



# **Software Programmers Manual**

## **BLRT Runner**

### **Software Version 10.3**

#### **Version 1.2**

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## MODIFICATIONS

<b>Issue</b>	<b>Date</b>	<b>Modified by</b>	<b>Modified Pages</b>	<b>Observations</b>
1.0	17/Oct/2016	JP		First revision
1.1	18/Nov/2016	JP	15	Added customisation section and startup option
1.2	20/Dec/2016	JP	13-15	Changes to reflect new manual mode screen



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## **1 Before You Begin**

### **1.1 Familiarisation**

Before using the BLRT test system it is strongly advised that you read all of the manuals provided and ensure that you are familiar with the concepts in operating this form of test equipment

### **1.2 About This Manual**

This manual is designed in such a way that a first time user of the BLRT system will, by following this manual be taken through the BLRT software in a logical manner. Those users more familiar with the BLRT may wish only to use this manual for reference.

## 2 Software User Interface

The BLRT software has been written with the primary intention of being simple to use, the aim being that familiarisation is quick and consistent in its use. As such the software is split in to two major parts the BLRT Editor and the BLRT Runner. The **Editor** is a desktop application that allows an operator to create test programs not only for BLRT but any MK test products. The **Runner** is a designed more with the shop floor operation of connecting to and testing the UUT. Refer to the BLRT Editor Software Manual for information regarding test creation/editing.

### 2.1 BLRT Runner



The operator can start the BLRT using the icon in the task bar . Upon logging in, the operator will be presented with the home screen.

### 2.2 Default Logins

The system is setup with 3 default logins, the username are not case sensitive the password are:

Username: Administrator	password:MKtest2016
Username: Advanced Programmer	Password: MKtest2013
Username: Operator	Password:Mktest21013

### 2.3 BLRT Home Screen

The BLRT home screen consists of a number of different areas:

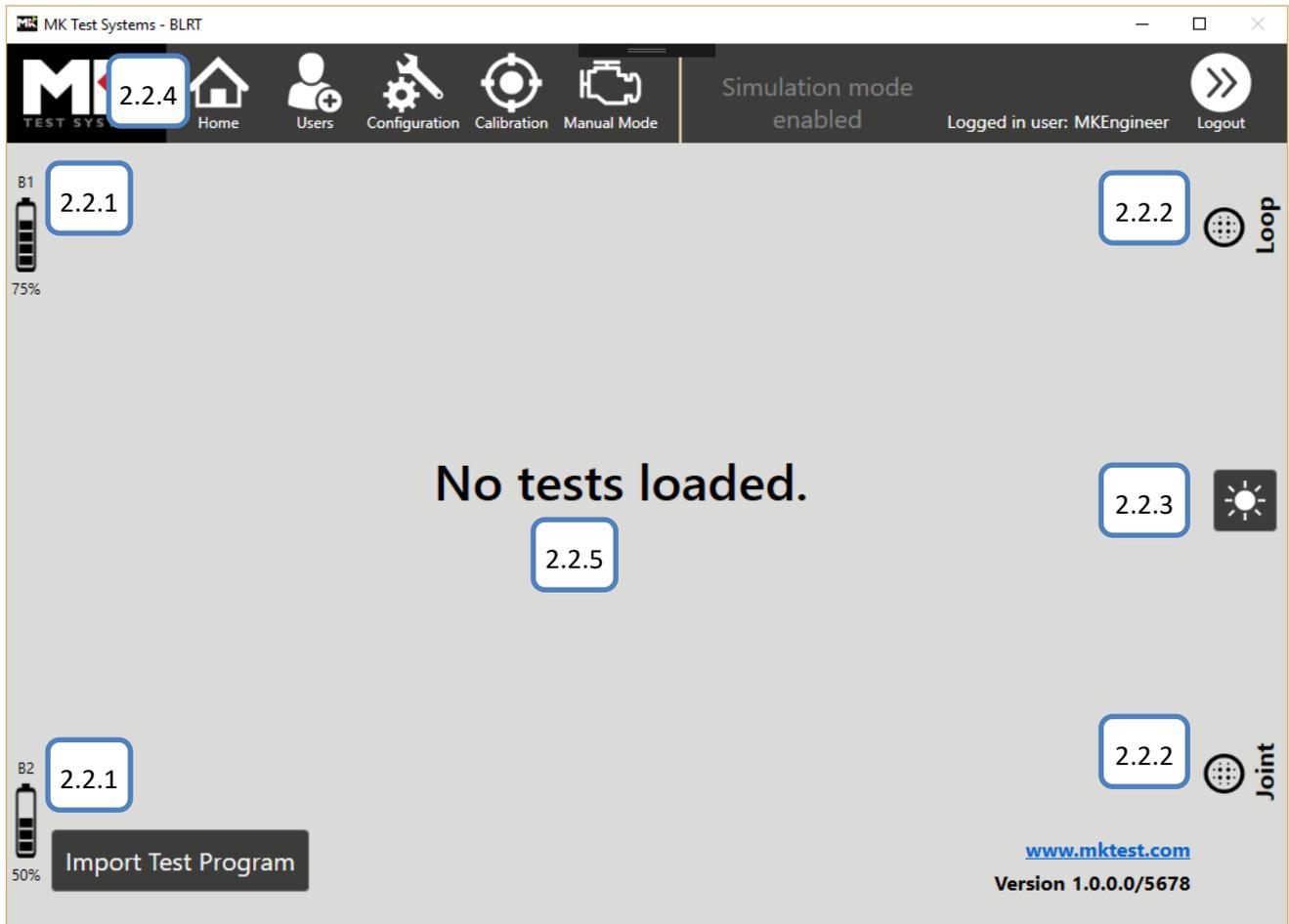


Figure 1: BLRT home screen

### 2.3.1 Battery Status

These icons will indicate the battery level of each battery, or will show a disconnected indicator if the battery is missing.

### 2.3.2 Connector Status

These icons will indicate the status of the connectors. They will turn red if the incorrect probe/clamp is inserted.

### 2.3.3 Headlight

Use this toggle button to switch the headlight on/off on the bond/joint probes.

### 2.3.4 Menu bar

Use the icons on this top bar to navigate to the sub-sections of the BLRT.

### 2.3.5 Test program area

When you've created a test program in the BLRT editor, you can use the "Import Test Program" option to load the program into the BLRT runner. The test program area will show the imported tests and allow you to run them and report on them.



### 3 Test Programs

#### 3.1 Importing a program

Because the editor is a separate application, you need to import the test programs into the runner. The runner can have many test programs imported at any time, like the example shows below where we have the program “BLRT Verification Test” loaded.

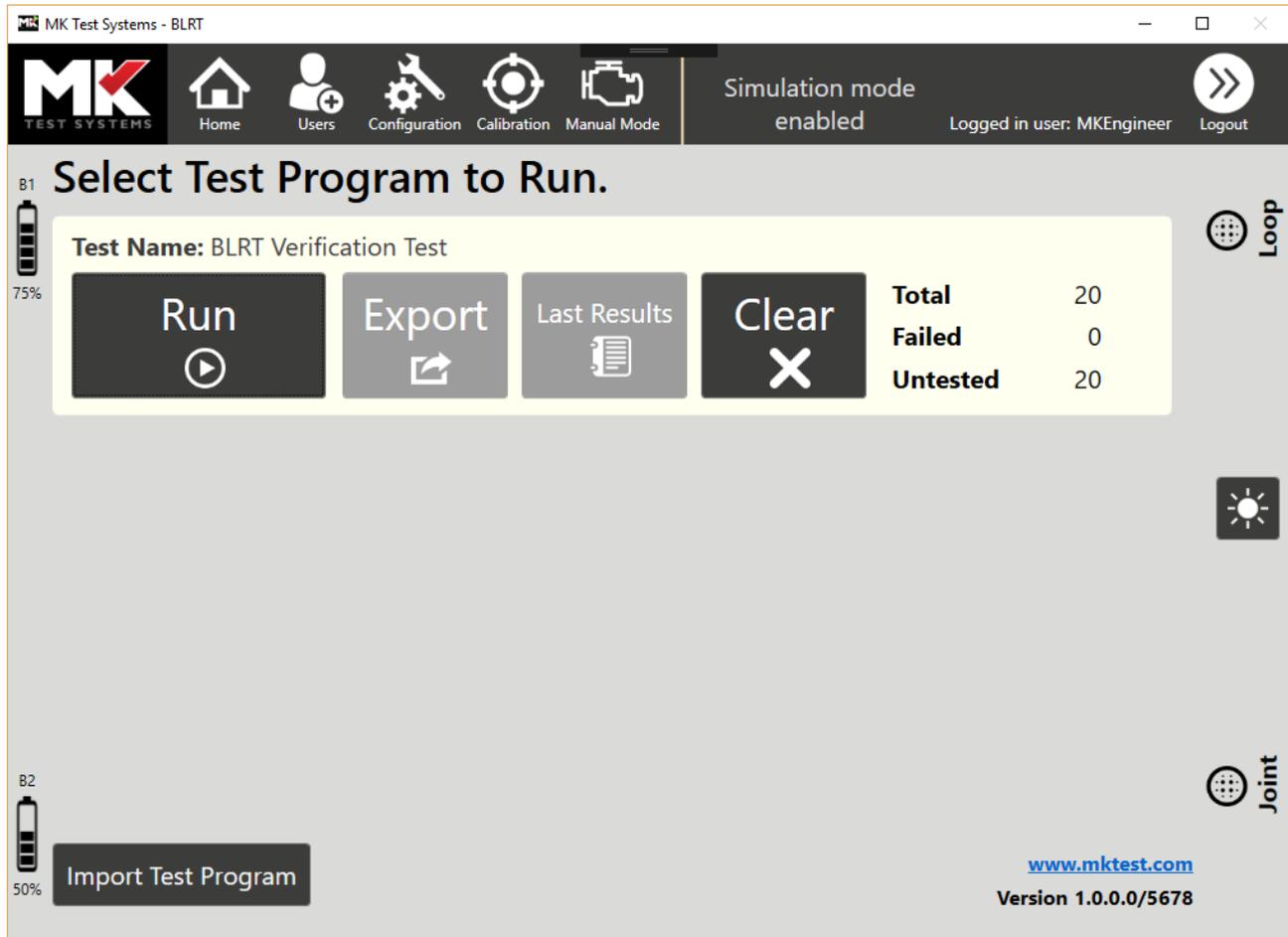


Figure 1: Main screen showing which test programs can be run.

To remove a program from the list, then you use the clear button, this will ask you if you wish to clear the results and delete the program. Clearing the results only will ensure that the previous test results are cleared from the database.

Selecting export will allow the user to save the last test run results (as an XML file).

The Last Results will show the last test run report screen.

### 3.2 Running a program

To run a program simply select the “Run” option, you will then be presented with the sub test selection screen.

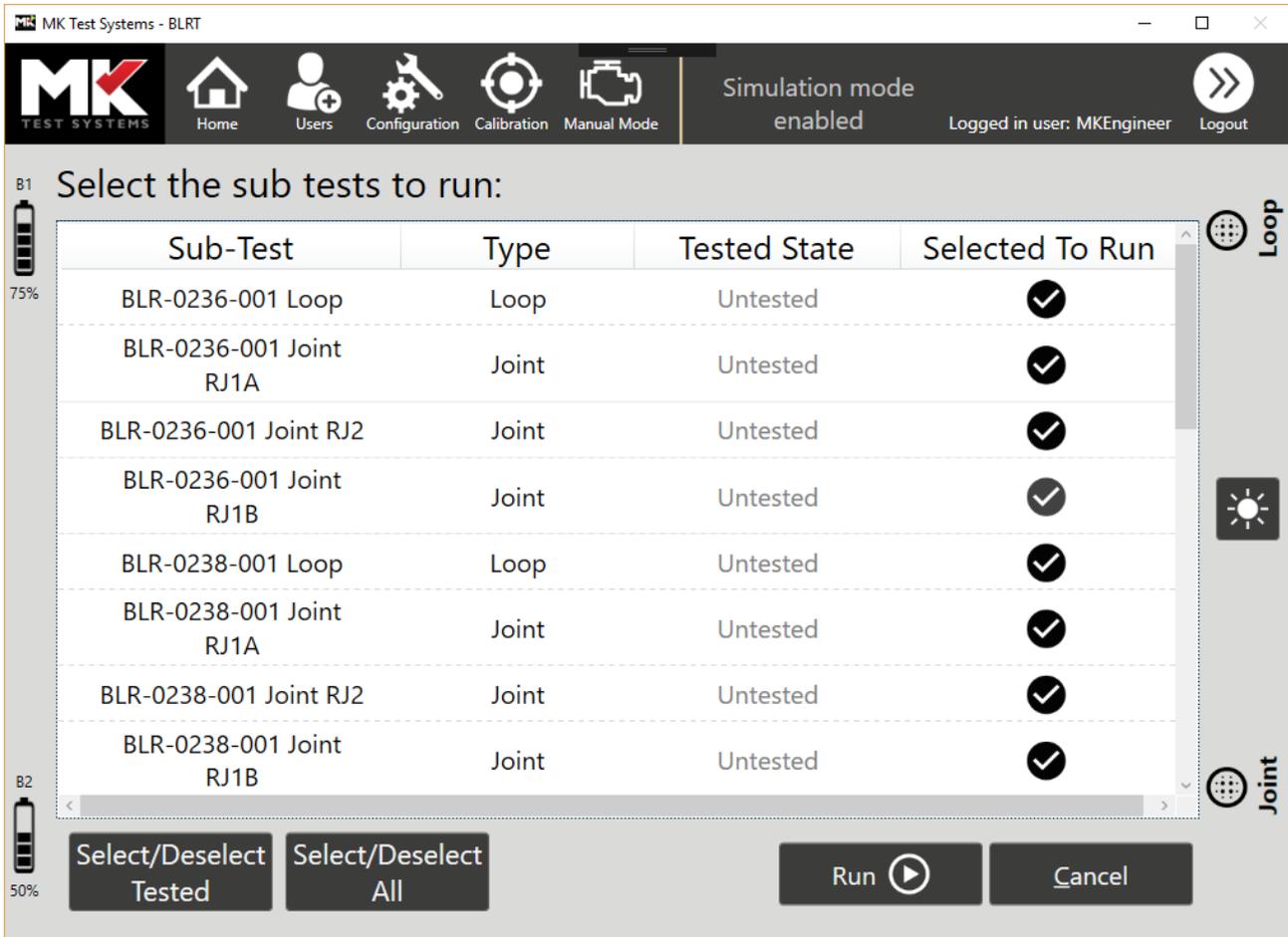


Figure 32:Sub-test selection screen.

This allows you to choose which sub-tests you wish to run. To de-select a test simply click the “tick” under the “Selected To Run” column. To re-select a test then click the “cross” against the specific sub-test that you wish to run. To return to the main screen you can cancel the operation that you have started.

Once a test has been started it is not possible to access any of the menu items until the test has completed or been stopped.

#### 3.2.1 Running a Loop Test

A loop test will wait for the user to press the green button on the in-line controller, or pressing to start icon



on screen. By starting the test, the unit will take a loop measurement and present the

measurement with an accept/reject option. If the measurement is rejected, you will be given the option of taking the measurement again. You can accept/reject using the on screen buttons, or the in-line controller.

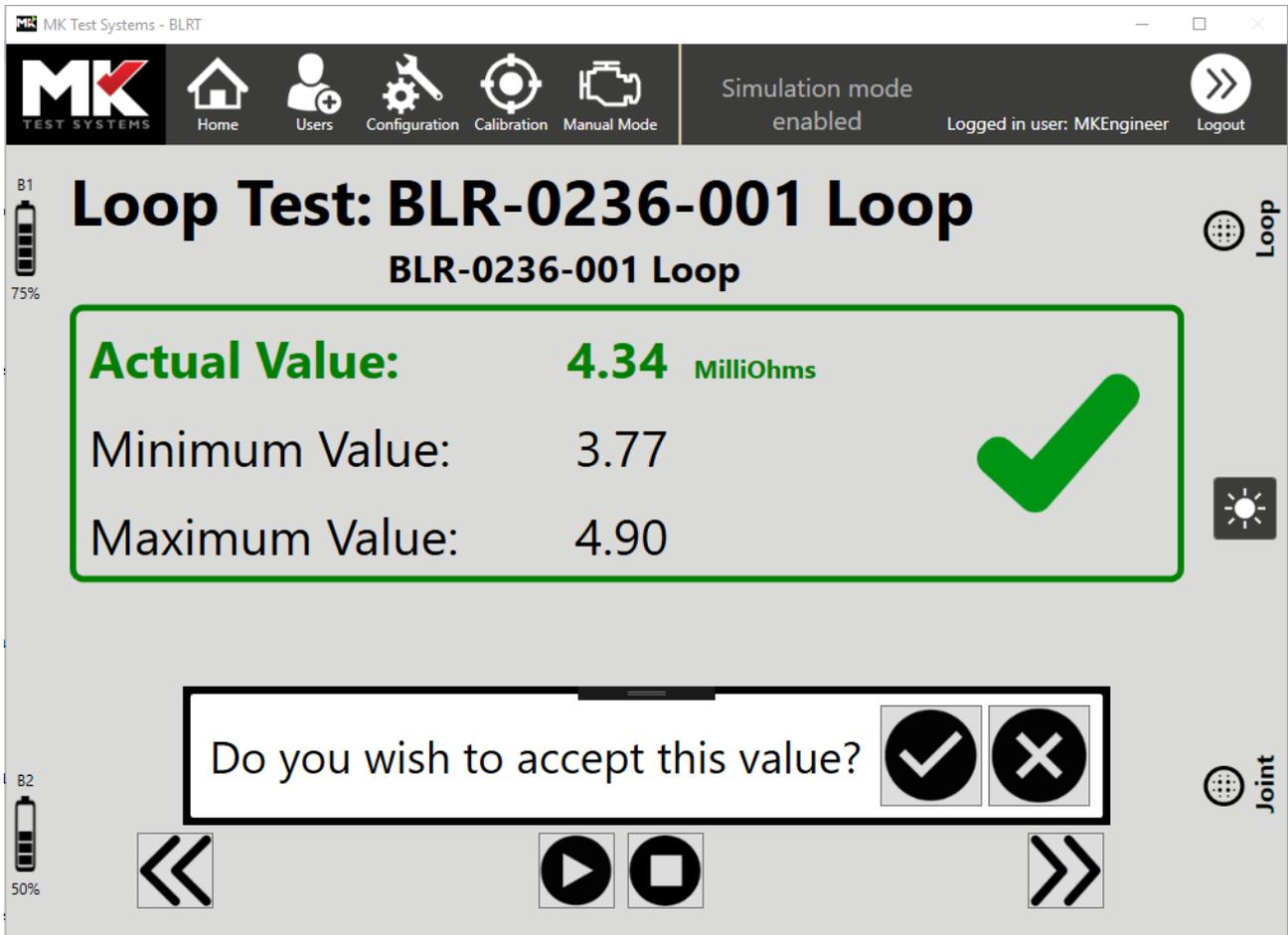


Figure 43:Accept/Reject loop measurement

### 3.2.2 Running a Joint Test

A joint test will wait for the user to connect the probes with the unit under test.

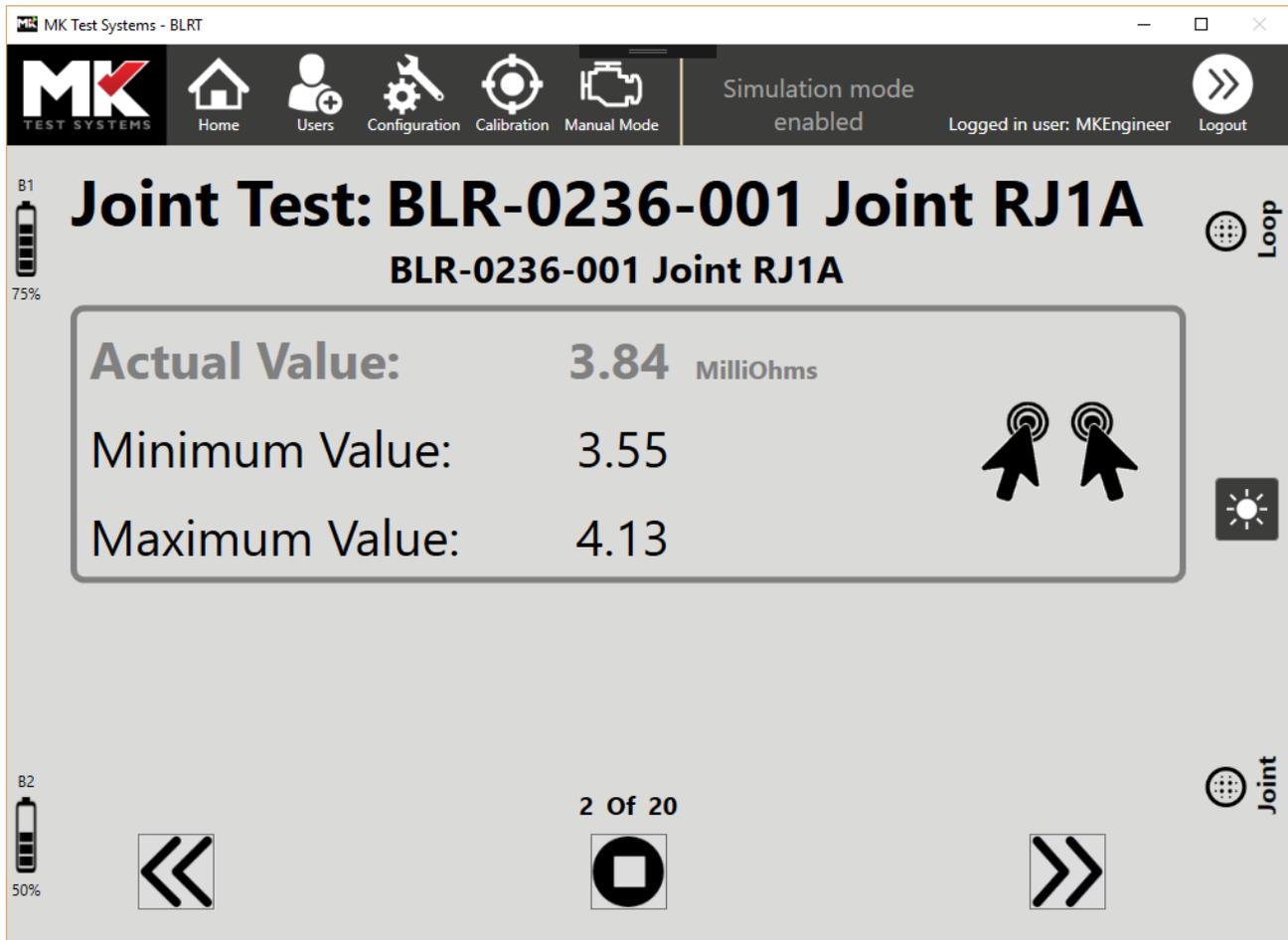


Figure 54: Joint measurement waiting to connect to UUT

Once the test has started, the unit will take a joint measurement and present the measurement with an accept/reject option. If the measurement is rejected, you will be given the option of taking the measurement again. You can accept/reject using the on screen buttons, or the in-line controller.

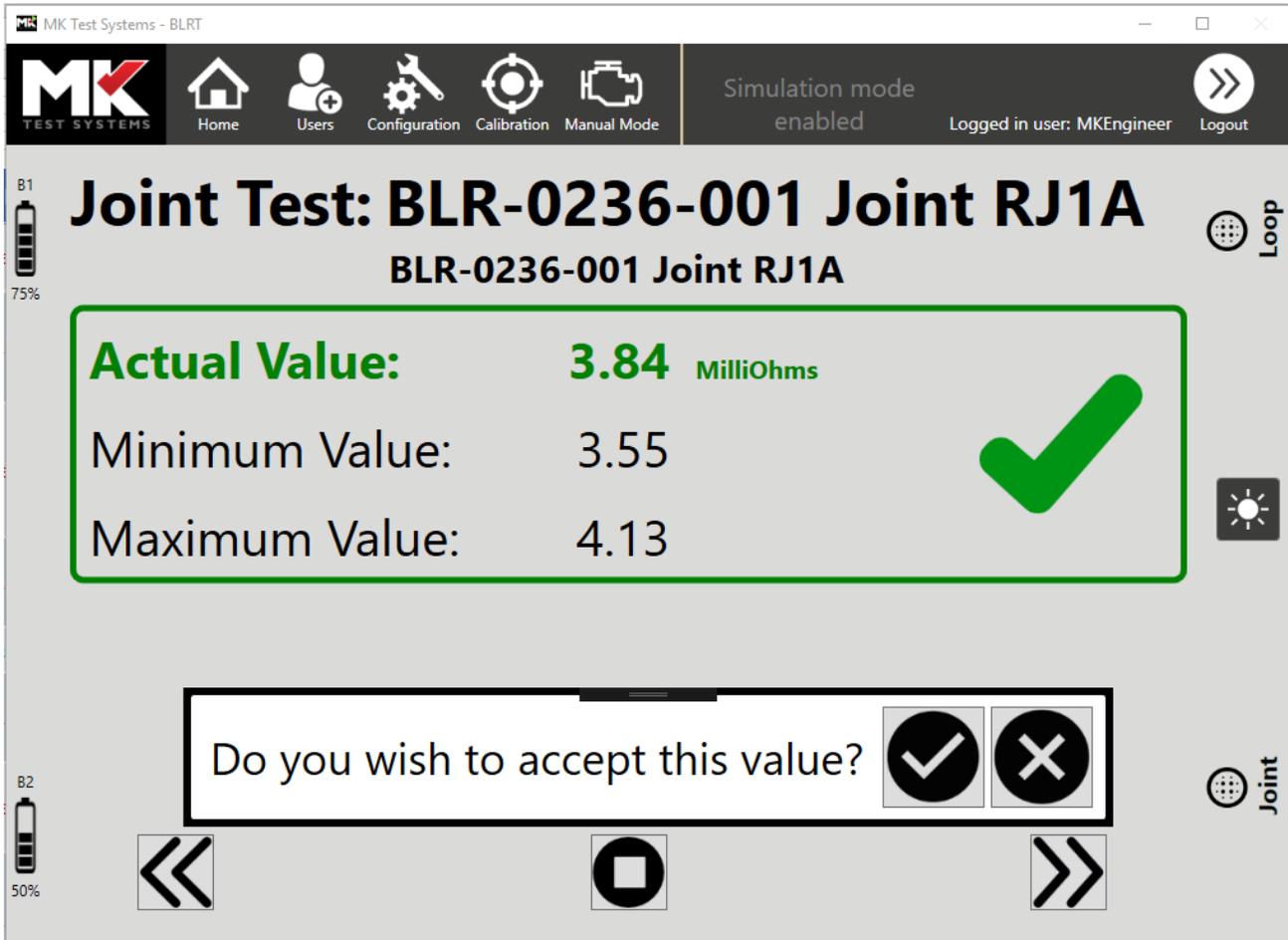


Figure 65:Accept/Reject joint measurement

### 3.2.3 Running a Bond Test

A bond test is run in the same way as a joint test, it will wait for the probes to be connected with the UUT before displaying a measurement

### 3.3 Test results

The result screen (see below) is shown when a test has completed/aborted, or when you select "Last Results" from the home screen. There is a collapsible section called "options" at the top of the screen that allows the operator to access the print and export buttons to allow them to record the result data.

MK Test Systems - BLRT

Simulation mode enabled | Logged in user: MKEngineer | Logout

Options

**BLRT Verification Test**

**Tested State: Partial**  
 Started: 17/10/2016 11:34:17  
 Finished: 17/10/2016 12:28:04  
 Run By: MK Engineer  
 Program Version: 6  
 Software Version: 1.0.0.0

Iteration: 1

1. Loop - BLR-0236-001 Loop. 1 total, 1 passed.

Failure Action: Continue

**Tested State: Passed**

Minimum	Maximum	Measured Current (mA)	Measured	Units	Tested State
3.77	4.00	3.10	4.34	mA	Passed

Figure 7: Report screen, showing a simple report of a test, the options to export and print can be accessed by expanding the options section.



## 4 Users

This allows you create / edit and manage the users who are allowed to login to the MK AT runner, you can also control the options / functions that an operator is allowed to use. You can do this by assigning groups to users, and control what permission are in which groups.

## 5 Configuration

There are a number of sub-tabs within the configuration section, however you should only really need to use 3 of them:

### 5.1 Parameters

Within this section you can change the application display language, the refresh interval for battery/probe status as well as adjust the level at which the system warns/shuts down when on batteries. It is advised to leave the Min/Max current settings alone.

### 5.2 Simulation

This tab allows you to switch to simulation mode, which will allow you to run all functions of the BLRT software without it actually taking real-life measurements or interacting with the probes/clamps.

### 5.3 Admin

This tab contains a number of features, the main ones being switching between full screen and windowed mode and changing the exit action. The combination of these 2 settings will allow you to put the device in a kiosk mode where the user can only interact with the BLRT software and the device can shut down when exited (rather than going back to windows).

The remote access settings are specifically for the API mode and are documented fully in the "BLRT API" documentation.

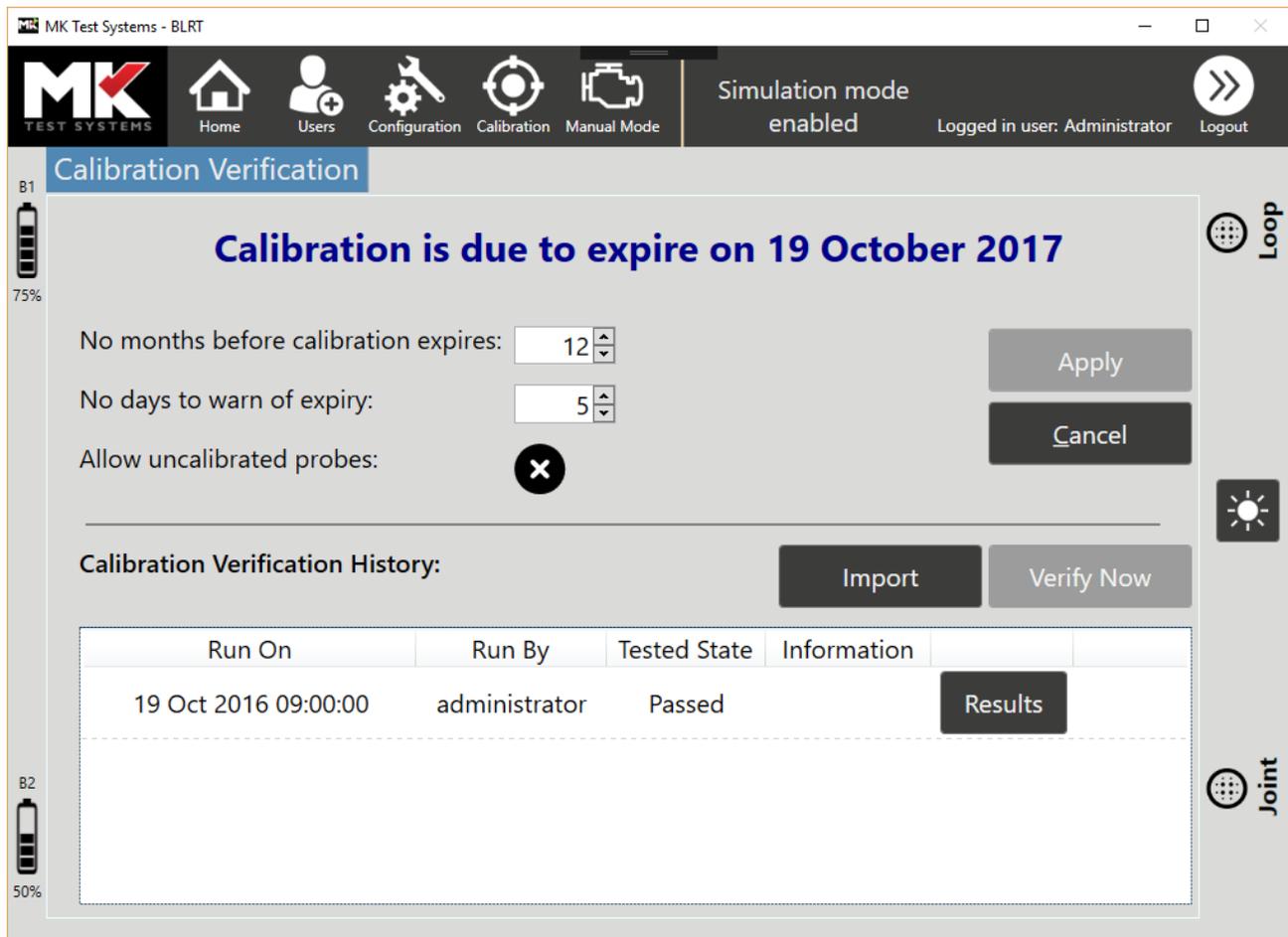


## 6 Calibration

### 6.1 Calibration Verification

The BLRT will, by default, only allow clamps/probes which have been verified with the system to be used when running tests. The verification of clamps/probes is valid only for a certain period of time since the last fully successful verification. The calibration verification page (which is only available to administrators) allows you to configure this calibration period, as well as disabling the probe check if necessary.

The lower half of the page shows the calibration verification history and allows you to verify a new set of clamps/probes by using the “Verify Now” button. To perform a verification, you will need a full set of loop/joint and bond clamps/probes and will need the calibration fixtures. The verification will test all of these items and, if all test pass, will update the verification expiry date.



**Calibration Verification**

**Calibration is due to expire on 19 October 2017**

No months before calibration expires:

No days to warn of expiry:

Allow uncalibrated probes:

**Calibration Verification History:**

Run On	Run By	Tested State	Information
19 Oct 2016 09:00:00	administrator	Passed	<a href="#">Results</a>

Figure 8: Calibration verification.

## 7 Manual Mode

### 7.1 Loop/Joint Manual Screen Overview

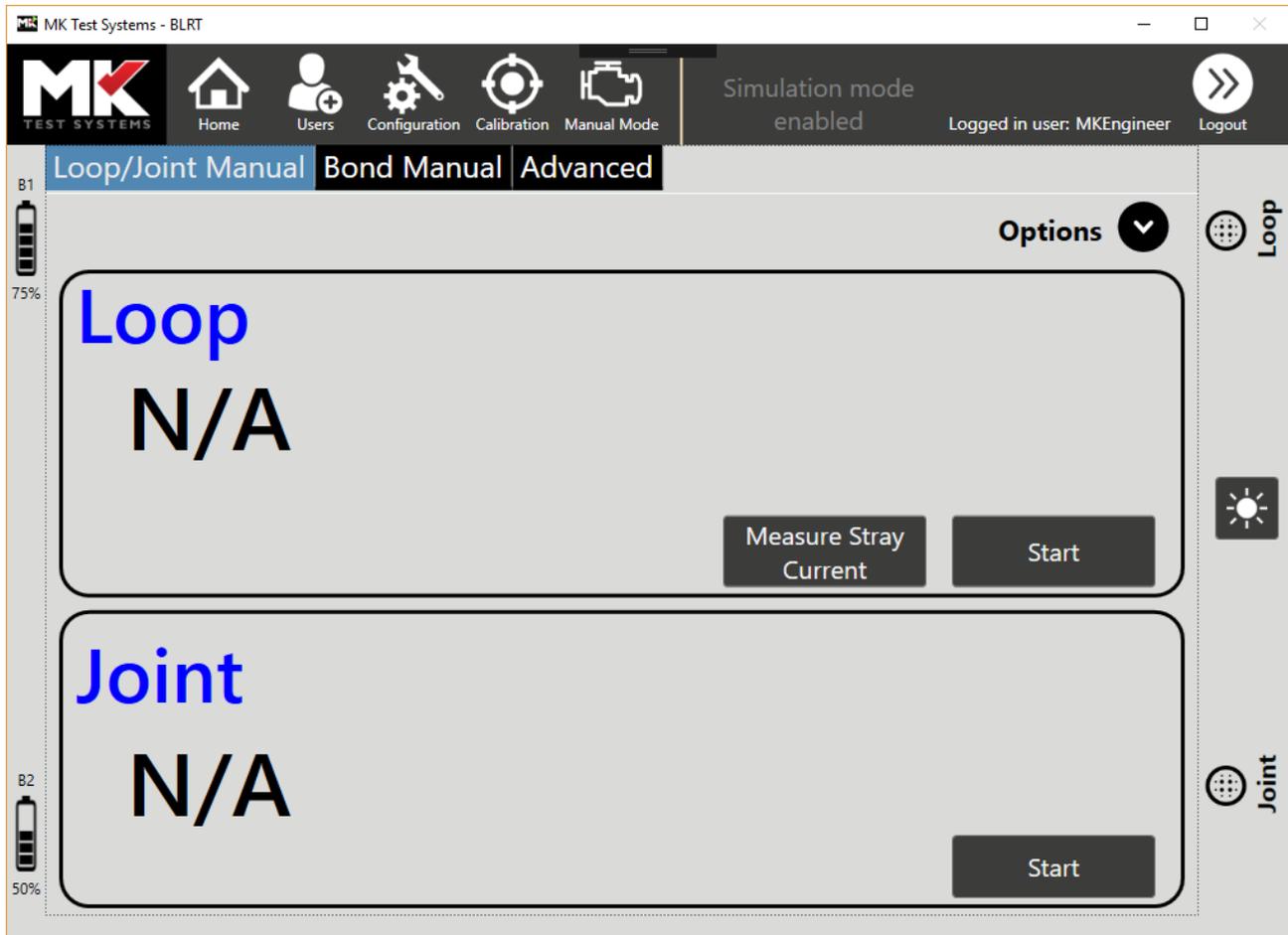


Figure 9: Loop/Joint Manual Screen

#### 7.1.1 Measure Stray Current

The measure stray current option will take a continuous reading from the detect clamp and will display the measured current on screen. It will alert you if the stray current is likely to affect actual measurement.

#### 7.1.2 Loop/Joint Single Reading Mode

Single read mode is selected when the “Continuous/Real Time” option is unchecked. You can take a single loop reading by clicking “Start” in the loop area, or clicking the green button on the in-line controller. The system will take a reading and display the result.

Single read mode for joint is started by clicking “Start” in the joint area, or clicking the green button on the in-line controller. The system will wait for the probes to come in contact with the UUT before taking and displaying a reading. In this mode the system will not stop after the first reading, instead it will wait for the probes to make contact with the UUT again and will take another reading until the “Stop” button is pressed.

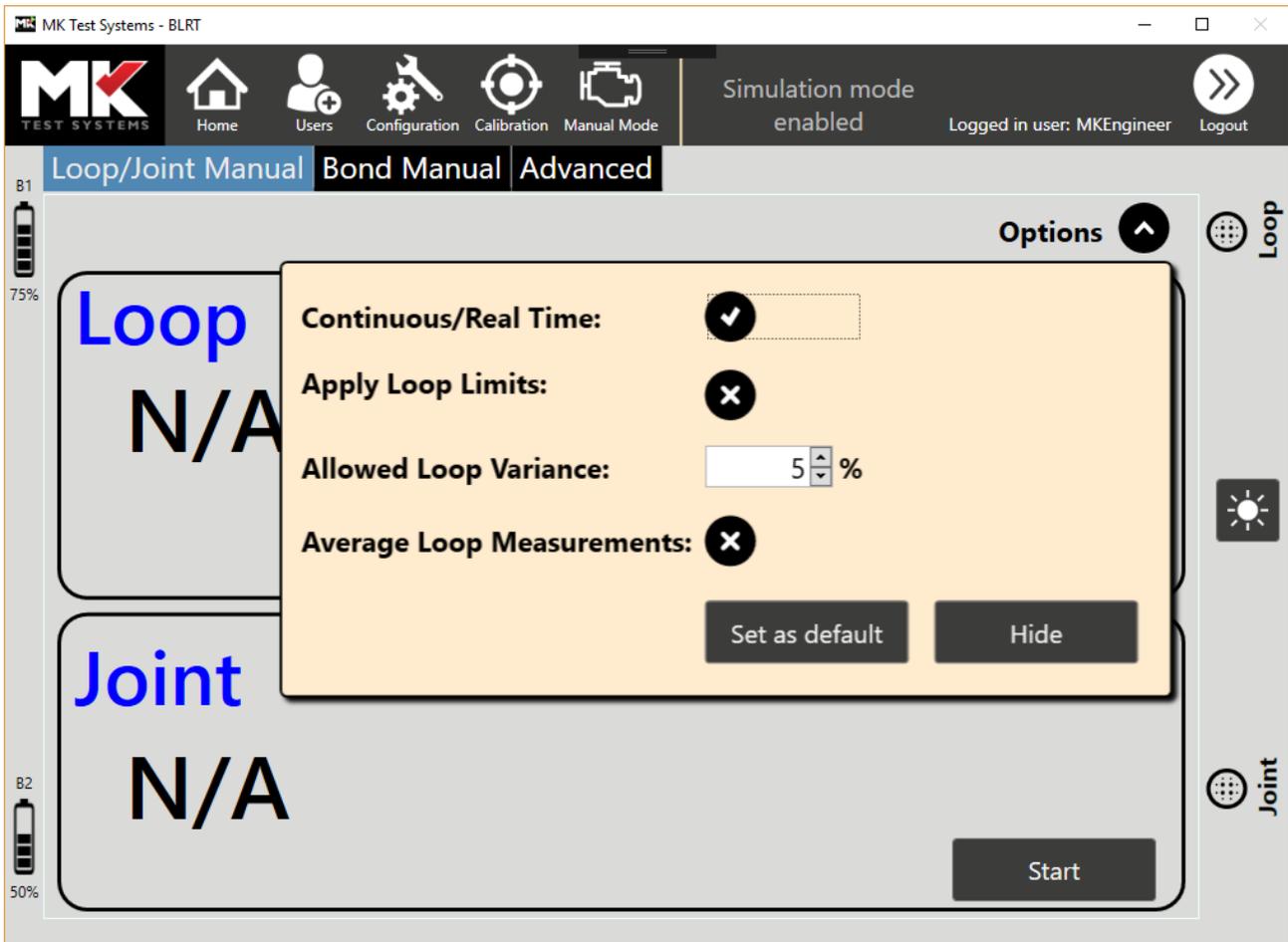


Figure 10: Loop/Joint Manual Screen – showing options

### 7.1.3 Loop/Joint Continuous/Real Time Mode

#### 7.1.3.1 Setting options

You can set additional options in manual mode using the Options drop down in the top-right hand side of the screen. This will allow you to switch to continuous mode, which in turn gives extra options for measurement.

#### 7.1.3.2 Starting continuous mode

Continuous loop read mode is selected when the “Continuous/Real Time” option is checked. You can take continuous loop readings by clicking “Start” in the loop area, or clicking the green button on the in-line controller. The system will take and display loop readings continuously until the “Stop” button is pressed.

Continuous joint read mode is selected when the “Continuous/Real Time” option is checked. You can take continuous joint readings by clicking “Start” in the joint area, or clicking the green button on the in-line controller. The system will take and display loop and joint readings continuously until the “Stop” button is pressed.

#### 7.1.3.3 Average loop measurements

During continuous mode you can select the option to show an averaged loop measurement instead of the very latest measurement. When you select this option, the loop measurement shown will be

an average of all readings since the loop/joint test was started and the latest, continuously updating, measurement will be shown on the right-hand side as the “Latest” measurement.

#### **7.1.3.4 Additional continuous options**

Within continuous mode you also have the option of letting the system notify you if the loop changes during readings. These 2 types of comparison are:

- Loop Min/Max limits: These can be applied by checking the “Apply Loop Limits” check box and entering a minimum and maximum resistance. Once a loop or joint continuous reading is started, the system will indicate on screen if the loop goes outside of these limits.
- Loop variance: You can specify a percentage change value in the “Allowed Loop Variance” option. The percentage is relative to the first measurement taken after the loop/joint has started. From this point onwards, if the loop reading varies by more than the specified percentage, you will see a warning appear on screen.

## **7.2 Bond Manual Mode**

The “Bond Manual” tab allows you to take manual bond measurements. You will need to specify the current to operate at and press the “Start” button. The system will wait for the probes to connect with the UUT and will display a reading. Once a reading has been taken the system will wait for the probe to connect with the UUT again unless you press the “Stop” button.

## 8 Additional Options

### 8.1 Customising the login screen

You can replace the background image on the login screen by placing a new png image in C:\ProgramData\MK Test Systems Limited this image must be called "LoginBackground.png" and should ideally be a high-resolution image sized per the screen it's being viewed on.

### 8.2 Starting the BLRT minimised

You can start the BLRT minimised in the task bar by providing a /StartMinimized command line argument. To use this you can create a new shortcut to the BLRT application, which is typically installed in C:\Program Files\MK Test Systems\BLRT\MKTest.BLRT.exe and supply /StartMinimized as the command line argument. You must ensure that the "Start In" parameter of the shortcut is the BLRT folder. An example shortcut is shown below:

