Caravan and Trailer Tester (CATT)

Standard Version

1. General Information

Thank you for purchasing the Apuljack Electronics Caravan & Trailer Tester (CATT). Please take the time to read these instructions, to enable trouble-free operation of the equipment.

The CATT has been designed to test caravan and trailer lights and functions efficiently and with ease. It is easily portable and has been incorporated into a robust IP rated case, ideal for both mobile engineers and service centres alike.

The CATT provides the user with an easy to use, whilst being comprehensive and powerful piece of test equipment. The CATT is able to help diagnose cabling and lighting issues related to statutory lights and recommended wiring practices related to towed trailers and caravans.

Depending on the model you have purchased the CATT provides manual, semi-automatic and automatic testing of caravan and trailer lights. In addition it can test the switched (fridge) and permanent (battery) supplies to a caravan or trailer.
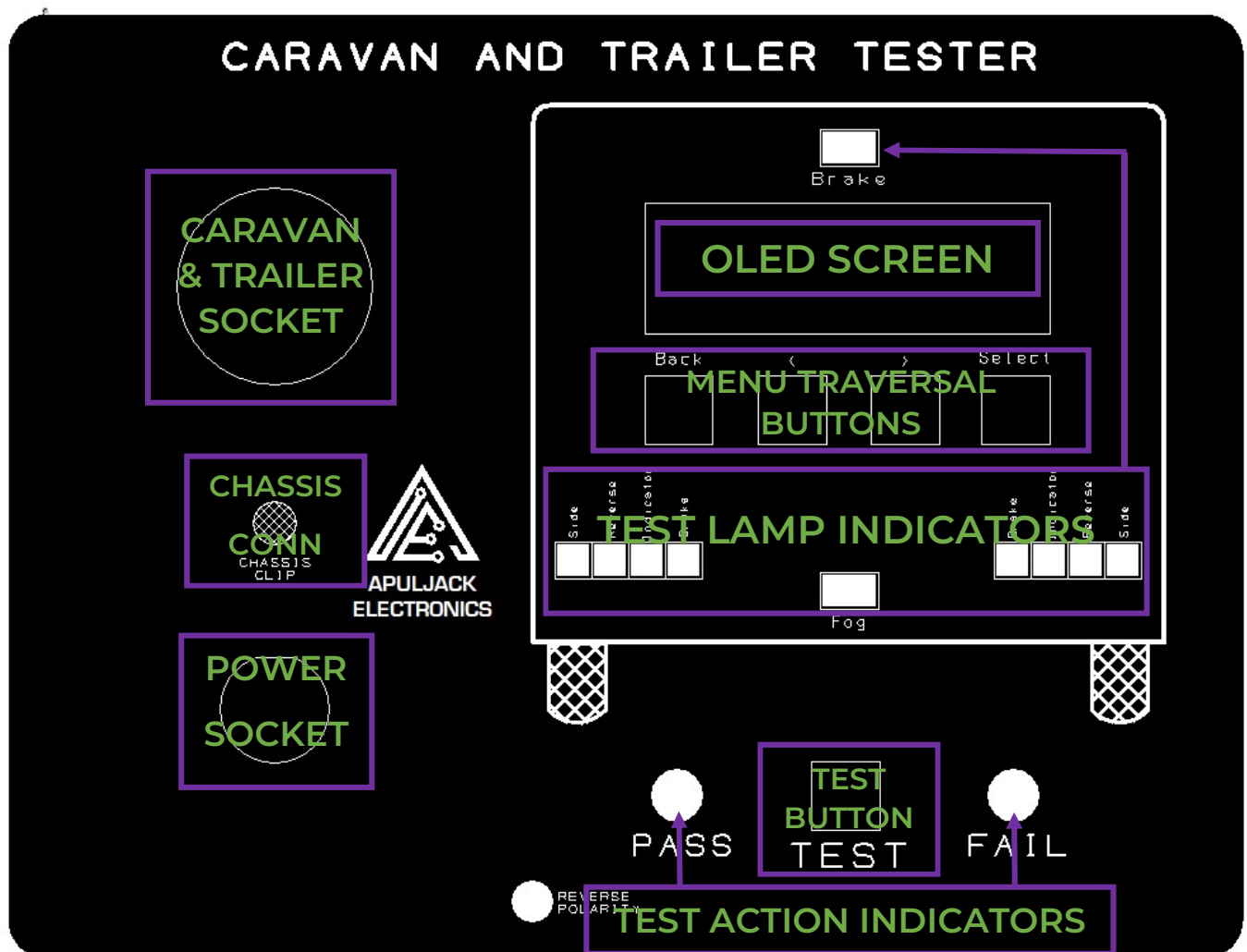

Figure 1 - button and socket/connector layout

2. Operation Overview

2.1 Power

The unit can be powered from a variety of sources, whether it be a battery or a power supply. A voltage of between 12V and 14.4V is required that can supply sufficient current to power the loads under test. This requires a source capable of supplying a minimum of 20A continuously.

The unit is supplied with a lead suitable for connecting a 12V lead acid battery to the tester. The lead is terminated with crocodile clips for easy connection to the battery.

Upon applying power the display will show the welcome screen and indicate the version of software in the unit.

After a period of approximately 5 seconds, the welcome screen will be replaced with the top level menu selection. Note that depending on the model of the caravan light tester purchased, not all menus are functional or selectable.

2.2 Button functions

The unit is menu-driven and the menu is traversed with the four buttons located beneath the display and a fifth towards the bottom of the unit. These buttons are;

Back   Ends a test, returns to a previous menu or selection

< or >   Cycles through menu options or changes values

Select   Selects a menu or option value

Test   This button executes a manual or automatic test. When a test is selected the action LEDs either side of the button will flash white to indicate that the button will cause a test to be conducted, or stopped. When an automatic test has been executed the actions LEDs will also indicate whether the test has passed or failed.

Figure 2 - leads supplied with the CATT

2.3   Menu Structure

Menu ID					Menu Name	Notes
1					**Manual Light Tests**	
1	>	1			Individual Lamp	
1	>	2			Both Indicators	
1	>	3			Both Side and Tail	
1	>	4			All Lamps	
2					**Auto Light Tests**	
2	>	1			Auto Cycle	
2	>	2			Light Summary	
3					**Power Tests**	
3	>	1			Man Power Control	
3	>	1	>	1	Fridge Only	
3	>	1	>	2	Split Charge Only	
3	>	2			Isolation Tests	**Pro Version only**
4					**Full Auto Test**	**Pro Version only**
5					**Unit Information**	
5	>	1			Version	
5	>	2			Test Mode	
5	>	3			Unique Id	
5	>	4			Temperature	

2.4   Manual Light Tests

Menu 1 - Manual Light Tests

This menu option provides the ability to select and control a light(s) individually. The unit will indicate which lamp is selected for testing, both textually on the display and by illuminating the relevant LED on the caravan lamp representation. In addition, the current draw (A) and power consumption (W) will be displayed on the screen.

Select one of the sub-menus to conduct a test.

1 > 1 Individual lamp test

This test allows for the selection of an individual lamp to be tested. The units will always default to the brake lights when this test is selected as they are the most switched and therefore the most liable to fail.

The unit will indicate that the brake lights are selected on the display and the appropriate LEDs will illuminate to represent the lights selected for test.

Additionally the display will indicate 'Power Off' to show that the selected lamp is currently not energised. To the bottom right of the display the current draw (A) and power consumption (W) is shown.

The white action LEDs either side of the test button will flash to show that the test button is activated and will supply power to the Unit Under Test (UUT) if pressed.

Pressing the Test button will now energise the brake lights. The display will change to "Power On" and if the brake lights are working, the display will now change to show the current consumption (A) and the power consumption (W) of the currently illuminated lights.

Pressing the Test button again will de-energise the selected light.

The order in which the lights are selected is

- brake lights
- reversing lights
- right indicator
- right side lights
- fog light
- left side lights
- left Indicator

The selection will cycle back to the beginning of the list when the end is reached.

Using the < and > or Select buttons, another light may be selected to be tested. The light to be tested can be selected with the power to the CATT turned on or off.

1 > 2 Both Indicators

This test allows for both left and right indicators to be energised together, representing the use of the lamps for hazard warning.

The white action LEDs either side of the test button will flash to show that the test button is activated and will supply power to the Unit Under Test (UUT) if pressed.

Pressing the Test button will now energise both indicator lights. The display will change to "Power On" and if the indicator lights are working the display will show the current consumption (A) and the power consumption (W) of the currently illuminated lights.

Pressing the Test button again will de-energise the selected light.

1 > 3 Side and Tail lights

This test allows for both left and right side, and tail lamps, to be energised together.

The white action LEDs either side of the test button will flash to show that the test button is activated and will supply power to the Unit Under Test (UUT) if pressed.

Pressing the Test button will now energise both left and right side and tail lights. The display will change to power on and if the indicator lights are working the display will show the current consumption (A) and the power consumption (W) of the currently illuminated lights.

Pressing the Test button again will de-energise the selected light.

1 > 4 All Lamps

This test allows all lamps to be energised together.

The white action LEDs either side of the test button will flash to show that the test button is activated and will supply power to the Unit Under Test (UUT) if pressed.

Pressing the Test button will now energise all of the lamps. The lamps will be energised sequentially to avoid a surge based over current condition. The display will change to power on and the display will show the current consumption (A) and the power consumption (W) of the currently illuminated lights.

Pressing the Test button again will de-energise the selected light.

2.5   Auto Light Test

Menu 2 – Auto Light Tests

These menus offer options to facilitate tests which cycle round the lights automatically, and depending on the unit purchased adjust parameters related to the lamp cycling.

2 > 1 Auto Cycle

Once in this mode the display will indicate the currently selected light for test, the status of the test (Stopped on entry) and the current consumption (A) and power consumption (W) of the currently selected lamp.

Pressing test will energize the lamp and initiate the auto-cycling around the lights. Pressing the test button will cause the unit to pause on the currently selected lamp. Pressing test again will cause the unit to continue cycling.

This allows a test to be set-up and then the lamps on the Unit Under Test to be inspected as they are energised in a continuous loop.

2 > 2 Light Summary

This test quickly energises each lamp sequentially and records the power consumption for the lamp under test.

The power consumption for each lamp is summarised on a single page.

This is the test that we would recommend is carried out as a starting point, as it will give an idea of the status of the lights in a short amount of time.

2.6   Power Tests

Menu 3 - Power Tests

These tests allow control of the circuits which supply power to the caravan/trailer. Available on the Pro Version only. To prevent overheating of the CATT both of these tests have a Timeout counter set at 60 seconds - the tests will automatically time out after 60 seconds, or if the unit overheats, whichever comes first - we wouldn't expect the unit to overheat before the 60 seconds, unless there is a fault within the vehicle.

3 > 1 Manual Power Control

These tests allow manual switching of power to circuits depending on the test selected.

The unit controls the following signals.

- D+/Fridge 12V Supply (Pin 10 on a 13pin trailer connector)
- Battery/Permanent 12V Supply (Pin 9 on a 12pin trailer connector)
- The D+/Fridge Ground (Pin 11 on a 13pin trailer connector)

By including a control of the D+/Fridge Ground the current consumption in the Battery/Permanent Supply can be measured in a system with a split charge relay without simultaneously also powering the Fridge.

3 > 1 > 1 Fridge Only

In this test power is supplied via pin 10 (D+/Fridge) and the ground via pin 11 is also connected. This allows the current consumption (A) and power consumption (W) of the Fridge to be measured and displayed.

3>1>2 Split Charge

In this test power is supplied via pin 9 (vehicle battery 12V supply). Power is also supplied via Pin 10 (D+/Fridge) to enable the split-charge relay, but importantly the D+/Fridge Ground is interrupted.

This enables the current consumption (A) and power consumption (W) of the permanent supply to be measured and displayed.

3>2 Isolation Tests

Only available on the Pro version.

2.7   Full Auto Test

Menu 4 - Full Auto Test

Only available on the Pro version.

2.8   Unit Information

Menu 5 - Unit Information

These menus provide information about the unit, and allow testing of the Caravan and Trailer Tester indicators.

5 > 1 Version

This menu provides information regarding the build of the unit (software version and hardware version).

5 > 2 Test Mode

This menu allows the indicators on the unit to be tested. Once the test mode is selected pressing Select again will cause all of the indicators to light up Red, Green, Blue and then white

5 > 3 Unique ID

This menu displays the unique ID associated with this particular CATT unit.

5 > 4 Temperature

This menu displays the internal temperature of the CATT.

Apuljack Electronics Ltd
Unit 11a
Mill Batch Farm
East Brent
Somerset
TA9 4JN
01278 588922
info@apuljackelectronics.co.uk
www.apuljackelectronics.co.uk