CBSR Sample Scanner User Manual

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Chapter 1

Overview

The CBSR Sample Scanner is a Microsoft Windows application that decodes DataMatrix encoded 1.0 ml or 0.5 ml tubes inserted into NUNC 96 well plates. It communicates with a scanner that uses either TWAIN¹ or WIA² drivers. Most scanners available on the market provide these drivers.

Up to 5 pallets can be scanned and decoded at a time. The product IDs of decoded pallets can be saved to individual files that specify the pallet product ID and the date and time the scan was performed. Files are saved in Comma Separated Value (CSV) format which is a plain text format or can be imported in to Microsoft Excel.

Figure 1.1 shows the application's main window and highlights some of its components. This figure shows the application when it is configured to scan a single pallet.

E	CBSR. Sample Scanner													
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	Pa	llet product IDs	2											
	Pa	llet 1: NU00046	6451 Pallet 2	:	Pallet 3:	F	Pallet 4:	Pallet	5:					
	Palle	#1 4												
1		1	2	3	4	5	6	7	8	9	10	11	12	
1	A	NUAW519934	NUAW519721	NUAW519758	NUAW519749	NUAW519703	NUAW519730	NUAW519697	NUAW519767	NUAW519776	NUAW519785	NUAW519794	NUAW520648	
	C	NUAW520055	NUAW519970 NUAW519712	NUAW520301 NUAW519952	NUAW519846	NUAW519855 NUAW520189	NUAW519864 NUAW519989	NUAW519873 NUAW519998	NUAW519882 NUAW520000	NUAW519891 NUAW520019	NUAW519907	NUAW519916 NUAW520037	NUAW519925 NUAW520046	
	D	NUAW520295	NUAW520064	NUAW520073	NUAW520082	NUAW520091	NUAW520107	NUAW520116	NUAW520125	NUAW520134	NUAW520143	NUAW520152	NUAW520161	
	E	NUAW519943	NUAW520435	NUAW520198	NUAW520204	NUAW520213	NUAW520222	NUAW520231	NUAW520240	NUAW520259	NUAW520268	NUAW520277	NUAW520286	
	F	NUAW520541	NUAW519837	NUAW520426	NUAW520329	NUAW520338	NUAW520347	NUAW520356	NUAW520365	NUAW520374	NUAW520383	NUAW520392	NUAW520408	
	G H	NUAW520417 NUAW520532	NUAW520620 NUAW519828	NUAW520505 NUAW519819	NUAW520444 NUAW520639	NUAW520453 NUAW520569	NUAW520462 NUAW520602	NUAW520471 NUAW520578	NUAW520480 NUAW520611	NUAW520499 NUAW520550	NUAW520310 NUAW520587	NUAW520514 NUAW519800	NUAW520523 NUAW520596	
		140411320332	NOH (# 31 / 020	NOAW STOOL	100400320037	NOHW 320309	140411-320002	140410320370	140449520011	NOM# 320330	110411320307	100400319000	NOH# 320390	
	9													
	allets	scanned and de	coded	-										
Ľ	5.005	aets sudimed and decoded.												



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<sup>1</sup>http://en.wikipedia.org/wiki/TWAIN
<sup>2</sup>http://en.wikipedia.org/wiki/Windows_Image_Acquisition
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- **Main Menu** (labelled 1) Allows the user access to the different functions provided by the software (see section 1.1 for a description of the menu items).
- **Pallet Product IDs** (labelled 2) The product ID of the pallets to be scanned. This product ID is used in the output file. These text boxes are enabled or disabled based on which plates are enabled in the preferences.
- **Decoding Profile** (labelled *3*) Scanning profiles control which tubes on the pallet will be decoded. Profiles are described in detail in section 2.1.2.
- **Decode Results** (labelled 4) This part of the window shows the decoded product IDs of the tubes that were decoded for each pallet.
- **Status Bar** (labelled 5) The status bar is used to display the current state of the application. It is usually updated after the user has completed a task.

1.1 Main Menu

1.1.1 File Menu

The items under the *File Menu* allow the user to create new scan tabs and save individual decoded pallets to a file.

CBSR Sample Scanner						
File	Scanner	Confi	guration	Help		
	New Scan		6:26:09	x		
	New Tab					
	5ave All		Re-Scan S	ielected		
	5ave	•				
	Quit					
Pallet 2:						

Figure 1.2: File menu.

New Scan Use this menu item to clear the contents of the current scanning tabs.

New Tab Creates a new scanning tab. Multiple scanning tabs can be used to keep decode information easily accessible.

Save All Saves to file all scanned pallets on the current tab.

Save Used to save to file one of the scanned pallets on the current tab.

Quit Used to quit the application.

1.1.2 Scanner Menu

Allows the user to save scanned images to file.

1.1. MAIN MENU

CBSR Sample Scanner					
File	Scanner	Configuration	Help	_	
	💽 Scan	Image to File			
	📕 Scan	Pallet to File	Þ	💻 Pallet 1	
	lear Select	ed Re-Scan S	ielecte	💻 Pallet 2	Pro
				💻 Pallet 3	
	-allet prod	uct IDs		💻 Pallet 4	-
F	Pallet 1:	VU00046451	Pallet	💻 Pallet 5	P
					_

Figure 1.3: Scanner menu.

Scan Image To File Scans the entire flatbed and saves it to a file in MS Windows BMP format.

Scan Pallet to File Scans the image from a pallet to a file.

1.1.3 Configuration Menu

This menu only contains the preferences item. See Chapter 2 for more details.



Figure 1.4: Configuration menu.

1.1.4 Help Menu

The only item under this menu is the *About* item. When selected it displays a dialog containing the application's version number.



Figure 1.5: About dialog.

Chapter 2

Configuration

The configuration settings for the Java Client can be found by selecting <code>Configuration</code> \rightarrow <code>Preferences</code> from the main menu.

Preferences			
Cype filter text Scanning and Decoding Decoding Parameters Decoding Profiles Plate 1 Position Plate 2 Position Plate 3 Position Plate 4 Position Plate 5 Position	Scanning and Dec	600	\$ * \$ * ▼
2	Contrast:	0	
			Restore Defaults Apply OK Cancel

Figure 2.1: Configuration preferences dialog box.

A configuration page can be selected by clicking on a node on the tree on the left hand side of the dialog box (labelled 2 in figure 2.1). The filter text box (labelled 1) can be used to quickly find a configuration page by typing the name of the page in whole or in part.

The following sections discuss the configuration pages in detail.

2.1 Scanning and Decoding

The settings on this page allow the user to specify the scanning and decoding parameters used when decoding pallet images.

Preferences			
type filter text	Scanning and Dec	oding 600 0	⇔ + ↔ - ▼

Figure 2.2: Scanning and Decoding preferences.

Select Scanner This button is used to select the scanner that will be used to scan 96 well pallets. The dialog box shown in figure 2.3 is shown when the button is pressed.

Select Source	
Sources: WIA-HP Scanjet 4800 series 1.0 (32-32)	
	Select
	Cancel

Figure 2.3: Selecting a scanning source.

- **Driver Type** The type of driver that was selected when the Select Scanner button was pressed. Normally, the application will attempt to determine the driver type as soon as the user makes the selection, but sometimes the application does not select the correct type. Use the check boxes here to override what the application selected if it was incorrect.
- **DPI** The *Dots per Inch* used by the scanner for scanning images. For best results use 600 DPI.
- **Brightness** The brightness setting to be used when scanning images. This parameter does not work on Hewlett-Packard scanners when using the WIA based driver.
- **Contrast** The contrast setting to be used when scanning images. This parameter does not work on Hewlett-Packard scanners when using the WIA based driver.

2.1.1 Decoding Parameters

On the preferences dialog window, if there is a "plus" symbol next to the *Scanning and Decoding* node, press it to expand the sub tree.

These settings control how the software decodes the sample tubes imprinted with Data-Matrix 2D barcodes.

2.1. SCANNING AND DECODING

Preferences			_ 🗆 🗙
type filter text	Decoding Parameters		
Scanning and Decoding Decoding Parameters	Decode Library Debug Level:	0	
Decoding Profiles	Decode Edge Threshold:	5	
Plate 1 Position	Decode Square Deviation:	15	
Plate 3 Position	Decode Corrections:	10	
Plate 5 Position	Decode Scan Gap:	0.085	
	Decode Cell Distance:	0.345	

Figure 2.4: Decoding preferences.

- **Decode Library Debug Level** The decoding software library can output debugging information to a log file. When this value is zero there is no debugging information stored in the log file. Possible values are 0 through 9. The higher the value the more detailed the debugging information.
- **Decode Edge Threshold** Set the minimum edge threshold as a percentage of maximum. For example, an edge between a pure white and pure black pixel would have an intensity of 100. Edges with intensities below the indicated threshold will be ignored by the decoding process. Lowering the threshold will increase the amount of work to be done, but may be necessary for low contrast or blurry images. The default and recommended value is 5.
- **Decode Square Deviation** Maximum deviation (in degrees) from squareness between adjacent barcode sides. The default and recommended value is *N*=15 and is meant for scanned images. Barcode regions found with corners <(90-N) or >(90+N) will be ignored by the decoder.
- **Decode Corrections** The number of corrections to make while decoding. The default and recommended value is 10.
- **Decode Scan Gap** The scan grid gap size in inches. The default and recommended value is *0.085*.
- **Decode Cell Distance** The distance in inches between tubes. The default and recommended value is 0.345 for NUNC pallets.

2.1.2 Decoding Profiles

On the preferences dialog window, if there is a "plus" symbol next to the *Scanning and Decoding* node, press it to expand the sub tree.

This page allows the user to define *Decoding Profiles*. These profiles allow the user define a sub set of tubes to decode when an image of a pallet is scanned. Scanning profiles can be used during scan link and scan assign (see sections **??** and **??**).

Preferences	
type filter text	Decoding Profiles 🗘 🗧 🗸
 Scanning and Decoding Decoding Parameters Decoding Profiles Plate 1 Position Plate 2 Position Plate 3 Position Plate 4 Position Plate 5 Position 	All V A1 V A2 V A3 V A4 V A5 V A6 V A7 V A8 V A9 V A10 V A11 V A12 V B1 V B2 V B3 V B4 V B5 V B6 V B7 V B8 V B9 V B10 V B11 V B12 V C1 V C2 V C3 V C4 V C5 V C6 V C7 V C8 V C9 V C10 V C11 V C12 V D1 V D2 V D3 V D4 V D5 V D6 V D9 V D10 V D11 V D12 V E1 V E2 V E3 V E4 V E5 V E6 V E7 V E8 V E9 V E10 V E11 V E12 V F1 V F2 V F3 V F4 V F5 V F6 V F7 V F8 V F9 V F10 V F11 V F12 V F1 V F2 V F3 V F4 V F5 V F6 V F7 V F8 V F9 V F10 V F11 V F12 V F1 V F
	Restore Defaults Apply
	OK Cancel

Figure 2.5: Decoding profiles preferences.

For example: the user may wish to only decode every other row on a pallet. Once the profile is created it can be used at scan link and scan assign time and only the cells activated in the profile will be decoded. If 2D barcodes are found in the cells not active in the profile, the user will be given a warning message.

To create a new profile follow these instructions:

- 1. Press the Add... button. A dialog box pops up requesting a name for the new profile. Enter an appropriate name and press the OK button.
- 2. Now select each cell that should be part of the profile (see cells with a checkmark in Figure 2.5). When done selecting cells press the Apply button.

2.1.3 Plate Positions

A plate is the region on the flatbed that is used to scan a pallet. Plate 1 corresponds to Pallet 1 and so on.

On the preferences dialog window, if there is a "plus" symbol next to the *Scanning and Decoding* node, press it to expand the sub tree.

2.1. SCANNING AND DECODING

Preferences			
type filter text	Plate 1 Position		← → → →
 Scanning and Decoding Decoding Parameters Decoding Profiles Plate 1 Position Plate 2 Position 	Crientation	Portrait	
Plate 3 Position	Left:	0.0	
Plate 5 Position	Top:	0.0	
-	Right:	4.0	
	Bottom:	3.0	
	Cell Gap Horizontal:	0.0	
	Cell Gap Vertical:	0.0	
			Plate is not enabled
			Scan Refresh
			Restore Defaults Apply
			OK Cancel

Figure 2.6: Configuring a plate position.

To define a pallet scanning region do the following:

- 1. Place a pallet that contains tubes on the flatbed scanner. Ensure the top edge of the pallet is touching the top of the scanning region, and the right edge of the pallet is touching the right margin. Ensure the 12 columns are vertical and the 8 rows are horizontal.
- 2. Select the plate region you are going to define. If it is the first select *Plate 1 Position*.
- 3. Click on the "Enable" box.
- 4. Press the Scan button. Now wait for the scanner to scan the entire flatbed.

Preferences			
type filter text	Plate 1 Position		↓ ↓ ↓
 Scanning and Decoding Decoding Parameters Decoding Profiles Plate 1 Position Plate 2 Position 	Enable Orientation Other Contents) Portrait	
Plate 3 Position	Left:	0.0	
Plate 5 Position	Top:	0.0	
	Right:	4.0	
	Cell Gap Horizontal:	0.0	
	Cell Gap Vertical:	0.0	Align grid with barcodes Scan Refresh Restore Defaults Apply
			OK Cancel

Figure 2.7: Sample flatbed scan.

- 5. Once the scan is done, you will see something similar to Figure 2.7. The image shown on the right hand side is the image taken by the scanner and superimposed is a grid with 8 rows and 12 columns. The cell coloured in cyan should correspond to tube in row A and column 1.
- 6. Under orientation select "Landscape".
- 7. You can adjust the size of the grid using the mouse. If you move the mouse to one of the corners or one of the edges you can resize the grid by holding down the left button on the mouse. The whole grid can be moved by pressing the left mouse button while hovering inside the grid.
- 8. Once the grid cells are aligned with each tube press the OK button (see Figure 2.8). The wheel on the mouse can be used to make the cells smaller or bigger (this is referred to as the *Cell Gap*).

Plate 1 Position			⇔ - ⇔ - ▼
 ✓ Enable Orientation ⊙ Landscape 	Portrait		
Left:	0.34076595	2 2 4 8 2 4 3 4 4 2 7 8 8 8 8 6 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	
Top:	0.23466666		
Right:	4.56382978		
Bottom:	3.07674074		14
Cell Gap Horizontal:	0.0		
Cell Gap Vertical:	0.0		

Figure 2.8: Grid aligned with tubes.

- 9. Repeat from step 2 to define any more pallet scanning regions.
- 10. Usually only one pallet scanning region is required for normal operation of the software.

Figure 2.9 shows an example of how *Plate 2* can be defined. Here Plate 2 is touching the top and the left margin of the of the flatbed region. The plate on the left of the image is where Plate 1 is defined.

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										125		1	腦	幽	瓥		
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						31	-		- 1	**	Ke	器	願	器		82	
	橋	3								麣	55	题	82	82	1	(B	
			1 E						=2	题	8	鱁	鬣	5	黀	8	
										-	NIS.	1	麟	题	B	劉	
										飅	龖		1	(B)		122	
										꽯	쮎	飈	-	-	122		

Figure 2.9: Plate 2 grid aligned with tubes.

Note that cell A1 should be at the *Top Left* when configuring a plate in **Landscape** orientation and *Top Right* when in **Portrait** orientation when looking down at the scanner's flatbed.

CHAPTER 2. CONFIGURATION

Chapter 3

Scanning and Decoding

This chapter discusses how to use the application for scanning and decoding.

	CBSR Sample	Scanner											
File	Scanner Cor	nfiguration Help											
1	Thu 13/01/201:	1 11:42:31 🛛											
	Clear Selected	Re-Scan Selected	Scan Selecte	ed Profile: All	~								
	- Pallet product II	~)r											
	Pallet 1:	Pallet 2	2:	Pallet 3:	I	Pallet 4:	Pallet	5:					
	Pallet 1				1.5		-			40		10	
	A	2	3	4	5	6	/	8	9	10	11	12	
	B C												
	D												
	F												
	Ĥ												
Co	nfiguration loaded	d.											

Figure 3.1: Application main window.

Figure 3.1 shows the application when it is configured to scan a single pallet. When more pallets are configured the bottom part of the screen will show a decode results table for each pallet that is enabled.

To scan one or more pallets follow these steps:

- 1. If this is the first time using the application please configure at least one pallet **plate** (see section 2.1.3).
- 2. Select the scanning profile to be used. Leave the selection on *All* if none have been defined.
- 3. Enter the pallet barcodes into the pallet barcode text boxes. A USB barcode scanner

can be used to enter this text into the text boxes.

- 4. Press the Scan Selected button. Note that only the pallets with text in the product ID text box will be scan and decoded.
- 5. The scanning and decoding progress dialogs will be displayed as shown in figure 3.2.

CBSR Sample Scanner		_ 🗆 🛛
wed 12/01/2011 15:21:42 🗙		
Clear Selected Re-Scan Selected Scan Selected P	Profile: Al 💌	
Pallet bar codes Pallet 1: NJ00046451 Pallet 2:	Pallet 3: Pallet 4: Pallet 5:	
Pallet 1	4 5 6 7 8 9 10 11 12	
AB	Transferring data	
D E	C Decoding plates	
F G		
	Cancel	
	Cancel	

Figure 3.2: Progress dialog boxes shown while scanning and decoding a pallet.

6. When the scan and decode is done the result may be missing one or more tubes. In this case press the Re-Scan Selected button to scan and decode again. The second scan and decode aggregates information to the previous scan and decodes. Figure 3.3 shows that the tube at position A1 was missed because that cell in the table is empty. Re-scan can be attempted multiple times.

— c	BSR Sample So	anner											
File	Scanner Config	uration Help											
*	Ved 12/01/2011 1	5:21:42 🔀											
0	ear Selected R	e-Scan Selected	Scan Selected	Profile: All	~								
F	allet 1: NU00046	451 Pallet 2	:	Pallet 3:	P	allet 4:	Pallet	5:					
Pa	let 1												
Pa	let 1	2	3	4	5	6	7	8	9	10	11	12	
Pa	let 1	2 NUAW519721	3 NUAW519758	4 NUAW519749	5 NUAW519703	6 NUAW519730	7 NUAW519697	8 NUAW519767	9 NUAW519776	10 NUAW519785	11 NUAW519794	12 NUAW520648	
Pa /	et 1 1 NUAW520055	2 NUAW519721 NUAW519970	3 NUAW519758 NUAW520301	4 NUAW519749 NUAW519846	5 NUAW519703 NUAW519855	6 NUAW519730 NUAW519864	7 NUAW519697 NUAW519873	8 NUAW519767 NUAW519882	9 NUAW519776 NUAW519891	10 NUAW519785 NUAW519907	11 NUAW519794 NUAW519916	12 NUAW520648 NUAW519925	
Pa 4 E	let 1 1 NUAW520055 NUAW520170	2 NUAW519721 NUAW519970 NUAW519712	3 NUAW519758 NUAW520301 NUAW519952	4 NUAW519749 NUAW519846 NUAW519961	5 NUAW519703 NUAW519855 NUAW520189	6 NUAW519730 NUAW519864 NUAW519989	7 NUAW519697 NUAW519873 NUAW519998	8 NUAW519767 NUAW519882 NUAW520000	9 NUAW519776 NUAW519891 NUAW520019	10 NUAW519785 NUAW519907 NUAW520028	11 NUAW519794 NUAW519916 NUAW520037	12 NUAW520648 NUAW519925 NUAW520046	
Pa 4 E (et 1 1 NUAW520055 NUAW520170 NUAW520295	2 NUAW519721 NUAW519970 NUAW519712 NUAW520064	3 NUAW519758 NUAW520301 NUAW519952 NUAW520073	4 NJAW519749 NJAW519846 NJAW519961 NJAW520082	5 NUAW519703 NUAW519855 NUAW520189 NUAW520091	6 NUAW519730 NUAW519864 NUAW51989 NUAW520107	7 NJAW519697 NJAW519873 NJAW519998 NJAW520116	8 NUAW519767 NUAW519882 NUAW520000 NUAW520125	9 NUAW519776 NUAW519891 NUAW520019 NUAW520134	10 NUAW519785 NUAW519907 NUAW520028 NUAW520143	11 NUAW519794 NUAW519916 NUAW520037 NUAW520152	12 NUAW520648 NUAW519925 NUAW520046 NUAW520161	
Pa 4 E C E	et 1 1 NUAW520055 NUAW520170 NUAW520295 NUAW519943	2 NUAW519721 NUAW519970 NUAW519712 NUAW520064 NUAW520435	3 NUAW519758 NUAW520301 NUAW519952 NUAW520173 NUAW520198	4 NUAW519749 NUAW519846 NUAW519961 NUAW520082 NUAW520204	5 NUAW519703 NUAW519855 NUAW520189 NUAW520091 NUAW520213	6 NUAW519730 NUAW519864 NUAW519989 NUAW520107 NUAW520222	7 NUAW519697 NUAW519873 NUAW519998 NUAW520116 NUAW520231	8 NUAW519767 NUAW519882 NUAW520000 NUAW520125 NUAW520240	9 NUAW519776 NUAW519891 NUAW52019 NUAW520134 NUAW520259	10 NUAW519785 NUAW519907 NUAW520028 NUAW520143 NUAW520268	11 NUAW519794 NUAW519916 NUAW520037 NUAW520152 NUAW520277	12 NUAW520648 NUAW519925 NUAW520046 NUAW520161 NUAW520286	
Pa 4 E C E F	et 1 1 NUAW520055 NUAW520170 NUAW520295 NUAW5205417 NUAW5202917	2 NUAW519721 NUAW519970 NUAW519712 NUAW520064 NUAW520435 NUAW519837	3 NUAW519758 NUAW520301 NUAW520303 NUAW520198 NUAW520198 NUAW520198	4 NUAW519749 NUAW519846 NUAW519961 NUAW520082 NUAW520204 NUAW520329	5 NUAW519703 NUAW519855 NUAW520189 NUAW520213 NUAW520213 NUAW520328	6 NUAW519730 NUAW519864 NUAW519889 NUAW520107 NUAW520222 NUAW520347	7 NUAW519697 NUAW519873 NUAW519978 NUAW520116 NUAW520231 NUAW520356	8 NUAW519767 NUAW519882 NUAW520000 NUAW520125 NUAW520240 NUAW520365	9 NUAW519776 NUAW519891 NUAW52019 NUAW520134 NUAW520259 NUAW520374	10 NUAW519785 NUAW519907 NUAW520028 NUAW520143 NUAW520268 NUAW520383	11 NUAW519794 NUAW519916 NUAW520037 NUAW520277 NUAW520392	12 NUAW520648 NUAW519925 NUAW520161 NUAW520286 NUAW520286 NUAW520288	
Pa 4 E C C E F C	et 1 1 NUAW520055 NUAW520170 NUAW520953 NUAW520951 NUAW520517 NUAW520517	2 NUAW519721 NUAW519970 NUAW519712 NUAW52064 NUAW520620 NUAW519837 NUAW520620 NUAW520620	3 NUAW519758 NUAW520301 NUAW5203073 NUAW520198 NUAW520198 NUAW520505 NUAW520505	4 NJAW519749 NJAW519846 NJAW52082 NJAW52082 NJAW520329 NJAW520329 NJAW520434	5 NUAW519703 NUAW519855 NUAW520189 NUAW52091 NUAW520338 NUAW520453 NUAW520453	6 NUAW519730 NUAW519864 NUAW519869 NUAW520107 NUAW520222 NUAW520347 NUAW520462 NUAW520462	7 NJAW519697 NJAW519873 NJAW519998 NJAW520116 NJAW52031 NJAW520356 NJAW520471	8 NUAW519767 NUAW519882 NUAW520000 NUAW520125 NUAW520365 NUAW520365 NUAW520480	9 NUAW519776 NUAW519891 NUAW52019 NUAW520134 NUAW520259 NUAW520374 NUAW520499 NUAW520499	10 NUAW519785 NUAW519907 NUAW520288 NUAW520268 NUAW520380 NUAW520380 NUAW520383	11 NUAW519794 NUAW52037 NUAW520152 NUAW520372 NUAW520392 NUAW520392 NUAW520314	12 NUAW520648 NUAW519925 NUAW520161 NUAW520286 NUAW520286 NUAW520528 NUAW520529	

Figure 3.3: Decode with missed tubes.

- 7. Once a pallet is successfully scanned the information can be saved to a file using the File → Save All menu item. If you only want to save a single pallet result the use the File → Save → Pallet x menu item. The files are saved with the following name <pallet_product_barcode>_<date_time>.csv to the folder of your choice.
- 8. Once all files have been saved, press the <u>Clear Selected</u> button to clear the product ID text boxes and start scanning a new pallet.

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3.1. ERROR CHECKING

3.1 Error Checking

To avoid human error, the application remembers the product IDs of the pallets that have been previously scanned. If it detects a duplicate product ID, the application will display the dialog box shown in figure 3.4.

Duplic	ate Pallet Product	D	
?	You are scanning a new Do you want to continu	v pallet (Pallet 1) with a Je?	a previously used product ID.
			OK Cancel

Figure 3.4: Warning dialog displayed when a duplicate pallet ID detected.

You are given the option of continuing to scan the pallet or cancel the scan. If more than one plate is enabled, the other pallets will be decoded.

3.2 Multiple Tabs

The application has the ability to display decode information on mutiple tabs. This may be useful when decoding many pallets and the user wishes to keep the information displayed on the screen. The user can quickly switch between the two windows by clicking on their corresponding tabs.



Figure 3.5: Main window with multiple tabs.

The tab's name displays the date and time that it was created.

Tab's can also be rearranged by clicking on the tab and dragging it. Figure 3.6 shows two tabs split horizontally. This was done by clicking and dragging the tab down the window until the icon under the mouse changes to a down arrow.

	BSR Sample So	anner											
File	Scanner Config	uration Help											
🔶 т	hu 13/01/2011 14	k:16:30 ⊠											
d	ear Selected R	e-Scan Selected	Scan Selected	Profile: All	~								
P	allet product IDs -												
Pi	allet 1: NU00046	9451 Pallet 2	:	Pallet 3:	F	allet 4:	Pallet	5:					
Pai	et 1	2	2	4	F	6	7	0	0	10	11	10	
A	NUAW519934	AUAW519721	NUAW519758	NUAW519749	NUAW519703	NUAW519730	NUAW519697	NUAW519767	, NUAW519776	NUAW519785	NUAW519794	NUAW520648	
В	NUAW520055	NUAW519970	NUAW520301	NUAW519846	NUAW519855	NUAW519864	NUAW519873	NUAW519882	NUAW519891	NUAW519907	NUAW519916	NUAW519925	
	NUAW520170 NUAW520295	NUAW519712 NUAW520064	NUAW519952 NUAW520073	NUAW519961 NUAW520082	NUAW520189 NUAW520091	NUAW519989 NUAW520107	NUAW519998 NUAW520116	NUAW520000 NUAW520125	NUAW520019 NUAW520134	NUAW520028 NUAW520143	NUAW520037 NUAW520152	NUAW520046 NUAW520161	
E	NUAW519943	NUAW520435	NUAW520198	NUAW520204	NUAW520213	NUAW520222	NUAW520231	NUAW520240	NUAW520259	NUAW520268	NUAW520277	NUAW520286	
F	NUAW520541	NUAW519837	NUAW520426	NUAW520329	NUAW520338	NUAW520347	NUAW520356	NUAW520365	NUAW520374	NUAW520383	NUAW520392	NUAW520408	
G	NUAW520417	NUAW520620	NUAW520505	NUAW520444	NUAW520453	NUAW520462	NUAW520471	NUAW520480	NUAW520499	NUAW520310	NUAW520514	NUAW520523	_
	NOAW320332	NUMW519020	NOAW319019	NOAW320039	NOAW520309	NUM1920002	NOAW320376	NGAW520011	NOA#320350	NOAW320307	NOAW515000	NOAW320390	
🚖 T	hu 13/01/2011 14	1:17:35 🔀											
0	ear Selected R	e-Scan Selected	Scan Selected	Profile: All	~								
	allet product IDs -												
Pi	allet 1: NU00023	8459 Pallet 2	:	Pallet 3:	F	allet 4:	Pallet	5:					
Pal	et 1												
	1	2	3	4	5	6	7	8	9	10	11	12	
A													
B													
D													
E													
F													
H													
<u> </u>													_
Pallets	s scanned and de	coded.											

Figure 3.6: Split tabs.

Note that a tab can be closed at any time by pressing the \mathbf{X} on the tab title. The tab's context menu is shown when you right click on the tab's title.

CBSR Sample Scanner	
File Scanner Configuration Help	
★ Thu 13/01/2011 14:16:30	Move
Pallet product IDs	Close Close Others
Pallet 1: Pallet 2:	Close All
Pallet 1	New Editor

Figure 3.7: A tab's context menu (right click on the tab title).

The functions of the items in this menu are as follows:

- **Move** Move the tab as to display two tabs side by side either vertically or horizontally. This is the same as clicking on the tab and dragging it.
- **Size** Used for resizing the tab.

Close Closes the tab.

- **Close Others** Closes all tabs except this one.
- Close All Closes all tabs. If this is done a new tab can be created by selecting File \rightarrow New Tab.

New Editor Creates a new tab.