

Report No:

AN161

Title:

Z-Wave 'SmartStart' labelling using the Equinox ISP-PRO application

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Abstract:

This application note describes how to set up the Equinox ISP-PRO software print out 'SmartStart' compliant labels for Z-Wave products.



The graphic features a blue background. On the left, the Z-Wave logo is displayed above the text 'SmartStart'. In the center, two white labels are shown: one with a QR code and another with a QR code and the following text: DSK: 61318-39186-30493, -59622-13827-32874, -62035-59972, SN: UUID 01234567890. On the right, a grey Zebra GX420i printer is shown with a label being printed. At the bottom, the text 'Labelling Solution' is written in white, followed by 'Using the Equinox' in white, the 'ISP PRO' logo in orange and black, and 'application' in white.

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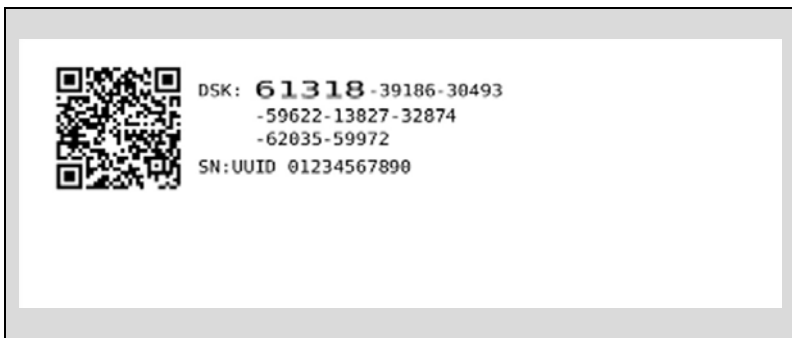
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1.0 Introduction

This application note describes how to set up the Equinox ISP-PRO software to generate and print out '**SmartStart**' compliant labels for Z-Wave products in a production environment.

A '**SmartStart**' compliant label comprises of a '**QR code**' which identifies the Z-Wave product along with all of the necessary Z-Wave configuration information to allow it to be 'included' into a Z-Wave network.

A sample '**SmartStart**' compliant label is shown below.....

 <p>DSK: 61318 - 39186 - 30493 - 59622 - 13827 - 32874 - 62035 - 59972 SN:UUID 01234567890</p>	<p>The label content comprises of:</p> <ul style="list-style-type: none">QR Code+DSK spread over 3 lines+UUID at the side
--	---

This application note describes the different 'default label formats' and to select which label(s) to print.

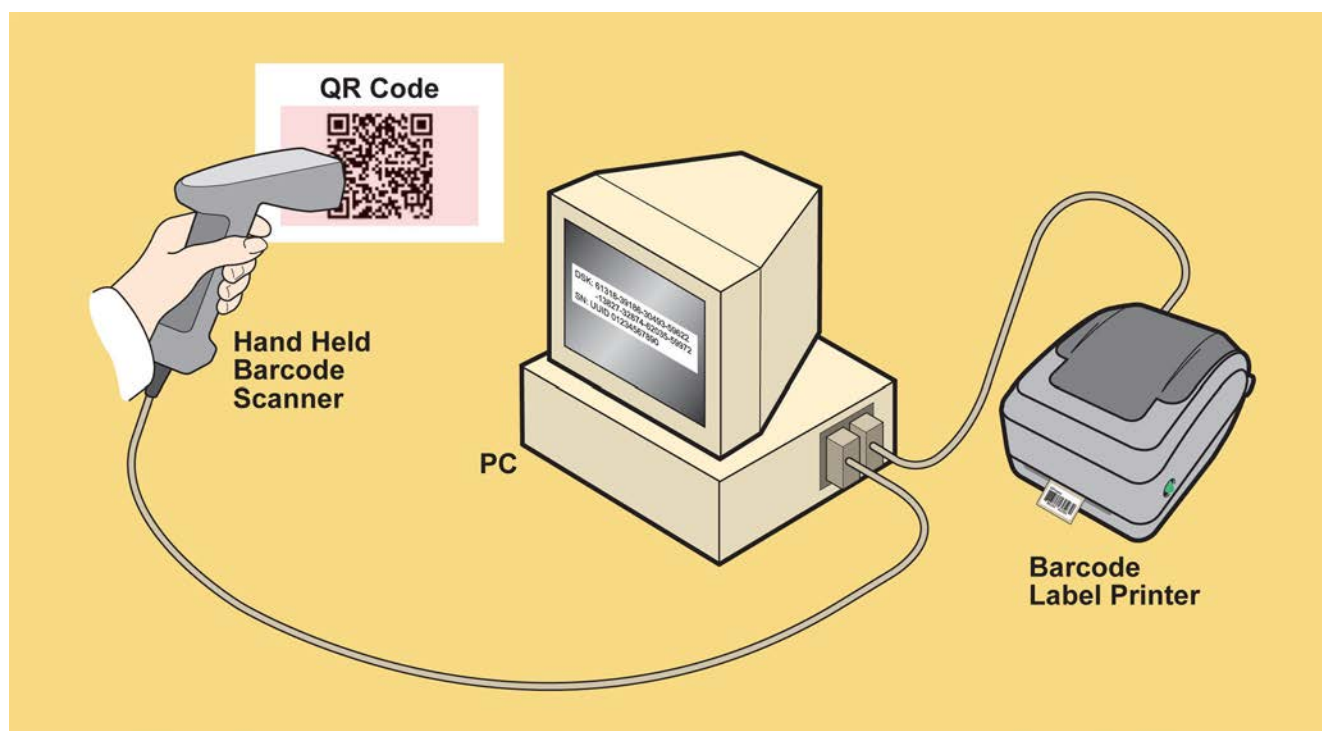
Please refer to the relevant Sigma documentation for a full explanation of the '**SmartStart**' label specification and it can be used with each Z-Wave product type.

1.1 Hardware / software requirements for SmartStart labelling

The following software + hardware + information is required to generate and print '**SmartStart**' compliant labels...

Hardware:

- PC workstation
- Label printer (e.g. Zebra printer or equivalent)
- Suitable labels
- Hand-held barcode scanner (optional)
- Equinox ISPnano programmer (optional for label printing)



Software:

- Sigma '**QREncoder**' Excel utility (available directly from Sigma only)
- Equinox '**ISP-PRO**' application
- Label printer - Windows driver utility

Other information / files:

- Production Control File (PCF)
- Z-Wave '**SmartStart**' label template file(s)
- Z-Wave '**S2 / SmartStart**' programming script(s)

1.2 Further reading

This application note focuses specifically on how to set up ISP-PRO to print '**SmartStart**' compliant labels. For more in-depth documentation about how to actually generate the '**SmartStart QR String**', how to set up the label printer and how to run the actual '**programming script(s)**' in the ISP-PRO application, please refer to further sources of documentation listed below...

Application notes:

Application Note	Title
Sigma INS13975	Smart Start Production control (Programming, QR, Label, Print)
Equinox AN160	Running a Z-Wave programming / script in the ISP-PRO application (manual control)
Equinox AN150	Configuring a Zebra Label Printer to work with the Equinox ISP-PRO application

User manuals:

This application note also assumes prior knowledge of how to both set up and use the Equinox ISP-PRO software package. Please refer to the following documentation for further information about the ISP-PRO software.

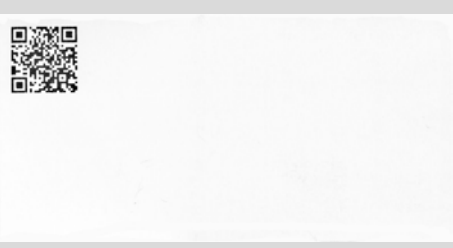
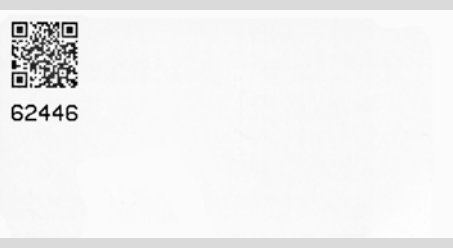

Manual Ref	Title
User Manual	ISP-PRO - User Manual

2.0 SmartStart Label templates


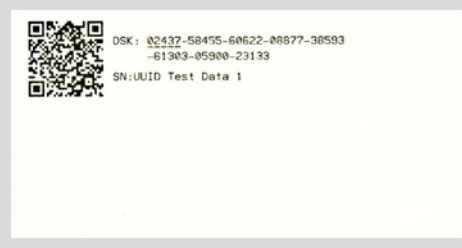
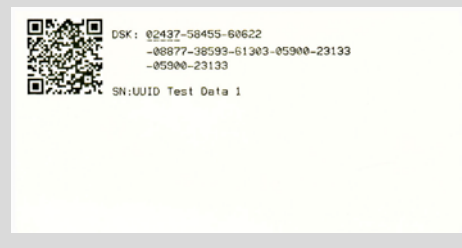

2.1 Overview

There are a number of different '*label templates*' available to define printing of the '*SmartStart*' labels as shown in the table below...

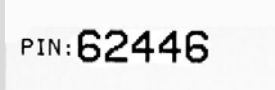

2.1.1 Non UUID Labels...

Label preview (Image not to size)	Label Functional description	Label template name / explanation
	QR Code only	<i>LABEL_001_QR_Code.txt</i> Only shows ' <i>QR Code</i> '. Fits in the smallest possible area.
	QR Code + PIN below	<i>LABEL_002_QR_PIN.txt</i> Shows ' <i>QR Code</i> ' + ' <i>PIN</i> ' for the user to manually. The ' <i>PIN</i> ' is the first 5 digits of the DSK code.
	QR Code + DSK 1 line below	<i>LABEL_003_QR_DSK1_Below.txt</i> Shows ' <i>QR Code</i> ' + full ' <i>DSK</i> ' code. The ' <i>PIN</i> ' is the first 5 digits of the DSK code.

2.1.2 QR and UUID Code Labels...

Label preview (Image not to size)	Label Functional description	Label template name / explanation
	QR Code + DSK 1 line + UUID (ASCII) below	LABEL_004_QR_DSK1_UUID_ASCII_Below Shows ' QR Code ' + full ' DSK ' code + a 16 byte ASCII ' UUID ' value below the QR code. The ' PIN ' is the first 5 digits of the DSK code.
	QR Code + DSK 2 lines + UUID at the side	LABEL_005_QR_DSK2_UUID_at_side.txt Shows ' QR Code ' + full ' DSK ' code over 2 lines + a 16 byte ASCII ' UUID ' value at the side of the QR Code. The ' PIN ' is the first 5 digits of the DSK code.
	QR Code + DSK 3 lines + UUID at the side	LABEL_006_QR_DSK3_UUID_at_side.txt Shows ' QR Code ' + full ' DSK ' code over 3 lines + a 16 byte ASCII ' UUID ' value at the side of the QR Code. The 'PIN' is the first 5 digits of the DSK code.
	QR Code + DSK 1 line + UUID (ASCII) below	LABEL_007_QR_DSK1_UUID_HEX32_Below Shows ' QR Code ' + full ' DSK ' code + a 32 HEX digit ' UUID ' value below the QR code. The 'PIN' is the first 5 digits of the DSK code.

2.1.3 Customised Labels...

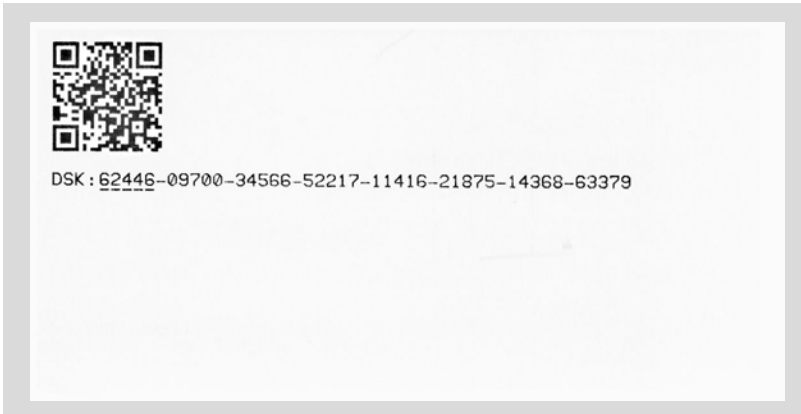
Label preview (Image not to size)	Label Functional description	Label template name / explanation
		<i>Label_009_PIN_only_30x10</i>
		<i>LABEL_010_QR_PIN_ROTATED</i>

The final choice of label format depends on the end product it will be used with. Some products may only require the '**QR code**' to be printed while others may require a more complex label with the '**QR code**' + '**PIN**' + full '**DSK**' + '**UUID**' values on the label.

Please note:

These '**label templates**' are only examples of sample label formats. They will need to be modified to suit the final production requirements for labelling as the label content and label dimensions will be different from the example templates.

Actual size of label LABEL_003_QR_DSK1_Below.txt

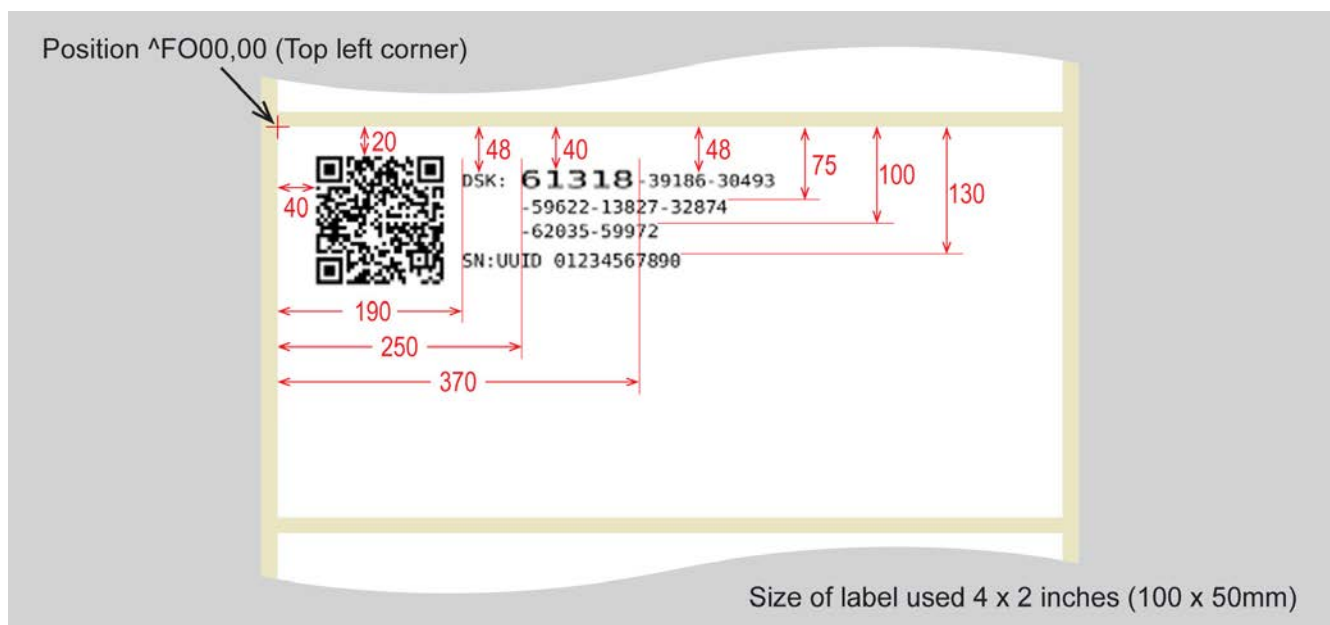


2.2 Example of ZPL commands used for printing a label

The illustration below shows a sample of the most complicated 'SmartStart' label showing *the 'QR code' + full 'DSK' + UUID* serial number.



It is actually quite complicated to set up this type of label as the exact positions of the 'QR code' and each independent block of text must be declared as shown in the illustration below.....



The setup of the label is all handled by the '**label template file**'.

This is simply a text file which specifies the '**ZPL commands**' required to generate the graphics and text needed for the label.

The sample '**ZPL code**' for the above label is shown on the next page.....

Example file: LABEL_006_QR+DSK3+UUID_at_side.txt

^XA - Label start command.

^LH 5,5

^FO00,00 - This command shows the position of the top left hand corner of the label.

^LH40,20 - This command shows the position of the barcode on the label, positions are always across then down i.e. 40 across from left and 20 down.

^BQN,2,4 - This shows the size of the barcode.

^FDLA,%SMARTLABEL%^FS - This command uses the various information for the barcode i.e. This label uses the DSK information and the UUID information.

^LH190,48 - This command shows the position of the letters DSK (190 across x 48 down).

^ADN,5,5 - This command shows the font size of the letters DSK.

^FDDSK: ^FS - This command shows the wording to be used.

^LH250,40 - This command shows the position of the first 5 digits of the DSK Code (250 across x 40 down)..

^ADN,5,15 - This command shows the font size of the first 5 digits of the DSK Code.

^FD%DSK#SUB=1,5%^FS - This command tells the printer which 5 digits to use from the DSK Code.

^LH370,48 - This command shows the position of the next 12 digits of the DSK Code on this line (370 across x 48down).

^ADN,5,5 - This command shows the font size of the next 12 digits of the DSK Code.

^FD%DSK#SUB=6,12%^FS - This command tells the printers which 12 digits to use from the DSK Code.

^LH250,75 - This command shows the position of the next 18 digits of the DSK Code on this line (250 across x 75 down).

^ADN,5,5 - This command shows the font size of the next 18 digits of the DSK Code.

^FD%DSK#SUB=18,18%^FS - This command tells the printer which 18 digits to use from the DSK Code.

^LH250,100 - This command shows the position of the next 12 digits of the DSK Code on this line (250 across x 100 down).

^ADN,5,5 - This command shows the font size of the next 12 digits of the DSK Code.

^FD%DSK#SUB=36,12%^FS - This command tells the printer which 12 digits to use from the DSK Code.

^LH190,130 - This command shows the position of the UUID Code (190 across x 130 down).

^ADN,5,5 - This command shows the font size to be used for the UUID Code.

^FDSN:%UUID16#HEXTOASCII%^FS - This command tells the printer which information to use for the UUID Code.

^LH0,0

^XZ - Label finish/end command.

3.0 Production Control File

3.1 Overview

A '**Production Control file**' is a machine-readable document (simple text file) which defines how Z-Wave '**Smart Start**' label printing is to be carried out in a production environment. The Z-Wave product developer must set up a unique '**Production Control file**' for each Z-Wave product variant that is to be manufactured.

The '**Production Control file**' defines the following:

- Z-Wave parameters to classify the customer Z-Wave product and identify the Z-Wave manufacturer and product (This information is encoded into the '**QR code string**' and used to print a '**QR code**' on a printed label)
- The '**label printing template(s)**' to be used to print each individual label.
- How many labels are to be printed

3.2 Example 'Production Control File'

An example '**Production Control file**' is shown below.....

```
=====
DESCRIPTION,This file contains the production control string for a Z-Wave Smart Start product
RELEASEDATE,20171021-1831
AUTHOR,John.Marriott
UUID16FORMAT,03
QRCODE,9001%CHECKSUM%003%DSK%00101638700768022065522010000017002880642%U
UID16FORMAT%%UUID16%
LABELCONTROL,LABEL_QR_PIN.txt
LABELCONTROL,LABEL_QR_DSK_UUID.txt
MANUFACTURERNAME,Equinox Technologies
PRODUCTNAME,DeluxeDoorLock
PRODUCTVERSION,1.32
=====
```

As you can see, the file is a simple text file specifying a list of commands.

QRCODE command

The '**QRCODE**' command specifies the '**QR string**' which is used as the starting point by ISP-PRO for generating the final '**SmartStart QR String**' which ends up generating the '**QR code**' on the printed label.

The following '**macro definitions**' specified in the '**QR string**' will be automatically replaced with 'dynamic values' when the Z-Wave programming script actually executes in ISP-PRO.....

Macro definition	Macro purpose
%CHECKSUM%	ISP-PRO will automatically calculate a ' <i>checksum</i> ' value covering the entire ' <i>QR string</i> '.
%DSK%	ISP-PRO will automatically replace this with the generated ' <i>DSK value</i> ' when the script executes.
%UUID16FORMAT%	This macro defines the actual printed format of the ' <i>UUID</i> ' parameter when printed on the label. This is a FIXED value.
%UUID16%	ISP-PRO will automatically replace this with the generated ' <i>UUID</i> ' parameter value when the script executes.

LABELCONTROL command

The '**LABELCONTROL**' command simply specifies the '*file name*' of a '*label template file*'. When the script executes and the result is '**PASS**', then ISP-PRO will look up the specified '*label template file*' and use it to print a label on the attached label printer.

It is possible to specify that multiple labels are printed by simply adding more '**LABELCONTROL**' commands to the list.

So in the example '*Production Control file*', the following commands will print out TWO labels.....

If the script execution is successful (PASS), then the following label(s) will be printed:

Label 1 - LABEL_QR_PIN.txt

Label 2 - LABEL_QR_DSK_UUID.txt

3.3 Preview of the 'Production Control File' in ISP-PRO

It is possible to preview a '*Production Control file*' in ISP-PRO as follows.....

This file contains the production control string for a Z-Wave SmartStart product.

Release Date: 21/10/2017
Author: john.marriott
Manufacturer: Equinox Technologies
Product Name: DeluxeDoorLock
Product Version: 1.32

If the script execution is successful (PASS), then the following label(s) will be printed:

Label 1 - LABEL_QR_PIN.txt

Label 2 - LABEL_QR_DSK_UUID.txt

QR Code:

9001%CHECKSUM%003%DSK%001016387007680220655220100000017002880642%U
UID16FORMAT%%UUID16%

This QR Code decodes to the following Z-Wave settings:

Lead-in: Z
Version: 01

Checksum: Not defined - will be replaced on-the-fly
Requested Keys: 003

DSK: Not defined - will be replaced on-the-fly

Block Type: 00(ProductType, Elective)
Block Length: 10
Block Data: 1638700768
ZwDeviceType: 0x4003
ZwInstallerIconType: 0x0300

Block Type: 02(ProductID, Elective)
Block Length: 20
Block Data: 65522010000001700288
ZwManufacturerId: 0xFFFF2
ZwProductType: 0x03E8
ZwProductId: 0x0011
ZwApplicationVersion: 0x0120

Block Type: 06(UUID16, Elective)
Block Length: 42
Block Data: %UUID16FORMAT%%UUID16%

3.4 How to create a 'Production Control File'

The setting up of a '**Production Control file**' is actually quite straightforward as long as you have all the required Z-Wave information about your Z-Wave product / product derivative available. It is recommended that a development engineer with in-depth knowledge of the Z-Wave design process carries out the creation of the '**Production Control file**'.

Please refer to the following application notes from Sigma Designs for instructions on how to create a '**Production Control file**'....

Sigma Application Note	Title
INS13975	Smart Start Production control (Programming, QR, Label, Print)

There is currently no automated method of creating a '**Production Control file**'.

However, Sigma Designs do offer an Excel spreadsheet which can generate the file once you have entered all the relevant Z-Wave setup parameters. Please contact your local Sigma FAE for further assistance on how to set up a '**Production Control file**'.

3.5 Where to store 'Production Control File(s)'

The '**Production Control file(s)**' can technically be stored in any folder within the currently defined ISP-PRO 'Scripts folder'. However, for all of the examples in this document, the files are stored in the **ZwSmartStart** folder.

When the '**programming script**' is executed in ISP-PRO, the operator will be prompted to select a '**Production Control file**' and so the **ZwSmartStart** folder can be selected.

3.6 Multiple 'Production Control Files' - one per product / variant

The idea is that an independent '**Production Control file**' is set up per manufacturer '**product**' or '**product variant**'. It is possible to have multiple '**Production Control files**' and the production operator simply selects the correct file at the start of a production run.

Important note:

If each '**product variant**' has a different setup for the '**Z-Wave config parameters**'.....

- ZwProductType
- ZwProductId
- ZwApplicationVersion

...then you will need to use the '**Sigma QR Encoder**' utility to create a new '**Production Control file**' for each '**product variant**'. This is because these Z-Wave parameters are encoded into the final printed '**QR code**' on the label so the parameters must be correctly declared in independent '**Production Control files**'.

3.7 Manually editing a 'Production Control File'

The '**Production Control file**' is a simple ASCII text file.

It can therefore be easily manually edited using any text editor application e.g. Notepad.

Manually editing the '**Production Control file**' allows you to...

1. Change the '**label template file**' definitions.

- This may be required if you plan to use a different '**label template**' to that specified in the file.

2. Add more labels to the list to be printed

- If you need to print more than one label, it is simple to add another label to be printed. There is no limit on the number of labels which can be printed.

!Warning!

Please be careful not change any other text in the '**Production Control file**' as this could cause the '**QR code**' generation to malfunction.

3.8 Changing 'Label template' file name

As there are many different '**label templates**' to choose from depending on your printer / label setup, then it may be necessary for you to manually change the to select a different template file.

Instructions:

- Open the relevant using a text editor e.g. Notepad
- Find the entries for printing the actual labels - '**LABELCONTROL**' command(s)...

Example:

LABELCONTROL,LABEL_QR_PIN.txt

LABELCONTROL,LABEL_QR_DSK_UUID.txt

- In this example, TWO labels will be printed.
- So let's say you want to change the template on the first label being printed, you just need to change 'LABEL_QR_PIN.txt' to your required new template file name e.g.
ZwSmartStart_QR_DSK_Below_1line_4x1_example1.txt

Alternatively, if you do not want to change the '**Production Control file**' manually, then you can simply rename your required '**label template file**' to be the same file name as specified in the '**Production Control file**'.

3.9 Printing more than one label

It is possible to print multiple labels when the '*programming script*' executes and runs successfully (reports a 'PASS' result). It is possible to print different labels with different layouts and content, so you can have a label for the product, one for the packing and one for the product registration card if needed.

The '*Production Control file*' specifies which '*label templates*' are to be used and also how many labels are to be printed.

Example:

```
LABELCONTROL,LABEL_QR_PIN.txt  
LABELCONTROL,LABEL_QR_DSK_UUID.txt
```

When ISP-PRO loads this '*Production Control file*', it will display....

If the script execution is successful (PASS), then the following label(s) will be printed:

Label 1 - LABEL_QR_PIN.txt
Label 2 - LABEL_QR_DSK_UUID.txt

Then when the script runs, these **TWO** labels will then be printed using the specified template files.

To add another label to this list of **TWO** labels, you can simply add another entry underneath the existing ones....

Example:

```
LABELCONTROL,LABEL_QR_PIN.txt  
LABELCONTROL,LABEL_QR_DSK_UUID.txt  
LABELCONTROL,ZwSmartStart_QR_DSK_Below_1line_4x1_example1.txt
```

Then when the script runs, these **THREE** labels will be printed using the specified template files.

4.0 Printing a set of SmartStart Test Labels

4.1 Overview

This section explains how to print out a set of **SmartStart 'Test Labels'** to prove that your printer and label templates are set up correctly. This procedure can be carried out without the need for an Equinox programmer to be attached to your PC.

The table below describes the steps required to print a set of **SmartStart 'Test Labels'**....

Task #	Task description	Further information
1	Install and configure your Zebra or ' Zebra compatible ' label printer	AN150
2	Install the latest version of the Equinox ISP-PRO software	ISP-PRO instruction manual
3	Locate or create a suitable SmartStart ' Production Control File '	AN161
4	Copy the SmartStart ' Label template ' files onto your PC	
5	Use the ISP-PRO - ' Printer ' setup screen to print a set of ' Test labels '	

4.2 Install and configure your Zebra label printer

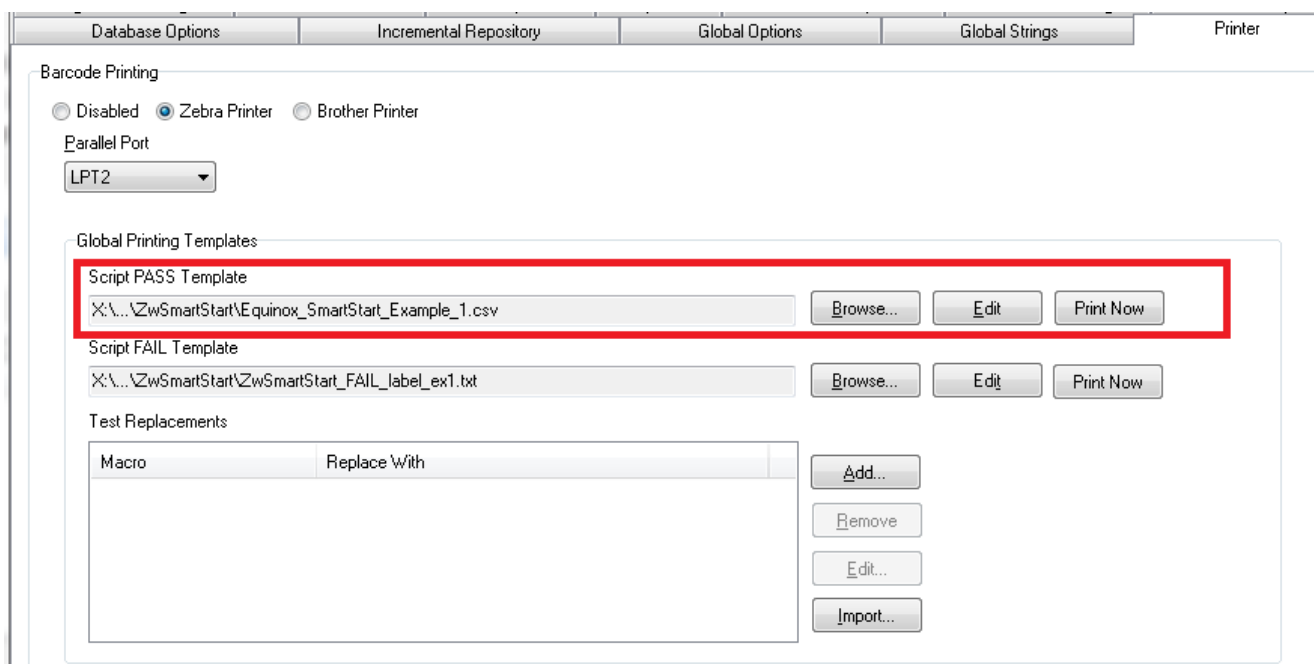
To print '**QR / barcode labels**' it is necessary to attach a compatible **Zebra** or '**Zebra compatible**' label printer to your production PC. The configuration of Zebra printers is beyond the scope on this application note. Please refer to application note AN150 for detailed instructions. You can also refer to your 'printer manual' for any printer-specific questions.

4.3 ISP-PRO - Printer configuration page

It is possible to set up the 'printer / label configuration' from the ISP-PRO '**Printer**' setup page.

To open the ISP-PRO '**Printer**' setup page...

- Log in to ISP-PRO
- Click the '**Setup**' icon
- Select the '**Printer**' tab
- The '**Printer**' setup page should now be displayed....



Important note:

This section assumes that you have already configured your printer in ISP-PRO and managed to print a '**Test label**' using the instruction in application note AN150.

4.4 ISP-PRO - Selecting a 'Production Control File'

A '**Production Control File**' is used to instruct ISP-PRO to print out the special '**SmartStart labels**' with the '**QR code**' on them.

To select the required '**Production Control File**'...

- Click the '**Browse**' button next to the '**Script PASS Template**' field.



- Browse to and select the which you want to use for testing.

4.5 Importing 'Test Parameters' for label testing

The '**SmartStart label**' templates all use certain '**macros**' to define the parameters which will be printed on the label. When printing a '**Test label**', it is necessary to import these parameters from your '**Script file**' into the '**Printer**' screen so you can use them for testing.

Instructions:

- On the '**Printer**' tab, click the '**Import**' button.

Test Replacements

Macro	Replace With
<p>There will be no macros set up here by default. Click the 'Import' button to import the macros used in your selected Script File.</p>	

- Browse to and select the '**Script file**' (*.esw file) which you are planning to run in ISP-PRO.
- The '**macros**' used in your '**Script file**' are now automatically imported into the '**Test Replacements**' table.

Test Replacements

Macro	Replace With
%DSK%	12345-67890-12345-67890-12345-67890-12345-67890
%UUID16%	022D01000001010001FFFFFFFFFFFFFF

So in this case, it has imported TWO macros....

Macro definition	Macro purpose
%DSK%	ISP-PRO will automatically replace this with the generated ' DSK value ' when the script executes.
%UUID16%	ISP-PRO will automatically replace this with the generated ' UUID ' parameter value when the script executes.

It has also imported some 'default values' for these parameters which can be used for test purposes. These are 'fixed values' and will be printed out on the '**Test label**' if they are defined in the selected '**label template**' in the '**Production Control File**'. You can change these values to be any suitable values for your test purposes.

4.6 Changing the default 'DSK' and 'UUID' test values

If you want to change the default '**DSK**' and '**UUID**' values used for test printing, this can be achieved as follows....

- Click the parameter in the list which you want to edit...

Test Replacements

Macro	Replace With
%DSK%	12345-67890-12345-67890-12345-67890-12345-67890
%UUID16%	022D01000001010001FFFFFFFFFFFFFF

Add...

Remove

Edit...

Import...

- Click the '**Edit**' button
- You can now change the value to be your preferred value
e.g. **55554944203031323334353637383930**
(ASCII representation: UUID 01234567890)

Edit Macro Replacement X

Macro (For example %SERIAL%, a unique string in the template file)

Replace Macro with value

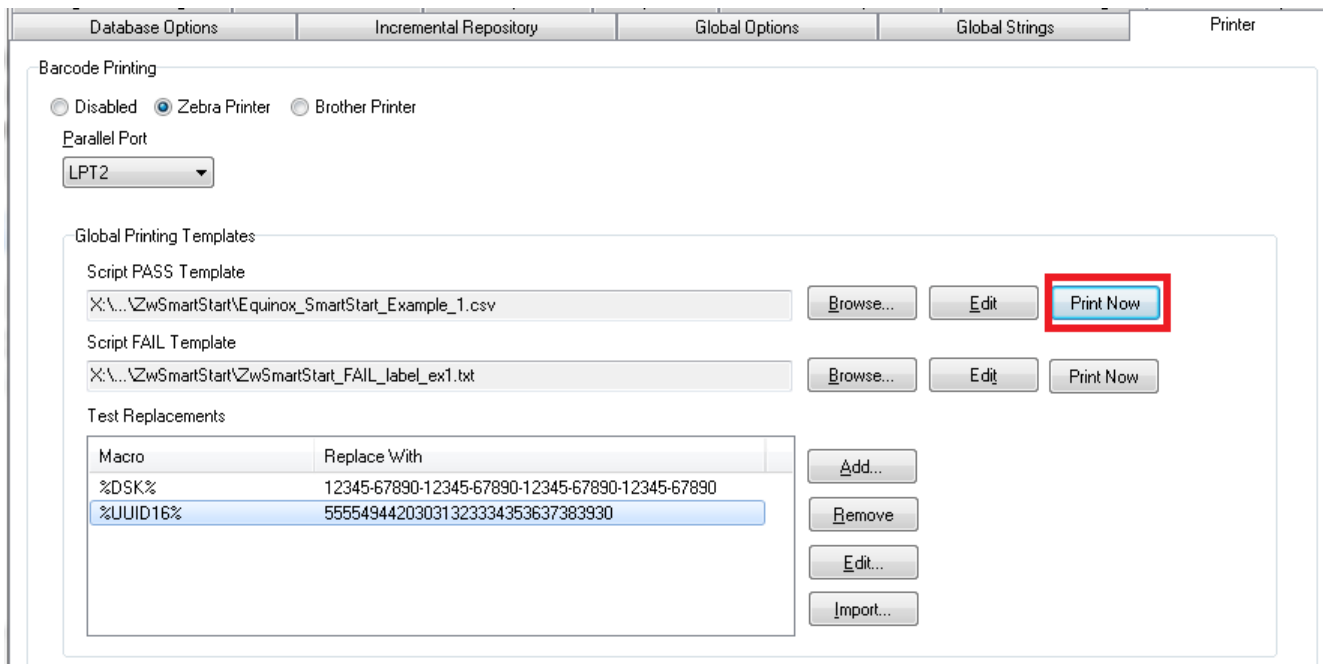
- Click '**OK**' to save your changes.

4.7 Printing a set of SmartStart 'Test Labels'

If you have followed the steps in the previous sections, then you should now be ready to perform a test print. The **'Test Print'** will print a set of labels out as defined by the selected **'Production Control File'**.

Instructions:

- Ensure that your **'label printer'** is switched on, on-line and has the correct labels loaded.
- Click the **'Print Now'** button....



Barcode Printing

Disabled
 Zebra Printer
 Brother Printer

Parallel Port
LPT2

Global Printing Templates

Script PASS Template
X:\...\ZwSmartStart\Equinox_SmartStart_Example_1.csv

Script FAIL Template
X:\...\ZwSmartStart\ZwSmartStart_FAIL_label_ex1.txt

Test Replacements

Macro	Replace With
%DSK%	12345-67890-12345-67890-12345-67890-12345-67890
%UUID16%	55554944203031323334353637383930

- The attached **'label printer'** should now print out one or more labels as defined in the selected **'Production Control File'**.
- The **'DSK'** and **'UUID'** values printed on these **'Test labels'** should match the values defined in the **'Test replacements'** section.
- The **'QR code'** printed on these **'Test labels'** will encode the selected values for the **'DSK'** and **'UUID'** parameters.

4.8 Example SmartStart 'Test Labels'

The table below shows actual pictures of the 'Test labels' which have been printed using the instructions in the previous section.

Label preview	Label template name / explanation
	QR Code only LABEL_QR.txt Only shows ' QR Code '. Fits in the smallest possible area.
	QR Code + PIN LABEL_QR_PIN.txt Shows ' QR Code ' + ' PIN ' for the user to manually. The ' PIN ' is the first 5 digits of the DSK code.
	QR Code + DSK LABEL_QR_DSK.txt The ' DSK ' code is on a single line underneath the ' QR code '.
	QR Code + DSK + UUID LABEL_QR_DSK_UUID.txt The ' DSK ' and ' UUID ' values are on 2 x separate lines underneath the ' QR code '.
	QR Code + DSK + UUID LABEL_QR_DSK_UUID.txt The ' DSK ' code is wrapped over 2 lines.
	QR Code + DSK + UUID LABEL_QR_DSK_UUID.txt The ' DSK ' code is wrapped over 3 lines.

5.0 Scanning / checking SmartStart Test Labels

5.1 Overview

This section explains how to double-check that the '**SmartStart labels**' you have printed are actually correct and contain the correct information.

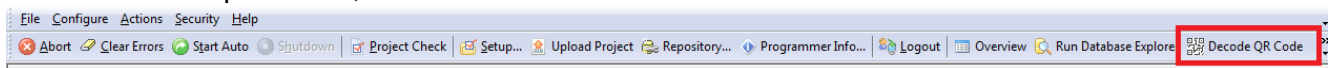
ISP-PRO features a 'QR Decoder' function which allows a printed '**SmartStart label**' to be scanned using a barcode scanner and then the scanned 'QR code' value is decoded into its constituent parameters.

5.2 Scanning / decoding a QR Label

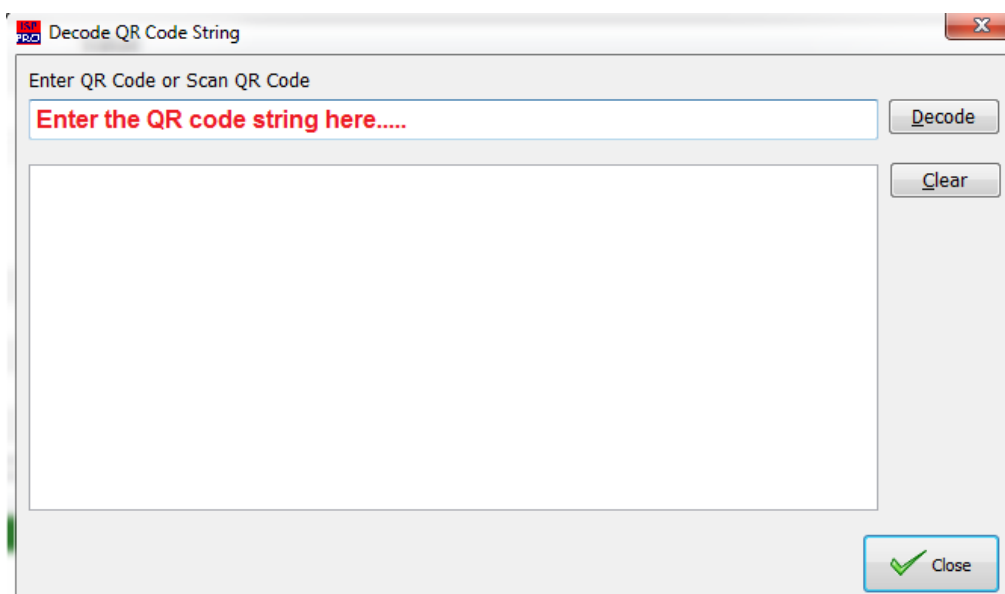
This section explains how to scan and then decode a '**QR label**'.

Instructions:

- Print out a sample '**SmartStart label**' with a '**QR code**' on it.
- Plug a '**barcode scanner**' into your PC (keyboard interface version is the simplest to get working)
- Start the ISP-PRO application
- On the top icon bar, click the '**Decode QR code**' icon...

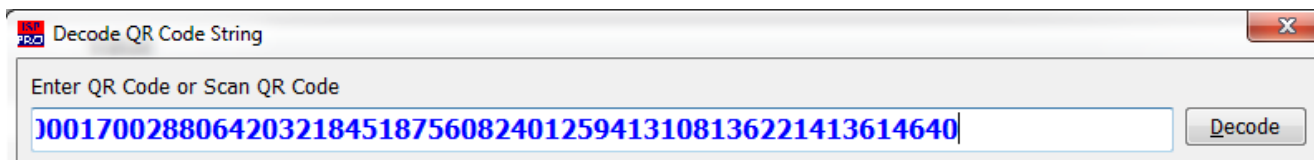


- The '**Decode QR Code String**' dialog box will now open....

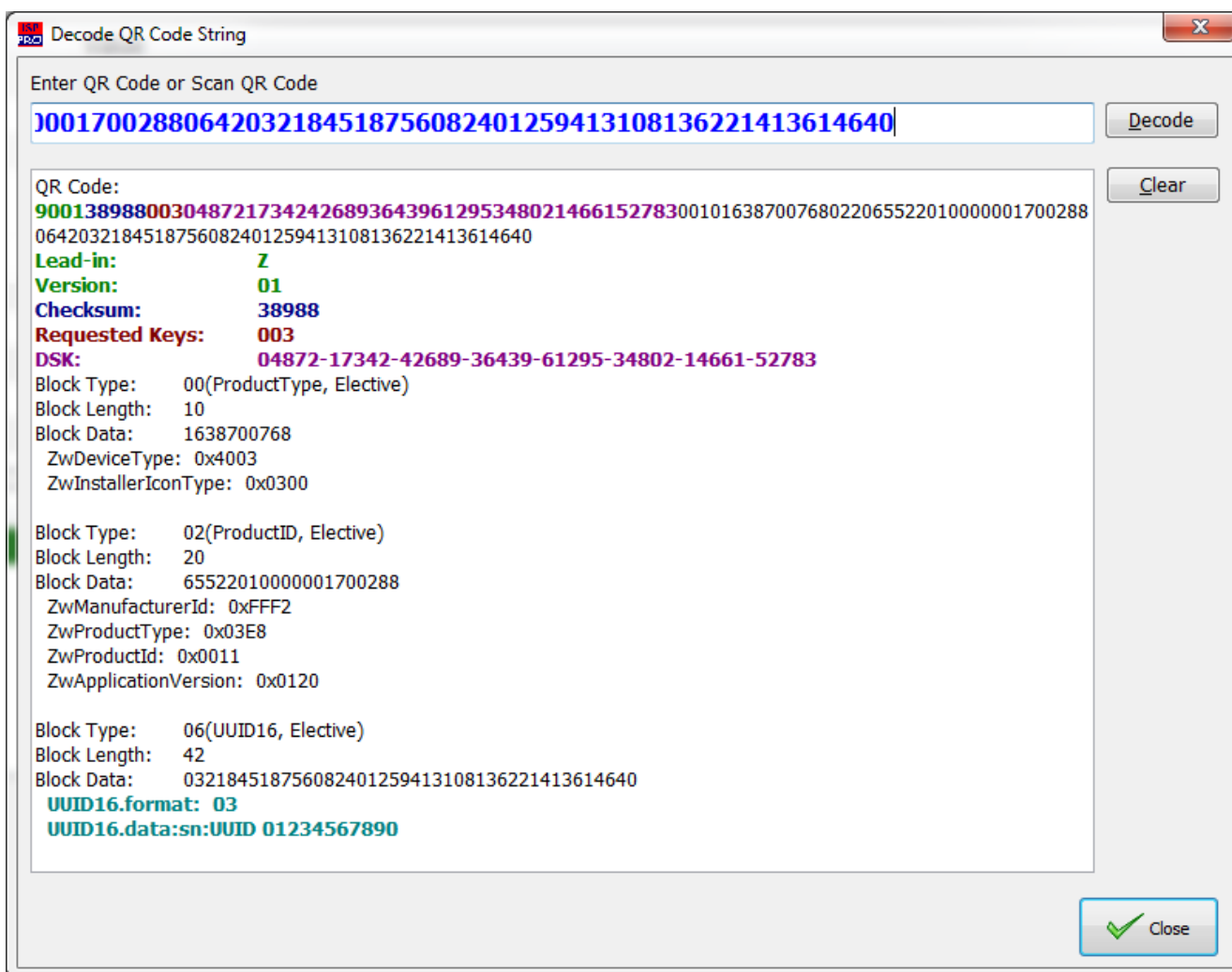


- If you are using a '**keyboard interfaced**' barcode scanner, then click the cursor in the '**Enter QR code**' field.
- Aim the scanner at the '**QR code**' on the printed label.

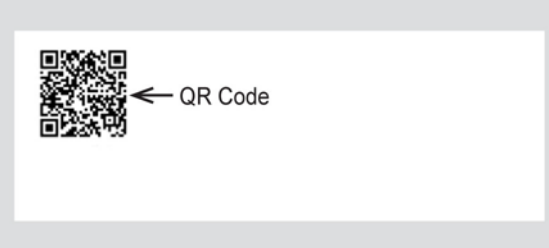
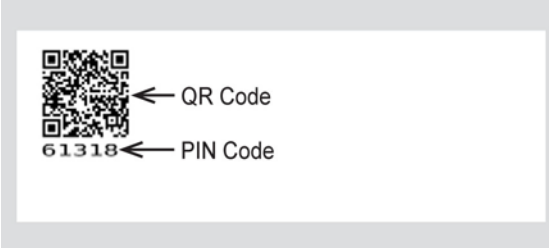
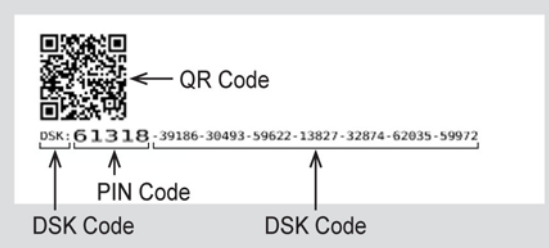
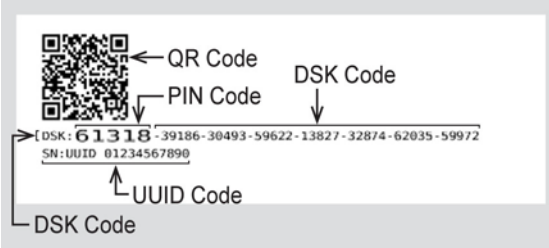
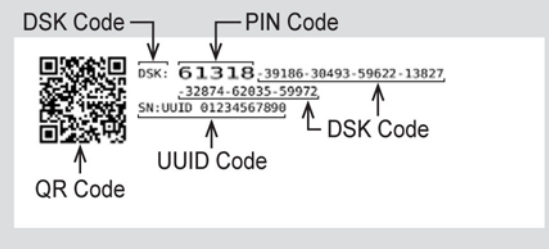
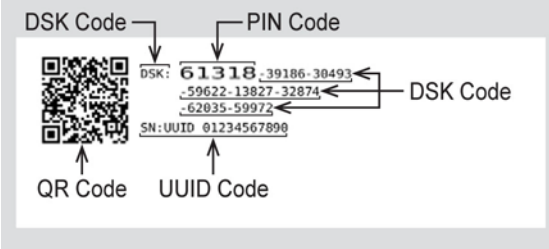
- Press the '**scan**' button on the scanner.
- The scanner will now transmit the decoded version of the '**QR code**' as a string of numbers which will fill the '**QR string**' field.



- If the barcode scanner sends a '**Carriage Return**' at the end of the string, then the '**QR code**' will be automatically decoded in the window below....



- If the '**QR string**' is not automatically decoded, press the '**Decode**' button to initiate the decoding process.

	
<p>Lab_001_QR-Code_Only</p>	<p>Lab_002_QR-and-PIN</p>
	
<p>Lab_003_QR-PIN-DSK_1LB</p>	<p>Lab_004_QR-PIN-DSK_UUID-2LB</p>
	
<p>Lab_005_QR-PIN-DSK2_UUID-Side</p>	<p>Lab_006_QR-PIN-DSK3_UUID-Side</p>