



Ceaseless Creativity for a Sustainable World

# Printing Simplified Chinese Characters (GB2312) from SAP To SATO Printers

## User Guide

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## Table of Contents

<b>1.</b>	<b>Introduction.....</b>	<b>3</b>
<b>2</b>	<b>Configuration at SAP environment .....</b>	<b>3</b>
<b>3</b>	<b>Using SATO firmware with GB2312 character set .....</b>	<b>4</b>
<b>4</b>	<b>Example.....</b>	<b>5</b>
<b>5</b>	<b>Appendix .....</b>	<b>7</b>
	24x24 dot Horizontal Text Flow Chinese Character Font Specification.	7
	24x24 dot Horizontal Text with Mixture of Half-sized, Fill-sized Chinese Character Font Specification.....	8
	24x24 dot Vertical Text Flow Chinese Character Font Specification.....	9
	24x24 dot Vertical Text with Mixture of Half-sized, Full-sized Chinese Character Font Specification .....	10

# 1. Introduction

This document is to explain how to print **Simplified Chinese characters (GB2312)** from SAP with SAPScript (ITF file upload method) to SATO **CL4xxe** printers.

Please refer to the following document on how to use NiceLabel Pro to create the ITF file:  
<http://www.nicelabel.com/Learning-center/White-Papers/Printing-labels-to-thermal-printers-from-SAP-ERP>

Note:

- 1) It is assumed the Chinese characters are entered on the Text Editor or read from database in the SAP environment. NiceLabel Pro is not able to create ITF file containing Chinese characters.
- 2) It is also assumed that the SAP system is Unicode Compliant, or at least supports inputting and displaying of Simplified Chinese.

# 2. Configuration at SAP environment

The SATO device type "ZLB\_SAT.pri" is using codepage 1103 (IBM PC Multilingual 850). This codepage is not able to support GB2312 character set. Codepage **8400**, Simplified Chinese (based on GB2312-EUC, MS CP936) has to be used instead in order to print the Simplified Chinese characters.

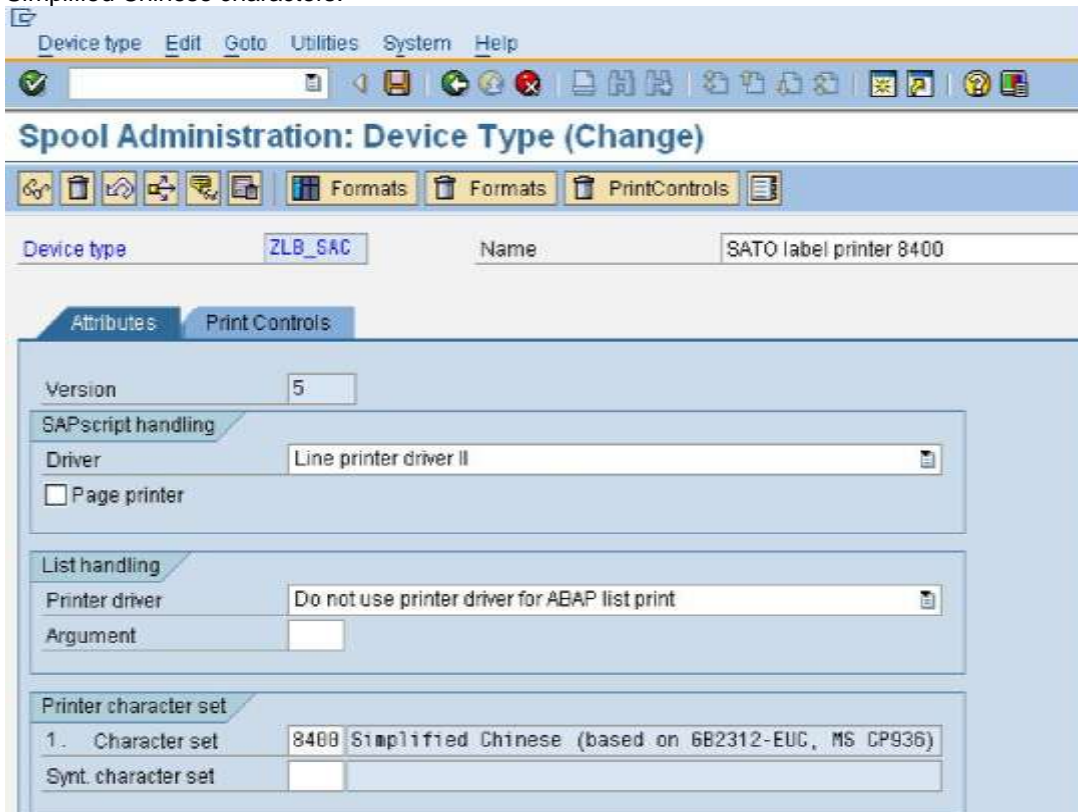


Figure 1 Using 8400 character set

### 3. Using SATO firmware with GB2312 Character Set

The following firmware has to be downloaded to the CL4xxe printer in order to print the GB2312 Simplified Chinese characters:

**Firmware version 05.21.06.00A** (Please email to [global.sysdev-gbs@sato-global.com](mailto:global.sysdev-gbs@sato-global.com) for more information)

The following commands are to be used to print the Simplified Chinese characters

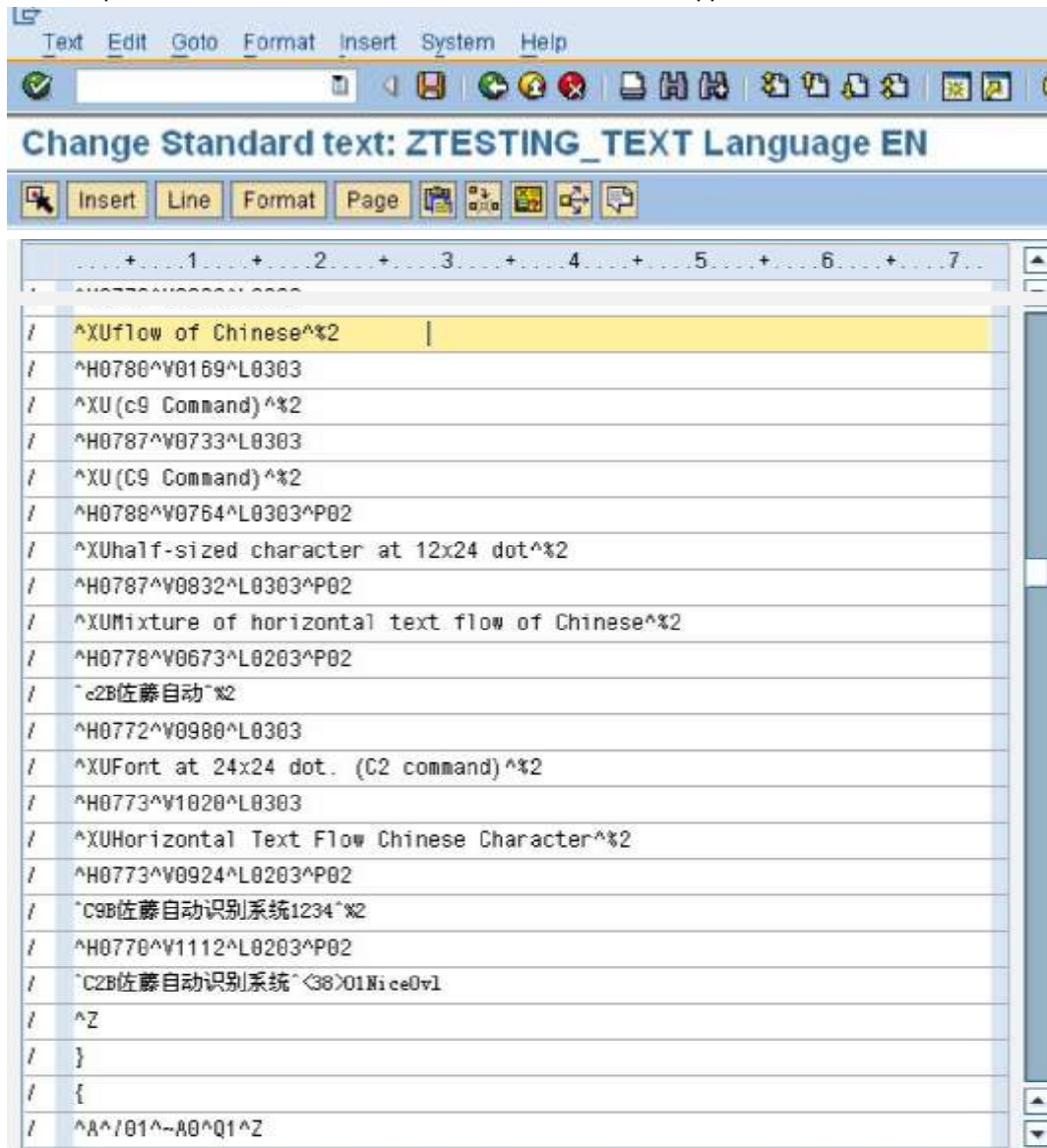
Command	Descriptions
<b>C2</b>	To specify Horizontal Text Flow Chinese Character Font at width 24x height 24 dot
<b>C9</b>	To specify mixture of horizontal text flow of Chinese Character Font at width 24x height 24 dot and half-sized character at width 12x height 24 dot
<b>c2</b>	To specify vertical text flow Chinese Character Font at width 24x height 24 dot.
<b>c9</b>	To specify mixture printing of vertical Chinese character font at width 24x height 24 dot and half-sized character at width 12x height 24 dot.

**Table 1 Commands to print Simplified Chinese**

Please refer to the appendix for the detail description of the commands.

## 4. Example

The sample of the ITF file below can be downloaded from the appendix.



**Table 2 ITF file with Simplified Chinese**

Note: Parameter "B" has to be used if the binary code of the Simplified Chinese is specified.

Using the above mentioned device type (with codepage 8400) and the SATO firmware with GB2312 character set, the following printout can be produced.



Figure 2 Printing output with Simplified Chinese

# 5. Appendix

## 24x24 dot Horizontal Text Flow Chinese Character Font Specification

Applicable Printer	CL4xx	CL6xx	M-840RVe	M-590RVe	M-84xxSe
<b>24X24 dot Horizontal Text Flow</b>				<b>ESC+C2</b>	
<b>Chinese Character Font Specification</b>					
16 Hex Code	ESC	C2	Parameter		
	<1B>16	<43>16<32>16	an~n		
Default Value	NO				

Valid Range & Time Frame of Command	When power is switched off	Set parameter will not be maintained.
	Valid Range within Items	Set parameter will become invalid.
	Valid Range among Items	Set parameter will become invalid.

**[Function]**

To specify Horizontal Text Flow Chinese Character Font at width 24x height 24 dot.

**[Format]**

<C2>an~n

•Parameter

a	「Code Specification Mode」	=	H	: HEX Character Specification
			B	: Binary Code Specification
			I	: with smoothing function based on HEX
			C	: with smoothing function based on binary code
			J	: with highlighting function base on HEX
			D	: with highlighting function based on binary code
			K	: with smoothing and highlighting function based on HEX
			E	: with smoothing and highlighting function based on binary code
n	「Data」	=	Refer to Chinese Character Code (GB2312) Range Table	

\* Printing will not be executed properly when data size increase or decrease

**[Coding Example]**

16 Hex Character Code Specification Horizontal Direction Ratio : 2 times      Vertical Direction Ratio : 3 times

<A> <V>100<H>100<P>8<L>0203

**<C2>HB0A1B0A2B0A3B0A4B0A5**

<Q>1 <Z>

**[Supplementary Explanation]**

1. 16 Hex Character Code = Chinese Character Code 4 byte ASCII / 1 character
2. Binary Code = Chinese Character Code 2 byte / 1 character
3. Smoothing Function Valid Ratio = horizontal, vertical valid range : 3~12 times
4. Emphasis Function Valid Ratio = horizontal, vertical valid range : 1~5 times

**[Point]**

1. Characters of Emphasis Function will increase horizontally when it follows the enlargement specification.
2. When using Emphasis Function, some characters may not be printed clearly.

**[Valid Command]**

Print Position	<V>	<H>							
Modification	<P>	<L>	<F>	<E>	<D>	<O>	<WD>		

## 24×24 dot Horizontal Text with Mixture of Half-sized, Fill-sized Chinese Character Font Specification

Applicable Printer	CL4xxe	CL6xxe	M-8400RVe	M-5900RVe	M-84xxSe
<b>24×24 dot Horizontal Text with Mixture of Half-sized, Full-sized Chinese Character Font Specification</b>					<b>ESC+C9</b>
16 Hex Code	ESC	C9	Parameter		
	<1B> <sub>16</sub>	<43> <sub>16</sub> <39> <sub>16</sub>	an~n		
Default Value	NO				

Valid Range & Time Frame of Command	When power is switched off	Set parameter will not be maintained
	Valid range within Items	Set parameter will become invalid.
	Valid range among Items	Set parameter will become invalid.

### [Function]

To specify mixture of horizontal text flow of Chinese Character Font at width 24× height 24 dot and half-sized character at width 12× height 24 dot.

### [Format]

<K9>an~n

#### •Parameter

a	「Code Specification Mode」	=	H	: HEX Character Specification
			B	: Binary Code Specification
			I	: with smoothing function based on HEX
			C	: with smoothing function based on binary code
			J	: with highlighting function base on HEX
			D	: with highlighting function based on binary code
			K	: with smoothing and highlighting function based on HEX
			E	: with smoothing and highlighting function based on binary code
n	「Data」	=	Refer to Chinese Character Code (GB2312) Range Table	

\* Printing will not be executed properly when data size increase or decrease

\* Specifiable code of half-sized character is from 20h~7Fh as there is an overlap with Chinese Character Code (GB2312).

[Coding Example] 16Hex Character Code Specification      Horizontal Direction Ratio : 2 times      Vertical Direction

Ratio : 3 times

<A> <V>100<H>100<P>8<L>0203

<C9>HB0A1B0A2B0A3B0A4B0A5303132

<Q>1 <Z>

### [Supplementary Explanation]

1. 16 Hex Character Code = Chinese Character Code 4 byte ASCII / 1 character
2. Binary Code = Chinese Character Code 2 byte / 1 character
3. Smoothing Function Valid Ratio = horizontal, vertical valid range : 3~12 times
4. Emphasis Function Valid Ratio = horizontal, vertical valid range : 1~5 times

### [Point]

1. Characters of Emphasis Function will increase horizontally when it follows the enlargement specification.
2. When using Emphasis Function, some characters may not be printed clearly.

### [Valid Command]

Print Position	<V>	<H>								
Modification	<P>	<L>	<?>	<&>	<>	<0>	<WD>			



## 24×24 dot Vertical Text Flow Chinese Character Font Specification

Applicable Printer				CL4xe	CL6xe	M-840RVe	M-590RVe	M-84xxSe
<b>24X24 dot Vertical Text Flow Chinese Character Font Specification</b>							<b>ESC+c2</b>	
16 Hex Code	ESC	c2	Parameter					
	<1B>16	<63>16<32>16	an~n					
Default Value	NO							

Valid Range & Time Frame of Command	When power is switched off	Set parameter will not be maintained
	Valid range within Items	Set parameter will become invalid.
	Valid range among Items	Set parameter will become invalid.

### [Function]

To specify vertical text flow Chinese Character Font at width 24× height 24 dot.

### [Format]

<c2>an~n

#### ●Parameter

a	「Code Specification Mode」	=	H : HEX Character Specification B : Binary Code Specification I : with smoothing function based on HEX C : with smoothing function based on binary code J : with highlighting function base on HEX D : with highlighting function based on binary code K : with smoothing and highlighting function based on HEX E : with smoothing and highlighting function based on binary code
n	「Data」	=	Refer to Chinese Character Code (GB2312) Range Table

\* Printing will not be executed properly when data size increase or decrease

[Coding Example] 16Hex Character Code Specification      Horizontal Direction Ratio : 2 times      Vertical Direction Ratio : 3 times

<A> <V>100<H>100<P>8<L>0203

<c2>HB0A1B0A2B0A3B0A4B0A5

<Q>1 <Z>

### [Supplementary Explanation]

1. 16 Hex Character Code = Chinese Character Code 4 byte ASCII / 1 character
2. Binary Code = Chinese Character Code 2 byte / 1 character
3. Smoothing Function Valid Ratio = horizontal, vertical valid range : 3~12 times
4. Emphasis Function Valid Ratio = horizontal, vertical valid range : 1~5 times

### [Point]

1. Characters of Emphasis Function will increase horizontally when it follows the enlargement specification.
2. When using Emphasis Function, some characters may not be printed clearly.

### [Valid Command]

Print Position	<V>	<H>							
Modification	<P>	<L>	<P>	<E>	<I>	<O>	<WD>		

## 24×24 dot Vertical Text with Mixture of Half-sized, Full-sized Chinese Character Font Specification

Applicable Printer	CL4xx	CL6xx	M-840RVe	M-5900RVe	M-84xxSe
<b>24×24 dot Vertical Text with Mixture of Half-sized, Full-sized Chinese Character Font Specification</b>					<b>ESC+c9</b>
16 Hex Code	ES	c9	Parameter		
	<1B>16	<63>16<39>16	an~n		
Default Value	NO				

Valid Range & Time Frame of Command	When power is switched off	Set parameter will not be maintained.
	Valid range within Items	Set parameter will become invalid.
	Valid range among Items	Set parameter will become invalid.

[Function]

To specify mixture printing of vertical Chinese character font at width 24× height 24 dot and half-sized character at width 12× height 24 dot.

[Format]

<c9>an~n

•Parameter

a	「Code Specification Mode」	=	H : HEX Character Specification B : Binary Code Specification I : with smoothing function based on HEX C : with smoothing function based on binary code J : with highlighting function base on HEX D : with highlighting function based on binary code K : with smoothing and highlighting function based on HEX E : with smoothing and highlighting function based on binary code
n	「Data」	=	Refer to Chinese Character Code (GB2312) Range Table

\* Printing will not be executed properly when data size increase or decrease

\* Specificable code of half-sized character is from 20h~7Fh as there is an overlap with Chinese Character Code (GB2312).

[Coding Example]

16Hex Character Code Specification Horizontal Direction Ratio : 2 times      Vertical Direction Ratio : 3 times

<A> <V>100<H>100<P>8<L>0203

<c9>HB0A1B0A2B0A3B0A4B0A5303132

<Q>1 <Z>

[Supplementary Explanation]

1. 16 Hex Character Code = Chinese Character Code 4 byte ASCII / 1 character
2. Binary Code = Chinese Character Code 2 byte / 1 character
3. Smoothing Function Valid Ratio = horizontal, vertical valid range : 3~12 times
4. Emphasis Function Valid Ratio = horizontal, vertical valid range : 1~5 times

[Point]

1. Characters of Emphasis Function will increase horizontally when it follows the enlargement specification.
2. When using Emphasis Function, some characters may not be printed clearly.

[Valid Command]

Print Position	<V>	<H>							
Modification	<P>	<L>	<?>	<E>	<>	<0>	<WD>		

## 5.1. ITF file sample with Simplified Chinese

```

/HTEXT
/:OBJECT TEXT
/:NAME ZTESTING_TEXT
/:ID ST
/:LANGUAGE E
/:FORM SYSTEM
/:STYLE
/:FIRST-USER A01ADM
/:FIRST-DATE 07 09 2000
/:FIRST-TIME 09 10 43
/:LAST-USER A01ADM
/:LAST-DATE 27 10 2000
/:LAST-TIME 15 30 41
/:TITLE '
/:TITLE1 '
/:TITLE2 '
/MTEXT
* {
/^A^EX0
/^AR^A3H001V001
/^CS3^#E4
/^A111590799^Z
/}
/{
/^A^PS^WKchinese.lbl^%2
/^H0700^V0570^L0303
/^XUFont at 24x24 dot. (c2 command)^%2
/^H0700^V0651^L0303
/^XUVertical text flow
/^H0700^V0611^L0303
/^XUChinese Character Font^%2
/ ^H0100^V0525^L0203^P02 / ^c9Bè̄  fǎ^«ç³»ç»YABC^%2 /
^H0779^V0249^L0303^P02 / ^XUCharacter Font at 24x24 dot and^%2
/^H0786^V0797^L0303
/^XUCharacter Font at 24x24 dot and^%2
/^H0781^V0209^L0303^P02
/^XUhalf-sized character at 12x24 dot^%2
/^H0779^V0329^L0303
/^XUMixture of vertical text
/^H0779^V0289^L0303
/^XUflow of Chinese^%2
/^H0780^V0169^L0303
/^XU(c9 Command)^%2
/^H0787^V0733^L0303
/^XU(C9 Command)^%2
/^H0788^V0764^L0303^P02
/^XUhalf-sized character at 12x24 dot^%2
/^H0787^V0832^L0303^P02

```

```
/^XUMixture of horizontal text flow of Chinese^%2
/^H0778^V0673^L0203^P02
/^c2Bä1/2lè—cè:†ªš“^%2
/^H0772^V0980^L0303
/^XUFont at 24x24 dot. (C2 command)^%2
/^H0773^V1020^L030
/^XUHorizontal Text Flow Chinese Character^%2
/^H0773^V0924^L0203^P02
/^C9Bä1/2lI è—cè:†ªš“è-†ªª«ç³»ç»Ÿ1234^%2
/^H0770^V1112^L0203^P02
/^C2Bä1/2D è—cè:†ªš“è-†ªª«ç³»ç»Ÿ^<38>01NiceOvl
/^Z
/}
/{/^A^
/01^~A0^Q1^Z
/}
```

\*\* END \*\*