

EngiBOX

EngiBOX system User Manual

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1. EngiBOX system introduction

EngiBOX is an integrated engine management system which consists in AvMap EngiBOX, EngiBOX App and EngiBOX Portal.



Fig. 1

Monitor and store your engine parameters during the flight in real-time with EngiBOX then use the EngiBOX App and EngiBOX Portal to save and share engine data with your Rotax Service Center for an optimal support service.

For further instructions on the installation please read the EngiBOX User and Installation Manual.

1.1. System capabilities

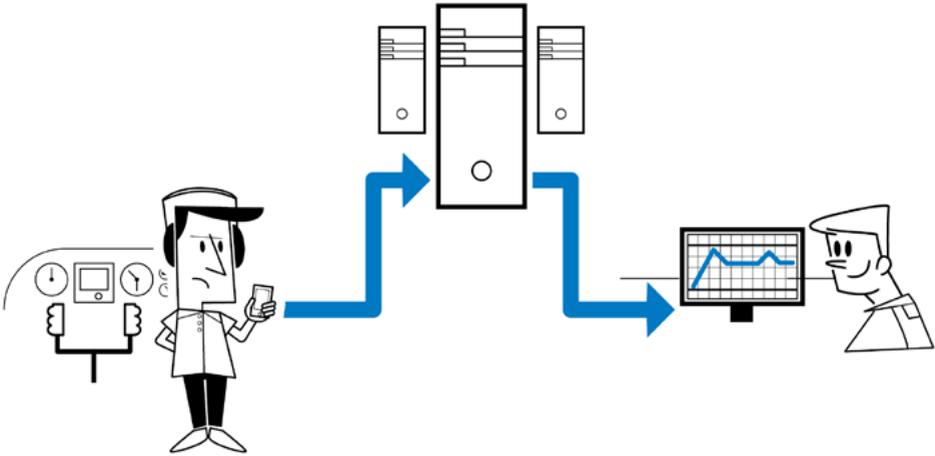
Monitor and store your engine parameters during the flight in real-time with EngiBOX then use the EngiBOX App and EngiBOX Portal to save and share engine data with your Rotax Service Center for an optimal support service.

EngiBOX App

- Complete the EngiBOX Installation
- Register and associate your engine to the EngiBOX
- Export engine data
- Share engine data with a Rotax Service Center and notify it via email to get instant support

EngiBOX Portal

- Analyze engine performance graphs for each parameter
- Share engine data with a Rotax Service Center for an optimal support service



1.2. System advantages for the engine owner

- Easy procedure to share engine data with your favorite Service Center remotely.
- Get a faster diagnosis and support for your engine.
- Safely store data: as data are safely stored with daily back up, never risk to lose precious files.
- Get Instant support: after sharing engine data with your Service Center, you can call and ask for instant support, the Service Center will be immediately able to analyze your shared engine data on the EngiBOX Portal.

1.3. Needed Equipment

- A smartphone / tablet connected to the internet to use the EngiBOX App
- A smartphone / tablet / PC connected to the internet to access the EngiBOX web Portal

Use the EngiBOX App to get a complete and fast support service.

In case you do not have a smartphone:

- Register on the EngiBOX Portal
- You can export engine data on the micro SD and upload them on the EngiBOX Portal (read Chap III, par. 5.1)

2. EngiBOX App

After setting up your EngiBOX (refer to the EngiBOX user manual for this operation), you can download for free the EngiBOX App for your smartphone.

2.1. First time EngiBOX App use and registration

1. Launch the EngiBOX App
2. Power on the EngiBOX and enable the Bluetooth
3. Detect the EngiBOX from the list of available devices. And tap on it. The App shows: EngiBOX ID, connection status. Engine model, Engine ID number and date of last overhaul
4. Tap on **LOGIN** button
5. Tap on **I DON'T HAVE AN ACCOUNT**
6. Fill the form in order to register*. You will receive an activation email.

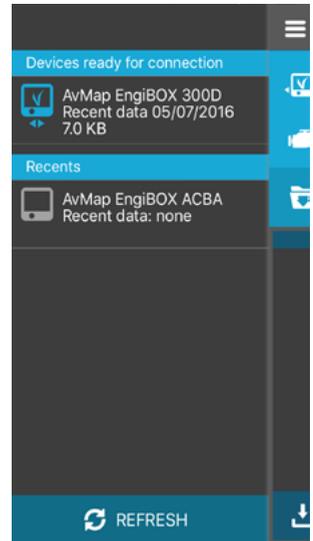


Fig. 2

***Note:** The provided email account will be used for both EngiBOX App and Portal account

2.2. How to export the engine log using the EngiBOX App

You can download engine data (up to 10 ½ hours of flight) from the EngiBOX and send them to the EngiBOX Portal using the EngiBOX App:

1. Launch the EngiBOX App
2. Power on the EngiBOX and enable Bluetooth.
3. Detect the EngiBOX from the available devices list
4. Tap on the device to connect to it
5. Use the spin selector to choose the time interval
6. Tap on **DOWNLOAD LOG**
7. When download is completed Tap on **SEND** button to save the log on the EngiBOX Portal
8. Then the service center selection is displayed.

9. Tap on **SEARCH SERVICE CENTER** and choose the service center from the list, if you wish to share the log with a Service Center, and tap on **SEND**, or just tap **SKIP**
- By tapping “Skip” the log is sent and saved on your EngiBOX Portal, but not shared with a Service Center.
 - By tapping “Send” the log is sent and saved on your EngiBOX Portal account and shared with the selected Service Center, who will also receive a notification via email. From this moment, the Service Center will be able to see your future downloaded logs saved on the Portal, until you decide to remove it or change Service Center. The engine data log is now saved on the EngiBOX Portal, that you can open by tapping the graph icon in the upper bar of the App. The App now shows the date and info of the last downloaded log.



Fig. 3

Once you have shared the first log with a Service Center, you can choose **SEND** to Service Center every time you need extra attention for your data log, and you want to notify your new engine data log to the Service Center with an email.

2.3. How to share with your Service Center a previously downloaded log

1. In the device page tap on **SEND** next to “Last Download” row
2. Select the service center and tap on **SEND** next to the service center. The log is saved on the EngiBOX Portal and shared with the selected Service Center that will also receive a notification via email.

2.4. How to invite a Service Center using the EngiBOX App

If you cannot find your service center in the list of Service Centers displayed,

1. Tap on **INVITE SERVICE CENTER** at the end of the list
2. Provide the service center email in the popup. An invitation email will

be sent to the service center

After sharing engine data with your Service center, you can call* them and ask for instant support. The Service Center will be immediately able to analyze your shared engine data on the EngiBOX Portal.

*When registered, the Service Centers Address and Phone number are available on the App.

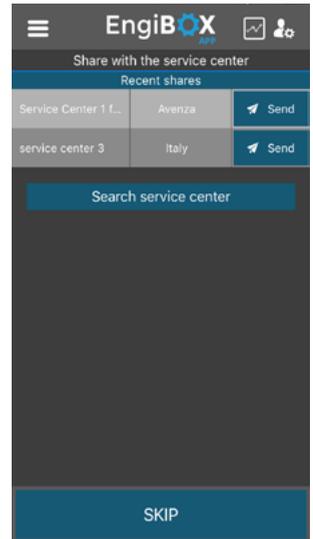


Fig. 4

3. EngiBOX Portal

The EngiBOX Portal is a web page that can be accessed from any platform with your account in order to analyze your engine performance graphs for each parameter.

3.1. How to use your Account on the EngiBOX Portal

1. Visit engibox.avmap.it and login with the same App account credentials. If you do not have a smartphone and cannot use the EngiBOX App, you can register here.
2. Click on the register link and fill the registration form
3. Follow the instructions to confirm your email address (it has to be the same used by the EngiBOX App in your smartphone / tablet. You can now login with credentials contained in the activation email.

3.2. EngiBOX Portal contents

Engine page:

It includes Engine ID, Engine Type, EngiBOX ID, Activation date, Last Overhaul, stored flight logs, Graphs and Alarm Table.

My account:

It includes personal details and selected Service Center.

3.3. How to examine your engine performance on the EngiBOX Portal

You can view the graph for each parameter for each exported data log.

3.3.1 How to analyze the last log

1. Open the web portal and login.
2. My Engine page opens up showing the engine info (Engine ID, type and last overhaul date), The EngiBOX info (EngiBOX ID and activation date), and the graph for the last log submitted.
3. Use the scroll down menu in the top left corner of the graph to change the parameter
4. Use the bottom timeline to change the time frame

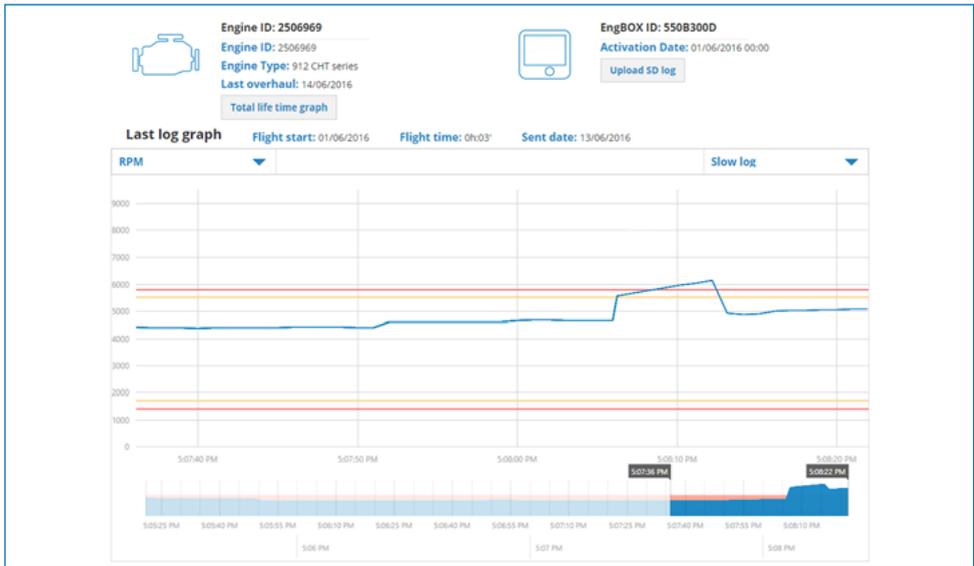


Fig. 5

3.3.2 How to analyze previous data logs

To analyze another data log

1. Choose one log from the flight logs table
2. Click **VIEW GRAPHS**

The graph page shows the performance graphs and a table listing triggered alarms with times and values.

Flights logs					
Flight Start	Flight time	Sent date		Actions	
26/07/2016 18:00:29	00h:30' ⚠	26/08/2016 14:00:24		View Graphs	Send to service center
16/02/2016 18:22:30	00:30'	26/07/2016 13:30:43		View Graphs	Send to service center
16/02/2016 18:22:30	00:30'	26/07/2016 07:20:06		View Graphs	Send to service center
26/07/2016 18:00:29	00h:30' ⚠	25/08/2016 15:05:43		View Graphs	Send to service center
26/07/2016 18:00:29	00h:30' ⚠	25/08/2016 14:53:35		View Graphs	Send to service center
26/07/2016 18:00:29	00h:30' ⚠	25/08/2016 14:53:06		View Graphs	Send to service center
26/07/2016 18:00:29	00h:30' ⚠	25/08/2016 14:44:41		View Graphs	Send to service center
16/02/2016 18:22:30	00:30'	25/07/2016 11:23:15		View Graphs	Send to service center

Fig. 6

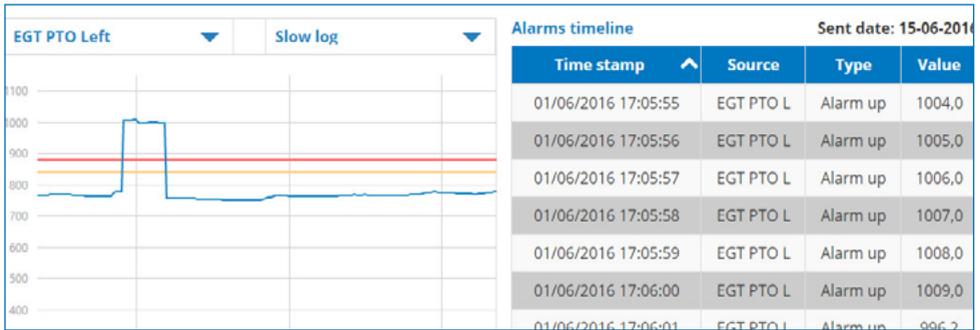


Fig. 7

3.3.3 Slow Log VS. Fast HD log

Use the scroll down menu in the top right corner to choose among **SLOW LOG** and **FAST HD LOG** graph.

Slow Log: it saves engine data once per second and it is used for general analysis.

Fast HD Log: it saves engine data five times per second, for a more detailed analysis. The Fast HD Log is available for the last 11 minutes of any data log exported from the EngiBOX by the App or on the micro SD card.

Tip: How to use the Fast HD log

As the Slow Log is used for general analysis, the Fast HD Log can be used for detailed analysis during maintenance, test flights, or emergency analysis.

Engine test

Run a ground engine test of about 11 minutes to test your EngiBOX and Engine: you will get a HD graph to check if everything is fine.

Alarm situation

As soon as EngiBOX notifies engine performance issues through alarms, the EngiBOX App can be used to get a fully detailed HD log of the situation.

3.3.4 How to analyze the total engine life

To view the Total life time graph, click the **TOTAL LIFE TIME GRAPH** button under the engine specifications. In the Total life time graph you can

also use the drop down menus on the upper right corner to select the time frame.

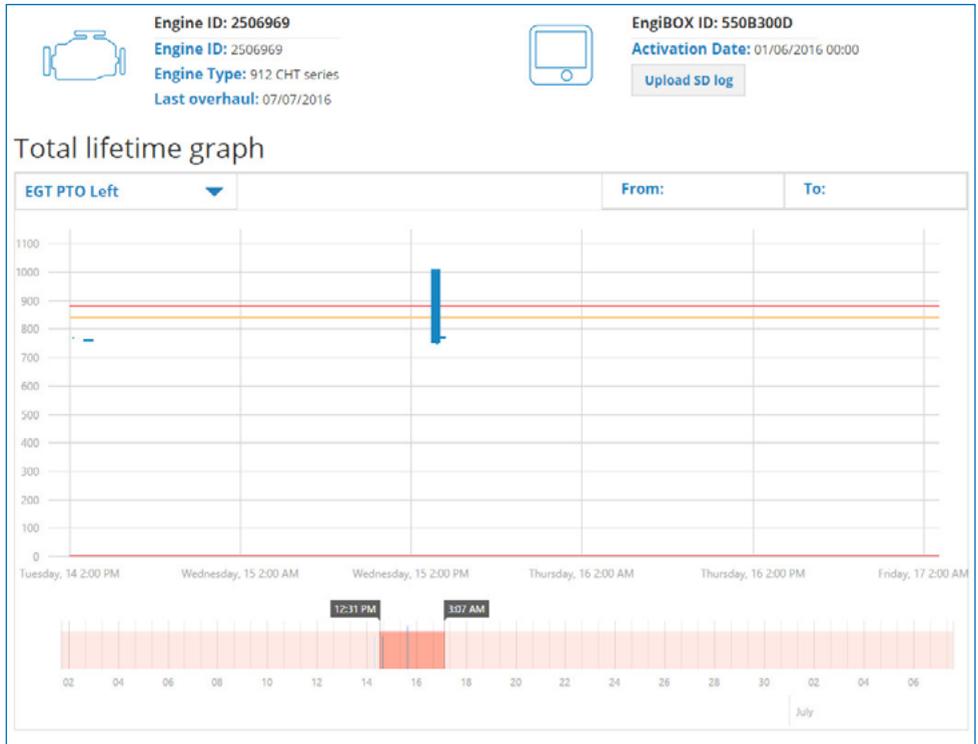


Fig. 8

3.4 How to share engine data with your Service Center on the EngiBOX Portal

1. In My Engine page choose the desired log from the logs table
2. Click on **SEND TO SERVICE CENTER** button
3. In the service center selection pop up, you can filter results using the country filter or the search box. Choose the service center and click

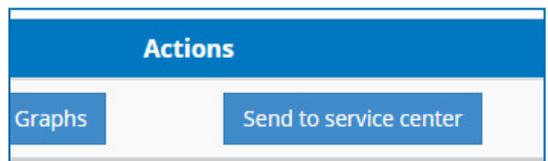
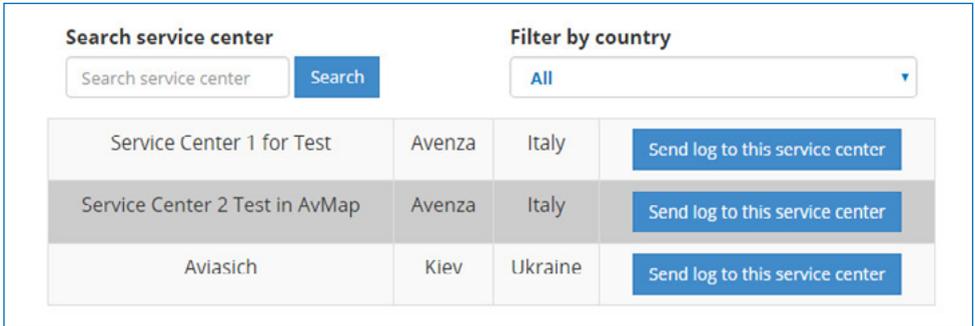


Fig. 9

on **SEND LOG TO THIS SERVICE CENTER** to enable log sharing with the service center.



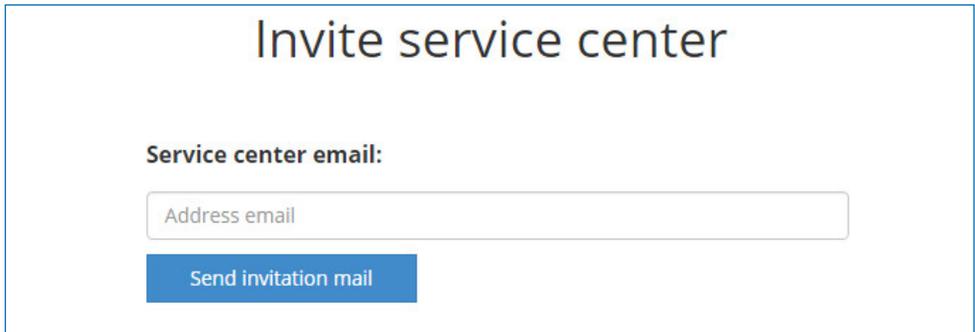
Search service center		Filter by country	
<input type="text" value="Search service center"/>	<input type="button" value="Search"/>	<input type="text" value="All"/>	
Service Center 1 for Test	Avenza	Italy	<input type="button" value="Send log to this service center"/>
Service Center 2 Test in AvMap	Avenza	Italy	<input type="button" value="Send log to this service center"/>
Aviasich	Kiev	Ukraine	<input type="button" value="Send log to this service center"/>

Fig. 10

3.4.1 How to invite a service center

If you cannot find your service center, you can invite them to use the EngiBOX Portal:

1. In the service center selection pop up click on **INVITE SERVICE CENTER button**
2. Type the service center email address in the pop up and click **INVITE**
3. The Service center will receive an invitation with instructions to join the EngiBOX Portal



Invite service center

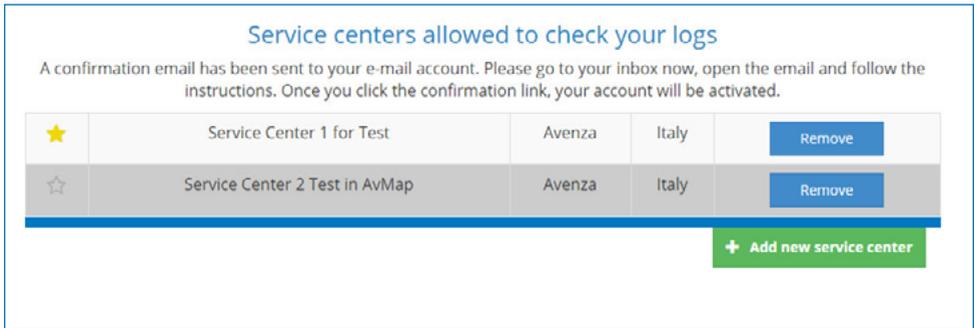
Service center email:

Fig. 11

3.4.2 How to remove a service center

If you do not wish to share data with a service center anymore

1. In **MY ENGINE** page click on the user menu icon
2. Click Account to open **MY ACCOUNT** page
3. Detect the service center to remove in the service center table and click on remove

**Fig. 12**

3.4.3 How to set a favorite service center

In order to speed up the sharing procedure, you can set up a favorite Service Center:

1. In **MY ENGINE** page click on the user menu icon
1. Click Account to open **MY ACCOUNT** page
2. Detect the service center to set as favorite in the service center table and click on the star icon.

The favorite service center will be highlighted on the top of the sharing table.

3.4.4 How to delete a favorite service center

To remove a service center from favorites:

1. In “My Engine” page click on the user menu icon
2. Click Account to open **MY ACCOUNT** page
3. Detect the service center in the service center table and click on the active star icon to disable it.

The service center will not be shown on top of the sharing table anymore.

3.5 How to upload on the EngiBOX Portal the complete engine data log from SD card

Besides using the EngiBOX App, you can also export engine the data from EngiBOX using the Micro SD card.

3.5.1 How to export engine data on the EngiBOX Micro SD

1. Make sure the Micro SD is inside the EngiBOX slot.
2. Access the EngiBOX Menu pressing and holding the knob for 5 seconds, the Menu page will appear. Rotate the knob to select

EXPORT DATA.

3. Select how many **HOURS** of flights you want to export. (e.g. last 2 hours) Confirm by selecting **OK**
4. Wait for the procedure to be complete, reading the messages on screen.
5. Rotate the knob to choose **BACK** and press to exit.
6. Extract the Micro SD.
7. Read the Micro SD card with a memory reader and save the content (.bin file) on your PC.

3.5.2 How to upload engine data on the EngiBOX Portal

8. Open the EngiBOX Portal and in **MY ENGINE** page click **UPLOAD SD LOG** button under the EngiBOX specifications.
9. Follow the instructions on the pop up to browse the PC and choose the .bin file to be upload
10. Click **UPLOAD**

Once uploaded, the log will appear in the engine logs table

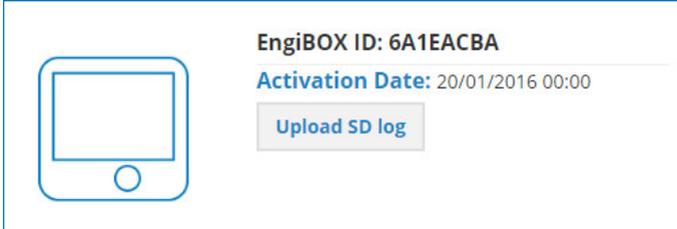


Fig. 13

3.6 How to recover your EngiBOX Portal password

11. Open the EngiBOX Portal and click on **LOGIN**
12. Click on **LOST YOUR PASSWORD?**
13. The recovery page opens up: fill the form with your email address
14. Receive a new password via email. This password can then be changed in **MY ACCOUNT** page.

3.7 How to change your EngiBOX account credentials

Login and go to My Account. And change your credentials and confirm by selecting **UPDATE YOUR DATA**.

Search service center		Filter by country	
<input type="text" value="Search service center"/>	<input type="button" value="Search"/>	<input type="text" value="All"/>	
Service Center 1 for Test	Avenza	Italy	<input type="button" value="Send log to this service center"/>
Service Center 2 Test in AvMap	Avenza	Italy	<input type="button" value="Send log to this service center"/>
Aviasich	Kiev	Ukraine	<input type="button" value="Send log to this service center"/>

Fig. 14

EngiBOX