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# TBarCode/SAPwin

Barcode DLL for SAPIpd, SAPsprint and  
SAPWIN

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Version 9.0

## User Documentation

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## 1 Content

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<b>1</b>	<b>Content</b>	<b>2</b>
<b>2</b>	<b>Disclaimer</b>	<b>5</b>
<b>3</b>	<b>About TBarCode/SAPwin</b>	<b>6</b>
3.1	Introduction	6
3.2	Linear and 2D Symbologies	6
3.3	Crystal-Clear Barcode Quality	6
<b>4</b>	<b>Installation</b>	<b>8</b>
4.1	Installation Steps	8
4.2	System Requirements	8
<b>5</b>	<b>Install TBarCode/SAPwin</b>	<b>9</b>
5.1	SAPlpd, SAPsprint oder SAPWIN	9
5.1.1	SAPlpd	9
5.1.2	SAPsprint	9
5.1.3	SAPWIN DLL	9
5.2	TBarCode/SAPwin Setup	9
5.3	Next step	10
<b>6</b>	<b>Create a Device Type Copy</b>	<b>11</b>
6.1	Copy a device type	11
6.2	Next step	12
<b>7</b>	<b>Assign the Device Type to a Printer</b>	<b>13</b>
7.1	Output Device Settings	13
7.1.1	Device Attributes	14
7.1.2	Hostspool Access method	14
7.2	Next step	15
<b>8</b>	<b>Define Printer Barcodes</b>	<b>16</b>
8.1	Adding new Printer Barcodes	16
8.1.1	Adding a new Printer-Barcode	18
8.2	Modifying Print-Controls	18
<b>9</b>	<b>Test Barcode Printing</b>	<b>20</b>
<b>10</b>	<b>Obtain a License</b>	<b>21</b>
10.1	Product Variants	21
10.2	License Key and License Types	21
10.3	License File Barcode.ini	22
<b>11</b>	<b>Using Barcodes in SAP</b>	<b>23</b>
11.1	SAPscript	23
11.1.1	Using Character Formats for Bar-coding (recommended method)	23
11.1.2	Direct use of Barcode-Print-Controls in SAPscript	24
11.2	SmartForms	25
11.2.1	Using Styles for Bar-coding	25
11.2.2	Style definition	26
11.3	ABAP	28
11.3.1	Sample ABAP Program	28
<b>12</b>	<b>Introduction to Print-Controls</b>	<b>29</b>
12.1	Usage	29
12.1.1	System-Barcodes	29
12.1.2	Printer-Barcodes	29
12.1.3	Print-Controls	29
12.2	Add new Print-Controls	29
12.2.1	New System Barcode	30
12.2.2	New Printer Barcode	31
12.3	Modify existing Print-Controls	31
12.4	Print-Controls with <i>Barcode Studio V6</i>	31
<b>13</b>	<b>Barcode Print-Control Reference</b>	<b>32</b>
13.1	Syntax and Structure of Print-Controls	32
13.1.1	Naming convention	32
13.1.2	Print-Control Prefix	32
13.1.3	Print-Control-Suffix	33
13.2	Print Control Parameters	33
13.2.1	General Parameters	33
13.2.2	Parameters specific for Aztec Code	38
13.2.3	Parameters specific for Data Matrix	39

13.2.4	Parameters specific for MaxiCode	40
13.2.5	Parameters specific for PDF417	41
13.2.6	Parameters specific for MicroPDF417	41
13.2.7	Parameters specific for QR-Code	42
13.2.8	Parameters specific for Micro QR-Code	43
13.2.9	Parameters for Codablock F	43
13.2.10	RSS Expanded Stacked specific Parameter	44
13.2.11	EAN.UCC Composite Symbology Parameter	44
<b>14</b>	<b>Encoding Special Characters</b>	<b>45</b>
14.1.1	Implemented Escape Sequences	45
14.1.2	Symbology dependent control characters	45
<b>15</b>	<b>BarCode.ini Configuration File</b>	<b>47</b>
15.1	Section [LICENSE_DATA]	47
15.2	Section [DEBUG]	47
15.3	Section [SETTINGS]	47
15.3.1	Default Font	49
15.3.2	Character Encoding / Code Pages	50
15.4	Section [EAN_UPC]	51
<b>16</b>	<b>Hex – ASCII Conversion Table</b>	<b>52</b>
<b>17</b>	<b>Predefined System-Barcodes</b>	<b>53</b>
<b>18</b>	<b>Printer Barcodes</b>	<b>54</b>
<b>19</b>	<b>Data Flow when using SWIN Device Type</b>	<b>55</b>
<b>20</b>	<b>DefaultSet Values</b>	<b>56</b>
<b>21</b>	<b>2D Symbol Sizes</b>	<b>58</b>
21.1	Aztec Code Symbol Sizes	58
21.2	Data Matrix Symbol Sizes	58
21.3	QR-Code Symbol Sizes (Versions)	59
21.4	Micro QR-Code Symbol Sizes (Versions)	59
21.5	MicroPDF Symbol Sizes (Versions)	60
<b>22</b>	<b>Troubleshooting / FAQ</b>	<b>61</b>
22.1	TEC-IT.COM FAQ Area	61
22.2	Was TBarCode/SAPwin installed correctly?	61
22.2.1	SAPsprint, SAPgui	61
22.2.2	SAPlpd	61
22.2.3	Check list	62
22.2.3.1	SAPlpd User	62
22.2.3.2	SAPsprint, SAPgui and SAPlpd User	62
22.3	How can I create a silent setup for deployment in my company?	62
22.4	How can I turn on Logging for Trouble-Shooting?	63
22.4.1	TBarCode/SAPwin Log File "barcode.log"	63
22.4.2	SAPlpd Log File	64
22.4.3	SAPsprint Log Files	64
22.5	No barcodes are printed	64
22.5.1	Wrong Host Spool Access Method	64
22.5.2	Incompatible Printer Driver	65
22.5.3	Wrong device type (not based on SWIN)	65
22.5.4	Wrong Variant of Print-Control Prefix	65
22.5.5	Missing CRT8 Runtime DLLs on the target system	65
22.6	Always the same barcodes (e.g. 2 of 5 interleaved) are printed	66
22.6.1	Wrong base device type	66
22.6.2	LOCL-Printer	66
22.7	Wrong barcode data / wrong output	66
22.8	Barcode error-messages while printing	66
22.9	Unwanted characters are printed after or beside the barcode	66
22.10	I am using WAS and try to print "SAPSCRIPT-BARCODETEST", but some barcodes are missing	67
22.11	SAPlpd on Windows Terminal Server uses always the same printer	68
22.12	Why is a horizontal bar drawn across the barcodes?	68
22.13	Testing Tray Selection and Print Mode Selection	68
22.14	No Frontend Printing possible with SAPsprint	68
22.15	The wrong paper tray is used	69
22.15.1	Problem	69
22.15.2	Solutions	69
22.16	How to enable Hebrew Double-Byte character set?	69
22.17	How to encode more than 70 characters in a 2D bar code?	69
22.18	How can I encode "Flattermarken" alias "OMR"?	70
22.19	How to change the vertical alignment of the bar codes?	70
22.19.1	Solution	70
22.20	The Font "Courier" isn't printing correctly with SAPlpd	71

22.21	How can I use Application Identifiers (FNC1)?	71
22.21.1	Sample GS1/EAN-128 prefix	71
22.21.2	Encoding Examples	71
22.22	I get the error message „NilBind: service 515 in use“	72
22.22.1	Symptom	72
22.22.2	Possible Causes	72
22.23	SAPlpd.log shows: “Unknown ESCAPE-Code: 0x1B 0x36”	73
22.24	I added a new Print-Control, but SAP could not find it	73
22.25	I can't define a Print-Control with variant 5 - SAP opens the window with value 1	73
22.26	Is it possible to use the same output device in SAP for all users?	73
22.26.1	Local and central printing	73
22.26.1.1	Local printing	73
22.26.1.2	Central printing	74
22.26.2	List printing	74
22.27	How to retrieve the System-ID?	74
22.28	How to license the product in “barcode.ini”?	75
<b>23</b>	<b>Supported Barcodes</b>	<b>76</b>
23.1	Linear Bar Codes (1D)	76
23.2	Postal Codes	81
23.3	Two Dimensional Bar Codes (2D)	84
23.4	GS1 DataBar / RSS Reduced Space Symbology	85
23.5	GS1 / EAN.UCC Composite Symbology	87
23.6	HIBC Codes	90
<b>24</b>	<b>Version Information</b>	<b>93</b>
<b>25</b>	<b>Appendix</b>	<b>95</b>
25.1	Index of Figures	95
25.2	Index of Tables	95
<b>26</b>	<b>Contact and Support Information</b>	<b>98</b>



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## 3 About TBarCode/SAPwin

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### 3.1 Introduction

*TBarCode/SAPwin* is a generic, printer-independent extension for SAP®-systems for bar code printing. It upgrades virtually all printers available on the market with barcode printing functionality.

*TBarCode/SAPwin* can be used as „Barcode-DLL“ for SAPIpd, SAPsprint und SAP Clients (with SAPWIN.dll).

*TBarCode/SAPwin*

- prints barcodes on any printer supported by Microsoft® Windows®
- unifies bar-coding, barcodes are generated in a complete device independent way
- barcode fonts are not required
- reduces barcode printing costs - no special barcode printers are required
- generates more than 50 barcode symbologies (linear as well as 2D codes)
- is a cost-effective solution. The licensing scheme does not depend on the number of printers or users
- runs as plug-in for SAPIpd, SAPsprint and SAPwin.dll (Windows SAPGUI)

### 3.2 Linear and 2D Symbologies

Beside linear barcodes (e. g. 2 of 5, 2of5 interleaved, Code39, Code128, EAN128, EAN, UPC, RSS-14, etc.) *TBarCode/SAPwin* supports also 2D and Multi-Row symbologies like:

- Aztec Code
- Codablock F (stacked Code128)
- Data Matrix
- EAN.UCC Composite Symbology
- GS1 DataBar (= RSS) Stacked Variants
- MaxiCode
- MicroPDF417
- Micro QR-Code
- PDF417 + PDF417 Truncated
- QR-Code

These 2D-symbologies features very high data capacity with enhanced data security and are required by several enterprises for their documents (and labels) – a selection:

- MaxiCode by UPS®
- PDF417 by General Motors®
- PDF417 and MaxiCode by the AIGA (B-10, Automotive Industry Action Group).
- Data Matrix by SPEC2000 (Aviation)
- PDF417 by BMW (VDA BeloM)

### 3.3 Crystal-Clear Barcode Quality

*TBarCode/SAPwin* offers the possibility to specify all barcode related parameters. This enables the user to produce barcodes meeting all requirements:

- Device independent specification of the module width in absolute units

- Selection of the subsets of Code128 (subsets A, B and C – and automatic compression mode)
- Bar width reduction (Pixel Shaving) for enlarging printing techniques (inkjet)
- Optimize bar width for actual printing resolution (OptResolution)
- Structured Append for 2D codes
- And many other parameters (see chapter 13 - Barcode Print-Control Reference)



## 4 Installation

### 4.1 Installation Steps

The first part of this document (chapter 5 to 10) covers the installation of *TBarCode/SAPwin*. The second part concentrates on bar-coding within SAP® R/3®, SAPscript®, SmartForms® and ABAP® in general.

In order to enhance SAP® with complete bar-coding features the following installation steps are required. Please follow these steps in the order specified.

Step	Operation	Chapter	Required	SAP Transaction
1	Install TBarCode/SAPwin	5	Yes	-
2	Create a Device Type Copy	6	Yes	SPAD
3	Assign the Device Type to a Printer	7	Yes	SPAD
4	Define Printer Barcodes	8	No	SE73
5	Test Barcode Printing	9	Recommended	SO10
6	Obtain a License	10	Yes	-

Table 1: Basic Workflow for Printing Barcodes

These steps are described in detail in the following sections.

- TEC-IT's support is available for questions at any time. Please send an email to [sap@tec-it.com](mailto:sap@tec-it.com).

### 4.2 System Requirements

*TBarCode/SAPwin* is a tool for generating barcodes in SAP® R/3®.

*TBarCode/SAPwin* is available as Barcode-DLL (32-Bit Windows DLL) and can be used with SAPlpd.exe, SAPsprint.exe or SAPWIN.dll (Windows SAPGUI).

Supported Platforms (only SAP-client or print-server platforms are relevant)	Microsoft® Windows® 95, Windows 98, Windows ME, Windows NT, Windows 2000, Windows XP, Windows 2003, Windows Vista, Windows Server 2008. Client as well as server-operating systems are supported
SAP	SAPlpd V2.10 (SAP® R/3® Release 2.2) or higher. SAPsprint V1.0.0.1 / SAPwin.dll V 1.0.0.6 or higher
Host Spool Access Method	F, S or G

Table 2: System Requirements

## 5 Install TBarCode/SAPwin

### 5.1 SAPIpd, SAPsprint oder SAPWIN

TBarCode/SAPwin can be used with the listed SAP programs (or program parts).

#### 5.1.1 SAPIpd

*SAPIpd.exe* is part of the Windows based SAPGUI and assumes the preparation of the SAPWIN data stream for Windows printer drivers. SAPIpd is addressed with host spool access method „F“ (Frontend Printing) or „S“ (SAPWIN). The SAPwin data stream is converted to the target printer language by using the installed Windows printer driver(s).

SAPIpd can be operated also with access method „U“ to work as spool server (Print data forwarding). In this case the print job is routed to the target printer without modification.

If needed, SAPIpd can be run stand-alone (without SAPGUI) on dedicated print servers (under Microsoft® Windows®).

#### 5.1.2 SAPsprint

*SAPsprint.exe* is a tool for server based printing under Windows (access method „S“ and „U“). It acts like SAPIpd, but can be installed as Service. Thus it offers more stability by automatic restart on errors.

➤ For details see SAP Note 894444.

#### 5.1.3 SAPWIN DLL

*SAPWIN.DLL* assumes the preparation of the SAPWIN print data stream in newer SAP client versions. The SAPWIN DLL is used also with front end printing through host spool access method „G“ („Control Technology“).

➤ For details see SAP Note 821519.

### 5.2 TBarCode/SAPwin Setup

This installation manual assumes that SAPIpd, SAPsprint or the SAPGUI (with SAPWIN.dll) is already installed on the client or print-server.

➤ Since TBarCode/SAPwin acts like a „Plug-In“ for the above listed programs, it has to be installed into the same program path as the particular programs. This assures that the „Barcode.dll“ can be loaded automatically.

Perform the following steps to install *TBarCode/SAPwin*:

1. Download the latest version of *TBarCode/SAPwin* from <http://www.tec-it.com>
2. Start the setup program
3. Confirm all dialog boxes with **Next** and read (and accept) the license agreement.
4. Go ahead until you are asked for the installation path.
  - If you want to use TBarCode/SAPwin with SAPIpd (client or server), enter the path to SAPIpd.exe
  - If you want to use the product with SAPsprint, enter the path to SAPsprint.exe

- If you want to use the product on a SAP client with SAPWIN.dll (e.g. for front-end printing with access method G) enter the path to SAPWIN.dll.
  - Alternatively the product can be installed into the Windows directory but we recommend using the path of the particular programs.
5. The MSI setup contains two separate Barcode DLLs – one version for SAPlpd.exe and one version for SAPsprint (or SAPwin.dll). The setup tries to select the appropriate version automatically for you. If your installation path does not contain any SAP printing component, you have to select the correct Barcode DLL version manually.
  6. Relevant for SAPlpd: After completing the setup routine, restart SAPlpd to make sure that the Barcode.dll and the Barcode.ini will be loaded.
  7. The setup of *TBarCode/SAPwin* is completed.

- If you don't install the Barcode DLL using the provided setup, please examine section 22.5.5.
- In order to gain more information about installing SAPlpd or SAPsprint please refer to the appropriate SAP®-documentation.

### 5.3 Next step

Create a copy of a suitable device type (usually SWIN). Please refer to the next chapter.



## 6 Create a Device Type Copy

SAP systems are shipped with predefined device types for generating the SAPWIN data stream (for printing through Windows Printer Drivers).

The name of the most important standard device type is `SWIN`. In order to change device-type specific parameters (e.g. adding or modifying barcode related Print-Controls) it is good practice to create a copy of this standard-device type and work with the copy.

- Predefined SAP device type definitions are set to standard values and should not be changed. For that reason creating a copy of a standard-device type is strongly recommended.

### 6.1 Copy a device type

Perform the following steps to create a copy of a device type

1. Start the spool administration (transaction `SPAD`) by choosing SAP Menu ► Tools ► CCMS ► Spool ► Spool Administration.
2. Choose Utilities ► For device type ► Copy device type to copy the definition of an output device.

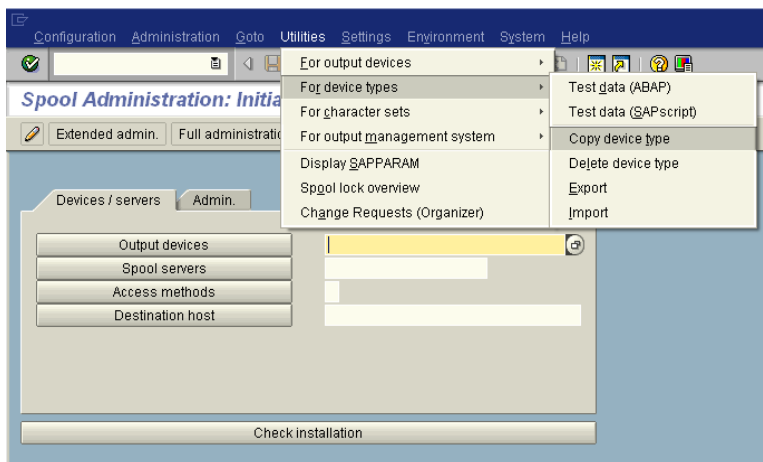


Figure 1: Invoke „Copy Device Type“

3. The dialog Copy device type appears. Enter (or select) the device type "`SWIN*` (Rel. 4.x/SAP1pd 4.09+ ONLY!)". This enables you to use all printers installed within the windows printer manager.

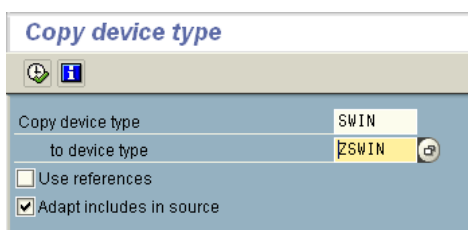


Figure 2: Copy Device Type

Parameter	Description
Copy device type	For Windows environments you choose SWIN* (Rel. 4x/SAP1pd 4.09+ ONLY). With this selection you can use all printers, which have an appropriate Windows printer driver installed. We recommend the device type SWIN because it contains all SAP standard bar code definitions. (The device type SAPWIN contains only the barcode type 2of5 IL per se). If you choose SAPWIN, the missing bar code Print controls must be added in an extra step.
To device type	The name of the copied device type. In SAP the custom namespace start with Y or Z - so choose ZSWIN as for the name of the new, customized device type. No special characters or spaces!
Use references	Do not select this option! Trouble shooting will be hard if you select it.
Adapt includes in source	Keep this option selected

Table 3: Copy Device Type

4. Confirm your input with **Execute (F8)** and the following dialog („Generate device type“) with **Yes**
5. SAP R/3 opens the object directory in the create mode

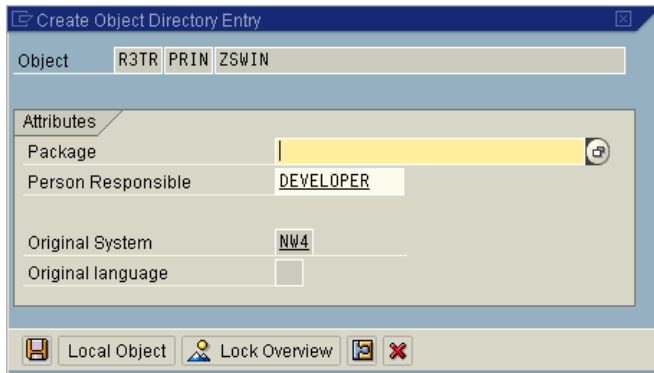



Figure 3: Create Object Directory Entry

6. In order to create a local object select **Local Object**, otherwise you need to specify a package. Please consider that local objects will not be transported.
7. SAP lists the copied items
8. Hit the back button  until you are in the main menu.

## 6.2 Next step

Assign the newly copied device type to output devices – please refer to the next chapter.

## 7 Assign the Device Type to a Printer

To use *TBarCode/SAPwin* it is required to assign the device type copy created in chapter 6 (Create a Device Type Copy) to an output device.

- Assigning the correct device type to the printer is a must. Without correct device type settings barcode printing will not work.

### 7.1 Output Device Settings

The dialog window to assign the new device type to a printer is accessible via transaction *SPAD* or is invoked by

SAP Menu ► Tools ► CCMS ► Spool ► Spool Administration.

The dialog *Spool Administration: Initial Screen* is opened. Choose the tab *Devices / servers* and click *Output devices*.

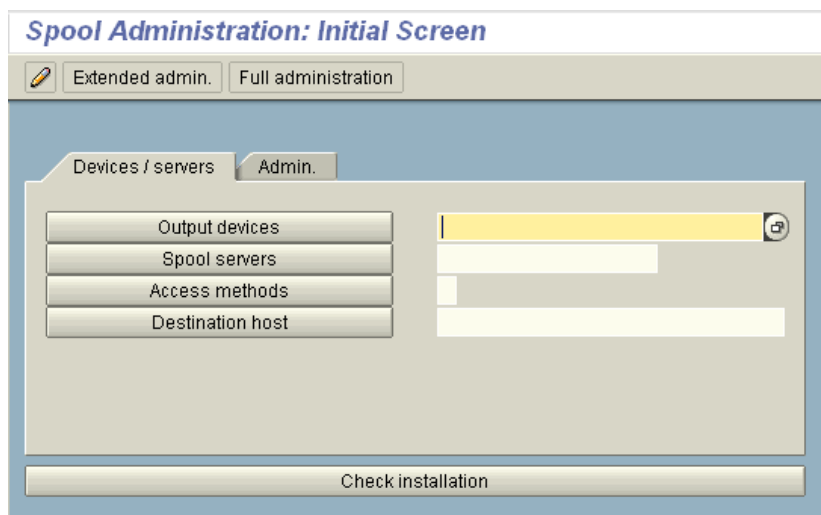



Figure 4: *Spool Administration: Initial Screen*

Afterwards, a list of all available output devices is displayed. Information about device, device type and server is available. Double-Click the printer you want to use for bar-coding.

In the upcoming dialog *Spooler Admin: Output Device* shown below you can change into edit-mode by clicking . Use the tab *DeviceAttributes* to change the device type and adjust the following values:

## 7.1.1 Device Attributes

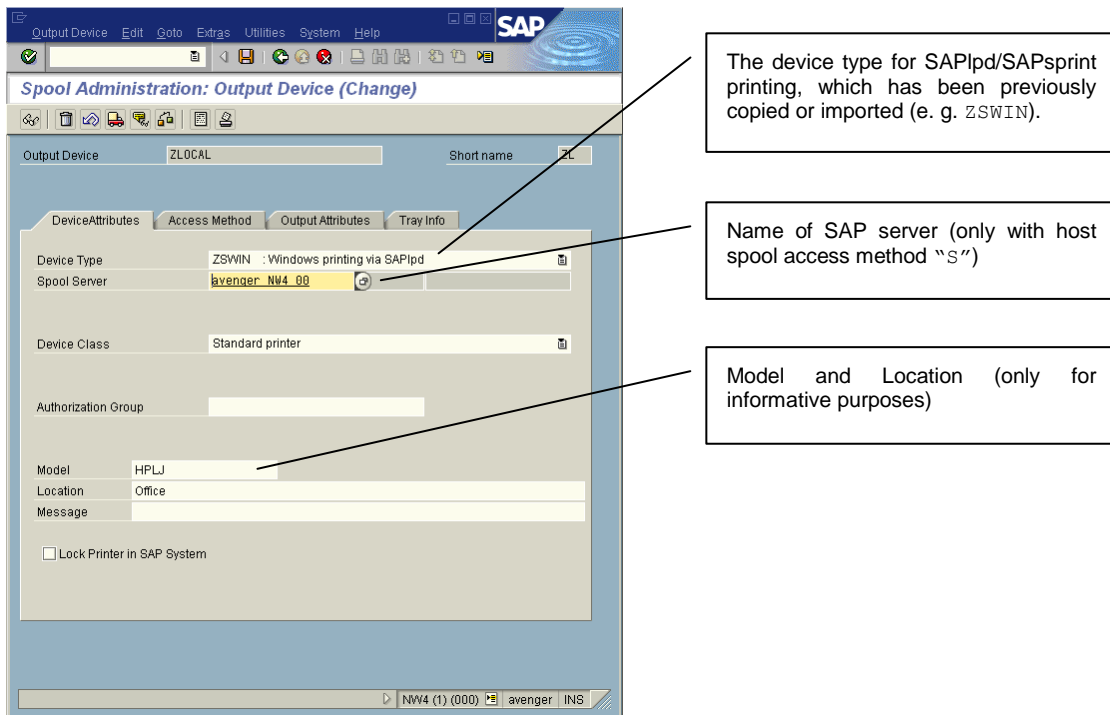


Figure 5: Spool Administration: Change Output Device

Parameter	Description
Device Type	For the Device Type enter/select the name of the copied device type E.g. ZSWIN, refer to chapter 6 (Create a Device Type ).
Spool server	Name of SAP Spool-Server. This field is only available when using hostspool access method "S".
Device Class	Do not change the standard settings.
Authorization Group	Not relevant for bar-coding
Model Location Message	Not relevant for bar-coding

Table 4: Output Device Field Values

## 7.1.2 Hostspool Access method

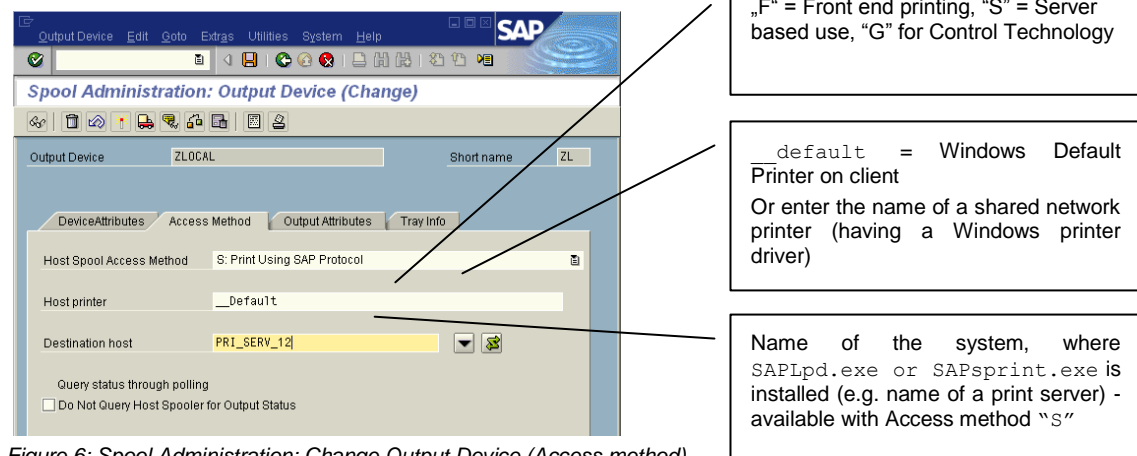




Figure 6: Spool Administration: Change Output Device (Access method)

In the tab `HostSpoolAccMethod` adjust the following values:

Parameter	Description
Host spool access method	<p>For the Access method enter <code>S</code>, <code>F</code>, or <code>G</code></p> <ul style="list-style-type: none"> <li>▪ Use access method <code>S</code> if you set up a print-server with <code>SAPLpd</code> or <code>SAPsprint</code></li> <li>▪ Use access method <code>F</code> if you plan to install TBarCode/SAPwin on each client</li> <li>▪ Use access method <code>G</code> if you want to use the new Control Technology for front end printing (install TBarCode/SAPwin into the <code>SAPWIN.dll</code> directory).</li> </ul>
Host printer	<ul style="list-style-type: none"> <li>▪ Enter <code>__DEFAULT</code> if you want to use the Windows Default Printer on the SAP client.</li> <li>▪ Or enter the name of a shared network printer (having a Windows printer driver)</li> </ul>
Destination Host	<p>Is required for Access Method <code>"S"</code></p> <p>Name of the system (e.g. Print server or Spool server), where <code>SAPsprint.exe</code> or <code>SAPLpd.exe</code> is running (e.g. name of a print server).</p> <p>With F1 you can list examples of possible entries.</p>

Table 5: Output Device Host Spool Access Method

Save all your settings with . Go back to the main menu using .

## 7.2 Next step

After you have saved the settings get back to the main menu and adjust the required printer barcodes. Please refer to the next chapter.

## 8 Define Printer Barcodes

Printer bar codes are defined within SAP® R/3® to make a connection between Print-Controls (they are device type dependent) and the system-barcodes (device type independent).

The next chapters are using the device type copy ZSWIN (refer to chapter 6 - Create a Device Type Copy) to demonstrate printer-barcode maintenance.

### 8.1 Adding new Printer Barcodes

Invoke transaction SE73 or choose

SAP Menu ► Tools ► SAPscript ► Administration ► Font

to open the dialog SAPscript Font Maintenance: Initial Screen

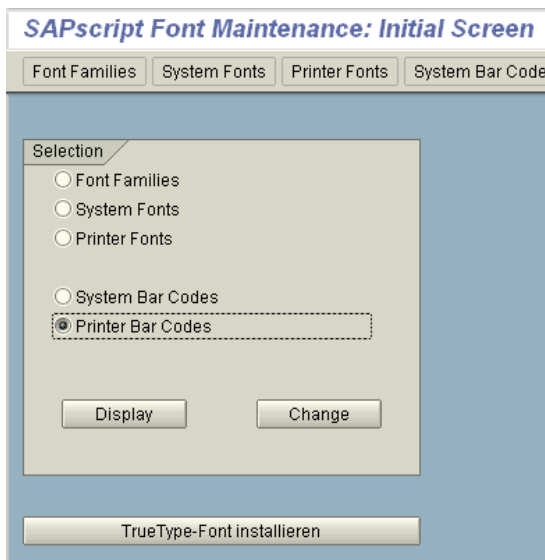



Figure 7: SAPscript Font Maintenance: Initial Screen

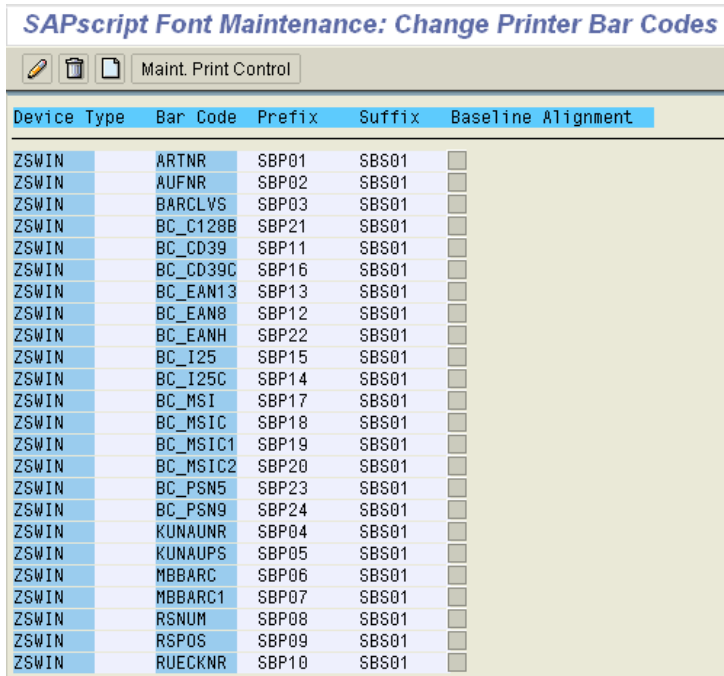
Select the option Printer Barcodes and click Change.



Figure 8: SAPscript Font Maintenance: Device Types


Choose your device type created in chapter 6 (Create a Device Type Copy). Double click it or press .

A list of printer-barcodes available for the device type is displayed.



Device Type	Bar Code	Prefix	Suffix	Baseline Alignment
ZSWIN	ARTNR	SBP01	SBS01	<input type="checkbox"/>
ZSWIN	AUFNR	SBP02	SBS01	<input type="checkbox"/>
ZSWIN	BARCLVS	SBP03	SBS01	<input type="checkbox"/>
ZSWIN	BC_C128B	SBP21	SBS01	<input type="checkbox"/>
ZSWIN	BC_CD39	SBP11	SBS01	<input type="checkbox"/>
ZSWIN	BC_CD39C	SBP16	SBS01	<input type="checkbox"/>
ZSWIN	BC_EAN13	SBP13	SBS01	<input type="checkbox"/>
ZSWIN	BC_EAN8	SBP12	SBS01	<input type="checkbox"/>
ZSWIN	BC_EANH	SBP22	SBS01	<input type="checkbox"/>
ZSWIN	BC_I25	SBP15	SBS01	<input type="checkbox"/>
ZSWIN	BC_I25C	SBP14	SBS01	<input type="checkbox"/>
ZSWIN	BC_MSI	SBP17	SBS01	<input type="checkbox"/>
ZSWIN	BC_MSIC	SBP18	SBS01	<input type="checkbox"/>
ZSWIN	BC_MSIC1	SBP19	SBS01	<input type="checkbox"/>
ZSWIN	BC_MSIC2	SBP20	SBS01	<input type="checkbox"/>
ZSWIN	BC_PSN5	SBP23	SBS01	<input type="checkbox"/>
ZSWIN	BC_PSN9	SBP24	SBS01	<input type="checkbox"/>
ZSWIN	KUNAUNR	SBP04	SBS01	<input type="checkbox"/>
ZSWIN	KUNAUPS	SBP05	SBS01	<input type="checkbox"/>
ZSWIN	MBBARC	SBP06	SBS01	<input type="checkbox"/>
ZSWIN	MBBARC1	SBP07	SBS01	<input type="checkbox"/>
ZSWIN	RSNUM	SBP08	SBS01	<input type="checkbox"/>
ZSWIN	RSPOS	SBP09	SBS01	<input type="checkbox"/>
ZSWIN	RUECKNR	SBP10	SBS01	<input type="checkbox"/>

Figure 9: SAPscript Font Maintenance: Change Printer Barcodes

Choose Create  (F5) to define a new printer barcode.

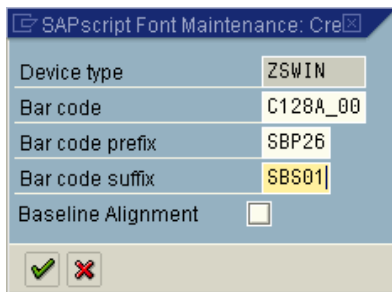


Figure 10: Assign Print-Control Prefix / Suffix

In this dialog you create a new printer-barcode. It contains a barcode-prefix and a barcode-suffix. If you decide to choose a predefined barcode Print-Control select the using the dropdown-menu.

Enter the following information:

Parameter	Description
Barcode	The name of the system barcode that you want to print. If the desired barcode is not listed here, you have to create a new system-barcode (see chapter 12.2.1 New System Barcode)
Barcode prefix	The name of the prefix Print-Control in the form SBP<nn>. <nn> is an ID number. You can select any identification number you want. The Print-Control name must be unique among the Print-Controls that have been defined for the device type. Example: SBP25
Barcode suffix	The name of the suffix Print-Control in the form SBS<nn>. <nn> is an ID number. You can select any identification number you want. The Print-Control name must be unique among the Print-Controls that have been defined for the device type.

	<p>Example: SBS25</p> <p>Usually only one suffix (named SBS01) is defined (for all prefixes in common). This is possible because the suffix does not depend on the barcode symbology and it is equal for all prefixes only.</p>
Baseline alignment	Not used by actual SAP Releases

Table 6: Printer-Barcodes Field Values

### 8.1.1 Adding a new Printer-Barcode

If prefix and suffix does not exist within SAP the system opens a confirmation dialog. Continue by pressing `Enter` to add the Print-Controls.

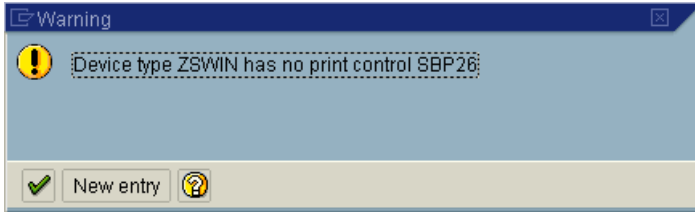



Figure 11: Adding a new Print-Control Prefix (SE73)

- If Print-Controls are added via the Font Maintenance SE73 the system always assigns them the standard-setting „Variant 1“ (Direct). But in order to use them for bar-coding purposes Variant 5 (extended) is required. **It is a must** to change Variant 1 into Variant 5 (extended). This can be done only within SPAD (refer to 22.5.4 - Wrong Variant of Print-Control).

After adding the prefix and the suffix modify them to meet your needs. Refer to chapter 8.2 (Modifying Print-Controls).

Confirm your settings with `OK` and save your settings. Use  to go back to the main menu.

- After you created a new entry for a Print-Control it may be necessary that you edit the Print-Control in order to save it in the device type. Sometime it will only be saved by SAP after it has been detected as “dirty” (means edited). E.g. enter a space and delete it.

## 8.2 Modifying Print-Controls

- For more detailed information regarding Print-Controls (parameters, syntax...) please refer to chapter 12 (Introduction to Print-Controls). In this chapter we show only how you can change them.

Invoke Transaction SE73 or use

SAP Menu ► Tools ► CCMS ► Print ► Font Maintenance  
to open SAPscript Font Maintenance: Initial Screen

In this dialog it is possible to adjust the Printer Barcodes for a specific device type.

**SAPscript Font Maintenance: Change Printer Bar Codes**

Maint. Print Control

Device Type	Bar Code	Prefix	Suffix	Baseline	Alignment
ZSWIN	ARTNR	SBP01	SBS01		
ZSWIN	AUFNR	SBP02	SBS01		
ZSWIN	BARCLYS	SBP03	SBS01		
ZSWIN	BC_C128B	SBP21	SBS01		
ZSWIN	BC_CD39	SBP11	SBS01		
ZSWIN	BC_CD39C	SBP16	SBS01		
ZSWIN	BC_EAN13	SBP13	SBS01		
ZSWIN	BC_EAN8	SBP12	SBS01		
ZSWIN	BC_EANH	SBP22	SBS01		
ZSWIN	BC_I25	SBP15	SBS01		
ZSWIN	BC_I25C	SBP14	SBS01		
ZSWIN	BC_MSI	SBP17	SBS01		
ZSWIN	BC_MSIC	SBP18	SBS01		
ZSWIN	BC_MSIC1	SBP19	SBS01		
ZSWIN	BC_MSIC2	SBP20	SBS01		
ZSWIN	BC_PSN5	SBP23	SBS01		
ZSWIN	BC_PSN9	SBP24	SBS01		
ZSWIN	C128A_00	SBP26	SBS01		
ZSWIN	KUNAUNR	SBP04	SBS01		
ZSWIN	KUNAUPS	SBP05	SBS01		
ZSWIN	MBBARC	SBP06	SBS01		
ZSWIN	MBBARC1	SBP07	SBS01		
ZSWIN	RSNUM	SBP08	SBS01		
ZSWIN	RSPOS	SBP09	SBS01		

Figure 12: Print-control Maintenance

Make sure to activate the “change” mode before editing a Print-Control.

The select the Print-Control prefix of the barcode you want to change and press Maint. Print Control.

The field's Hexadecimal switch and Control Char. Sequ. are now editable and you can adapt the barcode settings to your requirements. We recommend entering the control sequences in hexadecimal code form (ASCII) - being sure to mark the Hex switch with an „X“ in this case.

SAPscript Font Maintenance: Maintain Print Control

Device type: ZSWIN

Print control: SBP25

Variant: 5

Hexadecimal switch: X

Standard setting:

Control Char. Seq.: 62433D3132382C423D39302C483D31332C413D302C443D

Figure 13: Print-control Maintenance - Detail

➤ Converting Print-Controls from ASCII into hex codes is supported by the TEC-IT Software Barcode Studio (refer to 12.4 Print-Controls with Barcode Studio).

Confirm your changes and save your settings before you go back to the main menu.

➤ For adjusting the Print-Control suffix (SBS01) refer to chapter 12 (Introduction to Print-Controls).

## 9 Test Barcode Printing

---

It is strongly recommended to perform a barcode printing test after all previous installation steps are completed.

For this purpose SAP-systems are shipped with a predefined test document. It prints the most important barcodes (see 17- Predefined System-Barcodes).

To test barcode printing, perform the following steps:

1. On the Spool Administration: Initial Screen (transaction SPAD) choose Utilities ► For device types ► Test data (SAPscript).
2. Print the predefined document SAPSCRIPT-BARCODETEST, specifying ST as the document ID and DE or EN as the language.  
If you want to test rotated barcode printing, choose SAPSCRIPT-BARCODETEST2.

➤ The test document is usually only available in client 000.

## 10 Obtain a License

### 10.1 Product Variants

*TBarCode/SAPwin* can be licensed in two variants. The difference between these variants is the number of supported barcode symbologies:

Product variant	Description
<i>TBarCode/SAPwin</i> 1D	Supports linear barcodes like Code128, Code39, EAN, UPC, EAN128, 2 of 5 Interleaved, ... No 2D-Symbologies are supported
<i>TBarCode/SAPwin</i> 2D	Supports linear barcodes and the following 2D barcodes with high data-density: <ul style="list-style-type: none"> <li>▪ PDF417</li> <li>▪ PDF417 Truncated</li> <li>▪ Micro PDF417</li> <li>▪ Data Matrix</li> <li>▪ MaxiCode</li> <li>▪ QR-Code</li> <li>▪ Micro QR-Code</li> <li>▪ Codablock-F</li> <li>▪ Aztec Code</li> </ul> Also supported are: <ul style="list-style-type: none"> <li>▪ RSS Stacked Varianten</li> <li>▪ EAN.UCC Composite Symbology</li> </ul>

Table 7: Product Variants

- The installation files (binary files) of the 1D and 2D version are always the same (only one setup program), but the license key to unlock the product is different.

### 10.2 License Key and License Types

*TBarCode/SAPwin* can be used immediately after setup. As long as *TBarCode/SAPwin* stays in unlicensed mode an additional horizontal bar or a small text mark (“Demo”) will be printed over the barcode. Usually this demo-restriction does not affect the readability of the code for evaluation purposes.

A valid license removes this restriction. There are three possible license modes to choose from:

License Mode	Description
Single	This license gives you the right to use <i>TBarCode/SAPwin</i> on exactly one computer (one client) and print to local printers. It is not permitted to use this license on a server or for network printers. Note: TEC-IT needs the System-ID of the target machine for this license (refer to 22.27- How to retrieve the System-ID?).
Site	This license gives you the right to use <i>TBarCode/SAPwin</i> at exactly one site within your company. Installation is allowed on as many clients as required within this site (also on a server and with network printers). A site is defined as a legal unit of an organization operating under one postal address.
World or Enterprise (Multi-Site)	This license gives you the right to use <i>TBarCode/SAPwin</i> worldwide at all sites of your company (no restrictions in the number of sites or clients).

Table 8: License Variants

- Redistributing *TBarCode/SAPwin* is generally NOT allowed – regardless of the license you purchased.

- The unlicensed product may only be used for test purposes. Use in production environments is not allowed.

### 10.3 License File Barcode.ini

After you ordered a license, you receive a license key, which has to be copied (entered) into the *barcode.ini* file.

*Barcode.ini* is located below the common application data path (so called before Windows Vista → similar to “*C:\Documents and Settings\All Users\Application Data\TEC-IT\TBarCode SAPwin\version number>*”) or the program data path (since Windows Vista → „*C:\ProgramData\TEC-IT\TBarCode SAPwin\<version number>*”).

If you want to use the product on more clients (e.g. when using a Site or World License), you have to copy the licensed *barcode.ini* file to each system (client).

Relevant for SAPlpd: You have to restart SAPlpd to reload *TBarCode/SAPwin*. The license file is only read once at startup.

- The demo restriction (horizontal demo bar or text) disappears when applying a valid license file.



## 11 Using Barcodes in SAP

A short introduction about barcode printing concepts of SAP R/3 is available in chapter 12 (Introduction to Print-Controls).

### 11.1 SAPscript

In SAPscript (SE71) you can choose between two methods for barcode printing.

#### 11.1.1 Using Character Formats for Bar-coding (recommended method)

A character format is defined using a system-barcode. Text marked with this character format is subsequently printed as barcode.

- For each system-barcode it is required to define a printer-barcode. This printer-barcode encapsulates a Print-Control prefix and suffix (see font maintenance SE73). The prefix and the suffix are triggering barcode generation when printing the text on the output device.
- When using the device type SWIN (or a copy of it) most of the barcode formats are already defined per default.

In the following example the character format B3 is used to print a Code 3of9:



Figure 14: SAPscript and Barcode-printing

- The character format B3 is defined to use system-barcode BC\_CD39.
- BC\_CD39 is also defined as printer-barcode using prefix SBP11 and suffix SBS01.
- The prefix SBP11 contains the control sequence for barcode parameters (barcode-type, size, check digit...). The prefix can be adjusted to meet your bar-coding needs (see 8.2-Modifying Print-Controls).

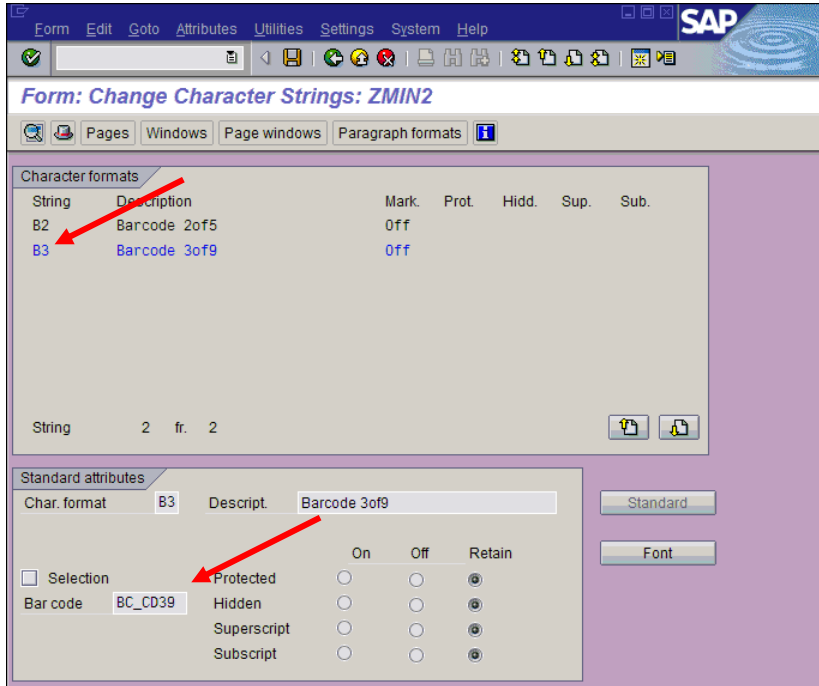


Figure 15: Character Format Definition

### 11.1.2 Direct use of Barcode-Print-Controls in SAPscript

- This method is not recommended. Use character formats instead (see above).

In SAPscript the barcode-related Print-Controls (prefix and suffix) are specified directly.

```
* TEXT contains the barcode data:
* <32>
/: PRINT-CONTROL SBP22
= &TEXT&
/: PRINT-CONTROL SBS01
```

- To avoid unwanted space or CR/LF characters when using a variable the "&" is necessary.
- Note, that you need a text line (or space character) before the barcode Print-control prefix; otherwise the SAPwin printer driver inserts a font command between the Print control and the bar code data.

Sample:

```

.....1.....2.....3.....4.....5.....6.....7..
/ DEMO / Barcode Printing with SAP
/ Using SAPSCRIPT Printcontrol commands
/ .....
/
/ Using Device Type: ZSWIN - a customized copy of SWIN
/ .....
/ Barcode-Data: 12345
/ .....
/
/ Barcode Printcontrol für System Barcode BC_CD39 (=Code 39)
/ .....
/ : PROTECT
/ Text before (needed!)
/ : PRINT-CONTROL SBP11
/ = 12345
/ : PRINT-CONTROL SBS01
/ : ENDPROTECT
/ .....
----- ZSAPSCR_DEMO ----- Lines 8 - 29 / 32 -----
LNKX (1) (000) iris INS

```

Figure 16: Sample SAPscript

## 11.2 SmartForms

### 11.2.1 Using Styles for Bar-coding

When using SmartForms Barcodes are defined using a so-called `STYLE`:

- In the output options of the form you select the `STYLE` applied to the whole form
- In the `STYLE` a system barcode is specified for character format B1.
- In the form you select the character format B1
- The text data inside the character format B1 will be printed as barcode

➤ You need to have keywords "PROTECT" and "ENDPROTECT" (beginning with "/:" in text mode) placed around the barcode character format.

Sample (the data to be encoded as barcode is 0123456789):

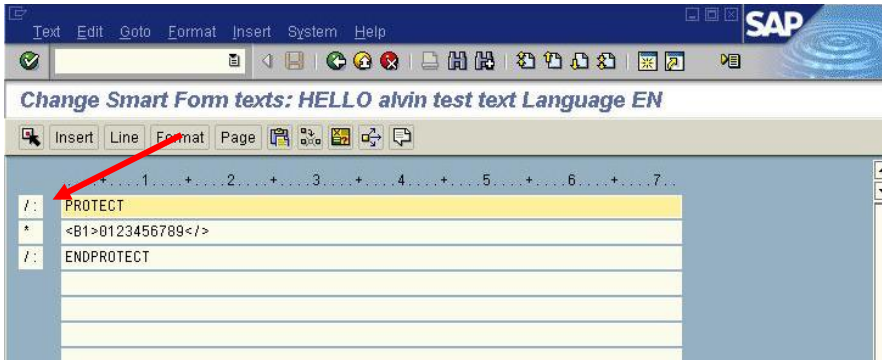


Figure 17: SmartForms Barcode Printing - Editor 1

Open the text editor with this button:

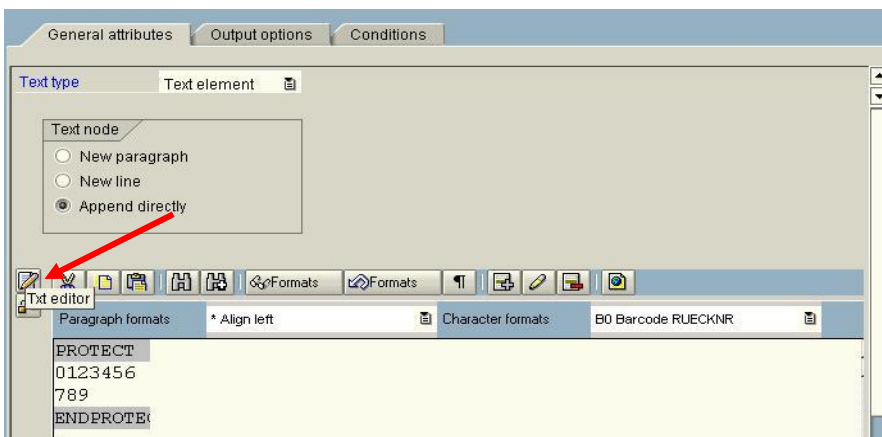


Figure 18: SmartForms Barcode Printing - Editor 2

### 11.2.2 Style definition

Choose a style, which is used for your SmartForms document.

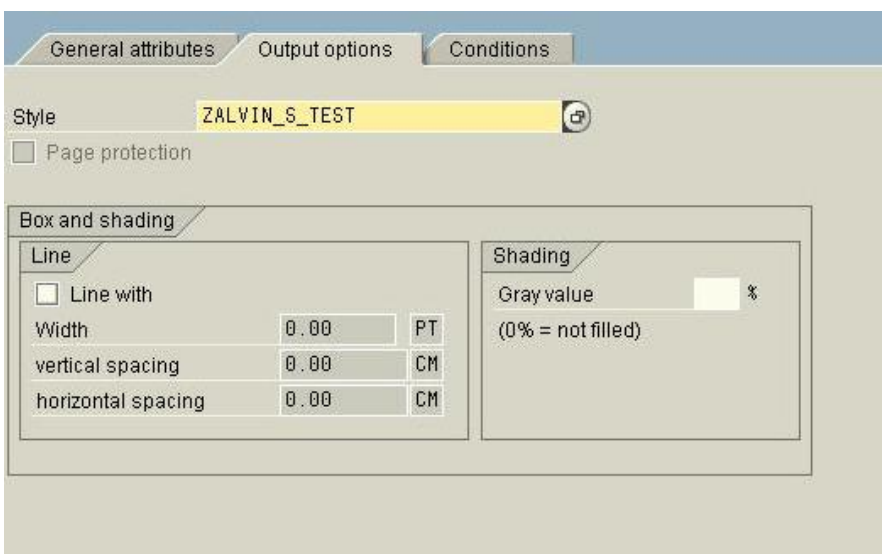


Figure 19: SmartForms Style

In the style definition you need to specify the system barcode used for printing the character format.

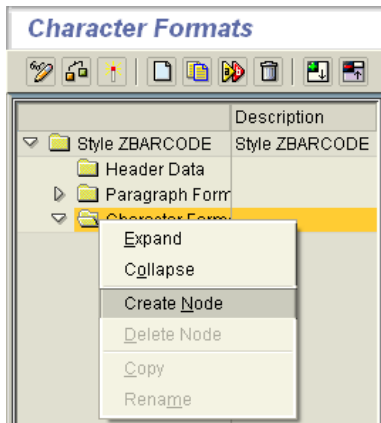


Figure 20: Style Definition – new Character Format

Regardless if you use SAPscript or SmartForms, add a new style node below the Character Format node (right click).

Enter two characters for the name and choose a bar code type – in our sample we select Code-39 but you can use any type.

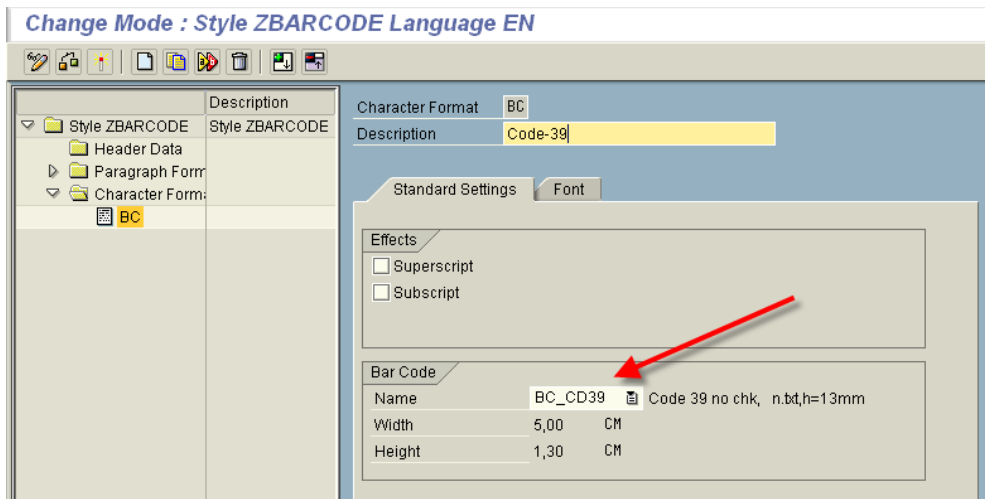


Figure 21: Style Definition – Bar Code Character Format

## 11.3 ABAP

### 11.3.1 Sample ABAP Program

```
DATA: V_BARCODE(20).
NEW-PAGE NO-HEADING PRINT ON LINE-SIZE 80.

* Build test string:

DO 2 TIMES.
  CONCATENATE '1234567890' V_BARCODE INTO V_BARCODE.
ENDDO.

FORMAT COLOR OFF INTENSIFIED OFF.

* If the barcode is the first element on the page, the following "write" statement
* is needed (otherwise you get a date in the first Print-Control):

WRITE: /.

* Begin of barcode
* Print-Control prefix (from the ZSWIN device type)
* The Print-Control contains the barcode parameters (type, size...)

PRINT-CONTROL FUNCTION 'SBP22'.

* Barcode data content (NO-GAP is important to avoid unwanted characters or CR/LF)

WRITE: V_BARCODE NO-GAP.

* End of barcode
* Print-Control suffix (from the ZSWIN device type)

PRINT-CONTROL FUNCTION 'SBS01'.

* This WRITE statement prevents inserting of Carriage Return / Line Feed into barcode data

WRITE: /.
```

- "Format Color off Intensified off" is necessary on some SAP systems as the list processor otherwise inserts Print-Controls by its own (resulting in disturbed barcode output).

## 12 Introduction to Print-Controls

---

### 12.1 Usage

SAP uses the term „Print-Control“ for control character sequences, which are used to adjust various out device features (like bar-coding).

SAP R/3 is using a 3-tier system for defining Print-Controls:

1. System-Barcodes
2. Printer-Barcodes
3. Print-controls

#### 12.1.1 System-Barcodes

A system-barcode is a system-wide (device-independent) definition of an available barcode type. Only if a system-barcode is defined you can use it in SAPscript or in style definitions.

System-barcodes are storing definitions like barcode symbology, size and alignment. But these settings are used only for controlling cursor and tabulator-positions during printing. Output of the barcode symbol itself is NOT influenced by a system-barcode (here the printer-barcode with the underlying Print-Controls is of relevance).

During print-time of a form or report the definition of a system-barcode is not needed. Instead of the system barcode the corresponding printer-barcode is used.

#### 12.1.2 Printer-Barcodes

A printer barcode defines the device specific control sequence for generating a previously defined system-barcode. In other words: For each system-barcode a printer-barcode must be defined per output device type.

Actual barcode output is controlled by Print-Controls. Each printer barcode consists of two such control sequences: the Print-Control prefix and the Print-Control suffix.

➤ Barcode printing will not work if printer-barcode definitions are missing.

#### 12.1.3 Print-Controls

A Print-Control represents the lowest definition level. It contains device-specific (in our case: *TBarCode/SAPwin* specific) control sequences which are triggering barcode output.

It is strongly recommended to enter Print-Controls in hex codes (instead of ASCII) to ensure correct barcode printing. Please refer to chapter 13 - Barcode Print-Control Reference.

## 12.2 Add new Print-Controls

➤ If you want to add a new barcode you must add a system-barcode as well as a printer-barcode.

If you only want to edit existing Print-Controls read ahead in chapter 8.2- Modifying Print-Controls.

## 12.2.1 New System Barcode

If you want to use a barcode type, which is not already defined in the system, you have to define a new system barcode first. Run transaction SE73 or follow the path

1. Utilities ► SAPscript ► Administration ► Font
2. Select System barcodes and then Change.
3. Choose Create (F5) to define a new barcode

➤ SAP systems starting with Release 4.7 need to know which barcode technology should be used. In the upcoming dialog choose „old“ („conventional system-barcode“). Unfortunately barcode integration into SAPlpd or SAPsprint is not possible with the “newer” technology.

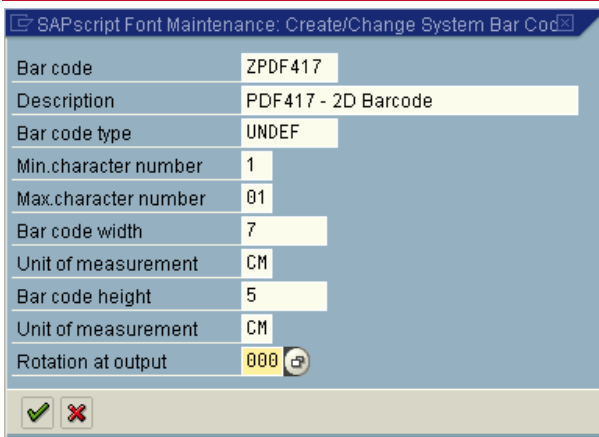


Figure 22: Create/Change a System-Barcode

Enter the following information:

Parameter	Description
Barcode	Enter the name of your new barcode. The name must begin with a Z to avoid conflicts between your barcodes and the SAP system barcodes.
Description	Just for informational purposes
Barcode type	This selection is only for informational use, you can choose UNDEF.
Min. character number	Minimum number of characters for barcode (choose 1)
Max. character number	Maximum number of characters for barcode (choose highest possible value)
Barcode width	Width of barcode. This value is only relevant for cursor and tab placement but not for the real size of the barcode. The effective size of the barcode is adjusted in the Printer barcode by Print-Control parameters.
Unit of measurement	Unit for width of barcode
Barcode height	Height of barcode. This value is only relevant for cursor and tab placement but not for the real size of the barcode. The effective size of the barcode is adjusted in the Printer barcode by Print-Control parameters.
Unit of measurement	Unit of height of barcode
Rotation at output	Barcode rotation (effective rotation is adjusted in the Printer barcodes!).

Table 9: System Barcode Field Values

Confirm the upcoming dialog with OK:

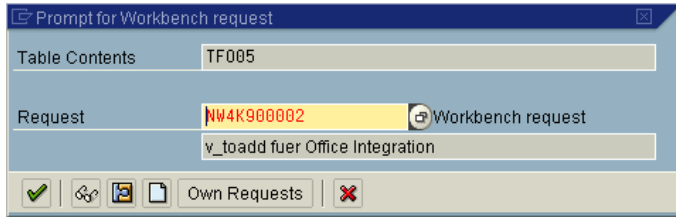


Figure 23: Confirmation Dialog: Prompt for Workbench request

➤ Please do not forget to define a corresponding printer-barcode for a system-barcode!

## 12.2.2 New Printer Barcode

Please see chapter 8.1 (Adding new Printer Barcodes).

## 12.3 Modify existing Print-Controls

Print-control maintenance is described in chapter 8.2 (Modifying Print-Controls)

The Print-Control parameters are available in chapter 13 (Barcode Print-Control Reference).

## 12.4 Print-Controls with *Barcode Studio V6*

You can use TEC-IT's software tool *Barcode Studio (currently V6 only)* to generate the Print-Controls required for SAP. Download it from <http://www.tec-it.com/download/>

Set the barcode parameters as required graphically and then open the Print-Control window (Menu View) to see the corresponding SAP parameters (available as hex codes and as ASCII string).

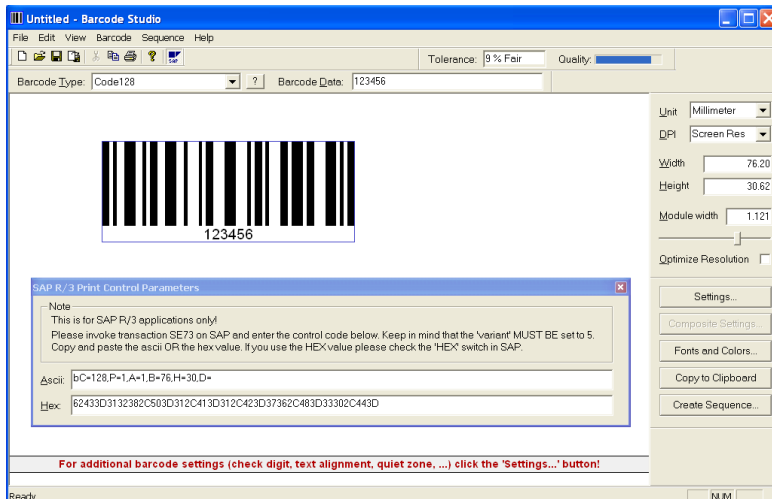


Figure 24: Barcode Studio

## 13 Barcode Print-Control Reference

Usually a Print-control is used for controlling device specific actions. In the case of *TBarCode/SAPwin* it defines barcode specific features. Each Print-Control consists of a prefix and a suffix. Within the Print-Controls you can use special parameters (“printer commands”) to control the output of *TBarCode/SAPwin*.

### 13.1 Syntax and Structure of Print-Controls

In general a Barcode Print-Control consists of a prefix and a suffix. The prefix controls the barcode properties; the suffix terminates the barcode data. That means that different barcode types require also different prefixes. The suffix however can be equal for all barcode types (valid for *SWIN* resp. *SAPWIN* device types).

#### 13.1.1 Naming convention

Please consider the naming convention if you add a new Barcode Print-Control. Prefixes start with SBP and suffixes with SBS. Thereafter follows a two-digit number, which must be unique for each device type.

Example: SBP25 (Prefix) and SBS01 (Suffix)

#### 13.1.2 Print-Control Prefix

A Print-Control prefix with the barcode parameters consist of the following parts: „\_bPARAMD=“

Value	Description
b	Start character (Hex code: 62)
PARAM	Barcode parameters Multiple parameters must be separated by a comma (Hex code = 2C)
D=	End of the control sequence MUST be specified at the end of the sequence (Hex code: 44 3D)

Table 10: Syntax of Print-Control Prefix/Suffix

Sample:

```
bC=E128,B=70,H=30,D=
```

We recommend entering all parameters as hex codes. Use the conversion table in chapter 16 (Hex – ASCII Conversion Table) to convert the ASCII representation into hex-codes. Sample (containing the same data as above):

```
62433D453132382C424337302C483D33302C443D
```

- Print-controls start and end with an ASCII escape character (hex 1B). These escape characters are added by SAP automatically to the Print-Control prefix and suffix, so don't encode them directly – only make sure the Print-Control is marked as “Extended” (within transaction *SPAD*).

### 13.1.3 Print-Control-Suffix

Das Print-Control-Suffix is defined as follows (Release dependent):

SAP-Release	Content
4.6	Empty Print-Control with Variant 5 (Extended)
4.7	Print-Control with Hex encoded value 1B and Variant 1 (Direct)

Table 11: Syntax Print-Control-Suffix

➤ Recommended procedure: add just one Print-Control suffix for all barcodes. Usually this suffix is named SBS01.

### 13.2 Print Control Parameters

The following commands and parameters can be used by *TBarCode/SAPwin* to control the barcode characteristics. You can find the Hex codes to each character in the [Hex – ASCII Table](#).

#### 13.2.1 General Parameters

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
C	Code selection (barcode symbology)	C=128	43 3D 31 32 38	Code 128
		C=128A	43 3D 31 32 38 41	Code 128 Character Set A
		C=128B	43 3D 31 32 38 42	Code 128 Character Set B
		C=128C	43 3D 31 32 38 43	Code 128 Character Set C
		C=25I	43 3D 32 35 49	Code 2 of 5 Industrial
		C=25L	43 3D 32 35 4C	Code 2 of 5 Interleaved
		C=25M	43 3D 32 35 4D	Code 2 of 5 Matrix
		C=25A	43 3D 32 35 41	Code 2 of 5 IATA
		C=39	43 3D 33 39	Code 39 (Code 3 of 9)
		C=39E	43 3D 33 39 45	Code 39 Extended (Full ASCII)
		C=93	43 3D 39 33	Code 93
		C=93E	43 3D 39 33 45	Code 93 Extended (Full ASCII)
		C=APC37	43 3D 41 50 43 33 37	Australia Post 37-CUST
		C=APC52	43 3D 41 50 43 35 32	Australia Post 52-CUST
		C=APC67	43 3D 41 50 43 36 37	Australia Post 67-CUST
		C=APCRP	43 3D 41 50 43 52 50	Australia Post REPLY Paid
		C=APCRD	43 3D 41 50 43 52 44	Australia Post Redirect
		C=APCRT	43 3D 41 50 43 52 54	Australia Post Routing
		C=AZT	43 3D 41 5A 54	Aztec Code <sup>1</sup>
		C=CBF	43 3D 43 42 46	Codablock F <sup>1</sup>
		C=CODA	43 3D 43 4F 44 41	Codabar
		C=DFT	43 3D 44 46 54	DAFT Code
		C=DMX	43 3D 44 4D 58	Data Matrix <sup>1</sup>
C=DPD	43 3D 44 50 44	DPD Code		
C=DPI	43 3D 44 50 49	Deutsche Post Identcode		
C=DPL	43 3D 44 50 4C	Deutsche Post Leitcode		
C=E128	43 3D 45 31 32 38	UCC/EAN128		
C=E13	43 3D 45 31 33	EAN13		

<sup>1</sup> needs 2D license

C=E13+2	43 3D 45 31 33 2B 32	EAN13 + 2 digits add on
C=E13+5	43 3D 45 31 33 2B 35	EAN13 + 5 digits add on
C=E14	43 3D 45 31 34	EAN-14
C=E8	43 3D 45 38	EAN8
C=E8+2	43 3D 45 38 2B 32	EAN8 + 2 digits add on
C=E8+5	43 3D 45 38 2B 35	EAN8 + 5 digits add on
C=FLM	43 3D 46 4C 4D	Flattermarken
C=G128	43 3D 47 31 32 38	GS1-128
C=HL128	43 3D 48 4C 31 32 38	HIBC LIC Code 128
C=HL39	43 3D 48 4C 33 39	HIBC LIC Code 39
C=HLCB	43 3D 48 4C 43 42	HIBC LIC CODABLOCK-F <sup>1</sup>
C=HLDM	43 3D 48 4C 44 4D	HIBC LIC Data Matrix <sup>1</sup>
C=HLMP	43 3D 48 4C 4D 50	HIBC LIC Micro PDF417 <sup>1</sup>
C=HLPD	43 3D 48 4C 50 44	HIBC LIC PDF417 <sup>1</sup>
C=HLQ	43 3D 48 4C 51	HIBC LIC QR-Code <sup>1</sup>
C=HP128	43 3D 48 50 31 32 38	HIBC PAS Code 128
C=HP39	43 3D 48 50 33 39	HIBC PAS Code 39
C=HPCB	43 3D 48 50 43 42	HIBC PAS CODABLOCK-F <sup>1</sup>
C=HPDM	43 3D 48 50 44 4D	HIBC PAS Data Matrix <sup>1</sup>
C=HPMP	43 3D 48 50 4D 50	HIBC PAS Micro PDF417 <sup>1</sup>
C=HPPD	43 3D 48 50 50 44	HIBC PAS PDF417 <sup>1</sup>
C=HPQ	43 3D 48 50 51	HIBC PAS QR-Code <sup>1</sup>
C=I14	43 3D 49 31 34	ITF-14
C=IP25	43 3D 49 50 32 35	Italian Postal 2 of 5
C=KIX	43 3D 4B 49 58	KIX
C=MPDF	43 3D 4D 50 44 46	MicroPDF417 <sup>1</sup>
C=MQR	43 3D 4D 51 52	Mirco QR-Code <sup>1</sup>
C=MSI	43 3D 4D 53 49	MSI
C=MXC	43 3D 4D 58 43	MaxiCode <sup>1</sup>
C=PDF	43 3D 50 44 46	PDF417 <sup>1</sup>
C=PDT	43 3D 50 44 54	PDF417 Truncated <sup>1</sup>
C=PH1	43 3D 50 48 31	Pharmacode 1-Track
C=PH2	43 3D 50 48 32	Pharmacode 2-Track
C=PSN5	43 3D 50 53 4E 35	USPS Postnet 5 digits
C=PSN9	43 3D 50 53 4E 39	USPS Postnet 9 digits
C=PSN11	43 3D 50 53 4E 31 31	USPS Postnet 11 digits
C=QRC	43 3D 51 52 43	QR-Code <sup>1</sup>
C=R14	43 3D 52 31 34	RSS-14
C=R	43 3D 52	
C=RL	43 3D 52 4C	RSS 14 Limited
C=RT	43 3D 52 54	RSS 14 Truncated
C=RS	43 3D 52 53	RSS 14 Stacked <sup>1</sup>
C=RO	43 3D 52 4F	RSS 14 Stacked Omni <sup>1</sup>
C=RE	43 3D 52 45	RSS Expanded
C=RX	43 3D 52 58	RSS Expanded Stacked <sup>1</sup>
C=RM	43 3D 52 4D	Royal Mail 4-State
C=SSCC18	43 3D 53 53 43 43 31 38	Serial Shipping Container Code (AI0)
C=TEL	43 3D 54 45 4C	Telepen
C=TELA	43 3D 54 45 4C41	Telepen Alpha

		C=UA	43 3D 55 41	UPC-A
		C=UA+2	43 3D 55 41 2B 32	UPC-A + 2 digits add on
		C=UA+5	43 3D 55 41 2B 35	UPC-A + 5 digits add on
		C=UC1		UPC-D1 (not supported)
		C=UC2		UPC-D2 (not supported)
		C=UC3		UPC-D3 (not supported)
		C=UC4		UPC-D4 (not supported)
		C=UC5		UPC-D5 (not supported)
		C=UCE	43 3D 55 43 45	UPC-E
		C=UCE+2	43 3D 55 43 45 2B 32	UPC-E + 2 digits add on
		C=UCE+5	43 3D 55 43 45 2B 35	UPC-E + 5 digits add on
A	Human readable text	A=0	41 3D 30	A=0: no human readable text is printed
		A=1	41 3D 31	A=1: the human readable text is printed below the bar code
		A=2	41 3D 32	A=2: the human readable text is printed above the bar code
B	Width of barcode symbol [mms]	B=52	42 3D 35 32  0 = Hex. 30 1 = Hex. 31 2 = Hex. 32 3 = Hex. 33 4 = Hex. 34 5 = Hex. 35 6 = Hex. 36 7 = Hex. 37 8 = Hex. 38 9 = Hex. 39	B=0: if not specified (or zero) the width of the symbol is based on the module width. The module width can be adjusted through parameter M or through the bar/space widths (L1...L4, S1...S4). B<>0: width of the bar code in mms
CP	Code Page Index	CP=1 CP=2 CP=3 CP=4 CP=5 CP=6 CP=7 CP=8 CP=9 CP=10 CP=11 CP=12	43 50 3D 31 43 50 3D 32 43 50 3D 33 43 50 3D 34 43 50 3D 35 43 50 3D 36 43 50 3D 37 43 50 3D 38 43 50 3D 39 43 50 3D 31 30 43 50 3D 31 31 43 50 3D 31 32	Select one of the predefined code pages. Parameter <b>EM</b> must be 0 or default. 1: default for selected code type. 2: ANSI 3: Windows-1252 (1252) 4: ISO 8859-1 Latin I (28591) 5: ASCII Extended (437) 6: UTF-8 7: Korean (949) 8: Japanese / Shift-JIS (932) 9: Simplified Chinese (936) 10: Traditional Chinese (950) 11: ANSI - Cyrillic (1251) 12: Russian KOI8-R (20866)
CPC	Custom Code Page	CPC=437  CPC=1252	43 50 43 3D 34 33 37  43 50 43 3D 31 32 35 32	As alternative to the predefined code pages you can specify the code page ID directly. e.g.: 437 for ASCII extended
D	Barcode data (digits / characters)	D=1234ABCD	44 3D + data	Data characters that are encoded in the barcode.  Must be at the end of the Print-Control prefix.
E	Translate Escape Sequences (refer to <a href="#">Escape sequences &amp; Control characters</a> )	E=0	45 3D 30	No translation (e.g. "\t" = "\t")
		E=1	45 3D 31	Translation = On e.g. "\t" = TAB; "\x0d" = Hex

				0D
EM	Encoding Mode	EM=0 EM=1 EM=2 EM=3	45 4D 3D 30 45 4D 3D 31 45 4D 3D 32 45 4D 3D 33	0: Data is converted to given code page (see also parameters <b>CP</b> and <b>CPC</b> ) → standard 1: Encode Lower Byte → UNICODE: ignore HI-BYTE, ANSI: no conversion done. 2: As Byte Stream (Low + High Byte) → UNICODE: LO-Byte before HI-BYTE, ANSI: no conversion done 3: As Byte Stream (High + Low Byte) → UNICODE: HI-Byte before LO-BYTE, ANSI: no conversion done
FS	Font Size	FS=8	46 53 3D 38	Font-size in points used for the human readable text.
FW	Font Weight	FW=N FW=B	46 57 3D 4E 46 57 3D 42	Selects if the font is printed normal or bold.
FN	Font Name	FN=Courier New  FN=Arial	46 4E 3D 43 6F 75 72 69 65 72 20 4E 65 77 46 4E 3D 41 72 69 61 6C	Font name, which is used for human readable text.
G	Width of the guard bar [in 1/1000 mm]	G=1000	47 3D + width	Width of the guard bar [0.001 mms]. G=0: if not defined or this value is zero no guard bar is drawn.
H	Height of the barcode symbol [mms]	H=25	48 3D + height  Hex code of digits – refer to Control „B“	Height of the bar code in mms.
L1	Width of a space (gap) for single modules in the symbol (= the smallest element in the symbol). [ratio, pixel or mm]	L1=6 L1=-300	4C 31 3D + module width [Pixel]  4C 31 3D 2D + width in [0.001 mms]	If the value for L1 is less than 0, the width is given in mms [0.001 mms]. L=-300 → module width = 0.3 mm  If the value for L1 is greater 0 and no symbol width is specified (B=0), this parameter controls the module width in [pixel].  Note: the final width depends on the printer resolution.  If the symbol width was specified (B <> 0) the print ratio of the spaces adapts to the ratio of all L-values.
L2	Width of space (gap) for two modules in the symbol	L2=12 L2=-600	4C 32 3D + width	Analog to L1
L3	Width of space (gap) for three modules in the symbol	L3=18 L3=-900	4C 33 3D + width	Analog to L1
L4	Width of space (gap) for four modules in the symbol	L4=24 L4=-1200	4C 34 3D + width	Analog to L1
M	Module width [in 1/1000 mm]	M=254	4D 3D + width	Module width (width of the narrow bar element). If the width B is undefined, the bar code width depends on the

				module width and the number of encoded characters. M=254 ... m.width = 0.254 mm
N	Normalize Bar Code Data	N=N N=L N=R N=A	4E 3D 4E 4E 3D 4C 4E 3D 52 4E 3D 41	N=N: No normalization (no white space stripping) L: Strip white spaces on the left side of the data. R: Strip white spaces on the right side of the data. A: Strip white spaces on both sides of the data.
P	Calculation of the check digit(s)	P=-1 P=0 P=1 P=2 P=3 P=4	50 3D 2D 31 50 3D 30 50 3D 31 ...	P=-1 / P=1: standard check digit (that is specified for each barcode type) is calculated and printed P=0: no check digit calculation (data is printed as is). 2: for MSI – not supported 3: for MSI – not supported 4: for MSI – not supported
PR	Das Verhältnis zwischen Balken- und Lückenbreiten (Print Ratio)	PR=1:2:1:2	50 52 3D 31 3A 32 3A 31 3A 32	Specifies the ratio between several bars and spaces in the bar code. Structure: <B1>:<B2>:...:<Bn>:<S1>:<S2>:...:<Sn> With B1..Bn as bar widths and S1...Sn as space widths.
R	Rotation of the barcode symbol	R=0 R=90 R=180 R=270	52 3D 30 52 3D 39 30 52 3D 31 38 30 52 3D 32 37 30	Rotation of the barcode [degrees clockwise]
S1	Width of a single module for a bar in the symbol. [ratio, pixel, mm]	S1=6 S1=-300	53 31 3D + width in [Pixel]  53 31 3D 2D + width in [0.001 mm]	If the value of S1 is less 0, the width is given in mm [0.001 mms]. S1=-300 → module width = 0.3 mm  If no symbol width is specified (B=0) this parameter controls the module width of the smallest bar element in [Pixel].  Note: the final width depends on the printer resolution.  If the symbol width was specified (B <> 0) the print ratio of the bars adapts to the ratio of all S-values.
S2	Width of a bar that is two modules wide	S2=12 S2=-600	53 32 3D + width	Analog to S1
S3	Width of a bar that is three modules wide	S3=18 S3=-900	53 33 3D + width	Analog to S1
S4	Width of a bar that is four modules wide	S4=24 S4=-1200	53 34 3D + width	Analog to S1
T	Text alignment of human readable text	T=0 T=1 T=2 T=3	543D30 543D31 543D32 543D33	0: Default 1: Left 2: Right 3: Center
W	Bar width reduction in percent, used for enhancing barcode quality when using inkjet printers	W=0 W=10	573D30 573D3130	W=0 is default (no reduction) W=10 reduces the bar width by 10% (based upon the width of the narrow bar), the printed

				size will be 90% of the nominal value.
X	Horizontal starting position of the barcode symbol [mms]	X=100	58 3 D + StartposX  (Hex code of digits – refer to Control „B“)	Distance to the left side of the page [mms]. If not specified the actual cursor position will be used.
Y	Vertical starting position of the barcode symbol [mms]	Y=120	59 3D + StartposY  (Hex code of digits – refer to Control „B“)	Distance to the upper side of the page [mms]. If not specified the actual cursor position will be used.
%	Place holder for FNC1	%=!	25 3D 21	The “!” is used as placeholder of FNC1 (used for separation of AI's with variable length, used with EAN128 only)

Table 12: General Barcode Print-Control Parameters

### 13.2.2 Parameters specific for Aztec Code

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
AZE	Error Correction	AZE=-1 AZE=50	41 5A 45 3D 2D 31 41 5A 45 3D 35 30	Error Correction Level (ECL) -1: Default (23%) 0..89 Error correction in percent of the symbol data.
AZFM	Aztec Code Format	AZFM=0 AZFM=1 AZFM=2	41 5A 46 4D 3D 30 41 5A 46 4D 3D 31 41 5A 46 4D 3D 32	Format Specification: AZFM=0 (default): Standard 1: UCC/EAN 2: Industry ( <b>AZFI</b> must be specified)
AZFI	Aztec Code Format Indicator	AZFI=a	11 5A 46 49 3D + value	Code-Format-Indicator (used for AZFM=2). Value can be 1 alphanumeric character or 2 numeric chars.
AZB	Binary Compaction Mode	AZB=0 AZB=1	41 5A 42 3D 30 41 5A 42 3D 31	Enforce the binary encoding mode for Aztec Code. 0: Optimized Encoding 1: Binary compaction (no data analysis)
AZS	Symbol Size	AZS=0 AZS=1 ... AZS=36	51 52 56 3D 30 51 52 56 3D 31 ... 51 52 56 3D 34 30	Symbol Size. AZS=0 (default value): Automatic Size Adaptation 1: smallest symbol ... 33: largest symbol 34-36: reader programming mode (please refer to the table below)
AZR	Rune Mode	AZR=0 AZR=1	41 5A 52 3D 30 41 5A 52 3D 31	In Rune mode you can only encode numbers between 0 and 255. Therefore the symbol size can be reduced to a minimum. 0: Rune Mode is off (default) 1: Rune Mode is on
AZAI	Structured Append Mode: Index of current symbol	AZAI=1 AZAI=2 ... AZAI=16	41 5A 41 49 3D 31 41 5A 41 49 3D 32 ...	Index of the current symbol when using Structured Append
AZAM	Structured Append Mode: Message ID	AZAM=Text	41 5A 41 4D 3D + Message-ID	Message ID for Structured Append Mode (must be identical for all symbols in a

				chain).
AZAS	Structured Append Mode: Total number of symbols	AZAS=2 AZAS=3 ... AZAS=16	41 5A 41 53 3D 32 41 5A 41 53 3D 33 ...	Number of symbols chained together with Structured Append

Table 13: Aztec Code Print-Control Parameters

### 13.2.3 Parameters specific for Data Matrix

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
DMF	Data Matrix-Format	DMF=0 DMF=1 DMF=2 DMF=3 DMF=4	44 4D 46 3D 30 44 4D 46 3D 31 44 4D 46 3D 32 ...	Support of special industry standards DMF=0: Standard 1: UCC/EAN 2: Industry 3: Macro 05 4: Macro 06 5: Reader Programming
DMB	Binary Compaction Mode	DMB=0 DMB=1	44 4D 42 3D 30 44 4D 42 3D 31	Enforce the binary encoding mode for Data Matrix. 0: Optimized Encoding 1: Binary compaction (no data analysis)
DMR	Representation mode rectangle	DMR=0 DMR=1	44 4D 52 3D 30 44 4D 52 3D 31	Data Matrix Code is drawn square or rectangular DMR=0: square DMR=1: rectangular If the symbol size (DMS) is <> 0, DMR is ignored.
DMS	Symbol Size	DMS=0 DMS=1 ... DMS=30	44 4D 53 3D 30 44 4D 53 3D 31 ... 44 4D 53 3D 33 30	Size of the symbol in rows / columns: DMS=0: size is calculated automatically 1: 10 x 10 2: 12 x 12 ... 30: 16 x 48 (refer to <a href="#">table</a> below)
DMAF	Structured Append Mode: File ID	DMAF=123456	44 4D 41 46 3D + File ID	In Structured Append Mode multiple barcode symbols can be chained (make sure that your barcode reader supports this mode). The file ID must be identical in all symbols within the same chain.
DMAI	Structured Append Mode: index of the actual symbol	DMAI=1 DMAI=2 ... DMAI=16	44 4D 41 49 3D 31 44 4D 41 49 3D 32 ...	Index of a symbol in a chain using Structured Append.
DMAS	Structured Append Modus: count of all symbols within the chain	DMAS=2 DMAS=3 ... DMAS=16	44 4D 41 53 3D 32 44 4D 41 53 3D 33 ...	Number of all symbols of a specific chain (Structured Append).

Table 14: Data Matrix Print-Control Parameters

### 13.2.4 Parameters specific for MaxiCode

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
MCM	Encoding mode	MCM=2 MCM=3 MCM=4 MCM=5	4D 43 4D 3D 32 4D 43 4D 3D 33 4D 43 4D 3D 34 4D 43 4D 3D 35	MCM=2: SCM (Structured Carrier Message) using only numeric postal codes 3: SCM with alphanumeric postal code 4: Standard 5: Extended error correction
MCU	Undercut in %	MCU=75	4D 43 55 3D + percentage	To optimize readability for a specific printer (scanner) you can set the undercut of the MaxiCode hexagons in percent. This changes the point size and the distance between the hexagons. The standard value is 75%.
MCAI	Structured Append Mode: index of the actual symbol	MCAI=1 MCAI=2 ... MCAI=8	4D 43 41 49 3D 31 4D 43 41 49 3D 32 ...	Used for Structured Append (chaining of symbols). Index of a specific symbol within the chain.
MCAS	Structured Append Mode: Total number of symbols	MCAS=2 MCAS=3 ... MCAS=8	4D 43 41 53 3D 32 4D 43 41 53 3D 33 ...	Used for Structured Append (chaining of symbols). Count of symbols used in the chain
MCPU	Use pre amble	MCPU=0 MCPU=1	4D 43 50 55 3D 30 4D 43 50 55 3D 31	For several industry standards the barcode data must start with a specific character sequence (the pre amble). MCPU=0: no pre amble is used MCPU=1: use pre amble
MCPD	Date (year) of the pre amble	MCPD=96	4D 43 50 44 3D + year „yy“	The pre amble includes a 2 digit year that can be defined with MCPD.
MCSC	Structured Carrier Message: Country code	MCSC=001	4D 43 53 43 3D + Country code	Country code of SCM (Structured Carrier Message). The country code consists of three characters. UPS uses SCM to encode address information. SCM is possible in Mode 2 and 3. For the other modes the SCM data has no influence.
MCSP	Structured Carrier Message: Postal code	MCSP=A4400	4D 43 53 50 3D + ZIP	Postal code (ZIP). In SCM-2 this information must be numerical and up to 9 digits long, for SCM-3 it can be alphanumeric and can hold up to 6 chars.
MCSS	Structured Carrier Message: Service class	MCSS=003	4D 43 53 53 3D + Service class	Service class (for SCM). Consists of three characters.
MCUP	UPS mode	MCUP=0 MCUP=1	4D 43 55 50 3D 30 4D 43 55 50 3D 31	MCUP turns on the UPS mode. The barcode data must contain data as specified by UPS (preamble, Structured Carrier Message, etc.). Do not use MCUP on one side or MCPU, MCPD, MCSC, MCSP, and MCSS on the other side in the same Print-Control! Encoding of function characters:

				Gs .. \x1d Rs .. \x1e Eot .. \x04
--	--	--	--	---

Table 15: MaxiCode Print-Control Parameters

### 13.2.5 Parameters specific for PDF417

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
PDEC	Error Correction Level	PDEC=-1 PDEC=0 PDEC=1 PDEC=2 PDEC=3 PDEC=4 PDEC=5 PDEC=6 PDEC=7 PDEC=8	50 44 45 43 3D 2D 31 50 44 45 43 3D 30 50 44 45 43 3D 31 ...	Error Correction Level (ECL). 1 (or not defined): the error correction level is set automatically based upon the code length.  0: no error correction, only error recognition 1: lowest error correction 8: highest error correction level
PDFC	Fixed number of columns	PDFC=-1 PDFC=1 ... PDFC=30	50 44 46 43 3D 2D 31 50 44 46 43 3D 31 50 44 46 43 3D 32 ...	-1 (or not defined): automatic calculation of the number of columns used for data representation. 1..30: number of columns. Note: rows and columns can't be fixed together – one has to be in automatic mode.
PDFR	Fixed number of rows	PDFR=-1 PDFR=3 ... PDFR=90	50 44 46 52 3D 2D 31 50 44 46 52 3D 33 50 44 46 52 3D 34 ...	-1 (or not defined): automatic calculation of the number of rows within PDF417. 1..30: number of rows in the symbol
PDRH	Row Height [in 1/1000 mm]	PDRH=-1 PDRH=1000	50 44 52 48 3D + Height	-1 (or not defined): Row height will be calculated from the symbol height. PDRH>0: row height in 1/1000 mm
PDPC	Row/Column-Ratio: Column	PDPC=-1 PDPC=2	50 44 50 43 3D 2D 31 50 44 50 43 3D + Column (Ratio)	-1 (default): no col/row ratio predefined = automatic adaptation to data content (or 1 if PDPR was set). PDPC>0: columns of row/col ratio.
PDPR	Row/Column-Ratio: Row	PDPR=-1 PDPR=3	50 44 50 52 3D 2D 31 50 44 50 52 3D + Row (Ratio)	-1 (default): no col/row ratio predefined = automatic adaptation to data content (or 1 if PDPC was set). PDPR>0: rows in row/col ratio.
PDM	PDF Encoding Mode	PDM=0 PDM=1	50 44 4D 3D 30 50 44 4D 3D 31	0: Optimized Encoding 1: Binary compaction (no data analysis)

Table 16: PDF417 Print-Control Parameters

### 13.2.6 Parameters specific for MicroPDF417

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
PDRH	Row height [in 1/1000 mm]	PDRH=-1 PDRH=1000	50 44 52 48 3D + Height	PDRH=-1(or not specified): Row height depends on total symbol height / rows. PDRH>0: row height is set to a constant value [1/1000 mm]
PDM	PDF Encoding Mode	PDM=0	50 44 4D 3D 30	0: Optimized Encoding

		PDM=1	50 44 4D 3D 31	1: Binary compaction (no data analysis)
MPM	MicroPDF Mode (encoding format)	MPM=0 MPM=1 MPM=2 MPM=3 MPM=4 MPM=5 MPM=6 MPM=7 MPM=8	4D 50 4D 3D + Mode	0 (default): Analyze input data and switch to compaction mode for smallest symbol 1: UCC/EAN-128 Emulation 2: Code128 Emulation 3: Code128 FNC2 Emulation 4: Linked UCC/EAN-128 Emulation 5: 05 Macro 6: 06 Macro 7: CC-A Data Mode 8: CC-B Data Mode
MPV	MicroPDF Version (version of data columns and data rows)	MPV=0 ... MPV=38	4D 50 56 3D + version index	0: Automatic version selection depending on amount of input characters (default). >0: Adjust specific symbol version - see table in chapter 21.4.  The version determines the maximum number of codeable data characters and influences also the graphical data density of the symbol.

Table 17: MicroPDF417 Print-Control Parameters

### 13.2.7 Parameters specific for QR-Code

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
QRE	Error Correction	QRE=0 QRE=1 QRE=2 QRE=3	51 52 45 3D 30 51 52 45 3D 31 51 52 45 3D 32 51 52 45 3D 33	Error Correction Level (ECL) 0: low ECL 1: (Standard) ... 3: Highest ECL
QRFM	QR-Code Format	QRFM=0 QRFM=1 QRFM=2	51 52 46 4D 3D 30 51 52 46 4D 3D 31 51 52 46 4D 3D 32	Format Specification: QRFM=0 (default): Standard 1: UCC/EAN 2: Industry (QRFI must be specified)
QRFI	QR-Code Format Indicator	QRFI=a	51 52 46 49 3D + Wert	Code-Format-Indicator (used for QRFM=2). Value can be 1 alphanumeric character or 2 numeric chars.
QRM	QR-Code Mask	QRM=-1 QRM=0 QRM=1 QRM=2 QRM=3 QRM=4 QRM=5 QRM=6 QRM=7	51 52 4D 3D 2D 31 51 52 4D 3D 30 51 52 4D 3D 31 ...	Graphic Mask Pattern. QRM=-1 (default): Standard, mask is calculated automatically. QRM=0: Selects Mask #0 ... QRM=7: Selects Mask #7
QRV	QR-Code Version	QRV=0 QRV=1 ... QRV=40	51 52 56 3D 30 51 52 56 3D 31 ... 51 52 56 3D 34 30	QR-Code Version (=Size). QRV=0 (default value): Automatic Size Adaptation 1: smallest symbol ... 40: largest symbol (please refer to the table below)

QRC	Multi Byte Compaction	MBC=-1 MBC=0 MBC=1 MBC=2	4D 42 43 3D 2D 31 4D 42 43 3D 30 4D 42 43 3D 31 4D 42 43 3D 32	-1: Default (based on Code Page) 0: No Compaction 1: Kanji Compaction 2: Chinese Compaction
QRAI	Structured Append Mode: Index of current symbol	QRAI=1 QRAI=2 ... QRAI=16	51 52 41 49 3D 31 51 52 41 49 3D 32 ...	Index of the current symbol when using Structured Append
QRAP	Structured Append Mode: Parity Byte	QRAF=123	51 52 41 50 3D + Parity Byte	Parity Byte for Structured Append Mode (must be identical for all symbols in a chain).
QRAS	Structured Append Mode: Total number of symbols	QRAS=2 QRAS=3 ... QRAS=16	51 52 41 53 3D 32 51 52 41 53 3D 33 ...	Number of symbols chained together with Structured Append

Table 18: QR-Code Print-Control Parameters

### 13.2.8 Parameters specific for Micro QR-Code

Command	Explanation	Values	ASCII Hex Code	Explanation
QRE	Error Correction	QRE=0 QRE=1 QRE=2 QRE=3	51 52 45 3D 30 51 52 45 3D 31 51 52 45 3D 32 51 52 45 3D 33	Error Correction Level (ECL) 0: low ECL 1: (Standard) ... 3: Highest ECL
MQM	Micro QR-Code Mask	MQM=-1 MQM=0 MQM=1 MQM=2 MQM=3	4D 51 4D 3D 2D 31 4D 51 4D 3D 30 4D 51 4D 3D 31 4D 51 4D 3D 32 4D 51 4D 3D 33	Graphic Mask Pattern. MQM=-1 (default): Standard, mask is calculated automatically. MQM=0: Selects Mask #0 ... MQM=3: Selects Mask #3
MQV	Micro QR-Code Version	MQV=0 MQV=1 MQV=2 MQV=3 MQV=4	4D 51 56 3D 30 4D 51 56 3D 31 4D 51 56 3D 32 4D 51 56 3D 33 4D 51 56 3D 34	Micro QR-Code Version (=Size). MQV =0 (default value): Automatic Size Adaptation 1: smallest symbol ... 4: largest symbol (please refer to the table below)
QRC	Multi Byte Compaction	MBC=-1 MBC=0 MBC=1 MBC=2	4D 42 43 3D 2D 31 4D 42 43 3D 30 4D 42 43 3D 31 4D 42 43 3D 32	-1: Default (based on Code Page) 0: No Compaction 1: Kanji Compaction 2: Chinese Compaction

Table 19: Micro QR-Code Print-Control Parameters

### 13.2.9 Parameters for Codablock F

Command	Explanation	Values	ASCII Hex Code	Explanation
CBC	Fixed number of columns	CBC=-1 CBC=4 ... CBC=62	4342433D+Number	Default or -1 ... automatic calculation 4..62: number of graphic columns in the symbol
CBR	Fixed number of rows	CBR=-1	4342523D+Number	Default or -1 ... automatic calculation

		CBR=2 ... CBR=44		2..44: number of graphic rows in the symbol
CBH	Row Height [in 1/1000 mm]	CBH=-1 CBH=1000	4342483D+Height	Default or -1 ... row height will be calculated based upon symbol height. CBRH>0: row height is set in 1/1000 mm
CBS	Separator Line Width [in 1/1000 mm]	CBS=-1 CBS=1000	4342533D+Width	Default or -1 ... width of row separator line will be calculated automatically CBS>0: separator line width is set in 1/1000 mm
CBF	Code Format	CBF=0 CBF=1	4342463D30 4342463D31	0 ... standard format (default) 1 ... EAN/UCC format

Table 20: Codablock-F Print-Control Parameters

### 13.2.10 RSS Expanded Stacked specific Parameter

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
SR	Segments per Row	SR=2 ... SR=22	53 52 3D 32 ... 53 52 3D 32 32	Number of data segments per row in RSS Expanded Stacked. Influences the width to height ratio.

Table 21: RSS Expanded Stacked Print-Control Parameters

### 13.2.11 EAN.UCC Composite Symbology Parameter

Com-mand	Explanation	Values	ASCII Hex Code	Explanation
CC	2D Composite Component  Combinable with EAN-8, EAN-13, UPC-A, UPC-E, all GS1 DataBar/RSS Codes and GS1-128/EAN-128	CC=N CC=D CC=A CC=B CC=C	43 43 3D 4E 43 43 3D 44 43 43 3D 41 43 43 3D 42 43 43 3D 43	Type of Composite Component N...no CC D...default CC (recommended) A...CC-A B...CC-B C...CC-C (only with EAN-128)  The data for the composite component must be separated by a separator character (Default " " - vertical bar), e.g.: 12345678 CompositeData. The separator character can be changed with parameter <b>CS</b> .
CS	Composite Separator	CS=_ CS=&	43 53 3D 5F 43 53 3D 26	Specify the separator character for composite components (Default:   - vertical bar).

Table 22: EAN.UCC Composite Symbology Print-Control Parameters

## 14 Encoding Special Characters

If you want to use non-printable or special characters in your barcode data, you have to use "Escape Sequences". They always start with a backslash ('\') followed by the sequence (see table below). You can use them also for encoding binary data (Bytes) into your barcode if the symbology offers this feature (e. g. PDF417 or Data Matrix).

- If you want to use escape sequences you have to turn on translation of escape sequences with the Print-Control "E=1" (to be done for each barcode type separately).
- Note: Please keep in mind, that when translation of escape sequences is enabled, you cannot code a backslash ("\") directly. Use "\\ " instead.

### 14.1.1 Implemented Escape Sequences

Esc-Sequence	Description
\a	Bell (alert)
\b	Backspace
\f	Form feed
\n	New Line
\r	Carriage Return
\t	Horizontal Tab
\v	Vertical Tab
\\	The Backslash \ itself
\0ooo	ASCII-character in octal notation ooo octal digits (0..7)
\ddd	ASCII-character in decimal notation ddd decimal digits (0..9)
\xhh	ASCII-character in hexadecimal notation hh hexadecimal digits (0..F)
\F	FNC1 or Gs (\x1d), used in UCC/EAN codes as field separator
\E	ECI (Extended Character Interpretation), used in 2D codes like MaxiCode, Data Matrix and QR-Code. Is used for switching between various code pages (multiple character sets) – contact us to get further information.
\EB, \EE	special ECI identifiers for nesting ECIs. \EB (ECI Begin) opens a nesting level; \EE (ECI End) closes it. Used in QR-Code
\G	GLI (Global Language Identifier), similar to ECI, but only used in PDF417.

Table 23: Escape Sequences

### 14.1.2 Symbology dependent control characters

The following table lists control characters, their escape sequences and the barcode-symbology they may be used for. The usage of these escape sequences is barcode dependent and differs from barcode symbology to barcode symbology.

Control character	Escape sequence	Valid for Barcode -Types
FNC1	\210 or \F	Code 128, EAN128, UCC128, 2D Codes
FNC2	\211	Code 128, EAN128, UCC128
FNC3	\212	Code 128, EAN128, UCC128
FNC4	\213	Code 128, EAN128, UCC128
DC1	\x11	Code93, Code93Ext
DC2	\x12	Code93, Code93Ext
DC3	\x13	Code93, Code93Ext
DC4	\x14	Code93, Code93Ext

Rs	\x1E	MaxiCode (Mode 3,4 SCM)
Gs	\x1D	MaxiCode (Mode 3,4 SCM)
Eot	\x04	MaxiCode (Mode 3,4 SCM)

Table 24: Barcode-specific Control Sequences



## 15 BarCode.ini Configuration File

### 15.1 Section [LICENSE\_DATA]

Parameter Name	Description
Product	The product code (may be "1D" or "2D")
Licensee	Your name
License Mode	Your purchased license mode (may be "Single", "Site" or "World")
Number Of Licenses	Number of purchased licenses (e.g. "1")
License Key	The license key (e.g. "12345678")

Table 25: Barcode-Ini Section LICENSE\_DATA

Example:

```
Product=1D
Licensee=Your Name
License_Mode =Site
Number_Of_Licenses=1
License_Key=Your Key
```

### 15.2 Section [DEBUG]

➤ ATTENTION: Do not activate debugging for production use!

Parameter Name	Description
Level	Selects the debug level used  0 for debugging off (Default) 1 for debugging on: a file named <code>barcode.log</code> will be written and all actions and parameters are logged into this file
BCText	Selects fixed Print-Controls for debugging If this line is activated (by removing the leading ;) all barcode-Print-Controls sent by R/3 are substituted by this text. You can test a special Print-Control without having to change the settings of the SAP R/3 system.  Default: not activated because of leading; character (commented out)

Table 26: Barcode-Ini Section DEBUG

Example (enables writing a log-file and prints always a Code128 with encoded data "This is a test"):

```
Level=1
BCText=C=128,A=1,H=10,D=This is a Test
```

### 15.3 Section [SETTINGS]

Parameter Name	Description
Direction	Select the printing direction of the barcodes (up or down). Change this setting if the position of the bar code looks wrong. This parameter was introduced due to a bug in some SAPlpd versions. Refer to 22.19 (How to change the vertical alignment of the bar codes?).  0 or 1 for standard print direction of barcodes -1 for reversed print direction (Default): all barcode symbols are drawn from top-to-bottom instead of bottom-to-top

DataMode	<p>Specifies the data encoding mode of the print controls sent by SAP. Depending on the SAP version the encoding of the print control string is different. Use this setting to attune to the particular data mode.</p> <p>0       <b>Auto-detection</b> (default) The bar code library examines the print control and conforms automatically to the its encoding.</p> <p>1       <b>ANSI Mode (former SAP systems)</b> The bar code library assumes that the print control is in ANSI format</p> <p>2       <b>Mixed Mode (SAP Unicode Systems, e.g. ECC 6.0)</b> The bar code library assumes that the print control is in mixed format (16-bit UNICODE and ANSI characters)</p>
Shift	<p>Baseline shift - used to fine-tune the baseline position of the bar codes. The bar code baseline is not always identical to the baseline of the text which is printed before the bar code. This effect is due to differences in the way printer drivers calculate text or font positions.</p> <p>0       no shifting (default)</p> <p>1       for PCL printers: shift down the bar code half of actual text height</p> <p>2       for Postscript printers: shift down actual text height</p> <p>&gt;2     correct base line in 20% steps of actual font height, see examples below: Shift=3 ... shift down 60% of font height Shift=5 ... shift down 100% of font height Shift=-5... shift <u>up</u> 100% of font height (negative values allowed)</p>
DefModWidth	<p>Specifies the default module width to be used</p> <p>Specifies the default module width in 1/1000 mm (e.g. 500 = 0.5 mm). The module width is the width of the smallest bar element in the symbol (also called "narrow bar width"). It influences also the total width. On demand you can specify the width of the single bars and spaces by using the L and S parameters in the Print-Control prefix. Most barcode specifications need a module width <math>\geq 0.19</math> mm. For 300 dpi printing resolution we recommend 0.254 mm (<code>DefModWidth=254</code>).</p> <p><i>Note: The DefModWidth value applies only if the total barcode width is not set by Print-control parameter B</i></p>
DefBearerBarWidth	<p>Specifies the default bearer bar width in 1/1000 mm (e.g. 500 = 0.5 mm). This value is used if the width of the bearer bar is not set by the Print-Control.</p> <p>0       no bearer bar will be drawn (default)</p> <p>300     bearer bar with a line width of 0.3 mms is drawn</p>
DefBarWidthReduction	<p>The value specifies in percent how much you want to decrease the bar width (in percent). This parameter is used for ink jet printers, where unwanted ink flow can increases the bar width.</p> <p>0       no width reduction (default)</p> <p>10      bar width is printed 90% instead of 100%</p> <p>100     the thin bars disappear (not recommended)</p>
DefaultSet	<p>Set of default values for the basic bar code parameters Here you can specify a specific set of bar code parameters to be used as default values if nothing was specified in the Print control. When using these default values you can get a readable, industry conform bar code even if you have an almost empty Print control (only specifying the bar code type). Default values are available for module width, symbol height, plain text on/off, PDF417 row/col ratio</p> <p>0       TBarCode specific default values</p> <p>1       Default values based on common industry standards</p> <p>Hint: if no default value is present for a specific bar code, <code>DefModWidth</code> is used</p>
OnError	<p>Specifies what to do if an error occurred during barcode printing (e.g. wrong Print-Control).</p> <p>Ignore           print nothing</p> <p>Message         print error box (Default)</p>
StripWhiteSpace	<p>The value specifies the white space stripping method that should be applied to the bar code data. This parameter is used for avoiding unintentional spaces before and behind the bar code data.</p>

	<p>N no white space stripping (default)  L white space stripping on the left side  R white space stripping on the right side  A white space stripping on both sides</p> <p>Attention: Avoid white space stripping if your bar code data is binary or could contain white spaces on the begin or at the end of the bar code.</p>
ConvertToSpace	<p>Replacement Character for Space</p> <p>Sometimes trailing spaces are eliminated by SAP, but should be encoded. This parameter specifies a character, which can be used instead of a space. During printing - before generating the bar code - all occurrences of the adjusted character are converted to space (hex code 20).</p> <p>@ All occurrences of @ are replaced with a space character  ^ All occurrences of ^ are replaced with a space character</p>
DefCompositeSeparator	<p>Set the default composite separation character</p> <p>This setting is used only if a composite symbol has to be generated. A composite symbol consists of a main part (mostly 1D) and a composite part (2D). Each of the parts has to be filled with data. To separate the 2 data parts in the data stream, a composite separator character is used (default ' '). This setting makes it possible to use another separator character instead.</p> <p>Note: Some SAP environments filter out " " characters from the data stream. This setting can be used to work around this problem.</p>

Table 27: Barcode-Ini Section SETTINGS (part 1)

**Example:**

```
[SETTINGS]
Direction=1
Shift=1
DefModWidth=254
OnError=Message
DefaultSet=1
DefCompositeSeparator=&
```

**15.3.1 Default Font**

Parameter Name	Description
DefFontName	Font name used for the human readable text line. If not set, use actual font of the document. Courier New use font family "Courier New"
DefFontSize	Default font height (point) used for the human readable text. If not set, use actual font size of the document. 10 use font size 10 pt
DefFontWeight	Select if the font is printed normal or bold. If not set, use actual font weight of the document. Bold print the font bold instead of normal

Table 28: Barcode-Ini Section SETTINGS (part 2)

The font characteristics applied to the barcode text are determined in the following order:

1. Font parameters defined in Print-Control?
  - yes: use Print-Control settings
  - no: check barcode.ini for default values
2. Font parameters defined in the barcode.ini?
  - yes: use barcode.ini settings
  - no: use actual font of currently printed document

➤ In the default installation, no Print-Control or `barcode.ini` settings are present, so the font of the actual document is used.

### 15.3.2 Character Encoding / Code Pages

Parameter Name	Description
DefEncodingMode	<p>Specifies how the input data shall be interpreted.</p> <p>The encoding mode is an integer argument that may have following values:</p> <p><b>0: Code Page</b> The input string is converted to the selected code page (default) -- see <b>DefCodePageIndex</b>.</p> <p><b>1: Encode Lower Byte</b> The input string is treated as a sequence of ASCII characters ranging from 0 to 255. If the input data is <b>UNICODE/UTF-16</b> → only the Lower Byte is encoded. <b>Single Byte (ANSI)</b> → it is used as it is ==&gt; no conversion is done.</p> <p><b>2: As Byte Stream (Low + High Byte)</b> The input string is treated as byte stream (Low Byte before High Byte). If the input data is <b>UNICODE/UTF-16</b> → 16-bit characters in the input stream are interpreted as two ASCII characters. This encoding mode is used for encoding binary and (untranslated) UNICODE data. <b>Single Byte (ANSI)</b> → it is used as it is ==&gt; no conversion is done.</p> <p><b>3: As Byte Stream (High + Low Byte)</b> The input string is treated as byte stream (High Byte before Low Byte). If the input data is <b>UNICODE/UTF-16</b> → 16-bit characters in the input stream are interpreted as two ASCII characters. This encoding mode is used for encoding binary and (untranslated) UNICODE data (reverse byte order of <b>(2)</b>). <b>Single Byte (ANSI)</b> → it is used as it is ==&gt; no conversion is done.</p>
DefCodePageIndex	<p>Following <b>predefined code pages</b> can be used:</p> <ul style="list-style-type: none"> <li>1: Default (depends on bar code type)</li> <li>2: ANSI Code Page</li> <li>3: Windows-1252 (1252)</li> <li>4: ISO 8859-1 Latin I (28591)</li> <li>5: ASCII Extended (437)</li> <li>6: UTF-8</li> <li>7: Korean (949)</li> <li>8: Japanese / Shift-JIS (932)</li> <li>9: Simplified Chinese (936)</li> <li>10: Traditional Chinese (950)</li> <li>11: ANSI - Cyrillic (1251)</li> <li>12: Russian KOI8-R (20866)</li> </ul> <p><b>Attention:</b> The encoding mode must be set to <b>Code Page</b> (=default) to use this setting.</p>
DefCodePageCustom	<p>The Code page ID</p> <p>Alternatively to the predefined code pages it is possible to enter the code page id directly.</p> <p><b>Attention:</b> The encoding mode must be set to <b>Code Page</b> (=default) to use this setting.</p> <p>437                      set the code page to ASCII Extended (437)</p>

Table 29: Barcode-Ini Section SETTINGS (part 3)

## 15.4 Section [EAN\_UPC]

This section is relevant for EAN-8, EAN-13, UPC-A, UPC-E and related barcode symbologies.

Parameter Name	Description
FontName	Name of font, which is used for human readable text Courier New      use font family "Courier New" Default            parameter is commented out (actual font of document is used)
FontSize	Point size, which is used for the human readable text 10                  use font size 10 pt Default            parameter is commented out (actual font size of document is used)
FontWeight	Selects if the human readable text is printed normal or bold bold                print the font bold instead of normal Default            commented out (use actual font weight of document)

Table 30: Barcode-Ini Section EAN\_UPC

### Example:

```
[EAN_UPC]
FontName=Courier New
FontSize=10
FontWeight=bold
```

➤ We recommend the settings "Courier New, 10, bold" if you have enabled DefaultSet=1

## 16 Hex – ASCII Conversion Table

This table helps you to enter the Print-Controls as a sequence of hex codes. Each character may also be represented by an equivalent hex code – e.g. „C“ = Hex 43 or „2“ = Hex 32.

Hex code	Character	Hex code	Character	Hex code	Character	Hex code	Character
0	NUL	20	[space]	40	@	60	`
1	SOH	21	!	41	A	61	a
2	STX	22	"	42	B	62	b
3	ETX	23	#	43	C	63	c
4	EOT	24	\$	44	D	64	d
5	ENQ	25	%	45	E	65	e
6	ACK	26	&	46	F	66	f
7	BEL	27	'	47	G	67	g
8	BS	28	(	48	H	68	h
9	HAT	29	)	49	I	69	i
A	LF	2A	*	4A	J	6A	j
B	VT	2B	+	4B	K	6B	k
C	FF	2C	,	4C	L	6C	l
D	CR	2D	-	4D	M	6D	m
E	SO	2E	.	4E	N	6E	n
F	ST	2F	/	4F	O	6F	o
10	SLE	30	0	50	P	70	p
11	CS1	31	1	51	Q	71	q
12	DC2	32	2	52	R	72	r
13	DC3	33	3	53	S	73	s
14	DC4	34	4	54	T	74	t
15	NAK	35	5	55	U	75	u
16	SYN	36	6	56	V	76	v
17	ETB	37	7	57	W	77	w
18	CAN	38	8	58	X	78	x
19	EM	39	9	59	Y	79	y
1A	STB	3A	:	5A	Z	7A	z
1B	ESC	3B	;	5B	[	7B	{
1C	FS	3C	<	5C	\	7C	
1D	GS	3D	=	5D	]	7D	}
1E	RS	3E	>	5E	^	7E	~
1F	US	3F	?	5F	_	7F	•

Table 31: ASCII-HEX Conversion

## 17 Predefined System-Barcodes

Print-Controls for the following system barcodes are predefined in SAP R/3 (starting with 3.0A).

Description	Barcode Type
ARTNR Article number	Code 128
AUFNR Request number	Code 128
BARCLVS Test Barcode in LVS	Code 39, without check digit
BC_93	Code 93 (height: 13 mm, no plain text)
BC_C128B	Code 128B, height 13 mm, no text
BC_CD39	Code 39, without check digit, no text, height 1,3 mm
BC_CD39C	Code 39 with check digit, height 13 mm, no text
BC_EAN8	EAN 8, height 13 mm, no text
BC_EAN13	EAN 13, height 13 mm, no text
BC_EANH (Release 3.0E)	For the Kyocera KYO device types, Code 128. For the HPLJ4 device type, EAN 128 (height: 13 mm, no text)
BC_I25	Interleaved 2of5 without check digit, height 13 mm, no text
BC_I25C	Interleaved 2of5 width check digit, height 13 mm, no text
BC_MSI	MSI without check digit, height 13 mm, no text
BC_MSIC	MSI with single mod-10 check digit, height 13 mm, no text
BC_MSIC1	MSI with mod-10 check digit, Height 13 mm, no text
BC_MSIC2	MSI with mod-11 check digit, Height 13 mm, no text
BC_PSN5 (Release 3.0E)	For the Kyocera KYO* device types, United States Postal Service (USPS) Postnet. For the HPLJ4 device type, ZIP+4 POSTNET 5. (Height: 3 mm, no text).
BC_PSN9 (Release 3.0E)	For the Kyocera KYO* device types United States Postal Service (USPS) Postnet. For the HPLJ4 device type, ZIP+4 POSTNET 9. (Height: 3 mm, no text).
C128A_00	Code 128, character set A (height: 5 mm, no plain text)
C128A_01	Code 128, character set A (height: 5 mm, no plain text)
C128B_00	Code 128, character set B (height: 5 mm, no plain text)
C128B_01	Code 128, character set B (height: 5 mm, no plain text)
CD39C_00	Code 39 with checksum (height: 5 mm, no plain text)
CD39C_01	Code 39 with checksum (height: 5 mm, no plain text)
CD39_00	Code 39 without checksum
CD39_01	Code 39 without checksum (height: 5 mm, no plain text)
KUNAUNR (sales order number)	Code 128
KUNAUPS (sales order item)	Code 128
MBBARC (test barcode - inventory management)	Code 128
MBBARC1 (test barcode 1 - inventory management)	EAN-8
RSNUM (reservation number)	Code 128
RSPOS (reservation item)	Code 128
RUECKNR (confirmation number)	Code 128

Table 32: Predefined System Barcodes

- A current list of predefined Print-Controls is also available at <http://help.sap.com/>
- Usually the listed bar codes are already defined in the SWIN device type - however sometimes the Print controls are missing or incorrect (so you have to edit them).

## 18 Printer Barcodes

Below you find the Printcontrols for the appropriate system bar codes. The prefix is maintained in transaction SE73 (Printer Barcodes).

System Barcode	Print Control Prefix (Default)	Print Control Prefix (Fixed Module Width)*
ARTNR	bC=128B,B=48,H=12,D=	bC=128B,M=254,H=12,D=
AUFNR	bC=128B,B=48,H=12,D=	bC=128B,M=254,H=12,D=
BARCLVS	bC=39,B=50,H=20,P=0,D=	bC=39,M=254,H=20,P=0,D=
BC_C128B	bC=128B,B=90,H=13,A=0,D=	bC=128B,M=254,H=13,A=0,D=
BC_CD39	bC=39,B=50,H=13,A=0,D=	bC=39,M=254,H=13,A=0,D=
BC_CD39C	bC=39,B=90,H=13,P=1,A=0,D=	bC=39,M=254,H=13,P=1,A=0,D=
BC_EAN8	bC=E8,B=30,H=13,A=0,D=	bC=E8,M=339,H=13,A=0,D=
BC_EAN13	bC=E13,B=50,H=13,A=0,D=	bC=E13,M=423,H=13,A=0,D=
BC_EANH	bC=E128,B=90,H=13,A=0,D=	bC=E128,M=254,H=13,A=0,D=
BC_I25	bC=25L,B=50,H=13,P=0,A=0,D=	bC=25L,M=254,H=13,P=0,A=0,D=
BC_I25C	bC=25L,B=50,H=13,P=1,A=0,D=	bC=25L,M=254,H=13,P=1,A=0,D=
BC_MSI	bC=MSI,B=90,H=13,P=0,A=0,D=	bC=MSI,M=254,H=13,P=0,A=0,D=
BC_MSIC	bC=MSI,B=90,H=13,P=1,A=0,D=	bC=MSI,M=254,H=13,P=1,A=0,D=
BC_MSIC1	-	-
BC_MSIC2	-	-
BC_PSN5	bC=PSN5,B=40,H=3,A=0,D=	bC=PSN5,M=423,H=3,A=0,D=
BC_PSN9	bC=PSN9,B=65,H=3,A=0,D=	bC=PSN9,M=423,H=3,A=0,D=
C128A_00*		bC=128A,H=5,A=0,M=212,D=
C128A_01*		bC=128A,H=5,A=0,M=212,R=90,D=
C128B_00*		bC=128B,H=5,A=0,M=212,D=
C128B_01*		bC=128B,H=5,A=0,M=212,R=90,D=
CD39C_00*		bC=39,P=1,H=5,A=0,M=212,D=
CD39C_01*		bC=39,P=1,H=5,A=0,M=212,R=90,D=
CD39_00*		bC=39,P=0,H=5,A=0,M=212,D=
CD39_01*		bC=39,P=0,H=5,A=0,M=212,R=90,D=
KUNAUNR	bC=128B,B=48,H=12,D=	bC=128B,B=48,H=12,D=
KUNAUPS	bC=128B,B=48,H=12,D=	bC=128B,B=48,H=12,D=
MBBARC	bC=128B,B=50,H=20,D=	bC=128B,B=50,H=20,D=
MBBARC1	bC=E8,B=48,H=12,D=	bC=E8,B=48,H=12,D=
RSNUM	bC=128B,B=48,H=12,D=	bC=128B,B=48,H=12,D=
RSPOS	bC=128B,B=48,H=12,D=	bC=128B,B=48,H=12,D=
RUECKNR	bC=128B,B=48,H=12,D=	bC=128B,B=48,H=12,D=

Table 33: Predefined Print Controls (Printer Barcodes)

\* The listed values are suggestions and can vary per application.

## 19 Data Flow when using SWIN Device Type

SAPlpd (or SAPsprint) can receive and process print jobs from different device types. Below you can see the difference in data flow between SWIN (and SAPWIN) based print data compared to others.

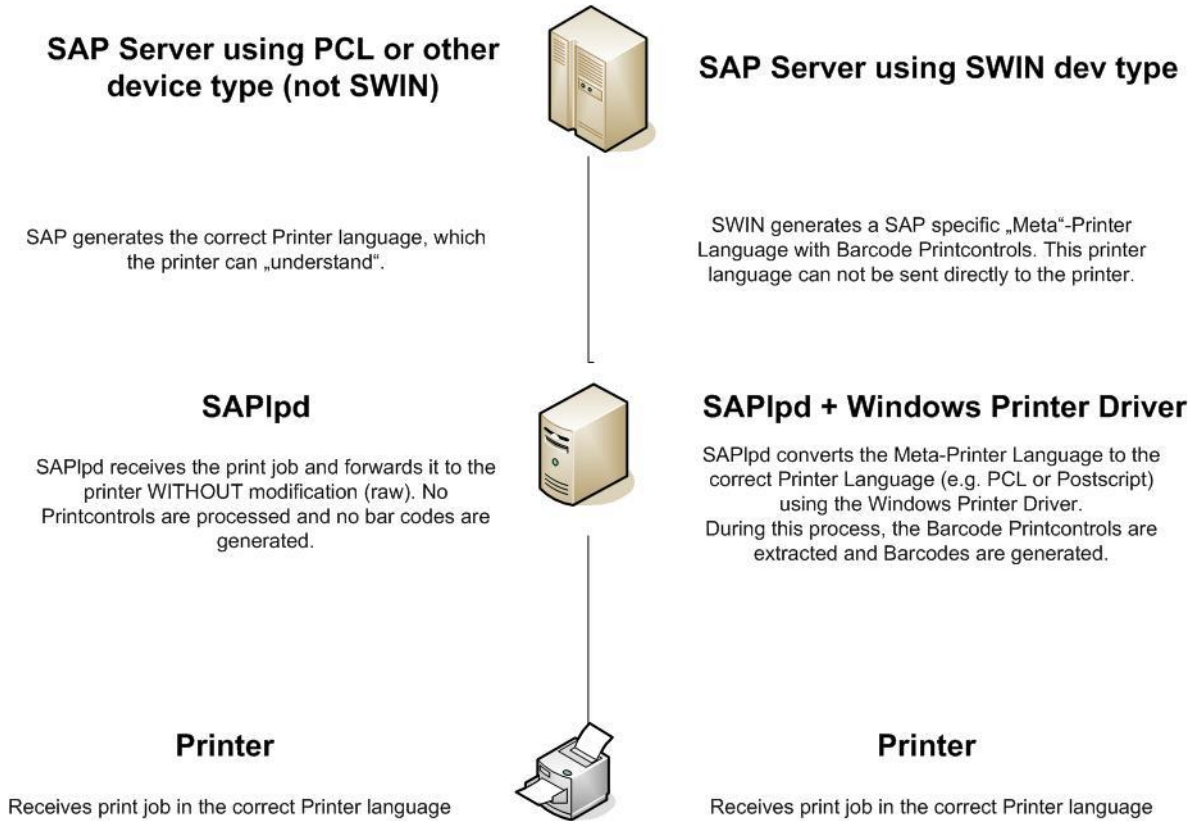


Figure 25: Data Flow SAPlpd

With the SWIN device type the so-called “SAPWIN” data stream is generated. This is a generic printer language and must be translated into the printer language of the destination printer (e.g. PCL or Postscript).

Print data in the SAPWIN data format can be processed by SAPlpd, SAPsprint or SAPWIN.DLL. Only through the SAPWIN “intermediate format” Windows printer drivers can be used ultimately.

## 20 DefaultSet Values

The information in this chapter applies if you want to use special default values for designated bar code parameters.

Precaution: set the parameter `DefaultSet=1` in the file `barcode.ini` to enable this feature. The default values in the table below are common values used in the industry and should create a readable bar code on most printers.

```
[SETTINGS]
DefaultSet=1
```

Please note:

- The default module width is used, if the parameter B= is not set in the Print-Control.
- The default height is used, if the parameter H= is not set in the Print-Control.
- The default text option is used, if the parameter A= is not set in the Print-Control.
- If a barcode symbology is not listed in the table, the following standard values are used  
Height = 10 mms  
Module Width = either the value of `DefModWidth` from `barcode.ini` (if present), or 0.508 mms.
- It is possible to adapt the characteristics of the EAN/UPC font in the `barcode.ini` file.

If required we can help you to adjust your device type (SWIN based) to produce a similar result as with the device types for HP printers. Please contact [support@tec-it.com](mailto:support@tec-it.com)

The table below lists the values of DefaultSet 1.

Barcode	Module Width [mm]	Height [mm]	Plain Text
2/5 Industry	0.254	10.2	N
2/5 IL (Interleaved)	0.254	10.2	N
2/5 Matrix	0.254	10.2	N
Codabar 2	0.254	10.2	N
Code 39	0.254	10.2	N
Code 39 ASCII (Extended)	0.254	10.2	N
Code 93	0.254	10.2	N
Code 93 ASCII	0.254	10.2	N
Code 128 (A/B/C/Auto)	0.254	10.2	N
EAN8	0.339	17.6	Y
EAN8P2	0.339	17.6	Y
EAN8P5	0.339	17.6	Y
EAN13	0.339	21.9	Y
EAN13P2	0.339	21.9	Y
EAN13P5	0.339	21.9	Y
UPCA	0.339	26.1	Y
UPCAP2	0.339	26.1	Y
UPCAP5	0.339	26.1	Y
UPCE	0.339	10.2	Y
UPCEP2	0.339	10.2	Y
UPCEP5	0.339	10.2	Y
EAN128 / UCC128	0.254	10.2	N

MSI	0.254	10.2	N
PostNet5 (ZIP 5 digits)	0.423	3.2	N
PostNet10 (ZIP+4 = 9 digits)	0.423	3.2	N
PDF417 + PDF417Trunc Row/Col ratio = 11:1	0.254	0.762 = row height	N
Codablock F	0.254	5.64 = row height	N
MAXICODE	0.870	25.0	N
DP Leitcode DP Identcode	0.423	25.4	Y
Australia Post Custom Australia Post Reply Paid	0.470	5.0	N
RSS Code Family (linear variants)	0.254	10.2	N
RSS Code Family (stacked variants)	0.254	Height depends on module width and data content	N
EAN.UCC Composite Symbology	0.254	Height depends on module width and data content	N

Table 34: DefaultSet Values



## 21 2D Symbol Sizes

### 21.1 Aztec Code Symbol Sizes

This table shows the possible user defined symbol sizes for Aztec Code. The symbol size can be defined by the Print Control „AZS=Index“. The column “Index“ represents the value that defines the corresponding size.

Index	Symbol size (rows x cols)	Index	Symbol size (rows x cols)
0	automatic calculation	19	91 x 91
1	15 x 15	20	95 x 95
2	19 x 19	21	101 x 101
3	23 x 23	22	105 x 105
4	27 x 27	23	109 x 109
5	31 x 31	24	113 x 113
6	37 x 37	25	117 x 117
7	41 x 41	26	121 x 121
8	45 x 45	27	125 x 125
9	49 x 49	28	131 x 131
10	53 x 53	29	135 x 135
11	57 x 57	30	139 x 139
12	61 x 61	31	143 x 143
13	67 x 67	32	147 x 147
14	71 x 71	33	151 x 151
15	75 x 75	34	19 x 19 reader
16	79 x 79	35	23 x 23 reader
17	83 x 83	36	27 x 27 reader
18	87 x 87		

Table 35: Aztec Code Symbol Sizes

### 21.2 Data Matrix Symbol Sizes

This table shows the possible user defined symbol sizes for Data Matrix. The symbol size can be defined by the [Print-Control DMS](#). Set DMS to that index value that corresponds to the selected size.

Index	Symbol size (rows x cols)	Index	Symbol size (rows x cols)
0	automatic calculation	16	64 x 64
1	10 x 10	17	72 x 72
2	12 x 12	18	80 x 80
3	14 x 14	19	88 x 88
4	16 x 16	20	96 x 96
5	18 x 18	21	104 x 104
6	20 x 20	22	120 x 120
7	22 x 22	23	132 x 132
8	24 x 24	24	144 x 144
9	26 x 26	25	8 x 18
10	32 x 32	26	8 x 32
11	36 x 36	27	12 x 26
12	40 x 40	28	12 x 36

13	44 x 44	29	16 x 36
14	48 x 48	30	16 x 48
15	52 x 52		

Table 36: Data Matrix Symbol Sizes

## 21.3 QR-Code Symbol Sizes (Versions)

This table shows the possible user defined symbol sizes for QR-Code. You can set them by the Print-Control „**QRV=Index**“. The column “Index“ represents the value that defines the corresponding size.

Index	Symbol size (rows x columns)	Index	Symbol size (rows x columns)
0	Automatic sizing	21	101 x 101
1	21 x 21	22	105 x 105
2	25 x 25	23	109 x 109
3	29 x 29	24	113 x 113
4	33 x 33	25	117 x 117
5	37 x 37	26	121 x 121
6	41 x 41	27	125 x 125
7	45 x 45	28	129 x 129
8	49 x 49	29	133 x 133
9	53 x 53	30	137 x 137
10	57 x 57	31	141 x 141
11	61 x 61	32	145 x 145
12	65 x 65	33	149 x 149
13	69 x 69	34	153 x 153
14	73 x 73	35	157 x 157
15	77 x 77	36	161 x 161
16	81 x 81	37	165 x 165
17	85 x 85	38	169 x 169
18	89 x 89	39	173 x 173
19	93 x 93	40	177 x 177
20	97 x 97		

Table 37: QR-Code Symbol Sizes

## 21.4 Micro QR-Code Symbol Sizes (Versions)

This table shows the possible user defined symbol sizes for Micro QR-Code. You can set them by the Print-Control „**MQV=Index**“. The column “Index“ represents the value that defines the corresponding size.

Index	Symbol size (rows x columns)
0	Automatic sizing
1	(M1) 11 x 11
2	(M1) 13 x 13
3	(M1) 15 x 15
4	(M1) 17 x 17

Table 38: Micro QR-Code Symbol Sizes

## 21.5 MicroPDF Symbol Sizes (Versions)

This table shows the possible user defined symbol sizes for MicroPDF417. You can set them by the Print-Control „MPV=Index“. The column “Index“ represents the value that defines the corresponding size.

Index	Symbolgröße (Spalten x Zeilen)	Index	Symbolgröße (Spalten x Zeilen)
0	Automatic sizing (default)	21	3 x 32
1	1 x 11	22	3 x 38
2	1 x 14	23	3 x 44
3	1 x 17	24	4 x 4
4	1 x 20	25	4 x 6
5	1 x 24	26	4 x 8
6	1 x 28	27	4 x 10
7	2 x 8	28	4 x 12
8	2 x 11	29	4 x 15
9	2 x 14	30	4 x 20
10	2 x 17	31	4 x 26
11	2 x 20	32	4 x 32
12	2 x 23	33	4 x 38
13	2 x 26	34	4 x 44
14	3 x 6		
15	3 x 8		
16	3 x 10		
17	3 x 12		
18	3 x 15		
19	3 x 20		
20	3 x 26		

Table 39: MicroPDF Symbol Sizes



## 22 Troubleshooting / FAQ

### 22.1 TEC-IT.COM FAQ Area

If you do not find an appropriate solution for your problem here, please visit our SAP FAQ website. It can be reached under the following URL:

<http://www.tec-it.com/en/support/faq/sap/barcode-dll/Default.aspx>

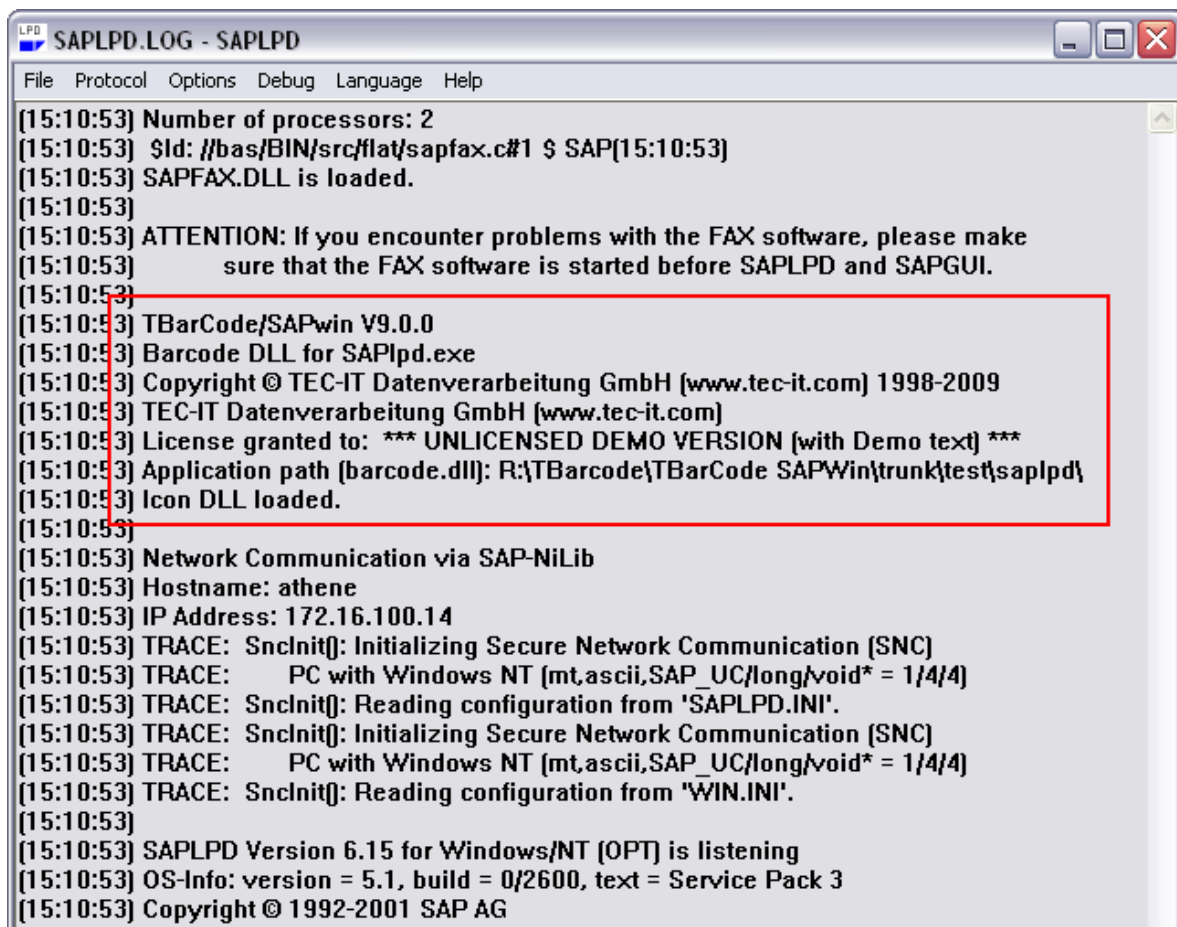
### 22.2 Was TBarCode/SAPwin installed correctly?

#### 22.2.1 SAPsprint, SAPgui

If you are using SAPsprint or the `SAPWIN.dll` you can enable the barcode log file in order to see if the product is loaded into memory. Please check out the next chapter: 22.4.1 TBarCode/SAPwin Log File "barcode.log" (page 63).

#### 22.2.2 SAPlpd

If you are using SAPlpd follow the steps below. To check the correct installation of *TBarCode/SAPwin*, simply start `SAPlpd` on the system in question.



```
LPD SAPLPD.LOG - SAPLPD
File Protocol Options Debug Language Help
[15:10:53] Number of processors: 2
[15:10:53] $Id: //bas/BIN/src/flat/sapfax.c#1 $ SAP[15:10:53]
[15:10:53] SAPFAX.DLL is loaded.
[15:10:53]
[15:10:53] ATTENTION: If you encounter problems with the FAX software, please make
[15:10:53]     sure that the FAX software is started before SAPLPD and SAPGUI.
[15:10:53]
[15:10:53] TBarCode/SAPwin V9.0.0
[15:10:53] Barcode DLL for SAPlpd.exe
[15:10:53] Copyright © TEC-IT Datenverarbeitung GmbH (www.tec-it.com) 1998-2009
[15:10:53] TEC-IT Datenverarbeitung GmbH (www.tec-it.com)
[15:10:53] License granted to: *** UNLICENSED DEMO VERSION (with Demo text) ***
[15:10:53] Application path [barcode.dll]: R:\TBarCode\SAPWin\trunk\test\saplpd\
[15:10:53] Icon DLL loaded.
[15:10:53]
[15:10:53] Network Communication via SAP-NiLib
[15:10:53] Hostname: athene
[15:10:53] IP Address: 172.16.100.14
[15:10:53] TRACE: Snclnit(): Initializing Secure Network Communication (SNC)
[15:10:53] TRACE:     PC with Windows NT (mt,ascii,SAP_UC/long/void* = 1/4/4)
[15:10:53] TRACE: Snclnit(): Reading configuration from 'SAPLPD.INI'.
[15:10:53] TRACE: Snclnit(): Initializing Secure Network Communication (SNC)
[15:10:53] TRACE:     PC with Windows NT (mt,ascii,SAP_UC/long/void* = 1/4/4)
[15:10:53] TRACE: Snclnit(): Reading configuration from 'WIN.INI'.
[15:10:53]
[15:10:53] SAPLPD Version 6.15 for Windows/NT (OPT) is listening
[15:10:53] OS-Info: version = 5.1, build = 0/2600, text = Service Pack 3
[15:10:53] Copyright © 1992-2001 SAP AG
```

Figure 26: SAPlpd Start Screen-Log file

If *TBarCode/SAPwin* was installed successfully and it was loaded by *SAP1pd*, the marked message will be displayed. The example above shows the unlicensed version. If *TBarCode/SAPwin* was licensed successfully, the text "UNLICENSED DEMO VERSION" is replaced with the licensee name.

### 22.2.3 Check list

If no log file exists or no message is displayed at the *SAP1pd* start screen, please check the following points:

#### 22.2.3.1 *SAP1pd* User

- Do you have restarted *SAP1pd* on your system (restarting is a must after installation!)? Without a reboot *TBarCode/SAPwin* is not loaded.
- Check if the *Barcode.dll* file is placed in the same directory as the *SAP1pd.exe* file. If the barcode DLL was installed in the Windows directory the files should be found as well, but the path of *SAP1pd.exe* is preferred.

#### 22.2.3.2 *SAPsprint, SAPgui and SAP1pd* User

- Was *TBarCode/SAPwin* installed on your computer (client) successfully? Before barcodes can be printed *TBarCode/SAPwin* have to be installed on your computer.
- Check if the *Barcode.dll* file can be found in the installation directory (or in the Windows directory). If this file is missing, please reinstall *TBarCode/SAPwin*. Without this file barcode printing is not possible.
- Check if the *Barcode.ini* is in the same directory as the *Barcode.dll*. Or alternatively - is the *Barcode.ini* file placed in the application respectively program data directory – see table below?

Operating System	Barcode.ini Directory
Windows XP and before	C:\Documents and Settings\All Users\Application Data\TEC-IT\TBarCode SAPwin\ version number>
From Windows Vista	C:\ProgramData\TEC-IT\TBarCode SAPwin\<version number>

## 22.3 How can I create a silent setup for deployment in my company?

Perform the following steps:

### 1. Create a Response File:

Record a Response File "Setup.iss" with the /r Parameter.

```
TBarCode_SAPwin.exe /r /f1"C:\Temp\Setup.iss"
```

### 2. Execute setup in Silent Mode

Do the Silent Installation with Parameter /s and specify the path of the .iss File. (Unless it is in the same path as the setup, then drop the f1 Parameter).

```
TBarCode_SAPwin.exe /s /f1"C:\Temp\Setup.iss"
```

By default, Setup.exe looks for a response file called Setup.iss in the same directory as Setup.exe, but the /f1 argument can be used to specify an alternative name and location of the response file.

## 22.4 How can I turn on Logging for Trouble-Shooting?

There are three options for debugging *TBarCode/SAPwin*:

- The TBarCode-log file „Barcode.log“
- The SAPlpd-log file „SAPlpd\_F.LOG“
- The SAPsprint log files

➤ Note: Please ensure to disable the logging feature before continuing with normal operation.

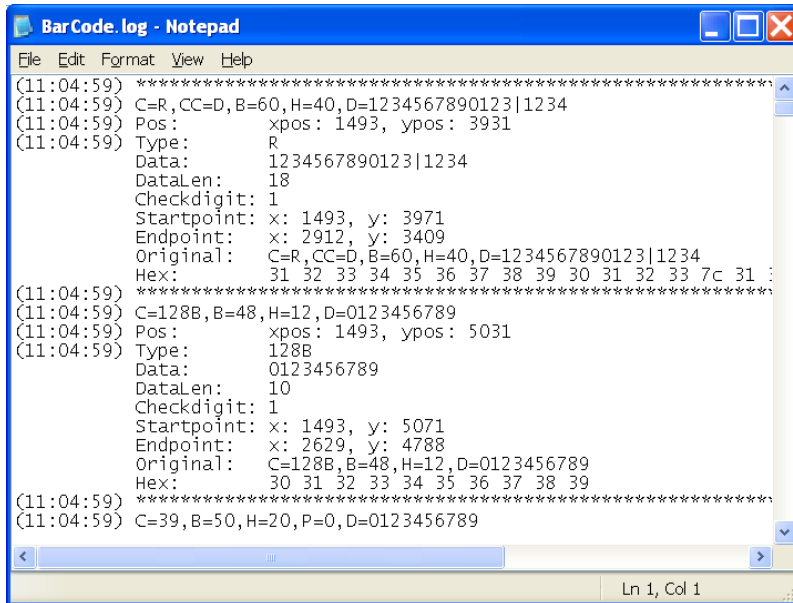
### 22.4.1 TBarCode/SAPwin Log File “barcode.log”

There is a detailed logging facility provided by *TBarCode/SAPwin* – the file `barcode.log`.

Usually this debugging feature is disabled. By setting the parameter “Level” in the section [DEBUG] of the “Barcode.ini” file to the value „1“ you can turn on logging.

```
[DEBUG]
Level=1
```

If you are using SAPlpd, restart SAPlpd to load the new settings.



```
BarCode.log - Notepad
File Edit Format View Help
(11:04:59) *****
(11:04:59) C=R,CC=D,B=60,H=40,D=1234567890123|1234
(11:04:59) Pos:      xpos: 1493, ypos: 3931
(11:04:59) Type:      R
          Data:      1234567890123|1234
          DataLen:   18
          Checkdigit: 1
          Startpoint: x: 1493, y: 3971
          Endpoint:   x: 2912, y: 3409
          Original:   C=R,CC=D,B=60,H=40,D=1234567890123|1234
          Hex:        31 32 33 34 35 36 37 38 39 30 31 32 33 7c 31 :
(11:04:59) *****
(11:04:59) C=128B,B=48,H=12,D=0123456789
(11:04:59) Pos:      xpos: 1493, ypos: 5031
(11:04:59) Type:      128B
          Data:      0123456789
          DataLen:   10
          Checkdigit: 1
          Startpoint: x: 1493, y: 5071
          Endpoint:   x: 2629, y: 4788
          Original:   C=128B,B=48,H=12,D=0123456789
          Hex:        30 31 32 33 34 35 36 37 38 39
(11:04:59) *****
(11:04:59) C=39,B=50,H=20,P=0,D=0123456789
Ln 1, Col 1
```

Figure 27: Barcode.log

*TBarCode/SAPwin* creates the log-file named “Barcode.log” in the application data or program data directory (like `barcode.ini`, see chapter **22.1 TEC-IT.COM FAQ Area**)

**If you do not find an** appropriate solution for your problem here, please visit our SAP FAQ website. It can be reached under the following URL:

<http://www.tec-it.com/en/support/faq/sap/barcode-dll/Default.aspx>

Was *TBarCode/SAPwin* installed correctly?). It contains product configuration, license information, SAP Print controls, bar code data and error messages.

➤ Ensure that the parameter `Level` in the file `barcode.ini` is set to 0 for production use (restart SAPlpd to read in the new settings).

## 22.4.2 SAPIpd Log File

The SAPIpd\_F.log file is written by SAPIpd and contains information about the SAP®-printing system. This feature is enabled only when SAPIpd was started using the command line parameter -gn (n=0..9).

- Please make sure to start SAPIpd without this parameter for normal operation, also ensure to delete existing SAPIpd\_F.log files before continuing with normal operation.

## 22.4.3 SAPsprint Log Files

You can help to find problems by enabling the logging in SAPsprint. Here are the commands you need to enter on the command line (for turning on maximum logging):

```

Set Log level to maximum
C:\Program Files\SAP\SAPSprint>sapsprint -oi LogLevel 9

Keep spool file after printing (for analysis)
C:\Program Files\SAP\SAPSprint>sapsprint -oi KeepFile 1

Create a new directory for spool files and log files
C:\Program Files\SAP\SAPSprint>mkdir c:\temp\sapsprint

Set the LogPath to our new directory
C:\Program Files\SAP\SAPSprint>sapsprint -os LogPath c:\temp\sapsprint

Log TCP/IP parameters
C:\Program Files\SAP\SAPSprint>sapsprint -oi NiTrace 1

Stop and Start SAPsprint
C:\Program Files\SAP\SAPSprint>sapsprint -p
C:\Program Files\SAP\SAPSprint>sapsprint -s
    
```

Now if you print something you get the spool file and a log file of SAPsprint in the path c:\temp\sapsprint (this path must exist!!).

The generated files may help our Support Team to find the problem (if it is a problem with the Barcode DLL).

## 22.5 No barcodes are printed

### 22.5.1 Wrong Host Spool Access Method

Please make sure that you are using host spool access method “S” or “F” – otherwise SAPIpd (or SAPsprint / SAPWIN.dll) is not used in the correct mode!

Access method	Description
S	Printing through SAP protocol. SAPIpd / SAPsprint must be already running (e.g. on a print server). Barcodes are created by the Barcode.dll of TBarCode/SAPwin.
F	Front-end printing. The print data stream is sent directly to the client, which starts SAPIpd automatically in order to process the print job. Barcodes are created by the Barcode.dll of TBarCode/SAPwin.
G	For printing on the SAP Client by using “Control Technology”. The SAPWIN.dll is loaded by the client and manages the print job processing. On demand SAPWIN.dll loads the Barcode.dll of TBarCode/SAPwin into memory for bar code generation.
U	With newer SAPsprint versions you can also use “U”. SAPIpd: Do <u>not</u> use “U” if you want to create bar codes with TBarCode/SAPwin.

### 22.5.2 Incompatible Printer Driver

In some cases the Windows printer driver of the printer in question is not working as expected. Changing the printing method of *TBarCode/SAPwin* in the `barcode.ini` file may help. Add the following line to the `barcode.ini` file in the installation path of *TBarCode/SAPwin*:

```
[DRAW MODE]
UseGDIrect=1
```

When using SAPlpd: restart SAPlpd if running and try printing again.

More information can be found on our web site <http://www.tec-it.com/>

### 22.5.3 Wrong device type (not based on SWIN)

Check if the device type for your printer is based on a copy of „SWIN“\* (Rel.4.x/SAPlpd 4.09+ ONLY!)“.

- A device type copy based on SWIN is recommended. SWIN contains most barcode definitions. In contrast SAPWIN contains only 2of5IL.

### 22.5.4 Wrong Variant of Print-Control Prefix

The so-called „variant“ of the Print-control prefix must be set to `extend` (and not to „direct“):

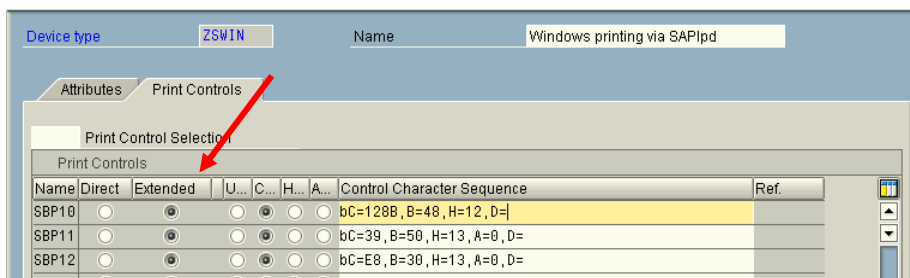


Figure 28: Print-Control Settings

Proceed this way: Transaction SPAD ► Spool Administration Initial Screen ► Tab „Device Types“ ► Button „Device Types“ ► Select your device type (e. g. „ZSWIN“) ► Button „Print-Controls“ ► Button „Change“ (F8) ► Page-Down until required Print-Control is displayed. Then change setting to „extended“ and save.

### 22.5.5 Missing CRT8 Runtime DLLs on the target system

Starting with version 6.0.2 the Barcode DLL needs the Microsoft Visual Studio 2005 (CRT 8 Runtime) DLLs. These are installed automatically with the setup program of *TBarCode/SAPwin*.

If you copy the Barcode DLL manually (or via script) into the SAPlpd or SAPsprint directory, it can be that the required CRT 8 DLLs are missing on the target system and the Barcode DLL cannot be loaded. You should see an error message in the event log of the target system (please check).

Solution: Either use the original setup of *TBarCode/SAPwin* or install the CRT 8 Runtime DLLs from the following package from Microsoft:

<http://www.microsoft.com/downloads/details.aspx?FamilyId=32BC1BEE-A3F9-4C13-9C99-220B62A191EE&displaylang=en>

## 22.6 Always the same barcodes (e.g. 2 of 5 interleaved) are printed

### 22.6.1 Wrong base device type

You have copied the device type `SAPWIN` instead of `SWIN`. We recommend using `SWIN` – it contains definitions for all usual barcode formats. In `SAPWIN` per default all Print-Controls are initialized to the bar code type 2of5ITL.

#### Solution:

Please refer to chapter 6 (Create a Device Type Copy) and make sure to choose `SWIN` as base device type. In some older SAP releases missing or wrong initialized Print-Controls may occur (even in `SWIN`) – in this case refer to chapter 12 (Introduction to Print-Controls ) and define the Print-Control as you need it.

### 22.6.2 LOCL-Printer

If the host printer „locl“ is set up in the output device (Spool Administration – Transaction `SPAD`) the predefined device type `SAPWIN` is always used for printout, regardless what else is adjusted.

#### Solution:

In Spool Administration (`SPAD`) you need to specify the exact printer name as for the host printer (or adjust „\_\_Default“). Use access method “S” or “F” and check your printer barcode settings with `SE73`.

## 22.7 Wrong barcode data / wrong output

If you encounter problems with unreadable barcodes – please ensure that your reading devices (scanners) are configured correctly. If everything is OK with your reading devices please ensure that the correct data is encoded in your barcode.

- Make sure that your SAPscript/APAB does not add additional line-feeds, carriage returns or spaces to the barcode data.

## 22.8 Barcode error-messages while printing

If there is an error while creating a barcode (usually due to invalid data characters which cannot be encoded by the selected barcode symbology) the corresponding error code together with additional input data will be written the log files.

Make sure your SAPscript/ABAP does not encode hidden spaces or new-line-characters. Refer to 22.4(How can I turn on Logging for Trouble-Shooting?).

## 22.9 Unwanted characters are printed after or beside the barcode

Characters like `;W0;` or `bC=PSN9` are printed beside the barcode. This occurs if the Print-Control suffix „SBS01“ is wrong defined. Its definition must look like this:

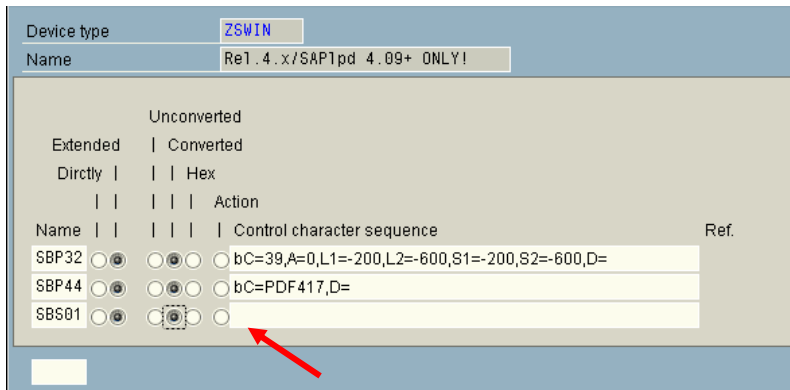


Figure 29: Correct Print-Control Definition of SBS01

Proceed this way: Transaction SPAD ► Spool Administration Initial Screen ► Tab „Device Types“ ► Button „Device Types“ ► Select your device type (e. g. „ZSWIN“) ► Button „Print-Controls“ ► Button “Change” (F8) ► Page-Down until Print-Control suffix „SBS01“ is listed.

- SAP 4.6 (and earlier): change the setting of SBS01 to “converted” (and make sure the Control character sequence is empty).
- SAP 4.7: change the setting of SBS01 to “Direct” and turn on the Hex encoding. As for the Control character sequence, enter 1B

Save your settings.

Optional: You can check the correct setting of this Print-Control with the “SAPscript Font Maintenance” like follows:

Transaction SE73 ► Select „Printer barcodes“ ► Button „Display“ ► Select Device Type (e.g. ZSWIN) ► F2 to select ► Select Suffix SBS01 (any barcode) ► Button „Display Print-Control“.

If you selected “Extended” in the above dialog, you should see Variant 5 in the Print-Control.

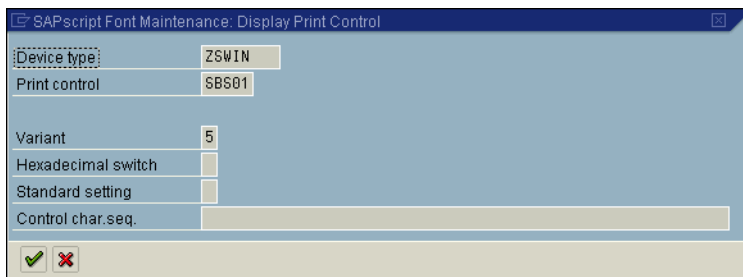


Figure 30: Correct Print-Control definition of SBS01 – Font Maintenance

## 22.10 I am using WAS and try to print “SAPSCRIPT-BARCODETEST”, but some barcodes are missing

1. You need to work with device type (or a copy of) SWIN or a variant of SWIN.
2. Check the barcode related Print-Controls of your device type. Make sure that the suffix SBS01 (edit with SE73 – printer barcodes) is empty and is using variant 5. If SBS01 is not empty, delete its content.
3. Make sure that in the style “S\_TEST” all character formats <B0>..<<BK> are defined as barcodes.

4. In some versions only B0..B9 has been defined as barcode, so not all formats of SAPSCRIPTTEST are printing as barcode.

## 22.11 SAPIpd on Windows Terminal Server uses always the same printer

If you have not set the system variable LP\_CMD, all users are printing through the default printer of the first user, who initiated a print job on the terminal server.

Solution: the system variable LP\_CMD must have the following value:

```
D:\program files\SAP\FrontEnd\SAPgui\SAPIpd\saplpd.exe -f&F -c&C -P&P
```

If not recognized, make sure you have set the correct path to SAPIpd or you may need to restart the system in order to read in the new value of LP\_CMD.

Now SAPIpd will be started (and terminated) for each print job, this is necessary for correct operation.

## 22.12 Why is a horizontal bar drawn across the barcodes?

This can occur if

- The printer driver has a problem (see 22.5.2)
- You are currently working with the unlicensed demo version of TBarCode for SAPIpd Version 5. Please refer to section 10 (Obtain a License) or contact us for a license file.

## 22.13 Testing Tray Selection and Print Mode Selection

SAP provides predefined SAPscript documents which can be used to test whether tray selection and print mode selection are working properly on your printers.

- For tray selection, print the SAPscript document SAPSCRIPT-TRAYTEST, ID ST, Language D / E.
- For print mode selection, print the SAPscript document SAPSCRIPT-PRINTMODETEST, ID ST, Language D or E.

## 22.14 No Frontend Printing possible with SAPsprint

You want to use Frontend Printing with Host Spool Access Method F, but it is not working.

Please check out SAP Note 821519.

If you have R/3 4.6c you don't have the required patch level to update to the new spool access method "G".

➤ Frontend Printing with SAPsprint or SAPFprint can be used with "G" only.

## 22.15 The wrong paper tray is used

### 22.15.1 Problem

Tray-Control works fine if there are no barcodes in the document. But if a barcode exists in the form, the default paper tray will be chosen automatically, also when another paper tray is selected explicitly.

### 22.15.2 Solutions

*TBarCode/SAPwin* is called from *SAPlpd* only if the Print-Control Esc + "b" has been received, then the rest of the Print-Control will be decoded and the barcode will be drawn. *TBarCode/SAPwin* doesn't have a direct influence to the tray control.

Please perform the following checks:

- Please check, if you are using always the same device type
- Make sure you are printing always the same document or form (frequently the A4/Letter problem causes such problems).
- Perhaps a Print-Control which was used for barcodes previously was changed in order to be used for tray-control purposes and this Print-Control is still used in the document.
- Check if there is a barcode related Print-Control that begins with "T" (instead of "b")?
- Make sure it is not printer driver related problem (choose another printer driver)
- Make sure you are using the latest *SAPlpd.exe* version

## 22.16 How to enable Hebrew Double-Byte character set?

Hebrew characters are represented as Double Byte Character Set (DBCS). *SAPlpd.exe* needs to know the Codepage in order to decode the DBCS correctly. Also other DBCS are supported (Japanese, Kanji, etc.).

Change the `WinCharSet` option to Hebrew as follows: Edit the file "win.ini" in the Windows directory and add (or edit) the following section:

```
[SAPlpd]
WinCharSet=177
```

Save `win.ini` and restart *SAPlpd* to read in new settings.

## 22.17 How to encode more than 70 characters in a 2D bar code?

SAPscript, but also Smart Forms has a maximum limit of 70 characters<sup>2</sup> per bar code. This limit causes problems when using 2D symbologies for high data capacity like PDF417 and Data Matrix.

For SAPscript there are two workarounds available:

- Work with a reduced font size as shown in SAP note 197177.
- Use the new command "RAWTEXT" as shown in SAP note 497491.

For Smart Forms there is a solution described in SAP note 497380.

Alternatively *TBarCode/SAPwin* offers the possibility for splitting up transmission of the bar code data into several "portions" - please contact TEC-IT's support [sap@tec-it.com](mailto:sap@tec-it.com) for details.

---

<sup>2</sup> This limit depends on the used SAP Release and the installed patch level.

## 22.18 How can I encode “Flattermarken” alias “OMR”?

Add a new System-Barcode and then add a new Printer barcode for OMR (e.g. ZBC\_OMR). Adjust the Print-Control prefix (SE73) of the printer bar code as follows (leave the suffix empty with Variant 5):

Encoding	Print-Control
ASCII	bC=FLM,B=15,H=30,R=90,A=0,D=
Hex	62433D464C4D2C423D31352C483D33302C523D39302C413D302C443D

Table 40: Flattermarken Sample (part 1)

Parameter	Value	Description
C	FLM	Flattermarken or "OMR" Code
B	15	width=15mm
H	30	height=30mm
R	90	rotation=90°
A	0	no text output

Table 41: Flattermarken Sample (part 2)

## 22.19 How to change the vertical alignment of the bar codes?

The vertical alignment of the bar code seems to be wrong. All of the barcodes are printing about 1/2 of the barcode height below the desired baseline.

### 22.19.1 Solution

You can change the baseline with two configuration parameters in the "barcode.ini" file. The baseline alignment checkbox in SAP has no affect.

The first parameter `Direction` indicates the printing direction as shown below:

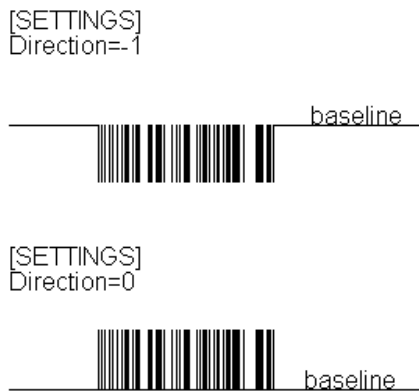


Figure 31: Barcode printing direction (adjusted in Barcode.ini)

The second parameter `Shift` can be used to “fine-tune” the baseline position.

➤ When using SAPIpd you need a restart of SAPIpd to read in the changed settings.

## 22.20 The Font “Courier” isn’t printing correctly with SAPIpd

In the SAPIpd menu open **Options ▶ Font Substitution** and check if the correct Windows Font is assigned to the SAP Font „COURIER NEW“.

If the Windows Font „COURIER“ is assigned to the SAP Font, it can make problems. Please choose in this case the button “Default” (deletes the Windows Font-name) and try a test print again.

## 22.21 How can I use Application Identifiers (FNC1)?

Application Identifiers are used in the barcode symbols GS1-128 (former called EAN-128 and UCC-128).

An Application Identifier (AI) is placed in front of the value of a data field and informs about the purpose of the data. An Application Identifier (AI) is a standard cipher combination which consists of 2-4 digits. The AI clearly defines a data field’s content and format (field with fixed or variable length, numeral or alphanumeric). Several data fields - each with preceding AI - could be encoded in a barcode symbol.

➤ The brackets, which enclose the AIs, don’t have to be encoded in the input data of the bar code. The brackets will be created automatically in the human readable text line if an AI was recognized.

Data fields with variable length have to be limited with a field separator. For separating those data fields in GS1-128, a special symbology character is used: FNC1. For encoding the FNC1 into the input data a “placeholder” is needed. This placeholder character can be adjusted in the Print-Control prefix.

For Example: If the exclamation mark "!" should be used as placeholder for FNC1, the control sequence `%=!` must be added to the Print-Control prefix.

### 22.21.1 Sample GS1/EAN-128 prefix

Parameter	Value
Variant	5
Hex-Switch	On
Print-Control (HEX)	62433D453132382C253D212C413D312C423D37362C483D32352C443D
Print-Control (ASCII)	bC=E128,%=!,A=1,B=76,H=25,D=

Table 42: GS1/EAN-128 Sample (part 1)

GS1-128 was designed to encode multiple data fields together. If you don’t use the maximum number of characters in a variable-length data field, you have to encode the FNC1 as field separator at the end. In the Print-Control above we set the exclamation mark "!" to be used as placeholder for FNC1.

### 22.21.2 Encoding Examples

Encoding a Batch Number: The AI for the batch number is 10. The AI for the batch number is defined with the format n2 + an..20, which means, that after the AI, the batch number with variable length (but with maximal 20 alphanumerical characters) is encoded.

Data to be encoded	10 + batch number = 1012345678
Barcode data	1012345678
The human readable text	(10)12345678 The ( and ) are automatically determined by TBarCode/SAPwin
Print-Control (ASCII)	bC=E128,%=!,A=1,B=76,H=25,D=

Table 43: GS1/EAN-128 Sample (part 2)

Using several AI's: In this example two data fields will be running together:

- Batch number AI (10) : data format: n2 + an..20
- EAN Article number AI (01) : data format: n14

Data to be encoded	10 +batch-number + ! + 01 + EAN-# product-number
Barcode data	1012345678 + FNC1 + 0112345678901234
The human readable text	(10)12345678(01)12345678901234 The ( and ) are automatically determined by TBarCode/SAPwin

Table 44: GS1/EAN-128 Sample (part 3)

The “!” in this example stands for FNC1 (have a look at Print-Control prefix) and is necessary, because the maximum numbers of characters (20 characters) has not been utilized.

➤ Hint: It is not allowed to add an FNC1 after the last data field.

## 22.22 I get the error message „NilBind: service 515 in use”

### 22.22.1 Symptom

During printing – while SAPlpd starts - you get this error message:

```
[11:13:58] TRACE: ***LOG Q0I=> NiPBind: bind
[11:13:58] TRACE: [10013: WSAEACCES: Permission denied]
[11:13:58] TRACE: [ninti.c 1473]
[11:13:58] *** ERROR: NilBind: service 515 in use
[11:13:58] *** ERROR: NilListen: NiBind (rc=-4)
[11:13:58] Error: Ni2Listen failed with code = -4
[11:13:58] The TCP-port [515] for the SAPLPD is in use!
[11:13:58] There is either another SAPLPD running or
[11:13:58] the previous SAPLPD did not release
[11:13:58] the TCP port.
[11:13:58] Maybe a PC reboot will help
```

Figure 32: Error message “NilBind: service 515 in use”

In this sample screen shot, SAPlpd.exe wants to use TCP Port 515 (as per default). If another process or another instance of SAPlpd.exe is running and using this port you get this error.

Please check out OSS note 0044009 to see how a TCP port can be changed. We suggest installing SAPlpd as Windows system service only if the SAPGUI Client won't be used or SAPlpd won't be started manually.

### 22.22.2 Possible Causes

- You have installed SAPlpd as service (refer to OSS Note 0042268) and want to run a second instance manually.
- You are using SAP in a UNIX environment and for printing you use lpd to send jobs to a Windows/2000 print server. The lpd process on the W2k server listens on the same port as SAPlpd.exe.

- If your Windows server has the Unix printing services installed, it can be, that the LPR Port (515) is already used by this service.  
Either you de-install the Unix printing services (if you don't need them) or you use another port for SAPIpd (according to OSS Note 0041913 there is a command line parameter `-r` to set the receiver port. of SAPIpd – see OSS note).  
<http://www.microsoft.com/windowsxp/pro/using/itpro/networking/printservicesunix.asp>

### 22.23 SAPIpd.log shows: “Unknown ESCAPE-Code: 0x1B 0x36”

- Please make sure that you have installed the latest downloadable version from <http://www.tec-it.com>
- Please check out that you have copied the device type `SWIN` to `ZSWIN` as shown in our documentation. Refer to chapter 6 (Create a Device Type Copy).

Each Print-Control in the device type begins with an escape character. If the Print-Control contains wrong characters, you may get this error. Barcode Print-Controls start with “b”.

### 22.24 I added a new Print-Control, but SAP could not find it

Sometimes, when you are creating a Print-Control (prefix or suffix), it has to be “dirty” in order that it is saved properly. To make it “dirty” edit it (add and delete a space) and then save it.

### 22.25 I can't define a Print-Control with variant 5 - SAP opens the window with value 1

The variant cannot be changed within `SE73`, but it can be changed within `SPAD`.

Options ► `SPAD` - Button “Full Admin...” ► Tab “Device Types” ► Enter device type `ZSWIN`  
► Tab “Print-Controls” ► F8 (change) ► select the Print-Control to change.

Now there are radio buttons to switch between “Direct” (Variant 1) and “Extended” (Variant 5). Switch to `Extended` to get variant 5 for a Print-Control.

### 22.26 Is it possible to use the same output device in SAP for all users?

#### 22.26.1 Local and central printing

Different users are printing bar codes from different locations. Is it possible to work with the same output device in SAP for all users or have I to define different output devices?

You have to define only “one” output device for the local printing on the client or over a central print-server.

##### 22.26.1.1 Local printing

SAPIpd.exe is running on the client, you have to install *TBarCode/SAPwin* on each client which wants to print barcodes.

Use access method `F` (front end) with device type `ZSWIN` (or the name of your `SWIN`-copy). Usually the default printer is in use on the client (but you can also adjust every arbitrary printer which is available on the client)

[http://help.sap.com/saphelp\\_470/helpdata/en/38/5bc3f2e4bd11d18e2b0000e83dd9fc/content.htm](http://help.sap.com/saphelp_470/helpdata/en/38/5bc3f2e4bd11d18e2b0000e83dd9fc/content.htm)

### 22.26.1.2 Central printing

SAPlpd.exe is running on a Windows server (e.g. print-server), *TBarCode/SAPwin* will be installed on this server, use access method *S* (SAP protocol) with device type *ZSWIN* (or the name of your *SWIN-copy*). You can use local and network printers which are installed on the print-server.

[http://help.sap.com/saphelp\\_470/helpdata/en/7e/36e4cd023411d399b70000e83dd9fc/content.htm](http://help.sap.com/saphelp_470/helpdata/en/7e/36e4cd023411d399b70000e83dd9fc/content.htm)

### 22.26.2 List printing

What can I do with the „normal“ list printing, when it is running with the same output devices (ext. output management system) and when I have to define different output devices?

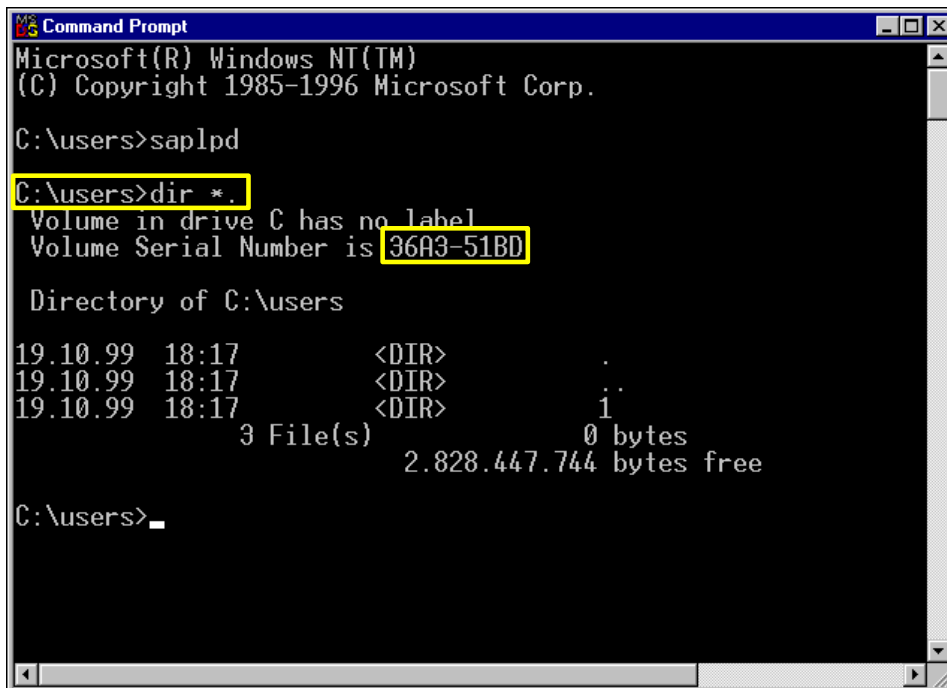
One and the same output device can „contain“ two drivers (the SAPscript and the list driver). You can also use another driver for list printing (that is not indicated in the output device, but in the device type *ZSWIN*).

In the SAP Information (look at the following link) you can use *SWIN* (and/or *ZSWIN*) for list printing. But you can also use PCL, Postscript and so on.

[http://help.sap.com/saphelp\\_470/helpdata/en/d9/4a958851ea11d189570000e829fbbd/content.htm](http://help.sap.com/saphelp_470/helpdata/en/d9/4a958851ea11d189570000e829fbbd/content.htm)

## 22.27 How to retrieve the System-ID?

For a Single License, TEC-IT needs the System-ID of the computer (the client) where you want to use *TBarCode/SAPwin*.



```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\users>saplpd
C:\users>dir *.*
Volume in drive C has no label
Volume Serial Number is 36A3-51BD

Directory of C:\users

19.10.99  18:17      <DIR>      .
19.10.99  18:17      <DIR>      ..
19.10.99  18:17      <DIR>      1
          3 File(s)              0 bytes
          2.828.447.744 bytes free

C:\users>
```

Figure 33: System-ID

To get this System-ID, please perform the following commands.

1. Open the command prompt (DOS-Box, *cmd.exe*) on your client
2. Change to the drive containing your operating system (usually drive C:) by typing „C:“ followed by carriage return.

3. Type in the DOS-command „dir \*.\*“ or „dir | more“ followed by carriage return.
4. The System ID is displayed as Volume serial number” (refer to screen-shot).

## 22.28 How to license the product in “barcode.ini”?

After you have ordered *TBarCode/SAPwin* you will receive your license data containing the license key.

The license data consist of several lines, which have to be entered (or copied with Copy and Paste) into the `barcode.ini` file. This file must reside in the application data/program data path (see chapter **22.2 Was TBarCode/SAPwin installed correctly?**), the same directory as the “Barcode.dll” program file (refer to the installation path of *TBarCode/SAPwin*), or in the Windows directory.

When using SAPIpd you have to restart SAPIpd (or your system) so the changes can take effect.

If a valid license file is installed on your client it turns your restricted installation (which is printing a “Demo” text over the barcode) into a full-featured installation without any restrictions.

```

BarCode.ini - TBarCode for SAPwin Settings File
*****
Contact:
TEC-IT Datenverarbeitung GmbH
Wagnerstr. 6
A-4400 Steyr

WEB:      http://www.tec-it.com
SUPPORT:  sap@tec-it.com
***** LICENSING *****
[LICENSE_DATA]
License_Product=20
Licensee=Your Name
License_Kind=2
Number_Of_Licenses=1
License_Key=Your Key

;Parameter "License_Product"
;   The product code (may be "20" for 1D-Barcodes or "21" for 1D/2D)

```

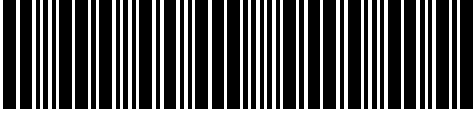





Figure 34: Barcode.ini

The license data section in the BarCode.ini File contains the following information (refer to screen-shot):







- `License_Product` (the product code)
  - 20 ... 1D license for linear bar codes (Code 2 of 5, Code 128, Code 39, EAN, UPC...)
  - 21 ... 2D license for two-dimensional codes (PDF417, MaxiCode, Data Matrix...)
  - The 2D license includes also the 1D bar codes.
- `Licensee` (usually the company name)
- `License_Kind` (ID of the license type)
  - 1 ... Single; 2 ... Site; 3 ... World/Enterprise
- `Number_Of_Licenses`
- `Licence_Key`








## 23 Supported Barcodes

### 23.1 Linear Bar Codes (1D)

<p><b>2 of 5 Industrial</b></p> <p>Valid characters: "0".."9"          Check digit method: Modulo10          Default: no check digit          Print Control: C=25I</p>	 <p>0123456</p>
<p>Notes:</p>	
<p><b>2 of 5 Interleaved</b></p> <p>Valid characters: "0".."9"          Check digit method: Modulo10          Default: no check digit          Print Control: C=25L</p>	 <p>00123456</p>
<p>Notes: If the number of digits is odd a leading zero will be inserted automatically. This barcode type can encode only an even number of digits</p>	
<p><b>2 of 5 Matrix</b></p> <p>Valid characters: "0".."9"          Check digit method: Modulo10          Default: no check digit          Print Control: C=25M</p>	 <p>0123456</p>
<p>Notes:</p>	
<p><b>2 of 5 IATA</b></p> <p>Valid characters: "0".."9"          Check digit method: Modulo10          Default: no check digit          Print Control: C=25A</p>	 <p>0123456</p>
<p>Notes:</p>	
<p><b>Codabar</b></p> <p>Valid characters: "0".."9", "-", "\$", ".", "/", ":", "+", "A", "B", "C", "D"          Check digit method: -          Default: no check digit          Print Control: C=CODA</p>	 <p>A01234:/.+ A</p>
<p>Notes: "A", "B", "C", and "D" are only useable as start or stop characters.</p>	
<p><b>Code 39</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", ":", "+", "\$", "/", ":", "%"          Check digit method: Modulo43          Default: no check digit          Print Control: C=39</p>	 <p>ABC123-+</p>
<p>Notes: Start- and stop characters (*) are created automatically and does not have to be included in the input data.</p>	



<p><b>Code 128 Subset C</b></p> <p>Valid characters: ASCII-characters between 0..127</p> <p>Check digit method: Check digit included in the code</p> <p>Default: -</p> <p>Print Control: C=128C</p>		 <p>1234567890</p>
<p>Notes: This code is a subset of Code 128. It is particularly used for encoding sequences of digits. A switch to other Code 128 subsets is done automatically if required.</p>		
<p><b>EAN 8</b></p> <p>Valid characters: "0".."9", 7 digits + 1 Check digit</p> <p>Check digit method: Check digit included in the code</p> <p>Default: -</p> <p>Print Control: C=E8</p>		 <p>9031 1017</p>
<p>Notes: Check digit (the 8<sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for article bar coding.</p>		
<p><b>EAN 8 with 2 digits add-on</b></p> <p>Valid characters: "0".."9"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: -</p> <p>Print Control: C=E8+2</p>		 <p>9031 1017 12</p>
<p>Notes: Same as EAN8, but with 2 add-on digits enclosed</p>		
<p><b>EAN 8 with 5 digits add-on</b></p> <p>Valid characters: "0".."9"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: -</p> <p>Print Control: C=E8+5</p>		 <p>9031 1017 12345</p>
<p>Notes: Same as EAN8, but with 5 add-on digits enclosed</p>		
<p><b>EAN 13</b></p> <p>Valid characters: "0".."9", 12 digits + 1 Check digit</p> <p>Check digit method: Check digit included in the code</p> <p>Default: -</p> <p>Print Control: C=E13</p>		 <p>9 780201 379686</p>
<p>Notes: Check digit (the 13<sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for article bar coding.</p>		
<p><b>EAN 13 with 2 digits add-on</b></p> <p>Valid characters: "0".."9"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: -</p> <p>Print Control: C=E13+2</p>		 <p>9 780201 379686 12</p>
<p>Notes: Same as EAN13, but with 2 add-on digits enclosed.</p>		

<p><b>EAN 13 with 5 digits add-on</b></p> <p>Valid characters: "0".."9"          Check digit method: Check digit included in the code          Default: -          Print Control: C=E13+5</p>	
<p>Notes: Same as EAN13, but with 5 add-on digits enclosed.</p>	
<p><b>UPC version A</b></p> <p>Valid characters: "0".."9", 11 digits + 1 Check digit          Check digit method: Check digit included in the code          Default: -          Print Control: C=UA</p>	
<p>Notes: Check digit (the 12<sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for article bar coding.</p>	
<p><b>UPC version A, 2 digits add-on</b></p> <p>Valid characters: "0".."9"          Check digit method: Check digit included in the code          Default: -          Print Control: C=UA+2</p>	
<p>Notes: Same as UPC version A, but with 2 add-on digits enclosed.</p>	
<p><b>UPC version A, 5 digits add-on</b></p> <p>Valid characters: "0".."9"          Check digit method: Check digit included in the code          Default: -          Print Control: C=US+5</p>	
<p>Notes: Same as UPC version A, but with 5 add-on digits enclosed.</p>	
<p><b>UPC version E</b></p> <p>Valid characters: "0".."9", 7 digits + 1 Check digit          Check digit method: Check digit included in the code          Default: -          Print Control: C=UCE</p>	
<p>Notes: Check digit (the 8<sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for article bar coding. Code must begin with "0" or "1".</p>	
<p><b>UPC version E, 2 digits add-on</b></p> <p>Valid digits: "0".."9"          Check digit method: Check digit included in the code          Default: -          Print Control: C=UCE+2</p>	
<p>Notes: Same as UPC version E, but with 2 add-on digits enclosed.</p>	
<p><b>UPC version E, 5 digits add-on</b></p> <p>Valid digits: "0".."9"          Check digit method: Check digit included in the code          Default: -          Print Control: C=UCE+5</p>	

Notes:		Same as UPC version E, but with 5 add-on digits enclosed.
<b>GS1-128 / UCC-128 / EAN-128</b>		
Valid characters:	ASCII characters between 0..127	 <p>ABCabc-/+</p>
Check digit method:	Check digit included in the code	
Default:	-	
Print Control:	C=G128 or C=E128	
Notes:		Standardized version of Code 128.
<b>SSCC18</b>		
Valid characters:	"0".."9", 17 digits + 1 Check digit	 <p>(00)390123451234567890</p>
Check digit method:	Check digit included in the code	
Default:	-	
Print Control:	C=SSCC18	
Notes:		Special version of EAN128. Check digit (the 18 <sup>th</sup> digit) is automatically calculated if not posted in the input data.
<b>MSI</b>		
Valid characters:	"0".."9"	Supported, but without check digits
Check digit methods:	Not implemented	
Default:	No check digit	
Print Control:	C=MSI	
Notes:		
<b>Flattermarken / OMR</b>		
Valid characters:	"0".."9", 9 digits specifying the position of the bars	
Check digit method:	none	
Default:	-	
Print Control:	C=FLM	
Notes:		For correct recognition of crease-bents.
<b>Pharmacode One-Track</b>		
Valid characters:	"0".."9"	 <p>123456</p>
Check digit method:	none	
Default:	-	
Print Control:	C=PH1	
Notes:		Used for pharmaceutical areas.
<b>Pharmacode Two-Track</b>		
Valid characters:	"0".."9"	 <p>123456</p>
Check digit method:	none	
Default:	-	
Print Control:	C=PH1	
Notes:		Used for pharmaceutical areas. Usually printed without a human readable text.

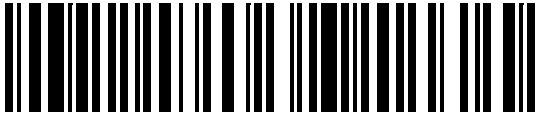

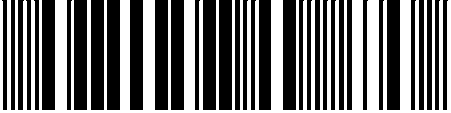
















<b>EAN-14</b>  Valid characters: "0".."9", 13 digits + 1 Check digit Check digit method: Check digit included in the code Default: - Print Control: C=E14		 (01)12345678901231
Notes: Special version of EAN128. Check digit (the 14 <sup>th</sup> digit) is automatically calculated if not posted in the input data.		
<b>Telepen</b>  Valid characters: Pairs of digits, pairs of one digit with an 'X' Check digit method: - Default: - Print Control: C=TEL		 1234567X
Notes: Telepen can encode pairs of characters only. A pair must consist of 2 digits or one digit and the letter 'X'.		
<b>Telepen Alpha</b>  Valid characters: ASCII characters between 0..127 Check digit method: - Default: - Print Control: C=TELA		 ABab
Notes:		
<b>ITF-14</b>  Valid characters: "0".."9", 13 digits + 1 Check digit Check digit method: Check digit included in the code Default: - Print Control: C=I14		 12345678901231
Notes: Special version of 2 of 5 Interleaved. Check digit (the 14 <sup>th</sup> digit) is automatically calculated if not posted in the input data.		

Table 45: Supported Linear (1D) Bar Codes

## 23.2 Postal Codes

<b>USPS Postnet 5</b>  Valid characters: "0".."9", 5 digits + 1 Check digit Check digit method: Check digit included in the code Default: - Print Control: C=PSN5		 123455
Notes: Check digit (the 6 <sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for postal purposes (USA).		
<b>USPS Postnet 9</b>  Valid characters: "0".."9", 9 digits + 1 Check digit Check digit method: Check digit included in the code Default: - Print Control: C=PSN9		 1234567895
Notes: Check digit (the 10 <sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for postal purposes (USA).		

<b>USPS Postnet 11</b>		 <p>123456789014</p>
Valid characters: "0".."9", 11 digits + 1 Check digit Check digit method: Check digit included in the code Default: - Print Control: C=PSN11	Notes: Check digit (the 12 <sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for postal purposes (USA).	
<b>Deutsche Post Leitcode</b>		 <p>01234.567.891.23 1</p>
Valid characters: "0".."9", 13 digits + 1 Check digit Check digit method: Check digit included in the code Default: - Print Control: C=DPL	Notes: Check digit is automatically calculated and added to the bar code. Used for postal purposes (Germany).	
<b>Deutsche Post Identcode</b>		 <p>00.123 456.789 016</p>
Valid characters: "0".."9", 11 digits + 1 Check digit Check digit method: Check digit included in the code Default: - Print Control: C=DPI	Notes: Check digit is automatically calculated and added to the bar code. Used for postal purposes (Germany).	
<b>Australian Post Customer / Australia Post 37-CUST</b>		 <p>12345678</p>
Valid characters: "0".."9", 8 digits Check digit method: Check digit included in the code Default: - Print Control: C=APC37	Notes: Used for postal purposes (Australia).	
<b>Australian Post Customer 2 / Australia Post 52-CUST</b>		 <p>12345678ABCDE</p>
Valid characters: "0".."9", "A".."Z", "a".."z", Space, "#"; 8 digits + up to 5 characters Check digit method: Check digit included in the code Default: - Print Control: C=APC52	Notes: Used for postal purposes (Australia).	
<b>Australian Post Customer 3 / Australia Post 67-CUST</b>		 <p>12345678ABCDEFGHJ</p>
Valid characters: "0".."9", "A".."Z", "a".."z", Space, "#"; 8 digits + up to 10 characters Check digit method: Check digit included in the code Default: - Print Control: C=APC67	Notes: Used for postal purposes (Australia).	
<b>Australian Post Redirection</b>		 <p>12345678</p>

Valid characters:	"0".."9", 8 digits	
Check digit method:	Check digit included in the code	
Default:	-	
Print Control:	C=APCRD	
Notes:	Used for postal purposes (Australia).	
<b>Australian Post Reply Paid</b>		
Valid characters:	"0".."9", 8 digits	
Check digit method:	Check digit included in the code	12345678
Default:	-	
Print Control:	C=APCRP	
Notes:	Used for postal purposes (Australia).	
<b>Australian Post Routing</b>		
Valid characters:	"0".."9", 8 digits	
Check digit method:	Check digit included in the code	12345678
Default:	-	
Print Control:	C=APCRT	
Notes:	Used for postal purposes (Australia).	
<b>Royal Mail 4 State (RM4SCC)</b>		
Valid characters:	"0".."9", "A".."Z"; up to 9 digits	
Check digit method:	Check digit included in the code	1234567895
Default:	-	
Print Control:	C=RM	
Notes:	Check digit is automatically calculated and added to the bar code. Used for postal purposes (UK, Singapore).	
<b>KIX – Dutch Postal Code</b>		
Valid characters:	"0".."9", "A".."Z", "a".."z"	
Check digit method:	-	ABCabc123
Default:	-	
Print Control:	C=KIX	
Notes:	Used for postal purposes (Netherlands).	
<b>Italian Postal Code 2 of 5</b>		
Valid characters:	"0".."9", 11 digits + 1 Check digit	
Check digit method:	Check digit included in the code	12345678901-2
Default:	-	
Print Control:	C=IP25	
Notes:	Check digit (the 12 <sup>th</sup> digit) is automatically calculated if not posted in the input data. Used for postal purposes (Italy).	
<b>DPD Code</b>		
Valid characters:	ASCII characters between 32..127, 28 characters	
Check digit method:	Check digit included in the code	0071 106 0163 2532 9483 75 179 276 A
Default:	-	
Print Control:	C=DPD	
Notes:	Used by DPD ( <i>Deutscher Paket Dienst</i> ). The encoded data and the human readable text differ slightly.	

<p><b>DAFT Code</b></p> <p>Valid characters: "D", "A", "F", "T" or "d", "a", "f", "t"          Check digit method: -          Default: -          Print Control: C=DFT</p>		
<p>Notes: DAFT is an artificial generic code, which is designed to generate arbitrary 4 state postal codes. Each of the 4 input characters stands for a specific kind of bar.</p>		

Table 46: Supported Postal Codes

### 23.3 Two Dimensional Bar Codes (2D)<sup>3</sup>

<p><b>MaxiCode (2D Symbology)</b></p> <p>Valid characters: alphanumeric and/or numeric          Check digit method: check digit and error correction included in the code          Mode: Mode-4 (standard symbol)          Print Control: C=MXC</p>		
<p>Notes: Used by UPS. Modes for including of postal information (SCM) can be adjusted. Printing size is set to a norm value.</p>		
<p><b>PDF417 &amp; PDF417 Truncated (2D Symbology)</b></p> <p>Valid characters: alphanumeric and/or bytes          Check digit method: check digit and error correction included in the code          Print Controls: C=PDF          C=PDT</p>		
<p>Notes: 2D symbology (multi-row) to encode large quantities of data. Data representation is divided into rows and columns that adjust automatically (depending on input data) or can be set by printer commands. Also available as truncated version: PDF417 Truncated</p>		
<p><b>Micro PDF417 (2D Symbology)</b></p> <p>Valid characters: alphanumeric and/or bytes          Check digit method: check digit and error correction included in the code          Print Control: C=MPDF</p>		
<p>Notes: 2D symbology to encode large quantities of data. Size adjusts automatically depending on input data or can be set by printer commands.</p>		
<p><b>Data Matrix (2D Symbology)</b></p> <p>Valid characters: alphanumeric and/or bytes          Check digit method: check digit and error correction included in the code          Print Control: C=DMX</p>		
<p>Notes: 2D symbology to encode large quantities of data. Size adjusts automatically depending on</p>		

<sup>3</sup> All symbologies in this chapter need a 2D License

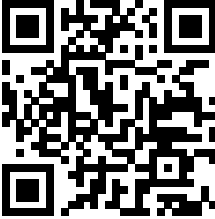
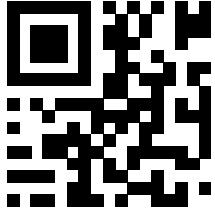

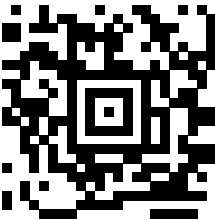

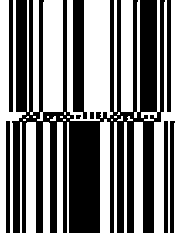
input data or can be set by printer commands.	
<p><b>QR-Code (2D Symbology)</b></p> <p>Valid characters: alphanumeric and/or bytes, Kanji character set</p> <p>Check digit method: check digit and error correction included in the code</p> <p>Print Control: C=QRC</p>	
<p>Notes: 2D symbology to encode large quantities of data. Size adjusts automatically depending on input data or can be set by printer commands. Special Industry formats are supported.</p>	
<p><b>Micro QR-Code (2D Symbology)</b></p> <p>Valid characters: numeric, alphanumeric and/or bytes, Kanji character set</p> <p>Check digit method: check digit and error correction included in the code</p> <p>Print Control: C=MQR</p>	
<p>Notes: 2D symbology designed to encode small quantities of data. Can be read very efficiently and safely.</p>	
<p><b>Codablock F (2D Symbology)</b></p> <p>Valid characters: ASCII 0-127</p> <p>Check digit method: internal check digit method</p> <p>Print-Controls: C=CBF</p>	
<p>Notes: "Stacked Code128" symbology, based upon Code 128 char set. Each row is a single Code 128 symbol extended with row indicator information and additional check digits. The UCC/EAN format indicator is supported.</p>	
<p><b>Aztec Code (2D Symbology)</b></p> <p>Valid characters: alphanumeric and/or bytes</p> <p>Check digit method: check digit and error correction included in the code</p> <p>Print Control: C=AZT</p>	
<p>Notes: 2D symbology to encode large quantities of data. Size adjusts automatically depending on input data or can be set by printer commands.</p>	

Table 47: Supported 2D Barcodes

## 23.4 GS1 DataBar / RSS Reduced Space Symbology

<p><b>RSS-14</b></p> <p>Valid characters: "0".."9", 13 digits + 1 check digit</p> <p>Check digit method: EAN 14</p> <p>Print-Control: C=R</p>	 <p>(01)01234567890128</p>
<p>Encoded data: 01234567890128</p>	
<p>Notes: Used to encode the GTIN (Global Trade Item Number) with AI "01". The GTIN contains of a packaging indicator (0..9) followed by a 12 digit number (taken from the EAN-13 article number system) followed by a check digit. The check digit is calculated automatically. The height of the symbol should be at least 33X to support Omni directional scanning</p>	

(X...module width). No quiet zone is needed.	
<b>RSS-14 Truncated</b>	
Valid characters:	"0".."9", 13 digits + 1 check digit
Check digit method:	EAN 14
Print-Control:	C=RT
 (01)01234567890128	
Encoded data:	01234567890128
Notes:	Similar to RSS-14 but height should be at least 13X (Omni-directional scanning may not be possible).
<b>RSS Expanded</b>	
Valid characters:	"A".."Z", "a".."z", "0".."9" + ISO 646 char set
Check digit method:	Mod10
Default;	No check digit
Print-Control:	C=RE
 ABab+	
Encoded data:	ABab+
Notes:	Variable length symbology; Encodes up to 74 numeric or 41 alphabetic; Omni-directional scanning is possible; No quiet zone is needed.
<b>RSS Limited</b>	
Valid characters:	"0".."9", 13 digits + 1 check digit
Check digit method:	EAN-14
Default;	Check digit included in input data
Print-Control:	C=RL
 (01)01234567890128	
Encoded data:	ABab+
Notes:	Similar to RSS-14 but smaller in size and limited to packaging indicator 0 and 1 (first digit). No quiet zone is needed.
<b>RSS 14 Stacked<sup>4</sup></b>	
Valid characters:	"0".."9", 13 digits + 1 check digit
Check digit method:	EAN14
Default:	Check digit included in input data
Print-Control:	C=RS
	
Encoded data:	1234567890123
Notes:	Similar to RSS-14 but split into 2 rows to make the symbol smaller. Used for pharmaceutical packaging. No quiet zone is needed.
<b>RSS-14 Stacked Omni directional<sup>4</sup></b>	
Valid characters:	"0".."9", 13 digits + 1 check digit
Check digit method:	EAN14
Default:	No check digit
Print-Control:	C=RO
	
Encoded data:	1234567890123
Notes:	This version of RSS-14 Stacked supports Omni-directional scanning.

<sup>4</sup> Needs 2D License

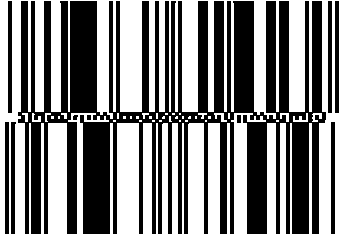
<p><b>RSS Expanded Stacked<sup>4</sup></b>  Valid characters: "A".."Z", "a".."z", "0".."9" + ISO 646 char set  Check digit method: Modulo10  Default: No check digit  Print-Control: C=RX</p>	
<p>Encoded data: 1234567890Az+</p>	
<p>Notes: Stacked version of RSS Expanded. The number of data segments per row can vary between 4 and 22. Default segmentation is 4.</p>	

Table 48: Supported GS1 DataBar / RSS Barcodes

## 23.5 GS1 / EAN.UCC Composite Symbology<sup>5</sup>

<p><b>RSS-14 Composite Symbology</b>  Valid characters RSS-14: "0".."9", 13 digits + 1 check digit  Valid characters CC-A/B: ISO 646 character set, up to 338 characters  Check digit method: EAN 14  Print-Control: C=R,CC=D</p>	 <p>(01)12345678901231</p>
<p>Encoded data: 1234567890123 TEC-IT</p>	
<p>Notes: RSS-14 barcode with an attached 2D component (CC-A or CC-B). The vertical bar " " character is used to separate the data between linear symbol and 2D composite component.</p>	
<p><b>RSS-14 Truncated Composite Symbology</b>  Valid characters RSS-14: "0".."9", 13 digits + 1 check digit  Valid characters CC-A/B: ISO 646 character set, up to 338 characters  Check digit method: EAN 14  Print-Control: C=RT,CC=D</p>	 <p>(01)12345678901231</p>
<p>Encoded data: 1234567890123 TEC-IT</p>	
<p>Notes: RSS-14 Truncated barcode with an attached 2D component (CC-A or CC-B). The vertical bar " " character is used to separate the data between linear symbol and 2D composite component.</p>	
<p><b>RSS-14 Stacked Composite Symbology</b>  Valid characters RSS-14: "0".."9", 13 digits + 1 check digit  Valid characters CC-A/B: ISO 646 character set, up to 338 characters  Check digit method: EAN 14  Print-Control: C=RS,CC=D</p>	
<p>Encoded data: 1234567890123 TEC-IT</p>	
<p>Notes: RSS-14 Stacked barcode with an attached 2D component (CC-A or CC-B). The vertical bar " " character is used to separate the data between linear symbol and 2D composite component.</p>	

<sup>5</sup> All variants of the Composite Symbology needs a 2D License




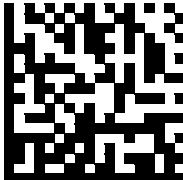
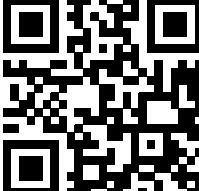
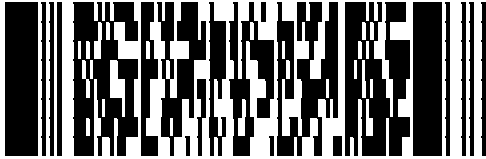
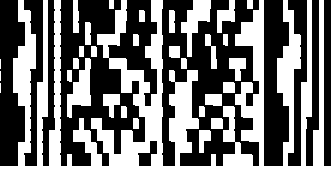
<p><b>RSS-14 Stacked Omni directional Composite Symbology</b>  Valid characters RSS-14: "0".."9", 13 digits + 1 check digit  Valid characters CC-A/B: ISO 646 character set, up to 338 characters  Check digit method: EAN 14  Print-Control: C=RO,CC=D</p>	
<p>Encoded data: 1234567890123 TEC-IT</p>	
<p>Notes: RSS-14 Stacked Omni directional barcode with an attached 2D component (CC-A or CC-B). The vertical bar "I" character is used to separate the data between linear symbol and 2D composite component.</p>	
<p><b>RSS Expanded Composite Symbology</b>  Valid characters RSS Exp.: ISO 646 character set  Valid characters CC-A/B: ISO 646 character set, up to 338 characters  Check digit method: Modulo10  Default: No check digit  Print-Control: C=RE,CC=D</p>	 <p>1234567890123</p>
<p>Encoded data: 1234567890123 TEC-IT</p>	
<p>Notes: RSS Expanded bar code with an attached 2D component (CC-A or CC-B). The vertical bar "I" character is used to separate the data between linear symbol and 2D composite component.</p>	
<p><b>RSS Expanded Stacked Composite Symbology</b>  Valid characters RSS ES: ISO 646 character set  Valid characters CC-A/B: ISO 646 character set, up to 338 characters  Check digit method: Modulo10  Default: No check digit  Print-Control: C=RX,CC=D</p>	
<p>Encoded data: ABCabc123+ TEC-IT</p>	
<p>Notes: RSS Expanded Stacked bar code with an attached 2D component (CC-A or CC-B). The vertical bar "I" character is used to separate the data between linear symbol and 2D composite component.</p>	
<p><b>RSS Limited Composite Symbology</b>  Valid characters RSS Lim.: "0".."9", 13 digits + 1 check digit  Valid characters CC-A/B: ISO 646 character set, up to 338 characters  Check digit method: EAN 14  Default: No check digit  Print-Control: C=RL,CC=D</p>	 <p>(01)12345678901231</p>
<p>Encoded data: 1234567890123 TEC-IT</p>	
<p>Notes: RSS Limited barcode with an attached 2D component (CC-A or CC-B). The vertical bar "I" character is used to separate the data between linear symbol and 2D composite component.</p>	
<p><b>UCC/EAN128 Composite Symbology</b>  Valid characters EAN 128: ASCII-characters between 0..127  Valid characters CC-A/B/C: ISO 646 character set, up to 2361 characters  Check digit method: Code128, Modulo10  Default: No check digit  Print-Control: C=E128,CC=D</p>	 <p>1234567890</p>
<p>Encoded data: 1234567890 TEC-IT</p>	
<p>Notes: EAN128 barcode with an attached 2D component (CC-A, CC-B or CC-C). The vertical bar</p>	

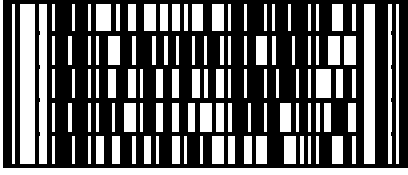



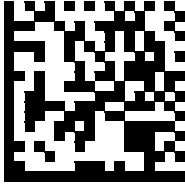
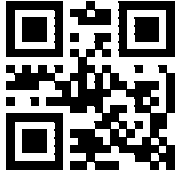
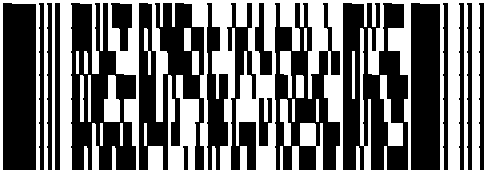
<p>“ ” character is used to separate the data between linear symbol and 2D composite component.</p>	
<p><b>EAN-8 Composite Symbology</b>                  Valid characters EAN 8: “0”..”9”, 7 digits + 1 check digit                  Valid characters CC-A/B: ISO 646 character set, up to 338 characters                  Check digit method: Check digit included in the code                  Print-Controls: C=E8,CC=D</p>	 <p>A composite barcode consisting of a standard EAN-8 linear barcode (1234567) followed by a vertical bar ( ) and a 2D composite barcode (5670).</p>
Encoded data:	1234567 TEC-IT
Notes:	EAN-8 barcode with an attached 2D component (CC-A or CC-B). The vertical bar “ ” character is used to separate the data between linear symbol and 2D composite component.
<p><b>EAN-13 Composite Symbology</b>                  Valid characters EAN 13: “0”..”9”, 12 digits + 1 check digit                  Valid characters CC-A/B: ISO 646 character set, up to 338 characters                  Check digit method: Check digit included in the code                  Print-Control: C=E13,CC=D</p>	 <p>A composite barcode consisting of a standard EAN-13 linear barcode (123456789012) followed by a vertical bar ( ) and a 2D composite barcode.</p>
Encoded data:	123456789012 TEC-IT
Notes:	EAN-13 barcode with an attached 2D component (CC-A or CC-B). The vertical bar “ ” character is used to separate the data between linear symbol and 2D composite component.
<p><b>UPC-A Composite Symbology</b>                  Valid characters UPC-A: “0”..”9”, 11 digits + 1 check digit                  Valid characters CC-A/B: ISO 646 character set, up to 338 characters                  Check digit method: Check digit included in the code                  Print-Control: C= UA,CC=D</p>	 <p>A composite barcode consisting of a standard UPC-A linear barcode (12345678901) followed by a vertical bar ( ) and a 2D composite barcode.</p>
Encoded data:	12345678901 TEC-IT
Notes:	UPC-A barcode with an attached 2D component (CC-A or CC-B). The vertical bar “ ” character is used to separate the data between linear symbol and 2D composite component.
<p><b>UPC-E Composite Symbology</b>                  Valid characters UPC-A: “0”..”9”, 7 digits + 1 check digit                  Valid characters CC-A/B: ISO 646 character set, up to 338 characters                  Check digit method: Check digit included in the code                  Print-Control: C= UCE,CC=D</p>	 <p>A composite barcode consisting of a standard UPC-E linear barcode (1234567) followed by a vertical bar ( ) and a 2D composite barcode.</p>
Encoded data:	1234567 TEC-IT
Notes:	UPC-E barcode with an attached 2D component (CC-A or CC-B). The vertical bar “ ” character is used to separate the data between linear symbol and 2D composite component.

Table 49: Supported Composite Barcodes

## 23.6 HIBC Codes

HIBC bar codes are commonly used by the health industry. HIBC standards do not describe unique symbologies, but a family of data structures. For a more detailed description of the HIBC formats please refer to the *TEC-IT Barcode Reference*.

<p><b>HIBC LIC 128</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HL128</p>	 <p style="text-align: center;">*+A99912345/9901510X3M*</p>
<p>Notes: Based on Code 128. Check digit is automatically calculated and added to the bar code.</p>	
<p><b>HIBC LIC 39</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HL39</p>	 <p style="text-align: center;">*+A123BJC5D6E71G*</p>  <p style="text-align: center;">*+83278F8G9H0J2G%*</p>
<p>Notes: Based on Code 39. Check digit is automatically calculated and added to the bar code.</p>	
<p><b>HIBC LIC Data Matrix</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HLDM</p>	
<p>Notes: Based on Data Matrix. Check digit is automatically calculated and added to the bar code.</p>	
<p><b>HIBC LIC QR-Code</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HLQ</p>	
<p>Notes: Based on QR-Code. Check digit is automatically calculated and added to the bar code.</p>	
<p><b>HIBC LIC PDF417</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HLPD</p>	
<p>Notes: Based on PDF417. Check digit is automatically calculated and added to the bar code.</p>	
<p><b>HIBC LIC MicroPDF417</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HLMP</p>	

Notes:	Based on MicroPDF417. Check digit is automatically calculated and added to the bar code.
<b>HIBC LIC Codablock-F</b>	
Valid characters:	“0”..”9”, “A”..”Z”, “-”, “.”, Space, “*”, “\$”, “/”, “+”, “%”
Check digit method:	Check digit included in the code
Default:	Modulo 43
Print Control:	C=HLCB
	
Notes:	Based on Codablock-F. Check digit is automatically calculated and added to the bar code.
<b>HIBC PAS 128</b>	
Valid characters:	“0”..”9”, “A”..”Z”, “-”, “.”, Space, “*”, “\$”, “/”, “+”, “%”
Check digit method:	Check digit included in the code
Default:	Modulo 43
Print Control:	C=HP128
 *+/EAH783/Z34H159\$*	
Notes:	Based on Code 128. Check digit is automatically calculated and added to the bar code.
<b>HIBC PAS 39</b>	
Valid characters:	“0”..”9”, “A”..”Z”, “-”, “.”, Space, “*”, “\$”, “/”, “+”, “%”
Check digit method:	Check digit included in the code
Default:	Modulo 43
Print Control:	C=HP39
 *+/1DI9876E*  *+/2931A1EZ*	
Notes:	Based on Code 39. Check digit is automatically calculated and added to the bar code.
<b>HIBC PAS Data Matrix</b>	
Valid characters:	“0”..”9”, “A”..”Z”, “-”, “.”, Space, “*”, “\$”, “/”, “+”, “%”
Check digit method:	Check digit included in the code
Default:	Modulo 43
Print Control:	C=HPDM
	
Notes:	Based on Data Matrix. Check digit is automatically calculated and added to the bar code.
<b>HIBC PAS QR-Code</b>	
Valid characters:	“0”..”9”, “A”..”Z”, “-”, “.”, Space, “*”, “\$”, “/”, “+”, “%”
Check digit method:	Check digit included in the code
Default:	Modulo 43
Print Control:	C=HPQ
	
Notes:	Based on QR-Code. Check digit is automatically calculated and added to the bar code.
<b>HIBC PAS PDF417</b>	
Valid characters:	“0”..”9”, “A”..”Z”, “-”, “.”, Space, “*”, “\$”, “/”, “+”, “%”
Check digit method:	Check digit included in the code
Default:	Modulo 43
Print Control:	C=HPPD
	
Notes:	Based on PDF417. Check digit is automatically calculated and added to the bar code.

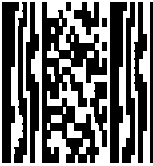
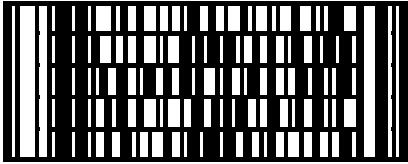
<p><b>HIBC PAS MicroPDF417</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HPMP</p>	
<p>Notes: Based on MicroPDF417. Check digit is automatically calculated and added to the bar code.</p>	
<p><b>HIBC PAS Codablock-F</b></p> <p>Valid characters: "0".."9", "A".."Z", "-", ".", Space, "*", "\$", "/", "+", "%"</p> <p>Check digit method: Check digit included in the code</p> <p>Default: Modulo 43</p> <p>Print Control: C=HPCB</p>	
<p>Notes: Based on Codablock-F. Check digit is automatically calculated and added to the bar code.</p>	

Table 50: Supported HIBC Barcodes

## 24 Version Information

Version	Notes
V1.03	<p>Start of version history.</p> <p>The following features were not implemented:</p> <ul style="list-style-type: none"> <li>Barcode types UPC version D1 to D5</li> <li>Selection of the font-width when printing human readable text</li> <li>Calculation of the Check digit for Code 93 Extended (Print-Control: 8; String: 93E)</li> <li>Barcode type MSI (Print-Control: 28; String: MSI)</li> <li>Calculation of the Check digit for barcode type MSI</li> </ul>
V2.01	<p>The following features were added:</p> <ul style="list-style-type: none"> <li>New supported barcodes: PDF417, PDF417 Truncated, Code128, Postnet, MaxiCode</li> <li>Barcode type MSI (Print-Control: 28; string: MSI) – but currently without check digits</li> <li>Calculation of the check digit for Code 93 Extended (Print-Control: 8; string: 93E)</li> </ul> <p>Currently not implemented (but available in later versions):</p> <ul style="list-style-type: none"> <li>Print-Controls for Data Matrix</li> <li>Print-Controls for SCM- modes of MaxiCode</li> </ul>
V2.02	<p>The following features were added:</p> <ul style="list-style-type: none"> <li>New supported barcode: Data Matrix</li> <li>The module width of bars and spaces is now adjustable in absolute units [mms/1000]. In previous versions the width was only adjustable in [pixels] - therefore the barcode width depended on the printer resolution. Also a default value for the module width can now be set in the barcode.ini file (setting: DefModWidth).</li> <li>Enhanced debugging features (e. g. sending a Print-Control - barcode.ini setting BCText). Errors in the barcode (wrong Print-Control, wrong barcode data) can be made visible on the printed document (barcode.ini setting: OnError).</li> <li>Better verification of syntax errors in Print-Controls</li> <li>Symbol specific parameters for PDF417, MaxiCode and Data Matrix are supported now (e.g. EC-Level, Structured Append, etc.).</li> </ul> <p>Bug Fix:</p> <ul style="list-style-type: none"> <li>A printing problem occurred always if the barcode data contained a comma (e.g. "123,45A")</li> </ul>
V4.0	<p>The following features were added:</p> <ul style="list-style-type: none"> <li>New supported barcode: QR-Code</li> <li>Row/Column Ratio for PDF417 adjustable (used by some industry label specifications).</li> </ul>
V4.1.1.15	<p>The following features were added:</p> <ul style="list-style-type: none"> <li>New supported barcodes: German Postal Codes, Australian Custom Codes</li> <li>Support for specific bar code default values, which are also used by customary hardware extensions (barcode.ini parameter: DefBarSIMMType)</li> </ul> <p>Bug Fix:</p> <ul style="list-style-type: none"> <li>Data Matrix encoding error if uneven number of digits encoded.</li> </ul>
V4.1.1.17	<p>Bug Fix:</p> <ul style="list-style-type: none"> <li>Check digit calculation (e.g.: Modulo10 for 2of5IL) couldn't be activated via Print-Control P.</li> </ul>
V4.1.1.18	<p>The following features were added:</p> <ul style="list-style-type: none"> <li>Print-Control A=2 for printing human readable text above the symbol</li> </ul> <p>Bug Fixes:</p> <ul style="list-style-type: none"> <li>Wrong Code 39 check digit</li> <li>Exception when using FNC1 (Print-Control %).</li> </ul>
V4.1.1.19	<p>Bug Fix:</p> <ul style="list-style-type: none"> <li>If the barcode.ini file can't be found in the application path of SAPIpd.exe (but in Win-NT directory or not available), the default module width was zero (instead of 0.5 mm).</li> </ul>
V4.1.0.20	<p>The following features were added:</p> <ul style="list-style-type: none"> <li>Adjusting of Default Guard Bar Width (barcode.ini); can help with problems with specific printer drivers (which don't print without horizontal line).</li> </ul>

V5.0.0.21	<p>The following features were added:                  Symbolologies Codablock F, Pharmacode 1+2 Spur, RSS-14, Flattermarken                  Setup of font characteristics for EAN/UPC barcodes through <code>barcode.ini</code> file parameters.                  New Print-Controls: W=Bar Width Reduction; T=Text Alignment</p> <p>Bug Fixes:                  2D Symbolologies (PDF417): the symbol height was influenced by the text flag (Print-Control A=1)                  BarSIMM-compatibility for PDF417 was improved (Default X/Y Ratio)</p>
V5.1.0.23	<p>New:                  New Print-Controls: FN, FS, FW for individual barcode fonts                  Default setting of font characteristics in the <code>barcode.ini</code> file</p>
V5.1.0.24	<p>New:                  Default Property „OptResolution“ in the <code>barcode.ini</code> is now possible. OptResolution enhances the readability of the barcode for low print resolution problems.</p>
V5.1.1.25	<p>Bug Fixes:                  An error with the selection of the default check digit was eliminated (occurred e.g. in Codabar 2 Width).</p>
V5.1.1.26	<p>New:                  The <code>barcode.ini</code> settings are displayed in the <code>barcode.log</code> file now.</p>
V6.0.0.27	<p>New:</p> <ul style="list-style-type: none"> <li>• RSS - Reduced Space Symbology (all sub variants)</li> <li>• EAN UCC Composite Symbology (all sub variants)</li> <li>• MicroPDF417</li> <li>• Enhanced error messages with indication of non-code-able characters</li> <li>• Demo text instead of horizontal line in unlicensed mode.</li> <li>• Shift parameter (<code>barcode.ini</code>) for vertical baseline adjustment</li> <li>• Print control parameter M for convenient module width adjustment</li> <li>• Tested SAPsprint and SAPWIN.dll support (access method G)</li> <li>• Bar code generator is based on new TBarCodeLib V6</li> </ul>
V6.0.2.32	<p>New:</p> <ul style="list-style-type: none"> <li>• The Barcode DLL uses the latest Barcode Engine (TBarCode Library V7)</li> <li>• The precision of the drawing routines was enhanced (again).</li> <li>• Printer driver problems can be solved better now (<code>barcode.ini</code>: GDIPRect).</li> </ul> <p>Bug Fixes:</p> <ul style="list-style-type: none"> <li>• An error with product licensing was fixed. Sometimes „Demo“ was printed in the bar code. This error occurred exclusively with parallel processing of print jobs in SAPsprint (Multi-Threading Problem).</li> <li>• Unexpected error messages in the SAPsprint/SAPlpd log file in spite of working bar code generation. The inconsistent evaluation of return codes is the reason (full details see below):                         <ul style="list-style-type: none"> <li>○ API function <code>BarcodeInit()</code>: SAPlpd and SAPsprint expect in the latest implementation a return code unequal to 0 (=true). To avoid misleading error log messages we changed our implementation to correspond with this return code - in spite of the fact that the SAP Interface Specification requires a return code of 0.</li> <li>○ API function <code>BarcodePrint()</code>: SAPsprint expects in the latest available version (v1.0.1.1+) a return value of 0 (now supplied by our DLL). This conforms to SAP Interface Specification. <i>Some previous SAPsprint-Versions expect a return code unequal to 0 (true), producing unwanted log file error messages.</i> Contrary to the Interface Specification SAPlpd expect always a return code unequal to 0 (true), this is now supplied by our DLL.</li> </ul> </li> </ul>
V9.0.0	<p>New:</p> <ul style="list-style-type: none"> <li>• Aztec Code, Micro QR-Code, and HIBC Codes</li> <li>• Further 1D Codes: KIX, Telepen, DPD, Italian Postal Code 2of5, etc.</li> <li>• Supporting various encoding methods and code pages</li> <li>• Binary compaction modes for several 2D codes</li> <li>• Custom definition of a separator character for composite data</li> <li>• Automatic check of check digits (if added by the user)</li> <li>• Support of SAP UNICODE Systems</li> <li>• White space stripping</li> <li>• Windows Vista Support</li> <li>• Bar code generator is based on new TBarCodeLib V9</li> </ul>

Table 51: Version Information



## 25 Appendix

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### 25.1 Index of Figures

Figure 1: Invoke „Copy Device Type“	11
Figure 2: Copy Device Type	11
Figure 3: Create Object Directory Entry	12
Figure 4: Spool Administration: Initial Screen	13
Figure 5: Spool Administration: Change Output Device	14
Figure 6: Spool Administration: Change Output Device (Access method)	14
Figure 7: SAPscript Font Maintenance: Initial Screen	16
Figure 8: SAPscript Font Maintenance: Device Types	16
Figure 9: SAPscript Font Maintenance: Change Printer Barcodes	17
Figure 10: Assign Print-Control Prefix / Suffix	17
Figure 12: Print-control Maintenance	19
Figure 13: Print-control Maintenance - Detail	19
Figure 14: SAPscript and Barcode-printing	23
Figure 15: Character Format Definition	24
Figure 16: Sample SAPscript	25
Figure 17: SmartForms Barcode Printing - Editor 1	26
Figure 18: SmartForms Barcode Printing - Editor 2	26
Figure 19: SmartForms Style	26
Figure 20: Style Definition – new Character Format	27
Figure 21: Style Definition – Bar Code Character Format	27
Figure 23: Confirmation Dialog: Prompt for Workbench request	31
Figure 24: Barcode Studio	31
Figure 25: Data Flow SAPlpd	55
Figure 26: SAPlpd Start Screen-Log file	61
Figure 27: BarCode.log	63
Figure 28: Print-Control Settings	65
Figure 29: Correct Print-Control Definition of SBS01	67
Figure 30: Correct Print-Control definition of SBS01 – Font Maintenance	67
Figure 31: Barcode printing direction (adjusted in Barcode.ini)	70
Figure 32: Error message “NilBind: service 515 in use”	72
Figure 33: System-ID	74
Figure 34: Barcode.ini	75

### 25.2 Index of Tables

Table 1: Basic Workflow for Printing Barcodes	8
Table 2: System Requirements	8
Table 3: Copy Device Type	12
Table 4: Output Device Field Values	14

Table 5: Output Device Host Spool Access Method	15
Table 6: Printer-Barcodes Field Values	18
Table 7: Product Variants	21
Table 8: License Variants	21
Table 9: System Barcode Field Values	30
Table 10: Syntax of Print-Control Prefix/Suffix	32
Table 11: Syntax Print-Control-Suffix	33
Table 12: General Barcode Print-Control Parameters	38
Table 13: Aztec Code Print-Control Parameters	39
Table 14: Data Matrix Print-Control Parameters	39
Table 15: MaxiCode Print-Control Parameters	41
Table 16: PDF417 Print-Control Parameters	41
Table 17: MicroPDF417 Print-Control Parameters	42
Table 18: QR-Code Print-Control Parameters	43
Table 19: Micro QR-Code Print-Control Parameters	43
Table 20: Codablock-F Print-Control Parameters	44
Table 21: RSS Expanded Stacked Print-Control Parameters	44
Table 22: EAN.UCC Composite Symbology Print-Control Parameters	44
Table 23: Escape Sequences	45
Table 24: Barcode-specific Control Sequences	46
Table 25: Barcode-Ini Section LICENSE_DATA	47
Table 26: Barcode-Ini Section DEBUG	47
Table 27: Barcode-Ini Section SETTINGS (part 1)	49
Table 28: Barcode-Ini Section SETTINGS (part 2)	49
Table 29: Barcode-Ini Section SETTINGS (part 3)	50
Table 30: Barcode-Ini Section EAN_UPC	51
Table 31: ASCII-HEX Conversion	52
Table 32: Predefined System Barcodes	53
Table 33: Predefined Print Controls (Printer Barcodes)	54
Table 34: DefaultSet Values	57
Table 35: Aztec Code Symbol Sizes	58
Table 36: Data Matrix Symbol Sizes	59
Table 37: QR-Code Symbol Sizes	59
Table 38: Micro QR-Code Symbol Sizes	59
Table 39: MicroPDF Symbol Sizes	60
Table 40: Flattermarken Sample (part 1)	70
Table 41: Flattermarken Sample (part 2)	70
Table 42: GS1/EAN-128 Sample (part 1)	71
Table 43: GS1/EAN-128 Sample (part 2)	72
Table 44: GS1/EAN-128 Sample (part 3)	72
Table 45: Supported Linear (1D) Bar Codes	81
Table 46: Supported Postal Codes	84
Table 47: Supported 2D Barcodes	85
Table 48: Supported GS1 DataBar / RSS Barcodes	87
Table 49: Supported Composite Barcodes	89

**Table 50: Supported HIBC Barcodes**

**92**

**Table 51: Version Information**

**94**



## 26 Contact and Support Information

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