

Gear Box Z Electron EM 1.0 User Manual

Plugging In the Unit

Locate the OBD II port below the steering wheel at the driver's seat. Remove the OBD II to mini USB cord from the package. Use it to connect the Electron EM 1.0 to the OBD II port. Turn the key on, with the engine off. The unit will power up automatically.

The Boot-up Screen

The first screen to appear will be a 'Check System' screen, which will check its own physical hardware, including the SD card. This screen will also load the Electron's firmware, or operating system, and briefly display the serial number to the unit. The screen will then show the Gear Box Z logo, and once again the serial number, along with the version number of the operating system while playing a sound effect. For a short amount of time, it will indicate that the product is searching for a vehicle while displaying a pair of gears near the top right corner. Then the 'Vehicle' page from the main menu will appear. You can visit this page and view the information displayed here later. Then the Main Menu will appear.

Introduction to the Main Menu

The Main Menu will appear after the 'Vehicle' page is displayed briefly whenever the Electron boots up. All features except Emergency Recovery are accessed through this Main Menu. If the Main Menu is left for several seconds, it will open 'Gauges' automatically. This is the icon found in the top left position of the Main Menu. The Main Menu can be opened from anywhere, by selecting an "Exit" button until it appears, selecting a "Menu" button, or touching the center of the screen, depending on what window or page is open. The options available at the Main Menu are 'Gauges,' 'Add-ons,' 'Info,' 'Codes,' 'Vehicle,' and 'Configuration.' The Electron's serial number and its current firmware version number are also displayed at the bottom of the menu.

'Gauges'

When the 'Gauges' option is either selected from the Main Menu, or opens on its own by default, the 'Dash' screen is displayed first. This screen has a large dial and digital speedometer in the middle to left side of the screen, with a list of other vehicle gauges displayed on the right side of the screen. Below the speedometer there and icon that looks like a graph and next to it is Add-On Specific controls or gauges. The graph icon opens more custom gauge screens. There

are tabs along the bottom of the screen in this menu which can be selected and displayed at will. All of these gauges are customizable using Electron Gauge Designer.

‘Add-ons’

The Electron has the option for 'Add Ons' that can be tools or vehicle software changes. These ‘add ons’ can allow you to change vehicle specific parameters or implement vehicle software changes for improving things like: engine performance, better fuel mileage or help facilitate maintenance of your vehicle’s systems. Having add-ons is not required for using the Electron. Add-ons are purchased as a separate software item from Gear Box Z. Some Add-Ons may require you to agree to a disclaimer in order to use that Add-on. You must agree to the disclaimers for the Electron EM 1.0 also.

Gathering Information

When the ‘Add-ons’ icon is selected from the menu for the first time, the Electron will ask for permission to gather information from the vehicle's computer. Selecting yes will start the process of gathering data. Selecting no will return to the Main Menu. Once the ‘Gathering Information’ process has started, it will take approximately 15 to 20 minutes to complete. The Electron will display a percentage to completion during the process, and an animation of a pair of gears near the top right corner of the screen will indicate that the process is working. Please note that you may need to wait for a few seconds to a minute after the screen indicates 100% to open the list of purchased add-ons.

After the list of add-ons appears, there will still be a ‘Gather’ button in the center of the bottom of the screen. This is available so that if there is some new software or features on the vehicle in the future, the ‘Gathering Information’ process can be repeated and keep the Electron up to date.

Please refer to the specific user manual for each add-on, included with the Electron if they have been purchased at the same time.

Installing Add-ons in the Correct Order

When the list of add-ons appears, there will be a button next to each one to select in order to install. It is important to note, however, that if you have the “Maintenance” add-on, that this must be installed last. If it is installed first, then all other add-ons will not be able to install until after it has been uninstalled. Other add-ons may be installed with the “Maintenance” add-on, but they must be installed first.

The ‘Settings’ Add-on

This add-on does not change the programming the vehicles computer. It is used to change the given tire size so the speedometer will calculate travel speed correctly. It also allows the user

to change the speed limiter, setting the speed at which the governor will stop acceleration. These settings will be reset every time other add-ons are installed. This means that changes to the ‘Settings’ add-on should be done after all other add-ons have been programmed, including the “Maintenance” add-on.

Return to Stock Feature

The ‘Return to Stock’ button is on the bottom left of the screen when the ‘Add-ons’ window is opened. Selecting this will restore the vehicle to the original manufacturer’s programming. This feature makes the Electron Add-Ons fully reversible.

‘Info’

This page shows how many add-ons have been installed and activated, as well as the serial number and firmware version number. This screen is very useful when talking to technical support from Gear Box Z Inc., available by calling 877-217-1911.

‘Codes’

This window is used to display and clear DTCs, or Diagnostic Trouble Codes. If any codes are present, a ‘display’ button will appear near the top right corner of the screen. After selecting this, the number and description of each code will be displayed. If the codes fill more than one page, a ‘more’ button will appear at the bottom right of the screen. If not, then a clear button will be in this position. If the codes fill more than one page, select the ‘more’ button until you reach the last page in order to find the ‘clear’ button. There will always be an ‘exit’ button available on every page. If there are no codes to clear, or if you have cleared the codes, it will be the only option in the window to select. Included with the Electron is a booklet which contains a list of known DTCs.

‘Vehicle’

This page is displayed briefly each time the Electron is plugged into the vehicle. This page serves to quickly and conveniently display information about the vehicle. It includes the year, make, model, engine, a calibration number (CAL), a transmission control module number (TCM), a vehicle code (CODE), an install code, and the VIN number at the bottom.

‘Configuration’

The ‘Config’ icon on the Main Menu will take you to another menu that provides user changeable settings for the Electron. These include settings for the display, the audio, general, and a simplified manual within the Electron.

Display

In the 'display' window there is a slider on the right side of the screen which changes the sensitivity of the light sensor which changes the screen to "Night Mode" when the surroundings become dark. (*The purpose of this feature is to make so that the screen is not too bright and distracting to the driver if the Electron is mounted on the dash or console in the interior of the vehicle.*) Move the slider back and forth to find the brightness that is best for switching from "Day Mode" to "Night Mode."

On the left side of the 'display' window there are buttons for changing how bright the "Night Mode" will be when low light levels are detected. Whichever button has been selected last will be the brightness of "Night Mode." Please beware that the 'Low' setting will make the screen very difficult to see if the Electron is not in a dark location.

Audio

In the 'audio' window there are options for turning on vibrate mode. When this is turned on, the electron will vibrate whenever a button is clicked on the screen. Selecting the 'vibrate' button toggles this option on and off. There are also 'up' and 'down' buttons for controlling the volume of the audio played by the Electron. This will change how loud the high and low warnings will be for the gauges that the Electron displays.

General

This window currently has no alterable settings. It exists for future updates which will allow customized startup animations and illustrations, as well as sound effects.

Emergency Recovery

There are many unfortunate conditions which can occur that may cause the vehicle's computer to have its programming become unreadable. This condition is sometimes called "corrupted," "scrambled," "bricked," or "blanked." When this occurs, the vehicle will not start, and may show various alarming symptoms, such as a flashing anti-theft light in the console. Fortunately, the Gear Box Z Electron EM 1.0 can resolve this issue. When the vehicle has been "bricked," the Electron will display a message upon startup saying "searching for vehicle" and "please turn the key on." There will also be a pair of gears visible in the top left corner of the screen. The Electron will not leave this screen. The solution is to select the gears. When the gears have been selected, a prompt will appear which will say "Would You Like to do any Emergency recovery?" To perform the recovery, select 'yes.' Selecting 'no' will put the Electron in mass storage device mode. This feature is for use with the Electron Gauge Designer software. After selecting 'yes,' a list of available recovery files will appear. If you have used the Electron unit before, select 'Last Vehicle.' This file will have the VIN number to the right of the button. After selecting a recovery file, an installation window will appear, which will read "Returning Stock..." This will take a few minutes. Please wait..." and will display the VIN number of the file being installed. The window will indicate the progress of the installation with a '% Done' field. The

installation must not be interrupted until complete. If the installation is interrupted, the Emergency Recovery must start over. After the recovery has been completed, a screen will appear that says “RECOVERY Successful.” The screen will remain for a brief moment before the Electron reboots itself. After the reboot, the Electron and the truck should be restored to its last condition before an interruption occurred.

Installing Firmware Updates

Gear Box Z Inc. is constantly working to improve the performance of the Electron EM 1.0, and add new and powerful features. Whenever a new update to the firmware is released, it can be easily installed by the user. The current method of checking for available updates is to call Gear Box Z at 877-217-1911.

When a firmware update has become available, it is installed through the micro SD card. The files that will be needed to perform the update are:

- info.dat – The file that is sent to Gear Box Z Inc. to quickly allow updating options on the Electron.
- **GBZFIRMW.BIN (It does not need to be renamed. Just copy it to the SD card. Do NOT place this file in any folder. The name cannot be changed...)**

The steps to performing the update are:

- Unplug the Electron from the vehicle.
- Remove the SD card from the Electron. This is located in a small slot on the side, and is removed by gently pressing the card inward until it clicks, and then allowed to spring outwards.
- Put the SD card into a micro SD card adapter (which is included with the Electron, although any good quality adapter will work) and plug the adapter into a PC.
- Download firmware file and any additional files provided by Gear Box Z Inc. for updating firmware.
- Copy the firmware file to the SD card and unzip any other files to the SD card in the correct folders as specified by GearBoxZ Inc.
- Safely remove the SD card adapter from the PC, and carefully install the SD card back into the Electron, once again by gently pressing it inwards inside the slot until it clicks and locks in place.
- Plug the Electron back into the vehicle.

- The electron will check the files when it boots up, and will automatically update its own firmware.

If the SD card is lost or damaged, please contact Gear Box Z tech support, and have the serial number to the Electron unit available. If you have any other further questions, call Gear Box Z tech support at 877-217-1911.