

# **TOSHIBA**

TOSHIBA Bar Code Printer

## **B-EX Series**

# **XML Print Specification**

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**TOSHIBA TEC CORPORATION**

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# 1. Scope

This specification applies to the XML-format file print function provided for the B-EX series industrial high-end general-purpose barcode label printer.

# 2. General Description

The B-EX series has a function to extract print data from XML-format file and print it out.

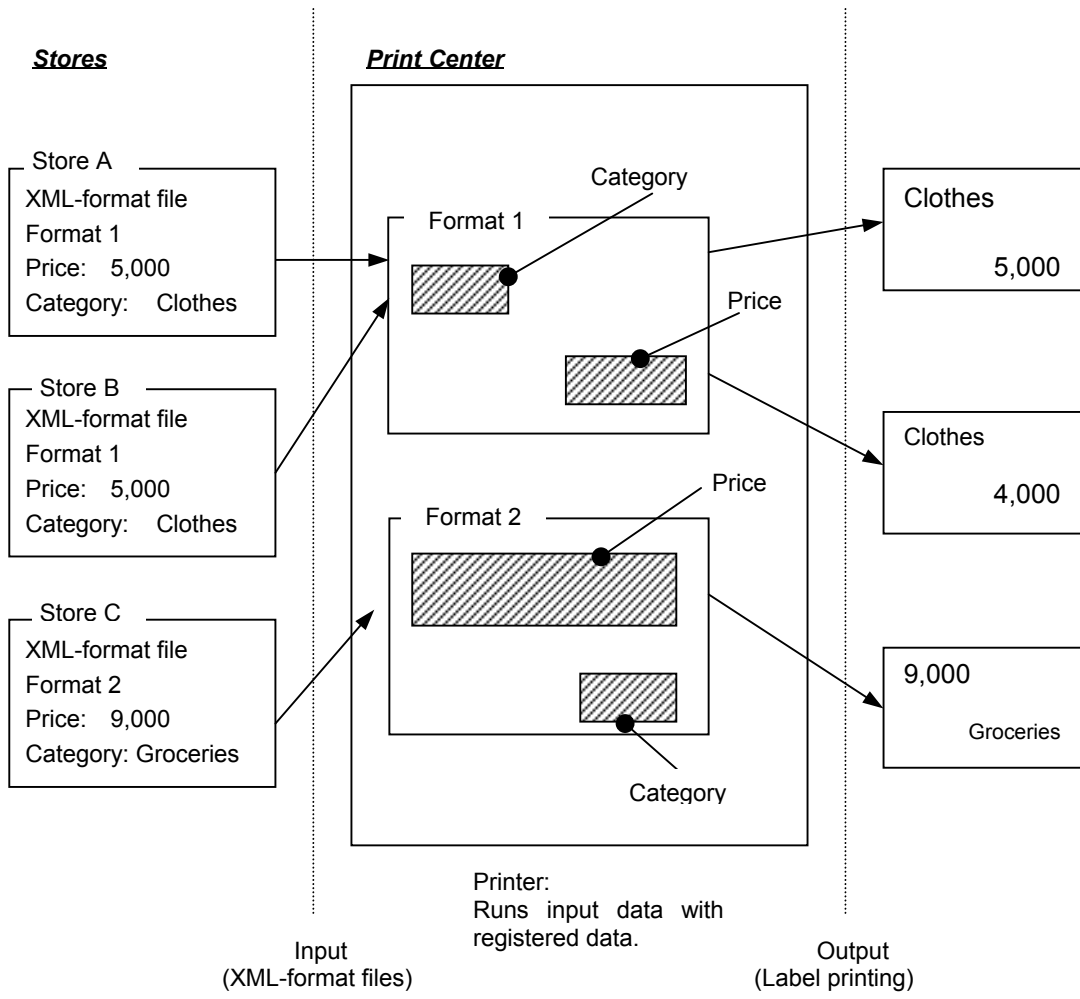
The following figure shows a case where each store sends print data to the print center to enable printing such data at the print center.

Each store individually creates XML-format files and sends the created files to the printer installed at the print center.

When the printer receives these XML-format files, it compares data with the information pre-registered in the printer for creating print images.

After creating print images, the printer starts printing.

Thus, each store can create print data without need to understand printer-specific languages just by sending XML-format files from each store to the printer.



## 2.1 Supported XML Format

Three XML formats: Standard XML, ORACLE XML, and SAP XML

## **2.2 Storage to be Used**

Flash ROM or USB memory is selectable for storing setting files.

## **2.3 Supported Interface**

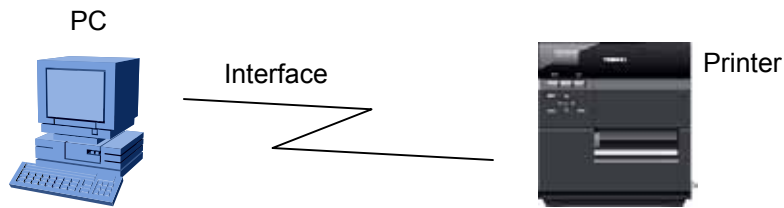
Any of the following interfaces allows XML-format files to be sent to the printer:

USB, wired LAN, wireless LAN, RS-232C, or Centronics interface

### 3. Outline of Operations

This section describes the outline of the XML-format file printing operation.

#### 3.1 Example of Device Configuration



#### 3.2 Preparation (Storing label format information in the printer)

##### 3.2.1 When using Flash ROM for storage

| Procedure   | Reference   |
|---|---|
| (1) Create an XML setup file (XML.INI), then copy it to "¥XML" folder in the PC.  | XML setup file (XML.INI)  |
| ↓   |   |
| (2) Create an item conversion table file (XXXX.INI), then copy it to "¥XML" folder in the PC.   | Item conversion table file (XXXX.INI)                           |
| ↓   |   |
| (3) Create a format setting file (XXXX.HDR) and an Issue command file (XXXX.FTR), then copy them to "¥XML" folder in the PC.  | Format setting file (XXXX.HDR)<br>Issue command file (XXXX.FTR) |
| ↓   |   |
| (4) Create a graphic file (XXXX.BMP), then copy it to "¥GRP_DATA" in the PC (only when printing SAP XML).   |   |
| ↓   |   |
| (5) Convert the files (1) to (4) into ROM using the XML ROM creating function provided for the B-EX Printer Setting Tool, and create a file (XXXX.BIN) in any folder in the PC. | B-EX Printer Setting Tool Specification                         |
| ↓   |   |
| (6) Download the file (4) to the printer.   | Download Specification  |
| ↓   |   |
| (7) Select "STD", "ORACLE" or "SAP" for the XML parameter.  | Key Operation Specification<br>Setting Command Specification    |

### 3.2.2 When using USB memory for storage

| Procedure   | Reference   |
|---|---|
| (1) Create an XML setup file (XML.INI), then copy it to “¥XML” folder in the USB memory to be used.   | XML setup file<br>(XML.INI)   |
| ↓   |   |
| (2) Create an item conversion file (XXXX.INI), then copy it to “¥XML” folder in the USB memory to be used.                                      | Item conversion table file<br>(XXXX.INI)                              |
| ↓   |   |
| (3) Create a format setting file (XXXX.HDR) and an Issue Command file (XXXX.FTR), then copy them to “¥XML” folder in the USB memory to be used. | Format setting file<br>(XXXX.HDR)<br>Issue command file<br>(XXXX.FTR) |
| ↓   |   |
| (4) Create a graphic file (XXXX.BMP), then copy it to “¥GRP_DATA” in the USB memory to be used (only when printing SAP XML).                    |   |
| ↓   |   |
| (5) Connect the USB memory, in which the files (1) to (4) are stored, to the printer.   |   |
| ↓   |   |
| (6) Select “STD EXT”, “ORACLE EXT” or “SAP EXT” for the XML parameter.  | Key Operation Specification<br>Setting Command Specification          |

### 3.3 Printing

|   |                               |
|---|-------------------------------|
| (1) Create an XML-format file (XXXX.XML).             | XML-format file<br>(XXXX.XML) |
| (2) Send the file created in step (1) to the printer. |                               |
| (3) Print   |                               |

NOTE: When there is no change in the XML setup file (Files (1) to (4) created in advance), the subsequent printing can be performed through the above operation only.

## 4. Specification

### 4.1 Preparation

#### 4.1.1 Preparation on the PC

Applications required for storing the label format information in the printer

- Printer setting tool
- Editor for creating data files

Applications required for printing

- Editor for creating data files
- Application for sending files

Setup files required to be stored in the printer

- XML setup file ¥XML¥XML.INI
- Format setting files for each label format  
(Example) ¥XML¥SHEET1.INI  
¥XML¥SHEET1.HDR  
¥XML¥SHEET1.FTR
- Graphic file  
(Example) ¥GRP\_DATA¥GRP.BMP (Only when printing SAP XML-format file)

#### 4.1.2 Preparation on the Printer

Select other than “OFF” for the XML parameter according to the type of XML and the storage to be used.

NOTE: Refer to the B-EX series Key Operation Specification and Setup Command Specification.

## 4.2 Standard XML

### 4.2.1 Files to be Used

#### 4.2.1.1 XML-format file (XXXX.XML)

An XML-format file must start with “<?XML”.

A line feed is required for each tag. Up to 256 bytes per line can be entered.

The maximum file size is equal to the receive buffer size.

Example of “XXXX.XML”

```
File_A.xml (XML-format file)
<?XML VERSION="1.0"?>
<?STYLESHEET HREF="DOC1.DSL"
TYPE="text/dsssl"?>
<DOC>
<ITEM>
<COMPANY>Company A</COMPANY>
<PRODUCT>Desk-top PC A</PRODUCT>
<PRICE>500,000</PRICE>
<QUANTITY>500</QUANTITY>
<NOTE>CA</NOTE>
</ITEM>
<ITEM>
<COMPANY>Company B</COMPANY>
<PRODUCT>Portable PC A</PRODUCT>
<COUNT>200</COUNT>
<COST>200,000</COST>
<NOTE>CB</NOTE>
</ITEM>
</DOC>
```



#### 4.2.1.2 XML setup file (XML.INI)

This is the main setup file required for the XML-format file print function.  
This file needs to be located in the “¥XML” folder.

Example of “XML.INI”

```
Xml.ini (XML setup file)

#
# Stylesheet table
SHEETTBL=DOC1.DSL,SHEET1
SHEETTBL=DOC2.DSL,SHEET2
SHEETTBL=DOC3.DSL,SHEET3
# File descriptor
FILE_BOUNDARY=DOC
```

(1) points to the SHEETTBL lines.  
(2) points to the FILE\_BOUNDARY line.

\* A line starting with “#” means a comment and is not processed.

##### (1) SHEETTBL

|          |  |
|----------|--|
| Function | Selects a label format by using a character string included in the XML-format file as a keyword. |
|----------|--|

|        |                                       |
|--------|---------------------------------------|
| Format | <code>SHEETTBL=DOC1.DSL,SHEET1</code> |
|--------|---------------------------------------|

|             |   |
|-------------|---|
| Explanation | This parameter setting allows the label format to be selected automatically, depending on XML-format file type. |
|-------------|---|

(Example) When description is “DOC1.DSL,SHEET1”:

When a character string, “DOC1.DSL” is found in the XML-format file, “SHEET1” is selected as a label format.

Then the “SHEET1.HDR” file is used as a label format, the “SHEET1.FTR” file as the Issue Command, and the “SHEET1.INI” file as the item conversion table, respectively.

##### (2) FILE\_BOUNDARY

|          |  |
|----------|--|
| Function | Declares tags indicating the start and end of the XML-format file. |
|----------|--|

|        |                                |
|--------|--------------------------------|
| Format | <code>FILE_BOUNDARY=DOC</code> |
|--------|--------------------------------|

|             |   |
|-------------|---|
| Explanation | When this is set to “DOC”, an XML-format file must end with “</DOC>”. Without this tag, the printer cannot recognize the end of the XML-format file. Therefore, the printer cannot start print operation. |
|-------------|---|

### 4.2.1.3 Item conversion table (XXXX.INI)

This file mainly consists of the conversion tables that define a rule to convert the XML-format files into the bar code printer commands.

**NOTES:**

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.

Example of XXXX.INI

```

Sheet1.ini (Format setting file 1)

# Item boundary
ITEM_BOUNDARY=ITEM (1)
# Data table
DATATBL= COMPANY,RC010
DATATBL= PRODUCT,RC020
DATATBL= PRICE,RC030
DATATBL= COST,RC040
DATATBL= QUANTITY,RC050
DATATBL= COUNT,RC060
DATATBL= TEL,RC070
DATATBL= DAT,RC080
    
```

\* A line starting with “#” means a comment and is not processed.

(1) ITEM\_BOUNDARY

|             |  |
|-------------|--|
| Function    | If multiple data with the same tag names are present in an XML-format file, this ITEM_BOUNDARY tag separates the data items and allows the number specified in the conversion table to be incremented automatically. |
| Format      | ITEM_BOUNDARY=ITEM   |
| Explanation | Refer to (2) DATATBL.  |

(2) DATATBL

|             |  |
|-------------|--|
| Function    | Specifies the data conversion table.   |
| Format      | DATATBL=COMPANY,RC001  |
| Explanation | <p>[When description is “COMPANY,RC001”]</p> <p>When data with &lt;COMPANY&gt; tag is defined as “&lt;COMPANY&gt;Company A&lt;/COMPANY&gt;” in the XML-format file, it is converted to the bar code printer command, “{RC001;Company A}”.</p> <p>[When ITEM tag, above mentioned in (1), is existing]</p> <p>For example, the XML data is as follows:</p> <pre> &lt;ITEM&gt;&lt;COMPANY&gt;Company A&lt;/COMPANY&gt;&lt;/ITEM&gt; &lt;ITEM&gt;&lt;COMPANY&gt;Company B&lt;/COMPANY&gt;&lt;/ITEM&gt;                     </pre> <p>“Company A” is converted to “{RC001;Company A}”.</p> <p>“Company B” is converted to “{RC002;Company B}”.</p> |

In this way, the ITEM tag automatically increments the table number for “Company B” by 1.

#### 4.2.1.4 Format setting file (XXXX.HDR)

This is a command file to be processed by the printer before the XML-format file is converted, when printing is performed in a selected label format.

It mainly consists of the Format Commands that define data fields in which converted XML data items are printed. Fixed data can also be described. (Refer to the line with ★ in the following example.)

##### NOTES:

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.
3. When the ITEM tag of the item conversion table file automatically increments the number, care must be taken to prevent the same number from being generated.

##### Example of "XXXX.HDR"

```
Sheet1.hdr (Format setting file 1)

{D1000,1057,1000}
{C}
{PC010;0020,0100,05,05,E,00,B}
{PC020;0020,0150,05,05,E,00,B}
{PC001;0020,0200,05,05,E,00,B}
{PC030;0150,0200,05,05,E,00,B}
{PC002;0020,0250,05,05,E,00,B}
{PC050;0100,0250,05,05,E,00,B}
{LC;0030,0300,0210,0300,0,02} ★
{PC011;0020,0350,05,05,E,00,B}
{PC021;0020,0400,05,05,E,00,B}
{PC003;0020,0450,05,05,E,00,B}
{PC041;0150,0450,05,05,E,00,B}
{PC004;0020,0500,05,05,E,00,B}
{PC061;0100,0500,05,05,E,00,B}
{RC001;Price      $} ★
{RC002;Q'ty       set} ★
{RC003;Price      $} ★
{RC004;Q'ty       set} ★
```

\* Data with ★ is fixed data.

#### 4.2.1.5 Issue Command file (XXXX.FTR)

This is a file that describes the Issue Command to be last executed, when printing is performed in a selected format.

##### NOTES:

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.

##### Example of "XXXX.FTR"

```
Sheet1.ftr (Issue Command file 1)

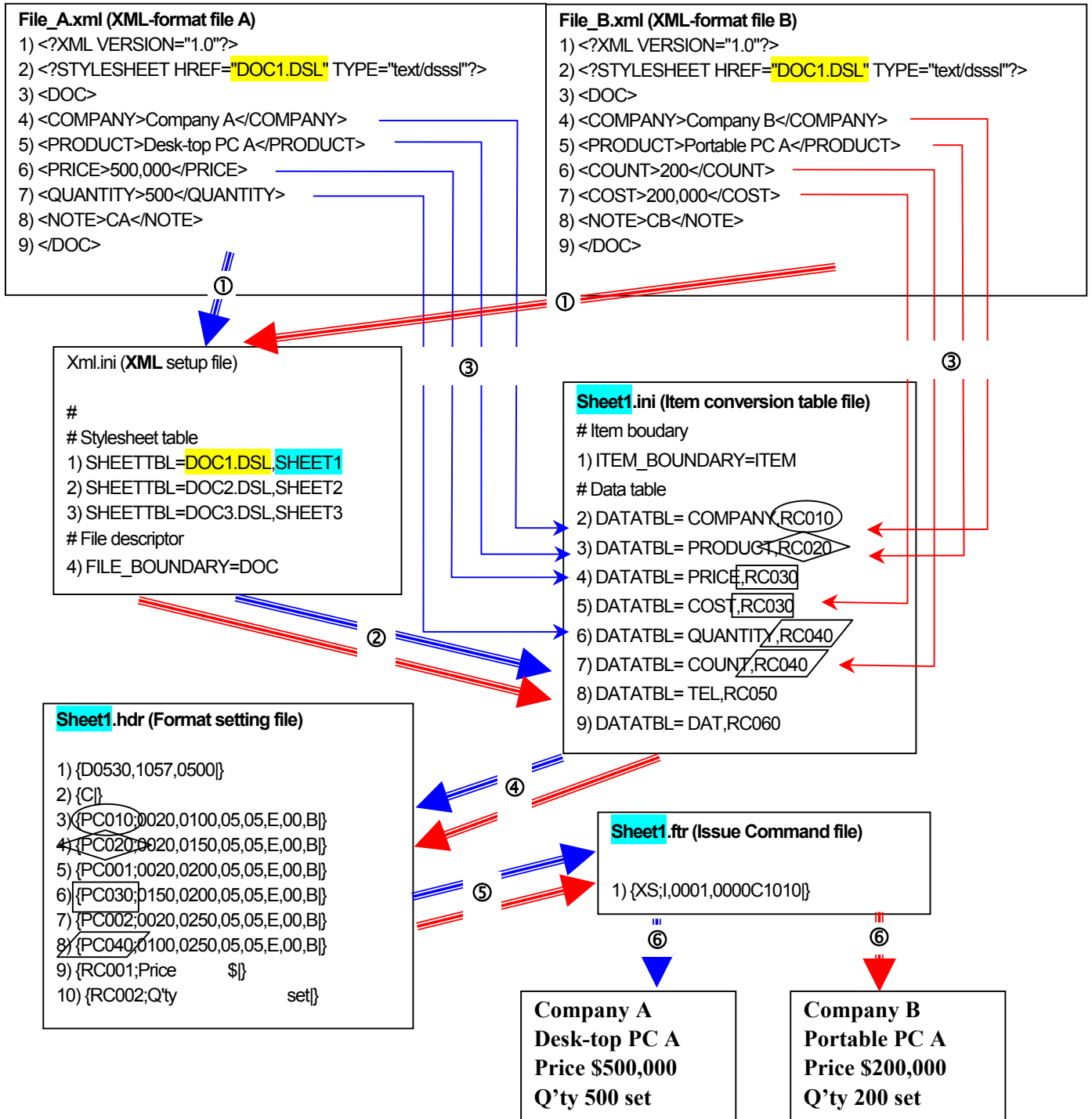
{XS;l,0001,0000C1010}
```

## 4.2.2 Sequence of Standard XML Printing

This section describes the three examples of printing operation using actual label format.

### 4.2.2.1 Printing Different Format Files in a Common Label Format

Even if different XML-format files are sent, the printer prints in the same label format as long as each item has been properly defined in the item conversion table. (For details about the printer operation, see the following pages.)



#### NOTES:

- Numbers at the beginning of lines indicate line numbers (corresponding to the line numbers on the following page).
- Lines starting with # are comment lines which are ignored in printer operations.

[Explanation]

XML-format file A

- (1) When the character string, "<?XML", is detected in normal mode, the printer recognizes that the input data is XML-format file and enters XML-format file processing mode.

*NOTE: If "<?XML" is described as data in the bar code printer command, the printer does not enter the XML-format file processing mode.*

- (2) The printer detects the character string, "DOC1.DSL", and selects "SHEET1" as a label format according to the definition on the 1st line of XML.INI file. In other words, "SHEET1.HDR", "SHEET1.FTR" and "SHEET1.INI" are used.

- (3) The printer executes the commands in "SHEET1.HDR".

- (4) The printer starts XML-format file conversion.

- (4)-1 There is no XML format defined in the "SHEET1.INI" in the first 3 lines of the XML-format file. Therefore, the first data to be converted is "<COMPANY>" on the 4th line.

The "<COMPANY>" on the 4th line is converted to "{RC010,Company A}" in accordance with the definition of the 2nd line, "SHEET1.INI" file.

- (4)-2 In a similar way, the "<PRODUCT>" on the 5th line of the XML-format file is converted to "{RC020.Desk-top PC A}", in accordance with the definition of the 3rd line, "SHEET1.INI" file.

- (4)-3 The "<PRICE>" on the 6th line of the XML-format file is converted to "{RC030.500,000}" in accordance with the definition of the 4th line, "SHEET1.INI" file.

- (4)-4 The "<QUANTITY>" on the 7th line of the XML-format file is converted to "{RC040.500}" in accordance with the definition of the 6th line, "SHEET1.INI" file.

- (4)-5 The "<NOTE>" on the 8th line of the XML-format file is ignored without being converted because it is not defined in the "SHEET1.INI" file.

- (4)-6 The "</DOC>" on the 9th line of the XML-format file is an end tag of "FILE\_BOUNDARY", as defined on 4th line of the "XML.INI" file. This is the end of the XML-format file, then the conversion is finished.

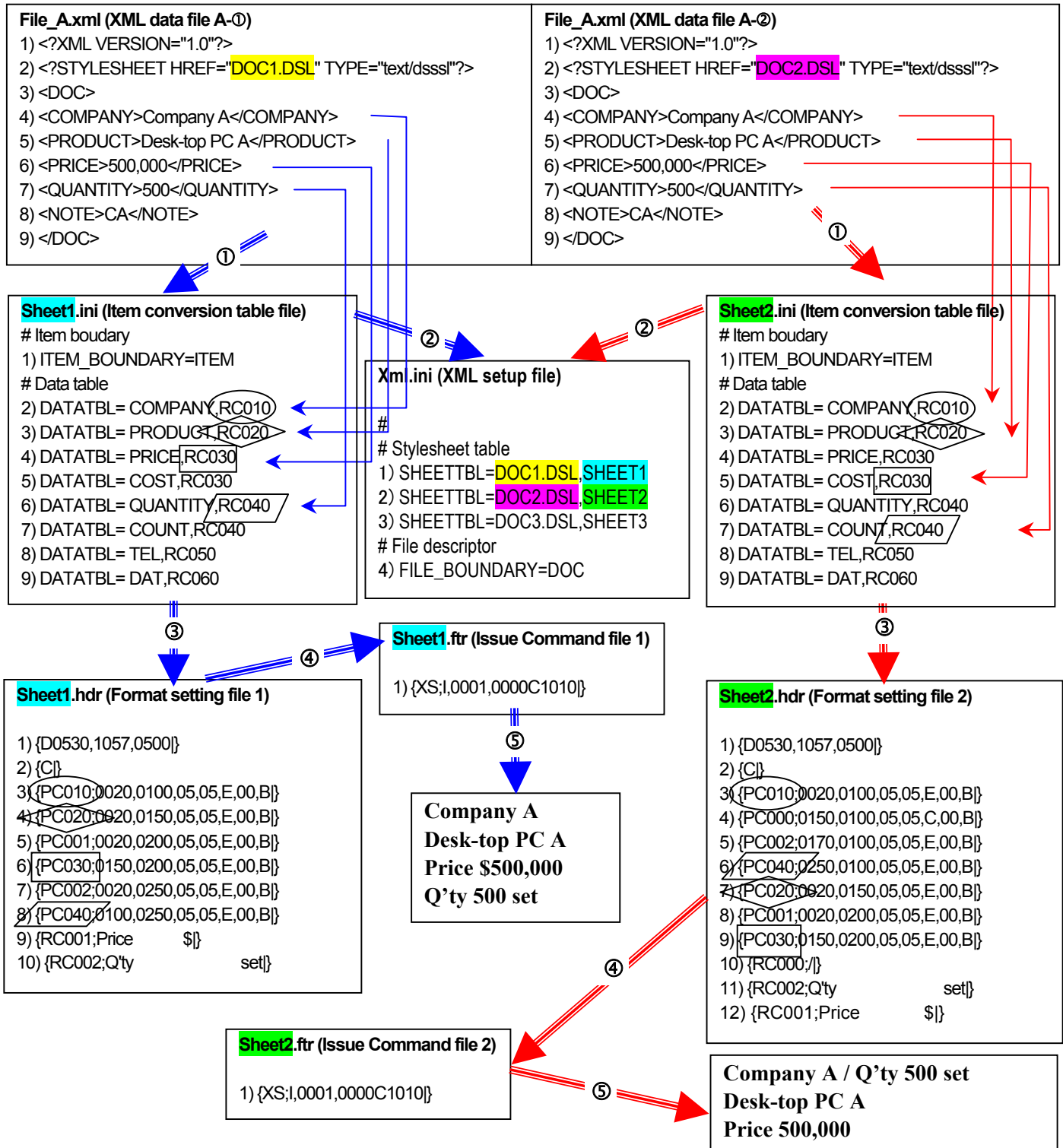
- (5) Execution of "SHEET1.FTR" causes the printer to print labels and exit the XML-format file processing mode.

## XML-format file B

- (1) When the character string, “<?XML”, is detected in normal mode, the printer recognizes that the input data is XML-format file and enters XML-format file processing mode.  
*NOTE: If “<?XML” is described as data in the bar code printer command, the printer does not enter the XML-format file processing mode.*
- (2) The printer detects the character string, “DOC1.DSL”, and selects “SHEET1” as a label format according to the definition on the 1st line of XML.INI file. In other words, “SHEET1.HDR”, “SHEET1.FTR” and “SHEET1.INI” are used.
- (3) The printer executes the commands in “SHEET1.HDR”.
- (4) The printer starts XML-format file conversion.
  - (4)-1 There is no XML data defined in the “SHEET1.INI” in the first 3 lines of the XML-format file. Therefore, the first data to be converted is “<COMPANY>” on the 4th line.  
The “<COMPANY>” on the 4th line is converted to “{RC010;Company A}” in accordance with the definition of the 2nd line, “SHEET1.INI” file.
  - (4)-2 In a similar way, the “<PRODUCT>” on the 5th line of the XML-format file is converted to “{RC020.Portable PC A}”, in accordance with the definition of the 3rd line, “SHEET1.INI” file.
  - (4)-3 The “<COUNT>” on the 6th line of the XML-format file is converted to “{RC040.200,000}” in accordance with the definition of the 7th line, “SHEET1.INI” file.
  - (4)-4 The “<COST>” on the 7th line of the XML-format file is converted to “{RC030.200}” in accordance with the definition of the 5th line, “SHEET1.INI” file.
  - (4)-5 The “<NOTE>” on the 8th line of the XML-format file is ignored without being converted because it is not defined in the “SHEET1.INI” file.
  - (4)-6 The “</DOC>” on the 9th line of the XML-format file is an end tag of “FILE\_BOUNDARY”, as defined on 4th line of the “XML.INI” file. This is the end of the XML-format file, then the conversion is finished.
- (5) Execution of “SHEET1.FTR” causes the printer to print labels and exit the XML-format file processing mode.

#### 4.2.2.2 Printing the Same Format Files in Different Label Formats

The printer can print the same XML-format files in different formats only by changing sheet information.  
(For details about the printer operation, see the following pages.)



#### NOTES:

- Numbers at the beginning of lines indicate line numbers (corresponding to the line numbers on the following page).
- Lines starting with # are comment lines which are ignored in printer operations.

[Explanation]

XML-format file A-①

- (1) When the character string, “<?XML”, is detected in normal mode, the printer recognizes that the input data is XML-format file and enters XML-format file processing mode.

*Note: If “<?XML” is described as data in the bar code printer command, the printer does not enter the XML-format file processing mode.*

- (2) The printer detects the character string, “DOC1.DSL”, then selects “SHEET1” as a label format according to the definition on the 1st line of XML.INI file. In other words, “SHEET1.HDR”, “SHEET1.FTR” and “SHEET1.INI” are used.

- (3) The printer executes the commands in “SHEET1.HDR”.

- (4) The printer starts XML-format file conversion.

(4)-1 There is no XML data defined in the “SHEET1.INI” in the first 3 lines of the XML-format file. Therefore, the first data to be converted is “<COMPANY>” on the 4th line.

The “<COMPANY>” on the 4th line is converted to “{RC010,Company A}” in accordance with the definition of the 2nd line, “SHEET1.INI” file.

(4)-2 In a similar way, the “<PRODUCT>” on the 5th line of the XML-format file is converted to “{RC020.Desk-top PC A}”, in accordance with the definition of the 3rd line, “SHEET1.INI” file.

(4)-3 The “<PRICE>” on the 6th line of the XML-format file is converted to “{RC030.500,000}” in accordance with the definition of the 4th line, “SHEET1.INI” file.

(4)-4 The “<QUANTITY>” on the 7th line of the XML-format file is converted to “{RC040.500}” in accordance with the definition of the 6th line, “SHEET1.INI” file.

(4)-5 The “<NOTE>” on the 8th line of the XML-format file is ignored without being converted because it is not defined in the “SHEET1.INI” file.

(4)-6 The “</DOC>” on the 9th line of the XML-format file is an end tag of “FILE\_BOUNDARY”, as defined on 4th line of the “XML.INI” file. This is the end of the XML-format file, then the conversion is finished.

- (5) Execution of “SHEET1.FTR” causes the printer to print labels and exit the XML-format file processing mode.

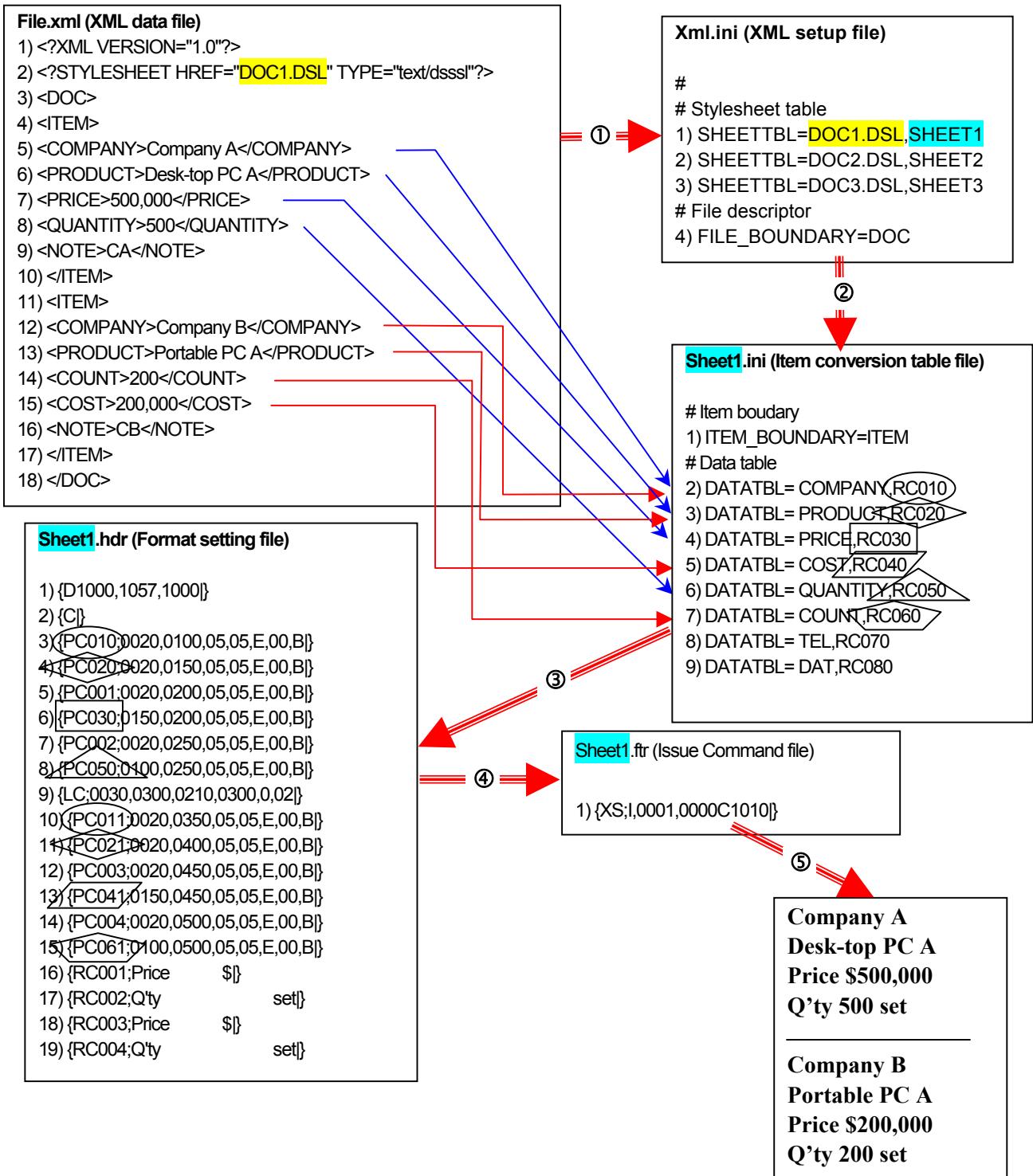


## XML-format file A-②

- (1) When the character string, “<?XML”, is detected in normal mode, the printer recognizes that the input data is XML-format file and enters XML-format file processing mode.  
*Note: If “<?XML” is described as data in the bar code printer command, the printer does not enter the XML-format file processing mode.*
- (2) The printer detects the character string, “DOC2.DSL”, and selects “SHEET2” as a label format according to the definition on the 1st line of XML.INI file. In other words, “SHEET2.HDR”, “SHEET2.FTR” and “SHEET2.INI” are used.
- (3) The printer executes the commands in “SHEET2.HDR”.
- (4) The printer starts XML-file format conversion.
  - (4)-1 There is no XML data defined in the “SHEET2.INI” in the first 3 lines of the XML-format file. Therefore, the first data to be converted is “<COMPANY>” on the 4th line.  
The “<COMPANY>” on the 4th line is converted to “{RC010,Company A}” in accordance with the definition of the 2nd line, “SHEET2.INI” file.
  - (4)-2 In a similar way, the “<PRODUCT>” on the 5th line of the XML-format file is converted to “{RC020.Desk-top PC A}”, in accordance with the definition of the 3rd line, “SHEET2.INI” file.
  - (4)-3 The “<PRICE>” on the 6th line of the XML-format file is converted to “{RC030.500,000}” in accordance with the definition of the 4th line, “SHEET2.INI” file.
  - (4)-4 The “<QUANTITY>” on the 7th line of the XML-format file is converted to “{RC040.500}” in accordance with the definition of the 6th line, “SHEET2.INI” file.
  - (4)-5 The “<NOTE>” on the 8th line of the XML-format file is ignored without being converted because it is not defined in the “SHEET2.INI” file.
  - (4)-6 The “</DOC>” on the 9th line of the XML-format file is an end tag of “FILE\_BOUNDARY”, as defined on 4th line of the “XML.INI” file. This is the end of the XML-format file, then the conversion is finished.
- (5) Execution of “SHEET2.FTR” causes the printer to print labels and exit the XML-format file processing mode.

#### 4.2.2.3 Printing an XML-Format File Containing Several Same Tags

When the printer receives a file containing several same tags, it can automatically assign a data table number to the tags by inserting the ITEM tags to the print data so as to print them on different coordinates. (For details about the printer operation, see the following pages.)



#### NOTES

1. Numbers at the beginning of lines indicate line numbers (corresponding to the line numbers on the following page).
2. Lines starting with # are comment lines which are ignored in printer operations.

[Explanation]

- (1) When the character string, “<?XML”, is detected in normal mode, the printer recognizes that the input data is XML-format file and enters XML-format file processing mode.

*NOTE: If “<?XML” is described as data in the bar code printer command, the printer does not enter the XML-format file processing mode.*

- (2) The printer detects the character string, “DOC1.DSL”, and selects “SHEET1” as a label format according to the definition on the 1st line of XML.INI file. In other words, “SHEET1.HDR”, “SHEET1.FTR” and “SHEET1.INI” are used.

- (3) The printer executes the commands in “SHEET1.HDR”.

- (4) The printer starts XML-format file conversion.

(4)-1 There is no XML data defined in the “SHEET1.INI” in the first 4 lines of the XML-format file. Therefore, the first data to be converted is “<COMPANY>” on the 5th line.

The “<COMPANY>” on the 5th line is converted to “{RC010,Company A}” in accordance with the definition of the 2nd line, “SHEET1.INI” file.

(4)-2 In a similar way, the “<PRODUCT>” on the 6th line of the XML-format file is converted to “{RC020.Desk-top PC A}”, in accordance with the definition of the 3rd line, “SHEET1.INI” file.

(4)-3 The “<PRICE>” on the 7th line of the XML-format file is converted to “{RC030.500,000}” in accordance with the definition of the 4th line, “SHEET1.INI” file.

(4)-4 The “<QUANTITY>” on the 8th line of the XML-format file is converted to “{RC040.500}” in accordance with the definition of the 6th line, “SHEET1.INI” file.

(4)-5 The “<NOTE>” on the 9th line of the XML-format file is ignored without being converted because it is not defined in the “SHEET.INI” file.

(4)-6 The “</ITEM>” on the 10th line of the XML-format file is an end tag of “ITEM\_BOUNDARY”, as defined on the 1st line of the “SHEET1.INI” file. At this point, a value specified in the conversion table is incremented by 1.

(4)-7 The “<COMPANY>” on the 12th line of the XML-format file is supposed to be converted to RC010 command, in accordance with the definition of the 2nd line, “SHEET1.INI” file. However, this item is incremented by 1 in step (4)-6, so it is converted to “|RC011;Company B}”.

(4)-8 The “<PRODUCT>” on the 13th line of the XML-format file is supposed to be converted to RC020 command, in accordance with the definition of the 3rd line, “SHEET1.INI” file. However, this item was incremented by 1 in step (4)-6, so it is converted to “|RC021;Portable PC A}”.

(4)-9 The “<COUNT>” on the 14th line of the XML-format file is supposed to be converted to RC060 command, in accordance with the definition of the 7th line, “SHEET1.INI” file. However, this item was incremented by 1 in step (4)-6, so it is converted to “|RC061;200}”.

(4)-10 The “<COST>” on the 12th line of the XML-format file is supposed to be converted to RC010 command, in accordance with the definition of the 2nd line, “SHEET1.INI” file. However, this item was incremented by 1 in step (4)-6, it is converted to “|RC011;Company B}”.

(4)-11 The “</DOC>” on the 17th line of the XML-format file is an end tag of “FILE\_BOUNDARY”, as defined on 4th line of the “XML.INI” file. This is the end of the XML-format file, then the conversion is finished.

- (5) Execution of “SHEET1.FTR” causes the printer to print labels and exit the XML-format file processing mode.

## 4.3 Oracle XML

### 4.3.1 Files to be Used

#### 4.3.1.1 XML-format file (XXXX.XML)

An XML-format file must start with “<?XML”.

A line feed is required per tag. Up to 256 bytes per line is acceptable.

The maximum file size is equal to the receive buffer size.

Example of “XXXX.XML”

**File\_A.xml (XML-format file)**

```
<?xml version="1.0" standalone="no"?>
<!DOCTYPE labels SYSTEM "label.dtd">
<labels _FORMAT="FORMAT1" _QUANTITY="1" _PRINTERNAME="Printer 1"
_JOBNAME="LBL101">
  <label>
    <variable name="COMPANY">Company A</variable>
    <variable name="PRODUCT">Desk-top PC A</variable>
    <variable name="PRICE">500,000</variable>
    <variable name="QUANTITY">500</variable>
    <variable name="NOTE">CA</variable>
  </label>
</labels>
```

#### 4.3.1.2 XML setup file (XML.INI)

This is the main setup file required for the XML-format file print function.  
This file needs to be located in the “¥XML” folder.

Example of “XML.INI”

| Xml.ini (XML setup file) |       |
|--------------------------|-------|
| #                        |       |
| # Stylesheet table       |       |
| SHEETTBL= FORMAT1,SHEET1 | } (1) |
| SHEETTBL= FORMAT2,SHEET2 |       |
| SHEETTBL= FORMAT3,SHEET3 |       |
| # File descriptor        |       |
| FILE_BOUNDARY= labels    | (2)   |

\* A line starting with “#” means a comment and is not processed.

##### (1) SHEETTBL

|             |   |
|-------------|---|
| Function    | Selects a label format by using a character string included in the XML-format file as a keyword.                    |
| Format      | SHEETTBL= <i>FORMAT1,SHEET1</i>   |
| Explanation | This parameter setting allows the label format to be selected automatically, depending on the XML-format file type. |

(Example) When description is “FORMAT1,SHEET1”:

When a character string, “FORMAT1” is found in the XML-format file, “SHEET1” is selected as a label format.  
Then the “SHEET1.HDR” file is used as a label format, the “SHEET1.FTR” file as the Issue Command, and the “SHEET1.INI” file as the item conversion table, respectively.

##### (2) FILE\_BOUNDARY

|             |  |
|-------------|--|
| Function    | Declares tags indicating the start and end of the XML-format file.   |
| Format      | FILE_BOUNDARY= <i>labels</i>   |
| Explanation | When this is set to “labels”, the XML-format file must end with “</labels>”.<br>Without this tag, the printer cannot recognize the end of the XML-format file.<br>Therefore, the printer cannot start print operation. |

### 4.3.1.3 Item conversion table (XXXX.INI)

This file mainly consists of the conversion tables that define a rule to convert the XML-format file into the bar code printer commands.

**NOTES:**

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.

Example of "XXXX.INI"

```

Sheet1.ini (Format setting file 1)

# Item boundary
ITEM_BOUNDARY= label (1)
# Data table
DATATBL= COMPANY,RC010
DATATBL= PRODUCT,RC020
DATATBL= PRICE,RC030
DATATBL= PRICE,RB010
DATATBL= QUANTITY,RC050
DATATBL= COUNT,RC060
DATATBL= TEL,RC070
DATATBL= DAT,RC080
    
```

\* A line starting with "#" means a comment and is not processed.

#### (1) ITEM\_BOUNDARY

|             |   |
|-------------|---|
| Function    | If multiple data with the same tag names are present in the XML-format file, this ITEM_BOUNDARY tag separates the data items and allows the number specified in the conversion table to be incremented automatically. |
| Format      | ITEM_BOUNDARY=ITEM  |
| Explanation | Refer to (2) DATATBL.   |

#### (2) DATATBL

|             |  |
|-------------|--|
| Function    | Specifies the data conversion table.   |
| Format      | DATATBL=COMPANY,RC001  |
| Explanation | <p>[When description is "COMPANY,RC001"]</p> <p>When data with &lt;variable&gt; tag is defined as "&lt;variable name = "COMPANY"&gt;Company A&lt;/variable&gt;" in the XML-format file, it is converted to the bar code printer command, "{RC001;Company A}."</p> <p>[When description is COMPANY,RC001 and COMPANY,RB001]</p> <p>When data with &lt;variable&gt; tag is defined as "&lt;variable name = "COMPANY"&gt;Company A&lt;/variable&gt;" in the XML-format file, it is converted to two different bar code printer commands, {RC001;Company A} and {RB001;Company A}.</p> |

#### 4.3.1.4 Format setting file (XXXX.HDR)

This is a command file to be processed by the printer before the XML-format file is converted, when printing is performed in a selected label format.

It mainly consists of the Format Commands that define data fields in which converted XML data items are printed. Fixed data can also be described. (Refer to ★ in the following example.)

##### NOTES:

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.
3. When the ITEM tag of the item conversion table file automatically increments the number, care must be taken to prevent the same number from being generated.

##### Example of "XXXX.HDR"

```
Sheet1.hdr (Format setting file 1)

{D1000,1057,1000}
{C}
{PC010;0020,0100,05,05,E,00,B}
{PC020;0020,0150,05,05,E,00,B}
{PC001;0020,0200,05,05,E,00,B}
{PC030;0150,0200,05,05,E,00,B}
{PC002;0020,0250,05,05,E,00,B}
{PC050;0100,0250,05,05,E,00,B}
{LC;0030,0300,0210,0300,0,02} ★
{PC011;0020,0350,05,05,E,00,B}
{PC021;0020,0400,05,05,E,00,B}
{PC003;0020,0450,05,05,E,00,B}
{PC041;0150,0450,05,05,E,00,B}
{PC004;0020,0500,05,05,E,00,B}
{PC061;0100,0500,05,05,E,00,B}
{RC001;Price      $} ★
{RC002;Qty        set} ★
{RC003;Price      $} ★
{RC004;Qty        set} ★
```

\* Data with ★ is fixed data.

#### 4.3.1.5 Issue Command file (XXXX.FTR)

This is a file that describes the Issue Command to be last executed, when printing is performed in a selected format.

The print count changes from the value specified by the Issue Command, depending on the XML-format file.

##### NOTES:

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.

##### Example of "XXXX.FTR"

```
Sheet1.ftr (Issue Command file 1)

{XS;l,0001,0000C1010}
```

### 4.3.2 Sequence of Oracle XML Printing

The sequence of Oracle XML printing complies with that of the standard XML except for the following special notes.

#### 4.3.2.1 Escape character processing

Oracle XML supports the following escape characters. When an escape character is entered, it is automatically converted to the character as specified below.

| Escape character | Conversion result |
|------------------|-------------------|
| &lt;             | <                 |
| &amp;            | &                 |
| &gt;             | >                 |
| &quot;           | "                 |
| &apos;           | '                 |

#### 4.3.2.2 Setting the print count

The print count can be changed by specifying the print count for “\_QUANTITY” when selecting a label format.

Example: <labels \_FORMAT="FORMAT1" \_QUANTITY="5">

In this example, the print count is set to 5.

The setting range is from 1 to 9999. A value over 9999 will be automatically corrected to 9999.

#### 4.3.2.3 Printing the same data as multiple items

When the same identification name is defined in the item conversion table file, the same data can be used for multiple items.

```
Item conversion table XXX.INI
DATATBL= ID,RC010
DATATBL= ID,RB010
```

```
XML data file XXX.XML
<variable name= "ID">000000001000</variable>
```

```
Print result
ID : 000000001000
```



000000001000

The value specified in the XML-format file is used for both a text and a bar code.



## 4.4 SAP XML

### 4.4.1.1 XML-format file (XXXX.XML)

An XML-format file must start with “<?XML”.

The maximum file size is equal to the receive buffer size.

Example of “XXXX.XML”

```
File_A.xml (XML-format file)
<?xml version="1.0" standalone="no"?>
<!DOCTYPE labels SYSTEM "label.dtd">
<labels _FORMAT="FORMAT1" _QUANTITY="1" _PRINTERNAME="Printer 1" _JOBNAME="LBL101">
  <label>
    <variable name="COMPANY">Company A</variable>
    <variable name="PRODUCT">Desk-top PC A</variable>
    <variable name="PRICE">500,000</variable>
    <variable name="QUANTITY">500</variable>
    <variable name="NOTE">CA</variable>
  </label>
</labels>
```

### 4.4.1.2 XML setup file (XML.INI)

This is the main setup file required for the XML-format file print function.

This file needs to be located in the “¥XML” folder.

Example of “XML.INI”

```
Xml.ini (XML setup file)
#
# Stylesheet table
SHEETTBL= FORMAT1,SHEET1
SHEETTBL= FORMAT2,SHEET2
SHEETTBL= FORMAT3,SHEET3 } (1)
```

\* A line starting with “#” means a comment and is not processed.

#### (1) SHEETTBL

|             |   |
|-------------|---|
| Function    | Selects a label format by using a character string between <form> and </form> as a keyword.                         |
| Format      | SHEETTBL= <i>FORMAT1,SHEET1</i>   |
| Explanation | This parameter setting allows the label format to be selected automatically, depending on the XML-format file type. |

(Example)

When description is “FORMAT1,SHEET1”:

When a character string, “<form>FORMAT1</form>”, is found in the XML-format file, “SHEET1” is selected as a label format.

Then the “SHEET1.HDR” file is used as a label format, the “SHEET1.FTR” file as the Issue Command, and the “SHEET1.INI” file as the item conversion table, respectively.

#### 4.4.1.3 Item conversion table (XXXX.INI)

This file mainly consists of the conversion tables that define a rule to convert the XML data into the bar code printer commands.

**NOTES:**

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "%XML" folder.

Example of "XXXX.INI"

```

Sheet1.ini (Format setup file)

# Data table
DATATBL=TAG0__TAG1_TAG1,RC001
DATATBL=TAG0__TAG1_TAG2_001,RC002
DATATBL=TAG0__TAG1_TAG2_002,RC003
    
```

(1)

\* A line starting with "#" means a comment and is not processed.

(1) DATATBL

|             |  |
|-------------|--|
| Function    | Specifies the data conversion table.   |
| Format      | DATATBL=COMPANY,RC001  |
| Explanation | <p>[When description is "TAG0_TAG1_TAG1,RC001"]</p> <p>When the following data is defined after the &lt;window&gt;tag in the XML-format file, they are converted to a bar code printer command, "{RC001,Company A}."</p> <pre> &lt;window name="TAG0_"&gt;   &lt;text name="TAG1"&gt;     &lt;p name="TAG2"&gt;Company A&lt;/p&gt;   &lt;/text&gt; &lt;/window&gt;                     </pre> <p>[When description is "TAG0_TAG1_TAG2_001,RC002 and TAG0_TAG1_TAG2_002,RC003"]</p> <p>When the following data is defined after the &lt;window&gt;tag in the XML-format file, they are converted to bar code printer commands, "{RC002,Company A}" and "{RC003,Company A}."</p> <pre> &lt;window name="TAG0_"&gt;   &lt;text name="TAG1"&gt;     &lt;p name="TAG2"&gt;Company A&lt;/p&gt;     &lt;p name="TAG2"&gt;Company B&lt;/p&gt;   &lt;/text&gt; &lt;/window&gt;                     </pre> |

#### 4.4.1.4 Format setting file (XXXX.HDR)

This is a command file to be processed by the printer before the XML-format file is converted, when printing is performed in a selected label format.

It mainly consists of the Format Commands that define data fields in which converted XML data items are printed.

Fixed data can also be described. (Refer to ★ in the following example.)

##### NOTES:

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.
3. When the ITEM tag of the item conversion table file automatically increments the number, care must be taken to prevent the same number from being generated.

Example of "XXXX.HDR"

```
Sheet1.hdr (Format setup file 1)

{D1000,1057,1000}
{C}
{PC010;0020,0100,05,05,E,00,B}
{PC020;0020,0150,05,05,E,00,B}
{PC001;0020,0200,05,05,E,00,B}
{PC030;0150,0200,05,05,E,00,B}
{PC002;0020,0250,05,05,E,00,B}
{PC050;0100,0250,05,05,E,00,B}
{LC;0030,0300,0210,0300,0,02} ★
{PC011;0020,0350,05,05,E,00,B}
{PC021;0020,0400,05,05,E,00,B}
{PC003;0020,0450,05,05,E,00,B}
{PC041;0150,0450,05,05,E,00,B}
{PC004;0020,0500,05,05,E,00,B}
{PC061;0100,0500,05,05,E,00,B}
{RC001;Price      $} ★
{RC002;Q'ty       set} ★
{RC003;Price      $} ★
{RC004;Q'ty       set} ★
```

Note: Data with ★ is fixed data.

#### 4.4.1.5 Issue Command file (XXXX.FTR)

This is a file that describes the Issue Command to be last executed, when printing is performed in a selected format.

The print count changes from the value specified by the Issue Command, depending on the XML-format file.

##### NOTES:

1. "XXXX" is defined according to the SHEETTBL parameter in the XML setup file (XML.INI).
2. This file needs to be located in the "¥XML" folder.

Example of "XXXX.FTR"

```
Sheet1.ftr (Issue Command file 1)

{XS;l,0001,0000C1010}
```

## 4.4.2 Sequence of SAP XML Printing

The sequence of SAP XML printing complies with that of the standard XML except for the following special notes.

### 4.4.2.1 Effective print data range

Character strings between <smartxf> and </smartxf> in the SAP XML are printed.

### 4.4.2.2 Line feed

When the <new-line/> is inserted in SAP XML data, a new line is inserted.

### 4.4.2.3 Setting the print count

A value between <tdcopies> and </tdcopies> in SAP XML is the print count.

The setting range is from 1 to 9999. A value over 9999 will be automatically corrected to 1.

### 4.4.2.4 Printing graphics

BMP files specified in SAP XML-format files can be printed.

```
Item conversion table (XXX.INI)

DATATBL=HEADER_LOGO_TEST,SG;0050,0050,0250,0150,8,
```

```
XML data file

<window name="HEADER_LOGO">
<graphics name="TEST" objname="FILE"/>
</window>
```

At this time, the FILE.BMP stored under the GRP\_DATA directory is printed.

*NOTE: The GRP\_DATA directory and XML directory must exist in the same location.  
(This is also applicable when creating XML ROM file.)*