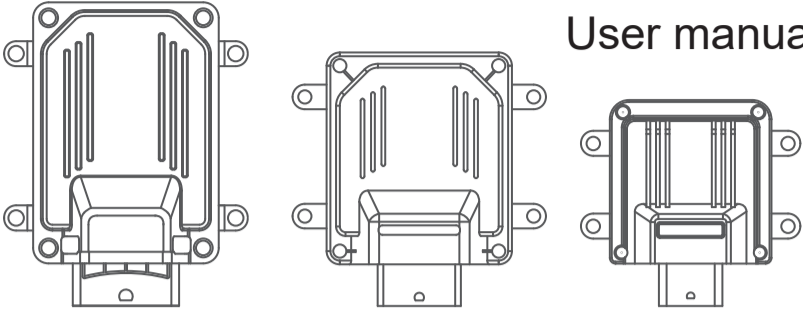




AirForce ONE

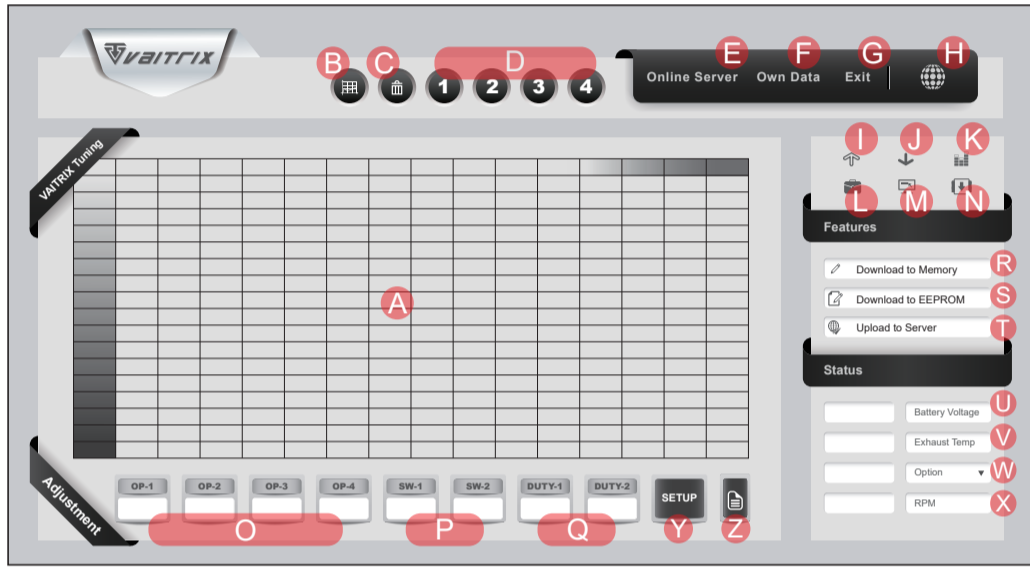
User manual



BOOSTER SOFTWARE MANUAL

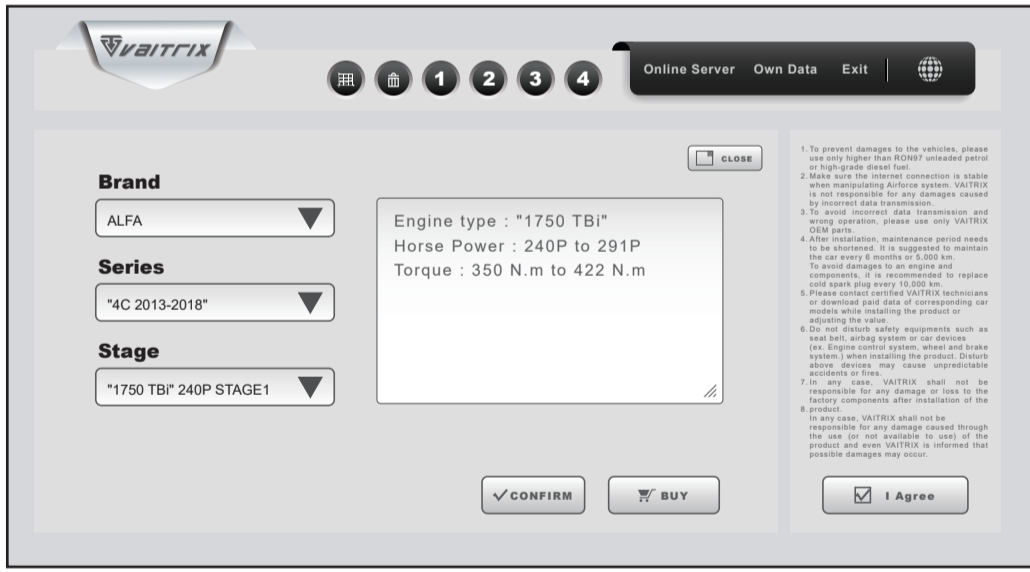
- ⚠ To prevent damages to the vehicles, please use only higher than RON97 unleaded petrol or high-grade diesel fuel.
- ⚠ Make sure the internet connection is stable when manipulating Airforce system. VAITRIX is not responsible for any damages caused by incorrect data transmission.
- ⚠ To avoid incorrect data transmission and wrong operation, please use only VAITRIX OEM parts.
- ⚠ After installation, maintenance period needs to be shortened. It is suggested to maintain the car every 6 months or 5,000 km. To avoid damages to an engine and components, it is recommended to replace cold spark plug every 10,000 km.
- ⚠ Please contact certified VAITRIX technicians or download paid data of corresponding car models while installing the product or adjusting the value.
- ⚠ Do not disturb safety equipments such as seat belt, airbag system or car devices (ex. Engine control system, wheel and brake system.) when installing the product. Disturb above devices may cause unpredictable accidents or fires.
- ⚠ In any case, VAITRIX shall not be responsible for any damage or loss to the factory components after installation of the product.
- ⚠ In any case, VAITRIX shall not be responsible for any damage caused through the use (or not available to use) of the product and even VAITRIX is informed that possible damages may occur.

MAIN INTERFACE



- (A) TUNING MAP**
Tuning maps are the cores of AirForce ONE / VAITRIX BOOSTER. In the map there are three major elements: X-axis, Y-axis, and data cells. The X-axis represents engine revs range from 0 to 9000 RPM. The Y-axis represent the signal strength of the sensor and is variable according to different maps and detail setting of the maps. Please refer to "Tuning maps Options" section for the meaning of Y-axis in different maps. The cells represent the tuning level in a specific engine RPM with specific signal strength. To set the tuning level, click the target cell then input the number. The allowable range and the meaning of the number vary according to different map. If user inputs a value beyond the allowable range, software will automatically modify it to closest allowable value.
- (B) SWITCH BETWEEN DATA LOGGER / TUNING MAPS**
This button is used for switching between Data Logger and Tuning Maps. Please refer to "Data Logger" section for further info about the logger.
- (C) EMPTY THE DATA LOGGER**
Clean up all the data in the Data Logger.
- (D) CURSOR 1 TO 4**
In the mapping table, the cursor (the number in bold) represents the current state of the engine in relation to its RPM and signal strength. The more often engine under certain state, the more frequent the cursor passes relative cell, hence the darker the background color is. Alongside observing the cursor in its own mapping table, using the cursor buttons VAITRIX BOOSTER provides additional function to view the dynamic relationship between different mapping tables. For example, if user chooses tuning table OP-1 and cursor button 2, AirForce ONE will show the signal of OP-2 moving around the table of OP-1, et cetera.

(E) Online Server



- (E) Online Server**
- By clicking the button user can go into the page to purchase and download new mapping data from VAITRIX cloud server. To download new mapping data, user need to purchase effective series number from VAITRIX website or licensed channels. One series number can only be used to download one set of mapping data and installed on one specific VAITRIX BOOSTER, but one VAITRIX BOOSTER can save as many sets of mapping data.
- Brand:** Vehicle brand the mapping data apply to.
 - Series:** Vehicle series/model the mapping data apply to.
 - Stage:** Tuning stage of the mapping data.
 - Information:** Description of the mapping data, including engine type, power and torque output, and the degree of performance improvement, etc.
 - Buy:** By clicking the button the input window of series number will pop up. Before finishing the purchase user need to agree the term of use and disclaimer in right column first.

(F) OWN DATA

- Download purchased mapping data online from cloud server.
- Brand:** Vehicle brand the mapping data apply to.
 - Series:** Vehicle series/model the mapping data apply to.
 - Stage:** Tuning stage of the mapping data.
 - Information:** Description of the mapping data, including engine type, power and torque output, and the degree of performance improvement, etc.

(G) Exit

Exit AirForce ONE. Since AirForce ONE has no save function, remember to upload the mapping data to cloud server or export it to EEPROM on VAITRIX BOOSTER if user wants to keep the data.

(H)Online / Offline indicator

The turning globe symbol indicate AirForce ONE is online currently. By clicking the symbol user can link to VAITRIX homepage for latest information.

(I)Indicator :VAITRIX BOOSTER is online

(J)Indicator :VAITRIX BOOSTER is offline

(K)Batch input

By double clicking different cells in the mapping table user can tag a cluster of cells in red. Then by using the batch input function and type the number in the "Fill" column the same value will be set across all the tagged cells.

(L)Save as local file: Save mapping data as local file.

(M)Open local file: Open local mapping data file.

(N)Download data from VAITRIX BOOSTER to AirForce ONE

Note: Some functions among (K) (L) (M) (N) might not be available on certain models.

Tuning map Options

By clicking different option button user can switch between up to eight mapping tables (depend on different VAITRIX BOOSTER model). To further setting different mapping table use "Setup" button in the right. (Please refer to "Setting the mapping table" section for more details.)

Setting the mapping table

The "Setup" button is located in the far right of the tuning table options. For each of the mapping table, the content of the setup page varies.

(O) Setup mapping table OP-1 to OP-4

•Min & Max:

Column Min and Max can be used to setup the lower and upper limits of the Y-axis in table OP-1 to OP-4. The range between these two values will be divided into 17 sections, so the smaller the different between these two values is, the more precise each of the section of Y-axis stands for. User can input a value between 0.00 to 5.00 (Volts) in these two columns, with additional restriction that the Max value has to be at least 2.00 larger than the Min value.

•Tuning Strength:

Tuning Strength is a useful tool when user wants to adjust the tuning level in all cells of a certain table in the same time. The strength is a percentage number between 0% to 100%, with 0% equals to factory default of the vehicle (no tuning), and 100% equals to the cell values in the table. However, to keep the engine running smoothly, Tuning Strength is not to multiply the cell value and Tuning Strength directly, instead it's a weighted value using the original tuning value as the weighting. The formula is as followed: Actual tuning value = 50% of the original cell value + 50% of the original cell value x Tuning Strength. For example, with same Tuning Strength of 60%, if the original cell value is 20, the actual tuning value = 50% x 20 + 50% x 20 x 60% = 10 + 6 = 16. The decrease of the value from 20 to 16 is 4. However, if the original cell value is set at 80, the actual tuning value = 50% x 80 + 50% x 80 x 60% = 40 + 24 = 66, and the decrease of the value from 80 to 66 is 14.

•Response Time:

Response Time represents the speed the strength of the signal changing from original state to target state. It's a value of percentage between 0% to 100%, with 100% meaning instant response.

•Send + Close, Send, and Close:

Save the setting then go back to main interface, Save and stay at current page, and go back without saving the change.

(o) Mapping table OP-1 to OP-4

Table OP-1 to OP-4 show the mapping data from the sensor OP-1 to OP-4. According to different VAITRIX BOOSTER model and vehicle type each of the mapping table represents different signal type. Please refer to VAITRIX BOOSTER model comparing table and manual of the wiring harness set for detail information.

In table OP-1 to OP-4, the Y-axis represents signal strength of the sensor (analog voltage signal, in Volt). The value in data cell represents the increase of signal strength in percentage. The tuning strength is a number between -100 to +100, with 0 equals to the factory default of the vehicle, and 100 equals to 100% increase. The measure of the Y-axis can be re-defined by user. Please refer to "Setting the mapping table" for further information.

(P) Mapping table SW-1 and SW-2

Table SW-1 and SW-2 show the on / off of the solenoid valve on the methanol / water injection system (methanol / water injection system needs to be purchased from other vendor). Different VAITRIX BOOSTER model can support different number of valves. The Y-axis of the table is the same as that of the source mapping table it links to. And, the cell value represents the on or off of the solenoid valve, with value 1 equal to supplying methanol / water to the engine and value 0 for stopping the methanol / water supply.

(P) Setup mapping table SW-1 and SW-2:

•**Load:** Setup which OP table SW-1 or SW-2 bases on. The on / off of the solenoid valve in the methanol / water injection system will be determined by the signal strength of that OP sensor.

•**Rev Limiter:** When the engine RPM exceeds the setting value, solenoid valve in the methanol / water injection system will keep fully open or close. Use lever in the right to decide the valve will open or close when RPM exceeds.

•**Offset:** The offset value is the RPM difference when solenoid valve opens / closes compare to original OP table it based on. Use the lever to set a percentage value between -100% to +100%, equals to a RPM difference between -500 to +500. It means the solenoid valve will open / close 500 RPM in advance if the offset is set at -100%, and vice versa.

•**Send + Close, Send, and Close:** Save the setting then go back to main interface, Save and stay at current page, and go back without saving the change.

(Q) Setup mapping table DUTY-1 and DUTY-2:

•**Load:** Setup which OP table DUTY-1 or DUTY-2 bases on. The output percentage of the equipment, such as the methanol / water injection pump, will change according to the signal strength from the OP sensor it bases on.

•**Min and Max:** Setup the minimum and maximum percentage of the equipment output. User can input value between 0 to 100 in these two columns with additional rule that Max must be higher than Min.

•**Freq:** Setup the signal frequency VAITRIX BOOSTER sends to the equipment. The allowable range of the column is between 10 to 100, in the unit of Hz.

•**Rev Limiter:** When the engine RPM exceeds the setting value, equipment linked will keep fully on or off. Use lever in the right to decide the equipment will keep on or off when RPM exceeds.

•**Send + Close, Send, and Close:** Save the setting then go back to main interface, Save and stay at current page, and go back without saving the change.

Data Logger



The Data Logger can save up to 10,000 sets of data and has loop-recording feature. By clicking the data chart (a) user can switch between two display modes: one is showing history data and the other is showing latest 50 data points.

Use the tags under log chart to control which curve user wants to display:

OP-1, OP-2, OP-3, OP-4: Data logs of signal strength from their dedicated sensors.

DUTY-1, DUTY-2: Data logs of signal output.

B-Volt: Data logs of battery voltage on the car.

E-Temp: Data logs of exhaust temperature (optional)

Temp: Data logs of temperature (optional)

RPM: Data logs of engine RPM

(Q) Mapping table DUTY-1 and DUTY-2

Depending on the optional wiring linking to VAITRIX BOOSTER, the table DUTY-1 and DUTY-2 can be used to control any equipment with variable power output by 5-Volt input signal, for example the methanol / water injecting pump, or other similar equipment such as electric turbocharger controller. Please refer to VAITRIX BOOSTER model comparing table for the set number the product supports.

If it's the methanol / water injecting pump DUTY-1 or DUTY-2 links to, the Y-axis of the table is the same as that of the OP table the output of methanol / water injection based on. The cell value of the mapping table represents the percentage of pump output ranging from 0 to 100.

(R) Download to Memory:

Save the adjusted mapping data to temporary memory on VAITRIX BOOSTER. The engine will respond to the adjustment immediately, but the memory will disappear when the engine shut down. After re-start engine setting will change back to the status saved in the EEPROM on VAITRIX BOOSTER. This mode is suitable for trial running of new adjustments.

(S) Download to EEPROM:

Save the adjusted mapping data to the EEPROM on VAITRIX BOOSTER. This will erase the original setting in the EEPROM and replaces with new data. This mode is suitable for actual driving.

(T) Upload to Server:

Save the adjusted mapping data to VAITRIX cloud server. For each VAITRIX BOOSTER user can save up to five sets of mapping data for future use.

•**Cloud File:** Each VAITRIX BOOSTER has its own serial number. The number will be used as the identity of the uploaded files.

•**Series:** Vehicle series/model the mapping data apply to.

•**Stage:** Tuning stage of the mapping data.

•**Information:** Description of the mapping data, including engine type, power and torque output, and the degree of performance improvement, etc.

(U) Battery Voltage

•**Voltage Correction:**

Electricity supply on the vehicle will fluctuate according to condition of battery and to states of the engine. The voltage correction function of VAITRIX BOOSTER will compensate automatically to keep the output to equipment on DUTY-1 and DUTY-2 stable. The correction value ranges from 0% to 100%, with 0% as no compensate and 100% means the output is totally stable.

(V) Exhaust Temp

VAITRIX BOOSTER can be linked to an exhaust temperature sensor (optional) and display the real-time temp reading in this column. The effective range of the reading is between 200 to 1300 degree Celsius, or 400 to 2400 degree Fahrenheit. Click the right column to enter the setting page:

•**EGT Limiter:**

Setup how high the exhaust temperature is when the limiter is triggered. When the temperature exceeds the setting value VAITRIX BOOSTER will keep working or shut down completely (back to factory default of the vehicle) according to the on or off the lever set at. The value in the column can be a number between 500 to 1300 (in Celsius mode) or 932 to 2372 (in Fahrenheit mode).

•**Unit switch:**

Use the lever to setup in Celsius or in Fahrenheit the temperature reading will be.

(W) Temp / Plug-in:

VAITRIX BOOSTER can be link to an optional temperature sensor or any other optional plug-in sensor using 5-V signal. When the temp sensor or plug-in sensor deploys, user can use this column to display the temp reading or self-defined reading.

•**Warm Temp:**

Setup the warm-up temperature to protect the vehicle. Under this temperature VAITRIX BOOSTER will keep in idle mode (meaning the vehicle will stay in its factory default). The value in the column can be a number between 0 to 210 degree in Celsius mode, or 32 to 410 degree in Fahrenheit mode.

•**Unit switch:**

Use the lever to setup in Celsius or in Fahrenheit the temperature reading will be.

Plug-in Sensor

•**Min and Max:**

Setup the minimum and maximum values displayed. The values in both columns can be numbers between -100 to +100, with additional rule that Max value needs to be larger than Min value.

•**Min V and Max V:**

The corresponding voltage to Min and Max values set up above. In both columns the value can be voltage readings between 0 to 5.00 V, with additional rule that Max V must be larger than Min V.

•**Unit:**

The self-defined unit user wants to display in the main interface. The value is alphabetical.

(X) RPM

•**Cylinders:**

Setup correct cylinder number so the RPM reading and all the mapping tables can work correctly.



(Y) Setup:

- Setup mapping table detail
- (O) Setup mapping table OP-1 to OP-4
- (P) Setup mapping table SW-1 and SW-2
- (Q) Setup mapping table DUTY-1 and DUTY-2

For different mapping table SETUP is separate independence



(Z) Map copy:

- Copy mapping table between OP-X to OP-X
- Copy mapping table between SW-1 to SW-2
- Copy mapping table between DUTY-1 to DUTY-2

Can't copy different typ of mapping table