CandJ Version 1.0 – An Android App

Introduction

CandJ is a concept app. It has been developed to give proof of concept with regard to a graphical interface for the wiring used in the production of electrical cabinets for aircraft.

CandJ has been designed to run on a Samsung tablet GT-P7510 which has a 10" screen. The graphical interface uses pixels which will result in there being no guarantee that the display will be identical on other tablets with different pixel dimensions. The app has been designed as a concept app that can be utilised as a template for building apps with a similar structure.

The Introduction Screen

On starting the system the current wires broken down by bundles is displayed. A screen dump of the opening screen is shown below.

The display shows each bundle code of wires together with the total wires in that bundle and the number of wires that have been attached to their component.

The user touches the bundle that is going to be worked on and the "Bundle/Wire" screen display is displayed.

The Bundle/Wire Screen

The Bundle/Wire screen is shown below. It can be broken down into two sections. On the left is a list of all the wires within the bundle. On the right is a graphical display of the circuit panel and all the wires that connect to the circuit panel are shown within this display.
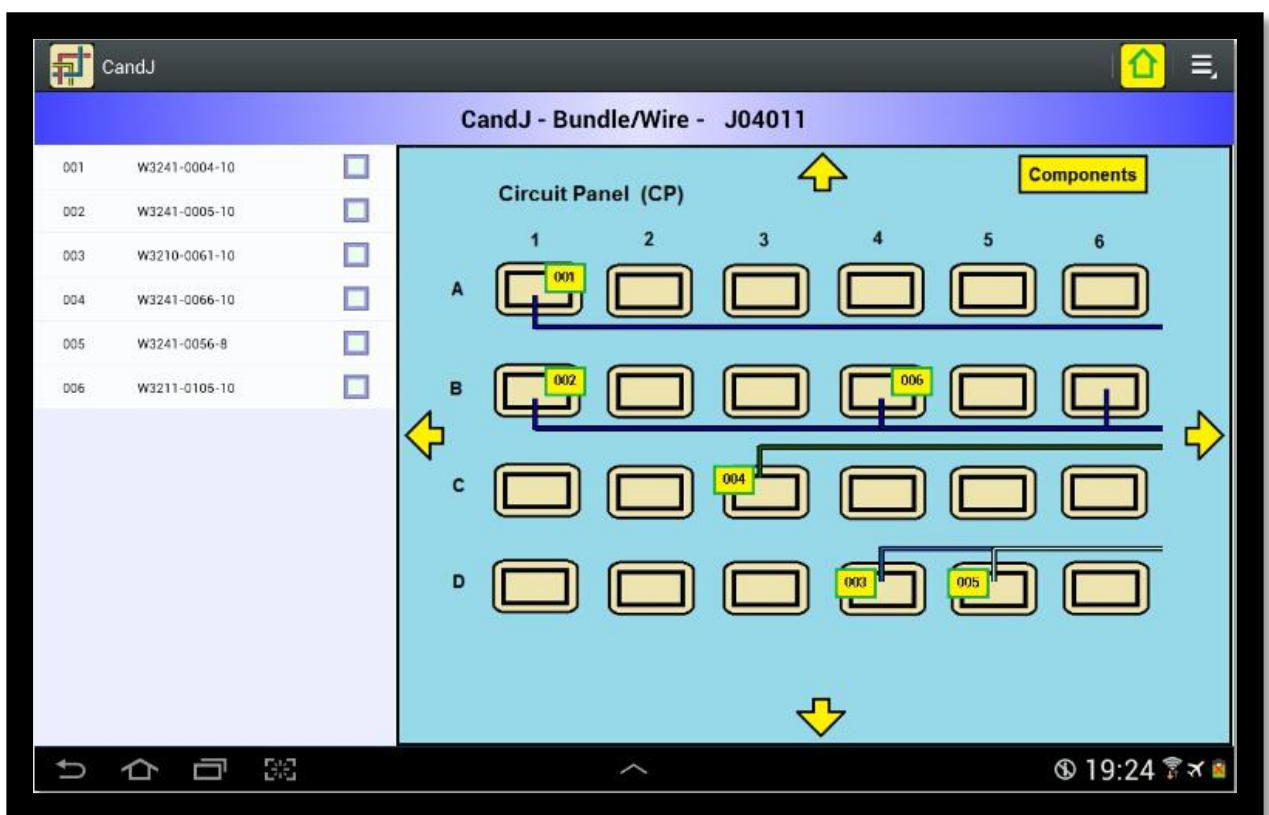
Each wire displayed in the circuit panel has an identifier which can be linked with the identifier in the list on the left. This connection is the link between the two screens.

The Circuit Panel is one of five screens. The five screens and how they form the electrical cabinet are shown in the diagram below.
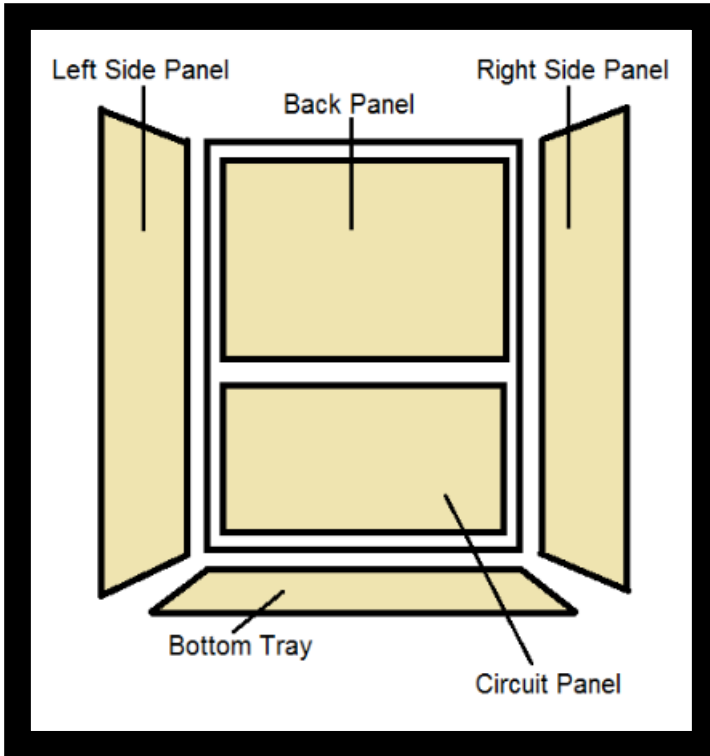
To move between the panels the user touches the arrow symbol displayed on the screen. The Circuit Panel shown above has four arrows that allow the user to move to the Left Side Panel, Right Side Panel, Bottom Tray and Back Panel.

When the arrow is pressed the current screen slides out and the new screen slides in from the opposite side. This animation unfortunately cannot be displayed in the documentation.

In addition to the wires the system will also display the components and the component codes. This is shown in the screen dump below.

To access this screen the user presses the "Components" box shown at the top right corner of the
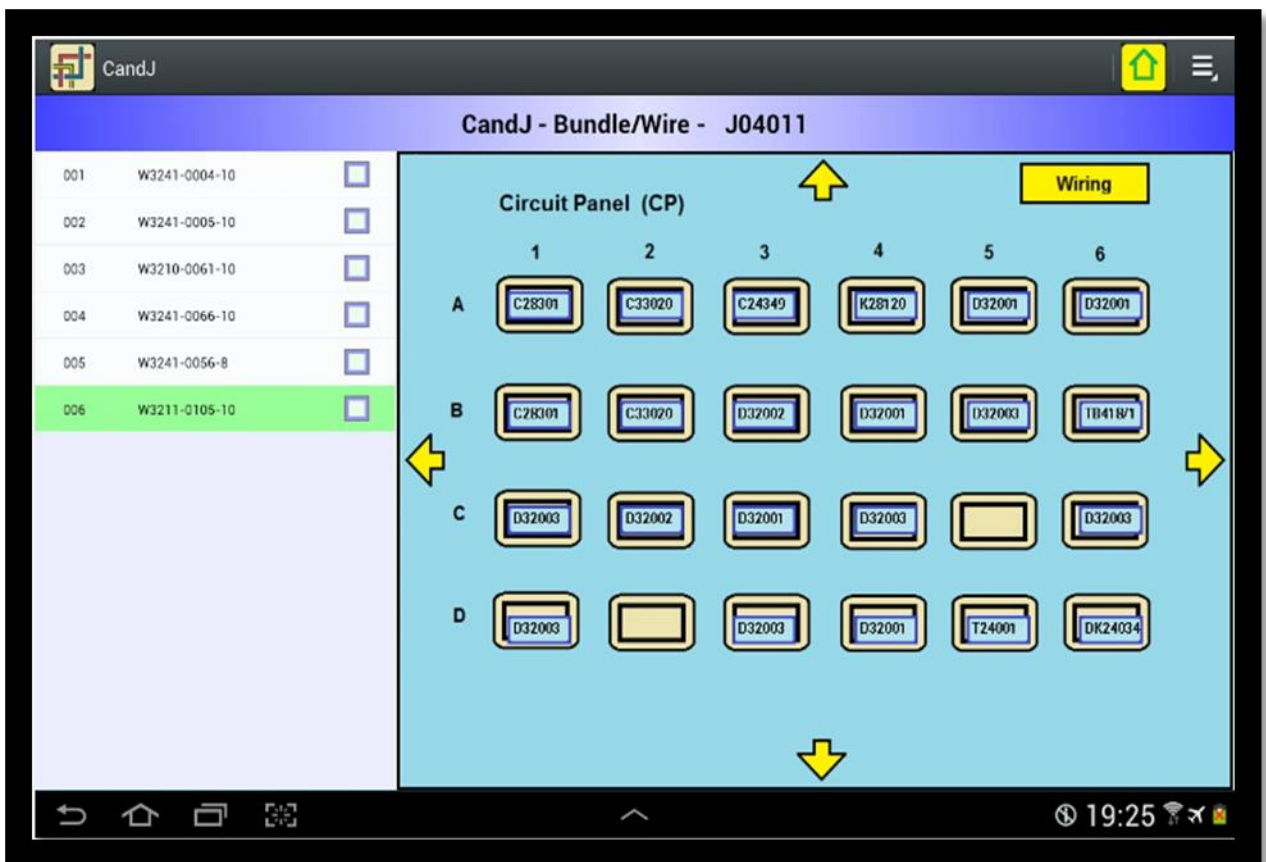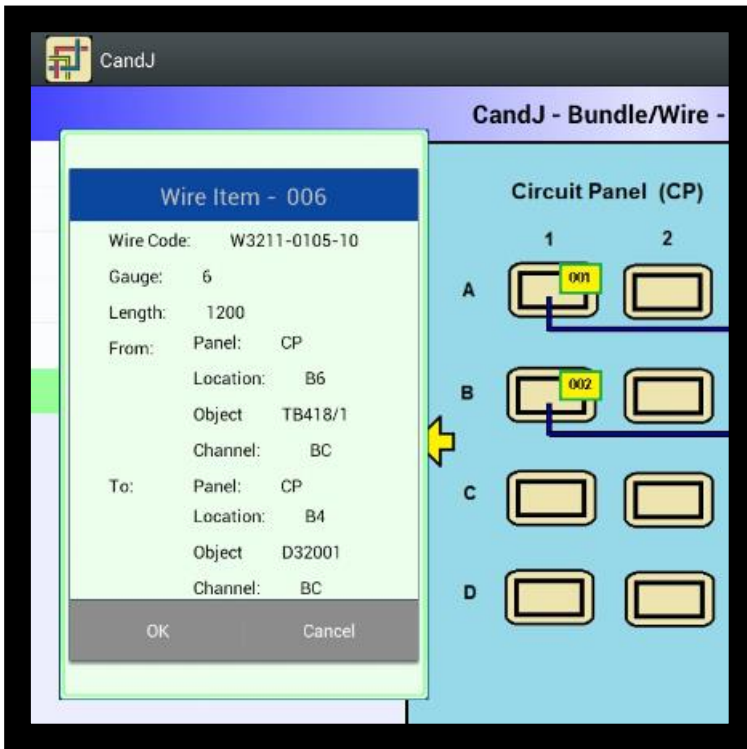
Circuit Panel display. This box is displayed on all five panel screens and at the same location, top right hand. Pressing this box switches the display to the components option and movement in the components option is the same as in the wiring option, that is through the use of the arrows shown at the side of the screen display. To return to the wiring from the components screen the user touches the "Wiring" box shown in the screen above.

To display the full details of the wire press the row in in the list that contains the wire. The dialog as shown below will drop down. In addition the specific wire will be highlighted and displayed prominently.
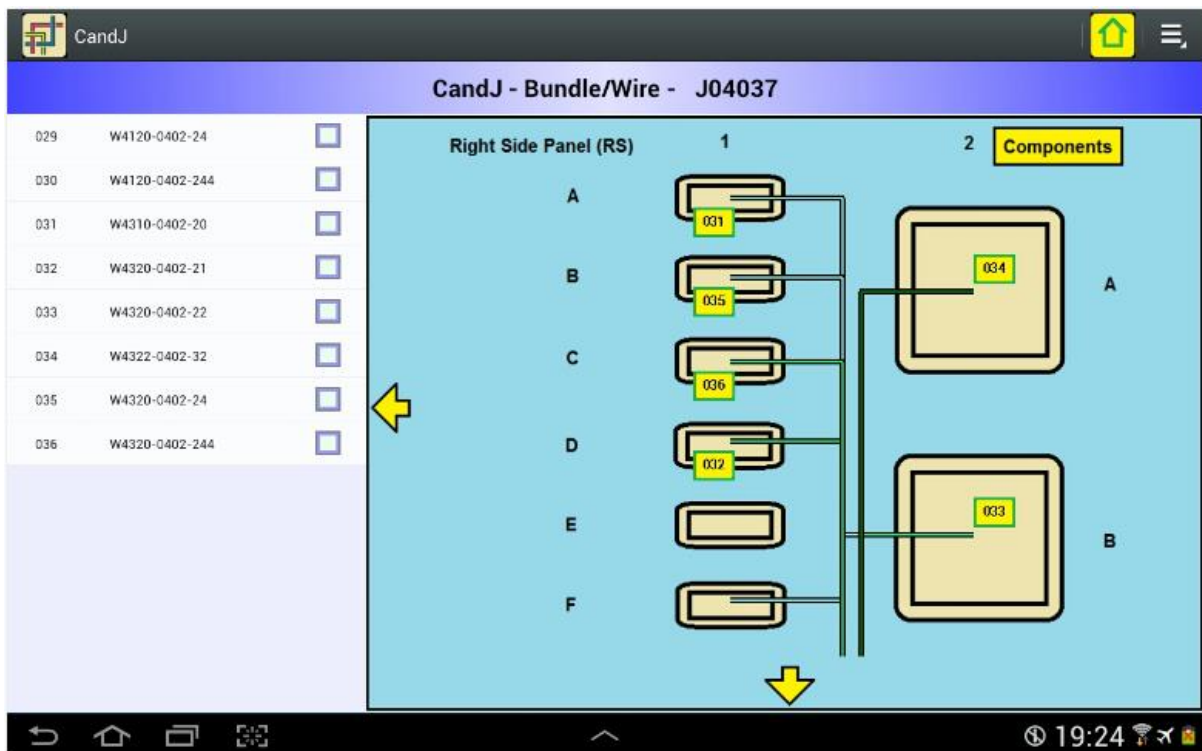
In addition to displaying the full details of the wire the dialog allows the user to signify when the wire has been attached to the components. This is signalled by entering the "OK" button. Pressing the cancel button will result in control returning to the main display.

Wires that have been attached to the components will display a slightly different colour icon thereby allowing the user to see at a glance those wires that have been attached.

Each wire has a specific colour depending on the wire gauge. Some output to the channel above and some to the channel below. This is defined in the data.
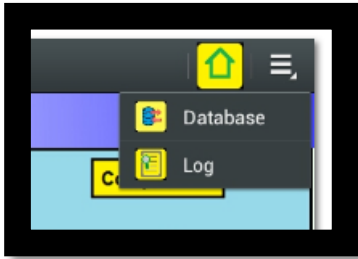
Additional ways of moving round the system include the menu and the home screen icon. When the home screen icon, shown in the screen dump on the left is pressed the Bundles screen is displayed. This home screen is shown on all the screens.

In addition there is the menu icon which when pressed shows the two menu options, "Database" and "Log" shown on the left. These options are documented in the "Additional Screens" section.
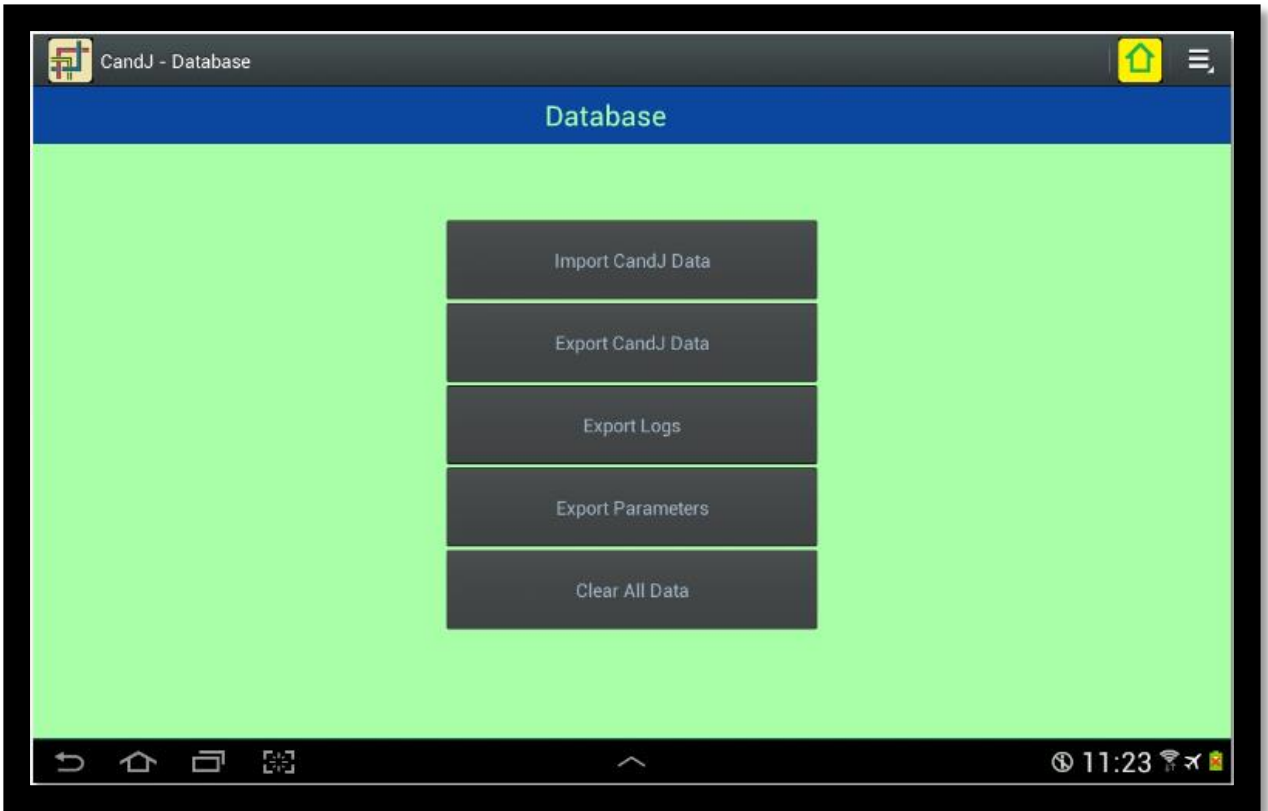
The Input File.

The information required to display the wiring is contained in the input file that contains a row for each wire. There are thirteen items in each row and each item is described in the table below.

Col.	Description.
1	Unique identifier
2	Bundle number
3	Wire Length
4	Wire Gauge
5	Wire Code
6	Component code that the wire is attached to.
7	Panel code that this component is in.
8	Position of the component within the panel.
9	Channel that the wire runs through in the first panel
10	Second component code that the wire is attached to.
11	Panel code that the second component is in.
12	Position of the second component within the second panel.
13	Channel that the wire runs through in the second panel.

The Additional Screens

When the "Database" option is selected from the menu the screen shown below will be displayed. This allows the import and export of data. The default position of the import and export files is "/mnt/sdcard/Download" and this along with the other default parameters are given in Appendix A. To import new data the file has to be called "InpWires.csv" and be in the default directory. It also has to have the structure as given in Appendix B, Default Data.

Appendix A – Default Parameters

Id	Value	Description
1	"/mnt/sdcard/Download"	Input Output Directory.
2	"InpWires.csv"	Input File
3	"InpParamFile.csv"	Input Parameter File.
4	"OutWires2.csv"	Output File.
5	"OutParams2.csv"	Output Parameter File
6	"OutLog2.csv"	Output Log File.
7	"|"	Separator

Appendix B – Default Data

The following is the wire data that is loaded as default data.

```
001|J04011|1500|6|W3241-0004-10|C28301|CP|A1|AB|D32001|RS|B1|12
002|J04011|1500|6|W3241-0005-10|C28301|CP|B1|BC|D32001|LS|B2|12
003|J04011|1700|8|W3210-0061-10|C33494|LS|A2|12|D32001|CP|D4|CD
004|J04011|1200|10|W3241-0066-10|K33058|BP|B2|12|D32001|CP|C3|BC
005|J04011|1000|14|W3241-0056-8|T24001|CP|D5|CD|D32001|RS|C1|12
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006|J04011|1200|6|W3211-0105-10|TB418/1|CP|B6|BC|D32001|CP|B4|BC
007|J04020|1500|14|W3435-0003-8|K24033|BT|B3|AB|D32002|CP|C2|BC
107|J04020|1500|14|W3135-0023-8|K24033|BT|B1|AB|D32002|CP|C2|BC
108|J04020|1200|12|W3135-0024-8|C28301|CP|B1|BC|D32002|CP|C2|BC
109|J04020|1200|12|W3136-0124-8|C28301|CP|B1|BC|D42001|BP|D1|12
110|J04020|1200|12|W3153-0125-8|C32003|CP|B5|BC|D42003|BP|D2|12
111|J04020|1200|12|W3154-0125-8|C32003|BP|C3|BC|D42003|BP|D2|12
112|J04020|1400|12|W3154-0126-8|D32003|CP|C4|BC|D45001|BP|A1|12
112|J04020|1400|12|W3154-0127-8|D32003|BP|A2|12|D45001|BP|A1|12
008|J04021|1200|10|W3440-0046-8|C24349|BT|A4|AB|D32001|CP|D4|CD
009|J04021|1200|14|W3440-0047-8|C24349|CP|A3|AB|D32002|LS|E2|12
010|J04021|1200|6|W3440-0041-10|T24001|CP|D5|CD|D32002|LS|F2|12
011|J04021|1200|6|W3440-0042-10|T5032|RS|A2|12|D32002|CP|B3|BC
012|J04021|1160|12|W3240-0026-8|D56320|RS|A1|12|D32001|CP|B4|BC
013|J04034|1400|10|W3110-0155-20|C33020|CP|A2|AB|D32003|CP|B5|AB
014|J04034|1500|8|W3110-0101-20|D32002|CP|C2|CD|D32001|LS|B2|12
015|J04034|1500|12|W3110-0103-14|T24001|CP|D5|CD|D32001|RS|B1|12
016|J04034|1500|14|W3110-0104-14|K28120|RS|E2|12|D32002|CP|C2|CD
017|J04034|1500|12|W3110-0105-14|K28130|RS|F2|12|D32003|CP|C4|BC
018|J04034|1500|10|W3110-0102-20|T5032|LS|A1|12||D32003|CP|D3|CD
019|J04035|1500|8|W3110-0155-20|C33020|CP|B2|BC|D32003|BT|A6|AB
020|J04035|1500|10|W3110-0101-20|DK24034|CP|D6|CD|D32003|BP|B1|12
021|J04035|1500|12|W3110-0103-14|K28120|CP|A4|AB|D32003|BP|C2|12
022|J04035|1500|14|W3110-0104-14|T5042|LS|A2|12|D32003|CP|C1|AB
023|J04035|1200|12|W3110-0105-14|T5042|LS|A2|12|D32003|CP|D1|BC
024|J04035|1200|8|W3110-0102-20|DK5032|LS|D2|12|D32003|CP|D3|CD
025|J04036|300|14|W4110-0402-20|DK5032|LS|C2|12|T5032|LS|A1|12
026|J04036|1200|12|W4120-0402-21|DK5032|LS|C2|12|D32001|CP|D4|CD
027|J04036|1500|12|W4120-0402-22|D32001|LS|B2|12|D32003|BT|A3|AB
028|J04036|1200|10|W4122-0402-32|C33494|LS|A2|12|D32001|CP|A6|AB
029|J04037|300|14|W4120-0402-24|D32002|LS|F2|12|D32001|LS|B2|12
030|J04037|1200|12|W4120-0402-244|D32002|LS|F2|12|D32003|CP|C6|BC
031|J04037|300|14|W4310-0402-20|T5042|RS|B2|12|D32003|RS|A1|12
032|J04037|1200|12|W4320-0402-21|D32005|RS|D1|12|D32001|CP|D4|CD
033|J04037|1500|12|W4320-0402-22|T5042|RS|B2|12|D32003|BT|A3|AB
034|J04037|1200|10|W4322-0402-32|T5032|RS|A2|12|D32001|CP|A5|AB
035|J04037|300|14|W4320-0402-24|K28130|RS|F1|12|D32003|RS|B1|12
036|J04037|1200|12|W4320-0402-244|D32001|RS|C1|12|C28301|CP|B1|BC
037|J04038|1500|8|W3110-0655-20|C33020|BT|B6|AB|C24349|BT|A4|AB
038|J04038|1500|10|W3110-0601-20|DK24034|BT|A5|AB|D32003|BP|B1|12
039|J04038|1500|12|W3110-0603-14|K28120|BT|A2|AB|D32003|BP|C2|12
040|J04038|1500|14|W3110-0604-14|T5032|LS|A1|12|D32003|BT|B4|AB
041|J04038|1200|12|W3110-0605-14|D32001|LS|B2|12|D32003|BT|B2|AB
042|J04038|1200|8|W3110-0602-20|C33494|LS|A2|12|D32003|BT|B5|AB
043|J04038|800|8|W3110-0603-21|T5042|LS|A2|AB|D32003|BT|B5|AB
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Appendix C – The Panel Codes

The panel codes are as follows:-

- CP – Circuit Panel
- BP – Back Panel
- LS – Left Side Panel
- RS – Right Side Panel
- BT – Bottom Tray

Appendix D – Technical Information

CandJ has been developed in Android Java and requires a minimum of Android api of 14. This is Android 4.0, Ice Cream Sandwich.

CandJ has been designed and developed on a Samsung GT-P7510 tablet.