



SAP Device Driver for SATO Printers

User Manual

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Introduction

1

“SAP Device Driver for SATO printers” is a SAP Smart Forms printing solution to SATO printer. It allows users to use a driver for a Page Description Language (PDL) that is implemented in Advanced Business Application Programming (ABAP) and resided in the SAP environment to print SATO printer without 3rd party solutions. With this device driver, SATO Barcode Printer Language (SBPL) is sent to the SATO printer directly from SAP system — providing greater performance and efficiency.

This document explains the necessary environment and configuration to use such a solution.

SAP Environment

2

The following SAP environment supports the ABAP based PDL drivers:

- SAP_BASIS Release 6.20:
Support Package SAPKB62064 + attached correction instructions or
Support Package SAPKB62065 + attached correction instructions
or Support Package SAPKB62066
Kernel 6.40 patch level 222
- SAP_BASIS Release 6.40:
Support Package SAPKB64022 + attached correction instruction
or Support Package SAPKB64023
Kernel 6.40 patch level 222
- SAP_BASIS Release 7.00:
Support Package SAPKB70014 + attached correction instruction
or Support Package SAPKB70016
Kernel 7.00 patch level 148
- SAP_BASIS Release 7.01:
supported from the beginning
- SAP_BASIS Release 7.10:
not supported in 7.10
- SAP_BASIS Release 7.11 and higher:
supported from the beginning

Please refer to the [SAP Notes: 1097563](#) for the updated information about the overview of SAP PDL driver.

Overview of Solution

3

This solution is primarily for Smart Forms printing. It requires 2 components from the printer providers, such as SATO.

- ABAP Based PDL device driver
- Device Type files

After uploading the components into the SAP system, users will

- Use Smart Styles to define the available printing items in the device type,
- Use Smart Forms to design the label
- Define Output Device that points to the given Device Type
- Print the Smart Forms through the output device.

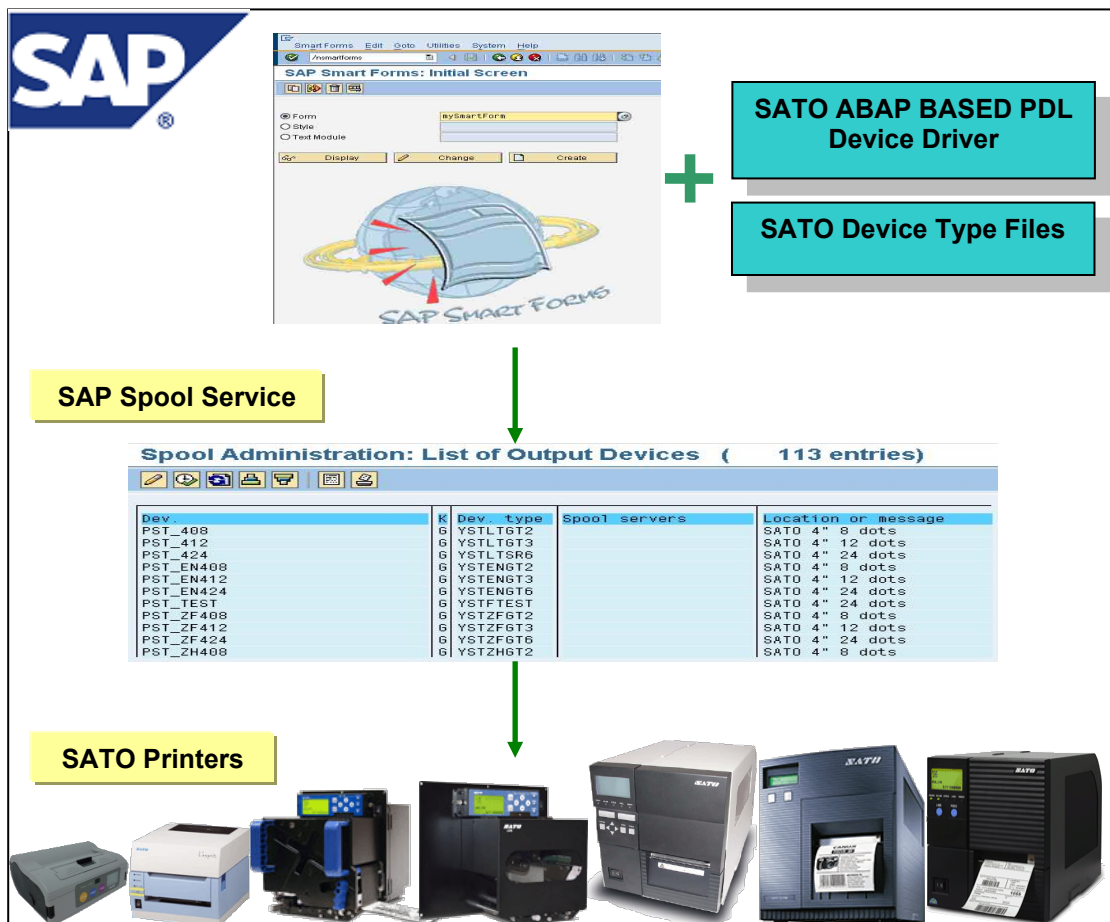


Figure 1 Overview of solution

Please refer to the [SAP Notes: 1135106](#) for the updated information about the SATO PDL Driver.

Using SATO Device Type

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The following device types for SATO PDL Driver are available:

| Codepage | Name of Device Type | Resolution | Supported Models |
|--------------------|---------------------|------------|---|
| Latin1 (ISO8859-1) | YSTLTGT2 | 203dpi | GT408e S8408 LT408 MB400i **S84-ex 203dpi **S86-ex 203dpi |
| | YSTLTGT3 | 305dpi | GT412e S8412 MB410i **S84-ex 305dpi **S86-ex 305dpi |
| | YSTLTGT6 | 609dpi | GT424e S8424 **S84-ex 609dpi |
| | YSTLTGL2 | 203dpi | GL408e |
| | YSTLTGL3 | 305dpi | GL412e |
| | YSTLTSR2 | 203dpi | *SR408 *PT408e *MR400e *SG408R *SG408R-ex *SG608R *CL4NX-J 203dpi *CL6NX-J 203dpi *CT4-LX-J/*HC4-LX-J 203dpi |
| | YSTLTSR3 | 305dpi | *SR412 *PT412e *MR410e *SG412R *SG412R-ex *SG612R *SG112T/R/ex *CL4NX-J 305dpi *CL6NX-J 305dpi *CT4-LX-J/*HC4-LX-J 305dpi |
| | YSTLTSR6 | 609dpi | *SR424 *SG424R *SG424R-ex *CL4NX-J 609dpi |
| | YSTLTHR6 | 609dpi | HR224 |
| | YSTLTCN2 | 203dpi | **CL4NX/CL4NX Plus 203dpi **PW208NX/PW208mNX **CT4-LX/**HC4-LX 203dpi |
| | YSTLTCN3 | 305dpi | **CL4NX/CL4NX Plus 305dpi **FX3-LX **CT4- LX/**HC4-LX 305dpi |
| | YSTLTCN6 | 609dpi | **CL4NX/CL4NX Plus 609dpi |

| Codepage | Name of Device Type | Resolution | Supported Models |
|-----------------------------------|---------------------|------------|--|
| English Only (7-Bit USA ASCII) | YSTENGT2 | 203dpi | GT408e S8408 **S84-ex 203dpi **S86-ex 203dpi LT408 |
| | YSTENGT3 | 305dpi | GT412e S8412 **S84-ex 305dpi **S86-ex 305dpi |
| | YSTENGT6 | 609dpi | GT424e S8424 **S84-ex 609dpi |
| | YSTENGL2 | 203dpi | GL408e |
| | YSTENGL3 | 305dpi | GL412e |
| | YSTENSR2 | 203dpi | *SR408 *MR400e *SG408R *SG408R-ex *SG608R *CL4NX-J 203dpi *CL6NX-J 203dpi *CT4-LX-J/*HC4-LX-J 203dpi |
| | YSTENSR3 | 305dpi | *SR412 *MR410e *SG412R *SG412R-ex *SG612R *SG112T/R/ex *CL4NX-J 305dpi *CL6NX-J 305dpi *CT4-LX-J/*HC4-LX-J 305dpi |
| | YSTENSR6 | 609dpi | *SR424 *SG424R *SG424R-ex *CL4NX-J 609dpi |
| | YSTENHR6 | 609dpi | HR224 |
| | YSTENCN2 | 203dpi | **CL4NX/CL4NX Plus 203dpi **PW208NX/PW208mNX **CT4-LX/**HC4-LX 203dpi |
| | YSTENCN3 | 305dpi | **CL4NX/CL4NX Plus 305dpi **FX3-LX **CT4-LX/**HC4-LX 305dpi |
| | YSTENCN6 | 609dpi | **CL4NX/CL4NX Plus 609dpi |

| Codepage | Name of Device Type | Resolution | Supported Models |
|-------------------------------------|---------------------|------------|---|
| Europe Characters (Codepage 850) | YSTCPCL2 | 203dpi | CL408e, CL608e CT408i M-8459Se M-8485Se M-8460Se M84-Pro2 CG208, CG408 GZ408e WS408 **CL6NX 203dpi |
| | YSTCPCL3 | 305dpi | CL412e, CL612e CT412i M-8465Se M-8490Se M10e M84-Pro3 CG212, CG412 GZ412e WS412 **CL6NX 305dpi |
| | YSTCPCL6 | 609dpi | M84-Pro6 |
| | YSTCPLM2 | 208dpi | LM408e |
| | YSTCPLM3 | 305dpi | LM412e |

| Codepage | Name of Device Type | Resolution | Supported Models |
|--|---------------------|------------|---|
| Korean (Wansung Encoding, HYR Gothic-Medium) | YSTKOGT2 | 203dpi | GT408e |
| | YSTKOGT3 | 305dpi | GT412e |
| | YSTKOGT6 | 609dpi | GT424e |
| | YSTKOGL2 | 203dpi | GL408e |
| | YSTKOGL3 | 305dpi | GL412e |
| Korean Unicode (UTF-8) | YSTKUGL2 | 203dpi | GL408e |
| | YSTKUGL3 | 305dpi | GL412e |
| Traditional Chinese (Big5) | YSTZFGT2 | 203dpi | GT408e |
| | YSTZFGT3 | 305dpi | GT412e |
| | YSTZFGT6 | 609dpi | GT424e |
| | YSTZFGL2 | 203dpi | GL408e |
| | YSTZFGL3 | 305dpi | GL412e |
| Traditional Chinese Unicode (UTF-8) | YSTFUGL2 | 203dpi | GL408e |
| | YSTFUGL3 | 305dpi | GL412e |
| Simplified Chinese (GB2312) | YSTZHGT2 | 203dpi | GT408e |
| | YSTZHGT3 | 305dpi | GT412e |
| | YSTZHGT6 | 609dpi | GT424e |
| Simplified Chinese Unicode (UTF-8) | YSTHUGL2 | 203dpi | GL408e |
| | YSTHUGL3 | 305dpi | GL412e |
| Japanese (Shift-JIS) + English (7-Bit USA ASCII) | YSTJAPT2 | 203dpi | *PT408e |
| | YSTJAPT3 | 305dpi | *PT412e |
| | YSTJASR2 | 203dpi | *SR408 *SG408R *SG408R-ex *SG608R *CL4NX-J 203dpi *CL6NX-J 203dpi *CT4-LX-J/*HC4-LX-J 203dpi |
| | YSTJASR3 | 305dpi | *SR412 *SG412R *SG412R-ex *SG612R *SG112T/R/ex *CL4NX-J 305dpi *CL6NX-J 305dpi *CT4-LX-J/*HC4-LX-J 305dpi |
| | YSTJASR6 | 609dpi | *SR424 *SG424R *SG424R-ex *CL4NX-J 609dpi |
| | YSTJALP2 | 203dpi | *L'espritT/R408v *L'espritT/R408v-ex |
| | YSTJALP3 | 305dpi | *L'espritT/R412v *L'espritT/R412v-ex |

Table 1 Device Types

Note: * denotes Japanese models

Note: ** denotes printer models which should have the LABEL_SIZE value described in a Smart Forms when printing. For finding out more regarding filling out label's width and height please refer to [Section 6.5.2](#) and *Figure 60* of this document. The label width value using YSTCPCL2 device type should be 1216 and the value needs to be 1824 when using YSTCPCL3 device type when printing using 6 inch label.

| Printer Model | Supported Languages | Device Type |
|---|--|---------------------|
| CL4NX/CL4NX Plus xxxdpi PW208NX/PW208mNX FX3-LX CT4-LX/HC4-LX | Latin1 (ISO8859-1) | YSTLTCLNx |
| | English (ASCII characters) | YSTENCLNx |
| CL6NX xxxdpi | European Characters (codepage 850) | YSTCPCLx |
| CL4xxe/CL6xxe | European Characters (codepage 850) | YSTCPCLx |
| GL4xxe | Latin1 (ISO8859-1) | YSTLTGLx |
| | English (ASCII characters) | YSTENGLx |
| | Korean (Wansung Encoding / Unicode) | YSTKUGLx / YSTKUGLx |
| | Simplified Chinese (Unicode) | YSTHUGLx |
| | Traditional Chinese (Big5 / Unicode) | YSTZFGLx / YSTFUGLx |
| GT4xxe | Latin1 (ISO8859-1) | YSTLTGTx |
| | English (ASCII characters) | YSTENGTx |
| | Korean (Wansung Encoding) | YSTKOGTx |
| | Simplified Chinese (GB2312) | YSTZHGTx |
| | Traditional Chinese (Big5) | YSTZFGTx |
| S84xx | Latin1 (ISO8859-1) | YSTLTGTx |
| | English (ASCII characters) | YSTENGTx |
| S84-ex | Latin1 (ISO8859-1) | YSTLTGTx |
| | English (ASCII characters) | YSTENGTx |
| S86-ex | Latin1 (ISO8859-1) | YSTLTGTx |
| | English (ASCII characters) | YSTENGTx |
| LT408 | Latin1 (ISO8859-1) | YSTLTGTx |
| | English (ASCII characters) | YSTENGTx |
| MB4xxi | Latin1 (ISO8859-1) | YSTLTGTx |
| | English (ASCII characters) | YSTENGTx |
| M84xxSE | European Characters (codepage 850) | YSTCPCLx |
| M84-Pro | European Characters (codepage 850) | YSTCPCLx |
| M10e | European Characters (codepage 850) | YSTCPCLx |
| CT4xxi | European Characters (codepage 850) | YSTCPCLx |
| CG2xx/CG4xx | European Characters (codepage 850) | YSTCPCLx |
| LM4xxe | European Characters (codepage 850) | YSTCPLMx |
| GZ4xxe | European Characters (codepage 850) | YSTCPCLx |
| HR224 | Latin1 (ISO8859-1) | YSTLTHR6 |
| | English (ASCII characters) | YSTENHR6 |
| WS408 | European Characters (Codepage 850) | YSTCPCL2 |
| WS412 | European Characters (Codepage 850) | YSTCPCL3 |
| * SR4xx | Latin1 (ISO8859-1) | YSTLTSRx |
| | English (ASCII characters) | YSTENSRx |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASRx |
| * SG4xxR | Latin1 (ISO8859-1) | YSTLTSRx |
| | English (ASCII characters) | YSTENSRx |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASRx |
| * SG4xxR-ex | Latin1 (ISO8859-1) | YSTLTSRx |
| | English (ASCII characters) | YSTENSRx |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASRx |
| * SG6xxR | Latin1 (ISO8859-1) | YSTLTSRx |
| | English (ASCII characters) | YSTENSRx |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASRx |

| Printer Model | Supported Languages | Device Type |
|--|--|----------------------|
| * SG112T/R/ex | Latin1 (ISO8859-1) | YSTLTSR _x |
| | English (ASCII characters) | YSTENSR _x |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASR _x |
| * MR4xx | Latin1 (ISO8859-1) | YSTLTSR _x |
| | English (ASCII characters) | YSTENSR _x |
| * PT4xxe | Latin1 (ISO8859-1) | YSTLTSR _x |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASR _x |
| * L'espritT/R4xxv | Japanese (Shift-JIS) + English (ASCII) | YSTJALP _x |
| * L'espritT/R4xxv-ex | Japanese (Shift-JIS) + English (ASCII) | YSTJALP _x |
| * CL4NX-J xxxdpi * CT4-LX-J/*HC4-LX-J xxxdpi | Latin1 (ISO8859-1) | YSTLTSR _x |
| | English (ASCII characters) | YSTENSR _x |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASR _x |
| * CL6NX-J xxxdpi | Latin1 (ISO8859-1) | YSTLTSR _x |
| | English (ASCII characters) | YSTENSR _x |
| | Japanese (Shift-JIS) + English (ASCII) | YSTJASR _x |

Table 2 Supported Languages of Device Types

Note: * denotes Japanese models (YSTJAx_{xx} version also support English ASCII font)

The following printer models support RFID Gen2 Barcode printing with SATO PDL Driver:

- CL4xxe
- CL6xxe
- GL4xxe
- GT4xxe / SR4xx
- M84xxSE
- S-84xx

* Ultra-High-Frequency (UHF) is used for the RFID encoding for the above printer models.

To print Asian languages from GT/SR or GL printer, language memory cartridge is needed:

| Language Pack | Part Number |
|---|-------------|
| GT Korean Memory Cartridge | WWGT0590C |
| GT Simplified and Traditional Cartridge | WWGT0590K |
| GL Simplified Chinese Memory Cartridge | WWGL159BC |
| GL Traditional Chinese Memory Cartridge | WWGL159DC |
| GL Korean Memory Cartridge | WWGL159FK |
| SR Japanese Cartridge | WSR401910 |

Table 3 Memory Cartridge and Part No.

The instruction of importing the PDL Device Driver can be found in the SAP Wizard Note:
[Note 1103422 - SAP Printer Vendor program: Installing device types, etc.](#)

Copy the transport files to the proper locations in SAP system:

- a. Copy the K*.PVD to the Cofile folder located at \usr\sap\trans\cofile
- b. Copy the R*.PVD to the Data folder located at \usr\sap\trans\data

Logon to the SAP ECC Dev System and open transaction STMS (Browse or type “STMS” in the transaction code area)

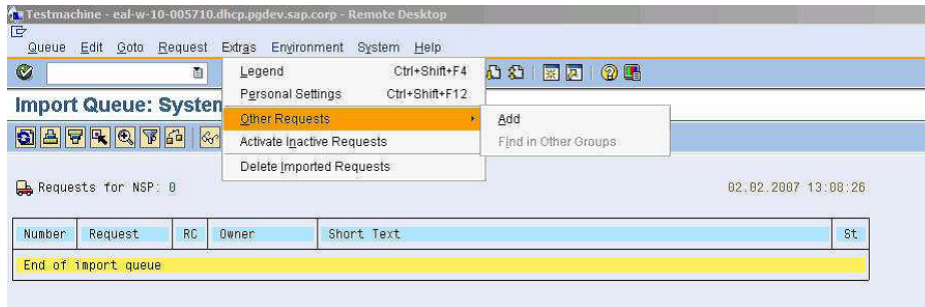


Figure 2 Adding transport request for PDL Device Driver

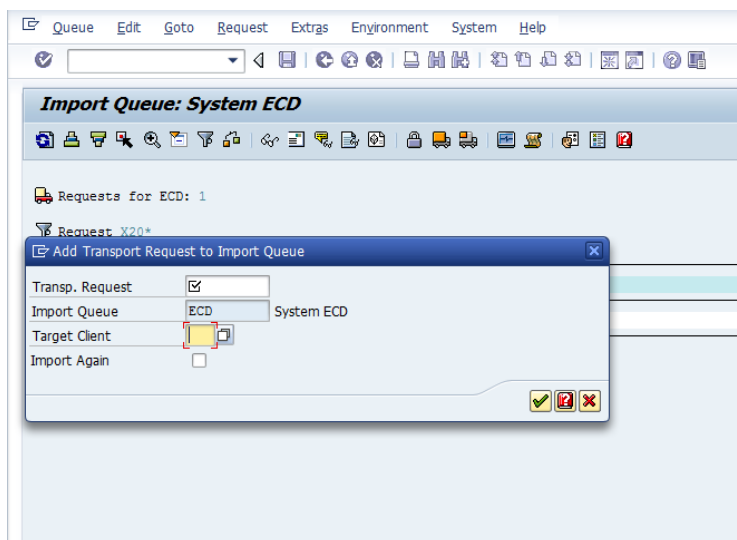


Figure 3 Enter target client and search for transport request

Search for the desired transport using the *wildcard selection and the transport file name (do not include the .PVD extension)

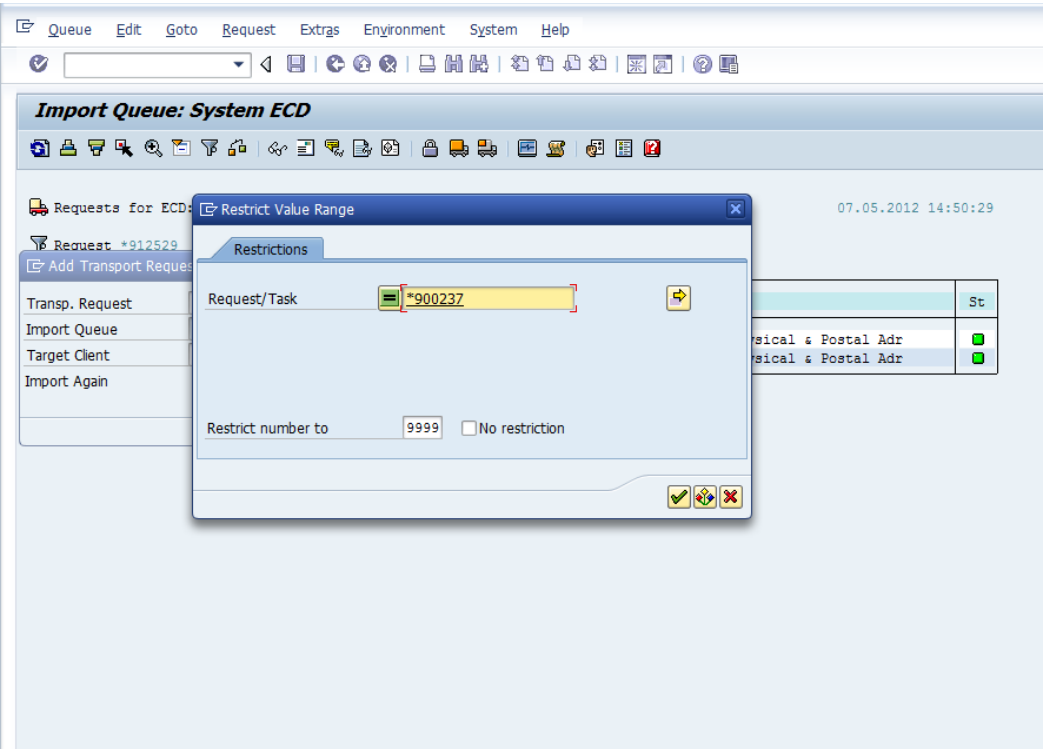


Figure 4 Search for transport file name

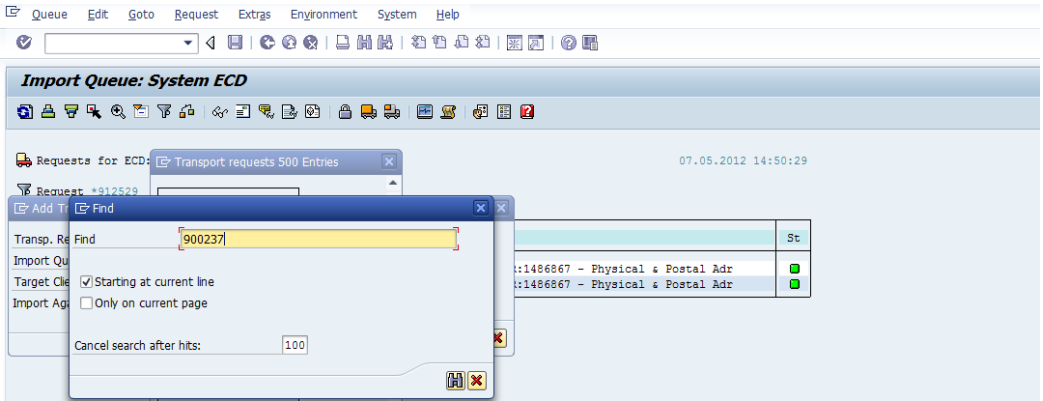


Figure 5 Identify desire transport number

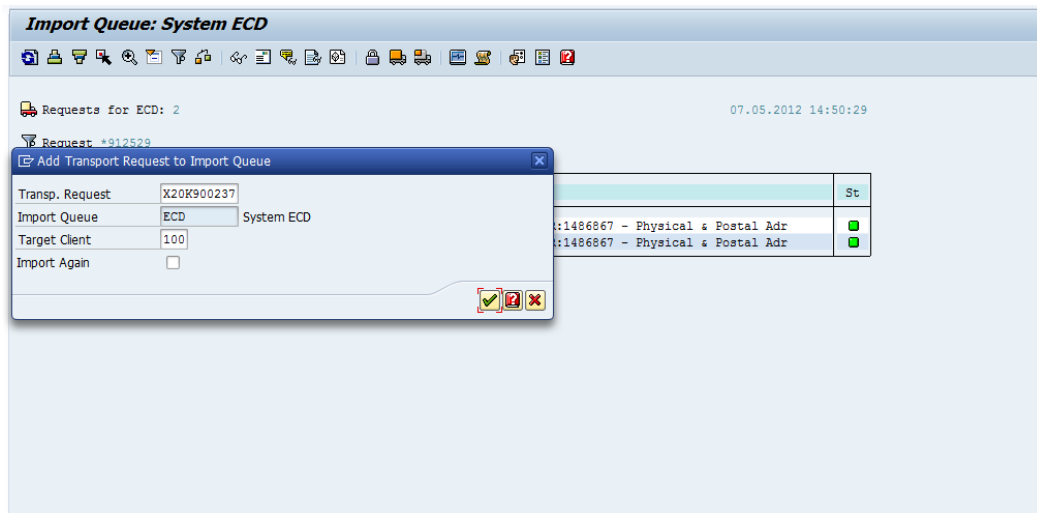


Figure 6 Verify transport request

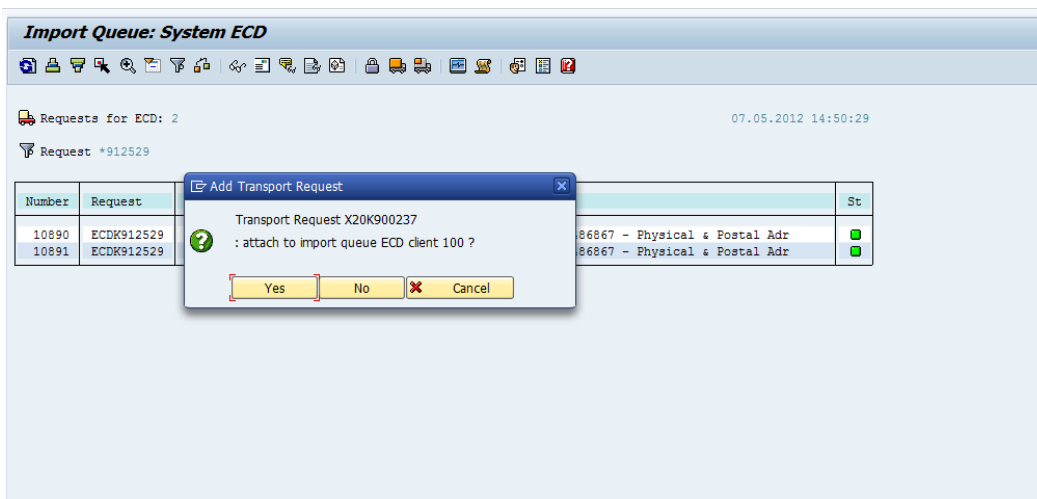


Figure 7 Confirm the transport request by click on Yes button

The SATO Device Type has to be uploaded into the SAP system by using the program '**RSTXSCR**P' in the transaction code '**se38**'.

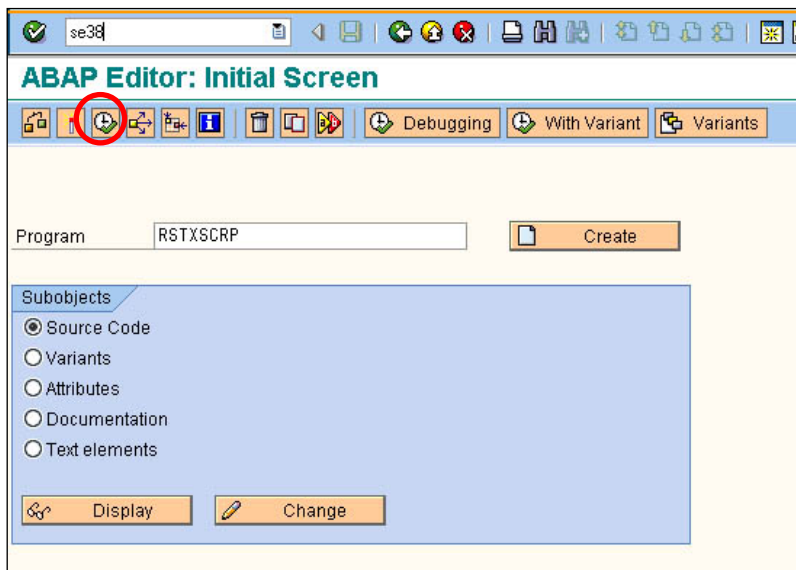


Figure 8 Uploading SATO Device Type

Click 'F8' to execute the command. The following screen will be displayed:

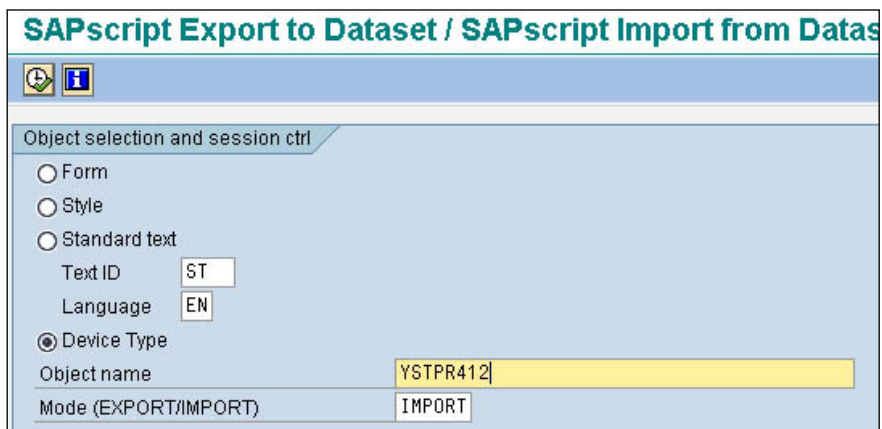


Figure 9 Importing Device Type file

Click on the radio button on 'Device Type'. Change the Mode (EXPORT/IMPORT) to 'IMPORT'. Then key in a name to represent the Device Type.

Note: The name must start with 'YST'. It should contain 8 characters. The object name must match with the file name of the device type (without the extension).

Click the Execute button (F8) to continue.

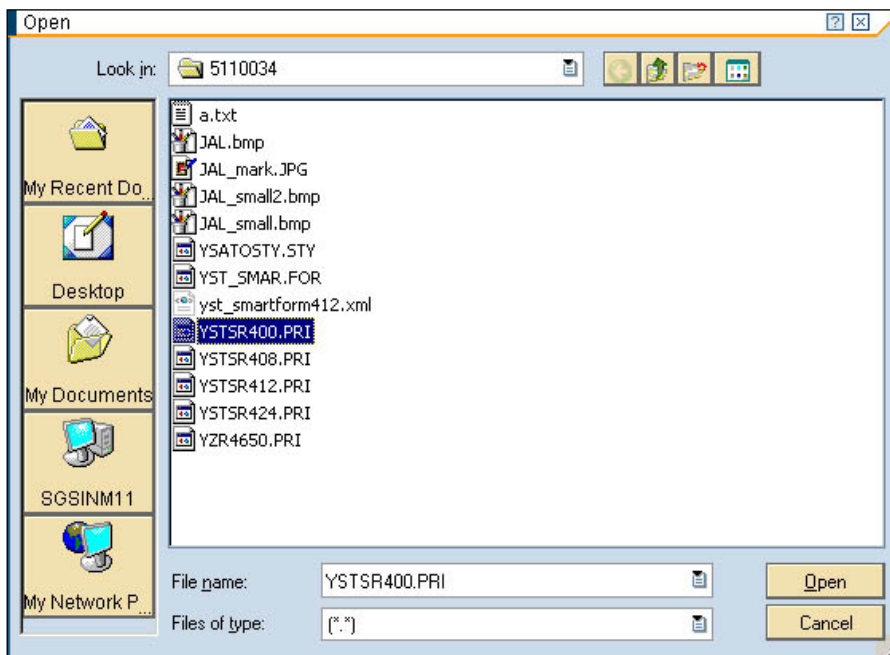


Figure 10 Selecting device type file

Creating Output Device

5

Enter '/nspad' transaction code to go to the Spool Administration application.

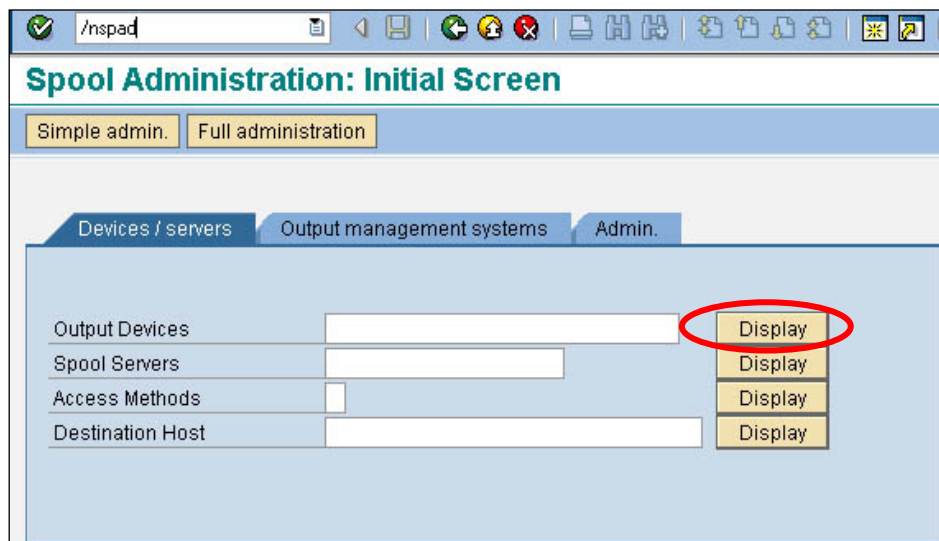


Figure 11 Creating Output Device

Under the Devices/Servers tab, click on “Display” button for ‘Output Devices’.

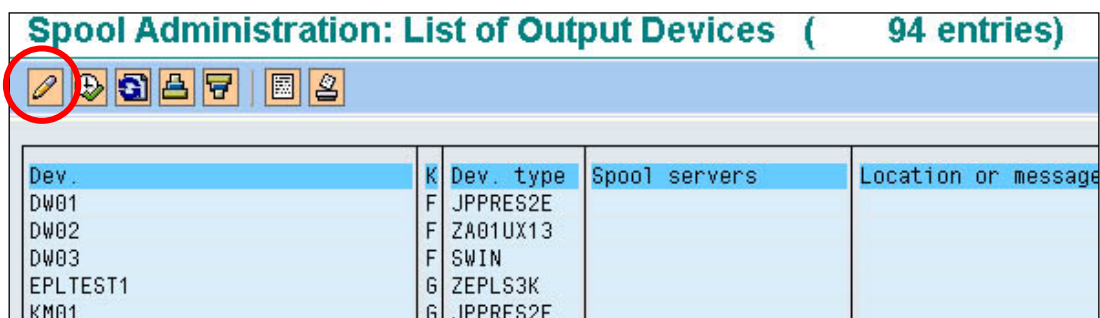


Figure 12 Click on the 'Edit' button to change the Edit mode



Figure 13 Edit Mode buttons

Click on the ‘Create’ button to create a new Output Device.

Output Device: YST_OUTPUTDEVICE_203 Short name: YST2

DeviceAttributes Access Method Output Attributes Tray Info

Device Type: YSTSR408 : SATO Device Type for SR408

Device Class: Standard printer

Authorization Group:

Model:

Location:

Message:

☐ Lock Printer in SAP System

Figure 14 Defining Output Device

Enter a meaningful name in the text box for Output Device. In the drop-down list of Device Type, select the Device Type you have previously uploaded into the SAP system.

Output Device: YST_OUTPUTDEVICE_203 Short name: YST2

DeviceAttributes Access Method Output Attributes Tray Info

Host Spool Access Method: G: Front End Printing with Control Tech.

Host printer: ___DEFAULT

☐ No Device Selection at Frontend

No status information available

Figure 15 Defining Printing Method

Under the 'Access Method', define your Host Spool Access Method. In the above example, method "G: Front End Printing with Control Tech" will prompt user to select a list of installed printer driver under the 'Printer and Faxes' in your Windows platform.

Note: Method G is used here just for the simplicity during testing.

Save the setting once the necessary information has been entered.

Functionalities of SATO-SAP Printer Driver

6

'SAP ABAP-Based Printer Driver for SATO printers' provides the following printing features:

6.1 Barcode

Both SAP traditional and new barcode symbology are supported. (Please refer to SAP notes: 430887 and 645158 for more information about the barcode symbology).

For New Barcode Technology (NBT), user only needs to define the barcode in SE73 transaction as System Barcode. The NBT supports the following barcodes:

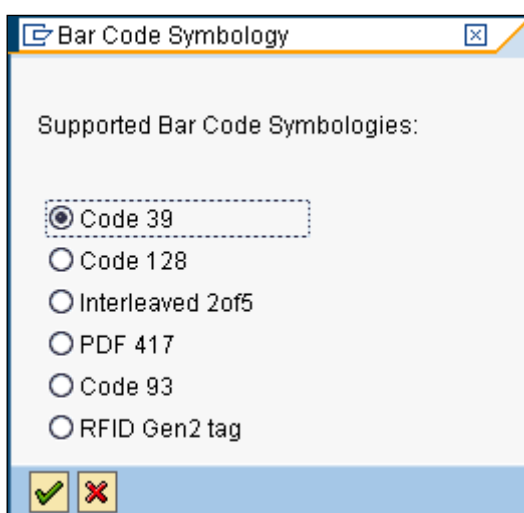


Figure 16 Barcodes in New Barcode Technology

For Traditional (old) Barcode, user needs to create the required barcode definition as System Barcode in SE73. Then link the barcode definition to the print control as Printer Barcode. The following shows the provided Print Control in SATO Device Types:

| Barcode Type | SAP Print Control | SBPL command |
|--------------------------------|-------------------|-----------------------|
| Postnet | SBP07 | ESC+BP |
| UUC/EAN128 | XB012 | ESC+BI |
| NW-7 (Codabar, Ratio 1:3) | XB101-XB112 | ESC+B0<module width> |
| Interleaved 2 of 5 (Ratio 1:3) | XB121-XB132 | ESC+B2<module width> |
| JAN/EAN13 (Ratio 1:3) | XB141-XB152 | ESC+B3<module width> |
| JAN/EAN8 (Ratio 1:3) | XB161-XB172 | ESC+B4<module width> |
| UPC-A (Ratio 1:3) | XB181-XB192 | ESC+BH<module width> |
| NW-7 (Codabar, Ratio 1:2) | XB201-XB212 | ESC+D0<module width> |
| Interleaved 2 of 5 (Ratio 1:2) | XB221-XB232 | ESC+D2<module width> |
| JAN/EAN13 (Ratio 1:2) | XB241-XB252 | ESC+D3<module width> |
| JAN/EAN8 (Ratio 1:2) | XB261-XB272 | ESC+D4<module width> |
| UPC-A (Ratio 1:2) | XB281-XB292 | ESC+DH<module width> |
| NW-7 (Codabar, Ratio 2:5) | XB301-XB312 | ESC+BD0<module width> |

| | | |
|-------------------------------|-------------|-----------------------|
| Interleave 2 of 5 (Ratio 2:5) | XB321-XB332 | ESC+BD2<module width> |
| JAN/EAN13 (Ratio 2:5) | XB341-XB352 | ESC+BD3<module width> |
| JAN/EAN8 (Ratio 2:5) | XB361-XB372 | ESC+BD4<module width> |
| UPC-A (Ratio 2:5) | XB381-XB392 | ESC+BDH<module width> |
| Code 39 (Ratio 1:3) | XB501-XB512 | ESC+B1<module width> |
| Code 39 (Ratio 1:2) | XB521-XB532 | ESC+D1<module width> |
| Code 39 (Ratio 2:5) | XB541-XB552 | ESC+BD1<module width> |
| Code 93 | XB561-XB572 | ESC+BC<module width> |

Table 4 Barcode Print Controls

- Note: **The SATO PDL Driver supports Barcode Code 128 Type-A, Type-B, Type-C and Auto-Switch.** Please refer to [SAP Note: 645158](#) for the approach to use this barcode.

6.1.1 Defining Barcode

Before a Barcode can be used in the Smart Forms, the definition of the Barcode must be made.

SE73 – SAPscript Font Maintenance

Enter Transaction code **SE73** to enter to the following screen.

Figure 17 Transaction Code 73 – SAPscript Font Maintenance

Choose the 'System Bar Codes' and then click the 'Change' button to go the following screen.

| System Bar Codes Edit Goto Environment System Help | | | | | | | | | |
|--|--------------------------------|------------------|------|-------|--------|--------|-------------------|--------------|---------|
| SAPscript Font Maintenance: Change System Bar Codes | | | | | | | | | |
| | | | | | | | | | |
| Bar Code | Description | Min. | Max. | Width | Unit | Height | Unit | Barcode Type | Rotatn. |
| C128B_01 | Code 128B, r=090, n.txt,h= 5mm | 01 | 15 | 4.00 | CM | 0.50 | CM | C128_B | 090 |
| CD39C_00 | Code39 w.chk, n.txt,h= 5mm | 01 | 15 | 4.00 | CM | 0.50 | CM | C39 | 000 |
| CD39C_01 | Code39 w.chk,r=090,n.txt,h=5mm | 01 | 15 | 4.00 | CM | 0.50 | CM | C39 | 090 |
| CD39_00 | Code39 n.chk, n.txt,h= 5mm | 01 | 15 | 4.00 | CM | 0.50 | CM | C39 | 000 |
| CD39_01 | Code39 n.chk,r=090,n.txt,h=5mm | 01 | 15 | 4.00 | CM | 0.50 | CM | C39 | 090 |
| KUNAUNR | Kundenauftragsnummer | 10 | 10 | 4.80 | CM | 1.20 | CM | | 000 |
| KUNAUPS | Kundenauftragsposition | 06 | 06 | 4.80 | CM | 1.20 | CM | | 000 |
| MBBARC | Test Barcode Bestandsführung | 10 | 10 | 5.00 | CM | 2.00 | CM | | 000 |
| MBBARC1 | Test Barcode 1 Bestandsführung | 10 | 14 | 5.00 | CM | 1.20 | CM | | 000 |
| RSNUM | Reservierungsnummer | 10 | 10 | 4.80 | CM | 1.20 | CM | | 000 |
| RSPDS | Reservierungsposition | 04 | 04 | 4.80 | CM | 1.20 | CM | | 000 |
| RUECKNR | Rueckmeldenummer | 08 | 14 | 4.80 | CM | 1.20 | CM | | 000 |
| TYPNR | Typennummer | 10 | 10 | 8.00 | CM | 1.20 | CM | | 000 |
| YST20F5 | SATO Barcode Int. 2of5 1:3 | 02 | 24 | 2.00 | CM | 2.00 | CM | 20F5 | 000 |
| YSTC128A | SATO Code 128 code A | Code 128 | | | ModW06 | H00150 | Mode A Chk Y | | Normal |
| YSTC39_1 | SATO Code 39 Ratio 1:3 | Code 39 | | | ModW06 | H00150 | Chk Y Ratio 30 | | Normal |
| YSTC39_2 | SATO Code 39 Ratio 1:2 | Code 39 | | | ModW06 | H00150 | Chk Y Ratio 20 | | Normal |
| YSTC39_3 | SATO Code 39 Ratio 2:5 | Code 39 | | | ModW06 | H00150 | Chk Y Ratio 25 | | Normal |
| YSTCODAB | SATO CODABAR barcode Ratio 1:3 | 12 | 12 | 5.00 | CM | 1.30 | CM | CODABAR | 000 |
| YSTEAN13 | SATO EAN 13 Barcode Ratio 1:3 | 12 | 13 | 5.00 | CM | 1.30 | CM | EAN13 | 000 |
| YSTEAN8 | SATO EAN 8 Barcode Ratio 1:3 | 07 | 08 | 5.00 | CM | 1.30 | CM | EAN8 | 000 |
| YSTPDF | SATO PDF417 Barcode | PDF 417 | | | ModW03 | H00150 | SeclV 3RowH 00010 | | Normal |
| YSTPOST5 | SATO POSTNET 5 Barcode | 05 | 05 | 5.00 | CM | 1.30 | CM | POSTNET | 000 |
| YSTR128A | SATO Code 128 code A Rotate 90 | Code 128 | | | ModW06 | H00150 | Mode A Chk Y | | Rotated |
| YSTUPCA | SATO UPC_A Barcode Ratio 1:3 | 12 | 12 | 5.00 | CM | 1.30 | CM | UPC_A | 000 |
| ZCD128A | Code 128 | Code 128 | | | ModW05 | H00250 | Mode A Chk Y | | Normal |
| ZCD39 | Code 39 | Code 39 | | | ModW07 | H00250 | Chk Y Ratio 30 | | Normal |
| ZCD93 | Code93 | Code 93 | | | ModW06 | H00200 | Chk Y | | Rotated |
| ZCD93N | Code 93 normal orientation | Code 93 | | | ModW06 | H00200 | Chk Y | | Normal |
| ZINT25 | Interleaved 2of5 | Interleaved 2of5 | | | ModW08 | H00250 | Chk Y Ratio 25 | | Normal |
| ZP417 | PDF 417 | PDF 417 | | | ModW07 | H00250 | SeclV 0RowH 00010 | | Normal |

Figure 18 System Barcode screen

Click the 'Create' button or press 'F5' key to create a new System Barcode definition.



Figure 19 Create Button

6.1.2 New Barcode Technology

The following describes how to create a barcode with new Barcode Technology.

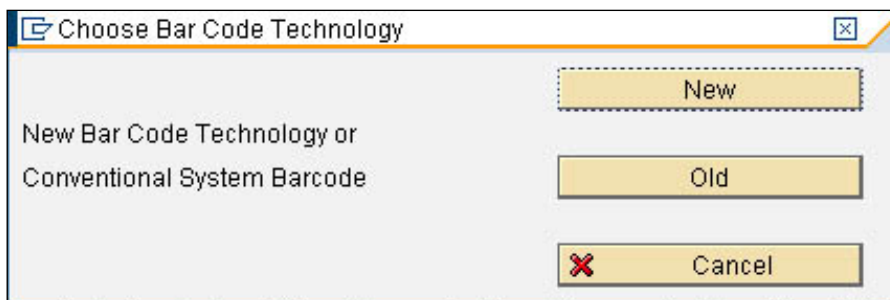


Figure 20 Choosing Barcode Technology

The 'New Barcode Technology' supports the following barcodes:

- Code39
- PDF417
- Code93
- 2 of 5 Interleaved
- Code128

Click on the 'New' button to enter the following screen.

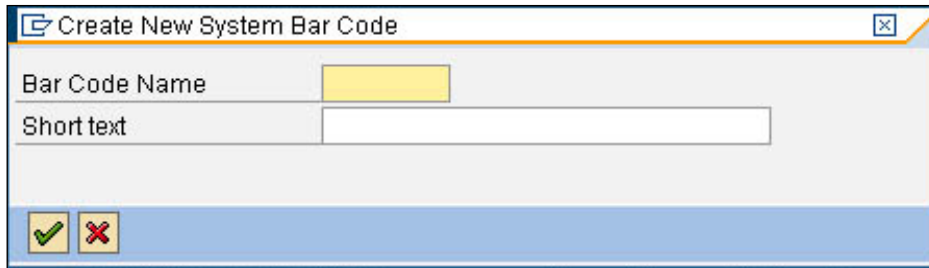
The screenshot shows a dialog box titled "Create New System Bar Code". It contains two input fields: "Bar Code Name" with a yellow background and "Short text" with a white background. At the bottom, there are two buttons: a green checkmark and a red X.

Figure 21 Entering Barcode information

For SATO barcode, it is recommended to define a Barcode name with prefix 'YST'. For example, to define a new Code39 barcode, the following Barcode name can be used:

YSTCd39

Enter some description on the textbox for 'Short text'. Click the tick button to continue.

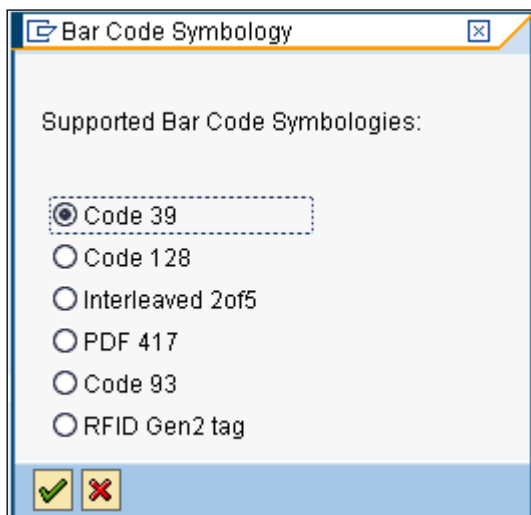
The screenshot shows a dialog box titled "Bar Code Symbology". It contains a section labeled "Supported Bar Code Symbologies:" with a list of options: "Code 39" (selected with a radio button), "Code 128", "Interleaved 2of5", "PDF 417", "Code 93", and "RFID Gen2 tag". At the bottom, there are two buttons: a green checkmark and a red X.

Figure 22 Selecting the Barcode Type

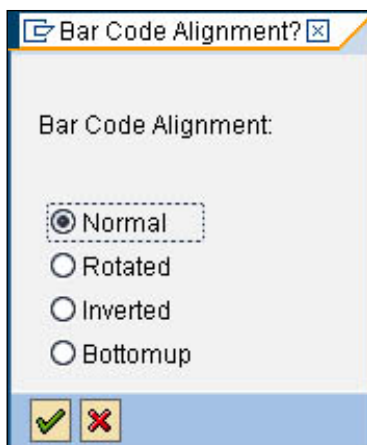
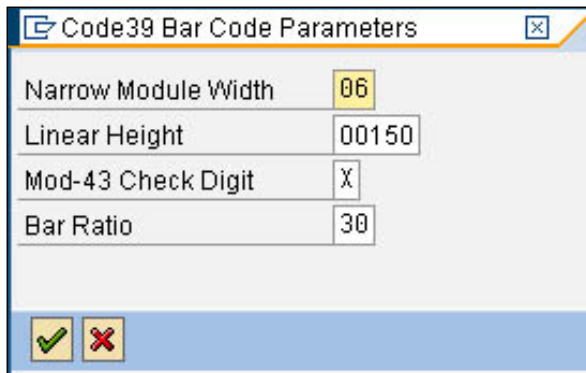
The screenshot shows a dialog box titled "Bar Code Alignment?". It contains a section labeled "Bar Code Alignment:" with a list of options: "Normal" (selected with a radio button), "Rotated", "Inverted", and "Bottomup". At the bottom, there are two buttons: a green checkmark and a red X.

Figure 23 Choosing the Barcode alignment

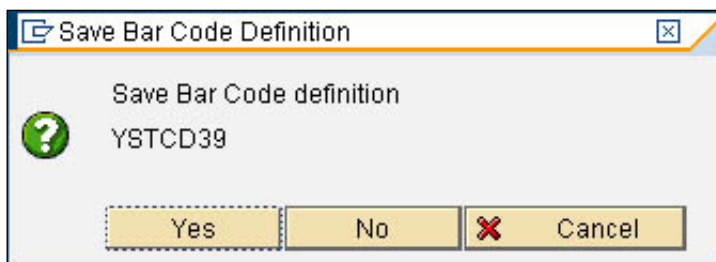


Code39 Bar Code Parameters

| | |
|---------------------|-------|
| Narrow Module Width | 06 |
| Linear Height | 00150 |
| Mod-43 Check Digit | X |
| Bar Ratio | 30 |

✓ ✗

Figure 24 Entering Barcode Information

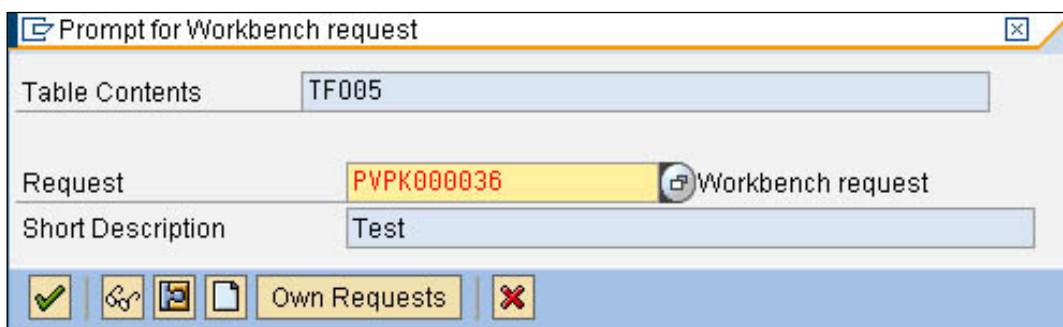


Save Bar Code Definition

Save Bar Code definition
YSTCD39

Yes No ✗ Cancel

Figure 25 Saving the Barcode definition



Prompt for Workbench request

Table Contents TF005

Request PVPK000036 Workbench request

Short Description Test

✓ ⚙️ 📄 📄 Own Requests ✗

Figure 26 Saving the definition to workspace

That is all for the System Barcode definition. The next step will be defining the Printer Barcode in order to link the System Barcode to the Printer Control in the device type.

6.1.3 New Technology Barcode

For more information about the SATO Barcode printing command, please refer to the printer command specifications.

Code 39

This barcode is to start and end with '*' characters. If the given data is not started and ended with the '*' character, then the SATO-SAP printer driver will add the characters to the data automatically.

The printer will generate a 'beep' sound if invalid data is given.

Code 93

The maximum number of data for this barcode is 99. The printer, not the printer driver, will generate a check digit when the data is printed on the printer.

Code 128

For example, if the data '123456' was given, the following SBPL command will be generated by the printer driver: ... **BG03158>H123456**.

Please refer to [SAP Note: 645158](#) for input approach for the Barcode Code 128. If unexpected values were received by the SATO PDL Driver, the barcode might not be printed.

Interleaved 2 of 5

The given data of this barcode must be even number. If odd number data is given, SATO-SAP printer driver will generate a '0' in front of the given data.

For example,

If '12345' was given, the barcode with value '012345' will be printed.

PDF 417

Minimum module width can be set to 01 and 02; however, this may not be read properly.

Note: For rotated PDF417 Barcode, the printed location on the label might differ from what shown on the print preview. User might want to adjust the position in the Smart Forms to get the required positioning.

RFID Gen2 Tag

User is to enter the necessary data based on the following descriptions:

| RFID Attribute: | Representation in barcode field data: |
|-----------------|---|
| EPC value | EPC:xxxxxxxxxxxxxxxxxxxxxxxxxxxx; (xxxxxxxxxxxxxxxxxxxxxxxxxxxx is 24 digit hex value representing 12 bytes) |
| PC value | PC:xxxxxxxxxxxxxxxxxxxxxxxxxxxx; (xxxxxxxxxxxxxxxxxxxxxxxxxxxx is 24 digit hex value representing 12 bytes) (SATO Device Driver does not support this feature) |
| USR value | USR:xxxxxxxxxxxxxxxxxxxxxxxxxxxx; (xxxxxxxxxxxxxxxxxxxxxxxxxxxx is 24 digit hex value representing 12 bytes) |
| ACS passcode | ACS:yyyyyyyy; (yyyyyyyy is 8 digit hex value representing 4 bytes) |
| LOCKMASK | LM:yy; yy is 2 digit hex value representing 1 byte: 0x01 – Lock EPC+PC 0x02 – Perma-lock EPC+PC 0x04 – Lock USR 0x08 – Perma-lock USR (only Lock EPC and Lock USR are supported by SATO Device Driver) |
| KILL passcode | KILL:yyyyyyyy; (yyyyyyyy is 8 digit hex value representing 4 bytes) |

Table 5 RFID Attributes

Examples:

| Barcode data field contents: | Meaning: |
|---|--|
| EPC:F2A07895C1710708090A0B0C; | Numerical (hexadecimal) data for EPC |
| USR:F2A07895C171010203040506;EPC:019975F3ABB0010203040506; | Numerical data for USR and EPC banks |
| EPC:112233445566010203040506;ACS:1224489F;LM:01; | Numerical data for EPC bank, ACS passcode for LOCK operation is 1224489F, Memory banks EPC+PC are locked |
| EPC:1122334455660708090A0B0C;USR:0112248D8F060708090A0B0C;ACS:1234567A;LM:0A; | Numerical data for EPC and USR banks, ACS passcode for PERMALOCK operation is 1234567A, Memory banks EPC+PC and USR are perma-locked |
| EPC:123456789ABC0708090A0B0C;KILL:1234567F; | Numerical data for EPC, KILL passcode is 1234567F |

Table 6 RFID input examples

6.1.4 Old Barcode Technology (Conventional System Barcode)

Click the 'Old' button (as in [Figure 20 Choosing Barcode Technology](#)) to define a Barcode with Old Barcode Technology.

| | |
|----------------------|------------------------------|
| Bar code | YSTEAN8 |
| Description | SATO EAN 8 Barcode Ratio 1:3 |
| Bar code type | EAN8 |
| Min.character number | 7 |
| Max.character number | 8 |
| Bar code width | 5.00 |
| Unit of measurement | CM |
| Bar code height | 1.30 |
| Unit of measurement | CM |
| Rotation at output | |

Figure 27 Defining Barcode with Old Barcode Technology

* In Old Barcode Technology, there is no way to define the Barcode Module Width. Thus, print controls with such information have been defined. User is to select the print control which carries required Barcode Module Width.

6.1.5 Old Technology Barcode

Interleaved 2 of 5

The given data of this barcode must be even number. If odd number data is given, SATO-SAP printer driver will generate a '0' in front of the given data.

For example,

If '12345' was given, the barcode with value '012345' will be printed.

CODABAR

The barcode includes start and stop characters: A,B,C,D,E,N,T,a,b,c,d,e,n,t. If the given data is not started and ended with the start/stop characters, then the SATO-SAP printer driver will embed the data with Start/Stop character 'A'.

POSTNET

The SATO-SAP printer driver supports the US Postal Service POSTNET barcode with the following formats:

- 5 digits (Postnet-32 format)
- 6 digits (Postnet-37 format)
- 9 digits (Postnet-52 format)
- 11 digits (Postnet-62 Delivery Point format)

If data with other formats than above was given, the SATO printer will generate a 'beep' sound to indicate invalid data.

UPC Barcode Type A

The data of this barcode should be 11 digits + 1 check digit. If user supplies 12 digits data, then SATO-SAP printer driver will assume the last digit is the given check digit. Else, the driver will generate the check digit.

EAN 8 Barcode

The data of this barcode should be 7 digits + 1 check digit. If user supplies 8 digits data, then SATO-SAP printer driver will assume the last digit is the given check digit. Else, the driver will generate the check digit based on Modulo 10 formula.

EAN 13 Barcode

The data of this barcode should be 12 digits + 1 check digit. If user supplies 13 digits data, then SATO-SAP printer driver will assume the last digit is the given check digit. Else, the driver will generate the check digit based on Modulo 10 formula.

Code 39

Code39 is an alphanumeric code that can represent the following characters in the bar code data:

Numbers: 1234567890

Capital letters: ABCDEFGHIJKLMNOPQRSTUVWXYZ

Special characters: - . \$ / + %

Blank characters (space characters)

The start and stop character for the Code39 bar code is represented by an asterisk (*) in the text view of the bar code data (also called "human-readable text" or "interpretation line").

If the given data is enclosed in asterisk (*), no check digit will be generated by the driver.

Code 93

Code93 is an alphanumeric code that can represent the following characters directly in the bar code data:

Numbers: 1234567890

Capital letters: ABCDEFGHIJKLMNOPQRSTUVWXYZ

Special characters: - . \$ / + %

Blank characters (space characters)

6.1.6 Defining Printer Barcodes

Once the System Barcode (Old Technology) has been defined, then proceed to define the printer barcode. **Note: This step is not required for barcode defined with New Barcode Technology.**

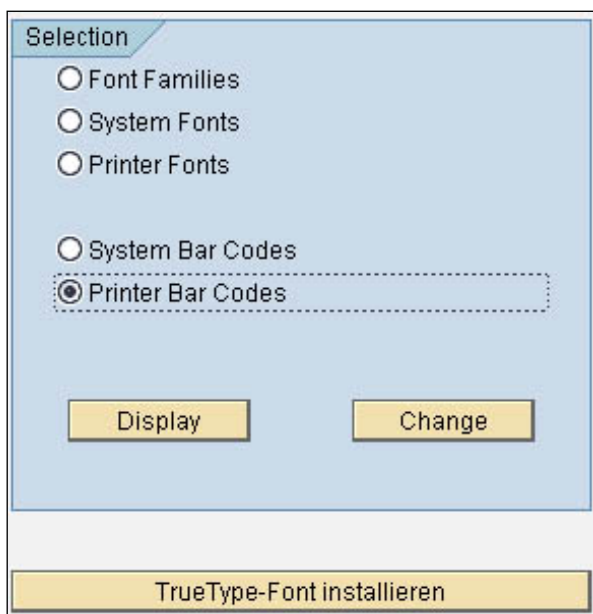


Figure 28 Printer Barcode Definition

Choose the 'Printer Barcodes' and then click the 'Change' button to create a Printer Barcode definition.

| SAPscript Font Maintenance: Change Printer Bar Codes | |
|--|--------------------------------|
| Print Controls | |
| Device Type | Description |
| THSPOST | Thai PostScript printing |
| TOPCALL | TOPCALL Telefax |
| TOPCALLT | TOPCALL: Teletex |
| TOPCALLX | TOPCALL: Telex |
| TROYMICR | TROY MICR printer |
| TW5577 | IBM5577 |
| TWHPLJ4 | HP LaserJet PCL-5 Trad.Chinese |
| TWLX522 | Lexmark T522 Tradit. Chinese |
| TWPDF | PDF Converter Tradit. Chinese |
| TWSAPWIN | MS Windows driver via SAPLPD |
| TWSPPOST | Taiwanese PostScript printing |
| UCPLAIN | SAPscript RDI (Unicode) |
| XDF | SAP Smart Forms: XDF Ausgabe |
| XFP | XFP Ausgabe |
| XSF | SAP Smart Forms: XSF Ausgabe |
| YPRP7000 | PTX P7000 P-Series Emul. |
| YPTP7000 | PTX P7000 P-Series Emul. |
| YSTJP408 | SATO Device Type-203dpi (JP) |
| YSTSR408 | SATO Device Type for SR408 |
| YSTSR412 | SATO Device Type for SR412 |
| YSTSR424 | SATO Device Type for SR424 |
| YZR43-L1 | HP LJ 4300/LJ 4200 R4.5+ |
| YZR4650 | IP65C R4.5+ |
| ZA00U015 | ZA00 family generic (4210) |
| ZBS_TEST | Zebra label printer 203dpi |
| ZCFPCL5 | Casc.Fonts PCL5 SAP Demo ! |
| ZEPLS3K | EPSON LP-S3000 ESC/Page BW |
| ZEPLS3KP | EPSON LP-S3000 Postscript B/W |
| ZEPLS4K | EPSON LP-S4000 ESC/Page BW |
| ZEPLS4KP | EPSON LP-S40000 Postscript B/W |
| ZEPLTST | EPSON LP-xxxx ESC/Page series |

Figure 29 Device List for Printer Barcodes

Double click the SATO device type which starts with prefix 'YST'.

| SAPscript Font Maintenance: Change Printer Bar Codes | | | | |
|--|----------|--------|--------|--------------------------|
| Maint. Print Control | | | | |
| Device Type | Bar Code | Prefix | Suffix | Baseline Alignment |
| YSTSR408 | BC_CD39 | SB102 | SB102 | <input type="checkbox"/> |
| YSTSR408 | YST20F5 | SB124 | SB124 | <input type="checkbox"/> |
| YSTSR408 | YSTC128A | SB005 | SB005 | <input type="checkbox"/> |
| YSTSR408 | YSTC39_1 | SB002 | SB002 | <input type="checkbox"/> |
| YSTSR408 | YSTC39_2 | SB003 | SB003 | <input type="checkbox"/> |
| YSTSR408 | YSTC39_3 | SB004 | SB004 | <input type="checkbox"/> |
| YSTSR408 | YSTCODAB | SB104 | SB104 | <input type="checkbox"/> |
| YSTSR408 | YSTEAN13 | SB144 | SB144 | <input type="checkbox"/> |
| YSTSR408 | YSTEAN8 | SB165 | SB165 | <input type="checkbox"/> |
| YSTSR408 | YSTPDF | SB006 | SB006 | <input type="checkbox"/> |
| YSTSR408 | YSTPOST5 | SB007 | SB007 | <input type="checkbox"/> |
| YSTSR408 | YSTR128A | SB005 | SB005 | <input type="checkbox"/> |
| YSTSR408 | YSTUPCA | SB184 | SB184 | <input type="checkbox"/> |

Figure 30 Printer Barcode List in the device type

Click on the 'Create' button or 'F5' key to create a new definition of Printer Barcode.

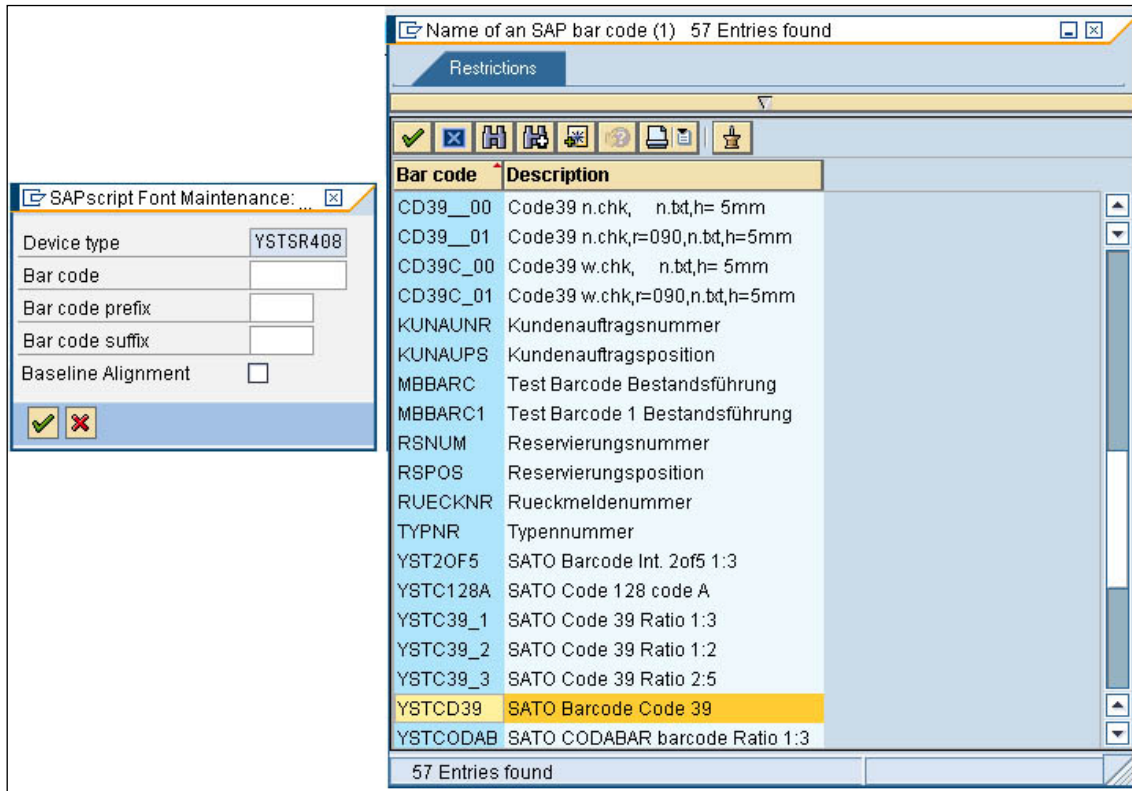


Figure 31 Defining Printer Barcode

Select the System Barcode which has been defined previously from the entry list. Then key in the required Print Control. Note: Key in the same print control for both 'Bar code prefix' and 'Bar code suffix'.

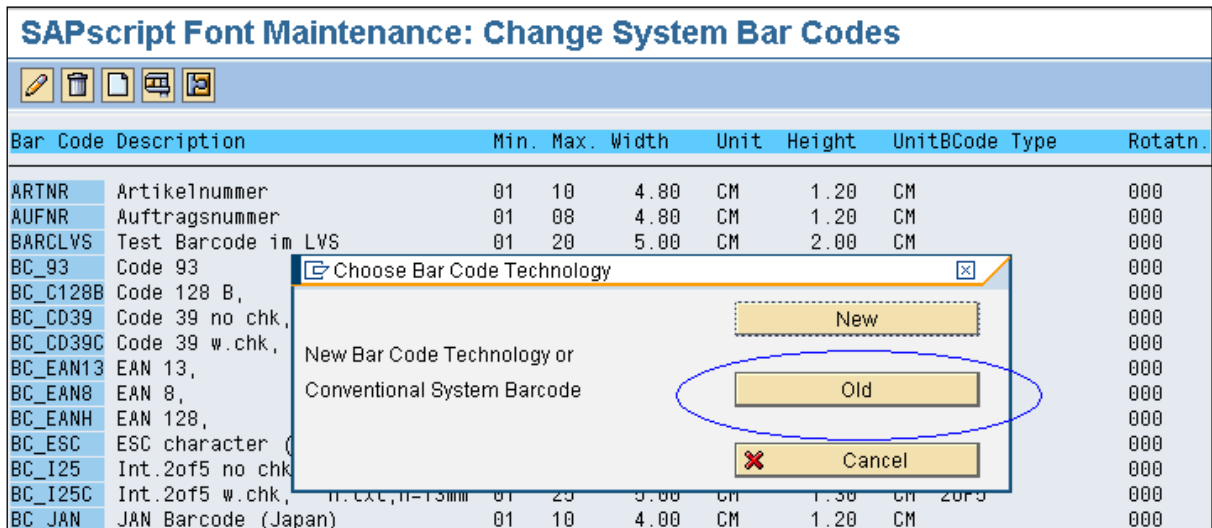
Refer to [Table 4 Barcode Print Controls](#) for the available print control definition in the device type.

6.1.7 Customized Barcode With UNDEF

Note that this task should only be performed by advanced users. Please contact SATO technical team at global.sysdev-gbs@sato-global.com should you have any queries.

If the printer-resident (such as GS1-128) is not supported in SAP system, customized print control can be added into the device type and “UNDEF” barcode type can be used to map to the print control.

UNDEF is only in Old Barcode Technology. To start with UNDEF, go to SE73->System Bar codes to define a Barcode using the Conventional System Barcode (choose ‘Old’)



6.1.7.1 GS1-128 Barcode With UNDEF

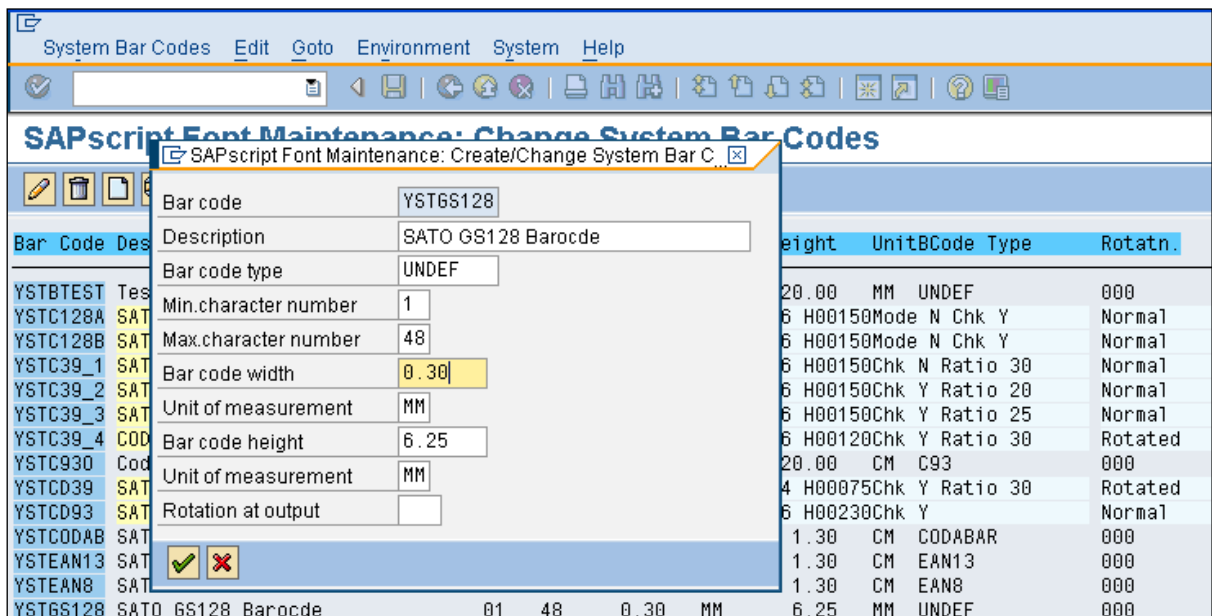


Figure 32 Customized Barcode Definition

- i. Create Customized Barcode Definition
Go to [SE73->System Bar Codes](#) to create a GS1-128 Barcode definition ([Figure 32 Customized Barcode Definition](#)). Use “UNDEF” as the Bar code type. Note that the “Bar code width” of the above definition will not be used.

- ii. Create Print Control in device type

Spool Administration: Device Type (Change)

Device type: YSTLT6L2 Name: SATO GL 203dpi ISO8859-1

Attributes **Print Controls**

Print Control Selection

| Name | Di | Ex | I | U | C | H | Ac | Control Character Sequence | Ref. |
|-------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|------|
| SA0FF | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | | |
| SB011 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B45553131 | |
| SB012 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B455531323033 | |
| SB101 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303031 | |

Figure 33 Defining Print Control in Device type

Use [SPAD->Full Administration->Device Types](#) to open the Print Controls tab of the device type. Add a new barcode print control (Prefix SB) and input the hex value of Control Character Sequence. In this example, the hex value of "<Esc>EU1203" is entered for Print Control SB012.

This print control defines SATO Barcode commands for GS1-128 (UCC/EAN128) with CC-C with Narrow Barcode with = 3 dots. The Barcode Height will be extracted from the Barcode Definition ([Figure 32 Customized Barcode Definition](#)). The Barcode Data will be supplied from Smart Forms or SAP Database.

- iii. Mapping of Barcode Definition to Print Control

Go to [SE73->Printer Bar Codes](#)

SAPscript Font Maintenance: In

Font Families System Fonts **Printer Fonts** S

Selection

☐ Font Families

☐ System Fonts

☐ Printer Fonts

☐ System Bar Codes

☒ Printer Bar Codes

Display Change

TrueType-Font installieren

Figure 34 Mapping of Print Control

Click on the Device Type to add the barcode mapping to Print Control.

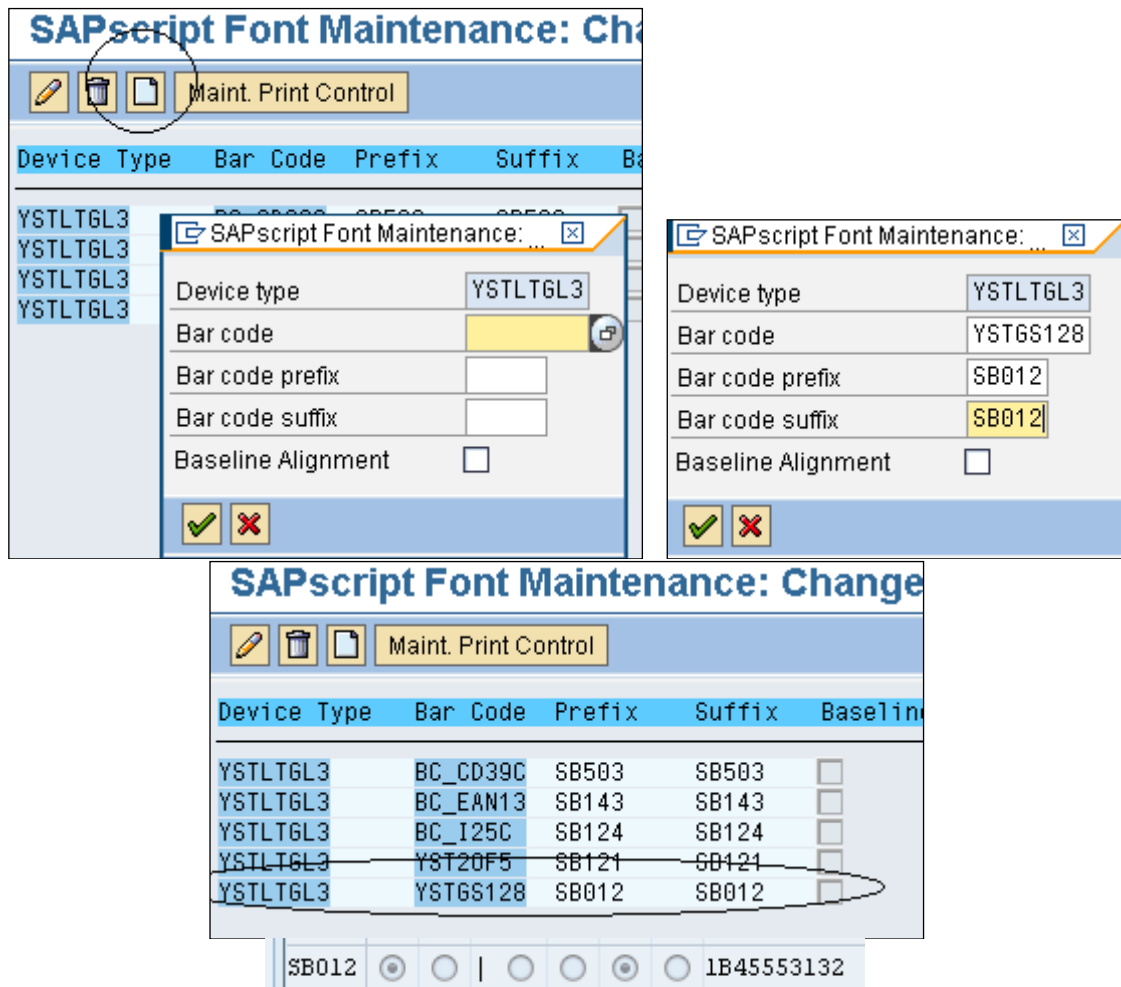


Figure 35 Mapping of Print Control

6.1.7.2 GS1 Datamatrix Barcode With UNDEF

6.1.7.2.1 Create a New Barcode Definition

Note:

1. The name of the Barcode must start with "YSTDMX". This is how the SATO Device Driver identifies this as the Barcode Definition for Datamatrix.
2. The Barcode Type must be UNDEF.
3. The rest of the parameters (except Rotation) will not be used by SATO Device Driver for the Datamatrix barcode. Those parameters have to be defined inside the Print Control as below.

The screenshot shows the SAPscript Font Maintenance: Create/Change System Bar Code dialog box. The 'Bar code' field is set to 'YSTDMX01', the 'Description' is 'Sato Datamatrix Barcode', and the 'Bar code type' is 'UNDEF'. Other fields include 'Min.character number' (1), 'Max.character number' (1), 'Bar code width' (1), 'Unit of measurement' (CM), 'Bar code height' (1), and 'Rotation at output' (000).

6.1.7.2.2 Define the Print Control Information in the Device Type

Spool Administration: Device Type (Change)

Device type: YSTLT6L2 Name: SATO GL 203dpi ISO8859-1

Attributes **Print Controls**

Print Control Selection

| Name | Di | Ex | U | C | H | Ac | Control Character Sequence | Ref. |
|-------|----------------------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-----------------------|--|------|
| SABLD | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | | |
| SAOFF | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | | |
| SB011 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B45553131 | |
| SB012 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B45553132 | |
| SB013 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B4258303131303032303230303030303030311B4443 | |
| SB014 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | | |
| SB101 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303031 | |

SB013 defines the prefix which carries the following SATO Print Commands:

Font ID: 01

Error correction level: 20 (ECC200)

Cell width: 02

Cell pitch: 02

No. of cells per line: 000

No. of cell lines: 000

Mirror image: Normal (Standard print)

<ESC> B X 0 1 **2 0** 0 2 0 2 0 0 0 0 0 0 0 0 1

<ESC> D C

The height and the width of the barcode are controlled by the cell width and pitch:

Example 1)

Cell width: 05, Cell pitch 05

<Esc> B X 0 1 **2 0** 0 5 0 5 0 0 0 0 0 0 0 0 1

Output:



Example 2)

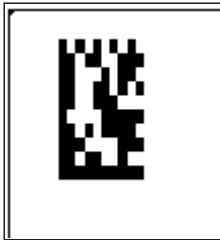
Cell width: 09, Cell pitch 09

<Esc> B X 0 1 **2 0** 0 9 0 9 0 0 0 0 0 0 0 0 1

Output:



Output:



The data of the Barcode will be appended to the Prefix print control (in this case, SB013). If there is any special code (such as FNC1 code), you can append it here (as hex value). SB014 defines the suffix. If there is no data for the Suffix, you can leave the print control empty.

The diagram illustrates the process of generating a barcode from a hex input. It shows a hex input field with the value 1B42583031323030363036303030303030303030311B4443. Below this, the ASCII representation is shown as <Esc> B X 0 1 2 0 0 6 0 6 0 0 0 0 0 0 1<Esc>DC. The hex input is highlighted with a blue box, and the ASCII representation is highlighted with a blue box. The ASCII representation is then used to generate a barcode, with the cell width and pitch both set to 06.

Click this for "Hex" input

1B42583031323030363036303030303030303030311B4443

<Esc> B X 0 1 2 0 0 6 0 6 0 0 0 0 0 0 1<Esc>DC




Cell Width: 06

Cell Pitch: 06


6.1.7.2.3 Mapping the Barcode Definition to Print Control

Go to [SE73->Printer Bar codes](#). Create the mapping in the device type.

SAPscript Font Maintenance: Change Printer Bar Codes

   Maint. Print Control

| Device Type | Bar Code | Prefix | Suffix | Baseline Alignment |
|-------------|----------|--------|--------|--------------------------|
| YSTLT6L2 | BC_CD39 | SB503 | SB503 | <input type="checkbox"/> |
| YSTLT6L2 | BC_CD39C | SB502 | SB502 | <input type="checkbox"/> |
| YSTLT6L2 | BC_EAN13 | SB142 | SB142 | <input type="checkbox"/> |
| YSTLT6L2 | YST20F5 | SB124 | SB124 | <input type="checkbox"/> |
| YSTLT6L2 | YSTCODAB | SB104 | SB104 | <input type="checkbox"/> |
| YSTLT6L2 | YSTEAN13 | SB144 | SB144 | <input type="checkbox"/> |
| YSTLT6L2 | YSTEAN8 | SB165 | SB165 | <input type="checkbox"/> |
| YSTLT6L2 | YSTUPCA | SB184 | SB184 | <input type="checkbox"/> |

 SAPscript Font Maintenance: ... ✕



Device type

Bar code

Bar code prefix

Bar code suffix

Baseline Alignment
☐

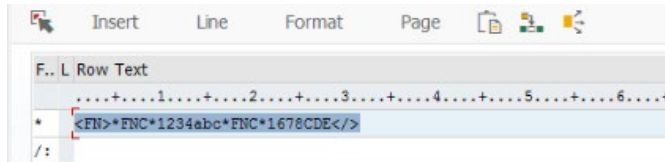



Select the Barcode Definition created previously and map it to the print controls.

6.1.7.2.4 FNC Special Characters in GS1 Datamatrix Command

The logic applied in order to produce the command containing the FNC special character(s) is as the same as this paragraph states doing that originally for the command not having the special character within but:

- The name of the Barcode must start with “**YSTQDM**”.
- The Smart Form’s tag generating the final FNC special character must be the “***FNC***”



- The example Hex string generating the <ESC>2D51,10,10,000,000<ESC>DN command might look like: "1B324435312C31302C31302C3030302C3030301B444E".

Command Format

<2D51>,aa,bb,ccc,ddd

Parameters:

a [Horizontal cell size] = Valid Range : 01 to 99 dots

b [Vertical cell size] = Valid Range : 01 to 99 dots

c [Number of cell in one line] = Valid Range : 010 to 144000 : (Auto-setting)

d [Number of cell lines] = Valid Range : 008 to 144 000 : (Auto-setting)

Data part

<DN>m m m m,n~n

Parameters:

m [Number of data] = Valid Range : 1 to 3116

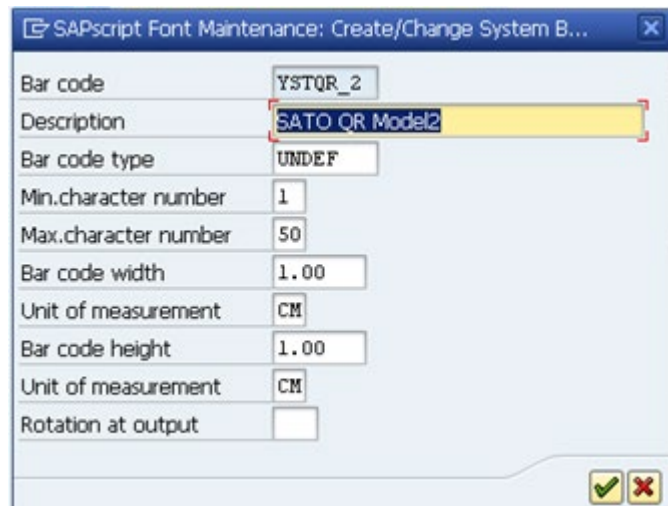
n [Print data] = Data

6.1.7.3 QR Code With UNDEF

6.1.7.3.1 Create a New Barcode Definition.

Note:

1. The name of the Barcode must start with “**YSTQR_**”. This is how the SATO Device Driver identifies this as the Barcode Definition for QR Code.
2. The Barcode Type must be **UNDEF**.
3. The rest of the parameters (except Rotation) will not be used by SATO Device Driver for the QR Code. Those parameters have to be defined inside the Print Control as below.



6.1.7.3.2 Define the Print Control Information in the DeviceType

Spool Administration: Device Type (Display)

Device type: YSTENGL3 Name: SATO GL 305dpi English

Attributes Print Controls

Print Control Selection

| Name | D... | E | U... | C... | H... | A... | Control Character Sequence | Ref. |
|-------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------------|------|
| SB015 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B324433302c4d2c30352c312c301b444e | |
| SB101 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303031 | |
| SB102 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303032 | |
| SB103 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303033 | |
| SB104 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303034 | |
| SB105 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303035 | |
| SB106 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303036 | |
| SB107 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303037 | |
| SB108 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1B42303038 | |

SB015 defines the prefix which carries the following SATO Print Commands:

Entered command in

Hex: 1B324433302c4d2c30352c312c301b444e

ASCII: 2D30,M,05,1,0DN

Command Format: <2D30>,a,bb,c,d

SBPL Command: <ESC>2D30

Parameters:

- a Error Correction = L: 7%, M: 15%, Q: 25%, H: 30%
- b Cell Size= 01 to 32 dots
- c Data Setting Mode = 0: Manual, 1: Auto
- d Concentration Mode = 0: Normal, 1 Concentration Mode (using 1 required more parameters)

For Data Part

Command Format : <DN>mmmm,n~n

SBPL Command : <ESC>DN

Parameters:

- m No of data = 1 to 2953
- n data = Print Data

6.1.7.3.3 Mapping the Barcode Definition to Print Control

Go to [SE73->Printer Bar codes](#). Create the mapping in the device type.

The screenshot shows two SAP windows. The top window, 'SAPscript Font Maintenance: Change Printer Bar Codes', has a table with columns: Device Type, Bar Code, Prefix, Suffix, and Baseline Alignment. The bottom window, 'SAPscript Font Maintenance: Maintain Print Control', has fields for Device type, Print control, Variant, Hexadecimal switch, Standard setting, and Control Char. Seq.

| Device Type | Bar Code | Prefix | Suffix | Baseline Alignment |
|-------------|----------|--------|--------|--------------------------|
| YSTENGL3 | BC_CD39C | SB503 | SB503 | <input type="checkbox"/> |
| YSTENGL3 | BC_EAN13 | SB143 | SB143 | <input type="checkbox"/> |
| YSTENGL3 | BC_I25C | SB124 | SB124 | <input type="checkbox"/> |
| YSTENGL3 | YST20F5 | SB121 | SB121 | <input type="checkbox"/> |
| YSTENGL3 | YSTDMX01 | SB013 | SB014 | <input type="checkbox"/> |
| YSTENGL3 | YSTGS128 | SB012 | SB012 | <input type="checkbox"/> |
| YSTENGL3 | YSTQR_2 | SB015 | | <input type="checkbox"/> |

The bottom window 'SAPscript Font Maintenance: Maintain Print Control' shows the following values:

- Device type: YSTENGL3
- Print control: SB015
- Variant: 1
- Hexadecimal switch: ☒
- Standard setting: ☐
- Control Char. Seq.: 1B324433302c4d2c30352c312c301b444e

Select the Barcode Definition created previously and map it to the print controls.

6.1.7.4 RFID “ESC+IP0e:h,epc:” Command

The old barcode technology barcode “IP0_1” must be created - the barcode’s name must start with “IP0_” value and it must be “UNDEF” type as the similar actions are already described in this document. The following hexadecimal “1B411B495030653A682C6570633A” string representing “ESC+AESC+IP0e:h,epc:” value is located in the print control of the chosen device type. If you wish to achieve “ESC+IP0e:h,epc:” only, you must remove the first two hex values of the print control’s hex string.

The 44 length string placed in a Smart Form:

"31004A00440041003100370031003400350037003600;"

Generated the RFID command section sent to the printer:

"ESC+AESC+IP0e:h,epc:31004A00440041003100370031003400350037003600;"

6.2 Fonts

SATO-SAP Printer Driver supports the following fonts:

Latin 1 (ISO8859-1 codepage) device types:

| SAP Font | SATO Font | Type | SBPL Command |
|-----------|----------------|----------|--------------|
| HELVETICA | CG Triumvirate | Scalable | ESC+RDB |
| TIMES | CG Times | Scalable | ESC+RDA |

English only device types:

| SAP Font | SATO Font | Type | SBPL Command |
|--------------------------------------|---|--------------------|------------------|
| HELVETICA | CG Triumvirate | Scalable | ESC+RDB |
| TIMES | CG Times | Scalable | ESC+RDA |
| COURIER BOLD (optional Italic) | Helvetica Outline Font, fixed character pitch | Scalable | ESC+\$B, ESC+\$= |
| LETGOTH | SATO Fixed Size M Font | Bitmap, fixed size | ESC+M |
| LNPRINT | SATO Fixed Size S Font | Bitmap, fixed size | ESC+S |

Codepage 850 device types :

| SAP Font | SATO Font | Type | SBPL Command |
|--------------------------------------|---|----------|------------------|
| HELVETICA | CG Triumvirate | Scalable | ESC+RDB |
| TIMES | CG Times | Scalable | ESC+RDA |
| COURIER BOLD (optional Italic) | Helvetica Outline Font, fixed character pitch | Scalable | ESC+\$B, ESC+\$= |

Codepage 850 for LM4xxe device types :

| SAP Font | SATO Font | Type | SBPL Command |
|--------------------------------------|--|--------------------|------------------|
| HELVETICA (optional Italic) | Helvetica Outline Font, proportional character pitch | Scalable | ESC+\$A, ESC+\$- |
| COURIER BOLD (optional Italic) | Helvetica Outline Font, fixed character pitch | Scalable | ESC+\$B, ESC+\$= |
| LETGOTH | SATO Fixed Size XM Font | Bitmap, fixed size | ESC+XM |
| LNPRINT | SATO Fixed Size XS Font | Bitmap, fixed size | ESC+XS |
| COUR_17 | SATO Fixed Size XU Font | Bitmap, fixed size | ESC+XU |

Korean (Wangsung Encoding/Unicode) device types:

| SAP Font | SATO Font | Type | SBPL Command |
|--------------------------|------------------|----------|--------------|
| KPBATANG Proportional | HYRGothic-Medium | Scalable | ESC+RDK |

Simplified Chinese (GB2312/Unicode) device types:

| SAP Font | SATO Font | Type | SBPL Command |
|------------------------|-----------------|----------|--------------|
| CNSONG Proportional | MKaiSO-Medium-U | Scalable | ESC+RDC |

Traditional Chinese (Big 5/Unicode) device types:

| SAP Font | SATO Font | Type | SBPL Command |
|------------------------|---------------|----------|--------------|
| TWSONG Proportional | MHeiS-Bold -U | Scalable | ESC+RDc |

Japanese (Shift-JIS) + English ASCII device types:

| SAP Font | SATO Font | Type | SBPL Command |
|--|--|--------------------|------------------|
| DBGothic, DBMincho, JPMincho | SATO Japanese resident bitmap font | Bitmap, fixed size | ESC+K |
| HELVETICA ^ | CG Triumvirate | Scalable | ESC+RDB |
| TIMES ^ | CG Times | Scalable | ESC+RDA |
| COURIER BOLD * (optional Italic) | Helvetica Outline Font, fixed character pitch | Scalable | ESC+\$B, ESC+\$= |

Note: * YSTJAPTx not supported, ^ YSTJALPx not supported

Table 7 Supported font in SATO-SAP Printer Driver

For Fixed size SATO Resident Font, please refer to the Font Appendix for a list of supported size of the font.

Note:

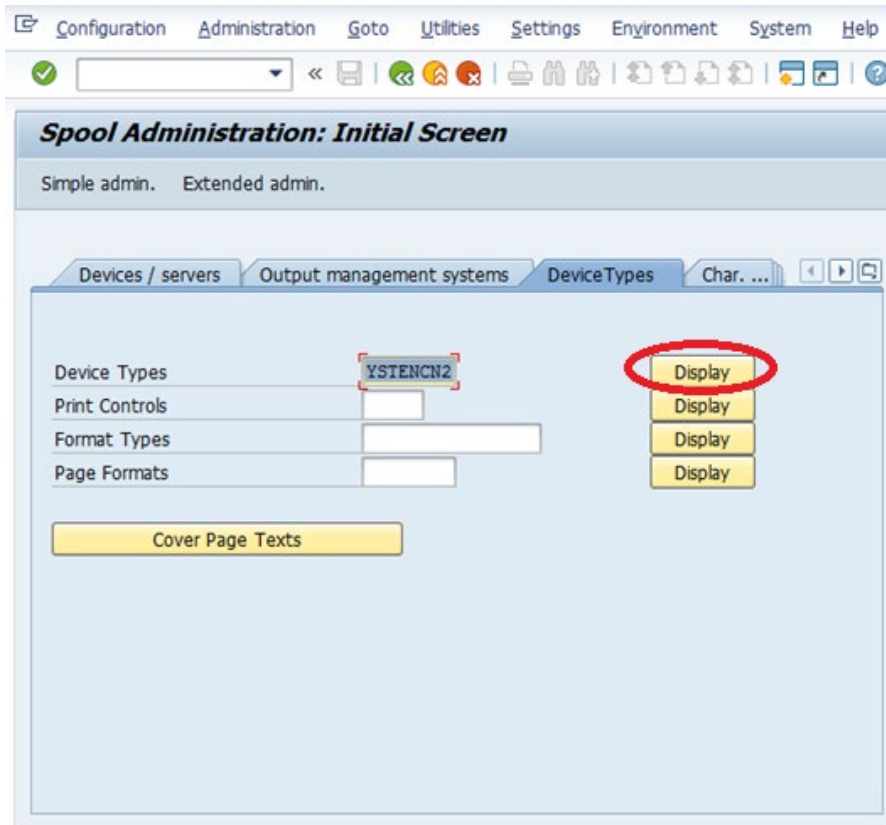
1. SATO 203dpi printer does not support printing of 8 point or lower Courier Font (ESC+\$A, ESC+\$B, ESC+\$=). It will be printed in a slightly larger size instead.
2. There could be some discrepancies of the string length shown on Smart Forms and what printed from printer. This is because when converting the SAP font point size into SATO font dot size for specific resolution, there is a rounding up of fractions in the calculation.
3. For Japanese device types which offer SATO Resident Bitmap fonts, the Japanese text will appear shorter than what shown on the print preview of Smart Forms. This is because the width of the 1-byte characters in the SAP Japanese fonts is 0.5 time of the 2-byte characters. But in SATO Japanese fonts, the width of the 1-byte characters is slightly larger, about 0.6 times, of the 2-byte characters.

6.2.1 Unicode Printing for NX Series

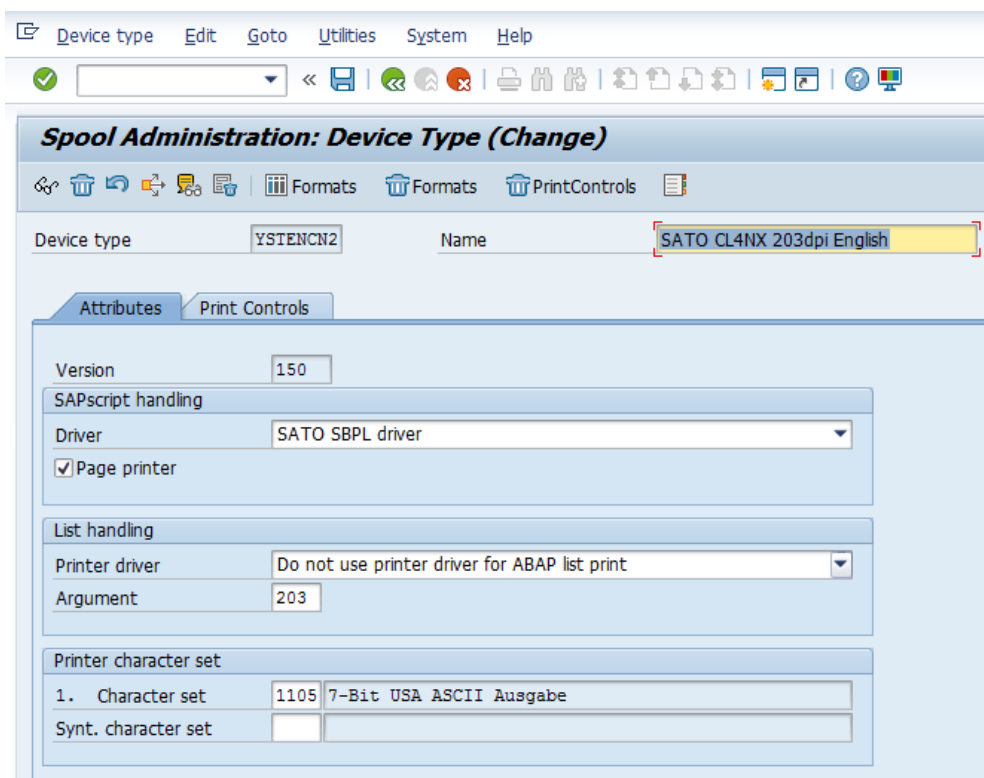
This section is about making of the device type Unicode printing for NX Series printers.

Creating Printer Font

Please go to Spool Administration and choose a correct device type which you would like to use.



Select a "Print Controls" tab



Click on the “Change” button to edit the values, key-in the new e.g SFU01 into the “Name” row section, check “Hexadecimal” radio button, type the correct value into the “Control Character Sequence” and click the “Save” button. The meaning of HEX values has been elaborated further in this chapter.

Spool Administration: Device Type (Change)

Device type: YSTEHCN2 Name: SATO CL4NX 203dpi English

Attributes Print Controls

Print Control Selection

| Name | D... | E... | U... | C... | H... | A... | Control Character Sequence | Ref. |
|-------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-----------------------|----------------------------------|------|
| SFU01 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C352C322C32302C32302C | |
| SFU02 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C342C302C32302C32302C | |
| SFU03 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C342C302C34302C34302C | |
| SFU04 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C372C332C32302C32302C | |
| SFU05 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C322C322C33352C33352C | |
| SFU06 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C332C302C33352C33352C | |
| SFU07 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C312C302C33352C33352C | |
| SFU08 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 1B5247302C31342C302C34352C34352C | |
| SFU09 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SL060 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SLAND | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SLINE | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 000A | |
| SPAGE | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | 000A | |
| SPB03 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SPB07 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SPB08 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SPB09 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SPB10 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SPORT | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SUB<< | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SUB>> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |
| SUL<< | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | | |

The control character sequence name must start “SFU” prefix containing two digit numbers only at its end, for example: “SFU01”, “SFU02”, “SFU15” etc.

Please use SE73 transaction, select “Printer Fonts” and click on the “Change” button.

SAPscript Font Maintenance: Initial Selection

Font Families System Fonts Printer Fonts System E

Selection

☐ Font Families

☐ System Fonts

☒ Printer Fonts

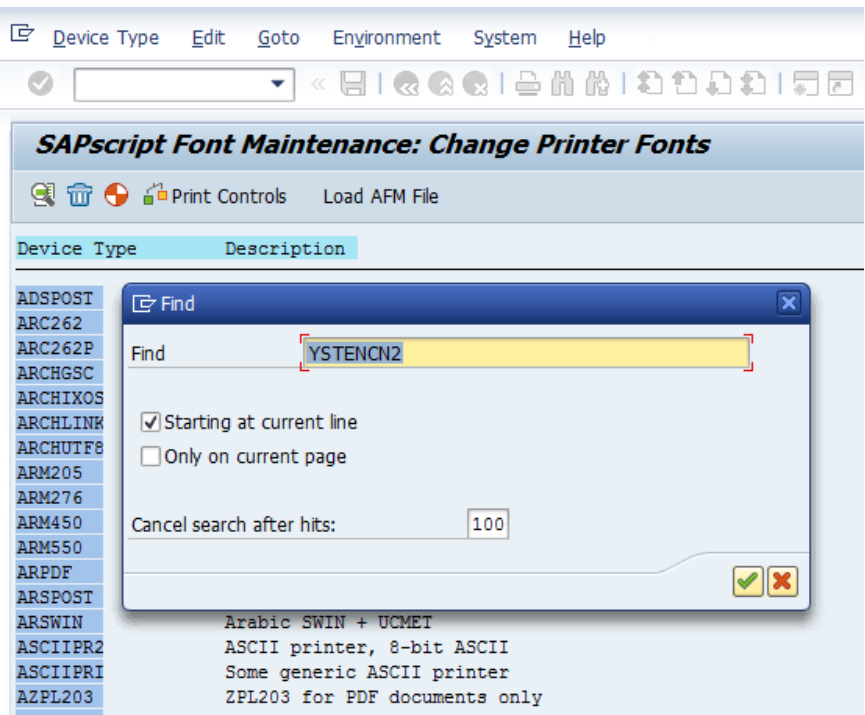
☐ System Bar Codes

☐ Printer Bar Codes

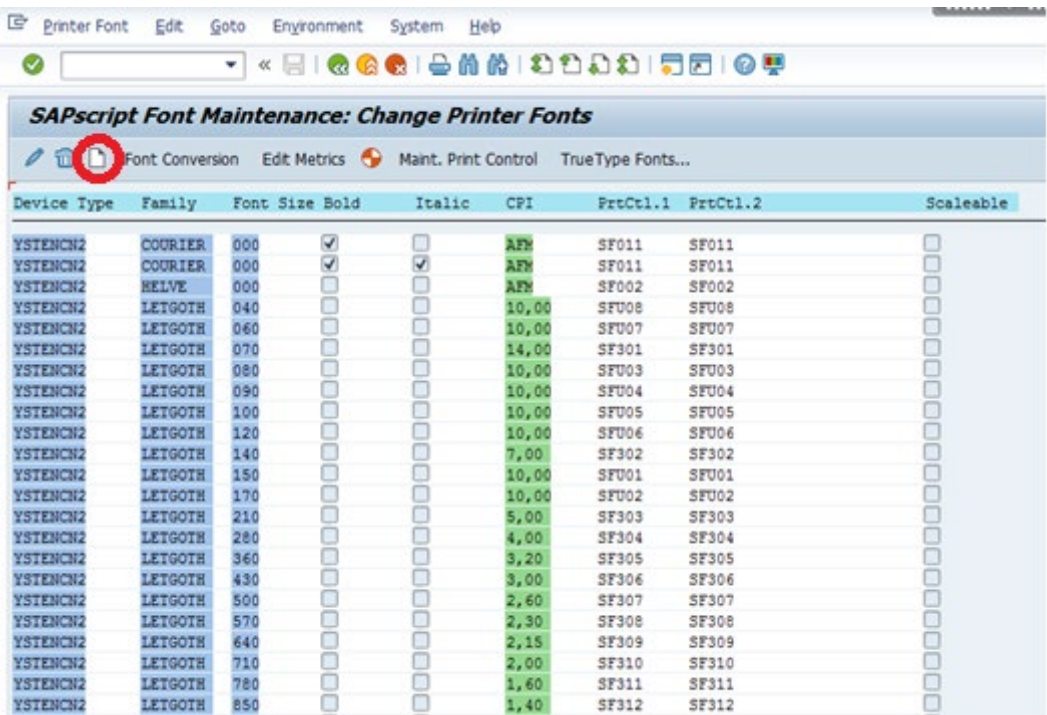
Display Change

Install TrueType Font

Use CTRL+F keys combinations to find your device type and click on the device type later.



Create a new font.



Fill out all necessary details and confirm your choice. Important – deselect “Font is Scalable”, provide a “Font Size” (180=18, this is the size we will be referring to in Smart Styles later), key-in the correct Print Controls name representing Unicode command (e.g. “SFU01” etc.) have used before and select the Font Family. The Font Family we use is LETGOTH but it can also be a different built-in font such as COURIER etc.

The entire idea to make Unicode (2-Byte) characters work is about calling a correct and previously created Smart Style’s tag in the Smart Form, configuring that Smart Style’s calling font tag by selecting a correct font and its size in the Smart Style (calling a font - making a reference to the just created on the below screen font, font passing the command parameters in SFU tag to the driver). There must be font’s identification (among many fonts having the same parameters) in the Smart Style’s tag, the Smart Style must know to call the correct/original font referring to the SFU print control user wants – there can’t be two the same fonts having the same parameters as the situation for the new tag on the Smart Form will be ambiguous if let’s say we want use LETGOTH 150. That is why we must use the “original” font for the new Smart Style’s tag as below.

In brief, the Smart Form calls your newly created Smart Style’s tag, that tag calls the original/unique device type’s font which kind of refers to the printer control (HEX command passing the command to the driver) being under that particular device type. When printing the Smart Form, the Smart Form calls the correct tag and the output device refers to that mentioned device type finally getting our final label having Unicode charters printed.

SAPscript Font Maintenance: Change Printer Fonts

Font Conversion Edit Metrics Maint. Print Control TrueType Fonts...

| Device Type | Family | Font Size | Bold | Italic | CPI | PrtCtl.1 | PrtCtl.2 | Scaleable |
|-------------|---------|-----------|-------------------------------------|-------------------------------------|-------|----------|----------|-----------|
| YSTENCN2 | COURIER | 000 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | AFM | SF011 | SF011 | |
| YSTENCN2 | COURIER | 000 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | AFM | SF011 | SF011 | |
| YSTENCN2 | HELVE | 000 | <input type="checkbox"/> | <input type="checkbox"/> | AFM | SF002 | SF002 | |
| YSTENCN2 | LETGOTH | 040 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU08 | SFU08 | |
| YSTENCN2 | LETGOTH | 060 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU07 | SFU07 | |
| YSTENCN2 | LETGOTH | 070 | <input type="checkbox"/> | <input type="checkbox"/> | 14,00 | SF301 | SF301 | |
| YSTENCN2 | LETGOTH | 080 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU03 | SFU03 | |
| YSTENCN2 | LETGOTH | 090 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU04 | SFU04 | |
| YSTENCN2 | LETGOTH | 100 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU05 | SFU05 | |
| YSTENCN2 | LETGOTH | 120 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU06 | SFU06 | |
| YSTENCN2 | LETGOTH | 140 | <input type="checkbox"/> | <input type="checkbox"/> | 7,00 | SF302 | SF302 | |
| YSTENCN2 | LETGOTH | 150 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU01 | SFU01 | |
| YSTENCN2 | LETGOTH | 170 | <input type="checkbox"/> | <input type="checkbox"/> | 10,00 | SFU02 | SFU02 | |
| YSTENCN2 | LETGOTH | 210 | <input type="checkbox"/> | <input type="checkbox"/> | 5,00 | SF303 | SF303 | |
| YSTENCN2 | LETGOTH | 280 | <input type="checkbox"/> | <input type="checkbox"/> | 4,00 | SF304 | SF304 | |
| YSTENCN2 | LETGOTH | 360 | <input type="checkbox"/> | <input type="checkbox"/> | 3,20 | SF305 | SF305 | |
| YSTENCN2 | LETGOTH | 430 | <input type="checkbox"/> | <input type="checkbox"/> | 3,00 | SF306 | SF306 | |
| YSTENCN2 | LETGOTH | 500 | <input type="checkbox"/> | <input type="checkbox"/> | 2,60 | SF307 | SF307 | |
| YSTENCN2 | LETGOTH | 570 | <input type="checkbox"/> | <input type="checkbox"/> | 2,30 | SF308 | SF308 | |
| YSTENCN2 | LETGOTH | 640 | <input type="checkbox"/> | <input type="checkbox"/> | 2,15 | SF309 | SF309 | |
| YSTENCN2 | LETGOTH | 710 | <input type="checkbox"/> | <input type="checkbox"/> | 2,00 | SF310 | SF310 | |

SAPscript Font Maintenance...

Device type: YSTENCN2

Font Family: LETGOTH

Font Size: 180

Bold: ☐

Italic: ☐

Characters per Inch: 10,00

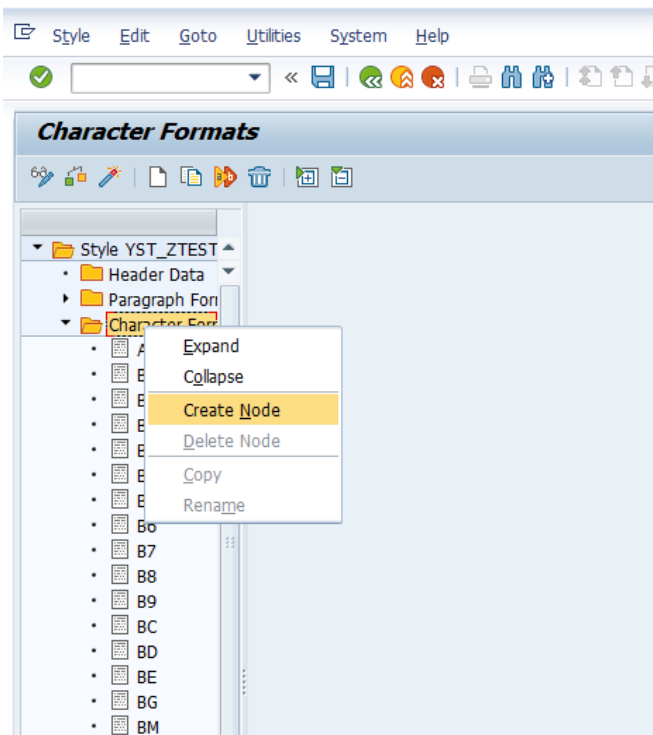
Print control 1: SFU09

Print control 2: SFU09

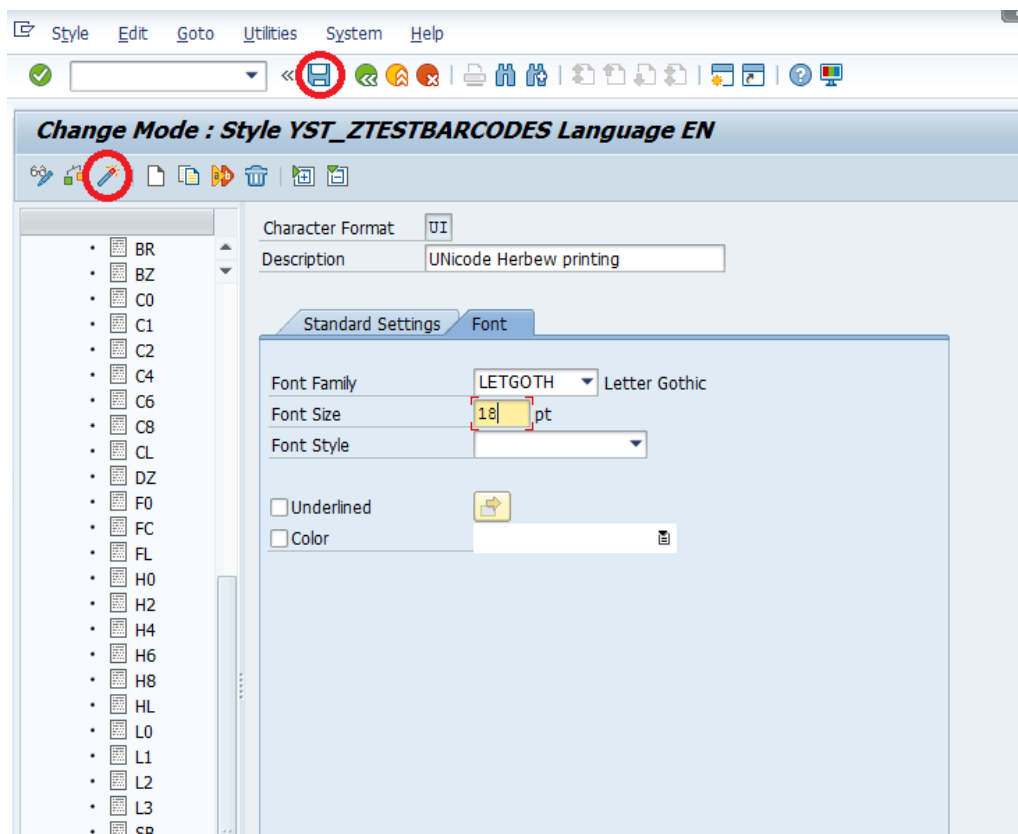
Font is scalable: ☐

Creating a Tag in a Smart Style

It is how the tag is created in the Smart Style.



Choosing of the correct font in the tag on the Smart Style. Please make sure to click “Save” and “Activate” buttons when finished.



Font type here must be equal to font type in the Font Maintenance Window. Font size 18 here must be equal to the size 180 in the previous Font Maintenance Window.

Now the Smart Form is ready to call the Unicode language tags residing in the Smart Style.

[illegible]

Smart Form's Text Field Content

Japanese small bold 123 こんにちは

Chinese Tradit. small 123 嗨那福的人

Chinese Sipl. big 123 嗨那里的人

Korean small bold italic 안녕 하십니까

Bold text without RG command



สวัสดีคนน่ารัก Thai bold Czudec jak się masz? 123 Polish

हाय वहाँ प्यारा लोग Hindi Dobraite ovajpnisac, Croatian

ArabicFarsi Big 123 يارة بسرعة كبي

הרבועית הולכת מהר Hebrew 123

Smart Form's Final Printout on The Label

A few words about <RG> command construction and its processing:

<RG> a,b,c,ddd,eee,ffff... fff

- Parameter
- a: [Character code] Character code of print data to be specified to a parameter f. See the table below.
- b: [Font set] Font type for printing. See the table below.
- c: [Modification] 0: Standard
 - 1: Italic
 - 2: BOLD
 - 3: BOLD+Italic
- d: [Width] Valid range: 20 to 999 (dots)
Valid range: P09 to P99 (points)
- e: [Height] Valid range: 20 to 999 (dots)
Valid range: P09 to P99 (points)
*One point is 0.35 mm.
- f: [Print data] (character code)

<ESC>RG0,5,0,20,20,こんにちは

Example of Full RG Japanese Command in ASCII Containing the Printing Data

| | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---------------------------------|---|---|---|---|---|---|--|
| <esc> | R | G | O | | S | , | 2 | , | 2 | 0 | , | 2 | 0 | |
| 1B 52 47 30 2C 35 2C 32 2C 32 30 2C 32 30 2C | | | | | | | | | | | | | | |
| SFU01 | ● | ○ | | ○ | ○ | | 1B5247302C352C322C32302C32302C | | | | | | | |
| SFU02 | ● | ○ | | ○ | ○ | | 1B5247302C342C302C32302C32302C | | | | | | | |
| SFU03 | ● | ○ | | ○ | ○ | | 1B5247302C362C302C34302C34302C | | | | | | | |
| SFU04 | ● | ○ | | ○ | ○ | | 1B5247302C372C322C32302C32302C | | | | | | | |
| SFU05 | ● | ○ | | ○ | ○ | | 1B5247302C322C322C32352C33352C | | | | | | | |
| SFU06 | ● | ○ | | ○ | ○ | | 1B5247302C332C302C33352C33352C | | | | | | | |
| SFU07 | ● | ○ | | ○ | ○ | | 1B5247302C312C302C35352C35352C | | | | | | | |
| SFU08 | ● | ○ | | ○ | ○ | | 1B5247302C3142C302C34352C34352C | | | | | | | |
| SFU09 | ● | ○ | | ○ | ○ | | | | | | | | | |

Mapping an Another Example RG Japanese Command to the Hex String

```
<ESC>RG0,5,0,20,20,  
1B5247302C352C302C32302C32302C
```

Example of RG Japanese Command in ASCII and HEX With No Printing Data

```
<ESC>RG0,14,0,45,45,  
1B5247302C31342C302C34352C34352C
```

Example of RG Hebrew Command in ASCII and HEX With No Printing Data

```
<ESC>CE1250<ESC>RG0,0,1,20,20,  
1B4345313235301B5247302C302C312C32302C32302C
```

Example of RG With <CE> commands (for Polish, Croatian printing etc.) With No Data

The print control contains the pure command only without the printing data inside. The parameter 'a' must be always fixed to '0' value, UTF-8.

[Font set list]

| Parameter | Font name | Font set | Font type | Character code range (UTF-16BE) |
|-----------|--------------------------------|------------------------------|-------------------------------|--|
| 0 | SATO Hebe Sans | WGL4 | Hebe Serif | 0020-FB02 |
| 1 | SATO Hebe Sans Arabic | Arabic (Farsi) +ISO8859-1 | Hebe Serif | 0020-00FF, 0600-06FF FE70-FEFC |
| 2 | SATO Hebe Sans Thai | Thai +ISO8859-1 | Hebe Serif | 0020-00FF, 0E01-0E5B |
| 3 | SATO Hebe Sans Hindi | Hindi +ISO8859-1 | Hebe Serif | 0020-00FF, 0901-097F |
| 4 | SATO Gothic Tradional Chinese | WGL4 | Hebe Serif | 0020-FFE6 |
| | | Big5 | MobileGothic | |
| | | GB-18030 | Crystalzhonghei | |
| | | JISx0208(+NEC) JISx0201 | MobileGothic | |
| | | KSX 1001 | MobileGothic | |
| 5 | SATO Gothic Japanese | WGL4 | Hebe Serif | 0020-FFE6 |
| | | JISx0208(+NEC) JISx0201 | MobileGothic | |
| | | KSX 1001 | MobileGothic | |
| | | GB-18030 | Crystalzhonghei | |
| | | Big5 | MobileGothic | |
| 6 | SATO Gothic Simplified Chinese | WGL4 GB-18030 | Hebe Serif Crystalzhonghei | 0020-FFE5 |
| 7 | SATO Gothic Korean | WGL4 | Hebe Serif | 0020-FFE6 |
| | | KSX 1001 | MobileGothic | |
| | | JISx0208(+NEC) JISx0201 | MobileGothic | |
| | | GB-18030 | Crystalzhonghei | |
| | | Big5 | MobileGothic | |
| 8 | SATO Silver Serif | WGL4 | Silver Serif | 0020-FB02 |
| 9 | SATO Mincho Tradional Chinese | WGL4 | Silver Serif | 0020-FFE6 |
| | | Big5 | Mincho | |
| | | GB-18030 | Shusong2M | |
| | | JISx0208(+NEC) JISx0201 | CrystalMincho | |
| | | KSX 1001 | Mincho | |
| 10 | SATO Mincho Japanese | WGL4 | Silver Serif | 0020-FFE6 |
| | | JISx0208(+NEC) JISx0201 | CrystalMincho | |
| | | KSX 1001 | Mincho | |
| | | GB-18030 | Shusong2M | |
| | | Big5 | Mincho | |
| 11 | SATO Mincho Simplified Chinese | WGL4 GB-18030 | Silver Serif Shusong2M | 0020-FFE5 |
| 12 | SATO Mincho Korean | WGL4 | Silver Serif | 0020-FFE6 |
| | | KSX 1001 | Mincho | |
| | | JISx0208(+NEC) JISx0201 | CrystalMincho | |
| | | GB-18030 | Shusong2M | |
| | | Big5 | Mincho | |
| 13 | SATO Roman Arabic | Arabic +ISO8859-1 | Roman | 0020-00FF, 0600-06FF, FDF2, FE70-FEFC |
| 14 | SATO Hebe Sans Hebrew | Hebrew +ISO8859-1 | Hebe Serif | 0020-00FF, 05B0-05F4, FB1D-FB4F |

<RG> Command Font Set List

| Parameter a | Official name | [Supplemental explanation] |
|-------------|---------------|---|
| 858 | DOS 858 | Multilingual Latin 1 + Euro character Default Code page proprietary to SATO. |
| 88591 | ISO 8859/1 | ISO 8859-1 Latin 1 |
| 88592 | ISO 8859/2 | ISO 8859-2 Latin 2 |
| 88599 | ISO 8859/9 | ISO 8859-9 Latin 5 |
| 850 | DOS 850 | Latin 1 Multilingual |
| 852 | DOS 852 | Latin 2 |
| 855 | DOS 855 | Cyrillic |
| 857 | DOS 857 | Turkish |
| 737 | DOS 737 | Greek |
| 866 | DOS 866 | Cyrillic II |
| 1250 | Win 1250 | Central Europe |
| 1251 | Win 1251 | Cyrillic |
| 1252 | Win 1252 | Western Latin 1 |
| 1253 | Win 1253 | Greek |
| 1254 | Win 1254 | Turkish |
| 1257 | Win 1257 | Baltic |
| 869 | IBM 869 | IBM 869 Greek |
| 201 | X0201 | Japanese X0201 *1 |
| UTF-8 | UTF-8 | Unicode encoding in UTF-8 |

<CE> Command Parameters against Code Pages

| b | Fontname | Sample |
|----|---------------------------------|---------------------------|
| 0 | SAT0 Hebe Sans | This is a fontsample. |
| 8 | SAT0 Silver Serif | This is a fontsample. |
| 1 | SAT0 Hebe Sans Arabic | هذا هو عينة من الخط. |
| 13 | SAT0 Roman Arabic | هذا هو عينة من الخط. |
| 2 | SAT0 Hebe Sans Thai | นี่คือตัวอย่างของตัวอักษร |
| 3 | SAT0 Hebe Sans Hindi | इस फॉन्ट का एक नमूना है. |
| 14 | SAT0 Hebe Sans Hebrew | זוהי דוגמא של הגופן. |
| 4 | SAT0 Gothic Traditional Chinese | 這是字體的樣本。 |
| 9 | SAT0 Mincho Traditional Chinese | 這是字體的樣本。 |
| 6 | SAT0 Gothic Simplified Chinese | 这是字体的样本。 |
| 11 | SAT0 Mincho Simplified Chinese | 这是字体的样本。 |
| 5 | SAT0 Gothic Japanese | これはフォントのサンプルです。 |
| 10 | SAT0 Mincho Japanese | これはフォントのサンプルです。 |
| 7 | SAT0 Gothic Korean | 이것은 글꼴의 샘플입니다. |
| 12 | SAT0 Mincho Korean | 이것은 글꼴의 샘플입니다. |

Multiple Language Samples

6.3 Smart Styles

Enter Transaction code ***/nsmartstyles*** to use the Smart Styles application.

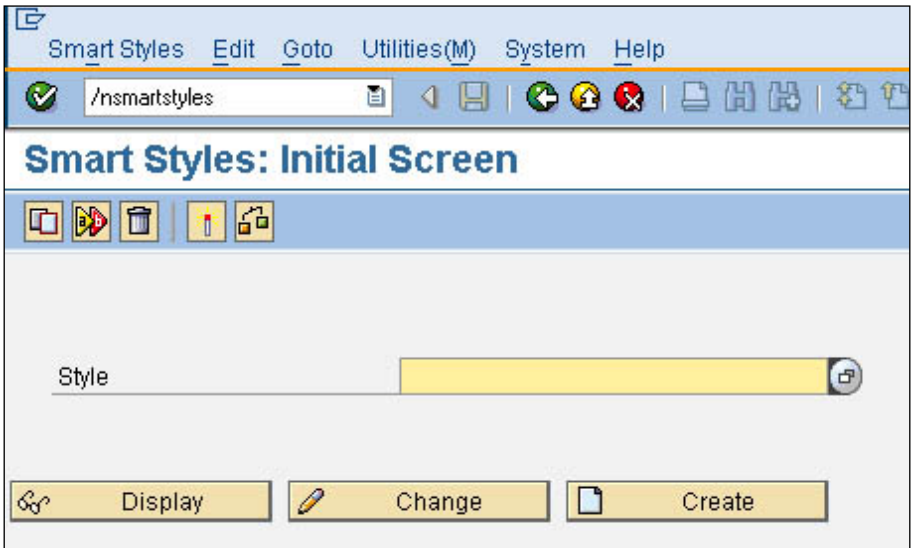


Figure 36 Smart Styles

Create or edit a Smart Styles to define the printing items which are to be used in the Smart Forms.

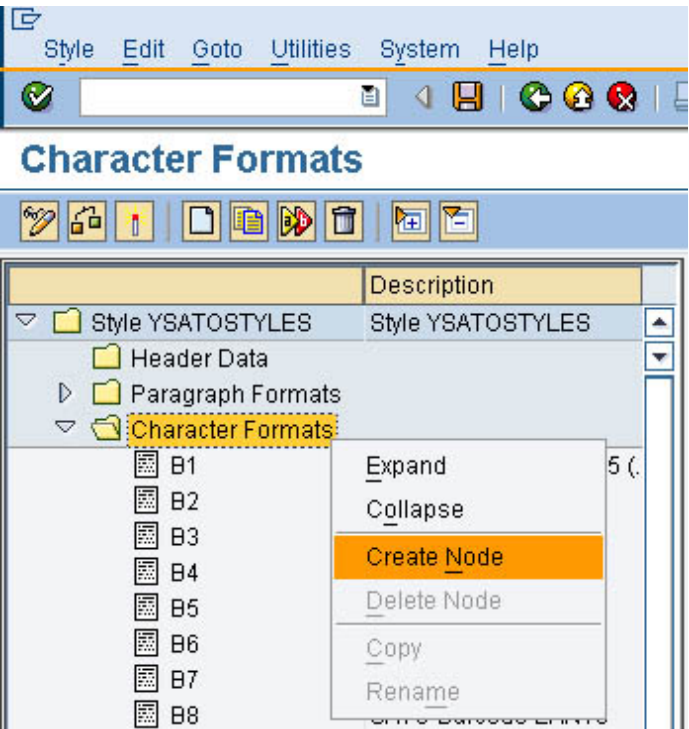


Figure 37 Create node of printing items

Right click on the 'Character Formats' and choose 'Create Node'.

| | | | | | | | | | | | |
|--|-------------------------------|----------------------------|------|---------|----------------------------|-------|------|----|--------|------|----|
| Character Format | B1 | | | | | | | | | | |
| Description | SATO Interleaved 2 of 5 (1:3) | | | | | | | | | | |
| <div> <div>Standard Settings</div> <div>Font</div> </div> | | | | | | | | | | | |
| <div>Effects</div> <div> <input type="checkbox"/> Superscript <input type="checkbox"/> Subscript </div> | | | | | | | | | | | |
| <div>Bar Code</div> <table border="1"> <tr> <td>Name</td> <td>YST2OF5</td> <td>SATO Barcode Int. 2of5 1:3</td> </tr> <tr> <td>Width</td> <td>2.00</td> <td>CM</td> </tr> <tr> <td>Height</td> <td>2.00</td> <td>CM</td> </tr> </table> | | | Name | YST2OF5 | SATO Barcode Int. 2of5 1:3 | Width | 2.00 | CM | Height | 2.00 | CM |
| Name | YST2OF5 | SATO Barcode Int. 2of5 1:3 | | | | | | | | | |
| Width | 2.00 | CM | | | | | | | | | |
| Height | 2.00 | CM | | | | | | | | | |
| <div>Preview</div> <div> abcdefghijklmnopqrstuvwxyz SATO Interleaved 2 of 5 (1:3) </div> | | | | | | | | | | | |

Figure 38 Defining Barcode printing item in Smart Styles

| | | | | | | | | | | | | | | | | | |
|--|--------------------|---------|-------------|---------|---------|-----------|-----|----|------------|--|--|-------------------------------------|--|--|--------------------------------|--|--|
| Character Format | M1 | | | | | | | | | | | | | | | | |
| Description | SATO M Font Size 7 | | | | | | | | | | | | | | | | |
| <div> <div>Standard Settings</div> <div>Font</div> </div> | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Font Family</td> <td>COURIER</td> <td>Courier</td> </tr> <tr> <td>Font Size</td> <td>7.0</td> <td>pt</td> </tr> <tr> <td>Font Style</td> <td colspan="2"></td> </tr> <tr> <td><input type="checkbox"/> Underlined</td> <td colspan="2"></td> </tr> <tr> <td><input type="checkbox"/> Color</td> <td colspan="2"></td> </tr> </table> | | | Font Family | COURIER | Courier | Font Size | 7.0 | pt | Font Style | | | <input type="checkbox"/> Underlined | | | <input type="checkbox"/> Color | | |
| Font Family | COURIER | Courier | | | | | | | | | | | | | | | |
| Font Size | 7.0 | pt | | | | | | | | | | | | | | | |
| Font Style | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Underlined | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Color | | | | | | | | | | | | | | | | | |
| <div>Preview</div> <div> abcdefghijklmnopqrstuvwxyz SATO M Font Size 7 </div> | | | | | | | | | | | | | | | | | |

Figure 39 Defining Font Printing item in Smart Styles

After defining the necessary Barcode and Fonts as printing items, check and activate the Smart Styles.

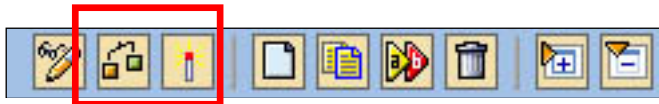


Figure 40 Check and Activate the Smart Styles

6.4 Smart Forms

Enter transaction code `/nsmartforms` to run the Smart Forms application.

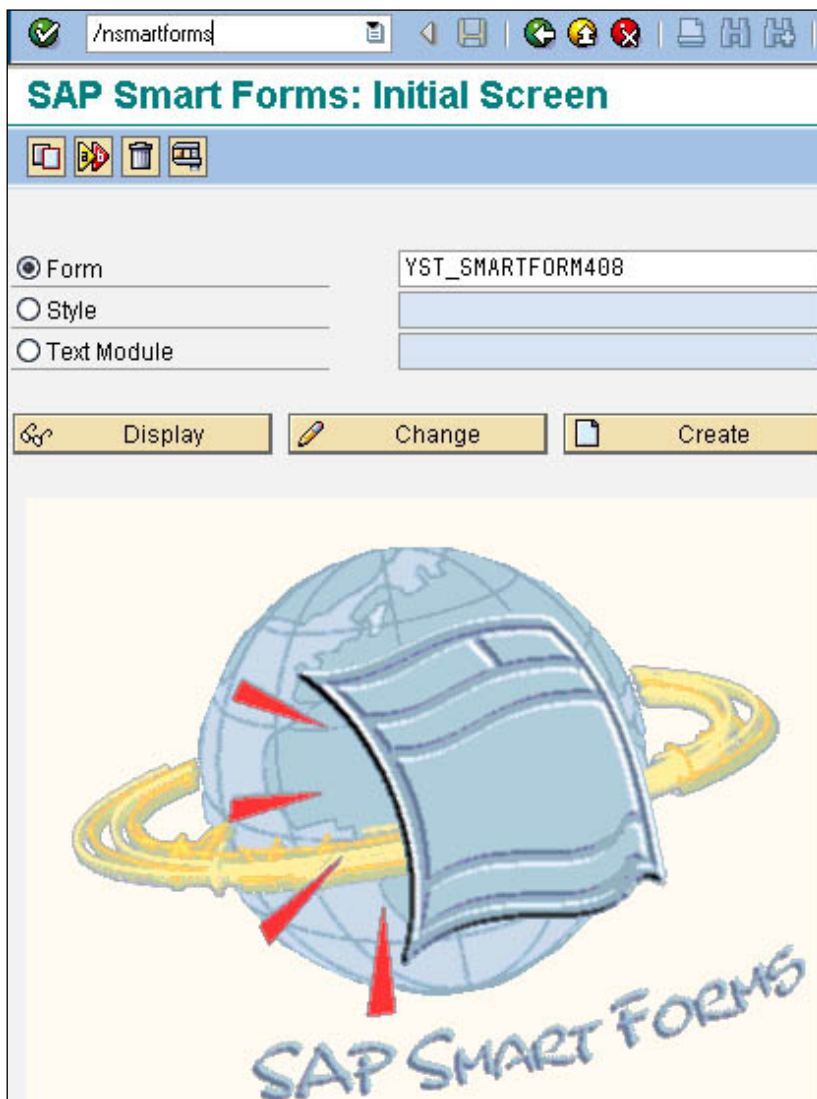


Figure 41 Smart Forms application

Create or edit a Smart Forms which the name is prefixed with 'YST'.

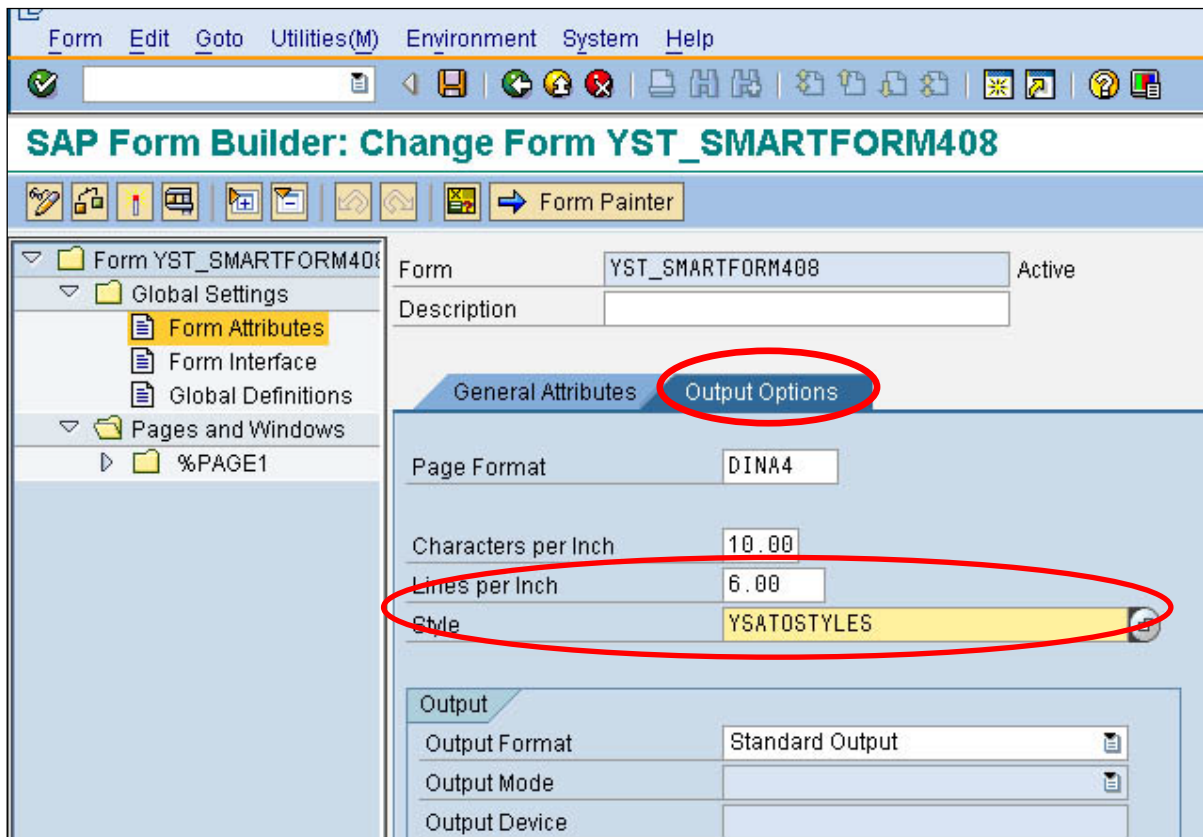


Figure 42 Applying the Smart Styles

Click on the 'Global Settings'-'>'Form Attributes', in the 'Output Options', apply the Smart Styles defined previously.

6.4.1 Adding Text

Right click on the 'Page1', choose 'Create'-'>'Window'.

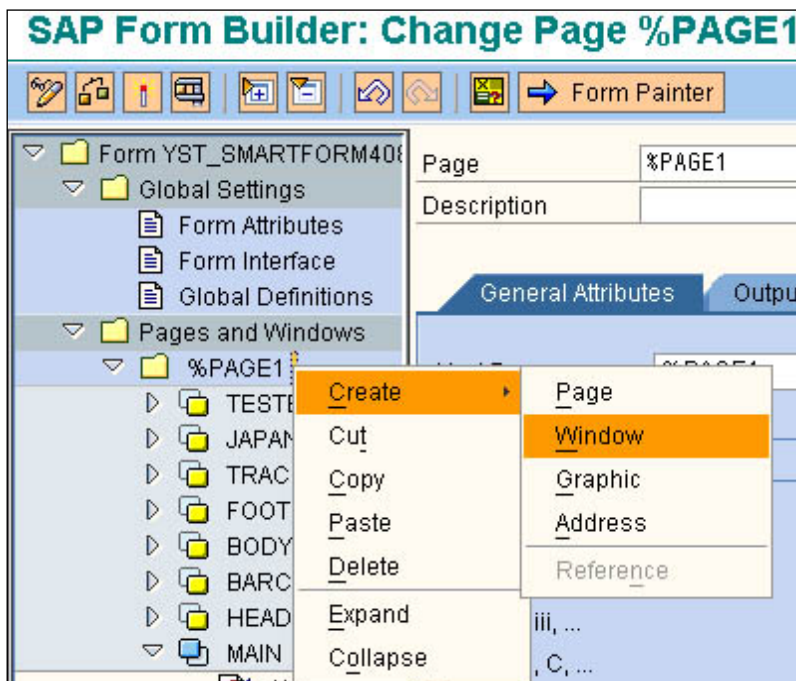


Figure 43 Creating Window

Give the Window component a meaningful name. Then right click on it and create a 'Text' component.

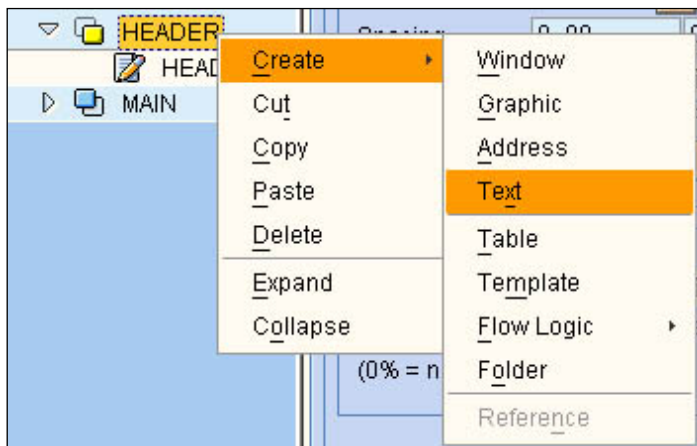


Figure 44 Creating Text Component

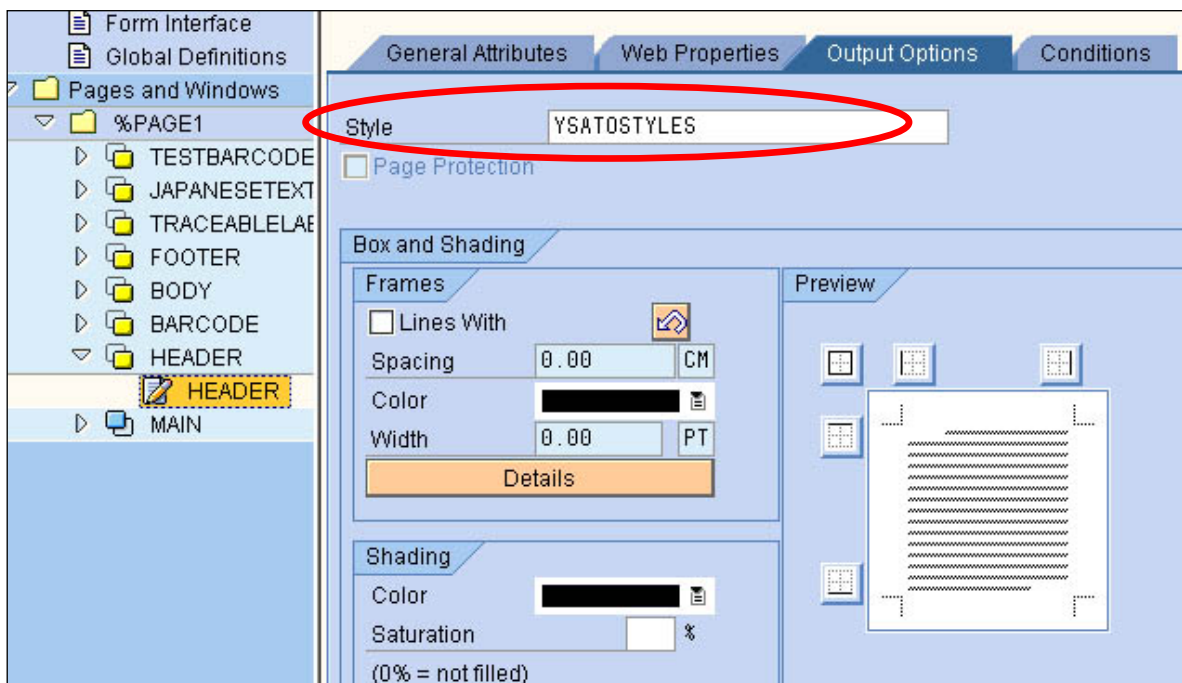


Figure 45 Defining Text Component

Under the 'Output Options' tab, select the Smart Styles which previously defined. So that the text printing item can be available to use.

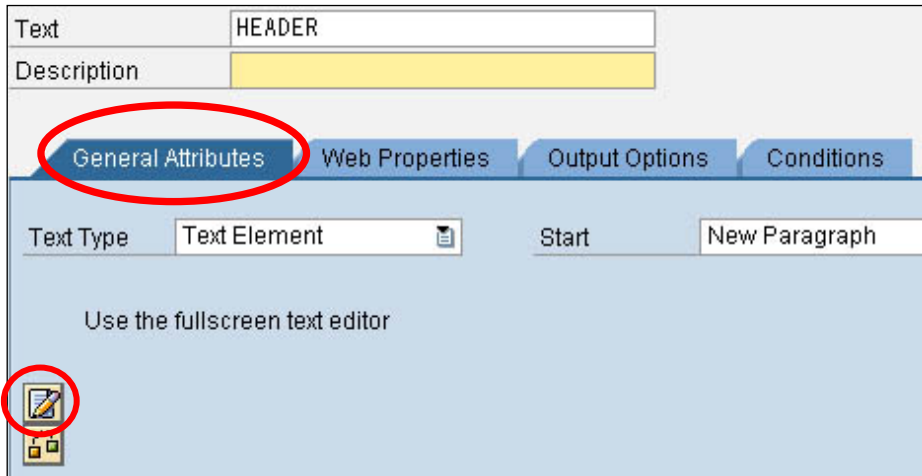


Figure 46 Adding Text

Click on the 'General Attributes' tab and click on the 'Editor' button to insert the text. Note: This procedure could be varied depending on the editor mode.

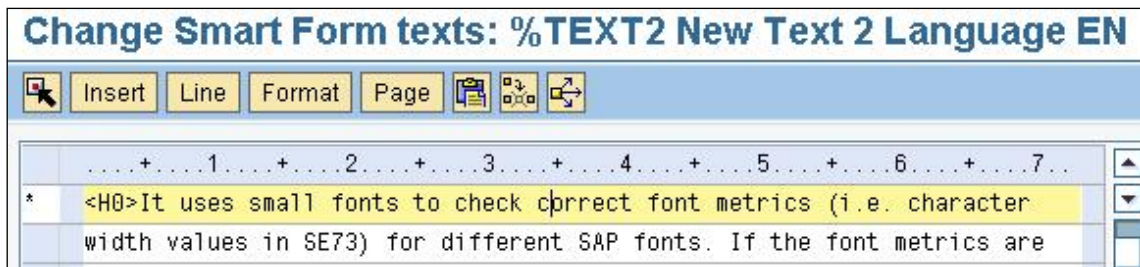


Figure 47 Entering the text with format

The message is embedded in format tags. In the above example, the message is included in **<H0>** and **</>** format tags which specify the SATO CG Triumvirate Font (ESC+RD). Format **H0** is a text printing item defined in the Smart Styles.

6.4.2 Adding Barcode

Define a 'Window' component under 'Page1' and give it a meaningful name. From this new window create a 'Text' component.

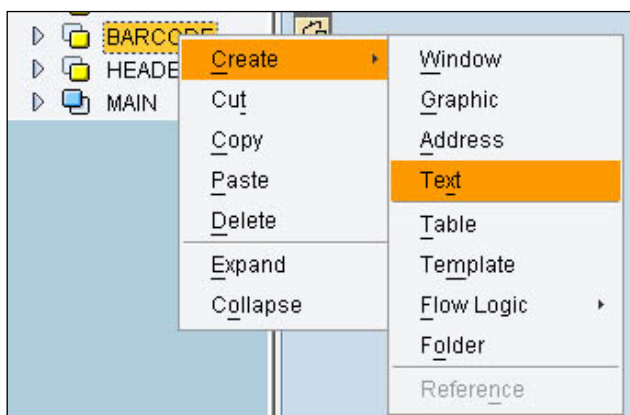


Figure 48 Creating Barcode component

Apply the Smart Styles in the 'Output Options'. Then in the Editor under 'General Attributes', type the Barcode value, and apply the Barcode printing format.

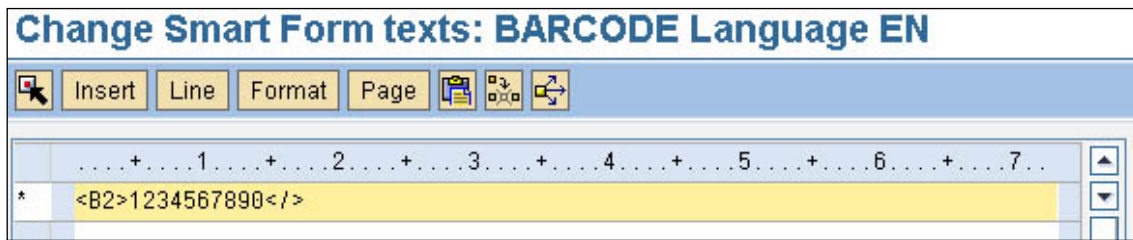


Figure 49 Entering Barcode value

The message is embedded in format tags. In the above example, the message is included in **<B2>** and **</>** format tags which specify the SATO Code 128A Barcode. Format **B2** is a Barcode printing item defined in the Smart Styles.

6.4.3 Adding Images

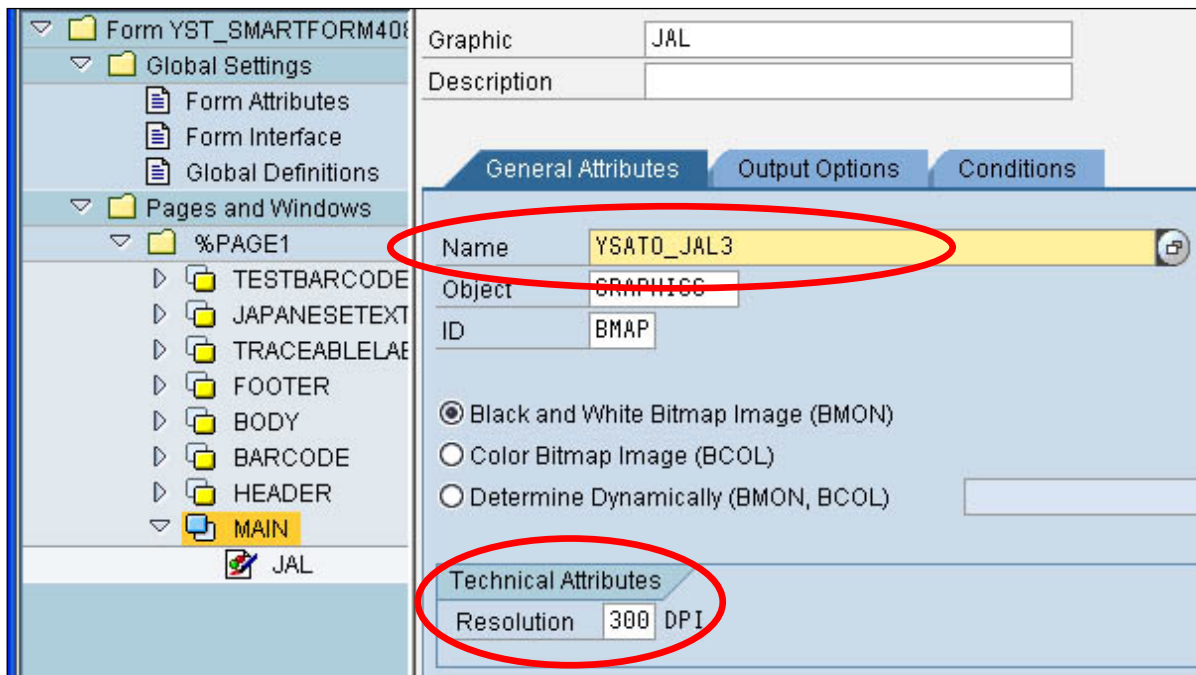


Figure 50 Creating Image component

All images must be imported to the SAP system through **SE78** command before attaching them to the smart form. Select the required image from the Name drop-down list under the General Attributes. Then key in the Resolution information for the image. For example, if the image is to be printed in 300 resolution printer, then select 300 from the Resolution field.

Currently, the images supported by SATO-SAP Printer Driver have the following constraints:

- Only 'Black and White Bitmap Images' are supported and they should be limited to 1bpp (bit per pixel) color deepness
- The images cannot be '*compressed*' when uploaded using Transaction code **SE78**.

6.4.4 Positioning Printing Components

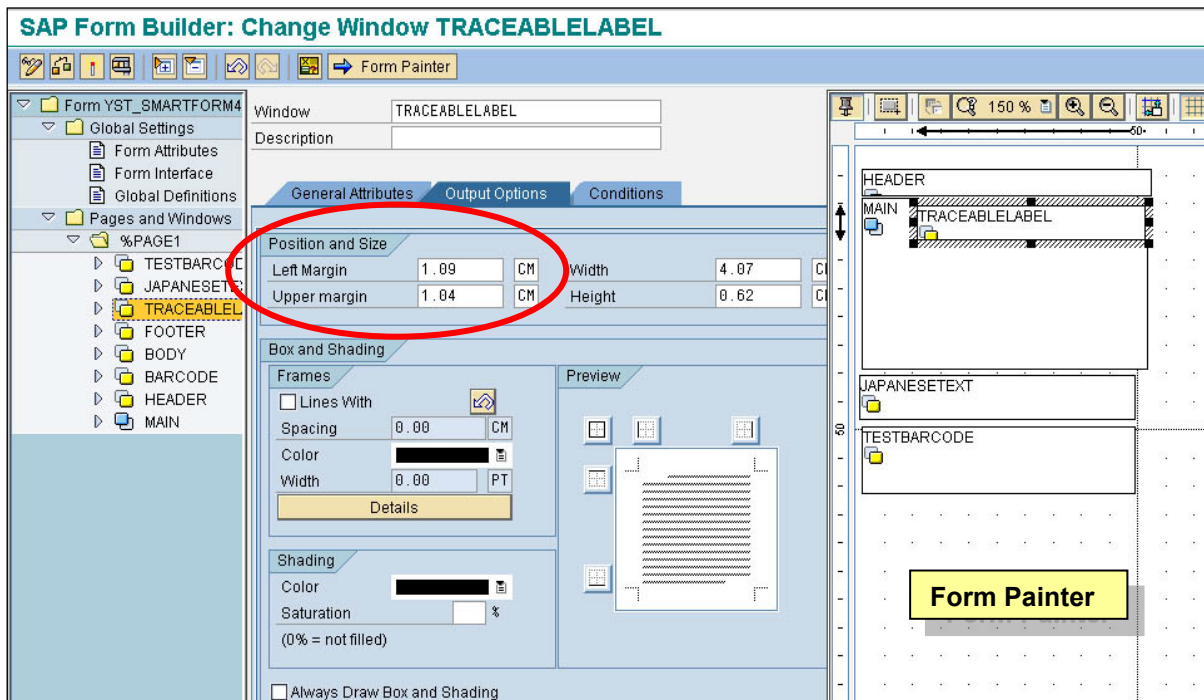


Figure 51 Positioning printing items

The positions of the printing items can be adjusted by drag & drop the components in the 'Form Painter'. Alternatively, it can be done by manipulating the values in the Left and Upper margin fields under the 'Output Options' tab of the window component.

6.4.5 Printing the Smart Forms

After the Smart Forms has been made, it must be checked and activated before it can be printed.



Figure 52 Check and Activate the Smart Forms

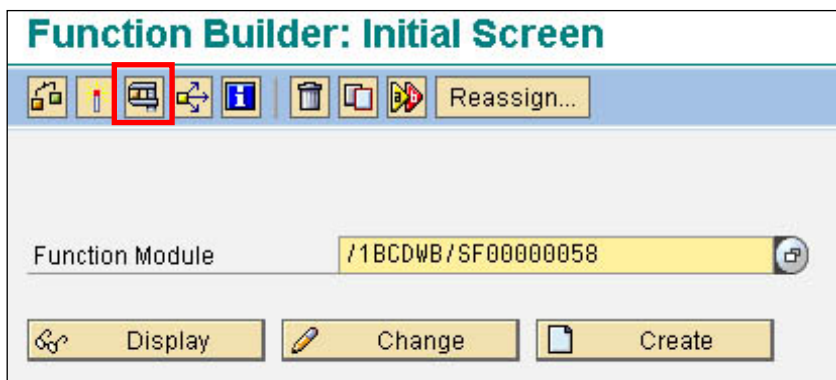


Figure 53 Printing Smart Forms

Click the 'Print' button to continue.

Test Function Module: Initial Screen

Debugging

Test for function group

/1BCDWB/SF000000058

Function module

/1BCDWB/SF000000058

Uppercase/Lowercase

☐

| Import parameters | Value |
|--------------------|------------|
| ARCHIVE_INDEX | 00.00.0000 |
| ARCHIVE_INDEX_TAB | 0 Entries |
| ARCHIVE_PARAMETERS | |
| CONTROL_PARAMETERS | |
| MAIL_APPL_OBJ | |
| MAIL_RECIPIENT | |
| MAIL_SENDER | |
| OUTPUT_OPTIONS | <Initial> |
| USER_SETTINGS | X |

Figure 54 Printing Screen

Click the 'Execute' button to continue.

Print:
✕

OutputDevice
YST_OUTPUTDEVICE_305

Page selection

Spool Request
✕

Name
SMART

Title

Authorization

C5110034

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately
 ☐ Delete After Output

New Spool Request

Close Spool Request

8 Day(s)

Storage Mode

Print only

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool retention pd
8 Day(s)

Storage Mode

Number of Copies
✕

Number

Group (1-1-1,2-2-2,3-3-3,...)

1

Spool Control
✕

☒ Print immediately

6.5 System Commands

User can specify the System Commands of SBPL in the Smart Forms label by using the Command nodes.

Right click on the Window node->Create->Flow Logic->Command to display Command node feature.

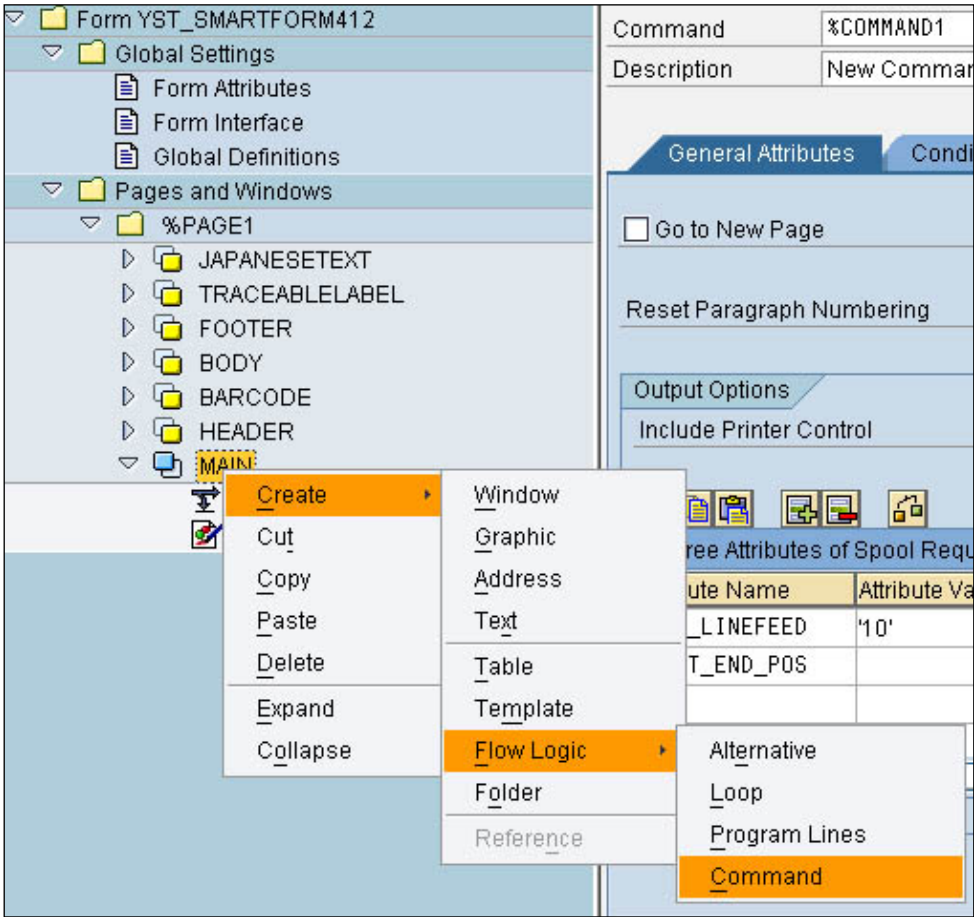


Figure 56 Defining System Command using Command node

Under the 'Output Options', user is to define the System Command in the Name-Value pairs format. **The value must be enclosed within the single quote character (') or empty, depending on the command.**

| | |
|-------------|---------------|
| Command | %COMMAND1 |
| Description | New Command 1 |

General Attributes


Conditions

☐ Go to New Page

Reset Paragraph Numbering ☐

Output Options

Include Printer Control ☐



Free Attributes of Spool Request

| Attribute Name | Attribute Value |
|----------------|-----------------|
| PRINT_SPEED | '5' |
| PRINT_DARKNESS | '3A' |
| LABEL_SIZE | '21361248' |
| STANDARD_AREA | |

Figure 57 Name-Value pairs information

The following are the available system commands:

| Function | Command Name | Command Value | SBPL Command | Remarks |
|-------------------------------|-------------------------|------------------------------------|--------------|--|
| Print Speed | PRINT_SPEED | 1~11 | ESC+CS | |
| Print Darkness | PRINT_DARKNESS | ab, a: 1~ 5 b: A~F | ESC+#E | |
| Label Size | LABEL_SIZE | Refer to the command specification | ESC+A1 | The printer driver will generate a default ESC+A1 command, based on the label size of designed Smart Forms, if this System command is not specified. |
| Start Print Correction | START_POINT | Refer to the command specification | ESC+A3 | The printer driver will generate a default ESC+A3 command, based on the position of the designed Smart Forms, if this System command is not specified. |
| Enlargement of Print Area | ENLARGEMENT_AREA | No value is needed | ESC+AX | |
| Standard Print Area | STANDAR_AREA | No value is needed | ESC+AR | |
| Print End Position | PRINT_END_POS | No value is needed | ESC+EP | |
| Multiple Cutting | MULTIPLE_CUT | 0~9999 | ESC+~(Null) | This command is valid only when the printer is equipped with cutter |
| No. of Labels per Cut Segment | CUT_SEGMENT | 0~9999 | ESC+~A | This command is valid only when the printer is equipped with cutter |
| Cutting Operation | CUT_OPERATION | No value is needed | ESC+~B | This command is valid only when the printer is equipped with cutter |
| Cut Number Unit | CUT_CTCOMMAND | 0~9999 | ESC+CT | This command is valid only when the printer is equipped with cutter |
| Eject and Cut | CUT_NCCOMMAND | No value is needed | ESC+NC | This command is valid only when the printer is equipped with cutter |
| Auto Linefeed | AUTO_LINEFEED | 0~999 | ESC+E | |

| | | | | |
|-----------------------------|-------------------------|---|------------|---|
| 90 degree Text Rotation | ROTATE_90_x | Name of Window to be rotated | ESC+% 1 | x is any number to make sure the command name is not repeated in the Smart Forms |
| 180 degree Text Rotation | ROTATE_180_x | Name of Window to be rotated | ESC+% 2 | x is any number to make sure the command name is not repeated in the Smart Forms |
| 270 degree Text Rotation | ROTATE_270_x | Name of Window to be rotated | ESC+% 3 | x is any number to make sure the command name is not repeated in the Smart Forms |
| Page Number | PRINT_QUANTITY | Number of pages to print | ESC+Q | It is print command is not specified, the page is printed once. Example of the value: '%PAGE2:4' This means the page with name "%PAGE2" will be printed 4 times. Subsequent page number can be added with a comma separator. For example, '%PAGE2:4, %PAGE3:3' This means page '%PAGE2' is printed 4 times and page '%PAGE3' is printed 3 times |
| Inverse Print | INVERSE_PRNTAREA | vvvvv,hhhh,aaaa,b bbbb v: vertical position h: horizontal position a: length of vertical b: length of horizontal | ESC+(| It can specified multiple inverse print area by using semicolon';' as separator |
| Print Darkness (#F command) | PRINT_DARKNESS_F | ab, a: 1~ 10 b: A~F | ESC+#F | This commands for supported models SG400R-ex, SG600R and SG112R/ex. |
| Print Motion Mode | PRINTMOTION_MODE | 0-8 | ESC+P M | To specify motion mode temporarily. |
| Print Off-set | LABELSTOP_OFFSET | abcc, a: 0~3 b: +/- c:00~99(dot) | ESC+P O | To specify adjustment of label stop position during every motion temporarily. |

Table 8 System Commands

It is important to refer to the command specification of the printer models to understand the correct range of value can be used for the Command values. Note that the Command Names are case-sensitive.

System command should be used carefully. Invalid input may result in unexpected outcome of the printout.

The table below shows the supported System Commands on models.

| Model | PT4xxe/ MB4xxi/ HR224 | CT4xxi/ L'esprit T/R4xxv /CGxxx | SR4xx | LT4xx/LM4xxe/CLxxe/M R4xxe/SGxxxRGT4xxe/ GL4xxe/M84Pro/M84xx SEM10e/CLxNX | S-84xx/S- 8x-ex |
|------------------|-----------------------------|--|-------|--|--------------------|
| Command | | | | | |
| PRINT_SPEED | O | O | O | O | O |
| PRINT_DARKNESS | O | O | O | O | O |
| LABEL_SIZE | O | O | O | O | O |
| START_POINT | O | O | O | O | O |
| ENLARGEMENT_AREA | | | | O | O |
| STANDARD_AREA | | | | O | O |
| PRINT_END_POS | | O | O | O | O |
| AUTO_LINEFEED | O | O | O | O | O |
| ROTATE_xx_X | O | O | O | O | O |
| PRINT_QUANTITY | O | O | O | O | O |
| INVERSE_PRNTAREA | | O | O | O | O |

Table 9 System Commands on Models

The table below shows the supported Cutting Commands on models.

| Model | PT4xxe/ MB4xxi/ HR224 | CT4xxi/ L'esprit T/R4xxv/C Gxxx | SR4xx | LT4xx/L M4xxe/ CLxxe/ GT4xxe /M84Pr o/M84x xSE/M1 0e/CLx NX | MR4xxe /SGxxx R | GL4xx e | S- 84xx/ S-8x- ex |
|---------------|-----------------------------|--|-------|---|-----------------------|------------|----------------------------|
| Command | | | | | | | |
| MULTIPLE_CUT | | O* | O* | O* | O* | | O* |
| CUT_SEGMENT | | O* | O* | O* | O* | | O* |
| CUT_OPERATION | | O* | O* | O* | O* | | O* |
| CUT_CTCOMMAND | | O* | O* | | O* | | |
| CUT_NCCOMMAND | | O* | O* | | O* | O* | |

Table 10 Cutting Commands on Models

*: Only possible when the Cutter unit is installed.

6.5.1 Text and Image Rotation

To rotate a text or an image on Smart Forms, user is to create a command in the window to be rotated. The name of parameter (e.g., ROTATE_180_x) should not be repeated. Image below is an example of how the rotated text can be setup:

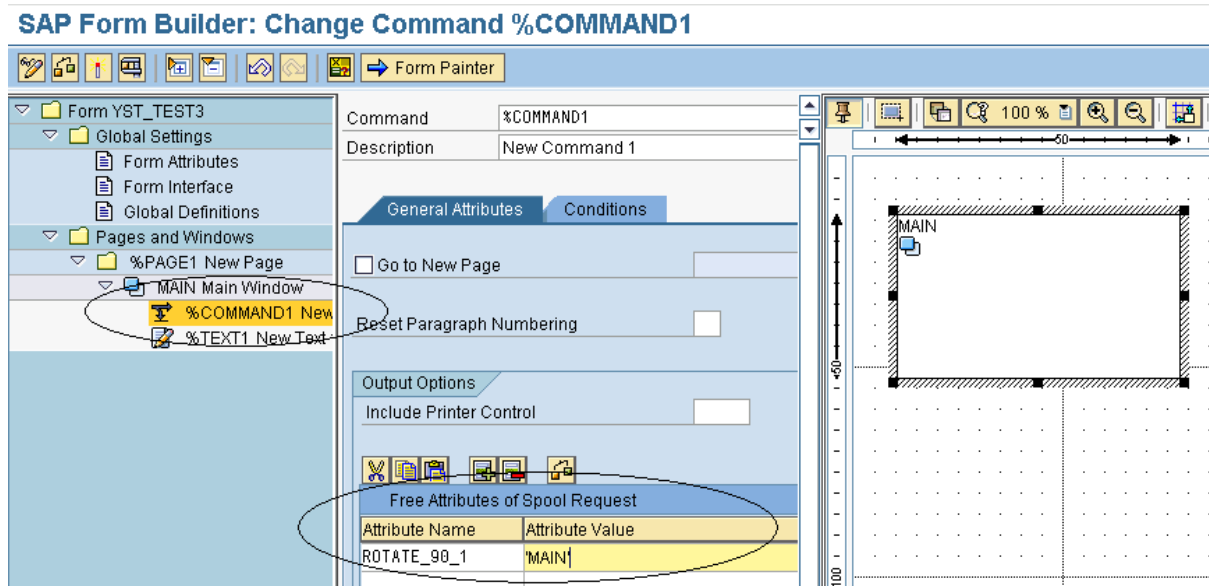


Figure 58 Text Rotation

Rotation Result:

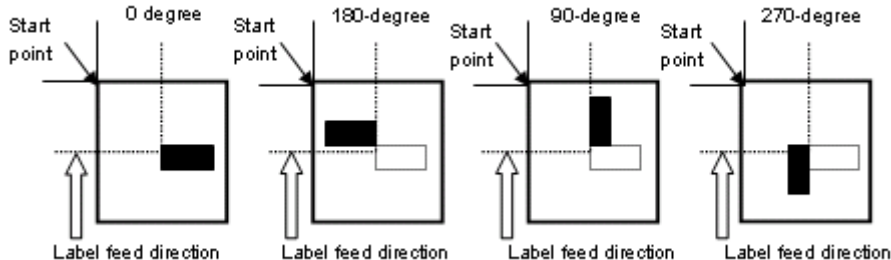


Figure 59 Rotation result

Please refer to the command specification for the behavior of the rotation.

There are a few restrictions on the Rotation functions:

- Smart Form will not display the rotated text on the print preview. User is to adjust the position of the window by checking the actual printout.
- The rotated text should not have more than 1 line.
- Each rotated window should have only 1 line of text or only 1 image.

6.5.2 Setup Label Size Using Command

This is the alternative method to setup custom label size using SATO Printer Language, A1 command. This will overwrite the standard Label size value by Page Format setting of Smart Forms. User should consult SBPL manual for A1 command before using it in Smart Forms. As described in [Table 8 System Commands](#), add **LABEL_SIZE** command with Parameter of label height follow by label width with correct number of digits as described in SBPL manual for specific printer.

Note: GL printer could not accept longer length than height of label for label width. Thus, Landscape Orientation setup on printer (using LCD Menus and Buttons) should utilize (that mean shorter length of label is width and the longer length is height.)

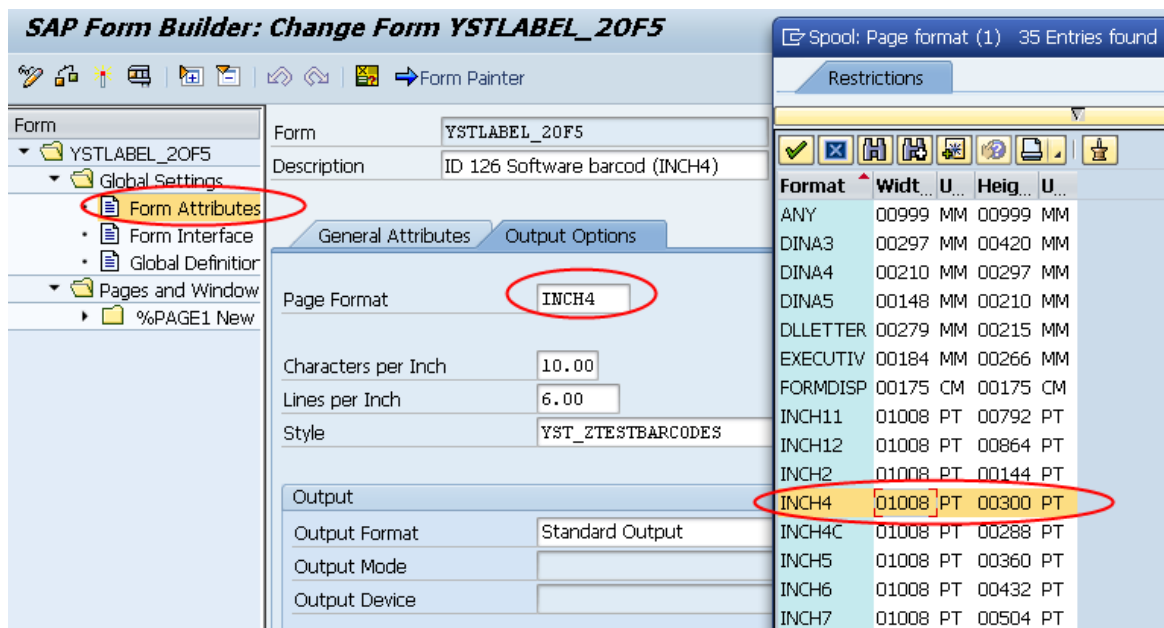


Figure 60 Standard Label Size Setup with appropriate Page Format setting

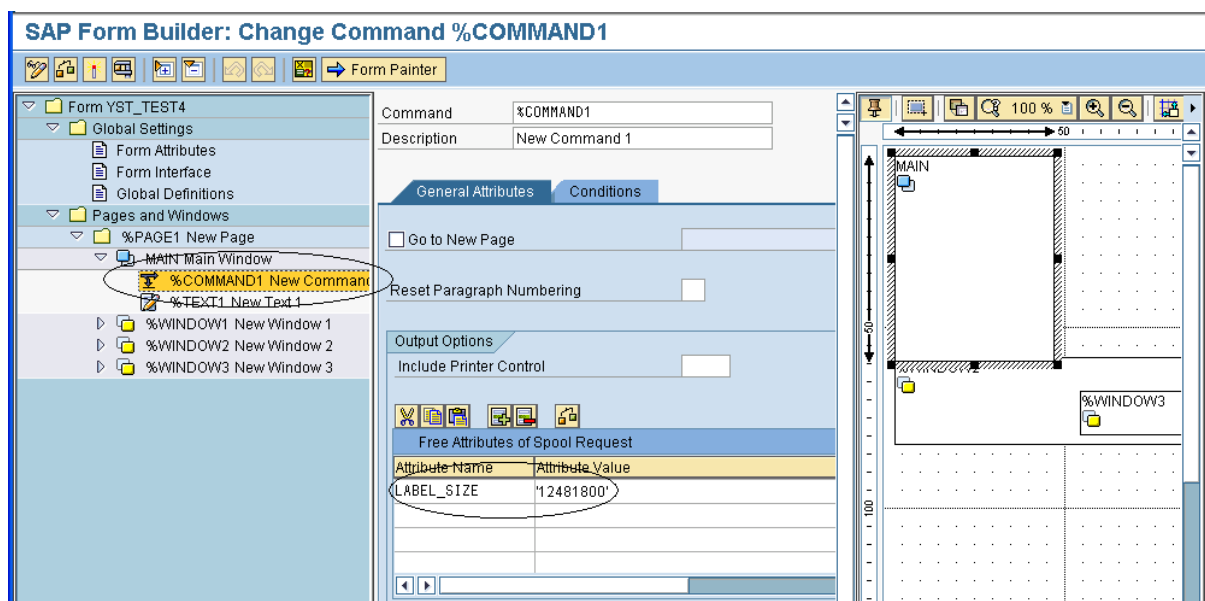


Figure 61 Custom Label Size Setup with Command

6.5.3 Inverse Color Print Area Setup

To define the inverse print area in Smart Form, user is to create a command in the window. The name of parameter (INVERSE_PRNTAREA) should be placed. Image below is an example of how to setup the inverse print area.

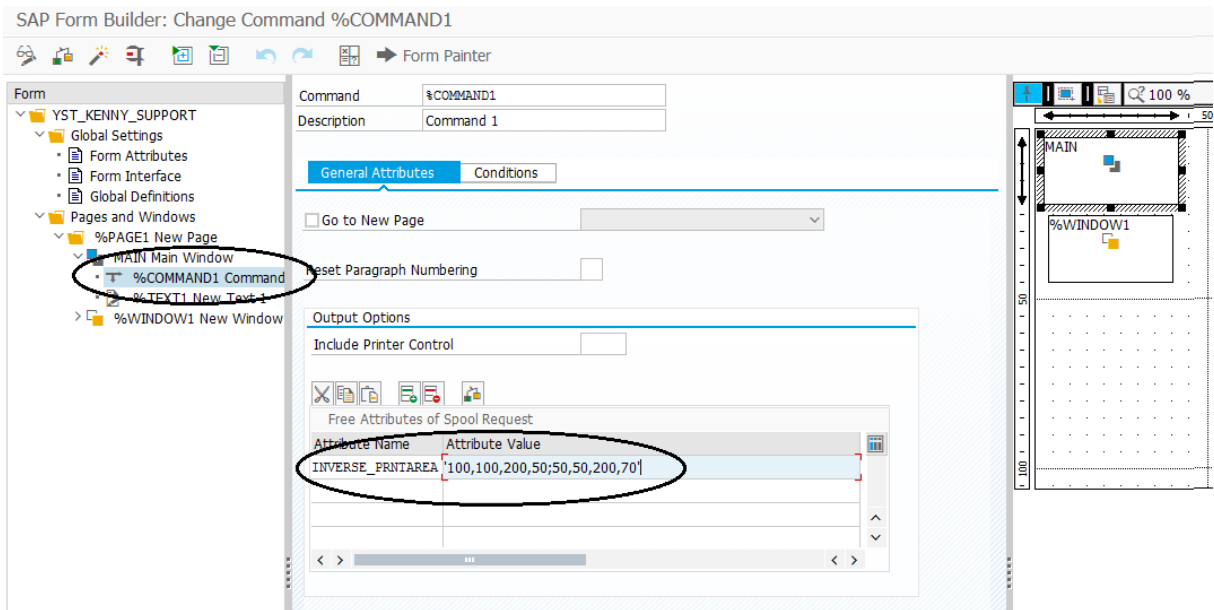
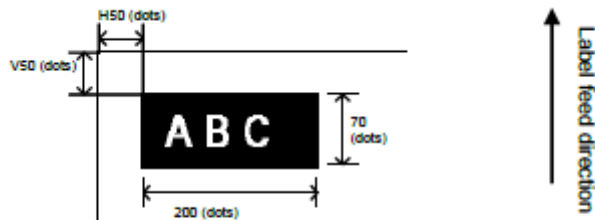


Figure 62 Inverse print area Setup. (Example print two Inverse area, V100H100 length 200 height 50 and V50H50 length 200 height 70)



[Note]

For setting, keep the black print area under 30% of overall label.

[Valid Range]

| Model | Valid Range : Horizontal Line Length (dot) | Valid Range : Vertical Line Length (dot) |
|---------------------------|--|--|
| CL408e | 8~832 | 8~1424 |
| M84Pro | | |
| CL412e | 8~1248 | 8~2136 |
| CL608e | 8~1216 | 8~1424 |
| CL612e | 8~1984 | 8~2136 |
| CT400DT/TT | 8~832 | 8~3200 |
| CT410DT/TT | 8~1248 | 8~4800 |
| CL4NX,PWNX,S84-ex 203 dpi | 8~832 | 8~20000 |
| CL4NX,S84-ex 305 dpi | 8~1248 | 8~18000 |
| CL4NX,S84-ex 609dpi | 8~2496 | 8~9600 |
| CL6NX,S86-ex 203 dpi | 8~1216 | 8~20000 |
| CL6NX,S86-ex 305 dpi | 8~1984 | 8~18000 |

Limitations

7

Please note the following are not supported by the SATO PDL Driver:

- Compressed graphics and color bitmap
- Underlined, superscript and subscript text
- There could be some slight variations of font size in Smart Forms and the actual font size printed from SATO printer. This is due to the size conversion and rounding up issues.
- Courier Font (which will be mapped to SATO Fixed Width Scalable font) does not support 8 points or lower font size printing in 203dpi printer. It will be printed in a slightly larger font size instead.
- Some European characters from ISO8859-1 and Codepage 850 device types are not available from printer. Please refer to the command specifications of printer for details.

For other functionalities of SATO printers which are not supported by the SATO PDL driver, please approach the technical team of SATO for customization requests at:

global.sysdev-gbs@sato-global.com

Appendix

8

8.1 Print Controls List for Barcode

For the control list of New Barcode Technology, please refer to [Table 4 Barcode Print Controls](#).

The following is the control list for the old barcodes:

Barcode (Ratio 1:3)

NW-7 (CODABAR)

| SAP Print Control | Narrow Bar Width | Mapped to SBPL Command |
|-------------------|------------------|------------------------|
| SB101 | 1 | ESC+B001 |
| SB102 | 2 | ESC+B002 |
| SB103 | 3 | ESC+B003 |
| SB104 | 4 | ESC+B004 |
| SB105 | 5 | ESC+B005 |
| SB106 | 6 | ESC+B006 |
| SB107 | 7 | ESC+B007 |
| SB108 | 8 | ESC+B008 |
| SB109 | 9 | ESC+B009 |
| SB110 | 10 | ESC+B010 |
| SB111 | 11 | ESC+B011 |
| SB112 | 12 | ESC+B012 |

Interleaved 2 of 5

| | | |
|-------|----|----------|
| SB121 | 1 | ESC+B201 |
| SB122 | 2 | ESC+B202 |
| SB123 | 3 | ESC+B203 |
| SB124 | 4 | ESC+B204 |
| SB125 | 5 | ESC+B205 |
| SB126 | 6 | ESC+B206 |
| SB127 | 7 | ESC+B207 |
| SB128 | 8 | ESC+B208 |
| SB129 | 9 | ESC+B209 |
| SB130 | 10 | ESC+B210 |
| SB131 | 11 | ESC+B211 |
| SB132 | 12 | ESC+B212 |

JAN/EAN13

| | | |
|-------|---|----------|
| SB141 | 1 | ESC+B301 |
| SB142 | 2 | ESC+B302 |
| SB143 | 3 | ESC+B303 |
| SB144 | 4 | ESC+B304 |
| SB145 | 5 | ESC+B305 |
| SB146 | 6 | ESC+B306 |
| SB147 | 7 | ESC+B307 |

| | | |
|-------|----|----------|
| SB148 | 8 | ESC+B308 |
| SB149 | 9 | ESC+B309 |
| SB150 | 10 | ESC+B310 |
| SB151 | 11 | ESC+B311 |
| SB152 | 12 | ESC+B312 |

JAN/EAN8

| | | |
|-------|----|----------|
| SB161 | 1 | ESC+B401 |
| SB162 | 2 | ESC+B402 |
| SB163 | 3 | ESC+B403 |
| SB164 | 4 | ESC+B404 |
| SB165 | 5 | ESC+B405 |
| SB166 | 6 | ESC+B406 |
| SB167 | 7 | ESC+B407 |
| SB168 | 8 | ESC+B408 |
| SB169 | 9 | ESC+B409 |
| SB170 | 10 | ESC+B410 |
| SB171 | 11 | ESC+B411 |
| SB172 | 12 | ESC+B412 |

UPC-A

| | | |
|-------|----|----------|
| SB181 | 1 | ESC+BH01 |
| SB182 | 2 | ESC+BH02 |
| SB183 | 3 | ESC+BH03 |
| SB184 | 4 | ESC+BH04 |
| SB185 | 5 | ESC+BH05 |
| SB186 | 6 | ESC+BH06 |
| SB187 | 7 | ESC+BH07 |
| SB188 | 8 | ESC+BH08 |
| SB189 | 9 | ESC+BH09 |
| SB190 | 10 | ESC+BH10 |
| SB191 | 11 | ESC+BH11 |
| SB192 | 12 | ESC+BH12 |

PostNet

| | |
|-------|--------|
| SB007 | ESC+BP |
|-------|--------|

Barcode (Ratio 1:2)

NW-7 (CODABAR)

| SAP Print Control | Narrow Bar Width | Mapped to SBPL Command |
|----------------------|---------------------|------------------------------|
| SB201 | 1 | ESC+D001 |
| SB202 | 2 | ESC+D002 |
| SB203 | 3 | ESC+D003 |
| SB204 | 4 | ESC+D004 |
| SB205 | 5 | ESC+D005 |
| SB206 | 6 | ESC+D006 |
| SB207 | 7 | ESC+D007 |
| SB208 | 8 | ESC+D008 |
| SB209 | 9 | ESC+D009 |
| SB210 | 10 | ESC+D010 |
| SB211 | 11 | ESC+D011 |
| SB212 | 12 | ESC+D012 |

Interleaved 2 of 5

| | | |
|-------|----|----------|
| SB221 | 1 | ESC+D201 |
| SB222 | 2 | ESC+D202 |
| SB223 | 3 | ESC+D203 |
| SB224 | 4 | ESC+D204 |
| SB225 | 5 | ESC+D205 |
| SB226 | 6 | ESC+D206 |
| SB227 | 7 | ESC+D207 |
| SB228 | 8 | ESC+D208 |
| SB229 | 9 | ESC+D209 |
| SB230 | 10 | ESC+D210 |
| SB231 | 11 | ESC+D211 |
| SB232 | 12 | ESC+D212 |

JAN/EAN13

| | | |
|-------|----|----------|
| SB241 | 1 | ESC+D301 |
| SB242 | 2 | ESC+D302 |
| SB243 | 3 | ESC+D303 |
| SB244 | 4 | ESC+D304 |
| SB245 | 5 | ESC+D305 |
| SB246 | 6 | ESC+D306 |
| SB247 | 7 | ESC+D307 |
| SB248 | 8 | ESC+D308 |
| SB249 | 9 | ESC+D309 |
| SB250 | 10 | ESC+D310 |
| SB251 | 11 | ESC+D311 |
| SB252 | 12 | ESC+D312 |

JAN/EAN8

| | | |
|-------|----|----------|
| SB261 | 1 | ESC+D401 |
| SB262 | 2 | ESC+D402 |
| SB263 | 3 | ESC+D403 |
| SB264 | 4 | ESC+D404 |
| SB265 | 5 | ESC+D405 |
| SB266 | 6 | ESC+D406 |
| SB267 | 7 | ESC+D407 |
| SB268 | 8 | ESC+D408 |
| SB269 | 9 | ESC+D409 |
| SB270 | 10 | ESC+D410 |
| SB271 | 11 | ESC+D411 |
| SB272 | 12 | ESC+D412 |

UPC-A

| | | |
|-------|----|----------|
| SB281 | 1 | ESC+DH01 |
| SB282 | 2 | ESC+DH02 |
| SB283 | 3 | ESC+DH03 |
| SB284 | 4 | ESC+DH04 |
| SB285 | 5 | ESC+DH05 |
| SB286 | 6 | ESC+DH06 |
| SB287 | 7 | ESC+DH07 |
| SB288 | 8 | ESC+DH08 |
| SB289 | 9 | ESC+DH09 |
| SB290 | 10 | ESC+DH10 |
| SB291 | 11 | ESC+DH11 |
| SB292 | 12 | ESC+DH12 |

Barcode (Ratio 2:5)

NW-7 (CODABAR)

| SAP Print Control | Narrow Bar Width | Mapped to SBPL Command |
|------------------------------|-----------------------------|---------------------------------------|
| SB301 | 1 | ESC+BD001 |
| SB302 | 2 | ESC+BD002 |
| SB303 | 3 | ESC+BD003 |
| SB304 | 4 | ESC+BD004 |
| SB305 | 5 | ESC+BD005 |
| SB306 | 6 | ESC+BD006 |
| SB307 | 7 | ESC+BD007 |
| SB308 | 8 | ESC+BD008 |
| SB309 | 9 | ESC+BD009 |
| SB310 | 10 | ESC+BD010 |
| SB311 | 11 | ESC+BD011 |
| SB312 | 12 | ESC+BD012 |

Interleaved 2 of 5

| | | |
|-------|----|-----------|
| SB321 | 1 | ESC+BD201 |
| SB322 | 2 | ESC+BD202 |
| SB323 | 3 | ESC+BD203 |
| SB324 | 4 | ESC+BD204 |
| SB325 | 5 | ESC+BD205 |
| SB326 | 6 | ESC+BD206 |
| SB327 | 7 | ESC+BD207 |
| SB328 | 8 | ESC+BD208 |
| SB329 | 9 | ESC+BD209 |
| SB330 | 10 | ESC+BD210 |
| SB331 | 11 | ESC+BD211 |
| SB332 | 12 | ESC+BD212 |

JAN/EAN13

| | | |
|-------|----|-----------|
| SB341 | 1 | ESC+BD301 |
| SB342 | 2 | ESC+BD302 |
| SB343 | 3 | ESC+BD303 |
| SB344 | 4 | ESC+BD304 |
| SB345 | 5 | ESC+BD305 |
| SB346 | 6 | ESC+BD306 |
| SB347 | 7 | ESC+BD307 |
| SB348 | 8 | ESC+BD308 |
| SB349 | 9 | ESC+BD309 |
| SB350 | 10 | ESC+BD310 |
| SB351 | 11 | ESC+BD311 |
| SB352 | 12 | ESC+BD312 |

JAN/EAN8

| | | |
|-------|---|-----------|
| SB361 | 1 | ESC+BD401 |
| SB362 | 2 | ESC+BD402 |
| SB363 | 3 | ESC+BD403 |
| SB364 | 4 | ESC+BD404 |
| SB365 | 5 | ESC+BD405 |
| SB366 | 6 | ESC+BD406 |
| SB367 | 7 | ESC+BD407 |
| SB368 | 8 | ESC+BD408 |
| SB369 | 9 | ESC+BD409 |

| | | |
|-------|----|-----------|
| SB370 | 10 | ESC+BD410 |
| SB371 | 11 | ESC+BD411 |
| SB372 | 12 | ESC+BD412 |

UPC-A

| | | |
|-------|----|-----------|
| SB381 | 1 | ESC+BDH01 |
| SB382 | 2 | ESC+BDH02 |
| SB383 | 3 | ESC+BDH03 |
| SB384 | 4 | ESC+BDH04 |
| SB385 | 5 | ESC+BDH05 |
| SB386 | 6 | ESC+BDH06 |
| SB387 | 7 | ESC+BDH07 |
| SB388 | 8 | ESC+BDH08 |
| SB389 | 9 | ESC+BDH09 |
| SB390 | 10 | ESC+BDH10 |
| SB391 | 11 | ESC+DBH11 |
| SB392 | 12 | ESC+BDH12 |

Code 39 (Ratio 1:3)

| | | |
|-------|----|----------|
| SB501 | 1 | ESC+B101 |
| SB502 | 2 | ESC+B102 |
| SB503 | 3 | ESC+B103 |
| SB504 | 4 | ESC+B104 |
| SB505 | 5 | ESC+B105 |
| SB506 | 6 | ESC+B106 |
| SB507 | 7 | ESC+B107 |
| SB508 | 8 | ESC+B108 |
| SB509 | 9 | ESC+B109 |
| SB510 | 10 | ESC+B110 |
| SB511 | 11 | ESC+B111 |
| SB512 | 12 | ESC+B112 |

Code 39 (Ratio 1:2)

| | | |
|-------|----|----------|
| SB521 | 1 | ESC+D101 |
| SB522 | 2 | ESC+D102 |
| SB523 | 3 | ESC+D103 |
| SB524 | 4 | ESC+D104 |
| SB525 | 5 | ESC+D105 |
| SB526 | 6 | ESC+D106 |
| SB527 | 7 | ESC+D107 |
| SB528 | 8 | ESC+D108 |
| SB529 | 9 | ESC+D109 |
| SB530 | 10 | ESC+D110 |
| SB531 | 11 | ESC+D111 |
| SB532 | 12 | ESC+D112 |

Code 39 (Ratio 2:5)

| | | |
|-------|---|-----------|
| SB541 | 1 | ESC+BD101 |
| SB542 | 2 | ESC+BD102 |
| SB543 | 3 | ESC+BD103 |
| SB544 | 4 | ESC+BD104 |
| SB545 | 5 | ESC+BD105 |
| SB546 | 6 | ESC+BD106 |
| SB547 | 7 | ESC+BD107 |
| SB548 | 8 | ESC+BD108 |
| SB549 | 9 | ESC+BD109 |

| | | |
|-------|----|-----------|
| SB550 | 10 | ESC+BD110 |
| SB551 | 11 | ESC+BD111 |
| SB552 | 12 | ESC+BD112 |

Code 93

| | | |
|-------|----|----------|
| SB561 | 1 | ESC+BC01 |
| SB562 | 2 | ESC+BC02 |
| SB563 | 3 | ESC+BC03 |
| SB564 | 4 | ESC+BC04 |
| SB565 | 5 | ESC+BC05 |
| SB566 | 6 | ESC+BC06 |
| SB567 | 7 | ESC+BC07 |
| SB568 | 8 | ESC+BC08 |
| SB569 | 9 | ESC+BC09 |
| SB570 | 10 | ESC+BC10 |
| SB571 | 11 | ESC+BC11 |
| SB572 | 12 | ESC+BC12 |

8.2 Font Print Controls

| | | 203dpi | 305dpi | 609dpi | Print Control |
|---|-------|--------|--------|--------|---------------|
| ESC+M | ESC+L | Point | | | |
| (13x20) (Courcyr) | 1 | 7 | 5 | 2 | SF301 |
| | 2 | 14 | 9 | 5 | SF302 |
| | 3 | 21 | 14 | 7 | SF303 |
| | 4 | 28 | 19 | 10 | SF304 |
| | 5 | 36 | 24 | 12 | SF305 |
| | 6 | 43 | 28 | 14 | SF306 |
| | 7 | 50 | 33 | 17 | SF307 |
| | 8 | 57 | 38 | 19 | SF308 |
| | 9 | 64 | 43 | 21 | SF309 |
| | 10 | 71 | 47 | 24 | SF310 |
| | 11 | 78 | 52 | 26 | SF311 |
| | 12 | 85 | 57 | 28 | SF312 |
| | | | | | |
| ESC+S (8x15) (Lnprint) | 1 | 5 | 4 | 2 | SF201 |
| | 2 | 11 | 7 | 4 | SF202 |
| | 3 | 16 | 11 | 5 | SF203 |
| | 4 | 21 | 14 | 7 | SF204 |
| | 5 | 27 | 18 | 9 | SF205 |
| | 6 | 32 | 21 | 11 | SF206 |
| | 7 | 37 | 25 | 12 | SF207 |
| | 8 | 43 | 28 | 14 | SF208 |
| | 9 | 48 | 32 | 16 | SF209 |
| | 10 | 53 | 35 | 18 | SF210 |
| | 11 | 59 | 39 | 20 | SF211 |
| | 12 | 64 | 43 | 21 | SF212 |
| | | | | | |
| ESC+XM (24x24) (Letgoth) LM4 Device Type | 1 | 8.5 | 5.5 | | SF301 |
| | 2 | 17.0 | 11.5 | | SF302 |
| | 3 | 25.5 | 17.5 | | SF303 |
| | 4 | 34.0 | 22.5 | | SF304 |
| | 5 | 42.5 | 28.5 | | SF305 |
| | 6 | 51.0 | 34.0 | | SF306 |
| | 7 | 59.5 | 39.5 | | SF307 |
| | 8 | 68.0 | 45.5 | | SF308 |
| | 9 | 76.5 | 51.0 | | SF309 |
| | 10 | 85.0 | 56.5 | | SF310 |
| | 11 | 93.5 | 62.5 | | SF311 |
| | 12 | | 68 | | SF312 |
| | | | | | |
| ESC+XS (17x17) (Lnprint) LM4 Device Type | 1 | 6.0 | 4.0 | | SF201 |
| | 2 | 12.0 | 8.0 | | SF202 |
| | 3 | 18.0 | 12.0 | | SF203 |
| | 4 | 24.0 | 16.0 | | SF204 |
| | 5 | 30.0 | 20.0 | | SF205 |
| | 6 | 36.0 | 24.0 | | SF206 |
| | 7 | 42.0 | 28.0 | | SF207 |
| | 8 | 48.0 | 32.0 | | SF208 |
| | 9 | 54.5 | 36.0 | | SF209 |
| | 10 | 60.5 | 40.0 | | SF210 |
| | 11 | 66.5 | 44.0 | | SF211 |

| | | | | | |
|--|----|------|------|--|-------|
| | 12 | 72.5 | 48.0 | | SF212 |
| | | | | | |
| ESC+XU (5x9) (Cour_i7) LM4 Device Type | 1 | 3.0 | 2.0 | | SF101 |
| | 2 | 6.5 | 4.0 | | SF102 |
| | 3 | 9.5 | 6.5 | | SF103 |
| | 4 | 13.0 | 8.5 | | SF104 |
| | 5 | 16.0 | 10.5 | | SF105 |
| | 6 | 19.0 | 12.5 | | SF106 |
| | 7 | 22.5 | 15.0 | | SF107 |
| | 8 | 25.5 | 17.0 | | SF108 |
| | 9 | 28.5 | 19.0 | | SF109 |
| | 10 | 32.0 | 21.0 | | SF110 |
| | 11 | 35.0 | 23.5 | | SF111 |
| | 12 | 38.5 | 25.5 | | SF112 |

Note: The fixed size resident fonts are only supported in English-only and LM4 Device Types.

Other font information can be found at [6.2 Fonts](#).

SATO