Clarke®

Model No: CBBT1
Part No: 6260107
BATTERY MONITOR
Input: 6V-20V ⎓1.5mA
BM6 SOFTWARE
IP67   UKCA CE

SCAN TO DOWNLOAD APP

12V BLUETOOTH BATTERY MONITOR
MODEL NO: CBBT1
PART NO: 6260107

OPERATION & MAINTENANCE INSTRUCTIONS

UKCA CE

ORIGINAL INSTRUCTIONS   DL0523 Rev 1

INTRODUCTION

Thank you for purchasing this CLARKE product.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service.

GUARANTEE

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

SAFETY INSTRUCTIONS

WARNING: HIGH VOLTAGES ARE PRESENT AT THE FOLLOWING POINTS: - THE IGNITION COILS, DISTRIBUTOR CAP, IGNITION CABLE, SPARK PLUGS.

CAUTION: PLEASE READ THESE INSTRUCTIONS AS WELL AS THOSE IN YOUR VEHICLE HANDBOOK VERY CAREFULLY BEFORE USING THE DEVICE, KEEP THEM IN A SAFE PLACE FOR FUTURE REFERENCE.

1. Clarke International are not liable for any damages or consequences resulting from:

    •   Connection and installation errors.

    •   Damage to the device due to mechanical influences or voltage surges or any modification to the device.

    •   Any unauthorized manipulation to the product which would lead to cancellation of the guarantee.

    •   Use of the device for purposes other than described in this instruction manual.

    •   Any influence of fluids.

    •   Any 3rd party or unauthorised software.

2. **DO NOT** use the device in a moist or wet environment.

3. **DO NOT** use the device close to flammable materials.

4. **DO NOT** use the device in an explosive environment.

5. Make sure the device is always positioned in a safe place.

    •   The device must be placed out of reach of children.

    •   **DO NOT** expose the device to direct sunlight or other direct heat source.

6. Store the monitor in a safe, dry place after use.

7. **DO NOT** try to use other cables with this product.

8. **DO NOT** open the case, there are no replaceable parts inside the product.

9. If the product malfunctions, please consult your dealer.

10. Seek professional help if you are unsure about anything related to the electrical system in your vehicle.

11. If the outer skin of the cable is damaged, it may cause a short circuit. Stop using it immediately and contact your dealer.

PARTS IDENTIFICATION

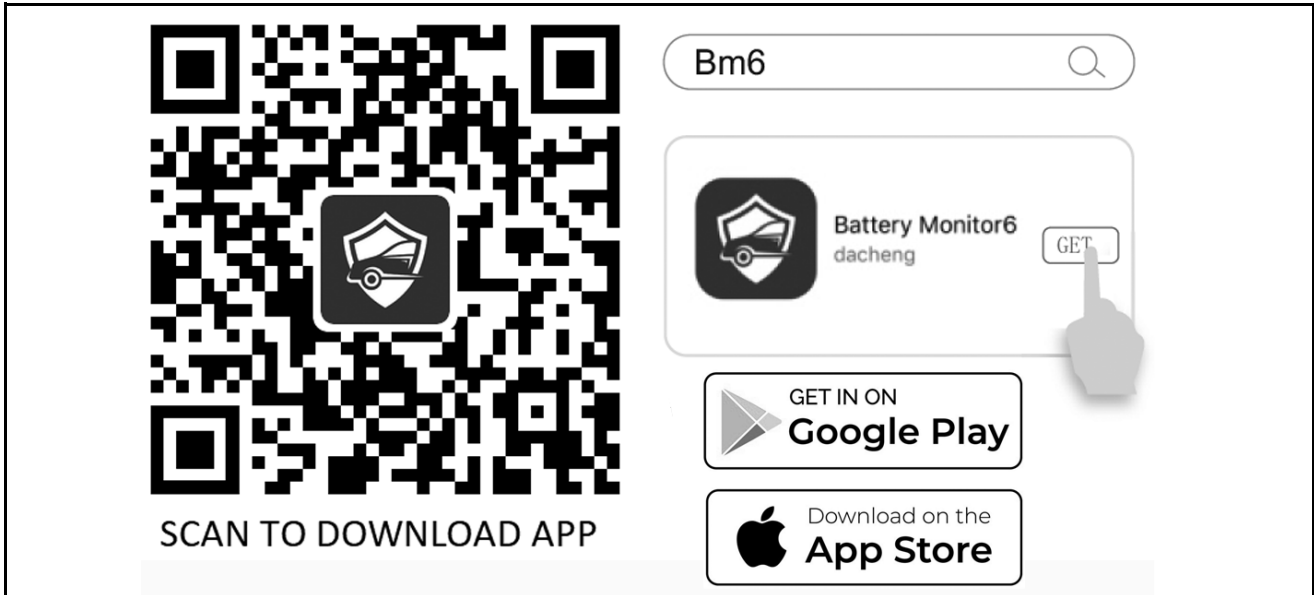| 1	Battery Monitoring Device	3	Negative (- / Black) Connector
2	Positive (+ / Red) Connector	4	Adhesive Tape (Not Shown)

OPERATION

MAIN FUNCTION DESCRIPTION

1. Real-time display of battery power, temperature and voltage.

2. Automatically tests the starting and charging systems of the vehicle.

3. Sends alarm notification if the battery is abnormal.

4. App supports multi-device connection, 4 devices can be monitored at the same time.

5. Records the track, cost and driving habits of each trip which can be exported to an Excel file.

6. Records the last known parking position automatically and provides a car finder function through navigation. Please note that this is not a live tracking function.

7. Stores historical data (voltage, charge percentage and temperature) in the device for up to 30 days. Saves the data every 2 minutes.

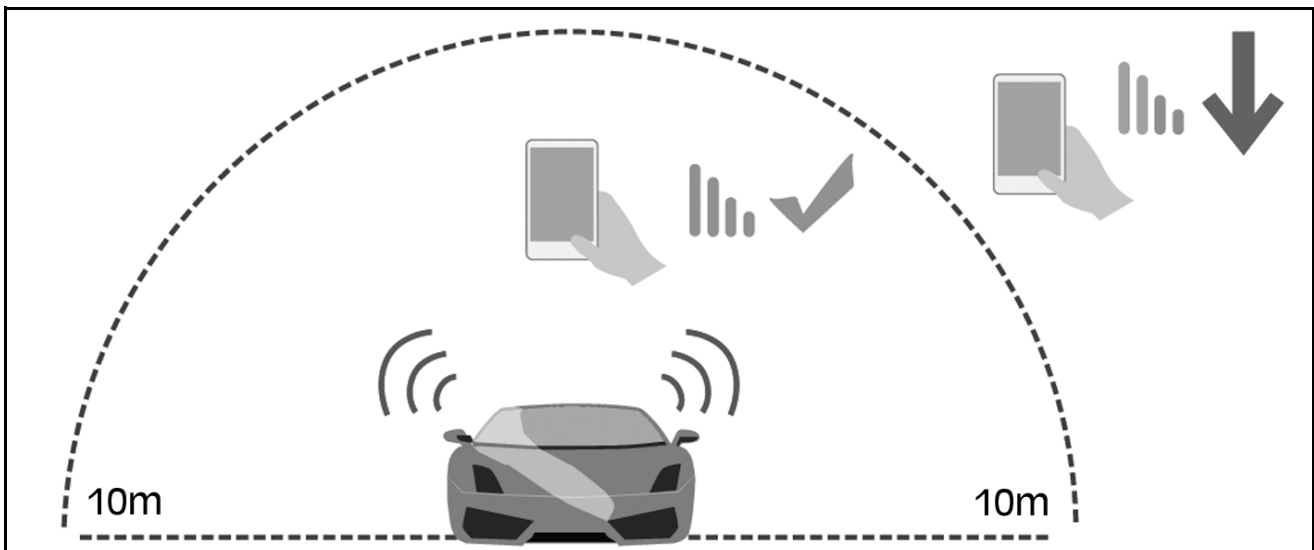8. Save unlimited historical data within the app.

INSTRUCTIONS

1. The input voltage range of this device is 6V - 20V, which is suitable for 12V vehicle/yacht lead-acid & LiFePO4 batteries. Too high input voltage may cause equipment damage.

2. In order to obtain accurate battery temperature, stick the device on the battery case using the double sided tape provided. Connect the Positive (+ / Red) connector to the Positive terminal of the battery and the Negative (- / Black) connector to the Negative terminal of the battery.

3. When installing the app, all permissions must be obtained to access all of the devices functions. If permission fails, some functions will not work.

4. Some functions need to allow the app to self start and run in the background. The app has been optimised for this and will not consume more power.

MOBILE APPLICATION

Bm6

Battery Monitor6
dacheng
GET

GET IN ON
Google Play
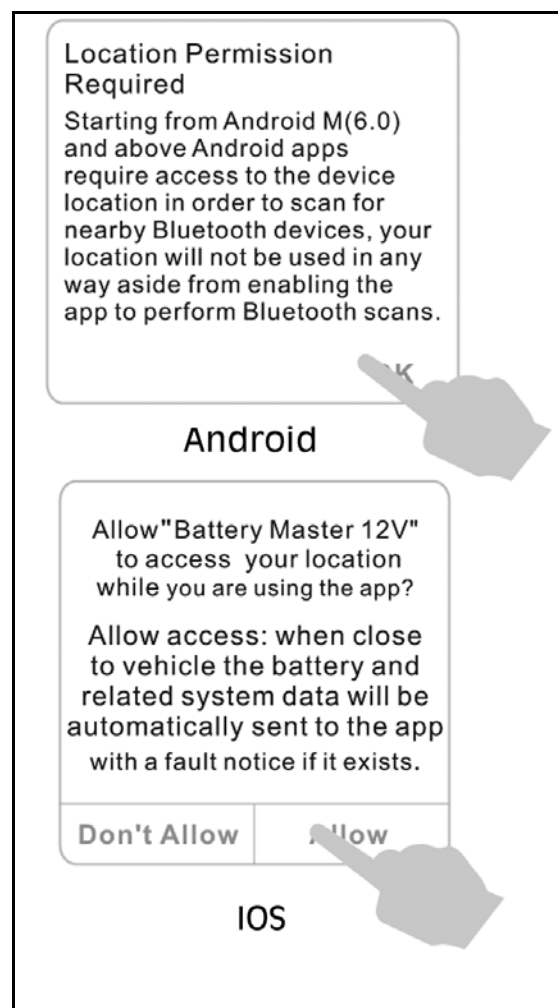
Download on the
App Store

SCAN TO DOWNLOAD APP

1. Scan the above QR code for the application or go to Google Play or Apple App Store and search Battery Monitor 6 or Bm6.

2. Download the Battery Monitor 6 (Bm6) application.

3. To connect to the device, turn on your mobile Bluetooth and be within 10m of the vehicle battery/device.

10m   10m

Parts & Service: 020 8988 7400 / E-mail: Parts@clarkeinternational.com or Service@clarkeinternational.com
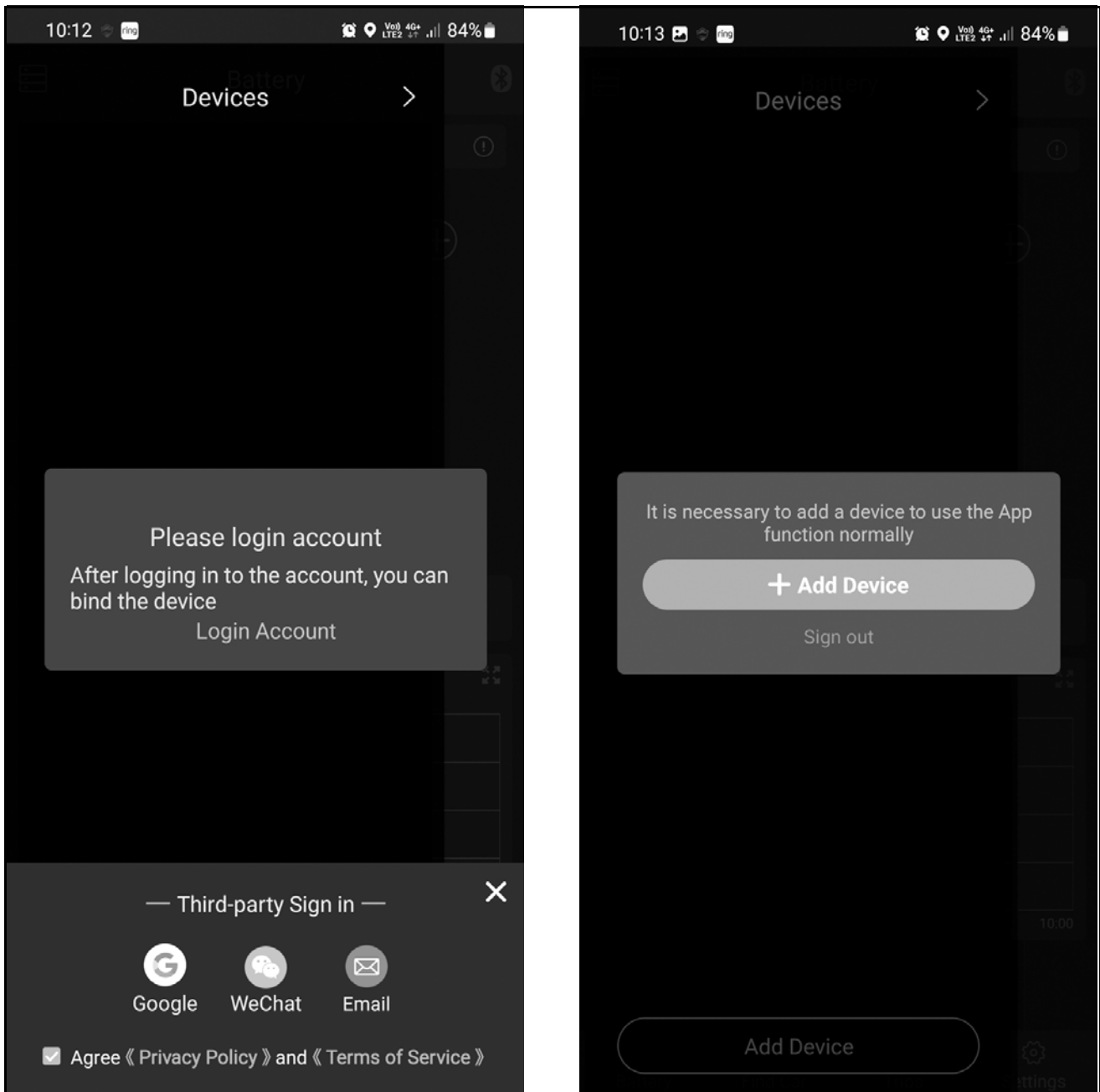
4. Click the App icon, and run.

5. Allow the app to access location, even when not using the app. If not the device will not automatically notify the user after monitoring a problem.

> "Battery Master" Would Like to Send You Notifications
>
> Notifications may include alerts, sounds, and icon badges. These can be configured in Settings.
>
> Don't Allow | Allow
>
> IOS

6. Allow the app to receive notifications, including the car battery, cranking system, charging system and problem alerts. This will allow, when your mobile is in Bluetooth range, to receive information notifications even if the app is not running.

> Location Permission Required
>
> Starting from Android M(6.0) and above Android apps require access to the device location in order to scan for nearby Bluetooth devices, your location will not be used in any way aside from enabling the app to perform Bluetooth scans.
>
> Android

> Allow "Battery Master 12V" to access your location while you are using the app?
>
> Allow access: when close to vehicle the battery and related system data will be automatically sent to the app with a fault notice if it exists.
>
> Don't Allow | Allow
>
> IOS

7

7. Register with either an E-mail or Google account and agree to terms of service. Click the `+ Add Device' button.

Parts & Service: 020 8988 7400 / E-mail: Parts@clarkeinternational.com or Service@clarkeinternational.com

8. To add a new device, enter the serial number of the device (this can be found on the side of the device) and device name (which is optional).
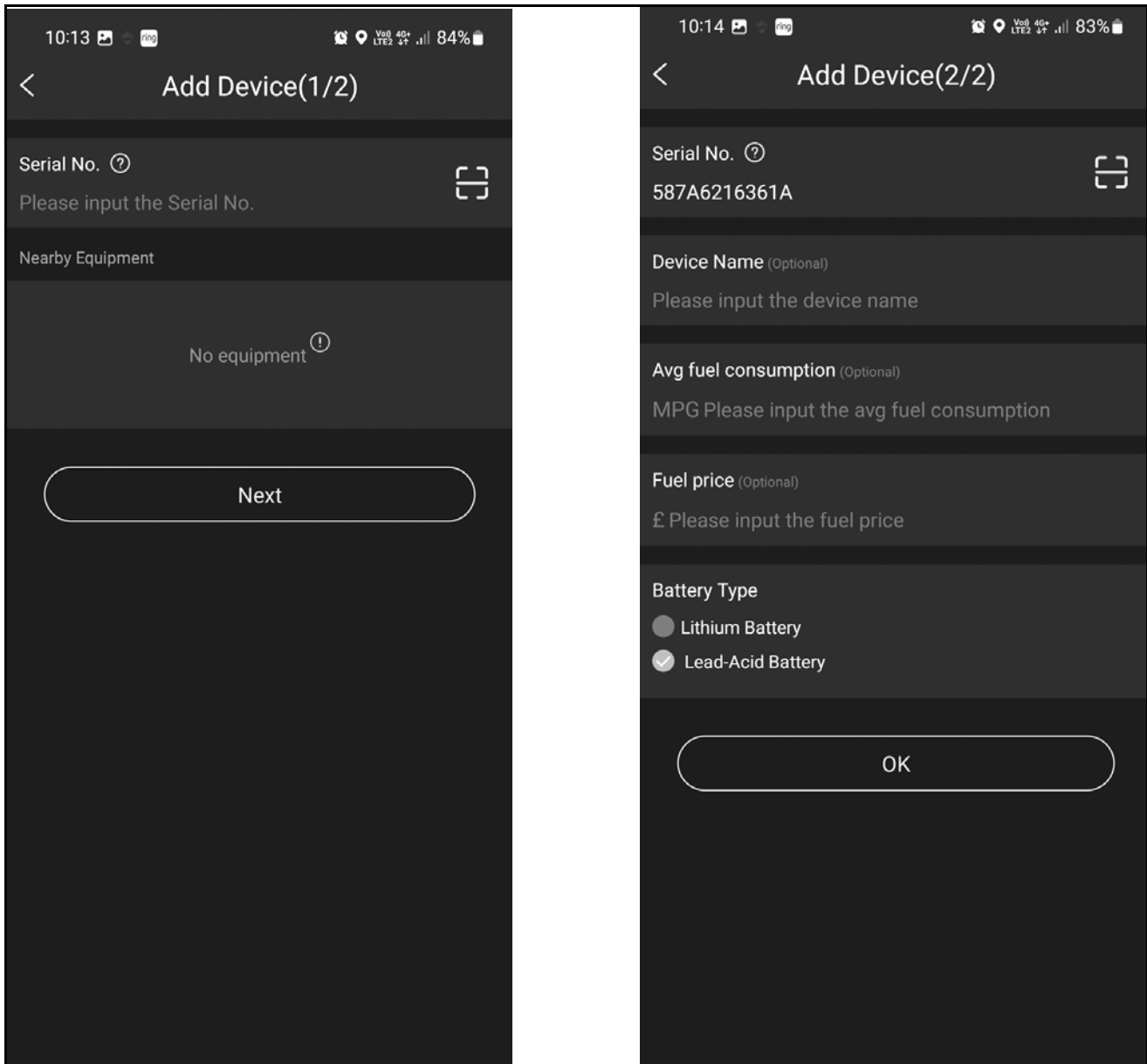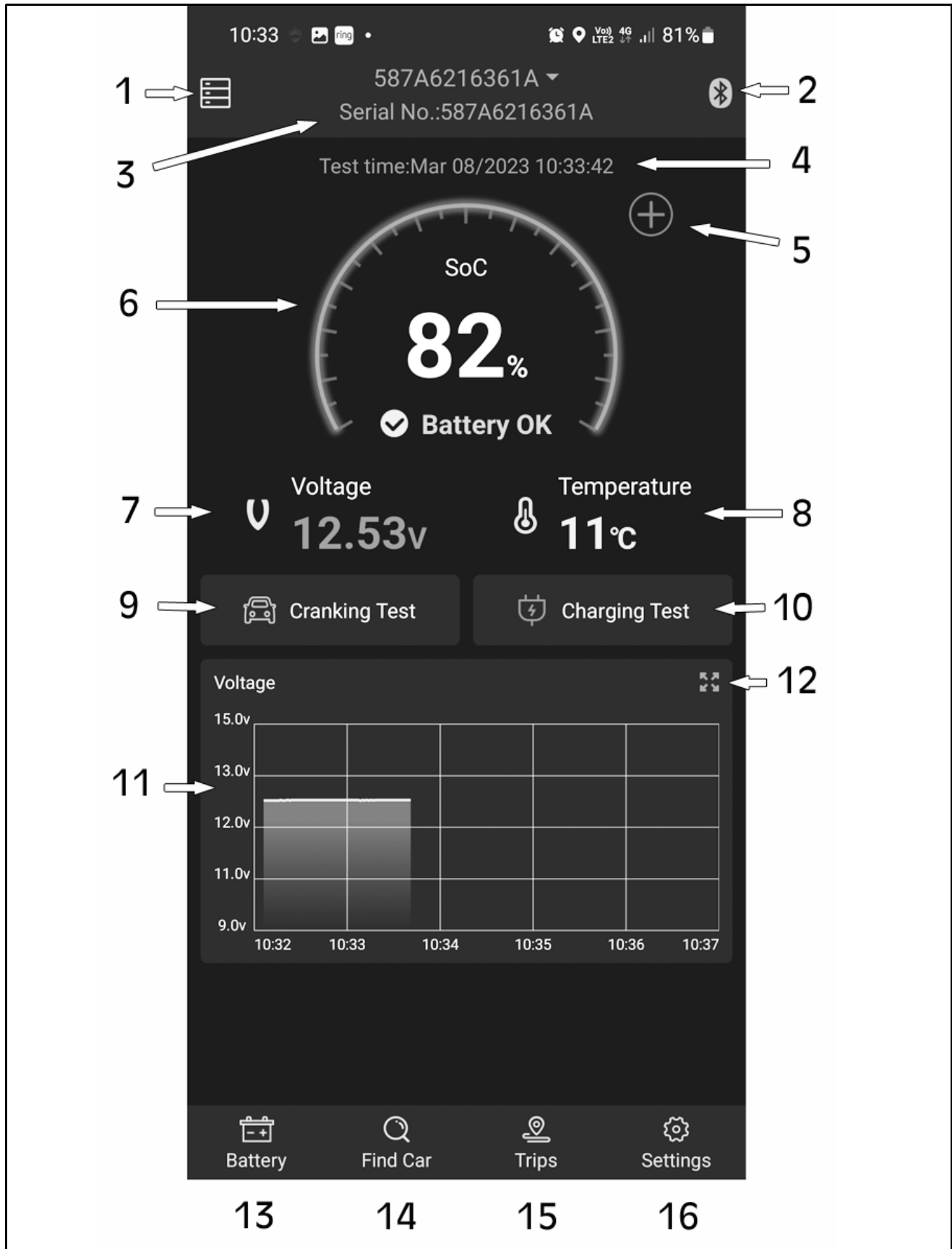

NOTE: Fuel consumption and price can be added here or added and changed in the settings page.

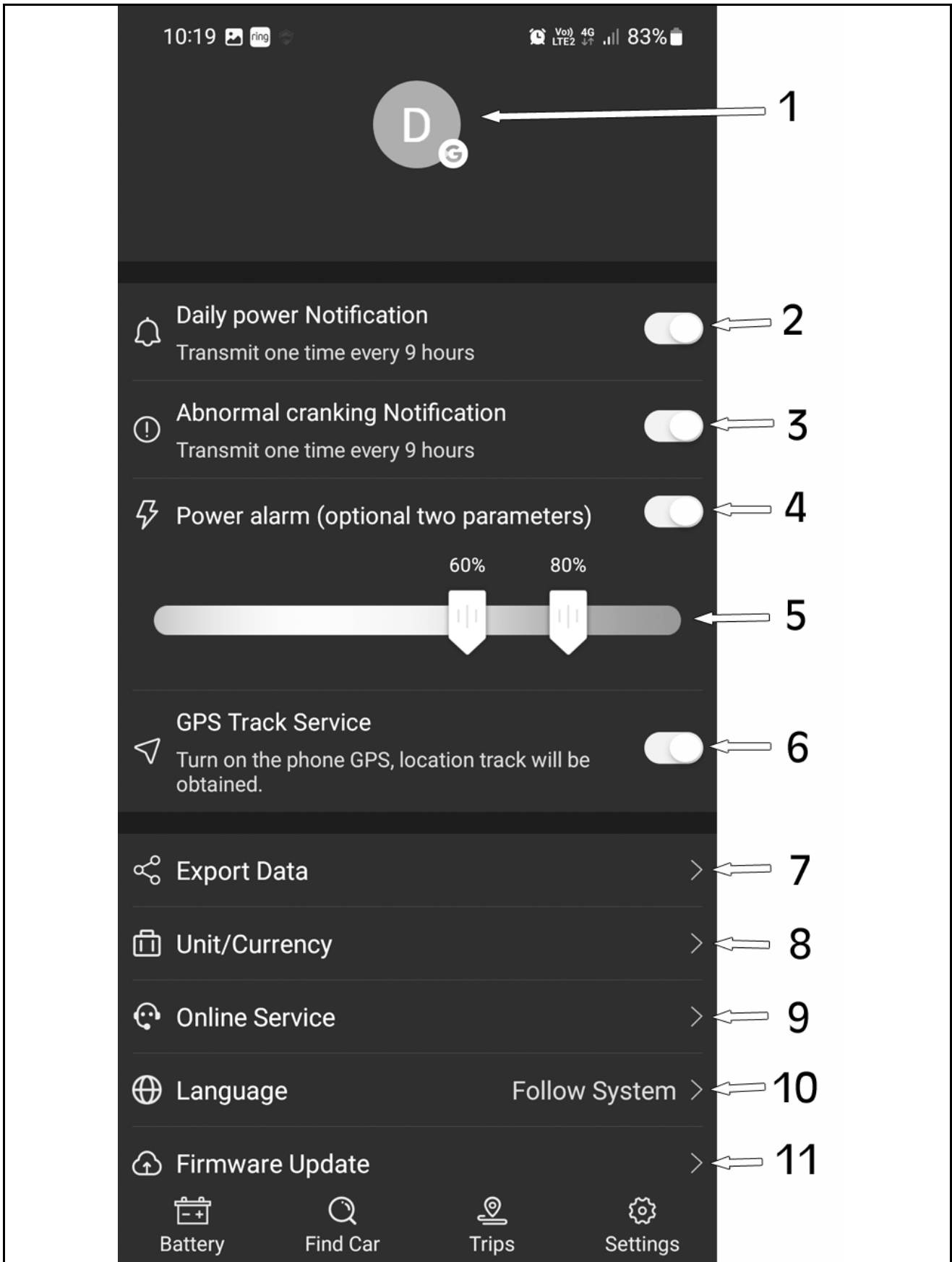**NOTE:** The app can add/delete/manage up to 4 devices at once.

NOTE: Each serial number can only be bound to one account. If the serial number is listed in one account, it must be deleted first before it can be used in another account.

APP HOME PAGE

1. Lists all devices and gives option to add more devices (Maximum of 4).You can also edit the device name, average fuel consumption, fuel price and battery type of each device.

2. Bluetooth connection status. Blue icon means connected, red icon means disconnected. It is set as default to connect to the latest device automatically, but can be connected or disconnected manually.

3. Shows the device name, as default, it will be the device ID no. The user can set a new name in the device management system setup.

4. Latest battery testing time and date.

5. Option to add other devices.

6. Shows battery real-time data: battery status and state of charge (SOC).

7. Current battery voltage.

8. Current battery temperature.

9. Cranking System Test: Mainly to test and analyse the starting motor.Through testing the actual required cranking current and cranking voltage of the starting motor, it can work out whether the starting motor is working correctly.

10. Charging System Test: To check and analyse the charging system. This includes generator, rectifier, rectifier diode, etc. this will give the output voltage of the generator and tell if the rectifier diode is working normal and the charging current is normal.

11. Graph review of the voltage history.

12. Graph Expander: This will expand the graph to show more detail and to be able to toggle between dates, state of charge, temperature and voltage.

13. Home page button.

14. Find Car page button.

15. Trips page button.

16. Settings page button

SYSTEM SETUP/SETTINGS

10:19   🔔 LTE2 Vo) 4G �।। 83% 🔋

D — 1

🔔 **Daily power Notification** — 2
Transmit one time every 9 hours

ⓘ **Abnormal cranking Notification** — 3
Transmit one time every 9 hours

⚡ **Power alarm (optional two parameters)** — 4

60%   80%

▼   ▼ — 5

◁ **GPS Track Service** — 6
Turn on the phone GPS, location track will be obtained.

⌸ **Export Data** > — 7

🛅 **Unit/Currency** > — 8

☏ **Online Service** > — 9

⊕ **Language**   Follow System > — 10

☁ **Firmware Update** > — 11

🔋 Battery   🔍 Find Car   📍 Trips   ⚙ Settings

1. Account - logged in.

2. Daily notification alert setup: Green is on, Grey is off. System default is every 6 hours. The notification frequency can be set here (1, 3, 6, 9, 12 or 24 hours).

3. Cranking daily notification setup: Green is on, Grey is off. System default is every 6 hours. The notification frequency can be set here (1, 3, 6, 9, 12 or 24 hours).

4. Power alarm: Green is on, Grey is off.

5. Power alarm: Slide the icons to set low and high parameters. When the battery power fails to reach the set value, user will receive an app notification about the charge level.

6. GPS track service: turn on or off.

7. Export Data: You can export the following information to a Microsoft Excel file (Date, Time, Voltage, SOC & Temperature)

8. Unit/Currency: Change between Distance (m/km or feet/miles), Temperature (centigrade or fahrenheit), Fuel Consumption (L/100km or MPG) and Fuel Cost Currency.

9. Online Services: Contact the App administrator with any problems that may occur.

10. Language: Click to change to appropriate language.

11. Firmware Update: Click to confirm current firmware version and to upload any new firmware updates when available.

CRANKING TEST

Cranking Test: When the engine starts, the device will test the cranking system automatically and store the test result. Usually, if the cranking voltage is more than 9.6V, it means it is normal. But if the cranking voltage is less than 9.6V, it means it is abnormal. If the cranking voltage is too low, this maybe due to the age of the battery, low power or a starter fault etc.

Press the Cranking Test button on the Home page to show results.

1. Date and time of test.

2. Cranking Time: Shown in milliseconds

3. Display of the cranking voltage values, green means healthy, red means unhealthy.

4. Cranking voltage graph.
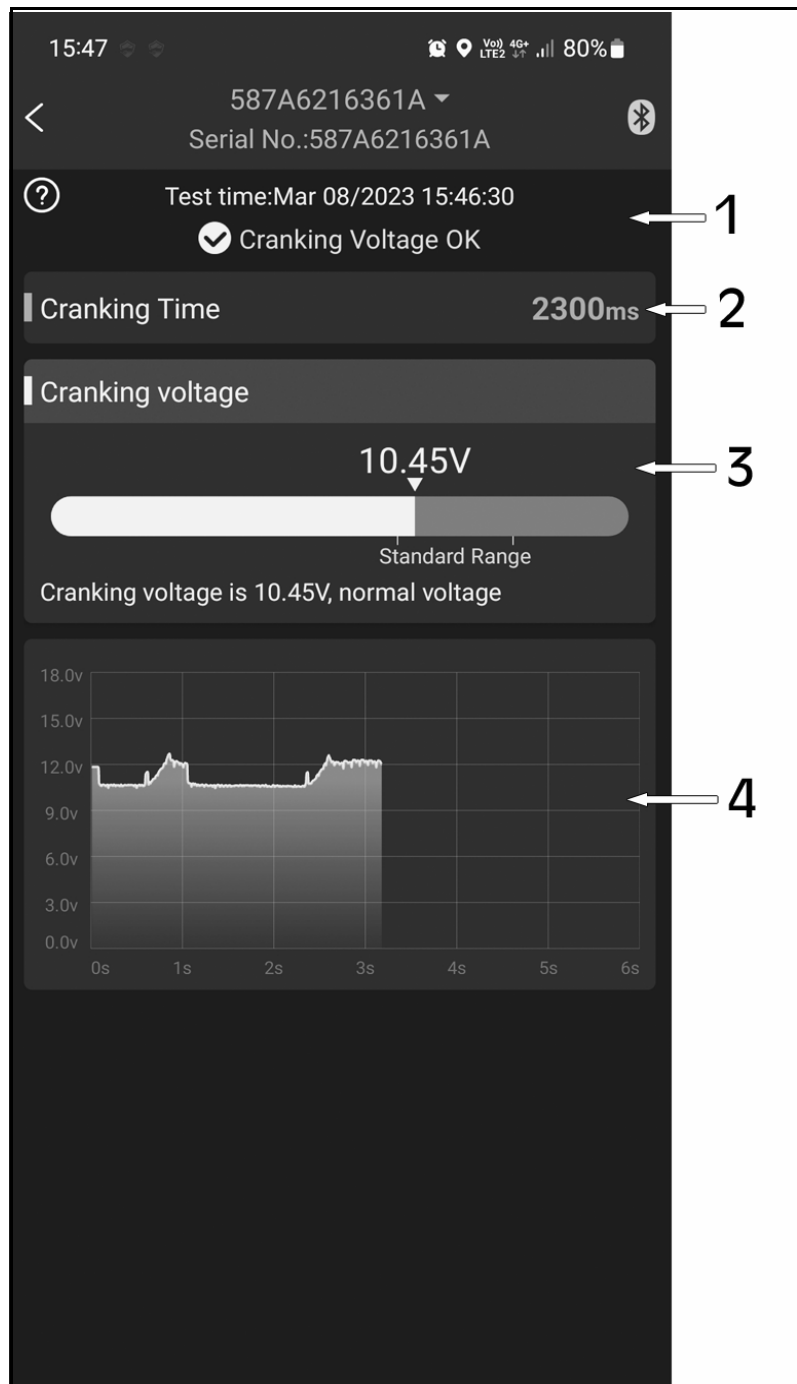
CHARGING TEST

There are 3 parts to the Charging Test; Idle Speed Test, High Speed Test and Diode Ripple Test. Press the Charging Test button on the home page to start testing.
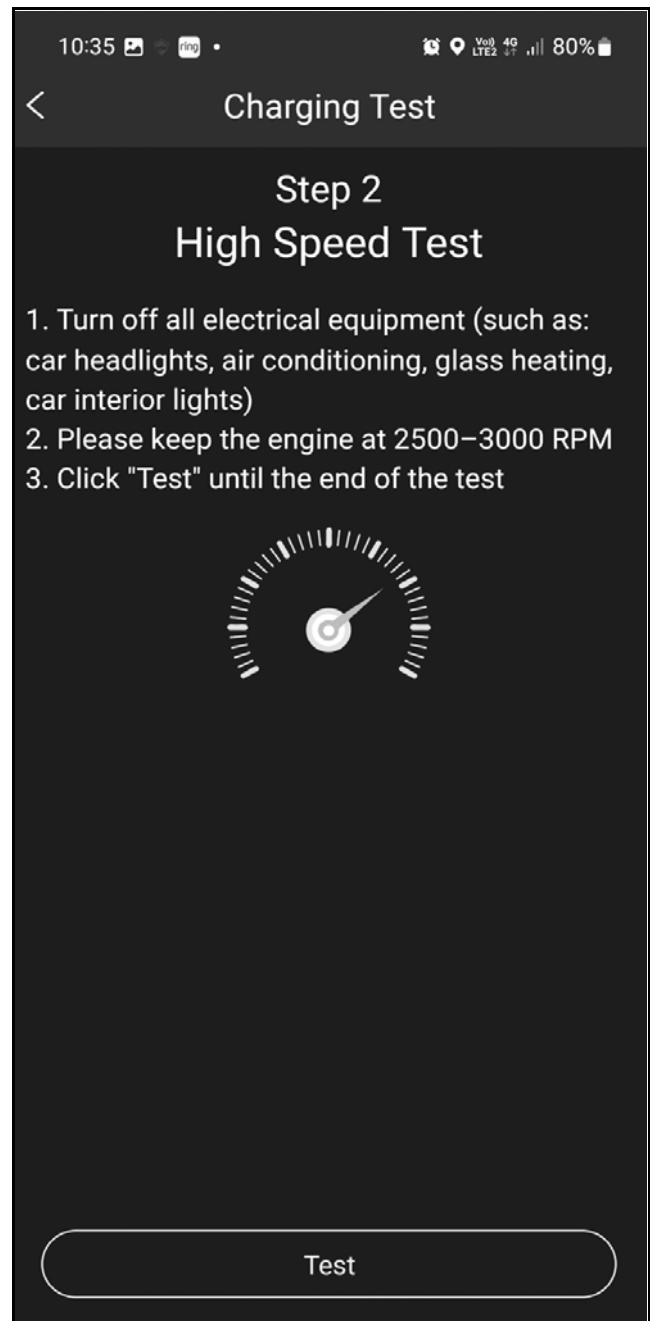
1. Idle Speed Test:

    1) Keep the vehicle in idle mode.
    2) Turn on all electrical equipment, such as head-lights, air con, glass heating, interior lighting.
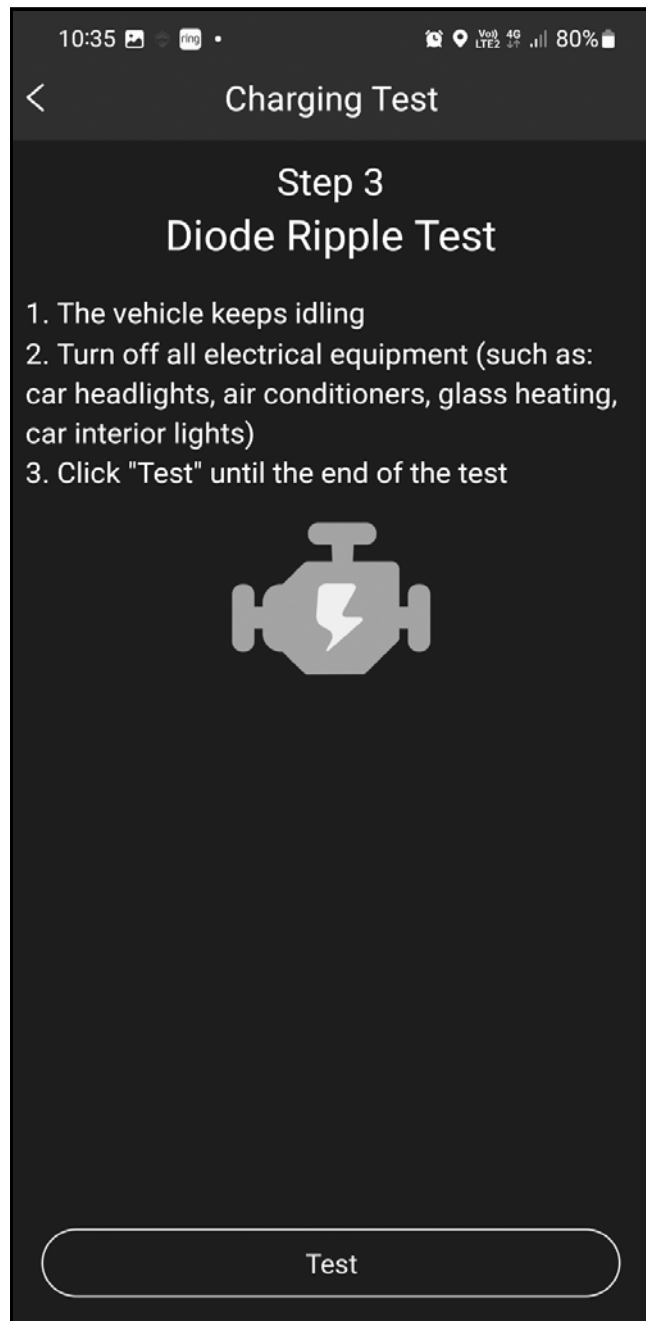   3) Click Test, which will run for 6 seconds.
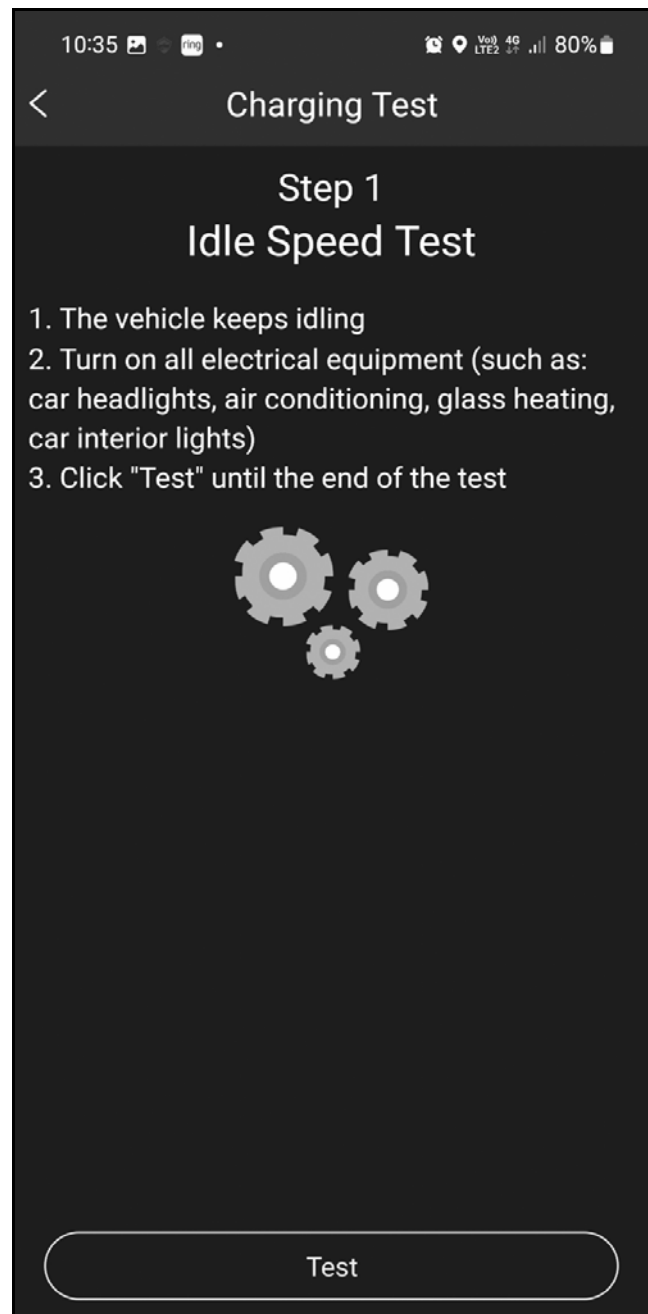
2. High Speed Test:

1) Turn off all electrical equipment, such as head-lights, air con, glass heating, interior lighting.
2) Keep the engine at 2500 - 3000 RPM.
3) Click Test, which will run for 6 seconds.

3. Diode Ripple Test:

    1) Keep the vehicle in idle mode.

    2) Turn off all electrical equipment, such as head-lights, air con, glass heating, interior lighting.

    3) Click Test, which will run for 6 seconds.

10:35

Charging Test

Step 3
Diode Ripple Test

1. The vehicle keeps idling
2. Turn off all electrical equipment (such as: car headlights, air conditioners, glass heating, car interior lights)
3. Click "Test" until the end of the test

Test

CHARGING TEST RESULTS

1. Date and Time of test.

2. Idle Charging Voltage: Green = Ok, Red = Abnormal.

3. High Speed Charging Voltage: Green = Ok, Red = Abnormal.

4. Diode Ripple Voltage: Green = Ok, Red = Abnormal.

5. Click button to restart test.

Description of charging voltage tests.

a) Charging Voltage: Normal. Charging system shows the alternator output normal, no problem detected.

b) Charging Voltage: Low. Check engine transmission belt isn't slipping or disconnected, check whether the line connection between the alternator and battery is normal or not. If transmission belt and line connection is good, please follow the car manufacturers recommendations to exclude the alternator failure.

c) Charging Voltage: High. The alternator output voltage is too high. Since most automotive engines use built-in regulators, there maybe a need to replace the regulator assembly (older vehicles use external regulators, which may need replacing). Common voltage limits for automotive regulators is $14.7 \pm 0.5V$. High charging volt will overcharge the battery and shorten its life and may make it malfunction.

d) No Voltage Output: No engine voltage output is detected. Check if the alternator cable and alternator belt are working correctly.
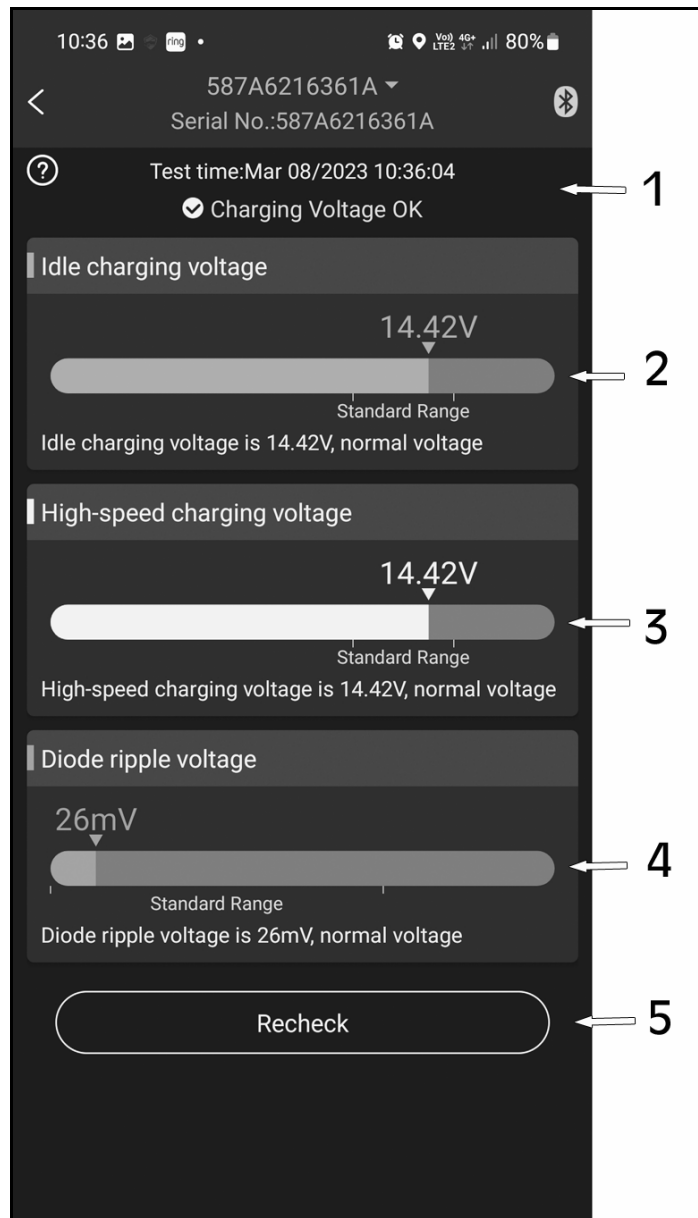
TRIP RECORD

The app will automatically record each trip made for analysis. Click on 'Trips' on the home page to view the trip data.

1. Search and list all trips by month.

2. A trip will automatically be listed as Unsorted until filed as Personal or Business. See page 20 on how to categorise each trip.

3. Shows a running total of all trips in mileage and cost.

4. Shows each individual trip made showing a map of the trip, mileage, time and cost.

Users can view the details of each single trip by touching each trip icon on the 'Trip'page.

1. Shows map of the trip made.You can zoom in and out to view the driving route and help you analyse driving habits through the rapid acceleration (shown in green) and sudden braking data (shown in orange/red).

2. Shows the mileage, time and cost of the trip made.

3. Shows the start location and time and the finish start and location of the trip made.

4. You can record any parking or toll fees paid on the trip and any comments.

   NOTE: Scroll down screen to see points 5, 6 & 7

5. You can categorise each trip either personal or business. The category chosen will show green.

6. You can sub-categorise the trip either: Office, Meeting, Airport/Travel, Visit Customers or Other. The category chosen will show green.

7. Click 'Modify' to save the changes to the trip.
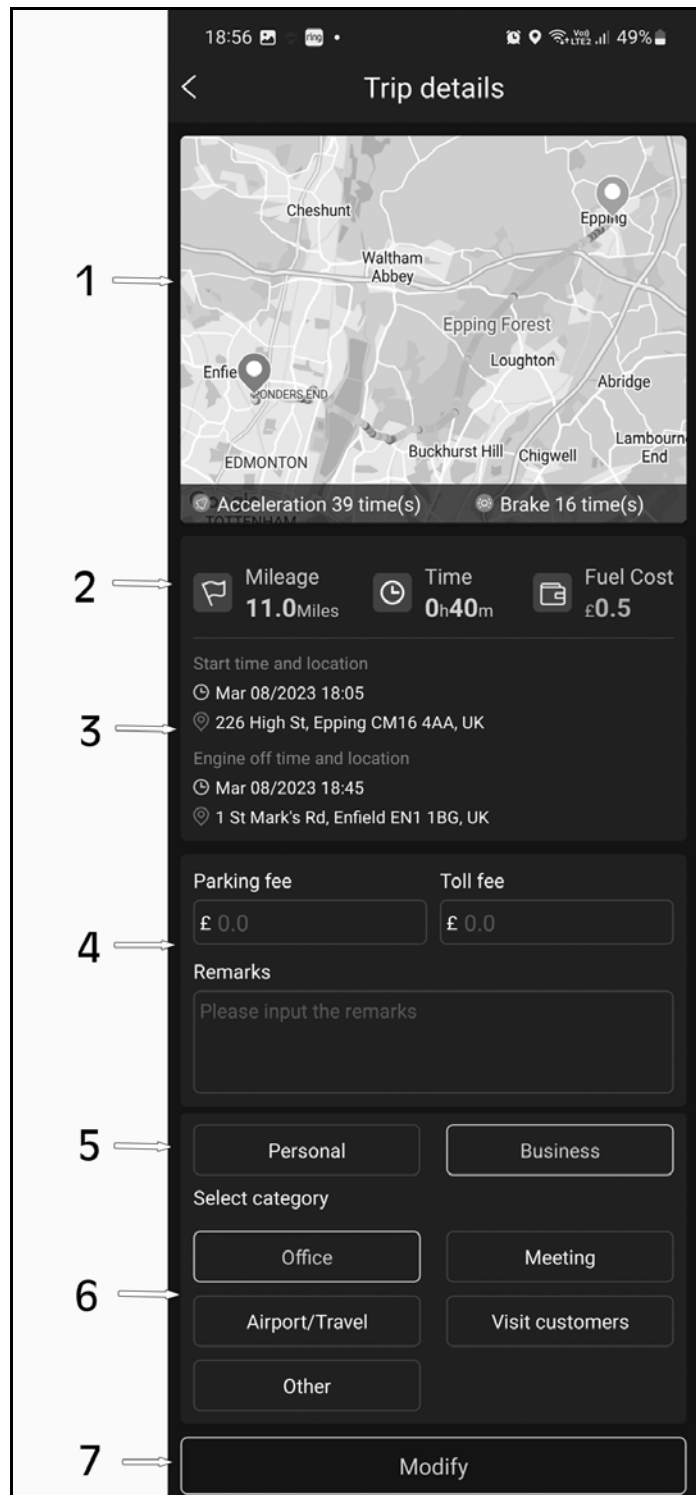
FIND CAR

The app will automatically save the parking position of your vehicle when the engine is switched off. Click 'Find Car' on the home page and the app will show both your current mobile location and the position of your vehicle using your mobiles map application.

1. A blue dot will show your current mobile location.

2. A green car will show you the last recorded position of your vehicle and the distance to it in feet.

    NOTE: This is not a live tracking application and can not be used to track your vehicle if it has moved from the location you last parked it.
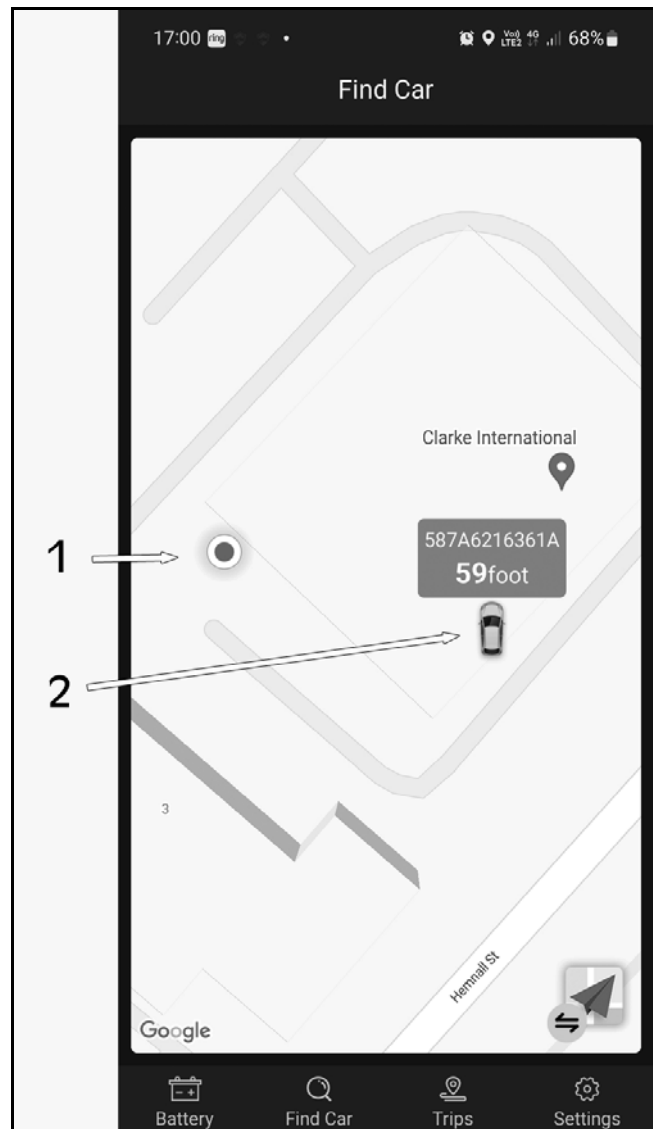
TIPS

1. The App requires a smartphone with the minimum software: Android 5.0 and higher, IPhone iOS 11.0 and higher, based on software version 2.3.0.

2. When your mobile enters Bluetooth range (10m), it will receive notification.

3. At the time of set up, if you choose "not allowed to access location", you will not receive notification alerts. If you want to use this function in the future, you can open the location in the phone settings by selecting "always allow location access".

4. If the daily test alert or exception test alert functions are not open when the mobile is close to the device, it also can't get notification of the daily test results. You can set to allow notifications both in the app and phones settings.

5. Firmware update will clear all data in the device, please open the app, wait for sync to finish before updating the firmware.

6. All historical data will be stored in the phone. App upgrades will not lose the historical data. But if the app is uninstalled, the phone data will be cleared.

7. The device will automatically monitor the vehicle battery, cranking and charging systems and store the data for 30 days. Use the app and link to the device via bluetooth at least once every 30 days for the device to synchronise all data to your mobile.

8. If the app can not search the battery monitor, please ensure the mobile bluetooth is on and within 10m of the device.

TROUBLESHOOTING

Issue	Solution
Need to enter a PIN code for Bluetooth connection.	When Bluetooth switch is turned on, some mobile phones will automatically list all nearby Bluetooth device names. Please ignore this PIN code pop-up as the device does not require a PIN code. Re-running the app will automatically connect to the device.
Bluetooth connection fail.	Ensure that the Bluetooth switch of the mobile is turned on, and there are no other phones nearby to connect the device. Then try to restart the Bluetooth or restart the mobile. In addition, if the phone Bluetooth is connected with any other device, it may also cause the Bluetooth not to connect correctly.
There is no track or parking position for the trip.	1.) Confirm that the GPS switch of the mobile is turned on. 2.) Confirm that the app has obtained the permission of the location service. 3.) Confirm that the app is running and the device is connected. 4.) Confirm that the "GPS Track Server" in the settings of the app is turned on. 5.) Confirm that the app can be started by itself and can run in the background.
There is no abnormal alarm notification.	Go to the settings of the mobile phone and turn on the application notification permission.
The display of battery power is inaccurate or no vehicle starting system data.	Suitable for 12V lead-acid and LiFEPO4 starting batteries of vehicles. If there is no in-vehicle usage scenario, such as no engine start behavior, the power may be inaccurate and there is no start data.

The vehicle charging system cannot be tested.	The test needs to be performed during engine running. It supports all ordinary alternators, and does not support smart alternators. If the test still does not work, please check with the vehicle manufacturer whether it is a smart alternator.
The fuel cost statistics are inaccurate.	Check whether the fuel consumption and the fuel price are correctly entered.
The position or trajectory is sometimes correct, sometimes incorrect or not obtained.	If the app can't be self-started and run in the background, the location data cannot be obtained. It is necessary to give the app the permission to self start and run in the background. this needs to be obtained in the settings of the phone.

NOTE: If your issue is not listed above, you can contact the App Administrator by going to the 'Home' page and clicking on 'Settings'and then clicking on 'Online Service'.

MAINTENANCE

CLEANING

- Before cleaning, disconnect the device from the battery.
- **DO NOT** use any liquid cleaning product.
- **DO NOT** use any inflammable cleaning product.
- **DO NOT** submerge the device or spill any liquids over it.
- If needed, clean the device with a light, damp, soft cloth.

SPECIFICATION

Operating Voltage	6V - 20V (12V System)
Operating Temp. Range	-40c - 90c
IP Rating	IP67
Device Measurement (H x W x D)	55 x 41 x 12.5 mm
Cable Length	270mm
Product Weight	30g
Minimum Mobile Operating System Requirement	Android 5.0 IPhone iOS 11.0
Minimum Bluetooth Requirement	Bluetooth 4.2
Compatible Battery Types	WET (Flooded) MF (Maintenance Free) EFB (Enhanced Flooded) AGM (Absorbed Glass Mat) GEL VRLA (Valve Regulated Lead Acid) Lead Calcium SLA (Sealed Lead Acid) 12V LiFePO4 (Lithium Iron Phosphate)

DECLARATION OF CONFORMITY - UKCA

UK CA

Clarke®
INTERNATIONAL

Hemnall Street, Epping, Essex, CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation:

Electromagnetic Compatibility Regulations 2016

Radio Equipment Regulations 2017

Electrical Equipment (safety) Regulations 2016

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The following standards have been applied to the product(s):

ETSI EN 301 489-1 v2.2.3 (2029-11), ETSI EN 301 489-17 v3.2.4 (2020-09),

ETSI EN 301 489-17 v2.2.2 (2019-07) EN 50663:2017, EN 62479:2010,

EN IEC 62368-1:2020+A11:2020, IEC 62321-3-1:2013, IEC 62321-4:2013, IEC 62321-5:2013,

IEC 62321-6:2015, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-8:2017.

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2023

Product Description:	12V Bluetooth Automotive Battery Monitor
Model Number(s):	CBBT1
Serial/Batch Number:	Refer to product/packaging label
Date of Issue:	28/02/2023
Signed:	

J.A Clarke

Director

CBBT1 UKCA Clarke DOC 022823

Page 1 of 1

DECLARATION OF CONFORMITY - CE

CE

Clarke®
INTERNATIONAL
Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation:

2014/30/EU	Electromagnetic Compatibility Directive
2014/53/EU	Radio Equipment Directive
2014/35/EU	Low Voltage Directive
2011/65/EU	Restriction of the Use of Certain Substances in Electrical Equipment Directive

The following standards have been applied to the product(s):

ETSI EN 301 489-1 v2.2.3 (2029-11), ETSI EN 301 489-17 v3.2.4 (2020-09),

ETSI EN 301 489-17 v2.2.2 (2019-07) EN 50663:2017, EN 62479:2010,

EN IEC 62368-1:2020+A11:2020, IEC 62321-3-1:2013, IEC 62321-4:2013, IEC 62321-5:2013,

IEC 62321-6:2015, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-8:2017.

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2023

Product Description:	12V Bluetooth Automotive Battery Monitor
Model Number(s):	CBBT1
Serial/Batch Number:	Refer to product/packaging label
Date of Issue:	28/02/2023

Signed:

J.A Clarke

J.A Clarke

Director

CBBT1 CE Clarke DOC 022823   Page 1 of 1

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