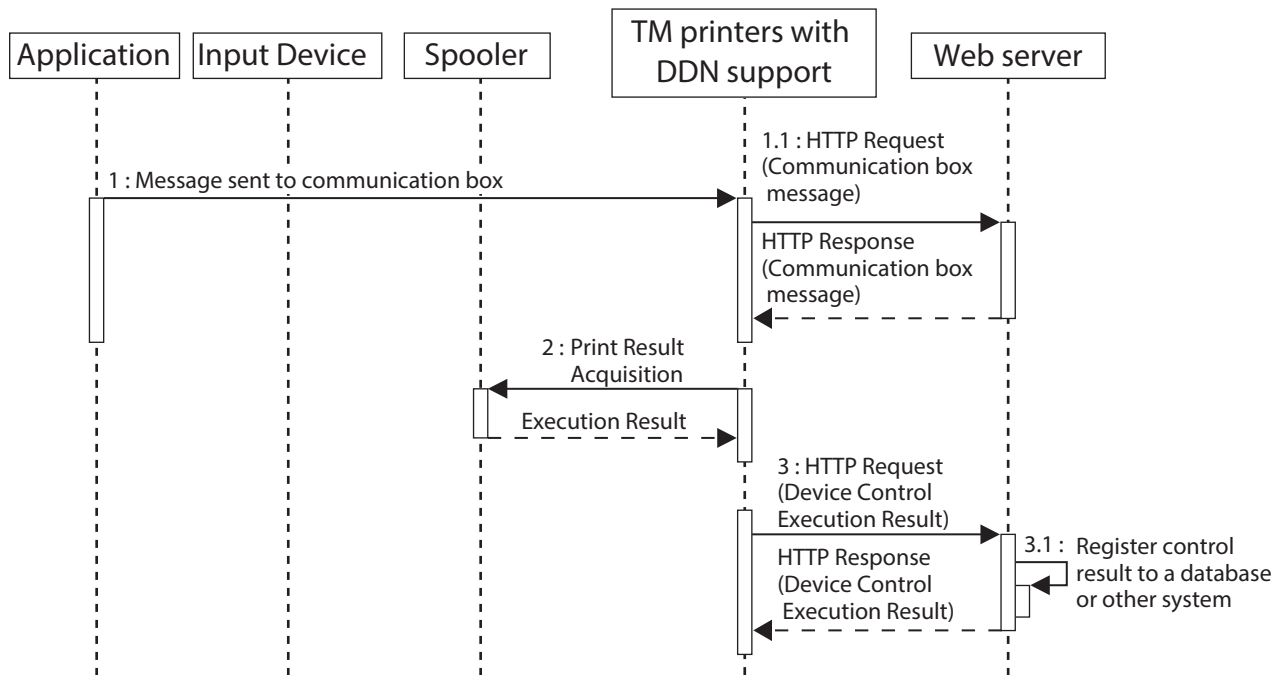
Specify the Box ID of the communication box beforehand.

Normal use



- 1: TM printers with DDN support send a request (Input Data) to the Web server when input data from an input device is generated. For details, refer to ["Request \(Input Data\)" on page 31](#).
- 2: The Web server application returns a response (Input Data) containing device control data (Print Data). For details, refer to ["Response \(Input Data\)" on page 32](#).
- 3: TM printers with DDN support save the device control data in the spooler. The spooler saves the data and sends the save result to the TM printers.
- 4: TM printers with DDN support send the request (Device Control Execution Result: success = "True"). This result is the result saved in the spooler and not the device control result.
For details, refer to ["Request \(Device Control Execution Result\)" on page 33](#).
- 5: The Web server application generates response data corresponding to the request (Device Control Execution Result) and returns it as a response.
For details, refer to ["Response \(Device Control Execution Result\)" on page 34](#).
- 6: TM printers with DDN support execute device control such as printing. The device control result is saved in the spooler.

Acquisition of a Device Control Result



- 1: The application sends a message to the communication box of TM printers with DDN support.
`<open_commbox><sequence>1</sequence><data><box_id>box1</box_id><member_id></member_id></data></open_commbox>`
- 2: TM printers with DDN support send an HTTP request (communication box message) to the Web server.
- 3: The Web server application returns a response that does not contain any data in response to the HTTP request (communication box message). For details, refer to ["Response to Disable Device Control" on page 35](#).
- 4: TM printers with DDN support acquire the Device Control Execution Result from the spooler.
- 5: TM printers with DDN support send an HTTP request (Device Control Execution Result) to the Web server. For details, refer to ["Request \(Device Control Execution Result\)" on page 33](#).
- 6: TM printers with DDN support execute device control such as printing. The device control result is saved in the spooler.
 As each request only contains the Device Control Execution Result for one time, the number of requests sent to the Web server is equal to the number of times that a Device Control Execution Result has been saved in the spooler.