ALFAPILOT
User Manual

Versión 2.3 |ENG|

2018-03-20

Content index

1. Introduction

Thank you for using Alfapilot device. This is a navigation device, which has a Android system by extending its functionality, and allowing install third party applications. If you have any questions or comments about using our device, you can visit our website www.alfapilot.com or contact by mail with the Support Department (support@alfapilot.com)

2. General Buttons

The physical buttons can acquire different functions depending on the application (*see sections 7.1 y 8.1*), for a general use their functions are:

2.1 Power Button

We will use it for the turn on/off the device, as well as toggle the mode Stand By.

*   To power on, press for 3 seconds this button.
*   To switch off press this button until it shows the dialog "Turn off" (4 seconds).
*   With a short while on press enters Stand By mode, and with another short press exits this mode.
*   By long press (around 10 seconds), we'll force the full shutdown.

2.2 Menu Button

• Displays a menu if it exists on the screen in which we find ourselves.

2.3 Back Button

• It allows to go back to a State or previous screen.
• It allows to hide the keyboard on some screens.

2.4 Lateral Buttons

• They serve to increase or decrease the volume of the system, it will display the volume bar.

3. Main Screen

When you start the device screen is displayed (also known as Launcher), at this screen will have the following:

Battery status and icon

GNSS Icon and satellite number

Date and Time

Enable/Disable Share GPS

Start SeRi FLY

Aplications

System Buttons
Home/Back/Bright/Menu

System Notify
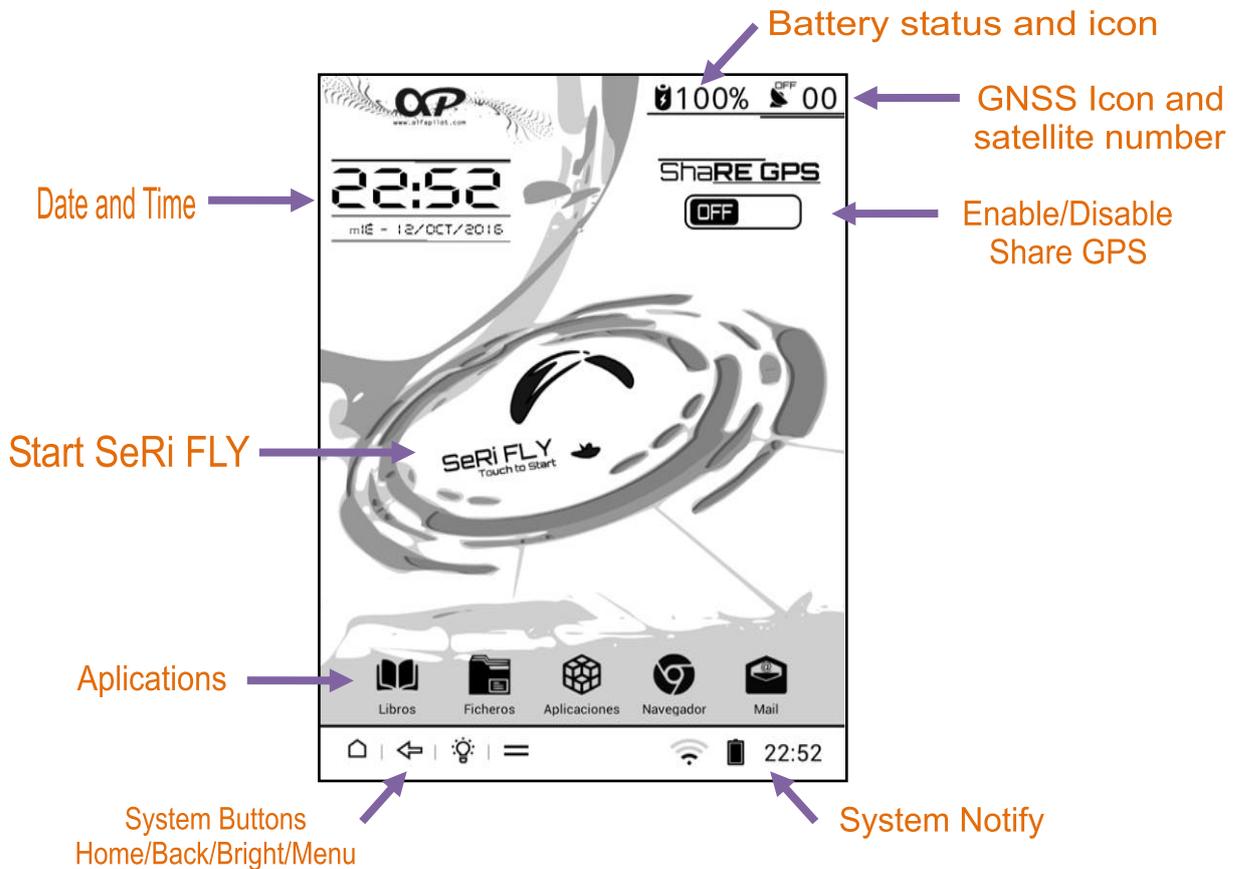
3.1 Enable/Disable share GPS

This option allows you to activate the GPS to make it available in third-applications*, the GPS status icon will change to search and indicate the number of satellites in use, also will activate the internall Vario. It has a few settings (Menu button) that allow us to:

- **Use barometric altitude - Compensated**, allows us to indicate that we want to use the (more accurate) barometric altitude instead of the GPS altitude, this facilitates applications that incorporate vario and glide ratio based on altitude calculations are also more precise.

- **Vario settings,** *see section 6.4.1.*

- **Update Launcher,** allows updating the system launcher.

- **Update system,** allows updating the Android system (more information on our website).

- **About us,** information about the developers.

* third-applications: GPS sharing allows us to provide GPS location to applications such as gaggle, xcsoar, xctrack, google earth, oruxmaps, etc. **IT IS NOT NECESSARY TO USE THIS FUNCTION WITH SeRi FLY.**

4. SeRi FLY APP

This is the application that we have developed for the flight in paragliding, it has different flight modes, multiple options, being these totally configurable by the user, to adapt the application to your needs, both in functions, assistants, and in the configuration of the data fields can be resized, moved, etc.

All this will be described in the following sections.

5. Main Menu

When you start the application, the Main Menu screen is displayed, in this screen you can choose the flight modes, access the flight book, enter the settings of the application and see the status of the GNSS and other sensors.
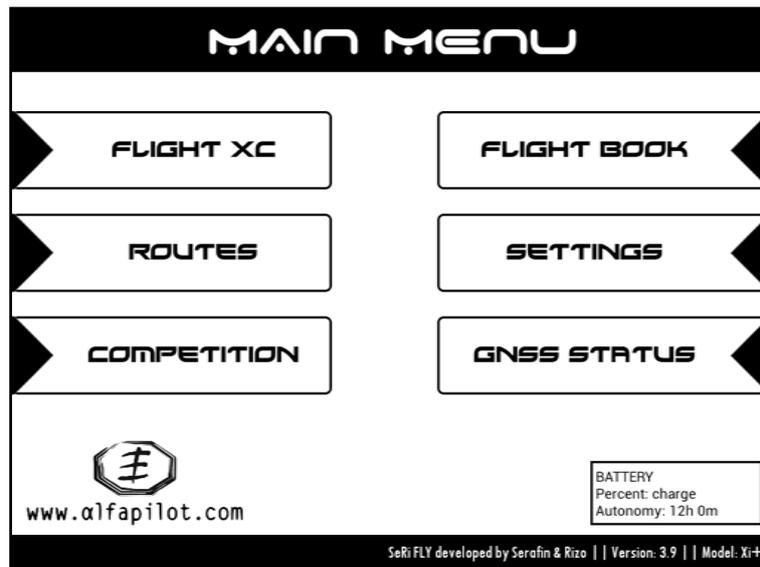
In the lower part it shows the information of the developers as well as the current version, also if we touch on this zone it shows a dialogue with the "List of Changes" of the different versions.

We also have information on the status and percentage of the battery, this information is the most reliable and may differ from the battery percentage indicated by the system, because it is based on the voltage and temperature of the battery.

To exit the application from the Main Menu screen, by pressing the **Menu Button**, it shows the "Exit" option.
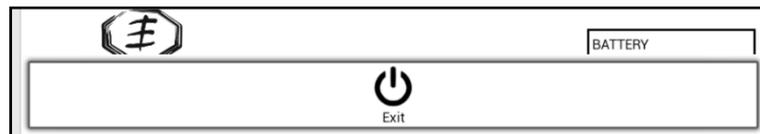
5.1 Flight Modes

Through these buttons we will initiate the different flight modalities, we have XC Flight, Routes and Competition. The characteristics of each modalities are described in **section 7**.

5.2 Flight Book

In the flight book we will find a list of the flights we have made, ordered by date, and indicating the type of flight we have made (flight mode), also shows us several options:
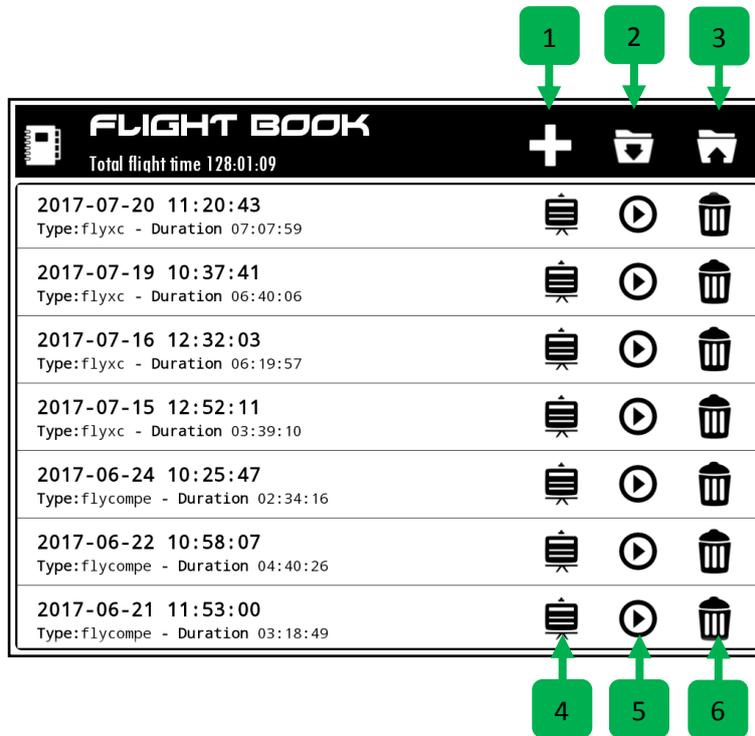
5.2.1 ADD/MERGE Track

With the Add Track option we can select an IGC file and add it to our flight book, choosing the modality in which it was made, as well as if we have a task or route stored for that flight.

Merge Tracks, in some cases the recording of a flight can be interrupted momentarily due to a bug, in these cases the recording will be stored in two separate track files, through this option we can merge them.

5.2.2 Import

It allows us to recover a flight book file previously exported (Backup), when clicking on this option it will show us a dialog to select the file.

5.2.3 Export

Clicking on this option will start the export of the flight book, it will be stored in the folder "SeRiFLY\FLYBOOK" with the extension ".ser". It is interesting to export our flight book periodically, as a Backup copy. Once exported we can also copy these files to our PC for greater security.

5.2.4 Show Info/Track

It will open a new screen in which we will be able to see the information of the flight, as well as its Track. It will also allow us to send our IGC flight file directly to a Leonardo server, XContest or send by... (Gmail, Drive...)
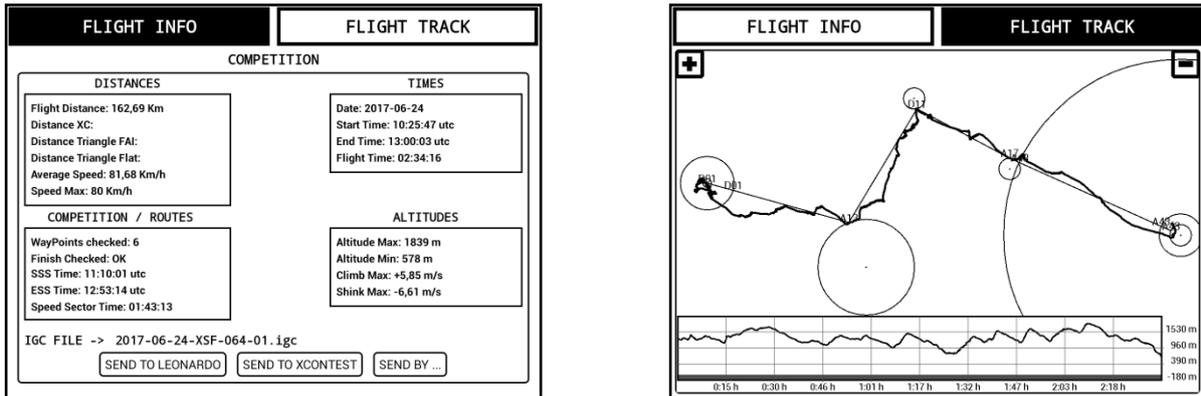
5.2.5 IGC Play

It allows us to directly reproduce the flight, in the same modality in which it was recorded. When the IGC is played we can press the physical "Menu" button and select IGC Play. This allows us to see 2 options:

1. Play Speed, we can accelerate from 1X up to 25X times the normal speed.

2. Foward // Rewind, It allows us to advance or go back the reproduction of the flight, the left being the beginning of the flight and the right the end of the flight.
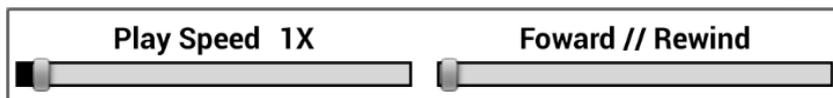
5.2.6 Delete

It will show us a dialog to confirm if we want to eliminate the flight from our flight book. When accepting, the data will be deleted from the flight book, but the IGC file will continue to remain in the "Tracks" folder.

5.3 GNSS STATUS

It will show us a screen to visualize the GNSS status, as well as satellites seen, in use, etc. The information of the Pressure and Humidity sensors will also be shown.
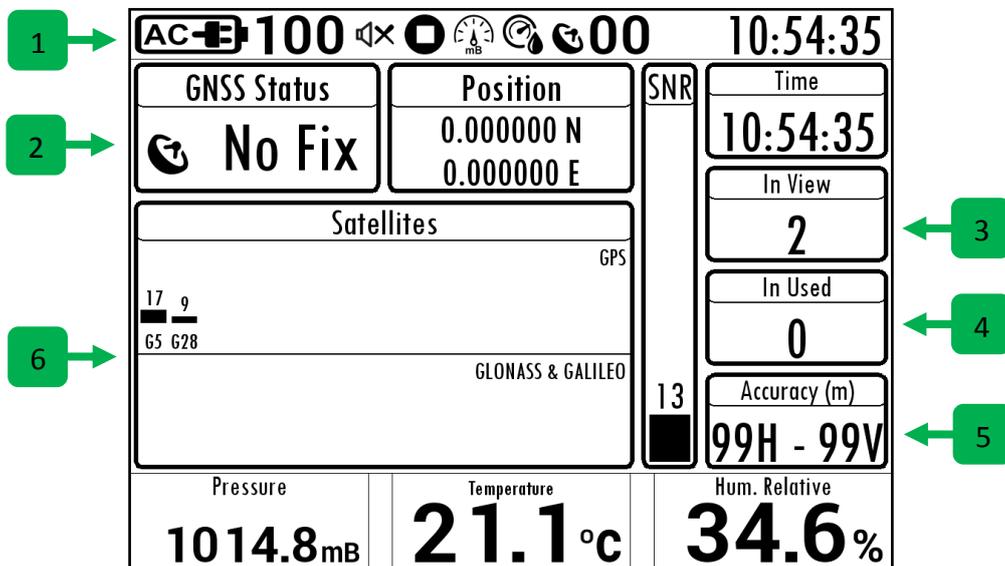
5.3.1 Status Bar

It shows information and icons related to the status of sensors, battery charge, numbers of satellites in use, etc.

5.3.2 GNSS Fix Status

The current state can be No Fix (without positioning), 2D Fix (Positioned without altitudes), 3D Fix (Positioned with altitudes).

5.3.3 In View

It is the total number of satellites that the GNSS module is scanning or using.

5.3.4 In Used

It is the number of satellites currently used to obtain the positioning.

5.3.5 Accuracy

It indicates the current accuracy of our position, the value H is the Horizontal precision and the value V is the Vertical precision, both expressed in meters.

5.3.6 Satellites

They are separated into two blocks, GPS satellite network (USA) and satellite network GLONASS (Russian) & GALILEO (European). It will show us information of each satellite, in the lower part we see its identifier, G for GPS, R for GLONASS, and E for GALILEO, in the upper part it indicates the SNR of each satellite (Signal strength).
Next we indicate the meaning of the SNR values:
- **Less than 22**: it is a low signal and this satellite will hardly be used for positioning.
- **22 a 29**: is an acceptable signal, and will be used for positioning.
- **30 a 35**: it is a good signal, and will be used for positioning.
- **36 o más**: it is an excellent signal, and will be used for positioning.

6. Global Settings

The Global Settings screen allows us to define values and options common to the entire application and flight modes. Its structure is as shown in the following image and is described below.
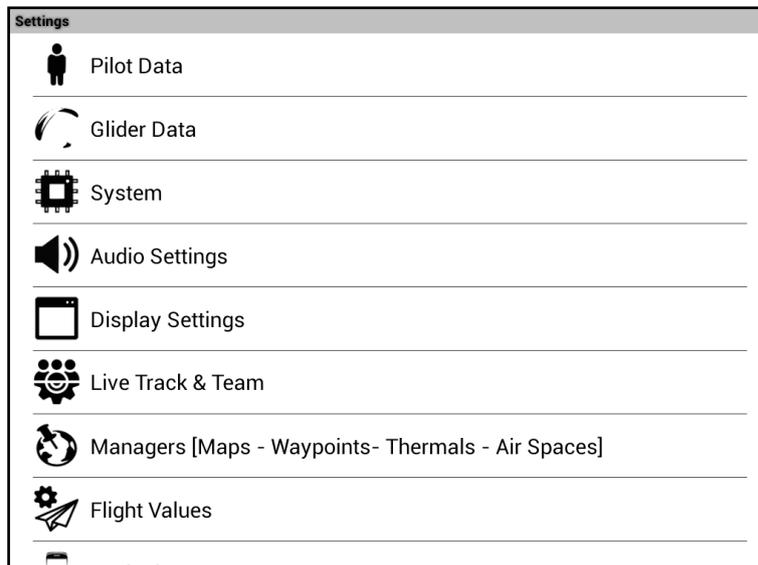
6.1 Pilot Data

We can fill in the fields to write the personal information of the pilot, this information consists of:
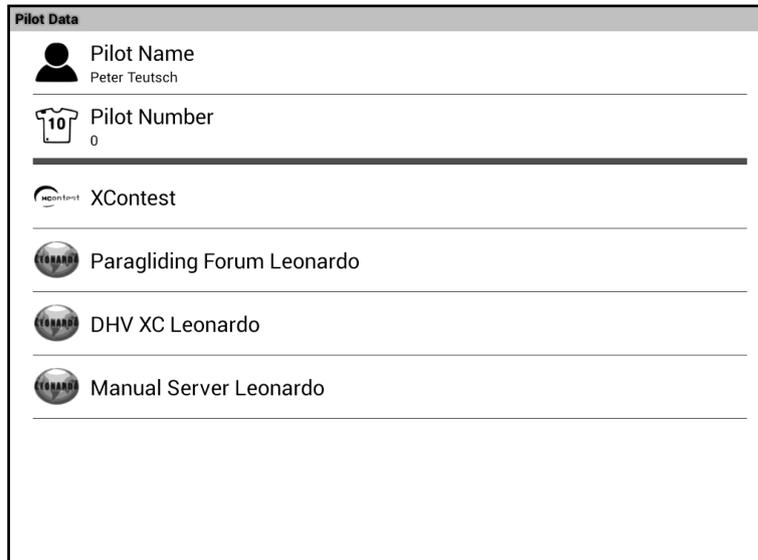
- **Pilot Name**: We use this information when we record a flight in IGC format.

- **Pilot Number**: We use this information when we record a flight in IGC format.

- **XC Servers**: we can configure our username and password for the following web servers **XContest, Paragliding forum Leonardo, DHV XC Leonardo**, or enter data from a **Leonardo server Manually**.

6.2 Glider Data

In the Wing Data option we can write the wing information that the pilot uses, this information is stored in the IGC flight file, and in some options when sending reports or flights to XC servers, it consists of:

- **Manufacturer:** List of Manufacturers.
- **Model:** this allow us to insert the model of glider.
- **FAI Class:** FAI-3, FAI-1, FAI-5, FAI-2, FAI-11, FAI-12.
- **Certification:** LTF 1, LTF 1/2, LTF 2, LTF 2/3, LTF3, EN A, ENB, EN C, EN D, CCC, Proto.
- **Category:** Sport, Open, Tándem.
- **Wing Speed (Km/h)***: Esta speed is indicated by the manufacturer at Hands Free.
- **Wing glide Ratio***: The glide ratio indicated by the manufacturer at Hands Free.
- **Maximum Wing Speed** *: It is the indicated by the manufacturer when we accelerate to the maximum.
- **Glide Ratio at Maximum Speed***: The glide ratio of our wing at maximum speed.

* Important to correctly define these values since they are used to perform calculations in the assistants. If you do not know them, you can check with the manufacturer, or indicate the approximate values.

6.3 System

6.3.1 Export configuration

Exports the current configuration of the entire application to a file "**.cfg**" (global configuration and configuration of screens), this file is located in the folder "**../SeRiFLY/Config/name.cfg**" and its name will be defined by the Export date.

6.3.2 Import Configuration

Displays a dialog to import the configuration from a "**.cfg**" file.

6.3.3 Use External SD (Class 10)

It allows to have the maps and elevation files on an SD card, it is essential that it is of class 10. To use the Micro SD card we must follow these steps:

- o   Format the card in NTFS or FAT32 on our computer (preferably NTFS).
- o   With the card in our alfapilot we activate this option.
- o   We leave SeRiFLY and re-enter so that the folders are created on our card.
- o   If we connect our alfapilot to a PC, we should see a new memory unit, in it we will have created the "**SeRiFLY**" folder that contains only the folders "**Maps**" and "**Elevations**".
- o   We can copy the maps and elevations files to their respective folders from our PC.
- o   We can also download the maps from our map manager (*See section 6.7.6*), these will be stored in our Micro SD card.

6.3.4 Update SeRi Fly APP

Update the application to the latest stable version.

6.3.5 TEST BETA VERSION SeRi Fly APP

Update the application to the latest BETA version. The beta versions include new features that are in the testing period, and may be more susceptible to contain an error or bug.

6.3.6 System Units

It allows to change the units shown in the widgets, between metric and imperial units.

6.3.7 Kalman Filter Settings

Start the adjustment screen of the Kalman filter to establish its values, it will help us find a value so that the vario reacts in the most appropriate way to our tastes. A low value will define a more reactive vario, a high value a vario less reactive but more stable. The most appropriate value is 5.0VH.
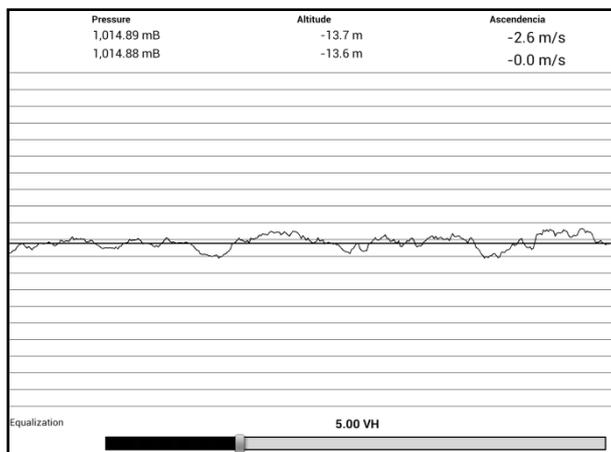
6.3.8 Send Logs

Sometimes an error can occur in SeRi Fly, normally the application automatically restarts to continue with the flight, while keeping an error report (Log). This option allows us to send these Logs to the support service, in order to identify and correct the causes of the failure or error. For a correct sending it is necessary to have an internet connection and have our Gmail account configured.

6.4 Audio Settings

In Audio settings we have the Audio configuration of the application.
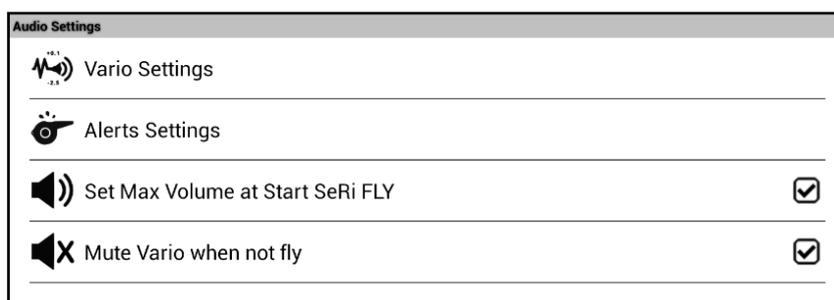
6.4.1 Vario Settings

Through this configuration screen we can adapt the sound of the vario to our tastes, as well as perform tests.
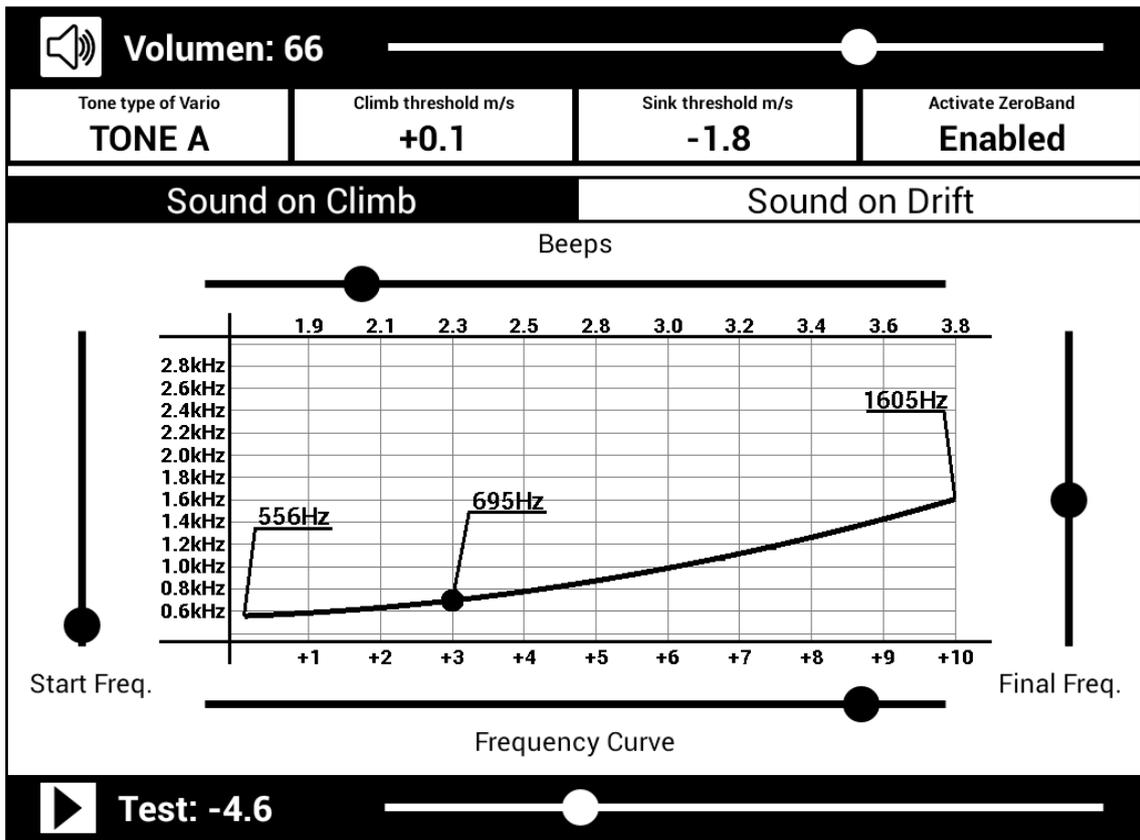
- **Volume of the Vario**

1. **Sound icon,** can be activated or deactivated.
2. **Volume,** current value of the Vario.
3. **Control Bar,** of the Vario volume.

- **General adjustments**
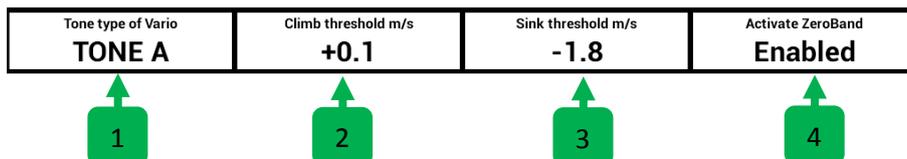
1. **Tone type of Vario**, we can select the type of tone we want for the Vario Sound. We have 3 options, TONE A, TONE B and TONE C. It is preferable to test the three options to listen to their differences.

2. **Climb threshold m/s**, the Vario will start to sound from this value when we climb. The value is expressed in m/s.
3. **Sink threshold m/s**, the Vario will start to sound from this value when we sink. The value is expressed in m/s.
4. **Activate ZeroBand**, activating this option, when the value of the vario is close to the Climb Threshold, special tones will be emitted. For example, if our Climb Threshold is 0.1 m/s, when the Vario is between -0.5 to 0.0 the Vario will use the special tones of ZeroBand.

▪ **Change to CLIMB or DRIFT configuration**

Sound on Climb	Sound on Drift

Pressing these buttons, we will change to the configuration in ascent or descent.
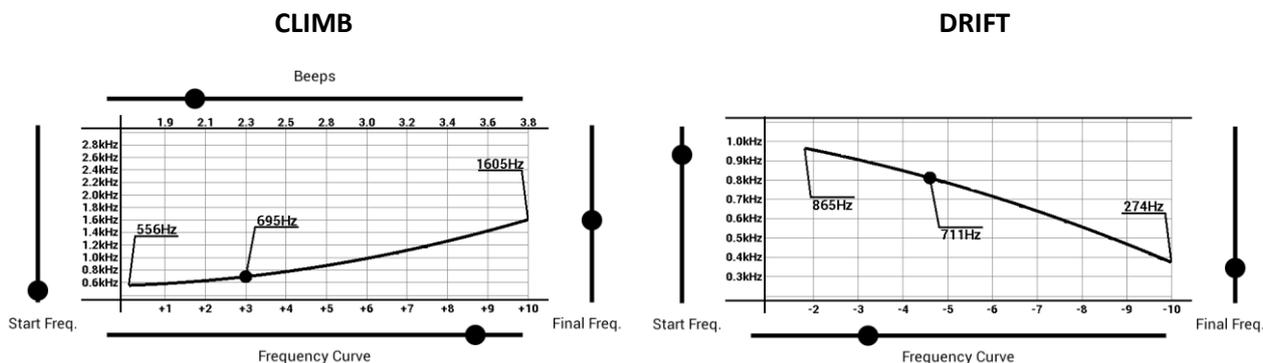
CLIMB

DRIFT
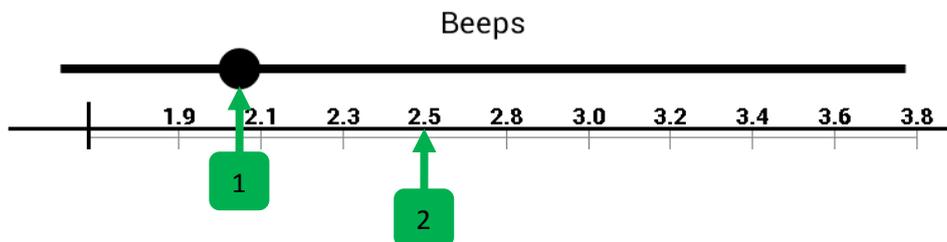
▪ **Beeps per Second**

* note: the beeps configuration is only available in Climb, since in drift the tone is continuous and there are no beeps.

1. **Beeps Bar**, by moving this bar we will increment (to the right) or decrease (to the left) the number of beeps per second according to the vertical speed.

2. **Beeps values**, we visualize the number of beeps that will be reproduced per second at the m/s that correspond. Following the example image, at 1.0m/s is 1.9 beeps per second, at 2m/s is 2.1 beeps per second, etc.

- **Frequency Bars**
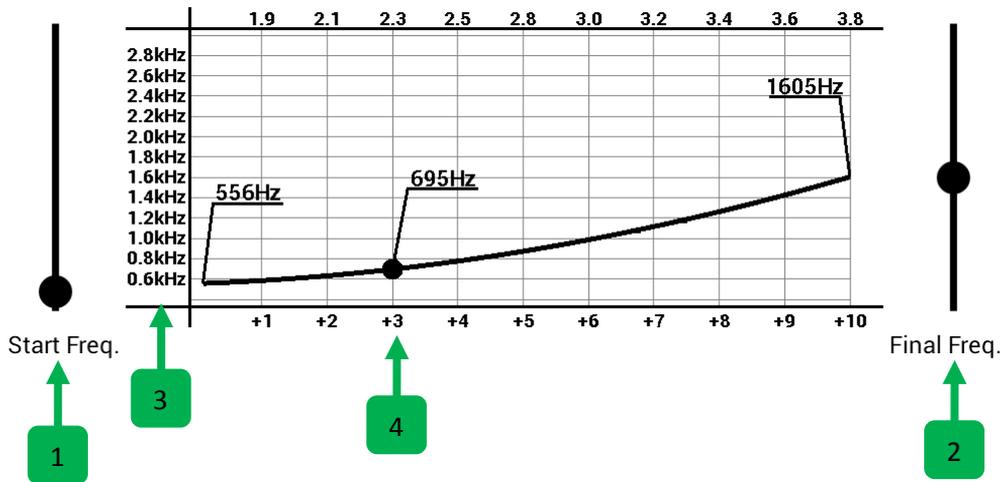
1. **Start Frequency Bar**, moving this bar allows us to set the frequency of sound at which the sound of the vario begins (the vario starts sounding at the value defined in "Climb Threshold" or "Drift Threshold ").

2. **End Frequency Bar,** moving this bar allows us to set the frequency of sound at which the sound of the various ends. The vario has a maximum range of +10m/s or -10m/s, once in flight if we reach this value, the Vario will continue to sound but at the frequency it will not increase or decrease, in climb the beeps continue to increase.

3. **Frequency scale,** is expressed in kHz.

4. **Climb or Sink scale**, is expressed in meters per second (m/s).

- **Frequency Curve**
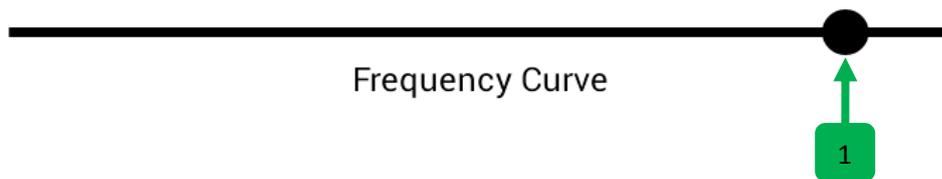
1. **Frequency Curve Bar,** through an exclusive algorithm, we have the option to further customize the sound of our vario to adapt it to our tastes. By moving the bar from right to left we modify the way in which the frequency of the sound of the vario increases or decreases.

- **Graph of Vario**

When modifying the bars or values of configuration, in the graph we will see the changes dynamically.
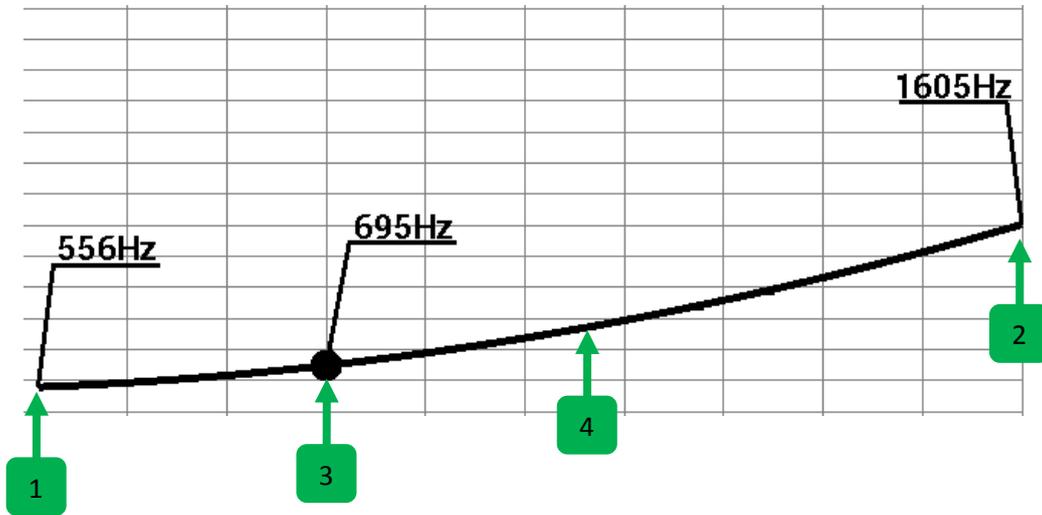
1. **Start Frequency,** indicates the frequency at which our Vario begins to sound. Horizontally corresponds to the Hz scale, and Vertically corresponds to the scale in m/s.

2. **End Frequency,** indicates the frequency at which our Vario ending to sound. Horizontally corresponds to the Hz scale, and Vertically corresponds to the scale in m/s.

3. **Actual value**, this point is defined by the value of the Test Bar, and serves as a reference.

4. **Frequency graph**, when modifying the values and bars, we will see in a visual way how the frequency is increase or decreased will be.

- **Vario Test**

1. **Test icon,** pressing it will start or stop sounding our vario. It helps us to simulate the vario as if we were flying, and it will help us to choose better the values and adjustments that we like. When it is sounding, the sound of the vario will be updated dynamically as we change the values and settings.

2. **Vario Value,** the current value in m/s at which our Vario is playing.

3. **Control Bar,** when moving this bar, we will simulate the vertical speed of our Vario, we will see the current value in both the "**Vario Value**", and in the graph of the various "**Actual Value**".

6.4.2 Alerts Settings

It allows us to establish different types of sound alerts for events. The format of the audio files must be "**.ogg**"

Alerts Settings
Basic Alerts
Altitude Alerts
Other Alerts
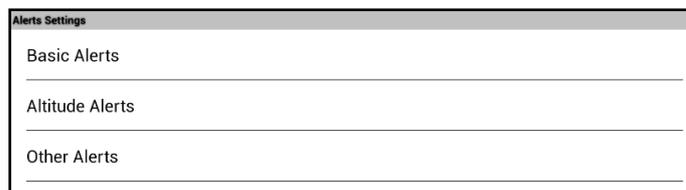
- o **Basic Alerts,** different sounds can be assigned for takeoff, waypoints, Start Point, End Speed Section and Landing.
- o **Altitude Alerts,** You can activate or deactivate the alert, set the limit altitude and its respective sound. In flight once reached this altitude the alert sounds, once we descend 100m below the altitude limit the alert will be activated again.
- o **Other Alerts,** You can activate or deactivate the "Glide to Final" alert, its sound and the glide ratio required for the alert (*see section 7.5*). In flight once the necessary glide ratio to reach the final is less than the configured value, the alert will sound.

6.4.3 Set Max Volume at Start SeRi FLY

Activating this option, will set the global volume of the system to the maximum every time we start SeRi Fly. If it can show a warning message of high volume (To avoid this message we advise to **update the firmware** to the latest version, check our web page for support the steps to update).

6.4.4 Mute Vario when not fly

Activating this option, the sound of the vario will be silenced whenever we are not in flight. This prevents that in case of having activated ZeroBand the vario is sounding continuously on takeoff or after landing.

6.5 Display Settings

Display Settings
Minimum size Widget
Number of screens in flight
Orientation Screen
Landscape
Enable Two Refresh of Map per Second
Automatic window change in competition
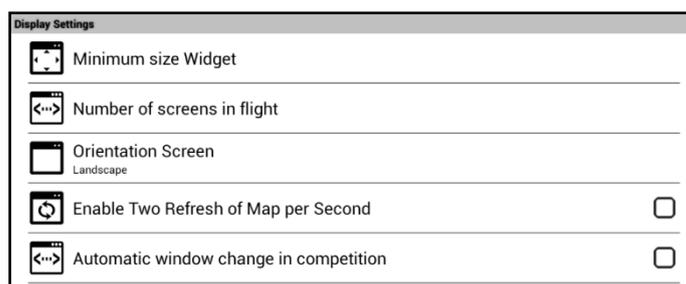
6.5.1 Minimum size Widget

It allows to establish the minimum size of the Widget*, it is possible to set the "Minimum height" in number of rows as well as the "Minimum width" in number of columns. We advise that these values are not inferior to "2 rows x 3 columns", since when adding a Widget for the first time this will be the preset size, and if the size is very small it will be difficult to resize it.

* Data fields on the flight screens.

6.5.2 Number of screens in flight

Allows you to set the number of screens up to a maximum of 5 for each flight mode. Each screen can have different widgets and sizes (*see section 7.6*).

6.5.3 Orientation Screen

We can choose the Orientation of the screen, between Horizontal, Horizontal Inverted, and Vertical, to adapt it to our cockpit in the most appropriate way.

6.5.4 Enable Two Refresh of Map per Second

This will make the map smoother more fluid (twice per second), but it also increases battery consumption.

6.5.5 Automatic window change in competition

Activating this option, in the Competition mode, the screen change will be automatic, following this order:

- o **Screen 1:** It will remain active until we reach the Start Point.
- o **Screen 2:** It will remain active until we reach the necessary glide to GOAL or until the next WayPoint is the ESS (End Speed Section).
- o **Screen 3:** It will remain active until reaching the GOAL.

6.6 Live Track & Team.
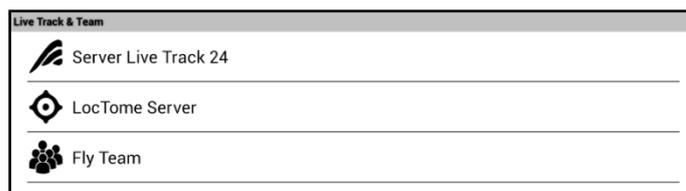
6.6.1 Server Live Track 24

- **Url for Send Data**: The default value is "http://t2.livetrack24.com" it should not be changed unless you want to send the information to another server compatible with LiveTrack24.
- **User**: Our user name for LiveTrack24 server.
- **Password:** Our password for LiveTrack24 server.
- **Time Interval (Sec.)**: It allows us to indicate how often the positions are sent..
- **Enable Live Track 24**: It allows us to activate or deactivate the Live Track function.

6.6.2 Server LocTome

- **Url for Send Data**: The default value is "Http://ts.loctome.com" it should not be changed unless you want to send the information to another server compatible with Loctome.
- **User**: Our user name for LiveTrack24 server.
- **Password:** Our password for LiveTrack24 server.
- **Time Interval (Sec.)**: It allows us to indicate how often the positions are sent..
- **Enable Loctome**: It allows us to activate or deactivate the Live Track function.

6.6.3 Fly Team

- **Team Config**: Allows you to add pilots by name and see the list of pilots online (with active team flight)

Fly Team	
Name: Robert	🗑
	Add Pilot by Name
Online Pilots	
gabyluena	
Perektx2	
piranita17	
	Update List
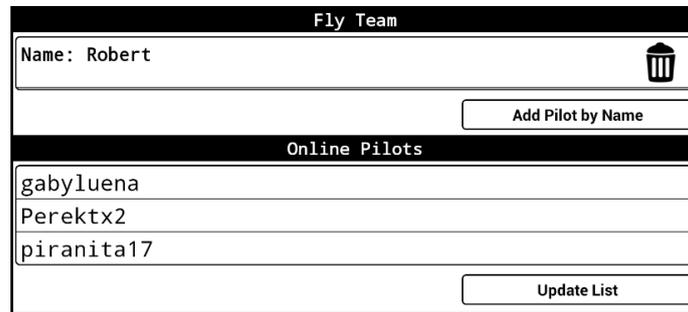
- **Enabled Fly Team**: Activate or deactivate flight in team.

6.7 Managers [Maps - Waypoints - Thermals - Air Spaces]

Managers [Maps - Waypoints- Thermals - Air Spaces]

- Manage WayPoints
- Manage Thermals
- Manage Air Spaces
- Map Manager
- Map Settings
- Download Maps
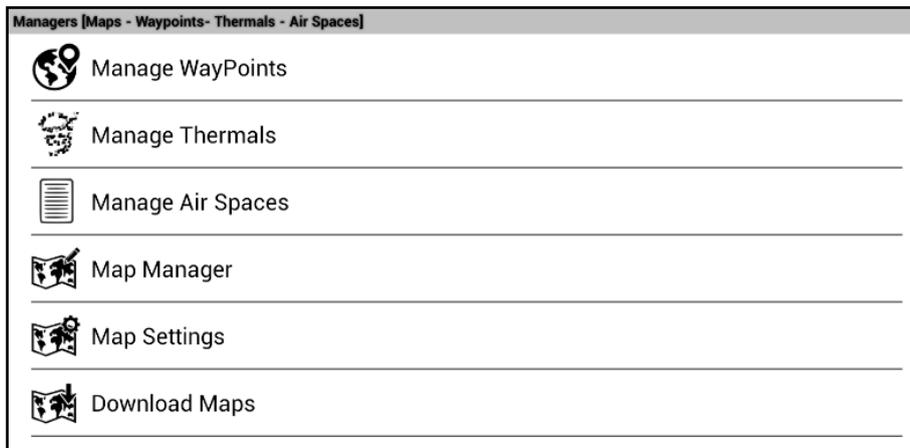
6.7.1 Send or Receive

In numerous configuration screens we will find the exclusive sending and receiving options of alfapilot. This will allow us in a simple way to send or receive items between alfapilot devices, without the need for cables and up to 100m range.

This function is easily identifiable by the following icons:

RECEIVE   SEND

1. When clicking on the send icon, it will show us a dialog in which we will see the name of our server as well as the shared element. We will provide the name of our server to the person interested in receiving our data.
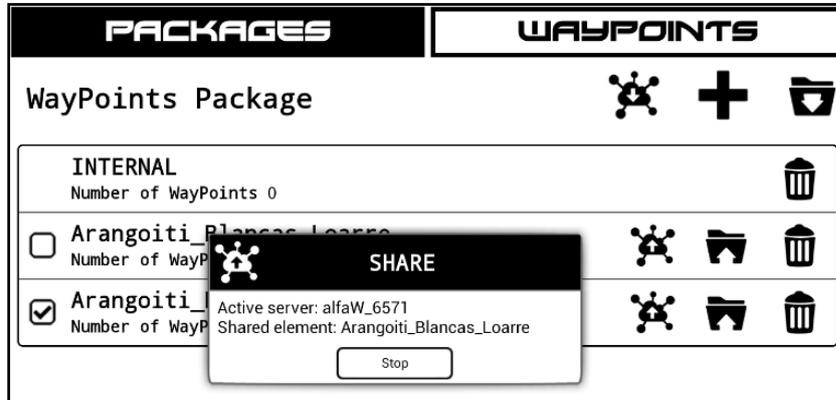
2. In the alfapilot of the person interested in receiving the information, press the receive button. If there are several people sending information we will select the name of the server that interests us, in any case we must click on the name to start the reception, or Update in case no name appears.
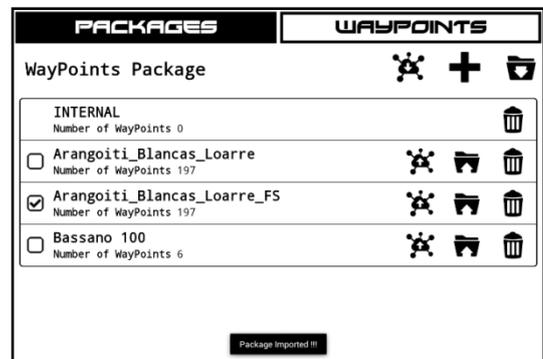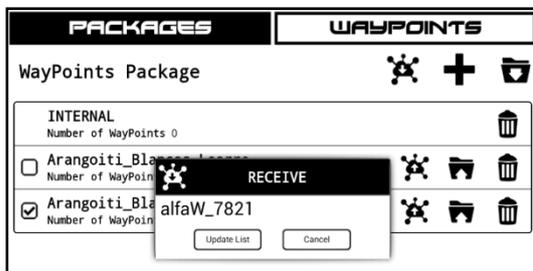
*Notes:

a) It is not necessary to have the activated wifi or internet to use this option, everything is managed automatically.

b) It is necessary to be in the same information screen (Waypoints, thermals, etc.) so that it works.

c) A package with the same name can not be imported twice.

6.7.2 Manage WayPoints
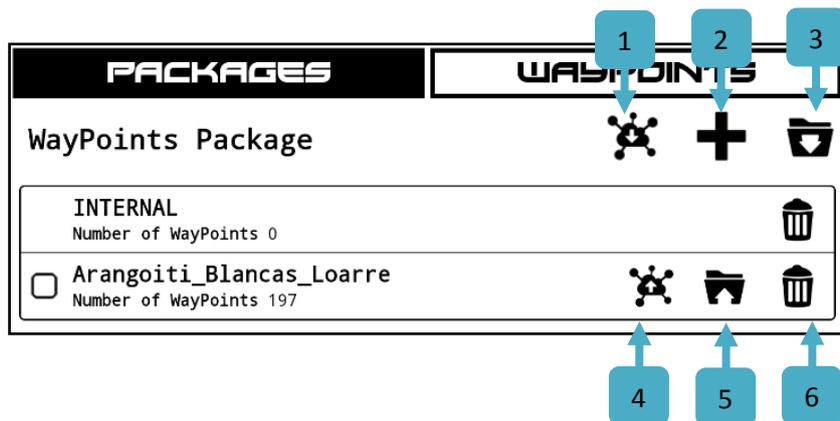
- **Packages:** Here we find the packages currently loaded in the system, we can also perform the following actions:
    1. Receive pack of WayPoints from another alfapilot device.
    2. Create a new package, we can define the name.
    3. Import an existing package, the accepted formats with **WPT** extension are **WGS84, UTM, and Ozi Explorer,** as well as with **GPX** extension with **GPS eXchange** format**.** The WayPoints package files must be previously loaded in the Waypoints folder.
    4. Send packet of WayPoints to another alfapilot device.
    5. Export the WayPoints package to a file in **GPS eXchange** format, **GPX** extension**.**
    6. Remove the Waypoint package from the database, the file will remained in the folder.

- **WayPoints**: Here we can individually manage the WayPoints of each package, being able to eliminate, modify or add new ones.
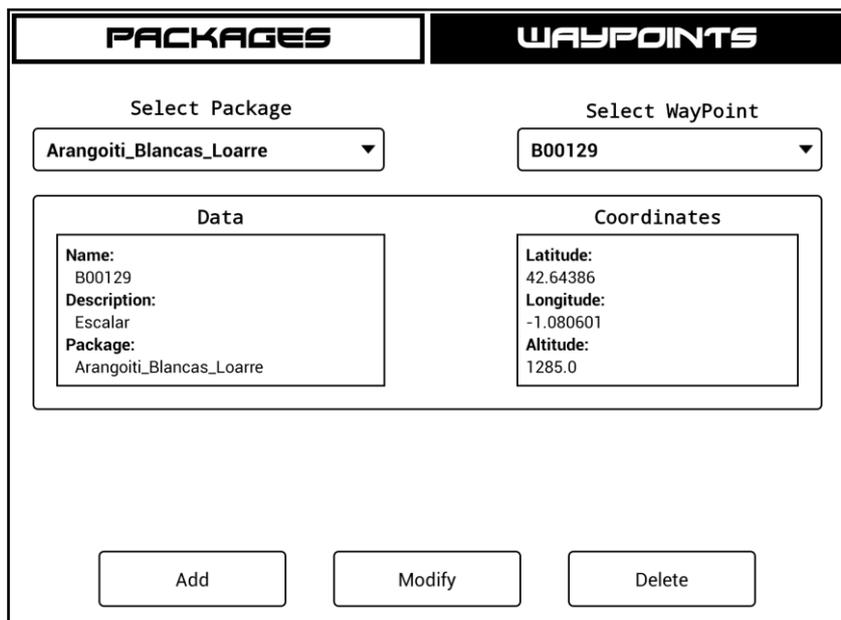
6.7.3 Manage Thermals

- **Packages:** It allows to add thermal packages (HotSpots) to show them in the map widget, it also keeps a history of Thermal detected in flight (INTERNAL Package), from this option we can manage these thermal, as well as add, modify or eliminate new HotSpot packages. It should be noted that for the thermals of the INTERNAL package, there is an optimization option to merge thermals that are less than 300m radius from each other.
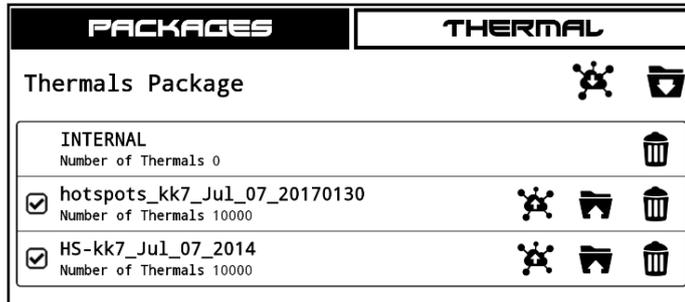
* Can be used the send/receive function (see section 6.7.1).

- **Thermal**: in this tab we can consult the data of each Thermal individually (HotSpot) and we have the option to eliminate it.
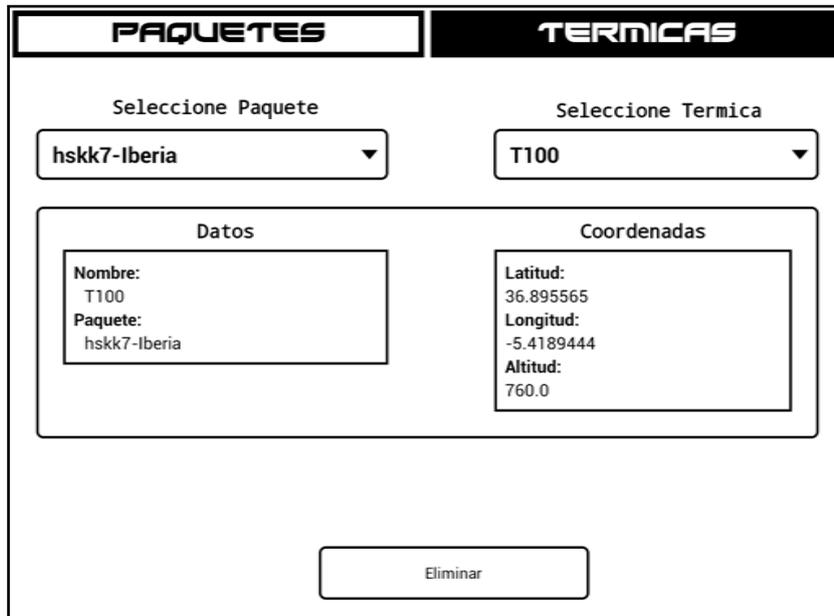
For the download of HotSpots packages we access the web http://thermal.kk7.ch/ and we must center the map in the area for which we want to download the HotSpots, in the panel of the Left select only "**Hotspots**".
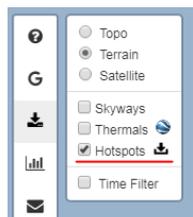
Then click on the download icon 📥 and it will show us the panel, it is important in "**File-Format**" to use **GPS Exchange Format (gpx)**, and in "**Limit**" not to exceed **10000**. Once the parameters are set, proceed to "**Download Hotspots**" to download the package, this will be a file in "**.gpx**" format that we can rename and we must copy to the "**Thermals**" folder of our alfapilot to be imported.
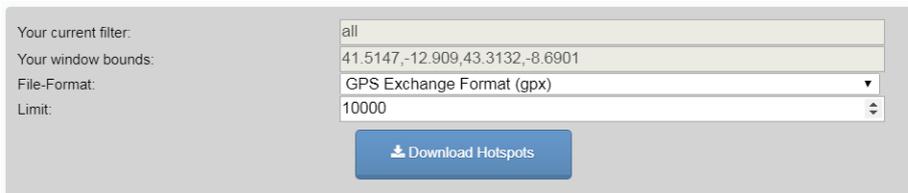
6.7.4 Manage Air Spaces

- **Air Spaces**: It allows you to import airspace packages from the "AirSpaces" folder in OpenAip format with extension ".aip" or OpenAir with extension ".txt". In our web section "Support" you have links to web pages for downloading airspaces.

- **Air Space**: Allows managing air spaces, individually or the entire package.
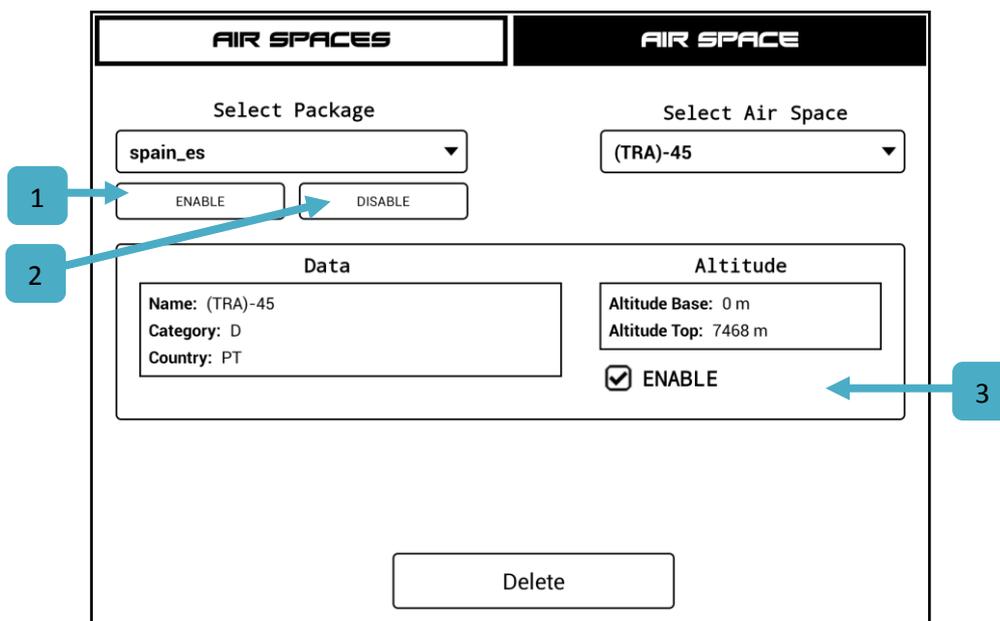
1. Enable: **activates all** the airspaces contained in the selected Package.
2. Disable: **disable all** the airspaces contained in the selected Package.
3. Enable: **individually activate or deactivate** the selected airspace.

6.7.5 Map Manager

It allows activating, deactivating the maps that are in the "Maps" folder, both those that are in the internal memory and in the MicroSD. The maps must have a ".map" extension and can be downloaded from the support section of our website http://www.alfapilot.com

MAP MANAGER

☐	Italy.map	🗑
☐	Spain_Portugal.map	🗑
☑	Spain_Portugal_ML.map	🗑
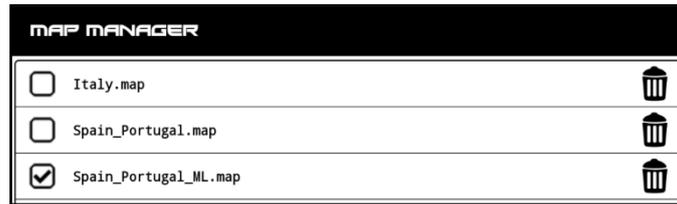
6.7.6 Map Settings

We can activate or deactivate the following map options, these will allow showing or hiding icons or text on the map referring to the following elements:

- Size Text, modify the size of the text shown on the map (Normal, small, large).
- Show Hamlet Names, shows or hides the names of small towns.
- Show Power Lines, shows or hides the electrical power lines.
- Show or hides the icons:
  - o Show Fuel Stations.
  - o Show Hospitals.
  - o Show Bus Stations.
  - o Show Bus Stops.
  - o Show Water Fountains.
  - o Show Fire Stations.
  - o Show Wind Generators.
  - o Show Nuclear Reactors.
  - o Show Alpine Huts.
  - o Show Camp Sites.
  - o Show Hostels.
  - o Show Hotels.

6.7.7 Download Maps

- **Download Maps**: will show us a list of available maps organized by Region. We can display the regions to select and download the map we want. Once the map to be downloaded is selected, it will be displayed in the Download List.

* It is essential to have WIFI internet connection.

DOWNLOAD MAPS	DOWNLOAD LIST
⌄ **Africa**	
⌄ **Asia**	
⌄ **Canada**	
⌃ **Europe**	
ALPS	1904.16 Mb
ALPS OST	747.67 Mb
ALPS WEST	705.27 Mb
AUSTRIA	714.19 Mb
AZORES	6.76 Mb
BALKAN	402.10 Mb
BELARUS	173.32 Mb
BELGIUM	299.58 Mb
BULGARIA	125.76 Mb
CANARYISLANDS	34.53 Mb

- **Download List**: will show us the list of map downloads, during your download we will see your progress in the bar, once the download will show the icon to process the map.

  We must bear in mind that the maps are downloaded temporarily in the internal memory in ZIP format, when we select the icon, the map will be decompressed (it may take more than 10 minutes depending on the size of the map), and it will be stored or in the folder "Maps" of the internal memory or if we have MicroSD and the option to use it (*see section 6.3.3*) will be stored in the "Maps" folder of the MicroSD memory.

* If we lose the Wi-Fi connection, these downloads will be paused and continue when we have a connection again.
*We must take into account the space we have in memory to download both the temporary file and once the map is decompressed.
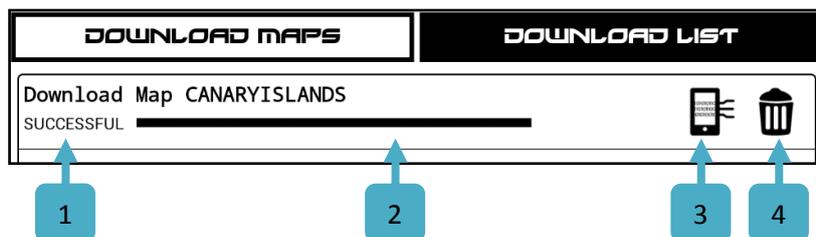
1. Download status.
2. Progress Bar.
3. Icon to process map (Decompress).
4. Icon to Delete (delete the download even if it is incomplete).

6.8 Flight Values
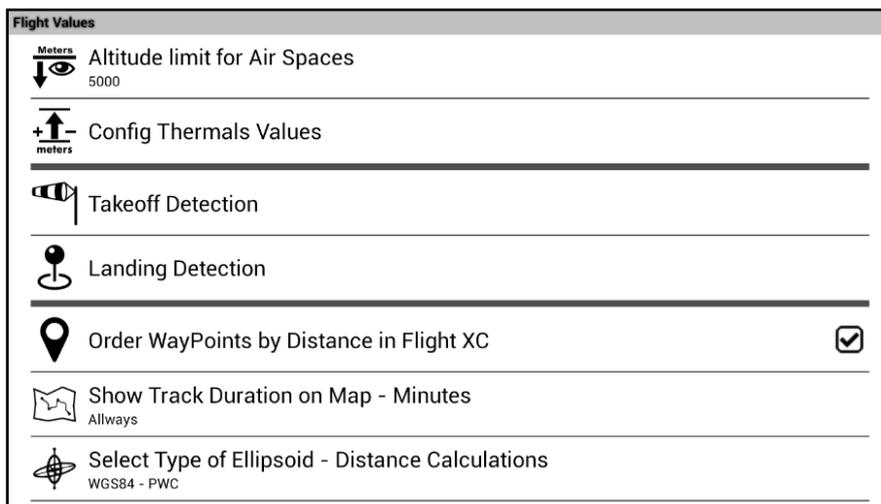
6.8.1 Altitude limit for Air Spaces

The airspaces have "Altitude Bottom" and "Altitude Top", through t**his option we can delimit the air** spaces that will be shown in the map. To do this, when indicating a**n altitude, all airspaces whose** "Altitude **Bottom**" is greater than the indicated altitude **value** will not be shown.

6.8.2 Config Thermals Values

- **Minimum Climb for add Thermal to History**: This parameter is used to limit the thermals that will be stored in the INTERNAL thermal package. Only thermals with an average value higher than the value entered in m/s will be stored.

- **End of Thermal at lost meters**: We indicate the meters that we must lose before SeRi FLY considers that the current thermal has been lost, by default 30 meters.

6.8.3 Takeoff Detection

It allows us to indicate to the system the minimum values that must be exceeded so that the takeoff is detected, both variations must be fulfilled. If only one is met, it is not considered take off.

- **Minimum Variation of Speed,** this value will indicate the minimum speed in km / h necessary to consider the takeoff.

- **Minimum Variation of Altitude,** this value will indicate the minimum variation of Altitude (barometric) in meters to consider the takeoff.

6.8.4 Landing Detection

It allows us to indicate to the system the maximum values that must not be exceeded during the indicated time for the landing to be detected, both variations must be fulfilled. If only one is met, it is not considered landed.

- **Maximum Variation of Speed,** this value indicates the maximum variation of speed in Km/h, if during the configured time our average speed is lower than this value it will be considered Landfall.

- **Maximum Variation of Altitude,** this value indicates the maximum variation of altitude (barometric) in meters, if during the configured time the variation of our average altitude is less than this value it will be considered Landed.

- **Maximum Time without Variations,** establishes the maximum time in seconds for the calculation of the variations of speed and altitude. A small time value can lead to false detections of landing.

6.8.5 Order WayPoints by Distance in Flight XC

Activating this option, in the "**Flight Manager**" in flight mode XC will order the WayPoints by the distance they are from our point. In case it is deactivated, they will be ordered alphanumerically.

6.8.6 Show Track Duration on Map - Minutes

It is the time in minutes that the painting of the trace of our flight will last on the map screen, by default "Always".

It is advisable to limit the time in hillside flights, or flights where we spend a lot of time flying over the same area.

6.8.7 Select Type of Ellipsoid - Distance Calculations

The type of ellipsoid defines the formula used to calculate distances, we can choose between:

- **WGS84 - PWC** uses the same formula as **CompCheck** the **PWC** application, based on the **WGS84** ellipsoid, is the most accurate.

- **FAI SPHERE** uses the same formula as **FS Comp** the application used in some **FAI** competitions, is less accurate, but sufficient for this type of competitions.

6.9 Asigning Keys

- **Invert Zoom Keys**, allows us to invert the zoom keys "**Lateral Keys**" (short press). For example activating or deactivating this option, the key on the left would be Zoom + or Zoom - and the one on the right vice versa.
- **Invert Change Screen Keys,** allows us to invert the keys of the page step " **Lateral Keys**" (long press). For example activating or deactivating this option, the left key would be Next or Previous screen, and the right key vice versa.

6.10 About US

Shows information about the application and its developers.

7. Flight Modes

SeRi Fly has three modes to choose from depending on the type of flight (XC, Routes and Competition) that we want to perform. These modalities have common elements, and elements specific to the selected modality, such as assistants, managers, etc..

7.1 Buttons in Flight Mode

During the flight, the buttons acquire various functions, being able to make short or long presses, these functions are described below

- **Menu Button**

  - **Short Press,** open the flight menu, offering different options that may vary depending on the flight mode or if we are playing a flight.
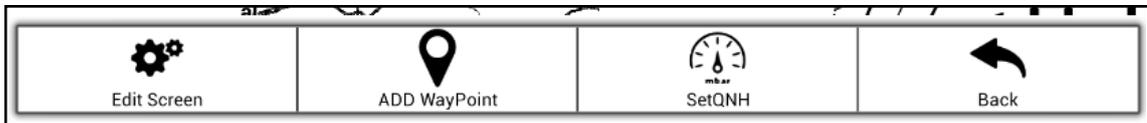
  - **Long Press,** modifies the volume of the Vario, alternating between **0% -> 33% -> 66% -> 100%**, the current volume level is displayed in the status bar, by means of an icon.
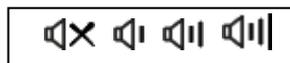
- **Back Button**

  - **Short Press**, Open the **Flight Manager** (*see section 8*).

- **Laterals Buttons***

  - **Short Press**, controls the Zoom on the map, allowing zoom in or out.

  - **Long Press**: Make the screen change to the next or the previous one, on a rotating basis, once we reach the last screen it will return to the first one, and it depends on the number of screens that we have configured (*see section 6.5.2*).

    * The function of these buttons can be reversed (see section 6.9).
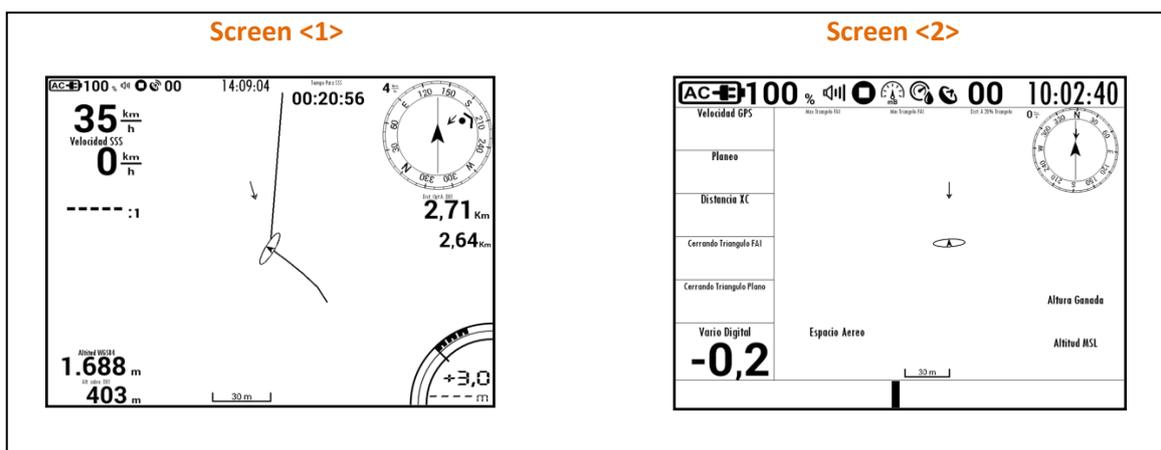
7.2 Flight Screen

When choosing a modality this will start, and we present your screen or flight screens, the number of screens will depend on this configuration (*see section 6.5.2*) if we have indicated several screens, we can alternate between them using the side buttons. On the flight screen we will have Widgets, as well as access to different options through the Menu Button.
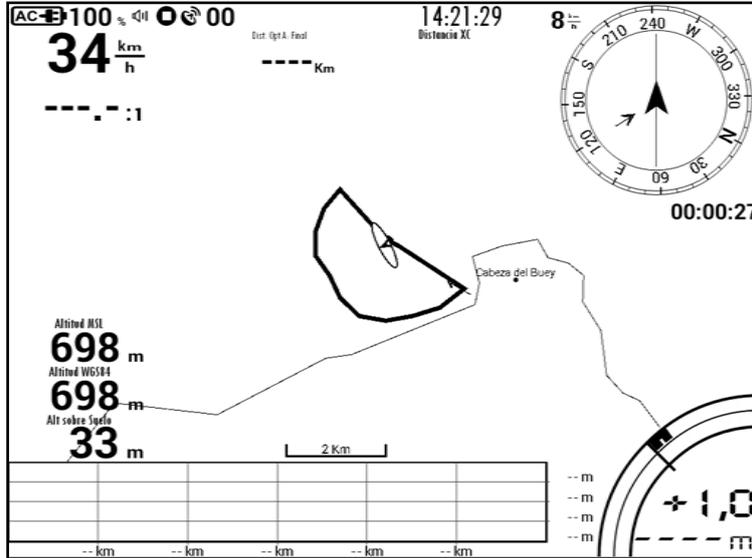
7.3 Widgets

They are data fields that show us the flight information, each one of them has individual configurations, to show or hide certain information (Border, Title, Units, etc.), you can also resize and change its location, all through the **Screen Edition** (*see section 7.6*).
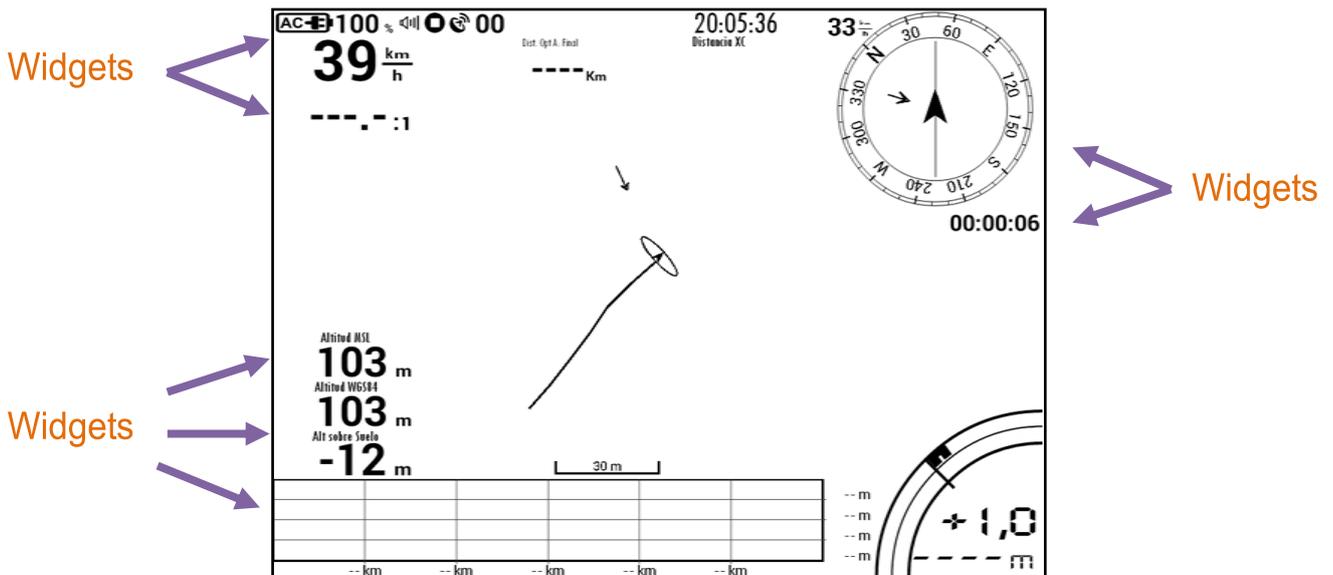
7.4 Menu Options - Common Elements

ADD WayPoint | SetQNH | Back
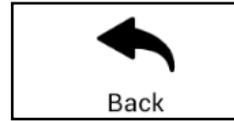
7.4.1 SetQNH

You can set the QNH manually for the calculation of the barometric altitude, also if the GNSS signal is available we can set it according to the GNSS Altitude, or manually if we know the Altitude of where we are. ALT requires the value in meters, QNH requires the value in mb.

Set QNH from...

1013.25

QNH | ALT | GPS

7.4.2 Add WayPoint

It allows us to add a new WayPoint, the coordinates will be taken from the central position of the map. This position can be given by the position of the GNSS module (satellites), or the point where we are displaced on the map (Crosshair). Also if we have the elevation files, the altitude for that point will be calculated.
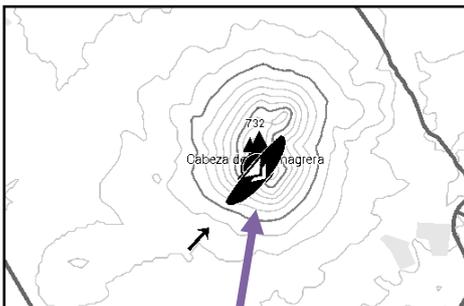
GNSS Position
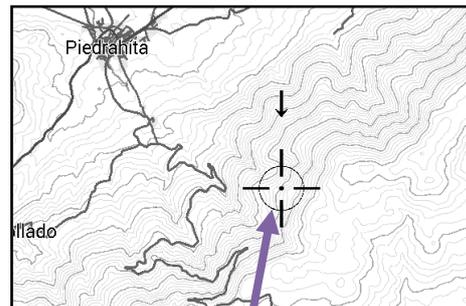
Crosshair Position

- WayPoint, the name.
- Description
- Altitude (in meters)
- Select Package, for save it (by default is "Internal")
- Coordinates: can be in DºM´S´´ - UTM - DD.DDDº format.
- Save or Cancel

Data

WayPoint | Name
Description | Desc
Altitude | 797.0 | Select Package | Arangoiti_Blancas_Loarre ▼

Coordinates

| N | 39 ° | 46 ' | 35.75958 " | | DºM'S" |
| O | 2 ° | 36 ' | 25.54716 " | | |

Save | Cancel

7.4.5 Back

Leave the Flight screen and return to the Main Menu.

7.5 Menu Options - Specific Elements

7.5.1 Route Management

It will be available in flight mode "**Routes**". Through the icons above, we can **receive**, **create** or **import** a route.

It also shows us a list of existing routes, which we can **activate** or **deactivate**, as well as **Send**, **Edit**, **Export**, or **Delete**.

* For more information about the send and receive options (see section 6.7.1).
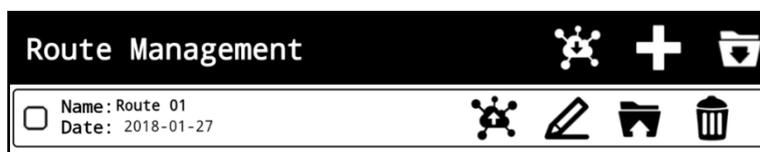
When creating or editing a Route, a new screen will open where we will have the options to configure this Route with the following elements:

* It is necessary to have a waypoint package already defined and activated (see section 6.7.2).
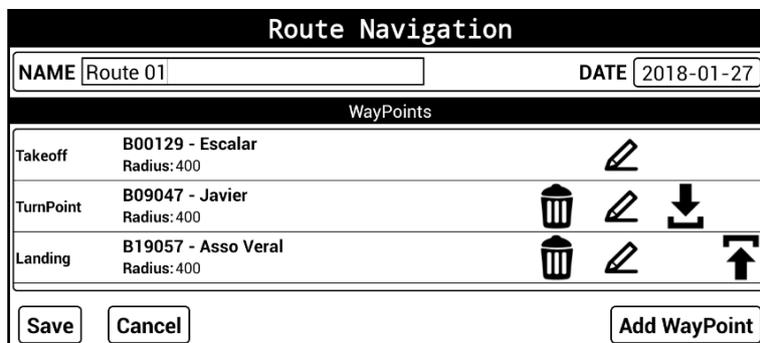
- **Name**: can indicate a name for the route.
- **Date**: We can indicate the date for the route.
- **WayPoints List**: Establishes the WayPoint and the order for the Route, and there must be at least one **takeoff** and one **landing.**
- **Add WayPoint**: It opens a dialog to add WayPoint (*see section 7.5.3*).
- **Route information**: After entering the values of the route, we will show the optimised and unoptimized distance of the route. A graphic with WayPoints, optimal points, and more, that allows us to move by click and drag in the central zone, as well as zoom in or zoom out by clicking on the icons "**+**" y "**-**".
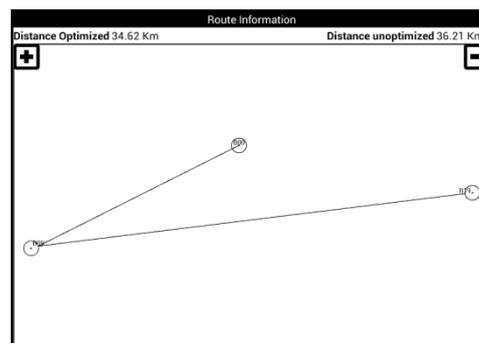
7.5.2 Task Management

It will be available in "**Competition**" flight mode. Through the icons above, we can **receive**, **create** or **import** a task.

It also shows us a list of existing tasks, which can be **activated** or **deactivated**, as well as **Send**, **Edit**, **Export**, or **Delete**.

* For more information about the send and receive options (see section 6.7.1).

Task Management	✖ ➕ 🗑
☐ Name : LA04 Date: 2017-07-29	✖ ✎ 📁 🗑

When creating or editing a task, a new screen will open where we will have the options to configure this Manga with the following elements:

* It is necessary to have a waypoint package already defined and activated (see section 6.7.2).

RACE TO GOAL

NAME	LA01		DATE	2017-07-26

Type of Start Point	Opening of Start Point
EXIT ▼	14:30

Type GOAL	Flight time limit
CYLINDER ▼	19:00

WayPoints

Takeoff	D03124 - D03 LAROUCO-N-TAKEOFF Radius: 400	✎
SSS Exit	T14127 - T14127 PICOTO Radius: 4000	🗑 ✎ ⬇
TurnPoint	T21087 - T21087 CUALEDRO Radius: 8000	🗑 ✎ ⬇ ⬆
ESS	G15058 - G15-VILA-FLOR-W Radius: 2000	🗑 ✎ ⬇ ⬆
GOAL Cylinder	G15058 - G15-VILA-FLOR-W Radius: 400	🗑 ✎ ⬆

Save	Cancel		Add WayPoint

- **Name**: Name for the Task.
- **Date**: Date for the Task.
- **Type of Start Point**: It can be Enter or Exit.
- **Type Goal**: It may be the type Cylinder or Line. For line it is considered its total length as twice the radius assigned. For example for a radius of 100 meters, the line will have a length of 200 meters.
- **Open of Start Point**: Set the opening time of Start Point.
- **Flight time limit**: Establishes the time limit for flight.
- **WayPoints**: Establishes the Waypoints and here order for the Competition Task, and there must be at least the following elements: **Takeoff** -> **Start Speed Section** -> **End Speed Section** -> **Goal**, between these elements can be inserted many TurnPoints as necessary.
- **Add WayPoint**: It opens a dialog to add WayPoint * (*see section 7.5.3*).

- **Task Information**: After entering the values of the task, we will show the optimised and unoptimized distance of the task. A graphic with WayPoints, optimal points, and more, that allows us to move by click and drag in the central zone, as well as zoom in or zoom out by clicking on the icons "**+**" y "**-**".
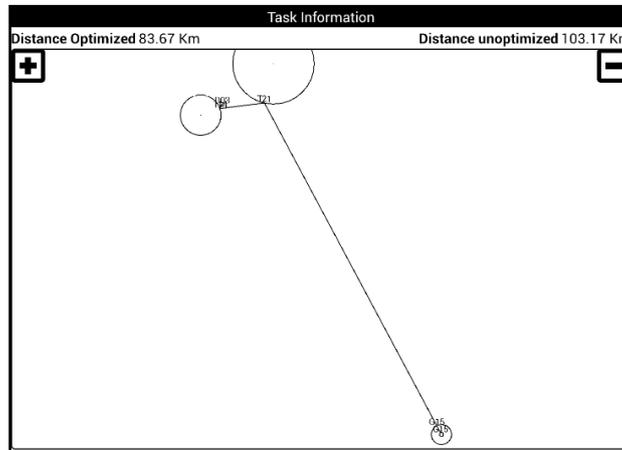
7.5.3 Add - Edit WayPoint

This is a common element for both **Managing Routes and Tasks**. It allows us to add a new WayPoint to the Route or Task, it is necessary to have an active WayPoint package to perform this action (*see section 6.7.2*). It has the following fields:

- **Quick search**: It allows us to perform a quick search of the Waypoint, introducing their first characters. As we introduce the characters will be updated the list of Waypoints, limited to the Waypoint that begin with the text entered.

  For example if we introduce "**a**" the list will contain all Waypoint that begin with "**a**", if we introduce "**a0**" the list will contain all Waypoint that begin with "**a0**"... If no exist waypoints that begins with the text entered, it will show "**vacio**".

- **Select Waypoint**: Displays the list of available Waypoint, they can be limited by the text entered in Quick Search. If no entered any character on Quick search, the list contains all waypoints available.

- **Insert Radius**: Can introducing the radius of waypoint.

- **Select Type**: It's the type of WayPoint we want to do, in the case of a competition with "TurnPoint Out", select "TurnPoint" and this will be automatically detected as "TurnPoint Out".

7.6 Menu Options - Edit Screen

Edit Screen

Being in a flight screen, through "Edit Screen" we access its edition. The system shows us a new screen, in which we have a Grid that will facilitate the displacement and resize of Widgets.

Move/Resize: By clicking on the center of a Widget we can drag it and move it on the screen, also by clicking on its corners we can resize it.

Configuration of Widget: To access the configuration of a widget, we must **double-tap on the center** of the widget for which we want to show its configuration.

Add/Remove: To add or remove widgets, we must press the "**Menu Button**" and select this option, it will show us a list with all the widgets, as well as those that are activated or not.

To exit the Edit mode, click on the "**Back button**".

If we have several flight screens, these are configured individually. For this we must change to the screen that we want to configure (*see section 7.1*) and then "**Edit Screen**".
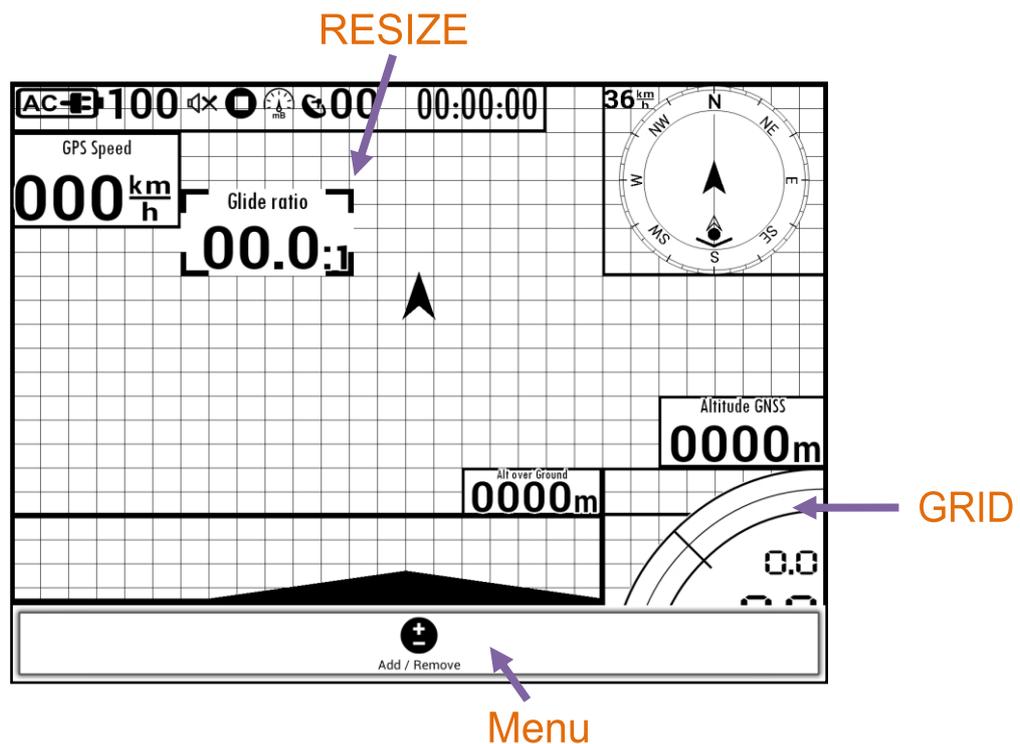
7.6.1 Add/Remove Widgets

It will show a list of widgets available for flight mode where we are. We can add new widgets or remove existing. When adding a new widget appears on a predefined location, if this widget has been defined previously it will appear in their previous location. When adding a new widget that was never defined, it will be established with the minimum size defined in the settings. (*see section 6.5.1*).

System	
Status Bar	☑
Time	☐
Flight	
GPS Speed	☑
Glide ratio	☑
Avg Glide Ratio	☐
Digital Vario	☐
Analog Vario	☐
Analog and Digital Vario	☑
Barometric Altitude QNH	☐

7.6.2 Basic Configuration of Widgets

By **double-tap** on the **center** of the Widget it shows us a list of its configurations. There are elements common to all the Widgets, such as:

Show Border	☐
Show Title	☑
Display Units	☑
Background Transparent	☐

- **Show Border:** Activate or deactivate the border for this widget.
- **Show Title:** Activate or deactivate the Title at the top of this widget.
- **Display Units:** It will show or not the units of that widget to the right of its value.
- **Background Transparent:** It will make the background of the transparent or opaque widget, for example when a widget is over the map.

7.6.3 Configuration and Specifics of Widgets

Some Widgets have a more extensive configuration, which we describe below:

- **Status Bar**

100 % ◯ 📶 🧭 🌀 **00**   **16:03:06**

  o **Activate GPS status**, shows the GPS status icon. This may vary between:

  Disconnected   **Without Signal**   **With Signal**

  o **Activate Pressure Sensor Status**, shows the status icon of the Pressure Sensor. This may vary between:

  Disconnected   **Connected**

  o **Activate Humidity Sensor Status**, displays the Humidity status icon. This may vary between:

  Disconnected   **Connected**

  o **High Temperature Alert**, in case the height of our alfapilot exceeds the limit of 48ºC, instead of the battery icon we will see the Alert icon:

  o It will also show icons in which we can see the status of the battery, the volume of the vario, whether or not it is recording the flight and the current time.

- **Navigation Compass**
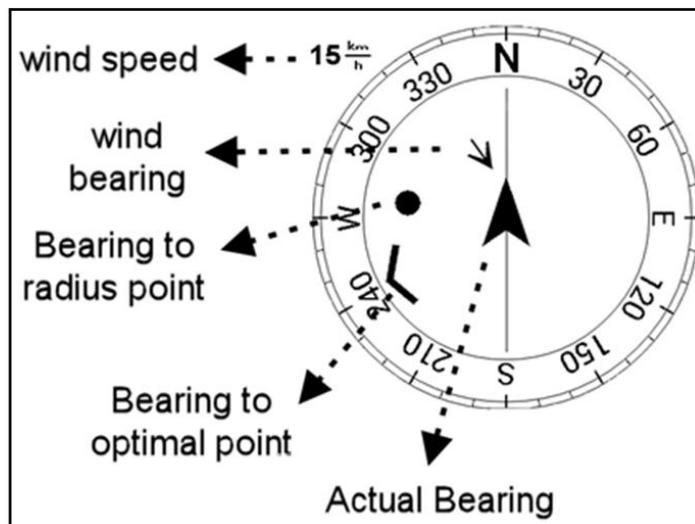
o **Show wind information**, it shows the wind direction by an arrow, and speed in Km/h.

o **Show real bearing,** available in the Xi+ models, will show an indicator of our real bearing (Digital compass).

o **Orientation**, it allows us to choose the orientation of the Compass.
   ▪ North Up: The compass sphere does not rotate and the North will always be located at the top, the Arrow rotate by bearing.
   ▪ Bearing Up: The compass sphere rotate for show up our bearing, the elements and Arrow not rotate.

o **Use simple compas,** substitutes the numerical degrees of the sphere for cardinal points.

o **Show direction to center of Next Waypoint**: (Option available on routes and competition) show us the way to the Waypoint center by a black circle (**bearing to the nearest point**). This parameter is interesting for Waypoints with a large radius, as a Start point, since in these cases it is likely that we desire to make travelling the shortest distance to Waypoint.
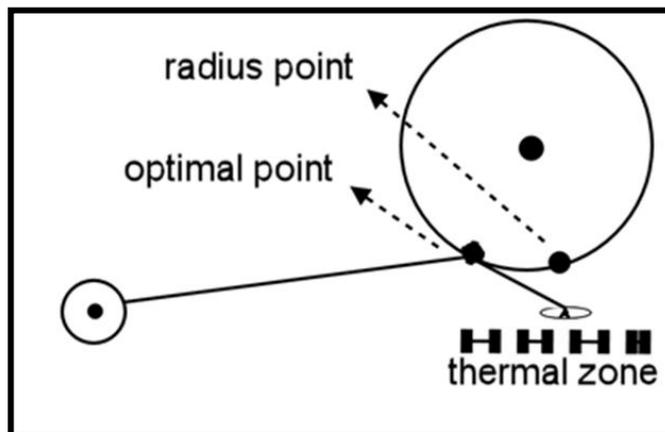
• **Navigation Map...** (Options common to all maps):

o **Show Border**, draw the perimeter line of the widget.

o **Show Map (roads, towns …)** it shows roads, towns, as well as the different icons of map elements.

o **Show elevation contours,** it will show the level curves (topographic map).

o **Mostrar Pilotos del equipo,** when activating this option we will be able to see the other members of the team. It is necessary to have previously configured the parameters of the team (*see section 6.6.3*) and have a WIFI internet connection.

o **Orientation**, it allows us to choose the orientation of the map.
   ▪ **North Up**: The map will not rotate and the North will always be located at the top.
   ▪ **Target UP**: The map will rotate to display at the top of the next WayPoint.
   ▪ **Bearing UP**: The map will rotate to present our bearing on top, we do not recommend using the latter mode.

o **Show Air Spaces,** show airspaces on the map, must have previously configured airspaces (*see section 6.7.4*).

o **Show Wind information,** shows an arrow on the map showing the wind direction.

o **Show Thermals on Map (HotSpots)**, shows on the map the position of the HotSpots through its Icon ⊖. These HotSpots must be activated previously in Settings, (*see section 6.7.3*).

o **Show Thermal detected in flight**, shows on the map the latest thermal detected by a Circle and its maximum value of climb.

o **Show Climb Points,** it is an exclusive system developed by alfapilot, when detecting a thermal this will show us a series of circles (bubbles) that will be bigger or smaller depending on the intensity of the ascendant. They will also be derived according to the direction and intensity of the wind. With this we can see in a visual and easy way the areas of greater or lesser ascendant in the current thermal.
It will also show the estimated center of the thermal through a black circle and the average value of this thermal.
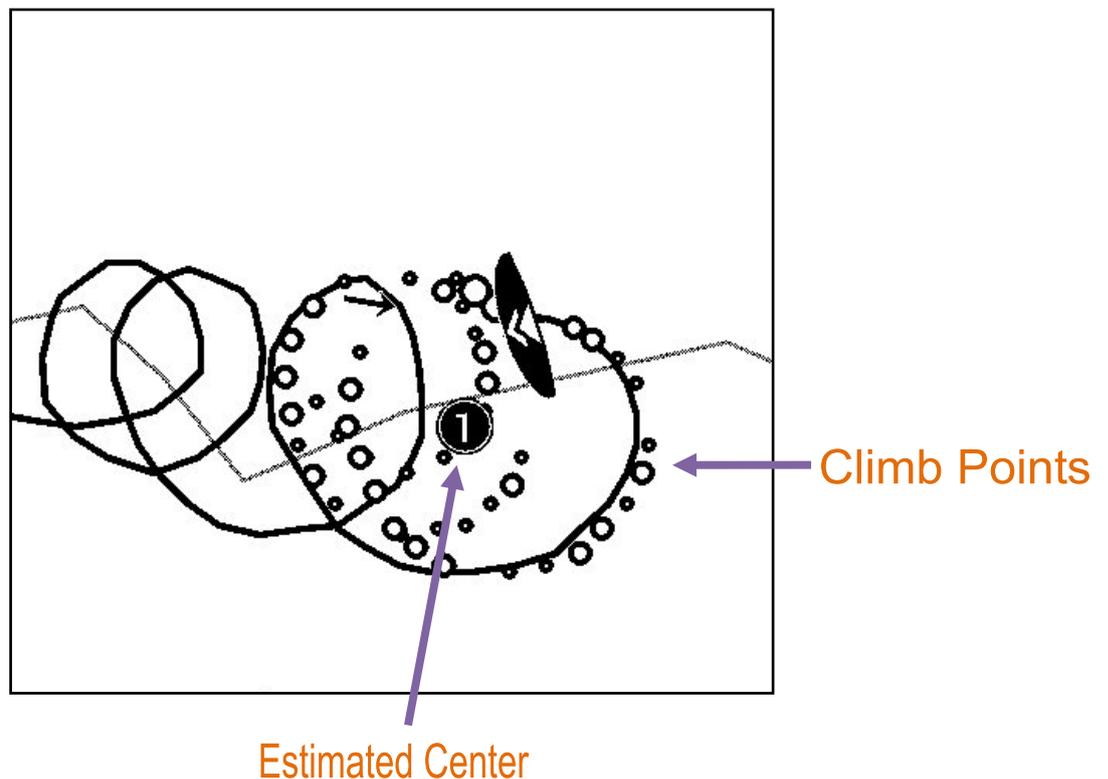
o **Show WayPoints,** shows the location of the WayPoints and their name on the map.

o **Show Elevations Radar,** shows a polygon that indicates the maximum distance we can fly, based on our current altitude, the altitude of the ground in all possible directions, the glide of our wing and the current wind. It is necessary to have the files of elevations loaded, (*see section 10*).
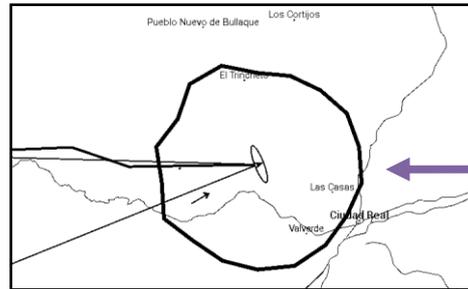
Elevation Radar

o **Auto-Zoom when Thermal is detected,** performs an automatic zoom when thermal is detected.

o **Zoom level for Thermal,** allows us to select the Zoom level when the Auto-Zoom occurs when detecting a thermal.

o **Show Thermals detected in flight**, show on the map the last positions of thermals by a circle and its average ascent.

Detected Thermals
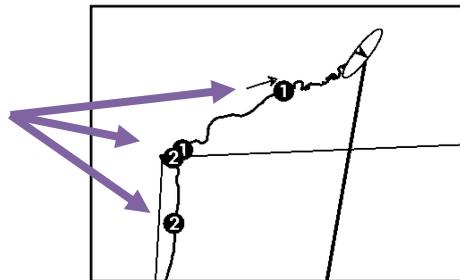
- **Navigational Map XC** (specific options):

o **Show Flight XC Path**, show us our flight XC lines, based on 3 TurnPoints optimized.
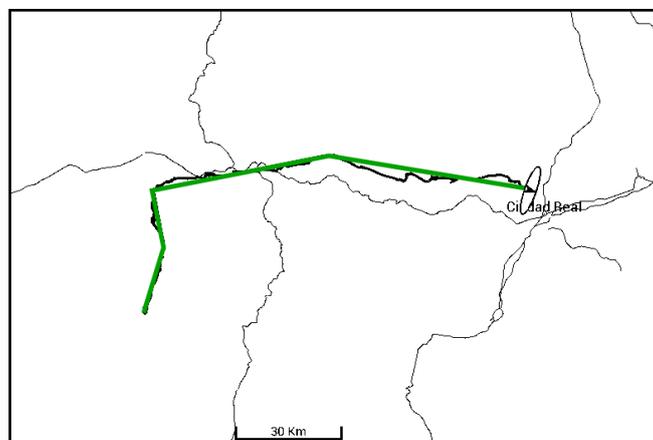
- o **Show Assistant Triangles FAI/Flat**, It shows us assistant that helps us make the Triangles FAI or FLAT, this information we have:

  - ▪ The **FAI polygons** that define the area for a triangle FAI, This polygon indicate any valid point to form a FAI triangle and indicate the lesser and greater distances as possible.
  - ▪ **Lines Triangle Flat**, They will be visible at the time that can form a flat triangle and its closing point.
  - ▪ **Closing circumference**, it is set to 20% of the distance calculated triangle.

FLAT Triangle

FAI polygon

Close 20%

80.0 Km

126.0 Km

15 Km
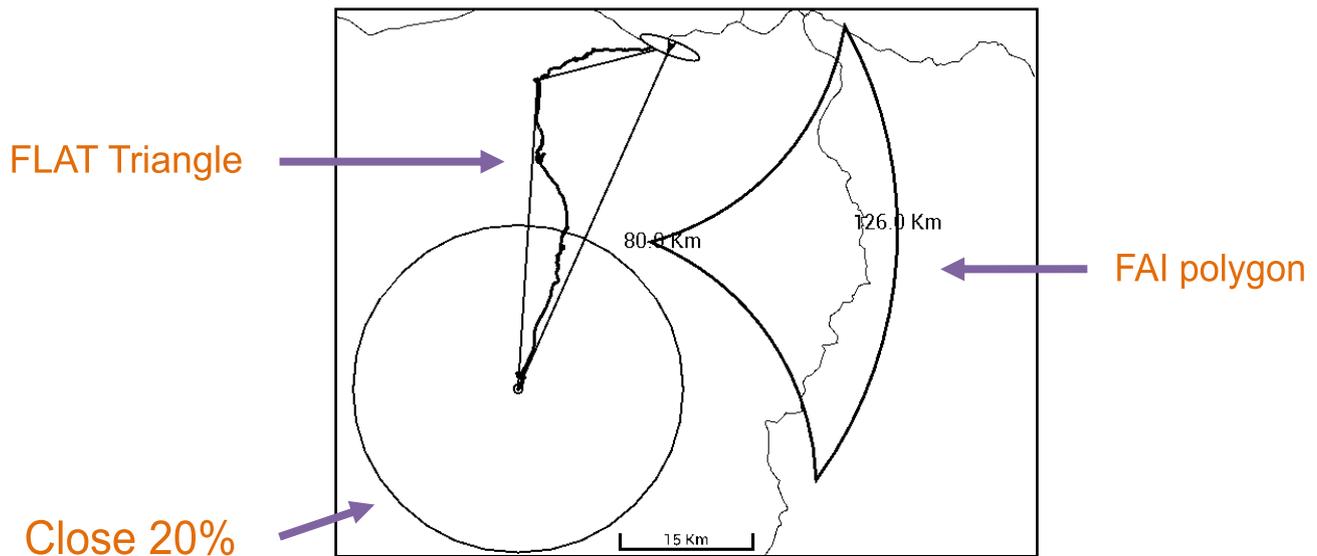
- • **Navigation Map in Route/Competition** (specific options):

  - o **Auto Zoom when approach to WayPoint**, activating this option will perform an automatic zoom when we approach a WayPoint, this zoom will be incremental, the closer to the radio the greater the zoom. Once the WayPoint is done, the zoom will return to its previous scale after a few seconds.

  - o **Show WayPoint number,** show us on the map the order numbers of the Waypoints.

- • **Glide and Average Glide Ratio**

  - o **Glide Average Seconds,** It allows us indicate seconds to perform the average. If we indicate a less second the glide ratio may fluctuate more quickly and be more approximate to the instantaneous glide ratio, if indicate more seconds it fluctuates less and is approximately the average glide ratio at the all time.

- • **Glide Ratios**

  - o **Use two decimals,** the glide ratio widgets, allow us to select if they should show one or two decimals. This function is more interesting for necessary glide to a destination, if activate two decimals we will see more instantaneously if our planning is improving or getting worse.

- **Bearing**

  - **Show bearing in letters,** default heading is shown in degrees from 0 to 359, if you activate this option we will show the heading in cardinal (letters), N-S-E-W, and its intermediates.

- **Relief Graph**

  - **Show Air Spaces,** will graphically show us the airspace section if it exists between our position and the target point.

  - **Show Wind Information,** it will show us by arrows the direction and speed of the wind at different altitudes, it will always be with respect to the direction with the objective.
    → Back Wind; ↑ Lateral right Wind; ↓ Lateral Left Wind; ← Front Wind.
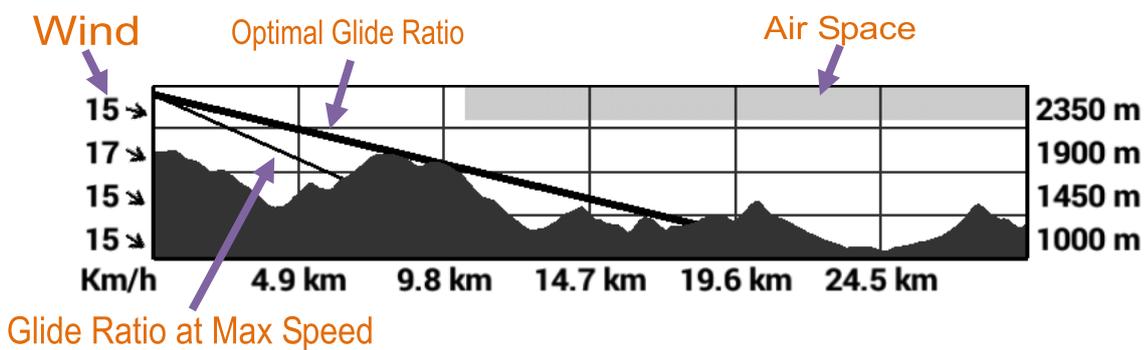
8. Flight Manager

8.1 Buttons in Flight Manager

In the three modes of flight, SeRi Fly has a "**Flight Manager**" to access it will use the "**Back button**" once deployed manager buttons acquire the following functionality:

8.2 XC Modality
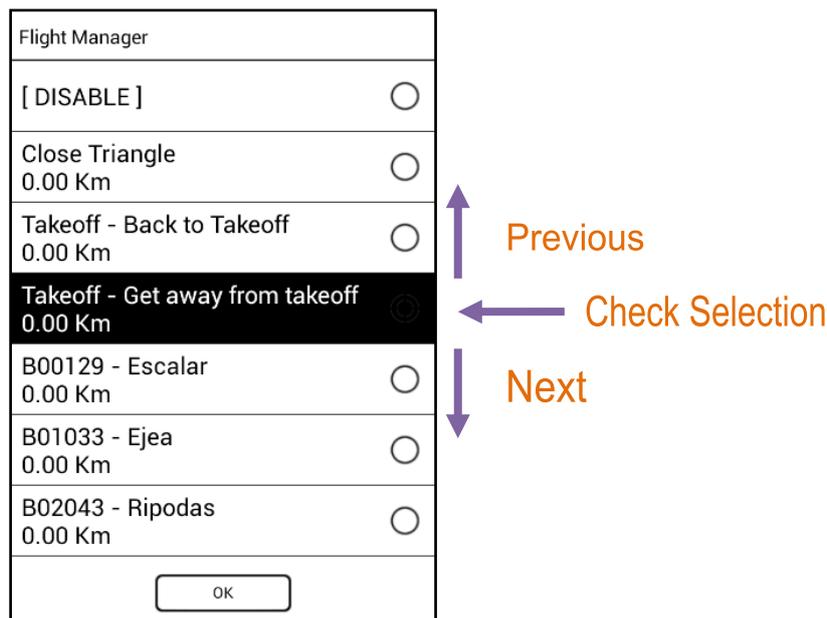
In flight XC, the Flight Manager will show us several possibilities, the first ones are related to flight XC, and the following are the list of available WayPoints (*see section 6.7.2*), these can be ordered by alphanumeric order or by distance depending on how we have configured it in settings (*see section 6.8.5*). With the **Previous and Next buttons** we will change the selected option (it is shown with black background), to validate the option we will press the **Validate button**, if on the contrary we want to cancel we will press the **Back button**.

- **[DISABLE]:** allows us to disable any other previously selected option and continue with the XC distance flight based on 3 TurnPoints.

- **Close Triangle:** activates the triangle assistants, showing on the map the possibilities to make a triangle, its sectors, as well as closing cylinder, etc..

- **Back to Takeoff:** It gives us the directions and direction to return to the takeoff, as well as necessary planes, height on take-off, distance, etc..

- **Get away from Takeoff:** is an exclusive function of alfapilot, is designed for distance flights without turning points, and makes it easier to follow the best bearing to get as far away as possible from the takeoff. This system will create a virtual WayPoint on the map, in the direction opposite to the takeoff and at a distance of 30 Km from us, each time we go near the point it will be re calculated.

- **WayPoints list:** we have the list of WayPoints, to make a GOTO.

8.3 Route or Competition Modality
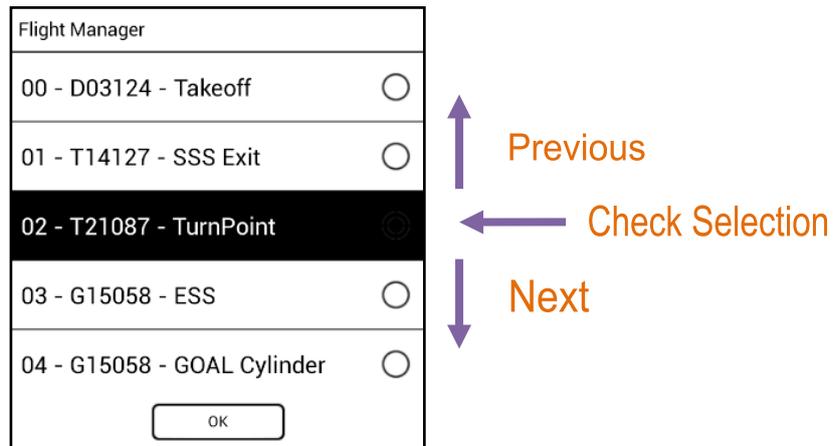
In Flight Route or Competition the flight manager will allow us to move forward or backward between the WayPoints of the active Route or Task, showing the WayPoints available in your order. With the **Previous and Next buttons** we can change the next WayPoint that we want to perform (shown with black background), to validate the WayPoint we will use the **Validate button**, if on the contrary we want to cancel we will press the **Back button**. Once a new WayPoint is selected the route or task will establish this WayPoint as the next WayPoint.

9. Widgets List

They are available to be added through the screen edition (*see section 7.6.1*), then we give an explanation of the functionality of the different Widgets:

* In some widgets it is possible to change the system of used units, for example Km/h or Mi/h (see section 6.3.6).

9.1 System

- **Status Bar**, shows the status bar.
- **Time**, shows the current Time.

9.2 Xi+ Widgets

- **Linear Acceleration G**, shows the absolute acceleration in G, regardless of the angle.
- **G Force**, shows the acceleration with respect to the earth in G.

9.3 Flight

- **GPS Speed**, shows the GPS speed.
- **Glide Ratio**, shows the current glide ratio.
- **Avg Glide Ratio**, shows the average glide of the time period that we have configured.
- **Digital Vario**, show digital vario in m/s.
- **Analog Vario**, show analog vario bar in m/s.
- **Analog and Digital Vario**, Show a analog and digital vario, with the altitude gained on the thermal.
- **Barometric Altitude QNH**, is the compensated barometric altitude, according to the QNH.
- **Barometric Altitude QNE (Competition)**, is the absolute barometric altitude (Uncompensated).
- **Altitude Zero**, shows a field with altitude, this can be set to 0, to have a reference with respect to a point, for example the takeoff.
- **Altitude GNSS**, show the altitude based on WS84 geoid, this altitude is used for IGC File.

- **Altitude Over the Ground**, show the altitude we have over the ground (Needed Elevations files).
- **Ground Altitude**, show the altitude of the ground on the our position (Needed Elevations files).
- **Altitude gain on thermal**, show the altitude gain in a thermal.
- **Longitude**, show the GPS longitude of our position, in coordinates DD.DDDº
- **Latitude**, show the GPS latitude of our position , in coordinates DD.DDDº
- **Bearing**, show the current GPS bearing.
- **Wind Speed**, show the estimated wind speed.
- **Flight Duration**, show the flight duration.

9.4 Weather conditions

- **Pressure**, show the current air pressure in mb.
- **Temperature**, display the current temperature in Celsius.
- **Hum. Relative**, show the Relative Humidity.
- **Hum. Absolute**, show the Absolute Humidity.
- **Temp. Condensation**, show the temperature at which water vapour condense.
- **Altitude Base Cloud**, shows an estimate of the Cloud Base in the current conditions, this field is experimental, and the estimates are more accurate taken at takeoff after turning on our device.

9.5 Navigation

- **Navigation Map in Flight XC**, show maps Navigation XC.
- **Navigation Map in Flight in Route**, show maps Navigation in Route.
- **Navigation Map in Flight in Competition**, show maps Navigation in Competition.
- **Air Spaces**, shows the information of nearby airspaces (Gray background), as well as if we are inside of one (Background in Black color).
- **Compass Navigation**, show the Compass Navigation.
- **Distance to the Next Radius**, show the remaining distance to the radius of the next TurnPoint.
- **Distance Optimized to Next Point**, show the remaining distance to optimum point of the next TurnPoint.
- **Distance Optimized to Final**, show the remaining distance to the end, considering the path formed by the optimal way.
- **Glide ratio required to Next**, show the necessary glide ratio to arrive the next optimized point.
- **Altitude over Next**, show the altitude which will arrive the next optimized point, this altitude may be negative, in this case it indicates that the current altitude is insufficient and need to acquire the remaining altitude.
- **Glide ratio required to Final**, show the needed glide ratio to reach the final, considering the path formed by the optimal way.
- **Glide ratio required to Goal**, show the needed glide ratio to reach the Goal, considering the path formed by the optimal way.
- **Altitude over Goal**, show the altitude which will arrive the Goal point, this altitude may be negative, in this case it indicates that the current altitude is insufficient and need to acquire the remaining altitude.
- **Altitude over Final**, show the altitude which will arrive the final point, this altitude may be negative, in this case it indicates that the current altitude is insufficient and need to acquire the remaining altitude.
- **Remaining time for Opening SSS**, remaining time for the opening of the Start Point (Start Speed Section), if we are on the wrong side the background will be black (for example if it is EXIT and we are out before the time).

- **Necessary speed for SSS (Near Point),** tells us the speed needed to do the Start Point at the opening time going to the Nearest Point.

- **Necessary speed for SSS (Optimal Point),** tells us the speed needed to do the Start Point at the time of opening by going to the Optimal Point.

- **Average Speed on Speed Sector**, is the average speed since we made the Start Point until the present time, according to the distance made.

- **Remaining time for end flight**, show the time remaining to the deadline time of flight.

- **Average Speed on XC Flight**, is the average speed since we Take Off until the present time, according to the distance made.

- **Distance Flight XC**, show the distance that we travelled in XC flight, considering Takeoff - landing, and three TurnPoints.

- **Closing Triangle FAI**, show the total distance in case there complete a possible FAI Triangle.

- **Close Triangle Flat**, shows the total distance in case there complete a possible FLAT Triangle.

- **Max Triangle FAI**, in the case is possible make a FAI Triangle, show Maximum distance of this.

- **Min Triangle FAI**, in the case is possible make a FAI Triangle, show Minimum distance of this.

- **Distance to 20% Triangle Close,** display the remaining distance to the closure of a triangle to 20% of the total distance.

- **Distance to Close Triangle**, display the remaining distance to triangle closing point.

- **Ground Level Graphic**, It shows a graph of the relief, between our current point and the next point, indicating the altitude of the relief, and a line of our glide ratio (glide of our wing). This graphic helps us to visualize quickly if between our point and the next point there is some elevation in the relief that prevents reaching the destination. If there is no next point, this graph does not show values.

- **Speed To Fly,** it indicates by means of icons the optimum speed, considering the glide ratio, wind bearing and speed, and our altitude.

  - ▶ optimal speed at Hands Free.
  - ▶ ▲ optimal speed at 33% of Speed Bar (first step).
  - ▶ ▲ ▲ optimal speed at 66% of Speed Bar (Second step).
  - ▶ ▲ ▲ ▲ optimal speed at 100% of Speed Bar (third step).

10. Folder structure SeRi Fly

From a Computer
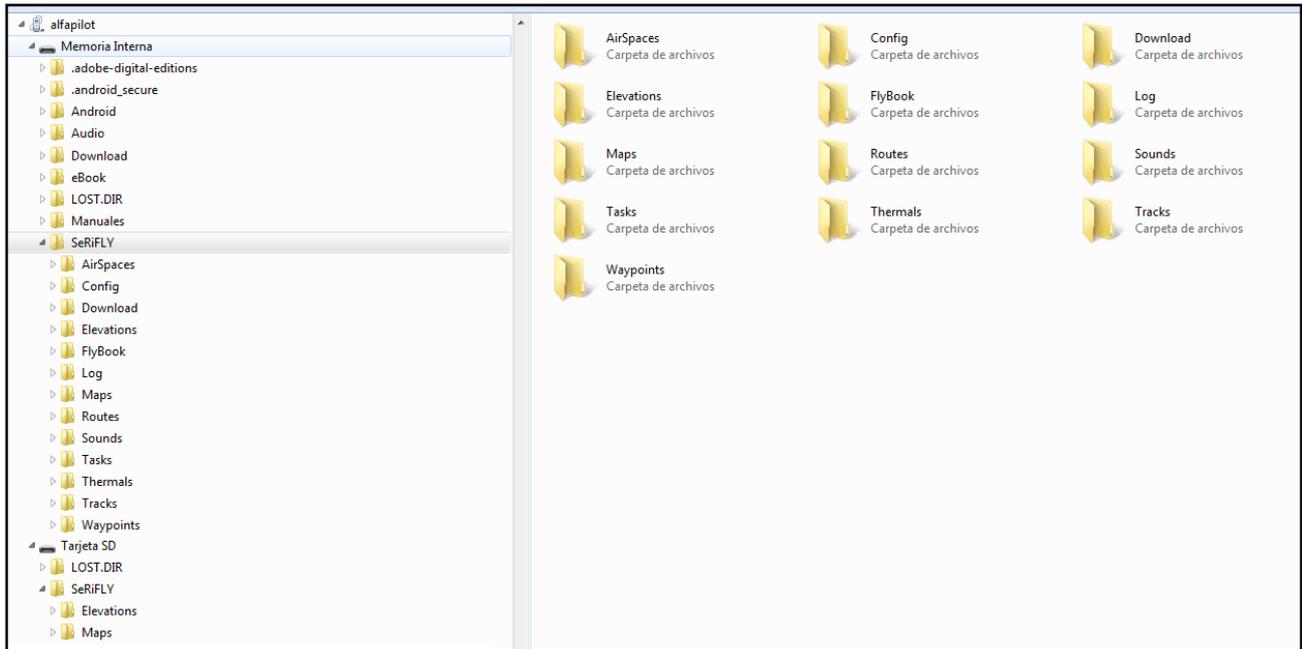
- **AirSpaces ->** It contains airspaces files in ".aip" or ".txt" format.
- **Config ->** It contains configuration files exported in ".cfg" format.
- **Download ->** It contains temporal downloaded files.
- **Elevations ->** It contains elevation* files in ".tiff" format.
- **FlyBook ->** Contains the exported flight book files in ".ser" format.
- **Log ->** It contains log files in ".log" format.
- **Maps ->** It contains maps files with roadmaps, towns and contour lines in ".map" format.
- **Routes ->** It contains exported routes files.
- **Sounds ->** It contains sound alert files in ".ogg" format.
- **Tasks ->** It contains exported tasks files.
- **Thermals ->** It contains files of HotSpots (Thermal) in ".gpx" or ".thp" format.
- **Tracks ->** It contains files of our flights in ".igc" format.
- **Waypoints ->** It contains waypoints packages in ".wpt" or ".gpx" format.

* In the Elevations folder, we can copy files from GeoTiff elevations in "**.tif**" format, these are available on our support website in "**.zip**" format, they can be copied directly since SeRi Fly can decompress these files (decompression can take a long time) or they can also be decompressed on the PC and only copy files with "**.tif**" format.

11. Use tips

- On our web page for support we have a "**Frequently asked questions**" section, it is recommended to read it.

- To facilitate the reception of enough satellites and ensure a accurate position, it is recommended to turn on our Alfapilot about five to ten minutes before takeoff.

- In days of high light intensity it is advisable to wear sunglasses, since the high contrast of our screen can produce an effect like that of snow on sunny days.

- In case of not using functions that require the use of WIFI, we recommend turning off the WIFI to avoid unnecessary consumption.

- Screen backlight is only needed in dark places or during the night, the use of this lighting during the day or outdoors does not improve the display and increases the battery consumption.

- When we load our device, normally the percentage shown on the screen will reach 100% before the load is complete, the best indicator that our alfapilot is fully charged is the green led to the right of the power button, when it is on load this led will light up, once the load is completed this led will turn off even when connected to the charger.

- It is possible to use a PowerBank at the same time that we use our alfapilot. This will keep the battery level always at maximum, and once the PowerBank battery is consumed, alfapilot will continue to work with the internal battery. For every 2500 mAh capacity in the PowerBank we will increase the autonomy in 10h.

12. Security advice

Caring for the device

- Avoid environments with fine dust, such as leaving the alfapilot on thin soil.

- Use the safety cord to avoid possible falls during takeoff, flight or landing.

- Avoid wetting or immersing the device in water, it is not a device with protection for water, in some cases it can withstand a few drops of water, on the screen or top.

- For cleaning our alfapilot use a soft and slightly moistened cloth.

- Do not use aggressive products, detergents or clean crystals to clean the alfapilot, they can affect the paint or the screen.

Warnings to avoid damages

- Avoid knocks or falls of the device, it can damage the screen and even the electronics.

- Avoid excess pressure or weight on the screen, this can break.

- Do not carry your alfapilot inside the backpack with the paraglider where all the weight can exert too much pressure on the screen.

- Protect your alfapilot in transport with some kind of rigid or semi-rigid case, and transport it in a separate backpack with the rest of your delicate electronics.

- The capacitive screen only responds to the pressure of our fingers or special gloves for capacitive screens, if you wear traditional gloves and your screen does not detect your pulsations, do not try to exert excessive pressure on the screen, as it will still not detect the pulsations and can break it.

- Do not leave your alfapilot under intense sun on hot days, it can produce an excess of temperature (more than 50ºC in the device and more than 80ºC in the processor), in this case alfapilot for

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- Do not leave your alfapilot under intense sun on hot days, it can produce an excess of temperature (more than 50ºC in the device and more than 80ºC in the processor), in this case alfapilot for

security will be blocked. If this happens, take your alfapilot to a shady place and wait a few minutes, press and hold the power button for 15 seconds. Once this is done proceed to the normal ignition of your alfapilot. To avoid this in the future, it is usually enough to cover our alfapilot with the flight jacket.

- If you use your Alfapilot at low temperatures (Below 0ºC), keep in mind that the battery uses Lithium technology, these batteries at low temperatures lose performance and autonomy. You can use an external PowerBank to mitigate this loss of autonomy.

- Do not use power cables, damaged connectors or loose plugs. Do not bend or damage the power cord. Do not touch the power cord with wet hands or pull the cord to disconnect the charger.

- Do not try to open your alfapilot, you can damage the electronics, or the screen. This action may void your Guarantee.

- The operating temperature limits of the alfapilot devices is -10ºC to 47ºC and the appropriate temperature of use is between 5ºC to 40ºC.

- The temperature limits for the lithium battery is -25ºC to 65ºC, exceeding these temperatures can damage the battery, cause deformation of the battery, and in some extreme situations cause its combustion.

13. Glossary

Explanation of some of the terms used:

- **Widgets**: Data fields shown flight information.
- **WayPoints**: Waypoints or geographical points with coordinates.
- **art Point**: Start Point is a waypoint depending on the time, Start Speed Section.
- **Start Speed Section**: Identical to Start Point.
- **End Speed Section**: The point at which stop the time compute for task.
- **IGC**: FAI/IGC Flight Recorder Data Format.
- **HotSpots**: are geographic points with coordinates where there is a greater possibility of thermal or ascending.
- **GNSS**: **G**lobal **N**avigation **S**atellite **S**ystem.

14. Correct disposal of this product

(Waste electrical and electronic equipment).
(Applicable in the European Union and in European countries with selective waste collection systems).

The presence of this symbol on the product, accessories or information material that accompany it indicates that, at the end of its useful life, neither the product nor its electronic accessories (charger, cables, etc.) must be disposed of together with other household waste.

To avoid possible damage to the environment or human health, separate these products from other types of waste and recycle them correctly. In this way, you promote the sustainable reuse of material resources and avoid the depletion of finite resources.

As a private user, you can contact the establishment where you purchased the product or the relevant local authorities to inform you about how and where you can take it so that it is subject to ecological and safe recycling.

15. European Regulation CE

Alfapilot devices in its range of models **M16, Xi, Xi+ y XiHD**

Comply with the provisions of Directive 2014/53/EU of radio equipment, complying with harmonized standards:

1. Health [Article 3.1a of the NET Directive]
   - EN 50566:2013 + AC:2014
   - EN 62209-2:2010

2. Security [Article 3.1a of the NET Directive]
   - EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

3. Electromagnetic Compatibility [Article 3.1b of the NET Directive]
   - EN 301 489-1 V2.1.1 (2017-02)
   - EN 301 489-17 V3.1.1 (2017-02)
   - EN 55032:2015+AC:2016
   - EN 55024:2010+A1:2015

4. Use of the radio frequency spectrum [Article 3.2 of the NET Directive]
   - ETSI EN 300 328 V2.1.1 (2016-11)

Made in Spain.