Model B650
Wireless Battery Condition & Charging System Tester

Tests 6V, 12V, 24V Auto/Truck and Non Auto Batteries
12/24V Starter/Charging Systems

User Manual

Joe's Auto Repair
850 Auto Repair Street
Anywhere, USA
555-1234

Test Date: Aug 5 2020
Year: 2018
Make: Kia
Model: Soul
VIN 1a1234567890tt
Vehicle Owner:

Nominal Voltage: 12V
Nominal Capacity: CCA 500
Measured Voltage: 12.83V GOOD
Measured Capacity (CCA) 496 9% GOOD
Measured Starter Voltage Drop: 10.6V GOOD
Measured Charging Voltage Idle No Load: 14.2V GOOD
Measured Charging Voltage Rev No Load: 14.5V GOOD
Measured Charging Voltage Rev Loaded: 14.3V GOOD
Measure Charging Voltage Idle Loaded: 14.0V GOOD

Sample Printout

Wireless Remote
7" Tablet

Transmitter
Module

CE

Made in USA

Introduction

The B650 wireless Bluetooth™ tester features a 7" touch screen tablet remote that displays and retains on a single, easy to use screen, all of the Battery System Test data including SOC, Available Capacity, Starter Condition, and Charging System data.

The B650 tester allows a Technician to run the battery, starter and charging tests from inside the vehicle or even while the vehicle is driving. The wireless B650 is also ideal for testing hard to reach batteries and battery systems in cars, trucks, buses and marine applications.

With remote distances up to 50 feet, shop owners can show customers in the waiting room real test time data on the display. The B650 wireless tests all 6V, 12V & 24V lead acid batteries individually or in parallel and series battery packs. The tester displays the battery or battery pack's condition as a percent (%) of available capacity, rated capacity (i.e. CCA's), state of charge voltage and good or replaces status.

The B650 also tests 6/12/24V starter and charging systems including starter draw, alternator and regulator output (loaded/unloaded), and diode ripple.

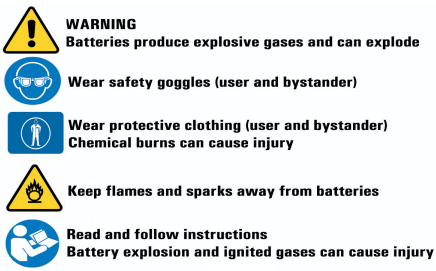
Test data can be printed out using any Windows PC or PC Printer utilizing WiFi, or Bluetooth™. Tablet and Carrying case included.

B650 Product Specifications:

Stock part number	**B650**
Description	**Battery, Charging, Starting System Tester**
Battery Size Range:	**60 to 3500 CCA (Parallel > 1700 CCA)**
Battery Voltage Range :	**6V, 12V & 24V Lead Acid Batteries**
DC Voltage: Range/Accuracy {Volts Mode)	**5 V to 50V +/- 2% of reading**
International Units Displayed	**CCA, EN, EIC, DIN, JIS**
LCD Display	**7" color touch screen display**
Transmission protocol	**Bluetooth 4.2**
Battery cable length (Battery Module)	**2 ft. chemical and abrasion resistant cable**
Dimensions	**7.5"L x 3'W x 1" H**
Distance from Transmitter to Remote:	**Up to 50 ft**
USB Cable Connector:	**Micro USB**
USB cable length:	**36"**
Operating Temperature:	**32"F to 120"F**
Weight:	**1 LB**
Warranty	**1 year**

7” Tablet Remote

B650 Bluetooth® Transmitter



STEP 1: Turn on Tablet

1. Press and release the button on the side (holding it portrait) or top (holding it landscape) of the tablet as shown in picture. The Tablet will show the date and time. Press the icon labeled **"Battery System Tester".**

2. The screen shown in the picture below will appear. The red dot indicates the tablet has not yet connected to the battery module.

Note: Indicator shows red until it is linked with Battery Module. It will turn green when Battery Module is linked to Tablet.

Note: your tablet has been setup to link automatically once the Battery Module in Step 2 below is connected to the battery. In case the Tablet does not link, follow the instructions on page 9 **Using the Tablet** in section "How to link the tablet to the Battery Module".

(as shown in the picture) indicating the battery module has power and is transmitting to the Tablet.

ry post as shown in the picture. ***to the lead post or battery***

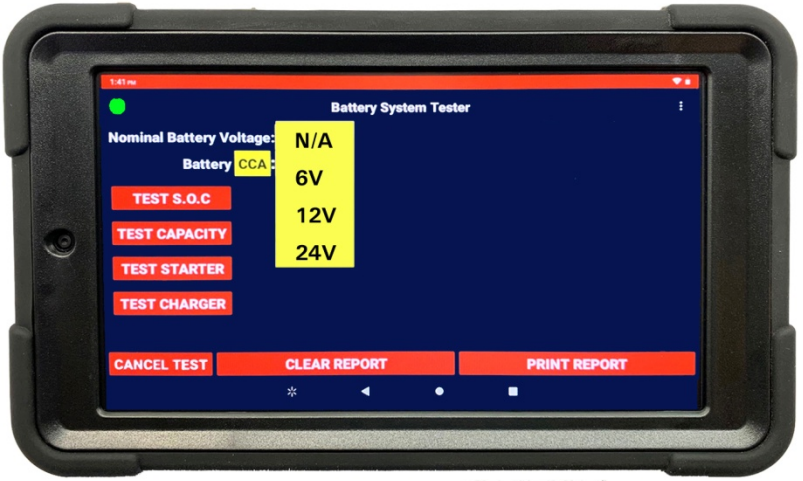
3. The green indicator on the tablet will turn from red to green indica the Battery Module is linked to T


Battery System Tester
Nominal Battery Voltage:
12 V
Battery CCA :
950
TEST S.O.C
TEST CAPACITY
TEST STARTER
TEST CHARGER
CANCEL TEST
CLEAR REPORT
PRINT REPORT

4

STEP 3: Select Battery Voltage

1. Press the highlighted Voltage to display a drop down menu for 6V, 12V and 24V batteries as shown in picture below. Press the desired voltage rating to select.

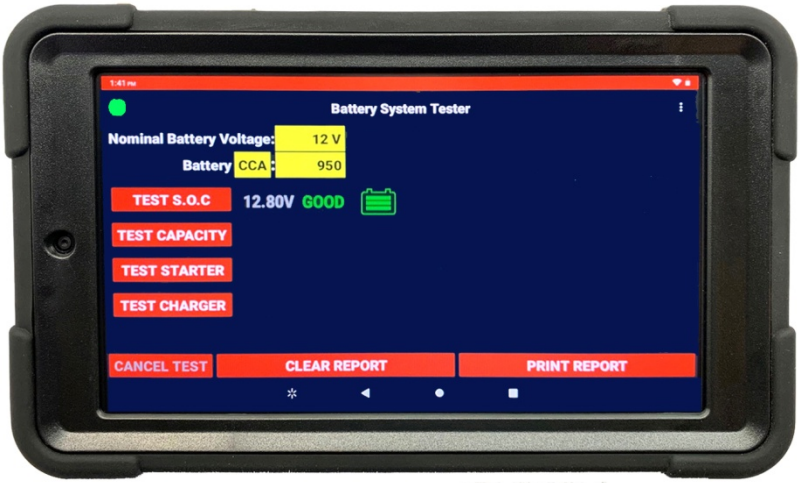


STEP 4: Select Battery Size (CCA'S)

1. Press the highlighted CCA to display a drop down menu for the battery CCA rating. Swipe the drop down menu until the desired battery rating is shown and press to select.

STEP 5: Test SOC & Available CCA'S

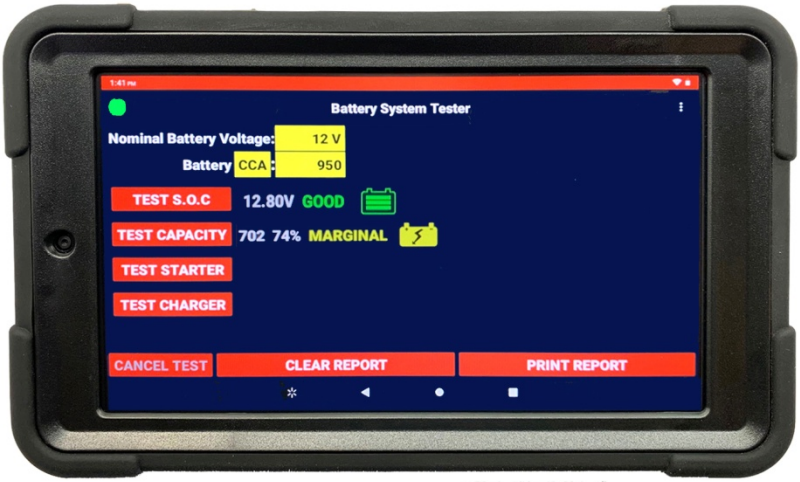
1. Press the TEST S.O.C button on the tablet to display the battery's state of charge.



BATTERY STATE OF CHARGE (SOC)

GOOD	>12.5V
MARGINAL	12.3V-12.4V
LOW (NEED CHARGE)	<12.3V
BAD CELL	<10.5V

2. Press the TEST CCA to display the battery's available CCA's and % available of the battery.



BATTERY CAPACITY

GOOD	80% -100%+*
MARGINAL	70% - 79%
REPLACE OR BAD CELL	< 70%

Note: Some batteries may show over 100% Capacity

STEP 6: Test Starter

1. Press the TEST STARTER button. The tablet will display the following message. Start the engine accessory load off.

2. Once the vehicle has started, the tablet will display the following the battery voltage drop.

CRANKING VOLTAGES

GOOD	**≥ 9.8V**
MARGINAL	**9.7V**
CHECK STARTER	**< 9.7**

STEP 7: Test Charging System

1. Press the TEST CHARGER button. The tablet will display the message; Set the engine to idle and turn off all accessories. Then press NEXT and follow the screen prompts to turn off accessory loads, REVV engine, and then turn on accessory loads while REVVing.

2. The Tablet will <u>continuously</u> display REAL TIME charging voltage and AC Ripple during each test sequence. The display will indicate GOOD throughout the test unless the charging voltages fall and/or AC ripple falls outside the normal voltage ranges. **NOTE: S.O.C and CCA tests are disabled during STARTER and CHARGER test.).**

CHARGING VOLTAGES	
GOOD	≥ 13.5V
MARGINAL	13.0-13.4V
CHECK ALTERNATOR	< 13.0
CHECK REGULATOR	>15V

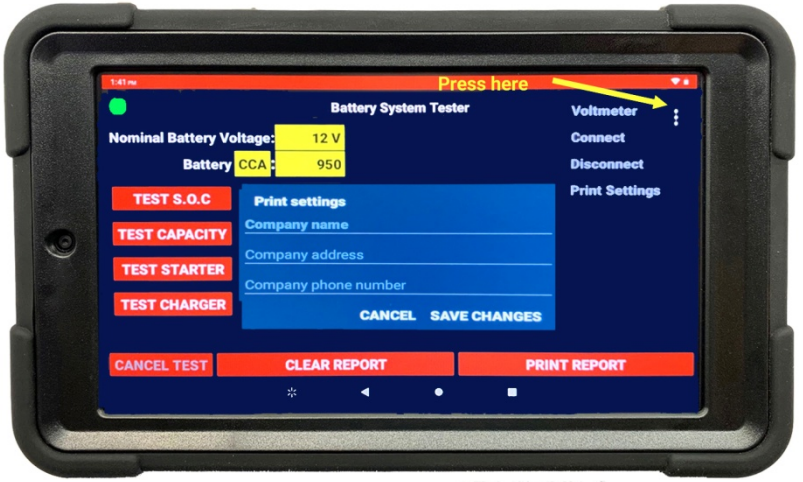
RIPPLE VOLTAGES	
GOOD	<300mV
MARGINAL	301 -499mV
CHECK DIODES	>500mV

Voltmeter Mode:

To display volts in real time:
Press ⋮ this icon and select Voltmeter in the drop down menu. The voltage will be displayed in real time without messages. This mode can be used to display 24V and 36V starting and charging systems or any other voltmeter applications in the vehicle.

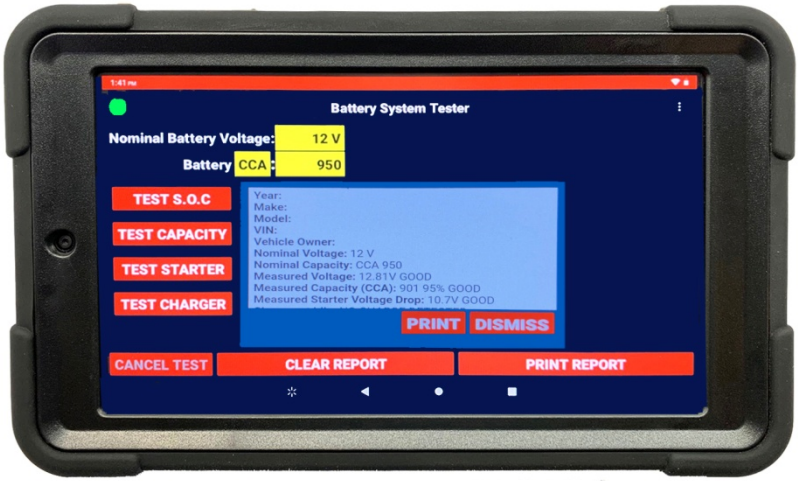
PRINTING TEST DATA

1. Connect the Tablet to the network Wi-Fi through the tablet Settings.
2. Press the ⋮ icon to select Print Settings in the drop down menu.
3. Enter the Shop Name, Address and Phone to include with Print-out.



Reviewing & Printing Test Data

Press PRINT REPORT. Select the desired printer in the print dialog box. Enter Vehicle info: Year, Make, Model, VIN #, Owner (if required). ***Note make sure printer is connected and shows in the upper left corner of the tablet display.***



Saving Print History

To save the print data to the tablet or a PC:

1. Select “Save to PDF” in the print dialog box. Name the file as required; for example you can save the file name under vehicle owner’s name. The file will be saved under “Files” and then select “Download” in the tablet.

Linking the tablet to the Battery

1. In case the tablet does not connect to the Battery Module, make sure the tablet Bluetooth is turned on in Tablet Settings

2. Press the icon in the upper right hand corner  to display the drop down menu “Connect, Disconnect and Print Setting”.

3. Press Disconnect first to remove any previously linked devices. Then Press Connect and select the device shown on the display. The Red dot in the upper left hand corner should turn green indicating the tablet has linked to the battery Module.

Charging the Tablet:

Plug the round 5V DC charging adapter pin into the round DC 5V Charging Port (see photo below). Charging from 0% should take approximately 5-6 hours. It is best to use the supplied AC adapter with the small round port for faster charging time.

Charging using the mini USB cable is best as a back-up alternative. You may not be able to turn on your tablet for at least 20 minutes if the battery was fully drained.

RETURN FOR REPAIR POLICY

Every effort has been made to provide reliable, superior quality products. However, in the event your instrument requires repair, forward unit to Service Center freight prepaid to the address below with return address, phone number and/or email address.

SERVICE CENTER
2651 W 81st Street
Hialeah, FL 33016

WARRANTY POLICY

The B650 Battery Diagnostic Tester is warranted to be free of defects in materials and workmanship for a period of two years from the date of purchase. This warranty applies to all repairable instruments that have not been tampered with or damaged through improper use including unauthorized opening of the unit. Please ship warranty units that require repair freight prepaid to Service Center along with proof of purchase, return address, phone number and/or email address.

US PATENT # 6,768,309